

Generator and Motor Commander



Synchronous machine control & protection in one package

The Generator and Motor Commander is a new innovation combining synchronous machine protection and control into one unit. Compared to traditional systems with several separate units and software, the Generator and Motor Commander takes less space and saves considerable hours of engineering time. Operation is smooth as there is only one interface to the system.

Highlights

- Over 86% space savings compared to traditional solution.
- Less spare parts needed.
- One, easy to use, software saves engineering time
- The included software wizard adapts the data from the generator specifications and calculates the majority of the parameters directly.
- 0,2S class measurement, robust technology and the newest protection functions guarantee the best solution available on the market.

Technical Data

PROTECTION

Generator/transformer differential (87G/T)

Threephase overcurrent, 2 stages INST, DT or IDMT (50/51)

Earthfault (sensitive), 2 stages INST, DT or IDMT (50/51N)

Harmonic overcurrent / inrush blocking, 4 stages 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)

Generator and Motor Commander

Directional (sensitive) earthfault, 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 earthfault (64S)

Rotor earthfault protection (64R)

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

Generator thermal overload (49G/49RTD)

Under impedance (21U)

Volts per hertz (24)

Out of step / pole slip (78)

Breaker failure protection (50BF/52BF)

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

CONTROL

Synchronizer with synchro check

Excitation with external IGBT bridge

Synchrocheck (25)

Controllable objects: 10

8 setting groups

MEASURING AND MONITORING

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

Voltage measurements (UL1UL3, U12U31, U0, SS)

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

Frequency (f)

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

Generator and Motor Commander

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: 10

Voltage inputs: 4

Digital inputs: 3 (standard)

Output relays: 5+1 (standard)

Options (11 slots)

Digital inputs optional: +8/16/24/32/40/48/56/64/72

Digital outputs optional: +5/10/15/20/25

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 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

Generator and Motor Commander

DNP 3.0, DNP 3.0 over TCP/IP

SPA

Generator and Motor Commander

Application Drawing

