

AQ-110F Arc Flash Protection Device (Main Unit)



Description

The AQ-110F arc flash protection device for medium-voltage systems supports both current and light sensing. Acting as the main unit of the arc flash protection system, the AQ-110F detects overcurrent in the incoming feeder and a light signal from a sub-unit, or from a light detection sensor connected to the device itself. It then trips the circuit breaker that is the source of the fault current, thereby significantly reducing the damage caused by an arcing fault (arc flash).

The AQ-110F devices also support Rogowski sensors, offering superior flexibility and ease of installation, especially for retrofit projects. This feature also enables the expansion of arc flash protection to parts of the switchgear that are not covered by current transformers.

This multipurpose arc flash protection device is suitable for a variety of applications, from stand-alone devices to a main unit of a more complex arc protection system. AQ-110F's Modbus RTU communication enables integrating the arc flash protection system into a SCADA/DCS system directly, or via an AQ 250 protection and control device. This allows for transferring all data about the alarms, sensors, and input/output signals - available locally on the HMI of the arc protection device - to the SCADA/DCS system e.g. according to the IEC 61850 standard.

Highlights:

- A wide range for the power supply (18...72 V DC **or** 92...265 V AC/DC).
- Three-phase and residual current detection.
- Support for Rogowski sensors.
- Max. 1 fiber loop sensor per main unit.

- Connectivity to both MV (AQuench) and LV (AQ-1000) **arc quenching systems**.
- 4 trip relays (with 7 ms total trip time).
- Complete system self-supervision.
- 2 binary inputs and 1 binary output.
- A multi-function push button (“SET”) with auto-configuration, indication reset, and system check.
- 19 indication LEDs.

Technical data

PROTECTION

- Overcurrent and light (50Arc)
- Earth fault and light (50NArc)
- Light only
- Circuit breaker failure protection (50BF/52BF)
- Total trip time: 7 ms

APPLICABLE SENSORS

- AQ-06 plastic fiber sensor (3...40 m)
- AQ-07 glass fiber sensor (3...50 m length)
- AQ-08 glass fiber sensor (3...15 m)

INPUTS AND OUTPUTS

Trip relays (T1, T2, T3, T4)

- 4 NO or 3 NO + 1 NC
- 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

Binary output (B01)

- Number of outputs: 1
- Rated voltage: +24 V DC

Binary inputs (BI1, BI2)

- Number of inputs: 2
- Threshold voltage: 24 V DC
- Rated voltage: 250 V

Power supply

- Auxiliary power supply: 92...265 V AC/DC
- Auxiliary power supply: 18...72 V DC (optional)

HMI

19 indication LEDs

Multi-function push button (SET) with auto-configuration, indication reset, and system check

SELF-SUPERVISION

Internal functions:

- Power supply
- Trip coil
- Internal voltages
- Settings

External connections:

- Sensors and wiring
- Binary I/O
- CT connections

SYSTEM CONNECTIVITY

- AQ 100 series
- AQ 200 series
- AQ 300 series
- AQ-1000 arc quenching device (LV)
- AQuench arc quenching device (MV)

ACCESSORIES

- AX006 Wall mounting bracket

Application Drawing

