GLOBAL PROTECTION

Appleton®

Manufacturing and processing facilities, and the environments they inhabit, continually challenge both man and machine. With the presence of flammable gases and vapors, these locations demand electrical products engineered to provide proper protection from dangers like heat or spark-induced ignition. They must also endure nature's toughest treatment through corrosive ocean air on offshore rigs in the North Sea, extreme heat at refineries in Saudi Arabia and frigid arctic winds at mining facilities in the Canadian Oil Sands.

For over 100 years Appleton products have been helping to protect facilities, and their workers. Whether your geography requires ATEX, IEC, NEC, or CEC certification, our product range, regulatory involvement and technical expertise solve the challenges of outfitting your facilities. Our engineers have developed innovative advancements in lighting, electrical control devices and instrumentation, making Appleton the leader in the production of hazardous location electrical products.

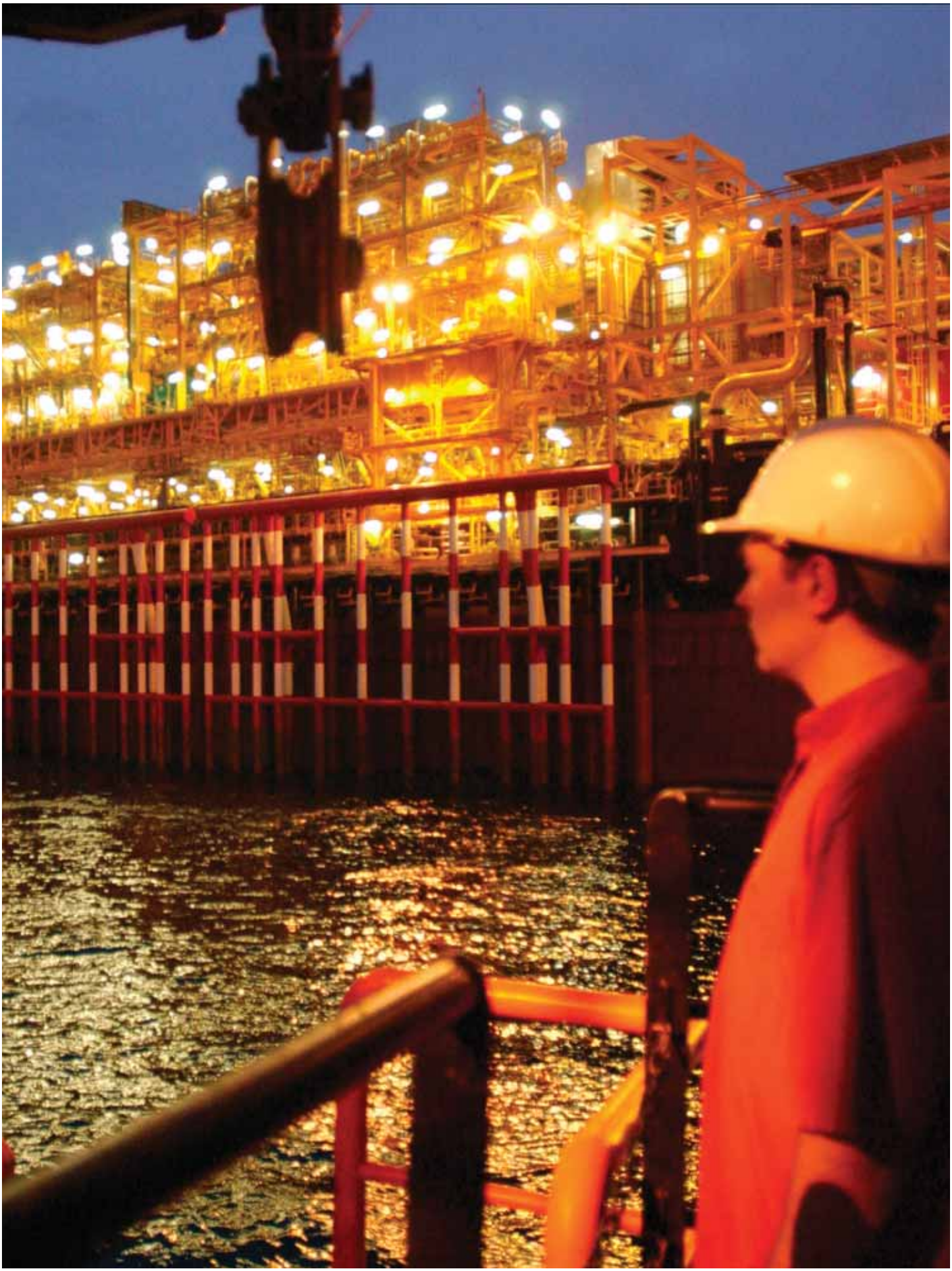
**At Appleton, we take the challenge of protecting hazardous environments seriously. It is protection throughout your facility and around the globe.**

| | | |
|---|---|---|
| INTRODUCTION | IEC/ATEX VS. NEC/CEC HAZARDOUS LOCATIONS | 4 |
| LIGHTING | INTRODUCTION | 6 |
| | LED LIGHTING | 8 |
| | FLUORESCENT LIGHTING | 10 |
| | HID LIGHTING | 12 |
| | STROBE & BEACON LIGHTING | 14 |
| CONTROLS, ENCLOSURES & PANELBOARDS | INTRODUCTION | 16 |
| | CONTROLS | 18 |
| | ENCLOSURES | 20 |
| | STARTERS | 22 |
| | CIRCUIT BREAKERS | 24 |
| | PANELBOARDS | 26 |
| PLUGS & RECEPTACLES | INTRODUCTION | 28 |
| | PLUGS & RECEPTACLES | 30 |
| CABLE GLANDS, CONNECTORS & FITTINGS | INTRODUCTION | 32 |
| | CABLE GLANDS & CONNECTORS | 34 |
| | CONDUIT FITTINGS | 38 |
| HEAT TRACING SYSTEMS | INTRODUCTION | 40 |
| | HEAT TRACING SYSTEMS | 42 |
| POWER QUALITY SOLUTIONS | INTRODUCTION | 44 |
| | POWER QUALITY SOLUTIONS | 43 |

## GLOBAL UNDERSTANDING AND EXPERTISE

Appleton electrical products help protect refinery production in India, ensure pipeline flow in South Africa, and maintain deep sea drilling operations in the Gulf of Mexico. Our worldwide presence demands mastery of the International Electrotechnical Commission (IEC), ATEX Directive and the North American (NEC/CEC) rules and a full product line for every application throughout hazardous locations.

IEC, ATEX and NEC/CEC rules each identify the amount of exposure, destructive force and ignition temperature of the gas, vapor or dust. However, the separate regulations differ in their nomenclature and sub-category tracking. To assist in outfitting and application, the following pages show the ratings and categories of each regulation body and reference points.



**IEC STANDARDS** and **EN STANDARDS** are identical. **IEC STANDARDS** have become the universal reference across Europe and are adopted along with other admissible standards in much of the rest of the world. IEC uses three Zones to classify hazardous environment conditions based on the duration and amount of combustible exposed. IEC is continuously reviewed by a technical board for updates and revisions.

# IEC/ATEX

## INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

Founded in 1904, the IEC is now considered the world's largest electrotechnology organization with over 130 countries as members and over 10,000 experts contributing to its standards. The IEC code defines hazardous locations as Zones. Zones define the amount of time rated equipment is exposed to hazardous atmospheres. Zone 0 locations feature continuous or extended exposure to flammable gases or vapors. Zone 1 locations have an intermittent presence of flammable gases or vapors, typically as a result of leakage. Zone 2 are locations in which flammable gases or vapors are not likely to occur in normal operation, but may become present upon the failure of equipment or through an accident. The exposure is unlikely and, if it does occur, it will do so infrequently and for only a short period of time. Atmospheres of combustible dusts are rated as Zone 20, 21 or 22. Zones 20, 21 and 22 correspond with Zones 0, 1 and 2 in identifying the amount of exposure to the hazardous atmosphere. IEC Groupings rate locations on whether the hazard is a mine (Group I) or an ignitable atmosphere above ground (Group II). IEC Subdivisions label the ignitability of the atmosphere with "A" being the least ignitable and "C" being the most.

## ATEX DIRECTIVE

The ATEX Directive is the first uniformed code which deals with the Essential Health and Safety Requirements (EHSR's) enacted by the European Union for equipment that is either used within, or connected to equipment located within, potentially hazardous environments. It includes safety devices, controllers, regulatory devices and other equipment whose failure would provoke an explosion.

**Area Classification - IEC vs NEC/CEC (Class/Division/Group)**

| Inflammable Material | IEC/CENELEC | | | NEC/CEC | | |
|---|---|---|---|---|---|---|
| Gases And Vapors | Zone | Equipment Group | Gas Group | Class | Division | Group |
| Acetylene | 0, 1 or 2 | II | C | I | 1 or 2 | A |
| Hydrogen | 0, 1 or 2 | II | B + $H_2$ | I | 1 or 2 | B |
| Propylene Oxide<br>Ethyl Oxide<br>Butadiene | 0, 1 or 2 | II | B | I | 1 or 2 | B |
| Cyclopropane<br>Ethyl Ether<br>Ethylene | 0, 1 or 2 | II | B | I | 1 or 2 | C |
| Acetone<br>Benzene<br>Butane<br>Propane<br>Hexane<br>Paint Solvents<br>Natural Gas | 0, 1 or 2 | II | A | I | 1 or 2 | D |

**IEC vs NEC "T" Ratings Temperature Classification Comparison ①**

| Temperatures in °C | IEC | NEC/CEC |
|---|---|---|
| 85 | T6 | T6 |
| 100 | T5 | T5 |
| 120 | T4 | T4A |
| 135 | T4 | T4 |
| 160 | T3 | T3C |
| 165 | T3 | T3B |
| 180 | T3 | T3A |
| 200 | T3 | T3 |
| 215 | T2 | T2D |
| 230 | T2 | T2C |
| 260 | T2 | T2B |
| 280 | T2 | T2A |
| 300 | T2 | T2 |
| 450 | T1 | T1 |

① *"T" rating classifications list the ignition point of the hazardous atmosphere. For safe usage, fixture "T" ratings must be below that of the surrounding atmosphere.*

**NEC/CEC STANDARDS** operate across the U.S., Canada, the Middle East and various locations across the globe. NEC code is reviewed and updated in three year cycles. The CEC code is updated regularly through their 9,000 members and its active involvement with the IEC.

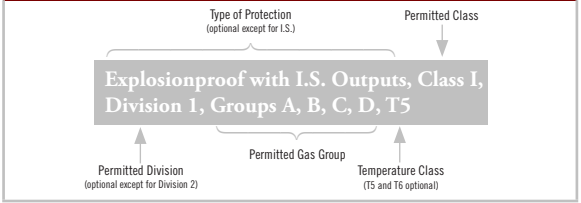
NEC/CEC

## NATIONAL ELECTRICAL CODE/CANADIAN ELECTRICAL CODE (NEC/CEC)

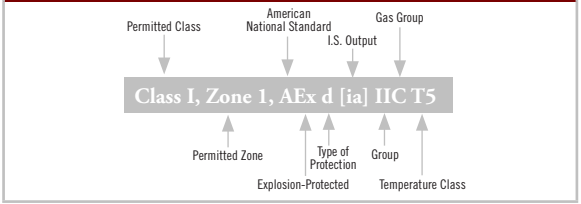
The NEC has been the standard for electrical wiring and equipment installations in the United States since 1897. The CEC began in 1927 and provides the electrical product standards for Canada. NEC/CEC Code categorizes hazardous locations into Classes, Divisions and Groups. Classes I, II and III define hazards into gases and vapors, combustible dusts, and fibers and flyings, respectively. Divisions further break down the Classes by the amount of the exposure to the combustible. Division 1 establishes locations where hazards are present during regular operations. Division 2 locations are where hazards are encountered only during an abnormal situation, such as equipment failure or a spill. Gas groups classify the explosive nature of the gas, vapor or dust when ignited.

**Product Marking Charts** ②

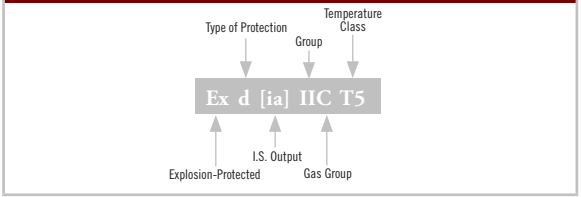
### US (NEC 500) and CA (CEC Annex J)



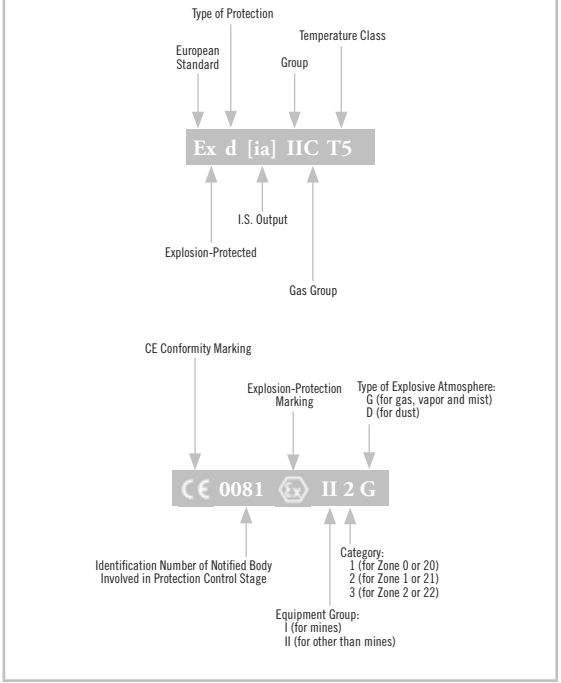

### US (NEC 505)




### IEC and CA (CEC Section 18)



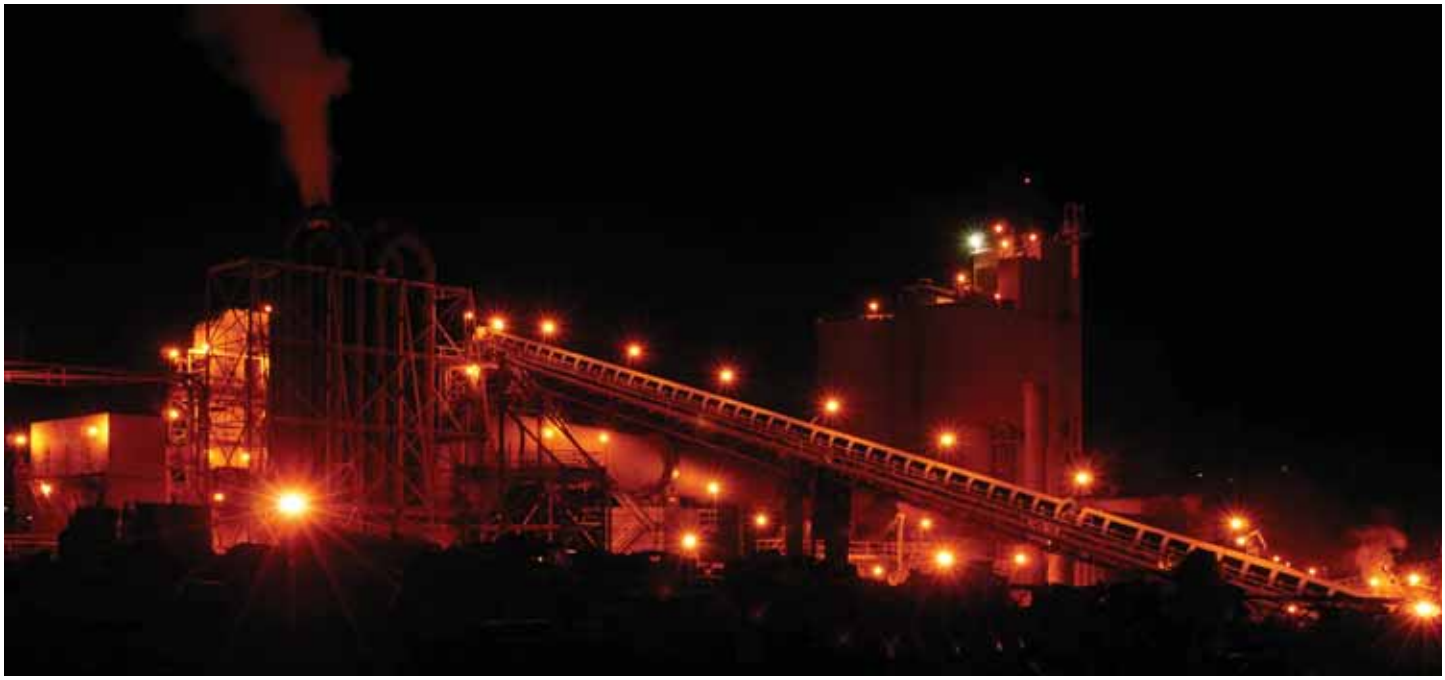

### EU (Directive 94/9/EC) - ATEX




*Certifications and performance markings are displayed on all electrical equipment to ensure proper conformity to each hazardous location's requirements.*

*Appleton offers products approved for ATEX, IEC, NEC and CEC locations.*

*② Ambient temperature ranges other than standard -20 °C ≤ Ta ≤ +40 °C (-4 °F ≤ Ta ≤ +104 °F ) must be marked.*



## LIGHTING

### WHENEVER AND WHEREVER YOU NEED US

From the loading bays to the refining rooms, facilities across the world rely on lighting fixtures to safely illuminate the narrow catwalks, enclosed production floors and 24 hour docks that connect its four corners. Besides providing light, these critical fixtures must overcome the inherent challenges and threats of hazardous environments.

Appleton's line of enclosed and gasketed fixtures are the perfect choice for use in Division and Zone locations. Our vented reflectors result in cooler operation and increased lumen output. Appleton's restricted breathing fixtures are secure from water, gases and vapors. Our fixtures are corrosion-resistant with stainless steel hardware and epoxy powder coated copperfree aluminum. Even a feature like our "safety" high hinge provides additional protection against accidental ballast housing disengagement while your maintenance team is installing or servicing them.

Our line of flameproof and explosionproof fixtures are available for use in Division and Zone 1 and 2 locations. With intelligent engineering, they are manufactured to prevent internal explosions from reaching the vapors surrounding the fixture by cooling the hot gases through precise flamepaths. Appleton's explosionproof fixtures also address safety outside of the lamp with innovative features like proprietary wireless mounting hoods that allow for quicker and safer "hot" installation or servicing.

From our fluorescent fixtures to our high durability high pressure sodium luminaires with long lamp life and low "T" ratings, Appleton's entire line of lighting products deliver unparalleled protection across your facility. Our proprietary coatings keep corrosion at bay while our exclusive reflector technology and class leading photometrics deliver the maximum amount of light possible. Appleton also boasts more fixtures for use in high ambient applications and the lowest "T" ratings in the industry for improved performance and wider applications.

We relentlessly test our fixtures to ensure they meet or exceed their rated capabilities even in the most extreme conditions. That is why facility engineers around the world have turned to Appleton for lighting products that improve efficiencies while protecting their workers.

ATEX/IECEx/NEC/CEC

LED LIGHTING

## MERCMASTER™ LED SERIES

LED lighting has come to hazardous locations, and Appleton's Mercmaster LED is setting the industry standard for safety, performance and efficiency. In day-to-day use, installation and maintenance, the Mercmaster LED's superior design simply shines. It is not just about efficiency. LED lighting delivers real productivity benefits.

- Compact lightweight low profile design, well suited for low mounting heights
- Multiple mounting hoods accommodate any application requirement
- Fixture housing and mounting hoods are copperfree cast aluminum for better heat dissipation. All exposed hardware is stainless steel
- Rounded edges throughout the heatsink reduce risk of injury during installation and maintenance
- Hinge design increases safety during installation and servicing, assuring 360° compression on ballast housing gasket
- Silicone rubber gasket seals out moisture, dirt and dust; stays flexible and withstands high temperatures
- Polycarbonate lens is threaded for easy removal and secure attachment
- Epoxy powder coat finish and stainless steel latch assembly are corrosion resistant
- Dark Sky Compliant: meets specifications for low glare, focused beam and avoidance of overlighting

ATEX/IECEx/NEC/CEC

LED LIGHTING

## AREAMASTER™ LED SERIES

Appleton's Areamaster LED is versatile with a universal design for flood or high bay mounting, making it ideal for replacing virtually any HID, fluorescent or incandescent fixture. Rated at 127 Watts, it delivers an optimal 13,000+ lumens of cool white light. Moreover, its highly directional light does not require the use of external optics, resulting in system efficiencies as high as 80 percent.

- Compact in size, attractively styled contemporary design, rugged and dependable
- Easy to install and service
- One piece housing
- One piece lens hinged cover. Secured by four M6 captive stainless steel slotted hex head bolts
- Thermal shock and impact resistant glass lens
- Heavy duty, high temperature, single piece, formed silicone rubber gasket
- Universal design for flood and high bay mounting; vibration rated in all configurations
- Dark Sky Compliant: meets specifications for low glare, focused beam and avoidance of overlighting

ATEX/IECEx

LED LIGHTING

## FDBAES SERIES

Appleton's ATX FDBAES Series LED provides emergency lighting in hazardous locations. These units are entirely self-contained in a flameproof enclosure, and include a built in automatic self-test system. Switched, unswitched, addressable switched and addressable unswitched versions are available

- Provides adequate lighting and/or visual indication of access on exit routes during an evacuation in a hazardous environment
- Can be installed in hazardous areas designated as Zone 1-2 and 21-22
- Padlockable switch is available on switched models which individually cuts off power supply and remote control
- All versions:
  - Can be maintained in hazardous areas as an internal switch cuts off battery supply automatically once the cover is unscrewed and opened
  - Charge indicator with 4 nos yellow LEDs (lifetime over 10 years)
  - Operates in any position
  - Automatic built-in self-test system (SATI) with memorization of tests indicated by LEDs

ATEX/IECEx

LED LIGHTING

## FNES SERIES

Appleton's ATX FNES Series LED provides emergency lighting in hazardous locations and can also be equipped with a variety of labels to indicate exit routes. These units are entirely self-contained, and include a built in automatic self-test system.

- Provides adequate lighting and/or visual indication of access and exit routes during an evacuation in a hazardous environment
- Can be installed in hazardous areas designated as Zone 2 and 21-22
- Non-maintained
- Operates in any position
- Charge indicator by green LED (lifetime over 10 years)
- Automatic built in self-test system (SATI) with memorization of tests indicated by LEDs
- Using a microprocessor and an internal clock, the unit will carry out automatic tests
- Remote control unit allows the fixture to be controlled and checked without switching the mains off
- The remote control unit installed in a safe area or inside a flameproof box allows manual ignition of all the units (maximum 300 units) for visual inspection of their operation

ATEX/IECEx

## FLUORESCENT LIGHTING

### FE™ SERIES

Appleton's ATX increased safety FE Series of fluorescent fixtures go a step beyond with added protection for everyday locations, as well as robust environments where corrosive atmospheres, severe weather and detergents prevail. These fluorescent fixtures are protected against the elements with an elastomer gasket that ensures a consistent, durable seal that is hosedown ready. The corrosion-resistant lens, body and hardware mean the FE Series fluorescent luminaires will endure the years. These fixtures offer a host of exclusive safety features that make servicing safe and easy.

- Hinged polycarbonate diffuser and multi-parabolic reflector for one handed maintenance
- Quick connector ballasts and IP 2X terminal shields
- Opening reflector activates power cut off switch to unit for safe access to internal controls
- If one tube fails, the other tubes remain lit
- Elastomer gasket and multiple cover fasteners
- Pre-impregnated fiberglass reinforced polyester body
- Optional dimmable switch alternates which tubes are lit for different lighting patterns and brightness

NEC/CEC

## FLUORESCENT LIGHTING

### FV™ SERIES

The FV Series places cost effective fluorescent lighting in Class I, Division 2 marine and other robust locations. Offering unprecedented safety and durability, the FV Series lens is rugged enough to endure hose downs and offers single handed lamp and internal control access. The internal reflector is hinged for easy access to the control gear. The lens automatically engages a unit cut off switch when opened. The FV Series stays cool with a T6 rating while operating with a remarkable 94% light producing efficiency.

- Nearly indestructible polycarbonate lens cover
- Automatic unit cut off switch
- Corrosion-resistant fiberglass reinforced polyester housing
- Single actuator enables one handed lens and reflector access
- Actuator can be removed for tamper-proof operation
- Multiple latch design and elastomer gasket provide a positive watertight seal

NEC/CEC

FLUORESCENT LIGHTING

## MERCMASTER™ III LOW PROFILE

The Mercmaster III Low Profile enclosed and gasketed fixture offers superior lighting in a small package for Class I, Division 2/Zone 2 locations. It is the perfect choice for low clearance, low ceiling heights or where fixture weights must be minimized. The PLT fluorescent lamps provide superior lighting efficiencies and economies. Its electronic ballast allows for flicker free, instant-on capabilities for zero blackout during momentary power dips. The Mercmaster III Low Profile is also suited for non-hazardous areas that are exposed to severe weather, excessive moisture, dirt and dust.

- Maintains high output lighting in ambient temperatures ranging from -5°C to +54°C (+23°F to +130°F)
- Excellent color rendering (82 CRI) for food processing and inspection facilities
- Compact profile is perfect for low clearance locations
- Baked epoxy powder coat finish and stainless steel hardware for the ultimate corrosion resistance
- Captive clamping bolt and high safety hinge provide for safe, easy maintenance
- Stainless steel threaded inserts prevent galling and freezing of reflectors, guards and other bolt-on attachments

NEC/CEC

FLUORESCENT LIGHTING

## EFU FLUORESCENT SERIES

These factory sealed, explosionproof and dust-ignitionproof fluorescent light fixtures are suited for any location where ignitable dust, fumes, gases, paint residue, paint powder or corrosive atmospheres are present, including inside a paint spray booth. The EFU's Class P ballasts feature a thermally-activated protective device that guards against excessive voltage, internal ballast short circuiting, inadequate lamp maintenance and improper fixture applications.

- Non-sparking exterior surfaces for safer operation
- Instant Start and Rapid Start options
- Available cold weather ballasts for -18°C (0°F) starting
- Heat and impact resistant glass tubes
- Reflectors are easily removed for replacement or cleaning
- Explosionproof caps can easily be removed for quick wiring and relamping

ATEX/IECEx/NEC/CEC

HID LIGHTING

## AREAMASTER™

Appleton's rugged, enclosed and gasketed, Areamaster floodlights are rated for Class I, Division 2/ Zone 2 and severe non-hazardous environments. Areamasters resist corrosion with a one piece, pressure cast, copperfree aluminum housing that features an architectural bronze polyester finish. Its compound parabolic and double segment design, with an Alzak finished aluminum reflector, provides optimum light distribution and efficiency.

- Compact size fits more locations
- Guard and reflector attached externally for quick and safe maintenance
- Thermal shock and impact resistant glass
- Plug-in terminal block
- Available for use in conditions defined as Class I, Zone 2 AEx nR IIC utilizing restricted breathing as the method of protection

ATEX/IECEx

HID LIGHTING

## HBDC SERIES CYLINDRICAL BULKHEAD LIGHTS

Realize cost efficiencies and safety in Zone 1-2 and 21-22 locations with flameproof bulkhead fixtures. Appleton's ATX HBDC Series produces industry leading photometrics for more light in critical locations and feature high temperature internal wiring for extended durability. Their housing design allows them to be mounted out of the way for safe lighting without added obstacles.

- Hardened lamp glass
- Available with integrated lug mounts
- Corrosion-resistant housings, end caps and cover
- Guard and reflector attached externally for quick and safe maintenance
- Threaded access cover with O-ring seal
- Plug-in terminal block

ATEX/IECEx

HID LIGHTING

## PB SERIES FLOODLIGHTS

Keep large areas well lit and safe with Appleton's ATX series of explosionproof and enclosed and gasketed floodlight products. Our optional mounting, efficient light patterns and various wattages enable you to put the light you need, wherever you need it. Floodlights are available for locations as cold as -40°C (-40°F) and as high as +55°C (+131°F). We also use a ferromagnetic ballast for optimal energy efficiency, reduced power loss, higher light output and increased lamp service life.

- Hinged mounts and pivoting lenses for easier mounting and repair
- Internal controls are insulated by Class H materials for maximum service life
- Corrosion-resistant, lightweight aluminum alloy housings conform to AFNOR French codification
- Self tightening connection terminal blocks
- Operates at any angle
- Safety terminal box allows for safe and straightforward installation
- Adjustable beam angles

IEC

## HID LIGHTING AND COMPACT FLUORESCENT

### NE850 SERIES

Appleton's Nutsteel flameproof NE850 Series of wellglass fixtures are rated Ex d, IIC for Zone 1 and 21 locations. Compact, efficient and lightweight, they offer an IP 66 and can be installed in any harsh environment. Their size makes them perfect for low clearance locations or where fixture weight needs to be considered. Operating temperatures range from -20°C to +55°C (-4°F to +131°F). An emergency version with battery back up is available.

- Shock resistant globe
- Corrosion-resistant fastenings
- REVESTEEL® anticorrosive coated aluminum body and guard
- AISI 304 stainless steel screws and lock washers
- Numerous lamping and mounting options
- 220 V, 60 Hz, 230/240 V, 50 Hz

NEC/CEC

## HID LIGHTING

### MERCMASTER™ III

The Mercmaster III's modular construction allows it to fit a vast range of applications and is suitable for Class I, Division 2/Zone 2; Class II, Division 1 and 2; Class II and other robust environments. Designed to dissipate heat from the ballast components out, Appleton's thermal performance with the Mercmaster III leads the industry. Appleton's heat reducing internal control design results in 18% cooler operation, which increases fixture durability and enables the Mercmaster III to be used in ambient temperatures up to +65°C (+149°F).

- Choice of heat-resistant prismatic glass refractors or globes
- Housing, hoods and guards are copperfree cast aluminum with baked epoxy powder coat finish for superior corrosion-resistance
- "Safety" high hinge and swing away design eases servicing
- Capacitors are non-PCB type and thermally isolated from the ballast
- Mogul base porcelain socket features nickel plated contacts and +200°C (+392°F) welded leads for trouble free operation in high ambient temperature locations

NEC/CEC

## HID LIGHTING

### CODE•MASTER™ 2

The explosionproof Code•Master 2 fixture features Appleton's proprietary technology for maximum safety and reliability in Class I and II locations. Internal components are uniquely arranged for the greatest heat dissipation, which enables extended lamp life and industry leading "T" ratings. Appleton's exclusive wireless mounting hood enables power on fixture installation and removal in hazardous locations.

- Double lead Acme threading allows for flame-tight seals with fewer turns
- Lamp socket and glass globe designed for optimum light distribution and control
- Factory sealed — no external seals are required
- Fixture and mounting hood threads are pretreated with no gall, anti-seize coating
- Porcelain socket and nickel plated phosphor bronze screw shell assures long, trouble free operation in high ambient areas
- Wide variety of mountings and light sources

ATEX/IECEx

## STROBE & BEACON

### IIC BEACONS & STATUS LAMPS

Appleton's ATX series of flameproof lighting fixtures offers visual communication in Zone 1-2 and 21-22 locations. Illuminated three stage indicator banks consist of interchangeable colored modules that can be coupled with two other modules for simultaneous lighting. Beacons are offered up to 15 joules, which maintain a remarkable 70% luminosity after eight million flashes. Various mountings, colors and guards are available.

- High temperature internal wiring
- Polymethacrylate globes are available in red, green, orange and clear
- Corrosion-resistant exteriors
- Operating temperatures range from -40°C to +55°C (-40°F to +131°F)
- Mounting hardware available in either stainless steel or zinc plated steel
- All beacons and status lamps work in any position

NEC/CEC

**STROBE**

## STYLMASTER™

The enclosed and gasketed Stylmaster strobe is suitable for Class I, Division 2/Zone 2 and Class II, Division 1 and 2 locations. The Stylmaster uses more than two flashes and light rotations per second to alert facility personnel of unsafe conditions or other communications that require visual cues.

- Factory installed lenses available in red, amber, blue, green and clear
- Heat and impact resistant globes have smooth, dust resistant exterior
- Minimum operating temperature of -25°C (-13°F)
- Suitable for base up and base down applications

NEC/CEC

**STROBE**

## CODE•MASTER™

Appleton delivers strobe technology in an explosionproof fixture for Class I and Class II locations. The Code•Master strobe utilizes Appleton's proprietary wireless mounting hood attachment for safer maintenance and installation. Fixtures can be unscrewed hot from the mounting hood in hazardous locations.

- Acme double lead, no gall threads speed fixture installation and removal
- Factory sealed — no external seals are required
- Operates in high ambient temperature environments
- Suitable for base up and base down applications

## CONTROLS, ENCLOSURES & PANELBOARDS

### PLACING POWER SAFELY IN YOUR CONTROL

Powering equipment throughout a Division 2, Zone 2 facility requires highly engineered controls, enclosures and panelboards. Appleton's extensive product offerings are manufactured to exceed the demands of facilities all over the globe, including severe weather and chemical environments. They are engineered and designed to keep your machinery and the workers using them safe, now and for years into the future.

Appleton designs, builds and tests their electrical control products to maximize both passive and active safety operation. Passive safety means that your equipment will perform, even under profound stress. Passive safety engineering prevents potential sparks from causing an explosion, provides durable housings that keep corrosion at bay and incorporates devices that function reliably for decades.

We incorporate active safety design into our controls, enclosures and panelboards, as well. Active safety engineering is about designing products that blend into your environment, are user friendly and work reliably. Smooth and accurate switches, high visibility pilot lights and customizable control interfaces all decrease the possibility of user error while increasing production efficiencies.

ATEX/IECEx/NEC/CEC

CONTROLS

## UNICODE 2

The Unicode 2 control station is tri-rated for ATEX, IEC and NEC/CEC compliance allowing for use in virtually every industrial application worldwide. These factory sealed control stations are rated for Zone 1-2 and Class I, Division 2 locations. Available materials include fiberglass reinforced polyester (FRP), polyamide, 316L stainless steel and cast aluminum with a polyester powder coat. The Unicode 2 offers a wide selection of conduit or cable gland entries on both the top and bottom of the box.

- Gasketed for IP 66, NEMA 3, 3R, 4 and 4X ratings
- T35 rail mounted components are held securely in place during operation and can be easily removed for servicing or modifications
- Captive corrosion-resistant stainless steel cover screws

ATEX/IEC/NEC/CEC

CONTROLS

## ACSEW CAST CONTROL PANEL

Combine controls, indicators and meters into one explosionproof control center. The ACSEW is flexible enough to be used in an array of applications with a variety of button, switch and pilot device combinations, including different sizes of meter windows. Gray epoxy powder coat is available to provide a NEMA 4X rating. The internal cavity is kept spacious by an external flange and accepts operators spaced on 2½" centers.

- Factory assembled and wired to specs
- Sand cast copperfree aluminum
- Wall thickness handles a minimum of seven full threads
- All push buttons and selector switches have stainless steel shafts

ATEX/IECEx

CONTROLS

## INCREASED SAFETY CONTROL PANEL

Appleton's ATX series of polyester or 316L stainless steel control panels are available with multiple operator functions including push buttons, selector switches, pilot lights and ammeters. This series comes in a wide variety of sizes and configurations and is offered with removable gland plates.

- Panels can be fitted with horizontal or vertical DIN rails
- Operating temperatures range from -30°C to +55°C (-22°F to +131°F)
- Supplied with identification labels

ATEX/IEC

CONTROLS

## EX d FLAMEPROOF CONTROL STATIONS

Appleton's ATX series of flameproof control stations bring modular design into Zone 1-2 locations. These control stations come in a variety of sizes and hole patterns for different jobs. Controls are available separately for on site assembly of control stations while retaining the flameproof integrity.

- Threaded flameproof joints
- Gray painted, marine grade, aluminum alloy or cast iron boxes
- Available with push buttons, pilot lights and selector switches

IEC

CONTROLS

## NECCS CONTROL STATION

Appleton's Nutsteel NECCS Series of copperfree aluminum control stations come assembled according to design specifications. They are rated for Zone 1-2, Ex d IIB locations. This series is available with pushbuttons, pilot lights, selector switches, emergency stop buttons and can accommodate up to 25 components.

- Supplied with stainless steel hardware
- Supplied with internal mounting plate
- IP 65
- Temperature Class of T5 or T6
- Revesteel® anticorrosive coated aluminum body and cover

NEC/CEC

CONTROLS

## EFDB/EFD/EDS SERIES

Factory sealed EFDB/EFD/EDS Series of control stations are ready for heavy duty applications with a 10 A/600 V rating and dozens of combinations of buttons, pilot lights and selector switches. This series is configurable to match the demands of almost any environment. Enclosed stainless steel helper springs prevent accidental operation of the push button in severe vibration situations. These control stations include stainless steel push button shafts that operate within stainless steel bushings for long lasting, maintenance free usage.

- Malleable iron or aluminum bodies with aluminum covers offer high thermal and arc resistance along with high dielectric strength
- Optional two or three position selector switches with modified operation
- Front operated push buttons are supplied with standard lockout type guards

NEC/CEC

CONTROLS

## INTRAGROUND NONMETALLIC CONTROL STATION SERIES

Appleton's pioneering Intraground Series were the first nonmetallic control stations UL Listed for Class I, Division 1 locations. The thermoplastic polyetherimide box and cover can support 33,000 psi flexural strength and retain perfect integrity after five UL gas burner tests. The cover and box also retain their integrity after being submerged in water for 336 hours and exposed to 720 hours of ultraviolet radiation.

- Nonmetallic construction with embedded grounding grid
- Superior conduit connection strength – UL pull out and bending resistance tests have proven no effect on conduit connections
- UL temperature index ratings as high as +170°C (+338°F)

ATEX/IECEx/NEC/CEC

ENCLOSURES

## FIBERGLASS REINFORCED POLYESTER TERMINAL ENCLOSURES

Appleton's ATX JBEP Series of increased safety enclosures are offered with an IP 66 rating and are available in multiple sizes depending on the number of terminals installed. Their modular design allows for similar sized terminal enclosures to be coupled together for ease of wiring during field installation. Terminal enclosures are ATEX approved for use in Zone 1-2 and 21-22 locations.

- Removable gland plates available
- Cable glands installed per customer requirements
- Carbon impregnated enclosure for static resistance

ATEX/IECEx/NEC/CEC

ENCLOSURES

## 316L STAINLESS STEEL TERMINAL ENCLOSURES

For corrosion-resistance, a clean appearance and flexible application options, Appleton's ATX series of stainless steel increased safety boxes and enclosures are the answer. Boxes are available in a variety of sizes with depths ranging from 95 mm to 300 mm (4 in to 12 in). The boxes come ready to be drilled on site or come pre-drilled from the factory. Doors are reversible and open either up and down or to the left and right. Each box features reversible anti-vibration mounting brackets.

- Vertical and horizontal mounting options
- Available with up to 204 cable entries per box face
- Optional removable padlock device
- Can be custom made to your specifications. Contact our Technical Support group

ATEX/IEC/NEC/CEC

ENCLOSURES

## INCREASED SAFETY JUNCTION BOXES

Junction boxes are available in a wide range of configurations for increased safety applications. Boxes for non-armored and armored cable come in high impact resistant polycarbonate bodies and covers. Appleton's ATX series of junction boxes feature two kinds of terminals: a spur multicore pillar terminal and junction isolated terminals that can be clipped onto a DIN rail.

- Body and cover available in four materials
- Available with identification labels
- Corrosion-resistant

ATEX/IEC/NEC/CEC

ENCLOSURES

## AJBEW SERIES

The AJBEW Series junction box can be used to house control stations, starters, breakers, relays and meters. It can also be used for splicing wire terminals or as a pull box, bus box or custom panel in Class I and II locations. The AJBEW is made from cast copperfree aluminum and can be mounted vertically or horizontally with a wide range of drilled and tapped outlet options.

- Hinges are standard on 300 mm to 300 mm (12" x 12") and larger sizes
- Optional gray epoxy powder coat provides NEMA 4X rating
- Custom drilling and tapping

ATEX/IEC

ENCLOSURES

## FLAMEPROOF CAST JUNCTION BOXES

Appleton's ATX series of flameproof junction boxes can be custom drilled to fit your specific application by our precision machining services. Cable entries can be distributed over all four sides. Wide interior space offers substantial room to work. The IIB flameproof boxes come in gray painted cast iron or steel, marine grade aluminum alloy and stainless steel.

- Inner compression locking nut retains inner seal during inspection of earth continuity
- Available bus bar systems
- Just one clamping ring allows foolproof assembly

NEC/CEC

ENCLOSURES

## GUBB SERIES

Ideal for indoor and outdoor use, the GUBB Series of junction boxes are designed for Class I and II locations containing such gases as butane, gasoline, hexane, naphtha, benzene, lacquer solvent vapors and alcohol. An optional mounting plate can be drilled to accommodate a variety of devices. Dome covers are available for added interior capacity.

- All conduit openings and hubs provide for a minimum of five full threads to meet UL requirements
- Wide selection of sizes and configurations to enclose relays, instruments and other controls
- Manufactured with either high tensile strength malleable iron or copperfree aluminum
- Iron bodies are triple coated with zinc electroplate, chromate and epoxy powder coat
- Aluminum bodies and covers feature an epoxy powder coat
- Available with window in cover

NEC/CEC

ENCLOSURES

## AGUB

These instrument and meter enclosures are explosionproof and dust-ignitionproof. They protect electrical devices and provide wire pulling locations in hazardous atmospheres. Large cover openings allow for easy access to wires and can be fitted with window covers for the safe display of gauges or indicators.

- Copperfree aluminum housings
- Standard corrosion-resistant, gray epoxy powder coat
- Cast mounting feet

NEC/CEC

ENCLOSURES

## GR BOXES

These explosionproof conduit outlet boxes are offered in 10 hub arrangements and meet a wide range of rated area requirements. Furnished with an internal ground screw and mounting hubs for terminal strip, the GR Series is manufactured from either malleable iron for high tensile strength and ductility or aluminum for lighter weight. Both box materials feature high corrosion-resistance and accurately tapped, tapered hub threads for secure joints and ground continuity.

- Standard O-rings provide a raintight fit for NEMA 3, 4 ratings
- Smooth, rounded integral bushing protects conductor insulation
- Function as sealing fittings when used with sealing covers

ATEX/IEC

STARTERS

## MOTOR STARTERS

Appleton's ATX series of Ex d flameproof motor starters and contactors are compact but rugged for long lasting use in hazardous environments. These motor starters are available in three electrical configurations: DOL (Direct on Line), YD Star-delta and reversing with breaking capacity from .37 to 75 KW up to 690 volts. The IP 66 rated enclosure comes in a variety of sizes dependent upon the size of starter and the option chosen. Ex d flameproof motor starters are approved for use in Zone 1-2 and 21-22 locations.

- Marine IP 66 rated cast aluminum with powder polyester finish comes in three sizes depending upon start/contactor size
- Available from .37 to 75 KW up to 690 volts
- Motor starters can be configured for various controls, such as pushbuttons, selector switches and pilot lights
- All exterior hardware is 316 stainless steel
- Supplied complete with protection breaker
- Various cable entry sizes can be drilled and tapped

IEC

STARTERS

## NEPPS AND NEPPM MOTOR STARTERS

Appleton's Nutsteel NEPPS and NEPPM Series are designed for use in Ex d IIB, Zone 1-2 locations. The NEPPS Series are designed for DOL (Direct on Line), starters for motors up to 0.75 HP at 220 V (1-phase), 1 HP at 220 V (3-phase) and 2 HP at 380 V (3-phase). The NEPPM Series is designed for DOL starters up to 60 HP at 220 V, 100 HP at 380 V or 125 HP at 440 V.

- Fully assembled with the following components:
  - Contactor
  - Circuit breaker
  - Time delay relay, adjustment 6-60 seconds
  - "On" - "Off" button
  - Indicator light
  - Overload relay
  - External grounding terminal
- The time relay assures automatic shutdown in 60 seconds, if the operator does not press the reset button
- Revesteel® anticorrosive coated copperfree aluminum body and cover
- Cover fixed with captive screws. All hardware is made of AISI 304 stainless steel

NEC/CEC

STARTERS

## AEB SERIES

Suited for hazardous and wet environments, the AEB Series delivers Appleton's explosionproof, dust-ignitionproof and watertight engineering capabilities into bolted, full voltage motor starter configurations. These starters offer the most robust power handling features and capacity available for combination and non-combination needs. The AEB is formed from copperfree aluminum with stainless steel hardware and mounts components on a galvanized steel removable pan.

- 65,000 AIC. Highest interrupt rated enclosure in the industry
- Precision machined flame path between box and cover
- Four point control terminal block, NEMA 1B with wire markers
- Corrosion-resistant gray epoxy powder coat inside and out
- Breaker handles on combination starters can be locked in the "On" or "Off" position
- Stainless steel hinges and cover bolts
- Designed to accept Cutler-Hammer, GE or Square D starters (consult local sales representative for other options)

NEC/CEC

STARTERS

## AE THREADED SERIES

Appleton's AE Series of starters can be designed to fit any application in your facility. The AE Series delivers Appleton's explosionproof and dust-ignitionproof protection with a watertight sealing into bolted, full voltage motor starter configurations. These starters offer the most robust power handling features and capacity available for combination and non-combination configuration needs. The AE is formed from copperfree aluminum with stainless steel hardware and mounts components on a galvanized steel removable pan. The AE Series are threaded type, full voltage starters that provide the ability to manually disconnect power while offering under voltage, circuit and motor running protection. The copperfree aluminum housing is NEMA 4X rated and features internal Acme screw type threads that protect against damage, galling and contaminants. AE enclosures fit Cutler-Hammer, GE or Square D starters.

- Enclosures furnished with or without components
- Drilled and tapped outlets available in various sizes
- Breaker handles on combination starters can be locked in the "On" or "Off" position (combination starters only)
- Reset operator features stainless steel shaft
- Outlets provided for remote control wiring
- Circuit breaker mounted outside the center housing for easy accessibility
- Spacious housing for installation and wiring of additional accessories
- 65,000 AIC. Highest interrupt rated enclosure in the industry
- Precision machined flame path between box and cover
- Four point control terminal block, NEMA 1B with wire markers
- Corrosion-resistant gray epoxy powder coat inside and out

ATEX/IEC

## CIRCUIT BREAKERS

### FLAMEPROOF CIRCUIT BREAKERS

Appleton's ATX series of Ex d flameproof load and motor circuit breakers provide short circuit protection and control of your electrical equipment and motors. These three-phase breakers are rated up to 690 volt and up to 125 Amp. The IP 66 marine grade enclosure is rated for rugged and hazardous environments. These breakers also serve as a disconnect means for lighting, heating, motors and other equipment. They are ATEX approved for use in Zone 1-2 and 21-22 locations.

- Marine IP 66 rated cast aluminum enclosure with powder polyester finish comes in various dimensions depending upon breaker size
- Available from 25 to 125 Amp up to 690 volts
- Fast electromagnetic trip, adjustable thermal overload and phase failure sensitive
- Can be configured for various controls such as pushbuttons, selector switches and pilot lights
- All exterior hardware is 316 stainless steel
- Various cable entry sizes drilled and tapped
- Easy access with gasketed hinged door cover

IEC

## CIRCUIT BREAKERS

### NEDJ CIRCUIT BREAKERS

Appleton's Nutsteel NEDJ Series of Ex d circuit breakers are available with an optional GFI. The 1-pole, 2-pole and 3-pole thermomagnetic circuit breaker meets IEC 60947-2 standard. It is suitable for control and protection of electrical circuits against overloads and short circuits in Zone 1-2, Ex d IIB locations.

- Circuit breakers are installed on DIN rails, on a steel electroplated mounting plate
- Circuit breakers available from 1 Amp up to 63 Amps
- Terminals for connecting 25 $mm^2$ (0.0387 $in^2$) cables for circuit breakers up to 25 Amp; and 35 $mm^2$ (0.0542 $in^2$) cables for circuit breakers from 35 Amp to 63 Amp
- Revesteel® anticorrosive coated copperfree aluminum body and cover
- Cover fixed with captive screws. All hardware is made of AISI 304 stainless steel

NEC/CEC

## CIRCUIT BREAKERS

### AE SERIES

The AE Series of circuit breaker enclosures are explosionproof, dust-ignitionproof and watertight. Precisely engineered flamepaths are machined between the box and the cover. Sand cast from copperfree aluminum, the box has been designed for maximum interior space and features stainless steel mounts, hardware and handle.

- Breaker handle can be locked in “On” or “Off” position
- Plugged outlets on top and bottom for breather and drain
- Easy mounting
- Wide range of drilled and tapped outlets
- Corrosion-resistant, non-sparking copperfree aluminum with two coats of epoxy powder coat finish
- Interior components are removable as an assembly to make wire pulling easier
- Designed to accept Cutler-Hammer, GE or Square D breakers
- Stainless steel captive Quad-Lead® cover bolts (disengaged in 1½ turns)

NEC/CEC

## CIRCUIT BREAKERS

### EB SERIES

Protect equipment and personnel from damaging power spikes with the EB Series of circuit breakers. Explosionproof for Class I, Division 1 locations, these thermal magnetic circuit breakers provide overcurrent, short circuit protection and safe disconnection. The EB Series is easy to operate with positive operating breaker handles that self locate to prevent damage, if the door is closed without being aligned with the breaker toggle position. Operating stops limit handle travel.

- Breaker handle can be locked in “On” or “Off” position
- Easy mounting
- Wide range of drilled and tapped outlets
- Breaker is trip free of handle
- Wide range of drilled and tapped outlets
- Corrosion-resistant, non-sparking copperfree aluminum with two coats of epoxy powder coat finish
- Interior components are removable as an assembly to make wire pulling easier

ATEX/IECEx/NEC/CEC

PANELBOARDS

## POWERPLEX 304 STAINLESS STEEL PANELBOARD

Appleton's PowerPlex™ panelboard delivers component level protection that increases hazardous location safety and flexibility while greatly reducing and simplifying maintenance. It transfers the flamepath from the panelboard enclosure to individual circuit breaker housings. Its module design offers the convenience of field replaceable off the shelf breakers. Standard panelboards are cCSAus certified and UL Recognized. Select models are ATEX/IECEx rated. PowerPlex panelboards are most commonly used for lighting, power, heat tracing, electrical distribution and control, MOV (motorized operated valve), temporary power and other electrical equipment.

- Field replaceable, standard North American Cutler-Hammer F-Frame or QC Series circuit breakers
- Lightweight design simplifies installation
- Supplied with standard hard drawn, tin plated copper bus bar allows more wiring space
- Easy access allows for quick, safe and simpler maintenance
- GFI version, 5mA and 30mA, single pole, 40 Amp maximum
- Standard supply with internal actuation. Choice of window or self-aligning external actuation
- Modular design and flexible mounting footprint provide almost endless breaker configurations
- Optional heaters for extreme cold weather conditions and specially calibrated breakers for higher ambient

ATEX/IEC

PANELBOARDS

## INCREASED SAFETY PANELBOARDS

Appleton's ATX series of increased safety distribution panels are available in IP 66 rated fiberglass reinforced polyester (FRP) or 316L stainless steel and come in multiple sizes depending on the number of circuits required. Modularity enables coupling together, allowing for additional circuits and the capability to add main circuit protection. Distribution panels are ATEX approved for use in locations classified as Zone 1-2 and 21-22 locations.

- Cover mounted, oversized lockable knob enables external operation of main and branch breakers
- Modular designs come in standard sizes and can be interconnected for additional breakers and main breakers
- Single, 2-, 3-, 4-pole and earth protection (RCD) breakers available up to 690 volts
- Auxiliary contacts available

IEC

PANELBOARDS

## NEPAC DISTRIBUTION, POWER AND PROTECTION PANEL

Appleton's Nutsteel NEPAC Series of Ex d IIB panelboards come fully assembled with circuit breakers and copper bus bar up to 150 Amp interconnected to the internal wiring. These explosionproof panels are designed for powering, distribution and protection of electrical circuits in Zone 1-2 locations.

- 2-pole or 3-pole circuit breaker up to 125 Amp, IEC 60947-2 standard, breaking capacity: 20 kA at 220/240 V, 10 kA at 400/415 V, 6 kA at 440 V
- 1-pole or 2-pole circuit breakers from 6 to 32 Amp, IEC 60947-2 standard, breaking capacity: 10 kA at 220/240 V (1-pole), 20 kA at 220/240 V (2-pole), 1 OkA at 400/415 V (2-pole), 6 kA at 440 Vac (2-pole)
- Revesteel® anticorrosive coated aluminum body and cover
- Cover fixed with captive screws. All hardware is made of AISI 304 stainless steel

NEC/CEC

## PANELBOARDS

### ALPN SERIES

Compact ALPN panelboards fit into many locations throughout your facility while featuring a spacious compartment for easy wiring and installation. The explosionproof and waterproof ALPN provides a central location for a controlled switching system of large quantities of branch circuits for lighting, heating, small motors and other similar electrical equipment in hazardous environments.

- Copper bus bars and Quad-Lead® stainless steel cover bolts are standard
- Padlockable breaker operators
- NEMA 4X rated
- 100 or 225 Amp main lug

NEC/CEC

## PANELBOARDS

### XP SERIES

The XP Series of pre-wired circuit breaker panelboards protects and controls lighting or heat trace circuits. The XP is both explosionproof and watertight for indoor or outdoor use. The panelboard and top junction box are factory sealed, eliminating the need for labor intensive field wiring and sealing fittings. Exclusive rotary slide circuit breaker operators align with breakers in the “On” or “Off” position when cover is being closed.

- Lockable breakers will not prevent tripping
- Removable hinged cover for easier wiring
- Furnished with bolt-on breakers
- Keyhole mounting lugs simplify mounting

PLUGS & RECEPTACLES

## MAKING CONNECTIONS WHERE YOU NEED THEM

Within the world of hazardous environments, power hungry portable equipment requires safe, secure and reliable access to power. That's why Appleton's broad line of plugs and receptacles are designed to eliminate the possibilities of sparks, arcs and accidental disconnections. We allow you to connect to the power you need safely, when you need it, over and over again.

With a broad range of power capacities, intermateability with other manufacturers and a variety of finish options, Appleton offers plugs and receptacles for use throughout your entire facility. But, most importantly, Appleton's product range is built upon our determination to keep facilities safe. That is why we have gone beyond the NEMA 3X industry standard rating and developed watertight, explosionproof receptacles that offer NEMA 4X ratings. Our plug designs feature double arc proof chambers and color coded housings that eliminate the possibility of connecting plugs into incorrect voltage receptacles. Our receptacles prevent arcing in hazardous environments with interlocks that guard against accidental disconnection while power is still being supplied.

ATEX/IECEx

PLUGS & RECEPTACLES

## INCREASED SAFETY POWER SOCKETS AND PLUGS

Appleton's ATX series of sockets and plugs incorporates added safety features that ensure each plug insertion and removal does not disturb the explosive atmospheres of Zone 1-2 locations. Available with a three-pole or four-pole flameproof cut-out switch with auxiliary early break contact. Plugs lock when the power is on. Switch handle can be padlocked in the "Off" position. Plug can only be inserted or removed when the switch is in the "Open" (power off) position.

- Flameproof cylindrical spigot joint
- Padlocking cover and handle configurations
- Wide selection of voltages and applications

ATEX/IECEx

PLUGS & RECEPTACLES

## EXTRA LOW VOLTAGE 16 AMP

Appleton's ATX series of 16 Amp extra low voltage sockets and plugs deliver increased protection to industrial environments where durable and rugged equipment is needed. The polycarbonate socket and polyamide cover offer impact and corrosion-resistance where the elements, gases or detergents erode and deteriorate more commonly used materials.

- Color coded by voltage
- Double acting safety device ensures the total disconnection of power when the plug is removed
- Automatically disconnects each phase in a flameproof chamber

ATEX/IEC

PLUGS & RECEPTACLES

## FLAMEPROOF POWER SOCKETS AND PLUGS

Appleton's ATX series of power sockets and plugs guards against arcing with locking receptacles and flameproof disconnection chambers. Plugs cannot be removed with the power on. Disconnections are completed within single or dual flameproof chambers before the plug is removed from the socket. Aluminum alloy flameproof plugs can be used with IEC 60309-2 industrial pin sockets outside hazardous environments. Heavy duty 80 Amp and 125 Amp models offer a cast iron wall mounted socket that is fitted with a load break isolating switch.

- Color coded by voltage
- Available padlockable covers and handles

NEC/CEC

PLUGS & RECEPTACLES

## POWERTITE® SERIES

Appleton's Powertite Series of plugs and receptacles delivers power in hazardous conditions with rugged construction that provides a watertight, explosionproof or dust-ignitionproof connection. This workhorse of the Appleton plugs and receptacles line is made from non-corrosive, copperfree aluminum and features a NEMA 4X rating. Powertite plugs and receptacles are easily adapted to reverse service in the field through a simple screw lock that connects the plug housing and interior.

- Available in 30, 60, 100, 200 and 400 Amp capacities
- Floating type plug terminal self-aligns to receptacle contacts
- Two grounding styles
- Arc snuffing chamber
- Special polarization available to prevent plug insertion in a receptacle wired for different voltages

NEC/CEC

PLUGS & RECEPTACLES

## EBR SERIES

EBR receptacles feature a circuit breaker and an externally mounted switching mechanism. The EBR mechanically locks the plug in the receptacle when the circuit breaker is in the "On" position. This prevents accidental disconnection and protects against short circuit and thermal time delay overload. Cover mounted components leave the entire enclosure space free for pulling of line conductors and wiring.

- Breaker handle can be locked in the "On" or "Off" position
- ¾" threaded openings in the top and bottom for optional drain and breather
- Receptacle is prewired to the load side of breaker

NEC/CEC

PLUGS & RECEPTACLES

## U-LINE®

The U-Line Series is a robust, explosionproof and dust-ignitionproof plug and receptacle. A neoprene gasket seals out dust, vapors, dirt and moisture while the plug is engaged. Plugs are longer and have finger grips for easier plug insertion and withdrawal. U-Line plugs also feature a heavy duty cable grip that exceeds UL 150 lb pull out test and engages with an audible click, so that the operator knows the connection has been made.

- Plug mates with competitive receptacles
- Grounding through extra pole and shell for added safety
- Brass contacts feature a unique design that exerts constant pressure along entire contact surface for a superior power connection
- Rated 20 Amp, 125 Vac

NEC/CEC

PLUGS & RECEPTACLES

## FSQC

Interlocked receptacles offer NEMA 4X corrosion resistance and superior electrical performance in a highly compact FSQC form factor. Durable and safe receptacles for retrofit or to meet existing specifications for expansion projects offer more capabilities, such as auxiliary contacts for signaling your process control system when a plug is energized or de-energized. The FSQC provides best in class safety with Appleton's interlocking plug system, arc quenching and containment features, special polarization option, and suitability for Class I, Division 1 and 2, Group B locations.

- Supplied as standard with both spring door cover for convenient weather resistance (NEMA 3, 3R) and a screw-on cover for NEMA 4X applications.
- Interlocked disconnect switch ensures that the plug cannot be removed or the access cover opened, while under load.
- UL Listed for use with Appleton's innovative Powertite ACP plugs and UL Classified for use with competitors' plugs.

## CABLE GLANDS, CONNECTORS & FITTINGS

### DISTRIBUTING POWER TO WHERE YOU NEED IT

Running cable and conduit throughout Division 2, Zone 2 facilities demands a wide range of products that meet your needs for both today and tomorrow. Whether it is designing a new facility, adding production capacity to an existing plant, or reconfiguring current equipment needs, Appleton has cable glands, conduit connectors and fitting products that help you run electrical power to where it's needed.

Appleton offers the most expansive and complete product line of cable glands, conduit connectors and fitting products in the industry. There is not a cable or conduit in the world that cannot be terminated with an Appleton product. We manufacture alternative designs for specialty applications and customer preferences. Appleton offers products constructed of standard brass, stainless steel, cast iron or aluminum. Additionally, brass cable glands can be nickel plated for extra corrosion-resistance.

Appleton has also advanced the safety of cable seals with revolutionary designs. Our proprietary seals displace as the gland is tightened, preventing damage to the cable sheathing and eliminating the “cold flow” caused by conventional compressions seals.

ATEX/IEC/NEC/CEC

CABLE GLANDS & CONNECTORS

## T3CDS SERIES

The T3CDS flameproof Ex d and increased safety Ex e brass cable glands come in sizes to fit all types of armored and braided cables. The T3CDS creates a flameproof seal on the cable inner sheath and an environmental seal on the cable outer sheath, while eliminating cable damage and cold flow. The T3CDS is approved for use in locations classified as Zone 1-2 and 21-22.

- Electroless nickel plated brass, standard
- Continuous operating temperature range from -60°C to +130°C (-76°F to +266°F)
- Reversible armored clamping cone and bi-directional clamping ring accommodates SWA cables, SWB cables, STA cables and wire braid

ATEX/IEC/NEC/CEC

CABLE GLANDS & CONNECTORS

## PX2KX SERIES

The PX2KX Series of brass cable connectors provides mechanical retention and electrical continuity for unarmored cables. The PX2KX Series is also suited for robust environments with an internal sealing ring that prevents the ingress of dust and moisture. Cable inner cores are sealed with a flameproof compound to retain the integrity of electrical systems in hazardous environments.

- Electroless nickel plated brass, standard
- Comprehensive range of sizes and rating approvals
- Continuous operating temperatures range from -20°C to +100°C (-4°F to +212°F)
- Additional certifications include CSA, GOST and Marine

ATEX/IEC/NEC/CEC

CABLE GLANDS & CONNECTORS

## TRAY CABLE CONNECTORS

Appleton offers a broad line of tri-rated tray cable connectors for use with TC, ITC, PLTC and other types of tray cable. The unique compensating displacement seal provides ingress protection to NEMA 4X and IP 68. Available in aluminum, stainless steel and nickel plated brass, Appleton tray cable connectors meet the exacting demands of highly caustic or harsh environments, such as food processing, petrochemical, wastewater treatment, pulp and paper or chemical manufacturing facilities

- Continuous operating temperature range of -60°C to +110°C (-76°F to +230°F)
- Available in trade sizes ½" through 4"
- Feature a unique seal insert that enables each gland size to terminate the widest cable range available in a single hub size
- Jacket sealing technique: compensating displacement seal, cable outer jacket
- NPT threads standard, metric available as an option. Other options include adaptor/reducer and earth tag
- ½" through 1" connectors ship with aluminum locknut standard. Locknuts for larger sizes must be sourced separately

ATEX/IEC/NEC/CEC

## CABLE GLANDS & CONNECTORS

### TMC2X SERIES

Whether you are installing one connection or one thousand, Appleton TMC2X cable connectors, sealed with RapidEx high-speed gel, offer explosionproof protection every time. RapidEx's unique low-viscosity formula has excellent cavity adaptation and surrounds each individual conductor, leaving no voids.

- Designed for use with MC/MC-HL, corrugated interlocked aluminum/steel armor, or continuously welded armor cables
- Provide a means for terminating jacketed type MC cable, forming a mechanical watertight connection and providing ground continuity for cable armor
- For use on horizontal or vertical runs
- Simplified two piece design
- Utilizes RapidEx high speed liquid resin sealing compound. Sold separately, unit volume dependant upon TMC2X catalog number ordered
- Independent sealing and armor clamping
- True 360º grounding
- Removable cable armor end stop accommodates larger insulated conductors.
- Superior pull out prevention
- Compact slim profile
- Widest cable acceptance range
- Disconnectable design
- Additional integral deluge proof seal for protection in extreme offshore and onshore environments
- Continuous operating temperature -60°C to +85°C (-76°F to +185°F)

IEC

## CABLE GLANDS & CONNECTORS

### A2F SERIES

Unarmored cables can be terminated with the A2F cable gland. The A2F is rated for both flameproof Ex d and increased safety Ex e applications. It is designed for outdoor use providing sealed protection against harsh weather and dust. The A2F is approved for use in locations classified as Zone 1-2 and 21-22.

- Optional integral entry thread seal available
- Electroless nickel plated brass, standard
- Superior sealing with compensating displacement seal
- Suitable for ambient temperatures ranging from -60°C to +130°C (-76°F to +266°F)
- Use indoor and outdoor
- Additional certifications include CSA, GOST and Marine

NEC/CEC

## CABLE GLANDS & CONNECTORS

### TMC2 SERIES

The TMC2 Series of cable connectors can be used in Class I, II and II locations. They are designed for use with following MC/MC-HL, corrugated interlocked aluminum/steel armor, or continuously welded armor cables. The TMC2 connectors provide a means for terminating jacketed type MC cable by forming a mechanical watertight connection and providing ground continuity for cable armor.

- Simplified two piece design with compact slim profile reduces installation time
- Integral O-ring face seal providing NEMA 4X and IP 68
- Independent sealing and armor clamping
- True 360° grounding
- Removable cable armor end stop accommodates larger insulated conductors
- Superior pull out prevention.
- Widest cable acceptance range.
- Additional integral deluge proof seal for protection in extreme offshore and onshore environments.
- Continuous operating temperature -60°C to +110°C (-76°F to +230°F)

NEC/CEC

## CABLE GLANDS & CONNECTORS

### TMCX SERIES

The TMCX explosionproof, dust-ignitionproof connector features a gas block and epoxy seal for use in hazardous environments. It uses an exclusive union sleeve that simplifies installations and guarantees the reusability of connectors when doing repair or replacements. The TMCX offers stainless steel grounding springs for positive ground continuity and excellent pull out resistance, additional integral deluge proof seals for protection in extreme offshore and onshore locations, and the widest cable acceptance range in the industry.

- Available in copperfree aluminum, nickel plated brass or stainless steel
- Watertight NEMA 4X
- True 360° grounding
- Independent sealing and armor clamping
- Compact and slim profile
- Rated for Class I, Class II, Class III, Class I, Zone 1. AEx d IIC, Class I, Zone 1 Ex d IIC
- Cable Type - MCHL - corrugated/interlocked, aluminum/steel armor and continuously welded armor cables (e.g. Teck, CLX)
- Metric options available

ATEX/IEC/NEC/CEC

CONDUIT FITTINGS

## FLEXIBLE COUPLINGS

Difficult bends, tight spaces, vibration and movement that challenge rigid conduit connections can be negotiated with Appleton's explosionproof, dust-ignitionproof, watertight flexible couplings. These bronze or stainless steel couplings are watertight and come with an inner core and insulating liner. Each coupling offers the electrical conductivity of rigid conduit, which negates the need for an external bonding jumper.

- Accurately tapped and tapered threads for tight, rigid joints
- Interior insulating liner protects wires from vibration induced abrasion
- Watertight
- No bonding jumper

NEC/CEC

CONDUIT FITTINGS

## UNY AND UNF UNION UNILETS®

UNY and UNF explosionproof, dust-ignitionproof unions come in expansion and non-expansion versions for joining conduit and affixing conduit to enclosures in hazardous atmospheres. These unions feature a concentric ring interlocked design that creates a slim external casing for use in tight spaces, such as around pumps and motors. Expansion unions' one piece design eliminates the need for disassembly during installation and includes an internal bronze contact grounding spring that ensures a positive ground connection.

- Facilitates modifications and removal of enclosures without turning or removal of conduit
- Expansion unions with telescoping cylinder come in standard and long models (½"-1")
- Unions come in standard sizes (½"-6")
- Expansion unions do not require bonding jumper

NEC/CEC

CONDUIT FITTINGS

## SEALINGS FITTINGS

Maintain the integrity of Class I, Division 1 and 2 locations with Appleton's extensive range of explosionproof, dust-ignitionproof sealing fittings. Vertical and horizontal applications are available in a variety of finishes, including Appleton's triple coat finish of zinc electroplate, chromate and epoxy powder coat. Materials include high strength malleable iron, breakout Grayloy®-iron and corrosion-resistant aluminum. Sealing fittings come in 25% fill for greater wire capacities and 40% fill for more economical installations.

- Sizes range from ½" to 6"
- Access cover for drain seal fittings automatically channels any water that has accumulated above the seal

NEC/CEC

CONDUIT FITTINGS

## CAPPED AND PULLING ELBOWS

Appleton's explosionproof capped and pulling elbows fit a wide range of Class I and II rated locations, endure exposure to corrosion accelerating agents and maintain the integrity of an explosionproof electrical system. The capped elbow models function as sealing fittings when used with sealing covers that also feature pry notches for easy opening. Elbows feature exclusive integral rollers that make pulling easier. The ELBD Series' body and cover feature ground mated surfaces to meet classified location requirements. The ELBY Series' threaded cover openings permit easy access for pulling conductors through hubs.

- Malleable iron bodies with copperfree aluminum covers have high tensile strength and ductility
- Smooth and rounded integral bushings protect conductor insulation
- Accurately engineered flame pathways ground into mating surfaces or threads

NEC/CEC

CONDUIT FITTINGS

## UNILET® CONDUIT OUTLET BODIES

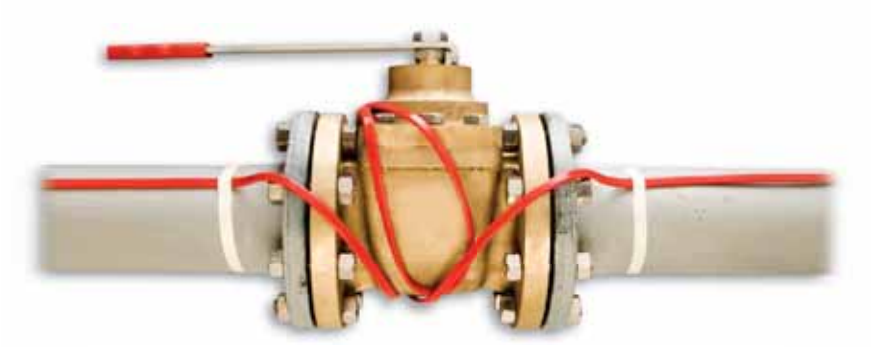
Whether it is new construction, modifications or renovations, Appleton has a conduit outlet body for any place wires are accessed or conduits change direction. The full range of conduit outlet bodies fits every application and footprint available with large interiors for easier maneuvering and accurately tapped, tapered threads for tight rigid joints and excellent ground continuity.

- Select series are interchangeable with other manufacturer conduit bodies
- Smooth, rounded and internal bushings prevent wire damage and easy pulling
- Available in malleable iron, aluminum and Grayloy®-iron for lightweight,watertight, corrosion-resistant and impact-resistant applications
- Stainless steel cover screws
- Form 35 features integral rollers on 1-1/4" to 4" trade sizes to facilitate easier pulling
- Appleton Form-IN-Place integral covers with gasket for FM7, FM8, and FM9 conduit bodies

## HEAT TRACE SYSTEMS

### GLOBAL PROCESS HEATING SOLUTIONS

Whether it is simple freeze protection or complex process maintenance, we can provide a rugged heat trace system that is reliable, efficient and smart.



Nelson Heat Trace heating cables, control and/or monitoring and accessories have been manufactured for every imaginable configuration, location and purpose. Our trouble free, efficient and cost effective systems are used around the globe. Compatible with all brands of heaters, our control systems offer the world's most advanced heat trace system management.

Our experienced team can provide comprehensive guidance on configuring a heat trace system that will optimize the power and cost efficiencies.

ATEX/IEC/NEC/CEC

HEAT TRACE SYSTEMS

## SELF-REGULATING HEATER CABLES

Nelson provides self-regulating heating cables for both freeze protection and process maintenance applications. Our cables are tested and certified to ensure the highest quality even in the harshest of environments. These heater cables can be field cut-to-length and feature multiple power output and voltage ratings.

- 120 thru 277 volt ratings
- 3 thru 20 watts per foot power outputs
- Various configurations available
- Maintenance temperatures up to +121°C (+250°F)
- Lower energy consumption
- Certified for ordinary, Division and Zone hazardous locations

ATEX/IEC/NEC/CEC

HEAT TRACE SYSTEMS

## MINERAL INSULATED HEATERS

Nelson pioneered the use of mineral insulated heating cables for industrial applications that require higher temperatures, extended heater life and efficient power output. With one or two heating elements surrounded by magnesium oxide insulation, maximum exposure temperatures of +593°C (+1,100°F) are possible. Wrapped in a corrosion-resistant alloy 825 sheath, MI heating cables feature excellent chemical resistance, including immunity from harsh chloride stress corrosion. Nelson's unique manufacturing process results in a product that is superior in durability, flexibility, and ease of installation.

- Voltages up to 600 Vac
- Power outputs to 70 watts per foot
- Maintenance temperatures up to +371°C (+700°F)
- Uniform diameters of 4.8 mm and 7.9 mm (.19 in and .31 in)
- Highly flexible, easy to install
- Certified for ordinary, Division and Zone hazardous locations

ATEX/IEC/NEC/CEC

HEAT TRACE SYSTEMS

## TERMINATION KITS

Nelson can provide a wide range of connection systems to meet the global installation requirements for Zone and Division locations. Manufactured using the highest quality materials, these systems are designed to handle the wide temperature ranges and chemical exposures found in today's industrial facilities. Pipe mounted and component based connections meet the stringent demands for heat trace applications.

- Power, splice and tee splice connections
- Above the insulation end terminations for accessibility
- Optional end of circuit indicating lights use LED lamps for reliability and long life
- Complete line of installation accessories
- Certified for ordinary, Division and Zone hazardous locations

NEC/CEC

HEAT TRACE SYSTEMS

## CM-2001 SINGLE POINT CONTROL/MONITORING SYSTEM

For stand alone or networked heat tracing applications, the CM-2001 is Nelson's most versatile control and monitoring system. This microprocessor based controller allows operational personnel to control the line temperature, as well as monitor various conditions such as voltage and current alarms, ground fault leakage and trip conditions, and sensor and communication failures. The CM-2001 is housed in a NEMA 4X enclosure that is certified for ordinary, Division and Zone locations. Simple integration into existing systems is assured with the ability to connect 32 individual systems per node and compatibility to Nelson's CM.COMM software or any Modbus compatible device.

- User selectable control modes
- Easy to read display for quick and clear communications
- Dual RTD inputs with user selectable operations
- Programmable auto test feature
- For use in hazardous and ordinary locations

NEC/CEC

HEAT TRACE SYSTEMS

## CM-332 MULTI-POINT CONTROL/MONITORING SYSTEM

One of the most advanced control and monitoring systems available, the CM-332 is a microprocessor based control and monitoring system based on standard industrial automation products specifically integrated for use with electric heat tracing systems. Nelson's CM-332 system provides temperature and current monitoring for each heat tracing circuit while communicating additional information to operations personnel such as temperature alarms, circuit faults, and sensor failure and communications failures.

- Color touchscreen operator interface
- Compatibility with existing facility automation systems
- Complete temperature monitoring
- Complete heater cable monitoring
- Configurable circuit management alerts
- Configurable system trouble alarms
- Global programming of all control and alarm functions
- Programmable auto test feature
- Worldwide product support
- Certified for ordinary and Division 2 hazardous locations
- Ethernet and Modbus communication options available

## POWER QUALITY SOLUTIONS

### ENSURING CLEAN POWER QUALITY THROUGHOUT YOUR FACILITY

Maintaining clean, continuous power is critical to plant safety and production. Power anomalies, such as voltage irregularities, brownouts and blackouts, create equipment failures that lead to costly downtime and compromised safety. They also affect data corruption and loss in both computers and computer controlled equipment. SolaHD manages power anomalies with a full line of power quality solutions.

SolaHD's power quality solutions are designed to ensure optimum production performance and workplace safety by protecting, converting and supplying power across your facility. SolaHD's transformers smooth the stream of power entering the plant's service inlet. Our surge suppressors, power conditioners, transformers and power supplies clean and support power throughout the branch distribution. SolaHD's line reactors, power supplies and uninterruptible power supplies (UPS) maintain the right voltage level to keep computer equipment and production lines humming along.

SolaHD equipment also meets the needs of industrial locations with encapsulated power supplies and transformers that surpass NEMA standards, along with a range of products rated for flammable atmospheres.

Depend on SolaHD's power quality solutions for controlled, reliable power throughout your plant. We are there, from service entrance to branch panel to point of use, to protect production with power that is always on and ready to be used.

ATEX/IEC/NEC/CEC

POWER QUALITY SOLUTIONS

## SDN™ POWER SUPPLY SERIES

SolaHD's line of SDN power supplies provides industry leading performance across a wide breadth of applications and uses. These power supplies have been engineered for the demands of hazardous locations with a wide operation temperature range, reliable performance, and high tolerance to shock and vibration. The SDN Series meets the European directive with power factor correction. SolaHD is a member of the Open DeviceNet Vendors Association and has designed certain SDN models for DeviceNet applications.

- Select models are ATEX approved
- Adjustable output voltage
- No internal fan, no extra cooling required in any power level
- Auto select 110/230 Vac, 50/60 Hz Input
- Operating temperatures range from -10°C to +60°C (+14°F to +140°F)
- Powers high inrush loads without shutdown or foldback
- Indefinite short circuit, over voltage and over temperature protection
- DC OK signal
- Highly efficient >90% switching capability

ATEX/IEC/NEC/CEC

POWER QUALITY SOLUTIONS

## SCP-X SERIES

The SCP-X Series is an enclosed IP 66/67 and NEMA 4X rated power supply for stand alone operations. This series operates within -40°C to +60°C (-40°F to +140°F) without derating and features quick change connectors for fast hook ups. The SCP-X's metal housing also reduces costs over having separate housings.

- Worldwide approvals
- Universal input
- Can be mounted in any orientation without limitation
- DC OK green LED
- ATEX approved

NEC/CEC

POWER QUALITY SOLUTIONS

## ENCAPSULATED TRANSFORMERS

SolaHD's encapsulated transformers are available in different configurations for hazardous locations and harsh weather environments. Rugged NEMA 3R enclosures are rated for Class I, Division/ Zone 2 locations. SolaHD's low temperature rise designs incorporate a +220°C (+428°F) insulation system for critical applications that mandate extra overload capacity, power conservation and cooler operating temperatures. Their temperature rise of only +80°C or +115°C (+176°F or +239°F) under full nameplate load produces 13% to 21% less power loss than conventional +150°C (+428°F) rise units which results in lower running costs and increased reliability. Fully enclosed, non-ventilated designs (TENV) are also available.

- Available NEMA 12, 4X and stainless steel enclosures
- Weather shields
- UL-3R enclosure for indoor or outdoor service
- Copper lead wire terminations
- Wall mounting brackets (500 lbs maximum)
- Copper wound, open core and coil designs
- Generously sized wiring compartments

NEC/CEC

POWER QUALITY SOLUTIONS

## POWER CONDITIONERS

Protect sensitive equipment from damage, degradation or misoperation with SolaHD's power conditioners and voltage regulators. The MCR line regulates the power going to sensitive equipment while providing superior noise filtering and surge protection. Dirty power is no longer caused by impulses, swells, sags, brownouts and waveform distortions. MCR's hardwired and portable designs increase the actual Mean Time Before Failure (MTBF) with SolaHD's ferroresonant design. Surge protection is tested to ANSI/IEEE C62.41 Class A and B Waveform: <10 V let through typical.

- Noise attenuation: -120 dB common mode, -60 dB transverse mode
- Harmonic filtering
- Hardwired series acts as a step-up or step-down transformer
- Galvanic isolation provides exceptional circuit protection
- Hardwired or portable for point-of-use protection
- 25 year typical MTBF
- No maintenance required
- ±3% output voltage regulation

The world's leading manufacturing and process facilities turn to Appleton as the trusted source of electrical products. We have earned that trust by committing over a century of expertise, and the resources of engineers around the globe, to the pursuit of safety and efficiency. It reflects our dedication to maintaining the highest production standards and rigorously testing above and beyond what is required. That trust also powers our continuous development and innovation of state of the art technology and revolutionary products.

Turn to Appleton when it is time to safely illuminate work operations among explosive fumes, deliver power to critical production machinery and keep pipelines warm in the unforgiving frost. Turn to Appleton when the first time is the only time to get it right.

Appleton is your trusted industrial electrical products brand. See our full line of electrical products for around the globe by visiting us at www.egseg.com.

EMERSON
Industrial Automation

Appleton is our premium line of industrial electrical products under EGS Electrical Group, a division of Emerson Industrial Automation.

Emerson Industrial Automation brings integrated manufacturing solutions to diverse industries worldwide. Our comprehensive product line, extensive experience, world-class engineering and global presence enable us to implement solutions that give our customers the competitive edge.

For over 150 years, our electrical product brands have been providing a rich tradition of long-term, practical, high quality solutions with applications ranging from the construction and safe operation of petrochemical and process plants to providing quality power that precisely controls automotive robotic production.

Engineers, distributors, contractors, electricians and site maintenance professionals around the world trust Emerson Industrial Automation brands to make electrical installations safer, more productive and more reliable.

EGS is organized into three focused businesses that provide distributors and end-users expert knowledge and excellent service.

### Electrical Construction Materials

This group manufactures a broad range of electrical products including conduit and cable fittings, plugs and receptacles, enclosures and controls, conduit bodies, and industrial lighting. Whether the application is hazardous location, industrial, or commercial, the ECM group has the products to meet your needs.

### Power Quality Solutions

This group offers the broadest power quality line including UPS, power conditioners, voltage regulators, shielded transformers, surge suppression devices and power supplies.

### Heating Cable Systems

This group offers a broad range of electrical heating cable products for residential, commercial, and industrial applications.

Electrical Construction Materials

Appleton

OZ/GEDNEY

Nutsteel

Power Quality Solutions

SOLAHD

Heating Cable Systems

EASYHEAT

NELSON


EGS Electrical Group
9377 W. Higgins Road
Rosemont, IL 60018
1.800.621.1506
www.egseg.com

Asia/Pacific
65.6891.7600

Australia
61.3.9721.0348

Brazil — São Paulo/SP
55.11.2122.5777

Brazil — Camaçari/BA
55.71.3623.2028

Canada
888.765.2226

China
86.21.3418.3888

Europe
33.3.2254.2759

Mexico/Latin America
52.55.5809.5049

Middle East/Africa/India
971.4.811.8100



The Appleton, O-Z/Gedney, SolaHD, EasyHeat, Nelson and Emerson logos are registered in the U.S. Patent and Trademark Office.
All other product or service names are the property of their registered owners. © 2012, EGS Electrical Group, LLC. All rights reserved.