

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)

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

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 + 6-8 x RTD input (max 2 cards)

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

Application Drawing

