

AQ-G215 Generator protection IED



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

Highlights

- Cost efficient synchronous machine protection

Technical Data

PROTECTION

Three-phase overcurrent, 2 stages INST, DT or IDMT (50/51)

Earth-fault (sensitive), 2 stages INST, DT or IDMT (50/51N)

Harmonic overcurrent / inrush blocking, 1 stage INST, DT or IDMT (50/51H, 68)

Current unbalance / broken conductor, 2 stages INST, DT or IDMT (46/46R/46L)

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

Directional overcurrent, 4 stages INST, DT or IDMT (67)

Directional (sensitive) earth-fault, 4 stages INST, DT or IDMT (67N)

Overvoltage, 2 stages INST, DT or IDMT (59)

Undervoltage, 2 stages INST, DT or IDMT (27)

Zero sequence overvoltage, 2 stages INST, DT or IDMT (59N)

Positive/Negative sequence overvoltage, 2 stages INST, DT or IDMT (59N/47)

Over/under frequency, 4 stages INST or DT (81O/81U)

Rate of change of frequency, 4 stages INST or DT or IDMT (81R)

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Loss of field (40)

Voltage restrained overcurrent (51V)

Field ground / 100% stator earth-fault (64S)

Over/Under/Reverse power (32/37/32R)

Generator thermal overload (49G/49RTD)

Under impedance (21U)

Volts per hertz (24)

Breaker failure protection (50BF/52BF)

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

CONTROL

Controllable objects: 5

Synchro-check (25)

8 setting groups

MEASURING & MONITORING

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

Voltage measurements (UL1-UL3, U12-U31, U0, SS)

Current and voltage THD and harmonics (up to 31st)

Frequency (f)

Power (P, Q, S, pf)

Energy (E+, E-, Eq+, Eq-)

Circuit breaker wear (CBW)

Disturbance recorder (3.2 kHz)

Current transformer supervision (CTS)

Fuse failure (VTS)

Trip circuit supervision (TCS)

Event recording

Non-volatile disturbance records: 100

Non-volatile event records: 15000

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I/O

Current inputs: 5

Voltage inputs: 4

Digital inputs: 3 (standard)

Output relays: 5+1 (standard)

Options (3 slots)

Digital inputs optional: +8/16/24

Digital outputs optional: +5/10/15

Arc protection (12 sensors +2xHSO +BI)

2 x mA input + 68 x RTD input

Communication media (specified below)

COMMUNICATION

RJ 45 Ethernet 100Mb (front standard)

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

Double RJ 45 or LC Ethernet 100Mb (option)

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

Communication protocols

IEC 61850

IEC 608705103/101/104

Modbus RTU, Modbus TCP/IP

DNP 3.0, DNP 3.0 over TCP/IP

SPA

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Application Drawing

