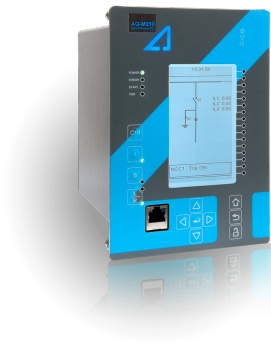


AQ-M210 Motor protection IED



The AQ-M210 motor protection IED offers a modular protection and control solution for small and medium size motors. You can add up to four (4) I/O or communication cards into the device for more comprehensive monitoring and control applications. You can also connect up to twelve (12) RTD signals for thermal alarming and tripping. AQ-M210 communicates using various protocols, including the IEC 61850 substation communication standard.

Highlights

- Five (5) thermal models (time constant accurate)
- Soft start protection begins from 6 Hz
- Star-delta started motor supervision
- Two-speed motor protection

Technical Data

PROTECTION FUNCTIONS

Non-directional overcurrent ($I>$; 50/51) - 4 stages (INST, DT or IDMT)

Non-directional earth fault ($I0>$; 50N/51N) - 4 stages (INST, DT or IDMT)

Negative sequence overcurrent/ Phase current reversal/ Current unbalance ($I2>$; 46/46R/46L) - 4 stages (INST, DT or IDMT)

Harmonic overcurrent ($Ih>$; 50H/51H/68H) - 4 stages (INST, DT or IDMT)

High-impedance or low-impedance restricted earth fault/ Cable end differential ($I0d>$; 87N)

Circuit breaker failure protection (CBFP; 50BF/52BF)

Resistance temperature detectors

Motor status monitoring

Motor start/ Locked rotor monitoring ($Ist>$; 48/14)

Machine thermal overload ($TM>$; 49M)

Mechanical jam ($Im>$; 51M)

Frequent start (N>; 66)

Non-directional undercurrent (I<; 37)

Programmable stage (PGx>/<; 99)

Arc protection (IArc>/I0Arc>; 50Arc/50NArc) (optional)

CONTROL

Number of objects to control and monitor: 5

Number of indicators to monitor: 5

Number of setting groups: 8

Cold load pick-up

MEASURING AND MONITORING

Phase, sequence and residual currents (IL1, IL2, IL3, I01, I02)

Current transformer supervision

Circuit breaker wear monitoring

Total harmonic distortion

Event recorder (max. 15 000 permanent event records)

Disturbance recorder (max. 100 records á 5 seconds at 3.2 kHz sampling)

Running hour counter

Measurement recorder

Measurement value recorder

HARDWARE

Current inputs: 5

Digital inputs (fixed): 3

Digital outputs (fixed): 5

Options (4 slots)

Digital inputs: +8/16/24/32

Digital outputs: +5/10

Milliampere I/O module (4 mA outputs + 1 mA input)

Arc protection module (4 sensors + 2 HSO + 1 BI)

External I/O modules (see "Accessories" tab)

Communication media (specified in the "Communication" tab)

COMMUNICATION

Communication inputs

RJ-45 100 Mbps Ethernet (front panel, fixed)

RJ-45 100 Mbps Ethernet and RS-485 (rear panel, fixed)

2 x RJ-45 100 Mbps Ethernet with an IRIG-B input (optional)

2 x ST 100 Mbps Ethernet with an IRIG-B input (optional)

2 x LC 100 Mbps Ethernet (PRP/HSR) (optional)

RS-232 serial fiber (PP/PG/GP/GG) (optional)

Communication protocols

IEC 61850

IEC 60870-5-101/104

IEC 60870-5-103

Modbus/RTU and Modbus/TCP

DNP3

SPA

ACCESSORIES

AX007 External 6-channel 2-/3-wire RTD input module (pre-configured)

AX008 External 8-channel thermocouple and mA input module (pre-configured)

AX009 Raising frame (87 mm)

AX010 Raising frame (40 mm)

AX011 Combiflex frame

AX012 Wall mounting bracket

Application Drawing

