



Ground Protection for Feeders, Generators & Industry

Ground Protection Relay (IPR96D) has been designed to measure the ground RMS current under normal conditions or under disturbances. The current signals are sensed throughout a current transformer (CT). This information is internally processed by the microprocessor in order to take the current protection actions defined under ANSI, IAC or IEC standard.

APPLICATIONS

- Primary and backup protection for utility feeder, power plants and industrial distribution systems

PROTECTIONS AND FUNCTIONALITIES

- (50G/50N) Instantaneous ground overcurrent
- (51.1G/51.1N) Ground timed overcurrent
- (51.2G/51.2N) Ground timed overcurrent
- ANSI, IAC or IEC/BS142 curves included:
 - moderately inverse
 - normal inverse
 - very inverse
 - extremely inverse
 - definite time

COMMUNICATION

- Communication port RS485
- Remote programming of the setpoints
- Communication Protocol: Modbus RTU

DIGITAL MEASUREMENT

- Ground RMS Currents

FEATURES

- CT rated primary selectable in 5 A steps (5 A to 5000 A)
- Ground RMS current measurement
- 1 trip relay and 2 programmable auxiliary relay
- Control power drop or internal fault relay
- Breaker operation & trip failure
- Digital input functions:
 - remote TRIP
 - remote RESET
 - remote Aux Relay activation
 - breaker Status

SIGNALLING

- LED and LCD display indication
- Ground current indication
- Indication and storage through a Pop-Up function, of fault conditions and their values

FIRMWARE UPGRADE

- via RS-485 Serial Port
- OTA via Bluetooth (Future option)

SPECIFICATIONS

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| <p>SUPPLY VOLTAGE Model W: 85V (115V) ÷ 264V (300V) Vac (Vdc) Model B: 24Vdc -15%, +10% Model C: 48Vdc -15%, +10%</p> <p style="text-align: right;"><i>Depending on IPR96D version</i></p> | <p>MAX. POWER CONSUMPTION 6 VA (4 W)</p> <p>BURN IN 48 hours at 50°C</p> |
| <p>TEMPERATURE Operational: 0°C ÷ +50°C Storage temperature: -20°C ÷ +70 °C</p> | <p>DIELECTRIC WITHSTAND VOLTAGE 2 kVac, 60s from all circuits and enclosure 2 kVac, 60s between HLV and LV circuit</p> |
| <p>ELECTRICAL INSULATION CONSTRUCTION OverVoltage category: III Pollution degree: 2 Altitude: 2000m (AMSL)</p> | <p>DIGITAL INPUT (2) Dry types. Programmable for <i>remote TRIP & RESET, Aux Relay activation, breaker Status</i></p> |
| <p>GROUND CT INPUT CT Rated Primary Current (I_{pn}) 5A to 5000A, Steps: 5 CT Rated Secondary Current (I_{sn}) 1A and 5A (use only one input) <i>Sampling:</i> True RMS, 32 sample/s <i>CT burden:</i> 0.25 VA (5A input) 0.1 VA (1A input) <i>Continuous Current:</i> $2 \times I_{sn}$ <i>Current withstand capac.:</i> 30 times I_{sn} for 1 sec. <i>Accuracy:</i> at $\leq 1 \times I_{sn} \rightarrow \pm 0.5\%$ of $1 \times I_{sn}$ at $> 1 \times I_{sn} \rightarrow \pm 0.5\%$ of $20 \times I_{sn}$</p> | <p>OUTPUT CONTACT (1) trip relay and (2) programmable auxiliary relays <i>Rated load:</i> 8A@ 240Vac Resistive 8A@ 24Vdc Resistive (0,2 A @125 Vdc) <i>Max Switching Voltage:</i> 250 Vac / 150 Vdc <i>Max Continuous Current:</i> 5 A</p> |
| <p>INSTANTANEOUS GROUND OVERCURRENT (50 N/G) <i>Pickup Level:</i> 1% to 2000% of CT, Steps: 1% / 10% <i>Delay Time:</i> 0 to 2000 ms, Steps: 10 ms <i>Accuracy Pickup:</i> $\pm 1\%$ CT Time +35 ms max</p> | <p>MECHANICAL Back connection, section 2,5 mm² or 14 AWG Frame: Noryl auto-extinguish IP40 Front (up to IP54 front, on request) Dimension: 96 x 96 x 113 mm. Front panel cutout: 92 x 92 mm Weight: 500 gr.</p> |
| <p>GROUND TIME OVERCURRENT (51.1 N/G) <i>Pickup Level:</i> 1% to 300% of CT, Steps: 1% <i>Time Multiplier:</i> 0.1 to 20.0 for each curve <i>Accuracy Pickup:</i> $\pm 1\%$ CT Time $\pm 3\%$ of trip time or 20 ms</p> | <p>COMMUNICATION RS-485 serial port Protocol: Modbus RTU-Slave Insulation: 1,5 kVdc Bluetooth: 4.2</p> |
| <p>GROUND TIME OVERCURRENT (51.2 N/G) <i>Pickup Level:</i> 1% to 300% of CT, Steps: 1% <i>Time Multiplier:</i> 0.1 to 20.0 for each curve <i>Accuracy Pickup:</i> $\pm 1\%$ CT Time $\pm 3\%$ of trip time or 20 ms</p> | <p>STANDARDS Low voltage directive: IEC 60255-27, IEC 60255-5 EMC directive: IEC 60255-26</p> |

ORDER CODE

IPR96D X Y

Where X stands for MODEL:

1: Standard version (Secondary CT 1A/5A)

X: Special version

Where Y stands for POWER SUPPLY:

W: 85V (115V) ÷ 264V (300V) Vac (Vdc)

B: 24Vdc -15%, +10%

C: 48Vdc -15%, +10%

