

AQ-103 Arc flash protection



AQ-103 is a sophisticated microprocessor-based arc flash protection unit for arc light detection. AQ-103 acts as a sub-unit to AQ-110P (or, AQ-110F) in an AQ-100 arc protection system. It can also function as a stand-alone unit in light-only systems. AQ-103 is designed to minimize the damage caused by an arcing fault (arc flash) by tripping the circuit breaker that sources the fault current. The complete system self-supervision function of AQ-103 provides the highest level of dependability by continuously monitoring all internal system functions as well as with external connections. AQ-103 provides communication through RS-485 and Modbus protocol as ordering options. Through the Modbus communication AQ-103 connects to a local display (AQ-S254) for indication of exact fault location and to a SCADA system either through a AQ-S254 or RTU.

Features:

- A wide range for the power supply (18...72 V DC or 92...265 V AC/DC)
- A maximum of 14 arc light point sensors (1 point sensor per channel)
- A maximum of 1 fiber loop sensor or connection to quenching device (optional)
- 4 trip relays
- 1 system failure relay
- 1 fast binary output
- 2 fast binary inputs
- 1 high-speed output (HSO)
- 1 multifunction push button
- Non-volatile memory
- 25 indication LEDs
- Modbus protocol (optional)

Technical Data

PROTECTION

Light (L>)

Light and pressure (L> / P>)

Circuit breaker failure protection (50BF/52BF)

Trip time when using mechanical trip relays: 7 ms*

Trip time when using solid state trip relays: 2 ms*

Reset time (arc light stage): 2 ms

*) total trip time when using arc light (L>) or when using arc light (L>) and phase/earth overcurrent (I>) from an AQ-110x unit

I/O

Applicable sensors

AQ-01 light sensor*

AQ-02 light and pressure sensor*

AQ-06 plastic fiber sensor (3...40 m) (optional)

AQ-07 glass fiber sensor (3-50 m length) (optional)

AQ-08 glass fiber sensor (3...15 m) (optional)

*) activation threshold options: 8.000 lx, 25.000 lx, 50.000 lx

Trip relays (T1, T2, T3, T4)

3 NO + 1 NC or 4 NO

Rated voltage: 250 V AC/DC

Continuous carry: 5 A

Make-and-carry for 3 s: 16 A

Make-and-carry for 0.5 s: 30 A

Breaking capacity DC (when L/R = 40 ms): 40 W; 0.36 A at 110 V DC

Contact material: AgNi 90/10

Binary output (BO1)

Number of outputs: 1

Rated voltage: +24 V DC

Maximum rated current: 20 mA

Binary inputs (BI1, BI2)

Number of inputs: 2

Threshold voltage: 24 V DC

Rated voltage: 250 V AC/DC

Rated current: 3 mA

Power supply

Auxiliary power supply: 92...265 V AC/DC

Auxiliary power supply: 18...72 V DC (optional)

Maximum interruption: 100 ms

Maximum power consumption: 5 W

Standby current: 90 mA

HMI

25 indication LEDs

Multifunction push button (SET)

Autoconfiguration

Indication reset

System check

SELF-SUPERVISION

Sensors and wiring

Binary I/O

Trip coil

Power supply

Internal voltages

Settings

COMMUNICATION

Modbus RTU

SYSTEM CONNECTIVITY

AQ-100 series

AQ-200 series

AQ-300 series

Application Drawing

