## ELECTRICAL CONNECTION SOLUTIONS

### FOR HAZARDOUS LOCATIONS

MELTRIC Plugs and Receptacles, Multipin Connectors, and Enclosures



meltric.com

### MELTRIC SIMPLIFIES Power and Control Connections

1 EN

### COMMON INDUSTRIES

- Oil Extraction and Refining
- Pharmaceuticals and Nutraceuticals
- Wastewater Treatment
- Chemical Production
- Grain, Sugar, and Feed Processing
- Power Generation
- Powdered Metal Processing
- Brewing, Distilling, Malting
- Fuel Depots

# IN HAZARDOUS LOCATIONS E



- Motor Disconnects
- Portable Power Distribution
   Skid Mounted Equipment Hook-ups
- Plug and Play Rooftop Connections
- Spray Paint Booth Equipment
- Process Pump Maintenance Disconnects
- System Equipment Interconnections
- Local Lighting Fixture Disconnects
- Heat Trace Connections
- Storage Silo Power

### **MELTRIC Advantages...**

### **© CONNECTION RELIABLITY**

#### Spring-Loaded Silver-Nickel Butt Contacts

- Spring-loading maintains optimal contact force and eliminates overheating.
- Unlike brass, Silver-Nickel maintains high conductivity after oxidation in harsh environments.
- End-to-end mating eliminates the harmful effects of wear inherent with sliding contacts.



#### **Spring-Assisted Terminals**

- The spring assist on MELTRIC Terminals (20 A-250 A devices) compensates for the effects of vibration, strand settlement and temperature cycling, keeping the conductor securely connected and eliminating overheating failures due to loosened connections.
- Loosening of the terminal screws is a common cause of failure on other types of plugs and receptacles, but not with MELTRIC.

The split terminal causes the spring ring to deform from a circle to an ellipse as the terminal screw is tightened.

The spring ring, trying to return to its original circle shape, pushes the conductor and terminal screw tightly together.

CONDUCTOR

#### Automatic Watertightness

- All MELTRIC hazardous location devices, except the PNCX, achieve their rated water and dust tightness simply by connecting the plug and receptacle.
- There are no additional twist or thread on rings that need to be engaged like most other types of plugs and receptacles.
- This eliminates the failures from users forgetting to engage the rings.

#### ... for Hazardous Location Applications

Press to interrupt

PLOS

ha.

Ah.

### SAFETY & SECURITY

#### **DXN & DX Current Interrupting Capabilities**

- DXN and DX plugs and receptacles are designed and rated for current interruption and can be safely operated under load in case of emergency.
- DXN and DX current interrupting devices are not rated for switching and must be applied in conjunction with an upstream disconnect switch.

#### **Dead Front/Safety Shutter Protection**

- The safety shutter blocks access to all live internal contacts on DXN and DX current interrupting devices when they are disconnected under load.
- It also provides added security on non-load break devices by ensuring that access to live parts is blocked if the circuit is energized while the plug and receptacle are disconnected.

#### **Lock Together Provisions**

- The standard lockout provisions on DXN25c, DXN37c multipin, and all Zone 2 receptacles (available as option on other DXN and DXA receptacles) can additionally be used to padlock the plug and receptacle together in the connected position.
- This prevents problems that could result from any unintended or unauthorized disconnection of the circuit.

### **MELTRIC Advantages...**



### **OPERATIONAL** EFFICIENCY

#### **Convenient Disconnects Wherever They Are Needed**

- DXN and DXA1 devices are horsepower and current interrupting rated making them perfect for use as emergency load break motor disconnects.
- Zone 2 DS and DSN devices are non-load break horsepower rated for use as convenient disconnects in motor circuits.
- Configuration flexibility allows placement near the equipment.



#### Power and Control in One Connection

- Models from 20 A to 250 A are available with optional auxiliary contacts allowing power, control, and signal circuits to all be connected through one device.
- Larger devices are available with up to 6 auxiliary contacts.
- The auxiliary contacts make last and break first.



#### Simplify Lockout-Tagout



Lockout provisions are standard on all 20 A to 250 A plugs/inlets, except the DX series, and allow them to be locked out with just a lock and tag.

Receptacle lockout provisions are standard on some devices and available as a low-cost option on some others. They allow the receptacles to be locked out with the lid closed using either a 5/16" shank lock or an optional locking pin that accepts various sized locks. Locking the lid closed makes it impossible to insert a plug.

#### ... for Hazardous Location Applications

### **OPPLICATION** FLEXIBILITY

#### Box or Panel Mount - Standard or 'Reverse' Service

- A variety of boxes and angles are available to facilitate wall or panel mounted applications.
- Reverse service is accomplished simply by mounting a standard inlet on the box or panel and mounting the standard receptacle on a handle at the end of the power cord.



- Inline cord-to-cord configurations are available for applications where portability is required.
- Threaded handles facilitate direct mounting to motors, threaded pipe conduit or other equipment or fittings to help provide convenient placement.

#### **Suitable for Flexible Conduits**

- Threaded handles accommodate liquidtight conduit fittings, simplifying wiring of multipin or power and control applications.
- Standard grounding provisions in metal handles facilitate the use of Teck or other armored cables.





### **Hazardous Area Classifications**

Hazardous areas are classified according to the type of hazardous substance and the degree to which the explosion hazard exists in the atmosphere. Hazardous areas in North America may be classified according to the Class and Division system or according to the Zone system that is used in most other parts of the world. The relationship between the two systems is shown in the table below.

| Area Classification by Hazard Type and Level |                       |   |  |                      |  |  |  |
|--|-----------------------|---|--|----------------------|--|--|--|
| Hazardous Substance                          | Classification System | Hazard is continuously<br>present or occurs<br>frequently | Hazard occurs only<br>briefly under abnormal<br>conditions |                      |  |  |  |
| CAC  | Class & Division      | Class I, Division 1                                       |  | Class I, Division 2  |  |  |  |
| GAS  | Zone                  | Zone 0  | Zone 1   | Zone 2               |  |  |  |
| DUST   | Class & Division      | Class II, Division 1                                      |  | Class II, Division 2 |  |  |  |
|  | Zone                  | Zone 20   | Zone 21  | Zone 22              |  |  |  |



#### **Gas and Dust Groups**

Different types of gases and dusts pose different levels of hazards depending upon the explosive characteristics of the substances. Equipment certifications identify the gases or dusts the equipment is suitable for use with based on material group and temperature class ratings. The temperature class indicates the maximum surface temperature that the equipment will generate. This temperature must be lower than the ignition temperature of the hazardous substances the equipment is used with.

| Gas & Dust Groups |             |                    |                     |  |  |  |  |
|-------------------|-------------|--------------------|---------------------|--|--|--|--|
| Substance Type    |             | Class, Div NEC 500 | Zones NEC 505 & 506 |  |  |  |  |
|                   | Acetylene   | Group A            | IIC                 |  |  |  |  |
|                   | Hydrogen    | Group B            | IIC                 |  |  |  |  |
| Classigas         | Ethylene    | Group C            | IIB                 |  |  |  |  |
|                   | Propane     | Group D            | IIA                 |  |  |  |  |
|                   | Metal Dusts | Group E            | IIIC                |  |  |  |  |
| Class II Dust     | Coal Dusts  | Group F            | IIIB                |  |  |  |  |
|                   | Grain/Other | Group G            | IIIB                |  |  |  |  |

| Zones - NEC 505 & CEC18<br>Max Surface Temperature<br>Generated by the Equipment |         |  |  |  |  |
|--|---------|--|--|--|--|
| Temp Class   | Temp    |  |  |  |  |
| T1   | ≤ 450°C |  |  |  |  |
| Τ2   | ≤ 300°C |  |  |  |  |
| Т3   | ≤ 200°C |  |  |  |  |
| Τ4   | ≤ 135°C |  |  |  |  |
| Τ5   | ≤ 100°C |  |  |  |  |
| Т6   | ≤ 85°C  |  |  |  |  |

### MELTRIC Products for Hazardous Areas

Electrical equipment used in hazardous areas must be rated for the type of environment it is used in or it can be rated for a more hazardous environment. For example, Zone 2 or Division 2 rated equipment may only be used in Zone 2 or Division 2 classified areas, while Zone 1 rated equipment may be used in either Zone 1 or Zone 2 classified areas and Division 1 rated equipment may be used in Division 1 or Division 2 classified areas.

ZONE

| Product Series                      |       | Hazardous<br>Substance | Certification    | Allowed Usage Areas are highlighted in Yellow |         |            |
|-------------------------------------|-------|------------------------|------------------|---|---------|------------|
| DXN and DXA<br>Current Interrupting |       | Class 1/GAS            | CSA              | Division 1                                    |         | Division 2 |
|                                     | Ng 65 |                        | CSA, ATEX, IECEx | Zone 0  | Zone 1  | Zone 2     |
|                                     |       | Class 2/DUST           | CSA              | Divis   | ion 2   | Division 2 |
| See pg 10                           |       |                        | CSA, ATEX, IECEx | Zone 20                                       | Zone 21 | Zone 22    |

| Zone 2    | rio - |             | CSA | Divis  | ion 1  | Division 2 |
|-----------|-------|-------------|-----|--------|--------|------------|
| See pg 12 | 600   | CLASS 1/0AS | CSA | Zone 0 | Zone 1 | Zone 2     |

| SPeX<br>Single Pole | Class 1/GAS | CSA              | Division 1              |         | Division 2 |            |
|---------------------|-------------|------------------|-------------------------|---------|------------|------------|
|                     |             | CSA, ATEX, IECEx | Zone 0                  | Zone 1  | Zone 2     |            |
|                     |             |                  | CSA                     | Divis   | ion 1      | Division 2 |
| See ng 14           | - • •       |                  | <b>CSA,</b> ATEX, IECEx | Zone 20 | Zone 21    | Zone 22    |

| PXN and DXN | GAS  | ATEX, IECEx | Zone 0  | Zone 1  | Zone 2  |
|-------------|------|-------------|---------|---------|---------|
| See pg 16   | DUST | ATEX, IECEx | Zone 20 | Zone 21 | Zone 22 |

| DX<br>Current Interrupting | GAS  | ATEX, IECEx | Zone 0  | Zone 1  | Zone 2  |
|----------------------------|------|-------------|---------|---------|---------|
| See pg 18                  | DUST | ATEX, IECEx | Zone 20 | Zone 21 | Zone 22 |

| PNCX      | GAS  | ATEX, IECEx | Zone 0  | Zone 1  | Zone 2  |
|-----------|------|-------------|---------|---------|---------|
| See pg 20 | DUST | ATEX, IECEx | Zone 20 | Zone 21 | Zone 22 |

| SB<br>Enclosures |           | Class 1/GAS | UL          | Division 1 |         | Division 2 |
|------------------|-----------|-------------|-------------|------------|---------|------------|
|                  |           |             | ATEX, IECEx | Zone 0     | Zone 1  | Zone 2     |
|                  | See pg 22 |             | UL          | Divis      | ion 1   | Division 2 |
| See pg 22        |           |             | ATEX, IECEx | Zone 20    | Zone 21 | Zone 22    |

### **DXN & DXA**

### . **E** Sone 1/21

#### Current Interrupting Plugs and Receptacles - 20 A to 60 A

| cCSAus Listed for use in the Following Areas |         |         |                     |  |  |  |  |
|--|---------|---------|---------------------|--|--|--|--|
| GAS  | Zone 1  | Zone 2  | Class I Division 2  |  |  |  |  |
| DUST   | Zone 21 | Zone 22 | Class II Division 2 |  |  |  |  |



#### **Current Interruption Rating - What does it Mean to Users?**

DXN and DXA devices are rated for current interrupting and thus can safely be connected and disconnected under load, up to their rated amperage and horsepower. They provide a convenient disconnection means for motors and other equipment in hazardous areas and assure user safety in the event of emergency, accidental or occasional disconnection under load. They are not rated for regular switching duty, so there must be a safety switch installed upstream in the circuit.

| cCSAus Amperage & Horsepower Ratings |               |               |               |              |  |  |  |  |
|--------------------------------------|---------------|---------------|---------------|--------------|--|--|--|--|
| Model/Amp                            | DXN20<br>20 A | DXN30<br>30 A | DXN60<br>60 A | DXA1<br>20 A |  |  |  |  |
| 120V 1Ø                              | 0.75 hp       | 1 hp          | 2 hp          | .75hp        |  |  |  |  |
| 208V 1Ø                              | 1 hp          | 2 hp          | 3hp           | 1 hp         |  |  |  |  |
| 240V 1Ø                              | 2 hp          | 3 hp          | 3 hp          | 2 hp         |  |  |  |  |
| 277V 1Ø                              | 2 hp          | 3 hp          | 5 hp          | 2 hp         |  |  |  |  |
| 480V 1Ø                              | 3 hp          | 5 hp          | 7.5 hp        | 3 hp         |  |  |  |  |
| 600V 1Ø                              | 3 hp          | 7.5 hp        | 10 hp         | 3 hp         |  |  |  |  |
| 208V 3Ø                              | 3 hp          | 5 hp          | 7.5 hp        | 3 hp         |  |  |  |  |
| 240V 3Ø                              | 3 hp          | 5 hp          | 7.5 hp        | 3 hp         |  |  |  |  |
| 480V 3Ø                              | 7.5 hp        | 10 hp         | 20 hp         | 7.5 hp       |  |  |  |  |
| 600V 3Ø                              | 7.5 hp        | 15 hp         | 20 hp         | 7.5 hp       |  |  |  |  |



#### Hazardous Location Ratings



11

### ZONE 2 DS/DR/DSN/DSDC . Zone 2

### Non-Current Interrupting Plugs and Receptacles – 20 A to 250 A AC & DC Circuits

| cCSAus Listed for use in the Following Areas |  |  |  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|--|--|--|
| GAS  | Class I, Zone 2  | Class I Division 2   |  |  |  |  |  |  |  |  |
|  | <b>ZONE 2</b><br>20 A to 250 A, 600 VAC; 20 A to 200 A, 250 VDC<br>Non-Load Break Horsepower ratings up to 100 hp<br>Type 4X protection achieved automatically upon connection<br>-40°F to 104°F | Tool engaged locking pawl prevents<br>unintended disconnection<br>Available with up to six 600V rated<br>auxiliary contacts<br>Metal and/or Poly casings, depending<br>upon size |  |  |  |  |  |  |  |  |

#### Non-Current Interrupting – but HP Rated for AC Motor Applications

ZONE 2 DS/DSN/DR/DSDC devices are non-current interrupting and should never be connected and disconnected under load in a hazardous environment. The circuit must be deenergized before they are connected or disconnected. The HP ratings on the DS and DSN models are based on the device ratings to make and break motor loads in non-hazardous locations, in order to provide plenty of safety margin for safely handling the running loads they will see in hazardous locations.

|           | cCSAus Amperage & Horsepower Ratings – AC Circuits |              |              |                     |              |                 |                        |                       |                |  |  |  |
|-----------|--|--------------|--------------|---------------------|--------------|-----------------|------------------------|-----------------------|----------------|--|--|--|
| Model/Amp | <b>DS20</b><br>20 A                                | DR30<br>30 A | DS30<br>30 A | <b>DR50</b><br>50 A | DS60<br>60 A | DS100C<br>100 A | <b>DSN150</b><br>150 A | <b>DS200</b><br>200 A | DR250<br>250 A |  |  |  |
| 120V 1Ø   | .75 hp   | n/a          | 1.5 hp       | n/a                 | 3 hp         | 5 hp            | 7.5hp                  | n/a                   | n/a            |  |  |  |
| 208V 1Ø   | 1.5 hp   | n/a          | 2 hp         | n/a                 | 5 hp         | 10 hp           | 15 hp                  | n/a                   | n/a            |  |  |  |
| 240V 1Ø   | 2 hp   | n/a          | 3 hp         | n/a                 | 5 hp         | 10 hp           | 20 hp                  | n/a                   | n/a            |  |  |  |
| 277V 1Ø   | 2 hp   | n/a          | 3 hp         | n/a                 | 7.5 hp       | 15 hp           | 25 hp                  | n/a                   | n/a            |  |  |  |
| 480V 1Ø   | 3 hp   | n/a          | 5 hp         | n/a                 | 15 hp        | 25 hp           | 25 hp                  | n/a                   | n/a            |  |  |  |
| 600V 1Ø   | 5 hp   | n/a          | 7.5 hp       | n/a                 | 20 hp        | 25 hp           | 25 hp                  | n/a                   | n/a            |  |  |  |
| 208V 3Ø   | 3 hp   | n/a          | 5 hp         | n/a                 | 10 hp        | 20 hp           | 30 hp                  | 40 hp                 | n/a            |  |  |  |
| 240V 3Ø   | 5 hp   | n/a          | 5 hp         | n/a                 | 10 hp        | 20 hp           | 30 hp                  | 40 hp                 | n/a            |  |  |  |
| 480V 3Ø   | 7.5 hp   | n/a          | 15 hp        | n/a                 | 25 hp        | 50 hp           | 75 hp                  | 100 hp                | n/a            |  |  |  |
| 600V 3Ø   | 10 hp  | n/a          | 15 hp        | n/a                 | 25 hp        | 50 hp           | 75 hp                  | 100 hp                | n/a            |  |  |  |
|           |  | cC           | SAus Amper   | rage & Vo           | ltage Rating | s – DC Circ     | uits                   |                       |                |  |  |  |
| DSDC1     |  |              | DSDC3        |                     | DSDC6        |                 | DSDC9                  | D                     | SDC2           |  |  |  |
| 130V DC   | 20 /   | 4            | 30 A         |                     | 60 A         |                 | 100 A                  |                       | 200A           |  |  |  |
| 250V DC   | 20 /   | 4            | 30 A         |                     | 60 A         |                 | 100 A                  | 2                     | 200A           |  |  |  |





#### Product Features – How it Works

#### **Locking Pawl**

The hazardous location ratings of these products are based on the use of the screw-type locking pawl.

- After connection, the screw lock must be engaged to prevent unintended disconnection.
- The lock must be unscrewed with the tool before the device can be disconnected.

For added security, a lockout hole in the pawl allows the device to additionally be padlocked in the connected position. It also allows the receptacle lid to be padlocked in the closed position to prevent the unintended connection of a plug.

#### **Contact Technology**

• Spring-Loaded Silver-Nickel Butt Contacts ensure a safe connection over thousands of operations and in harsh environments.

#### **Auxiliary Contacts**

• Optional auxiliary contacts allow power, control, and monitoring circuits to all be connected through one device.



### . **E** Sone 1/21

#### Single Pole Plug and Receptacle – 600 A for AC Circuits

|   |  | cCSAus List  | ed for use in the Follo   | wing Areas  |   |
|---|--|--|---|---|---|
|   | GAS  | Zone 1   | Zone 2  | -   | Class I Division 2  |
|   | DUST   | Zone 21  | Zone 22   | Class II Division 1   | Class II Division 2   |
| lot Conn<br>egral pili<br>controll<br>wer circu<br>Latcl<br>Enabl<br>plug † | ections<br>bt circuit<br>ig the<br>it.<br>• Release Button<br>• Release Button<br>• Release Button | Mechanical/Electrical<br>Twist ring closes/ opens to<br>the latching mechanism we<br>prevent connection or dis<br>Pr<br>Pr | Interlock<br>the pilot circuit and locks/unlocks<br>which works with a breaker to<br>connection under load.<br>otective Caps<br>otect contacts when disconnected.<br>Silver Contact<br>Enables maximu<br>and durability –<br>least 2000 operation | CSA up     ATEX to     Mechan     Wire Ca     750 MC     Phases     labeled     IP65/IP     -20°C t     on Envi     Pilot wi m performance withstands at tions. | to 600 A, 600 VAC<br>o 1000 VAC, 1500 VDC<br>nical/Electrical Interlock<br>apacity 2/0 AWG to<br>M<br>are keyed, color-coded an<br>66<br>o +40°C or +60°C, based<br>ronment<br>re capacity of 14 - 12 AWG |

#### **Mechanical Interlocked Pilot Circuit - Prevents Operation Under Load**

The pilot circuit must be wired and used to control the power to the device.

- When the pilot circuit is open the power is off, the latch is unlocked, and the device may be safely connected and disconnected.
- Once a plug is inserted, twisting the interlock ring clockwise to the ON position locks the latch, preventing removal of the plug, and closes the pilot circuit allowing power to flow.
- Returning the interlock ring to the OFF position opens the pilot circuit, causes the power to be switched off, and unlocks the latch allowing the plug to be removed.





Latch is unlocked. Plug can be inserted.





Latch locks the plug and receptacle together.

Pilot Circuit is closed, Power is ON



Latch is locked. Plug cannot be removed.





Latch unlocks. Plug may be removed.

Pi In<sup>®</sup> fo



| ECEX LCI 1                                     | CHAL ELECTR<br>D Ex e IIC Gb<br>Ex tb IIIC Db<br>2.0005X/LCIE 07 | ATEX 6073X                            |                                       | Class I Zone 1 AEx e IIC T5<br>(or T6 see table) | Cover<br>Ethylene &<br>environn<br>may occu<br>Safe for | s Acetylene, H<br>Propane gas<br>nents where t<br>Ir in normal c<br>gases with au | lydrogen,<br>groups in<br>he hazard<br>onditions.<br>toignition |
|--|--|---------------------------------------|---------------------------------------|--|---|---|---|
| Includes<br>Grain/Flo<br>environm<br>hazard is | Metal, Coal,<br>our dust grou<br>nents where<br>continuousl      | and<br>ups in<br>the<br>y present.    | Class II Division 1<br>Groups E, F, G |  | Temper<br>operatio                                      | ps above Tx (S<br>rature range f<br>on (see Table f                               | ee table).<br>or normal<br>for Tmax).                           |
|  | -20'C≤Ta≤+40'C<br>G / D<br>T5 / T56'C                            | -20'C≤Ta≤+60'C<br>G / D<br>T5 / T76'C |                                       | $-20^{\circ}C \le Ta \ge Tmax Tx Txx$            | Safe for  | gases with au   | Itoignition   |
| 70 mm2   | 290A   | 235A                                  |                                       | (see Table)                                      | Cofo for  | usto with other   | <del>see la</del> ple).   |
| 95 mm2   | 415A   | 335A                                  |                                       |  | Safe for  | dusts with at   | itoignition   |
| 120 mm2  | 456A   | 376A                                  |                                       |  | temps a   | ibove Txx°C (S  | See table].   |
| 150 mm2  | 493A   | 415A                                  |                                       |  |   |   |   |
| 240 mm2  | 570A   | 450A<br>497A                          |                                       |  |   |   |   |
| 300 mm2  | 620A   | 540A                                  |                                       |  | Tompor  | atura Datinga I   | Medel   |
| 400 mm2  | 680A   | 600A                                  |                                       |  | remper  | ature Ratings i   | by Model  |
|  |  |                                       |                                       |  | T Max   | Тх  | Txx°C   |
|  |  |                                       |                                       | -  | +60°C   | T5 = 100°C  | T76°C   |
|  |  |                                       |                                       |  | +40°C   | T6 = 85°C   | T56°C   |



#### **Other Product Features**

**Phase Identification** 



Drawbar Mechanism



**Makes Connection Easy** 



| Wiring Capacity |         |         |         |  |  |  |  |  |  |  |
|-----------------|---------|---------|---------|--|--|--|--|--|--|--|
|                 | I.D.    | Flex    | Course  |  |  |  |  |  |  |  |
| min             | .43 in  | 1/0 AWG | 2/0 AWG |  |  |  |  |  |  |  |
| max             | 1.15 in | 777 MCM | 800 MCM |  |  |  |  |  |  |  |

### **Available Configurations**

#### **Receptacle on Angle**







Plugs are available with 4 different handle cord grip sizes, accommodating cable diameters of 0.70 - 1.89 inches.



### **DXN & PXN**



#### Multipin Plugs and Receptacles – 10 A for AC & DC Circuits Not for Current Interrupting

| ATEX & IECEx Listed for use in the Following Areas |         |         |  |  |  |  |  |  |  |
|--|---------|---------|--|--|--|--|--|--|--|
| GAS  | Zone 1  | Zone 2  |  |  |  |  |  |  |  |
| DUST   | Zone 21 | Zone 22 |  |  |  |  |  |  |  |



| X | N | 1 | 2 | C |  |
|---|---|---|---|---|--|
|   |   |   |   |   |  |

- 10 A, 220 VAC or VDC
- 12 Contacts
- IP65/IP66
- -40°C to +55°C
- Metal Casings
- Crimp/Solder Terminals
- Locking provision prevents unintended disconnection



#### DXN25c/DXN37c

- 10 A, 440 VAC or VDC (DXN25c)
- 10 A, 230 VAC or VDC (DXN37c)
- 25 or 37 Contacts
- IP66/IP67
- -40°C to +55°C or 60°C
- Metal Casings
- Crimp/Solder Terminals
- Locking provision prevents unintended disconnection

#### Simplified Contact Termination, Assembly, and Disassembly

#### **Conductor Terminations**

- The contacts accept wire sizes of 16 to 14 AWG or 1.0 2.5 mm<sup>2</sup>.
- The conductors may be terminated by crimping or by soldering them into the contacts.
- Ferrules are provided to help contain loose strands and heat shrink tubing is provided to ensure effective insulation of the termination and between contacts.



#### **Conductor Terminations**



Once the terminations are complete, the contacts can be assembled into the device by pushing the contact into the appropriate contact hole (from the backside of the device) until they are firmly seated in the insulator.

#### **Conductor Terminations**



A special tool is provided for contact removal. Push the hollow end of the tool around the o.d. of the contact until it stops. The contact will then be released. A contact may be inserted/ removed 3 times.

#### Hazardous Location Ratings



#### Other Product Features

**Locking Provision** 







Locking Pawl

Prevents unintended connection with lid locked closed

#### Dual Pawl/Latch



Ensures a secure connection

#### **Locking Provision**



Prevents unintended connection or disconnection

### **Available Configurations**

DXN25c/DXN37

Inlet or Receptacle Mounted on Handle



Inlet or Receptacle with Mounting Angle





Inlet or Receptacle with Box and Angle



17



#### Current Interrupting Plugs and Receptacles – 20 A to 125 A

| ATEX & IECEx Listed for use in the Following Areas |         |         |  |  |  |  |  |  |  |
|--|---------|---------|--|--|--|--|--|--|--|
| GAS  | Zone 1  | Zone 2  |  |  |  |  |  |  |  |
| DUST   | Zone 21 | Zone 22 |  |  |  |  |  |  |  |

#### **Heavy-Duty Aluminum Casing**

All components are enclosed in rugged copper free aluminum housings for maximum durability and protection.

#### **Arc Isolation Chamber**

Minimizes gas/dust volume present during arcing, withstands internal pressure caused by its ignition of it and isolates the ignition from the outside environment.

#### **Spring Operated Switching Mechanism**

An integral switching mechanism ensures quick-make, quick-break operation, independent of the motion of the user.

#### Dead Front

The 'dead' load-side switching contacts block access to the receptacle and are locked in the open position until an appropriate mating plug is fully inserted. This prevents unintended access to live parts and ensures user safety.

#### Silver-Nickel Butt Contacts

Contact design provides a superior connection, with maximum conductivity, the ability to withstand arcing and oxidation, excellent wear resistance, and a long operating life. A wiping motion during operation also provides a self-cleaning action.

| ATEX/IECEx Amperage |                    |             |                    |                     |  |  |  |  |  |
|---------------------|--------------------|-------------|--------------------|---------------------|--|--|--|--|--|
| Model/Amp           | <b>DX1</b><br>20 A | DX3<br>32 A | <b>DX6</b><br>63 A | <b>DX9</b><br>125 A |  |  |  |  |  |
| VAC max             | 750                | 750         | 750                | 750                 |  |  |  |  |  |

All models are available in US and International voltage configurations

- Integrated Load break Switch
- Rated up to 750 VAC
- Heavy Duty Aluminum Casing
- -25°C to +60°C or -40°C to +60°C
- IP65/IP66 Water and Dust Protection
- IK10 Impact protection

#### Load Break Switching Mechanism

DX devices are equipped with a quick-make quick-break internal switching mechanism, which essentially functions like a rotary switch. The plug can only be inserted into the receptacle when the receptacle contacts are in the OFF position. The power remains off until the plug is rotated clockwise to the ON position, which trips the switch causing the receptacle contacts, the plug contact and downstream load to be energized. The plug cannot be removed while it is in the ON position.





#### Hazardous Location Ratings



Alternative T6 = 85°C rating reduces Tmax to +50°C and reduces Txx by 10°C

#### Product Features – How it Works

Receptacle with Plug Disconnected



Live power contact (a) is isolated from the dead receptacle contact (b)

Insertion of Plug



Connected plug and receptacle contact are dead and isolated from the power contact

#### Rotation of plug to ON position



Rotation winds then releases the operating spring to achieve a quick-make connection

#### Rotation of plug back to OFF position



Rotation back releases the remaining spring energy for a quick-break of the connection

### **Available Configurations**

Inlet or Receptacle Mounted on Handle



Inlet or Receptacle Mounted on Box



#### Receptacle







#### **Compact Non-Current Interrupting Plugs and Receptacles – 5A**

| ATEX & IECEx Listed for use in the Following Areas |         |         |  |  |  |  |  |  |  |
|--|---------|---------|--|--|--|--|--|--|--|
| GAS  | Zone 1  | Zone 2  |  |  |  |  |  |  |  |
| DUST   | Zone 21 | Zone 22 |  |  |  |  |  |  |  |



- 5 A, 250V non-current interrupting IP66/IP67/IP69 Water and Dust Protection
- Contact configuration 3P + N + G
- -25°C to +70°C

- Cable Range: 0.4 0.55", 10 14mm
- Wire Capacity: 20 14AWG,
- .75 mm to 2.5 mm
- Thermoplastic Casing
- Screw Terminals

, d<sup>e</sup>

#### **Small Footprint for Low Power and Control Circuits**

PNCX devices provide convenient and reliable hazardous location connections for control signal and low amperage power circuits. Their small size helps keep panel or enclosure dimensions to a minimum and installation is quick and easy.

- Spring-loaded silver-nickel contacts maintain high conductivity in harsh environments
  - Suitable for low power 4 20mA control signals
- Device locks, connecting and engaging water/ dust protection by the simple 40° rotation of a locking ring
- Panel mounting requires drilling only a single 1" hole
- Screw terminals simplify wiring





Use of standard caps maintains IP ratings when disconnected









Insert plug into receptacle



Rotate ring 40° to lock device together and engage water and dust ingress protection

### **Available Configurations**

Inlet or Receptacle (with Retention Nut for Panel Mounting)



Plug or Power Connector (Inlet or Receptacle with a Handle)



### **SB Enclosures**



### **Class I, Division 2**



#### Stainless Steel Enclosures

| Certification | UL   | ATEX and IECEx   |   |  |  |  |  |
|---------------|--|--|---|--|--|--|--|
| GAS           | Class I, Division 2*   | Zone 1   | Zone 2  |  |  |  |  |
| DUST          | n/a  | Zone 21  | Zone 22   |  |  |  |  |
|               | <ul> <li>Based on UL508A and Type 4X certificat</li> <li>Stainless Steel - AISI<br/>Silicone Rubber Gask<br/>Type 4X &amp; 12, IP66/IF<br/>Environmental rating<br/>Standard sizes up to 19</li> </ul> | ion plus NEC code allowances.<br>316L - 1.5MM thick<br>kets<br>267<br>JS<br>2.5" x 19.5" x 6.25" | n sizes up to 35.75" x 44.75" x 19.5"<br>le empty or as assembled panels<br>um entry size of 3.125" |  |  |  |  |

#### **Available as Empty Enclosures or Custom Assembled Panels**





#### **Standard Enclosure Dimensions and Entry and Terminal Capacities**







|             |     | DIME | ENSIONS (mm)* |     | MAXI<br>CABLE E<br>W/O GLAI | MUM<br>ENTRIES<br>ND PLATE | MAXI<br>CABLE E<br>W/GLAN | MUM<br>ENTRIES<br>D PLATE | MAX NUI<br>TERM | MBER OF<br>INALS           | WEIGHT                   |      |
|-------------|-----|------|---------------|-----|-----------------------------|----------------------------|---------------------------|---------------------------|-----------------|----------------------------|--------------------------|------|
| NUMBER      | А   | В    | С             | D   | E                           | SIDE A                     | SIDE B                    | SIDE A                    | SIDE B          | <b>2,5 MM</b> <sup>2</sup> | <b>4 MM</b> <sup>2</sup> | (KU) |
| SB-101210** | 100 | 120  | 100           | 150 | -                           | 4                          | 4                         | -                         | -               | 7                          | 6                        | 1.5  |
| SB-151510** | 150 | 150  | 100           | 180 | -                           | 6                          | 6                         | -                         | -               | 13                         | 11                       | 2.5  |
| SB-202010   | 200 | 200  | 100           | 230 | 160                         | 9                          | 9                         | -                         | -               | 22                         | 19                       | 3    |
| SB-142013   | 140 | 200  | 130           | 170 | 160                         | 6                          | 10                        | 4                         | 4               | 11                         | 9                        | 4    |
| SB-202713   | 200 | 270  | 130           | 230 | 230                         | 10                         | 14                        | 6                         | 6               | 36                         | 30                       | 7    |
| SB-273513   | 270 | 350  | 130           | 300 | 310                         | 14                         | 18                        | 8                         | 8               | 72                         | 60                       | 9.5  |
| SB-302016   | 300 | 200  | 160           | 330 | 160                         | 21                         | 15                        | 12                        | 8               | 44                         | 38                       | 5    |
| SB-353516   | 350 | 350  | 160           | 380 | 310                         | 27                         | 27                        | 16                        | 16              | 102                        | 86                       | 5.6  |
| SB-355016   | 350 | 500  | 160           | 380 | 460                         | 27                         | 39                        | 16                        | 24              | 160                        | 134                      | 13   |
| SB-505016   | 500 | 500  | 160           | 530 | 460                         | 39                         | 39                        | 24                        | 24              | 240                        | 201                      | 14.5 |
| SB-384516   | 380 | 450  | 160           | 410 | 410                         | 30                         | 36                        | 18                        | 20              | 171                        | 144                      | 10.7 |
| SB-577620   | 570 | 760  | 200           | 600 | 720                         | 73                         | 98                        | 54                        | 74              | 558                        | 468                      | 21.7 |
| SB-769520   | 760 | 950  | 200           | 790 | 910                         | 98                         | 125                       | 74                        | 94              | 990                        | 834                      | 32.9 |

\* Upon request, any dimension between 100x120x100 mm and 910x1140x500 mm can be manufactured.

\*\* The enclosure is only available without hinges.

#### **MELTRIC Connection Solutions** for Hazardous Locations

### DIVISION



DXN

• Current Interrupting up to 60 A or 25 hp



Zone 2

• 20 A-250 A with up to 6 Auxiliary Contacts



• Single Pole with Mechanical Interlock - 600 A



SB

- Stainless Steel Enclosures
- Available Empty or as Custom Assemblies



Multipin

Up to 37 ContactsCrimp or Solder Terminals



PNCX

• Compact Size for Low Power (5 Contacts)



Quick-Make Quick-Break
 Current Interruption

Our friendly engineering and customer service teams are available Monday - Friday, 7 a.m. - 5 p.m. (Central Time)

Phone: 414-433-2700 Email: mail@meltric.com

Need it quickly? Most orders ship within 2 days.

Please note, Hazardous Location products are non-returnable



### Plug into SAFETY and RELIABILITY with MELTRIC

**meltric.com** 4765 W. Oakwood Park Drive • Franklin, WI 53132 414-433-2700 • Fax 414-433-2701 ©2021 MELTRIC Corporation. All rights reserved. HAZLOC\_A



### **Understanding North American Ratings**





|                        | Table 1 - Class, Division and Zone Loo               | ation Class  | ifications      |                               |               |
|------------------------|--|--------------|-----------------|-------------------------------|---------------|
| Hazardous Substance    | Frequency of Explosive Atmosphere Occurrence         | Hazardou     | s Location Clas | Equipment<br>Protection Level |               |
|                        | Continuously or for long periods                     |              | Division 1      | Zone 0                        | Ga            |
| Gases, Mists or Vapors | Likely to occur in Normal Conditions                 | Class I      | DIVISION I      | Zone 1                        | Gb            |
|                        | Infrequently and only for short periods              |              | Division 2      | Zone 2                        | Gc            |
|                        | Continuously or for long periods                     |              | Division 1      | Zone 20                       | Da            |
| Dusts                  | Likely to occur in Normal Conditions                 | Class II     | DIVISION I      | Zone 21                       | Db            |
|                        | Infrequently and only for short periods              |              | Division 2      | Zone 22                       | Dc            |
|                        | Continuously or for long periods                     |              | Division 1      | Zone 20*                      | Da*           |
| Fibers & Flyings       | Likely to occur in Normal Conditions                 | Class III    | DIVISION I      | Zone 21*                      | Db*           |
|                        | Infrequently and only for short periods              |              | Division 2      | Zone 22*                      | Dc*           |
| * requires temp        | erature ratings ≤ T165°C for equipment that will not | be overloade | ed or ≤ T120°C  | for equipme                   | nt that will. |

| Table 2 - Material Groups |                           |                  |                  |            |                                       |  |  |  |  |  |
|---------------------------|---------------------------|------------------|------------------|------------|---------------------------------------|--|--|--|--|--|
| Hazardous<br>Substance    | Class &<br>Division Group | Flamma<br>Proper | ability<br>ties* | Zone Group | Example Materials                     |  |  |  |  |  |
|                           | А                         | Acetyl           | ene              | IIC        | Acetylene                             |  |  |  |  |  |
| 0                         | В                         | MESG ≤ .45       | MIC ≤ .40        | IIC        | Hydrogen                              |  |  |  |  |  |
| Gases                     | С                         | .45 < MESG ≤ .75 | .40 < MIC ≤ .80  | IIB        | Ethylene                              |  |  |  |  |  |
|                           | D MESG                    |                  | MIC > .80        | IIA        | Propane, Methane, Ammonia             |  |  |  |  |  |
|                           | E                         | Combustible M    | etal Powder      | IIIC       | Aluminum, Magnesium                   |  |  |  |  |  |
| Dusts                     | F                         | Combustible Carb | onaceous Dusts   | IIIB       | Coal, Coke, Carbon Black, Charcoal    |  |  |  |  |  |
|                           | G                         | Other Combus     | stible Dusts     | IIIB       | Flour, Grain, Wood, Polymer, Chemical |  |  |  |  |  |
| Fibers                    | -                         | Ignitable Fiber  | s and Flying     | IIIA       | Cotton, Rayon, Cocoa, Jute, Hemp      |  |  |  |  |  |

\* MESG and MIC listed based on NEC 500. NEC 505 values vary slightly. The **MESG** (maximum experimental safety gap) is the maximum gap between two flat surfaces that prevents an ignition of a gas/air mixture from propagating thru a 25mm long pathway. The smaller the MESG, the higher the explosion hazard of the substance. The MIC (minimum ignition current) ratio is the minimum current required to ignite a gas or vapor compared to the minimum current to ignite methane. The lower the MIC ratio, the more explosive the substance is.

|      |  | Table 3                       | 8 - Temperatu             | re Class        |                        |       |      |
|------|--|-------------------------------|---------------------------|-----------------|------------------------|-------|------|
|      | Temperature Class  | T1                            | T2                        | тз              | Т4                     | Т5    | T6   |
| Gas  | Maximum Allowed<br>Surface Temperature                                 | 450°C                         | 300°C                     | 200°C           | 135°C                  | 100°C | 85°C |
| Dust | Actual Maximum Surface<br>Temperature Generated                        | tual maximum                  | surface tempe             | erature the pro | duct generates         |       |      |
| Dust | Surface Temperature<br>Actual Maximum Surface<br>Temperature Generated | 450°C<br>T <i>xxx</i> °C, whe | 300°C<br>re xxx is the ac | 200°C           | 135°C<br>surface tempe | 100°C | duc  |

The purpose of the temperature class is to prevent the use of products that will generate a surface temperature that is hot enough to ignite the gas or dust substances in the atmosphere that it comes in contact with. See table 5 for some gas autoignition temperatures.

|          |            |                                   | Sample ATEX IECEx Gas Rating  | Sample ATEX IECEx Dust Rating  |              |  | Sample ATEX IECex Gas Rating   | Sample ATEX IECex Dust Rating   |
|----------|------------|-----------------------------------|---|--|--------------|--|--|---|
|          | Ex         |                                   | Approval mark f   | or EU certification  |              | Explosion Group                              | IIA = Propane<br>IIB = Ethylene (+ IIA gases)<br>II <b>C = Hydrogen (+ IIA &amp; IIB gases)</b>                              | IIIA = Combustible Dust<br>IIIB = Non-conductive Dust (+IIIA)<br>IIIC = Conductive Dust (+IIIA & IIIB)        |
| <b>H</b> | П          | Equipment Group:                  | I - Underground Mining  | II = Surface Applications<br>(All other than underground Mining)                           | Gb/Db        | Equipment Protection Level:<br>(See Table 4) | Ga = (Gas) Zone 0 (+Zones 1 & 2)<br><b>Gb = (Gas) Zone 1 (+Zone 2)</b><br>Gc = (Gas) Zone 2                                  | Da = (Dust) Zone 20 (+Zone 21&22)<br><b>Db = (Dust) Zone 21 (+Zone 22)</b><br>Dc = (Dust) Zone 22             |
|          | 2G/2D      | Equipment Group:<br>(See Table 4) | 1G = (Gas) Zone 0 (+Zones 1 & 2)<br><b>2G = (Gas) Zone 1 (+Zone 2)</b><br>3G = (Gas) Zone 2 | 1D = (Dust) Zone 20 (+Zone 21&22)<br>2D = (Dust) Zone 21 (+Zone 22)<br>3D = (Dust) Zone 22 | T6/<br>T51°C | Temperature Class: (See Table 5)             | The max surface temperature of the<br>product is coded by a <b>T1, T2, T3, T4, T5</b> or<br><b>T6</b> marking. (See Table 2) | The max surface temperature the product generates is indicated directly in the rating, such as <b>T51°C</b> . |
|          | EX e/Ex tb | Explosion I                       | Protection provided by means of: d, e, l,   | p, m, o, q, or t (See table 6)   |              |  |  |   |

| Table 4 - Classification and Ratings Requirements of Hazardous Locations   |  |   |                        |                |               |           |           |                  |               |     | Table 5 - Gas Explosion Groups & Temperature Classes |   |          |   |                     |                      |                   |                     |         |  |
|--|--|---|------------------------|----------------|---------------|-----------|-----------|------------------|---------------|-----|--|---|----------|---|---------------------|----------------------|-------------------|---------------------|---------|--|
| Explosive  |  |   | Product Classification |                |               | Equipment |           | 1                | Gas Explosion |     |  | Autoimition Tomme of Some Crown IIA, IID & IIC Cosee and Tomm Close Ty required for use with them |          |   |                     |                      |                   |                     |         |  |
|  | Frequency of Explosive                     | Classification of<br>Hazardous Location | Product                | E              | Equipment Pro |           | Prot      | Protection Level |               |     | Group  |   |          | Autoignition remps of some broup IIA, IIB $\alpha$ IIC bases and temp class IX required for use with them |                     |                      |                   |                     |         |  |
| Athosphere   | Annosphere occurrence                      |   | Group                  |                | Catego        | ry        | (EPL      |                  | EPL)          |     |  |   |          | >450°C  | >300°C              | >200°C               | >135°C            | >100°C              | >85°C   |  |
|  | Continuously or for long periods           | Zone 0                                  | II                     |                |               |           |           |                  |               |     |  |   | IIA      | Ammonia<br>Methane<br>Pronano   | Ethanol<br>n-butane | Gasoline<br>Kerosine |                   |                     |         |  |
| Gases, Mists<br>or Vapors  | Likely to occur in<br>Normal Conditions    | Zone 1                                  | П                      | 1G             | 20            |           | Ga        | Ch               |               |     |  | IIB   |          | Fropane   | Ethylene            |                      | Di-ethyl ether    |                     |         |  |
|  | Infrequently and only<br>for short periods | Zone 2                                  | П                      |                | 20            | 36        | 00        | Gc               |               | IIC |  |   | Hydrogen | Acetylene   |                     |                      |                   | Carbon<br>disulfide |         |  |
|  | Continuously or for long periods           | Zone 20                                 | П                      |                |               |           |           |                  |               |     |  |   | T1       | <450°C  |                     |                      |                   |                     |         |  |
|  |  | 20110 20                                |                        |                |               |           | _         |                  |               |     | The T  | emp   | T2       |   | <300°C              |                      |                   |                     |         |  |
| Dusts  | Likely to occur in<br>Normal Conditions    | Zone 21                                 | П                      | 1D             |               |           | Da        |                  |               | i   | Class, T<br>indicates                                | Class, Tx,<br>indicates the   |          | T3  |                     |                      | <200°C            |                     |         |  |
|  | Infrequently and only                      | 7one 22                                 | Ш                      |                | 2D            | 20        |           | Db               | De            | r r | max sı<br>temp (                                     | urface<br>of the  | 14       |   |                     |                      | <135°C            | (10000              |         |  |
|  | for short periods                          | 20112 22                                |                        |                |               | 50        |           |                  |               |     | prod   | luct  | 15       |   |                     |                      |                   | <100°C              |         |  |
| Product Group II   | indicates ratings for surface (non-unde    | erground mining) applica                | tions. The <b>1</b>    | I <b>G</b> (an | d/or Ga       | a) ratir  | ig indica | ates suit        | tability      |     |  |   | Т6       |   |                     |                      |                   |                     | <85°C   |  |
| pr Zone 0, 1 and 2 gas environments, while the 2G (and/or Gb) rating is suitable for Zones 1 and 2, and 3G (and/or Gc) is suitable |  |   |                        |                |               |           |           |                  |               |     | he rer   | nuired e  | auinme   | nt rating Ty dene   | nds on the asses in | the environment      | For example, carb | on disulfide which  | is vorv |  |

only for Zone 2. Similarly, the 1D (and/or Da) rati Db) rating is suitable for Zones 1 and 2, and 3D (a

|    |                                  | Table 6 - (          | Common Protec | tion Met    | hod Mark | ings for Zon | e Locations ATEX/IECE           | x and North American (Red : | specific to the | US)        |      |        |            |
|----|----------------------------------|----------------------|---------------|-------------|----------|--------------|---------------------------------|-----------------------------|-----------------|------------|------|--------|------------|
|    | Protection Method                |                      | Datin a Ca    | Dation Oada |          | e in Zones   | Drester                         | tion Mothed                 | Det             | in n Oa da |      | Usable | e in Zones |
|    |                                  |                      | Rating Co     | ae          | Gas      | Dust         | Protec                          | tion Method                 | kating Code     |            |      | Gas    | Dust       |
|    |                                  |                      |               | da          | 0, 1, 2  |              | Positive pressure               | Purged & pressurized        |                 | pxb        |      | 1, 2   | 21, 22     |
|    | Contains explosion               | Flameproof Enclosure | Ex d AEx d    | db          | 1, 2     |              | prevents gas or<br>dust entry   |                             | Exp AExp        | pyb        |      | 1, 2   | 21, 22     |
|    |                                  |                      |               | dc          | 2        |              |                                 |                             |                 | pzc        |      | 2      | 22         |
|    | Prevents sparks &                | Increased Safety     |               | eb          | 1, 2     |              | Isolation from Ex<br>atmosphere | Oil Immersion               |                 | ob         |      | 1, 2   |            |
|    | high temperatures                |                      | Exe AExe      | ec          | 2        |              |                                 |                             |                 | oc         |      | 2      |            |
|    |                                  |                      |               | ia          | 0, 1, 2  | 20, 21, 22   |                                 | Powder Filling              | Exq AExq        |            |      |        |            |
|    | Low current, voltage             | Intrinsic Safety     | Exi AExi      | ib          | 1, 2     | 21, 22       | Quench the flame                |                             |                 | qb         |      | 1, 2   |            |
|    |                                  |                      |               | ic          | 2        | 22           |                                 |                             |                 |            |      |        |            |
|    | External barrier                 | Encapsulation        |               | ma          | 0, 1, 2  | 20, 21, 22   | Dust explosion<br>proof         | Protection by Enclosure     | Ext AExt        | ta         |      |        | 20, 21, 22 |
| ТМ | rM prevents gas<br>or dust entry |                      | Ex m AEex m   | mb          | 1, 2     | 21, 22       |                                 |                             |                 | tb         | +D   |        | 21, 22     |
|    |                                  |                      |               | mc          | 2        | 22           |                                 |                             |                 | tc         | LD . |        | 22         |

### **Understanding Atex IECEx Ratings and Markings**

| n-underground mining) applications. The <b>1G</b> (and/or Ga) rating indicates suitability       |
|--|
| <b>G</b> (and/or Gb) rating is suitable for Zones 1 and 2, and <b>3G</b> (and/or Gc) is suitable |
| ng indicates suitability for Zone 0, 1 and 2 dust environments, while the <b>2D</b> (and/or      |
| nd/or Dc) is suitable only for Zone 2.   |

ting, Tx, depends on the gases in the environr ment. For example, carbon disulfide, ne requirea equipmen n is very explosive and has a low 90°C autoignition temperature, requires the highest group IIC and temperature class T6 protection ratings. Propane, which poses a lower explosion hazard and has a high autoignition temperature, requires only the lowest IIA and T1 ratings.

#### meltric.com

