AQ-L357 Line protection IED

AQ-L357 is a line protection IED with full scheme distance protection for transmission and sub-transmission line protection applications. It integrates a full range of line protection functions along with variety of additional functions for control, measurement, monitoring and communications.

Highlights

- Distance Protection with polygon or MHO characteristics
- Impedance measuring in separately six loops for phase or earth faults
- Parallel line zero sequence current compensation
- Load encroachment and power swing block characteristics
- Zone1 subcycle trip time

Technical Data

PROTECTION FUNCTIONS

Distance protection, 5 zones forward or reverse
Teleprotection, PUTT, POTT, Direct, DUTT (86)
Pole discordance
Stub protection
Power swing block
out-of step
Three-phase overcurrent,3 stages INST, DT or IDMT
Residual overcurrent, 3 stages INST, DT or IDMT (50/51N)
Directional three-phase overcurrent, 2 stages INST, DT or IDMT
Directional residual overcurrent, 2 stages INST, DT or IDMT (67N)

Current unbalance, 1 stage (46)
Overvoltage, 2 stages INST, DT (59)
Undervoltage, 2 stages INST, DT (27)
Residual voltage, 2 stages INST, DT (59N)
Under/over frequency, 4 stages DT (81U/O)
Rate of change of frequency, 1 stage DT (81R)
Line thermal protection (49)
Breaker failure protection (50BF,52BF)
Inrush detection and blocking (68)
Auto-reclose, 4 shots (79)
Synchrocheck (25)
Voltage transformer supervision function (60)
CT supervision
Switch onto fault logic
Distributed busbar protection sub-unit (option)

CONTROL

Single and three phase trip
Bay control unit, 6 objects
Status monitoring switching devices, 2 objects

MEASURING & MONITORING

Current (I1, I2, I3, Io)
Voltage (U1, U2, U3, U12, U23, U31, Uo) and frequency
Power (P, Q, S, pf) and Energy (E+, E-, Eq+, Eq-)
Trip circuit supervision (TCS)
Dead line detection function
Circuit breaker wear protection

Event recording

Non-volatile disturbance records: 100
Non-volatile event records: 10000

I/O

Current inputs: 4
Voltage inputs: 4
Digital inputs: 12 (Up to 120)
Digital outputs: 8 (Up to 40)
Fast trip outputs: 4

COMMUNICATION

RJ 45 Ethernet 100Mb (front standard)
RJ 45 Ethernet 100Mb (rear standard)
RS422/RS485/RS232 interfaces (option)
Plastic or glass fiber interfaces (option)

Communication protocols

IEC 61850
IEC 608705101,103,104
Modbus RTU and Modbus TCP/IP
DNP 3.0 and DNP 3.0 over TCP/IP
SPAbus

Application Drawing