Integrated Protection Relay IPD

For mobile machine electrical outlets
Microprocessor based
Compact plug-in unit
Machine communication
Cable insulation test feature

Certified for use in underground coal mines
IPD Integrated Protection Relay

The Ampcontrol IPD Integrated Protection Relay is an intelligent device based on microprocessor technology. The relay provides the necessary functions required for protecting electrical outlets supplying underground mining machinery. All of the protection functions are combined into a compact, plug-in unit, which can be easily changed out to minimise down time.

IPD Protection Functions:
- Automatic and manual insulation test
- Earth leakage
- Earth fault lockout
- Earth continuity
- Overcurrent/overload
- Short circuit
- Contactor fail

Cable Insulation Test Feature
As part of a “pre-start” check, an intrinsically safe earth fault lockout, three phase insulation test is applied to the machine cable. If the measured resistance is above the preset level then an automatic high voltage DC “insulation test” to earth of the cable is carried out. A resulting successful test allows the IPD’s main contactor relay to energise, which in turn closes the main contactor. A manual insulation test is provided as a maintenance/fault finding tool. This feature allows cable insulation levels to be trended providing valuable information for maintenance planners.

Machine Communication
The IPD Relay can provide machine communication through the use of a Remote Termination Unit (RTU-D) connected between the pilot and earth at the machine end of the trailing cable. Through the use of the RTU-D the relay parameters are automatically up loaded from a remote machine when a cable is inserted into a power outlet.

Information Display and Monitoring
Extensive information display and monitoring features are included to facilitate fault finding and system trending. This information can be accessed from the IPD Remote Display Module (RDM-D) on the outside of the enclosure, or remotely via a communication link.

Application
The IPD Integrated Protection Relay is certified for use in underground mining operations. For the protection of mining equipment in hazardous areas the relay is installed inside a flameproof enclosure with the Remote Display Module located on the outside of the enclosure, made possible due to its Intrinsically Safe design.

Features/Benefits:
- High voltage insulation test improves safety and maintenance efficiency
- Machine communications negates the need for dedicated outlets
- Programmable from the Remote Display Module - user friendly
- Fail safe operation - trips to safety on loss of supply
- Diode or Remote Termination Unit operation provides flexibility
- IS Remote Display Module, Ex ia - out of panel diagnostics setup
- 120 event log - invaluable fault finding aid
- Local or remote control provides flexible operation
- Serial communication allows sequencing to be arranged by a PLC
- Plug-in for quick change out reduces downtime
- Fan interlocking provided on any outlet - no additional controls required
- Thermal modelling for accurate motor protection
- Easy to read plain text status messages simplifies operation
- Fully functional for of two seconds during power loss ensures minimum disruptions
- Relay and digital input status to aid fault finding

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