

## AQ-F210 Feeder protection IED



The AQ-F210 offers a modular feeder protection and control solution for non-directional overcurrent and earth-fault protection with automatic reclosing. Up to four optional I/O or communication cards are available for more comprehensive monitoring and control applications. The AQ-F210 communicates using various protocols including IEC 61850 substation communication standard.

### Highlights

- Cable end differential protection
- Low-impedance REF protection
- Harmonics protection and control
- 5-shot scheme controlled autorecloser

## Technical Data

### PROTECTION

Three-phase overcurrent, 4 stages INST, DT or IDMT (50/51)

Earth-fault (sensitive), 4 stages INST, DT or IDMT (50/51N)

Harmonic overcurrent / inrush blocking, 4 stages INST, DT or IDMT (50/51H, 68)

Current unbalance / broken conductor, 4 stages INST, DT or IDMT (46/46R/46L)

High/low impedance restricted earth fault / cable end differential (87N)

Breaker failure protection (50BF/52BF)

Arc protection (option) (50ARC/50NARC)

### CONTROL

Controllable objects: 5

Autorecloser (79)

Cold-load pick-up block

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Switch onto fault logic

8 setting groups

## MEASURING & MONITORING

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

Current THD and harmonics (up to 31st)

Circuit breaker wear (CBW)

Disturbance recorder (3.2 kHz)

Current transformer supervision (CTS)

Trip circuit supervision (TCS)

### Event recording

Non-volatile disturbance records: 100

Non-volatile event records: 15000

## I/O

Current inputs: 5

Digital inputs: 3 (standard)

Output relays: 5+1 (standard)

### Options (4 slots)

Digital inputs optional: +8/16/24/32

Digital outputs optional: +5/10/15

Arc protection (12 sensors +2xHSO +BI)

2 x mA input + 6-8 x RTD input

Communication media (specified below)

## COMMUNICATION

RJ 45 Ethernet 100Mb (front standard)

RJ 45 Ethernet 100Mb and RS 485 (rear standard)

Double LC Ethernet 100Mb (option)

RS232 + serial fibre PP/PG/GP/GG (option)

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Communication protocols

IEC 61850

IEC 60870-5-103/101/104

Modbus RTU, Modbus TCP/IP

DNP 3.0, DNP 3.0 over TCP/IP

SPA

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Application Drawing

