R. STAHL, INC.

9016

HAZARDOUS LOCATION ELECTRICAL PRODUCTS

electrical catalog 9016

Hazardous Location Electrical Products

STAHL

Innovative Global Explosion Protection by R. STAHL

FM
DMT
PTB
UL
SIL
Safety Integrity Level
IEC 61508 IEC 61511
Dust-Ex

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R. STAHL in North America

R. STAHL, INC. has been in North America for almost 30 years. Located in Houston, Texas and Edmonton, Alberta, Canada, we have expanded to include over 40 representatives throughout the Americas. Our service is unmatched, with qualified technical experts that can be reached in real time, not seven hours away in Europe.

Expertise
where safety knows no compromise

One hundred thirty years after our founding, with facilities strategically located on five continents, R. STAHL is acknowledged as the world's foremost innovator in explosion-protected components and systems for Automation, Control and distribution, Operations and monitoring, Lighting and Signals & Alarms.

Our commitment to the Americas commenced in 1979 when R. STAHL introduced intrinsic safety technology to the North American market. It rose to greater prominence in the mid-1990s, when R. STAHL played a leading advocacy role in the harmonization of the U.S. National Electrical Code (NEC) and the International Electrical Code (IEC). Changes made at that time yielded increased global standardization, and produced heightened efficiencies and maintenance benefits for international markets.

Our expertise also covers related areas of safety engineering such as functional safety, SIL and FDA. International certifications, approvals, and patents underline our expertise and make it possible for R. STAHL products to be used anywhere in the world. One thing is certain: on the basis of experience and international synergies, we continue to deliver technological innovations tailored to your individual needs.

Benefits

- *All protection methods available*
- *Over 3000 certificates for explosion protection issued*
- *More than 70 active patents*
- *Technical training*
- *Member of many international committees, technical commissions and research groups (Profibus, Fieldbus Foundation, HART etc.)*
- *In-house testing laboratory*

More Than Protection

PEACE OF MIND

Our Mission

"We provide products and services to protect the most valuable – and often irreplaceable – assets of some of the most critical industries on Earth."

Applications

- *Petroleum and natural gas deliveries*
- *Petroleum and natural gas storage and transporters*
- *Petrochemical industry*
- *Chemical industry*
- *Pharmaceutical industry*
- *Food product, beverage and tobacco industries*
- *Shipbuilding and offshore industries*
- *Food processing industry*
- *Water purification*
- *Automotive*
- *Original equipment manufacture*

In the production, processing, transportation and storage of many materials, grave danger can exist. Flammable gasses, vapors, mists and dusts can occur that, when combined with oxygen in the air, form an explosive atmosphere. Given a source of ignition, these substances can detonate and destroy life and property in seconds.

Our job at R. STAHL is to create products and deliver services to eliminate the possibility of such an incident. And in fulfilling this role, we offer More than Protection. Peace of Mind. Our products are the most innovative in the world.

Promises to our customers

- We provide you the best engineering minds available to protect your people and property from explosions.
- We offer you only products we know to embody the finest technology and craftsmanship.
- We carefully develop and engineer the right solutions for your individual applications.
- We deliver your products and services quickly and efficiently.
- We serve you in a manner that places Stahl above our competitors in providing you "peace of mind" concerning the safety of your people and property.

Manufacturing

COMMITTED TO TEAMWORK

Production Plants:

- *Houston*
- *Waldenburg*
- *Weimar*
- *Cologne*
- *Hengelo*
- *Stavanger*
- *Chennai*
- *Shanghai*

R. STAHL's global headquarters is located in Waldenburg Germany. Located in Houston, Texas, R.STAHL Inc. is proud of it's world class manufacturing, engineering and technical service competency. Here our engineers work together in teams to develop tailor-made, reliable and cost-effective solutions for complex systems worldwide. Project management and production departments work side by side in state of the art facilities to foster communication and cooperation between all departments throughout the entire production process. Flat hierarchies, flexibility, and open dialog describe our culture. Our large portfolio of components and systems, one of the most comprehensive in the world, is the basis for our explosion protection system solutions, all of which are carefully designed to work seamlessly with each other. This guarantees our customers the reliability they require and the assurance that a project will be successful. Our expert representatives will update you on your project status at any time. Our other manufacturing facilities located in Weimar and Cologne (Germany), Stavanger (Norway), Hengelo (Netherlands), Chennai (India) and Shanghai (China) adhere to the same high standards.

Development & Laboratory/ Certification

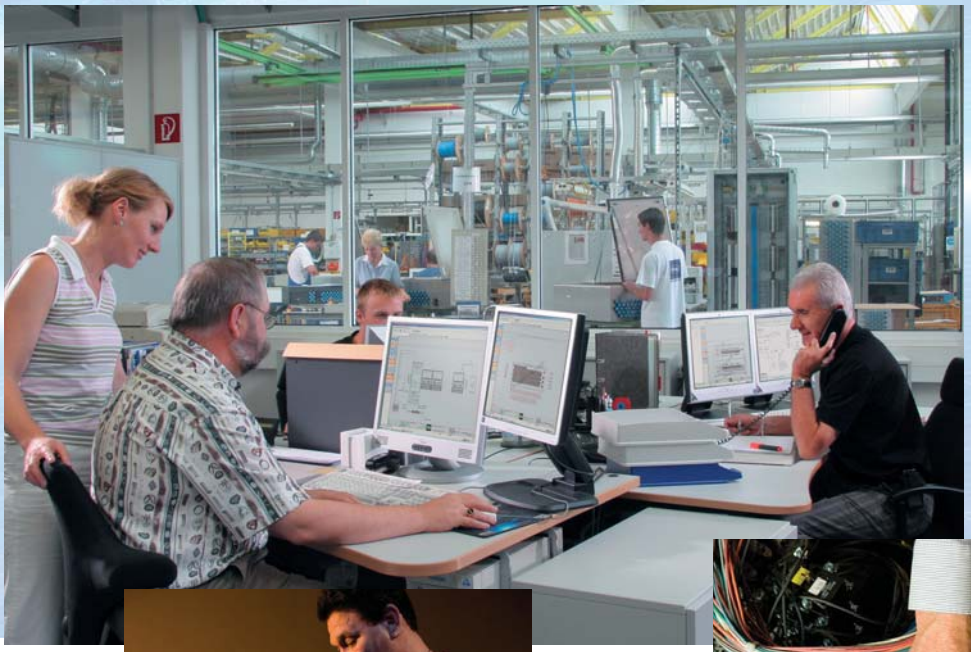
Development

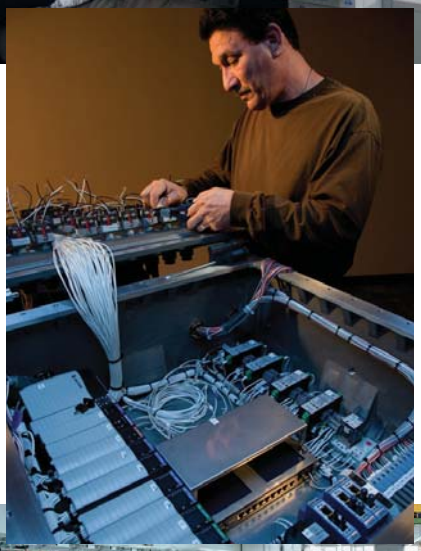
- *6% of our annual revenue is reinvested in the innovation process*
- *40% of our revenue has been generated with products launched into the market in the past five years*
- *We actively participate in international committees*
- *We use state of the art CAD systems and provide rapid prototyping*

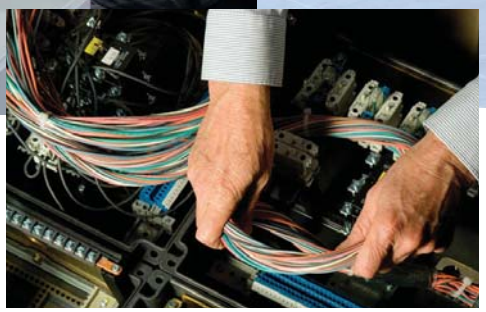
Laboratory/ Certification

- *All key tests are performed on site in our own state of the art testing facilities*
- *We hold over 3,000 international certificates for explosion protection, shipping vessel approvals and functional safety*
- *We offer factory accepted testing for domestic and international projects*

Project Planning & Production







Project Planning

- *Extensive cooperation with customers to develop the optimal solution*
- *Highly skilled engineers with international experience design solutions based on your individual needs*

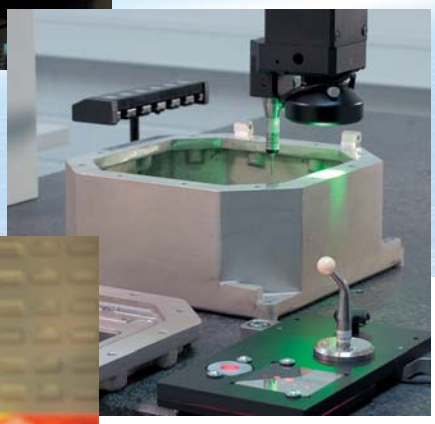
Production

- *Manufacturing plants located in: Houston, Texas (USA), Waldenburg, Weimar & Cologne (Germany), Hengelo (Netherlands) Stavanger (Norway), Shanghai (China) and Chennai (India)*
- *Flexible production and organized manufacturing provides effective communication between all departments*
- *In-house occupational training center with educated trainers*
- *In-house tool-and-die manufacturing facilities*

Quality Management & On-site Acceptance Testing

Quality Management

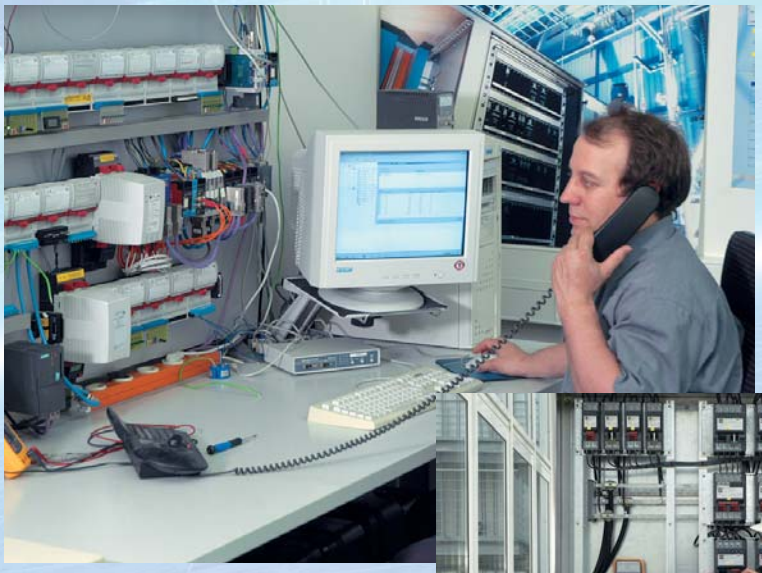
- *ISO 9000 certified in 1993 and ISO 9001 in 2004*
- *Quality management process covers the whole supply chain*
- *Quality management system is approved by PTB*
- *Calibration laboratory monitors over 2,000 items of electrical and mechanical test equipment*
- *Production process is covered by quality assurance*



On-site Acceptance Testing

- *State of the art testing and inspection equipment*
- *Intensive technical support*
- *Personnel are continuously trained on the latest technology*
- *On-site consultants are in direct contact with development product managers*

After-Sales Service & Logistics



After-Sales Service

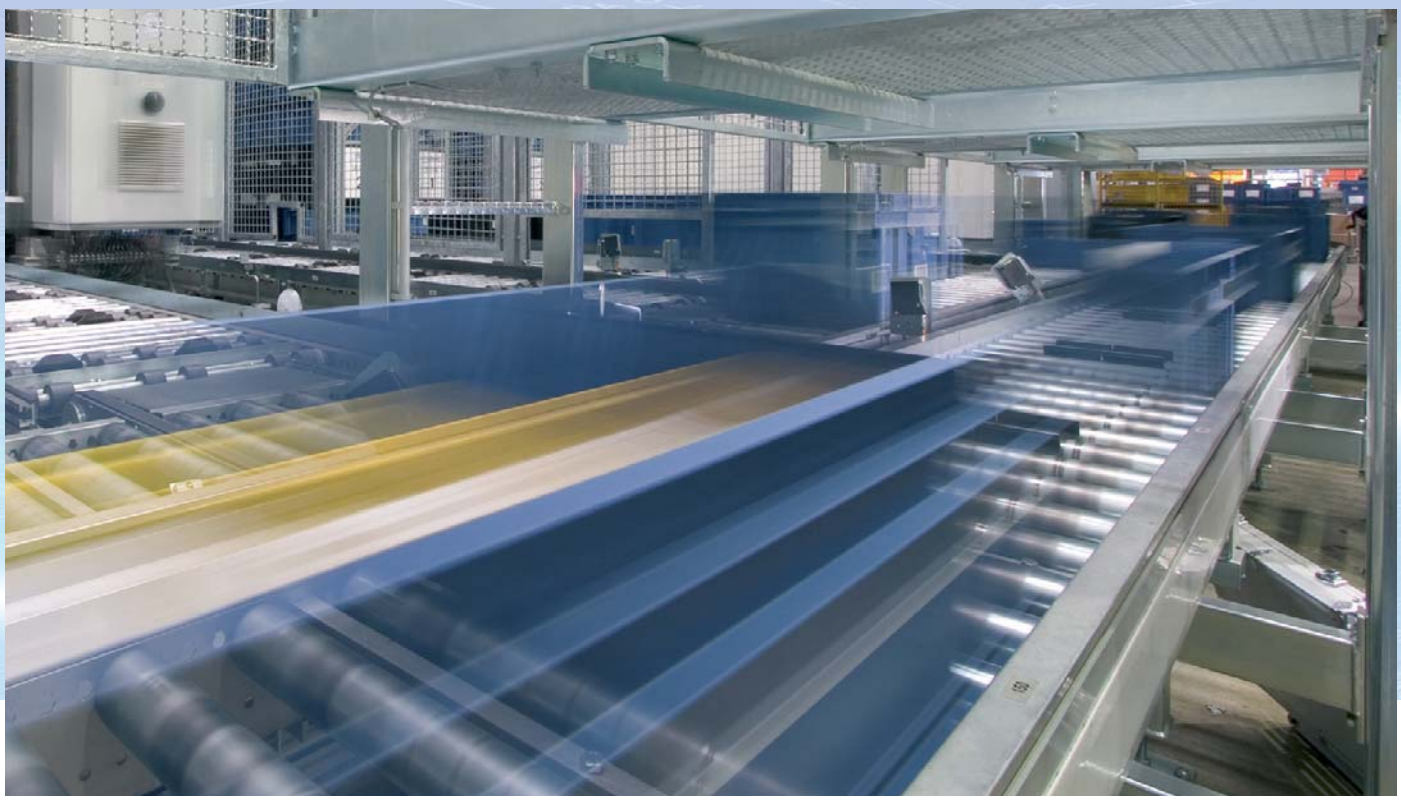
- *Extended warranty on products and services*
- *Field service engineers available*
- *Competent information given by telephone and email*

Logistics

- *Efficient and economical workflow*
- *Modern, fully automatic high-bay warehouse*
- *Production organized on the kanban principle*

Service

WE HAVE YOU COVERED



Protecting lives and equipment is R. STAHL's highest priority. When you partner with R. STAHL in this endeavor you can be assured that our customized, technically advanced, comprehensive products and services receive the highest quality of service.

OEM service

On a worldwide basis, Original Equipment Manufacturers are continuously looking to expand their markets for existing and new system designs. When market opportunities arise that require ATEX or IECEx certification for markets, such as Europe, the Middle East, Asia and Russia, R. STAHL is the preferred partner. In North America, producing custom, quality products — often with extremely tight turnaround —is an R. STAHL specialty.

With our more than seventy-five years of Experience, we stand ready to guide and educate OEMs and their engineering teams in meeting global electrical codes and standards in all harsh environments and hazardous (classified) locations.

- *Development of individual solutions*
- *Technical service*
- *After-sales service*
- *Expert information available via hotlines*
- *Global distribution network*
- *Relevant information via www.rstahl.com*
- *Permanent order status updates*
- *Flexibility*
- *Quality management*
- *Fast, reliable shipping*
- *24-hour turnaround on pick-and-pull items*
- *International customer support*
- *International shipping*
- *Training*

Training

GOOD TO KNOW

- *Training programs*
- *In-house training center*
- *Training classes conducted at the customer's facility*

Competent and trained employees are the most important link in a safe production chain. Remaining at the top of an industry requires committed employees who work diligently with new technologies and implement new safety regulations. At R. STAHL, we are aware of this and make our expert knowledge available to you by conducting training classes. Individuals may choose to take advantage of a basic or advanced training class. Theory and practice are conveyed in equal measure by our specialists. Individuals may choose to have training classes at their own location or at our facility. R. STAHL training classes provide participants with valuable knowledge pertaining to engineering, scientific principals and implementation of the NEC, CEC and ATEX / IECEx requirements.

Hazardous Location Overview

Understanding Global Explosion Protection

- *Class and Division System*
- *Class and Zone System*
- *ATEX/CENELEC Zone System*
- *IEC*

Basics of Explosion Protection

HAZARDOUS LOCATIONS

Hazardous locations are defined as premises, buildings or parts thereof where fire or explosion hazards may exist due to the presence of flammable gases or vapors, flammable liquids, combustible dusts, or easily ignitable fibers or flyings.

Although, flammable gases, vapors and combustible dusts exist almost everywhere, fortunately, they are present only in minute quantities. Simply because flammable gases or vapors, or combustible dusts are present, there is not necessarily a hazardous location. The quantities or concentrations must be sufficient to present a potential explosion hazard.

The electrical codes that deal with these types of hazardous locations areas do not deal with materials such as high explosives, such as dynamite, munitions, or fireworks. Other rules and regulations deal with areas involving these materials.

Understanding "Global" Hazardous Location Requirements

The evolution of hazardous location electrical codes and standards throughout the world has taken two distinct paths. In North America, a "**Class, Division**" System has been used for decades as the basis for area classification of hazardous (classified) locations. Because the hazards and methods of protecting electrical equipment against these hazards differ for different materials, hazardous locations are divided into three Classes, and two Divisions. The Classes are based on the type of hazard and the explosive characteristics of the material with the Divisions being based on the occurrence or risk of fire or explosion that the material presents. While Canada has traditionally been a country with a Class, Division system like the US; Canada has adopted the Class Zone system for new construction projects, the Class, Division system still exist in facilities previously built under this system.

In other parts of the world, areas containing explosive atmospheres are dealt with using the "Zone System". Zones are based predominantly on the International Electrotechnical Commission (IEC) and European Committee for Electrotechnical Standardization (CENELEC) standards. Whereas North America deals with multiple types of hazardous atmospheres.

HAZARDOUS LOCATION BASICS

In North America, hazardous locations are separated into three "Classes" or types based on the explosive characteristics of the materials. The Classes or type of material is further separated into "Divisions" or "Zones" based on the release of the flammable material. The Zone system has three levels of hazard versus the Division System's two levels.

Hazardous Materials	Class/Division System	Class/Zone System
Gases or Vapors ①	Class I, Division 1 Class I, Division 2	Class I, Zone 0, Zone 1 Class I, Zone 2
Combustible Dusts ②	Class II, Division 1 Class II, Division 2	Class I, Zone 20 Zone 21 Class I, Zone 22
Fibers or Flyings	Class III, Division 1 Class III, Division 2	Class I, Zone 20 Zone 21 Class I, Zone 22

① The United States and Canada have adopted Zones for Gases and Vapors

② Zones 20, 21 and 22 for Dust are adopted by Europe and the U.S. but not by Canada.

Class I Locations

Class I locations are those in which flammable "gases or vapors" are, or may be, present in the air in quantities sufficient to produce explosive or ignitable mixtures. The terms, "gases or vapors" differentiates between materials that are in a gaseous state under normal atmospheric conditions, such as hydrogen or methane, and a vapor that is flashed off from a liquid, under normal atmospheric conditions, such as gasoline.

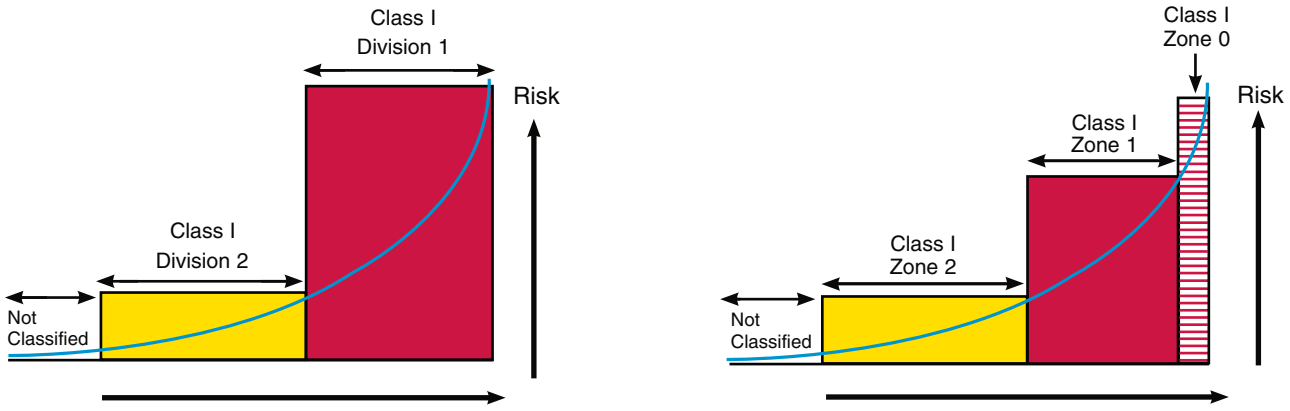
The subdivision of Class I, locations into "Divisions" or "Zones" is based on the probability that an explosive gas atmosphere may be present in a location. If the risk is extremely low, the location is considered unclassified. A good example of a low risk area is a single family home with natural gas or propane furnace for heating. The gas could, and does on extremely rare occasions, leak into the home, encounter an ignition source and an explosion occurs, usually with devastating results. However, since the risk is so low, because of the safety systems built into the gas supply and heating equipment, these areas are not "hazardous (classified) locations".

Recent editions of the NEC® (National Electrical Code) and CEC® (Canadian Electrical Code) have incorporated the international definitions for "Zones" for Class I, locations. The two codes continue to address the "Division" system although the methods are somewhat different.

The frequency of occurrence determines the level of hazard for a location. Simply stated, the longer the material is present, the greater the risk.

Frequency of Occurrence	Division System	Class/Zone System
Continuous	Class I, Division 1	Class I, Zone 0
Intermittent Periodically		Class I, Zone 1
Abnormal Condition	Class I, Division 2	Class I, Zone 2

The charts below compare the Division and Zone systems in terms of risk assessment.



The abnormal conditions of occurrence, or lower risk areas, in the Zone and Division system are basically identical. However, in areas where a hazard is expected to occur in normal operation, the Zone system deals with highest risk areas separately, and risk associated with the remaining location is considered lower. The Division system tends to be less specific in its consideration of Division 1. The Division system treats all areas where a hazard is expected to occur in normal operation the same.

The following chart illustrates the differences between the various Zones.

Grade of Release	Class, Zone	Flammable Mixture Present
Continuous	0	1000 hours per year or more (10%)
Primary	1	Between 10 and 1000 hours per year or more (0.1% to 10%)
Secondary	2	Less than 10 hours per year (0.01% to 0.1%)
Unclassified	-	Less than 1 hour per year (Less than 0.01%)①

This is a combination of Tables 2 and 3 from API RP505

①The 1-hour per year used in API RP505 is considered to be high by some industry experts. Conservative estimates of this figure should be 0.01 hours per year.

Class I Locations, continued

Class I locations are further divided into Groups based on the explosive properties of the materials present. North America under the Class & Div. System uses four Gas groups while the IEC/CENELEC and the U.S. and Canada under the Zone System use three.

The chart below compares the two systems.

Typical Gas	Class/Division Gas Groups	Class I, Zone Gas Groups
Acetylene	A	II C
Hydrogen	B	
Ethylene	C	II B
Propane	D	II A

(The US has added a “IIB + hydrogen” group to address certain construction limitations.)

Class II Locations

Class II locations are those which are hazardous due to the presence of combustible or electrically conductive dusts. The dust must be present in sufficient quantities for a fire or explosion hazard to exist. The fact that there is some combustible dust present does not mean a Class II hazardous location exists.

Class II substances are divided into three groups for similar reasons to those of Class I materials: equipment design and area classification. Class II groups are based on different characteristics than those of Class I, given the requirements for an explosion to occur and the protection methods required for equipment. In Class II locations the ignition temperature, the electrical conductivity, and the thermal blanketing effect of the dust are critical when dealing with heat-producing equipment, such as lighting fixtures and motors. It is these factors which are the deciding factors in determining the Class II groups.

Groups	Type of Material	Examples
E	Metal Dusts	Powdered Metals such as Aluminum or Magnesium
F	Carbonaceous Dusts	Carbon Black, Coal Dust or Coke Dust
G	Agricultural Dusts	Grain, Flour, Sugars, Spices and certain Polymers

(The IEC and NEC 506 have developed Zones for atmospheres containing combustible dusts, which again separates areas in to three Zones 20, 21 and 22.)

Zone 20, 21 and 22 Locations

The IEC/CENELEC and the U.S. introduced the three-Zone system for combustible dust locations. These have not been included in the CEC yet. The definitions are as follows:

Zone 20 - an area in which a combustible dust, as a cloud, is present continuously or frequently during normal operations in sufficient quantities to produce an explosive mixture.

Zone 21 - an area in which a combustible dust, as a cloud, is likely to occur during normal operations in sufficient quantities to produce an explosive mixture.

Zone 22 - an area in which combustible dust clouds may occur infrequently and persist for only short periods of time or in which accumulations or layers may be present under abnormal conditions.

Class III Locations

Class III locations are those which are hazardous due to the presence of easily ignitable fibers or flyings. However, the material is not suspended in the air in quantities sufficient to produce ignitable mixtures.

Easily ignitable fibers and flyings present a serious fire risk, not normally an explosion hazard. The greater danger with Class III materials is that if a layer forms throughout a facility, an ignition will cause a flash fire which moves at near explosive speeds.

In the Zone System fibers and flyings are treated under Zone 20, 21 and 22.

TEMPERATURE CLASSES

Ignition temperature or auto-ignition temperature (AIT) is the minimum temperature of a surface at which an explosive atmosphere ignites. Flammable vapors and gases can be classified into temperature classes according to their ignition temperature. The maximum temperature of a piece of equipment must always be lower than the ignition temperature of the gas - air mixture or vapor - air mixture in which it is placed. Equipment shall be marked to show the operating temperature or temperature class referenced to a +40°C (+104°F) ambient. The temperature class (T code) is indicated on the manufacturers nameplate and is based on the table below.

AMBIENT TEMPERATURE

The ambient temperature is the surrounding temperature of the environment in which a piece of equipment is installed, whether it is indoors or outdoors. The standard temperature range for equipment design in the Zone system is –20°C to +40°C; and in the Class and Division System -25°C to +40°C for this ranges no ambient temperature marking is required on the product. Electrical equipment that is designed for use in a range of ambient temperature other than stated, the actual ambient temperature range shall be marked on the equipment nameplate.

The R. STAHL product lines, in most cases, exceed the above mentioned temperature requirements. Refer to the appropriate catalog pages for the product-specific "Ambient Temperature Range". Any ranges outside of the above stated ranges are marke on the product nameplate.

North American Temperature Code	IEC/CENELEC/NEC 505 Temperature Classes	Maximum Temperature	
		°C	°F
T1	T1	450˚C	842˚F
T2	T2	300˚C	572˚F
T2A	-	280˚C	536˚F
T2B	-	260˚C	500˚F
T2C	-	230˚C	446˚F
T2D	-	215˚C	419˚F
T3	T3	200˚C	392˚F
T3A	-	180˚C	356˚F
T3B	-	165˚C	329˚F
T3C	-	160˚C	320˚F
T4	T4	135˚C	275˚F
T4A	-	120˚C	248˚F
T5	T5	100˚C	212˚F
T6	T6	85˚C	185˚F

Applications requiring product with extreme ambient temperature ranges outside those standard ranges stated under the heading "Ambient Temperature Range" are specified under the heading of "Special Ambient Temperature Range". Only products with this additional catalog information can be customized for extreme temperature applications. Please consult factory for your special needs.

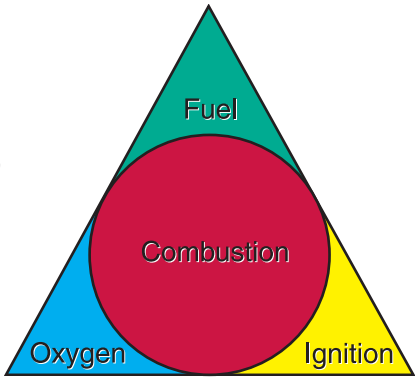
EXPLOSIVE GAS PROTECTION METHODS

There are a number of methods of protecting electrical equipment, which prevent an explosion when used in a flammable gas atmosphere.

Three elements are required for an explosion to occur - fuel, oxygen and a heat or ignition source must be present. The fuel and oxygen must be in the correct mixture. Too little fuel, or a lean mixture, or too much fuel, a rich mixture cannot ignite. These explosive limits are defined as the "Lower Explosive Limit" (LEL) and the "Upper Explosive Limit" (UEL).

Each method of protection addresses the Fire Triangle in some manner. Either by containing an internal explosion or eliminating one or more of the components necessary for an explosion to occur.

The most common North American methods of protection are explosionproof equipment for Class I locations, and dust-ignition proof equipment for Class II locations. R. STAHL produces a wide range of equipment for use in hazardous locations using various methods of protection.



Methods of Protection (Gas)

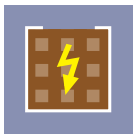
Flameproof Type of Protection "d"- or Explosionproof Equipment

Although the North American term "explosionproof" and IEC term "flameproof" are SIMILAR concepts, the requirements in the product standards are different. Explosionproof is a Div. 1 technology which can be used in a NEC or CEC defined Zone 1 environment. Flameproof is a Zone 1 technology and can not be used in a Div. 1 environment.

Since flammable gases and vapors are expected inside an enclosure, the equipment must be capable of withstanding an explosion caused by sparking contacts of devices, high temperatures, or an electrical fault. The enclosure is designed so that hot gases generated during an internal explosion are cooled below the ignition temperature of the surrounding flammable atmosphere as they escape through the joints of the unit.

In addition, the external surfaces of the enclosure must not become hot enough to ignite the surrounding atmosphere due to heat energy within the unit. This heat energy may be the result of normal operation of heat-producing equipment, or the result of an electrical arc to the enclosure from an arcing ground fault. Safety factors are applied to all testing of this type of enclosure to ensure the unit will not rupture as a result of an internal explosion.

Hazardous Location Overview

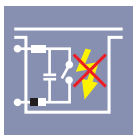


Encapsulation - Type of Protection “ma” for use in Zone 0 and “mb” for use in Zone 1 & Class I, Zone 2

Encapsulation is a type of protection in which the parts that can ignite an explosive atmosphere are enclosed in a resin. The resin must be sufficiently resistant to environmental influences so that the explosive atmosphere cannot be ignited by either sparking or heating, which may occur within the device. This is typically used with electronic devices.

Increased Safety - Type of Protection “e” or “eb” for use in Zone 1 & Class I, Zone 1

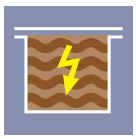
Type of protection applied to electrical equipment that does not produce arcs or sparks in normal service and under specified abnormal conditions, in which additional measures are applied so as to give increased safety against the possibility of excessively high temperatures and of the occurrence of arcs and sparks.



Intrinsic Safety - Types of Protection “i”, “ia”, “ib” and “ic”

North America now identifies four versions of this protection method. Types “i” (NEC 504) and “i_a” (NEC 505) are identical since type “i” is based on the IEC 60 079-11 Standard. In Zone 0 the only acceptable type of equipment are types “i” and “i_a”. Type “i_b” is acceptable in Zone 1 and “i_c” is acceptable in Zone 2

(For further details refer to R. STAHL INC’s Catalog for Hazardous Location Automation Products.)



Oil Immersion - Type of Protection “o” or “ob” for use in Zone 1 & Class I, Zone 1

Type of protection where electrical equipment is immersed in a protective liquid in such a way that an explosive atmosphere that may be above the liquid or outside the enclosure cannot be ignited.

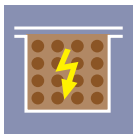
Pressurization - Types of Protection “px” or “pxb” for use in Zone 1, “py” or “pyb”for use in Zone 1 and “pz” or “pzc” for use in Zone 2

This type of protection prevents the surrounding atmosphere from entering an enclosure by maintaining a positive pressure within the unit. Clean air or inert gas is used to maintain a higher pressure than the surrounding atmosphere. In pressurization, the electrical equipment is interlocked with a system which cycles clean air within the unit to remove explosive gases before start up.

Purged and Pressurized -

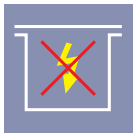
For the Class and Division System the following table applies

Type	Explanation
X	Changes the area within the unit from Class I, Division 1 to unclassified
Y	Changes the area within the unit from Class I, Division 1 to Class I, Division 2
Z	Changes the area within the unit from Class I, Division 2 to unclassified



Powder Filling - Type of Protection “q” or “qb” for use in Zone 1 & Class I, Zone 1

Type of protection where electrical parts capable of igniting an explosive atmosphere are fixed in position and completely surrounded by filling material (glass or quartz powder) to prevent the ignition of an external explosive atmosphere.



Nonsparking Equipment - Type of Protection “nA” or “nAc” for Use in Zone 2 & Class I, Zone 2

Sparking Equipment - Type of Protection “nC” or “nCc” for Use in Zone 2 & Class I, Zone 2

Equipment in which the contacts are suitably protected other than by restricted breathing enclosure.

Hermetically Sealed for use in Class I, Division 2 or Class I, Zone 2

A common type of hermetically sealed equipment is a contact block or reed switch. In this method, the arcing components of the switch are encased in a glass tube. The connecting wires are fused to the glass sealing the unit to prevent any ingress of flammable gases.

Restricted Breathing Enclosure - Type of Protection “nR” or “nRc” for Use in Zone 2 & Class I, Zone 2

Combustible Dust Protection Methods

CLASS II EQUIPMENT

Dusttight equipment is designed to exclude dust from entering the enclosure, to prevent hot particles, arcs, sparks or heat generated inside of the enclosure from igniting an exterior accumulation or atmospheric suspension of dusts on or in the vicinity of the enclosure. Nonmetallic enclosures must also prevent the accumulation of static charges on the enclosure itself.

The primary function of the joints of these enclosures is to seal dust out and keep the hot particles etc. inside, therefore, typically the joints are gasketed.

Since this protection method keeps the combustible dusts outside, the enclosure is not expected or designed to contain an internal explosion. The design must be sufficient though to withstand mechanical abuse.

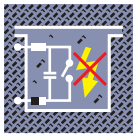
The ignition temperature of dusts is usually lower than that of gases and vapors, and therefore the control of external surface temperatures is more rigorous for Class II equipment than for Class I equipment. Dust layers on the equipment can act as insulation for the heat generated inside the equipment, which in turn can increase the surface temperature of the unit even under normal operating conditions.

The NEC defines “Dust-ignition proof” as the protection for Class II, Division 1 and 2 locations for which it is approved, and “Dusttight” as a type of enclosure that is constructed so that dusts will not enter the enclosing case under specific test conditions. In the NEC, some applications for Class II, Division 1 require Dust-ignition proof enclosures.

The NEC, in Article 506 introduced the Zone Classification System, Zones 20, 21 and Zone 22 for Combustible Dust or Ignitible Fibers and Flyings, as an alternative to the Class and Division Classification System covered in Articles 500, 502 and 503.

The Zone Classification System is based on the modified IEC Area Classification System as defined in ANSI/ISA 61241-10.

Methods of Protection (Dust)



Intrinsic Safety - Type of Protection iaD for Zone 20, 21 and 22

Intrinsic Safety - Type of Protection ibD for Zone 21 and 22

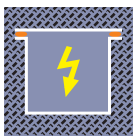
Associated Apparatus - Type of Protection [iaD] - Unclassified

Associated Apparatus - Type of Protection [ibD] - Unclassified

Encapsulation - Type of Protection maD for Zone 20, 21 and 22

Encapsulation - Type of Protection mbD for Zone 21 and 22

Pressurization - Type of Protection pD for Zone 21 and 22



Enclosure - Type of Protection tD for Zone 21 and 22

Environmental Protection

NEMA and CSA Type Enclosure

NEMA or CSA Type 1 Enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling dirt. This type is not specifically identified in the CSA Standard.

NEMA or CSA Type 2 Enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.

NEMA or CSA Type 3 Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust; and damage from external ice formation.

NEMA or CSA Type 3R Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet; and damage from external ice formation, and must have a drain hole.

NEMA or CSA Type 3S Enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust; and to provide for operation of external mechanisms when ice laden.

NEMA or CSA Type 4 Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water, hose directed water; and damage from external ice formation.

NEMA or CSA Type 4X Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose directed water; and damage from external ice formation.

NEMA or CSA Type 5 Enclosures are intended for indoor use primary to provide a degree of protection against settling airborne dust, falling dirt, and dripping non-corrosive liquids.

NEMA or CSA Type 6 Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during occasional temporary submersion at a limited depth; and damage from external ice formation.

NEMA or CSA Type 6P Enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during prolonged submersion at a limited depth; and damage from external ice formation.

NEMA or CSA Type 12 Enclosures are intended for indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping non-corrosive liquids.

NEMA or CSA Type 12K Enclosures with knockouts are intended for indoor use primarily to provide a degree of protection against circulating dust, falling dirt, and dripping non-corrosive liquids.

NEMA or CSA Type 13 Enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil, and non-corrosive coolant.

Definitions Referring To NEMA Requirements for Hazardous Location

The following NEMA type enclosures occasionally appear on specifications and product literature

NEMA 7 Enclosures are intended for indoor use in locations classified as Class I, Groups A, B, C, or D, as defined in the NEC.

NEMA 8 Enclosures are for indoor or outdoor use in locations classified as Class I, Groups A, B, C, or D, as defined in the NEC.

NEMA 9 Enclosures are intended for indoor use in locations classified as Class II, Groups E, F, and G, as defined in the NEC.

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NEMA 10 Enclosures are constructed to meet the applicable requirements of the Mine Safety and Health Administration. (MSHA)

The designations are considered to be historical terminology approaching obsolescence and are incomplete designations at best. Types 7 and 9 are not mentioned anywhere in the National Electrical Code, the controlling document for installations. All hazardous location products must be marked with the Class, Division, Group, and Temperature Class to provide to an installer all of the information needed to complete an installation in accordance with Article 500 of the National Electrical Code.

Comparison of Specific Applications of Enclosures for Indoor Unclassified Locations

Provides A Degree Of Protection Against The Following Environmental Conditions	Type of Enclosure									
	1*	2*	4	4x	5	6	6P	12	12K	13
Incidental contact with the enclosed equipment	x	x	x	x	x	x	x	x	x	x
Falling dirt	x	x	x	x	x	x	x	x	x	x
Falling liquids and light splashing	-	x	x	x	x	x	x	x	x	x
Circulation dust, lint, fibers, and flyings**	-	-	x	x	-	x	x	x	x	x
Settling airborne dust, lint, fibers, and flyings**	-	-	x	x	x	x	x	x	x	x
Hosedown and splashing water	-	-	x	x	-	x	x	-	-	-
Oil and coolant seepage	-	-	-	-	-	-	-	x	x	x
Oil and coolant spraying and splashing	-	-	-	-	-	-	-	-	-	x
Corrosive agents	-	-	-	x	-	-	-	-	-	-
Occasional temporary submersion	-	-	-	-	-	x	x	-	-	-
Occasional prolonged submersion	-	-	-	-	-	-	-	-	-	-

*These enclosures may be ventilated. However, Type 1 may not provide protection against small particles of falling dirt when ventilation is provided in the enclosure top.

**These ibers and flyings are not explosive materials and are not considered as Class III type ignitable fibers or combustible flyings. For Class III type ignitable fibers or combustible flyings see the National Electrical Code®, Article 500.

Comparison of Specific Applications of Enclosures for Outdoor Unclassified Locations

Provides A Degree Of Protection Against The Following Environmental Conditions	Type of Enclosure						
	3*	3R***	3S	4	4X	6	6P
Incidental contact with the enclosed equipment	x	x	x	x	x	x	x
Rain, snow, sleet*	x	x	x	x	x	x	x
Sleet**	-	-	x	-	-	-	
Windblown dust	x	-	x	x	x	x	
Hosedown	-	-	-	x	x	x	
Corrosive agents	-	-	-	-	x	-	
Occasional temporary submersion	-	-	-	-	-	x	
Occasional prolonged submersion	-	-	-	-	-	-	x

*External operating mechanisms are not required to operate when the enclosure is ice covered.

** External operating mechanisms are operable when the enclosure is ice covered.

***These enclosures may be ventilated.

Comparison of Specific Applications of Enclosures for Indoor Hazardous (Classified) Locations

Provides a Degree of Protection Against Atmospheres Typically Containing Hazardous Gases, Vapors, and Dusts***	Type of Enclosure: NEMA 7 & 8, Class I Groups**					NEMA 9 & 10, Class II Groups**			
	Class	A	B	C	D	E	F	G	10
Acetylene	I	x	-	-	-	-	-	-	-
Hydrogen, manufactured gases	I	-	x	-	-	-	-	-	-
Diethyl ether, ethylene, cyclopropane	I	-	-	x	-	-	-	-	-
Gasoline, hexane, butane, naphtha, propane, acetone	I	-	-	-	x	-	-	-	-
Toluene, isoprene	I	-	-	-	x	-	-	-	-
Metal dusts	II	-	-	-	-	x	-	-	-
Carbon black, coal dust, coke dust	II	-	-	-	-	-	x	-	-
Flour, starch, grain dust	II	-	-	-	-	-	-	x	-
Fibers, flyings	III	-	-	-	-	-	-	-	-
Methane with or without coal dust	MSHA	-	-	-	-	-	-	-	x

*Due to the characteristics of the gas, vapor, or dust, a product suitable for one Class or Group may not be suitable for any other Class or Group unless so marked on the product.

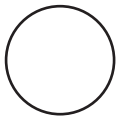
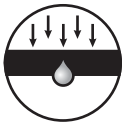
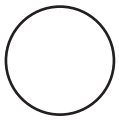
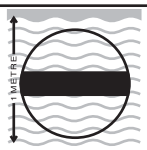
**For Class III type ignitable fibers or combustible flyings refer to the National Electrical Code® Article 500.

***For a complete listing of flammable liquids, gases, or vapors refer to NFPA 497 - 1997 (Recommended Practice for the Classification of Flammable Liquids. Gases, or Vapors and of Hazardous (Classified) Locations for Electrical installations in Chemical Process Areas and NFPA 325 - 1994 (Fire Hazard Properties of Flammable Liquids. Gases, and Volatile Solids). Reference also NFPA 499 -1997 Classifications of Combustible Dusts and of Hazardous (Classified) Locations for Electrical installations in Chemical Process Areas.

Ingress Protection (IP)

The IEC uses the term “Ingress Protection” to identify the environmental protection of a device.

This is defined in IEC Standard 60 529 and the following chart illustrates the two-digit code used.

IP The IP classification system designates, by means of a number, the degree of protection provided by a device against ingress of dust and water.		**SECOND NUMBER** Degree of protection against water	
		0 	Non-protected.
FIRST NUMBER Degree of protection against solid objects		1 	Protected against water dripping vertically, such as condensation.
0 	Non-protected.	2	Protected against dripping water when tilted up to 15°.
1	Protected against a solid object greater than 50mm such as a hand.	3	Protected against water spraying at an angle of up to 60°.
2	Protected against a solid object greater than 12mm, such as a finger.	4	Protected against water splashing from any direction.
3	Protected against a solid object greater than 2.5mm, such as wire or a tool.	5	Protected against jets of water from any direction.
4	Protected against a solid object greater than 1.0 mm, such as wire or thin strips.	6	Protection against heavy seas or powerful jets of water.
5	Dust-protected. Prevents ingress of dust sufficient to cause harm.	7 	Protected against harmful ingress of water when immersed between a depth of 150mm to 1 meter.
6	Dust tight. No dust ingress.	8	Protected against submersion. Suitable for continuous immersion in water.

EQUIPMENT CERTIFICATION

Equipment for use in hazardous locations must be certified to an appropriate National Standard and marked as such by an accredited third party testing organization. Follow-up inspection to ensure conformance is part of the program. Products may carry multiple markings for multiple countries. The following is a brief description of the National Requirements.

Important Listing Information

The specific requirements for product certification vary from country to country. While UL, FM and CSA are similar in their approach, subtle differences still exist.

North American certifications permit conduit or cable entries to be field installed provided appropriate bonding and grounding requirements are followed.

Marking

Typical North American Marking to NEC 500

Class I, Divisions 1 or 2, Groups A, B, C & D, T4 (T-Code)
Class II, Divisions 1 or 2, Groups E, F & G, T4 (T-Code)
Class III,
Enclosure Type 3, 4, 4X

Typical U.S. Marking to NEC 505

Class I, Zone 1, AEx de IIC T6 Gb

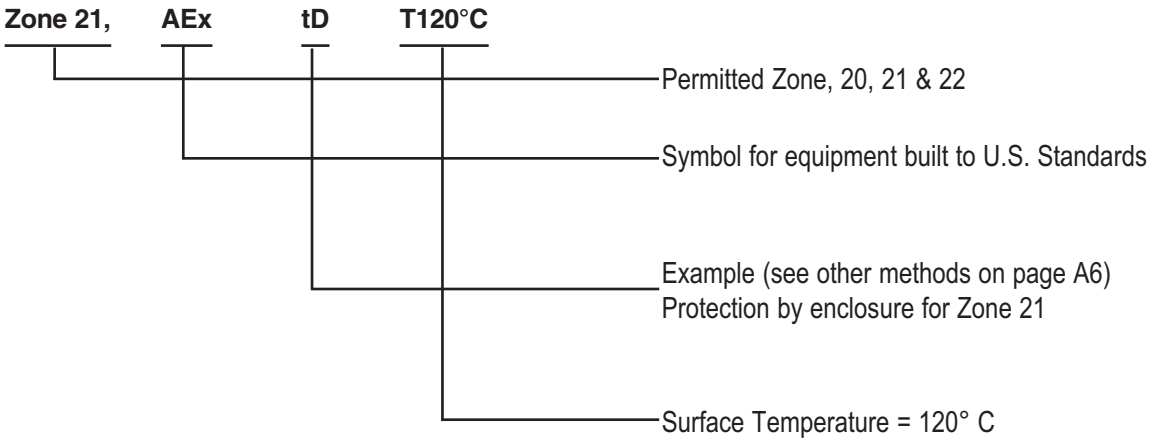
- Class I (Gases and Vapors)
  - Zone 0 — Areas where explosive gas atmosphere is **continuously** present or present for long periods of time
  - Zone 1 — Areas where explosive gas atmosphere is **likely to occur** in normal operation or can be expected to be present frequently
  - Zone 2 — Area where explosive gas atmosphere is **not likely to occur** and if it does, it will only exist for a short period of time
- AEx designates built to a US ANSI standard
- Methods of protection, d, e, p, i, o, q, m, n
- Apparatus Group
  - II Surface Industries
    - A (propane)
    - B (ethylene)
    - C (hydrogen)
- Temperature Class
  - T1 450° C
  - T2 300° C
  - T3 200° C
  - T4 135° C
  - T5 100° C
  - T6 85° C
- Equipment Protection Level
  - G for Gas followed by
  - a - Zone 0
  - b - Zone 1
  - c - Zone 2

Equivalent Canadian Marking would read

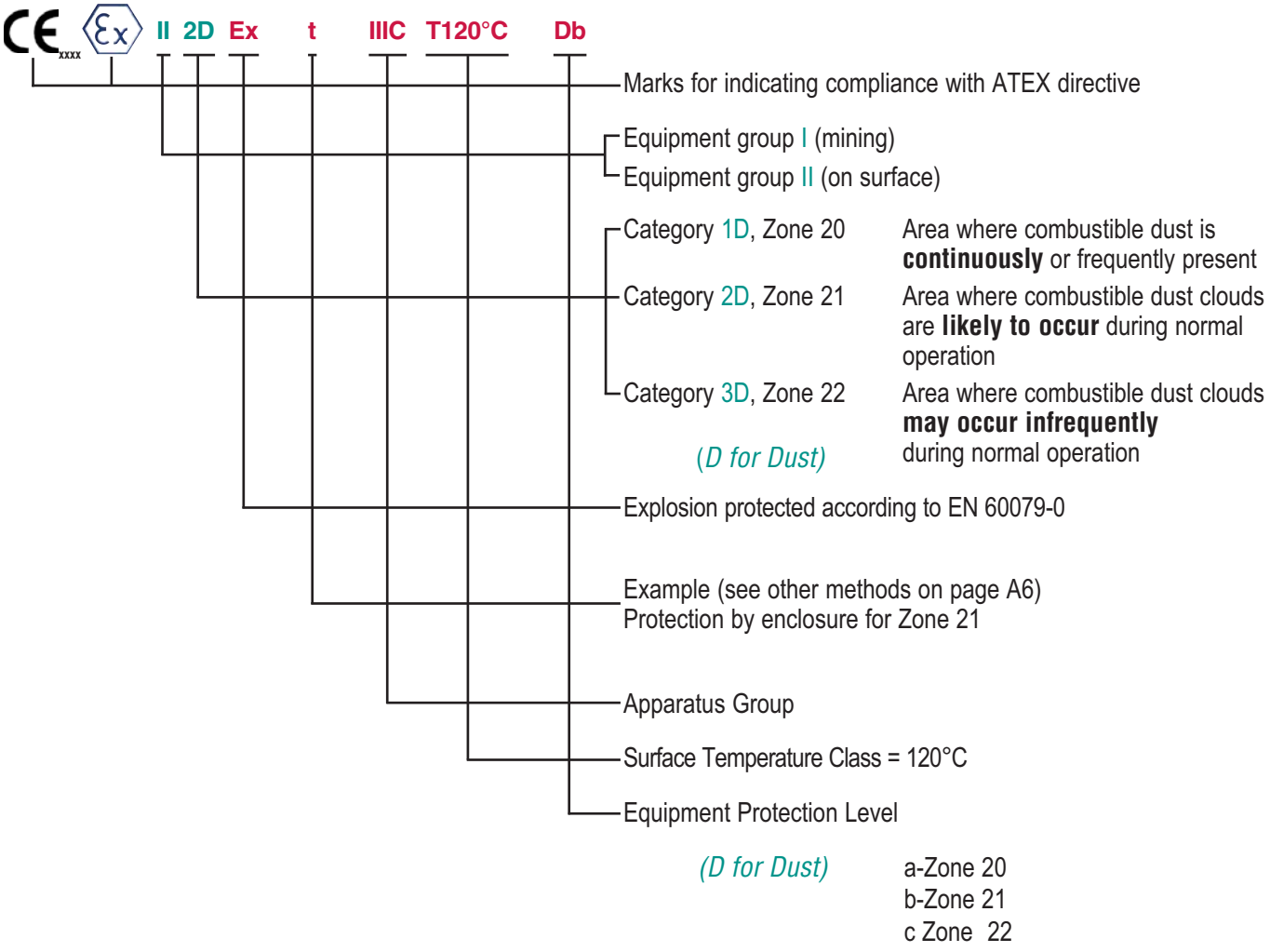
Class I, Zone 1
Ex de IIC T6

Typical U.S. Marking to NEC 506

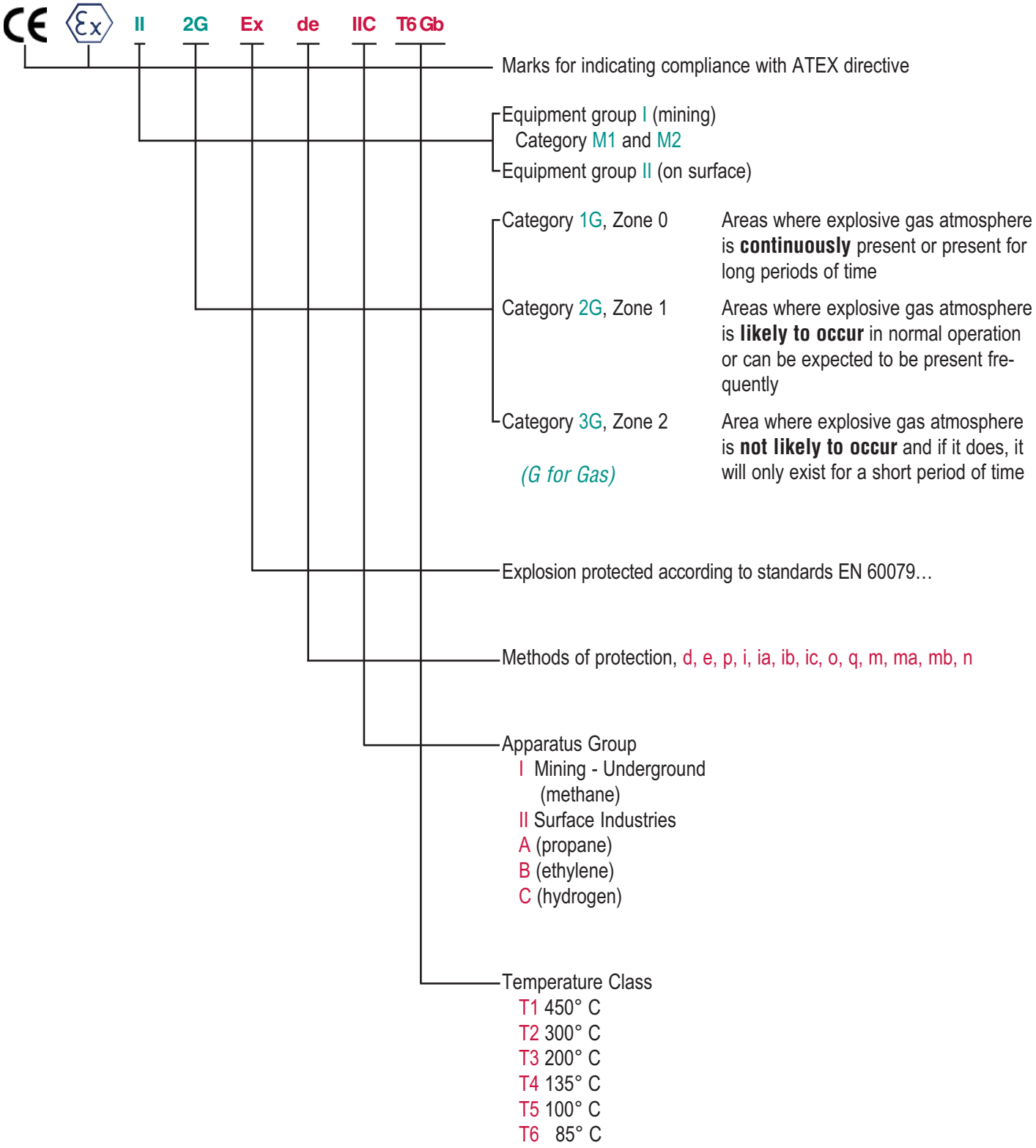
(Dust Zones not adopted by Canada yet)



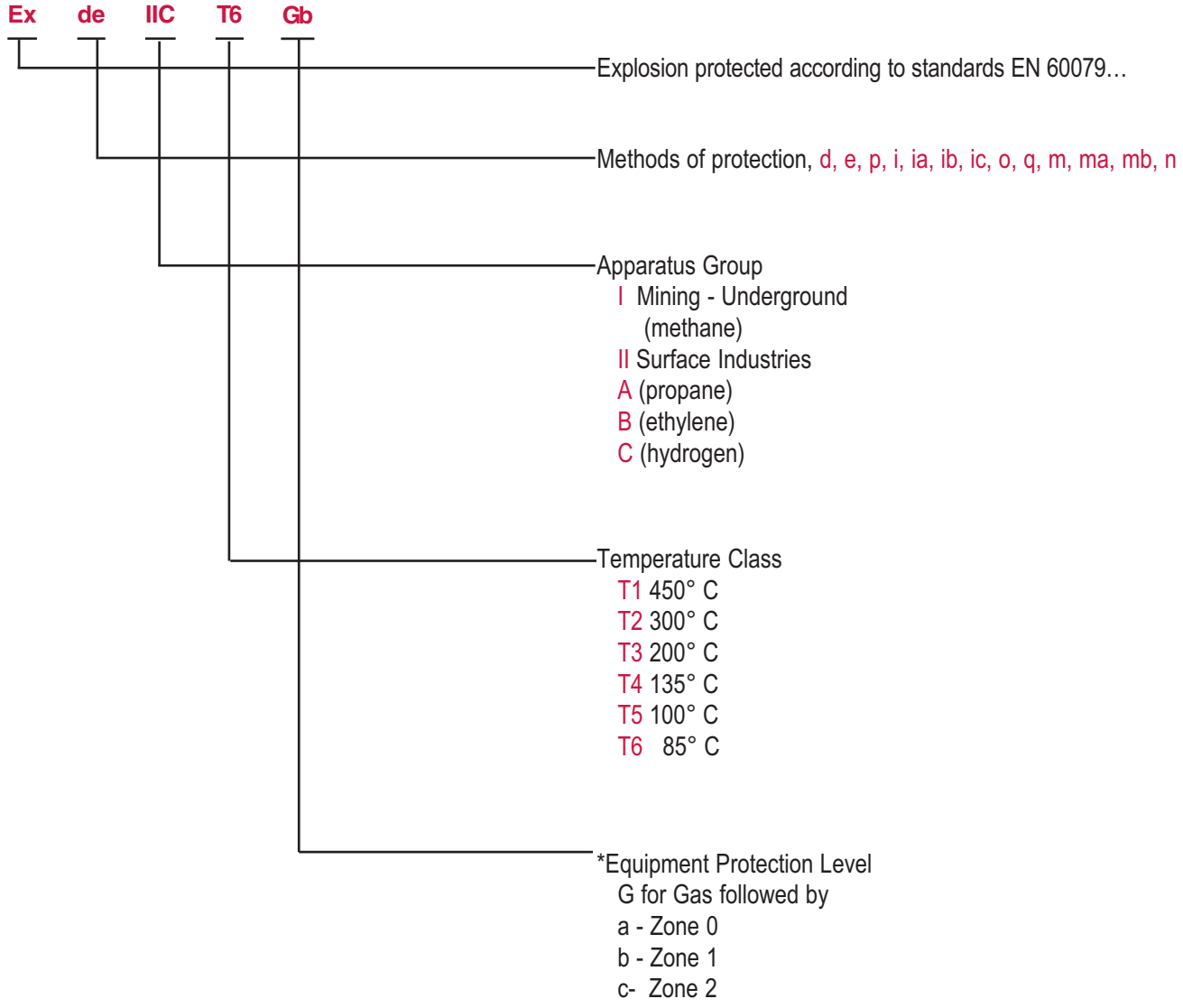
Typical European ATEX/CENELEC Marking for Dust Explosion Protection



Typical European ATEX/CENELEC Marking for Gas Explosion Protection



Typical IECEx Marking for Gas Explosion Protection



ATEX DIRECTIVE

The ATEX Directive 94/9/EC is a directive adopted by the European Union (EU) to facilitate free trade in the EU by aligning the technical and legal requirements in the Member States for products intended for use in potentially explosive atmospheres.

This Directive applies to electrical and non-electrical equipment/components and protective systems. The ATEX Directive became mandatory on July 1, 2003.

Equipment located outside potentially explosive atmospheres are also covered by the ATEX Directive under the following conditions:

- The equipment is a safety device, controller or regulatory device; and
- The equipment is required for the safe function of equipment or protective systems with respect to the risk of explosion.

All equipment under its scope is required to bear the European CE Marking as verification of compliance with the Directive (the CE Marking will not appear on components defined by this Directive). The ATEX Directive specifically defines procedures for the evaluation of a product's design and production based on Equipment Groups and Categories. This is briefly outlined below.

Equipment Group I Overview

Equipment intended for use in underground parts of mines, and to those parts of surface installations of such mines, liable to be endangered by firedamp and/or combustible dust.

Equipment Category	Protection	Comparison To Current IEC Classification
M1	2 levels of protection; or 2 independent faults	Group I
M2	1 level of protection based on normal operation	Group I

Equipment Group II Overview

Equipment intended for use in other than Equipment Group I places that are liable to be endangered by explosive atmospheres.

Equipment Category	Protection	Comparison To Current IEC Classification
1G 1D	2 levels of protection; or 2 independent faults	Group II, Zone 0 (gas) Zone 20 (dust)
2G 2D	1 level of protection based on frequent disturbances; or equipment faults	Group II, Zone 1 (gas) Zone 21 (dust)
3G 3D	1 level of protection based on normal operation	Group II, Zone 2 (gas) Zone 22 (dust)

ATEX Marking

The equipment for ATEX identifies the category which indicates a risk of the equipment becoming a source of ignition. The table at right shows the relationship between Categories and Zones. Note that the Zone represents only the risk of a release of flammables into the area.

NOTE: As an alternative to the relationship given in the table at right between Categories and Zones, the required Category of equipment may be selected on the basis of risk, i.e. taking into account the consequences of an ignition. This may, under circumstances, require a higher Category or permit a lower Category than defined in the table.

Zone	Categories
0	1G
1	2G
2	3G
20	1D
21	2D
22	3D

Differences Between the Old and New Directives

The main differences are:

- The inclusion of non-electrical equipment
- The inclusion of dust atmospheres
- Requirements for safety related devices (flame arrestors, suppression systems etc) and safe area equipment
- Additional quality system requirements
- The need to produce a 'Technical File'

Products Covered

The Directive includes equipment and safety or control devices installed outside the potentially explosive area but having an explosion protection function. A wide range of products comes within the definition of equipment, including electric motors, compressors, diesel engines, lighting fittings, control and communication devices and monitoring and detection equipment, to name but a few. "Protective Systems" are also included, and include items that prevent an explosion that has been initiated from spreading or causing damage. They include flame arrestors, quenching systems, pressure relief panels and fast-acting shut-off valves to name but a few.

Product Exclusions

The Directive, however, does exclude the following product types:

- Medical devices
- Products for use in the presence of explosives
- Products for domestic use
- Means of transport by air or on road or rail or water networks. Vehicles intended for use in an explosive atmospheres are not excluded.
- Sea-going vessels and mobile offshore units
- Military equipment
- Personal protective equipment covered by directive 89/686/EEC

For more info about ATEX, visit http://ec.europa.eu/enterprise/ATEX/index_en.htm

CE MARKING

The CE mark is a mandatory European marking for certain product groups to indicate conformity with the essential health and safety requirements set out in European Directives. The letters 'CE' are an abbreviation of Conformité Européenne, French for European conformity. The CE mark must be affixed to a product if it falls under the scope of the so called 'New Approach' Directives. Without the CE marking, and thus without complying with the provisions of the Directives, the product may not be placed in the market or put into service in the fifteen member states of the European Union and Norway, Iceland and Liechtenstein. However, if the product meets the provisions of the applicable European Directives, and the CE mark is affixed to a product, these countries may not prohibit, restrict or impede the placing in the market or putting into service of the product. Thus, CE marking can be regarded as the products trade passport for Europe. For more info about CE marking, visit www.eurunion.org/legislat/standard/standard.htm

IECEx SCHEME

The objective of the IECEx Scheme is to facilitate global trade in electrical equipment intended for use in explosive atmospheres by eliminating the need for multiple national certification.

The IECEx Scheme provides the means for manufacturers of Ex equipment to obtain certificates of conformity that will be accepted at national level in all participating countries. A certificate of conformity may be obtained from any certification body accepted into the Scheme. The certificate will attest that the equipment design conforms to the relevant IEC Standards. The final objective of the IECEx Scheme is world-wide acceptance of one standard, one certificate and one mark.

For the IECEx Scheme to achieve its long term objective, every national Standard for which application is made by participating countries will need to be identical to the corresponding IEC Standard. For countries whose national Standards are not yet identical to the IEC Standards, a transitional period will be necessary to allow time for participating IECEx Scheme member countries to adjust their national standards to the IEC standards and work toward national acceptance of IECEx Certificates of conformity and the IECEx mark.

For more info about IECEx Scheme, visit www.IECEx.com

Temperature Conversion Table
Degree Celsius vs. Degree Fahrenheit

The equation for converting Fahrenheit to Celsius is: (Deg. F - 32) x (5/9) = Deg. C

°C	°F	°C	°F
-59.4	-75		-103.0
-58.9	-74		-101.2
-58.3	-73		-99.4
-57.8	-72		-97.6
-57.2	-71		-95.8
-56.7	-70		-94.0
-56.1	-69		-92.2
-55.6	-68		-90.4
-55.0	-67		-88.6
-54.4	-66		-86.8
-53.9	-65		-85.0
-53.3	-64		-83.2
-52.8	-63		-81.4
-52.2	-62		-79.6
-51.7	-61		-77.8
-51.1	-60		-76.0
-50.6	-59		-74.2
-50.0	-58		-72.4
-49.4	-57		-70.6
-48.9	-56		-68.8
-48.3	-55		-67.0
-47.8	-54		-65.2
-47.2	-53		-63.4
-46.7	-52		-61.6
-46.1	-51		-59.8
-45.6	-50		-58.0
-45.0	-49		-56.2
-44.4	-48		-54.4
-43.9	-47		-52.6
-43.3	-46		-50.8
-42.8	-45		-49.0
-42.2	-44		-47.2
-41.7	-43		-45.4
-41.1	-42		-43.6
-40.6	-41		-41.8
-40.0	-40		-40.0
-39.4	-39		-38.2
-38.9	-38		-36.4
-38.3	-37		-34.6
-37.8	-36		-32.8
-37.2	-35		-31.0
-36.7	-34		-29.2
-36.1	-33		-27.4
-35.6	-32		-25.6
-35.0	-31		-23.8
-34.4	-30		-22.0
-33.9	-29		-20.2
-33.3	-28		-18.4
-32.8	-27		-16.6
-32.2	-26		-14.8
-31.7	-25		-13.0
-31.1	-24		-11.2
-30.6	-23		-9.4
-30.0	-22		-7.6
-29.4	-21		-5.8
-28.9	-20		-4.0
-28.3	-19		-2.2
-27.8	-18		-0.4
-27.2	-17		1.4
-26.7	-16		3.2

°C	°F	°C	°F
-26.1	-15		5.0
-25.6	-14		6.8
-25.0	-13		8.6
-24.4	-12		10.4
-23.9	-11		12.2
-23.3	-10		14.0
-22.8	-9		15.8
-22 2	-8		17.6
-21.7	-7		19.4
-21.1	-6		21.2
-20.6	-5		23.0
-20.0	-4		24.8
-19.4	-3		26.6
-18.9	-2		28.4
-18.3	-1		30.2
-17.8	0		32.0
-17.2	1		33.8
-16.7	2		35.6
-16.1	3		37.4
-15.6	4		39.2
-15.0	5		41.0
-14.4	6		42.8
-13.9	7		44.6
-13.3	8		46.4
-12.8	9		48.2
-12.2	10		50.0
-11.7	11		51.8
-11.1	12		53.6
-10.6	13		55.4
-10.0	14		57.2
-9.4	15		59.0
-8.9	16		60.8
-8.3	17		62.6
-7.8	18		64.4
-7.2	19		66.2
-6.7	20		68.0
-6.1	21		69.8
-5.6	22		71.6
-5.0	23		73.4
-4.4	24		75.2
-3.9	25		77.0
-3.3	26		78.8
-2.8	27		80.6
-2.2	28		82.4
-1.7	29		84.2
-1.1	30		86.0
-0.6	31		87.8
-0.0	32		89.6
0.6	33		91.4
1.1	34		93.2
1.7	35		95.0
2.2	36		96.8
2.8	37		98.6
3.3	38		100.4
3.9	39		102.2
4.4	40		104.0
5.0	41		105.8
5.6	42		107.6
6.1	43		109.4
6.7	44		111.2

°C	°F	°C	°F
7.2	45		113.0
7.8	46		114.8
8.3	47		116.6
8.9	48		118.4
9.4	49		120.2
10.0	50		122.0
10.6	51		123.8
11.1	52		125.6
11.7	53		127.4
12.2	54		129.2
12.8	55		131.0
13.3	56		132.8
13.9	57		134.6
14.4	58		136.4
15.0	59		138.2
15.6	60		140.0
16.1	61		141.8
16.7	62		143.6
17.2	63		145.4
17.8	64		147.2
18.3	65		149.0
18.9	66		150.8
19.4	67		152.6
20.0	68		154.4
20.6	69		156.2
21.1	70		158.0
21.7	71		159.8
22.2	72		161.6
22.8	73		163.4
23.3	74		165.2
23.9	75		167.0
24.4	76		168.8
25.0	77		170.6
25.6	78		172.4
26.1	79		174.2
26.7	80		176.0
27.2	81		177.8
27.8	82		179.6
28.3	83		181.4
28.9	84		183.2
29.4	85		185.0
30.0	86		186.8
30.6	87		188.6
31.1	88		190.4
31.7	89		192.2
32.2	90		194.0
32.8	91		195.8
33.3	92		197.6
33.9	93		199.4
34.4	94		201.2
35.0	95		203.0
35.6	96		204.8
36.1	97		206.6
36.7	98		208.4
37.2	99		210.2
37.8	100		212.0
38.3	101		213.8
38.9	102		215.6
39.4	103		217.4
40.0	104		219.2

Temperature Conversion Table, continued
Degree Celsius vs. Degree Fahrenheit

The equation for converting Fahrenheit to Celsius is: (Deg. F - 32) x (5/9) = Deg. C

°C	°F	°C	°F
40.6	**105**		221.0
41.1	**106**		222.8
41.7	**107**		224.6
42.2	**108**		226.4
42.8	**109**		228.2
43.3	**110**		230.0
43.9	**111**		231.8
44.4	**112**		233.6
45.0	**113**		235.4
45.6	**114**		237.2
46.1	**115**		239.0
46.6	**116**		240.8
47.2	**117**		242.6
47.8	**118**		244.4
48.3	**119**		246.2
48.9	**120**		248.0
49.4	**121**		249.8
50.0	**122**		251.6
50.6	**123**		253.4
51.1	**124**		255.2
51.7	**125**		257.0
52.2	**126**		258.8
52.8	**127**		260.6
53.3	**128**		262.4
53.9	**129**		264.2
54.4	**130**		266.0
55.0	**131**		267.8
55.6	**132**		269.6
56.1	**133**		271.4
56.7	**134**		273.2
57.2	**135**		275.0
57.8	**136**		276.8
58.3	**137**		278.6
58.9	**138**		280.4
59.4	**139**		282.2
60.0	**140**		284.0
60.6	**141**		285.8
61.1	**142**		287.6
61.7	**143**		289.4
62.2	**144**		291.2
62.8	**145**		293.0
63.3	**146**		294.8
63.9	**147**		296.6
64.4	**148**		298.4
65.0	**149**		300.2
65.6	**150**		302.0
66.1	**151**		303.8
66.7	**152**		305.6
67.2	**153**		307.4
67.8	**154**		309.2
68.3	**155**		311.0
68.9	**156**		312.8
69.4	**157**		314.6
70.0	**158**		316.4
70.6	**159**		318.2
71.1	**160**		320.0
71.7	**161**		321.8
72.2	**162**		323.6
72.8	**163**		325.4
73.3	**164**		327.2

°C	°F	°C	°F
73.9	**165**		329.0
74.4	**166**		330.8
75.0	**167**		332.6
75.6	**168**		334.4
76.1	**169**		336.2
76.7	**170**		338.0
77.2	**171**		339.8
77.8	**172**		341.6
78.3	**173**		343.4
78.9	**174**		345.2
79.4	**175**		347.0
80.0	**176**		348.8
80.6	**177**		350.6
81.1	**178**		352.4
81.7	**179**		354.2
82.2	**180**		356.0
82.8	**181**		357.8
83.3	**182**		359.6
83.9	**183**		361.4
84.4	**184**		363.2
85.0	**185**		365.0
85.6	**186**		366.8
86.1	**187**		368.6
86.7	**188**		370.4
87.2	**189**		372.2
87.8	**190**		374.0
88.3	**191**		375.8
88.9	**192**		377.6
89.4	**193**		379.4
90.0	**194**		381.2
90.6	**195**		383.0
91.1	**196**		384.8
91.7	**197**		386.6
92.2	**198**		388.4
92.8	**199**		390.2
93.3	**200**		392.0
93.9	**201**		393.8
94.4	**202**		395.6
95.0	**203**		397.4
95.6	**204**		399.2
96.1	**205**		401.0
96.7	**206**		402.8
97.2	**207**		404.6
97.8	**208**		406.4
98.3	**209**		408.2
98.9	**210**		410.0
99.4	**211**		411.8
100.0	**212**		413.6
100.6	**213**		415.4
101.1	**214**		417.2
101.7	**215**		419.0
102.2	**216**		420.8
102.8	**217**		422.6
103.3	**218**		424.4
103.9	**219**		426.2
104.4	**220**		428.0
105.0	**221**		429.8
105.6	**222**		431.6
106.1	**223**		433.4
106.7	**224**		435.2

°C	°F	°C	°F
107.2	**225**		437.0
107.8	**226**		438.8
108.3	**227**		440.6
108.9	**228**		442.4
109.4	**229**		444.2
110.0	**230**		446.0
110.6	**231**		447.8
111.1	**232**		449.6
111.7	**233**		451.4
112.2	**234**		453.2
112.8	**235**		455.0
113.3	**236**		456.8
113.9	**237**		458.6
114.4	**238**		460.4
115.0	**239**		462.2
115.6	**240**		464.0
116.1	**241**		465.8
116.7	**242**		467.6
117.2	**243**		469.4
117.8	**244**		471.2
118.3	**245**		473.0
118.9	**246**		474.8
119.4	**247**		476.6
120.0	**248**		478.4
120.6	**249**		480.2
121.1	**250**		482.0
121.7	**251**		483.8
122.2	**252**		485.6
122.8	**253**		487.4
123.3	**254**		489.2
123.9	**255**		491.0
124.4	**256**		492.8
125.0	**257**		494.6
125.6	**258**		496.4
126.1	**259**		498.2
126.7	**260**		500.0
127.2	**261**		501.8
127.8	**262**		503.6
128.3	**263**		505.4
128.9	**264**		507.2
129.4	**265**		509.0
130.0	**266**		510.8
130.6	**267**		512.6
131.1	**268**		514.4
131.7	**269**		516.2
132.2	**270**		518.0
132.8	**271**		519.8
133.3	**272**		521.6
133.9	**273**		523.4
134.4	**274**		525.2
135.0	**275**		527.0
135.6	**276**		528.8
136.1	**277**		530.6
136.7	**278**		532.4
137.2	**279**		534.2
137.8	**280**		536.0
138.3	**281**		537.8
138.9	**282**		539.6
139.4	**283**		541.4
140.0	**284**		543.2

Dimensions of Copper Conductors
Standard Cross-Sections of Copper Conductors

Metric Size ISO mm²	Comparison Between AWG/kcmil and metric sizes	
	Size AWG/kcmil	Equivalent Metric Area mm²
0,2	24	0,205
—	22	0,324
0,5	20	0,519
0,75	18	0,82
1	—	—
1,5	16	1,3
2,5	14	2,1
4	12	3,3
6	10	5,3
10	8	8,4
16	6	13,3
25	4	21,2
35	2	33,6
50	0	53,5
70	00	67,4
95	000	85
—	0000	107,2
120	250 kcmil	127
150	300 kcmil	152
185	350 kcmil	177
240	500 kcmil	253
300	600 kcmil	304
350	700 kcmil	355
380	750 kcmil	380
400	800 kcmil	405
450	900 kcmil	456
500	1 000 kcmil	507
630	1 250 kcmil	634
750	1 500 kcmil	760
890	1 750 kcmil	887
1 000	2 000 kcmil	1 014

Useful Conversion Factors

Linear Measures

1 inch (in.) = 2.54 cm
1 foot (ft.) = 30.48 cm
1 yard (yd.) = 91.44 cm
1 mile = 1609.344 m
1 centimeter (cm) = 0.0328084 ft.
= 0.393701 in.
= 0.01 m
= 10.00 mm
1 meter (m) = 3.28084 ft.
= 39.3701 in.
= 1.09361 yd.

Weights

1 ounce (oz. av.) = 28.35 g.
1 pound (lb.) = 0.453 kg or 16 oz.
1 kilogram (kg) = 2.20462 lb.

Power

1 kilowatt (kW) = 1.34102 hp.
1 horsepower (hp.) = 0.745700 kW

Moment Force (Torque)

1 Newton meter (Nm) = 8.85075 lbf in. or
= 0.73756 lbf ft.
1 Inch pound (lbf in.) = 0.11299 Nm
1 Foot pound (lbf ft.) = 1.35582 Nm

Notes

EXLUX • ECOLUX •

6000 • 6008 • 6400 • 6408 • 6600 • 6608

Explosion Protected Fluorescent Luminaires for Hazardous and Corrosive Applications

Features:

- *Electronic Ballasts*
- *For Fluorescent Bipin Lamps*
- *One or two-lamp versions:*
  17W
  32W
  40W
- *Enclosure Material: FRP*
- *Cover Material: PC*

EXLUX 6000 Series

EXPLOSION PROTECTED FLUORESCENT LUMINAIRES FOR HAZARDOUS AND CORROSIVE APPLICATIONS

Fluorescent Luminaires with Lens Interlock Switch for Div. 2, Zone 1 and Zone 2 Applications

Luminaires for Use with Standard T8 Med. Bipin Lamps

CLASSIFICATIONS

NEC- Class I, Zone 1 & 2, AEx de IIC T4
Class I, Division 2, Groups A,B,C,D, T4
Class II, Divisions 1 & 2, Groups E,F,G
Class III
Types 3, 4, 4X & IP66
File No. J.I.3D2A9.AE

CEC- Class I, Zone 1 & 2, Ex de IIC T4
Class I, Division 2, per CEC J18-150 (C)
Class II, Divisions 1 & 2, Groups E,F,G
Class III

Ambient Temperature Range:
+55°C (+131°F) Max.
–20°C (–4°F) Min.

Supply Voltage 120 to 277V, ac/dc

FEATURES

The EXLUX 6000 Series of Luminaires are designed for hostile and hazardous locations where reliability and rugged performance are critical. The housing is constructed of heavy-duty fiberglass reinforced polyester (FRP) with a single piece, low glare polycarbonate lens.

The EXLUX 6000 Series is supplied with electronic ballasts which are designed to addition 4 of IEC 60079-7 Annex H for control of the "End of Life" of the lamps. They are available in 17, 32 and 40-Watts one or two-lamp versions. The appropriate lamps are standard T8 medium bipin. The luminaires also come with a cover interlock switch which automatically de-energizes the luminaires when opening for relamping. They also are available in either dead-end or feed-through wiring. The ballasts are self-contained flameproof enclosures with increased safety terminals for the highest degree of safety.

INSTALLATION

The luminaire includes threaded NPT openings with grounded back plates and NPT close-up plugs. For MC-HL cable installation use TMC cable glands.

For conduit installation use conduit hubs 8166/11-0•-N (See Page B7).

Ordering Information

Catalog Number	Description
17 Watts, 2'	
6000/531-8021-0130	1-lamp luminaire 120 to 277V, ac/dc, dead-end wiring, 1 x 3/4" NPT both ends
6000/531-8521-0150	1-lamp luminaire 120 to 277V, ac/dc, 5 wire feed-thru, 1 x 3/4" NPT both ends
6000/532-9021-0130	2-lamp luminaire 120 to 277V, ac/dc, dead-end wiring, 1 x 3/4" NPT both ends
6000/532-9521-0150	2-lamp luminaire 120 to 277V, ac/dc, 5 wire feed-thru, 1 x 3/4" NPT both ends
32 Watts, 4'	
6000/551-8021-0130	1-lamp luminaire 120 to 277V, ac/dc, dead-end wiring, 1 x 3/4" NPT both ends
6000/551-8521-0150	1-lamp luminaire 120 to 277V, ac/dc, 5 wire feed-thru, 1 x 3/4" NPT both ends
6000/552-9021-0130	2-lamp luminaire 120 to 277V, ac/dc, dead-end wiring, 1 x 3/4" NPT both ends
6000/552-9521-0150	2-lamp luminaire 120 to 277V, ac/dc, 5 wire feed-thru, 1 x 3/4" NPT both ends
40 Watts, 5'	
6000/571-8021-0130	1-lamp luminaire 120 to 277V, ac/dc, dead-end wiring, 1 x 3/4" NPT both ends
6000/571-8521-0150	1-lamp luminaire 120 to 277V, ac/dc, 5 wire feed-thru, 1 x 3/4" NPT both ends
6000/572-9021-0130	2-lamp luminaire 120 to 277V, ac/dc, dead-end wiring, 1 x 3/4" NPT both ends
6000/572-9521-0150	2-lamp luminaire 120 to 277V, ac/dc, 5 wire feed-thru, 1 x 3/4" NPT both ends

For one 1/2" NPT entry thread at both ends, change this **2** into a **1**.
For two 1/2" NPT entry threads at both ends, change this **2** into a **5**.

For parts and accessories see pages B6-B8.

EXLUX 6008 Series

EXPLOSION PROTECTED FLUORESCENT EMERGENCY LUMINAIRES WITH AUTO-TESTING EMERGENCY BALLAST.

Emergency Fluorescent Luminaires - With Battery Back-up Units and Lens Interlock Switch for Div. 2, Zone 1 & Zone 2 Applications

Luminaires for use with Standard T8 Med. Bipin Lamps

Ordering Information

Catalog Number	Description
17 Watts, 2'	
6008/532-9021-2147	Auto Testing, 2-lamp luminaire 120V 60Hz, dead-end wiring, 1 x 3/4" NPT both ends
32 Watts, 4'	
6008/552-9021-2147	Auto Testing, 2-lamp luminaire 120V 60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6008/552-9621-2167	Auto Testing, 2-lamp luminaire 120V 60Hz, 6 wire feed-thru, 1 x 3/4" NPT both ends

For one 1/2" NPT entry thread at both ends, change this **2** into a **1**.
For two 1/2" NPT entry threads at both ends, change this **2** into a **5**.

For parts and accessories see pages B6-B8.

Status Indicator Display

LED Display	Display Description
Green LED continuously ON	Everything functional
Green LED blinking	Luminaire either function test or lighting time duration test in process
Red LED continuously ON	Battery problem, either not connected or totally discharged
Red LED blinking	Battery capacity not enough; battery needs replacement
Red LED flashing	Lamp problem, lamp is defect reached End of Life and needs replacement
LED green / red blinking	Emergency light function interrupted

CLASSIFICATIONS
NEC & CEC
Class I, Zone 1 & 2, AEx dem IIC T4
Class I, Division 2, Groups A,B,C,D, T4
Class II, Divisions 1 & 2, Groups E,F,G
Class III
Types 3, 4, 4X & IP66
FM APPROVED File No. J.I.3D2A9.AE

Supply Voltage 120V, 50-60Hz

Ambient Temperature Range:
AC & Battery Operation
+50°C (+122°F)Max.
–20°C (–4°F) Min.
Charging & Test Operation
+50°C (+122°F) Max.
–5°C (+23°F) MIN.

FEATURES
The EXLUX 6008 Series carries out pre-programmed testing schedules, monitors emergency ballast performance and battery charging. In case of power failure the Auto-testing Emergency Ballast automatically switches to emergency mode, keeping one lamp illuminated at reduced lumen output for a minimum of 90 minutes. When AC power is restored, the luminaire returns to AC supply. The EXLUX 6008 Series of Emergency Luminaires are designed for hostile and hazardous locations where reliability and rugged performance are critical. The housing is constructed of fiberglass reinforced polyester (FRP) with a single piece, low glare polycarbonate lens. They are supplied with flameproof electronic ballasts as standard, which are designed to edition 4 of IEC 60079-7 Annex H for control of the "End of Life" of the lamps. The luminaires also come with a cover interlock switch which automatically de-energizes the luminaires when opening for relamping.

INSTALLATION
The luminaire includes threaded NPT openings with grounded back plates and NPT close-up plugs. For MC-HL cable installation use TMC cable glands. For conduit installation use conduit hubs 8166/11-0 • -N (see page B7). The luminaire must be wired with a permanent charging phase which needs to be the same potential as the switched phase. The terminal capacity is 2 stranded wires 10 AWG per terminal.

PERIODIC AUTO TESTING
The luminaire automatically performs a weekly functional test and a discharge test which is performed every six months.

STATUS INDICATOR DISPLAY
One red LED and one green LED are incorporated into the luminaire and can be seen from the outside through the lens.
The functions and test results are listed on the table to the left.

EXLUX 6400 Series

EXPLOSION PROTECTED FLUORESCENT LUMINAIRES FOR HAZARDOUS AND CORROSIVE APPLICATIONS

Fluorescent Luminaires with Lens Interlock Switch for Div. 2 and Zone 2 Applications

Luminaires for Use with Standard T8 Med. Bipin Lamps

CLASSIFICATIONS

NEC & CEC

- Class I, Zone 2, Group IIC T4
- Class I, Division 2, Groups A,B,C,D,T4
- Class II, Divisions 1 & 2, Groups E,F,G,T5
- Class III
- Types 3, 4, 4X & IP66
- File No. J.I.3009378

Ambient Temperature:

For Class I areas:

- +55°C (+131°F) Max.;
- -20°C (4°F) Min.

For Class II & III areas:

- +40°C (+104°F) Max.;
- -20C (4°F) Min.

Supply Voltages
(see ordering information)

FEATURES

The EXLUX 6400 Series of Luminaires are designed for hostile and hazardous locations where reliability and rugged performance are critical. The housing is constructed of heavy-duty fiberglass reinforced polyester (FRP) with a single piece, low glare polycarbonate lens.

The EXLUX 6400 Series is supplied with electronic instant-start ballasts as standard and is available in 17, 32 and 40-watts one or two-lamp versions. The two-lamp versions are dual channel, which keeps the luminaire functional should one lamp fail. The luminaires also come with a cover interlock switch which automatically de-energizes the luminaires when opening for relamping. The power factor is ≥ .99. The electronic ballast meets ANSI C82.11 standards regarding harmonic distortion.

INSTALLATION

The luminaire includes threaded NPT openings with grounded back plates and NPT close-up plugs. For MC Cable installation use TMC cable glands.

For conduit installation use conduit hub 8166/11-0 • -N (See Page B7).

The appropriate lamps are standard T8 medium bipin lamps.

Ordering Information

Catalog Number	Description
17 Watts, 2'	
6400/531-8021-8130	1-lamp luminaire 120-277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/531-8521-8150	1-lamp luminaire 120-277V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/531-8021-7130	1-lamp luminaire 347V 50/60Hz, dead-end wiring,1 x 3/4" NPT both ends
6400/531-8521-7150	1-lamp luminaire 347V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/532-9021-8130	2-lamp luminaire 120-277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/532-9521-8150	2-lamp luminaire 120-277V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/532-9021-7130	2-lamp luminaire 347V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/532-9521-7150	2-lamp luminaire 347V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
32 Watts, 4'	
6400/551-8021-8130	1-lamp luminaire 120-277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/551-8521-8150	1-lamp luminaire 120-277V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/551-8021-7130	1-lamp luminaire 347V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/551-8521-7150	1-lamp luminaire 347V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/552-9021-8130	2-lamp luminaire 120-277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/552-9521-8150	2-lamp luminaire 120-277V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/552-9021-7130	2-lamp luminaire 347V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/552-9521-7150	2-lamp luminaire 347V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
40 Watts, 5'	
6400/571-8021-8130	1-lamp luminaire 120-277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/571-8521-8150	1-lamp luminaire 120-277V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/571-8021-7130	1-lamp luminaire 347 V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/571-8521-7150	1-lamp luminaire 347 V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/572-9021-8130	2-lamp luminaire 120-277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/572-9521-8150	2-lamp luminaire 120-277V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends
6400/572-9021-7130	2-lamp luminaire 347 V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6400/572-9521-7150	2-lamp luminaire 347 V 50/60Hz, 5 wire feed-thru, 1 x 3/4" NPT both ends

For one 1/2" NPT entry thread at both ends, change this **2** into a **1**.

For two 1/2" NPT entry threads at both ends, change this **2** into a **5**.

For parts and accessories see pages B6-B8.

EXLUX 6408 Series

EXPLOSION PROTECTED FLUORESCENT EMERGENCY LUMINAIRES FOR HAZARDOUS AND CORROSIVE APPLICATIONS

Emergency Fluorescent Luminaires with Battery Back-up Unit and Lens Interlock Switch for Div. 2 and Zone 2 Applications

Luminaires for use with Standard T8 Med. Bipin Lamps

Ordering Information for Application in the USA

Catalog Number	Description
17 Watts, 2'	
6408/532-9027-8141	2-lamp luminaire 120 to 277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
32 Watts, 4'	
6408/552-9027-8141	2-lamp luminaire 120 to 277V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6408/552-9627-8161	2-lamp luminaire 120 to 277V 50/60Hz, 6 wire feed-thru, 1 x 3/4" NPT both ends

Ordering Information for Application in Canada

Catalog Number	Description
17 Watts, 2'	
6408/532-9027-5141	2-lamp luminaire 120 V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6408/532-9027-7141	2-lamp luminaire 347 V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
32 Watts, 4'	
6408/552-9027-5141	2-lamp luminaire 120 V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6408/552-9627-5161	2-lamp luminaire 120 V 50/60Hz, 6 wire feed-thru, 1 x 3/4" NPT both ends
6408/552-9027-7141	2-lamp luminaire 347 V 50/60Hz, dead-end wiring, 1 x 3/4" NPT both ends
6408/552-9627-7161	2-lamp luminaire 347 V 50/60Hz, 6 wire feed-thru, 1 x 3/4" NPT both ends

For one 1/2" NPT entry thread at both ends, change this **2** into a **1**.

For two 1/2" NPT entry threads at both ends, change this **2** into a **5**.

For parts and accessories see pages B6-B8.

CLASSIFICATIONS

NEC & CEC

Class I, Zone 2, Group IIC T4
Class I, Division 2, Groups A,B,C,D, T4
Class II, Divisions 1 & 2, Groups E,F,G, T5
Class III
Types 3, 4, 4X & IP66
File No. J.I.3009378

Ambient Temperature Range:

For Class I areas:
+50°C (+122°F) Max.
0°C (+32°F) Min.

For Class II and III areas:
+40°C (+104°F) Max.
0°C (+32°F) Min.

Supply Voltage Range from
120V, to 277V, 50/60 Hz or 347V

FEATURES

The EXLUX 6408 Series of Emergency Luminaire is equipped with one high temperature, maintenance free, nickel-cadmium battery back-up unit with a life expectancy of 7–10 years. In case of power failure it automatically switches over to battery supply keeping two lamps illuminated at reduced lumen output for a minimum of 90 minutes. When AC power is restored, the luminaire returns to AC supply. When the Red LED indicating light is illuminated the battery is being charged or monitored. It is visible from the outside through the lens.

The EXLUX 6408 Series is also supplied with an AC electronic instant start ballast unit and is available in 2 x 17W or 2 x 32W parallel lamps. This keeps the luminaire functional should one lamp fail. The luminaires also come with a cover interlock switch which automatically de-energizes the luminaires when opening for relamping. The power factor is ≥ .99. The electronic ballast meets ANSI C82.11 standards regarding harmonic distortion.

The EXLUX 6408 Series are designed for hostile and hazardous locations where reliability and rugged performance are critical. The housing is constructed of heavy-duty fiberglass reinforced polyester (FRP) with a single piece, low glare polycarbonate lens.

INSTALLATION

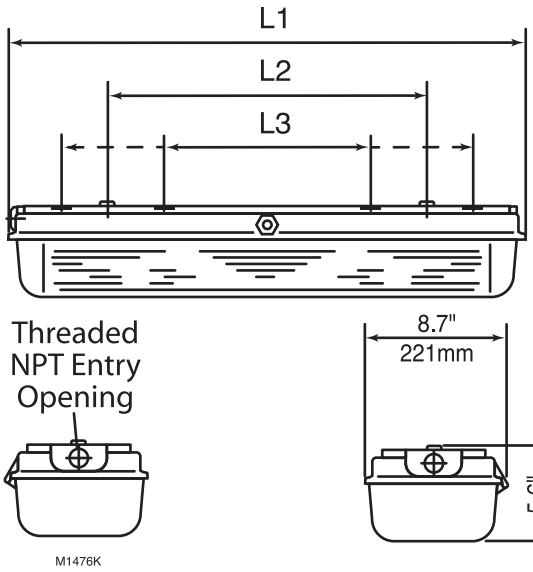
The luminaire includes threaded NPT openings with grounded back plates and NPT close-up plugs. For MC Cable installation use TMC cable glands. For conduit installation use conduit hub 8166/11-0 • -N (See Page B7).

The luminaire must be wired with a permanent charging phase which needs to be the same potential as the switched phase.

The appropriate lamps are standard T8 medium bipin lamps.

Dimensions

EXLUX 6000, 6400 & 6408

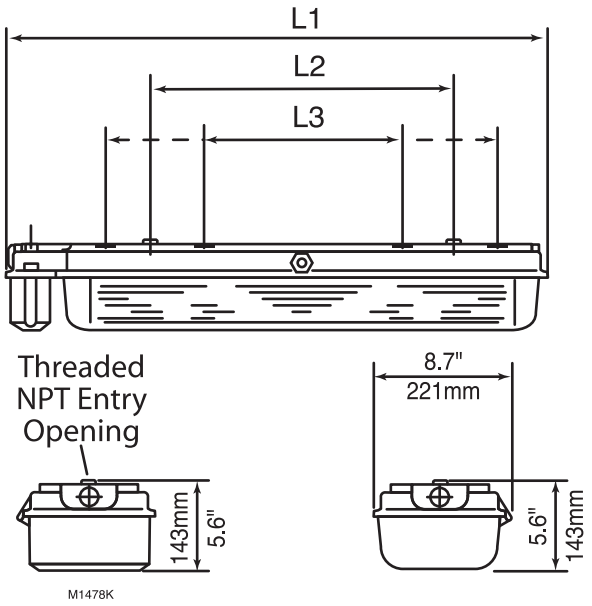


Dimensions

	17W, 2' Fixture		32W, 4' Fixture		40W, 5' Fixture	
	inch	mm	inch	mm	inch	mm
L1	27.5"	(700mm)	51.5"	(1310mm)	63.4"	(1610mm)
L2 [1)]	15.7"	(400mm)	31.5"	(800mm)	31.5"	(800mm)
L3 [2)]	12.3"-18.3"	(312-465mm)	26.3"-34"	(670-865mm)	26.3"-34"	(670-865mm)

1) fixed mounting distance
2) variable mounting distance

EXLUX 6008

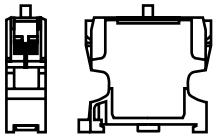
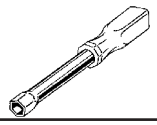
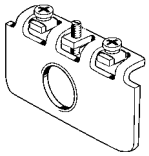
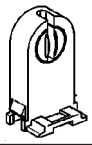
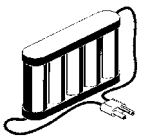
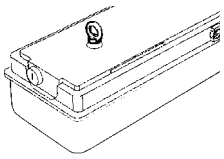
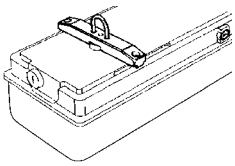
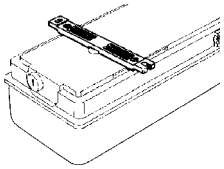
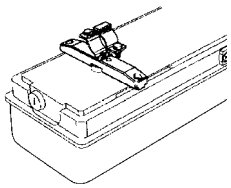


Dimensions

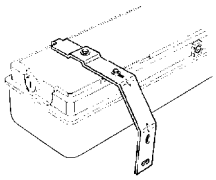
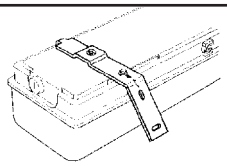
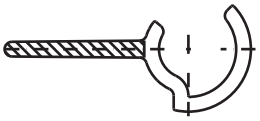
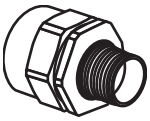
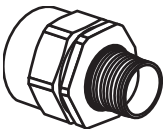
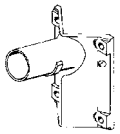
	17W, 2' Fixture		32W, 4' Fixture	
	inch	mm	inch	mm
L1	30.8"	(782mm)	54.8"	(1392mm)
L2 [1)]	15.7"	(400mm)	31.5"	(800mm)
L3 [2)]	12.3"-18.3"	(312-465mm)	26.4"-34"	(670-865mm)

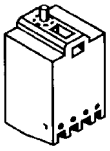
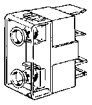
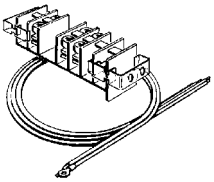
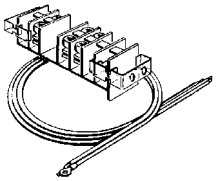
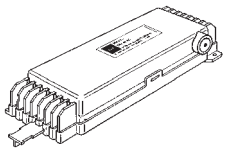
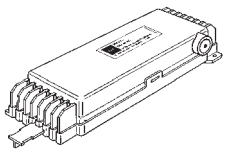
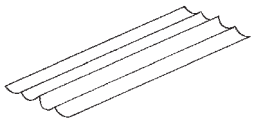
1) fixed mounting distance
2) variable mounting distance

Use only the following original spare parts and accessories, any others would invalidate the certification and warranty.

Description	Type		Catalog Number
Interlock Switch 8082/1-2		Interlock switch 1 NO for battery enclosure 6008 luminaire	132640
Socket Wrench 1/2" (13mm)		to operate the central interlock mechanism	140486
Entry Back-up Plate		stainless steel back-up plate with set screw and grounding provisions 1 x NPT 1/2" entry threads: 2 x NPT 1/2" 1 x NPT 3/4"	 115821 115829 115824
Lamp Holder		snap-in lamp holder for 6400 and 6408 luminaires	107275
Lamp Holder		snap-in lamp holder for 6000 and 6008 luminaires	117252
Battery Pack for luminaire 6008		Battery capacity 7Ah	118013
Eye Bolts M8		1 pair can directly be screwed into the luminaire	115736
Mounting Brackets with Suspension Lugs		1 pair of adjustable mounting brackets with suspension lugs	115777
Ceiling Brackets		1 pair of adjustable ceiling mounting brackets	115733
Pipe Clamps with Mounting Brackets		1 pair of stainless steel pipe clamps with adjustable mounting brackets for EMT 1 1/4" conduit EMT 1 1/2" conduit EMT 2" conduit	 115728 115690 115711

Parts and Accessories

Description	Type		Catalog Number
Wall-Mounting Bracket 90°		1 pair of 90° stainless steel wall-mounting brackets horizontally adjustable	115713
Wall-Mounting Bracket 50°		1 pair of 50° stainless steel wall-mounting brackets horizontally adjustable	115691
Safety Clips		10 pcs. in one bag to avoid unintentional detachment of the lens from the luminaires.	115724
Cable Gland 1/2" NPT		for MC cable with sealing ring	TMC 050A
Cable Gland 3/4" NPT		for MC cable with sealing ring	TMC 075A
Conduit Hub 1/2" NPT		Conduit hub 1/2" NPT with sealing ring	8166/11-01-N
Conduit Hub 3/4" NPT		Conduit hub 3/4" NPT with sealing ring	8166/11-02-N
Close-up Plug 1/2" NPT		Polymeric close-up plug 1/2" NPT with sealing ring	PD-E-4-0-29-00
Close-up Plug 3/4" NPT		Polymeric close-up plug 3/4" NPT with sealing ring	PD-E-4-0-30-00
Cast Wall and Corner Mounting Bracket for Stanchion Mounting		Insert 1 1/2" EMT conduit into the bracket. Use pipe clamp PN 60 008 01 26 0 to attach luminaire to conduit.	108947

Description	Type		Catalog Number
Lens		for luminaire 2’ 17W 4’ 32W 5’ 40W	115120 115128 115135
Interlock Switch 8080/1–3-L 20e		Switch block 2 NC	132527
Fuse		to protect battery circuit 6.3A	149114
Retrofit Kit for 6 Wire Feed-Through Wiring for EXLUX 6008		to retrofit dead-end luminaire EXLUX 6008 amperage rating 16 Amp max. L^{I} , L1, L2, L3, N, PE 4’ 32W	 116359
Retrofit Kit for 5 Wire Feed-Through Wiring for EXLUX 6000		to retrofit dead-end luminaire EXLUX 6000 amperage rating 16 Amp max. L1, L2, L3, N, PE 2’ 17W 4’ 32W 5’ 40W	 60 088 12 87 0 60 088 14 87 0 60 088 16 87 0
Electronic Ballast Unit		for use with luminaires 1x and 2x 17W EXLUX 6000, 6008 2x and 2x 32W 1x and 2x 40W	202073 202074 202075
Auto Testing Emergency Ballast		for use with Emergency Luminaires EXLUX 6008	201642
Parabolic Reflector		For 1-lamp luminaires 17W For 1-lamp luminaires 32W For 1-lamp luminaires 40W For 2-lamp luminaires 17W For 2-lamp luminaires 32W For 2-lamp luminaires 40W	60 009 10 58 0 60 009 11 58 0 60 009 12 58 0 115955 115970 115983

ECOLUX 6600 Series

EXPLOSION PROTECTED FLUORESCENT LUMINAIRES
FOR HAZARDOUS AND CORROSIVE APPLICATIONS

CLASSIFICATIONS
NEC & CEC
Class I, Zone 2, Group IIC T5
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
Types 3, 4, 4X & IP66
File No. J.I.3012747

Ambient Temperature Range:
+40°C (+104°F) Max.;
-20°C (4F) Min.

Supply Voltages
(see ordering information)

FEATURES

The ECOLUX 6600 Series of Luminaires are designed for hostile and hazardous locations where reliability and rugged performance are critical. The housing is constructed of heavy-duty fiberglass reinforced polyester (FRP) with a single piece, low glare polycarbonate lens.

The ECOLUX 6600 Series is supplied with electronic instant-start ballasts as standard and is available in 17, 32 and 40-Watts, one or two-lamp versions. The two-lamp versions are dual channel, which keeps the luminaire functional should one lamp fail. The power factor is ≥ .99. The electronic ballast meets ANSI C82.11 standards regarding harmonic distortion.

INSTALLATION

The luminaire includes threaded NPT openings with grounded back plates and NPT close-up plugs. For MC Cable installation use TMC cable glands. For conduit installation use conduit hub 8166/11-0 • -N (See Page B11).

The appropriate lamps are standard T8 medium Bipin lamps.

Fluorescent Luminaires for Div. 2 and Zone 2 Applications

Luminaires for Use with Standard T8 Med. Bipin Lamps

Ordering Information

Catalog Number	Description
17 Watts, 2'	
6600/531-8020-8000	1-lamp luminaire 120-277V 50/60Hz, 1 x 3/4" NPT both ends
6600/531-8020-7000	1-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends
6600/532-9020-8000	2-lamp luminaire 120-277V 50/60Hz, 1 x 3/4" NPT both ends
6600/532-9020-7000	2-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends
32 Watts, 4'	
6600/551-8020-8000	1-lamp luminaire 120-277V 50/60Hz, 1 x 3/4" NPT both ends
6600/551-8020-7000	1-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends
6600/552-9020-8000	2-lamp luminaire 120-277V 50/60Hz, 1 x 3/4" NPT both ends
6600/552-9020-7000	2-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends
40 Watts, 5'	
6600/571-8020-8000	1-lamp luminaire 120-277V 50/60Hz, 1 x 3/4" NPT both ends
6600/571-8020-7000	1-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends
6600/572-9020-8000	2-lamp luminaire 120-277V 50/60Hz, 1 x 3/4" NPT both ends
6600/572-9020-7000	2-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends

For one 1/2" NPT entry thread at both ends, change this **2** into a **1**.
For two 1/2" NPT entry threads at both ends, change this **2** into a **5**.

For parts and accessories see pages B11-B13.

ECOLUX 6608 Series

EXPLOSION PROTECTED FLUORESCENT EMERGENCY LUMINAIRES FOR HAZARDOUS AND CORROSIVE APPLICATIONS

Emergency Fluorescent Luminaires with Battery Back-up Unit for Div. 2 and Zone 2 Applications

Luminaires for use with Standard T8 Med. Bipin Lamps

Ordering Information for Application in the USA

Catalog Number	Description
17 Watts, 2'	
6608/532-9027-8000	2-lamp luminaire 120 to 277V 50/60Hz, 1 x 3/4" NPT both ends
32 Watts, 4'	
6608/552-9027-8000	2-lamp luminaire 120 to 277V 50/60Hz, 1 x 3/4" NPT both ends

Ordering Information for Application in Canada

Catalog Number	Description
17 Watts, 2'	
6608/532-9027-5000 6608/532-9027-7000	2-lamp luminaire 120V 50/60Hz, 1 x 3/4" NPT both ends 2-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends
32 Watts, 4'	
6608/552-9027-5000 6608/552-9027-7000	2-lamp luminaire 120V 50/60Hz, 1 x 3/4" NPT both ends 2-lamp luminaire 347V 50/60Hz, 1 x 3/4" NPT both ends

For one 1/2" NPT entry thread at both ends, change this **2** into a **1**.
For two 1/2" NPT entry threads at both ends, change this **2** into a **5**.

For parts and accessories see pages B11-B13.

CLASSIFICATIONS
NEC & CEC
Class I, Zone 2, Group IIC T5
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
Types 3, 4, 4X & IP66
File No. J.I.3012747

Ambient Temperature Range:
+40°C (+104°F) Max.
0°C (32°F) Min.

FEATURES

The ECOLUX 6608 Series of Emergency Luminaire is equipped with one high temperature, maintenance free, nickel-cadmium battery back-up unit with a life expectancy of 7–10 years. In case of power failure it automatically switches over to battery supply keeping two lamps illuminated at reduced lumen output for a minimum of 90 minutes. When AC power is restored, the luminaire returns to AC supply. When the Red LED indicating light is illuminated the battery is being charged or monitored. It is visible from the outside through the lens.

The ECOLUX 6608 Series is also supplied with an AC electronic instant start ballast unit and is available in 2 x 17W or 2 x 32W parallel lamps. This keeps the luminaire functional should one lamp fail. The power factor is ≥ .99. The electronic ballast meets ANSI C82.11 standards regarding harmonic distortion.

The ECOLUX 6608 Series are designed for hostile and hazardous locations where reliability and rugged performance are critical. The housing is constructed of heavy-duty fiberglass reinforced polyester (FRP) with a single piece, low glare polycarbonate lens.

INSTALLATION

The luminaire includes threaded NPT openings with grounded back plates and NPT close-up plugs. For MC Cable installation use TMC cable glands (See page B13). For conduit installation use conduit hub 8166/11-0 • -N (See page B11).

The luminaire must be wired with a permanent charging phase which needs to be the same potential as the switched phase.

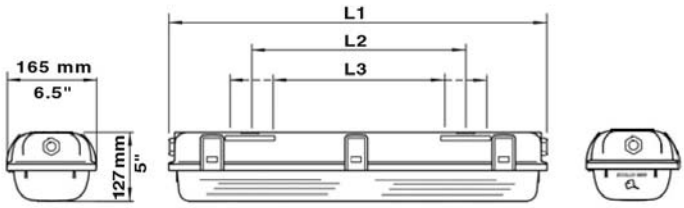
The appropriate lamps are standard T8 medium bi-pin lamps.

ECOLUX 6600 & 6608

Dimensions

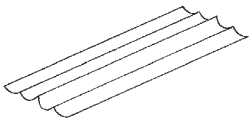
	17 W	32 W	40 W
L1	700 mm	1310 mm 27.5”	1610 mm 51.6”63.4”
L2	400 mm	800 mm 15.75”	800 mm 31.5”31.5”
L3	340 - 460 mm 13.4” - 18.1”	680 - 920 mm 26.8” - 36.2”	795 - 1030 mm 31.3” - 40.5”

Opening the Luminaire

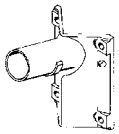
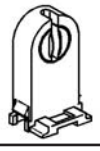
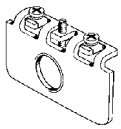
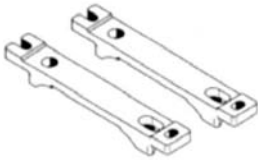


Parts and Accessories

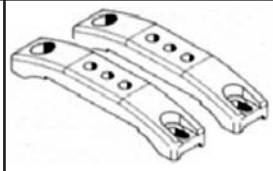
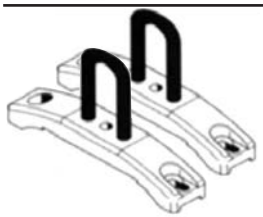
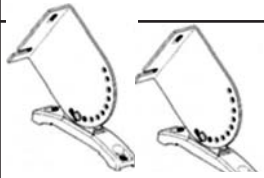
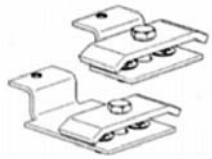
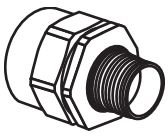
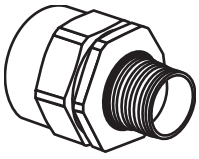
Use only the following original spare parts and accessories, any others would invalidate the certification and warranty.

Item	Image	Description	Catalog Number
Conduit Hub 1/2” NPT		Conduit hub 1/2” NPT with sealing ring	8166/11-01-N
Conduit Hub 3/4” NPT		Conduit hub 3/4” NPT with sealing ring	8166/11-02-N
Close-up plug 1/2” NPT		Polymeric close-up plug 1/2” NPT with sealing ring	PD-E-4-0-29-00
Close-up plug 3/4” NPT		Polymeric close-up plug 3/4” NPT with sealing ring	PD-E-4-0-30-00
Parabolic Reflector (Optional)		For retro-fitting for 1-lamp luminaires: 17W 32W 40W for 2-lamp luminaires: 17W 32W 40W	 60 309 03 58 0 60 309 04 58 0 60 309 06 58 0 117098 117115 117145

Use only the following original spare parts and accessories, any others would invalidate the certification and warranty.

Item	Image	Description	Catalog Number
Cast wall and corner mounting bracket for stanchion mounting	 S0613P	Insert 1 1/2" EMT conduit into bracket Use pipe clamps (PN 66 008 01 26 0) to attach luminaire to conduit	108947
Lens		for luminaires 2' 17W 4' 32W 5' 40W	124635 124646 124657
Snap Action Buckles		Color: White 10 Pieces	124892
		Color: Black 6 Pieces	124899
		Color: Black 2 Pieces with a borehole for switch actuation	124903
Lamp Holder		snap-in lamp holder	107275
Entry back-up plate		stainless steel back-up plate with set screw and grounding provisions entry threads: 1 x NPT 1/2" 2 x NPT 1/2" 1 x NPT 3/4"	 115821 115829 115824
Eye bolts M8		1 pair of eye bolts M8 can be directly screwed into the inserts of the luminaire for fixed suspension points	115736
Ceiling Mounting brackets		1 pair of fixed ceiling mounting brackets for fixed mounting points	124908

Parts and Accessories

Item	Image	Description	Catalog Number
Mounting Brackets		1 pair of mounting brackets for adjustable mounting points	124894
Suspension Lugs		1 pair of stainless steel suspension lugs which can only be used together with mounting brackets P/N 66 008 01 75 0	115710
		1 pair of stainless steel suspension lugs c/w adjustable mounting brackets for adjustable suspension points	124901
Pipe Clamps		1 pair of stainless steel pipe clamps c/w adjustable mounting brackets for adjustable mounting points EMT 1 1/4” EMT 1 1/2” EMT 2”	 124913 124891 124898
Tiltable Wall Mounting bracket		1 pair of stainless steel wall mounting brackets which tilt at 15° increments complete with adjustable mounting brackets for adjustable mounting points	124910
Clamps for Wire Basket Systems		1 pair of stainless steel brackets suitable for fastening luminaire to a wire basket system	124905
Cable Gland 1/2” NPT		For standard MC Cable with sealing ring	TMC 050A
Cable Gland 3/4” NPT		For standard MC Cable with sealing ring	TMC 075A

Light Switches 8040 Series

Ordering Information - 1 Gang

Switch Description	Catalog Number	
	3/4" NPT Bottom Feed	3/4" NPT Top Feed
ON-OFF	8040/734-L12601	8040/733-L12601
THREE-WAY	8040/734-L12610	8040/733-L12610

For Feed Through, change Catalog Number to 8040/735-L126••

Ordering Information - 2 Gang

Switch Description	Catalog Number	
	3/4" NPT Bottom Feed	3/4" NPT Top Feed
ON-OFF ON-OFF	8040/844-L12601 -L12601	8040/843-L12601 -L12601
THREE-WAY THREE-WAY	8040/844-L12610 -L12610	8040/843-L12610 -L12610
ON-OFF THREE-WAY	8040/844-L12601 -L12610	8040/843-L12601 -L12610

For Feed Through, change Catalog Number to 8040/845-L126••

CLASSIFICATIONS

NEC-Class I, Zones 1 & 2, AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
FILE No. E182378

CEC-Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
FILE No. LR99480

Type 3, 4 & 4X; IP66

HOUSING MATERIAL
Fiberglass Reinforced Polyester (FRP) with recessed gasket.

Application

The 8040/73 Series of light switches are 16 Amp rotary switches that come in either ON-OFF or as THREE-WAY types to switch lighting circuits from two different locations.

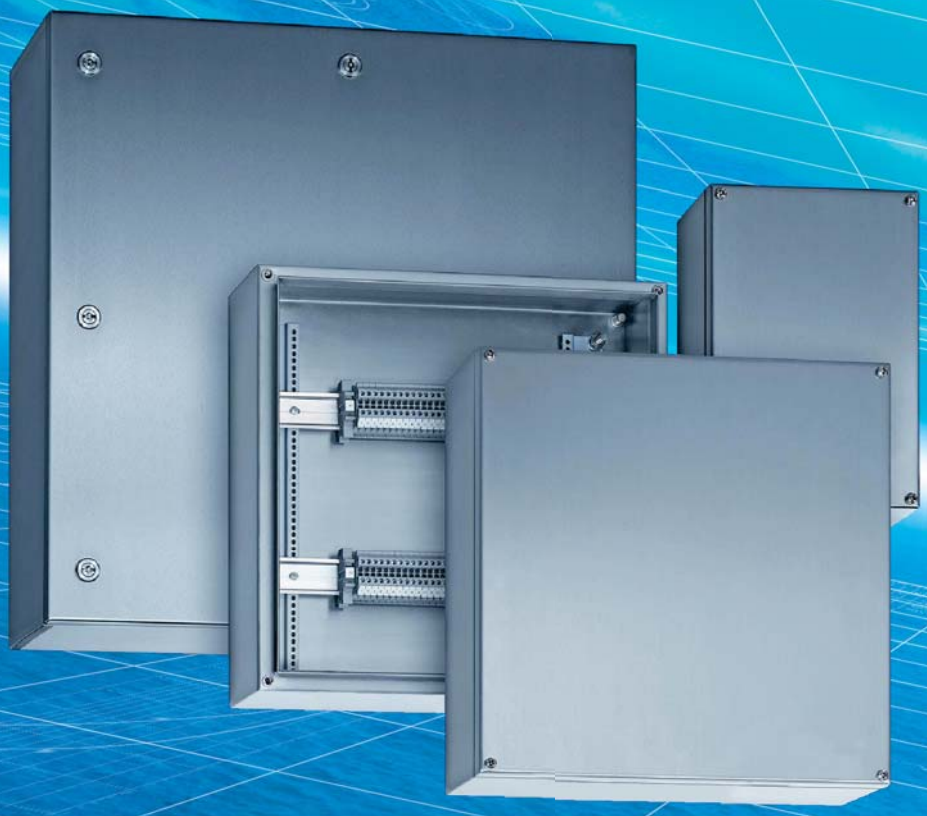
There is also the 8040/84 Series available with a two-gang enclosure which allows for one conduit run and **two** of the above mentioned switches.

Technical Data

	NEC/CEC
Rated Voltage	600V
Rated Current	10A
Mechanical Life	≥ 10^5 Operations
Electrical Life	≥ 10^5 Operations
Terminals	12AWG

Notes

8150 Series Terminal Boxes



Ready-Term ®
8150 Terminal Boxes Features

- *Enclosures made of stainless steel, brushed finished (AISI 304) or (AISI 316L)*
- *Optional hinges with cam locks or screws cover*
- *Hinged Versions 130° opening angle*
- *-60°C to +70°C Ambient temperature Standard Range*
- *Circumferential protection channel prevents water entry*
- *External Grounded connection*
- *Flange plate screwed on from the outside enables simple installation*
- *Degree of protection IP66*
- *Complete Global Certifications including IECEx, ATEX, NEC & CEC (Class 1, Division2) INMETRO, GOST*

Ready-Term® 8150 Terminal Boxes

ELECTRICAL AND MECHANICAL DATA SHEET

Explosion Protection

Marking

Version	8150/1	8150/2 (for IS Circuits)
IECEx Gas Explosion Protection	Ex db eb ia/ib mb IIA, IIB, IIC T6 (Ta= -60...+40 °C) Ex db eb ia/ib mb IIA, IIB, IIC T5 (Ta= -60...+55 °C) Ex db eb ia/ib mb IIA, IIB, IIC T4 (Ta= -60...+70 °C)	Ex ia/ib IIA, IIB, IIC T6 (Ta= -60...+75 °C)
Dust Explosion Protection	Ex tb IIIC IP66 T80 °C (Ta= -60...+40 °C) Ex tb IIIC IP66 T95 °C (Ta= -60...+55 °C) Ex tb IIIC IP66 T130 °C (Ta= -60...+70 °C)	Ex tb IIIC IP66 T80°C (Ta= -60...+40 °C)
Europe (ATEX) Gas Explosion Protection	II 2 G Ex db eb ia/ib mb IIA, IIB, IIC T6 (Ta= -60...+40 °**C)** II 2 G Ex db eb ia/ib mb IIA, IIB, IIC T5 (Ta= -60...+55 °**C)** II 2 G Ex db eb ia/ib mb IIA, IIB, IIC T4 (Ta= -60...+70 °**C)**	II 2 G Ex ia/ib IIA, IIB, IIC T6 (Ta= -60...+75 °C)
Dust Explosion Protection	II 2 D Ex tb IIIC IP66 T80°C (Ta= -60...+40°C) II 2 D Ex tb IIIC IP66 T95°C (Ta= -60...+55°C) II 2 D Ex tb IIIC IP66 T130°C (Ta= -60...+70°C)	II 2 D Ex tb IIIC IP66 T80°C(Ta= -60...+40 °C)
USA **Gas Explosion Protection**	**Canada** **Gas explosion protection**	
Class 1, Zone 1 AEx e IIC (T.*) Class 1, Zone 1 AEx de IIC (T.*) Class 1, Division 2, Groups ABCD -60°C to +40°C(T6)* -60°C to +55°C(T5)* -60°C to +85°C(T4)* IP54 (with breather) IP66 (without breather) Enclosure Type 3,4,4X, IP66	Class 1, Zone 1 Ex e IIC (T.*) Class 1, Zone 1 Ex de IIC (T.*) Class 1, Division 2, Groups ABCD -60°C to +40°C(T6)* -60°C to +55°C(T5)* -60°C to +85°C(T4)* IP54 (with breather) IP66 (without breather) Enclosure Type 3,4,4X, IP66	

Certificates

IECEx	**IECEx PTB 09.0048**
Europe-ATEX	**PTB 09 ATEX 1108**
USA/Canada	**File #E1177842**

Technical Data

Electrical Data	
Rated Operation Voltage	Max. 1100 V depending on terminal types and explosion protected components used
Rated Operation Current	Max. 630 A depending on terminal types and explosion protected components used
Mechanical Data	See Explosion Protection Data depending on terminal types and explosion protected components used
Environmental Protection	IP66 acc. to IEC/EN 60529
Material	-stainless steel (AISI 304) respectively (AISI 316L) brush finish
Enclosure	Silicone foamed
Gaskets	-with captive M6 stainless steel combo head screws or -with hinges/ cam locks
Cover Options	Double-bit key no.5 for cam lock included
Flange Plate	
Standard Version	without flange plate
Special Version	with flange plate
Wall Thickness	(1.5mm)
Enclosure Cover	min~14 ga (2mm)
Cover screws tightening torque	4.5 Nm
Extrenal Connection	M8 hex screw
Wire Size	Max. 600 kcmil (300mm²) depending on terminal types and explosion protected components used

Ready-Term® 8150 Terminal Boxes

ADVANTAGES OF THE SERIES 8150

The new form of the edges allows quick water drainage and prevents water from accumulating around the gasket.
This solution helps to increase the safety inside the enclosure.

The flange plate mounted from the outside is another advantage of this enclosure:
This guarantees a perfect accessibility - even if the cables are already built-in.

The large beam width allows you a comfortable access and an easy and fast handling.

If a regular access is required, the version equipped with a sash lock (or a hinge) is recommended.

The enclosure comes with an external ground connection.

Preselection table:

8150/ a - bbbb - cccc - ddd - e f g h - i jjj - kk L

a (regulations)
1 = Ex e or Ex e ia/ib or AEx
2 = Ex i

Example: 8150/1-0400-0300-230-2311-a012-fpabc

Description: 400x300x230, 304sst, no hinge, with 2.5mm^2 (12) terminals, flange plates on sides A, B, C

bbbb (width)

0176	mm	(6.93”)
0236	mm	(9.39”)
0300	mm	(11.81”)
0360	mm	(14.17”)
0400	mm	(15.75”)
0550	mm	(21.65”)
0600	mm	(23.62”)
0727	mm	(28.62”)
0787	mm	(30.98”)
0800	mm	(31.50”)
1000	mm	(39.37”)

ddd (depth)

091	mm	(3.58”)
150	mm	(5.91”)
190	mm	(7.48”)
230	mm	(9.06”)
300	mm	(11.81”)

i (terminal size)
a = 2.5mm^2 terminal (26-12)
b = 4mm^2 terminal (26-10)
c = 6mm^2 terminal (24-8)
d = 10mm^2 terminal (20-6)
e = 16mm^2 terminal (16-4)
f = 35mm^2 terminal (14-1/0)

e (material)
2 = 304 SST
3 = 316L SST

jjj (terminal quantity)
# of terminals (ie. 012 = 12 terminals)

cccc (height)

0166	mm	(4.57”)
0176	mm	(6.92”)
0200	mm	(7.87”)
0360	mm	(14.17”)
0300	mm	(11.81”)
0400	mm	(15.75”)
0600	mm	(23.62”)
0760	mm	(29.92”)
0787	mm	(30.98”)
1000	mm	(39.37”)
1200	mm	(47.24”)
1600	mm	(62.99”)

f (surface)
3 = brushed

kk (flange plate)
FP = Flange Plate (optional)

g (cover attachment)
1 = screws only
2 = cover with hinge and sash lock

L (flange plate location)
A = Flange Plate Side A
B = Flange Plate Side B
C = Flange Plate Side C
D = Flange Plate Side D

h = 1 always

Ready-Term® 8150 Terminal Boxes

DIMENSIONS OF SCREW COVER ENCLOSURES

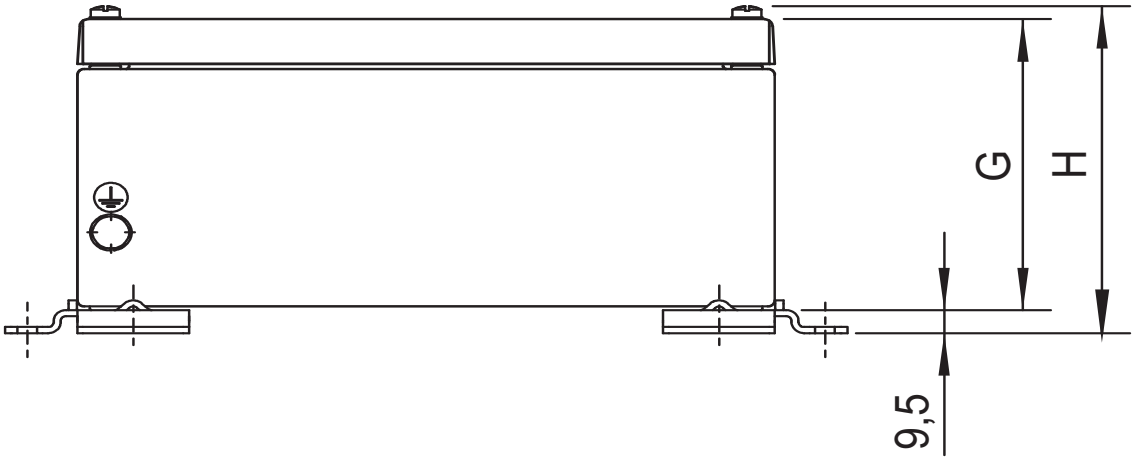
Catalog Number Enclosure size 8150/1-....-....-...-....	Width E mm (inches)	Height F mm (inches)	Depth G mm (inches)	H mm (inches)	a1 mm (inches)	a2 mm (inches)	b1 mm (inches)	b2 mm (inches)	c1 mm (inches)	c2 mm (inches)
0176-0116-091-3311	176.5 (6.95)	116.5 (4.59)	91 (3.58)	106 (4.17)	136 (5.35)	76 (2.99)	212 (8.35)	152 (5.98)	228.5 (9.00)	168.5 (6.63)
0176-0176-091-3311	176.5 (6.95)	176.5 (6.95)	91(3.58)	106 (4.17)	136 (5.35)	136 (5.35)	212 (8.35)	212 (5.98)	228 (8.98)	228 (8.98)
0236-0176-091-3311	236.5 (9.31)	176.5 (6.95)	91 (3.58)	106 (4.17)	196 (7.72)	136 (5.35)	272 (10.71)	212 (8.35)	288 (11.34)	228 (8.98)
0236-0176-150-3311	236.5 (9.31)	176.5 (6.95)	150 (5.91)	165 (6.50)	196 (7.72)	136 (5.35)	272 (10.71)	212 (5.98)	288 (11.34)	228 (8.98)
0300-0200-150-3311	300 (11.81)	200 (7.87)	150 (5.91)	165 (6.50)	260 (10.42)	160 (6.29)	336 (13.22)	236 (9.29)	352 (13.66)	252 (9.22)
0360-0176-091-3311	360 (14.17)	176.5 (6.95)	91 (3.58)	106 (4.17)	320 (12.6)	136 (5.35)	396 (15.59)	212 (8.35)	412 (16.22)	228 (8.98)
0360-0176-150-3311	360 (14.17)	176.5 (6.95)	150 (5.91)	165 (6.50)	320 (12.6)	136 (5.35)	396 (15.59)	212 (8.35)	412 (16.22)	228 (8.98)
0360-0360-091-3311	360 (14.17)	360 (14.17)	91 (3.58)	106 (4.17)	320 (12.6)	320 (12.6)	396 (15.59)	396 (15.59)	412 (16.22)	412 (16.22)
0360-0360-150-3311	360 (14.17)	360 (14.17)	150 (5.91)	165 (6.50)	320 (12.6)	320 (12.6)	396 (15.59)	396 (15.59)	412 (16.22)	412 (16.22)
0360-0360-190-3311	360 (14.17)	360 (14.17)	190 (7.48)	205 (8.07)	320 (12.6)	320 (12.6)	396 (15.59)	396 (15.59)	412 (16.22)	412 (16.22)
0360-0360-230-3311	360 (14.17)	360 (14.17)	230 (9.05)	245 (9.65)	320 (12.6)	320 (12.6)	396 (15.59)	396 (15.59)	412 (16.22)	412 (16.22)
0400-0300-150-3311	400 (15.75)	300 (11.81)	150 (5.91)	165 (6.50)	360 (14.17)	260 (10.24)	436 (17.17)	336 (13.23)	452 (17.8)	352 (13.86)
0400-0300-230-3311	400 (15.75)	300 (11.81)	230 (9.05)	245 (9.65)	360 (14.17)	260 (10.24)	436 (17.17)	336 (13.23)	452 (17.8)	352 (13.86)
0400-0400-150-3311	400 (15.75)	400 (15.75)	150 (5.91)	165 (6.50)	360 (14.17)	360 (14.17)	436 (17.17)	436 (17.17)	452 (17.8)	452 (17.8)
0400-0400-230 -3311	400 (15.75)	400 (15.75)	230 (9.05)	245 (9.65)	360 (14.17)	360 (14.17)	436 (17.17)	436 (17.17)	452 (17.8)	452 (17.8)
0550-0360-230-3311	550 (21.65)	360 (14.17)	230 (9.05)	245 (9.65)	510 (20.08)	320 (12.6)	586 (23.07)	396(15.59)	602 (23.7)	412 (16.22)
0600-0400-150-3311	600 (23.62)	400 (15.75)	150 (5.91)	165 (6.50)	560 (22.05)	360 (14.17)	636 (25.04)	436 (17.17)	652 (25.67)	452 (17.8)
0600-0400-230-3311	600 (23.62)	400 (15.75)	230 (9.05)	245 (9.65)	560 (22.05)	360 (22.5)	636 (25.04)	436 (17.17)	652 (25.67)	452 (17.8)
0600-0600-150-3311	600 (23.62)	600 (23.62)	150 (5.91)	165 (6.50)	560 (22.05)	560 (22.05)	636 (25.04)	636 (25.04)	652 (25.67)	652 (25.67)
0600-0600-230-3311	600 (23.62)	600 (23.62)	230 (9.05)	245 (9.65)	560 (22.05)	560 (22.05)	636 (25.04)	636 (25.04)	652 (25.67)	652 (25.67)
0727-0360-091-3311	727 (28.62)	360 (14.17)	91 (3.58)	106 (4.17)	687 (27.05)	320 (12.6)	763 (30.04)	396 (15.59)	779 (30.67)	412 (16.22)
0727-0360-150-3311	727 (28.62)	360 (14.17)	150 (5.91)	165 (6.50)	687 (27.05)	320 (12.6)	763 (30.04)	396 (15.59)	779 (30.67)	412 (16.22)
0727-0360-190-3311	727 (28.62)	360 (14.17)	190 (7.48)	205 (8.07)	687 (27.05)	320 (12.6)	763 (30.04)	396 (15.59)	779 (30.67)	412 (16.22)
0787-0480-230-3311	787 (30.98)	480 (18.90)	230 (9.05)	245 (9.65)	747 (29.40)	440 (17.32)	823 (32.40)	516 (20.31)	839 (33.03)	532 (20.95)

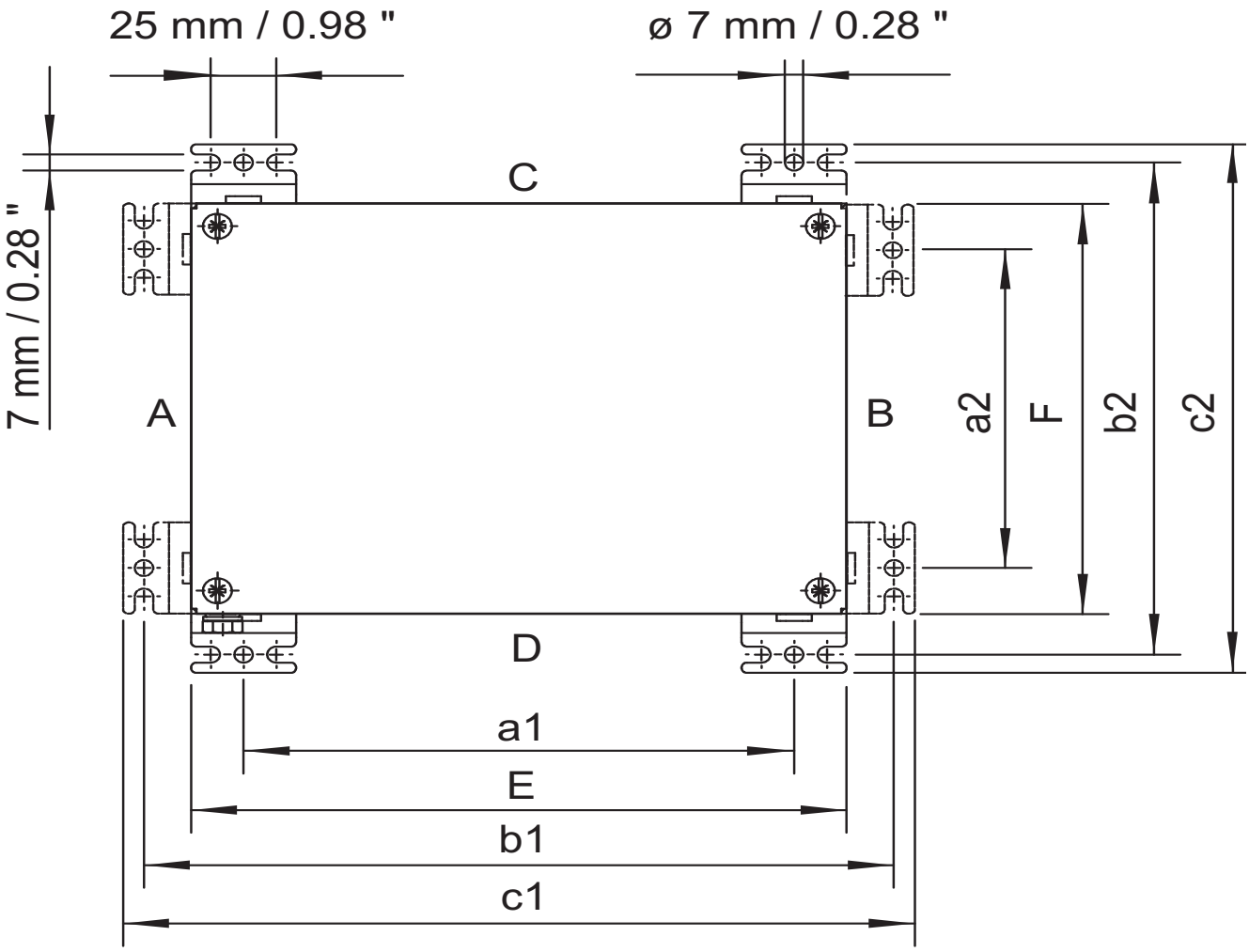
All in mm (inches)

	Width	Height	Depth
Min. overall Dimensions available:	100 (3.94)	100 (3.94)	60 (2.36)
Max. overall Dimensions available:	1200 (47.24)	2200 (86.61)	800 (31.50)

Note: To specify intrinsically safe terminals, change to 8150/2. To change to 304 stainless, change “3” to a “2” (ie 3311 to 2311).
Custom sizes are available. Contact R. STAHL for more information.

JUNCTION BOX DIMENSIONAL DATA





Ready-Term® 8150 Terminal Boxes

DIMENSIONS OF HINGED ENCLOSURES

Catalog Number Enclosure size 8150/1-....-....-...-....	Width E mm (inches)	Height F mm (inches)	Depth G mm (inches)	H mm (inches)	a1 mm (inches)	a2 mm (inches)	b1 mm (inches)	b2 mm (inches)	c1 mm (inches)	c2 mm (inches)
0176-0360-150-3321	176.5 (6.93)	360 (14.17)	150 (5.91)	165 (6.50)	136 (5.35)	320 (12.6)	212 (8.35)	396 (15.59)	228 (8.98)	412 (16.22)
0200-0300-150 -3321	200 (7.87)	300 (11.81)	150 (5.91)	163.5 (6.44)	160 (6.30)	260 (10.23)	236 (9.29)	336 (13.22)	252 (9.92)	352 (13.86)
0300-0400-150-3321	300 (11.81)	400 (15.75)	150 (5.91)	165 (6.50)	260 (10.42)	360 (14.17)	336 (13.22)	436 (17.17)	352 (13.86)	452 (17.8)
0300-0400-230-3321	300 (11.81)	400 (15.75)	230 (9.05)	243.5 9.59)	260 (10.42)	360 (14.17)	336 (13.22)	436 (17.17)	352 (13.86)	452 (17.8)
0360-0360-150-3321	360 (14.17)	360 (14.17)	150 (5.91)	163.5 (6.44)	320 (12.6)	320 (12.6)	396 (15.59)	396 (15.59)	412 (16.22)	412 (16.22)
0360-0360-190-3321	360 (14.17)	360 (14.17)	190 (7.48)	203 (8.01)	320 (12.6)	320 (12.6)	396 (15.59)	396 (15.59)	412 (16.22)	412 (16.22)
0360-0550-230-3321	360 (14.17)	550 (21.65)	230 (9.05)	243.5 (9.59)	510 (20.08)	320 (12.6)	586 (23.07)	396 (15.59)	602 (23.7)	412 (16.22)
0360-0727-150-3321	360 (14.17)	727 (28.62)	150 (5.91)	163.5 (6.44)	320 (12.6)	687 (27.05)	398 (15.67)	763 (30.03)	412 (16.22)	779 (30.67)
0360-0900-230-3321	360 (14.17)	900 (35.43)	230 (9.05)	243.5 (9.59)	320 (12.6)	960 (37.80)	396 (15.59)	936 (36.85)	412 (16.22)	952 (37.48)
0360-1100-230-3321	360 (14.17)	1100 (43.30)	230 (9.05)	243.5 (9.59)	320 (12.6)	1160 (45.67)	396 (15.59)	1136 (4472)	412 (16.22)	1152 (45.35)
0360-1300-230-3321	360 (14.17)	1300 (51.18)	230 (9.05)	243.5 (9.59)	320 (12.6)	1360 (53.54)	396 (15.59)	1336 (52.59)	412 (16.22)	1352 (53.22)
0400-0400-150-3321	400 (15.75)	400 (15.75)	150 (5.91)	163.5 (6.44)	360 (14.17)	360 (14.17)	436 (17.17)	436 (17.17)	452 (17.8)	452 (17.8)
0400-0400-230-3321	400 (15.75)	400 (15.75)	230 (9.05)	243.5 (9.59)	360 (14.17)	360 (14.17)	436 (17.17)	436 (17.17)	452 (17.8)	452 (17.8)
0400-0600-150-3321	400 (15.75)	600 (23.62)	150 (5.91)	163.5 (6.43)	360 (14.17)	360 (14.17)	436 (17.17)	436 (17.17)	452 (17.8)	452 (17.8)
0400-0600-230-3321	400 (15.75)	600 (23.62)	230 (9.05)	243.5 (9.59)	510 (20.08)	320 (12.6)	586 (23.07)	396 (15.59)	602 (23.7)	412 (16.22)
0480-0787-230-3321	480 (18.90)	787 (30.98)	230 (9.05)	243.5 (9.59)	747 (29.40)	440 (17.32)	823 (32.40)	516 (20.31)	839 (33.03)	532 (20.94)
0600-0400-230-3321	600 (23.62)	400 (15.75)	230 (9.05)	243.5 (9.59)	510 (20.08)	320 (12.6)	586 (23.07)	396 (15.59)	602 (23.7)	412 (16.22)
0600-0600-150-3321	600 (23.62)	600 (23.62)	150 (5.91)	163.5 (6.43)	560 (22.05)	560 (22.05)	636 (25.04)	636 (25.04)	652 (25.67)	652 (25.67)
0600-0600-230-3321	600 (23.62)	600 (23.62)	230 (9.05)	243.5 (9.59)	560 (22.05)	560 (22.05)	636 (25.04)	636 (25.04)	652 (25.67)	652 (25.67)
0800-1000-300-3321	800 (31.50)	1000 (39.37)	300 (11.81)	313.5 (12.34)	860 (33.85)	1060 (41.73)	836 (32.91)	1036 (40.78)	852 (33.54)	1052 (41.41)
0800-1200-300-3321	800 (31.50)	1200 (47.24)	300 (11.81)	313.5 (12.34)	860 (33.85)	1260 (49.60)	836 (32.91)	1236 (48.66)	852 (33.54)	1252 (49.29)
0800-1600-300-3321	800 (31.50)	1600 (62.99)	300 (11.81)	313.5 (12.34)	759 (29.88)	1559 (61.38)	836 (32.91)	1636 (64.41)	852 (33.54)	1652 (65.04)
1000-1200-300-3321	1000 (39.37)	1200 (47.24)	300 (11.81)	313.5 (12.34)	959 (37.76)	1159 (45.63)	1036 (40.79)	1236 (48.66)	1052 (41.42)	1252 (49.29)

***With hinges and cam lock**
All dimensions in mm (inches)

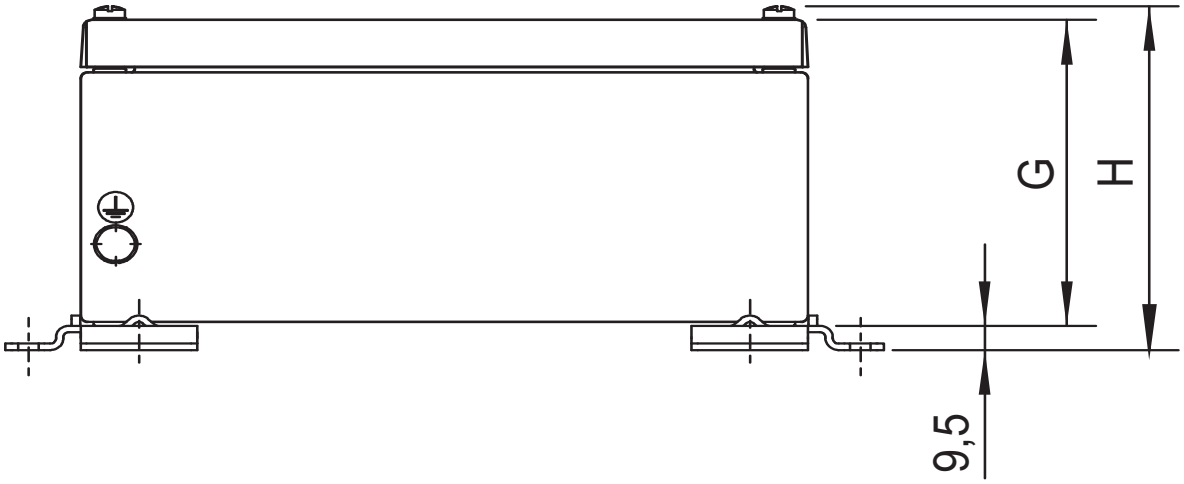
All in mm (inches)

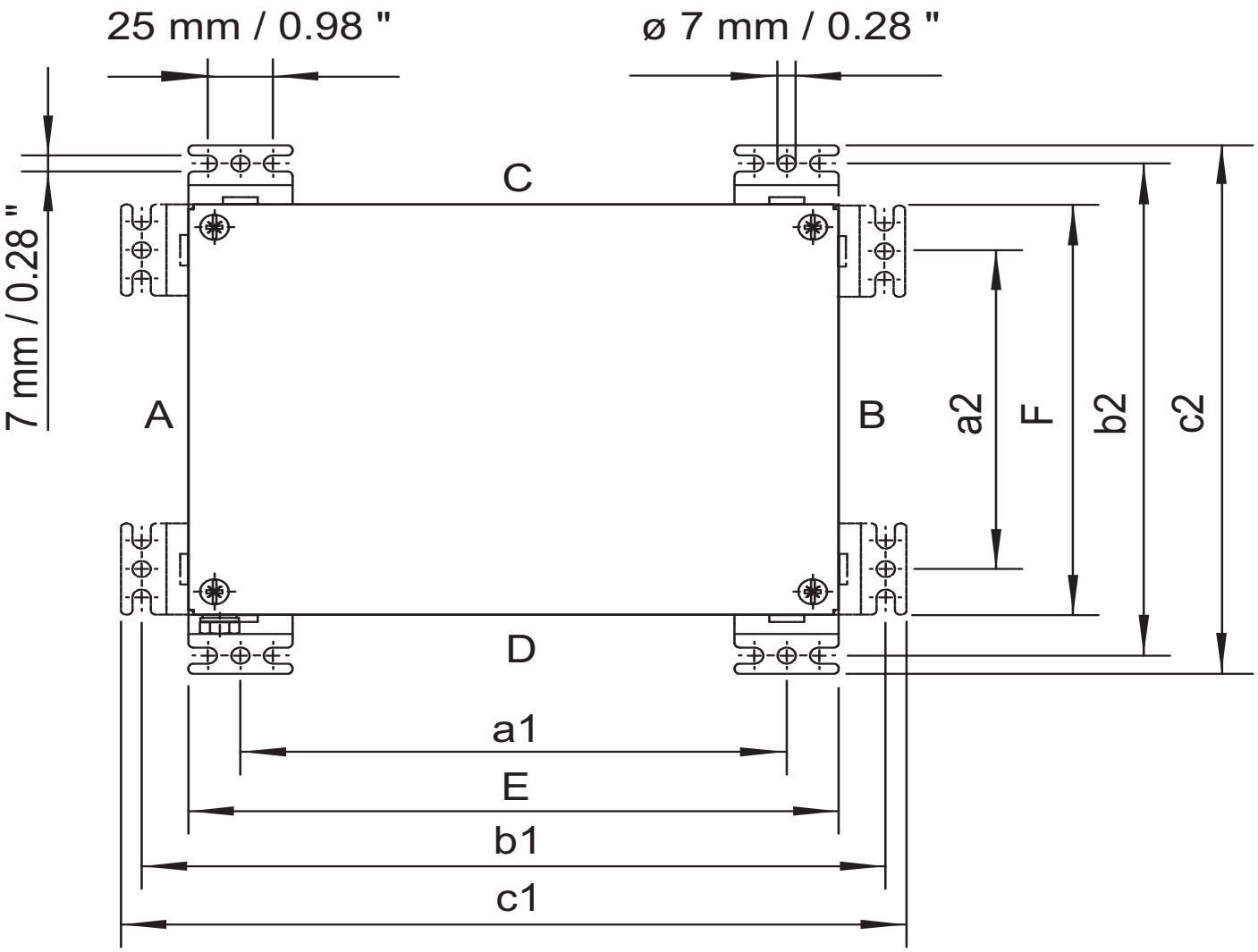
	Width	Height	Depth
Min. overall Dimensions available:	100 (3.94)	100 (3.94)	60 (2.36)
Max. overall Dimensions available:	1200 (47.24)	2200 (86.61)	800 (31.50)

Note: To specify intrinsically safe terminals, change to 8150/2. To change to 304 stainless, change “3” to a “2” (ie 3321 to 2321).
Custom sizes are available. Contact R. STAHL for more information.

Ready-Term® 8150 Terminal Boxes

JUNCTION BOX DIMENSIONAL DATA





Ready-Term® 8150 Terminal Boxes

PRESELECTION TABLE: NUMBER OF TERMINALS ACCORDING TO THE ENCLOSURE TYPE

Version	Maximum Terminal Quantity Allowed AWG (mm^2)					Catalog Number
8150 Terminal Box Series	Number of Rails Required for Max.	26-12 (2.5)	26-10 (4)	24-8 (6)	20-6 (10)	
	1	16	13	11	-	8150/.-0176-0116-...-.3.1
	2	22	18	15	12	8150/.-0176-0176-...-.3.1
	2	36	26	22	20	8150/.-0236-0176-...-.3.1
	2	67	56	46	37	8150/.-0360-0176-...-.3.1
	4	188	153	124	104	8150/.-0360-0360-...-.3.1
	2	105	84	69	33	8150/.-0300-0200-...-.3.1
	3	229	185	104	87	8150/.-0400-0300-...-.3.1
	4	306	247	150	125	8150/.-0400-0400-...-.3.1
	4	443	358	222	183	8150/.-0550-0360-...-.3.1
	4	443	358	289	209	8150/.-0727-0360-...-.3.1
	4	490	397	250	208	8150/.-0600-0400-...-.3.1
	6	735	596	409	339	8150/.-0600-0600-...-.3.1
	5	833	539	443	368	8150/.-0787-0480-...-.3.1

* Based on Phoenix Terminals. Other manufacturers may vary, please consult factory for specific information.

Ready-Term® 8150 Terminal Boxes

METRIC TRADE SIZE MAXIMUM NUMBER OF OPENINGS

Catalog Number Enclosure size 8150/.-....-....-...-....	Flange	Side	Size of the Cable Entry						
			M16 x 1.5	M20 x 1.5	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
0176-0116-091-3311	Without Flange	A/B	6	4	2	1	1	-	-
		C/D	12	8	4	3	2	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	-	-	-	-	-	-	-
0176-0176-091-3311	Without Flange	A/B	11	8	4	3	2	-	-
		C/D	12	8	4	3	2	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	-	-	-	-	-	-	-
0236-0176-091-3311	Without Flange	A/B	11	8	4	3	2	-	-
		C/D	15	12	6	4	3	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	4	4	2	-	-	-	-
0236-0176-150-3311	Without Flange	A/B	28	17	10	6	4	3	2
		C/D	41	26	16	10	6	4	2
	Flange	A/B	9	6	4	2	1	1	-
		C/D	17	10	7	5	3	2	2
0360-0360-190-3311	Without Flange	A/B	65	42	26	18	12	-	-
		C/D	65	42	26	18	12	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	-	-	-	-	-	-	-
0360-0360-150-3321	Without Flange	A/B	65	42	26	18	10	6	4
		C/D	67	42	26	19	10	6	4
	Flange	A/B	28	18	13	9	5	3	3
		C/D	28	18	13	9	5	3	3
0727-0360-091-3311	Without Flange	A/B	65	42	26	18	10	6	4
		C/D	117	74	46	33	36	22	14
	Flange	A/B	R						
		C/D	R						
0600-0600-230-3321	Without Flange	A/B	187	130	91	63	34	22	14
		C/D	190	131	94	63	36	22	14
	Flange	A/B	110	74	49	31	16	14	10
		C/D	110	74	49	31	16	14	10

R = On request

Ready-Term® 8150 Terminal Boxes

METRIC TRADE SIZE MAXIMUM NUMBER OF OPENINGS

Catalog Number Enclosure size 8150/.-....-....-...-....	Flange	Side	Size of the Cable Entry						
			M16 x 1.5	M20 x 1.5	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
0727-0360-150-3311	Without Flange	A/B	65	42	26	18	10	6	4
		C/D	117	74	46	33	36	22	14
	Flange	A/B	R						
		C/D							
0600-0600-230-3311	Without Flange	A/B	187	130	91	63	34	22	14
		C/D	190	131	94	63	36	22	14
	Flange	A/B	110	74	49	31	16	14	10
		C/D	110	74	49	31	16	14	10
0550-0360-230-3311	Without Flange	A/B	91	59	43	27	15	9	6
		C/D	123	85	59	38	22	14	9
	Flange	A/B	-	-	-	-	-	-	-
		C/D	-	-	-	-	-	-	-
0400-0400-150-3321	Without Flange	A/B	74	48	29	21	11	7	5
		C/D	74	48	30	22	11	7	5
	Flange	A/B	28	18	13	9	5	3	3
		C/D	28	18	13	9	5	3	3
0400-0400-150-3311	Without Flange	A/B	74	48	29	21	11	7	5
		C/D	74	48	30	22	11	7	5
	Flange	A/B	28	18	13	9	5	3	3
		C/D	28	18	13	9	5	3	3
0400-0300-150-3311	Without Flange	A/B	54	34	21	16	8	5	3
		C/D	74	48	30	22	11	7	5
	Flange	A/B	R						
		C/D	28	18	13	9	5	3	3
0360-0360-230-3311	Without Flange	A/B	91	59	43	27	15	-	-
		C/D	91	59	43	27	15	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	-	-	-	-	-	-	-
0360-0360-190-3321	Without Flange	A/B	65	42	26	18	10	-	-
		C/D	65	42	26	18	10	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	-	-	-	-	-	-	-

R = On request

Ready-Term® 8150 Terminal Boxes

METRIC TRADE SIZE MAXIMUM NUMBER OF OPENINGS

Catalog Number Enclosure size 8150/.-....-....-...-....	Flange	Side	Size of the Cable Entry						
			M16 x 1.5	M20 x 1.5	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
0360-0360-150-3311	Without Flange	A/B	65	42	26	18	10	6	4
		C/D	67	42	26	19	10	6	4
	Flange	A/B	28	18	13	9	5	3	3
		C/D	28	18	13	9	5	3	3
0360-0360-091-3311	Without Flange	A/B	27	20	10	7	5	-	-
		C/D	28	20	10	7	5	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	9	6	6	-	-	-	-
0360-0176-150-3311	Without Flange	A/B	28	17	10	6	4	3	2
		C/D	67	42	26	19	10	6	4
	Flange	A/B	9	6	4	2	1	1	-
		C/D	28	18	13	9	5	3	3
0360-0176-091-3311	Without Flange	A/B	11	8	4	3	2	-	-
		C/D	27	20	10	7	5	-	-
	Flange	A/B	-	-	-	-	-	-	-
		C/D	9	6	6	-	-	-	-
0600-0400-150-3321	Without Flange	A/B	74	48	30	22	11	7	5
		C/D	117	74	46	33	18	11	7
	Flange	A/B	28	18	13	9	5	3	3
		C/D	47	31	21	15	8	5	5
0400-0600-150-3321	Without Flange	A/B	117	74	46	33	18	11	7
		C/D	74	48	30	22	11	7	5
	Flange	A/B	47	31	21	15	8	5	5
		C/D	28	18	13	9	5	3	3
0600-0600-150-3321	Without Flange	A/B	116	73	45	33	18	11	7
		C/D	117	74	46	33	18	11	7
	Flange	A/B	47	31	21	15	8	5	5
		C/D	47	31	21	15	8	5	5
0176-0360-150-3321	Without Flange	A/B	28	17	10	6	4	3	2
		C/D	67	42	26	19	10	6	4
	Flange	A/B	28	18	13	9	5	3	3
		C/D	9	6	4	2	1	1	-

R = On request

Ready-Term® 8150 Terminal Boxes

METRIC TRADE SIZE MAXIMUM NUMBER OF OPENINGS

Catalog Number Enclosure size 8150/.-....-....-...-....	Flange	Side	Size of the Cable Entry						
			M16 x 1.5	M20 x 1.5	M25 x 1.5	M32 x 1.5	M40 x 1.5	M50 x 1.5	M63 x 1.5
0300-0400-230-3321	Without Flange	A/B	123	85	60	39	22	14	9
		C/D	91	59	43	27	15	9	6
	Flange	A/B	69	44	28	20	10	8	6
		C/D	R						
0400-0300-230-3321	Without Flange	A/B	91	59	43	27	15	9	6
		C/D	123	85	60	39	22	14	9
	Flange	A/B	R						
		C/D	69	44	28	20	10	8	6
0400-0400-230-3321	Without Flange	A/B	123	85	59	38	22	14	9
		C/D	123	85	60	39	22	14	9
	Flange	A/B	69	44	28	20	10	8	6
		C/D	69	44	28	20	10	8	6
0400-0600-230-3321	Without Flange	A/B	187	130	91	63	34	22	14
		C/D	123	85	60	39	22	14	9
	Flange	A/B	110	74	49	31	16	14	10
		C/D	69	44	28	20	10	8	6
0600-0400-230-3321	Without Flange	A/B	123	85	60	39	22	14	9
		C/D	187	130	91	63	34	22	14
	Flange	A/B	69	44	28	20	10	8	6
		C/D	110	74	49	31	16	14	10
0360-0550-230-3321	Without Flange	A/B	123	85	59	38	22	14	9
		C/D	91	59	43	27	15	9	6
	Flange	A/B	R						
		C/D	R						
0480-0787-230-3321	Without Flange	A/B	190	131	94	63	36	22	14
		C/D	117	74	46	33	36	22	14
	Flange	A/B	R						
		C/D	47	31	21	15	8	5	5
0787-0480-230-3321	Without Flange	A/B	117	74	46	33	36	22	14
		C/D	190	131	94	63	36	22	14
	Flange	A/B	47	31	21	15	8	5	5
		C/D	R						
0800-1600-300-3321	Without Flange	A/B	893	645	446	283	182	129	85
		C/D	441	318	220	140	90	63	42
	Flange	A/B	R						
		C/D	R						
1000-1200-300-3321	Without Flange	A/B	667	482	333	211	136	96	64
		C/D	554	400	277	175	113	80	53
	Flange	A/B	R						
		C/D	R						

R = On request

Ready-Term® 8150 Terminal Boxes

ENTRY HARDWARE AS LISTED IN SELECTION MAXIMUM NUMBER OF HOLES FOR NPT OPENINGS

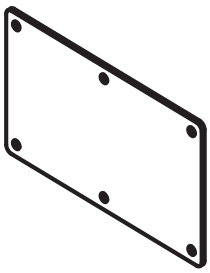
	Without flange (A & B)								Without flange (C &D)							
Enclosure size 8150/.-....-....-...-...	**1/2"**	**3/4"**	**1"**	**1-1/4"**	**1-1/2"**	**2"**	**2-1/2"**	**3"**	**1/2"**	**3/4"**	**1"**	**1-1/4"**	**1-1/2"**	**2"**	**2-1/2"**	**3"**
0176-0116-091-..1	3	3	2	0	0	0	0	0	2	1	1	0	0	0	0	0
0176-0360-150-..2	6	6	4	2	1	1	1	0	14	12	10	4	4	3	3	0
0200-0300-150-..2	6	6	6	2	2	1	1	0	12	10	8	4	3	2	2	0
0236-0176-091-..1	4	4	3	0	0	0	0	0	3	3	2	0	0	0	0	0
0236-0176-150-..1	8	8	6	3	2	2	2	0	6	6	4	2	1	1	1	0
0300-0200-150-..1	12	10	8	4	3	2	2	0	6	6	6	2	2	1	1	0
0300-0400-150-..2	12	10	8	4	3	2	2	0	16	14	12	5	4	4	3	0
0300-0400-230-..2	24	20	12	8	6	4	2	2	32	28	18	10	8	8	3	3
0360-0176-091-..1	7	6	5	0	0	0	0	0	3	3	2	0	0	0	0	0
0360-0176-150-..1	14	12	10	4	4	3	3	0	6	6	4	2	1	1	1	0
0360-0360-091-..1	7	6	5	0	0	0	0	0	7	6	5	0	0	0	0	0
0360-0360-150-..1	14	12	10	4	4	3	3	0	14	12	10	4	4	3	3	0
0360-0360-190-..1	21	18	10	8	8	3	3	2	21	18	10	8	8	3	3	2
0360-0360-190-..2	21	18	10	8	8	3	3	2	21	18	10	8	8	3	3	2
0360-0360-230-..1	28	24	15	8	8	6	3	2	28	24	15	8	8	6	3	2
0360-0550-230-..2	28	24	15	8	8	6	3	2	44	40	24	14	12	10	5	4
0360-0727-150-..2	14	12	10	4	4	3	3	0	30	28	22	10	8	7	6	0
0400-0300-150-..1	16	14	12	5	4	4	3	0	12	10	8	4	3	2	2	0
0400-0300-230-..1	32	28	18	10	8	8	3	3	24	20	12	8	6	4	2	2
0400-0400-150-..1	16	14	12	5	4	4	3	0	16	14	12	5	4	4	3	0
0400-0400-150-..2	16	14	12	5	4	4	3	0	16	14	12	5	4	4	3	0
0400-0400-230-..1	32	28	18	10	8	8	3	3	32	28	18	10	8	8	3	3
0400-0600-150-..2	16	14	12	5	4	4	3	0	24	22	18	8	7	6	5	0
0400-0600-230-..2	32	28	18	10	8	8	3	3	48	44	27	16	14	12	5	4
0480-0787-230-..2	40	36	21	12	10	8	4	3	64	60	39	20	18	16	7	6
0550-0360-230-..1	44	40	24	14	12	10	5	4	28	24	15	8	8	6	3	2
0600-0400-150-..1	24	22	18	8	7	6	5	0	16	14	12	5	4	4	3	0
0600-0400-230-..1	48	44	27	16	14	12	5	4	32	28	18	10	8	8	3	3
0600-0600-150-..1	24	22	18	8	7	6	5	0	24	22	18	8	7	6	5	0
0600-0600-230-..1	48	44	27	16	14	12	5	4	48	44	27	16	14	12	5	4
0727-0360-091-..1	15	14	11	0	0	0	0	0	7	6	5	0	0	0	0	0
0727-0360-150-..1	30	28	22	10	8	7	6	0	14	12	10	4	4	3	3	0
0727-0360-190-..1	45	42	22	20	16	7	6	5	21	18	10	8	8	3	3	2
0787-0480-230-..1	64	60	39	20	18	16	7	6	40	36	21	12	10	8	4	3

Note: For Maximum trade size and Number of openings with flange plate, please consult factory.

Ready-Term® 8150 Terminal Boxes

ACCESSORIES & SPARE PARTS

Accessories and Spare Parts

		Catalog Number	Depth mm (inches)	Flange Thickness mm (inches)	Material			
					Side A/B		Side C/D	
					304	316L	304	316L
Flanges		**8150/.-0176-0116-...-.3.1**	91 (3.58)	-	-	-	-	-
		8150/.-0176-0176-...-.3.1	91 (3.58)	-	R	R	R	R
		8150/.-0236-0176-...-.3.1	91 (3.58)	3 (0.12)	202965	202966	R	R
				5 (0.20)	202967	202968	R	R
		8150/.-0360-0176-...-.3.1	91 (3.58)	3 (0.12)	202961	202962	R	R
				5 (0.20)	202963	202964	R	R
			150 (5.91)	3 (0.12)	202892	202893	202885	202866
				5 (0.20)	202894	202895	202887	202888
		8150/.-0360-0360-...-.3.1	91 (3.58)	3 (0.12)	202961	202962	202961	202962
				5 (0.20)	202963	202964	202963	202964
			150 (5.91)	3 (0.12)	202892	202893	202892	202893
				5 (0.20)	202894	202895	202894	202895
			190 (7.48)	3 (0.12)	R	R	R	R
				5 (0.20)	R	R	R	R
		8150/.-0400-0300-...-.3.1	150 (5.91)	3 (0.12)	202892	202893	R	R
				5 (0.20)	202894	202895	R	R
			230 (9.06)	3 (0.12)	202896	202897	R	R
				5 (0.20)	202898	202899	R	R
		8150/.-0400-0400-...-.3.1	150 (5.91)	3 (0.12)	202892	202893	202892	202893
				5 (0.20)	202894	202895	202894	202895
			230 (9.06)	3 (0.12)	202896	202897	202896	202897
				5 (0.20)	202898	202899	202898	202899
		8150/.-0550-0360-...-.3.1	230 (9.06)	3 (0.12)	202900	202901	202896	202897
				5 (0.20)	202902	202903	202898	202899
		8150/.-0600-0400-...-.3.1	230 (9.06)	3 (0.12)	202900		202896	202893
				5 (0.20)	202902	202901	202898	202895
		8150/.-0727-0360-...-.3.1	150 (5.91)	3 (0.12)	R	R	202892	202905
				5 (0.20)	R	R	202894	202907
		8150/.-0600-0600-...-.3.1	150 (5.91)	3 (0.12)	202904	202905	202904	202901
				5 (0.20)	202906	2020907	202906	202903
			230 (9.06)	3 (0.12)	202900	2029031	202900	202897
				5 (0.20)	202902	202903	202902	202899
		8150/.-0787-0480-...-.3.1	230 (9.06)	3 (0.12)	202938	202939	202896	202897
				5 (0.20)	202940	202941	202898	202899

R = On request

8125 Series Terminal Boxes

Ready-Term®
8125 Terminal Boxes Features:

- *Pre-Configured with terminals mounted*
- *Materials: Stainless Steel or Carbon Steel*
- *Six enclosure sizes with different depths*
- *For power and control circuits*
- *For I.S. circuits with blue terminals*
- *Entry hardware optional*
- *Field installation possible*

Ready-Term® 8125 Terminal Boxes

PRE-CONFIGURED STAINLESS AND CARBON STEEL TERMINAL BOXES WITH PHOENIX TERMINALS

CLASSIFICATIONS OF 8125/1

NEC- Class I, Zones 1 & 2 AEx e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Types:
stainless steel version
3, 4 & 4X; IP66,
carbon steel version, painted
3 & 4; IP66,
File No. E177642

CEC- Class I, Zones 1 & 2 Ex e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

CSA ENCLOSURES
stainless steel version
Types 3, 4 & 4X; IP66
carbon steel version, painted
Types 3 & 4; IP66
File No. LR 99480

II 2G Ex e II T6/T5
II 2G Ex ia/ib IIC T6
PTB 00 ATEX 3116
II 2D Ex td A21 IP66, T80˚C/T95˚C

IECEx
Ex e II T6/T5
Ex ia/ib IIC T6
Ex td T21 IP66 T80˚C
IECEX PTB 06.0060

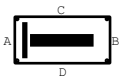
Max. Voltage 600 AC/DC

Ambient Temperature Range:
+40˚C (+104˚F) Max. T6
+55˚C (+131˚F) Max. T5
–20˚C (–4˚F) Min.

FEATURES

The Ready-Term® 8125 Series of terminal boxes are made of 316L stainless sheet steel or painted carbon steel. They offer a one-source solution to the time-consuming process of providing ready to install terminal boxes for hazardous locations. With its single part number solution, the Ready-Term® 8125 Series eliminates the inconvenience of purchasing the enclosure and individual parts. This Series is supplied with the indicated quantity of individually numbered terminals for each size of enclosure, fully certified and ready to be installed.

Ordering Information

TERM. QTY.	WIRE RANGE AWG.	TERM. SIZE mm2	MAX. AMPS. PER TERM.	CATALOG NUMBER FOR POWER & CONTROL CIRCUITS	CATALOG NUMBER GRND. WIRE CONNECTIONS	CATALOG NUMBER FOR INTRINSICALLY SAFE CIRCUITS	CATALOG NUMBER PA WIRE CONNECTIONS	ENCLOSURE ORIENTATION
15	26-12	2.5	20	8125/1041-2DP-12015*	8	8125/2041-2DP-12015*	8	
18	26-12	2.5	20	8125/1051-2DP-12018	14	8125/2051-2DP-12018	14	
15	26-10	4	30	8125/1051-2DP-10015	14	8125/2051-2DP-10015	14	
9	20-6	10	65	8125/1051-2DP-06009	12	-	-	
24	26-12	2.5	20	8125/1061-2DP-12024	14	8125/2061-2DP-12024	14	
21	26-10	4	30	8125/1061-2DP-10021	14	8125/2061-2DP-10021	14	
9	20-6	10	65	8125/1061-2DP-06009	12	-	-	
45	26-12	2.5	20	8125/1071-2DP-12045	14	8125/2071-2DP-12045	14	
36	26-10	4	30	8125/1071-2DP-10036	14	8125/2071-2DP-10036	14	
24	20-6	10	65	8125/1071-2DP-06024	12	-	-	

To Select Painted Steel Enclosures change 2 to 1
To Select Weidmuller Terminals change P to W
For dimensional data see page C20
*With Phoenix terminals only

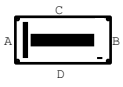
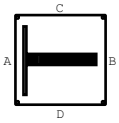
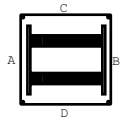
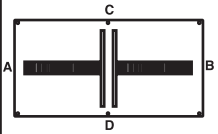
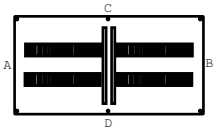
"Hazardous Location" Conduit Hubs

HUB, NPT THREAD SIZE	CATALOG NUMBER
1/2"	*8166/11-01-NE*
3/4"	*8166/11-02-NE*
1"	*8166/11-03-NE*
1 1/4"	*8166/11-04-NE*
1 1/2"	*8166/11-05-NE*
2"	*8166/11-06-NE*
2 1/2"	*8166/11-07-NE*
3"	*8166/11-08-NE*

Ready-Term® 8125 Terminal Boxes

PRE-CONFIGURED STAINLESS AND CARBON STEEL TERMINAL BOXES WITH PHOENIX TERMINALS

Ordering Information

TERM. QTY.	WIRE RANGE AWG.	TERM. SIZE mm²	MAX. AMPS. PER TERM.	CATALOG NUMBER FOR POWER & CONTROL CIRCUITS	CATALOG NUMBER GRND. WIRE CONNECTIONS	CATALOG NUMBER FOR INTRINSICALLY SAFE CIRCUITS	CATALOG NUMBER PA WIRE CONNECTIONS	ENCLOSURE ORIENTATION
45	26-12	2.5	20	8125/1073-2DP-12045	14	8125/2073-2DP-12045	14	
36	26-10	4	30	8125/1073-2DP-10036	14	8125/2073-2DP-10036	14	
24	20-6	10	65	8125/1073-2DP-06024	12	-	-	
18	16-4	16	85	8125/1073-2DP-04018	6	-	-	
12	14-1/0	35	150	8125/1073-2DP-1/012	6	-	-	
45	26-12	2.5	20	8125/1083-2DP-12045	36	8125/2083-2DP-12045	36	
36	26-10	4	30	8125/1083-2DP-10036	36	8125/2083-2DP-10036	36	
24	20-6	10	65	8125/1083-2DP-06024	24	-	-	
18	16-4	16	85	8125/1083-2DP-04018	6	-	-	
12	14-1/0	35	150	8125/1083-2DP-1/012	6	-	-	
90	26-12	2.5	20	8125/1083-2DP-12090	72	8125/2083-2DP-12090	72	
72	26-10	4	30	8125/1083-2DP-10072	72	8125/2083-2DP-10072	72	
48	20-6	10	65	8125/1083-2DP-06048	48	-	-	
90	26-12	2.5	20	8125/1093-2DP-12090	72	8125/2093-2DP-12090	72	
72	26-10	4	30	8125/1093-2DP-10072	72	8125/2093-2DP-10072	72	
48	20-6	10	65	8125/1093-2DP-06048	48	-	-	
36	16-4	16	85	8125/1093-2DP-04036	12	-	-	
24	14-1/0	35	150	8125/1093-2DP-1/024	12	-	-	
180	26-12	2.5	20	8125/1093-2DP-12180	72	8125/2093-2DP-12180	72	
144	26-10	4	30	8125/1093-2DP-10144	72	8125/2093-2DP-10144	72	
96	20-6	10	65	8125/1093-2DP-06096	48	-	-	

To Select Painted Steel Enclosures change 2 to 1
To Select Weidmuller Terminals change P to W
For dimensional data see page C20

STAHL

CLASSIFICATIONS of 8125/1

NEC- Class I, Zones 1 & 2 AEx e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Types: See Page C15
File No. E177642

CEC- Class I, Zones 1 & 2 Ex e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES: See Page C15
File No. LR 99480

II 2G Ex e II T6/T5
II 2G Ex ia/ib IIC T6
PTB 00 ATEX 3116
II 2D Ex td A21 IP66, T80˚C/T95˚C

IECEx
Ex e II T6/T5
Ex ia/ib IIC T6
Ex td T21 IP66 T80˚C
IECEX PTB 06.0060

Max. Voltage 600 AC/DC

Ambient Temperature Range:
See Page C15

In addition to the various North American applications, this Series is PTB certified for use in Zones 1 and 2. The design conforms to EN/IEC 60 079-7 and many others.Consult factory.

APPLICATION

Typical applications include junction boxes for petrochemical plants, waste treatment facilities, oil refineries and other major industrial plants. As a product with certifications recognized globally, the Ready-Term® 8125 Series is well suited for original equipment manufacturers who market throughout the world.

The 8125/1 Series of terminal boxes is intended for use on circuits designed for power and motor control applications.

The 8125/2 Series is intended for use with intrinsically safe circuits. These enclosures are outfitted with blue terminals to provide an indication to field personnel that the circuits are intrinsically safe and should not be confused with non-intrinsically safe circuits.

These enclosures make it necessary for the metal entry hardware to be bonded to the ground system. Use the suitable 8166/11 conduit hubs specified in the hub table on page C17.

Custom enclosures can be configured upon request. The following modifications are available:
- Stainless Steel hinges for right or left side (specify)
- Conduit hubs 8166/11 (specify)
- Cable glands (specify)
- Close-up plugs (specify)
- Flange plates (specify)
- Screw-Type Terminals up to 600MCM
- Cage Clamp Terminals up to 8AWG

8125 Series Terminal Boxes

The 8125 Series of metallic terminal boxes are available with factory installed conduit hubs for conduit installation or with cable glands for cable installation.

Approved and suitable for the location entry hardware can also be field installed.

These enclosures make it necessary for the metal cable glands or conduit hubs to be bonded to the ground system. This can be accomplished by installing enclosures with flange plates according to Method 1 (shown on the upper half of this page), or enclosures without flange plates according to Method 2 (shown on the lower half of this page).

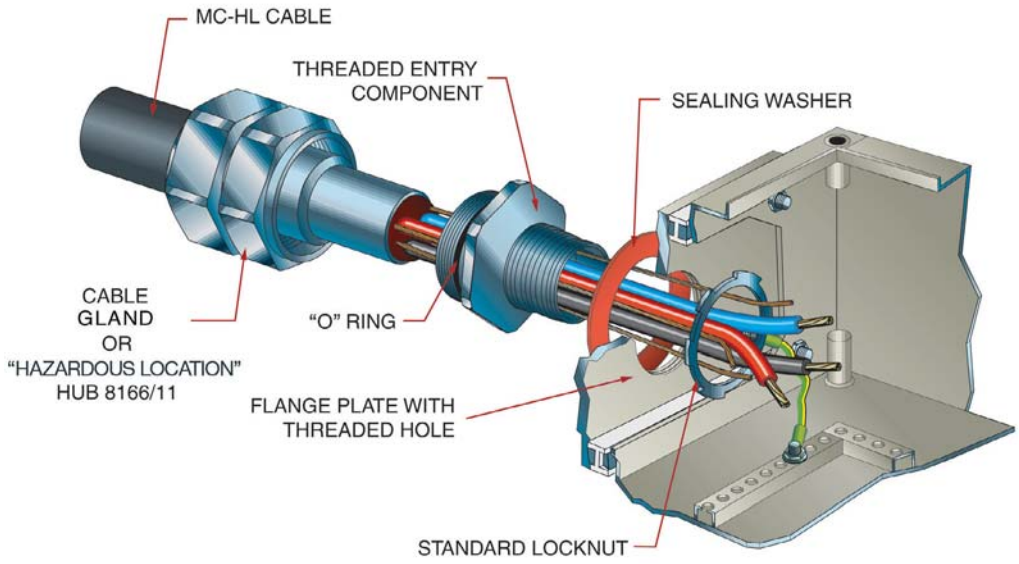
For cable glands see section J.

Table for max. numbers of entry openings either installed with conduit hubs 8166/11 or cable glands (see page C18).

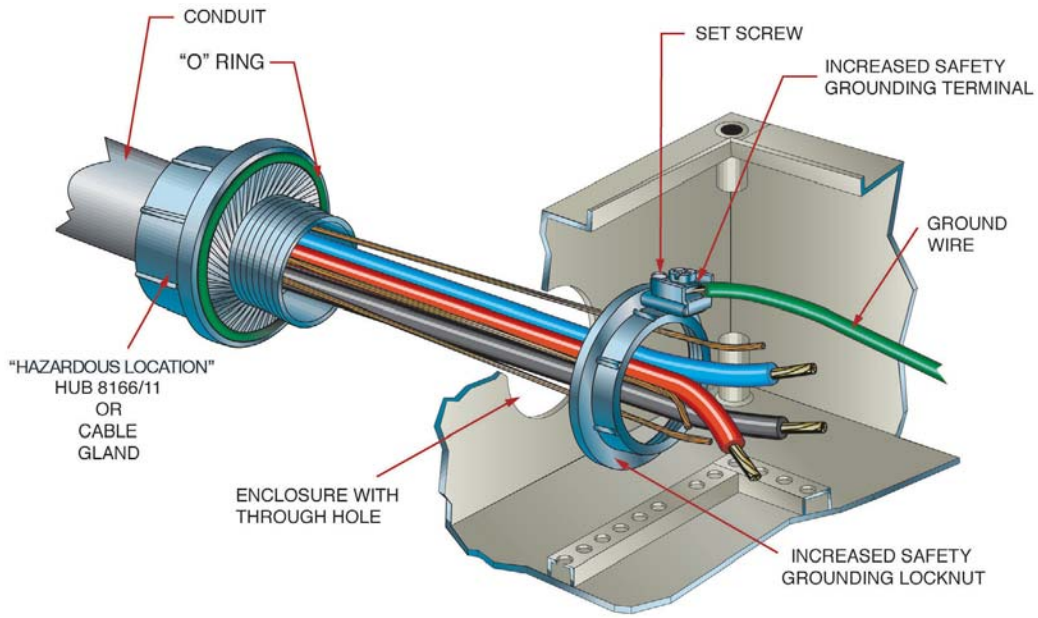
CAUTION:
The max. possible number of entries which can be installed on the sides of the enclosures depends on the number of terminal columns installed. With horizontally installed columns, there are no side entries possible or only limited, depending on enclosure size. With vertically installed columns there are no bottom or top entries possible, or only limited, depending on enclosure size.

INSTALLATION OF ENTRY HARDWARE

Method 1: Enclosures with flange plates using threaded openings through the flange plate and standard locknuts. Flange plates must be connected to the internal grounding system using jumper wires.



Method 2: Enclosures without flange plates using a hole 'through the enclosure' with an "increased safety" grounding locknut.

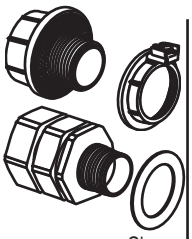


These locknuts must be bonded between each other and to the grounding system using a jumper wire.

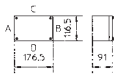
After the entry hardware is installed, connect the appropriate conduit or cable.

8125 Series Terminal Boxes

INSTALLATION OF 8166/11 CONDUIT HUBS OR TMCW CABLE GLANDS

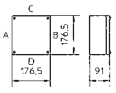


8125/.041



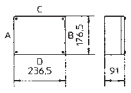
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	2	3	-	2
3/4”	1	3	-	2
1”	1	2	-	-
1-1/4”	1	2	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8125/.051



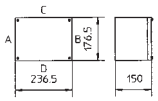
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	3	3	2	2
3/4”	3	3	2	2
1”	2	2	-	-
1-1/4”	2	2	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8125/.061

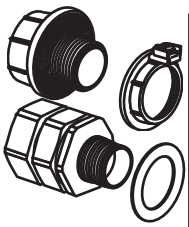


Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	3	5	2	2
3/4”	3	4	2	2
1”	2	3	-	-
1-1/4”	2	2	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

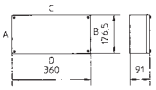
8125/.063



Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	6	10	4	4
3/4”	5	8	4	4
1”	4	6	2	2
1-1/4”	3	4	1	1
1-1/2”	2	3	1	1
2”	1	2	1	1
2-1/2”	1	2	1	1
3”	1	1	-	-

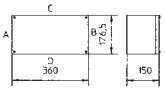


8125/.071



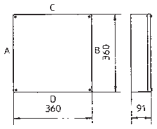
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	3	8	2	4
3/4”	3	6	2	4
1”	2	5	-	-
1-1/4”	2	4	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8125/.073



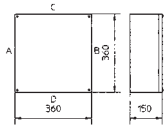
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	6	16	4	10
3/4”	5	12	4	8
1”	4	10	2	4
1-1/4”	3	7	1	4
1-1/2”	2	5	1	3
2”	1	4	1	2
2-1/2”	1	3	1	2
3”	1	2	-	-

8125/.081

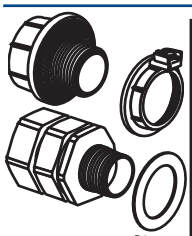


Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	8	8	4	4
3/4”	6	6	4	4
1”	5	5	-	-
1-1/4”	4	4	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

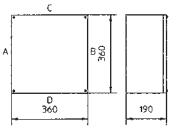
8125/.083



Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	16	16	10	10
3/4”	12	12	8	8
1”	10	10	4	4
1-1/4”	7	7	4	4
1-1/2”	5	5	3	3
2”	4	4	2	2
2-1/2”	3	3	2	2
3”	2	2	-	-

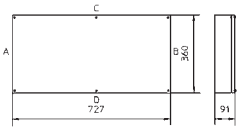


8125/.085



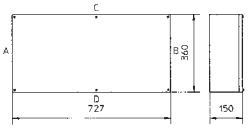
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	23	23	10	10
3/4”	17	17	8	8
1”	12	12	4	4
1-1/4”	9	9	4	4
1-1/2”	8	8	3	3
2”	5	5	2	2
2-1/2”	3	3	2	2
3”	3	3	-	-

8125/.091



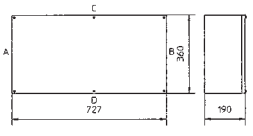
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	8	17	4	8
3/4”	6	14	4	8
1”	5	10	-	-
1-1/4”	4	8	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8125/.093



Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	16	34	10	20
3/4”	12	28	8	16
1”	10	20	4	8
1-1/4”	7	12	4	8
1-1/2”	5	10	3	6
2”	4	8	2	4
2-1/2”	3	6	2	4
3”	2	5	-	-

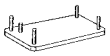
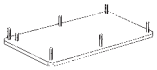
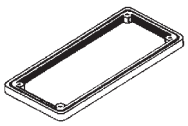
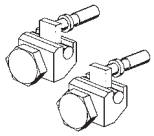
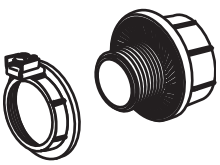
8125/.095



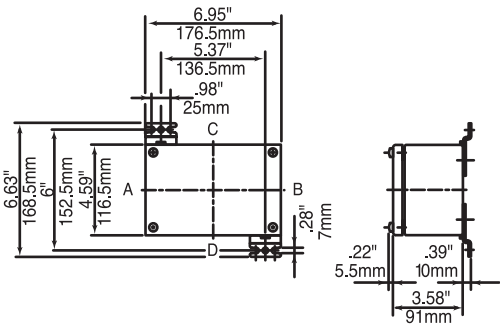
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	23	46	10	20
3/4”	17	33	8	16
1”	12	23	4	8
1-1/4”	9	20	4	8
1-1/2”	8	16	3	6
2”	5	11	2	4
2-1/2”	3	7	2	4
3”	3	6	-	-

8125 Series Terminal Boxes

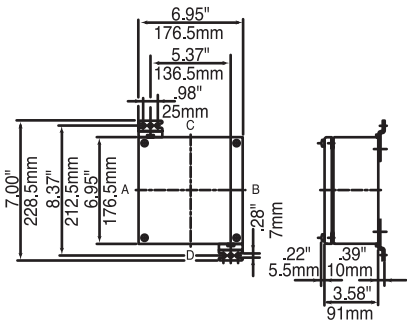
PARTS AND ACCESSORIES

DESIGNATION	ILLUSTRATION	DESCRIPTION	CATALOG NUMBER
Flange Plate Size 1		5" x 2.7" x 0.2" (128 x 68 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•051 — A/B/C/D 8125/•061 — A/B/C/D 8125/•071 — A/B/C/D 8125/•S71 — C/D 8125/•081 — A/B/C/D	**134126** **135051**
Flange Plate Size 2		10.5" x 5" x 0.2" (266 x 128 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•073 — C/D 8125/•083;/•085 — A/B/C/D 8125/•093;/•095 — A/B/C/D	**134245** **135093**
Flange Plate Size 3		5" x 5" x 0.2" (126 x 126 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•073 — A/B 8125/•063 — C/D	**134274** **135125**
Flange Plate Size 4		13.86" x 6.1" x 0.2" (352 x 155 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•085 — A/B/C/D 8125/•095 — A/B/C/D	**134292** **135145**
Coupling Frames		Frame Sizes 0 — 2.68" x 2.68" (68 mm x 68 mm) 1 — 5.04" x 2.68" (128 mm x 68 mm) 2 — 10.47" x 4.96" (266 mm x 126 mm) 3 — 4.96" x 4.96" (126 mm x 126 mm) 4 — 13.86" x 6.1" (352 mm x 155 mm)	**136012** **135974** **136031** **136235** **134289**
Cover Hinges		8125 for retrofitting to enclosure Kit consists of: 2 hinges 3 hinges	**134943** **134949**
Entry Hubs			**8166/11** **8166/11** **(see page J1)**

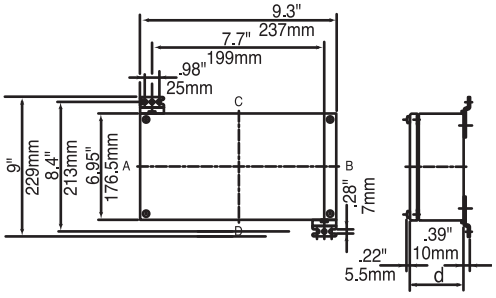
DIMENSIONS



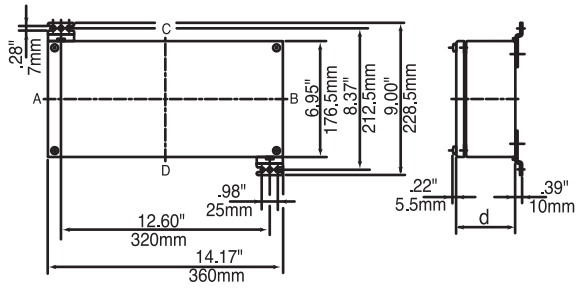
8125/•041



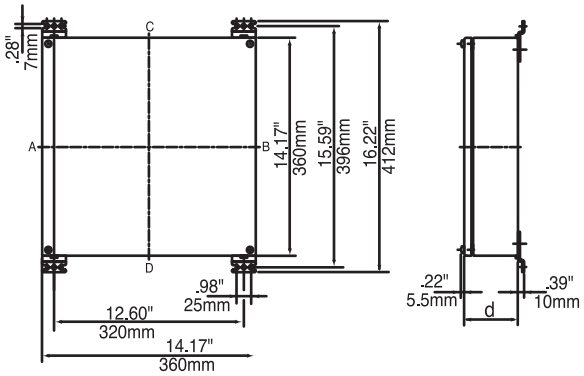
8125/•051



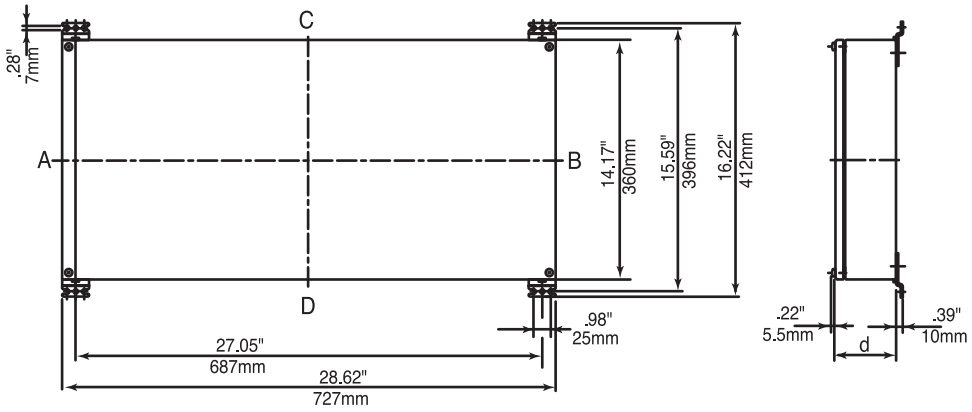
8125/•06•



8125/•07•



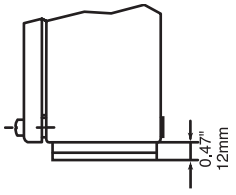
8125/•08•



8125/•09•

Available Enclosure Depth (d)				
Enclosure Sizes	1 3.58" 91mm	3 5.91" 150mm	5 7.48" 190mm	6 9.06" 230mm
8125/•04•	x	-	-	-
8125/•05•	x	-	-	-
8125/•06•	x	x	-	-
8125/•07•	x	x	-	-
8125/•08•	x	x	x	x
8125/•09•	x	x	x	-

Flange option: Add to overall dimensions.



8125 /1 Series Terminal Boxes

Terminal Data

Terminal Type Phoenix	solid/stranded wire range	Max. voltage, V	Max. Amps	Torque lb-in
UT 2.5	26-12	600	20	5.3-7
UT 4	26-10	600	30	5.3-7
UT 6	24-8	600	50	13.3-16
UT 10	20-6	600	65	13.3-16
UT 16	16-4	600	85	22-26.5
UT 35	14-1/0	600	150	28-32.7
Terminal Type Weidmueller				
WDU 2.5	22-12	600	25	4.5-7.1
WDU 4	22-10	600	35	9
WDU 6	20-8	600	45	14.2
WDU 10	16-6	600	65	20.4
WDU 16	14-6	600	70	35
WDU 35	12-2	600	115	51
WDU 70	6-2/0	600	175	87
WDU 120	2-250	600	225	130
WFF 185	8-500	600	380	177
WFF 300	6-600	600	500	354
Terminal Type Wago				
281-691	28-12	600	20	N/A
281-991	28-12	600	20	N/A
282-691	24-10	600	30	N/A
283-691	24-6	600	65	N/A
284-691	24-8	600	50	N/A

Electrical Capacity Tables
(only applicable for Class I, Zone 1)

In Class I, Zone 1 hazardous (classified) areas, heat produced by current in the wire inside an enclosure is a concern. Therefore, the continuous current of each current carrying conductor, the quantity and the size of the conductors inside a terminal enclosure needs to be limited. For each enclosure size, there is one table which shows the permissible values for that particular terminal enclosure.

How to use the electrical capacity tables:

- Determine the enclosure type you are dealing with.
- Reference the applicable electrical capacity table printed on pages C22-C25.

In the white area of the table the permitted numbers of current carrying conductors inside the enclosure are indicated (in and out counts two wires) depending on wire size and continuous current.

In the green shaded area of the table additional conductors/terminals are permitted up to the space limit of the enclosure. (see catalog pages C15 & C16)

In the area with red diagonal lines of the table no conductors/terminals are permitted.

Jumper links and ground wires can be neglected, in calculating the number of wires. These can be added whenever necessary.

EXAMPLE:

Enclosure type: 8125/1061-2DP-10021(see page C15).

The maximum physical quantity of terminals 26-10 AWG for this enclosure is 21.

Reference the table 8125/1061 on page C22, you will find that 18 wires 10 AWG with 30 Amps continuous current is the thermal limit of this enclosure.

Conclusion: To terminate 18 wires 9 terminals are needed, terminating two wires per terminal only. The remaining 12 terminals (21- 9 =12) can be used for low amperage circuits in the green shaded area of the table. Jumper links and ground wires can be neglected.

Mixed circuits of different wire sizes and current values are possible by applying the table values proportionally

i.e. enclosure table 8125/1061.

Wire Size AWG	Current Amps	Number of Current Carrying Conductors		Proportion
		Permissible	Actual	
12	20	24	12	50%
10	30	18	9	50%

100% max.

8146 Series Terminal Boxes

Ready-Term®
8146 Terminal Boxes Features:

- *Pre-Configured with terminals mounted*
- *Made of Fiberglass Reinforced Polyester (FRP)*
- *8 enclosure sizes with different depths*
- *For power and control circuits*
- *For I.S. circuits with blue terminals*
- *Entry hardware optional*
- *Field installation possible*

Ready-Term® 8146 Terminal Boxes

PRE-CONFIGURED FRP TERMINAL BOXES WITH PHOENIX TERMINALS

CLASSIFICATIONS of 8146/1

NEC- Class I, Zones 1 & 2 AEx e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Types 3,4 & 4X; IP66
File No. E177642

CEC-Class I, Zones 1 & 2 Ex e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES 3, 4 & 4X; IP66
File No. LR 99480

II 2G Ex e II T6/T5
II 2G Ex ia/ib IIC T6
PTB 01 ATEX 1016

II 2D Ex A21 IP66, T80˚C, T45˚C

IECEx
Ex e II T6/T5
Ex ia/ib IIC T6
Ex TD A21 IP66 T80˚C
IECEx PTB 06.0046

Max. Voltage 600 AC/DC

Ambient Temperature Range:
8146/1 +55˚C (+131˚F) Max., T5
+40˚C (+104˚F) Max., T6
–20˚C (–4˚F) Min.
8146/2 +75˚C (+167˚F) Max., T6
–20˚C (–4˚F) Min.

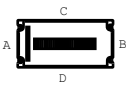
Special Ambient Temperature Range:*
* Consult Factory

FEATURES

The Ready-Term® 8146 Series of terminal boxes are made of impact proof fiberglass reinforced polyester resin. They offer a one-source solution to the time-consuming process of providing ready to install terminal boxes for hazardous locations. With its single part number solution, the Ready-Term® 8146 Series eliminates the inconvenience of purchasing the enclosure and individual parts. This Series is supplied with the indicated quantity of individually numbered terminals for each size of enclosure, fully certified and ready to be installed.

The FRP Ready-Term® 8146 Series are made of specially formulated impact proof glass fiber reinforced polyester which provides superior corrosion resistance while dissipating static electricity.

Ordering Information

TERM. QTY.	WIRE RANGE AWG.	TERM. SIZE mm2	MAX. AMPS. PER TERM.	CATALOG NUMBER FOR POWER & CONTROL CIRCUITS	CATALOG NUMBER GRND. WIRE CONNECTIONS	CATALOG NUMBER FOR INTRINSICALLY SAFE CIRCUITS	CATALOG NUMBER PA. WIRE CONNECTIONS	ENCLOSURE ORIENTATION
9	26-12	2.5	20	8146/1031-3DP-12009	4	8146/2031-3DP-12009	4	
15	26-12	2.5	20	8146/1041-3DP-12015*	8	8146/2041-3DP-12015*	8	
18	26-12	2.5	20	8146/1051-3DP-12018	14	8146/2051-3DP-12018	14	
15	26-10	4	30	8146/1051-3DP-10015	14	8146/2051-3DP-10015	14	
9	20-6	10	65	8146/1051-3DP-06009	12	- -		
24	26-12	2.5	20	8146/1061-3DP-12024	14	8146/2061-3DP-12024	14	
21	26-10	4	30	8146/1061-3DP-10021	14	8146/2061-3DP-10021	14	
9	20-6	10	65	8146/1061-3DP-06009	12	- -		
45	26-12	2.5	20	8146/1071S-3DP-12045	14	8146/2071S-3DP-12045	14	
36	26-10	4	30	8146/1071S-3DP-10036	14	8146/2071S-3DP-10036	14	
24	20-6	10	65	8146/1071S-3DP-06024	12	- -		

To Select Weidmuller Terminals Change P to W
For dimensional data see page C28
*With Phoenix terminals only

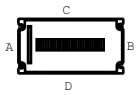
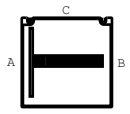
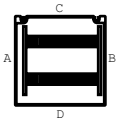
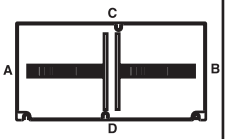
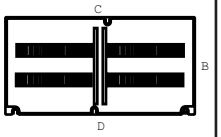
"Hazardous Location" Conduit Hubs

HUB, NPT THREAD SIZE	CATALOG NUMBER
1/2"	8166/11-01-NE
3/4"	8166/11-02-NE
1"	8166/11-03-NE
1 1/4"	8166/11-04-NE
1 1/2"	8166/11-05-NE
2"	8166/11-06-NE
2 1/2"	8166/11-07-NE
3"	8166/11-08-NE

Ready-Term® 8146 Terminal Boxes

PRE-CONFIGURED FRP TERMINAL BOXES WITH PHOENIX TERMINALS

Ordering Information

TERM. QTY.	WIRE RANGE AWG.	TERM. SIZE mm²	MAX. AMPS. PER TERM.	CATALOG NUMBER FOR POWER & CONTROL CIRCUITS	CATALOG NUMBER GRND. WIRE CONNECTIONS	CATALOG NUMBER FOR INTRINSICALLY SAFE CIRCUITS	CATALOG NUMBER PA WIRE CONNECTIONS	ENCLOSURE ORIENTATION
45	26-12	2.5	20	8146/1073S-3DP-12045	14	8146/2073S-3DP-12045	14	
36	26-10	4	30	8146/1073S-3DP-10036	14	8146/2073S-3DP-10036	14	
24	20-6	10	65	8146/1073S-3DP-06024	12	-	-	
18	16-4	16	85	8146/1073S-3DP-04018	6	-	-	
12	14-1/0	35	150	8146/1073S-3DP-1/012	6	-	-	
45	26-12	2.5	20	8146/1083-3DP-12045	36	8146/2083-3DP-12045	36	
36	26-10	4	30	8146/1083-3DP-10036	36	8146/2083-3DP-10036	36	
24	20-6	10	65	8146/1083-3DP-06024	24	-	-	
18	16-4	16	85	8146/1083-3DP-04018	6	-	-	
12	14-1/0	35	150	8146/1083-3DP-1/012	6	-	-	
90	26-12	2.5	20	8146/1083-3DP-12090	72	8146/2083-3DP-12090	72	
72	26-10	4	30	8146/1083-3DP-10072	72	8146/2083-3DP-10072	72	
48	20-6	10	65	8146/1083-3DP-06048	48	-	-	
90	26-12	2.5	20	8146/1093-3DP-12090	72	8146/2093-3DP-12090	72	
72	26-10	4	30	8146/1093-3DP-10072	72	8146/2093-3DP-10072	72	
48	20-6	10	65	8146/1093-3DP-06048	48	-	-	
36	16-4	16	85	8146/1093-3DP-04036	12	-	-	
24	14-1/0	35	150	8146/1093-3DP-1/024	12	-	-	
180	26-12	2.5	20	8146/1093-3DP-12180	72	8146/2093-3DP-12180	72	
144	26-10	4	30	8146/1093-3DP-10144	72	8146/2093-3DP-10144	72	
96	20-6	10	65	8146/1093-3DP-06096	48	-	-	

To Select Weidmuller Terminals Change P to W
For dimensional data see page C28

CLASSIFICATIONS of 8146/1

NEC- Class I, Zones 1 & 2 AEx e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Types 3, 4 & 4X; IP66
File No. E177642

CEC- Class I, Zones 1 & 2 Ex e II T6/T5
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES 3, 4 & 4X; IP66
File No. LR 99480

II 2G Ex e II T6/T5
II 2G Ex ia/ib IIC T6
PTB 01 ATEX 1016

II 2D Ex td A21 IP66, T80˚C, T45˚C

IECEx
Ex e II T6/T5
Ex ia/ib IIC T6
Ex TD A21 IP66 T80˚C
IECEx PTB 06.0046

Max. Voltage 600 AC/DC

Ambient Temperature Range:
See Page C27

In addition to the various North Americanapplications, this Series is PTB certified for use in Zones 1 and 2. The design conforms to CENELEC EN/IEC 60 079-7 and many others. Consult factory.

APPLICATION
Typical applications include junction boxes for petrochemical plants, waste treatment facilities, oil refineries and other major industrial plants. As a product with certifications recognized globally, the Ready-Term® 8146 Series is well suited for original equipment manufacturers who market throughout the world.

The 8146/1 Series of terminal boxes is intended for use on circuits designed for power and motor control applications.

The 8146/2 Series is intended for use on circuits which are intrinsically safe. These enclosures are outfitted with blue terminals to provide an indication to field personnel that the circuits are intrinsically safe and should not be confused with non-intrinsically safe circuits.

These enclosures make it necessary for the metal entry hardware to be bonded to the ground system. Use the suitable 8166/11 conduit hubs specified in the hub table on page C26.

Custom enclosures can be configured upon customer request.

The following modifications are available:
- Conduit hubs 8166 (specify)
- Cable glands (specify)
- Close-up plugs (specify)
- Flange plates (specify)
- Screw-type terminals up to 600 MCM
- Cage-clamp Terminals up to 8 AWG

8146 Series Terminal Boxes

INSTALLATION OF ENTRY HARDWARE

The 8146 Series of FRP terminal boxes are available with factory installed conduit hubs for conduit installation or with cable glands for cable installation.

Approved and suitable for the location entry hardware can also be field installed.

These enclosures make it necessary for the metal cable glands or conduit hubs to be bonded to the ground system. This can be accomplished by installing them to a threaded brass back plate as shown with Method 1 (shown on the upper half of this page), or with grounding nuts, according to Method 2 (shown on the lower half of this page).

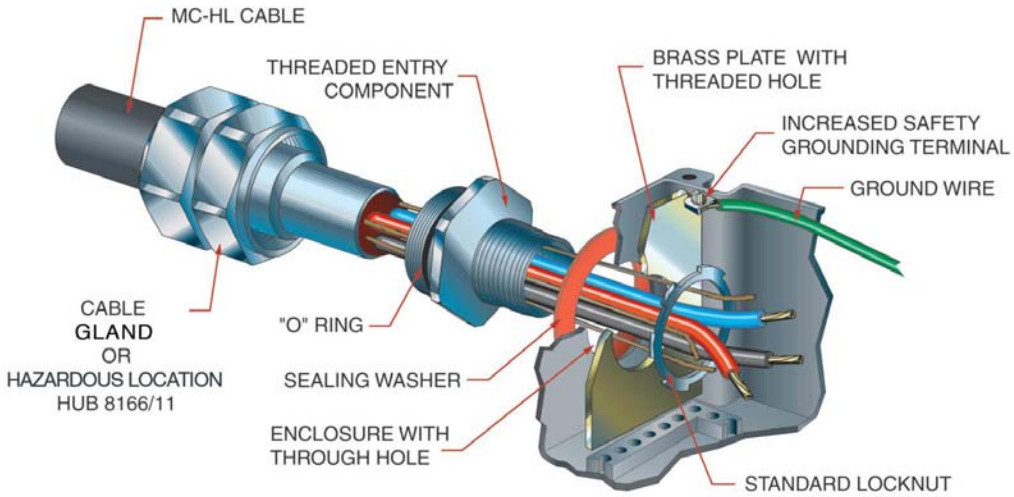
For cable glands see section J.

Table for max. numbers of entry openings either installed with conduit hubs 8166/11 or cable glands (see page C30) .

CAUTION:
The max. possible number of entries which can be installed on the sides of the enclosures depends on the number of terminal columns installed. With horizontally installed columns, there are no side entries possible or only limited, depending on enclosure size. With vertically installed columns there are no bottom or top entries possible, or only limited, depending on enclosure size.

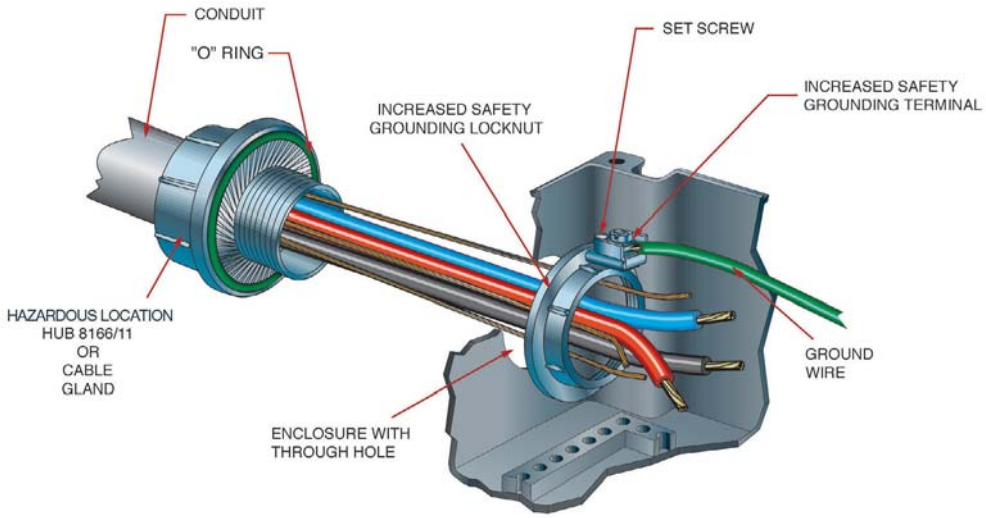
For Class I Zone 1 installation also non-armoured cable type TC-ER-HL is acceptable. For details see NEC, NFPA 10 2014, Article 505.15 (B) (1) (i).

Method 1: Installation using a hole 'through the enclosure' with a brass back plate (see page C31) with a threaded opening and "increased safety" ground terminal.



Brass Plate(s) must be connected to internal grounding system using jumper wires.

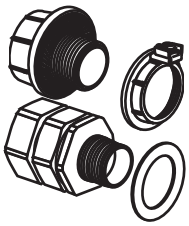
Method 2: Installation using a hole 'through the enclosure' with an "increased safety" grounding locknut instead of a brass back plate.



These locknuts must be bonded between each other and to the grounding system using a jumper wire.

8146 Series Terminal Boxes

INSTALLATION OF 8166/11 CONDUIT HUBS OR CABLE GLANDS



8146/.031 | 8146/.041

Size	w/o flanges A/B	w/o flanges C/D	w/o flanges A/B	w/o flanges C/D
1/2”	1	1	1	2
3/4”	1	1	1	2
1”	-	1	1	1
1-1/4”	-	-	1	1
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8146/.051/.052

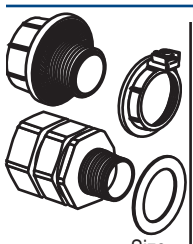
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	2	3	-	2
3/4”	1	2	-	2
1”	1	2	-	1
1-1/4”	1	1	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8146/.061/.062

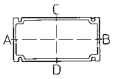
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	3	4	2	2
3/4”	2	3	2	2
1”	2	2	1	1
1-1/4”	1	2	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

Table for max. numbers of entry openings either installed with conduit hubs 8166/11 or cable glands (see section K).

CAUTION:
The max. possible number of entries which can be installed on the sides of the enclosures depends on the number of terminal columns installed. With horizontally installed columns, there are no side entries possible or only limited, depending on enclosure size. With vertically installed columns there are no bottom or top entries possible, or only limited, depending on enclosure size.

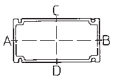


8146/.071/.072



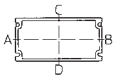
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	3	6	2	4
3/4”	2	5	2	4
1”	2	4	1	2
1-1/4”	1	3	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8146/.073/.075



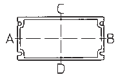
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	6	12	4	11
3/4”	5	9	4	9
1”	4	8	2	4
1-1/4”	2	5	1	4
1-1/2”	2	4	1	3
2”	1	3	1	2
2-1/2”	1	2	1	2
3”	1	2	-	-

8146/.S71

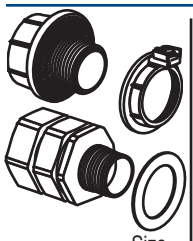


Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	2	7	-	4
3/4”	1	6	-	4
1”	1	4	-	2
1-1/4”	1	4	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

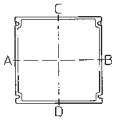
8146/.S73



Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	5	14	-	11
3/4”	3	12	-	9
1”	2	8	-	4
1-1/4”	1	5	-	4
1-1/2”	1	4	-	3
2”	1	3	-	2
2-1/2”	-	3	-	2
3”	-	2	-	-

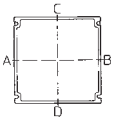


8146/.081/.082



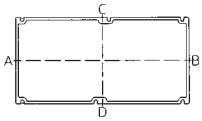
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	6	7	4	4
3/4”	5	6	4	4
1”	4	4	2	2
1-1/4”	3	4	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

8146/.083/.085/.086



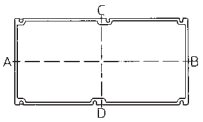
Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	12	14	11	11
3/4”	9	12	9	9
1”	8	8	4	4
1-1/4”	5	5	4	4
1-1/2”	4	4	3	3
2”	3	3	2	2
2-1/2”	2	3	2	2
3”	2	2	-	-

8146/.091/.092



Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	7	12	4	8
3/4”	6	10	4	8
1”	4	8	2	4
1-1/4”	4	7	-	-
1-1/2”	-	-	-	-
2”	-	-	-	-
2-1/2”	-	-	-	-
3”	-	-	-	-

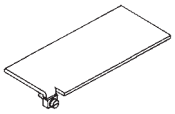
8146/.093/.095

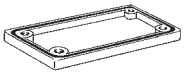
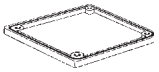
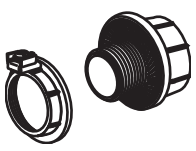


Size	w/o flanges A/B	w/o flanges C/D	with flanges A/B	with flanges C/D
1/2”	14	28	11	22
3/4”	12	19	9	18
1”	8	16	4	8
1-1/4”	5	11	4	8
1-1/2”	4	7	3	6
2”	3	6	2	4
2-1/2”	3	4	2	4
3”	2	4	-	-

8146 Series Terminal Boxes

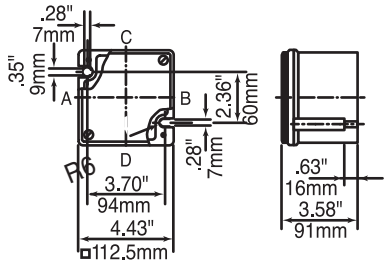
PARTS AND ACCESSORIES

ILLUSTRATION/DESCRIPTION		CATALOG NUMBER
Brass Plates for Flange Plates	 To bond metal cable glands for 8146 Flange Size 1 2 3	 **136201** **136568** **136726**
Brass Plates for Enclosures without Flange Plates	Side 8146/•03• C/D 8146/•04• A/B C/D 8146/•05• A/B C/D 8146/•06• A/B C/D 8146/•071 A/B C/D 8146/•073 & 8146/•075 A/B C/D 8146/•S71 A/B C/D 8146/•S73 A/B C/D 8146/.081 A/B C/D 8146/•083 & 8146/•085 & A/B C/D 8146/•086 8146/•091 A/B C1/D1 C2/D2 8146/•093 & 8146/•095 A/B C1/D1 C2/D2 Flange-enclosure	 **136395** **136395** **136365** **136240** **136 430** **136430** **136374** **136430** **136451** **136616** **136631** **136240** **136544** **136611** **136626** **136451** **136544** **136621** **136626** **136544** **136201** **136544** **136626** **136621** **136626** 81 460 32 55 0

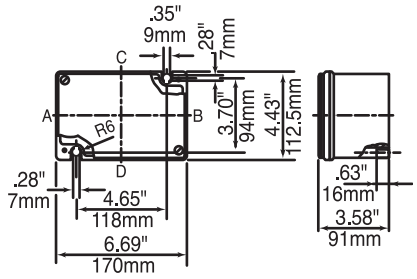
ILLUSTRATION/DESCRIPTION		CATALOG NUMBER
Flange Plates Size 1	**in FRP**  Versions 0.11" 2,8mm thick 0.23" 5,8mm thick For Mounting on: Enclosure Sides 8146/•051/•052 C/D 8146/•061/•062 A/B/C/D 8146/•071/•072 A/B/C/D 8146/•S71 C/D 8146/•081/•082 A/B/C/D 8146/•091/•082 A/B/C/D	 **135978** **136032**
Flange Plates Size 2	 0.11" 2,8mm thick 0.23" 5,8mm thick For Mounting on: Enclosure Sides 8146/•073/•075 C/D 8146/•S73 C/D 8146/•083/•085/•86 A/B/C/D 8146/•093/•095 A/B/C/D	 **136045** **136083**
Flange Plates Size 3	 0.11" 2,8mm thick 0.23" 5,8mm thick For Mounting on: Enclosure Sides 8146/•073/•075 A/B	 **136199** **136237**
Coupling Frames	 Size 0 2.68" x 2.68" (68 mm x 68 mm) Size 1 5.04" x 2.68" (128 mm x 68 mm) Size 2 10.47" x 4.96" (266 mm x 126 mm) Size 3 4.96" x 4 96" (126 mm x 126 mm)	 **136012** **135974** **136031** **136235**
Entry Hubs		**8166/11 (see page J1)**

8146 Series Terminal Boxes

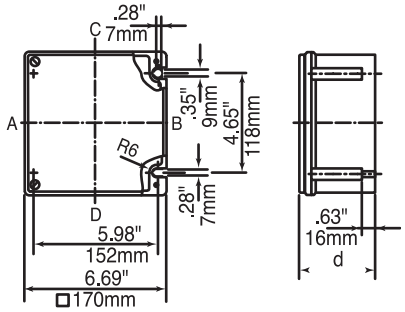
DIMENSIONS



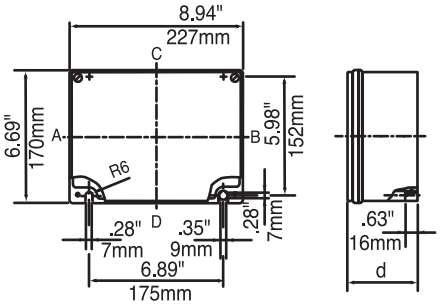
8146/•031



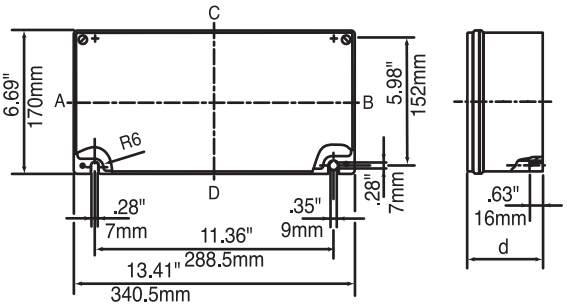
8146/•041



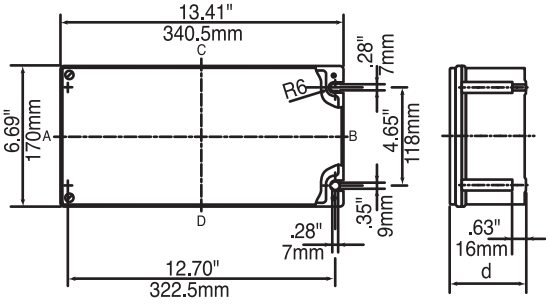
8146/•05•



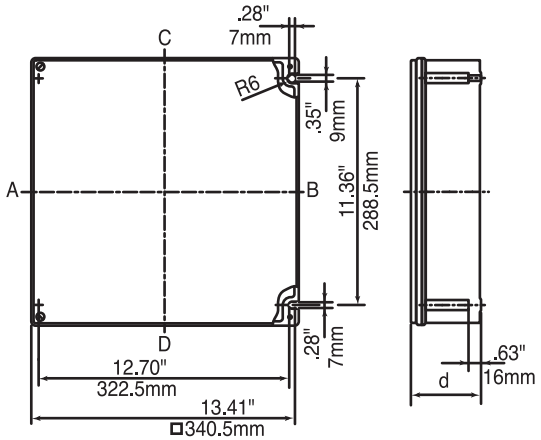
8146/•06•



8146/•07•

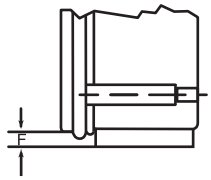


8146/•S7•



8146/•08•

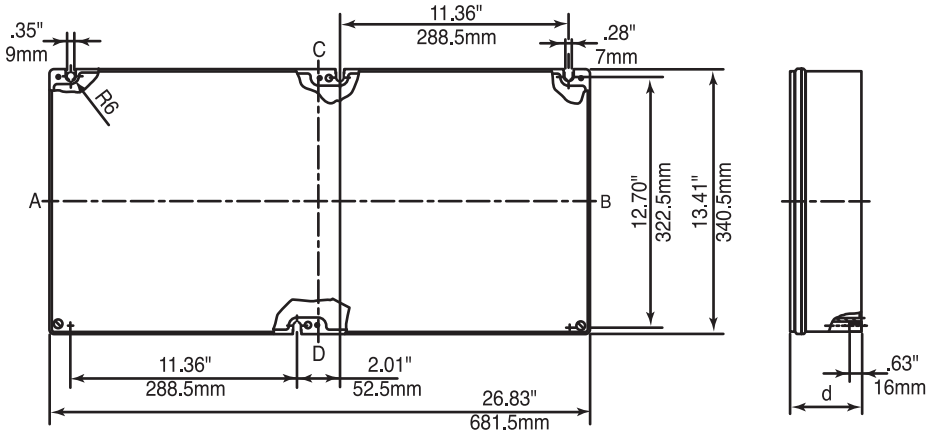
Flange option: Add to overall dimensions.



Flange Thickness	Dimension F
0.11" 2.8mm	0.27" 7mm
0.23" 5.8mm	0.39" 10mm

Available Enclosure Depth (d)						
Enclosure Sizes	1 3.58" 91mm	2 5.16" 131mm	3 5.91" 150mm	4 6.73" 171mm	5 7.48" 190mm	6 9.06" 230mm
8146/•03•	x	-	-	-	-	-
8146/•04•	x	-	-	-	-	-
8146/•05•	x	x	-	-	-	-
8146/•06•	x	x	-	-	-	-
8146/•07•	x	x	x	-	x	-
8146/•S7•	x	-	x	-	-	-
8146/•08•	x	x	x	x	x	x
8146/•09•	x	x	x	-	x	-

X indicates depths available.



8146/•09•

8146 Series Terminal Boxes

Terminal Data

Terminal Type Phoenix	solid/stranded wire range	Max. voltage, V	Max. Amps	Torque lb-in
UT 2.5	26-12	600	20	5.3-7
UT 4	26-10	600	30	5.3-7
UT 6	24-8	600	50	13.3-16
UT 10	20-6	600	65	13.3-16
UT 16	16-4	600	85	22-26.5
UT 35	14-1/0	600	150	28-32.7
Terminal Type Weidmueller				
WDU 2.5	22-12	600	25	4.5-7.1
WDU 4	22-10	600	35	9
WDU 6	20-8	600	45	14.2
WDU 10	16-6	600	65	20.4
WDU 16	14-6	600	70	35
WDU 35	12-2	600	115	51
WDU 70	6-2/0	600	175	87
WDU 120	2-250	600	225	130
WFF 185	8-500	600	380	177
WFF 300	6-600	600	500	354
Terminal Type Wago				
281-691	28-12	600	20	N/A
281-991	28-12	600	20	N/A
282-691	24-10	600	30	N/A
283-691	24-6	600	65	N/A
284-691	24-8	600	50	N/A

Electrical Capacity Tables
(only applicable for Class I, Zone 1)

In Class I, Zone 1 hazardous (classified) areas, heat produced by current in the wire inside an enclosure is a concern. Therefore, the continuous current of each current carrying conductor, the quantity and the size of the conductors inside a terminal enclosure needs to be limited. For each enclosure size, there is one table which shows the permissible values for that particular terminal enclosure.

How to use the electrical capacity tables:

- Determine the enclosure type you are dealing with.
- Reference the applicable electrical capacity table printed on pages C30-C34.

In the white area of the table the permitted numbers of current carrying conductors inside the enclosure are indicated (in and out counts two wires) depending on wire size and continuous current.

In the green shaded area of the table additional conductors/terminals are permitted up to the space limit of the enclosure.
(see pages C23 & C24)

In the area with red diagonal lines no conductors/terminals are permitted.

Jumper links and ground wires can be neglected, in calculating the number of wires. These can be added whenever necessary.

EXAMPLE:

Enclosure type: 8146/1061-3DP-10024 (see page C31).

The maximum physical quantity of terminals 26-10 AWG for this enclosure is 24.

Reference the table 8146/1061 on page C31, you will find that 18 wires 10 AWG with 30 Amps continuous current is the thermal limit of this enclosure.

Conclusion: To terminate 18 wires, 9 terminals are needed, terminating two wires per terminal only. The remaining 12 terminals (21 - 9 = 12) can be used for low amperage circuits in the green shaded area of the table. Jumper links and ground wires can be neglected.

Mixed circuits of different wire sizes and current values are possible by applying the table values proportionally

i.e. enclosure table 8146/1061.

Wire Size AWG	Current Amps	Number of Current Carrying Conductors		Proportion
		Permissible	Actual	
14	15	24	12	50%
12	20	24	12	50%

100% Max.

ELECTRICAL CAPACITY TABLES

Enclosure 8146/1031				
Current Amps	Wire size AWG			
	16	14	12	10
5				
10	27	53		
15		20	39	
20			19	43
25				22
30				14

Enclosure 8146/1041				
Current Amps	Wire size AWG			
	16	14	12	10
5				
10	28	56		
15		21	42	
20			20	46
25				23
30				15

Enclosure 8146/1241				
Current Amps	Wire size AWG			
	16	14	12	10
5				
10	28	57		
15		21	42	
20			21	47
25				24
30				15

Enclosure 8146/1242				
Current Amps	Wire size AWG			
	16	14	12	10
5				
10	35	70		
15		26	52	
20			26	58
25				30
30				18

Enclosure 8146/1051							
Current Amps	Wire size AWG						
	16	14	12	10	8	6	4
5							
10	32	63					
15		24	47				
20			23	52			
25				27			
30				17	37		
35					24		
40					16	43	
45						27	
50						20	
60							30
65							22
70							17

Enclosure 8146/1052							
Current Amps	Wire size AWG						
	16	14	12	10	8	6	4
5							
10	39	78					
15		29	58				
20			28	64			
25				33			
30				20	46		
35					29		
40					20	53	
45						33	
50						24	
60							37
65							27
70							21

8146 Series Terminal Boxes

ELECTRICAL CAPACITY TABLES

Enclosure 8146/1061							
Current Amps	Wire size AWG						
	16	14	12	10	8	6	4
5							
10	34	67					
15		24	50				
20			24	55			
25				28			
30				18	40		
35					25		
40					17	46	
45						29	
50						21	
60							31
65							23
70							18

Enclosure 8146/1062							
Current Amps	Wire size AWG						
	16	14	12	10	8	6	4
5							
10	41	81					
15		31	61				
20			30	67			
25				34			
30				21	48		
35					30		
40					21	56	
45						35	
50						25	
60							38
65							28
70							22

Enclosures 8146/1071 and 8146/1S71										
Current Amps	Wire size AWG									
	16	14	12	10	8	6	4	3	2	1
5										
10	35	70								
15		26	52							
20			25	57						
25				29						
30				18	41					
35					26					
40					18	48				
45						30				
50						22				
60							33			
65							24	61		
70							19	34		
80								20	41	
85								16	29	
90								13	23	
100								9	15	29
110									11	19
115									9	16
125										11

Enclosures 8146/1072 and 8146/1S72										
Current Amps	Wire size AWG									
	16	14	12	10	8	6	4	3	2	1
5										
10	42	83								
15		32	62							
20			31	69						
25				35						
30				22	49					
35					31					
40					21	57				
45						36				
50						26				
60							39			
65							29	73		
70							23	41		
80								24	49	
85								19	35	
90								16	27	
100								10	18	35
110									13	23
115									11	19
125										14

ELECTRICAL CAPACITY TABLES

Enclosure 8146/1073 and 8146/1S73

Current Amps	Wire size AWG											
	16	14	12	10	8	6	4	3	2	1	1/0	2/0
5												
10	45	90										
15		34	67									
20			33	74								
25				38								
30				24	53							
35					34							
40					23	62						
45						39						
50						28						
60							42					
65							31	79				
70							24	44				
80								26	53			
85								21	37			
90								17	29			
100								11	20	37		
110									14	25	83	
115									11	21	44	
125										15	28	
150											13	25
175												12

Enclosures 8146/1075 and 8146/1S75

Current Amps	Wire size AWG/MCM														
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250
5															
10	52	104													
15		39	77												
20			38	85											
25				44											
30				27	61										
35					39										
40					27	71									
45						45									
50						32									
60							49								
65							36	91							
70							28	50							
80								30	61						
85								24	43						
90								20	34						
100								13	23	43					
110									16	28	95				
115									13	24	50				
125										17	32				
150											15	28			
175												14	29		
200													15	35	
225														18	35

Enclosure 8146/1081

Current Amps	Wire size AWG										
	16	14	12	10	8	6	4	3	2	1	1/0
5											
10	48	94									
15		36	70								
20			35	77							
25				40							
30				25	56						
35					35						
40					24	65					
45						40					
50						29					
60							44				
65							33	82			
70							26	46			
80								27	56		
85								22	39		
90								18	31		
100								12	21	39	
110									14	26	87
115									12	22	46
125										16	29
150											13

Enclosure 8146/1082

Current Amps	Wire size AWG										
	16	14	12	10	8	6	4	3	2	1	1/0
5											
10	55	109									
15		41	81								
20			40	89							
25				46							
30				29	64						
35					41						
40					28	75					
45						47					
50						34					
60							51				
65							38	95			
70							30	53			
80								31	64		
85								25	45		
90								21	36		
100								14	24	45	
110									17	30	100
115									14	25	53
125										18	33
150											15

8146 Series Terminal Boxes

ELECTRICAL CAPACITY TABLES

Enclosure 8146/1083

Current Amps	Wire size AWG/MCM														
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250
5															
10	58	115													
15		44	86												
20			42	95											
25				49											
30				31	68										
35					43										
40					30	79									
45						50									
50						36									
60							54								
65							40	101							
70							32	56							
80								33	68						
85								27	48						
90								22	38						
100								14	26	48					
110									18	32	106				
115									15	27	56				
125										19	36				
150											16	32			
175												16	33		
200													17	39	
225														20	39

Enclosures 8146/1084

Current Amps	Wire size AWG/MCM														
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250
5															
10	62	123													
15		47	92												
20			45	101											
25				52											
30				33	73										
35					46										
40					32	85									
45						53									
50						38									
60							58								
65							43	107							
70							34	60							
80								35	73						
85								29	51						
90								23	40						
100								15	27	51					
110									19	34	113				
115									16	28	60				
125										20	38				
150											18	34			
175												17	35		
200													18	41	
225														22	42

Enclosure 8146/1085

Current Amps	Wire size AWG/MCM														
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250
5															
10	66	130													
15		49	97												
20			48	107											
25				55											
30				34	77										
35					49										
40					34	89									
45						56									
50						40									
60							61								
65							45	113							
70							35	63							
80								37	77						
85								30	54						
90								25	43						
100								16	29	54					
110									20	36	120				
115									17	30	63				
125										22	40				
150											19	36			
175												18	37		
200													19	43	
225														23	44

Enclosure 8146/1086

Current Amps	Wire size AWG/MCM														
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250
5															
10	73	144													
15		55	108												
20			53	119											
25				61											
30				38	86										
35					54										
40					37	99									
45						62									
50						45									
60							68								
65							51	126							
70							39	70							
80								42	85						
85								34	60						
90								28	47						
100								18	32	60					
110									22	40	133				
115									19	33	70				
125										24	45				
150											21	40			
175												20	41		
200													22	48	
225														25	49

Enclosure 8146/1091

Current Amps	Wire size AWG										
	16	14	12	10	8	6	4	3	2	1	1/0
5											
10	55	109									
15		41	81								
20			40	90							
25				46							
30				29	64						
35					41						
40					28	75					
45						47					
50						34					
60							51				
65							38	95			
70							30	53			
80								31	64		
85								25	45		
90								21	36		
100								14	24	45	
110									17	30	100
115									14	25	53
125										18	33
150											15

Enclosure 8146/1092

Current Amps	Wire size AWG										
	16	14	12	10	8	6	4	3	2	1	1/0
5											
10	62	122									
15		46	91								
20			45	101							
25				52							
30				32	73						
35					46						
40					32	84					
45						53					
50						38					
60							58				
65							43	107			
70							33	60			
80								35	72		
85								29	51		
90								23	40		
100								15	27	51	
110									19	34	113
115									16	28	60
125										20	38
150											17

8146 Series Terminal Boxes

ELECTRICAL CAPACITY TABLES

Enclosure 8146/1093

Current Amps	Wire size AWG/MCM																		
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250	300	400	500	600
5																			
10	65	129																	
15		49	96																
20			47	106															
25				55															
30				34	77														
35					48														
40					33	89													
45						56													
50						40													
60							61												
65							45	113											
70							35	63											
80								37	76										
85								30	54										
90								25	42										
100								16	29	54									
110									20	35	119								
115									17	30	63								
125										21	40								
150											18	36							
175												18	36						
200													19	43					
225														23	44				
250															23	58			
300																17			
350																	21		
380																		36	
450																			26

Enclosure 8146/1095

Current Amps	Wire size AWG/MCM																		
	16	14	12	10	8	6	4	3	2	1	1/0	2/0	3/0	4/0	250	300	400	500	600
5																			
10	72	143																	
15		54	106																
20			53	118															
25				61															
30				38	85														
35					54														
40					37	98													
45						61													
50						45													
60							67												
65							50	125											
70							39	69											
80								41	84										
85								33	60										
90								27	47										
100								18	32	59									
110									22	39	131								
115									18	33	69								
125										24	44								
150											20	39							
175												20	40						
200													21	48					
225														25	48				
250															26	64			
300																19			
350																	23		
380																		40	
400																		27	
450																			29

Notes

Series Features:

- *Color coding and pin configuration makes it physically impossible to mate plugs and receptacles of different voltages and current ratings (per IEC 60 309-2).*
- *Interlocked switch mechanism prevents accidental removal of plug from receptacle under load.*
- *Horsepower rated disconnect switch*
- *20A, 30A, 63A and 125A models.*

SolConeX Series

20A & 30A HAZARDOUS/CORROSIVE DUTY

CLASSIFICATIONS

FM APPROVED File No. OR6A2. AX

NEC- Class I, Zones 1 & 2 AEx de IIC T*
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

File No. 1729614

CEC- Class I, Zones 1 & 2 Ex de IIC T*
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

*Ambient Temperature Range and T Rating:
8570/2 +55˚C (+131˚F) Max., T6
–50˚C (–58˚F) Min.

8571/2 +55˚C (+131˚F) Max., T5
+40˚C (+104˚F) Max., T6
–50˚C (–58˚F) Min.

Zones 1, 2, 21 & 22
8570: II 2 G Ex de IIC T6
II 2 G Ex de [ia] IIC T6
II 2D Ex tD A21 IP66 T80˚C
PTB 03 ATEX 1227

8571: II 2 G Ex de IIC T6
II 2 G Ex de [ia] IIC T6
II 2D Ex tD A21 IP66 T80˚C
PTB 04 ATEX 1160

IECEx Zones 1, 2, 21 &22
8570: Ex de IIC T6
Ex de [ia] IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 05.0023

8571: Ex de IIC T6
Ex de [ia] IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 05.0024

INTRODUCTION

The 8570 and 8571 Series of plugs and switched receptacles provide unique solutions for electrical connections in hazardous and corrosive environments in the following industries:

Chemical — Pharmaceutical
Petrochemical — Offshore Energy
Refining — Coal Mining

They are made almost entirely from non-metallic material, and are available in 20A and 30A models.

This system makes the mating of plugs and receptacles of different voltages and current ratings physically impossible as required by the National Electrical Code. The plugs and switched receptacles are color coded according to voltage rating and ground pin position.

Each receptacle contains a horsepower rated disconnect switch. The circuit cannot be energized until the plug is inserted and the switch is turned to the ON position. The plug cannot be removed until the switch is turned to the OFF position, thus de-energizing the circuit.The switch handle is padlockable in the ON or OFF position.

Ordering Information

POLE/ WIRE	VOLTAGE (VAC) 50/60Hz	GRND. HOUR POS.	COLOR CODE	CATALOG NUMBER			
				20 AMPERE		30 AMPERE	
				RECEPTACLE	PLUG	RECEPTACLE	PLUG
2 POLE 3 W RE	125	4	Yellow	8570/21-304	8570/22-304	–	–
	250	6	Blue	8570/21-306	8570/22-306	–	–
	480	7	Red	8570/21-307	8570/22-307	–	–
3 POLE 4 WIRE	3 ø 250	9	Blue	8570/21-409	8570/22-409	8571/21-409	8571/22-409
	3 ø 480	7	Red	8570/21-407	8570/22-407	8571/21-407	8571/22-407
	3 ø 600	5	Black	8570/21-405	8570/22-405	8571/21-405	8571/22-405
4 POLE 5 WIRE	3 øY 120/208	9	Blue	8570/21-509	8570/22-509	8571/21-509	8571/22-509
	3 øY 277/480	7	Red	8570/21-507	8570/22-507	8571/21-507	8571/22-507
	3 øY 347/600	5	Black	8570/21-505	8570/22-505	8571/21-505	8571/22-505

Technical Data for Receptacles

DESCRIPTION	20A RECEPTACLE			30A RECEPTACLE	
ENVIRONMENTAL SUITABILITY	Type 3, 4, 4X, IP66				
ENCL. MATERIAL	Polyamide				
WEIGHT	3 lbs.			4 5 bs.	
TERMINAL CAPACITY	2 W res, 16 to 10 AWG			2 W res, 14 to 8 AWG	
TEMPERATURE RATING OF WIRE	Ta < 45˚C use 75˚C w re m n. Ta > 45˚C use 90˚C w re m n.				
BOTTOM ENTRY	3/4" NPT HUB			1" NPT HUB	
AUXILIARY CONTACT RATING	see bottom of page D2				
HORSEPOWER RATINGS	VOLTAGE	3 PHASE	1PHASE	VOLTAGE	3 PHASE
	600 VAC	15 HP	N/A	600 VAC	25 HP
	480 VAC	10 HP	5 HP	480 VAC	20 HP
	250 VAC	5 HP	3 HP	250 VAC	10 HP
	120 VAC	N/A	1.5 HP	—	—
SHORT CIRCUIT CURRENT RATING	10 kA sym RMS				
DIMENSIONS	see pages D4 and D5				

Technical Data for Plugs

DESCRIPTION	20A PLUG	30A PLUG
ENVIRONMENTAL SUITABILITY	Type 3, 4, 4X, IP66	
ENCL. MATERIAL	Polyamide	
WEIGHT	1 lbs.	1.3 lbs.
TERMINAL CAPACITY	1 Wire, 16 to 12 AWG	1 W re, 14 to 8 AWG
TEMPERATURE RATING OF CORD	75˚C or 90˚C	
CORD O.D.	0.3" to 0.8"	0.6" to 1.1"
DIMENSIONS	see pages D4 and D5	

20A & 30A HAZARDOUS/CORROSIVE DUTY

Ordering Information

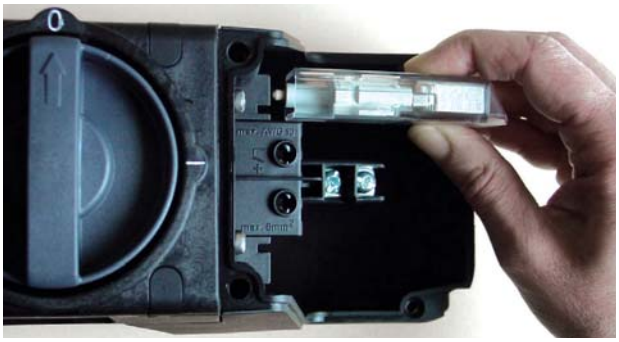
POLE/ WIRE	VOLTAGE (VAC) 50/60Hz	GRND. HOUR POS.	COLOR CODE	CATALOG NUMBER 20 AMPERE FLANGE RECEPT.	CATALOG NUMBER 30 AMPERE FLANGE RECEPT.
2 POLE 3 W RE	125	4	Yellow	8570/25-304	–
	250	6	Blue	8570/25-306	–
	480	7	Red	8570/25-307	–
3 POLE 4 WIRE	3 ø 250	9	Blue	8570/25-409	8571/25-409
	3 ø 480	7	Red	8570/25-407	8571/25-407
	3 ø 600	5	Black	8570/25-405	8571/25-405
4 POLE 5 WIRE	3 øY 120/208	9	Blue	8570/25-509	8571/25-509
	3 øY 277/480	7	Red	8570/25-507	8571/25-507
	3 øY 347/600	5	Black	8570/25-505	8571/25-505

Use plug as spec f ed on page D1

Technical Data for Flange Receptacles

DESCRIPTION	20A RECEPTACLE	30A RECEPTACLE
ENVIRONMENTAL SUITABILITY	Type 3, 4, 4X, IP66 But not higher than enclosure	
ENCL. MATERIAL	Polyam de	
WEIGHT	3 lbs.	4.5 lbs.
TERMINAL CAPACITY	2 W res, 16 to 10 AWG	2 Wires, 14 to 8 AWG
TEMPERATURE RATING OF WIRE	Ta < 45˚C use 75˚C wire Ta > 45˚C use 90˚C wire	
AUXILIARY CONTACT RATING	see below	
HORSEPOWER RATINGS	VOLTAGE 3 PHASE 1PHASE 600 VAC 15 HP N/A 480 VAC 10 HP 5 HP 250 VAC 5 HP 3 HP 120 VAC N/A 1.5 HP	VOLTAGE 3 PHASE 600 VAC 25 HP 480 VAC 20 HP 250 VAC 10 HP — —
SHORT CIRCUIT CURRENT RATING	10 kA sym RMS	
DIMENSIONS	see pages D4 and D5	

Auxiliary Contact Blocks for Receptacles 8570 and 8571



Optional Snap-in Auxiliary Contact Blocks	Catalog Number
Auxiliary Contact Block NC, A600 (600V AC, 10A)	150688
Auxiliary Contact Block NO, A600 (600V AC, 10A)	150690
Auxiliary Contact Block NC for I.S. Circuit	150691
Auxiliary Contact Block NO for I.S. Circuit	150692

STAHL

CLASSIFICATIONS

FM APPROVED File No. OR6A2. AX

NEC- Class I, Zones 1 & 2 AEx de IIC T*
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

SP File No. 1729614

CEC- Class I, Zones 1 & 2 Ex de IIC T*
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

*Ambient Temperature Range and T Rating:
8570/2 +55˚C (+131˚F) Max., T6
–50˚C (–58˚F) Min.
8571/2 +55˚C (+131˚F) Max., T5
+40˚C (+104˚F) Max., T6
–50˚C (–58˚F) Min.

Ex Zones 1, 2, 21 & 22
See page D1

IECEx Zones 1, 2, 21 & 22
8570: Ex de IIC T6
Ex de [ia] IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 05.0023
8571: Ex de IIC T6
Ex de [ia] IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 05.0024

INTRODUCTION

When more than one receptacle is required in one enclosure, the flange receptacles 8570/25 and 8571/25 offer the perfect solution. They are incomplete devices and must be installed in the wall of an enclosure in compliance with the mounting, spacing, casualty and segregation requirements of the ultimate application. R.STAHL offers completely assembled Receptacle Panels in any configuration in either FRP or stainless steel enclosures according to specifications.

ACCESSORIES

The wall and flange receptacles 8570 and 8571 accommodate up to two auxiliary contact blocks. They can be installed by snapping them into either side of the terminal block. They are not synchronized with the main contacts (Trailing - ON; Leading - OFF). There are two standard blocks one NC and one NO. The standard blocks are rated A600 (600VAC, 10A). If only one is fitted the contact may be used at its rating. If two are installed the current is limited to 5A on both contacts. There are also two I.S. blocks for intrinsically safe circuits, one NC and one NO and they both meet the requirements for simple apparatus as defined in Article 504 of NFPA 70. They all have cage clamp terminals for two wires 16 to 14 AWG.

SolConeX Series

63A & 125A HAZARDOUS/CORROSIVE DUTY

Ordering Information

POLE/ WIRE	VOLTAGE (VAC) 50/60Hz	GRND. HOUR POS.	COLOR CODE	CATALOG NUMBER			
				63 AMPERE		125 AMPERE	
				RECEPTACLE	PLUG	RECEPTACLE	PLUG
3 POLE 4 W RE	3 ø 250	9	Blue	8579/41-409	8579/22-409	8581/41-409	8581/22-409
	3 ø 480	7	Red	8579/41-407	8579/22-407	8581/41-407	8581/22-407
	3 ø 600	5	Black	8579/41-405	8579/22-405	8581/41-405	8581/22-405
4 POLE 5 WIRE	3 øY 120/208	9	Blue	8579/41-509	8579/22-509	8581/41-509	8581/22-509
	3 øY 277/480	7	Red	8579/41-507	8579/22-507	8581/41-507	8581/22-507
	3 øY 347/600	5	Black	8579/41-505	8579/22-505	8581/41-505	8581/22-505

Technical Data for Receptacles

DESCRIPTION	63A RECEPTACLE	125A RECEPTACLE
ENVIRONMENTAL SUITABILITY	Type 3, 3R,4X; IP66	
ENCL. MATERIAL	Fiberglass Re nforced Polyester	
WEIGHT	17.2 lbs.	47 2 bs.
DIMENSIONS	see page D5	
TERMINAL CAPACITY	Main Contacts: 6 to 0 AWG Sol d or stranded wires Aux. Contacts: 16 to 12 AWG Sol d or stranded	Main Contacts: 2 to 3/0 AWG Solid or stranded wires Aux. Contacts: 16 to 12 AWG Solid or stranded
TEMP. RATING OF WIRE/CORD	75˚C min.	
BOTTOM ENTRY	1 1/2" NPT HUB	2" NPT HUB
AUXILIARY CONTACT RATING	6A 250VAC	6A 250VAC
HORSEPOWER RATING	VOLTAGE 3 PHASE 600 VAC 60 HP 480 VAC 40 HP 250 VAC 20 HP	VOLTAGE 3 PHASE 600 VAC 125 HP 480 VAC 100 HP 250 VAC 40 HP
BACK-UP FUSE	Receptacle is suitable for use on a circuit capable of delivering not more than 10,000 rms symmetrical amperes, 600V max. when protected by J fuses, 150A Max.	200A Max.
RECEPTACLE MOUNTING BOLTS	THREE 5/16" BOLTS	THREE 3/8" BOLTS

CLASSIFICATIONS

FM APPROVED File No. OR6A2. AX

NEC- Class I, Zones 1 & 2 AEx d e IIC T*
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

CEC- Class I, Zone 1, Ex d e IIC T*
Class I, Division 2, per CEC J18-150
Class II, Division 1, Groups G

*Ambient Temperature Range and T Rating:
8579/4 +40˚C (+104˚F) Max., (T6)
–30˚C (–22˚F) Min.
8581/4 +40˚C (+104˚F) Max., (T5)
–30˚C (–22˚F) Min.

8579/4:
IECEx- PTB 06.0020
Ex d e IIC T**
Ex tD A 21 Ipp66 T60 ˚C, T105˚C

Ex II 2G Ex de IIC T**
II 2D Ex tD A21 T60°C or T105°C
PTB 01 ATEX 1150

8581/4:
IECEx - PTB 06.0034
Ex d e IIC T**
Ex tD A21 IP66 T80 °C or T90°C

Ex II 2G Ex de 11C T**
II 2D Ex tD A21 IP66 T65°C or T95°C
PTB 01 ATEX 1161

**Ambient Temperature Range and T Rating:
8579/4 +55°C (+131°F) Max., T4
+50°C (122°F) Max., T5
+40°C (104°F) Max., T6
-45°C (-49°F) Min.

8581/4 +55°C (+131°F) Max., T5
+40°C (122°F) Max., T6
-45°C (-49°F) Min.,

Each receptacle contains an horsepower rated disconnect switch. The circuit cannot be energized until the plug is inserted and the switch is turned to the ON position. The plug cannot be removed until the switch is turned to the OFF position, thus de-energizing the circuit. The switch handle is padlockable in the ON or OFF position.

VALUE POINTS

The disconnect switch includes an auxiliary contact (late make, early break) as standard. This can be used for connection to a pilot light which can be used to signal power ON or power OFF, at a remote location.

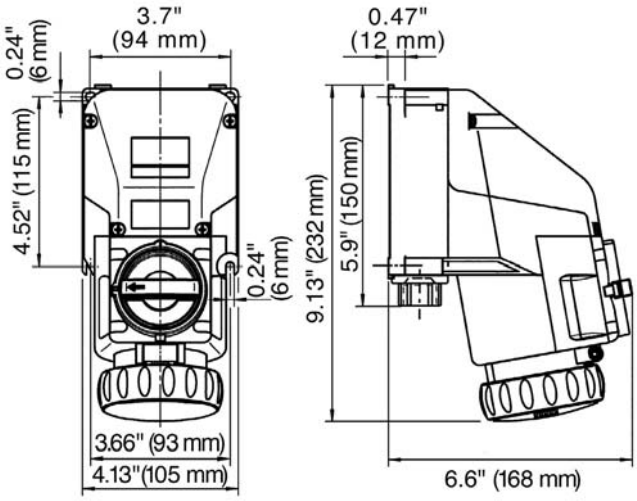
HAZARDOUS LOCATION APPLICATION DATA

When CES plugs and switched receptacles are installed in Class II, Division 1 and 2, Group E or F classified locations, a dust cap must be installed when the plug is not engaged in the receptacle. See the technical data tables for dust caps catalog numbers.

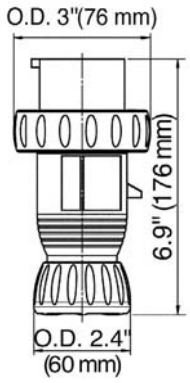
Technical Data for Plugs

DESCRIPTION	63A PLUG	125A PLUG
ENVIRONMENTAL SUITABILITY	4X; IP66	
ENCL. MATERIAL	Polyamide	
WEIGHT	2 bs.	3 lbs.
DIMENSIONS	see page D5	
TERMINAL CAP. (NUMBER X SIZE)	6 AWG	1 AWG
TEMP. RATING OF WIRE/CORD	90˚C	
CORD O.D.	≤ 1.4"	≤ 2.0"
DUST CAPS	CATALOG NUMBER	
4/5 WIRE	153261	153730

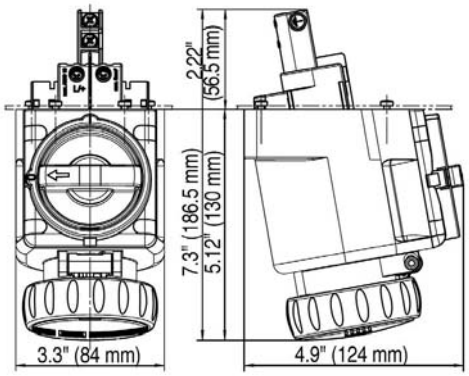
DIMENSIONS



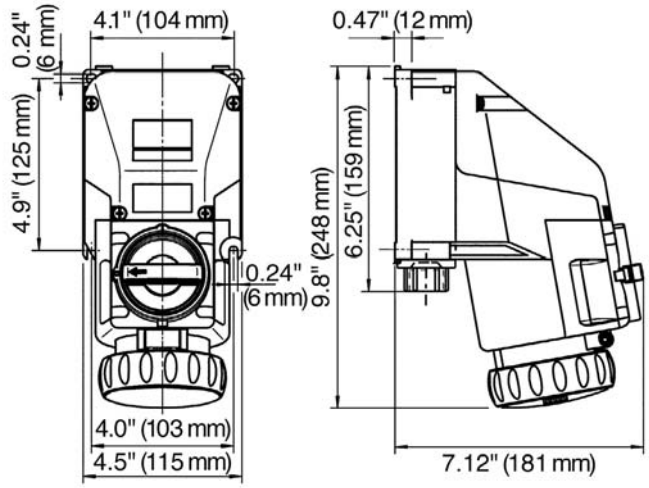
WALL RECEPTACLE 20A
2 POLE - 3 WIRE
8570/21-3••



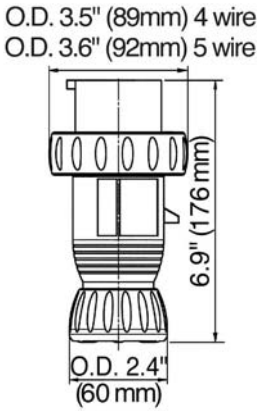
PLUG 20A
2 POLE - 3 WIRE
8570/22-3••



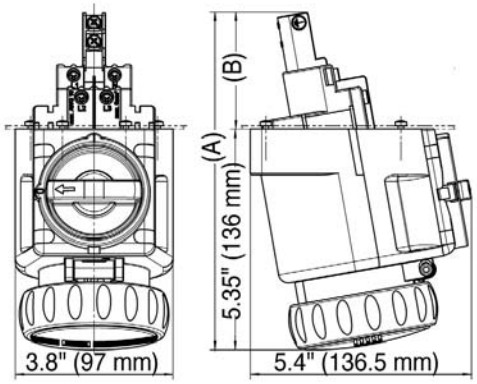
FLANGE RECEPTACLE 20A
2 POLE - 3 WIRE
8570/25-3••



WALL RECEPTACLE 20A
3 POLE - 4 WIRE & 4 POLE 5 WIRE
8570/21-•••



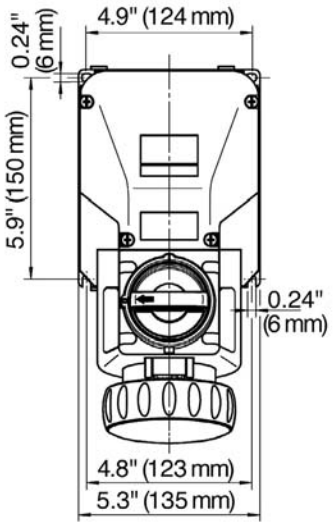
PLUG 20A
3 POLE - 4 WIRE &
4 POLE - 5 WIRE
8570/22-•••

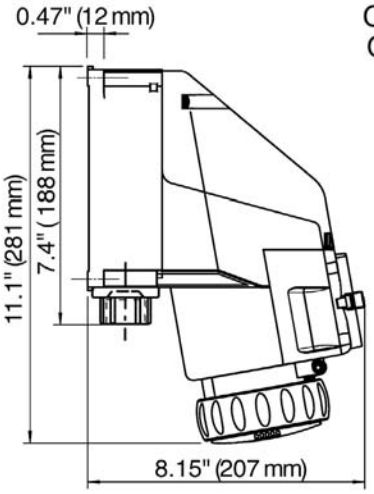


FLANGE RECEPTACLE 20A
3 POLE - 4 WIRE & 4 POLE 5 WIRE
8570/25-•••

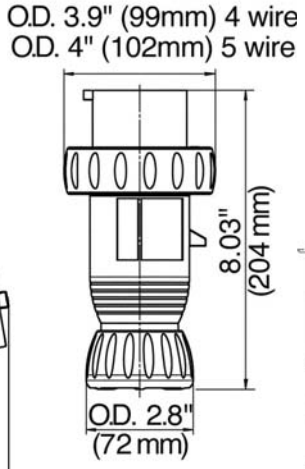
Versions	Dimensions (approx.)	
	A	B
405, 407	8.2" (208 mm)	2.8" (72 mm)
409	7.7" (195.5 mm)	2.3" (59.5 mm)
505, 507	8.2" (208 mm)	2.8" (72 mm)
509	7.5" (190.5 mm)	2.1" (54.5 mm)

DIMENSIONS

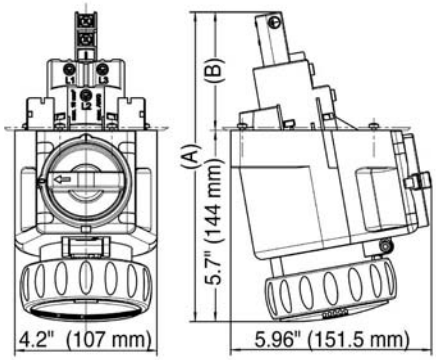




WALL RECEPTACLE 30A
3 POLE - 4 WIRE & 4 POLE - 5 WIRE
8571/21-•••

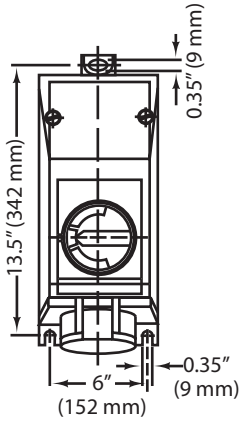


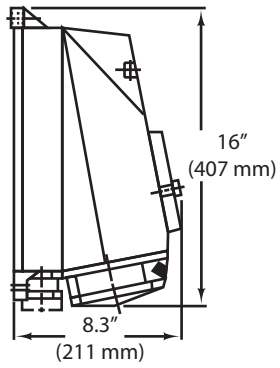
PLUG 30A
3 POLE - 4 WIRE &
4 POLE - 5 WIRE
8571/22-•••

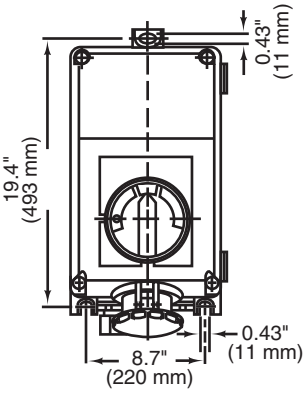


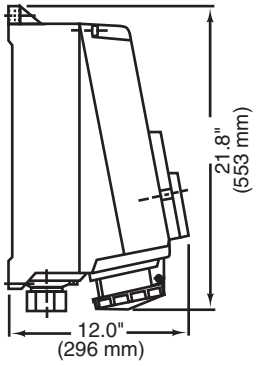
FLANGE RECEPTACLE 30A
3 POLE - 4 WIRE &
4 POLE - 5 WIRE
8571/25-•••

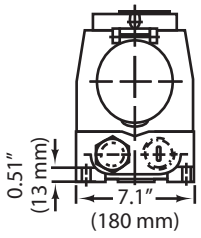
Versions	Dimensions (approx.)	
	A	B
405, 407	9.2" (234 mm)	3.5" (90 mm)
409	8.5" (217 mm)	2.8" (73 mm)
505, 507	9.2" (234 mm)	3.5" (90 mm)
509	8.5" (217 mm)	2.8" (73 mm)

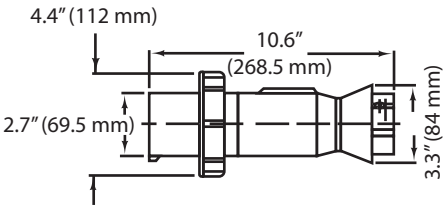




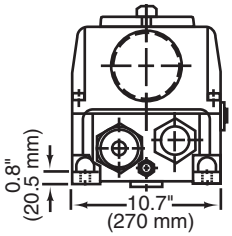


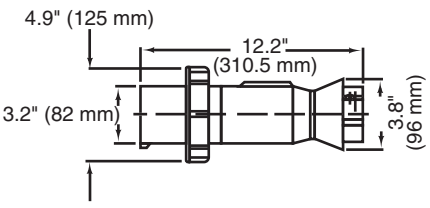






WALL RECEPTACLE & PLUG 63A
3 POLE - 4 WIRE & 4 POLE - 5 WIRE
8579/2•-•••





WALL RECEPTACLE & PLUG 125A
3 POLE - 4 WIRE & 4 POLE - 5 WIRE
8581/2•-•••

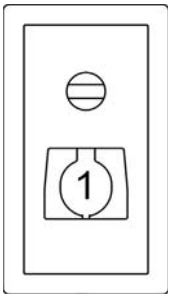
CRP 8125/5 Series

CLEAN ROOM RECEPTACLE PANELS

Single Panel

Duplex Panel

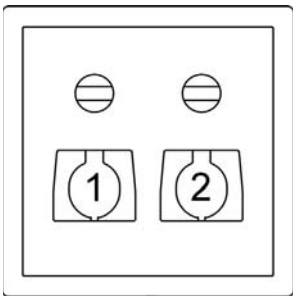
Ordering Information



Single Panel

CRP Single Panel	**8125/5073**
with Receptacle	**8800/23__-0-21-__ __ __**

(choose receptacle from "ordering information" table on page D7 and fill in the red blanks)



Duplex Panel

CRP Duplex Panel	**8125/5083**
Receptacle left	**8800/23__-0-21-__ __ __**
Receptacle right	**8800/23__-0-21-__ __ __**

(choose receptacles from "ordering information" table on page D7 and fill in the red blanks)

In addition, select mating plug(s) from information on page D7

CLASSIFICATIONS
NEC & CEC Suitable for:
Class I, Division 2, Groups A,B,C,D
Class I, Zone 2, Group IIC T6
Enclosure Type 3 & 3R

II 2G Ex de IIC T5/T6, IP65
PTB 01 ATEX 1001

Applications

Designed specifically for hazardous (classified) location clean rooms, such as found in the pharmaceutical industry, where equipment must be easy to clean and free of contaminant holding cavities. Electrical devices should also be flush wall mounted with concealed wiring, to minimize contamination.

Features

Available with single or duplex receptacles, in 16 or 30 amps with a variety of voltages, and pin configurations. See page D7.

Color coding and pin configuration makes it physically impossible to mate plugs and receptacles of different |voltages and current ratings (per IEC 60 309-2)

Flush mounting, smooth contours for easy cleaning.

Enclosure made of 316L stainless steel with concealed gasket.

Interlocked switch mechanism prevents accidental removal of plug from receptacle under load.

The internal disconnect switch includes an auxiliary contact for indicating control circuits.

CRP 8125/5 Series

CLEAN ROOM RECEPTACLE PANELS

Ordering Information

POLE/ WIRE	VOLTAGE (VAC) 50/60Hz	GRND. HOUR POS.	COLOR CODE	CATALOG NUMBER			
				16 AMPERE		30 AMPERE	
				RECEPTACLE	PLUG	RECEPTACLE	PLUG
2 POLE 3 WIRE	125	4	Yellow	8800/231-0-21-304	8570/22-304	–	–
	250	6	Blue	8800/231-0-21-306	8570/22-306	–	–
	480	7	Red	8800/231-0-21-307	8570/22-307	–	–
3 POLE 4 W RE	3 ø 250	9	Blue	8800/231-0-21-409	8570/22-409	8800/232-0-21-409	8571/22-409
	3 ø 480	7	Red	8800/231-0-21-407	8570/22-407	8800/232-0-21-407	8571/22-407
	3 ø 600	5	Black	8800/231-0-21-405	8570/22-405	8800/232-0-21-405	8571/22-405
4 POLE 5 W RE	3 øY 120/208	9	Blue	8800/231-0-21-509	8570/22-509	8800/232-0-21-509	8571/22-509
	3 øY 277/480	7	Red	8800/231-0-21-507	8570/22-507	8800/232-0-21-507	8571/22-507
	3 øY 347/600	5	Black	8800/231-0-21-505	8570/22-505	8800/232-0-21-505	8571/22-505

Technical Data

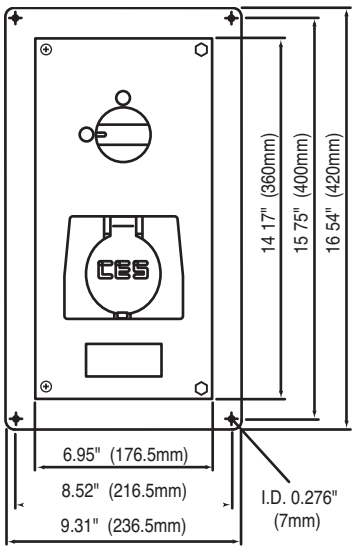
DESCRIPTION	16A RECEPTACLE	30A RECEPTACLE
ENVIRONMENTAL PROTECTION	Type 3, 3S, IP65	
TERMINAL CAPACITY MAX.	1 wire, 10 AWG 4mm²	1 wire, 8 AWG 10mm²
TEMP. RATING OF WIRE/CORD	75˚C m n.	
SHORT CIRCUIT CURRENT RATING	10 kA sym RMS	
FREQUENCY	50/60 Hz.	
MATERIAL Enclosure Cover Gasket Switch Handle Receptacle Flange	Sta nless Steel 316T, polished Polyurethane, formed n place Sta nless Steel 316T Polyester	
COVER FIXING	Cover H nges on the r ght Sta nless Steel	
AMBIENT TEMP.	40˚C (104˚F) Max. -20˚C (-5˚F) Min.	
ENTRY HARDWARE	See Section J	

Technical Data

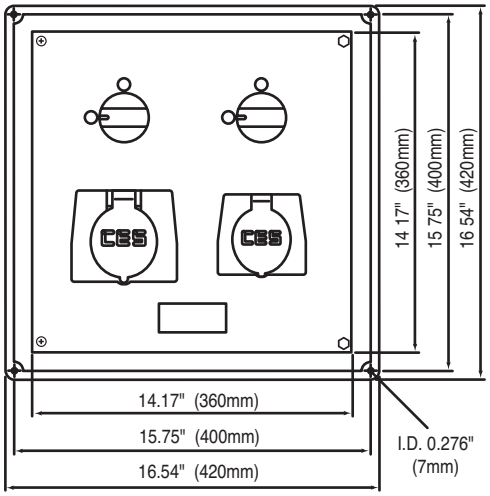
DESCRIPTION	16A PLUG	30A PLUG
ENVIRONMENTAL PROTECTION	Type 4X, IP66,	
TERMINAL CAPACITY MAX.	1 w re, 12 AWG 4mm²	1 w re, 8 AWG 10mm²
TEMP. RATING OF WIRE/CORD	75˚C m n.	
FREQUENCY	50/60 Hz.	
MATERIAL	Polyam de	
AMBIENT TEMP.	40˚C (104˚F) Max. -20˚C (-5˚F) Min.	

For Plug Dimensions see pages D4 and D5.

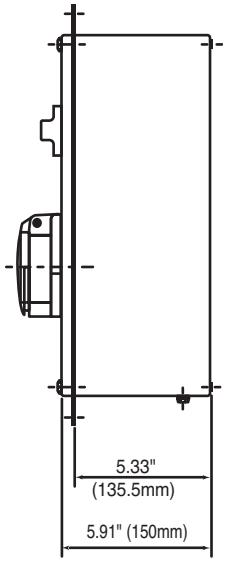
Receptacle Panel Dimensions



Single Receptacle Panel



Duplex Receptacle Panel



Single/Duplex Receptacle Profile

PanSiC Series Panel Mounted Control Devices

PanSiC Series Features:

- *Suitable for hazardous and corrosive locations.*
- *Installation is easy and precise.*
- *Devices fit into a standard 30.5mm, 1.2” knock-out.*
- *Tightening the retainer nut makes installation complete.*
- *Available with cage clamp terminals or leads for easy connection.*

PanSiG Series Panel Mounted Control Devices

8003 PUSHBUTTONS AND CONTROL SWITCHES

CLASSIFICATIONS
NEC & CEC
Class I, Zone 1 & 2, AEx de IIC T6
Class I, Zone 1 & 2, Ex de IIC T6
Class I, Division 2, Groups A,B,C,D

Environmental Protection 4, 4X, IP66, Front, depending on enclosure (see table – "Enclosure Type Rating For Installation")

c UL us LISTED File No. E 182378

8003/1•1 and 8003/1•3
II 2 G Ex de IIC T6
II 2D Ex tD A21 IP66 T80°C
PTB 02 ATEX 1057X

8003/1•2
II 2 G Ex de IIC
PTB 02 ATEX 1080 U

IECEx
8003/1.1 & 8003/1.3
Ex de IIC T6
Ex tD A21 IP66 T80°C
IECEx PTB 06.0066 U

Ambient Temperature Range:
+60°C (+140˚F) Max.
–30°C (–22˚F) Min.

FEATURES

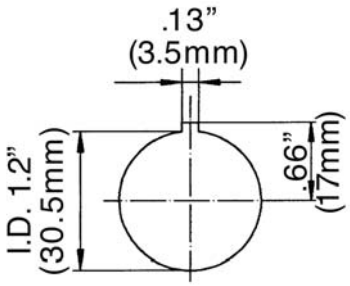
The 8003 pushbutton and control switch series are typically mounted in an electrical panel or enclosure, for custom control applications. They come with different actuators, contact arrangements and connection options as indicated on pages E2, E3 and E4.

Installation is easy and precise. To install, simply snap through a standard 30.5mm (1.20") pushbutton knockout. Hand tightening of the retainer nut makes the installation complete. The pushbuttons are suitable for hazardous (classified) locations in conjunction with the appropriate enclosure type (see above table for "Enclosure Type Rating For Installation").

Technical Data

Enclosure Material	Polyamide
Contact Material	Silver-Nickel
Mechanical/Electrical Life	10^6 Operations
Terminal Wire Capacity	2 x 18 to 2 x 12 AWG
Wire Leads	4 Core, 18 AWG
Contact AC switching capacity	UL A 600 (750VA)
Contacts DC switching capacity	110V Max. 1 Amp. Max.
Lowest Energy	12V AC/DC, 50 mA*

*For lower energy use gold plated contacts, available on request.



Knockout for 8003

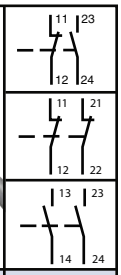
Enclosure Type Rating For Installation

Area Classification Of Use	Pushbutton with Cap 8003/1•1 or with Cap and Lead 8003/1•3	Pushbutton with Cage Clamps 8003/1•2 (without Cap)
Class I Zone 1	Enclosure Type① 1, 2, 3, 3R, 4, 4X, 12, 13	Enclosure AEx e, Ex e
Class I Division 2 Groups A, B, C, D	Enclosure Type 1, 2 ,3, 3R, 4, 4X, 12. 13	

① Terminate in "Increased Safety" Enclosure.

PUSHBUTTONS

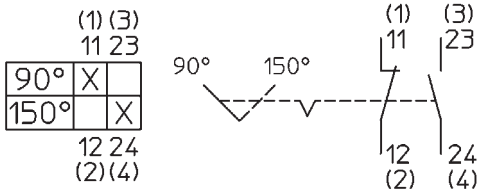
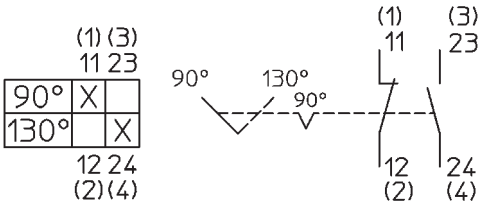
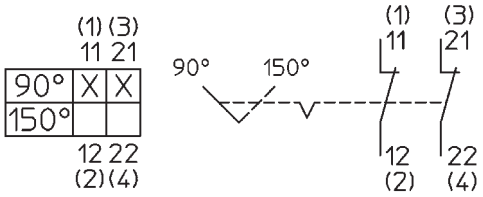
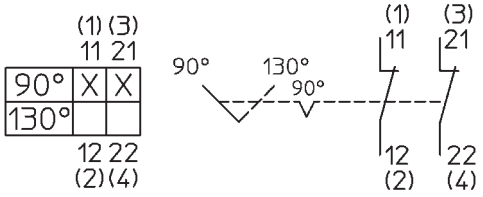
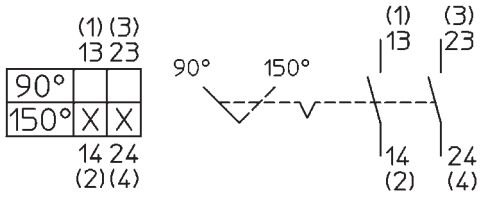
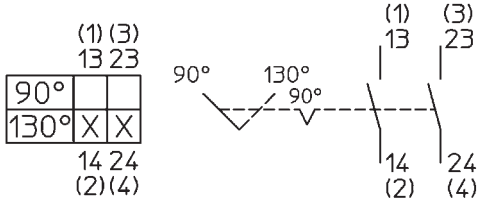
Ordering Information

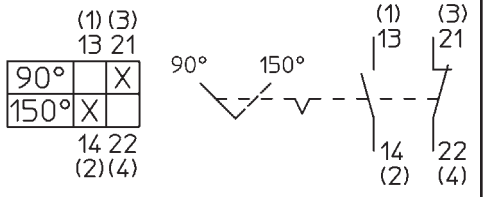
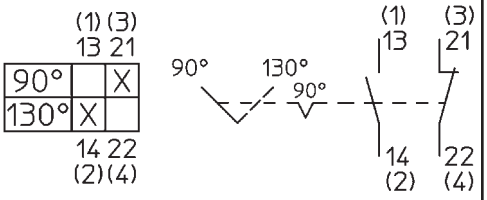
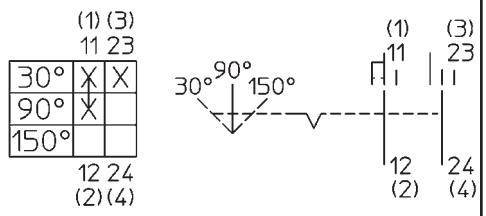
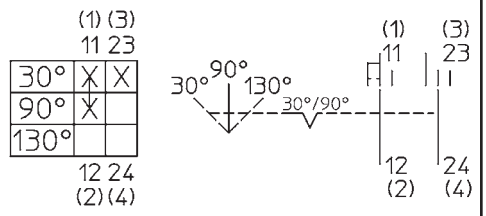
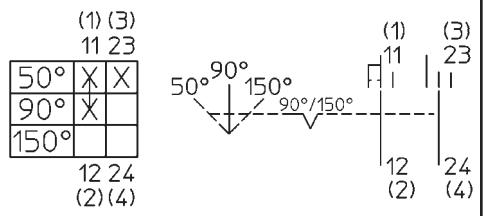
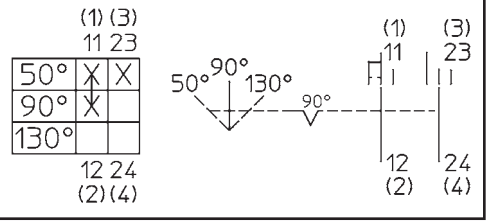
Connection Options / Actuator Options	With Cage Clamps & Cap	With Cage Clamps	With Cap & 20' Lead	
Descriptions	**CATALOG NUMBER**			**Contacts**
Momentary Pushbutton 1.5" (38mm) O.D. With two legend disks START STOP.②	**8003/111-001** **8003/121-001** **8003/131-001**	**8003/112-001** **8003/122-001** **8003/132-001**	**8003/113-001-6** **8003/123-001-6** **8003/133-001-6**	NC/NO NC/NC NO/NO
Emergency Stop Red Mushroom 1.5" (38mm) O.D. Maintained action. Key-to-Release from maintained position.①	**8003/111-009** **8003/121-009**	**8003/112-009** **8003/122-009**	**8003/113-009-6** **8003/123-009-6**	NC/NO NC/NC
Mushroom Black 1.5" (38mm) O.D. Maintained action. Key-to-Release from maintained position.	**8003/111-006** **8003/121-006** **8003/131-006**	**8003/112-006** **8003/122-006** **8003/132-006**	**8003/113-006-6** **8003/123-006-6** **8003/133-006-6**	NC/NO NC/NC NO/NO
Emergency Stop Red Mushroom Pushbutton 1.5" (38mm) O.D. Maintained action. Turn-to-Release.①	**8003/111-010** **8003/121-010**	**8003/112-010** **8003/122-010**	**8003/113-010-6** **8003/123-010-6**	NC/NO NC/NC
Emergency Stop (Jumbo) Red Mushroom Pushbutton 2.16" (55mm) O.D. Maintained action. Turn-to-Release.①	**8003/111-015** **8003/121-015**	**8003/112-015** **8003/122-015**	**8003/113-015-6** **8003/123-015-6**	NC/NO NC/NC
Mushroom Pushbutton Maintained Black with Red Legend Disk 1.5" (38mm) O.D.② Maintained action. Turn-to-Release.	**8003/111-012** **8003/121-012** **8003/131-012**	**8003/112-012** **8003/122-012** **8003/132-012**	**8003/113-012-6** **8003/123-012-6** **8003/133-012-6**	NC/NO NC/NC NO/NO
Mushroom Pushbutton Black 1 .5" (38mm) O.D. Momentary action. With black snap-in legend disk.②	**8003/111-003** **8003/121-003** **8003/131-003**	**8003/112-003** **8003/122-003** **8003/132-003**	**8003/113-003-6** **8003/123-003-6** **8003/133-003-6**	NC/NO NC/NC NO/NO

①*Yellow plastic washer for E-STOP function is enclosed.*
②*Other legend disks must be ordered separately. See Page E7.*

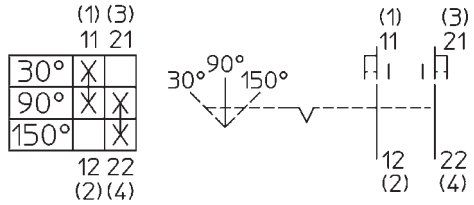
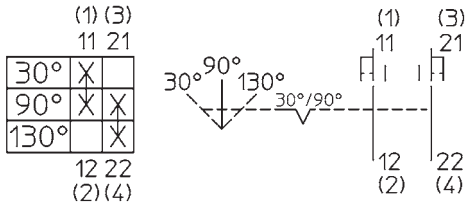
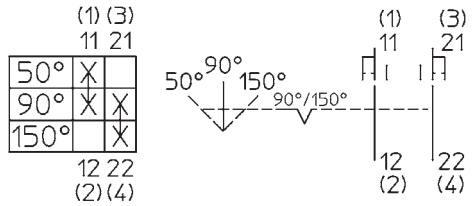
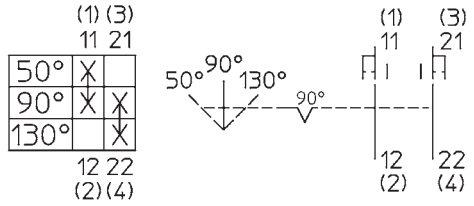
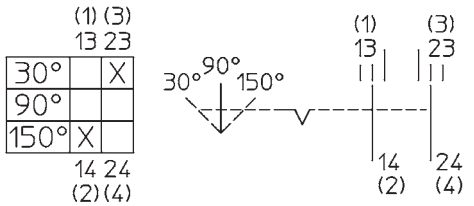
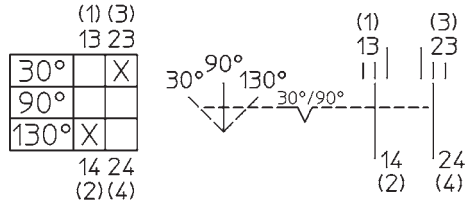
PanSiG Series Panel Mounted Control Devices

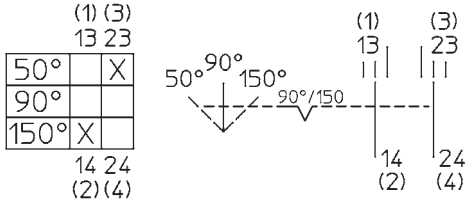
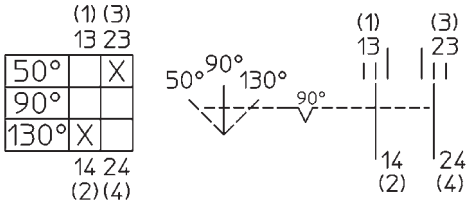
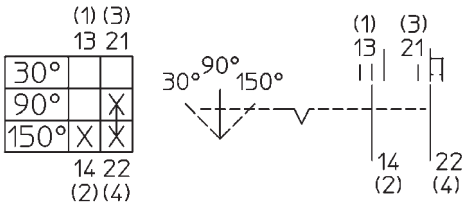
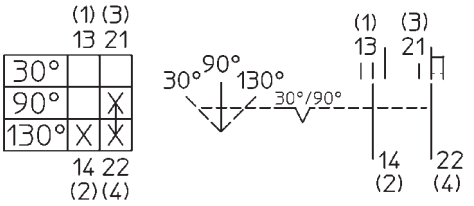
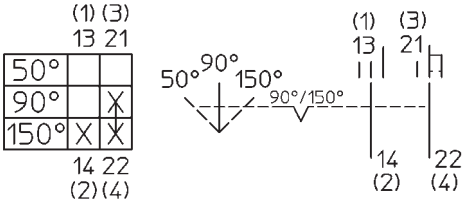
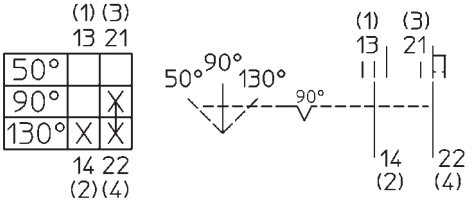
8003 SELECTOR SWITCHES

CATALOG NUMBER	CONTACT ARRANGEMENTS
8003/11□-□□□-2-r maintained maintained	
8003/11□-□□□-2-t maintained spring return	
8003/12□-□□□-2-r maintained maintained	
8003/12□-□□□-2-t maintained spring return	
8003/13□-□□□-2-r maintained maintained	
8003/13□-□□□-2-t maintained spring return	

CATALOG NUMBER	CONTACT ARRANGEMENTS
8003/14□-□□□-2-r maintained maintained	
8003/14□-□□□-2-t maintained spring return	
8003/11□-□□□-3-rr maintained maintained maintained	
8003/11□-□□□-3-rt maintained maintained spring return	
8003/11□-□□□-3-tr spring return maintained maintained	
8003/11□-□□□-3-tt spring return maintained spring return	

8003 SELECTOR SWITCHES

CATALOG NUMBER	CONTACT ARRANGEMENTS
8003/12□-□□□-3-rr maintained maintained maintained	
8003/12□-□□□-3-rt maintained maintained spring return	
8003/12□-□□□-3-tr spring return maintained maintained	
8003/12□-□□□-3-tt spring return maintained spring return	
8003/13□-□□□-3-rr maintained maintained maintained	
8003/13□-□□□-3-rt maintained maintained spring return	

CATALOG NUMBER	CONTACT ARRANGEMENTS
8003/13□-□□□-3-tr spring return maintained maintained	
8003/13□-□□□-3-tt spring return maintained spring return	
8003/14□-□□□-3-rr maintained maintained maintained	
8003/14□-□□□-3-rt maintained maintained spring return	
8003/14□-□□□-3-tr spring return maintained maintained	
8003/14□-□□□-3-tt spring return maintained spring return	

Non-lockable

Pad-lockable

Key Operated

Standard:
Key removable in all positions.
Key type: MS 1

Special:
Non-removable key positions need to be specified.
Other key types than MS 1 available.

PanSiG Series Panel Mounted Control Devices

8013/3 LED PILOT LIGHTS

Technical Data

Material - Enclosure	Polyamide
Material - Bezel/Lens	Polyamide
Mechanical/Electrical Life	10^5 Output Hours
Rated Voltage - Standard	12V to 254V AC or DC 0-60 Hz
Rated Voltage - I. S.	10.8V to 28V AC or DC
Rated Current	14 mA at 24V DC
Rated Power	0.6W
Colors	red, amber, green, blue and white
Wire Leads	2 Core, 18 AWG
Terminal Capacity	2 x 18 to 2 x 12 AWG per terminal
Enclosure Knock-out	30 5 mm or 1.2" I.D.

Intrinsic Safety Ratings Entity Parameters	
V max	28V
I max	150 mA
P max	1W
Li	0
Ci	0

Enclosure Type Rating For Installation

Area Classification of Use	Pilot Light I.S. 8013/32•	Pilot Light with Cap 8013/3•1 or with Cap & Lead 8013/3•3	Pilot Light with Cage Clamps 8013/3•2 (without Cap)
Class I, Div. 1, I.S. Class I, Zone 0, I.S.	Enclosure Types 4, 4X, 12 or 13		
Class I, Zone 1		Enclosure Types[1] 1, 2 ,3, 3R, 4, 4X, 12 or 13	Increased Safety Enclosure
Class I, Division 2 Groups A,B,C & D		Enclosure Types 4, 4X, 12 or 13	

[1]Terminate in "Increased Safety" Enclosure.

Ordering Information

Connection Options / Applications	With Cage Clamps & Cap	With Cage Clamps	With Cap & 20' feet Lead
Descriptions	**CATALOG NUMBER**		
Standard - 12V to 254V AC/DC	**8013/311-al**	**8013/312-al**	**8013/313-al-6**
For I.S. Circu ts 10.8V to 28V AC/DC	**8013/321-al**	**8013/322-al**	**8013/323-al-6**

CLASSIFICATIONS
For types 8013/31•
NEC- Class I, Zone 2, AEx nA IIC T6
Class I, Division 2, Groups A,B,C, & D
Class I, Zone 1, contact factory

File No. E182378

CEC- Class I, Zones 1 & 2, Ex dem IIC T6
Class I, Division 2, Groups A,B,C, & D

II 2G Ex e mb IIC (T6)
II 2D Ex tD A21 IP66 T80°C
8013/311 and 8013/313
PTB 02 ATEX 2131X
8013/312
PTB 02 ATEX 2130U

IECEx
Ex e mb IIC (T6)
Ex tD A21 IP66 T80°C
8013/311 & 8013/313
IECEx PTB 07.0010 X
8013/312
IECEx PTB 07.0012 U

CLASSIFICATIONS
For I. S. versions 8013/32•
NEC- Class I, Zone 0, AEx ia IIB T4
Class I, Zone 1, AEx ia IIC T4
Class I, Division 1, Groups A,B,C, & D
CEC- Class I, Zone 0, Ex ia IIB T4
Class I, Zone 1, Ex ia IIC T4
Class I, Division 1, Groups A,B,C, & D

Environmental Protection 3, 4, 4X; IP66 Front, depending on enclosure (see table – "Enclosure Type Rating For Installation")

Ambient Temperature Range:
+60°C (+140°F) Max.
–30°C (–22°F) Min.

II 2G Ex d mb ia IIC (T6)
8013/321 & 8013/323
PTB 02 ATEX 2131X
8013/322
PTB 02 ATEX 2130U

IECEx
Ex d mb ia IIC (T6)
8013/321 & 8013/323
IECEx PTB 07.0010 X
8013/322
IECEx PTB 07.0012 U

FEATURES:
The 8013/3 Series of Pilot Lights are available for standard – and I.S. application. The Pilot Lights for standard application 8013/31•-al are capable to work on voltages between 12V up to 254V AC/DC. The types 8013/32•-al are for connection with intrinsically safe circuits only and operate safely within the values stated in the above table "Intrinsic Safety Ratings Entity Parameters"·

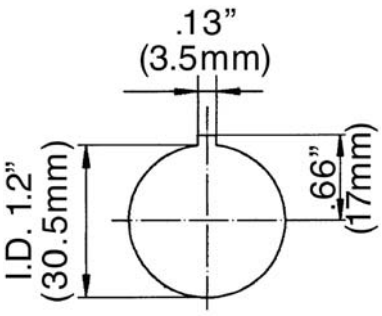
The installation should be in accordance with ANSI/ISA RP 12. 06. 01. Recommended Barrier: 9002/13-252-121-041

8018/3 ILLUMINATED PUSHBUTTONS

Technical Data

ENCLOSURE	
Material - Enclosure	Polyamide
Material - Bezel	Polyamide
Colors	red, amber, green, blue and white
Wire Leads	6 Core, 18 AWG, 20' Length
Enclosure Knock-out	30.5 mm or 1 2" I D.
CONTACTS	
Material	Silver-Nickel
Contact Life	10^6 Operations
Lowest Energy	12V AC/DC, 50 mA*
Contact Switching Capacity	AC – A600 (720VA Max.) DC – 110V Max. 1 Amp Max.
LED PILOT LIGHT	
LED Life	10^5 Output Hours
Rated Voltage	12V to 254V AC/DC 0-60 Hz
Rated Current	14 mA at 24V DC
Rated Power	0.6W

*For lower energy use gold plated contacts, available on request.



Knockout for 8018

Enclosure Type Rating For Installation

Area Classification of Use	Illuminated Pushbutton with Lead
Class I Zone 1	Enclosure Type ① 1, 2, 3, 3R, 4, 4X, 12 or 13
Class I Division 2 Groups A, B, C, & D	Enclosure Type 1, 2 ,3, 3R, 4, 4X, 12 or 13

① Terminate in "Increased Safety" Enclosure.

CLASSIFICATIONS

NEC- Class I, Zone 2, AEx nC IIC T6
Class I, Division 2, Groups A,B,C,D
Class I, Zone 1, contact factory

CEC- Class I, Zones 1 & 2, Ex dm IIC T6
Class I, Division 2, Groups A,B,C,D

File No. E182378

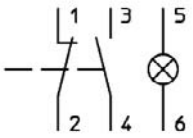
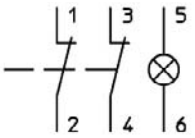
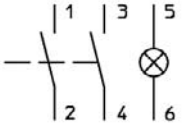
Environmental Protection 3, 4, 4X; IP66 depending on enclosure (see table – "Enclosure Type Rating For Installation")

II 2 D Ex tD A21 IP66 T80°C
PTB 02 ATEX 2129X
IP66 depending on enclosure

Ambient Temperature Range:
+60°C (+140°F) Max.
–30°C (–22°F) Min.

IECEx
Ex d mb IIC T6
Ex tD A21 IP66 T80°C
IECEx PTB 07.0011 X

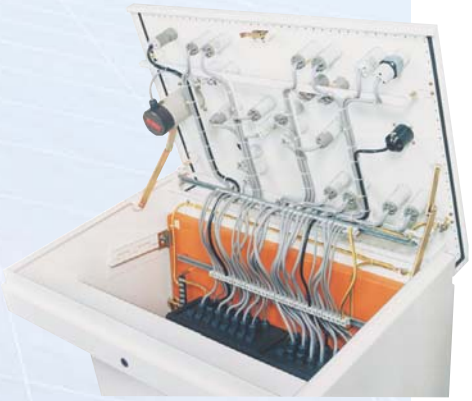
Ordering Information

Description	Wire Connections	CATALOG NUMBER
Illuminated Pushbutton Spring Return 1 NC and 1 NO		**8018/3113-al-6**
Illuminated Pushbutton Spring Return 2 NC		**8018/3123-al-6**
Illuminated Pushbutton Spring Return 2 NO		**8018/3133-al-6**

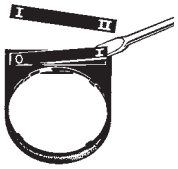
FEATURES:
The illuminated Pushbutton for panel mounting Series 8018/3 combines control and indicating functions. One actuator operates two contacts and simultaneously can indicate their actual operating status by means of an LED. All illuminated Pushbuttons are spring return action and come with a clear bezel and five colored snap-in filter disks, red, amber, green, blue and white. All disks are included in the package for the user to choose from.

PanSiG Series Panel Mounted Control Devices

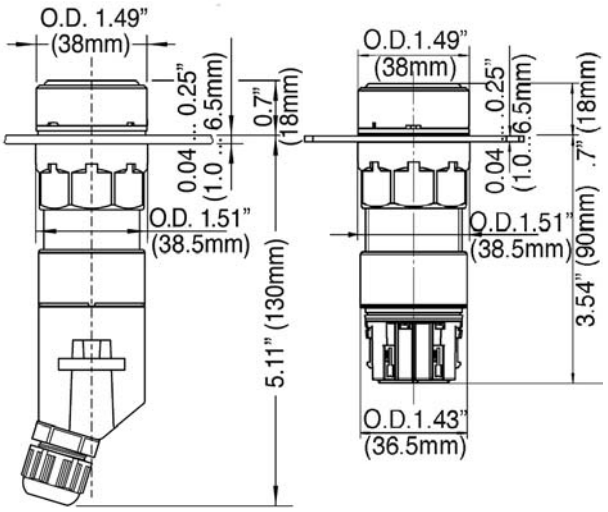
ACCESSORIES AND SPARE PARTS



Ordering Information

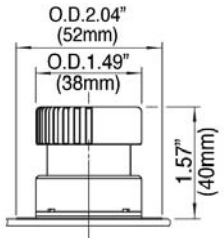
DESIGNATION	ILLUSTRATION	DESCRIPTION	CATALOG NUMBER	
Spare Keys		For all key-operated buttons/ key-operated switches		
		Standard version MS 1	**107109**	
		Special key, specify number	**107110**	
Pushbutton Legend Disks		Blank, Legend Disk Blue	**155911**	
		Blank, Legend Disk Amber	**155914**	
		Blank, Legend Disk Red	**155897**	
		Blank, Legend Disk Green	**155901**	
		Blank, Legend Disk White	**155908**	
		Blank, Legend Disk Black	**155905**	
		Red, Legend Disk “STOP”	**155615**	
		Green, Legend Disc “START”	**155721**	
		Red, Legend Disk “OFF”	**155654**	
		Green, Legend Disk “ON”	**155671**	
		Green, Legend Disk “I”	**155689**	
		Green, Legend Disk “II”	**155706**	
		Red, Legend Disk “O”	**155596**	
		Red, Legend Disk Arrow	**155567**	
		Black, Legend Disk “UP”	**200217**	**“UP”**
		Black, Legend Disk “DOWN”	**200217**	**“DOWN”**
		Black, Legend Disk “RUN”	**200217**	**“RUN”**
		Black, Legend Disk “SLOW”	**200217**	**“SLOW”**
		Black, Legend Disk “FAST”	**200217**	**“FAST”**
		Black, Legend Disk “CLOSE”	**155878**	
		Black, Legend Disk “OPEN”	**155868**	
		Black, Legend Disk “AUTO”	**200217**	**“AUTO”**
		Black, Legend Disk “RIGHT”	**200217**	**“RIGHT”**
		Black, Legend Disk “LEFT”	**200217**	**“LEFT”**
		Black, Legend Disk “HAND”	**200217**	**“HAND”**
		Black, Legend Disk “RESET”	**200217**	**“RESET”**
		Black, Legend Disk “OFF-ON”	**200217**	**“OFF-ON”**
		Black, Legend Disk Arrow	**155749**	
		Black, Legend Disk Arrow	**155761**	
Inserts		HAND 0 AUTO	**155723**	
		OFF • ON	**155708**	
		0/OFF I/ON	**155569**	
		blank 1 line text	**155737**	
		blank 2 lines text	**155875**	
Legend Frames		One-line Legend Frame	**155632**	
		Blank, One-line Insert	**155737**	
		Two-line Legend Frame	**155687**	
		Blank, Two-line Insert	**155875**	
		Three-line Legend Frame	**155844**	
		Blank, Three-line Insert	**155925**	
Actuator		for illuminated pushbutton (spring-return)	**155163**	
Color Filter		Snap-in Color Fi ters		
		white	**155877**	
		red	**155882**	
		amber	**155885**	
		green	**155888**	
		blue	**155891**	
Close-up Plug		To close-up unused mounting holes I.D. 1.2” (30.5mm)	**155329**	

DIMENSIONS

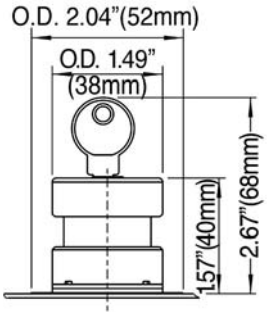


8003/1•1-001 Momentary Pushbutton with Cage Clamps & Cap

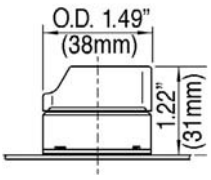
8003/1•2-001 Momentary Pushbutton with Cage Clamps



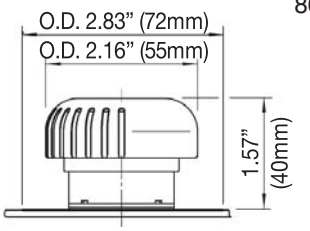
8003/1••-003, -010, -012 Mushroom Buttons
Mushroom E-STOP Button



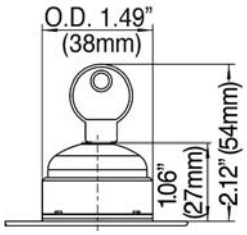
8003/1••-006, Mushroom Black Key Button
8003/1••-009, E-STOP Red Mushroom, Key Button



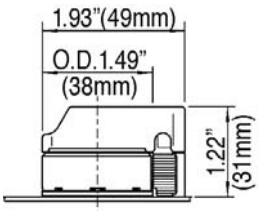
8003/1••-726, Control Switch Handle Non-Lockable



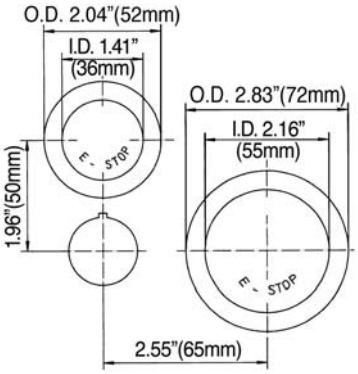
8003/1••-015 E-STOP Red Mushroom Pushbutton



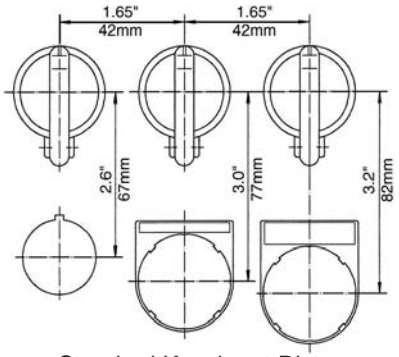
8003/1••-008 Key Operated Switch



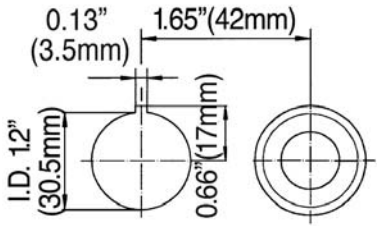
8003/1••-727, Control Switch Handle Pad-Lockable



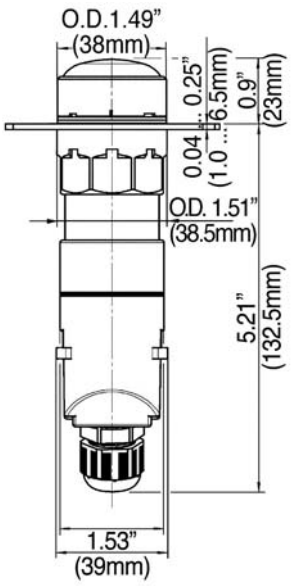
Standard Knock-out Distance for Jumbo E-STOP Button (8003/1••-015 Mushroom Maintained)



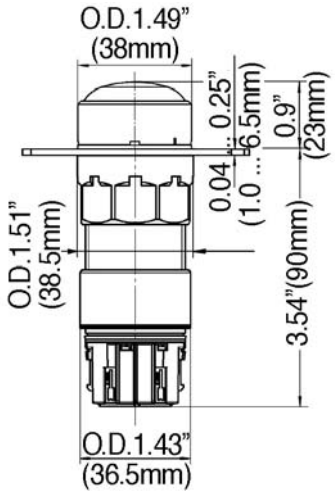
Standard Knock-out Distance with / without Legend Frame



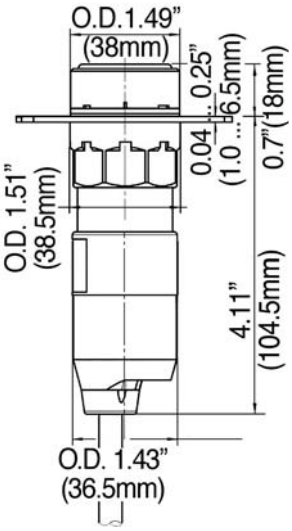
Knock-out Distance for Aligning Several devices with O.D. 1.49"(38mm) in a Panel



8013/3•1 Pilot Light with Cap



8013/3•2 Pilot Light without Cap



8018 Illuminated Pushbutton with Lead

PanSiG Series Panel Mounted Control Devices

8415 LED PILOT LIGHT ASSEMBLY

CLASSIFICATIONS
For Pilot Light 8010/2 and Bezel 8602
NEC- Class I, Zones 1 & 2, AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III

File No. E182378

CEC- Class I, Zones 1 & 2, Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

Certified File No. LR99480

II 2G Ex de IIC
PTB 01 ATEX 1160 U
PTB 01 ATEX 1129 U

CLASSIFICATIONS
For I. S. Pilot Light 8010/3 and Bezel 8602
NEC- Class I, Zone 0, AEx ia/ib IIB T4
Class I, Zone 1, AEx ia/ib IIC T4
Class I, Division 1, Groups A,B,C,D

CEC- Class I, Zone 0, Ex ia/ib IIB T4
Class I, Zone 1, Ex ia/ib IIC T4
Class I, Division 1, Groups A,B,C,D

File Nos. E81680 and E182378

II 2G Ex d ia/ib IIC
PTB 01 ATEX 1160 U
PTB 01 ATEX 1129 U

IECEx
Ex d ia/ib IIC
IECEx PTB 06.0016 U
IECEx PTB 06.0016 U

Ambient Temperature Range:
+55°C (+131°F) Max.
–25°C (–13°F) Min.

Environmental Protection 3, 4, 4X; IP66 front, depending on enclosure (see table – "Enclosure Type Rating For Installation")

FEATURES:
The 8415 Pilot Light assembly consists of an LED/power pack 8010/3, one mounting bracket and one bezel/lens assembly. Five different colors are available: red, green, amber, white and blue.

The 8415 Pilot Light assemblies are available for power circuits – and intrinsically safe circuits. The types for power applications 8415/24 are capable to work on voltages between 12V up to 254V AC/DC.

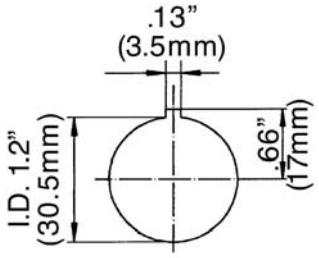
The types 8415/24-50 are for connection with intrinsically safe circuits only, and operate safely within the values stated in the above table "Intrinsic Safety Rating Entity Parameters".

The installation should be in accordance with ANSI/ISA RP 12. 06. 01. and control drawing 80 106 01 31 3.

Recommended Barrier:
9002/13-252-121-041.

Technical Data

Mechanical/Electrical Life	10^5 Output Hours
Rated Voltage - Standard	12V to 254V AC or DC 0-60 Hz
Voltage Tolerance	-10% +6%
Rated Voltage - I. S.	10 8V to 28V AC or DC
Rated Current	15 mA at 24V DC
Rated Power	1W max.
Colors	red, amber, green, blue andwhite
Terminal Capacity	2 x 12 AWG (2 5mm²)
Enclosure Knock-out	30.5 mm or 1.2" I.D.
Enclosure/Lens Material	Polyam de



Knockout for 8415

Intrinsic Safety Ratings Entity Parameters	
V max	28V
I max	150 mA
P max	1W
Li	0
Ci	0

Enclosure Type Rating For Installation

Area Classification of Use	Pilot Light
Class I Zone 1	Enclosure AEx e/Ex e
Class I Div. 1, Zone 0 I.S.	Enclosure Type 1, 2, 3, 3R, 4, 4X, 12, 13
Class I Division 2 Groups A, B, C, D	Enclosure Type 1, 2 ,3, 3R, 4, 4X, 12, 13
Class II Division 1 Groups E, G	Enclosure Type 3, 4, 4X, 12, 13
Class II Division 2 Groups E, G	Enclosure Type 3, 4, 4X, 12, 13
Class III	Enclosure Type 3 ,4, 4X, 12, 13

Ordering Information

PILOT LIGHT	LENS COLORS	CATALOG NUMBER
Standard 12V to 254V AC/DC	red	**8415/24-R-9**
	green	**8415/24-G-9**
	amber	**8415/24-A-9**
	white	**8415/24-W-9**
	blue	**8415/24-B-9**
For I.S. Circuits 10.8-28V AC/DC	red	**8415/24-50-R-9**
	green	**8415/24-50-G-9**
	amber	**8415/24-50-A-9**
	white	**8415/24-50-W-9**
	blue	**8415/24-50-B-9**

8703 PUSHBUTTON ASSEMBLY

Contact Block Information

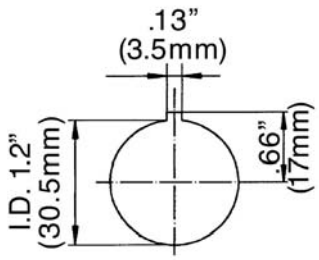
DESCRIPTION	CONTACT SYMBOL		INDIVIDUAL ORDER CATALOG NUMBER
	IEC	NEMA	
Single contact block, 1 NC			8082/1-1-00
Single contact block, 1 NO			8082/1-2-00

Technical Data of Contact Block

	NEC/CEC	IEC
Rated Voltage	600VAC	500VAC
Continuous Current	10A	6A
Terminals	12AWG	2.5mm²
Mechanical Life	≥ 10⁶ operations	
Electrical Life	≥ 10⁶ operations	
Housing Material	polyamide	
Contact Material	silver plated	
Lowest Energy	50mA. @ 12V*	

Enclosure Type Rating For Installation

Area Classification of Use	Pushbutton 8703
Class I Zone 1	Enclosure AEx e/Ex e
Class I Division 2 Groups A, B, C, D	Enclosure Type 1, 2 ,3, 3R, 4, 4X, 12, 13
Class II Division 2 Groups F, G	Enclosure Type 3, 4, 4X, 12, 13
Class III	Enclosure Type 3 ,4, 4X, 12, 13



Knockout for 8703

Ordering Information

PUSHBUTTON CONTACTS	CATALOG NUMBER
1 NC	8703/01 - □□ - 9
1 NO	8703/02 - □□ - 9
1 NC / 1 NO	8703/12 - □□ - 9
2 NC	8703/11 - □□ - 9
2 NO	8703/22 - □□ - 9

Fill out the blanks in the Catalog Number with the information found on pages F15 or F16 in the column "ACTUATOR CODE" (actuator code 23 not possible).

CLASSIFICATIONS for Contact Block 8082/1 and Actuator 8602

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Environmental Protection 3, 4, 4X;
IP66 Front, depending on enclosure
(see table – "Enclosure Type Rating For Installation")

File No. E182378

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 2, Groups F,G
Class III

CERTIFIED - FILE No. LR99480

II 2 G Ex de IIC
PTB 00 ATEX 1031 U
PTB 01 ATEX 1129 U

Ambient Temperature Range:
+55°C (+131°F) Max.
–25°C (–13°F) Min.

IECEx
Ex de IIC
IECEx PTB 06.0011 U
IECEx PTB 06.0014 U

FEATURES:

The 8703 pushbutton assembly consists of contact block(s) 8082/1, one mounting bracket and one actuator 8602 - as listed on page F715.

The contact blocks have a single contact either 1 NC or 1 NO.

The terminals are accessible from the front, therefor the wires need to be connected before the contact block is snapped into the b

Notes

Explosion Protected Stainless Steel Control Stations 8150 Series

CONTROL & SIGNALING STATIONS

8150 Features:

- *Attractive space efficient design.*
- *Enclosures made of Stainless Steel for excellent corrosion resistance.*
- *Snap-on mounting of individual components.*
- *High illumination LED pilot light from 12V to 254V, AC or DC with an operating life time over 100,000 hours.*
- *A variety of pushbuttons, control switches,illuminated pushbuttons and ammeters*
- *Durable silicone foamed enclosure gaskets are concealed to protect from damage or premature aging by UV light and chemicals.*
- *Fluorsilicate gasket in standard pushbutton actuators is suitable for a wide temperature range.*
- *Globally Certified. One part number provides Class I Division 2, ATEX and IECEx Zone 1 certifications.*
- *Also available in GOST-R, INMETRO, KGS, and others.*

Explosion Protected Stainless Steel Control Stations 8150 Series

CONTROL & SIGNALING STATIONS

The ConSig 8150 Series is a new generation of control and signaling stations utilizing explosion protected components with stainless steel enclosures for the ultimate flexibility, safety and durability in Hazardous (Classified) and Hostile (Corrosive) Locations.

This control and signaling station utilizes snap-on mounted components making field assembly quick and easy. Components include contact blocks with a variety of actuator options, LED pilot lights in all of the standard colors and voltages from 12V to 254V AC/DC, 2-pole and 4-pole control switches configurations and direct or indirect reading ammeters.

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type 3,4 & 4X; IP66

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

File No. E231214

II 2 G Ex de IIC T6
II 2 D Ex tD A21 IP66 T80˚C

IECEx
Ex de IIC T6
Ex tD A21 IP66 T80˚C

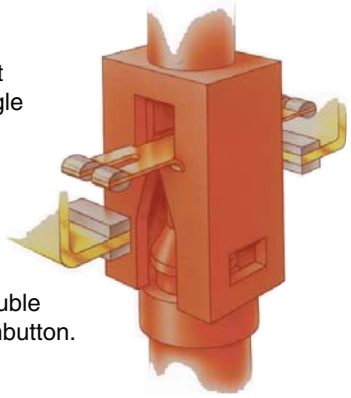
Ambient Temperature Range:
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Special Ambient Temperature Range:*
*Consult Factory

Enclosures

ConSig 8150 Series can be specified as one, two or three gang configurations and is made of Stainless Steel. Enclosure gasketing is durable silicone foamed which is concealed to protect it from premature aging by UV light and chemical elements. Components snap-on to the rail provided.

Contact Blocks



The contact system incorporates 8082 Series contact blocks which are individually explosion protected single pole units and are available as 1 N.O. or 1 N.C. The contact blocks incorporate a parallel bridge contact (H-contact) designed to ensure utmost contact reliability even with very low control voltages and currents. Any combination can be installed to provide a complete range of control configurations. Standard actuator styles include a double push-button, booted pushbutton and illuminated pushbutton.

LED Pilot Lights

ConSig 8150 Series introduces an extraordinary compact LED pilot light unit. The 8010 Series pilot light incorporates electronics which allow the same unit to operate at any voltage from 12 to 254 Volts, DC to 60 Hz. High output LEDs are used to provide superior illumination levels which are visible in direct sunlight from the front or side. The bezel is clear and the snap-on lenses are added in the colors Red, Green, Amber, White and Blue!

Control Switches

8008 Series control switches offer over 300 different switching configurations. They are available as 2-pole and 4-pole units incorporating maintained or spring return action. The control switch is for quick and easy snap-on mounting. Three styles of handles, with or without padlocking provision can be used in conjunction with the switches.

Illuminated Push-Buttons

Illuminated push-buttons make it possible to have control and signaling functions in the space of one. This is achieved by combining the 8082 Series Contact Blocks and 8010 Series LED Pilot Lights under a special illuminated pushbutton actuator which is spring return with a clear bezel and five colored snap-in filter disks in Red, Green, Amber, White and Blue.

Ammeters

ConSig 8150 Series offers a cost effective ammeter station as a solution for applications in a Hazardous (Classified) Location. The 8405 Series ammeter is a moving iron core instrument available in direct or indirect read versions. A manually adjustable red pointer provides quick and easy comparison of the actual circuit operation.
The ammeter is for quick and easy snap-on mounting.

316 Stainless Steel Construction for Excellent Corrosion Resistance

Captive Stainless Steel Tri-Drive Screws. No Loose Bolts

Choose From One Of Hundreds of Operator Combinations

Also Available in 304 Stainless Steel

Globally Certified For:
Class I Division 2, Zone 1
ATEX / IECEx Zone 1
Available in:
CU-TR
INMETRO
KGS
And More

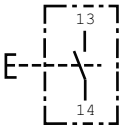
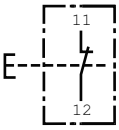
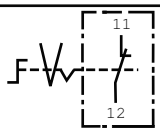
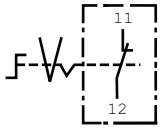
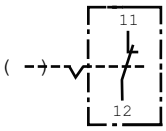
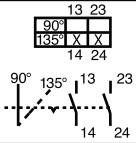
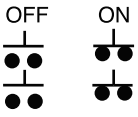
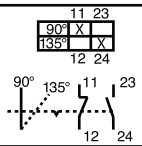
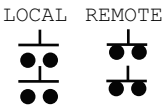
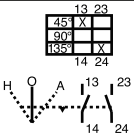
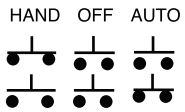
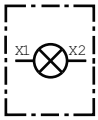
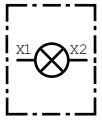
No Conduit Seals Required

3/4" Standard NPT Conduit Hub

Explosion Protected Stainless Steel Control Stations
8150 Series

PRE-CONFIGURED CONTROL STATIONS

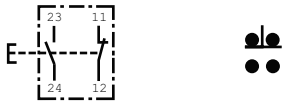
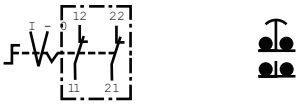
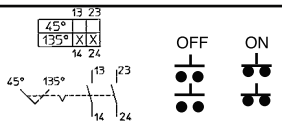
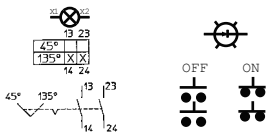
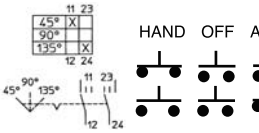
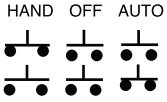
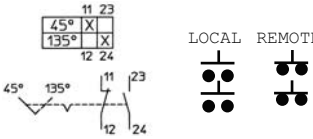
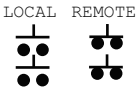
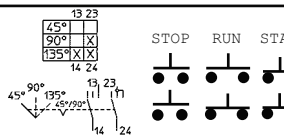
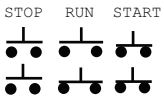
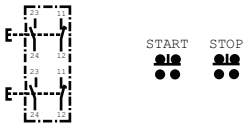
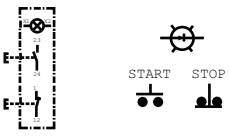
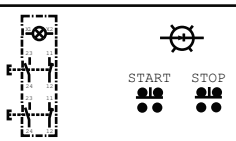
Ordering Information

FUNCTION	CONTACT SYMBOL		CATALOG NUMBER
	IEC	NEMA	
"START" Green Momentary Pushbutton, 1 NO			8150/5-124 - X011
"STOP" RED Momentary Pushbutton, 1NC			8150/5-124 - Y012
"E-STOP" SMALL RED Maintained Mushroom, 1 NC			8150/5-124 - Y100
"E-STOP" JUMBO RED Maintained Pushbutton, 1 NC			8150/5-124 - Y150
"E-STOP" Keyed Maintained Red Mushroom, 1 NC			8150/5-124 - Y090
"OFF - ON" Selector Switch 2-Position/10 Amps			8150/5-124 - 02MN1
"LOCAL REMOTE" Selector Switch 2-Positions/10 Amps			8150/5-124 - U2MN4
"Hand - O - Auto" Maintained Selector Switch 3-Positions/10 Amps			8150/5-124 - 03MMN3
"START-STOP" Double PB Momentary 1 NO / 1 NC			8150/5-124 - U2312
"PILOT LIGHT" RED LED 12V-254V AC / DC			8150/5-124 - PLR0
"PILOT LIGHT" GREEN LED 12V-254V AC / DC			8150/5-124 - PLG0

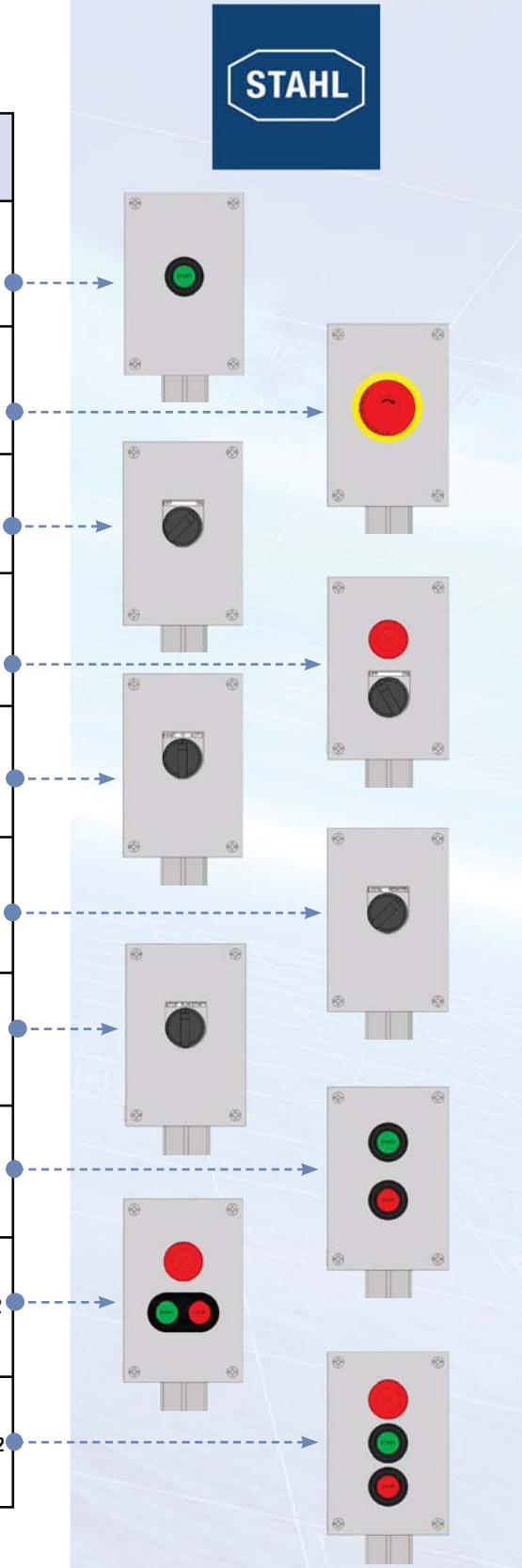
All above stations include one 3/4" hub bottom.

PRE-CONFIGURED CONTROL STATIONS

Ordering Information

FUNCTION ❶	FUNCTION ❷	FUNCTION ❸	CONTACT SYMBOL IEC	CONTACT SYMBOL NEMA	CATALOG NUMBER
"START" Green Momentary Pushbutton 1 NO / 1 NC	----	----			8150/5-124 - U011
"E-STOP" RED JUMBO Mushroom Maintained 2 NC	----	----			8150/5-124 - C150
"OFF - ON" Maintained Control Switch 2-Pos./2-Pole 10 amps	----	----			8150/5-124 - N021
RED LED Pilot Light 12V-254V AC / DC	"OFF-ON" Maintained Control Switch 2-Pos./2-Pole 10 amps	----			8150/5-224 - PLR0-N021
"H - O - A" Maintained Control Switch 3-Pos./2-Pole 10 amps	----	----			8150/5-124 - N273
"LOCAL REMOTE" Control Switch 2-Positions 10 amps	----	----			8150/5-124 - N164
"STOP-RUN START" Control Switch 3-Pos./2-Pole Spring Return From Right 10 amps	----	----			8150/5-124 - N385
"START" Momentary Green Pushbutton 1 NO / 1 NC	"STOP" Momentary Red Pushbutton 1 NO / 1 NC	----			8150/5-224 - U011-U012
RED LED Pilot Light 12V- 254V AC / DC	"START-STOP" Double PB Momentary 1 NO / 1 NC	----			8150/5-224 - PLR0-U2312
RED LED Pilot Light 12V-254V AC / DC	"Start" Green Momentary Pushbutton 1 NO / 1 NC	"STOP" Red Momentary Pushbutton 1 NO / 1 NC			8150/5-334 - PLR0-U011-U012

All above stations include one 3/4" hub bottom.



Explosion Protected Stainless Steel Control Stations
8150 Series

CUSTOM CONFIGURATION LOGIC

Start Here

ConSig	Enclosure	
Control Station	Enclosure Type (__ __)	Entry or Entries (__)
8150/5-		

12 1-device

22 2-device

33 3-device
Pilot light and push button only

42 Ammeter

54 Ammeter plus 1-device

Entry Type:

Conduit Hub
0 = 1/2" Hub Top Feed
1 = 1/2" Hub Bottom Feed
2 = 1/2" Hub Feed-Thru
3 = 3/4" Hub Top Feed
4 = 3/4" Hub Bottom Feed
5 = 3/4" Hub Feed-Thru

Compression Gland - IECEx or ATEX
6 = M25 Gland Top Feed
7 = M25 Gland Bottom Feed
8 = M25 Gland Feed-Thru
9 = Special

Other Special Entries
Non-Metallic Cable Glands
J = M20 Gland Bottom Feed
K = M20 Gland Feed-Through

Metal Clad Cable Connectors
Q = TMC050 Bottom Feed
V = TMC075 Bottom Feed

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type 3, 4 & 4X; IP66
c UL us LISTED FILE No. E182378

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

Ex II 2 G Ex de IIC T6
II 2 D Ex tD A21 IP66 T80˚C
PTB 01 ATEX 1105

IECEx
Ex de IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 06.0025

HOUSING MATERIAL AND GASKETING
316L Stainless Steel with silicone foamed recessed gasketing.

FEATURES
The 8150 Series of control & signaling stations with its many enclosure sizes and components is uniquely flexible.

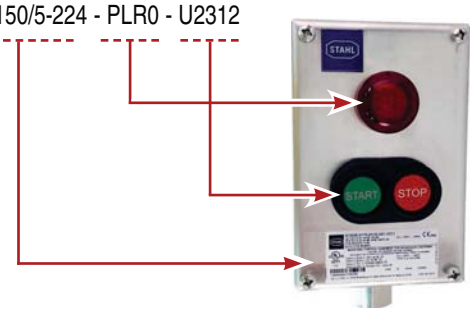
How to use configuration logic tables:

Fill in the blanks in the light blue striped fields located on the top of pages F5 and F6 left to right from information stated below the individual fields.

Step 1: Select enclosure type
Step 2: Select entry or entries
Step 3: Select the device mounted to the cover as well as the device mounted into the back box.
Step 4: Repeat step 3 when configuring a two-device station.
Step 5: Repeat step 3 when configuring a three-device station.

CUSTOM CONFIGURATION LOGIC

Example
8150/5-224 - PLR0 - U2312



Device Specification (1, 2 or 3 devices described from top to bottom)		
First or only position (_____)	Second position (_____)	Third position (_____)

PUSHBUTTONS

Contact type	Actuator type	Legend
X = 1 N.O. **Y** = 1 N.C. **U** = 1 N.O./ 1 N.C. **O** = 2 N.O. **C** = 2 N.C. **M** = 2 N.C./ 1 N.O. **W** = 1 N.C./ 2 N.O. **T** = 3 N.C. **R** = 3 N.O. **D** = 2 N.O./ 2 N.C. only with actuator 23 in enclosures 12, & 54	**01** = Standard Momentary **02** = Booted Momentary **03** = Black Momentary small Mushroom **09** = Keyed E-STOP Red Mushroom Maintained **10** = E-STOP Red small Mushroom Maintained **12** = Black small Mushroom Maintained **13** = Red small Mushroom Maintained **15** = Emergency STOP Red Jumbo Mushroom Maint. **23** = Double Pushbutton Momentary **P733** = Device Close-up Plug	**0** = none **1** = START **2** = STOP **3** = ON **4** = OFF **5** = RUN **6** = RESET **7** = OPEN **8** = CLOSE **9** = special (specify from F22)

SELECTOR SWITCHES

X = 1 N.O.
Y = 1 N.C.
U = 1 N.O./ 1 N.C. **O** = 2 N.O.
C = 2 N.C.

2SK	**2SN**	**2SL**
2MK	**2MN**	**2ML**
3SSK	**3SSN**	**3SSL**
3MMK	**3MMN**	**3MML**
3SMK	**3SMN**	**3SML**
3MSK	**3MSN**	**3MSL**

Note: For Actuator Descriptions see page F16)

PILOT LIGHTS

PL

Color
A = amber
B = blue
G = green
R = red
W = white

Legend
Same # as pushbutton

CONTROL SWITCHES

Actuator type
N = Non-lockable
S = Small-lockable
L = Large lockable

Switch arrangements 2 pole
02 = 2-pos. Maintained (OFF-ON)
05 = 2-pos. Maintained (ON-OFF)
16 = 2-pos. Maintained (LOCAL-REMOTE)
27 = 3-pos. Maintained (HAND-O-AUTO)
38 = 3-pos. Maint., Spring Return from Right (OFF-RUN-START)
Switch arrangements 4 pole
102 = 2-pos. OFF-ON
106 = 2-pos. LOCAL-REMOTE
119 = 3-pos. HOA
For more switching arrangements see pgs.F19 and F20.

Legend
0 = none
1 = OFF-ON
2 = ON-OFF
3 = HAND-O-AUTO
4 = LOCAL-REMOTE
5 = STOP-RUN-START
6 = O - I
7 = blank one line text
8 = blank two lines text
9 = special (specify)

ILLUMINATED PUSHBUTTONS

Spring Return	Colors	Contact type	Legend
SR =	red	**X** = 1 N.O.	Same # as pushbuttons
SG =	green	**Y** = 1 N.C.	
SA =	amber	**U** = 1 N.O. / 1 N.C.	
SW =	white	**O** = 2 N.O.	
SB =	blue	**C** = 2 N.C.	

PUSHBUTTON LOCKOUTS/GUARDS

LK01 = Momentary Lockout (01 & 02)
LK02 = Momentary Exclusion (01 & 02)
LK03 = Small Mushroom Guard (03,10,12 &13)
LK10 = Small Mushroom Lockout (03,10,12 &13)
LK11 = Small Mushroom Pin & Chain Lockout (03,10,12, 13 & 15)
LK20 = Small Mushroom Exclusion Lockout (03,10,12 & 13)
LK21 = Momentary Pushbutton (01 & 02) exclusion
LK23 = Double Pushbutton Lockout, 1-device (23)

POTENTIOMETERS

Dial Increments	Resistance (Ohm) Range		
P1 = 0-10 scale	**01** = 100Ω	**06** = 4.7 kΩ	**11** = 220 kΩ
	02 = 220Ω	**07** = 10 kΩ	**12** = 470 kΩ
P2 = 0-100 scale	**03** = 470Ω	**08** = 22 kΩ	**13** = 1 MΩ
	04 = 1 kΩ	**09** = 47 kΩ	**14** = 2.2 MΩ
P6 = 0-6 scale	**05** = 2.2 kΩ	**10** = 100 kΩ	**15** = 4.7 MΩ

AMMETERS

Direct reading (2X overload):
AD....

Scales
0-0.02/0.04A
0-1/2A
0-4/8A
0-10/20A
0-15/30A

Indirect reading for Current Transformer (5X overload):

A1....
For 1 AMP C.T.

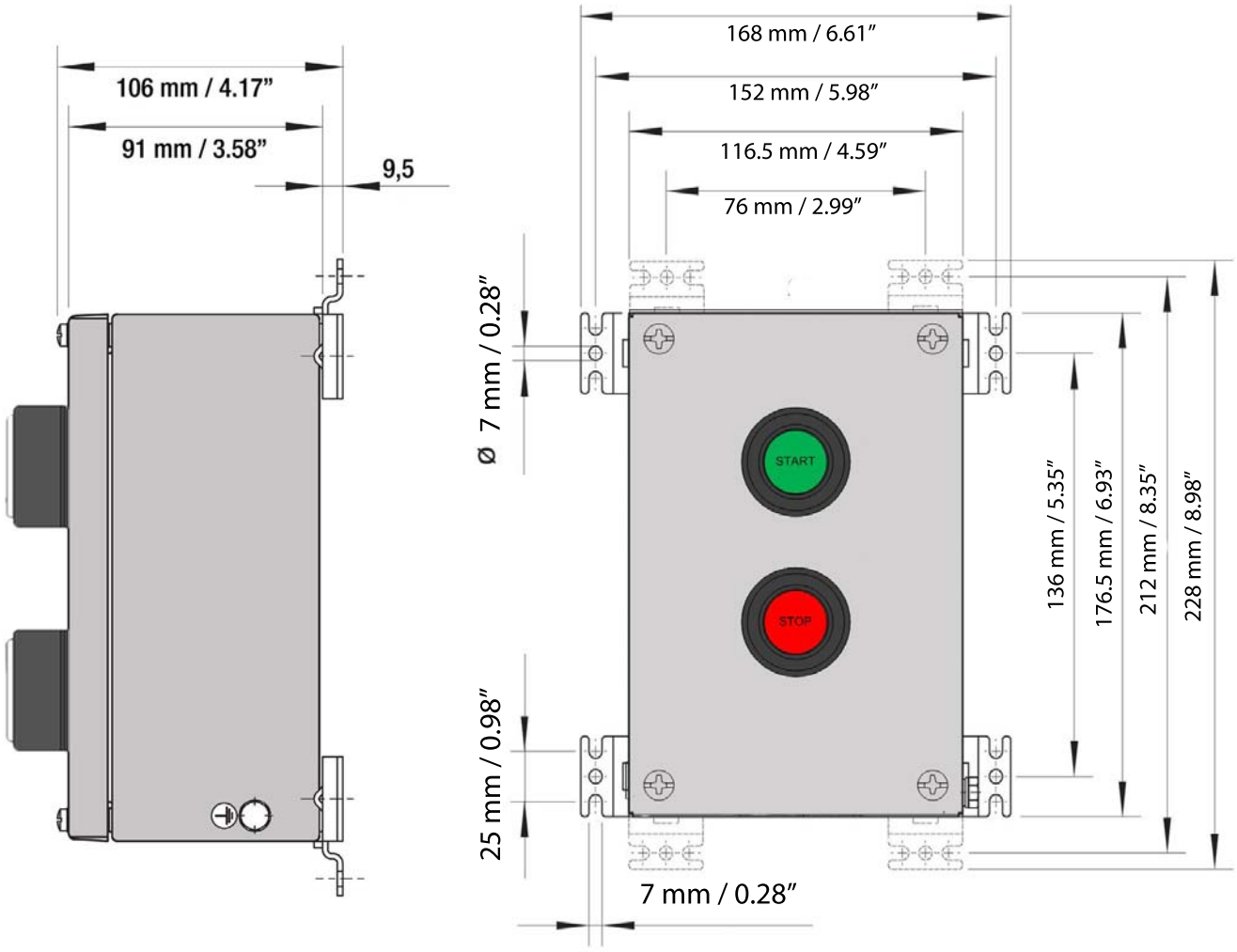
or

A5....
For 5 AMP C.T.

0-1/5	**0-50/250**
0-2/10	**0-75/375**
0-5/25	**0-100/500**
0-10/50	**0-150/750**
0-15/75	**0-200/1000**
0-20/100	**0-250/1250**
0-30/150	**0-300/1500**
0-40/200	

Ammeter Example:
8150/5-424-A1 20/100, Ammeter for CT 1AMP, Scale 0-20/100A in
Enclosure Size 42 with 3/4" NPT Bottom Hub.

DIMENSIONS


106 mm / 4.17"
91 mm / 3.58"
9,5
168 mm / 6.61"
152 mm / 5.98"
116.5 mm / 4.59"
76 mm / 2.99"
Ø 7 mm / 0.28"
START
STOP
136 mm / 5.35"
176.5 mm / 6.93"
212 mm / 8.35"
228 mm / 8.98"
25 mm / 0.98"
7 mm / 0.28"

ConSig 8040 Series

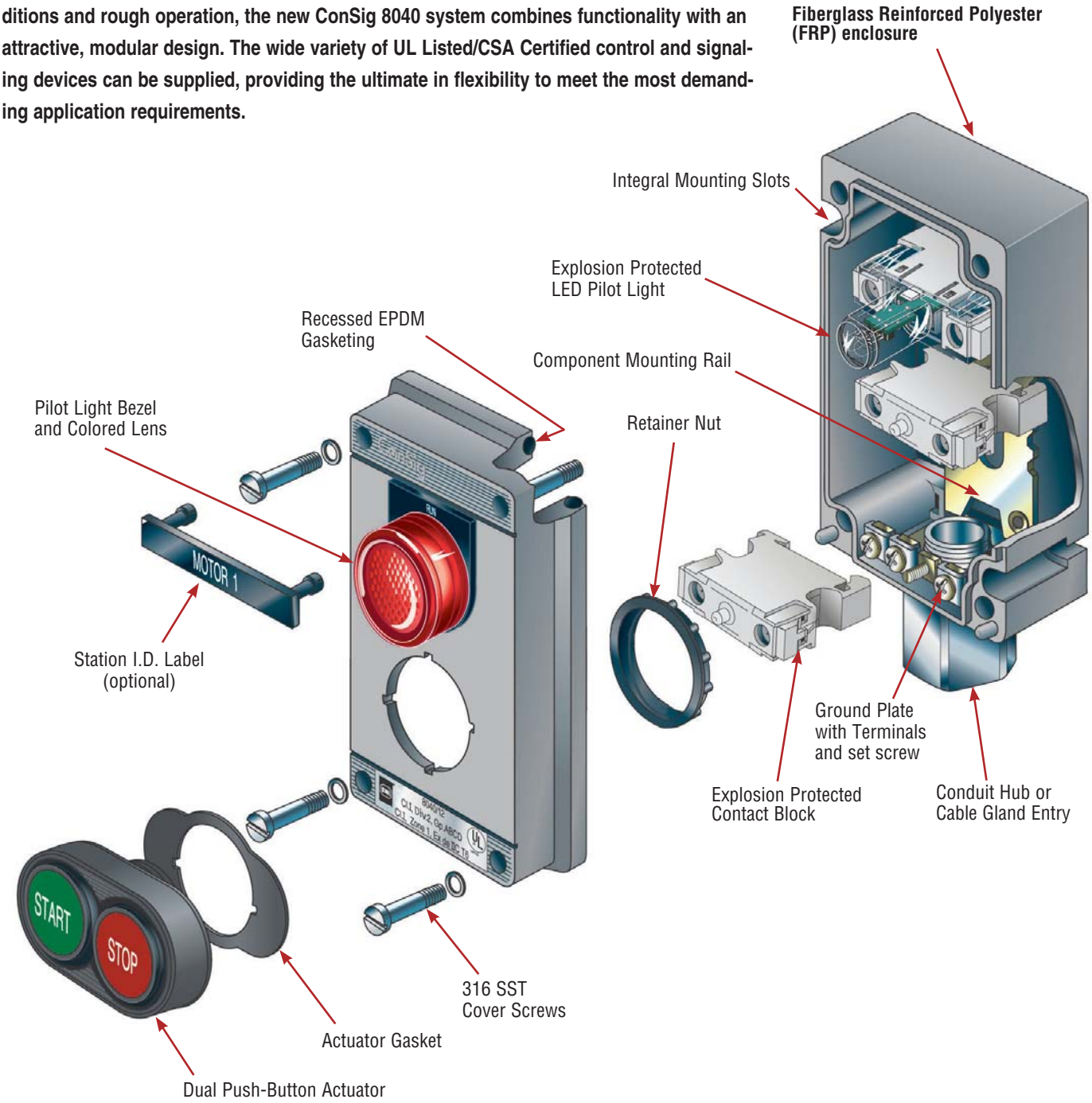
CONTROL & SIGNALING STATIONS

8040 Features:

- *Attractive space efficient design.*
- *A variety of enclosure sizes made of Fiberglass Reinforced Polyester (FRP).*
- *Snap-on mounting of individual components.*
- *High illumination LED pilot light from 12V to 254V, AC or DC with an operating life time over 100,000 hours.*
- *A variety of pushbuttons.*
- *Control switches.*
- *Illuminated pushbutton.*
- *Durable EPDM enclosure gaskets are concealed to protect from damage or premature aging by UV light and chemicals.*
- *Fluorsilicate gasket in standard pushbutton actuators is suitable for a wide temperature range.*

ConSig "Puts You In Control"

R. STAHL is setting new standards for function, design and technology with the new ConSig 8040 Series of control and signaling stations. Designed for complex industrial conditions and rough operation, the new ConSig 8040 system combines functionality with an attractive, modular design. The wide variety of UL Listed/CSA Certified control and signaling devices can be supplied, providing the ultimate in flexibility to meet the most demanding application requirements.



ConSig 8040 Series

CONTROL & SIGNALING STATIONS

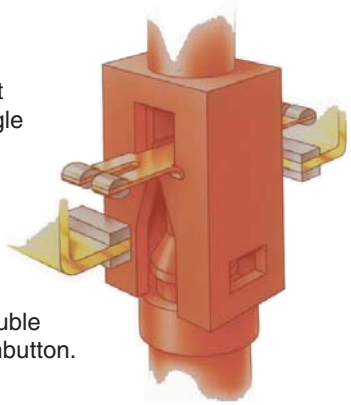
The ConSig 8040 Series is a new generation of control and signaling stations utilizing explosion protected components with non-metallic enclosures for the ultimate flexibility, safety and durability in Hazardous (Classified) and Hostile (Corrosive) Locations.

This control and signaling station utilizes snap-on mounted components making field assembly quick and easy. Components include contact blocks with a variety of actuator options, LED pilot lights in all of the standard colors and voltages from 12V to 254V AC/DC, 2-pole and 4-pole control switches configurations and direct or indirect reading ammeters.

Enclosures

ConSig 8040 Series can be specified as one, two or three gang configurations and is made of Fiberglass Reinforced Polyester (FRP). Enclosure gasketing is durable EPDM which is concealed to protect it from premature aging by UV light and chemical elements. Components snap-on to the rail provided.

Contact Blocks



The contact system incorporates 8082 Series contact blocks which are individually explosion protected single pole units and are available as 1 N.O. or 1 N.C. The contact blocks incorporate a parallel bridge contact (H-contact) designed to ensure utmost contact reliability even with very low control voltages and currents. Any combination can be installed to provide a complete range of control configurations. Standard actuator styles include a double push-button, booted pushbutton and illuminated pushbutton.

LED Pilot Lights

ConSig 8040 Series introduces an extraordinary compact LED pilot light unit. The 8010 Series pilot light incorporates electronics which allow the same unit to operate at any voltage from 12 to 254 Volts, DC to 60 Hz. High output LEDs are used to provide superior illumination levels which are visible in direct sunlight from the front or side. The bezel is clear and the snap-on lenses are added in the colors Red, Green, Amber, White and Blue!

Control Switches

8008 Series control switches offer over 300 different switching configurations. They are available as 2-pole and 4-pole units incorporating maintained or spring return action. The control switch is for quick and easy snap-on mounting. Three styles of handles, with or without padlocking provision can be used in conjunction with the switches.

Illuminated Push-Buttons

Illuminated push-buttons make it possible to have control and signaling functions in the space of one. This is achieved by combining the 8082 Series Contact Blocks and 8010 Series LED Pilot Lights under a special illuminated pushbutton actuator which is spring return with a clear bezel and five colored snap-in filter disks in Red, Green, Amber, White and Blue.

Ammeters

ConSig 8040 Series offers a cost effective ammeter station as a solution for applications in a Hazardous (Classified) Location.The 8405 Series ammeter is a moving iron core instrument available
in direct or indirect read versions. A manually adjustable red pointer provides quick and easy comparison of the actual circuit operation. The ammeter is for quick and easy snap-on mounting.

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type 3,4 & 4X; IP66
FILE No. E182378

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES 3, 4 & 4X; IP66
CERTIFIED - FILE No. LR99480

II 2 G Ex de IIC T6
II 2 D Ex tD A21 IP66 T80˚C
PTB 01 ATEX 1105

IECEx
Ex de IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 06.0025

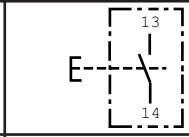
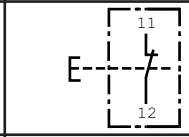
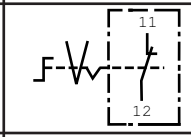
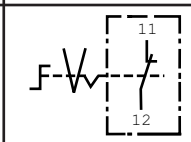
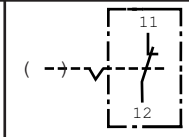
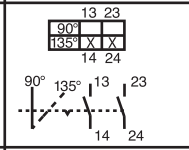
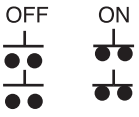
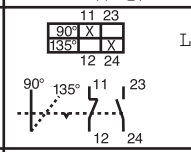
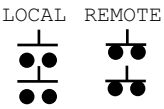
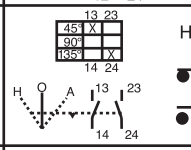
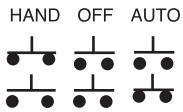
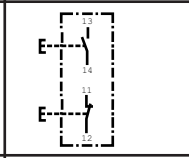
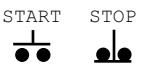
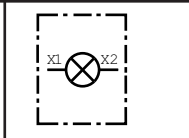
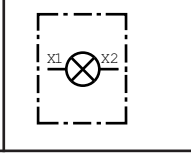
Ambient Temperature Range:
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Special Ambient Temperature Range:*
*Consult Factory

ConSig 8040 Series

PRE-CONFIGURED CONTROL STATIONS

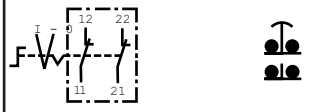
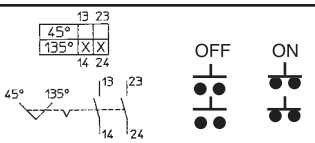
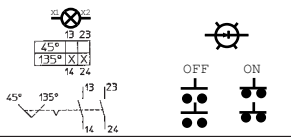
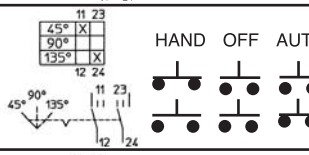
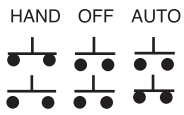
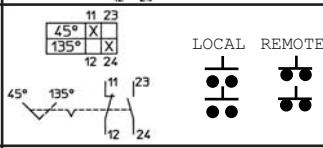
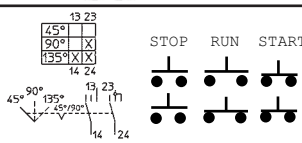
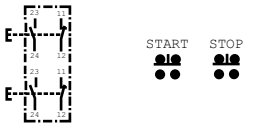
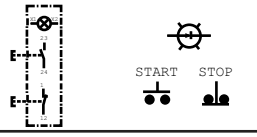
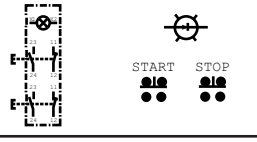
Ordering Information

FUNCTION	CONTACT SYMBOL		CATALOG NUMBER
	IEC	NEMA	
"START" Green Momentary Pushbutton, 1 NO			8040/114 - X011
"STOP" RED Momentary Pushbutton, 1NC			8040/114 - Y012
"E-STOP" SMALL RED Maintained Mushroom, 1 NC			8040/114 - Y100
"E-STOP" JUMBO RED Maintained Pushbutton, 1 NC			8040/114 - Y150
"E-STOP" Keyed Maintained Red Mushroom, 1 NC			8040/114 - Y090
"OFF - ON" Selector Switch 2-Position/10 Amps			8040/114 - 02MN1
"LOCAL REMOTE" Selector Switch 2-Positions/10 Amps			8040/114 - U2MN4
"Hand - O - Auto" Maintained Selector Switch 3-Positions/10 Amps			8040/114 - 03MMN3
"START-STOP" Double PB Momentary 1 NO / 1 NC			8040/114 - U2312
"PILOT LIGHT" RED LED 12V-254V AC / DC			8040/114 - PLR0
"PILOT LIGHT" GREEN LED 12V-254V AC / DC			8040/114 - PLG0

All above stations include one 3/4" hub bottom.

PRE-CONFIGURED CONTROL STATIONS

Ordering Information

FUNCTION ❶	FUNCTION ❷	FUNCTION ❸	CONTACT SYMBOL IEC	CONTACT SYMBOL NEMA	CATALOG NUMBER
RED LED Pilot Light 12V-254V AC / DC	----	----			8040/124 - PLR0
"START" Green Momentary Pushbutton 1 NO / 1 NC	----	----			8040/124 - U011
"E-STOP" RED JUMBO Mushroom Maintained 2 NC	----	----			8040/124 - C150
"OFF - ON" Maintained Control Switch 2-Pos./2-Pole 10 amps	----	----			8040/124 - N021
RED LED Pilot Light 12V-254V AC / DC	"OFF-ON" Maintained Control Switch 2-Pos./2-Pole 10 amps	----			8040/224 - PLR0-N021
"H - O - A" Maintained Control Switch 3-Pos./2-Pole 10 amps	----	----			8040/124 - N273
"LOCAL REMOTE" Control Switch 2-Positions 10 amps	----	----			8040/124 - N164
"STOP-RUN START" Control Switch 3-Pos./2-Pole Spring Return From Right 10 amps	----	----			8040/124 - N385
"START" Momentary Green Pushbutton 1 NO / 1 NC	"STOP" Momentary Red Pushbutton 1 NO / 1 NC	----			8040/224 - U011-U012
RED LED Pilot Light 12V- 254V AC / DC	"START-STOP" Double PB Momentary 1 NO / 1 NC	----			8040/224 - PLR0-U2312
RED LED Pilot Light 12V-254V AC / DC	"Start" Green Momentary Pushbutton 1 NO / 1 NC	"STOP" Red Momentary Pushbutton 1 NO / 1 NC			8040/3 34 - PLR0-U011-U012

All above stations include one 3/4" hub bottom.

ConSig 8040 Series

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type 3, 4 & 4X; IP66
FILE No. E182378

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES 3, 4 & 4X; IP66
CERTIFIED - FILE No. LR99480

See page F10

IECEx See page F10

HOUSING MATERIAL AND GASKETING
Fiberglass Reinforced Polyester (FRP) with EPDM recessed gasketing.

FEATURES
The ConSig 8040 Series of control & signaling stations with its many enclosure sizes and components is uniquely flexible. If the preconfigured control stations on pages F11 and F12 do not meet your specific application needs, take advantage of the flexibility of ConSig 8040 and use the custom configuration logic tables on the right to custom configure a control station which can exactly meet your particular application.

How to use configuration logic tables:

Fill in the blanks in the light blue striped fields located on the top of pages F13 and F14 left to right from information stated below the individual fields.

Step 1: Select enclosure size

Step 2: Select entry or entries

Step 3: Select the device mounted to the cover as well as the device mounted into the back box.

Step 4: Repeat step 3 when configuring a two-gang station.

Step 5: Repeat step 3 when configuring a three-gang station.

DIMENSIONS
For dimensional data see page F23.

CUSTOM CONFIGURATION LOGIC

Start Here

ConSig	Enclosure	
Control Station 8040 /	Enclosure Size (__ __)	Entry or Entries (__)

11 1-device Compact

12 1-device Expanded

22 2-device

64 2-device Expanded

33 3-device

42 Ammeter

54 Ammeter plus 1-device

73 One 4 Pole switch Deep

84 Two 4 Pole switch Deep

94 Ammeter 1- 4 Pole switch Deep

Entry Type:

Conduit Hub
0 = 1/2" Hub Top Feed
1 = 1/2" Hub Bottom Feed
2 = 1/2" Hub Feed-Thru
3 = 3/4" Hub Top Feed
4 = 3/4" Hub Bottom Feed
5 = 3/4" Hub Feed-Thru

Compression Gland - FOR IECEx or ATEX
6 = M25 Gland Top Feed
7 = M25 Gland Bottom Feed
8 = M25 Gland Feed-Thru
9 = Special

Threaded Opening - In Internal Ground Plate
A = 1/2" NPT plate Top Feed
B = 1/2" NPT plate Bottom Feed
C = 1/2" NPT plate Feed-Through
D = 3/4" NPT plate Top Feed
E = 3/4" NPT plate Bottom Feed
F = 3/4" NPT plate Feed-Through
G = 1/2" NPT plug Feed-Through
H = 3/4" NPT plug Feed-Through
L = M20 Plate Bottom Feed
M = M25 Plate Bottom Feed

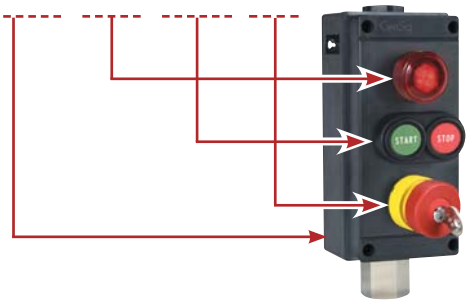
Other Special Entries
Non-Metallic Cable Glands
J = M20 Gland Bottom Feed
K = M20 Gland Feed-Through

Metal Clad Cable Connectors
Q = TMC050 Bottom Feed
V = TMC075 Bottom Feed

8040 Control Station Coupling
Z = Coupling Frame Bottom

CUSTOM CONFIGURATION LOGIC

Example
8040/334 - PLR0 - U2312 - Y090



Device Specification (1, 2 or 3 devices described from top to bottom)

First or only position (_____)	–	Second position (_____)	–	Third position (_____)

PUSHBUTTONS

Contact type	Actuator type	Legend
X = 1 N.O. **Y** = 1 N.C. **U** = 1 N.O./ 1 N.C. **O** = 2 N.O. **C** = 2 N.C. **M** = 2 N.C./ 1 N.O. **W** = 1 N.C./ 2 N.O. **T** = 3 N.C. **R** = 3 N.O. **D** = 2 N.O./ 2 N.C. only with actuator 23 in enclosures 12, 54 & 64	**01** = Standard Momentary **02** = Booted Momentary **03** = Black Momentary small Mushroom **09** = Keyed E-STOP Red Mushroom Maintained **10** = E-STOP Red small Mushroom Maintained **12** = Black small Mushroom Maintained **15** = Emergency STOP Red Jumbo Mushroom Maint. **23** = Double Pushbutton Momentary **P733** = Device Close-up Plug	**0** = none **1** = START **2** = STOP **3** = ON **4** = OFF **5** = RUN **6** = RESET **7** = OPEN **8** = CLOSE **9** = special (specify from F22)

SELECTOR SWITCHES

X = 1 N.O. **Y** = 1 N.C. **U** = 1 N.O./ 1 N.C. **O** = 2 N.O. **C** = 2 N.C.	**2SK** **2MK** **3SSK** **3MMK** **3SMK** **3MSK**	**2SN** **2MN** **3SSN** **3MMN** **3SMN** **3MSN**	**2SL** **2ML** **3SSL** **3MML** **3SML** **3MSL**	**Note:** For Actuator Descriptions see page F16

PILOT LIGHTS

PL	Color **A** = amber **B** = blue **G** = green **R** = red **W** = white	Legend Same # as pushbutton

CONTROL SWITCHES

Actuator type	Switch arrangements 2 pole	Legend
N = Non-lockable **S** = Small-lockable **L** = Large lockable	**02** = 2-pos. Maintained (OFF-ON) **05** = 2-pos. Maintained (ON-OFF) **16** = 2-pos. Maintained (LOCAL-REMOTE) **27** = 3-pos. Maintained (HAND-O-AUTO) **38** = 3-pos. Maint., Spring Return from Right (OFF-RUN-START) Switch arrangements 4 pole **102** = 2-pos. OFF-ON **106** = 2-pos. LOCAL-REMOTE **119** = 3-pos. HOA } only for deep enclosures 73, 84 & 94 For more switching arrangements see pgs. F19 and F20.	**0** = none **1** = OFF-ON **2** = ON-OFF **3** = HAND-O-AUTO **4** = LOCAL-REMOTE **5** = STOP-RUN-START **6** = O - I **7** = blank one line text **8** = blank two lines text **9** = special (specify)

ILLUMINATED PUSHBUTTONS

Spring Return	Colors	Contact type	Legend
SR = **SG** = **SA** = **SW** = **SB** =	red green amber white blue	**X** = 1 N.O. **Y** = 1 N.C. **U** = 1 N.O. / 1 N.C. **O** = 2 N.O. **C** = 2 N.C.	Same # as pushbuttons

PUSHBUTTON LOCKOUTS/GUARDS

LK01 = Momentary Lockout (01 & 02)
LK02 = Momentary Exclusion (01 & 02)
LK03 = Small Mushroom Guard (03,10,12 &13)
LK10 = Small Mushroom Lockout (03,10,12 &13)
LK11 = Small Mushroom Pin & Chain Lockout (03,10,12, 13 & 15)
LK20 = Small Mushroom Exclusion Lockout (03,10,12 & 13)
LK21 = Momentary Pushbutton (01 & 02) exclusion
LK23 = Double Pushbutton Lockout, 1-device (23)

POTENTIOMETERS

Dial Increments	Resistance (Ohm) Range		
P1 = 0-10 scale	**01** = 100Ω	**06** = 4.7 kΩ	**11** = 220 kΩ
	02 = 220Ω	**07** = 10 kΩ	**12** = 470 kΩ
P2 = 0-100 scale	**03** = 470Ω	**08** = 22 kΩ	**13** = 1 MΩ
	04 = 1 kΩ	**09** = 47 kΩ	**14** = 2.2 MΩ
P6 = 0-6 scale	**05** = 2.2 kΩ	**10** = 100 kΩ	**15** = 4.7 MΩ

AMMETERS

Direct reading (2X overload):
AD....

Scales
0-0.02/0.04A
0-1/2A
0-4/8A
0-10/20A
0-15/30A

Indirect reading for Current Transformer (5X overload):

A1....
For 1 AMP C.T.

or

A5....
For 5 AMP C.T.

0-1/5	**0-50/250**
0-2/10	**0-75/375**
0-5/25	**0-100/500**
0-10/50	**0-150/750**
0-15/75	**0-200/1000**
0-20/100	**0-250/1250**
0-30/150	**0-300/1500**
0-40/200	

Ammeter Example:
8040/424-A1 20/100, Ammeter for CT 1AMP, Scale 0-20/100A in
Enclosure Size 42 with 3/4" NPT Bottom Hub.

Control Components

PUSH BUTTON ACTUATORS

Ordering Information

APPROVALS

FILE No. E182378

CERTIFIED - FILE No. LR99480

PTB 01 ATEX 1129 U

IECEx PTB 06.0014 U

STAHL offers a large variety of push-button actuator versions including momentary and maintained action in standard, booted, mushroom, keyed and selector switch styles. A new double push-button actuator combines two control functions in the space of one with the same size button.

Up to three 8082 contact blocks can be mounted under each push-button actuator. Under the double momentary push-button 23, up to four 8082 contact blocks can be mounted. Legend disks, in a variety of standard markings, snap into the center of the actuator making the button function easily identifiable.

ACTUATOR DESCRIPTION	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE		
		CONTACT BLOCK	ACTUATOR CODE	LEGEND DISK
Standard Momentary Pushbutton 1 5" (38mm) O D. Legend disks to be ordered separately, see page F14.	**8602A0001-1-S**		01 __	0 = none
Booted Momentary Pushbutton 1.5" (38mm) O.D. Legend disks to be ordered separately, see page F14.	**8602A0002-1-S**	M = 2 x NC 1 x NO	02 __	1 = START
Double Momentary Pushbutton 1.5" (38mm) O.D. Legend disks to be ordered separately, see page F14.	**8602A0023-1-S**	W = 1 x NC 2 x NO	23 __	2 = STOP
Black Mushroom Pushbutton 1.5" (38mm) O.D. Momentary action. Legend disks to be ordered separately, see page F14.	**8602A0003-1-S**	T = 3 x NC	03 __	3 = ON
Emergency Stop Red Pushbutton 1.5 " (38mm) O.D. Maintained action. Turn-to-Release. Arrow disk and yellow washer supplied.	**8602A0010-1-S**	R = 3 x NO X = 1 x NO	10 __	4 = OFF 5 = RUN
Maintained Black Mushroom Pushbutton 1.5 " (38mm) O.D. Maintained action. Turn-to-Release. Red arrow disk included	**8602A0012-1-S**	Y = 1 x NC	12 __	6 = RESET
Emergency Stop (Jumbo) Red Pushbutton 2.16" (55mm) O.D. Maintained action. Turn-to-Release. Arrow disk and yellow washer supplied.	**8602A0015-1-S**	U = 1 NO + 1 NC	13 __	7 = OPEN
Emergency Stop Red Mushroom 1.5 " (38mm) O.D. Maintained action. Key-to-Release from maintained position. Arrow disk and yellow washer supplied.	**8602A0009-1-S -MS1**	O = 2 x NO C = 2 x NC	15 __	8 = CLOSE
		D = 2 x NC ①2 x NO	09 __	9 = special (state text w/order)

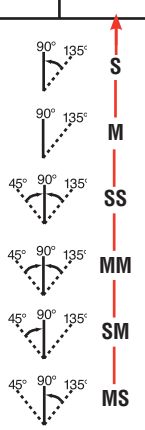
① Only possible under double pushbutton 23 in enclosures 12, 54 & 64.

SELECTOR SWITCH ACTUATORS

Ordering Information

	ACTUATOR DESCRIPTION	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE		
			CONTACT BLOCK(S)	ACTUATOR CODE	LEGEND
	Key Operated Switch - 2 Positions	**8602A0008-1-2-r-V-MS1**		__2SK__ * __2MK__	0 = none 1 = OFF-ON
	Key Operated Switch - 3 Positions	**8602A0008-1-3-rr-V-MS1**	X = 1 x NO	__3SSK__ * __3MMK__ __3SMK__ __3MSK__	2 = ON-OFF 3 = HAND-OFF-AUTO
	Rotary Actuator 2 Positions Non-lockable	**8602A0726-1-2-r**	Y = 1 x NC	__2SN__ __2MN__	4 = LOCAL-REMOTE
	Rotary Actuator 3 Positions Non-lockable	**8602A0726-1-3-rr-V**	U = 1 NO + 1 NC	__3SSN__ __3MMN__ __3SMN__ __3MSN__	5 = STOP-RUN-START 6 = O - I
	Rotary Actuator 2 Positions Padlockable in center	**8602A0727-1-2-r-V**	O = 2 x NO	__2SL__ __2ML__	7 = blank, one-line text 8 = blank, two-lines text
	Rotary Actuator 3 Positions Padlockable in center	**8602A0727-1-3-rr-V**	C = 2 x NC	__3SSL__ __3MML__ __3SML__ __3MSL__	9 = special (specify)

Replacement actuators include parts to convert maintained positions into spring return and to convert key removable positions into non-removable positions.



*Standard: Key removable in all maintained positions. Key not removable in all spring return positions.

APPROVALS

cULus LISTED FILE No. E182378

CERTIFIED - FILE No. LR99480

PTB 01 ATEX 1129 U

IECEx

IECEx PTB 06.0014 U

Control Components

8082 CONTACT BLOCK

Ordering Information

DESCRIPTION	CONTACT SYMBOL		INDIVIDUAL ORDER CATALOG NUMBER
	IEC	NEMA	
Single contact block, 1 NC			8082/1-1
Single contact block, 1 NO			8082/1-2

Technical Data

	NEC/CEC	IEC
Rated Voltage	600VAC	500VAC
Continuous Current	10A	6A
Terminals	12AWG	2 5mm²
Mechanical Life	≥ 10_6 operations	
Electrical Life	≥ 10_6 operations	
Housing Material	polyamide	
Contact Material	silver plated	
Lowest Energy	50mA. @ 12VAC/DC*	

** For lower energy use gold plated contacts, available on request.*

APPROVALS

FILE No. E182378

CERTIFIED - FILE No. LR99480

PTB 00 ATEX 1031U

IECEx

IECEx PTB 06.0014 U

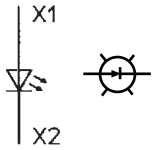
The contact block Series 8082 are available in two versions.
- 1 NO
- 1 NC

Each block is made of polyamide and designed to contain an internal explosion.

The terminals are designed to increased safety requirements

8010 LED Pilot Light

Ordering Information

	COLORS	SYMBOL		INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
		IEC	NEMA		
PILOT LIGHT	white			8010/2-01-W	Included in ordering code below.
PILOT LIGHT FOR I.S. CIRCUITS 10.8-28V AC/DC				8010/3-02-WS	
BEZEL WITH COLORED LENS	red			86 028 03 58 7 AA	PLR
	amber			86 028 03 58 7 AB	PLA
	green			86 028 03 58 7 AC	PLG
	clear			86 028 03 58 7 AD	PLW
	blue			86 028 03 58 7 AE	PLB

See page F22 for legend plate ordering information.

Technical Data

	NEC/CEC/IEC
Rated Voltage	12V-10% . . . 254V+6%
Frequency	DC . . . 60Hz.
Rated Current	max. 15mA.
Rated Power	max. 15mW
Electrical Life	100,000 hrs (11yrs)
Colors	Red, Amber, Green, White, Blue
Terminals	2.5mm² (12AWG)
Housing Material	polyamide

APPROVALS

FILE No. E81680 (I.S.)

CERTIFIED - FILE No. LR99480

PTB 01 ATEX 1160 U

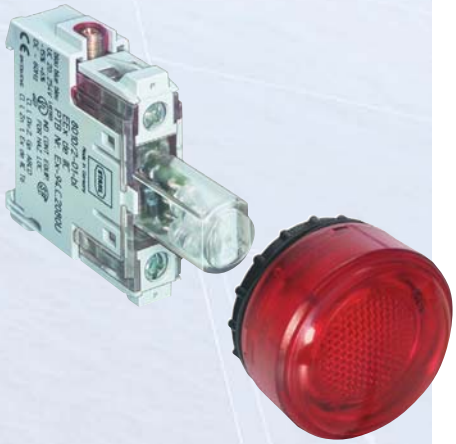
IECEx

IECEx PTB 06.0016 U

The rail mounted 8010 Series LED Pilot Light accommodates any voltage from 12 to 254V AC or DC in one compact unit!

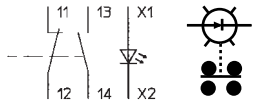
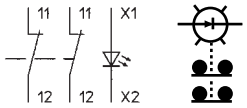
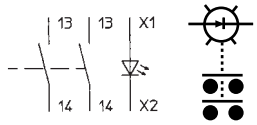
High intensity LED's provide superior illumination levels that are easily viewable in direct sunlight from the front or side.

Long life & low temperature make these ideal for hazardous location applications.



8082/8010 ILLUMINATED PUSHBUTTON

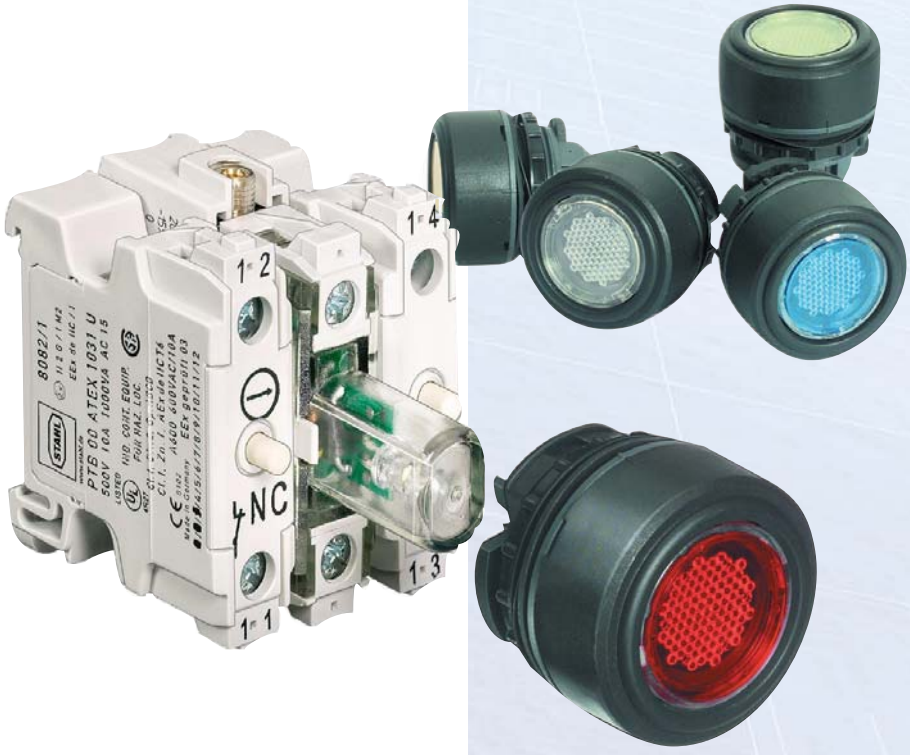
Ordering Information

	CONTACT SYMBOL		COLOR	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
	IEC	NEMA			
Contact Arrangement					
1NC + 1 NO			N/A	8602-A0737-1	U
2 NC			N/A	8602-A0738-1	C
2 NO			N/A	8602-A0739-1	O
Actuator					
Spring Return	Includes red, green, amber, white and blue color filter disks		red green amber white blue	8602-A0735-1	SR SG SA SW SB

Technical Data

8010 Pilot Light	NEC/CEC/IEC	
Rated Voltage	12V-10% . . . 254V+6%	
Frequency	DC . . . 60Hz.	
Rated Current	max. 15mA.	
Rated Power	max. 15mW	
Electrical Life	100,000 hrs. (11 yrs.)	
Colors	Red, Green, Amber, White, Blue,	
Terminals	12AWG (2.5mm²)	
Housing Material	polyamide	
8082 Contact Block	**NEC/CEC**	**IEC**
Rated Voltage	600VAC	500VAC
Continuous Current	10A	6A
Lowest Energy	50mA @ 12VAC/DC*	

** For lower energy use gold plated contacts, available on request.*



APPROVALS

FILE No. E182378

CERTIFIED - FILE No. LR99480

PTB 00 ATEX 1031U
PTB 01 ATEX 1160 U
PTB 01 ATEX 1129 U

IECEx

IECEx PTB 06.0011 U
IECEx PTB 06.0016 U
IECEx PTB 06.0014 U

Series 8082/8010 Illuminated Pushbuttons have contact blocks and LED pilot lights combined under one actuator. The possible contact blocks are either 2 N.C., or 2 N.O., or 1 N.O. and 1 N.C. By wiring the individual components appropriately, different switching and indicating functions can be achieved.

The lamps may be operated at any voltage between 12V and 254 V AC/DC. They are available in red, green, amber, white and blue.

Control Components

8008 CONTROL SWITCHES

APPROVALS

FILE No. E182378

CERTIFIED - FILE No. LR99480

PTB 00 ATEX 1111U

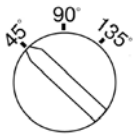
IECEx

IECEx PTB 06.0010 U

The 8008 Series is a two pole and a four pole control switch which is rail mountable via a supplied adapter plate. Control switch bodies are made from polyester and designed to contain the pressure generated by an internal explosion. The switches are available in over 300 different contact configurations. The most common 2-pole switching arrangements are illustrated on this page. The 4 pole switching arrangements are illustrated on page F20. For more configurations, consult factory.

Ordering Information

Selector switch specification example: 8008/2-38



How to read the diagram:
First we note that there are three positions to which the handle can be turned: 45° left position, 90° center position and 135° right position.

The first contact, designated by terminal numbers 13-14 is open when the handle is in the left position (45°) [blank square], it is also open in the center position (90°) [blank square], and is closed in the right position (135°) [square marked with an X].

The second contact, designated by terminal numbers 23-24 is open in the left position (45°) [blank square] and is closed in the center position (90°) [square marked with an X]. At the right position (135°) the contact remains closed [square marked with an X].

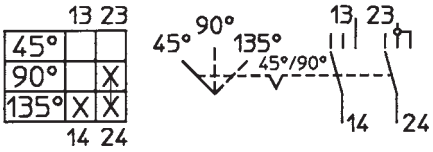
The terminal numbers are marked on the switch block.

See chart below for a selection of available contact configurations. For other contact configurations, consult factory.

Technical Data for 2 and 4 Pole

	NEC/CEC	IEC
Rated Voltage	600V	690VAC
Rated Current	10A	16A
Mechanical Life	≥ 10^5 Operations	
Electrical Life	≥ 10^5 Operations	
Terminals	12AWG	2.5mm²

MAKE BREAK DIAGRAM	CONTACT ARRANGEMENT	ORDERING CODE 038



Note: The above denoted 45°/90° at the notch indicates that in these two positions the switch is maintained, and the 135° position is spring return to the 90° center position. The contacts are drawn in the 45° position. This is indicated by the solid 45° line.

Ordering Information, 2 Pole Switches

MAKE BREAK DIAGRAMS	CONTACT ARRANGEMENTS	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
13 23 / 45° / 135° X X / 14 24	45° 135° 13 23 14 24	8008/2-002	□02
11 21 / 45° X X / 135° / 12 22	45° 135° 11 21 12 22	8008/2-005	□05
11 23 / 45° X / 135° X / 12 24	45° 135° 11 23 12 24	8008/2-016	□16
11 23 / 45° X / 90° / 135° X / 12 24	45° 90° 135° 11 23 12 24	8008/2-027	□27
68° 11 23 / 45° / 90° X / 135° X X / 12 24	45° 90° 135° 90° 11 23 12 24	8008/2-034	□34
13 23 / 45° / 90° X / 135° X X / 14 24	45° 90° 135° 45°/90° 13 23 14 24	8008/2-038	□38
13 23 / 45° X / 90° / 135° X / 14 24	45° 90° 135° 90° 13 23 14 24	8008/2-040	□40
13 23 / 45° X / 90° / 135° X / 14 24	45° 90° 135° 90°/135° 13 23 14 24	8008/2-051	□51

Insert Actuator Code

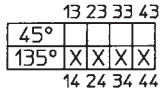
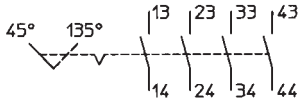
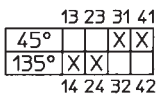
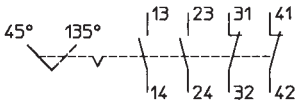
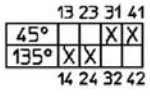
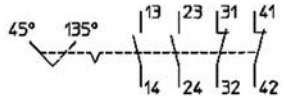
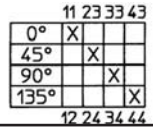
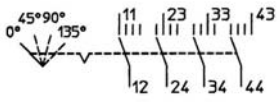
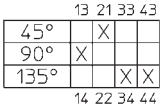
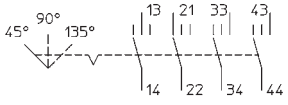
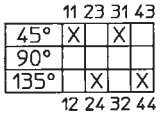
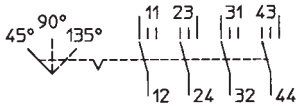
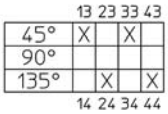
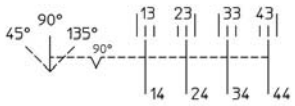
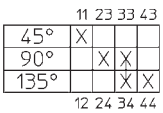
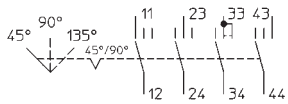
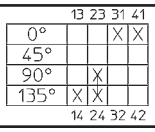
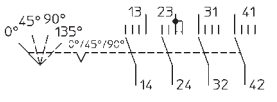
L-Large Lockable
S-Small Lockable
N-Small Non-Locking

(See Switch handle ordering table on next page).

Control Components

8008 CONTROL SWITCHES, 4-POLE

Ordering Information, 4 Pole Switches

MAKE BREAK DIAGRAM	CONTACT ARRANGEMENT	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
		8008/2-102	102
		8008/2-106	106
		8008/2-109	109
		8008/2-110	110
		8008/2-113	113
		8008/2-119	119
		8008/2-127	127
		8008/2-139	139
		8008/2-148	148

Insert Actuator Code
L - Large Lockable
S - Small Lockable
N - Small Non-Locking

Control Switch Handles

DESCRIPTION	TYPE	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
Small Rotary Actuator	not lockable	8602A0732-1	N
	lockable, one position	8602A4-0734	S
Large Rotary Actuator*	lockable	8602A1-SS-0731	L

* Can only be installed in enclosure codes 12, 73, 54 and 94
(See page F22 for legend plate ordering information.)

APPROVALS

c UL us LISTED FILE E182378

CERTIFIED - FILE LR99480

PTB 00 ATEX 1111U

IECEx
IECEx PTB 06.0010 U

The most common 4-pole switching arrangements are illustrated on this page. For more configurations, consult factory.

Since the 4 pole switches are deeper than the 2 pole, they only can be mounted into deep enclosures with the assembly codes 73, 84 and 94.

L

S

N

Control Components

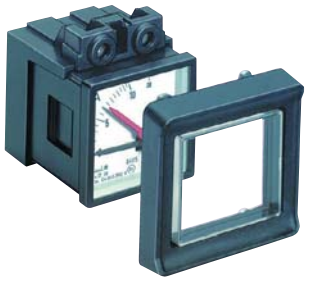
8405 AMMETERS

Ordering Information

TYPE	MEASURING RANGE	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
DIRECT READ (2X OVERLOAD)	0-20mA or 4-20mA	8405/2-0.02/0.04	AD0204
	0-1/2 A	8405/2-1/2	AD0012
	0-4/8 A	8405/2-4/8	AD0048
	0-10/20 A	8405/2-10/20	AD1020
	0-15/30 A	8405/2-15/30	AD1530
INDIRECT READ (for current transformer)	1A Secondary/ 2 and 5X Overload	8405/2-1	A1 _ _ _ _
	5A Secondary/ 2 and 5X Overload	8405/2-5	A5 _ _ _ _
	SCALE CODES 1/5, 2/10, 5/25, 10/50, 15/75 20/100, 30/150, 40/200, 50/250, 75/375 100/500, 150/750, 200/1000, 250/1250, 300/1500		
BEZEL	2.5" x 2.5" (64 x 64mm)	86 038 01 58 7	Included in ordering code above

Technical Data

	NEC/CEC	IEC
Rated Insulated Voltage:	600V	690V
Movement:	Iron Core	
Power Consumption:	0.2W Max.	
Frequency	15-100 Hz. DC available	
Accuracy	2.5% of full range	
Terminals	12AWG	2.5mm²



APPROVALS

FILE No. E182378

CERTIFIED - FILE LR99480

PTB 01 ATEX 2158 U

IECEx

IECEx PTB 06.0017 U

The 8405 Series ammeters are used to measure current of a motor supply circuit in a potentially explosive atmosphere.

They are available in both direct and indirect reading versions (current transformer not supplied) with slide in scales to accommodate any amperage range required.

A red pointer can be manually adjusted for quick visual comparison of the actual value with the set value.

The supplied adapter plate allows the unit to be railed mounted for snap-on-installation.

8208 POTENTIOMETERS FOR HAZARDOUS LOCATIONS

Ordering Information

	INDIVIDUAL ORDER CATALOG NUMBER	ASSEMBLY CODE
Potentiometer		
resistance values in ohms	8208/24-08-S002-_ _	01 = 100Ω, 02 = 220Ω, 03 = 470Ω, 04 = 1 kΩ, 05 = 2.2 kΩ 06 = 4.7 kΩ, 07 = 10 kΩ, 08 = 22 kΩ, 09 = 47 kΩ, 10 = 100 kΩ 11 = 220 kΩ, 12 = 470 kΩ, 13 = 1 MΩ, 14 = 2.2 MΩ, 15 = 4.7 MΩ
Actuator		
with dial scale 0-6	86 028 06 16 7 AA	P6
0-10	86 028 06 16 7 AB	P1
0-100	86 028 06 16 7 AC	P2

Technical Data

Housing material:	Polyester
Rated Power:	2 Watt
Voltage limit:	450V
Resistance Values:	100 ohms to 4.7 mega ohms
Characteristics:	linear
Resistance tolerance:	±30%
Material of resistor:	carbon
Adjustment scale:	270 degrees
Terminals:	12AWG (2.5mm²)

APPROVALS

CERTIFIED - FILE LR99480

PTB 01 ATEX 1066U

IECEx

IECEx PTB 06.0032 U

A potentiometer functions as a variable resistor. It is used to adjust resistance in a control circuit to vary motor speed or other applications.

The housing is made from polyester and designed to contain the pressure generated by an internal explosion.

The supplied adapter makes it rail mountable for snap-on-installation.

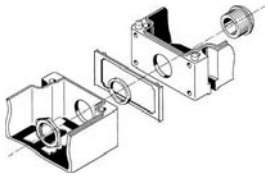
NAME PLATES AND LEGEND DISCS

Pushbutton Legend Disks Ordering

DESCRIPTION	CATALOG NUMBER	
Blank, Legend Disk Blue	155911	
Blank, Legend Disk Yellow	155914	
Blank, Legend Disk Red	155897	
Blank, Legend Disk Green	155901	
Blank, Legend Disk White	155908	
Blank, Legend Disk Black	155905	
Red, Legend Disk “STOP”	155615	
Green, Legend Disc “START”	155721	
Red, Legend Disk “OFF”	155654	
Green, Legend Disk “ON”	155671	
Green, Legend Disk “I”	155689	
Green, Legend Disk “II”	155706	
Red, Legend Disk “O”	155596	
Red, Legend Disk Arrow	155567	
Black, Legend Disk “UP”	200217	“UP”
Black, Legend Disk “DOWN”	200217	“DOWN”
Black, Legend Disk “RUN”	200217	“RUN”
Black, Legend Disk “SLOW”	200217	“SLOW”
Black, Legend Disk “FAST”	200217	“FAST”
Black, Legend Disk “CLOSE”	155878	
Black, Legend Disk “OPEN”	155868	
Black, Legend Disk “AUTO”	200217	“AUTO”
Black, Legend Disk “RIGHT”	200217	“RIGHT”
Black, Legend Disk “LEFT”	200217	“LEFT”
Black, Legend Disk “HAND”	200217	“HAND”
Black, Legend Disk “RESET”	200217	“RESET”
Black, Legend Disk “OFF-ON”	200217	“OFF-ON”
Black, Legend Disk Arrow	155749	
Black, Legend Disk Arrow	155761	

Conduit & Cable Entry Parts Ordering

DESCRIPTION	CATALOG NUMBER
Hub Assemblies for FRP Housings	
Back Plate M20	130711
Back Plate M25	130718
Back Plate 1/2”	130732
Back Plate 3/4”	130726
3/4” NPT Fixed Hub	143739
Cable Gland, plastic M25	8161/5-M25-17
Close-up Plug M25	8290/3-M25
Locknut M25	138395
Breathing Gland, includes locknut M25	138580
Breathing Gland, 3/4”	8162/9
Reducer, 3/4” - 1/2” NPT	R-21
Coupling Kit M25	130956



Combination Coupling Kit to gang boxes

88 000 07 54 0 Installed

Legend Plates Ordering

DESCRIPTION	POS. 1	POS. 2	POS. 3	CATALOG NUMBER
One-line Legend Frame				155632
Inserts:				
	HAND	0	AUTO	155723
	OFF	•	ON	155708
		0	I	155691
	I		II	155673
	I	0	II	155656
	0	I	II	155635
	0	•	I	155598
	0/OFF		I/ON	155569
Blank- one line insert				155737
Two-line Legend Frame				155687
Blank- two line insert				155875
Three-line Legend Frame				155844
Blank- Three-line insert				155925

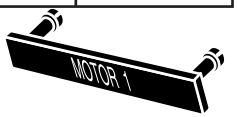
Legend Disks for Large Control Switch Handle* Ordering

DESCRIPTION	CATALOG NUMBER
Blank	155871
OFF-ON	155750
HAND-O-AUTO	155828

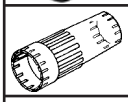
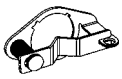
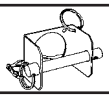
* Must be installed prior to handle assembly

Label Ordering

DESCRIPTION	CATALOG NUMBER
Station Identification Label	130673



Accessories

	DescriptioN	Catalog Number	Assembly Code
	Device close-up plug	155329	P733
	Actuator wrench	130382	N/A
	Momentary PB 01, 02 lockout	155402	LK01
	Momentary PB 01, 02 exclusion	155431	LK02
	Small mushroom PB 03, 10, 12 & 13 guard	155326	LK03
	Small mushroom 03, 10, 12 & 13 lockout (actuated)	155349	LK10
	Mushrooms 10, 15 pin & chain lockout	155445	LK11
	Small mushroom 03, 10, 12 & 13 exclusion (non actuated)	155469	LK20
	Momentary PB 01, 02 exclusion	155371	LK21
	Double PB 23 lockout	155460	LK23

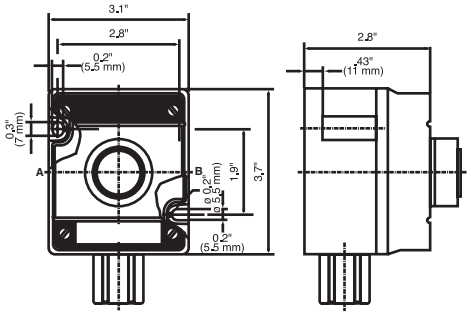
88 000 07 52 0

Conduit Hub Assembly

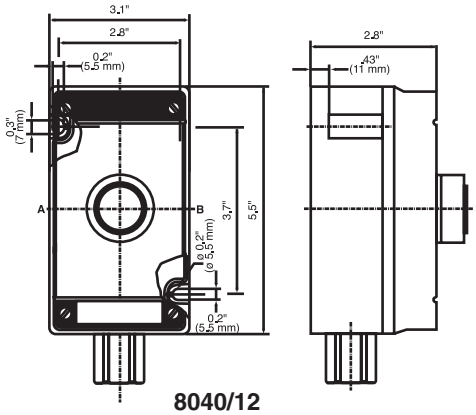
Actuator Wrench

ConSig 8040 Series

DIMENSIONS



Compact 8040/11



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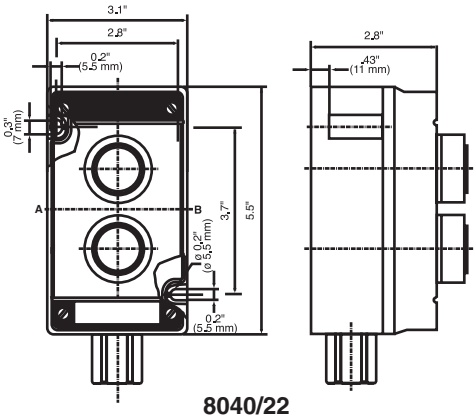

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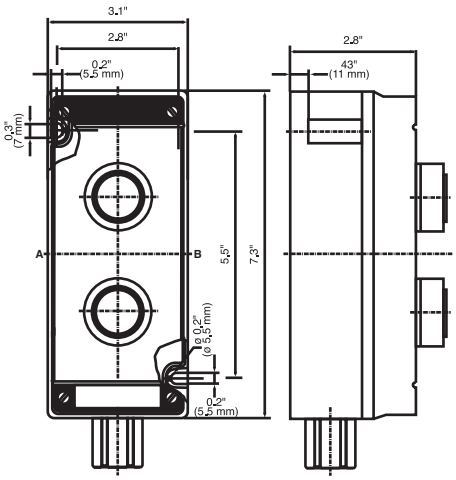

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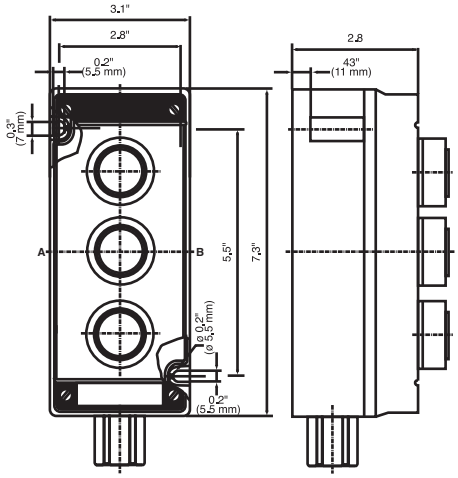
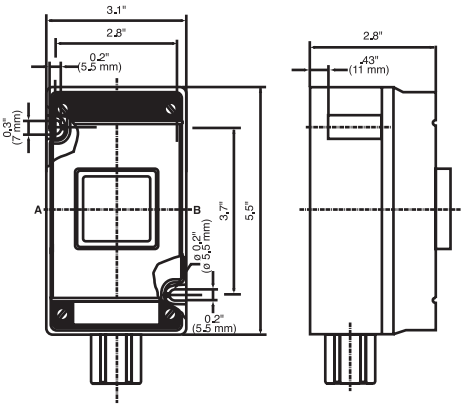


8040/33



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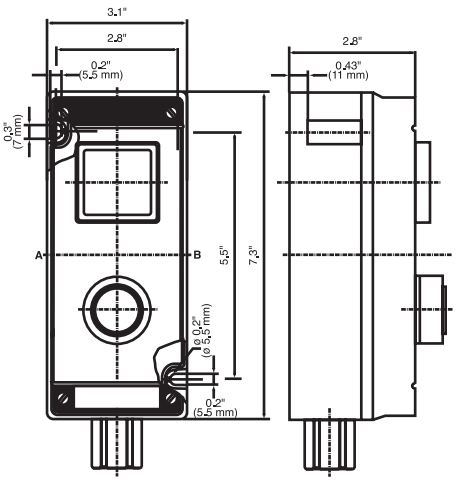

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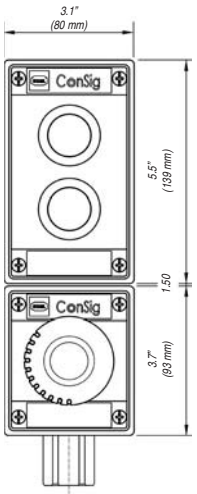
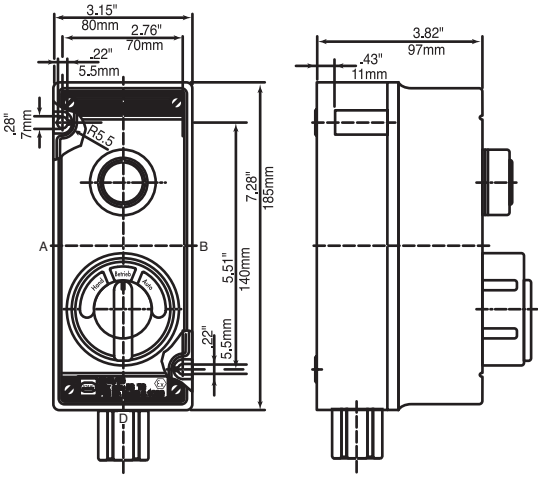


Any Combination possible with kit 130956



8040/73,84,94

8150 Series

CONTROL PANEL IN STAINLESS STEEL

CLASSIFICATIONS

NEC & CEC

Class I, Zones 1 & 2 AEx de II C T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type: 3, 4 & 4X; IP66

File No. E 231214

II 2G Ex de IIC T6
PTB 09 ATEX 1109

II 2D Ex tD A21 IP66, T80˚C

IECEx

Ex de IIC T6
Ex tD A21 IP66 T80˚C
IECEx PTB 06.0090

Ambient Temperature Range:
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Special Ambient Temperature Range:*
***Consult Factory**

Features:

8150 series control stations are designed to incorporate control and display devices. The number of units installed depends on the control station size and the space required to fit each device.

- Enclosures in 316L or 304 stainless steel
- Options:
  - Flanges
  - Cover Hinges
- Enclosures can be coupled together

For entry hardware see pages C8 to C12 & Section K

Components:

- Contact blocks
- Pilot lights
- Illuminated Pushbuttons
- Control switches
- Ammeters
- Voltmeters

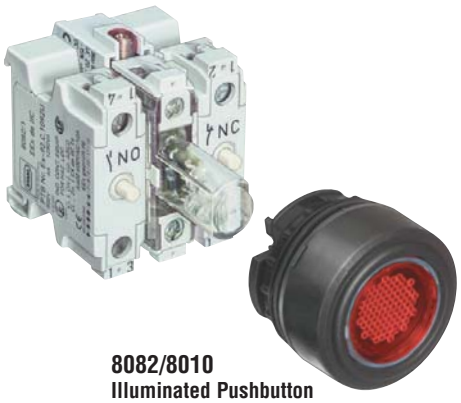
For component data see pages F15-F22.

8150 Series Control Panel

IN STAINLESS STEEL

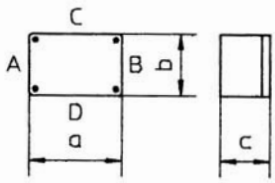
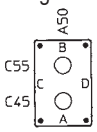
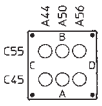
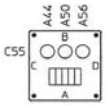
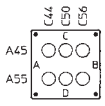
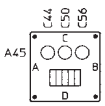
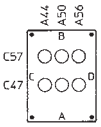
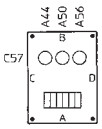
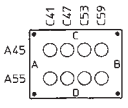
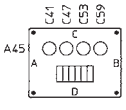
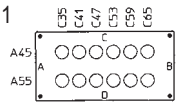
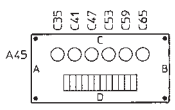
8082
Control Unit with actuators 7/16" /o.d. 38mm

8010
LED Pilot Light



8082/8010
Illuminated Pushbutton

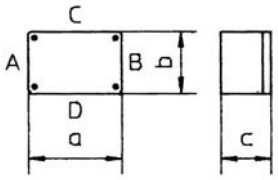
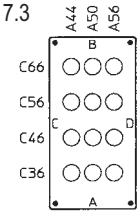
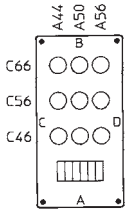
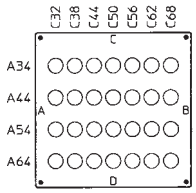
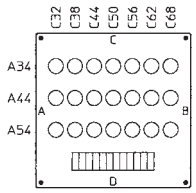
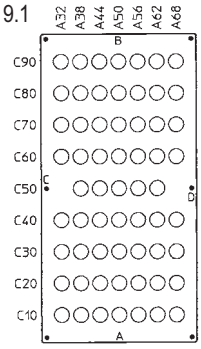
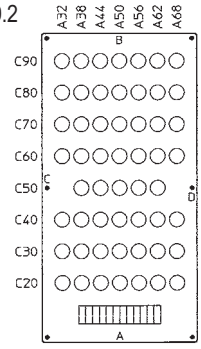
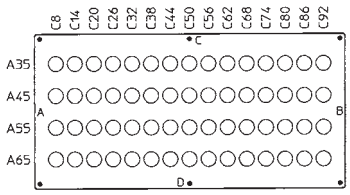
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, and Illuminated Pushbuttons 8082/8010.	
4 Side facing down	a 6.95" 176 mm b 4.58" 116 mm c 3.58" 91 mm	Fig. 4.1  **A**	1.4301 (AISI 304) **8150/5-0176-0116-091-2311** 1.4404 (AISI 316L) **8150/5-0176-0116-091-3311**
5 Side facing down	a 6.95" 176 mm b 6.95" 176 mm c 3.58" 91 mm	Fig. 5.1  A Fig.5.2  A Fig. 5.3  D Fig. 5.4  D	1.4301 (AISI 304) **8150/5-0176-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0176-0176-091-3311**
6 Side facing down	a 9.29" 236 mm b 6.95" 176 mm c 3.58" 91 mm	Fig. 6.1  A Fig. 6.2  A Fig. 6.3  D Fig. 6.4  D	1.4301 (AISI 304) **8150/5-0236-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0236-0176-091-3311**
7 Side facing down	a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91mm	Fig. 7.1  D Fig. 7.2  D	1.4301 (AISI 304) **8150/5-0360-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0360-0176-091-3311**

For dimensional information see page F29

IN STAINLESS STEEL

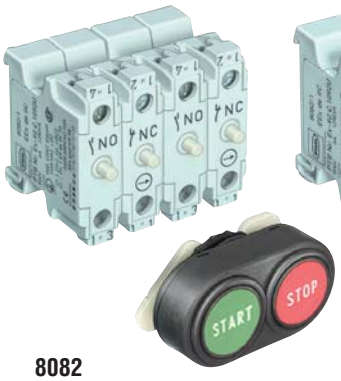
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		**Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, and Illuminated Pushbuttons 8082/8010.**	
7 Side facing down	a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91mm	Fig. 7.3  A Fig. 7.4  A	1.4301 (AISI 304) **8150/5-0360-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0360-0176-091-3311**
8 Side facing down	a 14.17" 360 mm b 14.17" 360 mm c 3.58" 91mm	Fig. 8.1  D Fig. 8.2  D	1.4301 (AISI 304) **8150/5-0360-0360-091-2311** 1.4404 (AISI 316L) **8150/5-0360-0360-091-3311**
9 Side facing down	a 28.62" 727 mm b 14.17" 360 mm c 3.58" 91mm	Fig. 9.1  A Fig. 9.2  A Fig. 9.3  D	1.4301 (AISI 304) **8150/5-0727-0360-091-2311** 1.4404 (AISI 316L) **8150/5-0727-0360-091-3311**

For dimensional information see page F29

8150 Series Control Panel

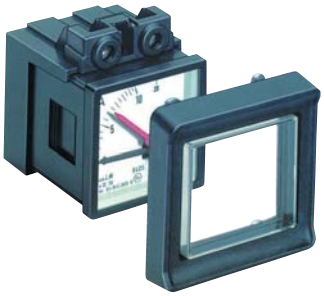
IN STAINLESS STEEL



8082
Contact Blocks with Double Momentary Pushbutton

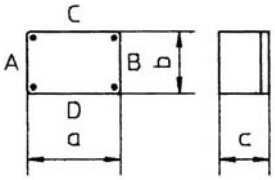
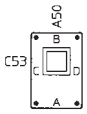
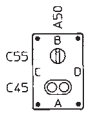
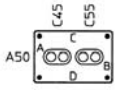
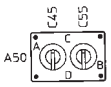
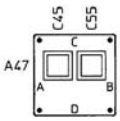
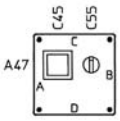
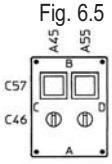
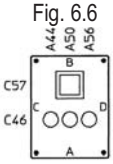
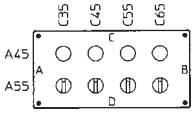
Emergency STOP (Jumbo)

8008
Control Switches



8405
Ammeter

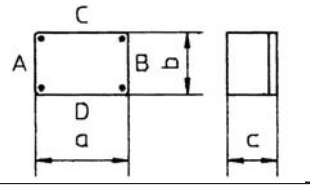
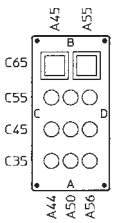
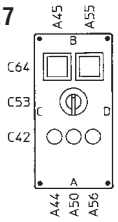
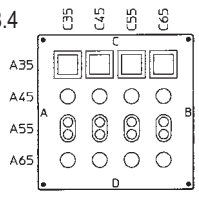
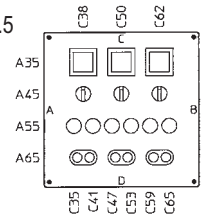
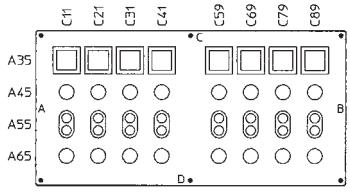
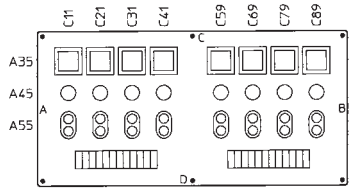
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, Illuminated Pushbuttons 8082/8010, Control Switches 8008 and Ammeters 8405.	
4	a 6.95" 176 mm b 4.58" 116 mm c 3.58" 91 mm Side facing down	Fig. 4.4  A Fig. 4.5  A Fig. 4.6  D Fig. 4.7  D	1.4301 (AISI 304) **8150/5-0176-0116-091-2311** 1.4404 (AISI 316L) **8150/5-0176-0116-091-3311**
5	a 6.95" 176 mm b 6.95" 176 mm c 3.58" 91mm Side facing down	Fig. 5.5  D Fig. 5.6  D	1.4301 (AISI 304) **8150/5-0176-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0176-0176-091-3311**
6	a 9.29" 236 mm b 6.95" 176 mm c 3.58" 91 mm Side facing down	Fig. 6.5  A Fig. 6.6  A	1.4301 (AISI 304) **8150/5-0236-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0236-0176-091-3311**
7	a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91mm Side facing down	Fig. 7.5  D	1.4301 (AISI 304) **8150/5-0360-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0360-0176-091-3311**

For dimensional information see page F29

IN STAINLESS STEEL

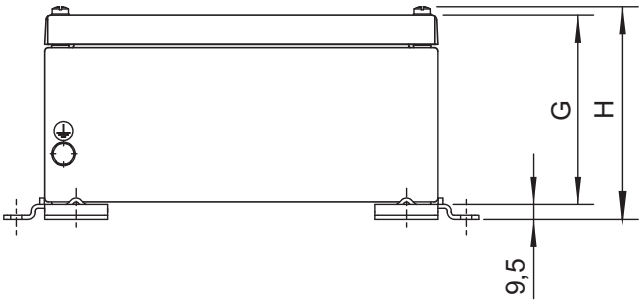
Typical Panel Configurations

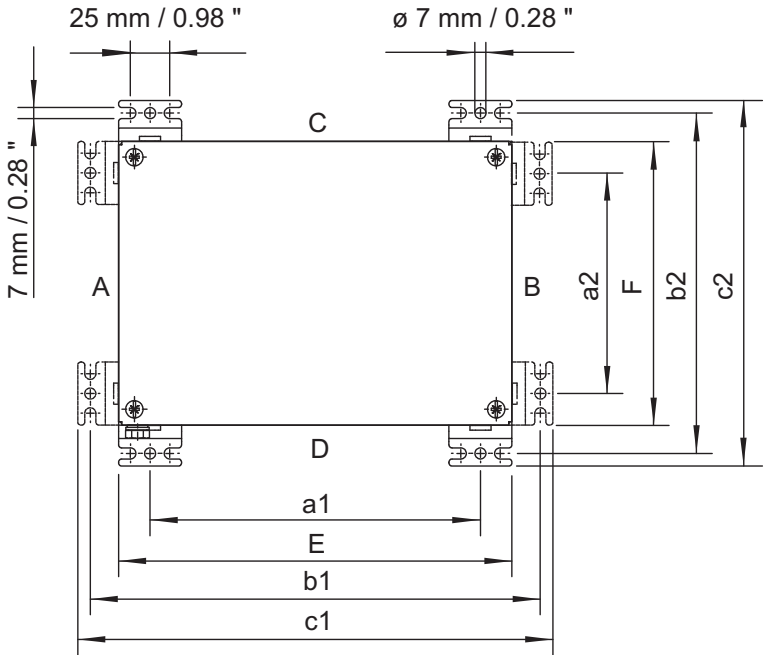
ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, Illuminated Pushbuttons 8082/8010, Control Switches 8008 and Ammeters 8405.	
7 **Side facing down**	a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91 mm	**Fig. 7.6**  **A** **Fig. 7.7**  **A**	1.4301 (AISI 304) **8150/5-0360-0176-091-2311** 1.4404 (AISI 316L) **8150/5-0360-0176-091-3311**
8 Side facing down	a 14.17" 360 mm b 14.17" 360 mm c 3.58" 91 mm	Fig. 8.4  D Fig. 8.5  D	1.4301 (AISI 304) **8150/5-0360-0360-091-2311** 1.4404 (AISI 316L) **8150/5-0360-0360-091-3311**
9 Side facing down	a 28.62" 727 mm b 14.17" 360 mm c 3.58" 91 mm	Fig. 9.4  D Fig. 9.5  D	1.4301 (AISI 304) **8150/5-0727-0360-091-2311** 1.4404 (AISI 316L) **8150/5-0727-0360-091-3311** 1.4301 (AISI 304) **8150/5-0727-0360-091-2311** 1.4404 (AISI 316L) **8150/5-0727-0360-091-3311**

For dimensional information see page F29

8150 Series Control Panel

DIMENSIONS

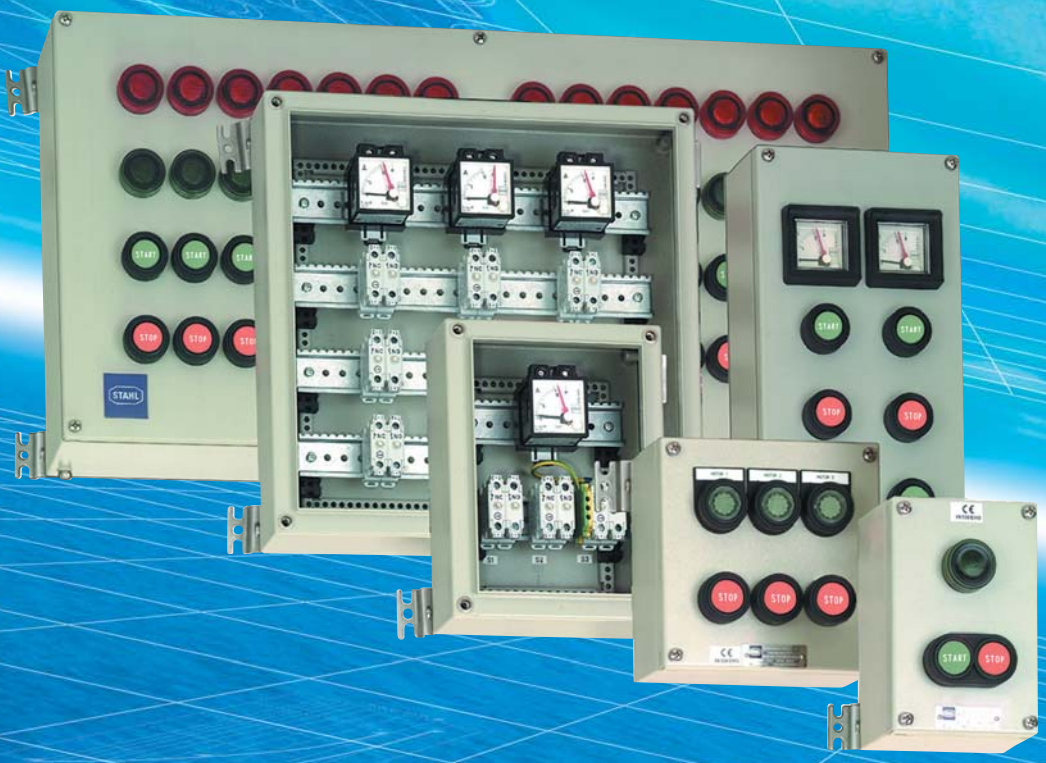




	Width	Height	Depth	Total Depth	Fixing Dimensions					
Catalog Number	E	F	G	H	a1	a2	b1	b2	c1	c2
8150/5-0176-0116-091	6.95" (176,5mm)	4.59" (116,5mm)	3.58" (91mm)	4.17" (106mm)	3.01" (76,5mm)	5.35" (136mm)	5.98" (152mm)	8.98" (228mm)	6.61" (228mm)	8.98" (228mm)
8150/5-0176-0176-091	6.95" (176,5mm)	6.95" (176,5mm)	3.58" (91mm)	4.17" (106mm)	5.37" (136,5mm)	5.35" (136mm)	8.35" (212mm)	8.35" (212mm)	8.98" (228mm)	8.98" (228mm)
8150/5-0236-0116-091	9.31" (236,5mm)	6.95" (176,5mm)	3.58" (91mm)	4.17" (106mm)	5.37" (136,5mm)	7.74" (136,5mm)	8.35" (212mm)	10.71" (272mm)	8.98" (228mm)	8.98" (228mm)
8150/5-0360-0176-091	14.17" (360mm)	6.95" (176,5mm)	3.58" (91mm)	4.17" (106mm)	5.37" (136,5mm)	12.6" (320mm)	8.35" (212mm)	15.59" (396mm)	8 98" (228mm)	16.22" (412mm)
8150/5-0360-0360-091	14.17" (360mm)	14.17" (360mm)	3.58" (91mm)	4.17" (106mm)	12.6" (320mm)	12.6" (320mm)	15.59" (396mm)	15.59" (396mm)	16.22" (412mm)	16.22" (412mm)
8150/5-0727-0360-091	28.62" (727mm)	14.17" (360mm)	3.58" (91mm)	4.17" (106mm)	27.05" (687mm)	12.6" (320mm)	30.04" (763mm)	15.59" (396mm)	30.67" (779mm)	16.22" (412mm)

8125 Series

CONTROL PANEL IN SHEET STEEL OR STAINLESS STEEL



CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de II C T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type:
stainless steel version
3, 4 & 4X; IP66,
carbon steel version, painted
3 & 4; IP66,
File No. E182378

CEC- Class I, Zones 1 & 2 Ex de II T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III

CSA ENCLOSURES
stainless steel version
3, 4 & 4X; IP66
carbon steel version, painted
3 & 4; IP66
File No. LR 99480

II 2G Ex de IIC T6
II 2D Ex tD A21 IP66 T80˚C
PTB 01 ATEX 1001
IECEx PTB 09.0049

Ambient Temperature Range:
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Special Ambient Temperature Range:*
***Consult Factory**

Features:
8125 series control stations are designed to incorporate control and display devices. The number of units installed depends on the control station size and the space required to fit each device.

- Enclosures in galvanized sheet steel or 316 stainless steel
- 6 basic enclosure sizes
- Options:
  - Flanges
  - Cover Hinges
- Enclosures can be coupled together

For entry hardware see pages C18 & Section J

Components:

- Contact blocks
- Pilot lights
- Illuminated pushbuttons
- Control switches
- Ammeters
- Voltmeters

For component data see pages F15-F22 and F46-F47.

8125 Series Control Panel

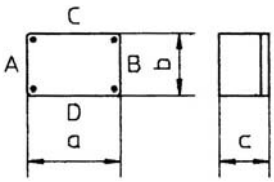
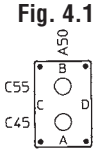
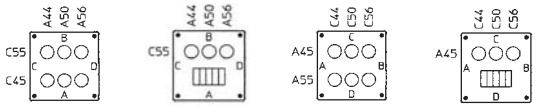
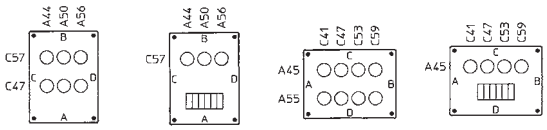
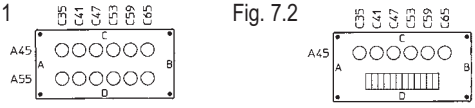
IN CARBON STEEL OR STAINLESS STEEL

8082
Control Unit with actuators
7/16" /o.d. 38mm

8010
LED Pilot Light

8082/8010
Illuminated Pushbutton

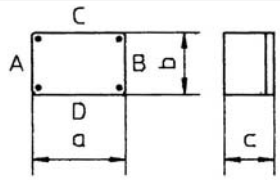
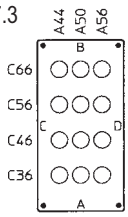
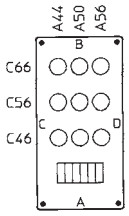
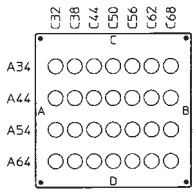
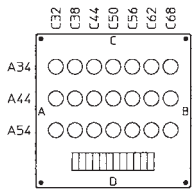
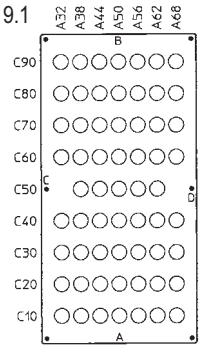
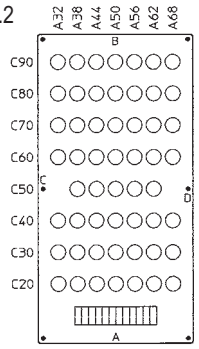
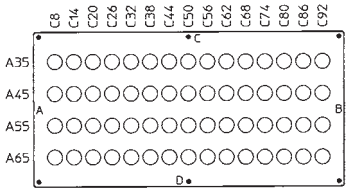
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, and Illuminated Pushbuttons 8082/8010.	
4 Side facing down	a 6.95" 176 mm b 4.58" 116 mm c 3.58" 91 mm	**Fig. 4.1**  A	**8125/5041-** ☐☐
5 Side facing down	a 6.95" 176 mm b 6.95" 176 mm c 3.58" 91 mm	Fig. 5.1 Fig.5.2 Fig. 5.3 Fig. 5.4  A A D D	**8125/5051** ☐☐
6 Side facing down	a 9.29" 236 mm b 6.95" 176 mm c 3.58" 91 mm	Fig. 6.1 Fig. 6.2 Fig. 6.3 Fig. 6.4  A A D D	**8125/5061-** ☐☐
7 **Side facing down**	**a 14.17" 360 mm** **b 6.95" 176 mm** **c 3.58" 91mm**	Fig. 7.1 Fig. 7.2  **D D**	**8125/5071-** ☐☐
		Enclosure material: sheet steel, painted **1** stainless steel **2**	
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F36

IN CARBON STEEL OR STAINLESS STEEL

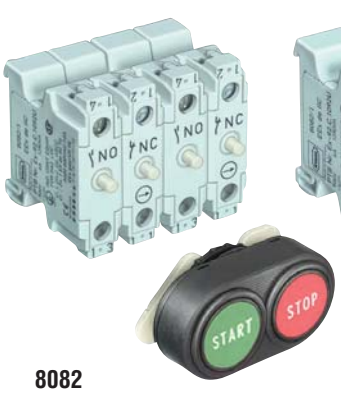
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, and Illuminated Pushbuttons 8082/8010.	
7 a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91mm Side facing down		Fig. 7.3  Fig. 7.4  A — A	8125/5071-□□
8 a 14.17" 360 mm b 14.17" 360 mm c 3.58" 91mm Side facing down		Fig. 8.1  Fig. 8.2  D — D	8125/5081-□□
9 a 28.62" 727 mm b 14.17" 360 mm c 3.58" 91mm Side facing down		Fig. 9.1  Fig. 9.2  A — A Fig. 9.3  D	8125/5091-□□
		Enclosure material: sheet steel, painted 1; stainless steel 2	
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F36

8125 Series Control Panel

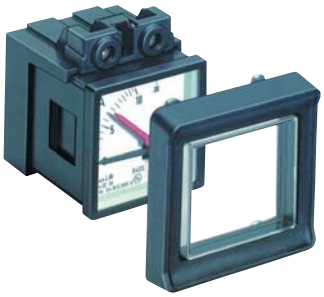
IN CARBON STEEL OR STAINLESS STEEL



8082
Contact Blocks with Double Momentary Pushbutton

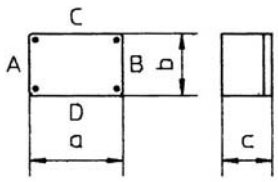
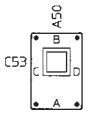
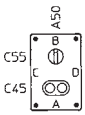
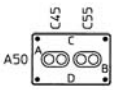
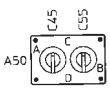
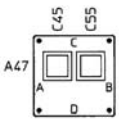
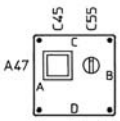
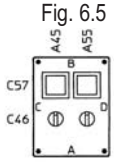
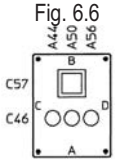
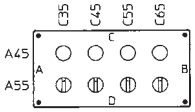
Emergency STOP (Jumbo)

8008
Control Switches



8405
Ammeter

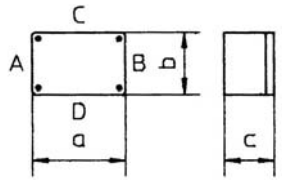
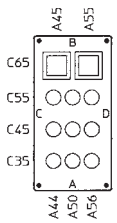
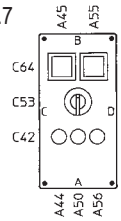
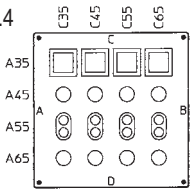
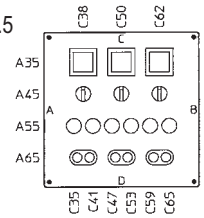
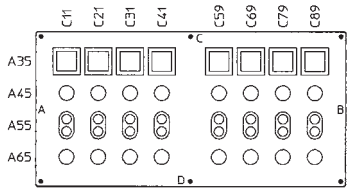
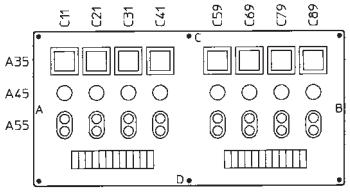
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, Illuminated Pushbuttons 8082/8010, Control Switches 8008 and Ammeters 8405.	
4 Side facing down	a 6.95" 176 mm b 4.58" 116 mm c 3.58" 91 mm	Fig. 4.4  A Fig. 4.5  A Fig. 4.6  D Fig. 4.7  D	**8125/5041-□□**
5 Side facing down	a 6.95" 176 mm b 6.95" 176 mm c 3.58" 91mm	Fig. 5.5  D Fig. 5.6  D	**8125/5051-□□**
6 Side facing down	a 9.29" 236 mm b 6.95" 176 mm c 3.58" 91 mm	Fig. 6.5  A Fig. 6.6  A	**8125/5061-□□**
7 Side facing down	a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91mm	Fig. 7.5  D	**8125/5071-□□**
		Enclosure material: sheet steel, painted 1; 316L stainless steel 2	
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F36

IN CARBON STEEL OR STAINLESS STEEL

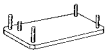
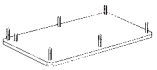
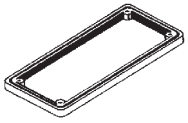
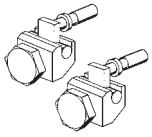
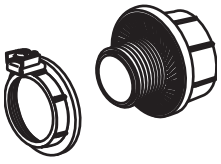
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, Illuminated Pushbuttons 8082/8010, Control Switches 8008 and Ammeters 8405.	
7 Side facing down	a 14.17" 360 mm b 6.95" 176 mm c 3.58" 91 mm	Fig. 7.6  Fig. 7.7  A — A	8125/5071-□□
8 Side facing down	a 14.17" 360 mm b 14.17" 360 mm c 3.58" 91 mm	Fig. 8.4  Fig. 8.5  D — D	8125/5081-□□
9 Side facing down	a 28.62" 727 mm b 14.17" 360 mm c 3.58" 91 mm	Fig. 9.4  D Fig. 9.5  D	8125/5091-□□
		Enclosure material: sheet steel, painted 1 316L stainless steel 2	
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F36

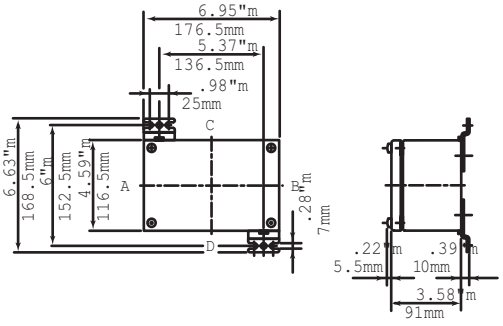
8125 Series Control Panel

PARTS AND ACCESSORIES

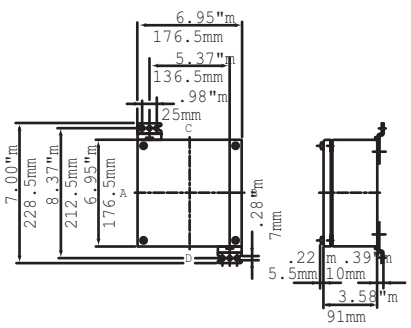
DESIGNATION	ILLUSTRATION	DESCRIPTION	CATALOG NUMBER
Flange Plate Size 1		5" x 2.7" x 0.2" (128 x 68 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•051 — A/B/C/D 8125/•061 — A/B/C/D 8125/•071 — A/B/C/D 8125/•S71 — C/D 8125/•081 — A/B/C/D	**134216** **135051**
Flange Plate Size 2		10.5" x 5" x 0.2" (266 x 128 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•063 — C/D 8125/•073 — C/D 8125/•083 /•085 — A/B/C/D 8125/•093 /•095 — A/B/C	**134245** **135093**
Flange Plate Size 3		5" x 5" x 0.2" (126 x 126 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•073 — A/B	**134274** **135125**
Flange Plate Size 4		13.86" x 6.1" x 0.2" (352 x 155 x 5 mm) carbon steel 316 stainless steel Can be fitted in Enclosures — Sides 8125/•085 — A/B/C/D 8125/•095 — A/B/C/D	**134292** **135145**
Coupling Frames		**Frame Sizes** 0 — 2.68" x 2.68" (68 mm x 68 mm) 1 — 5.04" x 2.68" (128 mm x 68 mm) 2 — 10.47" x 4.96" (266 mm x 126 mm) 3 — 4.96" x 4.96" (126 mm x 126 mm) 4 — 13.86" x 6.1" (352 mm x 155 mm)	**136012** **135974** **136031** **136235** **134289**
Cover Hinges		8125 for retrofitting to enclosure Kit consists of: 2 hinges 3 hinges	**134943** **134949**
Entry Hubs			**8166/11** (see page J1)

For Entry information see pages C16, 18 & 19.

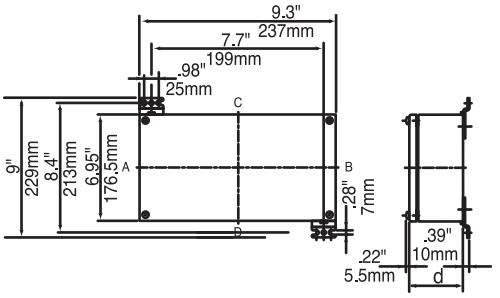
DIMENSIONS



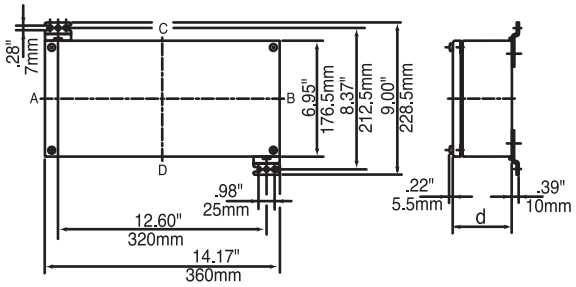
8125/5041



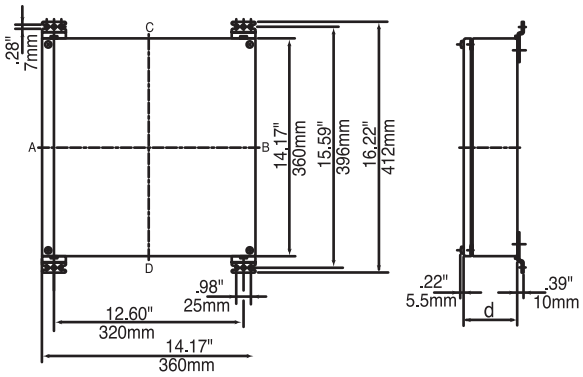
8125/5051



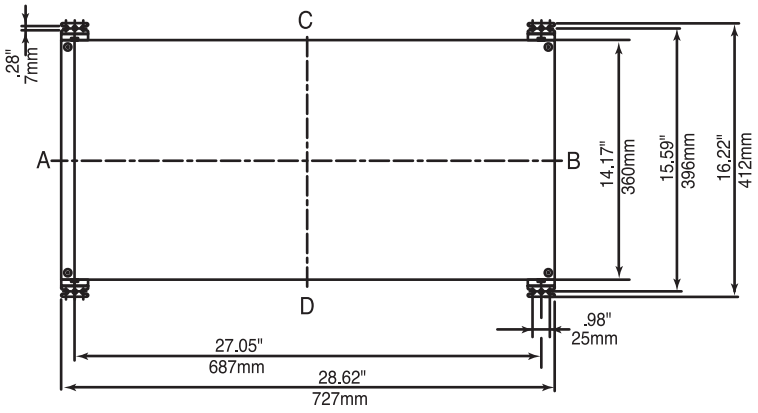
8125/506•



8125/507•



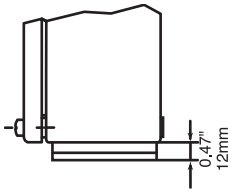
8125/508•



8125/509•

Available Enclosure Depth (d)				
Enclosure Sizes	1 3.58” 91mm	3 5.91” 150mm	5 7.48” 190mm	6 9.06” 230mm
8125/504•	x	-	-	-
8125/505•	x	-	-	-
8125/506•	x	x	-	-
8125/507•	x	x	-	-
8125/508•	x	x	x	x
8125/509•	x	x	x	-

Flange option: Add to overall dimensions.



Notes

8146 Series

CONTROL PANEL IN POLYESTER RESIN

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Enclosure Type 3, 4 & 4X; IP66
FILE No. E182378

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES 3, 4 & 4X; IP66
CERTIFIED - FILE No. LR99480

II 2G Ex de IIC T6
PTB 01 ATEX 1024

II 2D Ex tD A21 IP66, T80˚C

IECEX
Ex de IIC T6
Ex tD A21 IP66 T80˚C
IECEX PTB 06.0079

Ambient Temperature Range
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Special Temperature Range*.
*Consult Factory

Features:

Control and display devices are assembled in a clear layout in 8146 series control stations. The number of installed components depends on the control station size and the space required to fit each device.

- Enclosures in fiberglass reinforced polyester (FRP)
- 7 basic enclosure sizes
- Different enclosure depths
- Options:
  - Flanges
  - Cover Hinges
  - Flanged enclosure
  - Brass plates for metal cable entries

  For entry hardware see pages C30 & Section J
- Can be combined to larger units

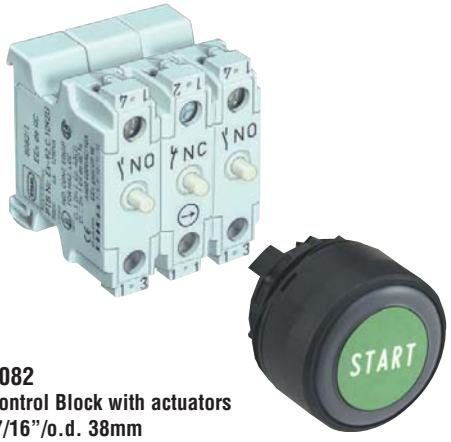
Components:

-Contact blocks
-Pilot lights
-Illuminated pushbuttons
-Control switches
-Ammeters
-Voltmeters

For component data see pages F15-F22 and F46-F47.

8146 Series Control Panel

IN FIBERGLASS REINFORCED POLYESTER (FRP)

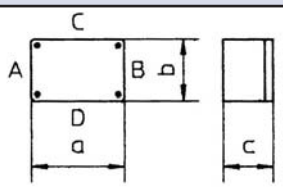
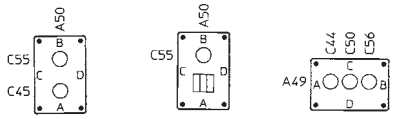
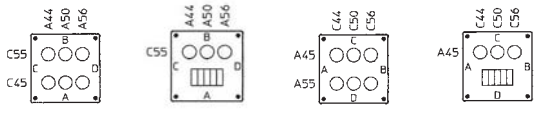
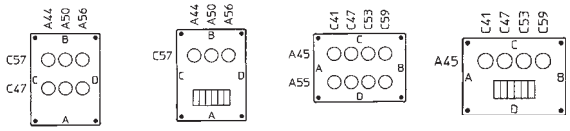


8082
Control Block with actuators 7/16"/o.d. 38mm

8010
LED Pilot Light

8082/8010
Illuminated Pushbutton

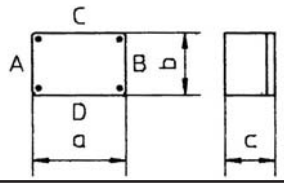
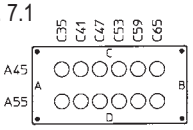
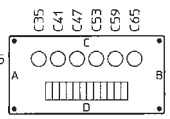
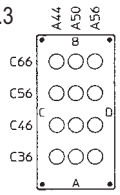
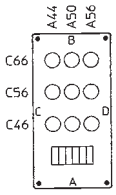
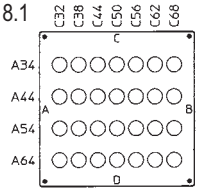
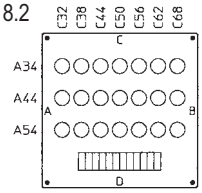
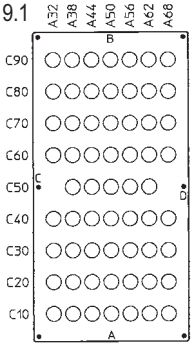
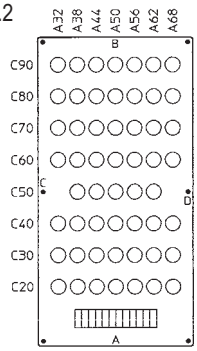
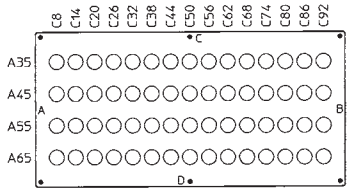
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, and Illuminated Pushbuttons 8082/8010.	
3 Side facing down	a 4.43" 112 mm b 4.43" 112 mm c 3.58" 91mm	Fig. 3.1 A	**8146/5031-3**
4 Side facing down	a 6.69" 170 mm b 4.43" 112 mm c 3.58" 91mm	Fig. 4.1 Fig.4.2 Fig. 4.3  A A D	**8146/5041-3**
5 Side facing down	a 6.69" 170 mm b 6.69" 170 mm c 3.58" 91mm	Fig. 5.1 Fig.5.2 Fig. 5.3 Fig. 5.4  A A D D	**8146/5051-3**
6 Side facing down	a 8.94" 227 mm b 6.69" 170 mm c 3.58" 91mm	Fig. 6.1 Fig.6.2 Fig. 6.3 Fig. 6.4  A A D D	**8146/5061-3**
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F44

IN FIBERGLASS REINFORCED POLYESTER (FRP)

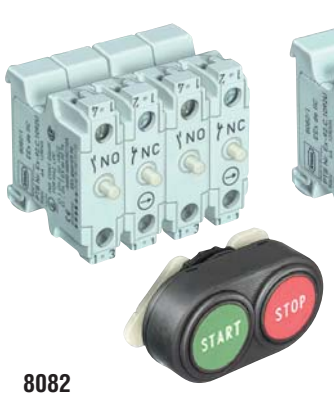
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, and Illuminated Pushbuttons 8082/8010.	
7	a 13.41" 340 mm b 6.69" 170 mm c 3.58" 91 mm Side facing down	Fig. 7.1  Fig. 7.2  D — D Fig. 7.3  Fig. 7.4  A — A	8146/5071-3
8	a 13.41" 340 mm b 13.41" 340 mm c 3.58" 91 mm Side facing down	Fig. 8.1  Fig. 8.2  D — D	8146/5081-3
9	a 26.83" 680 mm b 13.41" 340 mm c 3.58" 91 mm Side facing down	Fig. 9.1  Fig. 9.2  A — A Fig. 9.3  D	8146/5091-3
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F44

8146 Series Control Panel

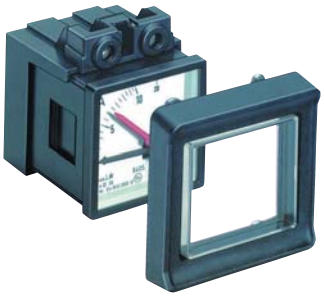
IN FIBERGLASS REINFORCED POLYESTER (FRP)



8082
Contact Blocks with Double Momentary Pushbutton

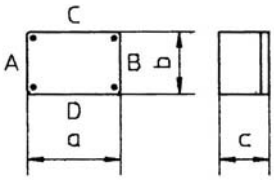
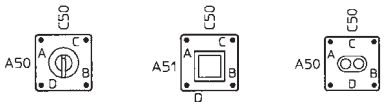
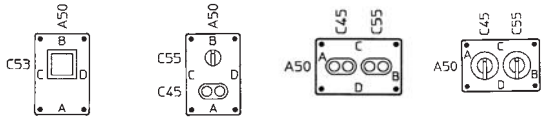
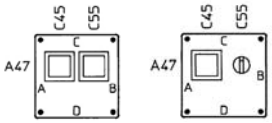
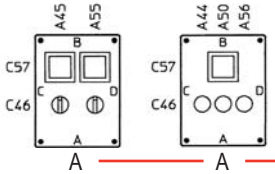
Emergency STOP (Jumbo)

8008
Control Switches



8405
Ammeter

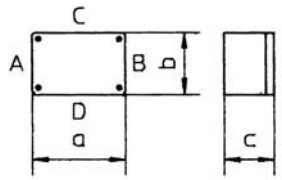
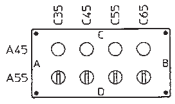
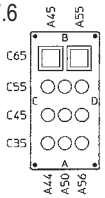
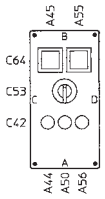
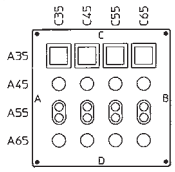
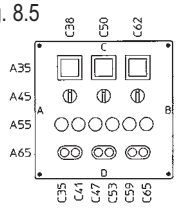
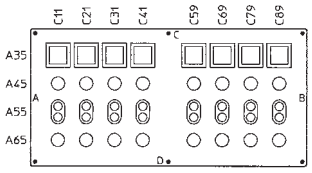
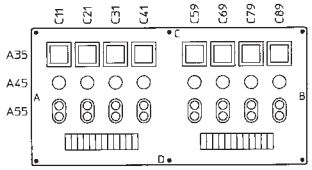
Typical Panel Configurations

ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, Illuminated Pushbuttons 8082/8010, Control Switches 8008 and Ammeters 8405.	
3	a 4.43" 112 mm b 4.43" 112 mm c 3.58" 91 mm Side facing down	Fig. 3.2 Fig. 3.3 Fig. 3.4  A A A	8146/5031-3
4	a 6.69" 170 mm b 4.43" 112 mm c 3.58" 91 mm Side facing down	Fig. 4.4 Fig.4.5 Fig. 4.6 Fig. 4.7  A A D D	8146/5041-3
5	a 6.69" 170 mm b 6.69" 170 mm c 3.58" 91 mm Side facing down	Fig. 5.5 Fig.5.6  D D	8146/5051-3
6	a 8.94" 227 mm b 6.69" 170 mm c 3.58" 91 mm Side facing down	Fig. 6.5 Fig. 6.6  A A	8146/5061-3
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F44

IN FIBERGLASS REINFORCED POLYESTER (FRP)

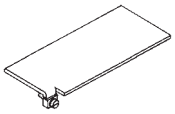
Typical Panel Configurations

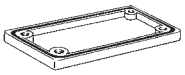
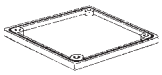
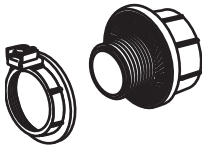
ENCLOSURE SIZE	DIMENSIONS Inches mm	PANEL CONFIGURATIONS	CATALOG NUMBER
		Panel configurations Maximum quantity of components such as; Contact Blocks 8082, Pilot Lights 8010, Illuminated Pushbuttons 8082/8010, Control Switches 8008 and Ammeters 8405.	
7 Side facing down	a 13.41” 340 mm Side facing down	b 6.69” 170 mm	c 3.58” 91 mm	Fig. 7.5  D Fig. 7.6  A Fig. 7.7  A	**8146/5071-3** ☐
8 Side facing down	a 13.41” 340 mm	b 13.41” 340 mm	c 3.58” 91 mm	Fig. 8.4  D Fig. 8.5  D	**8146/5081-3** ☐
9 Side facing down	a 26.83” 680 mm	b 13.41” 340 mm	c 3.58” 91mm	Fig. 9.4  D Fig. 9.5  D	**8146/5091-3** ☐
Add to catalog number:		Specify side facing down A or D (see above)	

For dimensional information see page F44

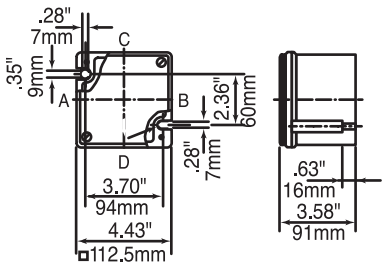
8146 Series Control Panel

PARTS AND ACCESSORIES

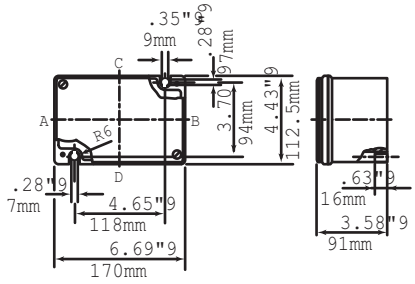
ILLUSTRATION/DESCRIPTION			CATALOG NUMBER
Brass Plates for Flange Plates	 To bond metal cable glands		
	for 8146	Flange Size	
		1	**136201**
		2	**136568**
		3	**136726**
Brass Plates for Enclosures without Flange Plates			
		Side	
	8146/•03•	C/D	**136395**
	8146/•04•	A/B	**136395**
		C/D	**136635**
	8146/•05•	A/B	**136240**
		C/D	**136430**
	8146/•06•	A/B	**136430**
		C/D	**136374**
	8146/•071	A/B	**136430**
		C/D	**136451**
	8146/•073 & 8146/•075	A/B	**136616**
		C/D	**136631**
	8146/•S71	A/B	**136240**
		C/D	**136544**
	8146/•S73	A/B	**136611**
		C/D	**136626**
	8146/.081	A/B	**136451**
		C/D	**136544**
	8146/•083 & 8146/•085 & 8146/•086	A/B	**136621**
		C/D	**136626**
	8146/•091	A/B	**136544**
		C1/D1	**136201**
		C2/D2	**136544**
	8146/•093 & 8146/•095	A/B	**136626**
		C1/D1	**136621**
		C2/D2	**136626**
		Flange-enclosure	**81 460 32 55 0**

ILLUSTRATION/DESCRIPTION		CATALOG NUMBER
Flange Plates Size 1	**in FRP** 	
	Versions	
	0.11" 2,8mm thick	**135978**
	0.23" 5,8mm thick	**136032**
	For Mounting on:	
	Enclosure — Sides	
	8146/•051/•052 — C/D	
	8146/•061/•062 — A/B/C/D	
	8146/•071/•072 — A/B/C/D	
	8146/•S71 — C/D	
	8146/•081/•082 — A/B/C/D	
	8146/•091/•092 — A/B/C/D	
Flange Plates Size 2		
	0.11" 2,8mm thick	**136045**
	0.23" 5,8mm thick	**136083**
	For Mounting on:	
	Enclosure — Sides	
	8146/•073/•075 — C/D	
	8146/•S73 — C/D	
	8146/•083/•085/•86 — A/B/C/D	
	8146/•093/•095 — A/B/C/D	
Flange Plates Size 3		
	0.11" 2,8mm thick	**136199**
	0.23" 5,8mm thick	**136237**
	For Mounting on:	
	Enclosure — Sides	
	8146/•073/•075 — A/B	
Coupling Frames		
Size 0	2.68" x 2.68" (68 mm x 68 mm)	**136012**
Size 1	5.04" x 2.68" (128 mm x 68 mm)	**135974**
Size 2	10.47" x 4.96" (266 mm x 126 mm)	**136031**
Size 3	4.96" x 4.96" (126 mm x 126 mm)	**136235**
Entry Hubs		**8166/11** (see page J1)

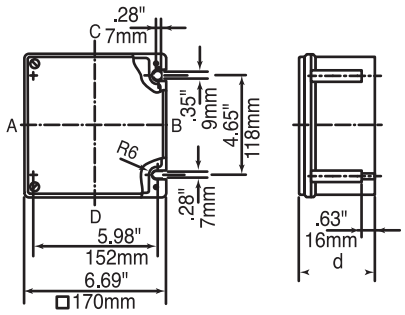
DIMENSIONS



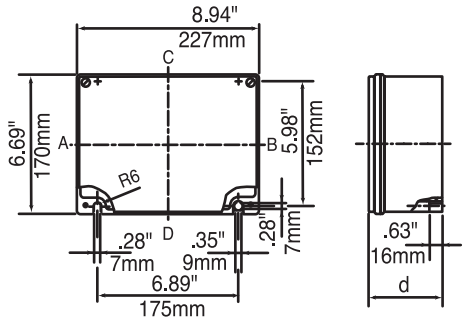
8146/5031



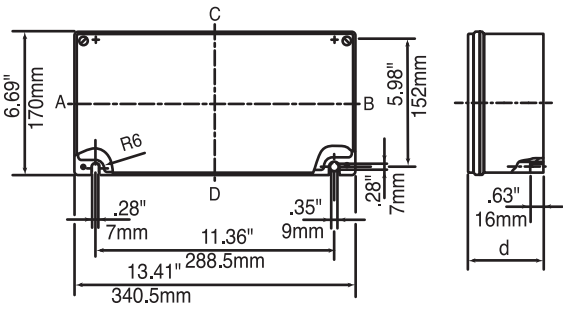
8146/5041



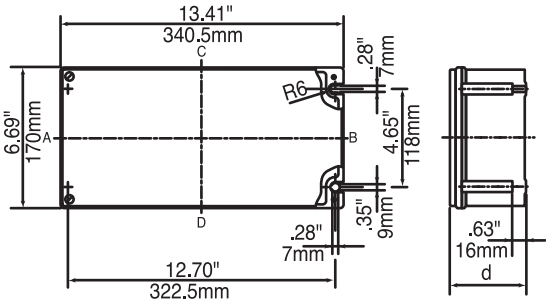
8146/505•



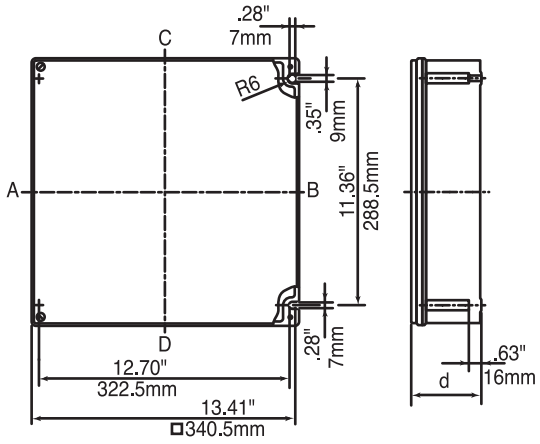
8146/506•



8146/507•

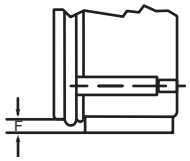


8146/5S7•



8146/508•

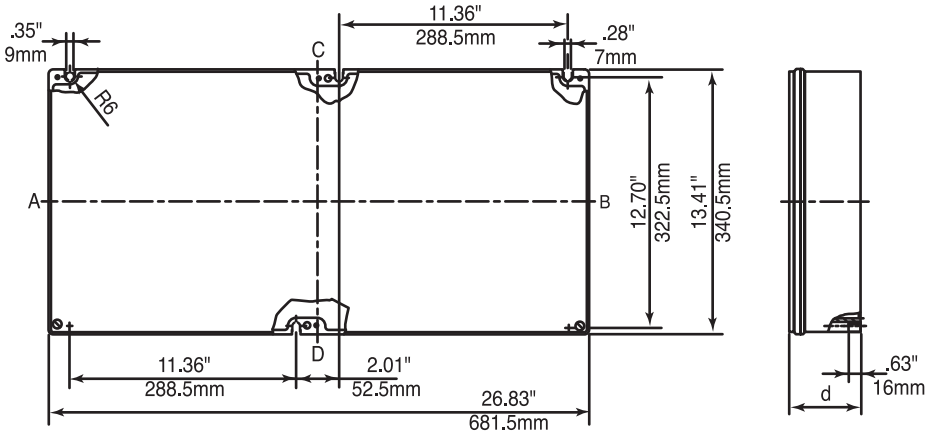
Flange option: Add to overall dimensions.



Flange Thickness	Dimension F
0.11" 2.8mm	0.27" 7mm
0.23" 5.8mm	0.39" 10mm

Available Enclosure Depth (d)						
Enclosure Sizes	1 3.58" 91mm	2 5.16" 131mm	3 5.91" 150mm	4 6.73" 171mm	5 7.48" 190mm	6 9.06" 230mm
8146/503•	x	-	-	-	-	-
8146/504•	x	-	-	-	-	-
8146/505•	x	x	-	-	-	-
8146/506•	x	x	-	-	-	-
8146/507•	x	x	x	-	x	-
8146/5S7•	x	-	x	-	-	-
8146/508•	x	x	x	x	x	x
8146/509•	x	x	x	-	x	-

X indicates depths available.

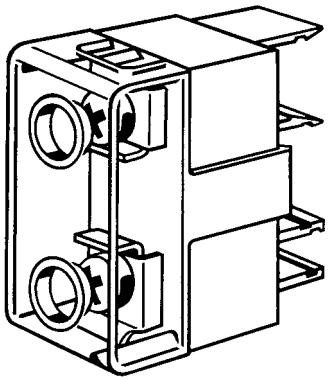


8146/509•

8560 Series, Fuses

SMALL FUSE BASES

Ordering Information



8560
Small fuse bases

Accessories
Identification Label (self adhesive)

	Rated Current	Catalog Number
quick acting	32 mA	8560/51-4023
	50 mA	8560/51-4033
	63 mA	8560/51-4043
	80 mA	8560/51-4053
	100 mA	8560/51-4063
	125 mA	8560/51-4073
	160 mA	8560/51-4083
	200 mA	8560/51-4093
	250 mA	8560/51-4103
	315 mA	8560/51-4113
	400 mA	8560/51-4133
	500 mA	8560/51-4143
	630 mA	8560/51-4153
	800 mA	8560/51-4173
	1 A	8560/51-4183
	1.25 A	8560/51-4193
time lag	2 A	8560/51-4222
	4 A	8560/51-4252
	6.3 A	8560/51-4272
Description	F1 ... F...	

CLASSIFICATIONS

CEC- Class I, Zones 1 & 2
Ex me II T*
Class I, Division 2, Groups A,B,C,D

File No. LR99480-17
II 2 G Ex e mb II
PTB 99 ATEX 2158U

IECEx- IECEx PTB 06.0056 U

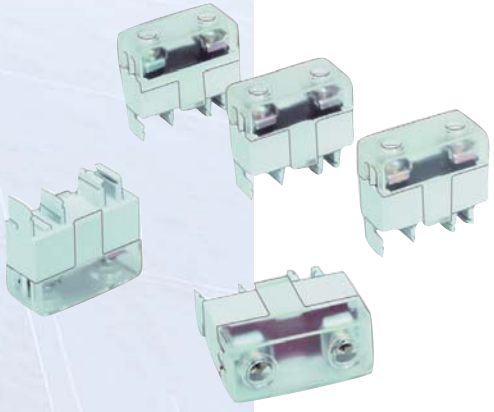
Max. Voltage 250 AC/DC
Ambient Temperature Range:
+70˚C (158˚F) Max.
–50˚C (–58˚F) Min.

*

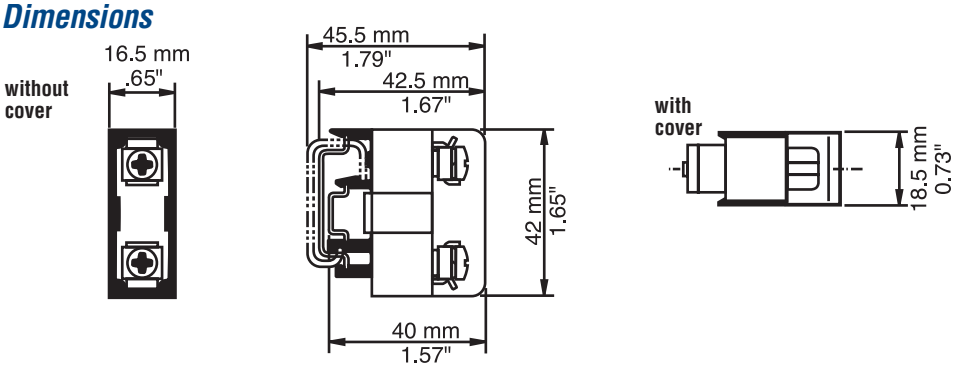
Ambient Temp.	Current	Temp. Classes
Ta ≤56° C	≤4.0 A	T6
Ta ≤70° C	≤4.0 A	T5
Ta ≤46° C	≤5.0 A	T5
Ta ≤70° C	≤6.3 A	T4

FEATURES:

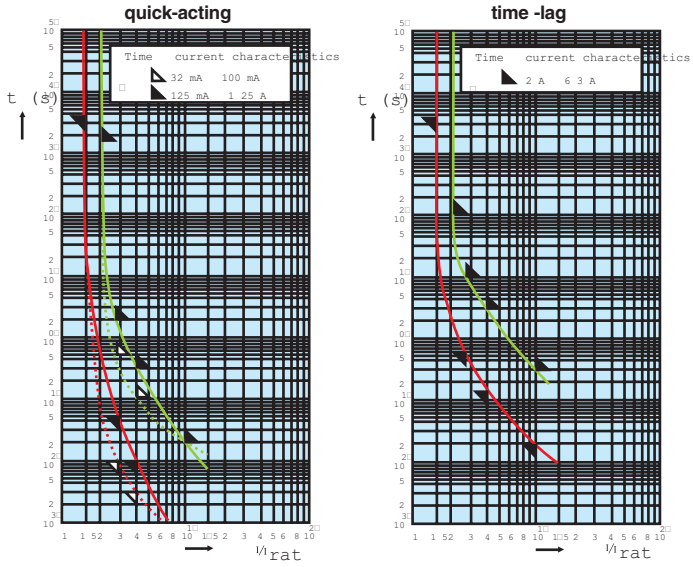
- The small fuse base 8560 Series is designed for 250V AC/DC for low amperage circuits from 32mA to 1.25A in quick-acting characteristic and from 2A to 6.3A in time-lag characteristic.
- The fuse base is for quick and easy snap-on mounting on DIN rails TS15, TS35 and TS32.
- They need to be mounted into “increased safety” certified enclosures i.e. the STAHL Series 8125 or 8146 Terminal or Control Enclosures.



Dimensions

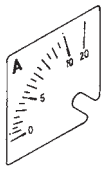


Current/time characteristics for fuses

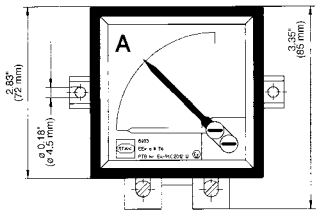


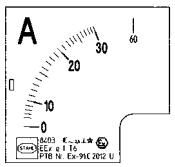
8403 Series Ammeters & 8404 Series Voltmeters

Selection Table

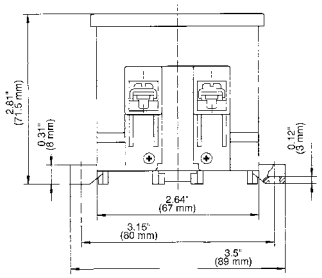
Version	Ammeter Voltmeter	Measuring Range	Overload Scale	Catalog Number Type no. for individual order	Catalog Number Assembly (code for installation)
8403 Ammeter ❑ 72 mm 2.83"	direct measuring	0 -20mA 0 -1/2A 0 -4/8A 0 -10/20A 0 -15/30A 0 -25/50A	2 times	**8403/2-0.02/0.04** **8403/2-1/2** **8403/2-4/8** **8403/2-10/20** **8403/2-15/30** **8403/2-25/50**	82/0.02/0.04 82/1/2 82/4/8 82/10/20 82/15/30 82/25/50
	for current transformers	sec 1A sec 5A	2 and 5 times overload	**8403/2-1** **8403/2-5**	82/1 82/5
 **Slide-in Scale**	Slide-in scale for ammeters indirect measuring	for 2 times overload or for 5 times overload measuring ranges 0 … 1; 5; 10; 15; 20; 25; 30; 40; 50; 60; 75; 100; 150; 200; 250; 300; 500		State measuring range	
8404 Voltmeter ❑ 72 mm 2.83"	direct measuring	0 -10V 0 -100V 0 -120V 0 -150V 0 -250V 0 -500V		**8404/2-10** **8404/2-100** **8404/2-120** **8404/2-150** **8404/2-250** **8404/2-500**	79/10 79/100 79/120 79/150 79/250 79/500
Bezel	Bezel	2.83" x 2.83" 72mm x 72mm (for ammeter 8403 and for voltmeter 8404)		**86 038 02 58 7**	145

Dimensions



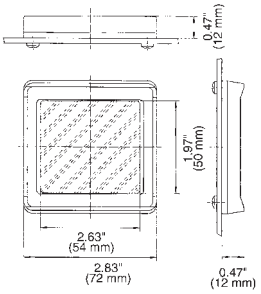


Slide-in scale for ammeters with CT



8403 Ammeter and Voltmeter 8404 with bezel assembly 145

8403 Ammeter



Bezel Assembly 145

APPROVALS

CERTIFIED - FILE LR99480

PTB 01 ATEX 2158 U

IECEx

IECEx PTB 06.0017 U

Ammeter

The 8403 Series ammeters are used to measure current of a motor supply circuit in a potentially explosive atmosphere.

They are moving iron instruments with an accuracy class 2.5.

They are available for direct measuring up to 25 Amps, and for indirect measuring in conjunction with a current transformer either for 1 Amp or 5 Amp secondary current. For indirect measuring slide-in scales are available. Ammeter/slide-in scale must have the same ratio that the CT has. (CTs are not supplied).

A red pointer can be manually adjusted for quick visual comparison of the actual value with the set value.

Voltmeter

The 8404 Series of voltmeters are used to measure voltage of a motor supply circuit in a potentially explosive atmosphere.

They are moving iron instruments with an accuracy class 2.5.

A red pointer can be manually adjusted for quick visual comparison of the actual value with the set value.

Both 8403 Ammeters and 8404 Voltmeters are suitable to mount into increased safety enclosures Series 8125 or 8146.

Control Components

8082 LOCKOUT TERMINAL

Ordering Information

DESCRIPTION	CONTACT SYMBOL		INDIVIDUAL ORDER CATALOG NUMBER
	IEC	NEMA	
Lockout Terminal, 1 NC			**8082/1-1-01**

Technical Data

	NEC/CEC	IEC
Rated Voltage	600VAC	500VAC
Continuous Current	10A	6A
Terminals	12AWG	2.5mm²
Mechanical Life	≥ 10^6 operations	
Electrical Life	≥ 10^6 operations	
Housing Material	polyamide	
Contact Material	silver plated	
Lowest Energy	50mA. @ 12VAC/DC*	

** For lower energy use gold plated contacts, available on request.*

APPROVALS

c UL us LISTED FILE No. E182378

PTB 00 ATEX 1031U

IECEx

IECEx PTB 06.0011 U

The lockout Terminal 8082/1-1-01 has one NC contact and is operated by the black lever. It is also lockable with a padlock.

Each block is made of polyamide and designed to contain an internal explosion.

The terminals are designed to increased safety “e” requirements.

PurgEx™ Z, Y, and X PURGE INDICATORS / CONTROLLERS

8626 SERIES

Globally Certified Z,Y,X Purge Indicators / Controllers and Accessories

Features:

- *Stainless steel or anodized aluminum construction for superior corrosion resistance (NEMA 4,4X)*
- *Small Profile and light weight reduces installation footprint*
- *Global Certifications. Certified to: ATEX / IECEx / NEC /CEC in a single part number. Ideal for global companies looking to standardize on a single design*
- *Dry contact outputs for remote monitoring comes standard.*

PurgEx™ Z, Y, and X PURGE INDICATORS / CONTROLLERS

Purged and pressurized systems are an ideal method of explosion protection where components internal to the enclosure cannot be specifically rated for the area. They provide a light weight, corrosion resistant alternative to traditional explosion proof enclosures. The protection concept maintains an above atmospheric pressure within the enclosure not allowing hazardous gas and/or dust to enter and to come into contact with possible sources of ignition.

The Purge Process

1) Purge Phase. In this phase, hazardous gases are removed from the enclosure by diluting the inside of the enclosure with a purge gas source. The enclosure is diluted between 4 to 5 times its cubic capacity with this purge gas, eliminating ignitable amounts of hazardous materials from being present inside the enclosure.

2) Pressurized Phase. In this phase, we have eliminated ignitable amounts of hazardous materials from being inside the enclosure. To prevent outside hazardous materials from entering the enclosure, the enclosure is then slightly pressurized above the outside environment.

Selecting Purge Indicators / Controller

Here are key questions you will need to know in selecting your purge indicator / controller:

1. What protection method do you need? Z, Y, or X?

Type "Z"

This system reduces the classification within protected enclosures from Division 2 / Zone 2 to non-hazardous. Automatic power control disconnects are not required, but visual and / or audible alarms must be initiated when there is loss of pressure within the enclosure.

Type 'Y"

This system reduces the classification within protected enclosures from Division 1 / Zone 1 to Division 2 / Zone 2. All protected equipment inside the enclosure must be rated for Division 2 / Zone 2. Automatic power control disconnects are not required, but visual and/or audible alarms must be initiated when there is loss of pressure. In addition to all requirements in Z, there must be a remote monitor alarm.

Type "X"

This system reduces the classification within protected enclosures from Division 1 / Zone 1 to nonhazardous. It is required to automatically control electrical power to all protected equipment.

2. Is this a dust or gas environment?

Is the hazard a Class I (Vapor, Liquid, Gas) or Class II (Dust)?

PurgEx™ Z, Y, and X PURGE INDICATORS / CONTROLLERS

3. How big is your enclosure?
What is the cubic volume of your enclosure?

Small - Up to 15 Cubic Feet
Medium - Up to 75 Cubic Feet
Large - Up to 200 Cubic Feet

4. Voltage?
PurgEx offers the following:

Z - 12 VDC, 24 VDC, 115 VAC, 230 VAC
Y - 12 VDC or 24 VDC
X - 115 or 230 VAC (for other voltages please consult factory)

5. Material Construction
Do you require 316 Stainless (NEMA 4X) or Anodized Aluminum? (NEMA 4)

6. What type of Purge Gas Inlet Kit do you plan to use?

CONTINUOUS PURGE / PURGE GAS
In Continuous Purge, purge gas is continuously passed through the enclosure at a maintained pressure during and after the dilution cycle, and discharged to the outside atmosphere through an exhaust vent. This method is preferred for applications where heat builds up from the electronics within the pressurized enclosure.

LEAKAGE COMPENSATIVE / PRESSURIZATION PURGE
Leakage compensation allows a higher volume of purge gas during the dilution cycle, which is then reduced to only what is required to maintain the required pressure within the enclosure. This is preferred when a source of instrument grade air is limited.

7. Location of the exhaust vent. Side or Top?
Traditional purge systems require an accessory exhaust vent. When one is required, its location needs to be determined (side or top mount).
Please Note: If enclosure is 15 cubic feet or smaller, a seperate vent is not required.

PURGEx 8626 Y/Z Purge / Pressurization Indicator

CUSTOM CONFIGURATION LOGIC

Start Here

8	626/1-D	Y	M	2
Dust or Gas	626/1-D	Type of Purge	Size of Enclosure	Voltage
7 = Dust **8** = Gas		**Y** = Y Purge **Z** = Z Purge	**S** = Up to 15 Cubic Feet **M** = Up to 75 Cubic Feet **L** = Up to 200 Cubic Feet	**1** = 12VDC **2** = 24VDC **3** = 115VAC* **4** = 230VAC*

*Not available in Y-Purge

General Specifications:

Casing Dimensions
4.5” diameter x 1.9” tall (114.3 mm diameter x 48.3 mm tall).

Operating Temperature
-40˚F to 150˚F (-40˚C to 65˚C)

Purge Pressure Lower Limit:
0.50 inch H20 (1.25 mbar).

Casing
Anodized aluminum 2.48 lbs (1.13 kg), IP66, NEMA 4, (standard).
316L stainless steel, 6.70 lbs. (3.04 kg), IP66, NEMA 4X, (optional).

Power Input / Consumption
0.5 Watts max.

Voltage:
12 VDC model (11 VDC to 16 VDC), 47 to 63 Hz
24 VDC model (19 VDC to 28 VDC), 47 to 63 Hz
115 VAC model (85 VAC to 160 VAC), 47 to 63 Hz
230 VAC model (130 VAC to 265 VAC), 47 to 63 HZ

Dry Contact Rating
Contact open on alarm (standard)
Contact closed on alarm (optional)
250 Volts AC / DC, 150mA max

Standard Hardware
All stainless steel mounting fasteners, o-ring, 1/4” (6.4 mm) diameter vent restrictor, warning label, and CD with all required documentation

CLASSIFICATIONS FOR Z PurgEx

NEC / CEC / UL/ CSA / ANSI /I SA 12.4 & NFPA 486 Certified
Class I, Division 2, Groups A,B,C,D, T6
Class II, Division 2, Groups F & G, T6

ATEX
II 3 G Ex nA ic [pz] IIC T6 Gc
II 3 D Ex tc IIIC T79°C Dc IP66
DNV 14 ATEX 5461X

IECEx
Ex nA ic [pz] IIC T6 Gc
Ex tc IIIC T79°C Dc IP66
IECEx DNV 14.0029X

CLASSIFICATIONS FOR Y PurgEx

NEC / CEC / UL / CSA / ANSI / ISA 12.4 & NFPA 486 Certified
Class I, Division 1, Groups A,B,C,D, T4
Class II, Division 1, Groups F & G, T4

ATEX
II 2 G Ex ib [py] IIC T4 Gb
II 2 D Ex tb IIIC T79°C Db IP66
DNV 14 ATEX 5460X

IECEx
Ex ib [py] IIC T4 Gb
Ex tb IIIC T79°C Db IP66
IECEx DNV 14.0029X

Ambient Temperature Range:
+65˚C (+150˚F) Max.
–40˚C (–40˚F) Min.

Globally Certified Y/Z Purge Indicators and Accesories

Features:

- Integral Vent standard on 15 CU FT or smaller indicators (no need to purchase or install accessory vents)
- Stainless Steel or Anodized Aluminum Construction for Superior Corrosion Resistance (NEMA 4, 4X)
- Smallest Profile and Lightest Weight on the market reduces installation footprint

Global Certifications
Certified to ATEX / IECEx / NEC/ CEC in a single part number.

- Dry Contact Outputs for Remote Monitoring Come Standard.

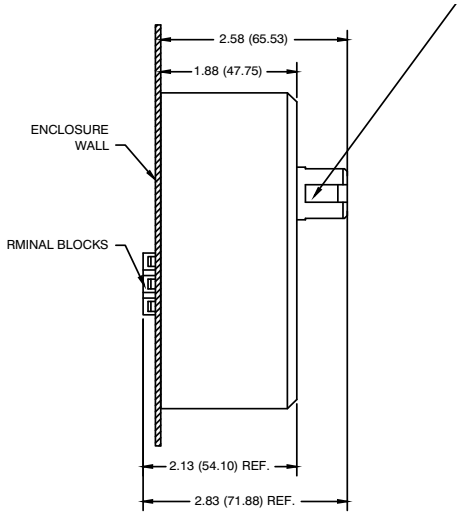
CUSTOM CONFIGURATION LOGIC

S	O	05	T	S	B
Material Construction	Alarm	05	Inlet Kit Accessory	Exhaust Vent Mounting	B
A = Aluminum **S** = 316 Stainless	**O** = Normally open contact **X** = Normally closed contact		**T** = Continuous Purge Inlet **P** = Manual Leakage Compensation Purge Inlet **N** = No Inlet Kit (Must be ordered separately. See pages G9-G14 for details on dimensions)	**S** = Side Mounted **T** = Top Sided Mounted **O** = Specify if ordering less than 15 cu.ft. indicator, or if ordering vent separately	

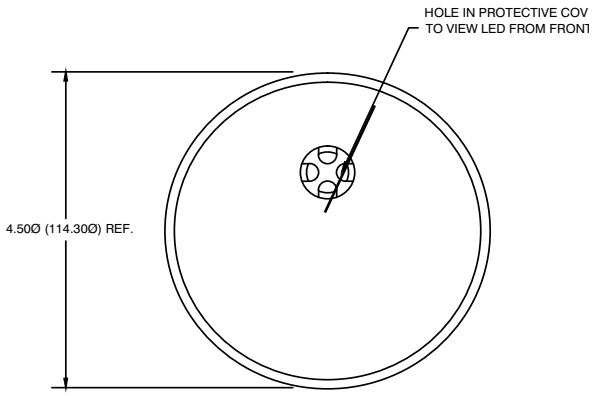
OPTIONS & ACCESSORIES AVAILABLE CONTINUED:

Protective Gas Loss Indicator Kit: An explosion-proof differential pressure switch may be installed to provide an alarm contact output signal to indicate the loss of the backup source of protective gas. Another explosion-proof differential pressure switch may be installed on the main protective gas supply to indicate that the primary protective gas pressure is adequate. Model number is PSO-PGLI-K.

Differential Pressure Gauge Kit: R. STAHL also offers an all stainless steel differential pressure gauge kit, which can be mounted on the left side model number PSO-DPG-L, right side model number PSO-DPG-R, top model number PSO-DPG-T or bottom model number PSO-DPG-B of enclosure.

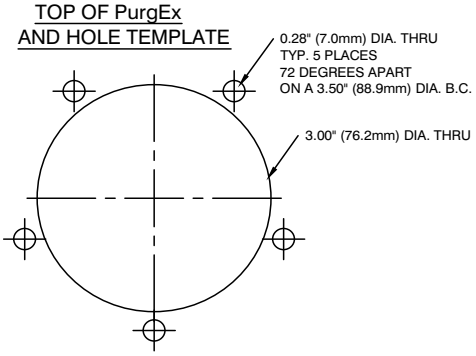


SIDE VIEW

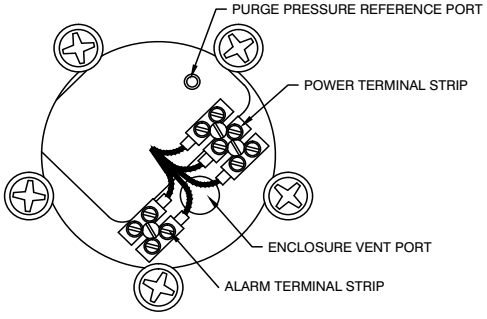


FRONT VIEW

TOP OF PurgEx
AND HOLE TEMPLATE



INTERNAL VIEW
MOUNTED ON ENCLOSURE



X Purge Controllers

CUSTOM CONFIGURATION LOGIC

Start Here

8	626/1	D	X	M
Dust or Gas	626/1	Protection Method	Type of Purge	Size of Enclosure
7 = Dust **8** = Gas		**D** = Housing Mounted on enclosure **N** = Externally Mounted Housing	**X** = X-Purge	**S** = Up to 15 Cubic Feet **M** = Up to 75 Cubic Feet **L** = Up to 200 Cubic Feet

X Purge Controllers enable the use of general purpose components to be placed inside the enclosures the X Purge will be monitoring and placed in a Class I Division 1, and ATEX/ IECEx Zone 1 hazardous area. These PURGEx X-Purge units come with global certifications. These units offer the lightest weight, and smallest profile controllers on the market. Because these designs mount directly on the enclosure, no additional holes, sheet metal, or plumbing is required.

PurgEx
X-Purge Controller (D)

- Integral Exhaust Vent Standard. No need to order and assemble accessory vent for enclosures with a volume up to 15 cubic feet.
- Available in Anodized Aluminum or 316 Stainless Steel 115 VAC up to 25 amps or 230VAC up to 12.5 Amps.
- Rugged, visual LED indicator for local monitoring is supplied as standard.

CLASSIFICATIONS

NEC / CEC / CSA / ANSI / ISA 12.4, & NFPA 496 Certified
Class I, Division 1, Group B,C, & D, T4
Class II, Division 1, Group E,F, & G, T4

ATEX
II 2 G Ex e mb ib [px] IIC T4 Gb
II 2 D Ex tb IIIC T119°C Db IP66
DNV 14 ATEX 5460X

IECEx
Ex e mb ib [px] IIC t4 Gb
Ex tb IIIC T119° Db IP66
IECEx DNV 14.0029X

Ambient Temperature Range:
+65˚C (+150˚F) Max.
–40˚C (–40˚F) Min.

Globally Certified X Purge Indicators and Accesories

Features:

- Integral Vent standard on 15 CU FT or smaller indicators (no need to purchase or install accessory vents)
- Stainless Steel or Anodized Aluminum Construction for Superior Corrosion Resistance (NEMA 4, 4X)

Global Certifications
Certified to ATEX / IECEx / NEC/ CEC in a single part number.

- Dry Contact Outputs for Remote Monitoring Come Standard.

X Purge Controllers

CUSTOM CONFIGURATION LOGIC

3	A	O	05	T	S	C
Voltage	Material	Alarm	05	Type of Compensation	Exhaust Vent Mounting	Classification
3 = 115VAC **4** = 230VAC For DC voltage, consult factory	**A** = Aluminum **S** = 316 Stainless	**O** = Normally open contact **X** = Normally closed contact		**T** = Continuous Purge Inlet **P** = Manual Leakage Compensation Purge Inlet **A** = Automatic Leakage Compensation Purge Inlet **N** = No Inlet Kit (Must be ordered separately. See pages G9-G17 for details on dimensions)	**S** = Side **T** = Top **O** = None (will order seperately, or 15 cubic feet or smaller)	**C** = Class I, Division 1 **Z** = ATEX / IECEx Zone 1

External Mounted (N)
Vent Included

- Available in Anodized Aluminum or 316 Stainless Steel 115 VAC up to 25 amps or 230 VAC up to 12.5 Amps.
- Rugged, visual LED indicator for local monitoring is supplied as standard.

X Purge Controllers

GENERAL SPECIFICATIONS

Casing Dimensions
8.0" diameter x 1.9" tall (203.2 mm diameter x 48.3 mm tall), protrudes outside of purged enclosure.
6.5" diameter x 4.50" tall (65.1 mm diameter x 114.0 mm tall), protrudes inside of purged enclosure.

Operating Temperature
-40˚F to 150˚F (-40˚C to 65˚C)

Purge Pressure Lower Limit:
0.50 inches H20 (1.25 mbar) Purge Controller will disconnect power to protected enclosure electronics.

Casing
Anodized aluminum 16.09 lbs (7.30 kg), NEMA 4, (IP66).
316 stainless steel, 37.98 lbs. (17.23kg), NEMA 4X, (IP66).

Power Control Capability
115 VAC up to 25 Amps RMS continuous over specified voltage ranges.
230 VAC up to 12.5 Amps RMS continous over specified voltage ranges.

Power Input / Consumption
2 Watts max.

Voltage:
115 VAC model (85 VAC to 160 VAC), 47 to 63 Hz
230 VAC model (130 VAC to 265 VAC), 47 to 63 HZ

Dry Contact Outputs & Rating
1. Enclosure purge pressure is below 0.50 inches H20 (1.25 mbar).
2. Enclosure exhaust flow has stopped.
3. Purge Controller is in maintenance mode.
Normally open contacts (standard).
Normally closed contacts (optional).
All rated to 265 Volts AC/DC, 150mA max.

Standard Hardware
All stainless steel mounting hardware, o-ring, 1/4" (6.4 mm) diameter exhaust vent restrictor, CD with all required documentation.

Hazardous Area Approvals
ATEX
II 2 G Ex e mb ib [px] IIC T4 Gb "for Zone 1 gas hazardous areas"
II 2 D Ex tb IIIC T119˚C Db IP66 "for Zone 1 dust hazardous areas"

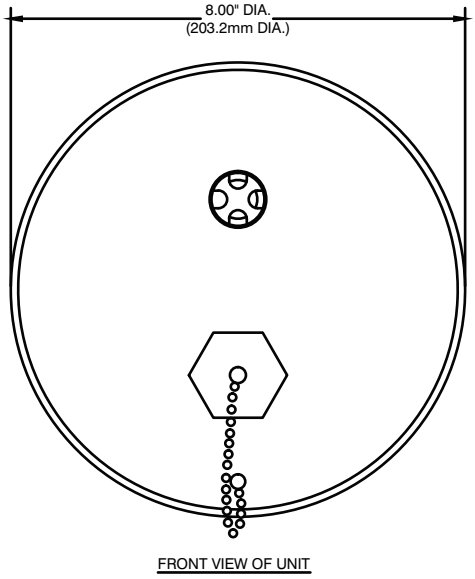
ANSI / ISA 12.4, CEC, NEC, and NFPA 496
Class I, Division 1, Group B,C, & D, T4 "for gas hazardous areas"
Class II, Division 1, Group E,F, & G, T4 "for dust hazardous areas"

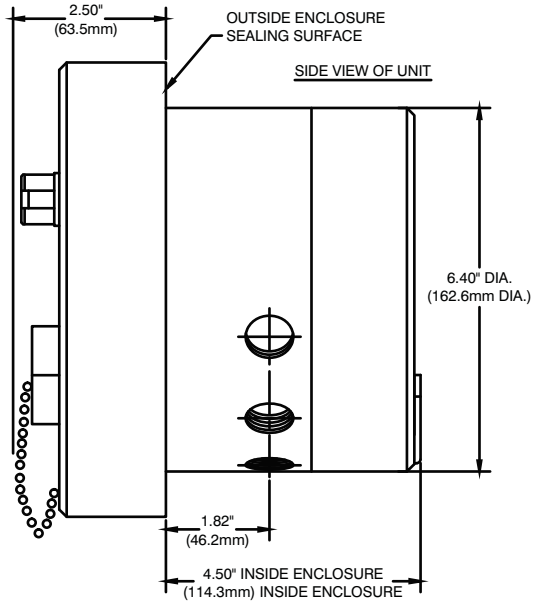
Certified to an Ambient Temperature Range of -40˚F (-40˚C) ≤Tamb≤ + 150˚F (+65˚C)

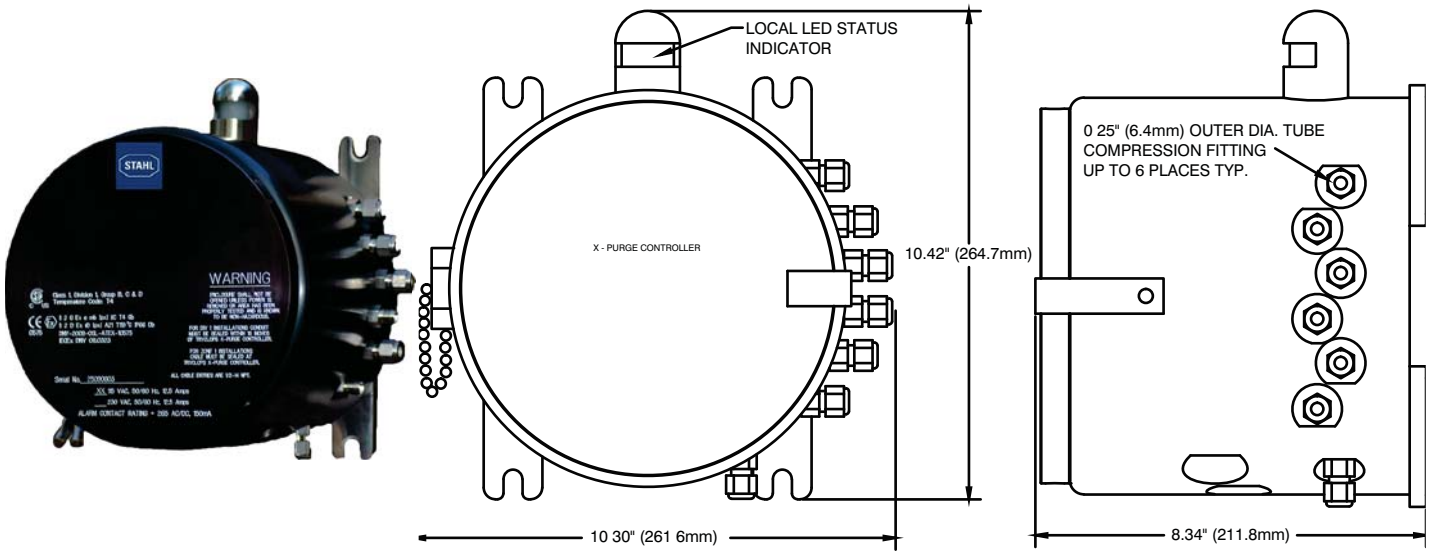
CE Marked

X Purge Controllers

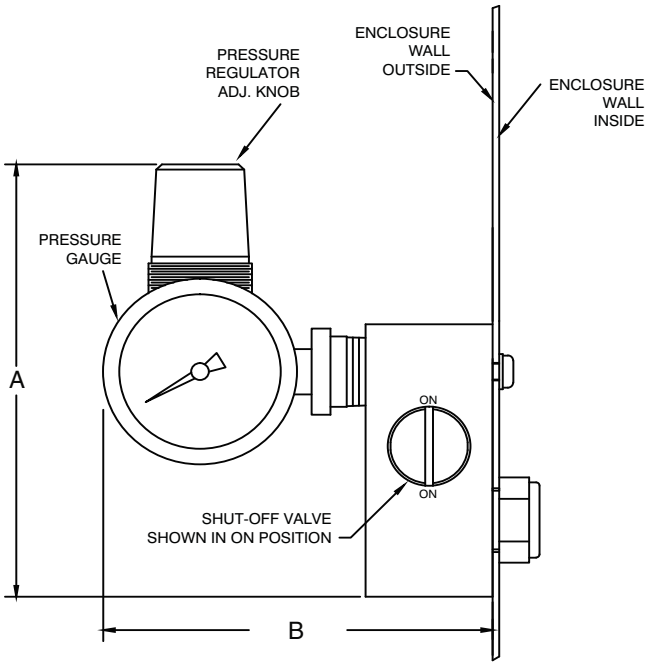
DIMENSIONAL INFORMATION



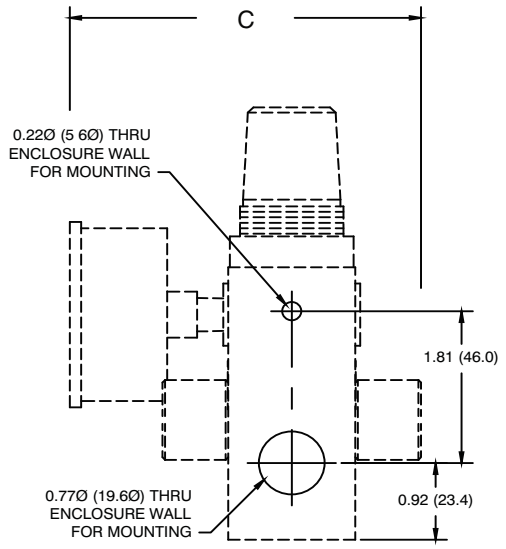




Continuous Dilution Purge Gas Inlet Kits



FRONT VIEW



SIDE VIEW
MOUNTING HOLE PATTERN

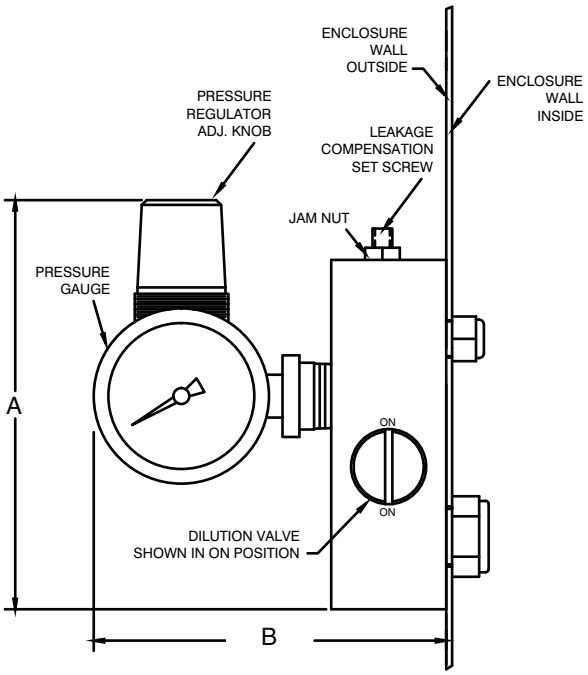
Size Information

Size	A (mm)	B (mm)	C (mm)	Purge Gas Inlet Size	Enclosure Volume
Small	5.15 (130.8)	4.44 (112.8)	4.00 (101.6)	1/4 - 18 FNPT	Up to 15 Cubic Feet
Medium	6.19 (157.2)	4.68 (118.9)	4.23 (107.4)	3/8 FNPT	Up to 75 Cubic Feet
Large	6.19 (157.2)	4.68 (118.9)	4.23 (107.4)	1/2 - 14 FNPT	Up to 200 Cubic Feet

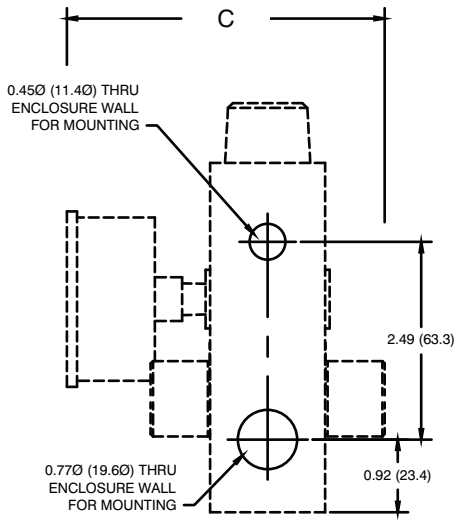
Ordering Information

Size	Enclosure Type	Catalog Number
Small	Aluminum	**PSO-SCD-A**
	Stainless	**PSO-SCD-S**
Medium	Aluminum	**PSO-MCD-A**
	Stainless	**PSO-MCD-S**
Large	Aluminum	**PSO-LCD-A**
	Stainless	**PSO-LCD-S**

Manual Leakage Compensation Purge Gas Inlet Kits



FRONT VIEW
SHOWN IN FAST DILUTION ON POSITION



SIDE VIEW
MOUNTING HOLE PATTERN

Size Information

Size	A (mm)	B (mm)	C (mm)	Purge Gas Inlet Size	Enclosure Volume
Small	5.15 (130.8)	4.44 (112.8)	4.00 (101.6)	1/4 - 18 FNPT	Up to 15 Cubic Feet
Medium	6.19 (157.2)	4.68 (118.9)	4.23 (107.4)	3/8 FNPT	Up to 75 Cubic Feet
Large	6.19 (157.2)	4.68 (118.9)	4.23 (107.4)	1/2 - 14 FNPT	Up to 200 Cubic Feet

Ordering Information

Size	Enclosure Type	Catalog Number
Small	Aluminum	**PSO-SMLC-A**
	Stainless	**PSO-SMLC-S**
Medium	Aluminum	**PSO-MMLC-A**
	Stainless	**PSO-MMLC-S**
Large	Aluminum	**PSO-LMLC-A**
	Stainless	**PSO-LMLC-S**

Automatic Leakage Compensation Purge Gas Inlet Kits

Size Information

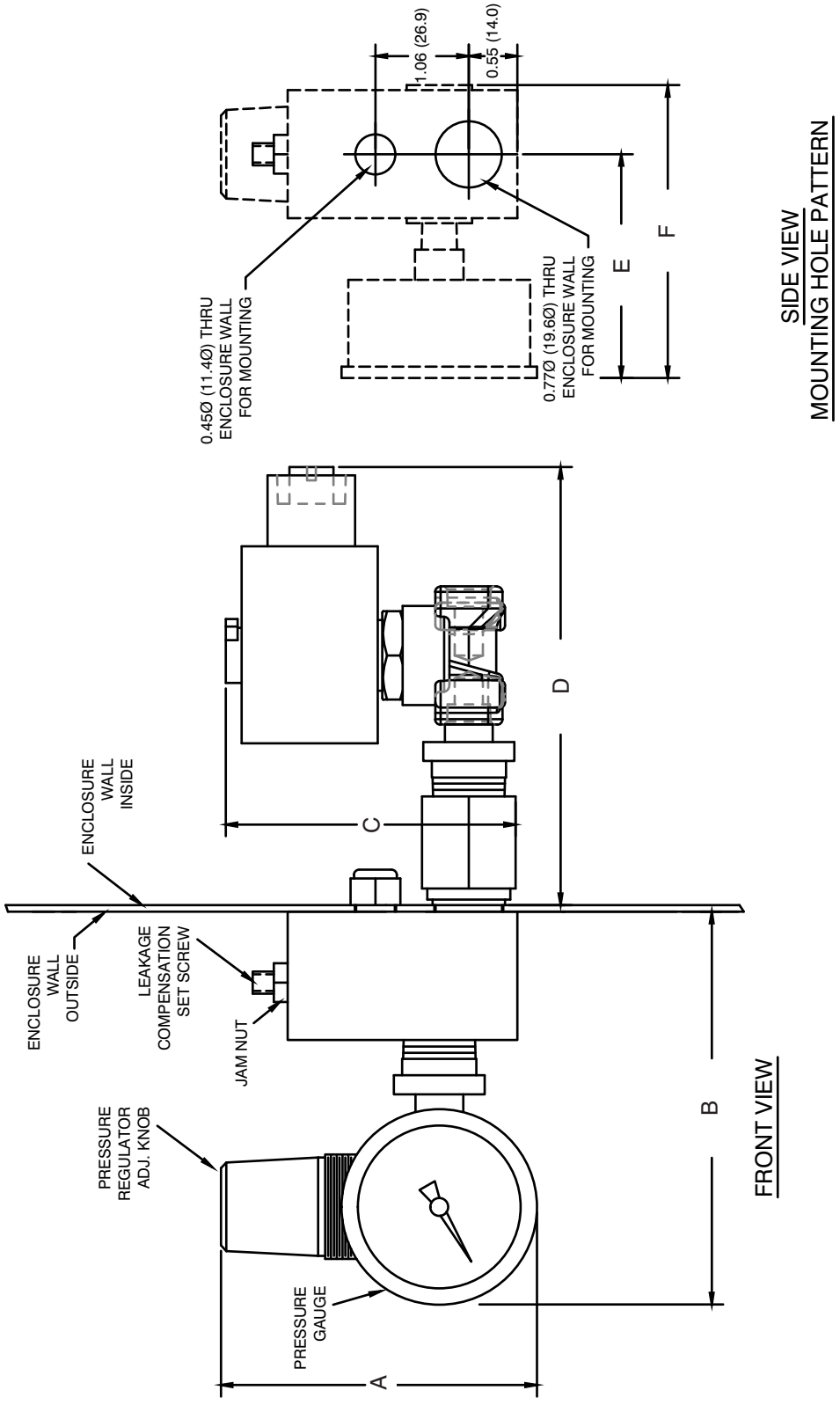
Size	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Purge Gas Inlet Size	Enclosure Volume
Small	3.57 (90.7)	4.44 (112.8)	3.28 (83.3)	4.95 (125.7)	2.53 (64.3)	3.31 (84.1)	1/4 - 18 FNPT	Up to 15 Cubic Feet*
Medium	4.89 (124.2)	4.68 (118.9)	3.84 (97.5)	4.31 (109.5)	2.75 (69.8)	3.93 (99.8)	3/8 FNPT	Up to 75 Cubic Feet*
Large	4.89 (124.2)	4.68 (118.9)	3.84 (97.5	4.31 (109.5)	2.75 (69.8)	3.93 (99.8)	1/2 - 14 FNPT	Up to 200 Cubic Feet*

**X Purge Controllers Only*

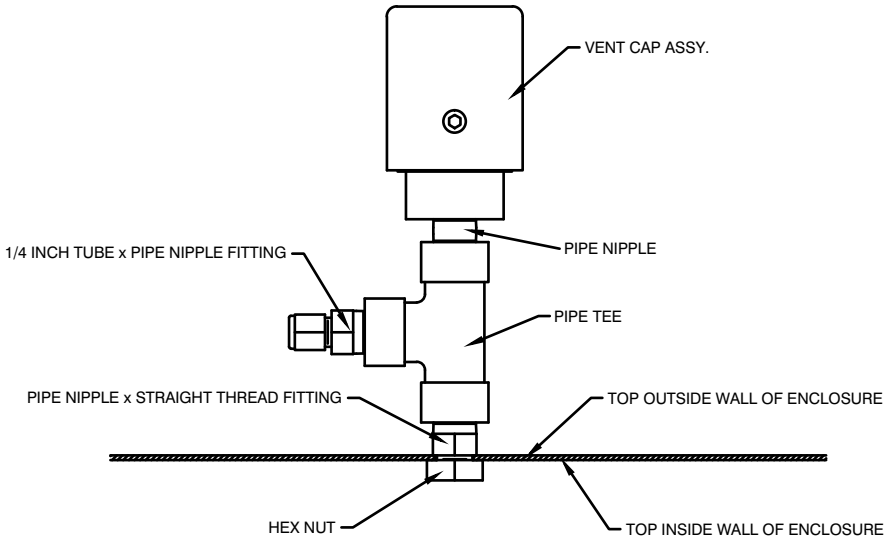
Ordering Information

Size	Enclosure Type	Voltage	Enclosure Type	Catalog Number
Small	Aluminum	115VAC	Div 1	PSO-SALC-D1A
			Zone1	PSO-SALC-Z1A
		230VAC	Div 1	PSO-SALC-D2A
			Zone 1	PSO-SALC-Z2A
	Stainless	115VAC	Div1	PSO-SALC-D1S
			Zone 1	PSO-SALC-Z1S
		230VAC	Div 1	PSO-SALC-D2S
			Zone 1	PSO-SALC-Z2S
Medium	Aluminum	115VAC	Div 1	PSO-MALC-D1A
			Zone 1	PSO-MALC-Z1A
		230VAC	Div 1	PSO-MALC-D2A
			Zone 1	PSO-MALC-Z2A
	Stainless	115VAC	Div 1	PSO-MALC-D1S
			Zone 1	PSO-MALC-Z1S
		230VAC	Div 1	PSO-MALC-D2S
			Zone 1	PSO-MALC-Z2S
Large	Aluminum	115VAC	Div 1	PSO-LALC-D1A
			Zone 1	PSO-LALC-Z1A
		230VAC	Div 1	PSO-LALC-D2A
			Zone 1	PSO-LALC-Z2A
	Stainless	115VAC	Div 1	PSO-LALC-D1S
			Zone 1	PSO-LALC-Z1S
		230VAC	Div 1	PSO-LALC-D2S
			Zone 1	PSO-LALC-Z2S

Automatic Leakage Compensation Purge Gas Inlet Kits

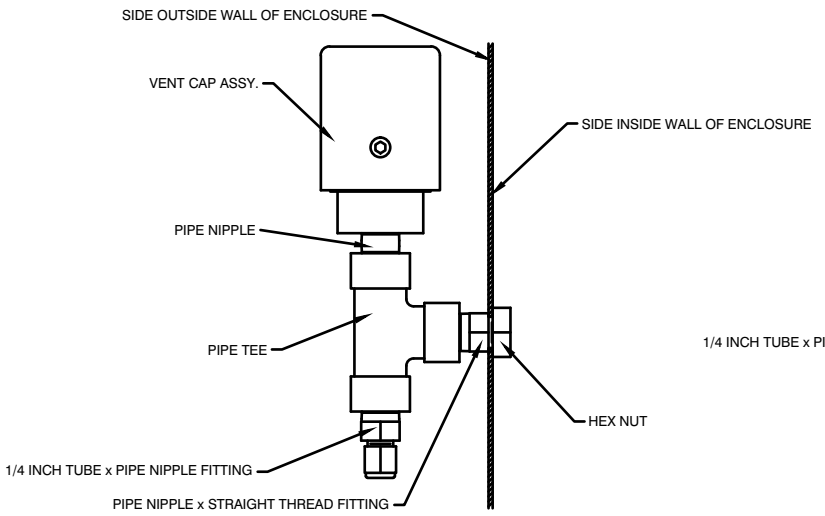


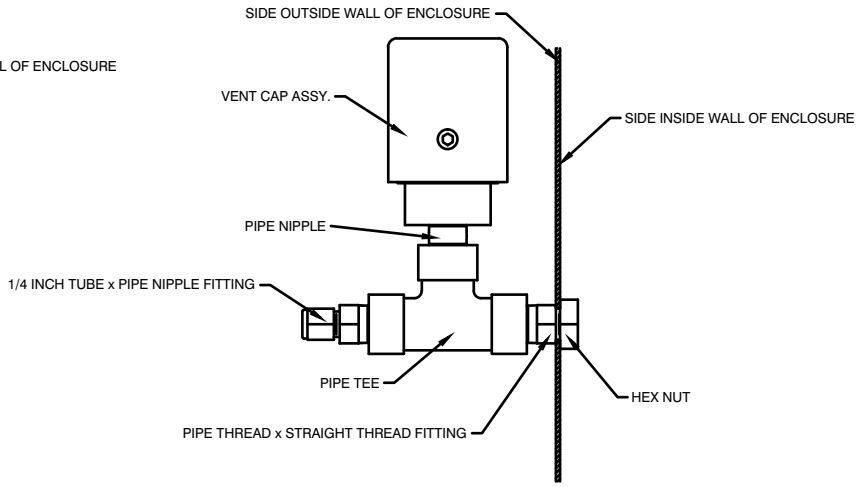
Top & Side Vent Mount



Size	Top / Side	Catalog Number
Small	Top	DO-11068-B
	Side	DO-11069-B
		DO-11070-B
Medium	Top	DO-11113-B
	Side	DO-11114-B
		DO-11115-B
Large	Top	DO-11128-A
	Side	DO-11129-A
		DO-11130-A

Top Vent Mount





Side Vent Mount

Vent Mount Size

Size	Box Hole Size Required
Small	0.57Ø (14.48Ø)
Medium	1.31Ø (33.3Ø)
Large	2.38Ø (60.5Ø)

XPPS Series

XPPS EXPLOSION PROOF FIRE ALARM STATIONS

XPPS Series

Features:

- *UL Rating*
- *D.P.D.T. Switch rated at 10 amps*
- *Terminal Block connections*
- *Metal Construction*
- *Mounting hardware & instructions*
- *Key lock reset (option key codes)*
- *Color finishes (Yellow, Blue, Etc)*
- *Dual action lift and pull cover*
- *Custom silk screening or engraving (in any language)*

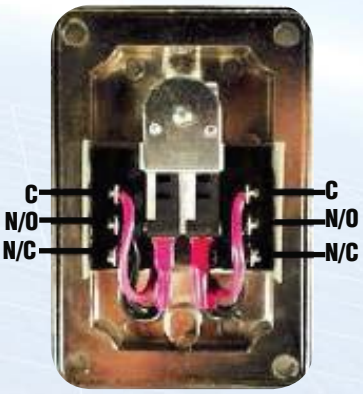
XPPS Series

The XPPS Series explosion proof fire alarm stations are the most compact fire alarm station on the market. Made of high strength metal die aluminium cast alloy, the R. STAHL series explosion proof fire alarm stations come standard with many features.

- Terminal block connections, D.P.D.T. contacts @ 10 amps,
- Standard Hex Key reset mechanism or optional key reset
- Standard T-Pull handle, with optional break glass with solid brass hammer and chain, or lift and pull cover.
- Offered in special colors: Orange, Yellow, Blue, etc.
- Available with custom silk screen wording (for additional languages or instruction).

CLASSIFICATIONS
NEC & CEC
Class I, Division 1, Groups B,C,D
Class II, Divisions 1, Groups E,F,G
Class III
NEMA 4X Outdoor

Contacts:	D.P.D.T
Contact Raiting:	10 amps at 125/250 VAC
Wire AWG:	12 to 22 AWG
Wiring: Connections	Terminal Black



XPPS Series Logic

XPPS /04 - a - b - c -41

a - Key Options
11- Key Lock (UL38)
12 - Key Operated

b - Accessory Cover
20 - None
21 - Lift and Pull (UL38)
22 - Break Glass Adaptor

c - Color
30 - Other
31 - Red (UL 38)
32 - Blue
33 - Green
34 - Yellow

8146 Series Fire Alarm Stations

HAZARDOUS LOCATIONS

8146 Fire Alarm Stations
Features:

- *The Fire Alarm Station is made from corrosion resistant fiberglass reinforced polyester. The enclosure is molded from highly visible bright red material.*
- *The enclosure gasket is made from polyurethane and is installed into recessed cover groove.*
- *The cover screws are captivated, slotted and made of 316 grade stainless steel.*
- *1/2" and 3/4" hubs are available in dead-end and feed-thru configurations.*
- *A hammer is mounted to the side of the alarm station and is attached by an 11" chain.*

8146 Series Fire Alarm Stations

Automatic Model–1.5" (38mm) O.D. Red Momentary Pushbutton Actuator is released when glass is broken.

CONTACT TYPE	HUB CONFIGURATION	1/2"	3/4"
Universal (1 NO/1 NC)	Top Feed	8146/5052-C8140	8146/5052-C8143
	Bottom Feed	8146/5052-C8141	8146/5052-C8144
	Feed-Thru	8146/5052-C8142	8146/5052-C8145

Manual Model–1.5" (38mm) O.D. Red Mushroom Pushbutton Maintained Turn-to-Release.

CONTACT TYPE	HUB CONFIGURATION	1/2"	3/4"
Universal (1 NO/1 NC)	Top Feed	8146/5052-C7960	8146/5052-C7963
	Bottom Feed	8146/5052-C7961	8146/5052-C7964
	Feed-Thru	8146/5052-C7962	8146/5052-C7965

Manual Model–1.5" (38mm) O.D. Red Mushroom Pushbutton Maintained Key to Release.

CONTACT TYPE	HUB CONFIGURATION	1/2"	3/4"
Universal (1 NO/1 NC)	Top Feed	8146/5052-C7970	8146/5052-C7973
	Bottom Feed	8146/5052-C7971	8146/5052-C7974
	Feed-Thru	8146/5052-C7972	8146/5052-C7975

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Division 2, Groups F,G
Class III
Type 3, 4 & 4X; IP66
c UL us LISTED FILE No. E182378

CEC- Class I, Zones 1 & 2 Ex de IIC T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 & 2, Groups E,F,G
Class III
CSA ENCLOSURES 3, 4 & 4X; IP66
CERTIFIED - FILE No. LR99480

II 2 G Ex de IIC T6, Zones 1 & 2, IP66
PTB 01 ATEX 1105

Ambient Temperature Range:
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Special Ambient Temperature Range:*
*Consult Factory

Application

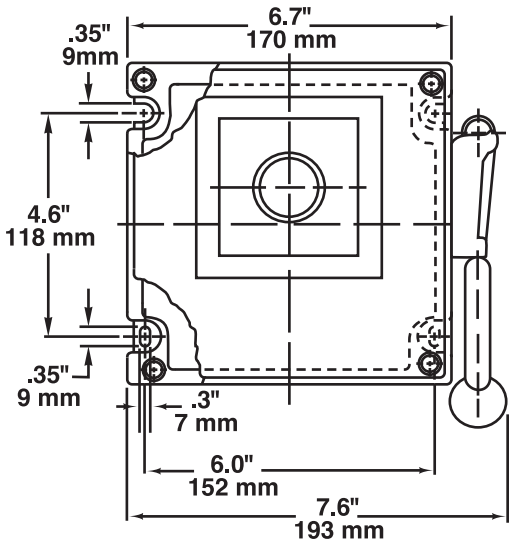
These Fire Alarm Stations are used to activate alarm circuits in hazardous and/or wet, corrosive industrial applications. The fire alarms are of the break-glass type construction.

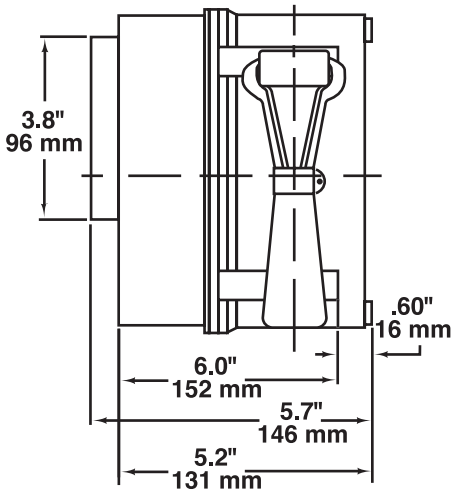
Two styles of stations are available:

Automatic Model– after glass is broken, actuator is automatically released to activate alarm circuit.

Manual Model– after glass is broken, actuator must be pushed to activate alarm circuit.

Dimensions





Yodalex YL6/YA6/FL6 Series

Yodalex YL6/YA6/FL6 Series

Features:

- *YL6 Football shaped horn/strobe combination unit weighs only 13 pounds*
- *Omni Directional high output horn 110dB max @ 1 meter*
- *2 stage alarm, independently selectable 2nd stage*
- *All units share a common explosion proof housing - machined flame paths*
- *Meets UL, CUL, CSA, GOST, ATEX and IECEx Approvals*
- *ATEX / IECEx Approved for Gas & Dust (Zone 1 & 2, 21 & 22)*
- *Dual cable entry*
- *Aluminium enclosure with stainless steel hardware*
- *Lens guard provided as standard*
- *5 Joule xenon - flash rate 1 per second.*
- *Weather proof flame retardant ABS compliant horn*
- *7 Lens colors in flame retardant polycarbonate*
- *32 selectable tones meeting international regulations*
- *Easy sound selection via DIL switches*
- *10 & 20 Joule Beacon available with ATEX or IECEx certification*
- *Telephone initiate available on ATEX or IECEx models*

Yodalex YL6/YO6/FL6 Series

CLASSIFICATIONS

NEC & CEC

Class I, Division 1, Groups BcD
Class II, Divisions 1, Groups E,F,G (V6 Only)
File No. E161818

II 2G Ex d IIB T4 Gb
II 2G Ex d IIB, H2 T4
II 2D IP66 T130°C
BASEEF A 02 ATEX 0212 x
BASEEF A 02 ATEX 0222 x

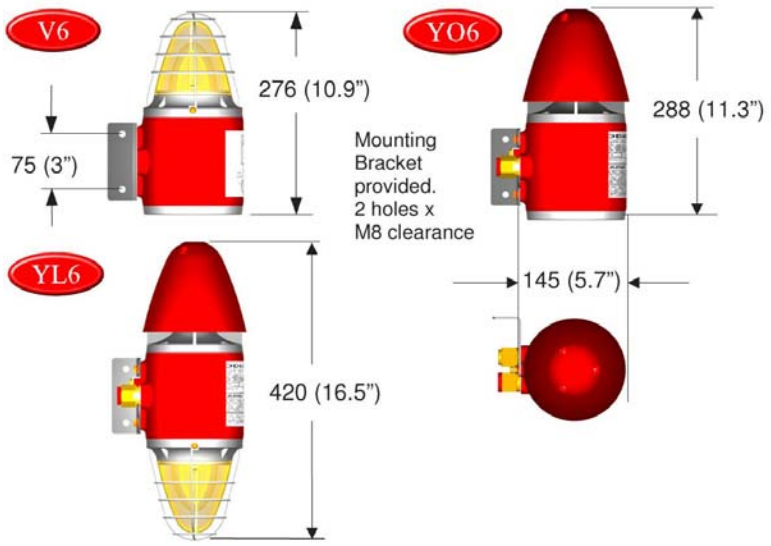
IECEx

Ex d IIB t4 Gb
Ex d IIB, H2 T4
Ex tb IIIC T135°C Db IP66
IECEx BAS 05.0086 X and
IECEx BAS 05.0087 X

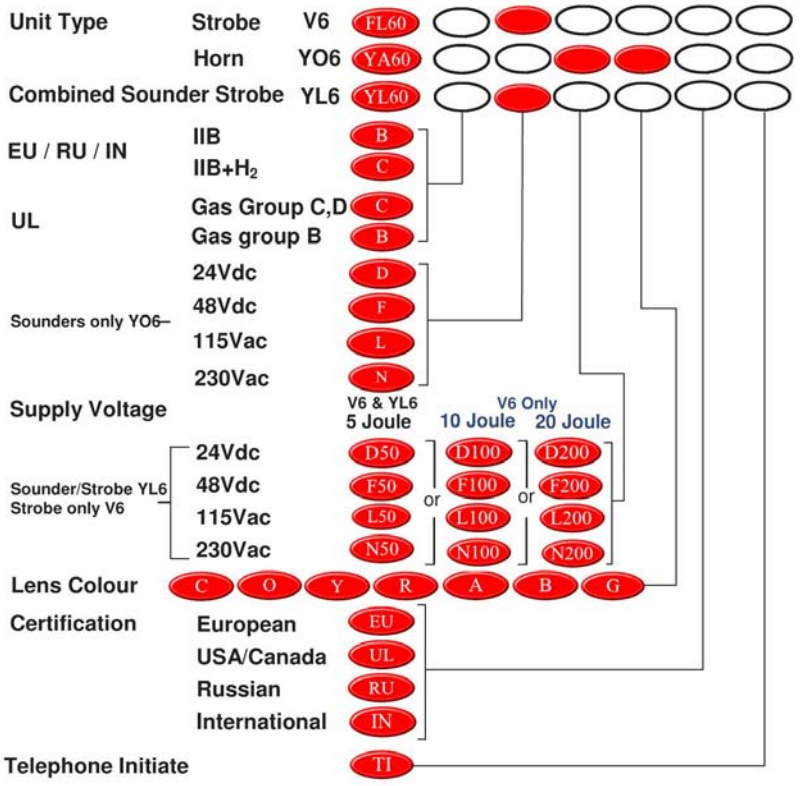
Ambient Temperature Range:

+60°C (+140°F) Max.
-20°C (-4°F) Min.

DIMENSIONS

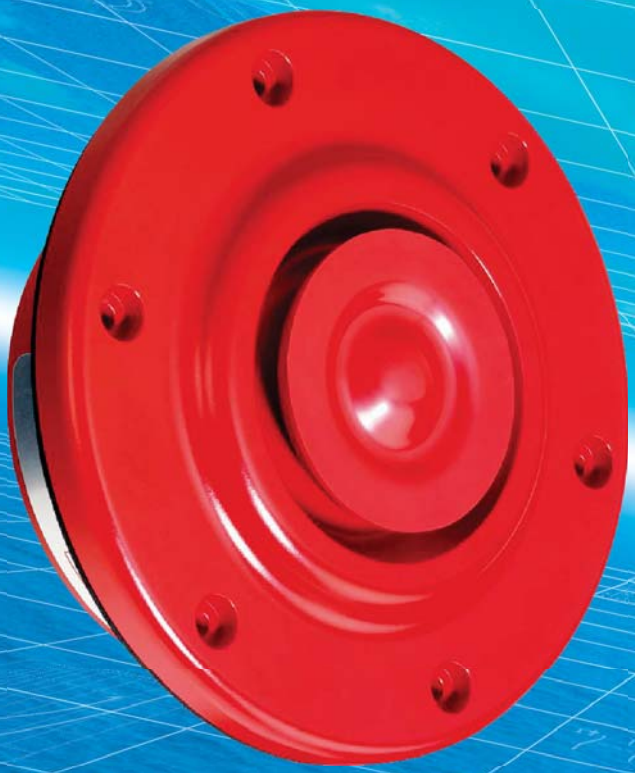


PRODUCT ORDERING CONFIGURATOR - Global Options



5 Joule beacons & combo units, V6 10 & 20 joule beacons only available with ATEX, or IECEx approval.

Yodalex YA11 Series



YA11 Series

Features:

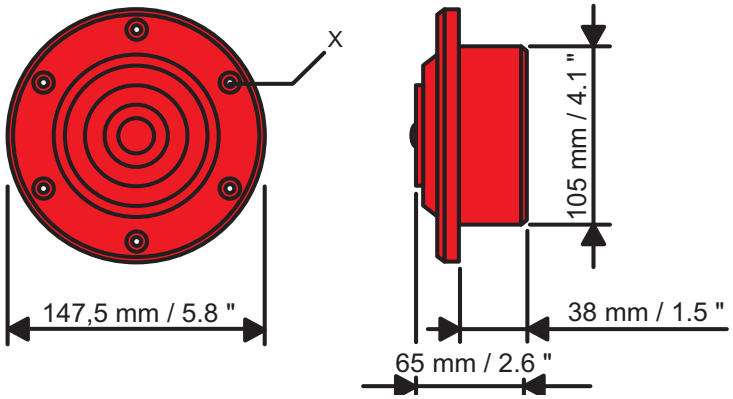
- *YA11 horn ABS aluminum construction weighs less than 3 pounds*
- *Low Profile (1.1 inch profile)*
- *100dB at 1 meter*
- *NEMA 4x, IP66*
- *32 sounds tones available meeting international regulations*
- *Prewired with 3 meter cable, ready for installation*
- *Meets UL, CUL, ATEX and IECEx approvals*
- *ATEX / IECEx approved for Gas & Dust (Zone 1, 2, 21, & 22)*
- *NEX / CEC Class I, Division 2, Class II, Division 2, Class III, Division 1*
- *Sealing gasket and stainless steel hardware provided*
- *High perfomance red paint finish as standard 18-32 VDC*
- *7 Lens colors in flame retardant polycarbonate*
- *-40 to +70 Degree C rated*

Version	Enclosure colour	Rated operational voltage	Order number	Art no.	Weight kg
YA11 Sounder, standard devices	red standard (R)	18-32 V DC	YA11/1-D-_ _ -RN	211439	1.315

Note: Customer must specify the required sound tone at the point of ordering the sound tone cannot be changed by the customer there are 32 tones available, please see the order number supplement below for example if tone 18 is required please use the order number YA11/1-D-18-RN

Tone table

Tone no.	Version	Frequency	Repetition Rate (Sec)	Special Application
Tone 01	Alternate two-tone	800-1000	0.5	Fire alarms - Level crossing
Tone 02	Alternate two-tone	2500-3100	0.5	Security alarms
Tone 03	Alternate fast two-tone	800-1000	0.25	Increased urgency - Level crossing
Tone 04	Alternate fast two-tone	2500-3100	0.25	Security deterrent
Tone 05	Alternate two-tone	440-554	0.4/0.1	AFNOR, France
Tone 06	Alternate two-tone	430-470	1.0	
Tone 07	Alternate very fast two-tone	800-1000	0.13	
Tone 08	Alternate very fast two-tone	2500-3200	0.07	
Tone 09	Alternate two-tone	440-554	2.0	Turn out, Sweden
Tone 10	Continuous note	700		All-clear, Sweden
Tone 11	Continuous note	1000		
Tone 12	Continuous note	1000		
Tone 13	Continuous note	2300		
Tone 14	Continuous note	440		
Tone 15	Interrupted tone	1000	2.0	
Tone 16	Interrupted tone	420	1.25	AS2220, Australia
Tone 17	Interrupted tone	1000	0.5	
Tone 18	Interrupted tone	2500	0.25	
Tone 19	Interrupted tone	2500	0.5	
Tone 20	Interrupted tone	700	6/12	Pre-vital message, Sweden
Tone 21	Interrupted tone	1000	1.0	
Tone 22	Interrupted tone	700	4.0	Air-raid alarm, Sweden
Tone 23	Interrupted tone	700	0.25	Local warning, Sweden
Tone 24	Interrupted tone	720	0.7/0.3	Industrial alarm, Germany
Tone 25	Interrupted, fast, rising volume	1400	0.25	
Tone 27	Rising constant, fall	1000	10/40/10	Industrial alarm, Germany
Tone 28	ISO 8201 Evacuation	800-1000	As Standard	International evacuation alarm
Tone 29	Fast whoop	500-1000	0.15	
Tone 30	Slow whoop	500-1200	4.5	Evacuation, The Netherlands
Tone 31	Reverse sweep	1200-500	1.0	Evacuation, Germany
Tone 32	Siren	500-1200	3.0	



8146/5-6 / 8150/5 Series Disconnects

DISCONNECT SWITCHES FOR HAZARDOUS & CORROSIVE ENVIRONMENTS

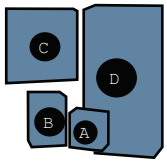
Disconnects 8146/5-6, 8150/5
Features:

- *16A, 25A, 63A and 125A models.*
- *Enclosures made of Fiberglass Reinforced Poly-ester (FRP) with recessed gasket and captive stainless steel cover screws*
- *3 pole (plus auxiliary) horsepower rated switch.*
- *Increased safety terminals and integrated round bar.*
- *Large grip, lockable handle.*
- *Multiple entry methods available*
- *No seals required for Division 2 applications.*

Stainless Steel Disconnect Switches Fused / Nonfused

DISCONNECT SWITCHES FOR HAZARDOUS & CORROSIVE ENVIRONMENTS

A - 16 AMP DISCONNECTS SERIES
B - 25 AMP DISCONNECTS SERIES
C - 63 AMP DISCONNECTS SERIES
D - 125 AMP DISCONNECTS SERIES



CLASSIFICATIONS
8150/5-* Nonfused Disconnects

NEC- Class I, Zone 1 AEx de IIC T* Gb
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 1 and 2, Groups E,F,G
Enclosure 3, 4, 4x, IP 66

CEC- Class I, Zone 1 Ex de IIC T* Gb
Class I, Division 2, Groups A,B,C,D
Class II, Division 1 Groups E,F,G
Enclosure type 3,4,4x; IP 66

File No. 3050071

Ex de IIC T* Gb
Ex tb IIIC T*
IECEx- PTB 09.0049

ATEX- Ex II 2G Ex de IIC T* Gb
Ex II 2D Ex tb IIIC T*
PTB 09 ATEX 1109

Ambient Temperature Range for 16A T6
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Ambient Temperature Range for 25A-125A T5
+40˚C (+104˚F) Max.
–40˚C (–40˚F) Min.

CLASSIFICATIONS
7150/5- Fused Disconnects

Class I, Division 2, Groups A,B,C,D T4
Enclosure 3, 4, 4x, IP 66

CEC- Class I, Division 2, Groups A,B,C,D T4
Enclosure type 3,4,4x; IP 66

File No. 3050071

Ambient Temperature Range
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Features

- Enclosed 316L stainless steel construction for maximum corrosion resistance
- No conduit seals required for Class I Division 2 areas
- Lightweight construction as opposed to cast metal enclosures
- Available in fused (7150 and non-fused (8150) versions (with J fuses)
- Padlockable robust rotary handle

8150/5 & 7150/5 Disconnect Logic

a 150 / 5 - **5** **c** **d** - **e** **fff**

a - Version
7 - Fuse (Class I, Div. 2)
8 - Non-Fuse (Zone 1, Class I, Zone 1)

Enclosure Material
5 - 316L Stainless Steel

c - Arrangement
0 - Switch Only
1 - Switch with Terminals
2 - Switch with Fuse (Div.2)
3 - Switch with Fuse & Terminals (Div.2)

d - Switch Raiting
2 - 16A
3 - 25A
6 - 63A (600VAC) / 80A (480VAC)
9 - 125A (600VAC)

e - Entry Location
0 - No Entries
3 - 1x Top Feed
4 - 1x Bottom Feed
5 - Feed Through (1x Top & 1x Bottom)
6 - 2x Top Feed
7 - 2x Bottom Feed

f - Entry Type
000 - No Entry

HUBS
001 - 1/2" NPT
002 - 3/4" NPT
003 - 1" NPT
004 - 1-1/4" NPT
005 - 1-1/2" NPT
006 - 2" NPT
007 - 2-1/2" NPT
008 - 3" NPT

999 - According to Specification

Stainless Steel Disconnect Switches Fused / Nonfused

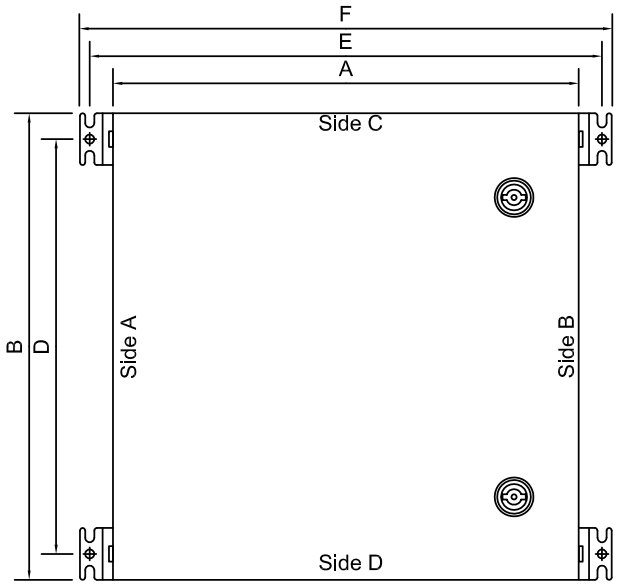
DISCONNECT SWITCHES FOR HAZARDOUS & CORROSIVE ENVIRONMENTS

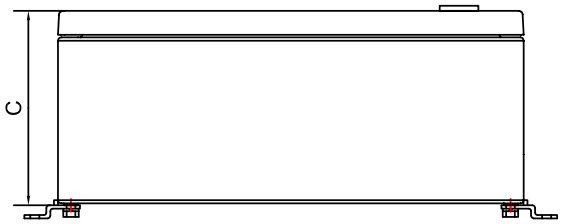
Technical Data

		16 AMP.	25 AMP.	63/80 AMP.	125/150 AMP.
RATED VOLTAGE	AC	600	600	600/480	600/480
RATED VOLTAGE	DC	220	125	60/125/240	60/125/240
HORSE POWER	600VAC	10	15	60	125
	480VAC	10	15	60	100
	240VAC	5	7.5	30	50
	120VAC	2	3	10	25
	60VDC	-	-	10(1)	-
	125VDC	-	3(2)*	10(2)*	10(2)*
	240VDC	-	5(3)*	30(3)*	20(3)*
TERMINALS	AWG	12	8	2	4/0
	STRANDED (mm^2)	2.5	10	25	95
BACK-UP FUSE (Required)	Class J	20 MAX	40 MAX	150 MAX	200 MAX

**The numbers within brackets indicate how many switch contacts need to be wired in series to achieve the indicated horsepower ratings in DC application.*

Dimensions (mm)





8150/5-	A	B	C	D	E	F
8150/5-x02-xxxx	176	236	150	196	212	228
8150/5-x03-xxxx	176	236	150	196	212	228
8150/5-x06-xxxx	300	400	150	360	336	352
8150/5-x09-xxxx	360	727	150	687	396	412
8150/5-x12-xxxx	176	236	150	196	212	228
8150/5-x13-xxxx	176	236	150	196	212	228
8150/5-x16-xxxx	300	400	150	360	336	352
8150/5-x19-xxxx	360	727	150	687	396	412

7150/5-	A	B	C	D	E	F
7150/5-x22-xxxx	200	300	150	260	236	252
7150/5-x23-xxxx	200	300	150	260	236	252
7150/5-x26-xxxx	360	550	150	510	396	412
7150/5-x29-xxxx	480	787	230	747	516	532
7150/5-x32-xxxx	220	440	150	400	256	272
7150/5-x33-xxxx	220	440	150	400	256	272
7150/5-x36-xxxx	400	600	150	687	396	412
7150/5-x39-xxxx	480	900	230	860	516	532

8146/5-6 Series Disconnect Switches

DISCONNECT SWITCHES FOR
HAZARDOUS & CORROSIVE ENVIRONMENTS

CLASSIFICATIONS 8146/5-602-....
NEC- Class I, Zone 1 & 2 AEx de II C T6
Class I, Division 2, Groups A,B,C,D
Class II, Divisions 2, Groups F,G
Class III
Environmental Protection 3, 4, 4x, IP66
File No. E 182378

II 2G Ex de IIC T6
Zone 1 & 2
Ingress Protection IP66
PTB 01 ATEX 1024

Ambient Temperature Range
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

CLASSIFICATIONS
8146/5-603-.... & 8146/5-606-....

NEC- Class I, Zone 1 AEx de IIC T6
Class I, Division 2, Groups A,B,C & D

File No. 3031420

CEC- Class I, Zone 1 EX de IIC T6
Class I, Division 2, Groups A,B,C & D /

Environmental Protection
Type 3, 4, 4x; IP66

Ambient Temperature Range
+40˚C (+104˚F) Max.
–40˚C (–40˚F) Min.

Applications

The DISCONNECTS 8146/5-6 series are horsepower rated for motor load applications. While the product is load rated, no short circuit protection is designed into the switch.

To provide adequate short circuit protection, properly sized Class J fuses must be installed in the circuit upstream from the switch.

Due to the design of the switch, no external sealing fittings are required for Class I, Division 2 applications. Some Class II applications may require installation of seals. Consult the National Electrical Code Article 502-5 or the Canadian Electrical Code Section 18 (154) for specific instructions.

STAHL offers the DISCONNECT Series 8146/5-6 constructed to meet the most demanding environments. The Disconnect 8146/5-6 Series provides safety in hazardous and corrosive locations.

Technical Data

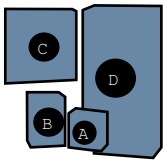
		16 AMP.	25 AMP.	63/80 AMP.	125/150 AMP.
RATED VOLTAGE	AC	600	600	600/480	600/480
RATED VOLTAGE	DC	220	125	60/125/240	60/125/240
HORSE POWER	600VAC	10	15	60	125
	480VAC	10	15	60	100
	240VAC	5	7.5	30	50
	120VAC	2	3	10	25
	60VDC	-	-	10(1)*	-
	125VDC	-	3(2)*	10(2)*	10(2)*
	240VDC	-	5(3)*	30(3)*	20(3)*
TERMINALS	AWG	12	8	2	4/0
	STRANDED (mm^2)	2.5	10	25	95
BACK-UP FUSE (Required)	Class J	20 MAX	40 MAX	150 MAX	200 MAX

**The numbers within brackets indicate how many switch contacts need to be wired in series to achieve the indicated horsepower ratings in DC application.*

8146/5-6 Series Disconnect Switches

DISCONNECT SWITCHES FOR
HAZARDOUS & CORROSIVE ENVIRONMENTS

A - 16 AMP DISCONNECTS SERIES
B - 25 AMP DISCONNECTS SERIES
C - 63 AMP DISCONNECTS SERIES
D - 125 AMP DISCONNECTS SERIES



Installation Example

8146/5-6 Disconnect Logic

8146/5-6__-____

HUBS
000 - NO HUBS
001 - 1/2" NPT
002 - 3/4" NPT
003 - 1" NPT
004 - 1-1/4" NPT
005 - 1-1/2" NPT
006 - 2" NPT
007 - 2-1/2" NPT
008 - 3" NPT

02 - 16 AMP
03 - 25 AMP
06 - 63 AMP
09 - 125 AMP

0 - NO ENTRY
3 - TOP FEED ENTRY
4 - BOTTOM FEED ENTRY
5 - FEED THROUGH ENTRY
6 - 2 TOP ENTRIES
7 - 2 BOTTOM ENTRIES

COMPRESSION CABLE GLANDS (CABLE O.D.)

M16	.20" - .30"
M20	.25" - .50"
M25	.50" - .67"
M32	.40" - .70"
M40	.65"- 1.00"
M50	.91"- 1.25"
M63	1.26"- 1.73"

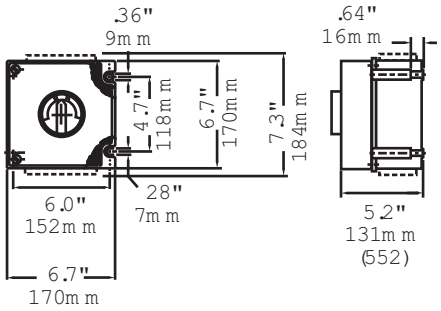
Ordering Information

CATALOG NUMBER			AMP.	HUB SIZE	ENCLOSURE
WITHOUT HUBS	FEED THROUGH ENTRY (Top & Bottom)	FEED THROUGH ENTRY (2 Hubs In Bottom)			
8146/5-602-0000	8146/5-602-5002	8146/5-602-7002	16	3/4”	8146/5052-D
8146/5-603-0000	8146/5-603-5003	8146/5-603-7003	25	1”	8146/5062-B
8146/5-606-0000	8146/5-606-5006	8146/5-606-7006	63/80	2”	8146/5083-D
8146/5-609-0000	8146/5-609-5007	8146/5-609-7007	125/150	2 1/2”	8146/5095-B

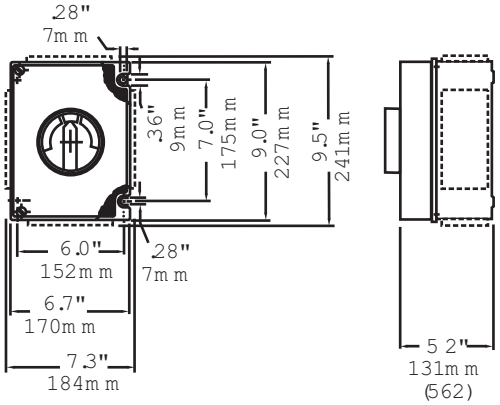
Modifications of the standard designs are possible e.g. auxiliary contacts entry parts, additional terminals.

8146/5-6 Series Disconnect Switches

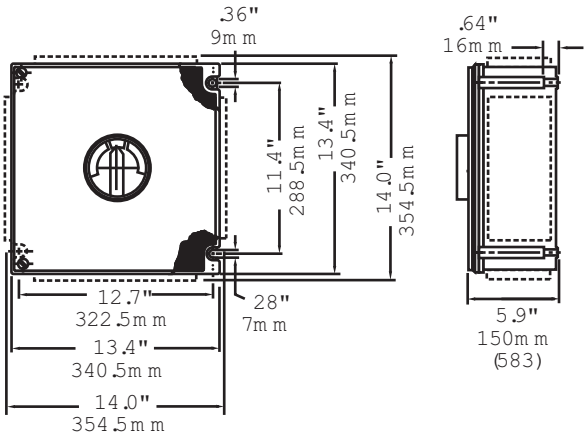
DIMENSIONS



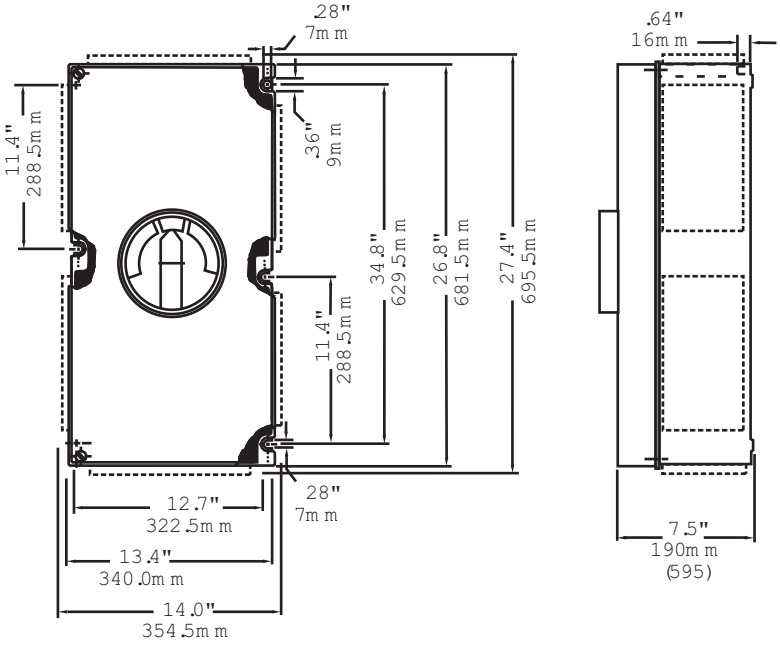
16A DISCONNECT SWITCH
8146/5-602 Series



25A DISCONNECT SWITCH
8146/5-604 Series



63A DISCONNECT SWITCH
8146/5-606 Series



125A DISCONNECT SWITCH
8146/5-609 Series

EPIK Circuit Breaker Panel

Applications:

- For hazardous classified locations due to explosive gas and/or dust atmospheres
- Petroleum refineries, oil sands, chemical and petrochemical facilities with indoor or outdoor processes
- Applications requiring overcurrent and short circuit protection for power, lighting, and heat tracing.

Features:

- 316L stainless steel housing provides high corrosion resistance; extending the life and safety of your system.
- Panels come prewired to terminals.
- Extremely easy to operate. Simply actuate the breakers by turning the external handle.
- Lightweight and easy to install compared to traditional explosion proof cast and bolted systems. Expensive lift equipment often not needed.
- R. STAHL 8562 series circuit breakers with 10kA short circuit ratings meet all necessary North American requirements including UL489.
- Breaker handles are padlockable in the off position.
- 5 mA, and 30 mA GFIs and GFCIs are also available for ground fault protection.
- Main breakers available up to 250 Amps
- Seamless silicone foam in place gaskets exclude contaminants and liquids ensuring long life of interior components.
- No cable or conduit seals are required, allowing for fast installation and lowering overall installed cost.
- Standard bottom entry reduces risk of moisture ingress. (Top entry is available)
- Enclosures are easily punched in the field. No drilling and tapping required.

CLASSIFICATIONS

NEC

Class I, Zone 1 & 2 Group IIC, T4
Class I, Division 2, Groups B, C & D, T4
Class II, Div 1, Groups E, F, G

CEC

Main Lug Only (Terminals)

Class I, Zone 1 & 2 Group IIC T4
Class I, Division 2 Groups B, C & D, T4

With Main Breakers

Class I, Division 2 Groups C, D & T4
Class II, Division 1, Groups E, F, G

Environmental Protection

Type 3, 4, 4X; IP66

SAVE INSTALLATION TIME

- Avoid removing dozens of bolts as with traditional explosion proof cast systems.
- No expensive and labor intensivecon-duit seals
- No drilling and tapping enclosures
- Light weight design (No need for expensive lift equipment)

LAST LONGER

- 316 stainless steel, outlasts traditional cast aluminum enclosures in corrosive environments

WORK SAFER

- Finger safe construction prevents accidental contact with live parts.
- Padlockable breaker and handles
- External handle mechanisms minimize the need to open the panel

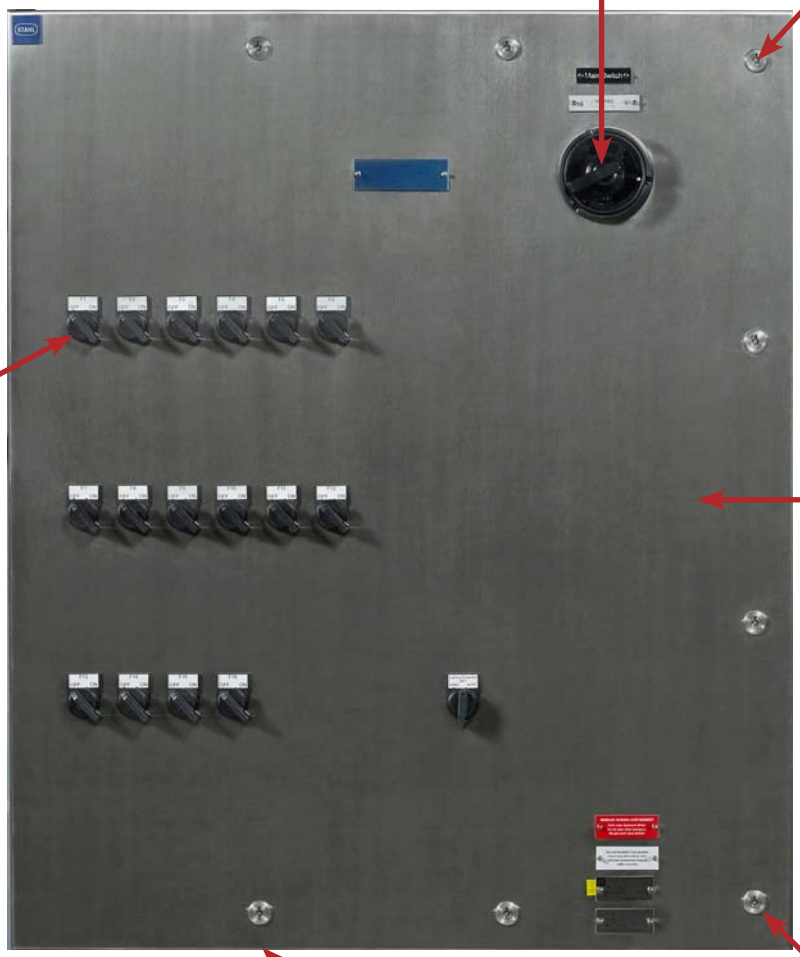
Options:

- Main breakers available up to 250AMP
- Complete skid fabrication capabilites including mounted transformers and photo cell available

EPiK Circuit Breaker Panel

ROBUST EXTERNAL MAIN BREAKER HANDLE LOCKABLE

CAM LOCK FASTENERS FOR EASY OPENING

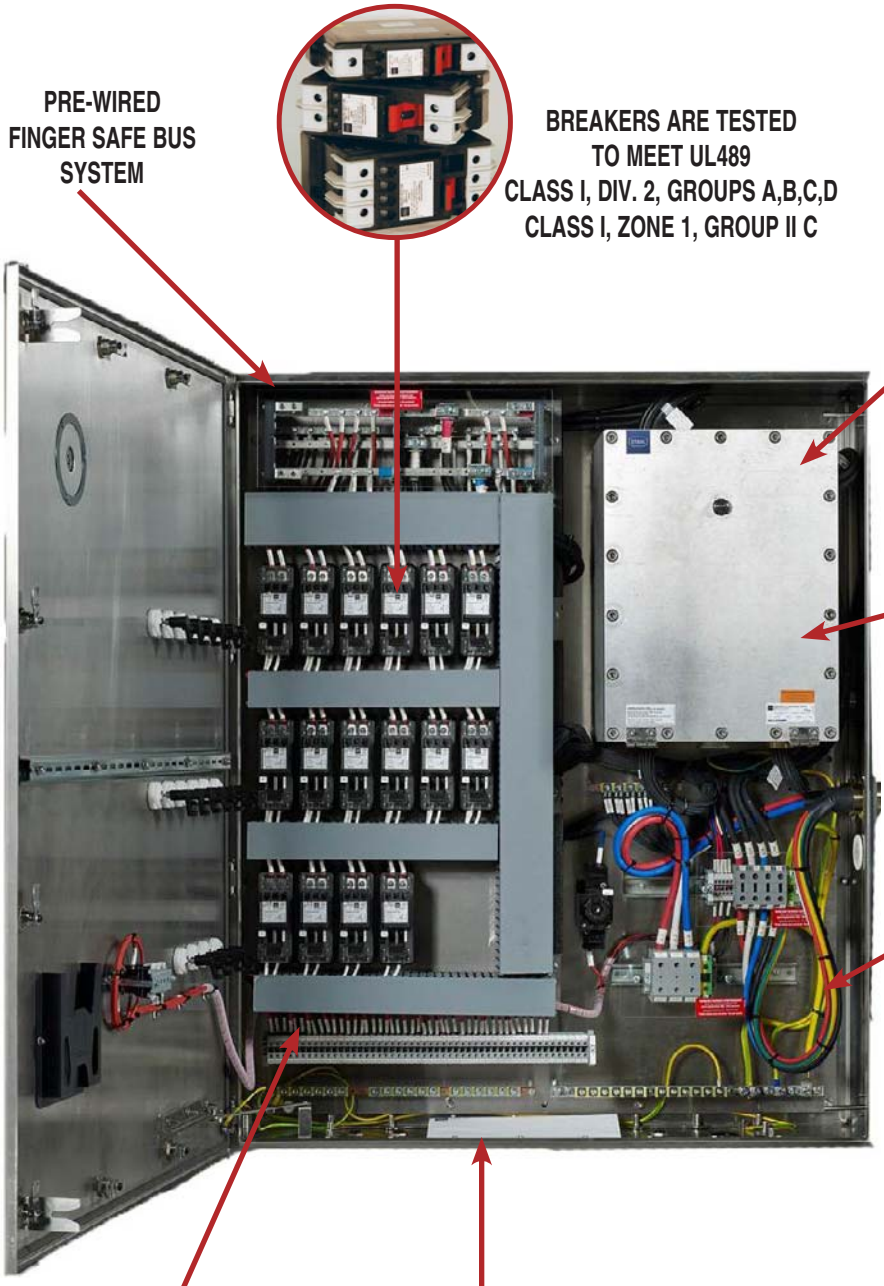


EXTERNAL CIRCUIT BREAKER HANDLE ASSEMBLIES COME WITH LOCKOUT CAPABILITY

MADE OF 316L STAINLESS STEEL FOR SUPERIOR CORROSION RESISTANCE

ELIMINATE THE NEED FOR BOLTS FOUND ON HEAVY CAST EXPLOSION PROOF ENCLOSURES

LIGHTWEIGHT STAINLESS STEEL ENCLOSURE ELIMINATES THE NEED FOR HEAVY CAST ENCLOSURES



PRE-WIRED FINGER SAFE BUS SYSTEM

BREAKERS ARE TESTED TO MEET UL489 CLASS I, DIV. 2, GROUPS A,B,C,D CLASS I, ZONE 1, GROUP II C

MAIN BREAKER UP TO 250 AMP WIRED WITHIN THE PANEL

PRE-WIRED INTEGRATED PHOTOCELL / CONTACTOR CONTROL AVAILABLE UPON REQUEST

OPTIONAL CUSTOM WIRING TO TRANSFORMER RACK ASSEMBLY AVAILABLE

LINE AND LOAD SIDE TERMINALS ARE PRE-WIRED FOR EASY INSTALLATION, SAVING TIME AND MONEY

NO NEED FOR CONDUIT SEALS HOLES CAN BE PUNCHED IN THE FIELD, OR PRE-PUNCHED

EPiK Circuit Breaker Panel

Logic

8150/5-	a	b	c	d	e	f	g	h
Example 8150/5-	5	2	SS6-	36-	MB225-	361P20-	D	-INT

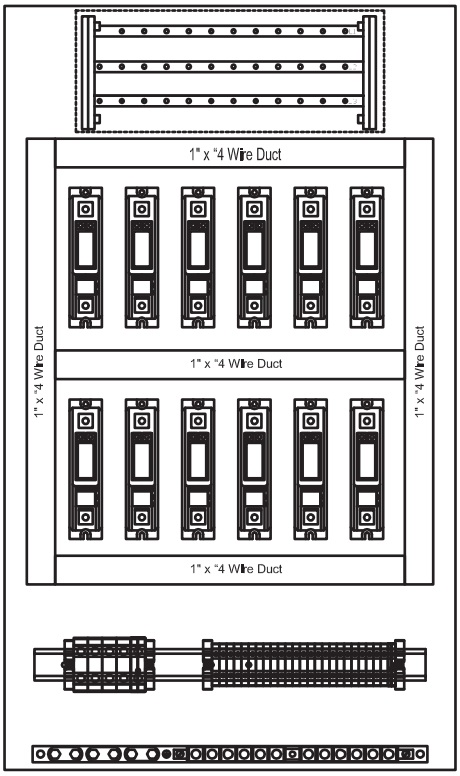
Description: 36 circuit panel 120V/240V with a 225 amp main breaker and (36) 1-pole 20 amp breakers

a	**Enclosure Size** 1 = 12 Circuit 2 = 18 Circuit 3 = 24 Circuit 4 = 35 Circuit 5 = 36 Circuit 6 = 42 Circuit 9 = Special **Note: For sizing purposes:** 1 Pole = 1 Space 2 Pole = 1 Space 3 Pole = 3 Spaces GFCI = 1 Space EPD = 1 Space
b	**Voltage / Phase** 1 = 208Y/120V AC 3 Phase, 4 Wire 2 = 120/240V, 1 Phase, 3 Wire 3 = 480Y/277V AC 3 Phase, 4 Wire
c	**Enclosure Material** SS6 = 316L Stainless Steel
d	**Number of Circuits** 12 = 12 Circuits 18 = 18 Circuits 24 = 24 Circuits 35 = 35 Circuits (Main Breaker Only) 36 = 36 Circuits (Main Lug Only) 42 = 42 Circuits
e	**Line Side** MLO100 = 100 amp Main Lug Only (Terminals) MLO150 = 150 amp Main Lug Only (Terminals) MLO225 = 225 amp Main Lug Only (Terminals) MLO250 = 250 amp Main Lug Only (Terminals) MB100 = 100 amp Main Breaker MB150 = 150 amp Main Breaker MB225 = 225 amp Main Breaker MBxxx = xxx amp Main Breaker (Specify Amp Rating)
f	**Branch Breakers (QTY, Poles, AMP)** xx = Number of Breakers 1P = 1 Pole Breaker 2P = 2 Pole Breaker 3P = 3 Pole Breaker yy = Amp Rating of Breaker EPD = 30 mA GFEP Breaker GFCI = 5 mA GFCI Breaker
g	**Enclosure Drain** D = With Drain O = Without Drain

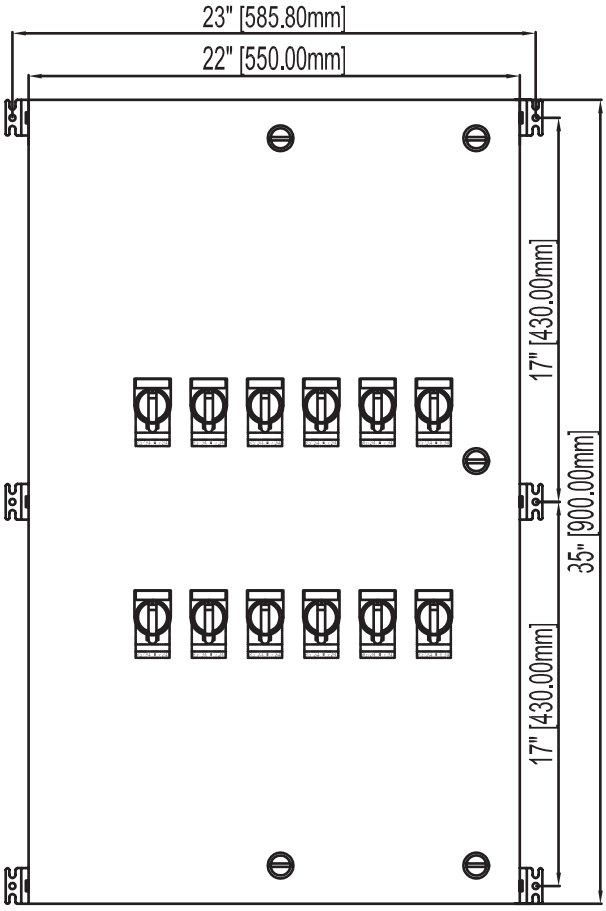
BREAKERS TESTED TO UL489 AND ARE CERTIFIED TO CLASS I, DIVISION 2 CLASS I, ZONE 1

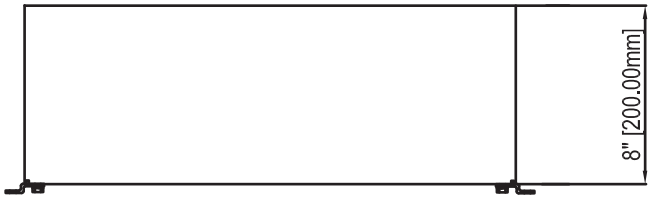
LET R. STAHL BUILD THE ENTIRE RACK ASSEMBLY COMPLETE WITH TRANSFORMER AND PHOTOCELL. CONTACT SALES@RSTAHL.COM FOR MORE INFORMATION

DIMENSIONS



12 Circuit 100 Amps
Main Lug Only

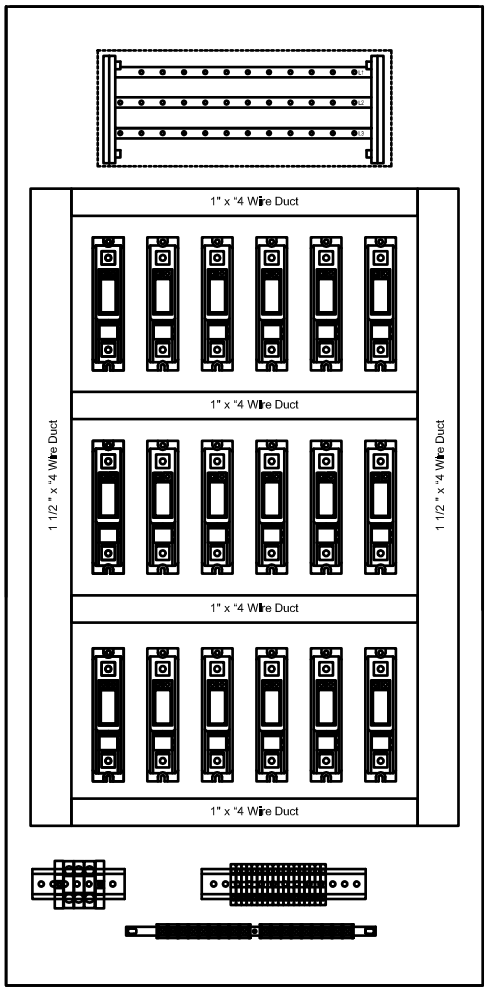




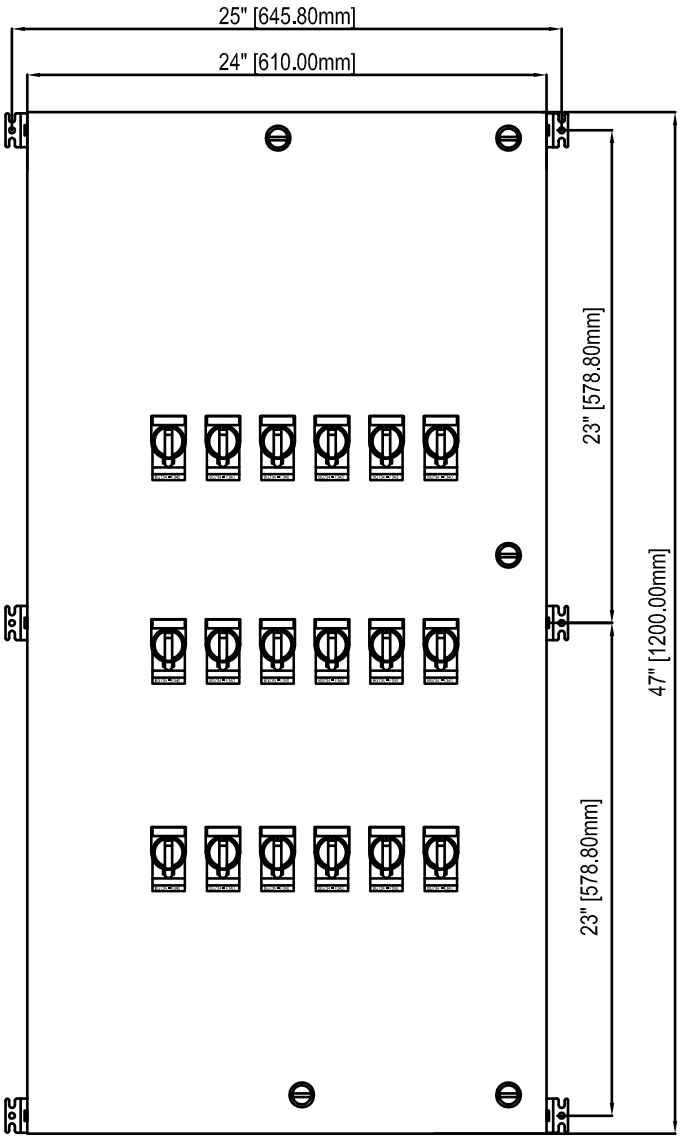
*Smaller size designs available. Please consult factory for more details.

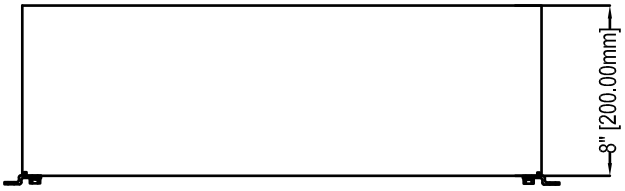
EPIK Circuit Breaker Panel

DIMENSIONS



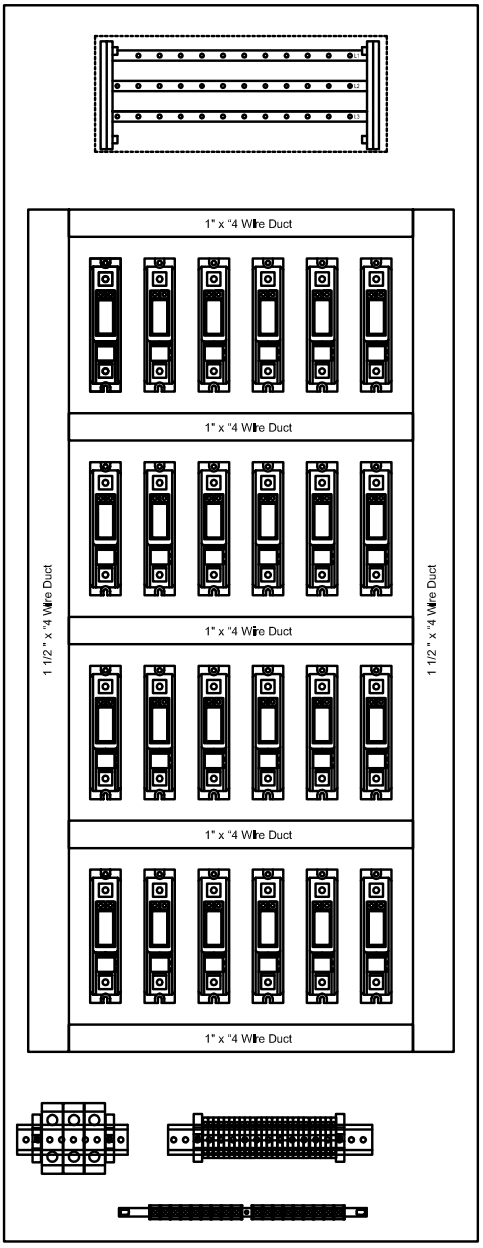
18 Circuit 100 Amps
Main Lug Only



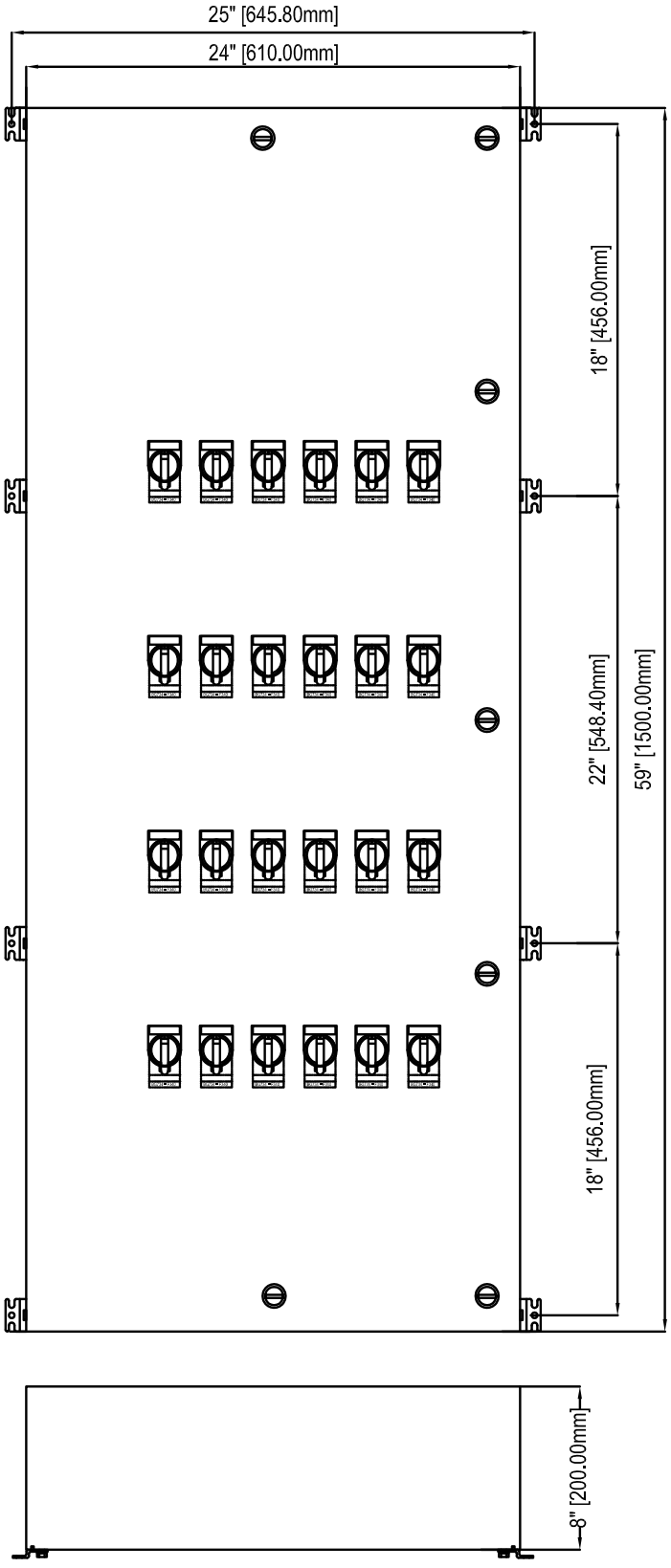


*Smaller size designs available. Please consult factory for more details.

DIMENSIONS



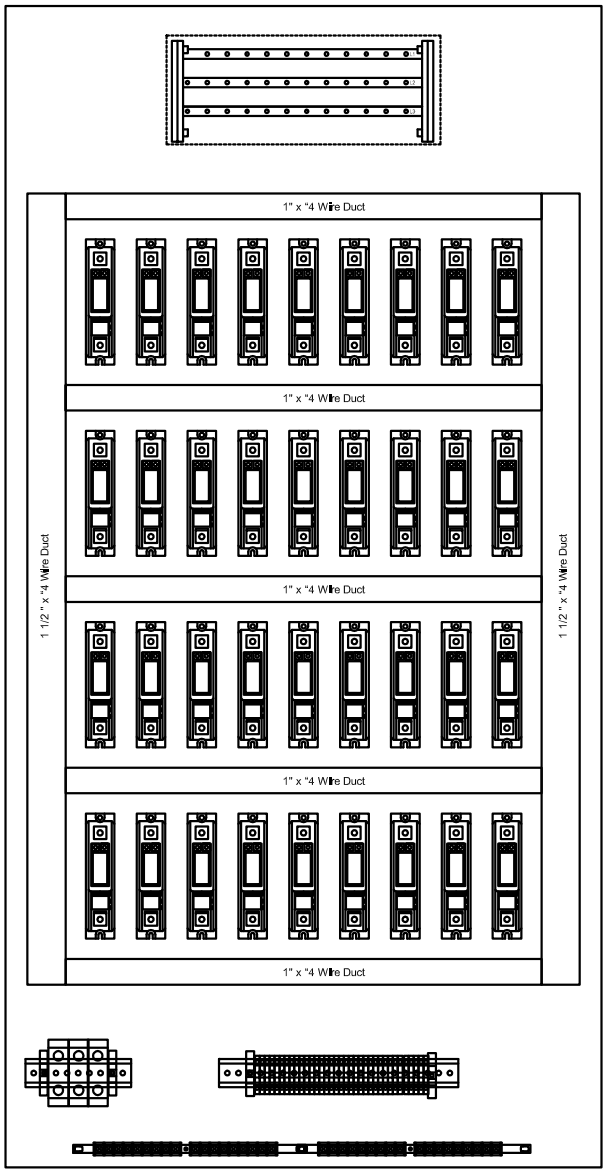
24 Circuit
225 or 250 Amps
Main Lug Only
(Terminals)



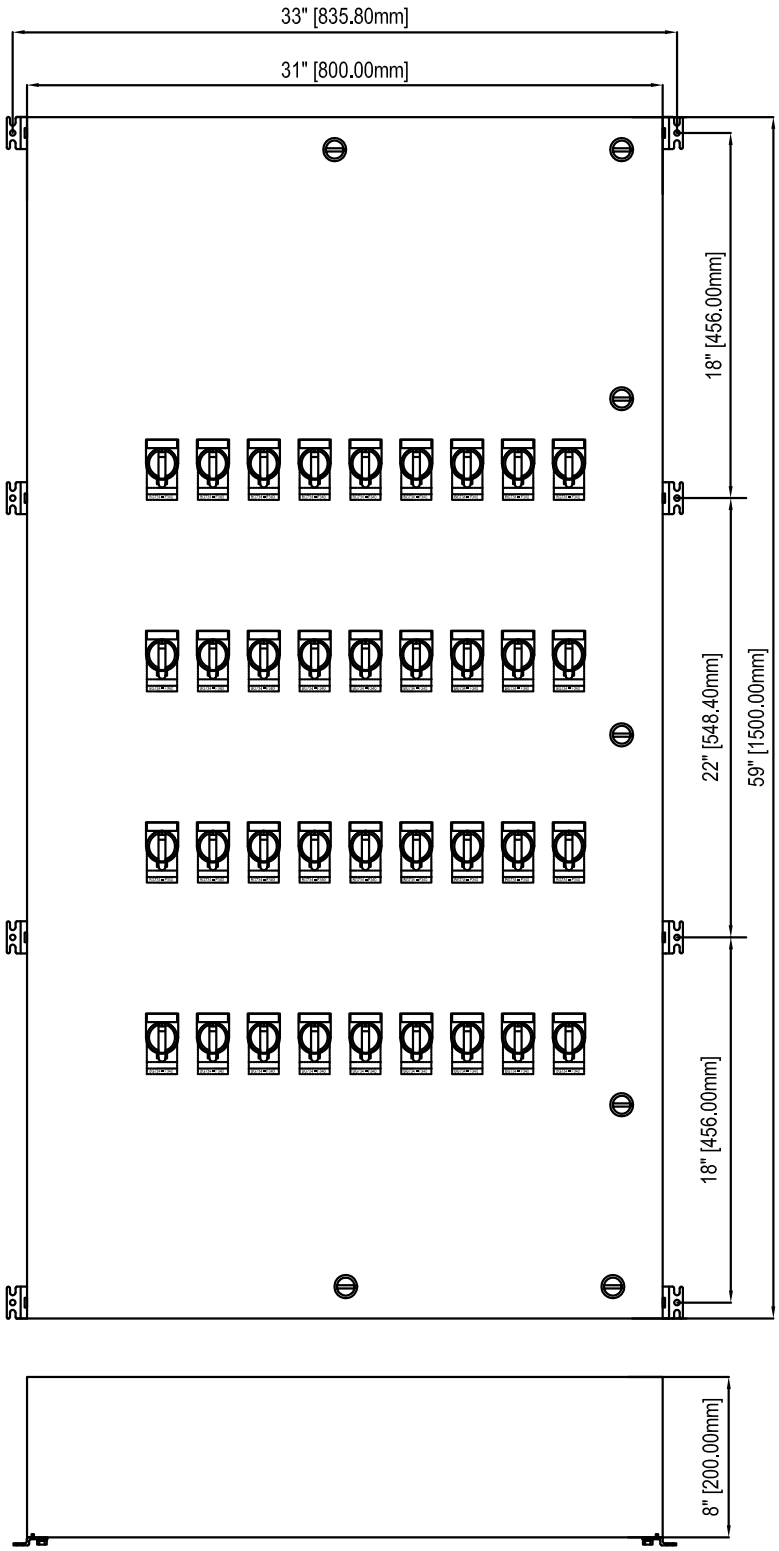
*Smaller size designs available. Please consult factory for more details.

EPIK Circuit Breaker Panel

DIMENSIONS

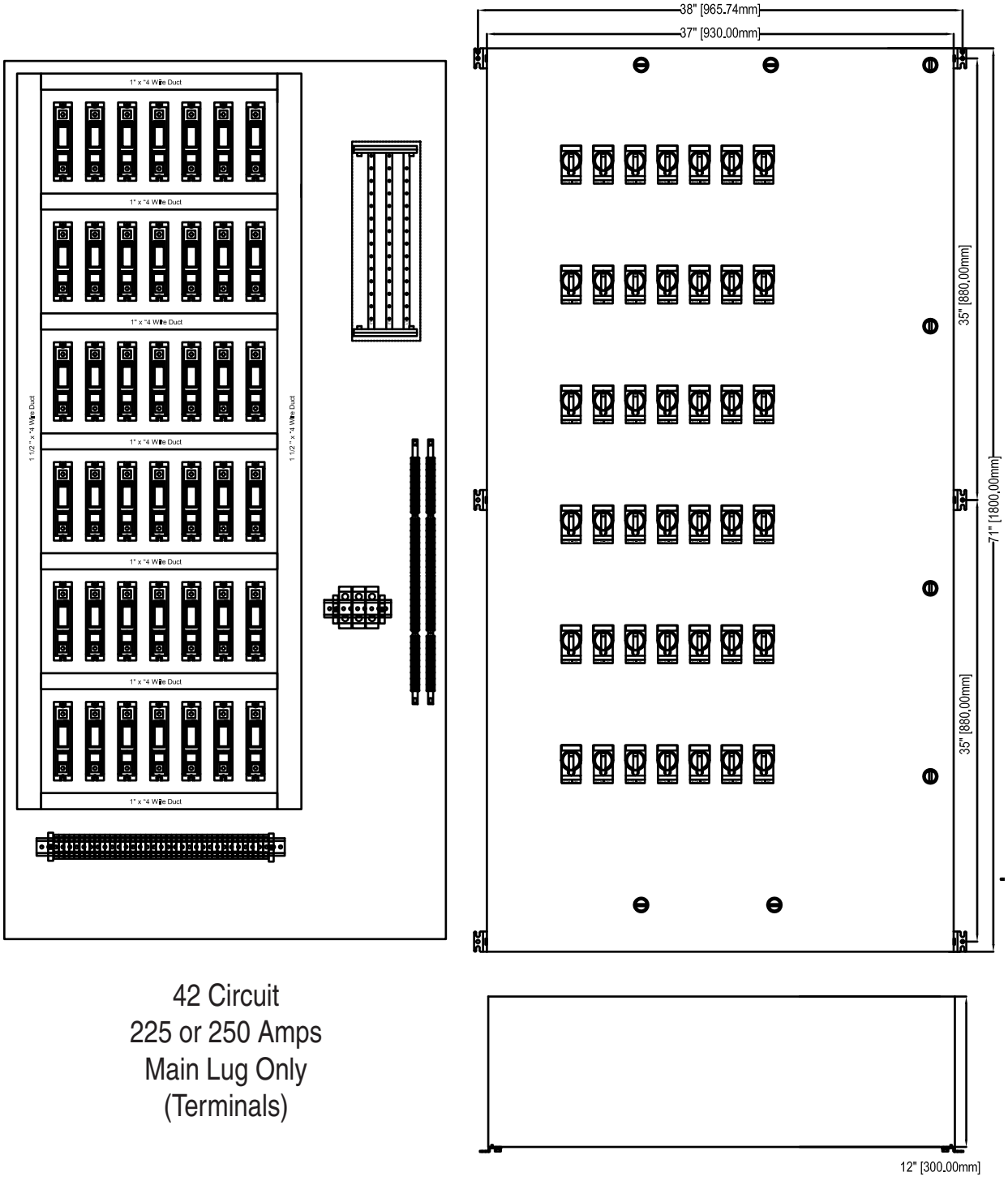


36 Circuit
225 or 250 Amps
Main Lug Only
(Terminals)



*Smaller size designs available. Please consult factory for more details.

DIMENSIONS

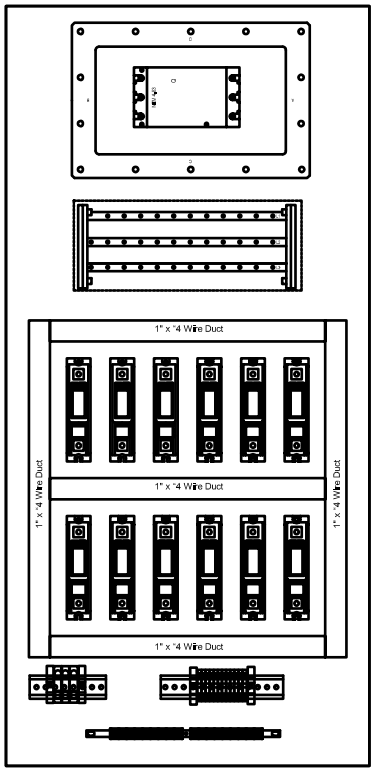


42 Circuit
225 or 250 Amps
Main Lug Only
(Terminals)

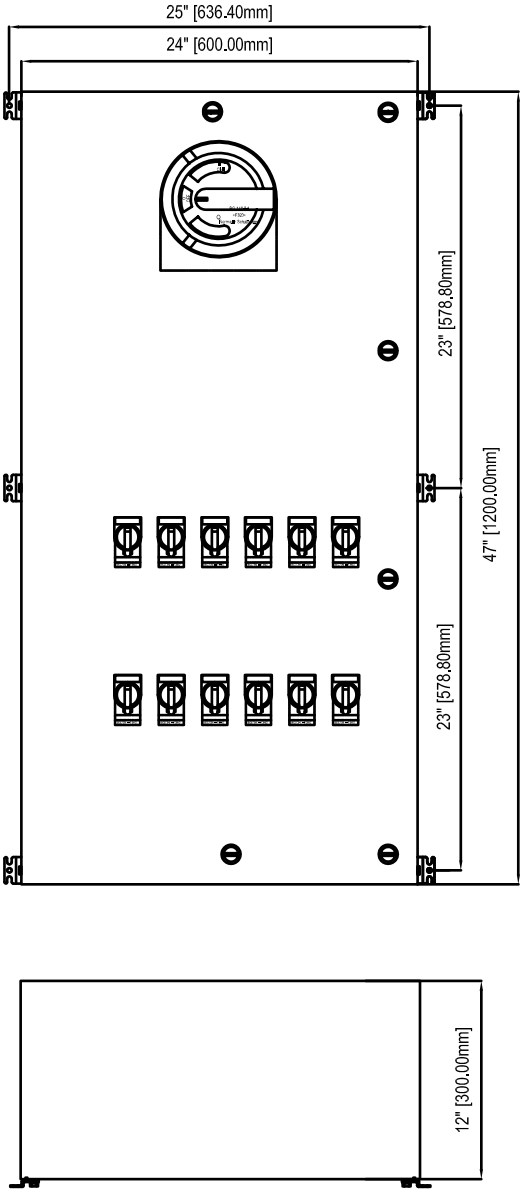
*Smaller size designs available. Please consult factory for more details.

EPiK Circuit Breaker Panel

DIMENSIONS



12 Circuit 100 Amps
Main Breaker



*Smaller size designs available. Please consult factory for more details.

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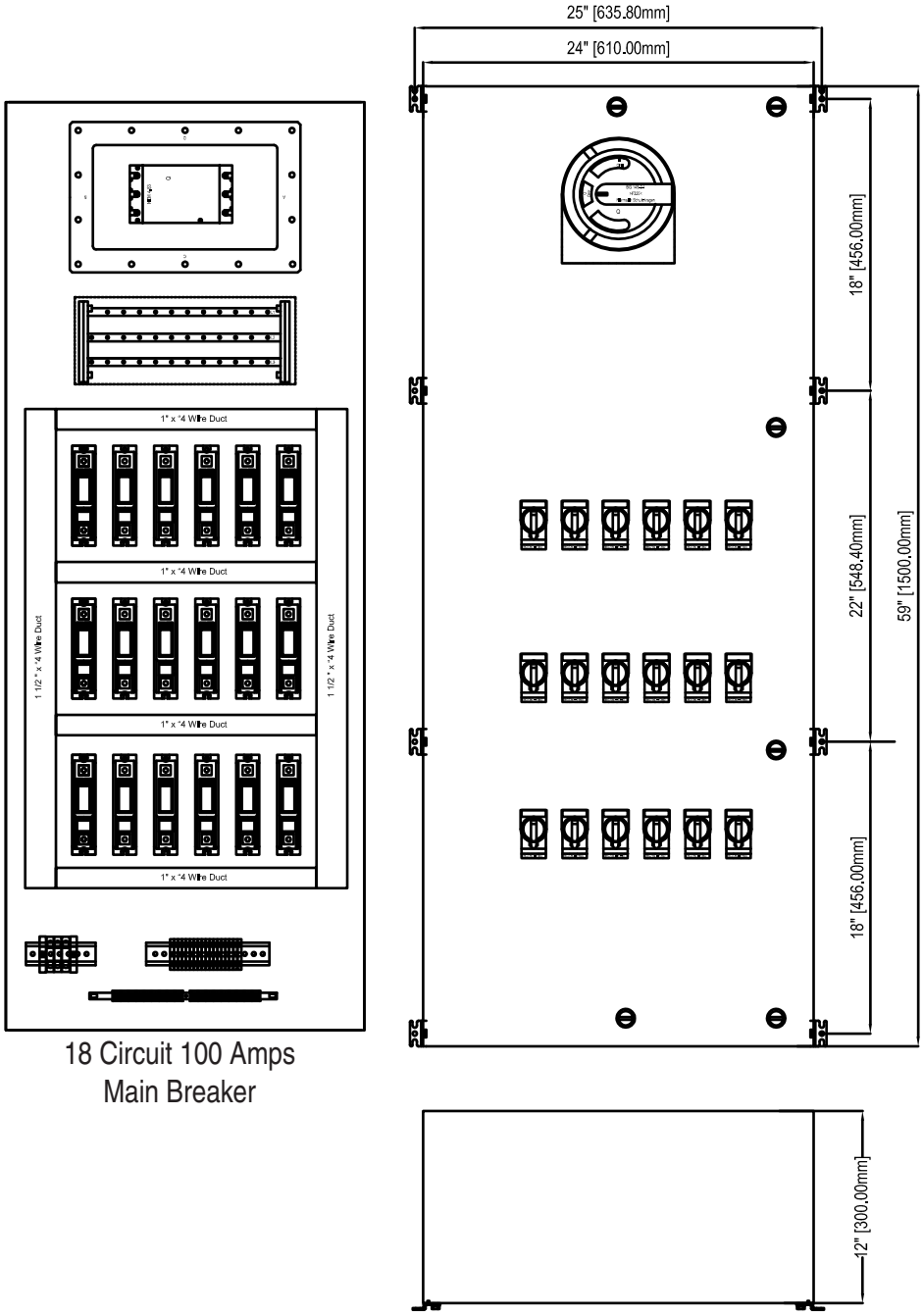
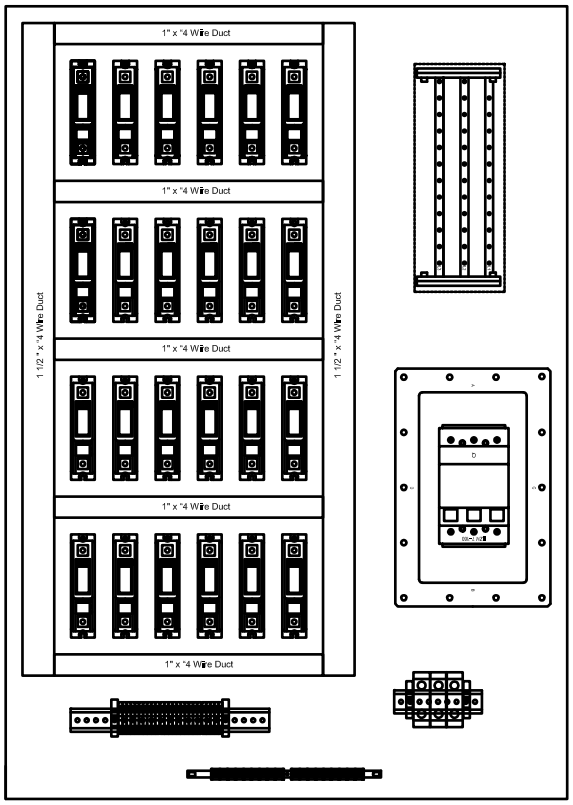


18 Circuit 100 Amps
Main Breaker

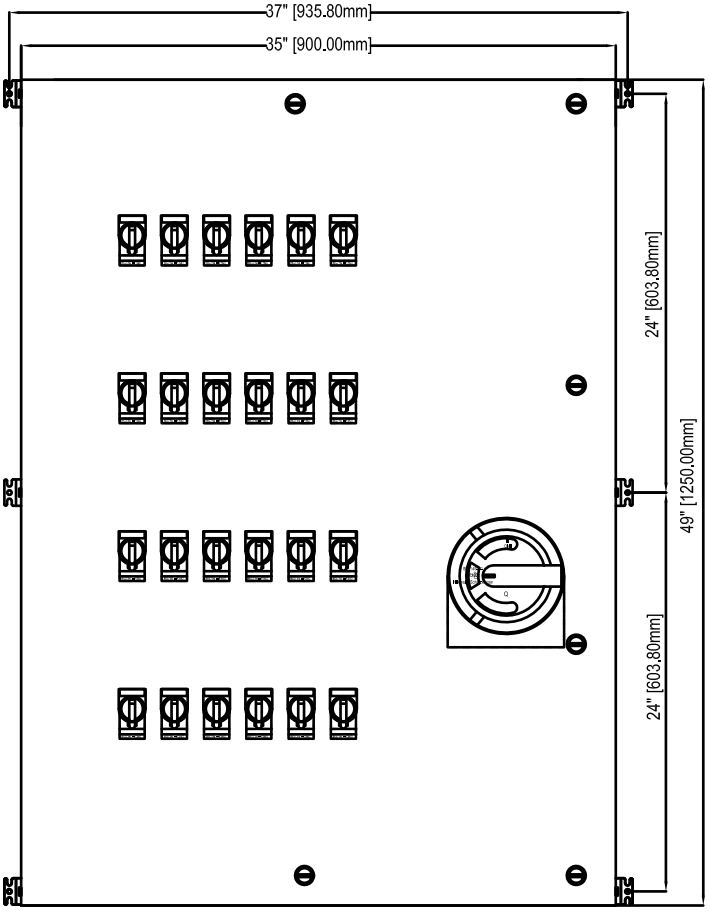
*Smaller size designs available. Please consult factory for more details.

EPiK Circuit Breaker Panel

DIMENSIONS



24 Circuit 150 Amps
Main Breaker



*Smaller size designs available. Please consult factory for more details.

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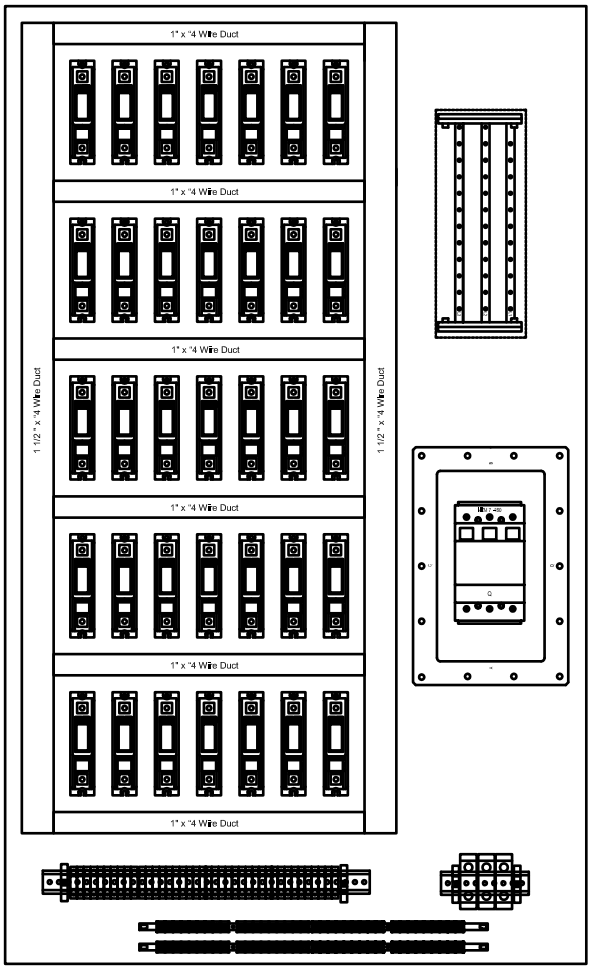
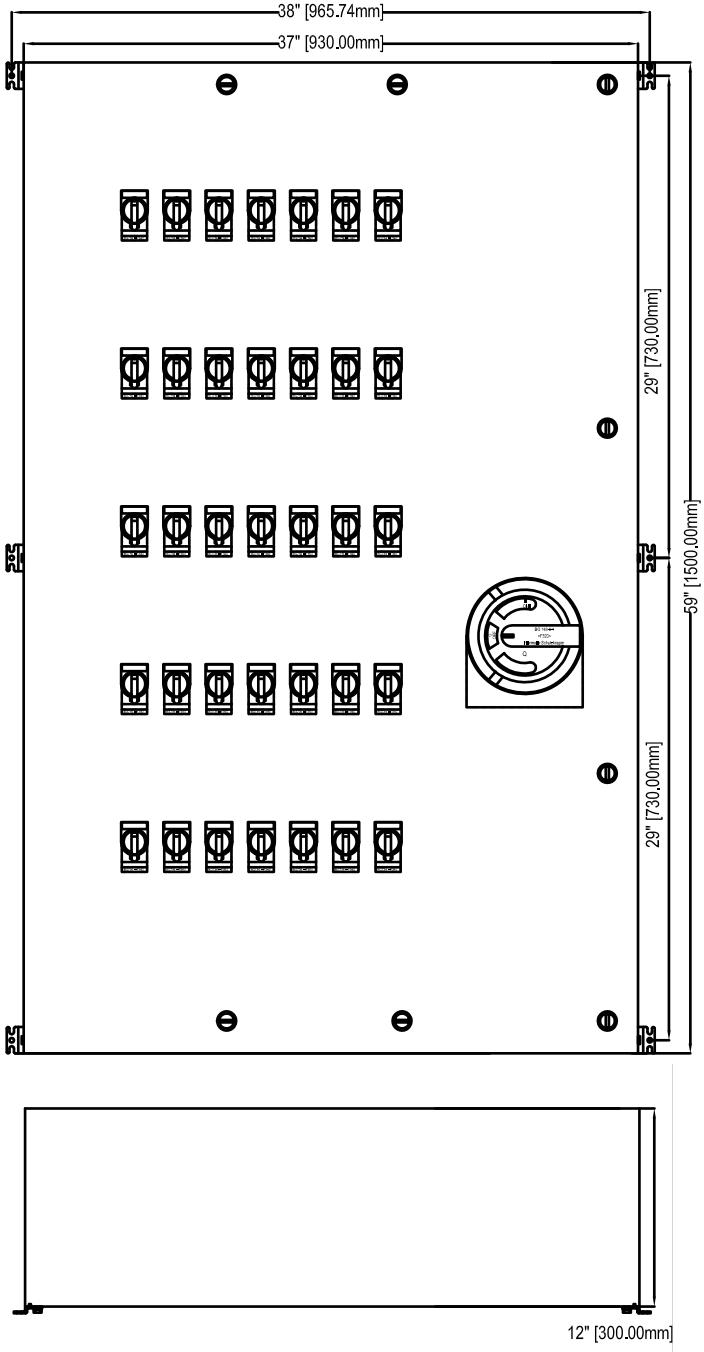


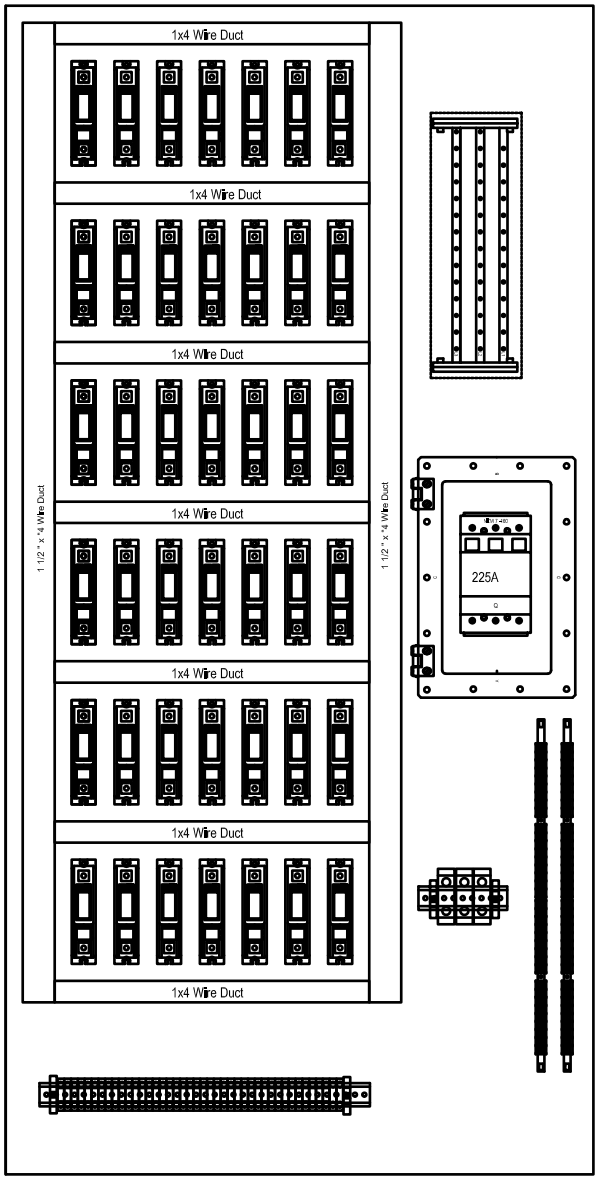
35 Circuit
225 or 250 Amps
Main Breaker



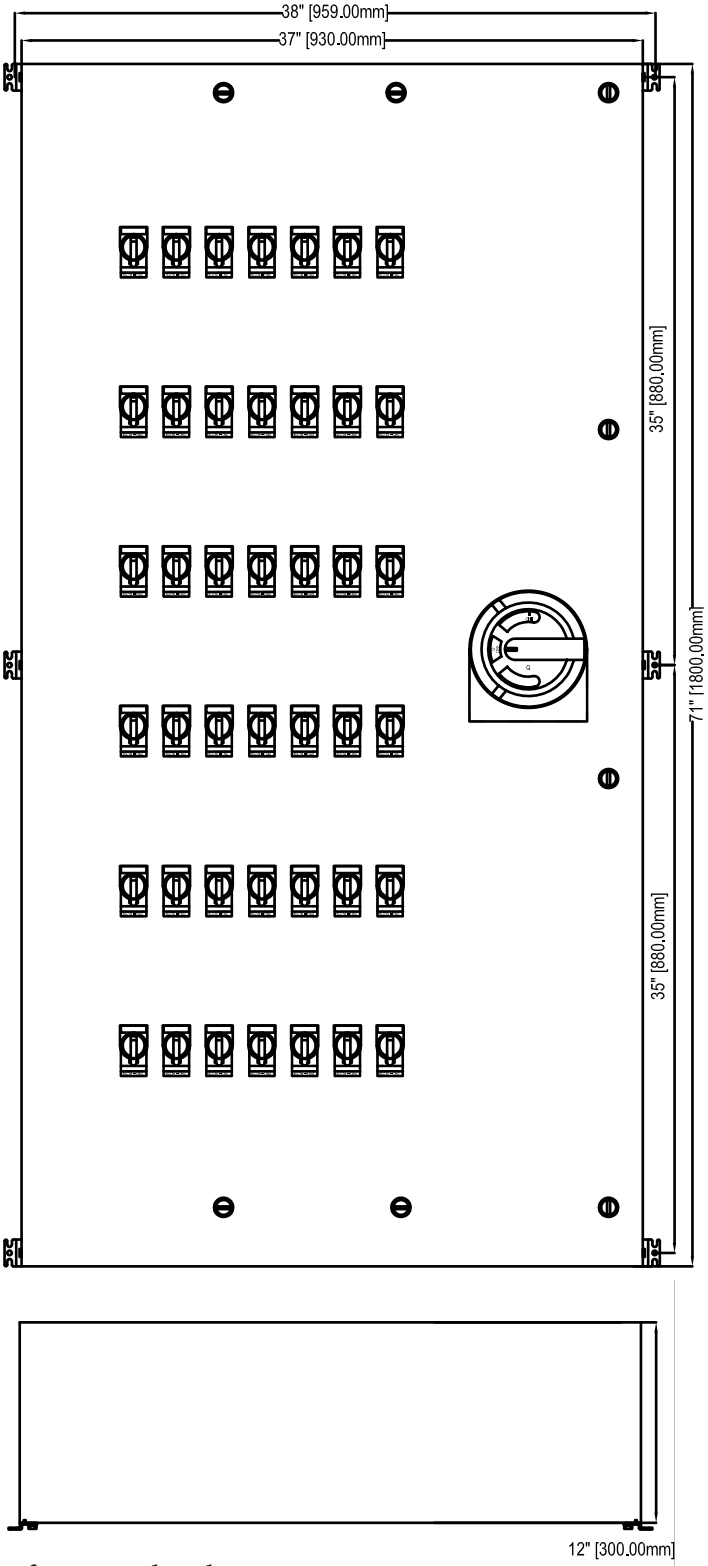
*Smaller size designs available. Please consult factory for more details.

EPiK Circuit Breaker Panel

DIMENSIONS



42 Circuit
225 or 250 Amps
Main Breaker



*Smaller size designs available. Please consult factory for more details.

Broz™ Hazardous Classified Breaker Panelboards

Applications:

- For hazardous classified locations due to explosive gas atmospheres
- Petroleum refineries, oilsands, chemical and petrochemical facilities with indoor or outdoor processes
- Applications requiring overcurrent and short circuit protection for power, lighting, and heat tracing.

Features:

- Extremely easy to maintain. Simply enter the enclosure by turning the door handle and gaining access to the breaker compartment. There is no need to remove dozens of bolts to change a breaker.
- Lightweight and easy to install compared to traditional explosion proof construction. Expensive lift equipment often not needed.
- Window doors allow easy viewing of breaker positions without opening the enclosure.
- R. STAHL 8562 series circuit breakers with 10KA interrupt ratings meet all necessary North American requirements. See page H7.
- 8562 series breakers are padlockable in the off position.
- GFIs and GFCIs are also available for ground fault protection. See pages H15 - H16.
- Seamless foam in place gaskets exclude contaminants and liquids ensuring long life of interior compnents.
- Standard housing in 304 stainless steel.
- Available in 316 brushed stainless steel, epoxy powder coated, and fiberglass for maximum corrosion resistance upon request.
- 316L stainless steel hardware provided for all external components to prevent corrosion.
- NEMA 4X padlocking 316L SS handle and internal heavy duty 3 point latching system combine security and a watertight seal with ease of access.
- No cable or conduit seals are required, allowing for fast installation and lowering overall installed cost.
- Standard bottom entry reduces risk of moisture ingress. (Top entry is available)
- Finger safe construction & UL508A approved bus system prevents accidental contact with live parts.
- Enclosures are easily punched in the field. No drilling and tapping required.

**Breaker information located on pages H15 - H16.*

CLASSIFICATIONS of Breaker

NEC

Class I, Zone 2 Group IIC, T4
Class I, Div. 2, Groups B, C & D, T4

CEC

Class I, Zone 2 Group IIC, T4
Class I, Div. 2 Groups B, C & D, T4

Environmental Protection

Type 3, 4, 4X; IP66

SAVE INSTALLATION TIME

- Avoid removing dozens of bolts as with traditional explosion proof ferrous systems.
- No expensive seals
- No drill and tapping enclosures
- Light weight design (No need for expensive lift equipment)

SAVE ON MAINTENANCE

- Window doors allow easy viewing.

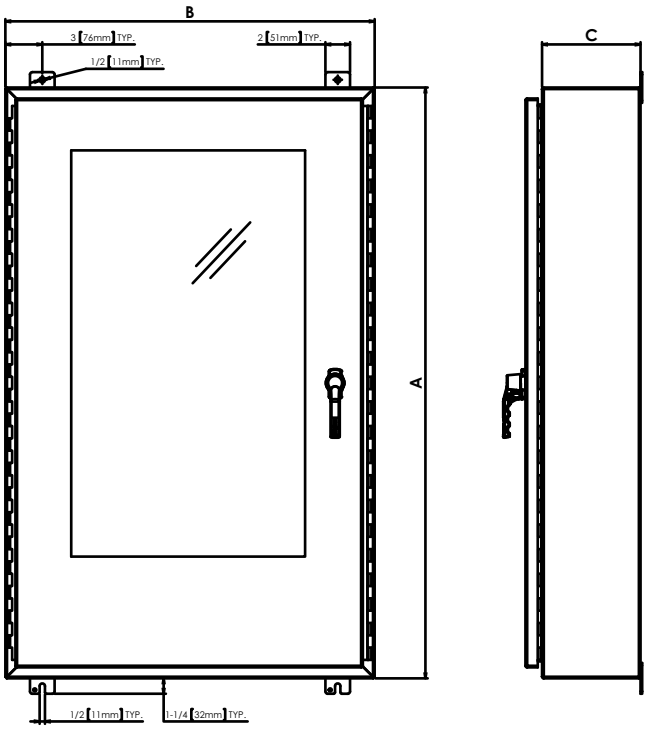
LAST LONGER

- Stainless Steel, and fiberglass options outlast traditional cast aluminum in corrosive environments

WORK SAFER

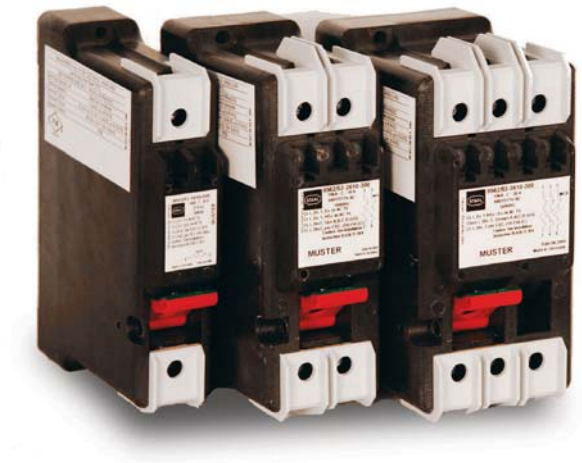
- Finger safe construction prevents accidental contact with live parts.
- Padlockable breakers

Specifications



BROZTM Zone 2 PANELBOARDS	BRZ	.	.	..	..	.....	.....	...
	BRZ	3	3	SS	3B	361P30	21P16	D-W
	a	b	c	d	e	f	f	g

a	Class I, Division 2/Zone 2 Circuit Breaker Panelboard
b	1 = 100A 2/0 main lugs (12cct) 2 = 225A 250 mcm main lug (24cct) 3 = 300A 250 mcm main lug (42cct and 60cct)
c	1 = 208Y/120V AC, 3 phase, 4 wire 2 = 120/240V, 1 phase, 3 wire 3 = 480Y/277V AC, 3 phase, 4 wire
d	Enclosure material SS = Stainless Steel ST = Powder Coated Steel
e	Enclosure size (Length A x Width B x Depth C) 1 = 12 circuit – 24" x 24" x 8" (610mm x 610mm x 203mm) 2 = 24 circuit – 30" x 24" x 8" (762mm x 610mm x 203mm) 3 = 42 circuit – 48" x 30" x 8" (1219mm x 762mm x 203mm) 4 = 60 circuit – 60" x 30" x 8" (1524mm x 762mm x 203mm)* B = Bottom Entries T = Top Entries
f	Qty # poles/amp rating 1, 2, 3 pole breakers, available up to 40 amp, 277/480V xx – Qty of Breakers 1P – 1pole breaker(s) 2P – 2pole breaker(s) 3P – 3pole breaker(s) xx – Amps of breaker EPD – 30 mA GFI GFCI – 5 mA GFCI Personal Protection Breaker
g	Options D = NEMA 4X Drain P = Breaker Padlock W = Window



*60 circuits available for Canada
Class I, Division 2, Class I, Zone 2

8146/5 Series Breaker Panelboards

BREAKER PANELBOARDS FOR HAZARDOUS & CORROSIVE ENVIRONMENTS

Breaker Panels

Features:

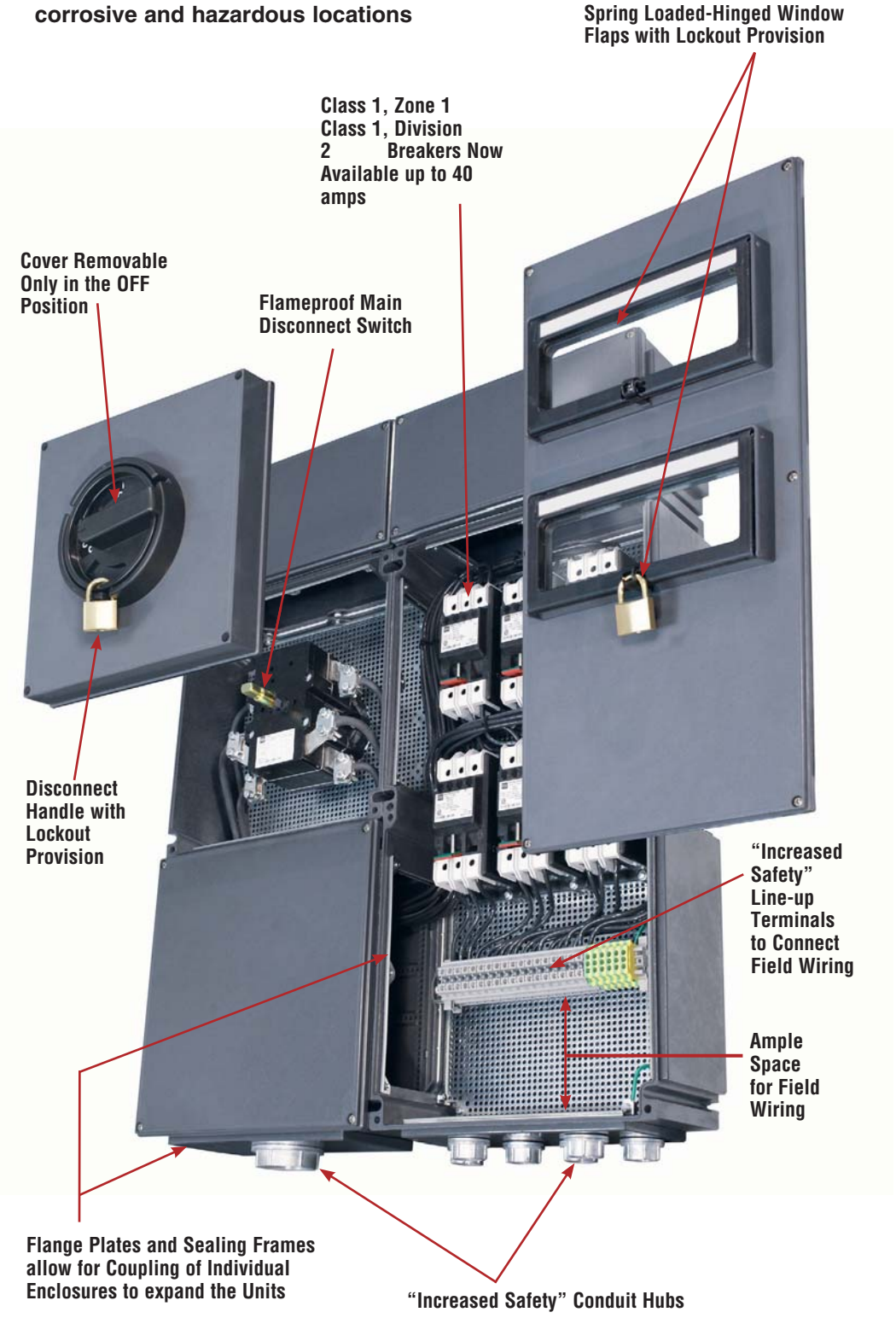
- *Wide variety of Flameproof branch circuit breakers for Zone 1 & Division 2 to UL 489 & CSA C22.2 No. 5*
  - *Thermal-magnetic branch circuit breaker protection, 40A max.*
  - *Mounted under hinged window flaps for easy actuation.*
  - *Shunt trips (optional).*
  - *Lockout on breaker and window flap.*
  - *Line and load side factory wired to "increased safety" terminals, ready for field connections*
  - *Flameproof Ground Fault Interrupters*
- *Flameproof main disconnect switches 125A max. with lockout provision (optional).*
- *FRP "increased safety" enclosures*
  - *Suitable for wet and corrosive locations*
  - *Impact resistant*
  - *Light weight*
  - *Wall mounting frames available*
  - *Flange Plates can be fitted with "Increased Safety" certified conduit hubs or cable glands (see section J).*
  - *No seals required for Division 2 application.*

8146/5 Series Breaker Panelboards

BREAKER PANELBOARDS FOR HAZARDOUS & CORROSIVE ENVIRONMENTS

Quick and Easy Access to Breaker

Modular "increased safety" enclosures made of FRP for indoors and outdoors, damp, wet corrosive and hazardous locations



CLASSIFICATIONS

NEC- Class I, Zone 1 AEx de IIC T5 or T6
Class I, Division 2, Groups A,B,C&D

FM APPROVED File No. 3031420

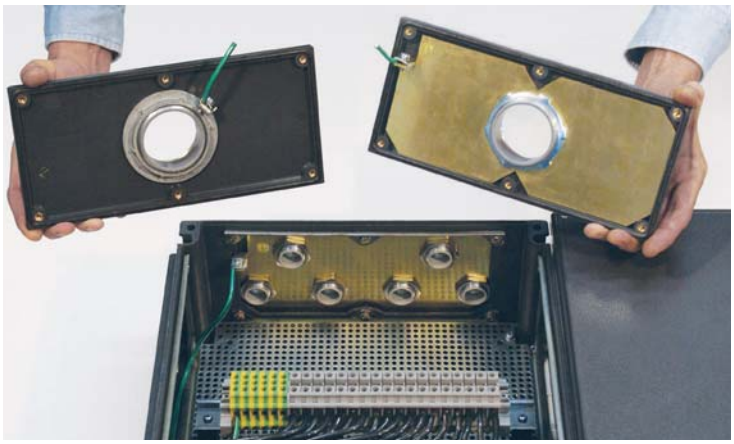
CEC- Class I, Zone 1 Ex de IIC T5 or T6
Class I, Division 2, Groups A,B,C&D

Environmental Protection
Type 3, 4, 4X; IP66

Ambient Temperature Range
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Applications

The series 8146/5 Breaker Panelboards provide a switching system with short circuit protection, overload protection and ground fault protection for feeder and branch circuits to control either resistive or inductive loads. Applications would be heating, lighting, heat tracing and motor circuits in refineries, chemical and petrochemical plants and other process industries. They are available with or without Main Disconnect. To provide adequate short circuit protection, properly sized Class J fuses must be installed in the circuit upstream for protection of the Main Disconnect Switch.



Conduit hubs or cable glands can be installed with back-up bonding plates, as shown above or with “increased safety” grounding locknuts which are interconnected with green jumper wire and also connected to the ground system.

For details see page C3, and for spacing see page C4.

Springloaded - hinged window flaps allow easy viewing and quick access to breakers without opening the enclosure.

Individual breakers and the window flaps can be padlocked.

Max. Number of Ex MCBs Under One Window Flap	Ex MCBs
6	1 pole
4	2 pole
3	3 pole

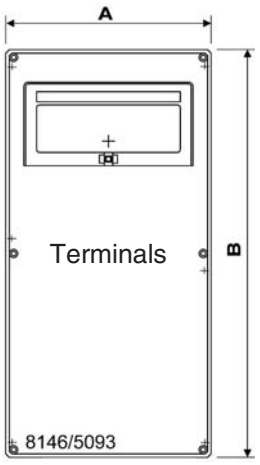
Technical Data of Main Disconnect Switches			
Type	Voltage ac	Amperage	Back-Up Fuse J
8544	600 / 480	63 / 80	150 A max.
8349	600 / 480	125 / 150	200 A max.

The Disconnect Switches are made of FRP to safely contain the pressure generated by an internal explosion.

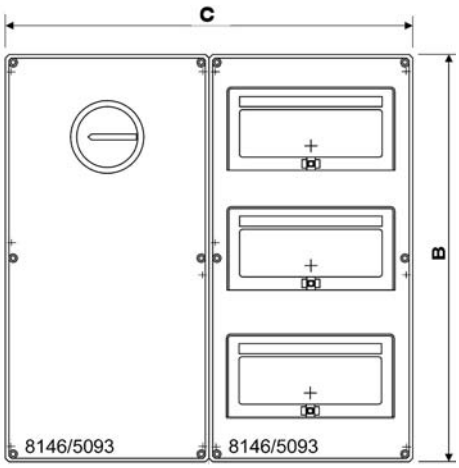
Optional auxiliary contacts are available.

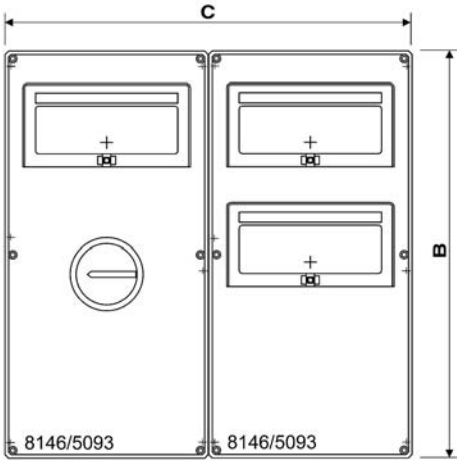
8146/5 Series Breaker Panelboards

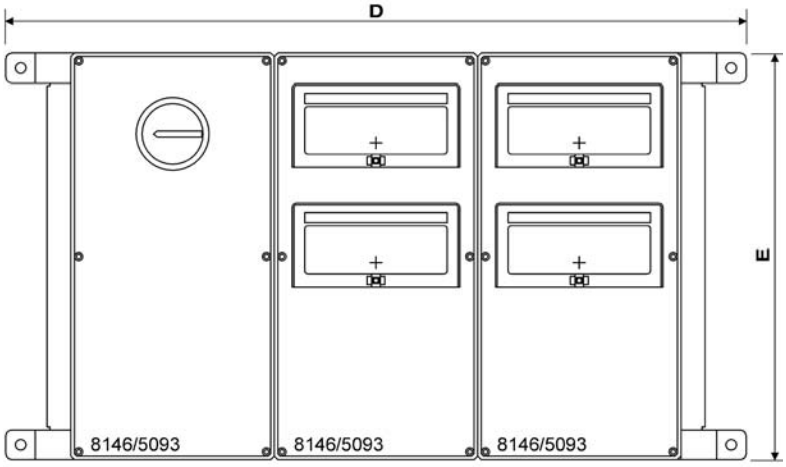
DIMENSIONS

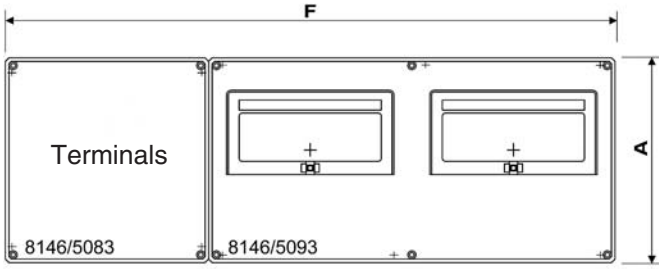


Layout without Disconnect Switch

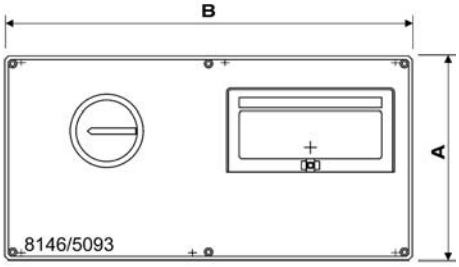


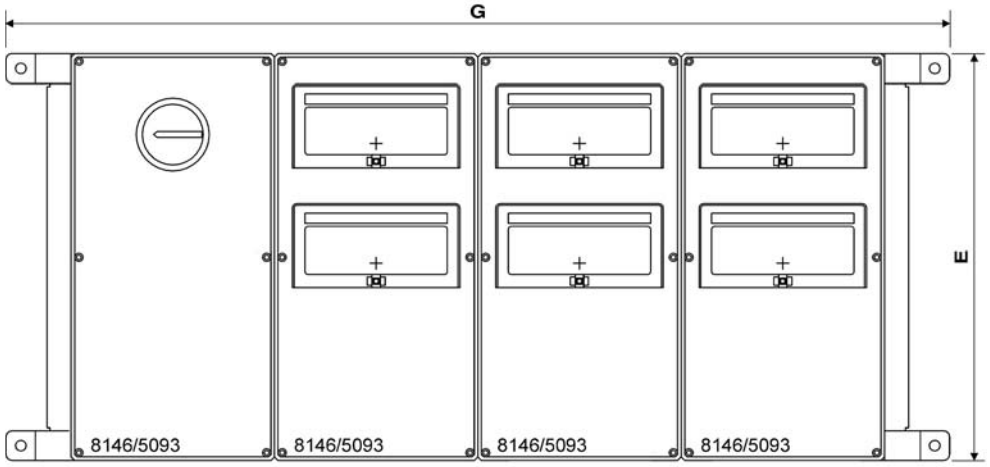






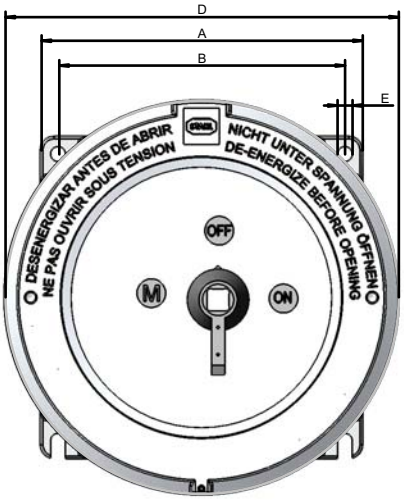
Layout without Disconnect Switch

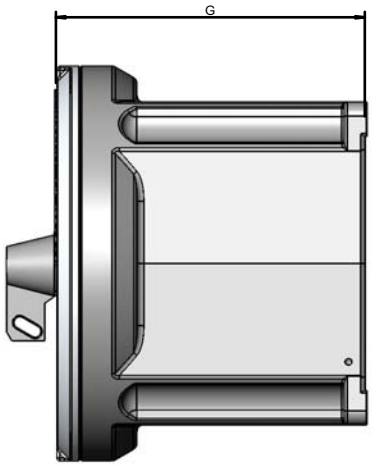




8146/5 Panelboard Dimensions	
Callouts	**mm / inches**
A	340.50 / 13.41
B	681.50 / 26.83
C	682.00 / 26.85
D	1236.00 / 48.66
E	684.00 / 26.93
F	1023.00 / 40.28
G	1578.00 / 62.13

8265 GUBox Enclosed Circuit Breaker





Dimensions

Part Number	Type Code Logic		Enclosure Dimensions				
	b	ccc	A	B	D	E	G
8265/6-K037-01-004bccc	S- Siemens	015-125	9.29 (236)	8.27 (210)	11.38 (289)	0.43 (11)	8.94 (227)
	E-Eaton	015-100	9.29 (236)	8.27 (210)	11.38 (289)	0.43 (11)	8.94 (227)
	A-ABB	015-100	9.29 (236)	8.27 (210)	11.38 (289)	0.43 (11)	8.94 (227)

Ordering Information

8265 Series Catalog No	Description	GUBox Enclosure
8265/6-K037-01-004S060	Siemens 3 pole 60A enclosed circuit breaker	-3 Aluminum
8265/6-K037-01-004E060	Eaton 3 pole 60A enclosed circuit breaker	-3 Aluminum
8265/6-K037-01-004A060	ABB 3 pole 60A enclosed circuit breaker	-3 Aluminum
8265/6-K037-01-004S100	Siemens 3 pole 100A enclosed circuit breaker	-3 Aluminum
8265/6-K037-01-004E100	Eaton 3 pole 100A enclosed circuit breaker	-3 Aluminum
8265/6-K037-01-004A100	ABB 3 pole 100A enclosed circuit breaker	-3 Aluminum

CLASSIFICATIONS

NEC- Class I, Division 1, Groups C,D
Class I, Zone 1 IIB
Zone 1, Groups C, D

CEC- Class I, Division 1, Groups C,D
Class I, Zone 1 IIB
Zone 1, Groups C, D

File No. 3054299

Ambient Temperature Range for T5 & T6
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Applications

The STAHL series 8265 GUBox Enclosed Circuit Breakers provide short circuit protection and overload protection of feeder and branch circuits, lighting and heating applications as well as Motor circuits in refineries, chemical and petrochemical plants, storage areas and other process industries where hazardous gases and vapors are present.

Features

- The ordinary location Molded Case Circuit Breakers are mounted into an Explosion Proof Enclosure with a screw type threaded cover.

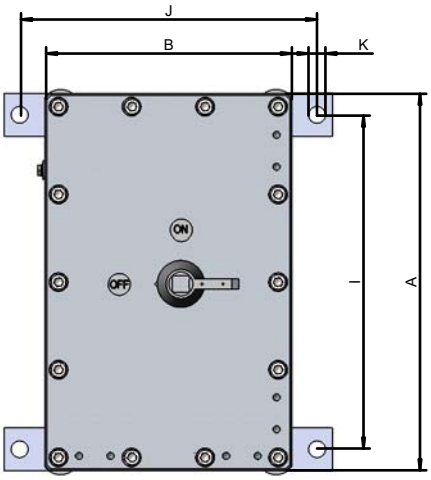
Enclosure

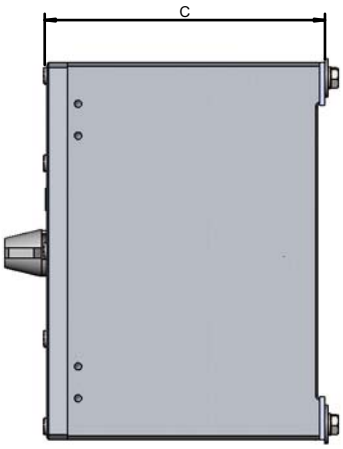
- The Enclosure and Handle Material is copper-free aluminum, high strength, light weight and corrosion resistant.
- Mounting lugs are integrated.
- Gasketed cover with “O” ring.
- The external handle is pad-lockable in the OFF position.
- Conduit openings: the enclosures are designed with a wall thickness suitable for drilling and tapping of conduit openings up to 3” NPT max.

Breakers

- The ordinary location breakers inside the Explosion-Proof enclosures are available either make SIEMENS, EATON or ABB
- From 15A to 100 A, 10 KA interrupting capacity
- The Circuit Breaker is trip free of handle mechanism for accessories like shunt trips, under voltage trips or auxiliary contacts please contact factory.

8264 CUBEx Enclosed Circuit Breakers





CLASSIFICATIONS

NEC- Class I, Division 1, Groups C,D
Class I, Zone 1 IIB
Zone 1, Groups C, D

CEC- Class I, Division 1, Groups C,D
Class I, Zone 1 IIB
Zone 1, Groups C, D

File No. 3054299

Ambient Temperature Range for T5 & T6
+40˚C (+104˚F) Max.
–20˚C (–4˚F) Min.

Applications

The STAHL series 8264 CUBEx Enclosed Circuit Breakers provide short circuit protection and overload protection of feeder and branch circuits, lighting and heating applications as well as Motor circuits in refineries chemical and petrochemical plants, storage areas and other process industries where hazardous gases and vapors are present

Features

- The ordinary location Molded Case Circuit Breakers are mounted into a rectangular, bolted type Explosion Proof Enclosure.

Enclosure

- The Enclosure and Handle Material is copper-free aluminum, high strength, light weight and corrosion resistant.
- 316L Stainless Steel, best material solution for challenging environmental conditions is available as an option.
- Gasketed cover:- “O” ring gasket is located inside the SS cover screws.
- The external handle is pad-lockable in the OFF position.
- External Mounting rails for wall mounting are included (see dimensional drawing)
- Conduit openings: the enclosures are designed with a wall thickness suitable for drilling and tapping of conduit openings up to 2” NPT max.

Breakers

- The ordinary location breakers inside the Explosion-Proof enclosures are available either make SIEMENS, EATON or ABB
- From 15A to 250A, and 400A (Siemens only), 10 KA interrupting capacity
- The Circuit Breaker is trip free of handle mechanism
- For accessories like shunt trips, under voltage trips or auxiliary contacts please contact factory

Dimensions

Part Number	Type Code Logic		Enclosure Dimensions					
	b	ccc	A	B	C	I	J	K
8264/6-K037-01-214bccc	S-Siemens	015-125	14.17 (360)	9.25 (235)	10.71 (272)	12.99 (330)	11.81 (300)	0.89 (25)
	E-Eaton	015-100	14.17 (360)	9.25 (235)	10.71 (272)	12.99 (330)	11.81 (300)	0.89 (25)
	A-ABB	015-100	14.17 (360)	9.25 (235)	10.71 (272)	12.99 (330)	11.81 (300)	0.89 (25)
Part Number	**b**	**ccc**	**A**	**B**	**C**	**I**	**J**	**K**
8264/6-K037-01-325bccc	S-Siemens	100-250	18.90 (480)	14.17 (360)	13.46 (342)	17.72 (450)	16.77 (426)	0.89 (25)
	E-Eaton	100-250	18.90 (480)	14.17 (360)	13.46 (342)	17.72 (450)	16.77 (426)	0.89 (25)
Part Number	**b**	**ccc**	**A**	**B**	**C**	**I**	**J**	**K**
8264/6-K037-01-395bccc	S-Siemens	250-400	28.74 (730)	18.90 (480)	13.46 (342)	27.56 (700)	21.50 (546)	0.89 (25)

Ordering Information

8264 Series Catalog No	Description	CUBEX Enclosure
8264/6-K037-01-214S060	Siemens 3 pole 60A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-214E060	Eaton 3 pole 60A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-214A060	ABB 3 pole 60A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-214S100	Siemens 3 pole 100A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-214S100	Eaton 3 pole 100A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-214S100	ABB 3 pole 100A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-325S150	Siemens 3 pole 150A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-325E150	Eaton 3 pole 150A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-325S225	Siemens 3 pole 225A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-325E225	Eaton 3 pole 225A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-325S250	Siemens 3 pole 250A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-325E250	Eaton 3 pole 250A enclosed circuit breaker	-3 Aluminum
8264/6-K037-01-935S400	Siemens 3 pole 400A enclosed circuit breaker	-3 Aluminum

8146/5 Series Breaker Panelboards

THERMAL-MAGNETIC Ex MCBs TO UL 489 & CSA C22.2 No.5

1 Pole Ex MCB, 8562/51 Series	
Amp Rating at Ta = 25°C	Catalog Number 277 Vac, 10 kAIC
2	8562/51-1430-020
4	8562/51-1430-040
6	8562/51-1430-060
8	8562/51-1430-080
10	8562/51-1430-100
15	8562/51-1430-150
16	8562/51-1430-160
20	8562/51-1430-200
25	8562/51-1430-250
30	8562/51-1610-300
32	8562/51-1610-320
40	8562/51-1610-400

2 Pole Ex MCB, 8562/52 Series	
Amp Rating at Ta = 25°C	Catalog Number 480Y/ 277 Vac, 10 kAIC
10	8562/52-2430-100
15	8562/52-2430-150
16	8562/52-2430-160
20	8562/52-2430-200
25	8562/52-2430-250
30	8562/52-2610-300
32	8562/52-2610-320
40	8562/52-2610-400

3 Pole Ex MCB, 8562/53 Series	
Amp Rating at Ta = 25°C	Catalog Number 480Y/ 277 Vac, 10 kAIC
10	8562/53-3430-100
15	8562/53-3430-150
16	8562/53-3430-160
20	8562/53-3430-200
25	8562/53-3430-250
30	8562/53-3610-300
32	8562/53-3610-320
40	8562/53-3610-400

CLASSIFICATIONS of Breaker

NEC

Class I, Zone 1, AEx de IIC T5 or T6
Class I, Div. 2, Groups A, B, C & D

CEC

Ex de IIC T5 or T6
Class I, Div. 2, per: CEC J18-150 (C)

Certified File No. 1850696

File No. 3033692

FEATURES

- Method of Protection:Flameproof 1, 2 and 3 Pole with Thermal - Magnetic Branch Circuit Protection
- Design to UL 489 and CSA-C22.2 No. 5-02
- Options: Shunt Trip - consult factory concerning availability
- Breakers are not temperature compensated

8562/5 Ground Fault Interrupter

EQUIPMENT PROTECTION EX GFI SERIES 8562/5

CLASSIFICATIONS of Ex GFIs
NEC & CEC
Class I, Zone 1, AEx de IIC T5 or T6
Class I, Division 2, Ex Groups A, B, C & D (US)
Class I, Division 2, per CEC J18-150 (C)

ATEX & IEC
II G Ex de IIC Gb

Designed to
ANSI/UL 1053
CSA C 22.2 No. 144 & IEC61008

Electrical Data
480Y/277 Vac/Main Contact(s)
120Vac Auxiliary/Alarm Contact, 2 Amps

Ambient Temperature:
+40 C (+104F) Max
-20 C (-4F) Min

Short Circuit
Switch Capacity-10kA symRms
When in circuit with properly sized current limitation device.

FEATURES

The Ex GFI Series 8562/5 is an explosion protected ground fault interrupter which assures ground fault protection for equipment and to a lesser extent personnel protection. The 8562/53 and 8562/54 can come with one Auxiliary contact, actuated by the breaker handle or one Alarm Contact actuated in case of ground fault.

1 Pole +N or 2 Pole				
Switch Capacity	Catalog Number	Configuration	Aux or Alarm	Leakage Current
16A	8562/52-2500-160	2-pole/ 1-p+N	none	10mA
25A	8562/52-2510-250	2-pole/ 1-p+N	none	30mA
35A	8562/52-2510-400	2-pole/ 1-p+N	none	30mA

1 Pole +N or 2 Pole with Auxiliary/Alarm Contact				
Switch Capacity	Catalog Number	Configuration	Aux or Alarm	Leakage Current
16A	8562/53-2501-160 8562/53-2502-160 8562/53-2503-160 8562/53-2504-160 8562/53-2505-160 8562/53-2507-160	2-pole/ 1-p+N	1xNOAux 1xNOAla 1xNCAux 1xCOAux 1xCOAla 1xNCAla	10mA
25A	8562/53-2511-250 8562/53-2512-250 8562/53-2513-250 8562/53-2514-250 8562/53-2515-250 8562/53-2517-250	2-pole/ 1-p+N	1xNOAux 1xNOAla 1xNCAux 1xCOAux 1xCOAla 1xNCAla	30mA
35A	8562/53-2511-400 8562/53-2512-400 8562/53-2513-400 8562/53-2514-400 8562/53-2515-400 8562/53-2517-400	2-pole/ 1-p+N	1xNOAux 1xNOAla 1xNCAux 1xCOAux 1xCOAla 1xNCAla	30mA

3 Pole +N with Auxiliary/Alarm Contact				
Switch Capacity	Catalog Number	Configuration	Aux or Alarm	Leakage Current
25A	8562/54-4510-250 8562/54-4511-250 8562/54-4512-250 8562/54-4513-250 8562/54-4514-250 8562/54-4515-250 8562/54-4517-250	3-p+N	none 1xNOAux 1xNOAla 1xNCAux 1xCOAux 1xCOAla 1xNCAla	30mA
35A	8562/54-4510-400 8562/54-4511-400 8562/54-4512-400 8562/54-4513-400 8562/54-4514-400 8562/54-4515-400 8562/54-4517-400	3-p+N	none 1xNOAux 1xNOAla 1xNCAux 1xCOAux 1xCOAla 1xNCAla	30mA

8565/1 Ground Fault Circuit Interrupter & Arc-Fault Circuit Interrupter

EX GFCI SERIES 8565/11-1050 AND EX GFEP SERIES 8565/11-1300

1-Pole + N			
Device	**Amp Rating at T_a=25°C**	**Catalog Number**	**Ground Fault Leakage Rate**
ExGFCI	15	8565/11-1050-015	5mA
	20	8565/11-1050-020	
	25	8565/11-1050-025	
	30	8565/11-1050-030	
ExGFEP	15	8565/11-1300-015	30mA
	20	8565/11-1300-020	
	30	8565/11-1300-030	
ExAFCI	15	8565/12-1000-015	
	20	8565/12-1000-020	

CLASSIFICATIONS of Ex GFCIs AND Ex GFEPs

NEC & CEC
Class I, Zone 1, AEx/Ex de IIC T6 Gb
Class I, Division 2, Groups A, B, C & D (US)
Class I, Division 2, per CEC J18-150 (C)

FM APPROVED File No. 3044318

CLASSIFICATIONS of Ex AFCIs

NEC & CEC
Class I, Zone 1, AEx/Ex de IIC T6 Gb
Class I, Division 2, Groups A, B, C & D (US)

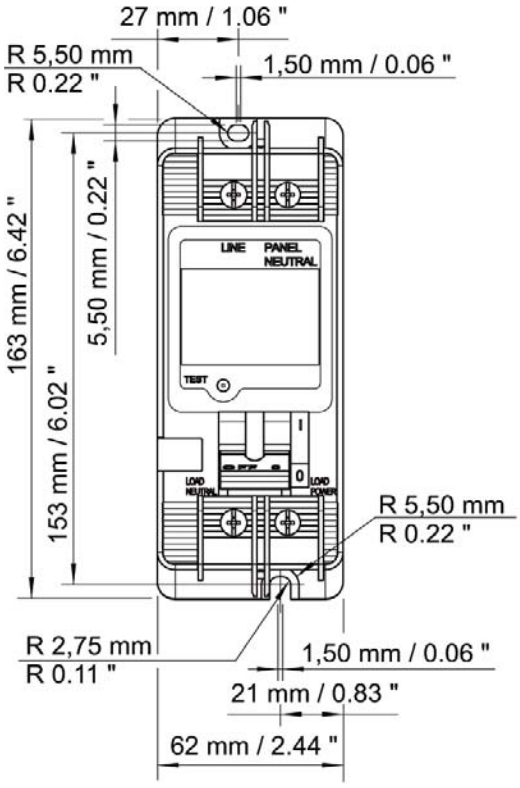
FM APPROVED File No. 3044318

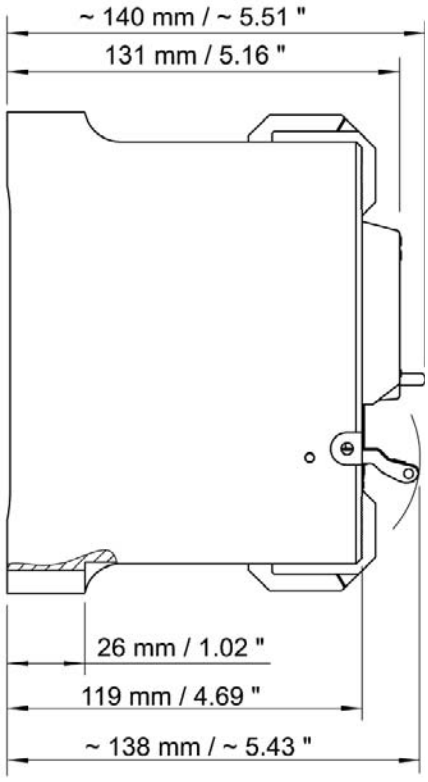
Designed to:
Ex GFCI: ANSI/UL 943 & 489
CSA C 22.2 No. 144-1 & No. 5
Ex GFEP: ANSI/UL 1053 & 489
CSA C 22.2 No. 144 & No. 5
Ex AFCI: ANSI/UL 1699 & 489

Voltage: 120 Vac

Ambient Temperature:
+40°C (+104°F) Max
-40°C (-40°F) Min

Short Circuit
Switch Capacity -10kA symRMS
When in circuit with properly sized current limitation device.





FEATURES

The Ex GFCI Series, 8565/11-1050 is an explosion protected device providing personnel protection from ground faults as well as over current protection.

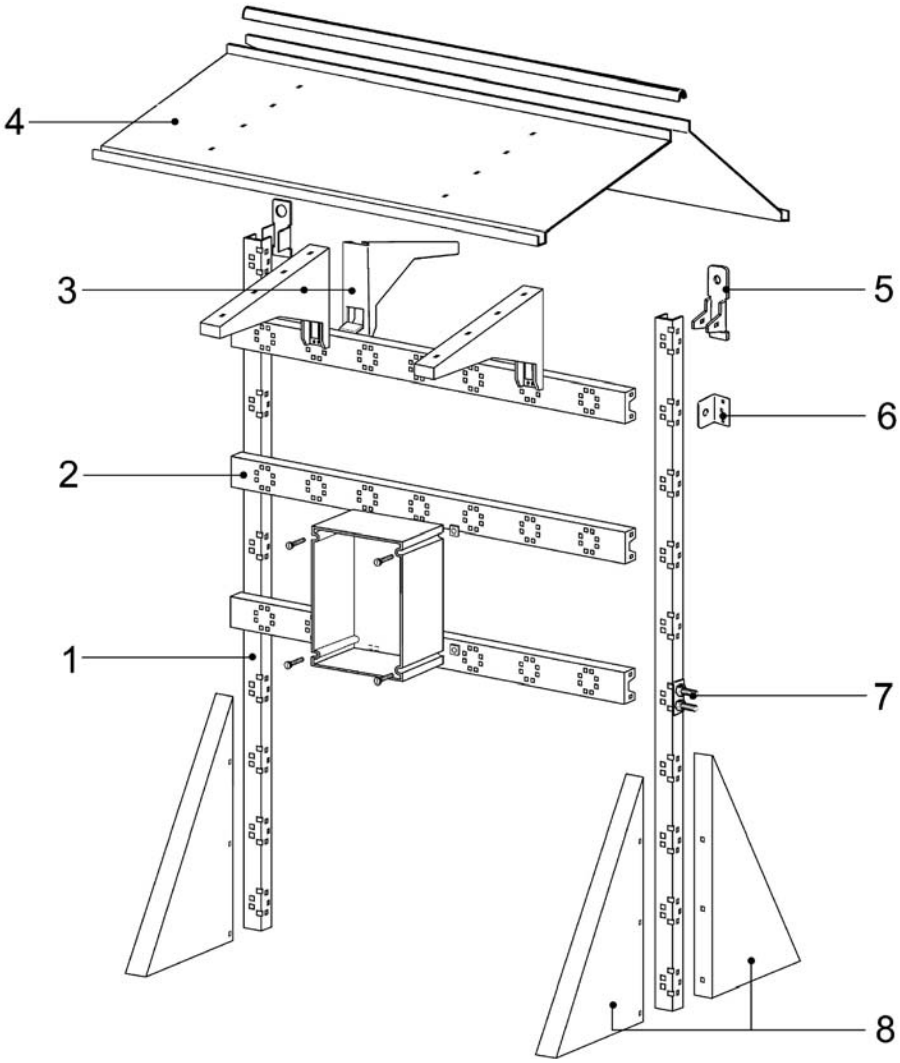
The Ex GFEP Series, 8565/11-1300 is an explosion protected device providing equipment protection from ground fault as well as over current protection.

The Ex AFCI Series, 8565/12-1000 is an explosion protected device providing personnel protection from line-to-ground and line-to-neutral arcs as well as overcurrent protection. These devices detect arcing faults that standard circuit breakers fail to detect. This device is intended to mitigate the effects of this type of arcing by functioning to de-energize the circuit.

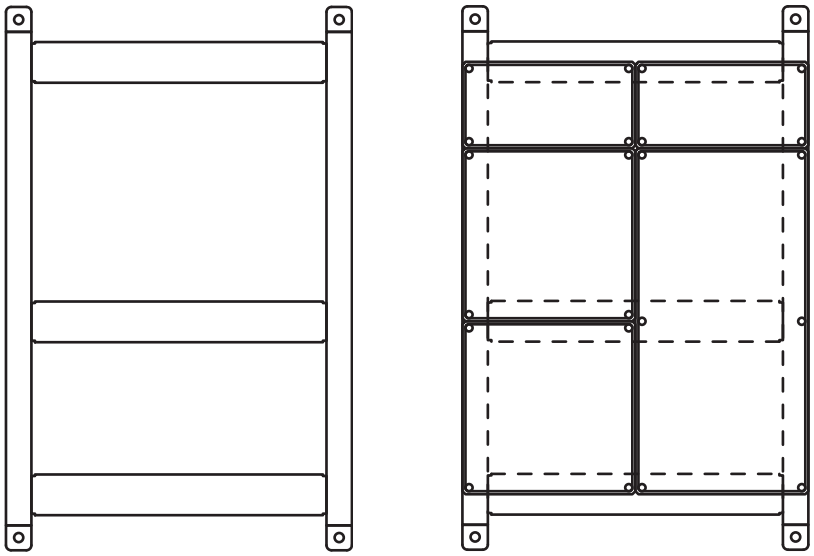
8298 Series Support Frame System

FOR BREAKER PANELS SERIES 8146/5

1. Vertical Supports
2. Horizontal Supports
3. Bracket for Roof Attachment
   - To secure roof
   - Can be used to mount a luminaire.
     See Catalog Section B.
4. Roof
   - For additional protection of the breaker panel from the elements.
5. Brackets
   - End piece for transportation and wall mounting. Possible on top and bottom.
6. Fixing Angle Brackets
   - For wall mounting (on left and right side)
7. Bonding terminal
8. Triangle Support
   - Free standing
   - Can be fixed to the floor
9. Material Galvanized Steel



Wall Mounting Frame for Breaker Panel shown on page H5.



R. STAHL INC. would welcome the opportunity to quote custom designed breaker panels. Contact our engineering department with your specific requirements

GUBOX Series 8265

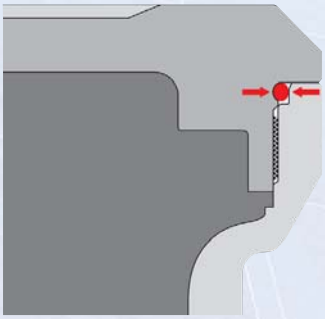
EXPLOSION PROOF & DUST IGNITION PROOF THREADED ENCLOSURES

8265 Series of Enclosures

Features:

- *Flexible modular design, available in four enclosure sizes.*
- *Available with or without glass windows.*
- *Mounting lugs are integrated.*
- *Made of Copper Free Aluminum (Marine Grade).*
- *Easy access to enclosure interior.*
- *Global Certifications.*
- *Compact square enclosures with threaded covers.*

- *Cover Gasket is standard on every assembly.*



GUBox Series 8265

EXPLOSION PROOF & DUST IGNITION PROOF THREADED ENCLOSURES

CLASSIFICATIONS

NEC & CEC:

Gas Explosion Protection

Class I, Division 1, Groups A,B,C, & D
Class I, Zone 1, Groups IIC, IIB & IIA

Dust Explosion Protection

Class II, Division 1, Groups E,F, & G
Class III

Environmental Protection

Type 3, 4, 4X, 7 & 9

c UL us FILE No. E307783

Ingress Protection IP66:

For ATEX and IEC certification please contact factory.

APPLICATIONS

The Series 8265 of threaded enclosures are for use in hazardous (classified) locations as specified above under CLASSIFICATIONS. They are designed to contain ordinary location electrical components for Instrumentation and Motor Control. The four sizes are available with or without windows, and come either with customized, factory drilled and tapped entry openings, or they also can be field modified. (see Field Drilling/Tapping Information on Page I2).

Ordering Information

Catalog Number	External Dimensions L x W x D	Descriptions
8265/62-0000	6.10" x 6.10" x 5.20"; (155 x 155 x 132 mm)	Empty enclosure w/o window
8265/62-0020	6.10" x 6.10" x 5.20"; (155 x 155 x 132 mm)	Empty enclosure with window
8265/63-0000	7.68" x 7.68" x 6.77"; (195 x 195 x 172 mm)	Empty enclosure w/o window
8265/63-0020	7.68" x 7.68" x 6.77"; (195 x 195 x 172 mm)	Empty enclosure with window
8265/64-0000	9.29" x 9.29" x 8.94"; (236 x 236 x 227 mm)	Empty enclosure w/o window
8265/64-0020	9.29" x 9.29" x 8.94"; (236 x 236 x 227 mm)	Empty enclosure with window
8265/66-0000	13.19" x 13.19" x 11.06" (335x335x281 mm)	Empty enclosure w/o window
8265/66-0020	13.19" x 13.19" x 11.06" (335x335x281 mm)	Empty enclosure with window

Technical Data

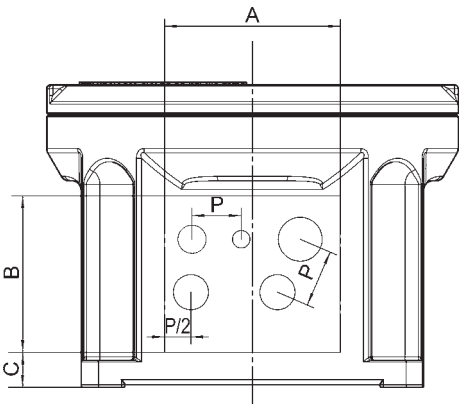
DESCRIPTION		
AMBIENT TEMPERATURE	For Groups A, B, C & D and for IIC, IIB & IIA	+50°C (+122°F) max. -25°C (-13°F) min.
	For Groups C & D and for IIB & IIA	+50°C (+122°F) max. -50°C (-58°F) min. (8265/62 - 0000 only)
	For Groups E, F, & G	+40°C (+104°F) max. -25°C (-13°F) min.
MAX. INTERRUPTING CAPACITY OF INSTALLED COMPONENTS	10 kA RMS Symmetrical Amperes	
EXTERNAL AUXILIARY DEVICES (i.e. Push Buttons or Pilot Lights)	Listed for Hazardous Locations USL (NOIV) & CNL (NOIV7)	
WINDOW MATERIAL	Borosilicate Glass	
ENCLOSURE MATERIAL	Copper Free Aluminum (Marine Grade)	

8265 Maximum Number of Entry Openings Per Side

Entry Size	Enclosure 8265/62	Enclosure 8265/63	Enclosure 8265/64	Enclosure 8265/66
1/2" NPT	4	9	18	39
3/4" NPT	3	6	16	28
1" NPT	2	5	9	20
1-1/4" NPT	2	3	6	12
1-1/2" NPT	1	2	5	8
2" NPT	-	1	3	6
2-1/2" NPT	-	-	-	4
3" NPT	-	-	-	2
M10 x 1.5	3	8	16	48
M14 x 1.5	3	8	16	48
M15 x 1.5	3	8	16	48
M16 x 1.5	3	8	16	48
M20 x 1.5	3	8	16	28
M25 x 1.5	2	4	9	16
M32 x 1.5	2	3	6	11
M33 x 1.5	1	2	4	11
M36 x 1.5	1	2	4	8
M40 x 1.5	1	2	4	8
M42 x 1.5	-	1	3	8
M48 x 1.5	-	1	3	8
M50 x 1.5	-	1	3	5
M56 x 1.5	-	1	1	5
M63 x 1.5	-	1	1	3
M75 x 1.5	-	1	1	2

Area for Conduit/Gland Openings

Enclosure Body	Area for Conduit/Gland Openings		
	Length (A) inches (mm)	Width (B) inches (mm)	Height over mounting surface (C) inches (mm)
8265/62	3.94 (100)	1.89 (48)	0.95 (24)
8265/63	3.94 (100)	3.50 (89)	0.95 (24)
8265/64	5.51 (140)	5.35 (136)	1.02 (26)
8265/66	8.31 (211)	6.58 (167)	1.26 (32)



*Dimension P see page I3

Required Center-To-Center Spacing For Entry Openings

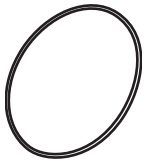
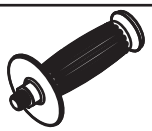
Minimum distance "P" in inch (mm) between entries of different sizes									
Metric or NPT	M10x1.5 M14x1.5 M15x1.5 M16x1.5	M20x1.5 1/2"	M24x1.5 M25x1.5 3/4" *	M32x1.5 1"	M33x1.5 M36x1.5 M40x1.5 1-1/4" *	M42x1.5 M48x1.5 M50x1.5 1-1/2"	M56x1.5 M63x1.5 2"	M75x1.5 2-1/2"	M90x1.5 M105x1.5 3"
M10x1.5 M14x1.5 M15x1.5 M16x1.5	1.18 (30)								
M20x1.5 1/2"	1.18 (30)	1.18 (30)							
M24x1.5 M25x1.5 3/4"*	1.38 (35)	1.38 (35)	1.57 (39.9)						
M32x1.5 1"	1.49 (37.8)	1.49 (37.8)	1.68 (42.7)	1.79 (45.5)					
M33x1.5 M36x1.5 M40x1.5 1-1/4" *	1.68 (42.7)	1.68 (42.7)	1.88 (47.7)	1.99 (50.5)	2.18 (55.4)				
M42x1.5 M48x1.5 M50x1.5 1-1/2"	1.79 (45.5)	1.79 (45.5)	1.99 (50.5)	2.10 (53.3)	2.29 (58.2)	3.35 (85.1)			
M56x1.5 M63x1.5 2"	2.12 (53.8)	2.12 (53.8)	2.31 (58.8)	2.43 (61.6)	2.62 (66.5)	2.73 (69.3)	3.06 (77.6)		
M75x1.5 2-1/2"	3.38 (60.5)	3.38 (60.5)	2.58 (65.5)	2.69 (68.3)	2.88 (73.2)	2.99 (76)	3.32 (84.3)	3.58 (91)	
M90x1.5 M105x1.5 3"	2.99 (76)	2.99 (76)	3.19 (81)	3.29 (83.5)	3.53 (89.7)	3.66 (93)	4.13 (104.8)	4.37 (111)	N/A

* NPT or NPSM

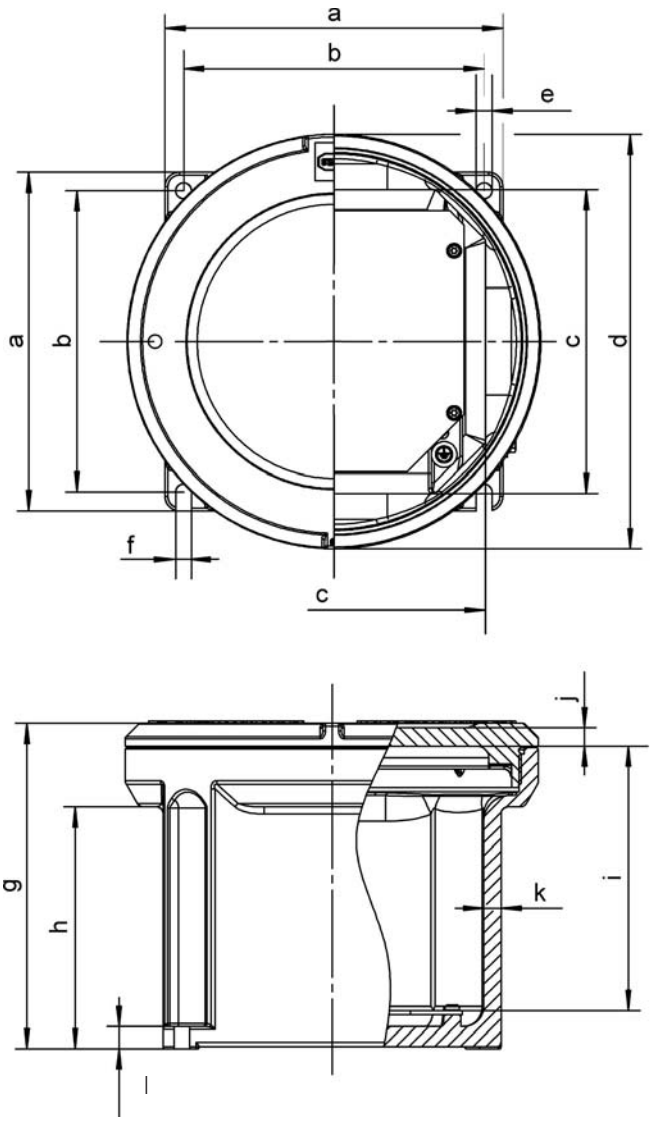
P/2 is the half distance between two entries of the same size

PARTS AND ACCESORIES

Use only the following original spare parts and accessories, any others would invalidate the certification and warranty.

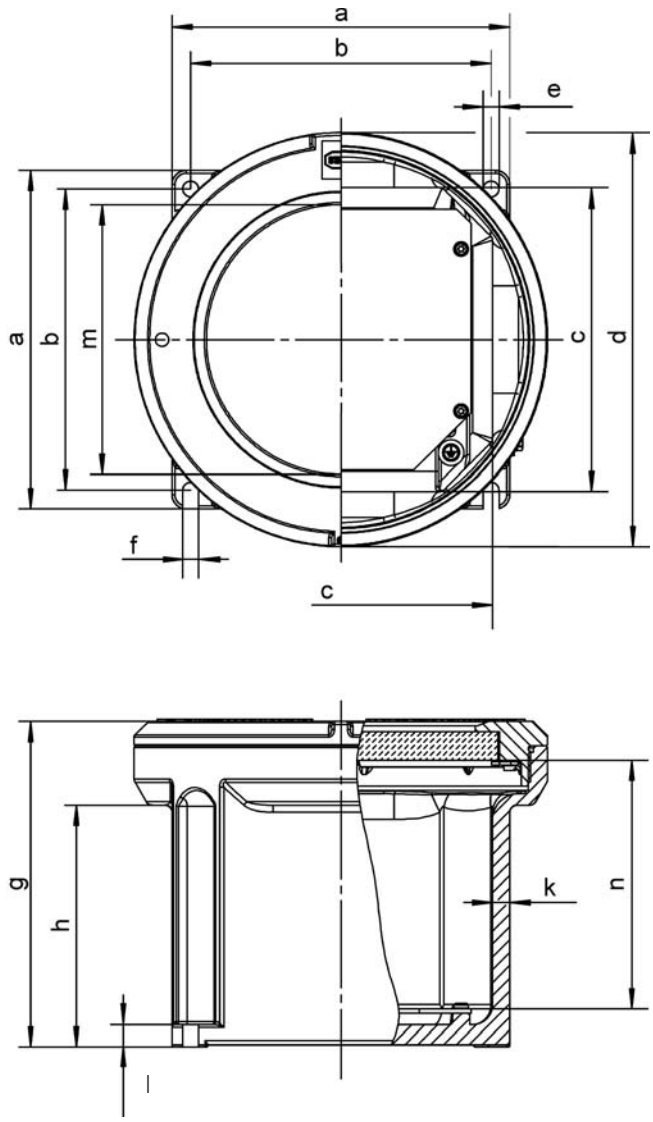
Item	Image	Description	Catalog Number
Threaded Cover w/o Window		for enclosure: 8265/62-0000 8265/63-0000 8265/64-0000 8265/66-0000	143468 143470 143472 826590050063
Threaded Cover with Window		for enclosure: 8265/62-0020 viewable diameter 4.13" (105 mm) of window 8265/63-0020 5.55" (141 mm) 8265/64-0020 7.32" (186 mm) 8265/66-0020 7.32" (186 mm)	143454 826500050130 826500050140 201890
Mounting Plate		for enclosure 8265/62 for enclosure 8265/63 for enclosure 8265/64 for enclosure 8265/66	143484 143485 143486 143488
O-Ring		for enclosure 8265/62 for enclosure 8265/63 for enclosure 8265/64 for enclosure 8265/66	111816 111817 111818 201341
DIN Rails for line-up Terminals		TS 15 for enclosure 8265/62 TS 35 for enclosure 8265/62 TS 15 for enclosure 8265/63 TS 35 for enclosure 8265/63 G 32 for enclosure 8265/63 TS 15 for enclosure 8265/64 TS 35 for enclosure 8265/64 G 32 for enclosure 8265/64 TS 15 for enclosure 8265/66 TS 35 for enclosure 8265/66 G 32 for enclosure 8265/66	143497 143498 137902 137970 137939 137908 137976 137945 826590980030 826590980040 826590980050
Set Screw		M5 x 16-A2 - Allen screw with point to secure the cover	5036760
Handle		to turn the enclosure cover (for sizes 2, 3 & 4) (2 required to open enclosure)	8225001160
Handle		to open the enclosure cover (for size 6) (2 required to open enclosure)	3706090

THREADED ENCLOSURE DIMENSIONS



Enclosure 8265/6.-0000,
without window

Usable Internal Dimensions: c x c x i



Enclosure 8265/6.-0020,
with window

Usable Internal Dimensions: c x c x n

Dimensions in inches (mm)														
Type	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**	**l**	**m**	**n**
8265/62	6.10 (155)	5.51 (140)	5.16 (131)	7.56 (192)	0.28 (7)	0.28 (7)	5 20 (132)	3.05 (77.5)	3.66 (93)	0.47 (12)	0.51 (13)	0.45 (11.5)	4.13 (105)	3.25 (82.5)
8265/63	7.68 (195)	6.77 (172)	6.73 (171)	9.21 (234)	0.35 (9)	0.35 (9)	6.77 (172)	4.62 (117.5)	5.24 (133)	0.51 (13)	0.51 (13)	0.61 (15.5)	5.55 (141)	4.82 (122.5)
8265/64	9.29 (236)	8.27 (210)	8.35 (212)	11.38 (289)	0.43 (11)	0.43 (11)	8.94 (227)	6.63 (168.5)	7.26 (184.5)	0.51 (13)	0.51 (13)	0.61 (15.5)	7.32 (186)	6.83 (173.5)
8265/66	13.2 (335)	12.3 (312)	11.8 (300)	16.1 (410)	0.45 (11.5)	0.45 (11.5)	11 (281)	8.12 (206.5)	9 (229.5)	0.71 (18)	0.69 (17.5)	0.61 (15.5)	7.32 (186)	8.6 (218.5)

CUBEX Series 8264

EXPLOSION PROOF & DUST IGNITION PROOF ENCLOSURES

8264 Series of Enclosures Made of Aluminum or Stainless Steel

Features:

- *Copper Free Aluminum – High strength, light weight and corrosion resistant.*
- *Stainless Steel – Best material solution for challenging environmental conditions.*
- *Gasketed Flange – "O" ring gasket is located inside the cover bolts.*
- *Flat Cover – Provides space for operator installation.*
- *Rectangular or Round Windows – Can be factory installed to enable viewing of digital read out meters and other devices.*
- *Conduit Openings – Enclosures are designed with a wall thickness suitable for drilling and tapping of conduit openings up to 2" max.*
- *Stainless Steel Hinges – All enclosures are provided with factory installed hinges which allow easy access for inspection, maintenance and system changes.*
- *Mounting Rails – Standard.*
- *Internal Mounting Plate Bosses – They are factory machined to enable field installation of the optional mounting plates.*
- *Optional Finish – Powder Coating.*

CUBEx Series 8264

EXPLOSION PROOF & DUST IGNITION PROOF ENCLOSURES

CLASSIFICATIONS

NEC & CEC:

Gas Explosion Protection
Class I, Division 1, Groups B, C & D
Class I, Zone 1, Groups IIA, IIB & IIB+H_2

Dust Explosion Protection
Class II, Division 1 Groups E, F & G
Class III

Environmental Protection
Type 3, 4, 4X, 7, 9

FILE No. E307783

For IEC certification please contact factory.

II 2G Ex d IIB + H2

II 2D Ex tD A21 IP66

KEMA01ATEX2145U

IECEx
Ex d IIB +H2
Ex tD A21 IP66
IECEx KEM 07.0050 U

Enclosure Materials
8264/6•••-3 Copper Free Aluminum (Marine Grade)
8264/6•••-2 Stainless Steel 316L

Ambient Temperature
+50°C (122°F) max.
-25°C (-13°F) min.

APPLICATIONS

The Series 8264 are Explosion Proof and Dust Ignition Proof enclosures made of Copper Free Aluminum or Stainless Steel 316L. They are suitable for use in hazardous (classified) locations as specified above.

They are designed to contain ordinary location electrical components for Instrumentation, Motor Control and Distribution. There are eight sizes of enclosures and they all come with Stainless Steel cover hinges and mounting rails as standard. Mounting Plates are optional and need to be ordered separately.

They can be customized with drilled and tapped entry openings as well as round and rectangular windows and operators.

Entry and operator openings can be field modified. For details regarding Aluminum Enclosures see pages I9 and I10. For Stainless Steel Enclosures see pages I11 and I12.

Ordering Information For Empty Aluminum Enclosures

with Stainless Steel cover hinges and mounting rails.

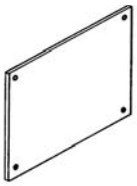
Catalog Number	External Dimensions L x W x D
8264/6114-3	9.25" x 9.25" x 10.24"; (235 x 235 x 260 mm)
8264/6214-3	14.17" x 9.25" x 10 24"; (360 x 235 x 260 mm)
8264/6224-3	14.17" x 14.17" x 10.24"; (360 x 360 x 260 mm)
8264/6225-3	14.17" x 14.17" x 12.99"; (360 x 360 x 330 mm)
8264/6325-3	18.90" x 14.17" x 12.99"; (480 x 360 x 330 mm)
8264/6335-3	18.90" x 18.90" x 12.99"; (480 x 480 x 330 mm)
8264/6935-3	28.74" x 18.90" x 12.99"; (730 x 480 x 330 mm)
8264/6995-3	28.74" x 28.74" x 12.99"; (730 x 730 x 330 mm)

Ordering Information For Empty Stainless Steel Enclosures

with Stainless Steel cover hinges and mounting rails.

Catalog Number	External Dimensions L x W x D
8264/6112-2	9.25" x 9.25" x 10.63"; (235 x 235 x 270 mm)
8264/6212-2	14.17" x 9.25" x 10.63"; (360 x 235 x 270 mm)
8264/6222-2	14.17" x 14.17" x 10.63"; (360 x 360 x 270 mm)
8264/6223-2	14.17" x 14.17" x 13.39"; (360 x 360 x 340 mm)
8264/6323-2	18.90" x 14.17" x 13.39"; (480 x 360 x 340 mm)
8264/6333-2	18.90" x 18.90" x 13.39"; (480 x 480 x 340 mm)
8264/6933-2	28.74" x 18.90" x 13.39"; (730 x 480 x 340 mm)
8264/6993-2	28.74" x 28.74" x 13.39"; (730 x 730 x 340 mm)

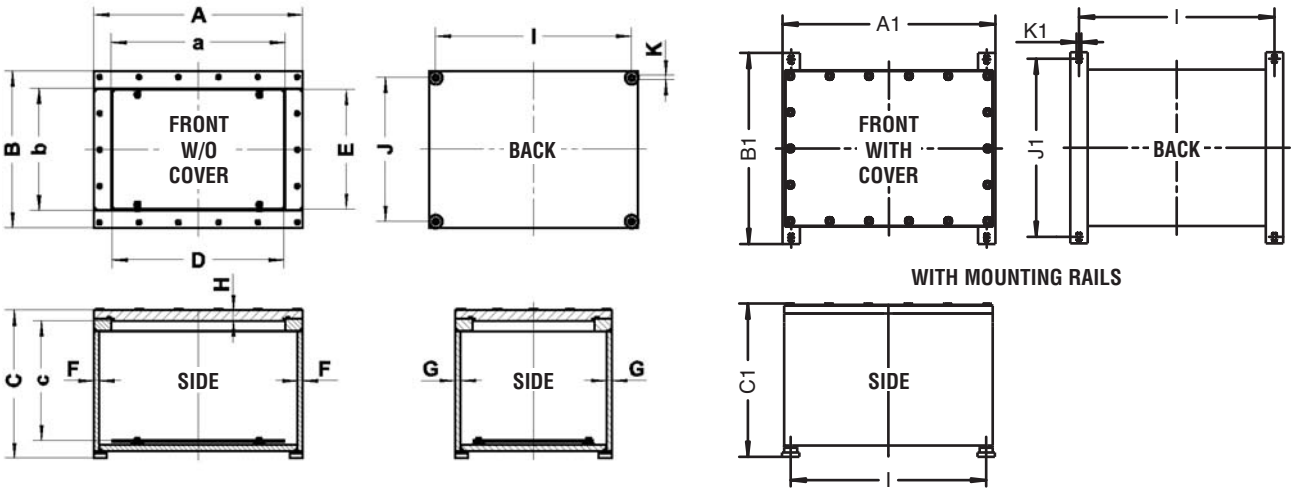
Mounting Plates

Item	Image	Description		Catalog Number
Optional Mounting Plates for Aluminum or Stainless Steel Enclosures		enclosure sizes:	8264/611•-• 8264/621•-• 8264/622•-• 8264/632•-• 8264/633•-• 8264/693•-• 8264/699•-•	143319 143323 143272 143284 143294 143303 143311
Fixing Screw Kit				168412

Technical Data

DESCRIPTION	
MAX. INTERRUPTING CAPACITY OF INSTALLED COMPONENTS	10 kA RMS Symmetrical Amperes
EXTERNAL AUXILIARY DEVICES (i.e. Push Buttons or Pilot Lights)	Listed for Hazardous Locations USL (NOIV) & CNL (NOIV7)
WINDOW MATERIAL	Borosilicate Glass
ENCLOSURE MATERIAL	Copper Free Aluminum (Marine Grade) or Stainless Steel 316L

ENCLOSURE DIMENSIONS



8264/6...-3 Aluminum Enclosure Dimensions in inches (mm)

Enclosure Type	External						Mounting Plate		Internal						Mounting				
	A	A1	B	B1	C	C1	D	E	a	b	c*	F	G	H	I	J	J1	K	K1
8264/6114-3	9.25 (235)	11.22 (285)	9.25 (235)	13.86 (352)	10.24 (260)	10.71 (272)	5.98 (152)	5.98 (152)	6.18 (157)	6.18 (157)	7.95 (202)	0.47 (12)	0.47 (12)	0.98 (25)	8.07 (205)	8.07 (205)	11.89 (302)	Standard Thread Size – M12 – 0.98 (25) deep (for optional thread sizes, please contact factory)	Width of elongated hole = 0.70 (18)
8264/6214-3	14.17 (360)	11.22 (285)	9.25 (235)	13.86 (352)	10.24 (260)	10.71 (272)	10.79 (274)	5.98 (152)	11.02 (282)	6.10 (157)	7.95 (202)	0.47 (12)	0.65 (16.5)	0.98 (25)	12.99 (330)	8.07 (205)	11.89 (302)		
8264/6224-3	14.17 (360)	16.14 (410)	14.17 (360)	18.74 (476)	10.24 (260)	10.71 (272)	10.79 (274)	10.79 (274)	11.02 (282)	11.02 (282)	7.95 (202)	0.65 (16.5)	0.65 (16.5)	0.98 (25)	12.99 (330)	12.99 (330)	16.77 (426)		
8264/6225-3	14.17 (360)	16.14 (410)	14.17 (360)	18.74 (476)	12.99 (330)	13.46 (342)	10.79 (274)	10.79 (274)	11.02 (282)	11.02 (282)	10.83 (272)	0.65 (16.5)	0.65 (16.5)	0.98 (25)	12.99 (330)	12.99 (330)	16.77 (426)		
8264/6325-3	18.90 (480)	16.14 (410)	14.17 (360)	18.74 (476)	12.99 (330)	13.46 (342)	15.51 (394)	10.79 (274)	15.83 (402)	11.02 (282)	10.24 (260)	0.65 (16.5)	0.65 (16.5)	1.01 (25.6)	17.72 (450)	12.99 (330)	16.77 (426)		
8264/6335-3	18.90 (480)	21.26 (540)	18.90 (480)	23.23 (590)	12.99 (330)	13.46 (342)	15.51 (394)	15.51 (394)	15.83 (402)	15.83 (402)	10.16 (258)	0.65 (16.5)	0.65 (16.5)	1.00** (25.4)	17.72 (450)	17.72 (450)	21.50 (546)		
8264/6935-3	28.74 (730)	31.10 (790)	18.90 (480)	23.23 (590)	12.99 (330)	13.46 (342)	24.80 (644)	15.51 (394)	25.59 (652)	15.83 (402)	8.66 (242)	0.65 (16.5)	0.85 (21.5)	1.58 (40.3)	27.56 (700)	17.72 (450)	21.50 (546)		
8264/6995-3	28.74 (730)	31.10 (790)	28.74 (730)	33.31 (846)	12.99 (330)	13.46 (342)	24.80 (630)	24.80 (630)	25.20 (640)	25.20 (640)	9.84 (238)	0.85 (21.5)	0.85 (21.5)	1.58 (40.3)	27.56 (700)	27.56 (700)	31.34 (796)		

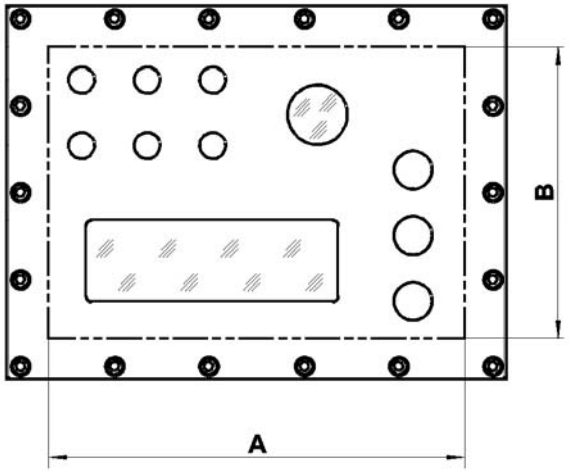
* For covers with windows: c = c – 0.88 (20) ** For covers with windows: H = 1.59 (40.3) and c = c – 1.38 (35)

8264/6...-2 Stainless Steel Enclosure Dimensions in inches (mm)

Enclosure Type	External						Mounting Plate		Internal						Mounting				
	A	A1	B	B1	C	C1	D	E	a	b	c*	F	G	H	I	J	J1	K	K1
8264/6112-2	9.25 (235)	11.22 (285)	9.25 (235)	13.86 (352)	10.63 (270)	11.10 (282)	5.98 (152)	5.98 (152)	6.10 (155)	6.10 (155)	8.07 (207)	0.47 (12)	0.47 (12)	0.98 (25)	8.07 (205)	8.07 (205)	11.89 (302)	Standard Thread Size – M12 – 0.98 (25) deep (for optional thread sizes, please contact factory)	Width of elongated hole = 0.70 (18)
8264/6212-2	14.17 (360)	11.22 (285)	9.25 (235)	13.86 (352)	10.63 (270)	11.10 (282)	10.79 (274)	5.98 (152)	11.02 (280)	6.10 (155)	8.07 (207)	0.47 (12)	0.47 (12)	0.98 (25)	12.99 (330)	8.07 (205)	11.89 (302)		
8264/6222-2	14.17 (360)	16.14 (410)	14.17 (360)	18.74 (476)	10.63 (270)	11.10 (282)	10.79 (274)	10.79 (274)	11.02 (280)	11.02 (280)	8.07 (204)	0.47 (12)	0.47 (12)	0.98 (25)	12.99 (330)	12.99 (330)	16.77 (426)		
8264/6223-2	14.17 (360)	16.14 (410)	14.17 (360)	18.74 (476)	13.39 (340)	13.86 (352)	10.79 (274)	10.79 (274)	11.02 (280)	11.02 (280)	10.83 (274)	0.47 (12)	0.47 (12)	0.98 (25)	12.99 (330)	12.99 (330)	16.77 (426)		
8264/6323-2	18.90 (480)	16.14 (410)	14.17 (360)	18.74 (476)	13.39 (340)	13.86 (352)	15.51 (394)	10.79 (274)	15.75 (400)	11.02 (280)	10.83 (274)	0.47 (12)	0.47 (12)	0.98 (25)	17.72 (450)	12.99 (330)	16.77 (426)		
8264/6333-2	18.90 (480)	21.26 (540)	18.90 (480)	23.23 (590)	13.39 (340)	14.57 (370)	15.51 (394)	15.51 (394)	15.75 (400)	15.75 (400)	10.63 (269)	0.47 (12)	0.47 (12)	0.99 (25.2)	17.72 (450)	17.72 (450)	21.50 (546)		
8264/6933-2	28.74 (730)	31.10 (790)	18.90 (480)	23.23 (590)	13.39 (340)	14.57 (370)	24.80 (644)	15.51 (394)	25.59 (650)	15.75 (400)	10.83 (273)	0.47 (12)	0.47 (12)	0.98 (25)	27.56 (700)	17.72 (450)	21.50 (546)		
8264/6993-2	28.74 (730)	31.10 (790)	28.74 (730)	33.31 (846)	13.39 (340)	14.57 (370)	24.80 (630)	24.80 (630)	25.59 (650)	25.59 (650)	10.63 (268)	0.47 (12)	0.47 (12)	0.98 (25)	27.56 (700)	27.56 (700)	31.34 (796)		

* For covers with windows: c = c – 0.88 (20)

Cover – Aluminum, Area for Operator Installation.



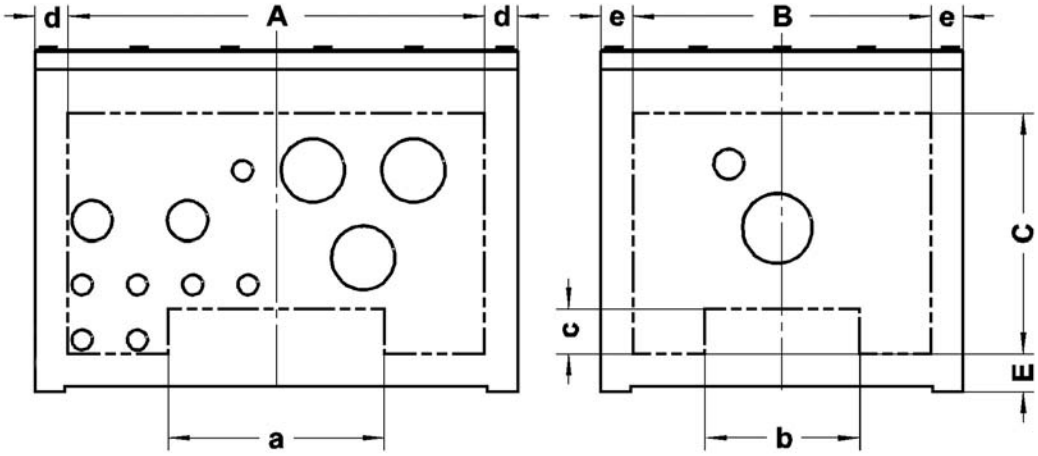
8264/6…-3 Aluminum Enclosure Cover - Area for Operator Installation in inches (mm)			
Cover for Enclosure Type	Length	Width	Max. Number of Operators
	A	B	3/4"-14 NPSM*
8264/6114-3	5.43 (138)	5.43 (138)	4
8264/6214-3	10.24 (260)	5.43 (138)	8
8264/6224-3	10.24 (260)	10.24 (260)	16
8264/6225-3	10.24 (260)	10.24 (260)	16
8264/6325-3	14.96 (380)	10.24 (260)	24
8264/6335-3	14.96 (380)	14.96 (380)	36
8264/6935-3	24.80 (630)	14.96 (380)	54
8264/6995-3	24.80 (630)	24.80 (630)	81

* Optional metric thread sizes can be used: M16 x 1.5; M20 x 1.5; M25 x 1.5.

8264/6…-3 Aluminum Enclosure Cover - Maximum Number of Windows and Sizes								
Cover for Enclosure Type	Round / Viewing Diameter in inches (mm)				Rectangular / Viewing Area in inches (mm)			
	2.17 (55)	2.56 (65)	3.54 (90)	5.51 (140)	2.28 x 5.59 (58 x 142)	3.86 x 5.59 (98 x 142)	5.63 x 9.21 (143 x 234)	7.87 x 11.81 (200 x 300)
8264/6114-3	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8264/6214-3	1	N/A	N/A	N/A	1	N/A	N/A	N/A
8264/6224-3	1	1	1	1	1	1	N/A	N/A
8264/6225-3	1	1	1	1	1	1	N/A	N/A
8264/6325-3	2	2	2	1	2	1	1	1
8264/6335-3	4	4	4	1	2	2	1	1
8264/6935-3	6	4	2	1	1	1	N/A	N/A
8264/6995-3	6	4	2	1	1	1	N/A	N/A

For combinations of operators and windows together, please consult factory.

Body – Aluminum, Area for Entry Installation.



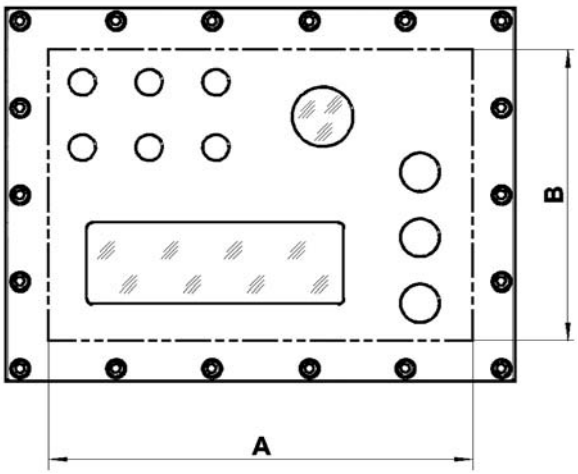
8264/6…-3 Aluminum Enclosure Body – Area for Entry Installation in inches (mm)									
Enclosure Type	Width		Height	Height over Mounting	Section of internal reinforcements			Distance to Side Wall	
	A	B	C	E	a	b	c	d	e
8264/6114-3	7.48 (190)	7.48 (190)	6.38 (162)	1.34 (34)	–	–	–	0.89 (22.5)	0.89 (22.5)
8264/6214-3	12.44 (316)	7.17 (182)	6.38 (162)	1.34 (34)	–	–	–	0.87 (22)	1.04 (26.5)
8264/6224-3	11.97 (304)	11 97 (304)	6.38 (162)	1.34 (34)	–	–	–	1.10 (28)	1.10 (28)
8264/6225-3	11.34 (288)	11.34 (288)	9.13 (232)	1.34 (34)	–	–	–	1.42 (36)	1.42 (36)
8264/6325-3	16.14 (410)	11.41 (290)	8.27 (210)	1.77 (45)	9.06 (230)	4.72 (120)	1.97 (50)	1.38 (35)	1.38 (35)
8264/6335-3	16.54 (420)	16.54 (420)	6.46 (164)	3.62 (92)	–	–	–	1.18 (30)	1.18 (30)
8264/6935-3	25.59 (650)	15.4 (390)	5.83 (148)	3.62 (92)	–	–	–	1.57 (40)	1.77 (45)
8264/6995-3	25.59 (650)	25.59 (650)	6.22 (158)	3.23 (82)	6.30 (160)	6.30 (160)	2.44 (62)	1.57 (40)	1.57 (40)

For minimum distance between entries contact factory. For maximum numbers of Entries see table below.

8264/6…-3 Aluminum Enclosure Body - Maximum Number of Entries per Side Wall and in Total for all Sides															
Enclosure Type	Wall Side	Entry Sizes													
		M16 x 1.5		1/2"-NPT or M20 x 1.5		3/4"-NPT* or M25 x 1.5		1"-NPT or M32 x 1.5		1-1/4"-NPT or M40 x 1.5		1-1/2"-NPT or M50 x 1.5		2"-NPT or M63 x 1.5	
		per side	max. total	per side	max. total	per side	max. total	per max.	max. total	per side	max. total	per side	max. total	per side	max. total
8264/6114-3	all sides	20	80	20	59	14	37	9	24	6	15	4	10	2	6
8264/6214-3	short side	18	102	18	73	14	45	9	29	6	18	4	13	2	8
	long side	33		33		22		15		8		6		4	
8264/6224-3	all sides	33	132	33	87	22	54	15	35	8	21	6	15	4	9
8264/6225-3	all sides	42	152	42	87	25	54	14	35	9	21	5	15	3	9
8264/6325-3	short side	32	152	32	96	19	60	10	38	6	24	5	17	3	10
	long side	44		44		25		14		8		6		4	
8264/6335-3	all sides	40	138	40	79	24	49	12	31	8	19	5	14	3	8
8264/6935-3	short side	36	192	36	119	21	74	10	47	8	30	4	21	3	13
	long side	60		60		36		18		14		7		5	
8264/6995-3	all sides	54	216	54	159	32	99	15	60	13	40	7	28	5	17

For combinations of operators and windows together, please consult factory.
* Optional thread size 3/4" - 14 NPSM permitted.

Cover – Stainless Steel, Area for Operator Installation.

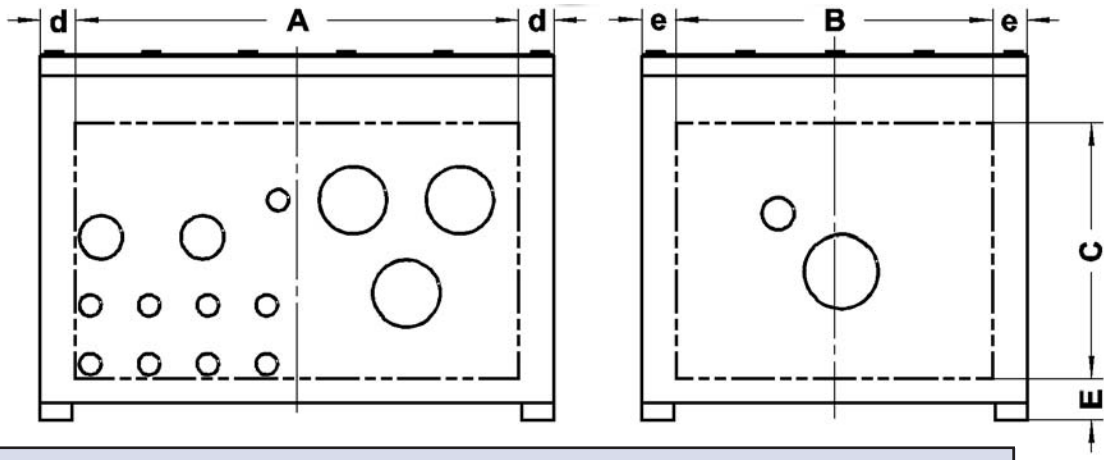


8264/6…-2 Stainless Steel Enclosure Cover - Area for Operator Installation in inches (mm)			
Cover for Enclosure Type	Length	Width	Max. Number of Operators
	A	B	3/4"-14 NPSM*
8264/6112-2	5.43 (138)	5.43 (138)	4
8264/6212-2	10.24 (260)	5.43 (138)	8
8264/6222-2	10.24 (260)	10.24 (260)	16
8264/6223-2	10.24 (260)	10.24 (260)	16
8264/6323-2	14.96 (380)	10.24 (260)	24
8264/6333-2	14.96 (380)	14.96 (380)	36
8264/6933-2	24.80 (630)	14.96 (380)	54
8264/6993-2	24.80 (630)	24.80 (630)	81
* Optional metric thread sizes can be used: M16 x 1.5; M20 x 1.5; M25 x 1.5			

8264/6…-2 Stainless Steel Enclosure Cover - Maximum Number of Windows and Sizes									
Cover for	Round / Viewing Diameter in inches (mm)				Rectangular / Viewing Area in inches (mm)				
Enclosure Type	2.17 (55)	2.56 (65)	3.54 (90)	5.51 (140)	2.28 x 5.59 (58 x 142)	3.86 x 5.59 (98 x 142)	5.63 x 9.21 (143 x 234)	7.87 x 11.81 (200 x 300)	9.21 x 12.52 (234 x 318)
8264/6112-2	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8264/6212-2	1	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A
8264/6222-2	1	1	1	1	1	1	N/A	N/A	N/A
8264/6223-2	1	1	1	1	1	1	N/A	N/A	N/A
8264/6323-2	2	2	2	1	2	1	1	1	N/A
8264/6333-2	4	4	4	1	2	2	1	1	N/A
8264/6933-2	6	4	2	1	1	1	1	1	1
8264/6993-2*	6	4	2	1	1	1	1	1	1

For combinations of operators and windows together, please consult factory.

Body – Stainless Steel, Area for Entry Installation.



8264/6…-2 Stainless Steel Enclosure Body – Area for Entry Installation in inches (mm)						
Enclosure Type	Width		Height	Height over Mounting	Distance to Side Wall	
	A	B	C	E	d	e
8264/6112-2	7.09 (180)	7.09 (180)	6.61 (168)	1.65 (42)	1.08 (27.5)	1.08 (27.5)
8264/6212-2	12.05 (306)	7.09 (180)	6.61 (168)	1.65 (42)	1.06 (27)	1.08 (27.5)
8264/6222-2	12.05 (306)	12.05 (306)	6.50 (165)	1.77 (45)	1.06 (27)	1.06 (27)
8264/6223-2	12.05 (306)	12.05 (306)	9 25 (235)	1.77 (45)	1.06 (27)	1.06 (27)
8264/6323-2	17.32 (440)	12.05 (306)	9 25 (235)	1.77 (45)	0.79 (20)	1.06 (27)
8264/6333-2	16.77 (426)	16.77 (426)	9.06 (230)	1.97 (50)	1.06 (27)	1.06 (27)
8264/6933-2	27.17 (690)	16.77 (426)	9 25 (235)	1.77 (45)	0.79 (20)	1.06 (27)
8264/6993-2	26.61 (676)	26.61 (676)	9.06 (230)	1.97 (50)	1.06 (27)	1.06 (27)

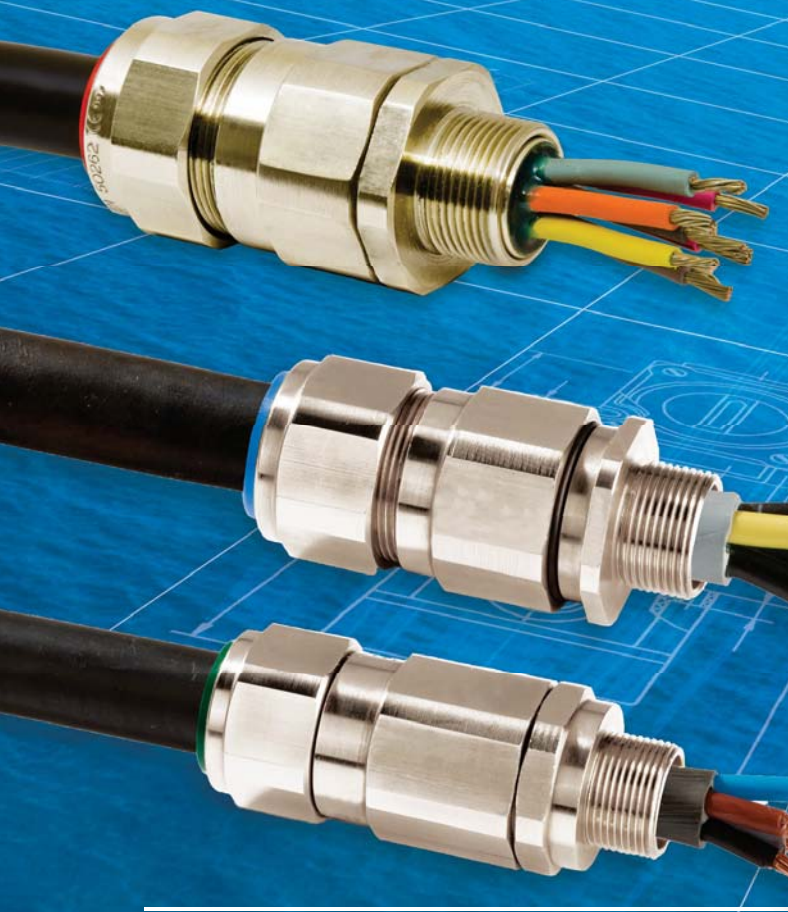
For minimum distance between entries contact factory. For maximum numbers of Entries see table below.

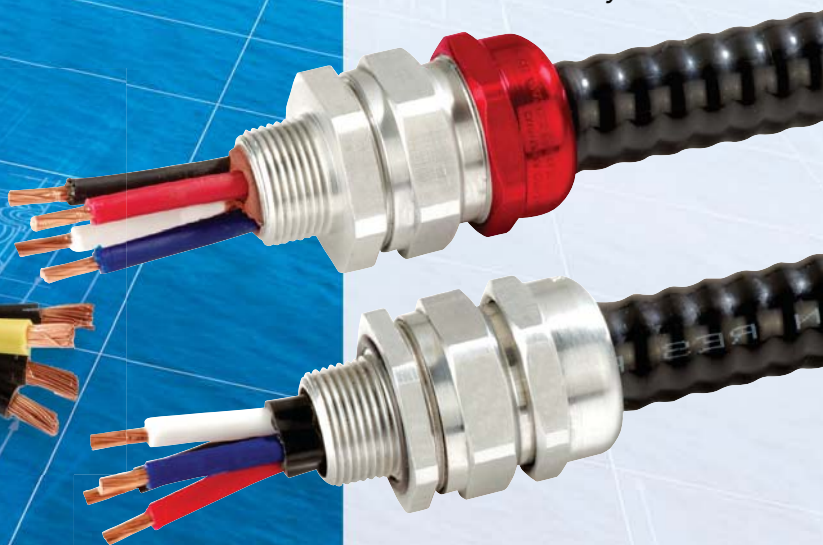
8264/6…-2 Stainless Steel Enclosure Body - Maximum Number of Entries per Side Wall and in Total for all Sides														
Enclosure Type	Wall Side	Entry Size												
		M16 x 1.5		1/2”-NPT or M20 x 1.5		3/4”-NPT* or M25 x 1.5		1”-NPT or M32 x 1.5		1-1/4”-NPT or M40 x 1.5		1-1/2”-NPT or M50 x 1.5		2”-NPT or M63 x 1.5	
		per side	max. total	per side	max. total	per side	max. total	per max.	max. total	per side	max. total	per side	max. total	per side	max. total
8264/6112-2	all sides	20	80	20	59	12	37	9	24	5	15	4	10	2	6
8264/6212-2	short side	20	110	20	77	12	48	9	31	5	19	4	13	2	8
	long side	35		35		22		15		8		6		4	
8264/6222-2	all sides	35	140	35	95	22	59	15	38	8	24	6	17	4	10
8264/6223-2	all sides	42	168	42	142	28	89	16	57	8	32	6	24	4	15
8264/6323-2	short side	42	204	42	185	28	115	16	74	8	44	6	28	4	20
	long side	60		60		38		22		14		8		6	
8264/6333-2	all sides	60	240	60	221	38	138	22	88	12	48	8	32	5	20
8264/6933-2	short side	60	312	60	293	38	183	22	116	12	66	8	40	6	28
	long side	96		96		60		36		21		12		8	
8264/6993-2	all sides	96	384	96	359	60	224	36	144	21	84	12	48	8	32

For combinations of operators and windows together, please consult factory.
* Optional thread size 3/4” - 14 NPSM permitted.

Notes

Conduit Hubs, Cable Glands & Breather





Conduit Hubs:

- *For connecting conduit.*
- *Sizes 1/2”-3” NPT.*
- *For Hazardous (classified) Locations.*
- *Material Zinc.*

Cable Glands:

- *For connecting all types of cables.*
- *Sizes 1/2”-4” NPT.*
- *For Wet and Hazardous (classified) Locations.*
- *Several gland materials available.*

Breather:

- *For ventilation.*
- *Explosion protection “increased safety”.*

8166/11 Series Conduit Hubs

CONDUIT HUBS FOR HAZARDOUS (CLASSIFIED) LOCATIONS

CLASSIFICATIONS

NEC- Class I, Zone 1, AEx e II
Class I, Division 2
Class II, Division 2, Groups F & G
Class III

CEC- Ex e II
Class I, Division 2
Class II, Division 2, Groups F & G
Class III
Environmental Protection
Types 3, 4 and 4X; IP66

File No. E200949

II 2 G Ex e II
II 2 D Ex tD A21 IP66
PTB 00 ATEX 1114U

IECEx
Ex e II
Ex tD A21 IP66
IECEx PTB 06.0095 U

Ambient Temperature Range
+100˚C (+212˚F) Max.
–30˚C (–22˚F) Min.

Grounding Terminal Capacity:
One or two copper wires,
14 to 8 AWG, solid or stranded

FEATURES

The 8166/11 Series of Conduit Hubs are listed for hazardous (classified) locations as specified above and are suitable for installation of rigid conduits with 1/2" - 3" NPT threads to metallic and non-metallic enclosures with appropriate ratings. They also provide a sure watertight seal by means of an embedded "O" Ring.

They are made of zinc and are provided with a protective, insulated throat. The grounding locknut provides an "increased safety" terminal which prevents the ground wire from rotating when tightening. The locknut also has a set screw which after tightening provides firm metal-to-metal connection between the HUB body and the locknut.

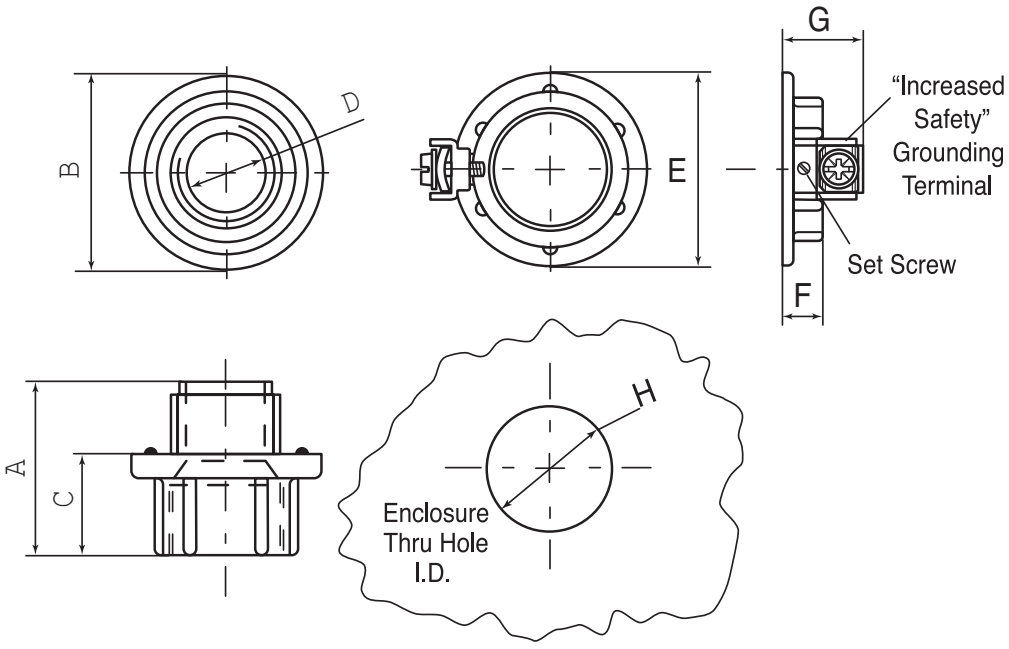
Hazardous Location Conduit Hubs with "Increased Safety" Grounding Terminal

Ordering Information

Size NPT	Catalog Number	(H) Enclosure Thru Hole I.D.
1/2"	**8166/11-01-NE**	7/8"
3/4"	**8166/11-02-NE**	1-1/8"
1"	**8166/11-03-NE**	1-3/8"
1-1/4"	**8166/11-04-NE**	1-3/4"
1-1/2"	**8166/11-05-NE**	2"
2"	**8166/11-06-NE**	2-1/2"
2-1/2"	**8166/11-07-NE**	3"
3"	**8166/11-08-NE**	3-5/8"

Dimensions in Inches

Hub with "e" grounding nut	A	B (O.D.)	C	D (ID) (min.)	D (ID) (max.)	E (O.D.)	F	G
8166/11-01-NE	1.31	1.54	0.73	0.56	0.65	1.54	0.34	0.71
8166/11-02-NE	1.37	1.73	0.78	0.79	0.85	1.73	0.39	0.71
8166/11-03-NE	1.59	2.04	0.90	1.01	1.08	2.04	0.46	0.89
8166/11-04-NE	1.59	2.42	0.90	1.32	1.41	2.42	0.46	0.89
8166/11-05-NE	1.59	2.79	0.90	1.54	1.65	2.79	0.46	0.89
8166/11-06-NE	1.59	3.29	0.90	1.98	2.10	3.29	0.46	0.89
8166/11-07-NE	2.47	3.70	1.56	2.44	2.49	3.70	0.56	0.98
8166/11-08-NE	2.47	4.39	1.56	3.05	3.10	4.39	0.56	0.98



8162/9 Series Breather

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2 AEx e II
Class I, Division 2

LISTED - File No. E200949

File No. 3000248
Material: Nylon
Ingress Protection
IP54, Type 3R
when installed in enclosures of the same rating

Application

The breather is designed for ventilation where there is the possibility of moisture or condensation being trapped within an enclosure.

Features:

The breather is suitable for installation in 3/4" conduit hubs or drilled and tapped conduit openings of general purpose or increased safety enclosures. They must be protected from severe impact. The felt insert is replaceable.

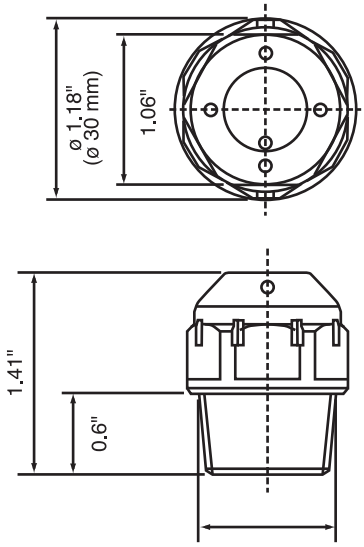
Ordering Information

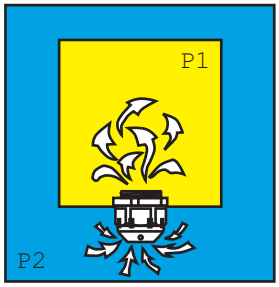
DESCRIPTION		CATALOG NUMBER
Breather 8162/9 Thread 3/4" NPT	1 piece	**138577**
	100 pieces	**138582**

Parts

DESCRIPTION	DESIGNATION	CATALOG NUMBER
Felt Washer	Polyamide 20 piece	**138595**

Dimensions





Temperature-dependent pressure differences between the interior of an enclosure (P1) and the external atmosphere (P2) are reliable equalized by means of the breather. Condensation build-up in the enclosure is thus kept to a minimum.

C2KX Unpacked Cable Glands

FOR ARMORED AND JACKETED CABLE

CLASSIFICATIONS

NEC- Class I, Zone 1, AEx e II
Class I, Div. 2, Groups A,B,C & D
NOTE: When installed in compliance with the NEC.

Types 4X; IP66, IP67 & IP68

NOTE: For IP67 and IP68 requirements the cable diameter "B" (minimum value) shown in table should be increased by 1.0 mm to ensure compliance.

ATEX
SIRA 06 ATEX 1097X
SIRA 07 ATEX 4326X
II 2G Ex e II
II 3G Ex nR II
II 2D Ex tD A21 IP66

IECEx
IECEx SIR 06.0042X
Ex e II
Ex nR II
Ex tD A21 IP66

Certificate No. 2367109

MARINE APPROVALS

Lloyds Approval No.: 01/00171
Gost K Cert. No.: KZ7500361.01.01.14761
RoK Approval No.: 08-06/7693
DNV Approval No.: E-10496
ABS Approval No.: 01-LD234401A/2-PDA
Ingress Prot. Doc.: 5046 C549G
Deluge Prot. Compliance: DTS01 : 91
Deluge Prot. Doc.: 5046 C549G-D

Continuous Operating Temperature
+130°C (+266°F) Max.
–60°C (–76°F) Min.

FEATURES

The C2KX cable gland is suitable for use with armored and jacketed cables with wire braid armor. The cable gland provides mechanical retention and electrical continuity via the armor termination. The standard cable gland material is Electroless Nickel Plated Brass as pictured above. Optional materials are: Stainless Steel or Brass with Electroless Nickel Plated Brass entry component.

Ordering Information (Dimensions in Inches)

C CABLE GLAND SIZE NPT	E MIN. THREAD LENGTH	A MAX. CABLE BEDDING DIA.	B OVERALL CABLE DIAMETER		ARMOR RANGE		D ACROSS		F NOM. PRO-TRUSION LENGTH	PVC SHROUD REF.	CATALOG NUMBER
			MIN.	MAX.	MIN.	MAX.	FLATS MAX.	CRNRS. MAX.			
1/2"	0.630	0.461	0.240	0.453	0 0	0.039	1.201	1.297	2.303	PVC06	**20S16C2KX1RA531**
1/2"	0.630	0.461	0.374	0.626	0 0	0.039	1.201	1.297	2.303	PVC06	**20SC2KX1RA531**
1/2"	0.630	0.551	0.492	0.823	0 0	0.039	1.201	1.297	2.382	PVC06	**20C2KX1RA531**
3/4"	0.669	0.787	0.551	0.866	0 0	0.039	1.476	1.594	2.657	PVC09	**25SC2KX1RA532**
3/4"	0.669	0.787	0.717	1.031	0 0	0.039	1.811	1.956	2.657	PVC09	**25C2KX1RA532**
1"	0.787	1.035	0.933	1.335	0 0	0.039	1.811	1.956	2.736	PVC11	**32C2KX1RA533**
1-1/4"	0.787	1.268	1.098	1.591	0 0	0.039	2.165	2.338	3.071	PVC15	**40C2KX1RA534**
1-1/2"	0.787	1.504	1.386	1.839	0 0	0.039	2.362	2.551	2.972	PVC18	**50SC2KX1RA535**
2"	0.906	1.736	1.591	2.091	0 0	0.039	2.760	2.981	3.169	PVC21	**50C2KX1RA536**
2"	0.906	1.969	1.795	2.339	0 0	0.039	2.953	3.189	3.602	PVC23	**63SC2KX1RA536**
2-1/2"	0.984	2.205	2.150	2.594	0 0	0.039	3.150	3.402	3.622	PVC25	**63C2KX1RA537**
2-1/2"	0.984	2.441	2.323	2.839	0 0	0.039	3.543	3.826	3.898	PVC28	**75SC2KX1RA537**
3"	1.417	2.677	2.626	3.091	0 0	0.039	3.937	4.252	4.016	PVC30	**75C2KX1RA538**
3-1/2"	1.417	3.150	3.000	3.559	0 0	0.063	4.528	4.890	4.724	PVC32	**90C2KX1RA539**

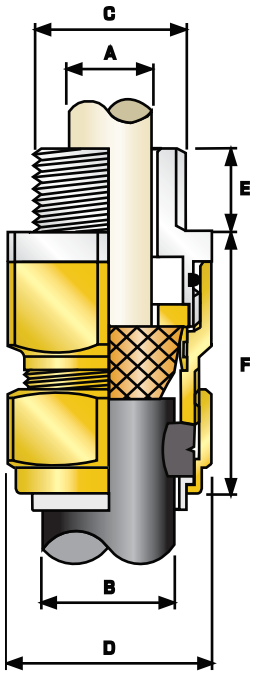
The standard Material is Fully Electroless Nickel Plated Brass, indicated by a 5 in the Catalog Number. For other Material Options change the 5 to the indicated number of the material options:

Insert Material Option

1- Aluminum
4- Stainless Steel
7- Brass w th Electroless Nickel Plated Entry Component

Technical Data

TYPE	C2KX
Standard Gland Material	Electroless N ckel Plated Brass
Optional Gland Material	Brass, Stainless Steel or Brass - Fully Electroless Nickel Plated
Seal Material	SOLO LSF Thermoplastic Elastomer
Cable Type	Armored & Jacketed
Armor Clamp ng	Detachable Armor Cone & AnyWay Universal Clamp ng R ng
Sealing Techn que	Un que "LRS"™ Outer Seal (Load Retention Seal)
Sealing Area(s)	Cable Outer Jacket
Optional Accessories See page J9	Locknut, Shroud, Entry Thread Seal, Serrated Washer, Adapter/Reducer



T3CDS Unpacked Cable Glands

FOR ARMORED AND JACKETED

Ordering Information (Dimensions in Inches)

C CABLE GLAND SIZE NPT	E MIN. THREAD LENGTH	A CABLE BEDDING DIAMETER		B OVERALL CABLE DIAMETER		D ACROSS		F NOMINAL ASSMLD. LENGTH	PVC SHROUD REF.	CATALOG NUMBER
		MIN.	MAX.	MIN.	MAX.	FLATS MAX.	CRNRS. MAX.			
1/2"	0 630	0.122	0.343	0 240	0 519	0.945	1.021	2.756	PVC02	**20S16T3CDS1RA531**
1/2"	0 630	0.240	0.461	0 374	0 626	1.063	1.148	2.756	PVC04	**20ST3CDS1RA531**
1/2"	0 630	0.256	0.551	0.492	0 823	1.201	1.297	2.835	PVC06	**20T3CDS1RA531**
3/4"	0 669	0.437	0.787	0 551	0 866	1.476	1.594	3.228	PVC09	**25ST3CDS1RA532**
3/4"	0 669	0.437	0.787	0 717	1 031	1.811	1.956	3.228	PVC09	**25T3CDS1RA532**
1"	0 787	0.669	1.035	0 933	1 335	1.811	1.956	3.346	PVC11	**32T3CDS1RA533**
1-1/4"	0 787	0.866	1.268	1 098	1 591	2.165	2.338	3.386	PVC15	**40T3CDS1RA534**
1-1/2"	0 787	1.161	1.504	1 386	1 839	2.362	2.551	3.858	PVC18	**50ST3CDS1RA535**
2"	0 906	1.402	1.736	1 591	2 091	2.760	2.981	3.937	PVC21	**50T3CDS1RA536**
2"	0 906	1.579	1.969	1 795	2 339	2.953	3.189	4.252	PVC23	**63ST3CDS1RA536**
2-1/2"	0 984	1.858	2.205	2.150	2 594	3.150	3.402	4.355	PVC25	**63T3CDS1RA537**
2-1/2"	0 984	2.079	2.441	2 323	2 839	3.543	3.826	4.434	PVC28	**75ST3CDS1RA537**
3"	1.417	2.327	2.677	2 626	3 091	3.937	4.252	4.520	PVC30	**75T3CDS1RA538**
3-1/2"	1.417	2.622	3.126	3 000	3 559	4.850	5.238	5.512	PVC32	**90T3CDS1RA539**

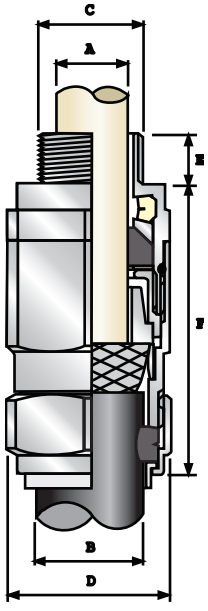
The standard Material is Fully Electroless Nickel Plated Brass, indicated by a 5 in the Catalog Number. For other Material Options change the 5 to the indicated number of the material options:

Insert Material Option

1- Aluminum
4- Stainless Steel
7- Brass with Electroless Nickel Plated Entry Component

Technical Data

TYPE	T3CDS
Standard Gland Material	Electroless N ckel Plated Brass
Des gn Specifications	UL 514B
Seal Material	SOLO LSF Thermoplast c Elastomer
Cable Type	Armored & Jacketed, W re Braid Armor, Served (Single) Wire Armor (SWA)
Armor Clamping	Reversible Armor Cone & AnyWay Universal Clamping Ring
Seal ng Technique	Inner CDS System & Un que "LRS"™ Outer Seal (Load Retent on Seal)
Seal ng Area(s)	Cable Inner Bedding & Outer Jacket
Optional Accessor es See page J9	Locknut, Shroud, Entry Thread Seal, Serrated Washer



Armor Range

GLAND SIZE NPT	GROOVED CONE		STEPPED CONE	
	MIN.	MAX	MIN.	MAX
1/2"	0.0	0.039	0.035	0.049
1/2"	0.0	0.039	0.035	0.049
1/2"	0.0	0.039	0.035	0.049
3/4"	0.0	0.039	0.049	0.063
3/4"	0.0	0.039	0.049	0.063
1"	0.0	0.039	0.063	0.078
1-1/4"	0.0	0.039	0.063	0.078
1-1/2"	0.0	0.039	0.078	0.098
2"	0.0	0.039	0.079	0.098
2"	0.0	0.039	0.079	0.098
2-1/2"	0.0	0.039	0.079	0.098
2-1/2"	0.0	0.039	0.098	0.118
3"	0.0	0.063	0.098	0.118
3-1/2"	0.0	0.063	0.124	0.157

NOTE: Stepped Cone is su table for SWA cables. Grooved Cone is su table for all other approved armored cables

CLASSIFICATIONS

NEC- Class I, Zones 1 & 2, AEx e II
Types 3, 4 & 4X, IP66, 67 & 68
NOTE: For IP67 and IP68 requirements the cable diameter "B" (minimum value) shown in table should be increased by 1.0 mm to ensure compliance.

ATEX
SIRA 06 ATEX 1283X
SIRA 07 ATEX 4328X
II 2G Ex d IIC
II 2G Ex e II
II 3G Ex nR II
II 2D Ex tD A21 IP66

IECEx
IECEx SIR 07.0005X
Ex d IIC
Ex e II
Ex nR II
Ex tD A21 IP66

CEC- Class I Zone 1 Ex d IIC / Ex e II
Class I, Div. 2, Groups A,B,C & D
Class II, Div. 2, Groups E,F & G
Class III
Types 3, 4 & 4X; IP66 & IP68

Certificate 1310517

MARINE APPROVALS

Lloyds Approval No.: 01/00172
Gost K Cert. No.: KZ7500361.01.01.14761
RoK Approval No.: 08-06/7693
DNV Approval No.: E-10496
ABS Approval No.: 01-LD234401A/2-PDA
Ingress Prot. Doc.: ITS 03 1006/Issue 1
Deluge Prot. Compliance: DTS01 : 91
Deluge Prot. Doc.: ITS 01005029

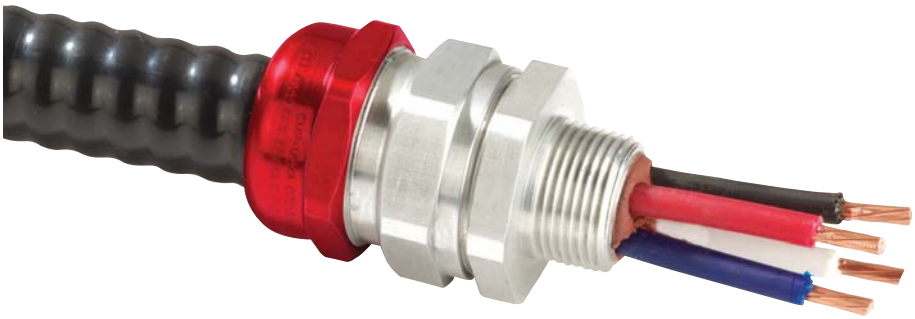
Continuous Operating Temperature
+130˚C (+266˚F) Max.
–60˚C (–76˚F) Min.

FEATURES

The T3CDS cable gland is suitable for use with all types of armored and jacketed marine cables with wire braid armor or served (single) wire. The cable gland provides a seal on the cable inner bedding and an environmental seal on the cable outer jacket. The T3CDS incorporates a unique Compensating Displacement Seal (CDS) system which provides full compatibility with restricted breathing equipment. The cable gland provides mechanical cable retention and electrical continuity via armor wire termination. A reversible armor cone and AnyWay universal clamping ring allows easy disconnection in confined or areas of restricted access from equipment for maintenance or change out.

TMCX Cable Glands

FOR INTERLOCKED OR CURRUGATED METAL AND ARMOR CABLE



CLASSIFICATIONS

NEC- Class I, Zone 1 & 2, AEx d II C
Class I, Div. 1 & 2, Groups A,B,C & D
Class II, Div. 1 & 2, Groups E,F & G
Ordinary & Wet Locations

ATEX
SIRA 07 ATEX 1122X
II 2G Ex d IIC
II 2G Ex e II
II 2D Ex tD A21 IP66

IECEx
IECEx SIR 07.0083X
Ex d IIC
Ex e II
Ex tD A21 IP66

CEC- Class I, Zone 1, Ex d IIC / Ex e II
Class I, Div. 1 & 2, Groups A,B,C & D
Class II, Div. 1 & 2, Groups E,F & G
Class III, Div. 1 & 2
Types 3, 4 & 4X; IP66 & IP68

Certificate No. 1129339

MARINE APPROVALS

Lloyds Approval No.: 01/00172
Gost K Cert. No.: KZ7500361.01.01.14761
RoK Approval No.: 08-06/7693
DNV Approval No.: E-10496
ABS Approval No.: 01-LD234401A/2-PDA

Continuous Operating Temperature
+85˚C (+185˚F) Max.
–60˚C (–76˚F) Min.

FEATURES

The TMCX cable gland is suitable for all types of interlocked, continuously welded or corrugated metal clad armor cable and types MC, MC-HL or TECK armored and armored & jacketed cable. The cable gland provides mechanical retention and electrical continuity via the armor termination and an environmental seal on the cable outer jacket. TMCX allows for easy disconnection from equipment, for maintenance and change out. The gland utilizes a re-usable compression spring that provides grounding and gripping functions to the cable armor. The standard cable gland material is Copper Free Aluminum (<0.4%), as pictured above. Optional materials are: Stainless Steel or Electroless Nickel Plated Brass.

Ordering Information (Dimensions in Inches)

C CABLE GLAND SIZE NPT	E ACTUAL THREAD LENGTH	A MAX. CABLE ARMOR DIA. END STOP IN MIN.	A MAX. CABLE ARMOR DIA. END STOP IN MAX.	A MAX. CABLE ARMOR DIA. END STOP OUT MIN.	A MAX. CABLE ARMOR DIA. END STOP OUT MAX.	B CABLE JACKET DIAMETER MIN.	B CABLE JACKET DIAMETER MAX.	D ENVELOPE DIA. ACROSS FLATS	D ENVELOPE DIA. ACROSS CRNRS.	F NOMINAL ASSMLD. LENGTH	PVC SHROUD REF.	CATALOG NUMBER
1/2"	0.79	—	—	0.342	0.503	0.354	0.550	1.18	1.31	2.20	PVC06	**TMCX050SA**
1/2"	0.79	—	—	0.437	0.669	0.550	0.787	1.42	1.57	2.20	PVC09	**TMCX050A**
3/4"	0.81	0.591	0.756	0.756	0.917	0.669	1.035	1.61	1.79	2.20	PVC11	**TMCX075A**
1"	0.99	0.775	0.969	0.969	1.150	0.910	1.268	1.96	2.18	2.24	PVC13	**TMCX100A**
1-1/4"	1.02	1.083	1.228	1.228	1.386	1.161	1.504	2.16	2.40	2.24	PVC15	**TMCX125A**
1-1/2"	1.04	1.320	1.461	1.461	1.618	1.402	1.736	2.36	2.62	2.37	PVC18	**TMCX150A**
2"	1.07	1.508	1.677	1.677	1.854	1.579	2.008	2.78	3.06	2.60	PVC21	**TMCX200SA**
2"	1.07	1.772	1.933	1.933	2.087	1.858	2.205	2.96	3.28	2.81	PVC23	**TMCX200A**
2-1/2"	1.58	2.052	2.161	2.161	2.320	2.079	2.441	3.14	3.49	2.88	PVC28	**TMCX250SA**
2-1/2"	1.58	2.247	2.406	2.406	2.545	2.327	2.677	3.35	3.71	2.88	PVC28	**TMCX250A**
3"	1.65	2.543	2.776	2.776	2.965	2.622	3.126	4.33	4.80	3.92	PVC31	**TMCX300A**
3-1/2"	1.69		3.291	3.291	3.485	2.992	3.830	5.25	5.82	4.61	—	**TMCX350A**
4"	1.74	—	—	3.500	4.020	3.700	4.220	5.25	5.84	7.66	—	**TMCX400A**

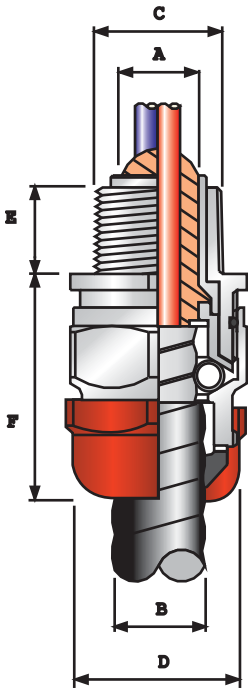
The standard Material is Copper Free Aluminum (<0.4%), indicated by an A at the end of the Catalog Number. For other Material Options change the A to the indicated letters of the material options:

Insert Material Option

SS- Stainless Steel
NB- Electroless Nickel Plated Brass

Technical Data

TYPE	TMCX
Standard Gland Material	Copper Free Alum num (<0.4%)
Optional Gland Material	Electroless Nickel Plated Brass, Sta nless Steel
Seal Material	SOLO LSF Thermoplastic Elastomer / Epoxy Resin Barrier
Cable Type	Corrugated & Interlocked Metal Clad Armor or TECK, continuously Welded Metal Clad Armor
Armor Clamp ng	Earth Cont nu ty in Contact w th Metal Clad Armor (MC-HL)
Sealing Techn que	Displacement Seal
Sealing Area(s)	Inner Compound Barrier & Cable Outer Jacket
Optional Accessories See page J9	Locknut, Shroud, Entry Thread Seal, Serrated Washer, Adapter/Reducer



TMC Cable Glands

FOR INTERLOCKED OR CURRUGATED METAL AND ARMOR CABLE

Ordering Information (Dimensions in Inches)

C CABLE GLAND SIZE NPT	E ACTUAL THREAD LENGTH	A MAX. CABLE ARMOR DIA. END STOP IN MIN.	A MAX. CABLE ARMOR DIA. END STOP IN MAX.	A MAX. CABLE ARMOR DIA. END STOP OUT MIN.	A MAX. CABLE ARMOR DIA. END STOP OUT MAX.	B CABLE JACKET DIAMETER MIN.	B CABLE JACKET DIAMETER MAX.	D ENVELOPE DIA. ACROSS FLATS	D ENVELOPE DIA. ACROSS CRNRS.	F NOMINAL ASSMLD. LENGTH	PVC SHROUD REF.	CATALOG NUMBER
1/2"	0.79	—	—	0.342	0.503	0.354	0.550	1.18	1.31	2.20	PVC06	**TMC050SA**
1/2"	0.79	—	—	0.437	0.669	0.510	0.787	1.42	1.57	2.20	PVC09	**TMC050A**
3/4"	0.81	0.591	0.756	0.756	0.917	0.669	1.035	1.61	1.79	2.20	PVC11	**TMC075A**
1"	0.99	0.775	0.969	0.969	1.150	0.910	1.268	1.96	2.18	2.24	PVC13	**TMC100A**
1-1/4"	1.02	1.083	1.228	1.228	1.386	1.161	1.504	2.16	2.40	2.24	PVC15	**TMC125A**
1-1/2"	1.04	1.320	1.461	1.461	1.618	1.402	1.736	2.36	2.62	2.37	PVC18	**TMC150A**
2"	1.07	1.508	1.677	1.677	1.854	1.579	2.008	2.78	3.06	2.58	PVC21	**TMC200SA**
2"	1.07	1.772	1.933	1.933	2.087	1.858	2.205	2.96	3.28	2.49	PVC23	**TMC200A**
2-1/2"	1.58	2.052	2.161	2.161	2.320	2.079	2.441	3.14	3.49	2.50	PVC28	**TMC250SA**
2-1/2"	1.58	2.247	2.406	2.406	2.545	2.327	2.677	3.35	3.71	2.52	PVC28	**TMC250A**
3"	1.65	2.543	2.776	2.776	2.965	2.622	3.126	4.33	4.80	3.57	PVC3	**TMC300A**
3-1/2"	1.69	2.91	3.291	3.291	3.485	2.992	3.830	5.25	5.82	4.61	—	**TMC350A**
4"	1.74	—	—	3.500	4.020	3.700	4.220	5.28	5.84	7.66	—	**TMC400A**

The standard Material is Copper Free Aluminum (<0.4%), indicated by an A at the end of the Catalog Number. For other Material Options change the A to the indicated letters of the material options:

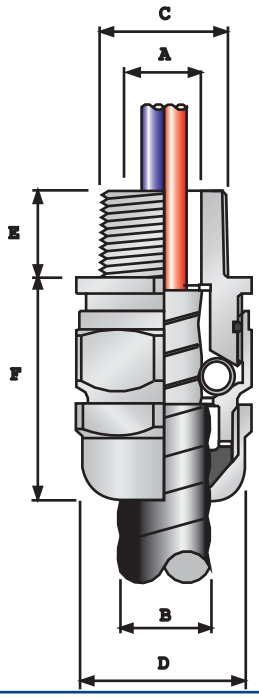
Insert Material Option

SS- Stainless Steel

NB- Electroless Nickel Plated Brass

Technical Data

TYPE	TMC
Standard Gland Material	Copper Free Alum num (<0.4%)
A ternative Gland Material	Electroless Nickel Plated Brass, Stainless Steel
Seal Material	SOLO LSF Thermoplastic Elastomer
Cable Type	Corrugated & Interlocked Metal Clad Armor or TECK, continuously Welded Metal Clad Armor
Armor Clamp ng	Earth Continu ty in Contact w th Metal Clad Armor
Seal ng Techn que	Displacement Seal
Seal ng Area(s)	Cable Outer Jacket
Opt onal Accessor es See page J9	Locknut, Shroud, Entry Thread Seal, Serrated Washer, Adapter/Reducer



CLASSIFICATIONS

NEC- Class I, Zone 1 & 2, AEx e II
Ordinary & Wet Locations

ATEX
SIRA 07 ATEX 1122X
II 2G Ex d IIC
II 2G Ex e II
II 2D Ex tD A21 IP66

IECEx
IECEx SIR 07.0083X
Ex d IIC
Ex e II
Ex tD A21 IP66

CEC- Class I, Zone 1, Ex e II
Class II, Div. 1 & 2, Groups E,F & G
Class III, Div. 1 & 2
Types 3, 4, 4X; IP66

Certificate No. 1129339

MARINE APPROVALS

Lloyds Approval No.: 01/00172
Gost K Cert. No.: KZ7500361.01.01.14761
RoK Approval No.: 08-06/7693
DNV Approval No.: E-10496
ABS Approval No.: 01-LD234401A/2-PDA

Continuous Operating Temperature
+130˚C (+266˚F) Max.
–60˚C (–76˚F) Min.

FEATURES

The TMC cable gland is suitable for all types of interlocked, continuously welded or corrugated metal clad armor cable and types MC, MC-HL or TECK armored and armored & jacketed cable. The cable gland provides mechanical retention and electrical continuity via the armor termination and an environmental seal on the cable outer jacket. The TMC cable gland comes as standard in Aluminum, complete with O-Ring and Locknut. It allows for easy disconnection from equipment, for maintenance and change out. The gland utilizes a re-usable compression spring that provides grounding and gripping functions to the cable armor. The standard cable gland material is Copper Free Aluminum (<0.4%), as pictured above. Optional materials are: Stainless Steel or Electroless Nickel Plated Brass.

PX2KX REX Packed Barrier Cable Glands

FOR ARMORED AND JACKETED CABLES

PVC SHROUD REF.

CLASSIFICATIONS

NEC- Class I, Zone 1, AEx d IIC, AEx e II
Class I, Div. 1 & 2, Groups A,B,C & D
Class II, Div. 1 & 2, Groups E, F & G
Types 4X; IP66, IP67, IP68

NOTE: For IP67 and IP68 requirements the cable diameter "B" (minimum value) shown in table should be increased by 1.0 mm to ensure compliance.

ATEX
SIRA 06 ATEX 1097X
SIRA 07 ATEX 4326X
II 2G Ex d IIC
II 2G Ex e II
II 2G Ex nR IIII 2D Ex tD A21 IP66

IECEx
IECEx SIR 06.0042X
Ex d IIC
Ex e II
Ex nR II
Ex tD A21 IP66

CEC- Class I, Zone 1, Ex d IIC, Ex e II
Class I, Div. 1 & 2, Groups A,B,C & D
Class II, Div. 1 & 2, Groups E, F & G

Certificate No. 2288626

MARINE APPROVALS

Lloyds Approval No.: 01/00172
Gost K Cert. No.: KZ7500361.01.01.14761
RoK Approval No.: 08-06/7693
DNV Approval No.: E-10496
ABS Approval No.: 01-LD234401A/2-PDA
Ingress Prot. Doc.: 5046 C549D
Deluge Prot. Compliance: DTS01 : 91
Deluge Prot. Doc.: 5046 C549D-D

Continuous Operating Temperature
+85˚C (+185˚F) Max.
–60˚C (–76˚F) Min.

FEATURES

The PX2KXREX gland utilizes a liquid pour resin seal, that vastly reduces installation time and associated costs. This solution is particularly effective on multicore cables where traditional compound is difficult and time consuming to apply. PX2KX-REX Class I Division 1 ABCD Cable Gland for use with Armored & Jacketed cable providing a barrier seal around the cable conductors and an environmental seal on the cable outer jacket. In addition this cCSAus listed cable Gland provides mechanical cable retention and electrical continuity via armor termination. A detachable armor cone and AnyWay universal clamping ring arrangement allows the cable to be easily disconnected from the equipment.

Ordering Information (Dimensions in Inches)

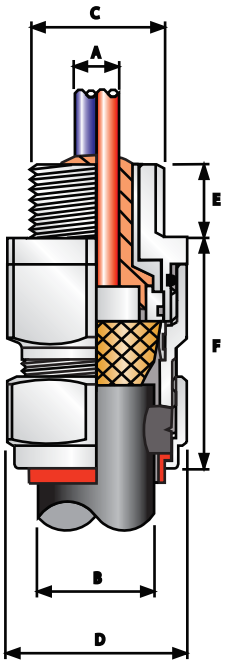
C CABLE GLAND SIZE NPT	E MIN. THREAD LENGTH	A MAX. DIA. OVER CNDCTR.	NO. OF CORES	B OVERALL CABLE DIAMETER		ARMOR RANGE		D ACROSS		F NOM. PRO-TRUSION LENGTH	PVC SHROUD REF.	CATALOG NUMBER
				MIN.	MAX.	MIN.	MAX.	FLATS MAX.	CRNRS. MAX.			
1/2"	0.591	0.496	11	0.240	0.453	0.0	0.039	1.201	1.297	2.303	PVC06	**20S16PX2KXREX1RA531**
1/2"	0.591	0.496	11	0.374	0.626	0.0	0.039	1.201	1.297	2.303	PVC06	**20SPX2KXREX1RA531**
1/2"	0.591	0.496	21	0.492	0.823	0.0	0.039	1.201	1.297	2.382	PVC06	**20PX2KXREX1RA531**
3/4"	0.591	0.689	38	0.551	0.866	0.0	0.039	1.476	1.594	2.657	PVC09	**25SPX2KXREX1RA532**
3/4"	0.591	0.689	38	0.717	1.031	0.0	0.039	1.811	1.956	2.657	PVC09	**25PX2KXREX1RA532**
1"	0.591	0.929	59	0.933	1.335	0.0	0.039	1.811	1.956	2.736	PVC11	**32PX2KXREX1RA533**
1-1/4"	0.591	1.181	89	1.098	1.591	0.0	0.039	2.165	2.338	3.071	PVC15	**40PX2KXREX1RA534**
1-1/2"	0.591	1.441	115	1.386	1.839	0.0	0.039	2.362	2.551	2.972	PVC18	**50SPX2KXREX1RA535**
2"	0.591	1.614	115	1.591	2.091	0.0	0.039	2.760	2.981	3.169	PVC21	**50PX2KXREX1RA536**
2"	0.591	1.886	140	1.795	2.339	0.0	0.039	2.953	3.189	3.602	PVC23	**63SPX2KXREX1RA536**
2-1/2"	0.591	2.114	140	2.150	2.594	0.0	0.039	3.150	3.402	3.622	PVC25	**63PX2KXREX1RA537**
2-1/2"	0.591	2.358	140	2.323	2.839	0.0	0.039	3.543	3.826	3.898	PVC28	**75SPX2KXREX1RA537**
3"	0.591	2.531	140	2.626	3.091	0.0	0.039	3.937	4.252	4.016	PVC30	**75PX2KXREX1RA538**
3-1/2"	0.591	2.965	140	3.00	3.559	0.0	0.063	4.528	4.890	4.724	PVC32	**90PX2KXREX1RA539**

The standard Material is Fully Electroless Nickel Plated Brass, indicated by a 5 in the Catalog Number.
For other Material Options change the 5 to the indicated number of the material options:

Insert Material Option
1 - Aluminum
4 - Stainless Steel
7 - Brass with Electroless Nickel Plated Entry Component

Technical Data

TYPE	PX2KX
Standard Gland Material	Electroless Nickel Plated Brass
Optional Gland Material	Aluminum or Stainless Steel
Sealing Material	SOLO LSF Thermoplastic Elastomer / Epoxy Resin Barr er Compound
Cable Type	Armored & Jacketed
Armor Clamp ng	Detachable Compound Tube / Armor Cone & AnyWay Universal Clamping Ring
Sealing Techn que	Unique "LRS"™ Outer Seal (Load Retention Seal)
Sealing Area(s)	Inner Compound Barr er & Cable Outer Jacket
Optional Accessories See page J9	Locknut, Shroud, Entry Thread Seal, Serrated Washer, Adapter/Reducer



PXSS2K REX Packed Barrier Cable Glands

FOR WET & HAZARDOUS LOCATIONS

Ordering Information (Dimensions in Inches)

C CABLE GLAND SIZE NPT	E MIN. THREAD LENGTH	A MAX. DIA. OVER CNDCTR.	NO. OF CORES	B OVERALL CABLE DIAMETER		D ACROSS		F NOM. PRO-TRUSION LENGTH	PVC SHROUD REF.	CATALOG NUMBER
				MIN.	MAX.	FLATS MAX.	CRNRS. MAX.			
1/2"	0.591	0.496	11	0.122	0.343	1.201	1.297	2.303	PVC04	**20S16PXSS2KREX1RA531**
1/2"	0.591	0.496	11	0.240	0.461	1.201	1.297	2.303	PVC04	**20SPXSS2KREX1RA531**
1/2"	0.591	0.496	21	0.256	0.551	1.201	1.297	2.382	PVC05	**20PXSS2KREX1RA531**
3/4"	0.591	0.689	38	0.437	0.787	1.417	1.530	2.657	PVC09	**25PXSS2KREX1RA532**
1"	0.591	0.929	159	0.669	1.035	1.614	1.743	2.736	PVC10	**32PXSS2KREX1RA533**
1-1/4"	0.591	1.181	89	0.866	1.264	2.614	1.743	3.071	PVC13	**40PXSS2KREX1RA534**
1-1/2"	0.591	1.441	115	1.161	1.504	1.969	2.127	2.972	PVC15	**50SPXSS2KREX1RA535**
2"	0.591	1.614	115	1.402	1.736	2.165	2.338	3.169	PVC18	**50PXSS2KREX1RA536**
2"	0.591	1.886	140	1.579	1.972	2.756	2.976	3.602	PVC21	**63SPXSS2KREX1RA536**
2-1/2"	0.591	2.114	140	1.858	2.205	2.756	2.976	3.622	PVC23	**63PXSS2KREX1RA537**
2-1/2"	0.591	2.358	140	2.079	2.441	3.150	3.402	3.898	PVC24	**75SPXSS2KREX1RA537**
3"	0.591	2.531	140	2.327	2.677	3.150	3.402	4.016	PVC26	**75PXSS2KREX1RA538**
3"	0.591	2.965	140	2.622	3.126	3.937	4.252	4.724	PVC31	**90PXSS2KREX1RA538**

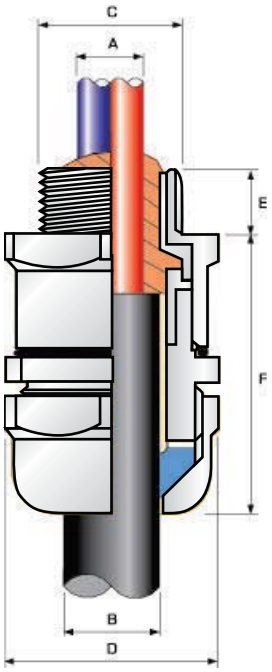
The standard Material is Fully Electroless Nickel Plated Brass, indicated by a 5 in the Catalog Number. For other Material Options change the 5 to the indicated number of the material options:

Insert Material Option

1 - Aluminum
4 - Stainless Steel
7- Brass w th Electroless Nickel Plated Entry Component

Technical Data

TYPE	PXSS2K
Standard Gland Material	Electroless N ckel Plated Brass
Optional Gland Material	Electroless N ckel Plated Brass, Aluminum or Stainless Steel
Seal Material	SOLO LSF Thermoplastic Elastomer / Epoxy Resin Barr er Compound
Cable Type	Non-Armored Marine & Tray Cable & Extra-Hard Usage Cord
Sealing Techn que	Displacement Seal
Sealing Area(s)	Inner Compound Barr er & Cable Outer Jacket
Optional Accessories See page J9	Locknut, Shroud, Entry Thread Seal, Serrated Washer, Adapter/Reducer



CLASSIFICATIONS

NEC- Class I, Zone 1, AEx d IIC, AEx e II
Class I, Div. 2, Groups A,B,C & D
Class II, Div. 2, Groups F & G
Types 4X; IP66, IP67, IP68

NOTE: For IP67 and IP68 requirements the cable diameter "B" (minimum value) shown in table should be increased by 1.0 mm to ensure compliance.

ATEX
SIRA 06 ATEX 1097X
SIRA 07 ATEX 4326X
II 2G Ex d IIC
II 2G Ex e II
II 3G Ex nR II
II 2D Ex tD A21 IP66

IECEx
IECEx SIR 06.0042X
Ex d IIC
Ex e II
Ex nR II
Ex tD A21 IP66

CEC- Class I, Div. 2, Groups A,B,C & D
Class II, Div. 2, Groups F & G
Ex d IIC, Ex e II

Certificate No. 2288626

MARINE APPROVALS

Lloyds Approval No.: 01/00172
Gost K Cert. No.: KZ7500361.01.01.14761
RoK Approval No.: 08-06/7693
DNV Approval No.: E-10496
ABS Approval No.: 01-LD234401A/2-PDA
Ingress Prot. Doc.: 5046 C549J
Deluge Prot. Compliance: DTS01 : 91
Deluge Prot. Doc.: 5046 C549J-D

Continuous Operating Temperature
+85˚C (+185˚F) Max.
–60˚C (–76˚F) Min.

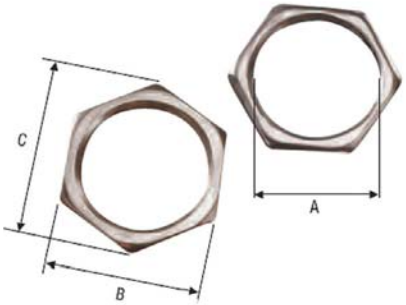
FEATURES

The PXSS2KREX gland utilizes a liquid pour resin seal, that vastly reduces installation time and associated costs. This solution is particularly effective on multicore cables where traditional compound is difficult and time consuming to apply. PXSS2K-REX Triple Certified Flameproof (Type 'd'), Increased Safety (Type 'e') and Restricted Breathing (Type'nR') cable gland for use in Zone 1, Zone 2, Zone 21 and Zone 22 Hazardous Areas with all types of unarmoured cable providing a barrier seal around the cable conductors and an environmental seal on the cable outer sheath. The cable gland provides mechanical cable retention. A combined detachable spacer and resin tube allows the cable to be easily disconnected from the equipment.

Locknuts, Sealing Washers & Serrated Washers

FOR WET & HAZARDOUS LOCATIONS

Locknuts



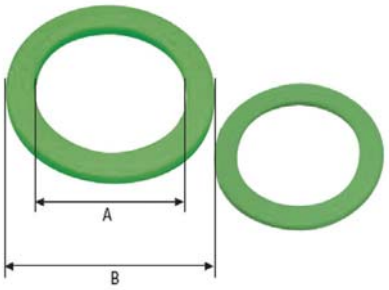
Electroless Nickel Plated Brass Locknuts are the recommended items for securing brass cable glands with nickel plated entry components.

This prevents the electrolytic action of galvanic corrosion which can occur when dis-similar metals are coupled together.

Ordering Information

A NPT THREAD DIAMETER	MIN. THICKNESS.		B ACROSS FLATS DIMENSIONS		C ACROSS CORNERS DIAMETER		CATALOG NUMBER
	IN.	(mm)	IN.	(mm)	IN.	(mm)	
1/2"	0.19	4.75	1.06	27.0	1.15	29.3	050NPTLN5
3/4"	0.19	4.75	1.30	33.0	1.41	35.8	075NPTLN5
1"	0.18	4.50	1.61	41.0	1.77	45.0	100NPTLN5
1-1/4"	0.19	4.75	1.97	50.0	2.10	53.4	125NPTLN5
1-1/2"	0.20	5.10	2.36	60.0	2.72	69.0	150NPTLN5
2"	0.20	5.10	2.76	70.0	3.16	80.2	200NPTLN5
2-1/2"	0.39	10.0	3.11	79.0	3.56	90.5	250NPTLN5
3"	0.39	10.0	4.25	108.0	4.84	123.0	300NPTLN5
3-1/2"	0.45	11.5	4.49	114.0	5.16	131.0	350NPTLN5

Sealing Washers

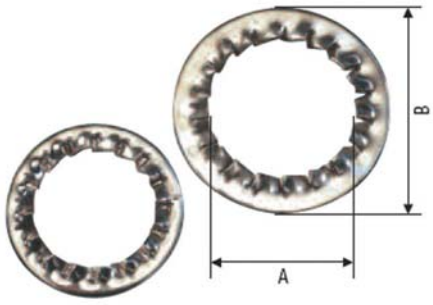


To maintain the Ingress Protection rating between the equipment and cable gland it is necessary to fit an Entry Thread Sealing washer at the gland entry interface.

Ordering Information

A NPT REF. DIAMETER	MIN. THICKNESS.		B EXTERNAL DIAMETER		CATALOG NUMBER
	IN.	(mm)	IN.	(mm)	
1/2"	0.08	2.0	1.13	28.6	050NPTETS
3/4"	0.08	2.0	1.38	35.0	075NPTETS
1"	0.08	2.0	1.75	44.5	100NPTETS
1-1/4"	0.08	2.0	2.00	50.8	125NPTETS
1-1/2"	0.08	2.0	2.56	65.0	150NPTETS
2"	0.08	2.0	3.00	76.2	200NPTETS
2-1/2"	0.08	2.0	3.74	95.0	250NPTETS
3"	0.08	2.0	4.33	110.0	300NPTETS

Serrated Washers



These stainless steel serrated washers fitted internally to the equipment, before the application of a locknut prevent the locknuts from loosening in service.

Ordering Information

A NPT REF. DIAMETER	MIN. THICKNESS.		B OUTER DIAMETER		CATALOG NUMBER
	IN.	(mm)	IN.	(mm)	
1/2"	0.15	3 7	1.26	32.0	050NPTSW4
3/4"	0.15	3 7	1.57	40.0	075NPTSW4
1"	0.15	3 7	1.73	44.0	100NPTSW4
1-1/4"	0.15	3 7	2.32	59.0	125NPTSW4
1-1/2"	0.15	3 7	3.15	80.0	150NPTSW4
2"	0.18	4 5	3.94	100.0	200NPTSW4
2-1/2"	0.20	5 0	4.41	112.0	250NPTSW4
3"	0.20	5 0	4.72	120.0	300NPTSW4
3-1/2"	0.25	6 3	5.91	150.0	350NPTSW4

Appendix by Part Number

Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page	Part Number	Page
180947	B7	6000/552-9521-0150	B1	6600/571-8020-8000	B9	8006/121-015	E2	8125001490	C20, F27
3706090	I4	6000/571-8021-0130	B1	6600/571-8020-8000	B9	8006/122-006	E2	8125002490	C20, F27
3746050	E7	6000/571-8521-0150	B1	6600/572-9020-7000	B9	8006/132-003	E2	8125003490	C20, F27
3746060	E7	6000/572-9021-0130	B1	6600/572-9020-8000	B9	8006/132-006	E2	8125004100	C20, F27
385 663 0	B6	6000/572-9521-0150	B1	8003/111-001	E2	8008/2-002	F11	8125004490	C20, F27
5036760	I4	6008/532-9021-2147	B2	8003/111-003	E2	8008/2-005	F11	8125802290	C20,F27
5156550	I4	6008/552-9021-2147	B2	8003/111-006	E2	8008/2-016	F11	8125803290	C20, F27
5156560	I4	6008/552-9621-2167	B2	8003/111-009	E2	8008/2-027	F11	8125902490	C20,F27
5156570	I4	6400/531-8021-7130	B3	8003/111-010	E2	8008/2-034	F11	8125904490	C20, F27
5158290	I4	6400/531-8021-8130	B3	8003/111-012	E2	8008/2-038	F11	8125906490	C20,F27
85879/41-505	D3	6400/531-8521-7150	B3	8003/111-015	E2	8008/2-040	F11	8125908490	C20,F27
6000033050	B8	6400/531-8521-8150	B3	8003/112-001	E2	8008/2-051	F11	8125/1041-2DP-12015	C16
6000034050	B8	6400/532-9021-7130	B3	8003/112-003	E2	8008/2-102	F12	8125/1051-2DP-06009	C16
6000035050	B8	6400/532-9021-8130	B3	8003/112-006	E2	8008/2-109	F12	8125/1051-2DP-10015	C16
6000801260	B6	6400/532-9521-7150	B3	8003/112-009	E2	8008/2-110	F12	8125/1051-2DP-12018	C16
6000801440	B7	6400/532-9521-8150	B3	8003/112-010	E2	8008/2-113	F12	8125/1061-2DP-06009	C16
6000802060	B6	6400/551-8021-7130	B3	8003/112-015	E2	8008/2-119	F12	8125/1061-2DP-10021	C16
6000802440	B7	6400/551-8021-8130	B3	8003/113-001	E2	8008/2-127	F12	8125/1061-2DP-12024	C16
6000802940	B7	6400/551-8521-7150	B3	8003/113-006	E2	8008/2-139	F12	8125/1071-2DP-06024	C16
6000803260	B6	6400/551-8521-8150	B3	8003/113-009	E2	8008/2-148	F12	8125/1071-2DP-06024	C16
6000803530	B8	6400/552-9021-7130	B3	8003/113-012	E2	802806167	F12	8125/1071-2DP-10036	C16
6000804530	B8	6400/552-9021-8130	B3	8003/121-006	E2	8030901400	F14	8125/1071-2DP-10036	C16
6000805530	B8	6400/552-9521-7150	B3	8003/121-009	E2	8040007550	F14	8125/1071-2DP-12045	C16
6000807750	B6	6400/552-9521-8150	B3	8003/121-010	E2	8040008550	F14	8125/1073-2DP-04018	C17
6000809750	B6	6400/571-8021-7130	B3	8003/121-012	E2	8040009550	F14	8125/1073-2DP-06024	C17
6000809900	B6	6400/571-8021-8130	B3	8003/122-001	E2	8040010550	F14	8125/1073-2DP-1/012	C17
6000817550	B6	6400/571-8521-7150	B3	8003/122-003	E2	8040806290	F14	8125/1073-2DP-10036	C17
6000818550	B6	6400/571-8521-8150	B3	8003/122-009	E2	8040/124-C150	F4	8125/1073-2DP-12045	C17
6000821550	B6	6400/572-9021-7130	B3	8003/122-010	E2	8040/124-N021	F4	8125/1083-2DP-04018	C17
6000907580	B8	6400/572-9021-8130	B3	8003/122-015	E2	8040/124-N164	F4	8125/1083-2DP-06024	C17
6000908580	B8	6400/572-9521-7150	B3	8003/123-001	E2	8040/124-N273	F4	8125/1083-2DP-06048	C17
6000909580	B8	6400/572-9521-8150	B3	8003/123-003	E2	8040/124-N385	F4	8125/1083-2DP-1/012	C17
6000910580	B8	6408/532-9027-5141	B4	8003/123-006	E2	8040/124-PLR0	F4	8125/1083-2DP-1/02	C17
6000911580	B8	6408/532-9027-7141	B4	8003/123-009	E2	8040/124-U011	F4	8125/1083-2DP-10036	C17
6000912580	B8	6408/532-9027-8141	B4	8003/123-010	E2	8040/144-02MN1	F3	8125/1083-2DP-10072	C17
6008812870	B8	6408/552-9027-5141	B4	8003/123-012	E2	8040/144-03MMN3	F3	8125/1083-2DP-12090	C17
6008814870	B8	6408/552-9027-7141	B4	8003/123-015	E2	8040/144-PLG0	F3	8125/1083-2DP-4018	C17
6008816870	B8	6408/552-9027-8141	B4	8003/131-001	E2	8040/144-PLR0	F3	8125/1093-2DP-04036	C17
6041804650	B6	6408/552-9627-5161	B4	8003/131-003	E2	8040/144-U2312	F3	8125/1093-2DP-06048	C17
6043802010	B8	6408/552-9627-7161	B4	8003/131-006	E2	8040/144-X011	F3	8125/1093-2DP-06096	C17
6044801740	B6	6408/552-9627-8161	B4	8003/132-001	E2	8040/144-Y012	F3	8125/1093-2DP-1/024	C17
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8800/231-0-21-505	D7	300NPTSW4	J9	TMC 050A	B7
8800/231-0-21-507	D7	32C2KX1RA533	J3	TMC 075A	B7
8800/232-0-21-405	D1,D7	32PX2KXREX1RA533	J7	TMC050A	J6
8800/232-0-21-407	D1,D7	32PXSS2KREX1RA533	J8	TMC050SA	J6
8800/232-0-21-409	D1,D7	32T3CDS1RA533	J4	TMC075A	J6
8800/232-0-21-505	D1,D7	350NPTLN5	J9	TMC100A	J6
8800/232-0-21-507	D1,D7	350NPTSW4	J9	TMC125A	J6
8800/232-0-21-509	D1,D7	40C2KX1RA534	J3	TMC150A	J6
125NPTETS	J9	40PX2KXREX1RA534	J7	TMC200A	J6
125NPTLN5	J9	40PXSS2KREX1RA534	J8	TMC200SA	J6
125NPTSW4	J9	40T3CDS1RA534	J4	TMC250A	J6
150NPTETS	J9	50C2KX1RA536	J3	TMC250SA	J6
150NPTLN5	J9	50PX2KXREX1RA536	J7	TMC300A	J6
150NPTSW4	J9	50PXSS2KREX1RA536	J8	TMC350A	J6
200NPTETS	J9	50SC2KX1RA535	J3	TMC400A	J6
050NPTETS	J9	50SPX2KXREX1RA535	J7	TMCX050A	J5
050NPTLN5	J9	50SPXSS2KREX1RA535	J8	TMCX050SA	J5
050NPTSW4	J9	50ST3CDS1RA535	J4	TMCX075A	J5
075NPTETS	J9	50T3CDS1RA536	J4	TMCX100A	J5
075NPTLN5	J9	63C2KX1RA537	J3	TMCX125A	J5
075NPTSW4	J9	63PX2KXREX1RA537	J7	TMCX150A	J5
100NPTETS	J9	63PXSS2KREX1RA537	J8	TMCX200A	J5
100NPTLN5	J9	63SC2KX1RA536	J3	TMCX200SA	J5
100NPTSW4	J9	63SPX2KXREX1RA536	J7	TMCX250A	J6
200NPTLN5	J9	63SPXSS2KREX1RA536	J8	TMCX250SA	J6
200NPTSW4	J9	63ST3CDS1RA536	J4	TMCX300A	J6
20C2KX1RA531	J3	63T3CDS1RA537	J4	TMCX350A	J6
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20S16PXSS2KREX1RA531	J7	75SPX2KXREX1RA537	J7		
20S16T3CDS1RA531	J4	75SPXSS2KREX1RA537	J8		
20SC2KX1RA531	J3	75ST3CDS1RA537	J4		
20SPX2KXREX1RA531	J7	75T3CDS1RA538	J4		
20SPXSS2KREX1RA531	J8	861A0013-1-S	F7		

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