

Generator Protection Selector Guide



Generator Protection

| Features | Device | MIWII | MIGII |
|--|-------------|-------|-------|
| Protection & Control | | | |
| Overspeed | 12 | | |
| Distance Backup | 21P | | |
| Volts/Hz | 24 | | |
| Synchronism check | 25 | | |
| Phase/Ground/Auxiliary Undervoltage | 27P/G/A | | |
| Third Harmonic Neutral Undervoltage | 27TN | | |
| Directional Power | 32 | • | |
| Undercurrent | 37 | | • |
| Bearing RTD | 38 | | |
| Loss of Field | 40 | • | |
| Generator Unbalance | 46 | | • |
| Voltage phase reversal | 47 | | |
| Thermal Overload | 49 | | • |
| Accidental Energization | 50/27 | | |
| Negative Sequence Overcurrent | 50, 2/51, 2 | | |
| Instantaneous Overcurrent Phase/Ground/Neutral | 50P/G/N | | P/G |
| Timed Overcurrent Phase/Ground/Neutral | 51P/G/N | | P/G |
| Split Phase | 50SP | | |
| Voltage Restraint Overcurrent | 51V | | |
| Breaker Failure | 50BF | | |
| Power Factor Limiting | 55 | | |
| Overvoltage Phase/Ground/Neutral/Auxiliary | 59 P/G/N/A | | |
| 100% Stator Earth Fault | 27TN/59N | | |
| Voltage Unbalance | 60V | • | |
| Directional Overcurrent Phase/Ground/Neutral/Neg. Seq. | 67P/G/N/Q | | |
| Power Swing Blocking | 68 | | |
| Out of Step Tripping | 78 | | |
| Voltage Surge/Loss of Mains | 78V | | |
| Autoreclose | 79 | | |
| Under/Overfrequency | 81U/O | | |
| Rate of Change of Frequency | 81R | | |
| Lockout | 86 | | |
| Generator Differential | 87G | | |
| Generator & Transformer Differential | 87GT | | |
| Restricted Ground Fault | 87RGF | | • |
| VT Fuse Failure | VTF | | |
| Automation | | | |
| Contact Inputs (max) | | 2 | 2 |
| Contact Outputs (max) | | 6 | 5 |
| Analog Inputs | | | |
| Analog Outputs | | | |
| RTD Inputs | | | |
| Virtual Inputs | | | |
| Direct Inputs | | | |
| Programmable Logic FlexElements | | • | • |
| Trip-Coil Supervision | | | |
| User-Programmable LED's | | | |
| User-Programmable Pushbuttons | | | |
| Selector Switch | | | |
| Digital Counters | | | |
| Digital Elements | | | |
| Redundant Power Supply | | | |
| Monitoring & Metering | | | |
| Current | | • | • |
| Voltage | | • | |
| Frequency | | | |
| Power Factor | | | |
| Power - Real, Reactive, Apparent | | • | |
| Energy | | | |
| Demand - Current, MW, MVA, Mvar | | | |
| Temperature | | | |
| Event Recorder (number of events) | | 24 | 24 |
| Oscillography (max samples per cycle) | | 8 | 8 |
| Fault Reports | | | |
| Data Logger (max sample rate) | | | |
| Communications | | | |
| RS232/RS485 serial communications | | • | • |
| Ethernet Communications | | | |
| Fiber Optic Ethernet | | | |
| Modbus Protocol | | • | • |
| Protocols | | | |
| DNP 3.0 Protocol | | | |
| EGD Protocol | | | |
| IEC 61870-5-105 protocol | | | |
| IEC61850 protocol | | | |
| Peer-to-Peer Communications (GSSE/GOOSE) | | | |
| Simple Network Timesync Protocol | | | |
| IRIG-B Input | | | |
| Process Bus (IEC 61850-9-2) | | | |

