We know your mining Challenges
Conveyor Solutions:
Engineered for the harshest environments

Mining is an around-the-clock operation where employee safety and zero downtime are critical requirements for your conveyor systems. You need to maximize the movement of your material and minimize the risk of damage to equipment or personnel. You need a partner like Cooper Industries.

Cooper, now a part of Eaton, offers a large portfolio of innovative and reliable products for conveyor-related applications. Whether it’s control switches or belt idlers to minimize downtime, safety grating to prevent slips and falls, or lighting that provides 7 years of continuous, maintenance-free operation, our product solutions are engineered for safety and productivity.

**LED Lighting Solutions**
Higher lumens per watt, vibration resistance, energy efficiency and extreme reliability.

**Control, Alignment & Signal Switches**
Reliable design, durable construction and ease of installation and maintenance.

**Industrial Fittings, Enclosures & Cable Glands**
Rugged construction, extensive range of configurations and broad range of material types.

**Cable Management & Safety Grating**
Broad offering, multiple material types, cost effective, field flexibility and labor saving design features.

**Limberoller Conveyor Belt Idlers**
Heat and corrosion resistant, impact absorbent, continuous belt support and reduced belt wear.
Crouse-Hinds offers the broadest portfolio of LED luminaires for any industrial or hazardous application. Additionally, we utilize more than 100 years of lighting expertise to optimize the benefits of LED technology to offer the safest and most reliable LED luminaires on the market.

Whether you need to light overland or tunnel conveyance systems or stackers and reclaimers, we have a solution that will exceed your needs. Featuring high performance LEDs and a solid state electronic driver, our LED luminaires improve energy consumption and reduce maintenance for relamping.

Approximately half the energy of HID and no maintenance for up to seven years, The Champ® Pro PVM is an ideal luminaire for illuminating conveyor belts and walkways.
Champ® Pro PVM Luminaires

Champ® Pro PVM Series Luminaires are designed to provide full-spectrum, crisp, white light with a true IES Type I distribution.

Five versions of the PVM Series are available, providing ideal solutions for a wide range of applications.

**LED System**
- High brightness light emitting diode (LED) arrays
- Color temperature: 3000K (CRI 82) and 5600K (CRI 65) options available
- Advanced heat sink design ensures low LED junction temperature and sustained lumen performance
- Redundant drivers provide reliable operation in the harshest environments

<table>
<thead>
<tr>
<th>Champ® Pro PVM Model</th>
<th>Equivalent HID Luminaire</th>
<th>Typical Energy Savings / Lifetime</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVM3L</td>
<td>70W-100W</td>
<td>Up to 58% reduction in energy costs and 60,000 hours of continuous operation!</td>
</tr>
<tr>
<td>PVM5L</td>
<td>100W-150W</td>
<td></td>
</tr>
<tr>
<td>PVM7L</td>
<td>150W-175W</td>
<td></td>
</tr>
<tr>
<td>PVM9L</td>
<td>175W-200W</td>
<td></td>
</tr>
<tr>
<td>PVM11L</td>
<td>200W-400W</td>
<td></td>
</tr>
</tbody>
</table>

Champ® Pro PFM Series Floodlights

Champ® Pro PFM Series Floodlights are designed to provide full-spectrum, crisp, white light.

Seven versions of the Champ PFM LED are available, providing ideal solutions for a wide range of applications.

**LED System**
- High brightness light emitting diode (LED) arrays
- Color temperature: 3000K (CRI 82) and 5600K (CRI 65) options available
- Advanced heat sink design ensures low LED junction temperature and sustained lumen performance
- Redundant drivers provide reliable operation in the harshest environments

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</tr>
<tr>
<td>PFM9L</td>
<td>175W-250W</td>
<td></td>
</tr>
<tr>
<td>PFM11L</td>
<td>250W-400W</td>
<td></td>
</tr>
<tr>
<td>PFM13L</td>
<td>400W</td>
<td></td>
</tr>
<tr>
<td>PFM25L</td>
<td>750W</td>
<td></td>
</tr>
<tr>
<td>PFM50L</td>
<td>1500-2000W</td>
<td></td>
</tr>
</tbody>
</table>
Crouse-Hinds conveyor belt alignment and control devices are engineered to be a safe, rugged, worry-free answer to your control and alignment needs. Durable materials, innovative design and a focus on safety lets you concentrate on other parts of your plant while your conveyor system stays running.

**Typical Application**

Installation of an AFA or AFAX unit on either side of a conveyor belt allows for continuous-operation belt monitoring to signal and stop when belt misalignment occurs, delivering safe and productive material handling.

Spring loaded operating arm will automatically return switch to normal position when belt interference is removed.

Recommended installation includes a pair of AFA or AFAX units on each side of the belt, spaced at a maximum distance of 90 meters (300 ft) and at the end of the belt.
AFU & AFUX Conveyor Belt Control Switch

Features & Application
- Used as emergency or normal “STOP” switch for conveyor lines, cranes, unloaders, and bulk handling systems
- Wired in-line to the control circuit of magnetic motor starters to shut down motor-driven conveyors or other machinery when switch is actuated
- Single-end units to be used at ends of conveyor system and spaced maximum 30 meters (100 ft) between switch. Double-end units to be used along conveyor and spaced maximum 30 meters (100 ft) from each side of unit
- Double-end units contain (2) red painted indicator arms on each side for actuating indication

Certifications & Compliances
- Cl. I, Div. 1 & 2, Groups C, D
- Cl. II, Div. 1, Groups E, F, G
- Cl. II, Div. 2, Groups F, G
- Cl. III
- NEMA 3, 4, 7CD, 9EG
- Explosionproof
- Dust-Ignitionproof
- Raintight
- Wet Locations

AFU & AFUX Conveyor Belt Control Switch Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Maximum Weight of Unsupported Line or Cable Without Actuating Switch† (lbs)</th>
<th>Total Operating Force Required (lbs)</th>
<th>Contact Arrangements With 2-NO, 2-NC in Each End Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single end left</td>
<td>15</td>
<td>25</td>
<td>AFU0333 50</td>
</tr>
<tr>
<td>Single end left</td>
<td>25</td>
<td>50</td>
<td>AFU0333 60</td>
</tr>
<tr>
<td>Single end right</td>
<td>15</td>
<td>25</td>
<td>AFU0333 05</td>
</tr>
<tr>
<td>Single end right</td>
<td>25</td>
<td>50</td>
<td>AFU0333 06</td>
</tr>
<tr>
<td>Double end</td>
<td>15</td>
<td>25</td>
<td>AFU0333 55</td>
</tr>
<tr>
<td>Double end</td>
<td>25</td>
<td>50</td>
<td>AFU0333 66</td>
</tr>
</tbody>
</table>

† A galvanized steel aircraft cable, supported every 10’ is recommended

AFA & AFAX Conveyor Belt Alignment Switch

Features & Application
- Used as emergency or normal “STOP” switch for conveyor belts whenever they become misaligned or run off their tracks due to excessive speed, uneven load, leveling, breakage and/or other problems
- For Signalling: Operating arm actuates normally closed contacts within 7º-15º of travel
- For Emergency Shutoff: Operating arm actuates normally closed contacts within 23º-31º of travel
- Over-travel protection of 85º: Prevents severe run off damage to switch mechanism. Spring loaded operating arm returns the switch to normal position when belt interference is removed.

Certifications & Compliances
- Cl. I, Div. 1 & 2, Groups C, D
- Cl. II, Div. 1, Groups E, F, G
- Cl. II, Div. 2, Groups F, G
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AFA & AFAX Conveyor Belt Alignment Switch Specifications

<table>
<thead>
<tr>
<th>Contact Arrangement</th>
<th>Diagram</th>
<th>Cat #</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 normally open</td>
<td><img src="image1.png" alt="Diagram" /></td>
<td>AFA20</td>
</tr>
<tr>
<td>2 normally closed</td>
<td><img src="image2.png" alt="Diagram" /></td>
<td>AFAX20</td>
</tr>
</tbody>
</table>
Crouse-Hinds electrical connectivity solutions are designed for severe mining conditions, offer extensive configurations, custom capabilities and numerous designs. Our time tested, innovative products move power where you need it simply and safely in any electrical installation.

One hundred years after the introduction of Condulet®, Crouse-Hinds remains the leader in conduit outlet bodies. The Condulet conduit bodies line has grown to include five distinct families of products, manufactured in sand-cast Feraloy® iron, sand-cast malleable iron, sand-cast copper-free aluminum, die cast aluminum, and stainless steel.

Bodies are offered in 10 different shapes to provide users with the most flexible offering on the market.

**Bodies**
- Form 7 bodies have a rounded back and are used for compact, neat installations
- Form 8 and Mark 9 bodies have a flat back and provide more room for heavy conductors
- Form 5 and Series 5 bodies are primarily for commercial and light industrial use
- Mogul bodies are larger with longer openings for oversized or stiff conductors

**Covers**
- Snaptight and wedgenut covers increase productivity with easy installation and reduced labor costs associated with re-tapping damaged screw holes
- Integral gasket option simplifies installation and reduces inventory costs

**Coatings**
- Electrogalvanized with aluminum acrylic paint for excellent corrosion resistance
- Bodies are “dunk” coated for enhanced protection inside the fitting and on the threads
Cable Glands

Crouse-Hinds cable glands are used in conveyor applications throughout the world. Our global offering provides a termination solution for virtually every cable type used. These cable glands are designed for strict adherence to global specifications, meeting North American and international codes and standards including NEC, CEC, ATEX, IECEx and regional certifications.

North American Glands
- Armored glands for metal clad and teck cable – TMC, TMCX, and TECK Series
- Non-armored glands for non-armored and tray cable

International Glands
- Armored glands for SWA, SWB, STA, braided marine shipboard, and lead sheathed cable – ADE4F, ADE6F, ADE6FC Series
- Non-armored glands for non-armored and tray cable – ADE1F, ADE1FC Series
- Wide range of materials including nickel plated brass, stainless steel, aluminum, and impact-resistant nylon

Electrical Enclosures

Crouse-Hinds enclosures are manufactured to meet the most demanding environmental conditions around the world. They are available in a comprehensive range of sizes, each with various configurations for a multitude of mining applications. These exceptionally durable, corrosion resistant enclosures can withstand extreme abuse and exposure to chemicals, water, and severe conditions. They have unique design features, precision manufacturing, and the highest quality materials, making them the premier choice for instrumentation and electrical applications.

NEMA Series Enclosures
UL, CSA & JIC certified enclosure and termination solutions for Type 12, 13, 4 and 4X applications. Available in stainless or sheet steel.

Ex-CELL Series Enclosures
A globally certified enclosure and termination solution for Type 3S and 4X applications. Available in stainless or sheet steel.

Fiberglass Enclosures
Made of fiberglass-reinforced polyester, non-metallic enclosures are exceptionally durable, corrosion resistant, and can withstand abuse and exposure to chemicals, water, and extreme conditions. Stainless steel used on all external hardware.
ELECTRICAL & MECHANICAL SUPPORT SYSTEMS

As the leading supplier of electrical and mechanical cable support systems, pipe supports and walkways, our designs are suited to match varying environments and conditions. We have one of the broadest offerings of cable trays with the longest spans available in the market today.

Safety Grating

Designed with slip resistance in all directions making it one of the best options for heavy duty safety grating applications in the market today. Heavy Duty GRIP STRUT™ is ideal for a variety of commercial and industrial applications.

- Slip resistant walkways for demanding environments where mud, ice, oil and other substances can create hazardous working conditions
- Available in a wide variety of traction patterns and material types
Cable Ladder, Channel & Accessories

Our cable tray solutions provide up to 40 ft spans between supports versus the industry standard 20 ft spans; helping you reduce your material costs and accelerate project construction schedules.

Cable Ladder and Accessories
- Corrosion resistant, hot-dipped galvanized, stainless steel and FA Series Fiberglass (electrically conductive GRP)
- Trefoil or single cable cleats for life and facility protection

Cable Channel and Accessories
- Hot-dip galvanized or stainless steel available in ventilated and non-ventilated options

FLEXTRAY™ Wire Basket
- Field fabricated fittings help reduce installation time and increase flexibility
- Unique splicing and support options help reduce the total installed cost over alternative methods

Strut Support Systems & Pipe Hangers

Strut Support Systems
- Broadest strut system offering in the industry
- Solutions for virtually any electrical, mechanical or industrial support application
- Materials and finishes for every environment including stainless steel, galvanized steel, aluminum and fiberglass

Pipe Hangers
- Patented technology eases pipe installation
- All products meet or exceed industry standards set for their design and application
TRANSPORT
STRONG, LIGHTWEIGHT, SELF CLEANING

LIMBEROLLER CONVEYOR BELT TROUGHING & RETURN IDLERS

Limberollers are the best choice to decrease conveyor system down time. Constructed of a rubber encapsulated steel rope design with only two bearings per idler, they are used in place of cantenary steel cans. Available in troughing and return configurations, Limberollers provide superior belt alignment, are lightweight enough to be handled by one person, and are self cleaning and non-static.

Design & Construction Advantages

- Continuous belt support
- Long bearing life
- Smooth flow of material, reduced spillage
- Rugged design
- Superior belt alignment
- Lightweight construction
- Reduced maintenance and conveyor downtime
- Long idler life
- Heat resistant
- Corrosion resistant
- Self-cleaning
- Reduced belt wear
**Limberoller Troughing Idlers**

The Limberoller Troughing Idler consist of a steel wire rope that is completely encapsulated in rubber. The elastomer is molded to the rope, under heat and pressure, so that a virtually impervious sheath of rubber completely covers the rope. This basic design varies depending on belt width, by configuration of the molded rubber jacket.

- LR-100 and LR-150 series troughing idlers with double row ball bearings and slotted to fit into a rigid mounting
- LR-300 and LR-350 series troughing idlers with tapered roller bearing in a trunnion type housing that fits into an oarlock type support
- Troughing Idler consist of a steel wire rope that is completely encapsulated in rubber
- Troughing Brackets feature steel standard, special and training troughing styles

**Limberoller Return Idlers**

The Limberoller Return Idler consists of a solid steel shaft completely encapsulated in rubber for a virtually impervious sheath. Return idlers feature bearing housings that are slotted so that they will fit in specially designed hanger and support brackets.

- Return idlers LR-106 & LR-307 series feature solid shaft return idlers with double row ball bearings
- LR-106 & LR-307 are for high impact of heavy duty
- LR-107 series solid shaft return idlers with double row ball bearings
- Solid steel shaft completely encapsulated in rubber for a virtually impervious sheath
- Steel hanger and training return brackets for use with LR-106, LR-107, and LR-307 series
- Synthetic rubber top mount brackets are for use with LR-106 and LR-107 series
We are committed to helping you create a safe environment, reinvest in innovative technologies and provide reliable solutions to maximize mine efficiency, productivity and operations.

With over 100 years of experience in harsh and hazardous areas,

we know that mining is a challenging business.

We are committed to helping you create a safe environment, reinvest in innovative technologies and provide reliable solutions to maximize mine efficiency, productivity and operations.