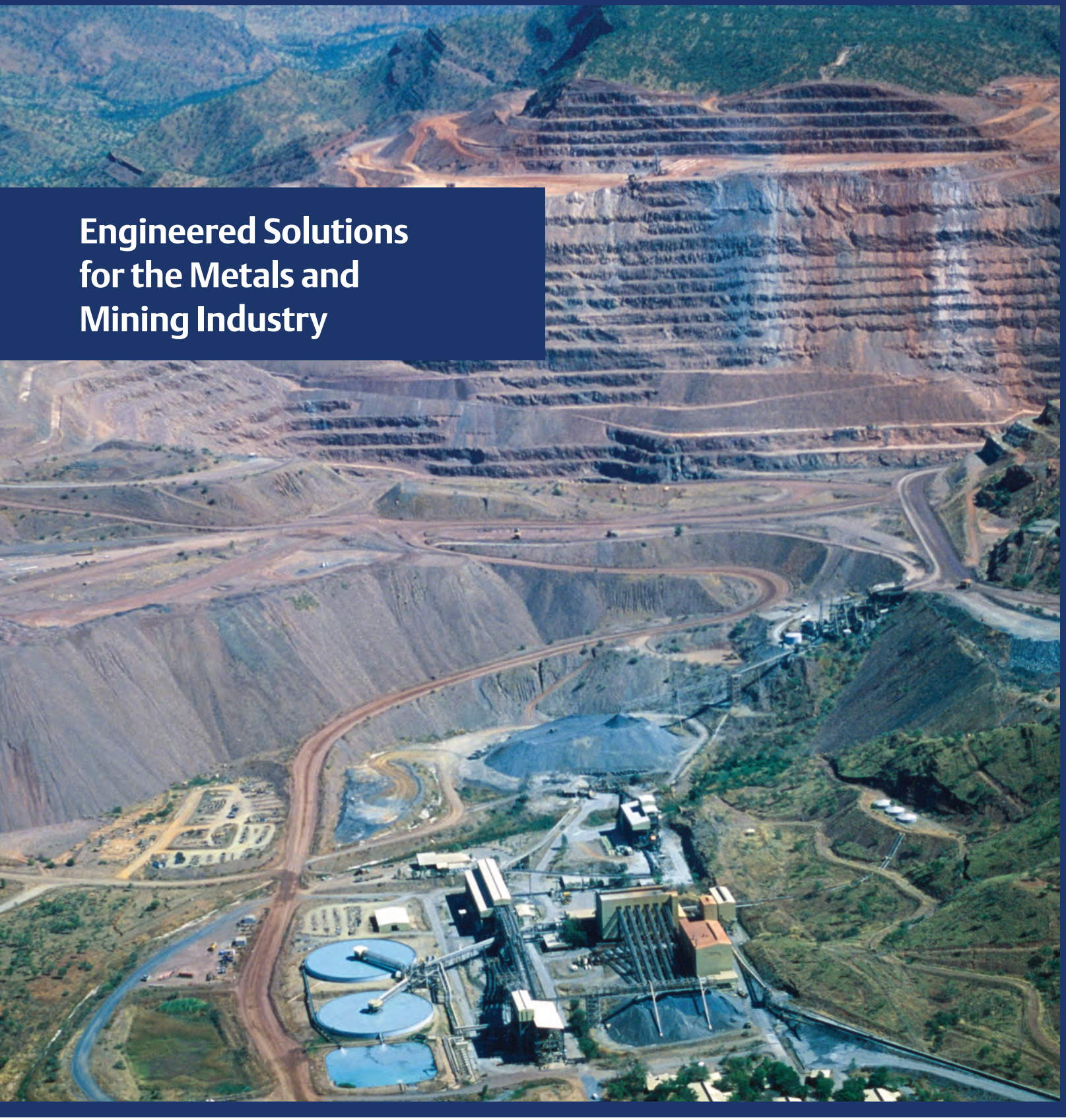


Engineered Solutions for the Metals and Mining Industry

Appleton™, SolaHD™ and Nelson™

Keep your facilities operating safely and efficiently with a full suite of electrical products.

EMERSON™

Ensure Maximum Power Reliability for a Range of Mining Applications

Emerson understands the importance of a reliable electrical source to make modern mining possible. Electrically powered equipment and machinery are used for transporting supplies, crushing and grinding rock, hauling raw materials, lighting dark caverns, running pumps and ventilation fans, and powering tools for drilling and cutting, dust collection and hoists.

In mining, electrical equipment is frequently exposed to environmental challenges which can result in failures and downtime when pushed to the limit. Losses can then be exacerbated when critical pieces of equipment have extended lead times for replacement. Each part of the mining process demands unique electrical solutions to keep operations running with minimal downtime while limiting safety hazards.

For mining companies under constant pressure to produce more – even as minerals become more difficult to recover and as equipment, energy and labor costs rise out of sight – the focus remains on productivity, profitability, and safety.

The electrical equipment installed must be reliable, durable, and safe — whether the operation is below ground, above ground, or a mineral processing facility. Emerson understands you can't afford reliability problems, safety incidents or unplanned downtime. That's why you can rely on our portfolio of Appleton™, SolaHD™ and Nelson™ brands industrial grade electrical products specifically engineered for environments focused on metals and mining. From electrical infrastructures to power quality to freeze protection, Emerson's end-to-end solutions improve facility reliability, safeguard processes, lower operating costs, and stop problems before they can inhibit mining production.

End-to-End Solutions to Improve Plant Performance

At every stage in the mining process, electrical equipment is subjected to corrosive liquids and harsh chemicals, combustible dusts and grime, heavy vibration, power surges, and extreme temperatures — all while running simultaneously, around the clock. If not properly engineered and diligently maintained, electrical equipment will fail, leading to costly production downtime.

Whatever certification your geography and application requires, Emerson is committed to providing reliable solutions to improve operational efficiency and reduce expensive maintenance costs. Engineered to perform in caustic environments, we use only the highest-grade metals and materials to ensure our Appleton, SolaHD, and Nelson electrical products provide the protection you require throughout your facility and around the globe.

Electrical Solutions

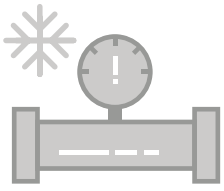
Appleton LED lighting, plugs and receptacles, fittings, controls, enclosures, and distribution equipment are built to withstand the unique challenges poised by combustible gases, vapors, or dusts, wet locations and constrained spaces

- Designed and certified to continuously withstand relentless vibrations, flammable atmospheres, and corrosive environments
- Improve plant infrastructure, reduce maintenance, and create a safer work environment for plant personnel

Power Quality Solutions

SolaHD transformers, power conditioners, power supplies, uninterruptible power supplies (UPS), and surge protectors defend operations against the threat of interruptions and downtime while providing the highest level of power quality

- Mitigate disturbances including power outages, harmful surges, harmonics, sags, noise, and lightning strikes
- Achieve clean electrical waveforms that prevent damage to sensitive electronics, and instrumentation



Freeze Protection Solutions

Nelson Heat Trace offers a broad range of heat trace cables, controls, monitors, and accessories to keep your facility flowing during cold months

- Prevent pipes from freezing with modern freeze protection technologies
- Safeguard your plant from potential flooding, the expense of replacement parts and repairs, environmental damage, and plant downtime

Solutions In Action

① Water/Wastewater Treatment

A B E F I J K M N O P Q S U V W X

② Processing & Manufacturing

C D E F G H I J K L M N O Q S U V W X

③ Power Quality & Power Distribution

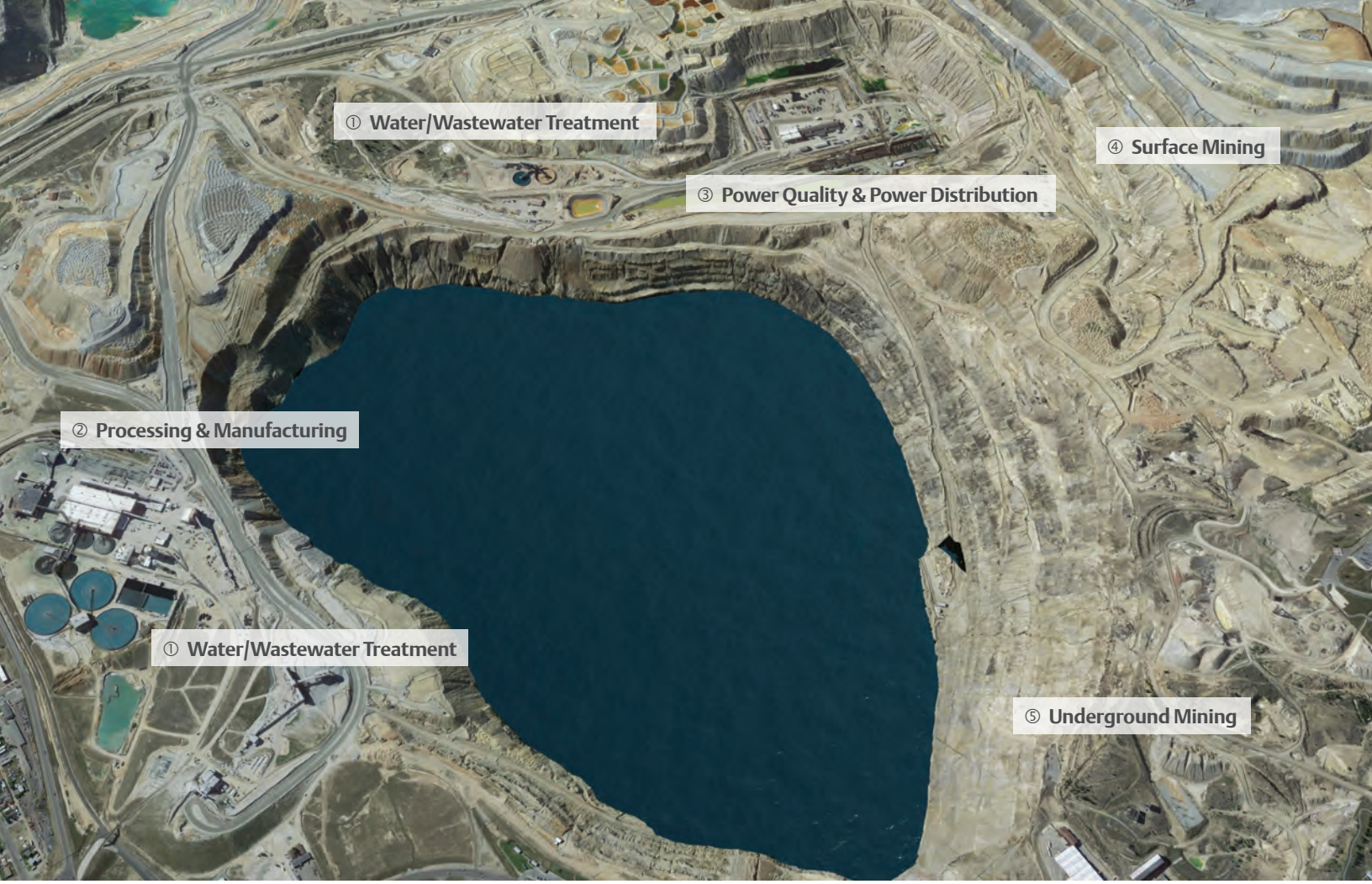
A B E I J K M N O Q R S T U

④ Surface Mining

B E I J N Q S U

⑤ Underground Mining

A C E G H I J K N Q S U V W X



Appleton Solutions

- A Task and Area Lighting
- B Flood Lighting
- C Linear Lighting
- D High Bay Lighting
- E Connected Lighting
- F Explosionproof Lighting
- G Emergency Lighting
- H Egress Lighting
- I Cable Glands, Connectors and Fittings
- J Plugs and Receptacles
- K Disconnect Switches
- L Conduit Bodies and Conduit Boxes
- M Contactors and Motor Starters
- N Controls
- O Panelboards
- P Enclosures and Junction Boxes

SolaHD Solutions

- Q Transformers
- R Power Conditioners
- S Uninterruptible Power Supplies
- T Tracking Filters and Surge Protective Devices
- U Power Supplies

Nelson Heat Trace Solutions

- V Heater Cables
- W Connection Systems
- X Thermostats
- Y Circuit Management and Cable Monitoring

Appleton LED Lighting Solutions

Connected

Connected LED lighting assists facilities, reduce energy consumption and maintenance needs, enhance safety, and strengthen a wireless network.

- Mercmaster™ Connect LED
- Appleton Wireless Motion Sensor
- Emerson Plantweb™ Insight Connected Lighting Application
- Emerson 1410S WirelessHART™ Gateway

Task and Area

Task lighting provides vertical and horizontal illumination in areas with mounting heights up to 3 meters (10 feet). Area lighting is designed to provide overall illumination for large open areas with mounting heights from 3.65 to 10.67 meters (12 to 35 feet).

- Mercmaster LED Generation 3
- Mercmaster LED Low Profile
- Contender™ LED

High Bay

In areas with high ceilings or in areas above tanks, our high bay luminaires are ideal for applications with mounting heights up to 30 meters (100 feet).

- Baymaster™ LED
- IHC LED

Flood

For applications including tank farms, loading docks and perimeter fence line lighting, our floodlights are ideal for mounting heights over 6 meters (20 feet).

- Areamaster™ Generation 2 LED

Linear

Linear lighting is typically used to illuminate narrow spaces, such as walkways, and areas where low clearance demands a compact design.

- Rigmaster™ LED

Explosionproof

Class I, Division 1 explosionproof luminaires have engineered flamepaths that vent the pressure of an explosion and release cooled gases at temperatures that will not ignite the surrounding flammable atmospheres.

- Code • Master™ LED Factory Sealed
- Code • Master Jr. LED Factory Sealed
- Rigmaster™ LED
- A-51™ LED Factory Sealed
- EHLED Handlamp

Egress and Emergency

Egress lighting is used as visual signal lighting to provide a pathway for exiting a building.

- HEX Series LED

Emergency lighting is essential in the event of a power failure and should be installed in critical areas of the facility to ensure the safety of personal.

- Mercmaster LED Generation 3
- Mercmaster LED Low Profile
- Rigmaster LED

Cable Glands | Connectors | Fittings

Cable glands, connectors, and sealing fittings are used to connect and change the direction of wire, conduit, or cable runs as well as to provide a secure connection from the run to an enclosure. Cable glands provide a barrier and environmental seal around cable conductors. Conduit fittings connect wire, conduit, or cable. Sealing fittings minimize the passage of gases and vapors.

- 4QSS Straight, 45° and 90° Stainless Steel Liquidtight™ Connectors
- EY 25% Fill Vertical and Horizontal Conduit Sealing Fittings
- EYD 25% Fill Vertical Conduit Drain Sealing Fittings
- Liquidtight STN Connectors for Liquidtight Flexible Metal Conduit

Conduit Bodies | Conduit Boxes

Conduit bodies and boxes provide access for maintenance, allow the connection of different lengths of conduit, and for changing the direction of conduit. These corrosion-resistant bodies and boxes are ideal for indoor and outdoor, classified, and unclassified locations.

- ER Conduit Outlet Boxes
- FM9™ Aluminum Conduit Outlet Bodies Covers Gaskets
- GR, GRF, and GRTS Conduit Outlet Boxes

Plugs | Receptacles

Portable equipment can be used to build, repair, operate, and maintain facilities. Achieving this safely requires connectivity solutions you can install quickly and rely on to provide quick access to power across a site.

- Powertite™ Series Pin and Sleeve Plugs, Connectors, Receptacles
- U-Line™ Contender Factory Sealed 20 Amp Plugs and Receptacles
- U-Line ECS Factory Sealed 15 and 20 Amp Plugs and Receptacles
- UPR Series Plugs and Sockets

Enclosures | Junction Boxes

To protect your equipment and employees, controls, and juntion boxes are designed to fully contain an explosive force within the enclosure and be strong enough to withstand the effects of corrosion, weather extremes, and time.

- AJBEW Cast Junction Boxes
- EXB Cast Iron Junction Boxes
- PJB Series Polyester Nonmetallic Enclosures
- GUBB, GUBBD and GUBBM Series

Controls

Electrical control products are engineered to increase production efficiencies. A wide range of control options meet the needs of almost any metals and mining application, while their superior design options ensure safe operation in your environment.

- Contender Factory Sealed Control Stations and Tumbler Switches
- Contender 4/4X Control Stations and Tumbler Switches
- EDS Factory Sealed Tumbler Switches
- EFD/EFDB and EDS Control Stations and Pilot Lights

Disconnect Switches

Disconnect switches are essential for personnel safety to ensure power is disconnected from equipment. They should be installed within 15.24 meters (50 feet) from the controlled equipment, or at the service entrance to disconnect power from the entire building at once.

- AE Series Disconnect Switches
- AE Bolted Molded Case Switches
- EDS Heavy Duty Disconnect Switches
- PlexPower™ Factory Sealed Enclosed Disconnect Switches
- WST and WDS Cast Aluminum Enclosed Disconnect Switches

Contactors | Motor Starters

Contactors and motor starters provide safe and efficient control and protection of systems such as pumps, motors, and lighting. NEC and CEC certified solutions ensure systems keep working, especially in wet and corrosive environments.

- PlexPower Contactor and Motor Starters
- PlexPower Lighting Contactor
- AEB Series Bolted Motor Starters and Contactors
- AELB Series 65 kAIC Bolted Motor Starters and Contactors
- ES Bolt-On Series Line Starter Enclosures

Panelboards

Panelboards provide protection and control in harsh industrial, hazardous, damp, wet, or corrosive environments, either indoors or outdoors. Available in a complete range of designs and materials ensures the flexibility to make the perfect panelboard choice.

- PlexPower Series Factory Sealed Panelboards
- PlexPower Fiber Panelboards
- ALPN, APPN and AGPN Series Distribution Panelboards
- ALPF Factory Sealed Lighting Panelboards
- APPF Power Distribution Panelboards
- D2P Factory Sealed Circuit Breaker Panelboards

SolaHD Power Quality Solutions

Transformers

Transformers address variable speed motor drive applications to magnetically isolate the motor drive from the main plant power. Drive isolation and K-factor transformers can be used with DC drives or variable-frequency AC drive applications to change voltage, reduce drive-induced ground currents, and reduce common-mode noise.

- General Purpose Ventilated Transformers
- Low Temperature Rise Ventilated Transformers
- K-Factor Ventilated Transformers
- Drive Isolation Transformers

Power Supplies

Power supplies prevent momentary losses of line voltage are one of the most frequent power quality disturbances found in industrial facilities. Normally caused internally by large load start-ups or externally by utility switching, voltage sags prematurely wear machines and computer equipment. The result can be lost data, inexplicable resets or a production shutdown

- SDN-D High Performance Din Rail Series and SolaHD Communication Modules
- SVL Essential Din Rail Series
- SDN-C™ Compact Din Rail Series

Power Conditioners

Power conditioners maintain a constant voltage against power quality events like: spikes and sags, while providing electrical isolation when the application requires it, thereby correcting against these power quality events by maintaining a regulated smooth, pure sinewave output for electronic loads.

- MCR Hardwired Series Power Line Conditioning with Voltage Regulation
- CVS Hardwired Series Constant Voltage Transformers

Surge Protection Devices | Tracking Filters

Surge protection and filtering devices allow for multi-staged protection against high-energy surges, electric noise, and residual low-voltage transient in your facility.

- STV25K DIN Rail Series Surge Protective Devices
- STFE Elite Series Tracking Filter with Surge Protection
- STFV Plus Series Tracking Filter with Surge Protection
- SPD50K Series Surge Protective Devices
- STV100K Series Hardwired Surge Protective Devices
- SPD200K and SPD300K Series Surge Protective Devices

Uninterruptible Power Supplies (UPS)

Clean and reliable power is never certain in mining operations. Power abnormalities such as brownouts, voltage sags and surges, and harmonics are common and can cause unplanned downtime. Industrial Uninterruptible Power Supplies are designed to provide additional protection from those abnormalities and maintain clean and reliable power.

- SDU AC - B and DC - B Series DIN Rail UPS
- S4KC Series On-Line UPS

Heater Cables

Heater cables keep pipes and fluids inside of them at a constant temperature to maintain desired and prevent freezing. Self-regulating heater cables automatically alter their output in response to temperature changes and feature multiple power output and voltage ratings. Mineral insulated heater cables feature excellent chemical resistance and are used in applications that require higher temperatures.

- Type LT Self-Regulating Heater Cable
- Type HLT Self-Regulating Heater Cable
- NC Constant Wattage Heater Cable
- Mineral Insulated Heater Cable

Circuit Management | Cable Monitoring

Micro-processor based, digital, general purpose controllers are designed for use in ordinary locations to provide temperature control of an individual heater segment with sensor monitoring, remote alarm contacts, and ground fault leakage detection. Multi-point control systems provide an economical approach to process control where large concentrations of heater circuits are present.

- CM3 Circuit Management System
- CM-1 Microprocessor Based Heater Cable Monitoring System
- CM 2201 Single Point Circuit Management System
- CM 2202 Dual Point Circuit Management System

Thermostats

When paired with field-fabricated heating cables, thermostats are approved for use in ordinary and Division 2 hazardous areas. Weatherproof options ensure accurate temperature measurement regardless of the location.

- TE760-TC Hazardous Location Thermostats
- TF4X40 Weatherproof Thermostats
- TA4X140 Weatherproof, Ambient Temperature Thermostat
- TA7140 Hazardous Location, Ambient Temperature Thermostat

Connection Systems

Connection kits and accessories are available for splicing cables under pipe insulation or in a rugged NEMA 4X enclosure. Offering exceptional weather and corrosion resistance, they are designed to handle wide temperature ranges and harsh environments.

- HASK Series Connection Kits
- AX Connection Kits
- PLT-Series Connection Kits and Accessories
- Power Connection Kits
- Splice Connection Kits

Products engineered and certified to deliver unparalleled results for any electrical job throughout your metals and mining facility

Visit www.masteringindustry.com/mm to learn more about our proven electrical solutions for your metals and mining facility.

Engineered solutions proven to work in the toughest environments.

Achieve operational excellence; minimize energy usage, installation, and maintenance costs while enhancing equipment reliability.

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