

AQ-G215 Generator protection IED



The AQ-G215 generator protection IED is well-suited for machines that require complete generator protections. AQ-G215 can be combined with AQ-T216 to protect larger machines that also require differential protection and greater protection redundancy. AQ-G215 communicates using various protocols, including the IEC 61850 substation communication standard.

Highlights

- Cost-efficient synchronous machine protection

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)

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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)

Voltage-restrained overcurrent ($Iv>$; 51V)

Overvoltage ($U>$; 59) - 4 stages (INST, DT or IDMT)

Undervoltage ($U<$; 27) - 4 stages (INST, DT or IDMT)

Neutral overvoltage ($U0>$; 59N) - 4 stages (INST, DT or IDMT)

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

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

Power protection (P, Q, S>/<; 32) - 4 stages (DT)

Overfrequency and underfrequency ($f > / <$; 81O/81U) - 8 stages (INST or DT)

Rate-of-change of frequency ($df/dt > / <$; 81R) - 1 stage (DT)

Volts-per-hertz overexcitation ($V/Hz >$; 24)

Underexcitation ($Q <$; 40)

Underimpedance ($Z <$; 21U)

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

100 % stator earth fault ($U03rd >$; 64S)

Voltage memory

Programmable stage ($PGx > / <$; 99)

Arc protection ($I_{Arc} > / I_{0Arc} >$; 50Arc/50NArc) (optional)

CONTROL

Number of objects to control and monitor: 5

Number of indicators to monitor: 5

Number of setting groups: 8

Vector jump ($\Delta\phi$; 78)

Synchrocheck ($\Delta V / \Delta a / \Delta f$; 25)

MEASURING & MONITORING

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

Phase, sequence and residual voltages ($UL1, UL2, UL3, U12, U23, U31, U0$)

Power and energy class 0.5

Power and energy class 0.2S (optional)

Current transformer supervision

Voltage transformer supervision (60)

Disturbance recorder (max. 15 000 permanent event records)

Circuit breaker wear monitoring

Total harmonic distortion

Frequency (f)

Power (P, Q, S, pf) and Energy (E+, E-, Eq+, Eq-)

Measurement recorder

Measurement value recorder

HARDWARE

Current inputs: 5

Voltage inputs: 4

Digital inputs (fixed): 3

Digital outputs (fixed): 5

Options (3 slots)

Digital inputs: +8/16/24

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)

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

