

## AQ-G357 Generator protection IED



AQ-G357 is a generator protection IED for synchronized machines of all sizes. It integrates a full range of generator protection functions as well as a variety of additional functions for control, measurement, monitoring and communications.

### Highlights

- Generator/motor differential protection
- Distance protection and loss of excitation protection
- Overexcitation protection

## Technical Data

### PROTECTION

Three-phase instantaneous/time overcurrent ( $I>$ ; 50/51)

Residual instantaneous/time overcurrent ( $I0>$ ; 50N/51N)

Directional three-phase overcurrent ( $I_{dir}>$ ; 67)

Directional residual overcurrent ( $I0_{dir}>$ ; 67N/32N)

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

Distance protection

Power swing block

Inrush detection and blocking

Negative sequence overcurrent/ Current unbalance ( $I2>$ ; 46)

Thermal overload ( $T>$ ; 49)

Generator differential (87G)

Over- and undervoltage ( $U>/<$ ; 59/27)

Residual overvoltage ( $U0>$ ; 59N)

Harmonic overvoltage (64H)

Over- and underfrequency ( $f>/<$ ; 81O/81U)

Rate-of-change of frequency ( $df/dt$ ; 81R)

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

Over-, under- and reverse power (32)

Loss of excitation (40)

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

Pole slip (78) (optional)

Distributed busbar protection (sub-unit) (optional)

## CONTROL

Common function

Trip logic (94)

Voltage variation

Dead line detection

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

## MEASURING AND MONITORING

Number of supervised trip contacts: 4

Current (IL1, IL2, IL3, I0)

Voltage (U1, U2, U3, U12, U23, U31, U0) and frequency

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

Current transformer supervision

Voltage transformer supervision (60)

Trip circuit supervision

Switching device status monitoring

Event recorder

Disturbance recorder (max. 10 000 permanent event records)

Circuit breaker wear monitoring

## HARDWARE

CPU module (MM/ST + RJ-45)

Power supply module (PS + fault relay + 2 trips)

Voltage measurement module

Current measurement module (2 instances)

Number of empty slots: 5

## COMMUNICATION

RJ-45 100 Mbps Ethernet + MM/ST fiber optic Ethernet

IEC 61850 (optional)

IEC 60870-5-101/104/103

Modbus/RTU and Modbus/TCP

DNP3.0

Application Drawing

