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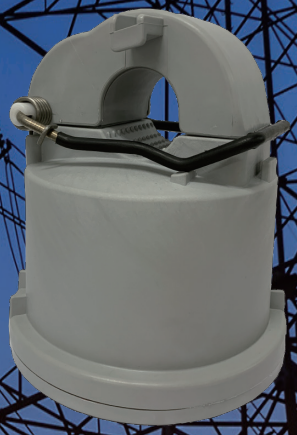
Power Total System Engineering

Fault detector PIA-1010 for fault location and load current measuring of distribution line



Reduction of power outage time

In the event of a power failure due to a short circuitor ground fault in the overhead distribution line, it is time consuming and inefficient for the maintenance personnel to conduct an on-site survey of the entire line to check the location of the fault, so it is necessary to automatically monitor the fault section from the control center.
When a power outage occurs due to a trip of the substation breaker since a fault occurs in the distribution line, the faulty section must be separated or repaired in order to re-close the tripped substation breaker.

Reduce power loss and improve power quality

By managing the imbalance load current by periodic automatic remote measurement of the load of the distribution line by a fault detector, the power loss due to the load imbalance can be reduced and the voltage difference also can be improved.

Smart sensor with power harvesting and cloud SCADA service

Fault section detection and load current measuring

Fault detector PIA-1010 installed in overhead distribution line detects short circuits and ground fault currents in power lines, not only notify fault section information to the central monitoring equipment, but also remotely measure load current in distribution lines.

Central monitoring by private wireless network

The fault detector communicates with the central monitoring system through the power company's private wireless communication network. Therefore, it is more economical than paying a communication fee to a telecommunication company such as GPRS or CDMA public wireless network.

Private wireless network can be constructed more economically and faster than installing an optical communication network.

Smart sensor with built-in communication device

A communication device is built into the fault detector itself, and the P2P mode communicates between the fault detectors and the central monitoring equipment, so it is economical and reliable because there is no need to install a separate communication device.

Since harvest power is used by the magnetic field induced from the load current of the power line, the communication unit of fault detector operates more stable and economical than using the solar cell mode communication device.

Remote monitoring and control of load breaker switch

The signal of fault detector is possible to extend to the RTU for monitoring and control of the load breaker switch, sectionalizing switch or re-closer installed on distribution line. And it performs fault location, isolation, and service restoration (FLISR) for power outage management.

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Momentary interruption transient detection

Power outages can be prevented by detecting information on the section of transient current due to momentary interruption such as tree contact to the distribution line, and dispatching maintenance personnel to the site to take repair measures.

Sending emails for faulty sections through mobile phones

As soon as a distribution line fault occurs, the HMI server automatically sends an email of the number and address of the fault section to the line maintenance personnel's cellphone, and enable to dispatch them to the site.

Installation of fault detectors without power outage of distribution lines

The structure of fault detector enables the installation and removal of fault detectors without power outages in the distribution line by using a fault detector installation tool and hot sticks.

Reduce construction costs with cloud HMI service

HMI cloud service can monitor the fault of multiple distribution lines at multiple substations with a single HMI server, so low cost construction is possible and maintenance cost is reduced, and HMI monitoring and control is possible through the PC at power company's necessary places.

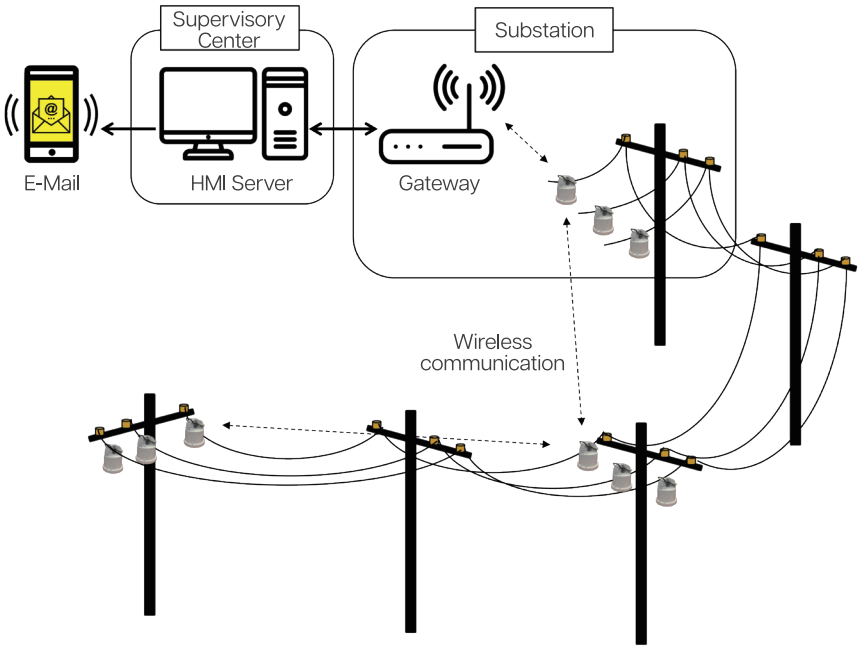
POWERTOS will guard your electric power facilities

Specification of fault detector PIA-1010

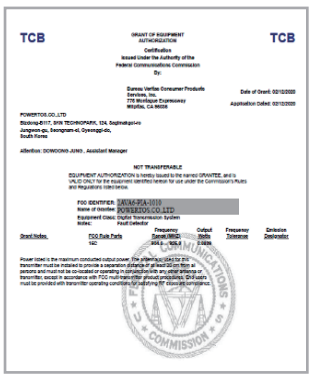
- **Power Frequency** : 50 ~ 60Hz
- **Current Range** : 10 ~ 600A
- **Current Accuracy** : ≤ 5%
- **Rated Voltage** : Max 69kV (Line to Line)
- **Cable Diameter** : 5 ~ 40mm
- **Fault pickup mode** : Load Adaptive
- **Pick-up Current** : 30 ~ 1600A Adjustable by setting (±5%)
- **Maximum fault current** : 25KA
- **Pick-up Time** : ≤ 24 mSec (±5%)
- **Power Supply** : Harvest Power by Split Current Transformer
- **Harvest starting current** : More than 13A
- **AC Power consumption** : Less than 0.5 VA
- **Lithium Battery** : 3.6V 19 AH
- **Max Battery life** : 15 Years
- **Dimensions** : 153mmØ x 174 mm(H)
- **Weight** : 1.78 Kg
- **Mounting** : Spring self-holding type
- **RF Frequency** : 920~ 923 MHz, Channel Selectable
- **Signal BW** : 125 Khz
- **RF TX output power** : 18.5 dBm
- **Communication Range** : Up to 10 Km (Outdoor, line of sight)
- **Data error detection** : 16Bit CRC
- **Antenna** : Internal Antenna
- **Ingress Protection** : IP66
- **Operating Temperature** : -30 °C ~ +85 °C

Installed Fault Detector

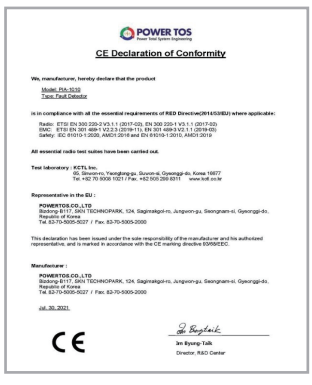
System configuration



FCC grant of equipment

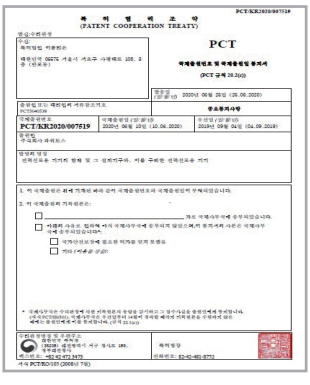


CE Confirmity



Certificate of patent

PCT Application



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