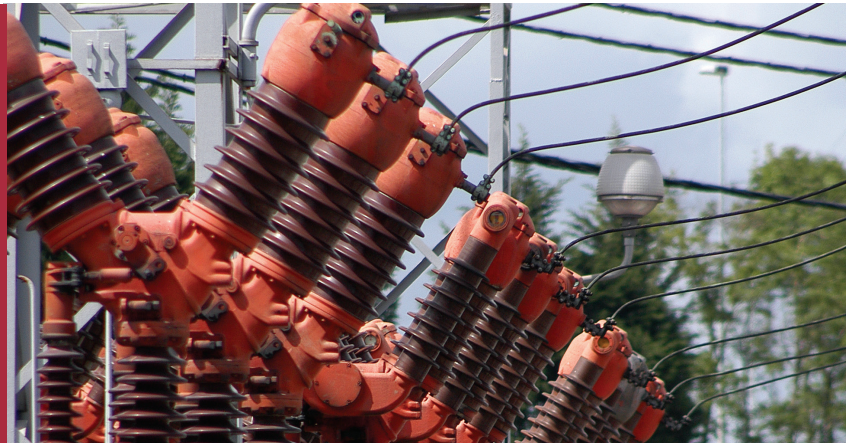




IRV

Integrated
Protection, Control
and Metering IED



The Latest Digital Technology
in **Protection, Control and
Metering for Feeders and
Machines**

Protection Units

50	Instantaneous Phase Overcurrent (2 units).	85-67N/67Q	Protection Schemes for Ground/Negative Sequence DIR O/C Elements.
51	Time Delay Phase Overcurrent (Inverse/Definite) (3 units)	51V	Voltage Dependent Phase Overcurrent (3 units).
50G	Instantaneous Ground Overcurrent (2 units).	27	Line or Phase Undervoltage (3 units).
51G	Time Delay Ground Overcurrent (Inverse/Definite) (3 units).	59	Line or Phase Overvoltage (3 units).
50SG	Instantaneous Sensitive Ground Overcurrent.	59G	Ground Overvoltage (2 units).
51SG	Time Delay Sensitive Ground Overcurrent.	64	Earth Fault.
50Q	Instantaneous Negative Sequence Overcurrent (I ₂) (2 units).	47	Negative Sequence Overvoltage.
51Q	Time Delay Negative Sequence Overcurrent (Inverse/Definite) (I ₂) (3 units).	81m	Underfrequency (4 units).
67	Directional Phase Overcurrent.	81M	Overfrequency (4 units).
67G	Directional Ground Overcurrent.	81D	Frequency Rate of Change (4 units).
67Q	Directional Negative Sequence Overcurrent.	50/62BF	Breaker Failure.
67SG	Directional Sensitive Ground Overcurrent.	46	Open Phase Element.
67Nu	Directional Ungrounded / Petersen Coil Neutral Overcurrent.	61	Residual Current Detection.
		25	Synchronism Check.
		78	Out-of-Step Element.
		49	Thermal Image Unit.
		26	Thermal Image Hot Spot Unit.
		32P/Q	Directional Power Element (Active/Reactive) (2 units).
		37	Undercurrent.
		87N	Restricted Earth Fault.
		79	Three Phase Recloser (4 cycles).



Additional Functions

- ✓ Cold Load Pick Up.
- ✓ Frequency Load Shedding.
- ✓ Phase sequence selectable (ABC or ACB).
- ✓ Number of Voltage Transformers selectable: 2 or 3.
- ✓ Current/Time Inverse Curves: IEC, IEEE(ANSI) and US standards
- ✓ Trip and Close Contacts (2+2)
- ✓ Trip and Close Circuit Supervision
- ✓ Breaker Monitoring (kA2 and number of trips)
- ✓ AC/DC power supply voltage monitoring
- ✓ 4 independent setting groups
- ✓ Event Recording and Programmable Metering Data Logging
- ✓ Fault Reporting
- ✓ Historical Metering Data Logging.
- ✓ Oscillographic Register (32 samples/cycle)
- ✓ Sequence of Event (SOE) Recorder with Programmable Metering Data Logging
- ✓ Fault Locator
- ✓ Integrated Simulator
- ✓ Time Synchronization via GPS (IRIG-B 003 and 123 Protocol) or by remote port (PROCOME 3.0 or DNP3 Protocols)
- ✓ Self-checking routines
- ✓ *ZivercomPlus*® Software Package.

Control Features

- ✓ Programmable Control Logic.
- ✓ Local Breaker Control (2 Pushbuttons for open/close).
- ✓ 6 Programmable Pushbuttons for local control of the bay.
- ✓ Alphanumeric Display and Keypad.
- ✓ 8 to 82 Programmable Digital Inputs.
- ✓ 5 to 31 Programmable Digital Outputs.
- ✓ 4 or 17 Programmable Led Targets.
- ✓ Virtual Inputs/Outputs (up to 16 digital signals and 16 analog magnitudes).

Metering Functions

- Phase and Ground Currents (L-L and L-N).
- Ungrounded and Sensitive Ground Currents.
- Phase-Ground, Phase-Phase, Ground and Synchronism Voltages.
- Power Supply Voltage.
- Active and Reactive Power (P and Q).
- Apparent Power (S).
- Maximum and Minimum Values of each Magnitude (I, V, P, Q, S).
- Active and Reactive Energy in both directions.
- Power Factor.
- Frequency.
- Harmonics (up to 8th) for IA and VA.
- Thermal Image.
- Distance to the fault.
- Cumulative kA2.

Communications

- ✓ Standard **DNP3**, **MODBUS**, **PROCOME** and **IEC61850**.
- ✓ One serial **RS232 + USB Local Port**.
- ✓ Two serial **RS232**, **F.O.** and **RS485 Remote Ports**.
- ✓ One Electrical Interface **RS232/RS485 Remote Port**.
- ✓ Two **LAN Ports: 100FX** and **100TX - Ethernet F.O. (MT-RJ)** and **RJ45**.
- ✓ One **BUS CAN Remote Port**.

