



CASE STUDY

Littelfuse and Epitron Help Newmont Mining Find Gold

MP8000 Motor Protection Relays Protect Newmont's Water Pumps

SITUATION

If you think of gold only for its use in jewelry, then you are not considering its broad applications. Gold is a critical electrical connection material in electronics and in battery contacts. Gold has important uses in implanted medical devices. Gold is even used in heat shields that protect satellites.

Supplying gold requires extraction from the earth, and that is the work of mining companies such as Newmont Corporation, one of the world's leading gold mining companies.

Newmont's headquarter is located in Denver, Colorado, US and has gold mines in North America, South America, Africa, and Australia.

Newmont electrical engineering managers in Timmins, Ontario, were looking for a better solution for their mine water removal pumps, which are supposed to shut off when there is no water to cool them. The pumps have a shut-off switch activated by a float. In mine environments, mud can cause the float to stick, causing pump motors to fail by running dry, overheating, and burning up. This mine uses pump motors as large as 50 hp; their replacement is expensive, as is downtime from flooding.

To address high-cost pump failures, the electrical engineers asked Epitron Inc., a local electrical distributor and manufacturer of motor control panels, to find a solution.

SEARCH FOR A SOLUTION

Epitron engineers recognized that, without water flowing through a pump, its current draw would be abnormally low, because of the light load condition. They knew that adding undercurrent protection would detect a low water condition.

Epitron selected two potential suppliers of an undercurrent monitoring device. Supplier 1 was a broad-based supplier of electrical and electronic power-distribution components. Supplier 2 was Littelfuse, the manufacturer of the SE-105 Ground-Fault Ground-Check relay, which is widely specified throughout the Canadian mining industry, and is also used in Epitron's motor control panels. The SE-105 is a combination ground-wire monitor and ground-fault relay for resistance grounded systems. The SE-105 monitors the integrity of the ground conductor to protect motors from hazardous voltages resulting from ground faults on 3-phase power systems.

Supplier #1 offered an electronic overload relay with undercurrent protection and little more. In contrast, Littelfuse provided in person technical consultation to Epitron and Newmont. After researching the application, Littelfuse recommended the MP8000 Bluetooth Overload Relay. In addition to providing undercurrent protection, the relay offered several useful features:

- Overload, voltage phase loss, voltage and current unbalance, and power monitoring
- Bluetooth wireless communication
- A smartphone- or tablet-based application to read relay status and configure the MP8000 remotely
- Ethernet communication for remote monitoring and control from a PC
- Storage and readout of fault history
- A lower price than the competitor's electronic overload relay

OUTCOME

Epitron selected the Littelfuse MP8000 relay, through which Epitron could offer Newmont cost savings, time savings, and greater worker safety.

Installed in the motor control panels, the MP8000 relays shut down pumps when they run dry. This action prevents pump failure and costly replacement.

Furthermore, maintenance workers can remotely access the MP8000 via its Ethernet connection to obtain information on a fault in advance of visiting the pump location. This saves time because workers know what parts to bring.

On location, maintenance workers can communicate with the MP8000 using the Bluetooth smart-phone application, avoiding the need to open the high-power motor control panel. This way, workers avoid exposure to shock and arc-flash hazards and avoid the need to put on PPE.

Epitron has designed the MP8000 and SE-105 relays into all new motor control panels that this mine requires and is retrofitting the MP8000 into existing motor control panels throughout the mine.

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—Jethro Skwarok,
General Manager of Epitron

"We could not be happier with the assistance we received from Littelfuse. They helped us understand how the MP8000 relay could solve Newmont's costly pump failures. The MP8000, with its Bluetooth communication link and its app, enabled Newmont to reduce its operating costs and improve worker safety. The MP8000 gives us a competitive advantage over other motor control panel manufacturers" said Jethro Skwarok, General Manager of Epitron.

Littelfuse innovation and technical support helped reduce costs and improve safety... and find gold.



* Bluetooth is a trademark of its respective owners.