

FAULT DETECTION AND SMART GRID SOLUTIONS

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QUALITY

Protrol offers specialized products and services. A dedicated quality work is of great benefit to both us and our customers, allowing employees at Protrol feel a genuine responsibility that the deliveries match, and preferably exceed, requirements and expectations

EASY IPS LIGHT

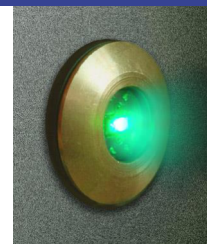
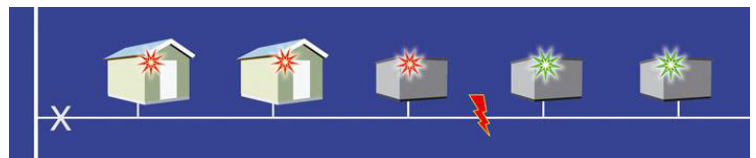


Local fault indication

Supercapacitors stores energy for 24 h flashing

APPLICATION

When the feeder is deenergized after a fault, the IPS Light indicates **GREEN** or **RED**



LED

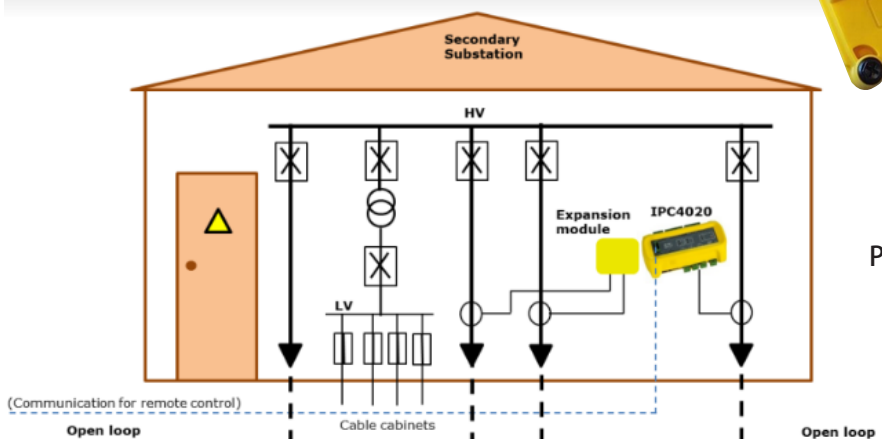
CONFIGURABLE IPS2 FAULT DETECTOR

Earth fault and over current detector
Easy rotary switch setup
IEC 60780 - 5 - 101 interface



APPLICATION

True fault pass-through indication for overcurrent and high ohmic earth faults. Sensitivity for earth faults is better than watt metrical directional earth fault relays Phase current measurement using simple and easy to apply magnetic current transformers no need for polarizing voltage in the secondary substation



IPC4020



IPC4020

IPC4020 is a fault detector for overcurrent and earth faults with integrated remote terminal unit functionality. It has I/O for indications and orders and is therefore suitable for a typical secondary substation with up to four objects.

The standard IPC4020 detects faults on one feeder. It can be ordered with an expansion module that allows fault detection of 2 additional feeders.

The communication protocol is IEC 60870-5-101 or -104.

Since the algorithm for earth fault detection does not require any voltage measurement, IPC4020 provides very cost-efficient fault detection and grid automation with a high sensitivity for pass-through faults, also in networks where the earth fault currents are low



IPC4022

Fault Detection

Overcurrent: 0.5 - 3.5 x rated CT, 0.04 - 10.00 s

Earth Fault: Hi Z: 0.8 A, 0.02 - 2.00 s

Transient Fault Recording

Inputs & Outputs

16 Binary Inputs

8 Binary Outputs

3 Analogue Inputs

Remote Terminal Unit

Expandable with expansion modules

Could be integrated to HMI User Interface

IPC4022

IPC4022 is a fault detector for overcurrent and earth faults with integrated remote terminal unit functionality. It has I/O for indications

The system interfaces are IEC 60870-5-101 and -104. Since the algorithm for earth fault detection does not require any voltage measurement, IPC4022 provides cost efficient fault detection with high sensitivity for pass through faults, also in networks where the earth fault currents are low.

Fault Detection

Overcurrent: 0.1 - 5 x rated CT, 0.02 - 10.00 s

Earth Fault: Hi Z: 0.8 A, 0.02 - 2.00 s

Transient Fault Recording

Inputs & Outputs

4 Binary Inputs

3 Binary Outputs

3 Analogue Inputs

Remote Terminal Unit

Expandable with expansion modules

Could be integrated to HMI User Interface

CURRENT TRANSFORMER

Splittable CT's are delivered with 4 m cable.

Temperature range: -30°C to 80°C

Isolation level: 3 kV

Each type of CT have 150/1 and 300/1 ratio



Split core current transformers, taped, for cables with diameter <50 mm or 85 mm



Split core current transformers, clip-together, for cables with diameter <34mm



Solid current transformers