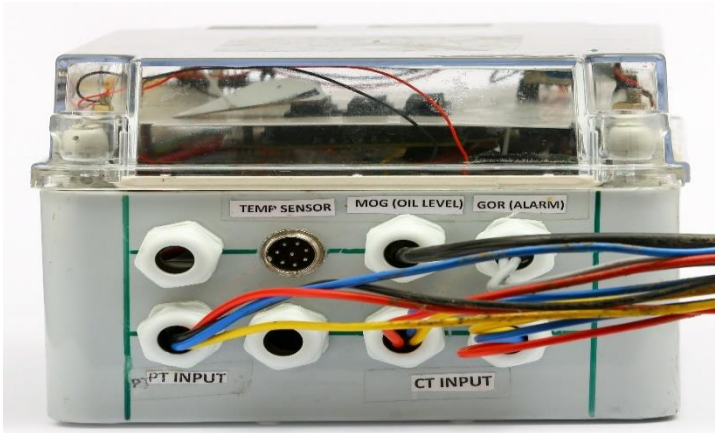# SMART TRANSFORMER MONITORING

TEKNOVATE
SOLUTIONS

Data Sheet

Transformer is a vital part of the smart grid, as well of the transmission and distribution System. By monitoring the transformer online the life of transformer can be extended also can utilize transformers to their full capacity and reduce the maintenance cost. The product can provide early warning of potential failure with the opportunity of organizing avoidance strategies to minimize loss of time and unexpected costs.

KernelSphere' Smart Transformer Monitoring supports both GSM and Low Power long-range wireless radio frequency technology (LoRaWAN). This highly secured data transmission technology required for Internet of Things (IoT) applications enables real-time communication of data and analytics that can be utilized to enhance efficiency and productivity.

The device is designed with rugged and high accuracy sensors. These sensors monitor Parameters such as OTI, WTI, Surge Relay, Bucholtz Relay, MOG, PRV etc. the device also monitors the ambient, winding and oil temperatures.

The device communicates with the GSM network or LoRa Gateway using the standard LoRaWAN protocol and the data is transmitted to the network server. The web application processes this data and takes appropriate action like sending SMS, E-Mail and alerts to the registered users also the device has built in LCD which gives notification about emergency condition.

Device Features

- Provides 24/7 access to current operational data
- Easily installed on new or legacy transformers from any manufacturer utilizing existing sensors
- Collects data through sensors from the transformer.
- Rugged Sensors with High accuracy
- Historical analysis & Data management
- SMS & Email Alert is configured to the registered mobile number.
- Map of sensors
- Responsive user interface
- User control profiles
- Live data monitor on web.
- Alerts users on several operating parameters such as:
  - ✓ WTI (Winding Temperature Indicator)
  - ✓ OTI (Oil Temperature Indicator)
  - ✓ Ambient temperature
  - ✓ Oil level
  - ✓ Voltage
  - ✓ Current
  - ✓ Surge Relay Trip
  - ✓ Bucholtz Relay alarm &Trip
  - ✓ MOG (Magnetic Oil Gauge alarm)
  - ✓ PRV (Pressure Relief Value) etc

The device is:

- CEIG Approved
- CPRI Approved

Applications

- Mining Industries
- Commercial buildings
- Hospitals
- Housing Society
- Manufacturing Industries
- Infrastructure companies
- Electricity boards

Technical Specifications

Wireless Frequency Band	EU 862~870 MHz / US 902~928 MHz / India 865~867 MHz / AS 923 MHz
Modulation	Based on IEEE 802.15.4g
LoRa Solution	Semtech SX-1276
Receive Sensitivity:	Typ. -136dBm @BW=125KHz with SF=10
Transmit Power	20dBm
Number of Channels	Configurable 64 channels (SKU-US) Configurable 8 channels (SKU-EU) Configurable 3 channels (SKU-IND)
Security	AES128
Network	GSM/GPRS
Operation	AC Powered
Antenna Type	Internal/External
Operation Temperature	-20ºC ~ 70ºC
Protection Requirements	IP65

About Teknovate

Today's dynamic world demands businesses to respond quickly through realizing automation in the end-to-end procedure. IoT technology is transforming the way we connect to the devices automatically. Service providers must adopt scalable, flexible and agile models to tap the client's requirements and expectations. Teknovate Technologies Pvt Ltd has responded to this market trend and developing robust and innovative smart city products for its customers.

Driven by over decade of industry experience, highly skilled technicians and wide geographical presence, we are continuously expanding our business worldwide and giving stiff competition to other IoT product manufacturers. We supply our products for various business verticals.

For more information about the Teknovate solution email us at iot@teknovateinc.com

Please visit www.teknovateinc.com