

IoT - 3C





Features

- ✓ Online streaming of Transformer parameters
- ✓ Geotagging of the device.
- ✓ Detection of protection relay status change and alerts through email/SMS
- ✓ Real-time alert and notification
- ✓ Centralized monitoring of the transformer data
- ✓ Trend monitoring and predictive analysis based on monitored parameters
- ✓ Seamless integration to existing equipment
- ✓ Dynamic copper loss, hotspot temperature, aging rate, and residual life

IoTx - 3C

Transformer monitoring device

CAT IV	IP	CE
600V	54	

IoTx-3C is a transformer monitoring device that needs to be installed near a transformer to measure its vital parameters such as RYB voltage and current, oil temperature, winding temperature, and any one of the protection relay statuses. Through the Motware platform, one can easily monitor the streaming parameters of the transformer. The Motware platform allows you to do predictive analysis of the dynamic copper loss, hot spot temperature, aging rate, and the residual life of the transformer. The device includes a GSM module to transmit the data to our cloud-based Motware application every 5 minutes, or as per the customer specified, the transfer rate depending on the set parameters. The data transferred is stored in the memory of the device. In the event of a network failure, it will transfer the data back to the cloud once the network is established. The device operates in mains and battery and comes with a geotagging facility.

Applications

The IoTx-3C transformer monitoring device is a digital wireless and reliable solution, which is designed to monitor the distribution/transmission transformer's parameters. It helps to overcome the limitations of the current conventional transformer monitoring systems by sending real-time data to the Motware IoT platform. It helps to review the transformer's parameters at regular intervals to help in easy predictive analysis and preventive maintenance. Transformer losses can be acutely monitored and streamed over a GSM network that is connected to the cloud-based Motware application. The user can make productive and informative decisions based on the data captured in the transformer monitoring device. The Motware application provides alerts based on the limits applied on the streamed parameter values to avoid any damage.

Our solution can be used for various segments like

- Utilities,
- Transformer OEMs
- Industries
- Commercial premises
- Railways and Metro's



Technical Specification

IoTx - 3C

Power Supply

Mains Power supply : 85-305 VAC Frequency 50/60Hz with OVP & OCP

Type of measurement

3 phase Current (R, Y, B)	Range: 1A as per measurement CT secondary, Resolution:0.1
3 phase – neutral Voltage (R, Y, B)	Range: 230V AC +/- 10%, Resolution:0.1
Oil Temperature	Range: 0-150 OC (Customisable as per customer requirement), Signal type:4-20mA, Resolution:0.1
Winding Temperature	Range: 0-150 OC (Customisable as per customer requirement), Signal type:4-20mA, Resolution:0.1
Oil Level (High/Low)	Range: The Oil level low level indication is set to 25% below the transformer conservator tank. Oil level high set to above 25% of the transformer conservator tank, Signal type:0-5V

Type of Indication

Alarm/trip status : 24V DC to 220V DC voltage level can be applied (Only one input available). The Alarm/Trip status will show as Healthy/Operated on the Motware application.

GPS Location (Latitude & Longitude)

Controller

Micro controller : 32bit ARM running at 72MHz

Real time clock : Battery backed internal RTC

Memory : Data can be stored up to 2 days depending on the time interval.

Protection on input channels

3 phase voltage i/p channel protection: Surge protection

Alarm/trip channel protection: Surge protection, OPTO isolation

Communication

Communication wireless : GSM/GPRS

Frequency range : 850Mhz/900Mhz/1800Mhz/1900Mhz

Supported SIM card type : 2G/3G/4G

GPS : Operating frequency:1575.4231 MHz

Indication

LED Indicators : Power Indication, Status, Data Transmit/Receive Indication

Mechanical

Enclosure material : Metal MS CRCA sheet

Mounting mode : Wall mount/Pole mount*1

Weight : 2.5Kg Approx.

Dimension : 220(L)x60(W)x270(H) mm Approx.

Environment

IP Degree of protection : IP65

Operating temperature range: -10°C to 55°C, Relative Humidity: < 95% RH non-condensing.

Storage temperature range: -20°C to 70°C



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Accessories

All input channels are giving wire with 5 meters length*2 (Wire can extend as per the site's requirement)

Standard Mounting Bracket

MOT-WARE Cloud Application

Motwane has designed and developed MOT-WARE – a cloud based test data platform to aid in accurate Asset Health Assessment. It is accessible from web based applications. In addition, it offers an open architecture that can seamlessly integrate with any asset for quick and authentic digital data. MOT-WARE also has the facility to upload data history and the breakdown history of the transformer. Digital test data enables data analytics and visualization which offers multiple statistical advantages. It improves productivity & efficiency, reduces costs, and improves the life of the asset. Data analysis done through MOT-WARE includes trends analysis. As an add-on, MOT-WARE also offers 'Motwane AI Analytics'(Link to AI Analytics page) which uses a proprietary AI algorithm and Machine Learning to make accurate predictions about your asset's life based on its behavioral patterns and operating conditions.

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