

AQ-T216 Transformer protection IED



AQ-T216 is a transformer protection IED with a sophisticated and easy-to-use differential protection function. The relay provides overcurrent protection for both LV and HV side, earth fault protection, negative sequence overcurrent protection as well as two independent instances of restricted earth fault protection. Additionally, AQ-T216 can be applied to generator and motor differential protection. AQ-T216 communicates using various protocols, including the IEC 61850 substation communication standard.

Highlights

- Both pre-defined and custom connection group selection
- 2nd and 5th harmonic blocking
- Automatic verification for the connection group and nominal value settings
- Overloading and through fault statistics for preventive maintenance.

Technical Data

PROTECTION

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)

Resistance temperature detectors

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

Generator/transformer differential (87T/87N/87G)

Transformer status monitoring

Transformer thermal overload (TT>; 49T)

Programmable stage (PGx>/<; 99)

Arc protection (IArc>/IOArc>; 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 & MONITORING

Phase, sequence and residual currents (IL1, IL2, IL3, IO1, IO2)

Current transformer supervision - 2 instances

Disturbance recorder (max. 15 000 permanent event records)

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

Total harmonic distortion

Running hour counter

Measurement recorder

Measurement value recorder

HARDWARE

Current inputs: 10

Digital inputs (fixed): 3

Digital outputs (fixed): 5

Options (2 slots)

Digital inputs: +8/16

Digital outputs: +5/10

RTD & mA input module (8 RTD inputs OR 4 RTD inputs + 2 mA inputs)

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

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

Communication media (specified in the "Communication" tab)

COMMUNICATION

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

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

Double LC 100 Mbps Ethernet (PRP/HSR) (optional)

RS-232 & serial fibre (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

Application Drawing

