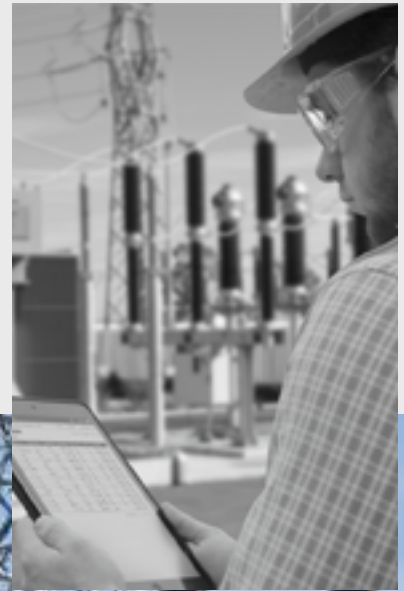


RUGGED  MONITORING

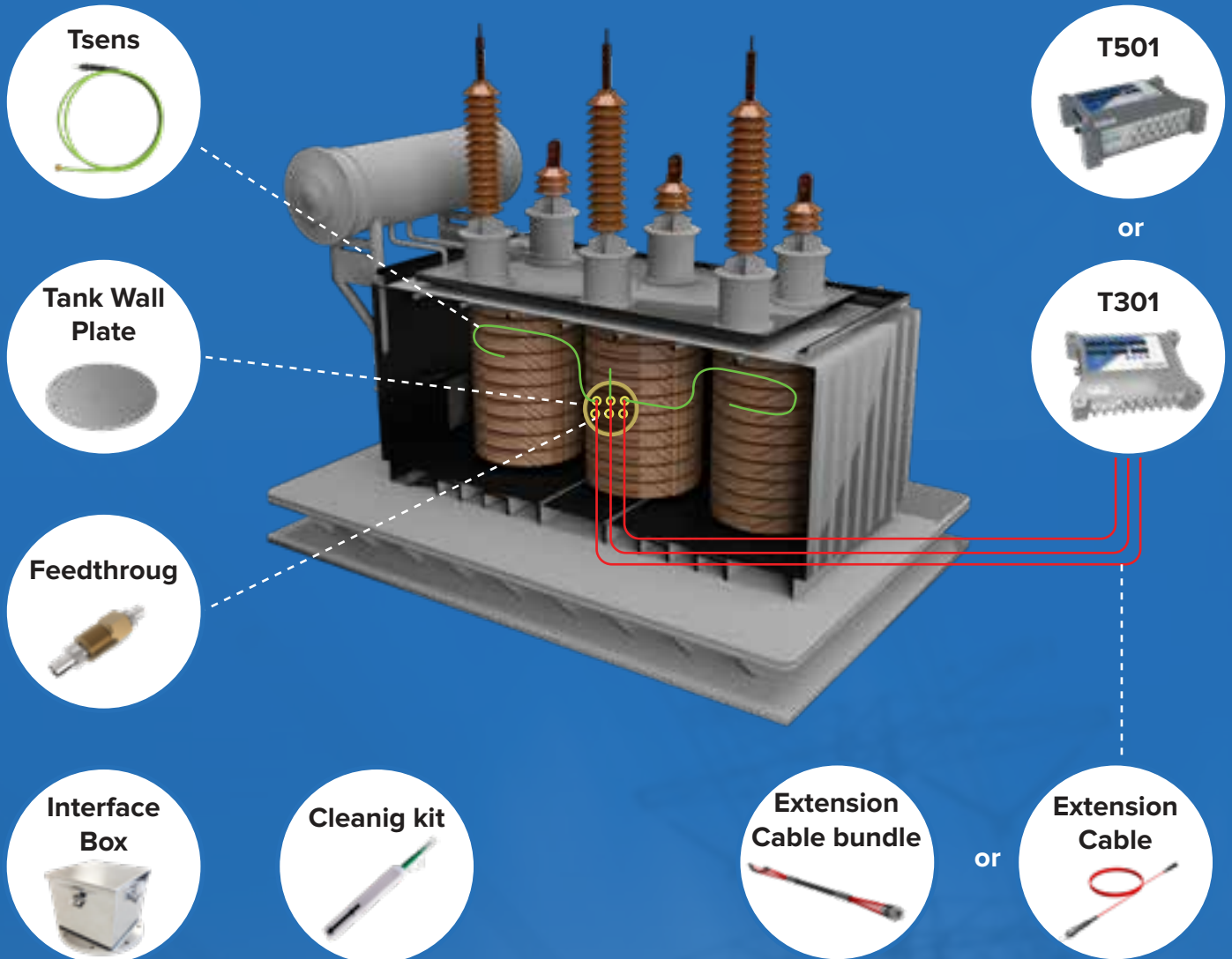
MONITORING SIMPLIFIED



Transformer
HOTSPOT
MONITORING SYSTEM

Robust | Reliable | Responsive

Typical System



- Increase Accuracy of "Heat Run" Tests
- Detect Early Life Failures
- Transformer Dynamic Loading Response
- Transformer Performance Optimization
- Thermal Model Reflects Operating Conditions
- Enable Preventive Maintenance

Recommended Probes

IEEE:

IEC:

Industry Trend : Emobility and Renewables driving specifications towards 24 probes per transformer



Recommended probes per transformer

Equipment	Non Critical Transformers	Standard Transformers	Critical Transformers
Central Winding-LV	2	2	6
Central Winding-HV	2	2	6
Lateral Winding-LV	1 per phase	1 per phase	2 per phase
Lateral Winding-HV	1 per phase	1 per phase	2 per phase
Top Yoke Core		1	1
Top Oil		1	1
Spare		2	2
Total Probes	8	12	24
Optical Feedthroughs	8	12	24
Tank Wall Plate	8 Hole Version	12 Hole Version	24 Hole Version
Interface Box (I-Box)	1	1	1
Extension Cables	8	12	24
Probes per Monitor	8	16	24



A specifically designed innovative patented probe with robustness and ease of installation can attract much attention from transformer manufacturers. While the transformer operators get reliable and long term temperature data essential for precise transformer aging evaluation.

Our Rugged Monitoring Tsens probes have been designed and built to give precise results when installed in transformers by measuring temperature directly. The sensing technology is based on the proven zero-drift GaAs technology. They are completely built using first quality materials, with very high dielectric strength, so your transformers can benefit from accurate temperature readings, which is essential to a good knowledge of transformer aging rate. During factory heat run tests these probes will give both transformer manufacturer and operator invaluable information regarding the transformer expected MVA performance. The patented tip construction makes them extremely robust, while being very easy to install in radial spacers or in other pressboard material (such as for temperature measurements in cores or other transformer components). This tip along with a 200 μ \varnothing fiber offers the highest probe pulling force in the industry. The spiral-wrap cable is especially constructed to allow complete oil penetration assuring that no air can be present. All materials used in the probe construction are compatible with high temperature kerosene desorption processes.

Features

- Optimized for easy installation in oil-filled and dry-type transformers and reactors
- Rugged and robust construction built to outlast your transformer life
- Outstanding repeatability, zero-drift GaAs technology
- 9 mm disc design, suitable for all locations in a transformer (windings, cores, busbars, tap changers, etc.)
- Solvent and chemical resistant

Benefits

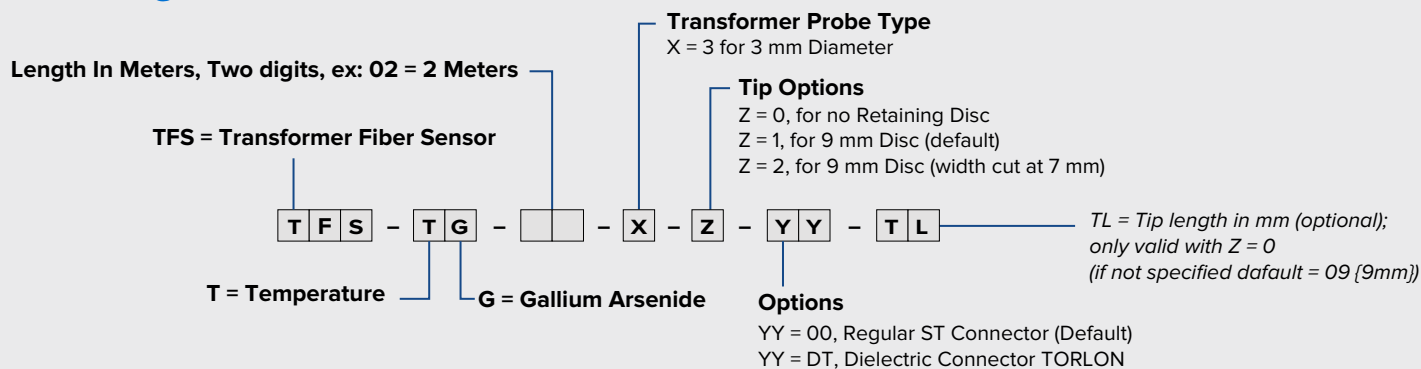
- Calibration free Sensors
- High Stability and No shift over time
- PTFE Teflon spiral-wrap reinforcement
- Robust fibre optic temperature sensor tip
- Available with disc and without disc
- Surpass ASTM D2413 and D149 standards
- Very low PD performance
- Designed to exceed transformer life



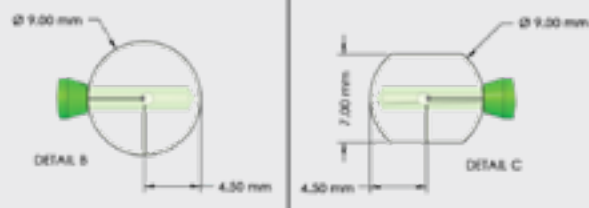
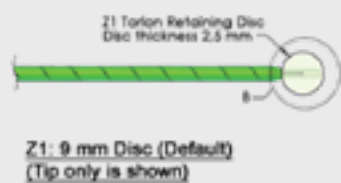
Applications

- Oil Filled or Dry Type Transformers
- Ideal for direct measurements of temperature
- Suitable for high voltage environments (1 MV, or more)
- Suitable for HVDC windings
- Standard radial spacers
- Withstands kerosene desorption
- Compatible with all types of transformer oil including ester type
- Can be Integrated with all Rugged Monitoring instruments

Ordering Code



Z0: No retaining Disc (Complete probe shown)

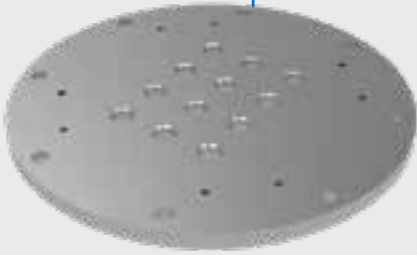


Technical Specifications

Temperature range	-80°C to +250°C
Repeatability	0.2°C
Accuracy absolute temperature	+/- 0.8°C
Accuracy relative temperature	+/- 0.2°C
Probe sheathing material	Teflon spiral-wrap
Tip material	Torlon (with disc) or Polyimide (no disc)
Connector	Stainless alloy ST with zirconia ferrule (Optional: Dielectric Torlon ST with zirconia ferrule)
Probe length	Up to 25 meters
Response time	Up to 0.2 sec without disc. About 2 sec with disc
Longevity	Probe accuracy and repeatability constant over time

Tank Wall Plate

Fiber Optic
Temperature Accesories



Our TPLT Tank Wall Plate is designed to be installed on the tank wall of oil filled transformers. Tank Wall Plate is a stainless steel customized circular plate that compete the integration of Rugged Monitoring Fiber Optic Hot Spot Monitoring system

Specifically designed to interface with TFFT Feedthrough, this 316L stainless steel TPLT is mounted on the transformer tank wall by bolting or welding to the transformer wall. An optional Corona Ring is offered to ease installation on rough surface

1/4 or 3/8 NPT ANSI TFFT Feedthrough can be easily mounted on the TPLT Tank Wall Plate, one per hole allowing optical signal to pass through the tank wall.

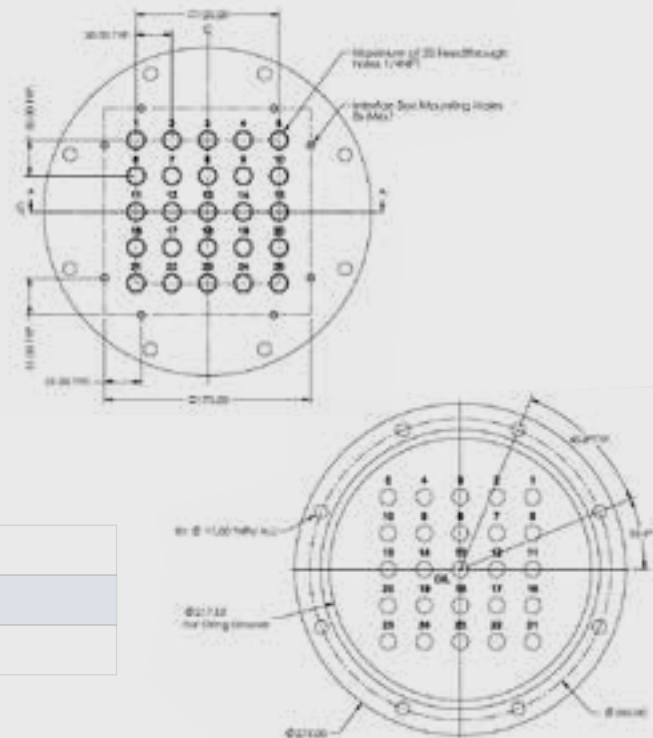
One TPLT Tank Wall Plate can fit as many as 24 TFFT Feedthrough. Each NPT hole is numbered on each side of the plate. The resulting setup is completely leak-proof and provides long term reliability. Optional leak test certification can be provided upon request

Features

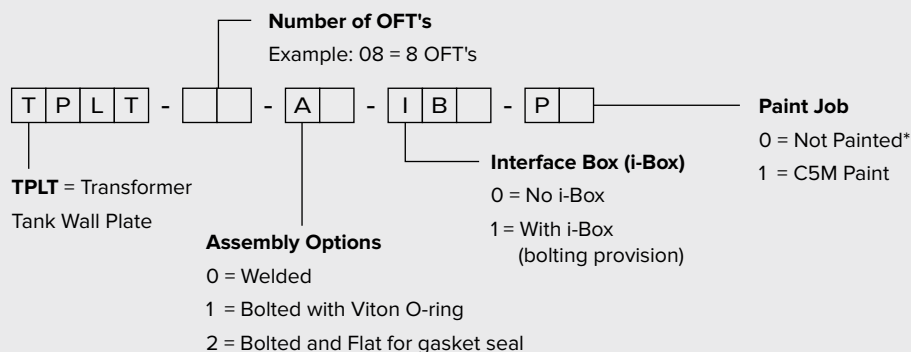
- With O-Ring or Customer supplied Gasket
- Compatible with RM interface Box (Optional Bolting provision)
- Built with Rust and Corrosion free Stainless steel 316L material

Technical Specifications

Diameter	275 mm
Stainless Steel	316 L Construction
Feedthroughs	Can accomodate upto 25

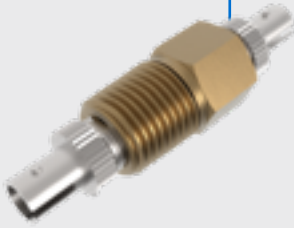


Ordering Code



Feedthroughs

Fiber Optic
Temperature Accessories



Feedthrough Rugged Monitoring fiber optic feedthroughs deliver the signals from sensors to the interface box acting as a junction between fiber optic probes inside and outside extension cables by way of transformer tank wall plate.

It provides long-term leak-free interface and requires zero maintenance undoubtedly. Based on high technology glass-to-metal bonding techniques, it overcomes all the disadvantages of other mechanical feedthroughs caused by unreliable epoxy bonding or maintenance-requiring O-rings.

Rugged Monitoring optical feedthrough connector is a stand-alone part designed to be integrated with any of our temperature sensors and extension cables. Simply connect ST connector of the sensor and it is optically integrated with the outside.

Made with standard threads, the optical feedthrough connector can be directly mounted on tank wall plate or on any part or location on the transformer.

Features

- Easy Installation
- No moving parts
- Uses no epoxy or O' ring
- Specifically designed for oil filled transformers

Ordering Code

T F F T - [] [] []
014 = 1/4" NPT Feedthrough, SS 316

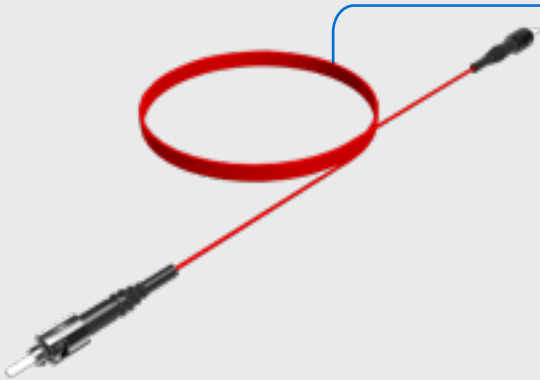
TFFT = Transformer Feedthrough

Technical Specifications

Transmission	Zirconia connector with better optical transmission
Probe Material	Stainless steel 316L construction
Measurement	Wide temperature and pressure ranges

Extension Cable

Fiber Optic
Temperature Accesories



Fiber Optic Extension cable provides robust and cost effective connection between transformer tank wall plate and fiber optic monitor. Extension cable uses a multimode 200 micron pure silica fiber built with chemically and thermally resistant PVC outer jacket. The terminated connector comes with zirconia ferrule to ensure minimal signal lose compared to competition.

Features

- PVC sheathing (outside transformer)
- Teflon sheathing is mandatory with dielectric connector (inside transformer)

Technical Specifications

Diameter	3mm OD
Maximum Temperature	+85 °C
Available in any lengths	up to 500 meters.

Options

- No need to change dimensions
- FOXT drawing follows the same method of FOBL drawing
- FOBL drawing doesn't contain dimension for the connector

Ordering Code

FOXT = Fiber Optic
Extension Cable



Length in Meters
Ex: 02 = 2 Meters

Cable Sleeve
P = PVC (Default)
T = PTFE Teflon

Connector Type

XX = ST, Metal Connector
XX = DT, Dielectric Connector Torlon
XX = DU, Dielectric Connector Ultem



Other Option Available

- Extension Bundle

Page 12

Interface Box

Fiber Optic
Temperature Accessories



TIBX enclosure is specially designed to protect power transformer tank wall optical Feedthroughs from the elements and from potential risk of damages. This protective enclosure can be installed directly over the Rugged Monitoring optical feedthroughs tank wall plate.

Being as much robust and resistant to the elements than conventional and self-made enclosures, the TIBX is a more economical solution and let manufacturers concentrate on other tasks during transformer manufacturing. Moreover, the protective enclosure, by being tied to the tank wall plate, which is welded or bolted directly onto the power transformer tank wall, offers an easier and faster installation than other methods. This solution also eliminates the needs for drilling more holes or welding on the side of the power transformer.

Because it matches the disc-shaped tank wall feedthrough adaptor plate, its size and ‘footprint’ is smaller than existing solutions, saving space on the sides of the power transformer; The protective enclosure has a cover that can be opened for servicing the covered parts and has a flat area for an easier and faster installation of conduits.

Features

- Leak Proof Design
- IP 66 rated
- No moisture ingress
- Stainless steel SS316 for rust and corrosion proof

Ordering Code

Transformer Interface Box — T I B X - A C C



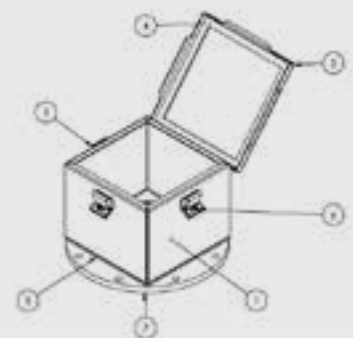
Technical Specifications

Size	200 x 200 mm, 150 mm high With neoprene gasket
Stainless Steel	316 L construction throughout

ITEM	QTY	DRAWING/PART NO.	DESCRIPTION	MATERIAL
1	1	ME0014-08	I-Box Enclosure Assembly	Stainless Steel 316 (14Ga)
2	3	ME0014-03	I-Box Hook	Stainless Steel 316 (14Ga)
3	1	ME0014-05	I-Box Door	Stainless Steel 316 (14Ga)
4	1	ME0014-07	I-Box Door Gasket	NEOPRENE 30A
5	1	ME0014-06	I-Box Lower Gasket	NEOPRENE 30A
6	3	91292A135	M6x16mm socket head Cap Screw	Stainless Steel 316

ITEMS NOT INCLUDED

7	1	ME0013-01	Tank Wall Plate	Stainless Steel 316
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T301 Rugged Monitoring Temperature Monitor



The Rugged Monitoring T301 is a multi-channel fiber optic temperature monitor with precision measurement for Industrial and Laboratory applications. The T301 fiber optic monitor combines compact form factor and user-friendly interface in the monitor and software.

It is designed to operate reliably in extreme EMI, RFI, Microwave and high voltage environments. The T301 has a measuring range from -271°C to +300°C. The system offers complete immunity to RFI, EMI, Chemical, microwave radiation, and high voltages making it an optimal choice for environments where the limitations of conventional temperature sensors / monitors impact usage in extreme conditions. The system is based on proven zero-drift GaAs technology and designed for Plug and Play operation.

The T301 is designed to collect data and to easily integrate into existing systems through serial communication like RS-485 or Gigabit Optical Ethernet. The T301 monitor comes with Rugged Connect software which is designed with the needs of Test Platform or Industrial Process monitoring integration needs. It has the data integration capability of multiple test platforms. Rugged Connect software is designed to collect data from 256 channels simultaneously. Plug and Play functionality provides the flexibility to interchange sensors without the inconvenience / concerns of calibration.

Rugged Monitoring has a dedicated team for application specific customizations for fiber optic sensors, monitor configuration and software integration to simplify the data collection of testing and monitoring applications.

Applications

- Transformer Hot Spot monitoring
- Industrial process control and monitoring
- Electric Vehicle and Battery Testing
- Medical Equipment testing (MRI, PETSCAN, NMR)
- Commercial Grade Microwave Radiation
- Food and Beverage Processes

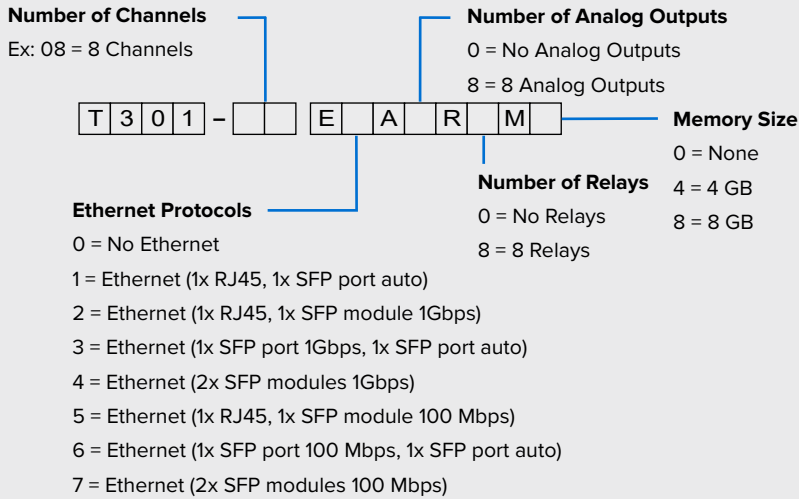
Features

- Rugged, Compact Design
- 4 to 24 Channels, Expandable
- Plug and Play, No field calibration
- Best in class EMI, ESD Immunity
- 8 Programmable relays, Form - C
- Software designed to be interfaced with other testing platforms

Benefits

- No shift over time, high stability
- Robust packaging
- Each Monitor comes with a complete NIST calibration Certificate
- Software designed for integration into test platforms
- Robust datalogging and analytics
- Customizable according to customer specific applications
- Suitable for OEM-type applications.

Ordering Code



Technical Specifications

Measurement Range	-80°C to +300°C (cryogenic 4°K range optional)
Measurement range (<i>Optional Range extensions</i>)	Down to 2°K / Up to +300 °C
Resolution	0.1°C
Accuracy	±1.0°C (±0.2°C in relative temperature)
Scan Rate	200 ms / channel
Memory	MicroSD external memory slot (Up to 2 TB)
Logging	10 years at 10 sec interval rate (8 GB)
Serial Port	RS-485 with Modbus
Ethernet Port	Gigabit RJ-45 or fiber ethernet (with PRP support using Redbox) – Optional
Analog Outputs	8 fully configurable 0-10 V / 4-20 mA optional module available – Optional
Max No. of Channels	256 Channels, Daisy chain up to 32 units (with Modbus)
Relays	8 Programmable Form-C Relays (5A) plus 1 system fault relay – Optional
Operating Temp	-40°C to 72°C
Storage Temp	-40°C to 85°C
Number of Channels	4 - 24 channels
Dimensions	10.5" x 7.4" x 2.8" 26.7W x 18.7D x 7.2H cm
Humidity	95% Non-Condensing

Options

Accessories

Extension Bundle

Fiber Optic Temperature Monitor

T501

Installation & Commissioning Support

Cleaning Kit

H201

Compatible with Enterprise Solution

Asset Monitoring Enterprise Solution

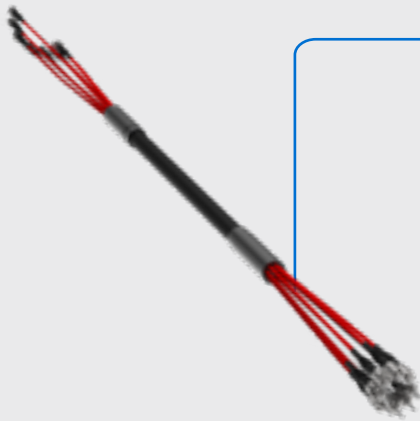
OPTIONS

RUGGED  **MONITORING**

MONITORING SIMPLIFIED

Extension Bundle

Fiber Optic
Temperature Accesories



Fiber Optic External Extension Bundles provide robust and cost effective connection between transformer tank wall plate and Fiber Optic Monitor.

The Extension Bundles uses upto 20 mm cover/ sheathing to ensure full capable protection from transformer tank wall plate to monitor.

Features

- RBR Orange PolyUrethane Dielectric Cover
- RUB Heavy Duty Rubber Sheathin
- RGG Rugged tree Braid Sheathing
- NEK Off-Shore NEK Bundle

Technical Specifications

Diameter Cover/ Sheathing	16.50 mm
Diameter	20 mm
Length	70 mm

Ordering Code

Length in Meters, Two digits,
Ex: 02 = 2 Meters

Number of Fibers,
Two Digits (02 to 12 fibers)

F O B L - [] - [] - X Y Z - S

Fanout type
0 = Not Staggered
1 = Staggered

Connector Type

XYZ = RBR, Orange PolyUrethane Dielectric cover

XYZ = RGG, Rugged Steel Braid Sheathing

XYZ = RUB, Heavy Duty Rubber Sheathing

XYZ = NEK, Off-shore NEK bundle



S0: Not Staggered



S1: Staggered



T501

Rugged Monitoring Temperature Monitor



Power transformers play a vital role in the electrical system and undergo critical stress most of the times. Rugged Monitoring T501 offers a whole range of functions designed to let the utilities use their transformers to the greatest limit by accurately monitoring all parameters required to calculate health index in order to maximize asset life.

Our advanced transformer monitoring system T501 is capable to perform but not limited to data logging, event recording, dynamic loading analysis, remote communication including IEC 61850. Keeping an eye on your transformer, the monitoring system can be integrated with various fiber optic sensors for direct winding temperature monitoring, H2Sens and any other third party online dissolved Gas Analyzer for measurement of gas in oil.

A monitoring system must be Robust, Reliable and Responsive, Our system meets all these features and is competent to perceive.

Options

- Integrated data logging (up to 20 parameters) and Event recording (up to 8 events)
- Ethernet port and/or fiber optic communications output (RS485)
- Weather proof enclosure with or without heater, 19" rack mount or control cabinet panel mount
- Oil RTD, Ambient RTD, clamp on CT, pressure transducer, oil level transmitter along with various other input modules.

Benefits

- Proactive Risk Monitoring
- Improved asset protection and utilization
- Simplified analysis for condition-based maintenance
- Intervention before failure and Malfunctioning
- Optimize loading and equipment life

Features

- 8 relays (1 dedicated for system status) for alarm and control based on up to 8 modular inputs of various types.
- 4 magnetically isolated current loop outputs (0-1 or 4-20mA selectable)
- RS 485 remote communication, fiber optics (Rs-485) communications and Ethernet ports
- Transformer monitor for condition based, continuous online monitoring of asset health (CBM).
- Interfaces with a variety of Rugged Monitoring and third party smart sensors, as well as traditional gauges to accurately measure transformer parameters vital to asset management.
- Web based software is specifically designed for ease of unit commissioning, setup and daily use.

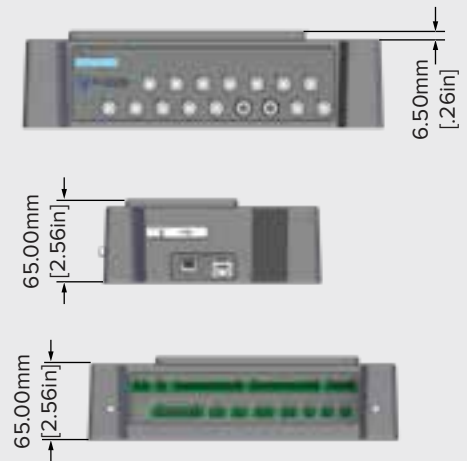
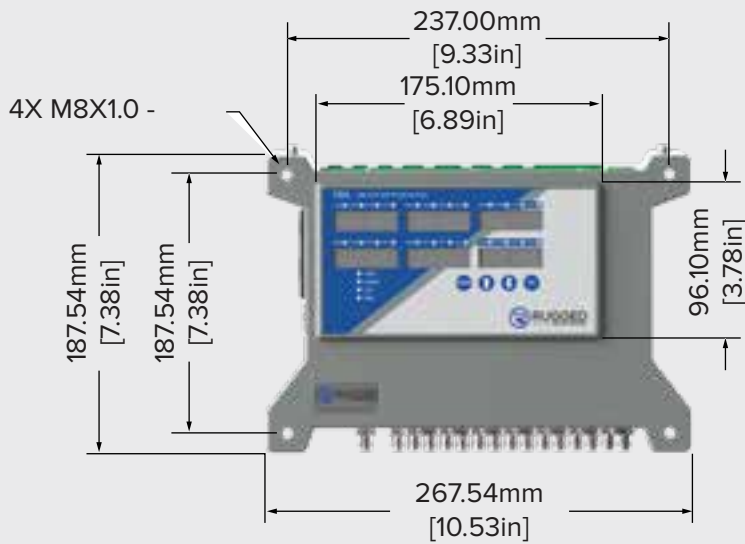
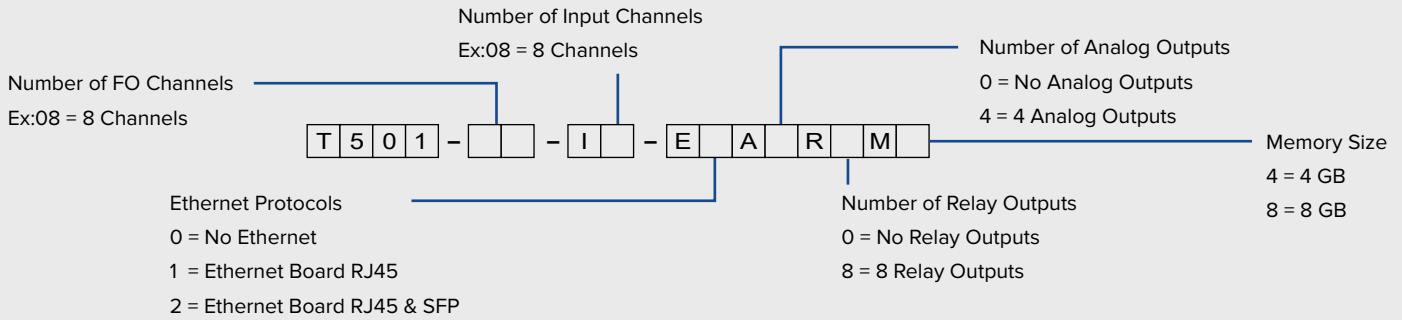
Technical Specifications

POWER SUPPLY	Input Power Requirement	24/48 VDC \pm 10%
	Power Consumption	20 Watts
ANALOG/DIGITAL INPUT MODULE	# of Input Channels	08/04 Channels
	Input Channel Types	Configurable from a range of input options, RTD, AC/DC current, AC/DC voltage, Potentiometer, Dry/Powered contact switch
	Accuracy of Channels	\pm 0.5% full scale input range
	Input Channel Sample Rate	1 Hz
FIBER OPTIC MODULES	Measurement Range	-80°C to +300°C (cryogenic 4°K range optional)
	Resolution	0.1°C
	Accuracy	\pm 1.0 °C (\pm 0.2°C in relative temperature)
	Scan Rate	200 ms / channel (Optional: Faster scanning rates available)
	Number of Channels	2 to 24 channels
ANALOG OUTPUT MODULE	# of Output Channels	04 Channels
	Output format	4-20 mA or 0-5Vdc / 0-10Vdc (Configurable for any measured / calculated value)
OUTPUT RELAY MODULE	# of Output Channels	08 Form C relays (5A)
	User Programmable	Yes, from Rugged Connect Software or webserver, if present
DATA STORAGE & CONFIGURATION	Data Storage Capacity	4 or 8 GB, Industrial Grade micro-SD, extendable to 2TB
	Logging Rate	User Configurable, 1 sec interval on USB
	System Fault Indication	1 System Fault Relay, with Local LED light
	Config port	USB (to use with Rugged connect windows software)
COMMUNICATION	Serial Communication	01 x RS-485 (RS-232 optional converter)
	Ethernet Communication	02 Ethernet Ports, configurable to RJ-45 or SFP (Gigabit Optical)
	Redundancy	Support PRP Redundancy
	Protocol Supported	Modbus, DNP3.0, IEC60870-104, IEC61850, Other protocols provided on request
EMC TYPE TESTING	Conducted & Radiated Emissions	ICES-003 (2016), CISPR32 (2015), CISPR11 (2015)
	ESD and EM Field Immunity	IEC61000-4-2, C37.90-3, IEC61000-4-3, C37.90.2
	Fast Transient & Surge Immunity	IEC61000-4-4, IEC61000-4-5, C37.90.2
	Magnetic Field Immunity	IEC61000-4-8, IEC61000-4-10
	Immunity from Conducted Disturbances	IEC61000-4-6, IEC61000-4-16
	Ripple, Dips & Damped Oscillatory	IEC61000-4-17, IEC61000-4-18, IEC61000-4-29
	Safety	IEC60255-26 and CE Certified
ENVIRONMENTAL AND MECHANICAL	Operating Temperature	-40 to 72°C
	Operating Humidity	95% Non Condensing
	Storage Temperature	-40 to 85°C
	Dimensions	W26.7 cm x H7.2 cm x D18.7 cm (10.5" x 2.8" x 7.4")
	Weight	App. 1.5 to 2.0 Kg. (based on number of configuration)

Applications

- Transformer monitor for condition based, continuous online monitoring of asset health (CBM).
- Interfaces with a variety of smart sensors including third party sensors, as well as traditional gauges to accurately measure transformer parameters vital to asset management.
- Specifically designed web based software for ease of unit commissioning, setup and daily use.

Ordering Code



Weight : 2 Kilograms

Cleaning Kit

Fiber Optic
Temperature Accesories



To clean fiber optic connectors before installation/ usage

- Pen with easy pushing motion engaging connector and initiates cleaning of Fiber Optic connection
- It Cleans micro fiber
- Made from anti static resin
- Extendable tip reaches recessed connectors

Ordering Code

FOS-CLEANPEN

H201

Rugged Monitoring Temperature Monitor



Rugged design, designed for reliability, handheld fiber optic temperature monitor for Factory Testing, Industrial and Laboratory applications.

The Rugged Monitoring H201 is a compact design, designed for reliability to operate in extreme EMI, RFI, Microwave and High Voltage environments. The H201 Fiber optic monitor combines reliability and user friendly interface in the monitor and software. It is a multi-channel fiber optic temperature monitor with precision measurement for Factory Testing, Industrial and Laboratory applications. The H201 has a measuring range from -271°C to +300°C. The system is based on proven GaAs technology and designed for Plug and Play operation. Its immunity to extreme test conditions and harsh environment makes H201 a default choice for temperature testing and measurement.

The H201 is designed to connect to the fiber optic temperature sensors (GaAs technology based) and provide temperature readings on local display. Plug and Play functionality provides the flexibility to interchange sensors without the inconvenience/concerns of calibration. The measured temperature data can also be send to third party datalogger / system through serial communication like RS-485 or analog outputs like 0-10 V / 4-20 mA. The H201 monitor comes with Rugged Connect software which is designed for remote visualization of data, perform analysis and integrate with other Test and Monitoring platforms. Rugged Connect software is capable of collecting data from 6 x H201 or other rugged monitoring systems simultaneously. Industry standard drivers available for a quick and easy connect to most popular laboratories software / computing environments.

We at Rugged Monitoring have a dedicated team of experts available for customizing fiber optic temperature solutions to meet specific customer needs.

Applications

- Transformer factory: Hottest spot testing
- Medical Equipment testing (MRI, PETSCAN, NMR)
- Commercial Grade Microwave Heating Applications
- Industrial Process Control and monitoring applications
- Chemical and Process Industries
- Food and Beverage Processes
- Wood Drying Industry
- Electric Vehicle and Battery Testing

Features

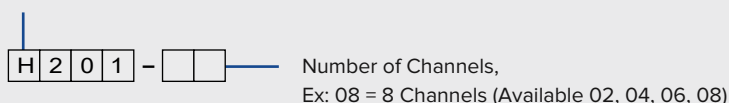
- Rugged, Compact Design for quick temperature reading and testing
- 2 to 8 Channels and Expandable
- Easy to use, USB powered, Plug and Play
- Suitable for HV applications and best in class EMI, ESD Immunity
- Built-in display with Remote Client software for advance visualizations

Benefits

- Sensors do not require any recalibration
- No shift over time, high stability & repeatability
- Handheld system with Robust packaging
- Each Monitor comes with a complete NIST calibration certificate
- Software designed for integration into test platforms
- Robust datalogging & Analytics
- Customizable according to customer specific applications
- Suitable for OEM-type applications

Ordering Code

H201 = Lab Instrument, 201 Series



Technical Specifications

Measurement Range	-80°C to +300°C
Measurement range (<i>Optional Range extensions</i>)	Down to 4°K / Up to +300°C
Resolution	0.1 °C
Accuracy	±1.0°C (+/- 0.2°C in relative temperature)
Number of Channels	2 - 8 Channels
Scan rate	200 ms / channel
Logging	1 sec interval on USB
Config port	USB (to use with Rugged connect windows software)
Serial port	RS-485 (RS-232 optional converter) with Modbus
Power	5 Volts USB powered
Battery	Optional Battery Module available
Memory	MicroSD external memory slot (up to 2 TB)
Analog output module	Fully configurable 0-10 V / 4-20 mA optional module available
Dimensions	12.5 cm x 18 cm x 6.9 cm
Weight	0.64 Kg. (for 8 channel unit)
operating temp	-30°C / 55°C
Storage temp	-30°C / 65°C
Humidity	95% Non Condensing

Asset Monitoring : Enterprise Architecture

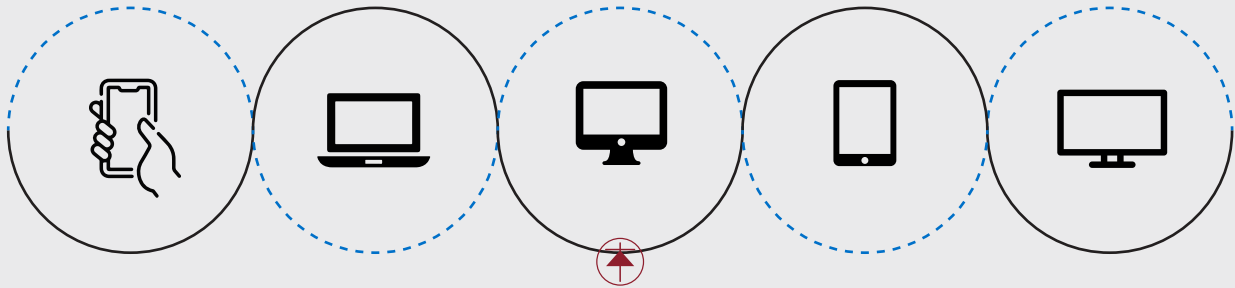
Compatible with Rugged Monitoring Enterprise Solution

UI UX



- Data Layer
- Analytics
- User Interface
- Custom Dashboards
- Reporting
- Email/SMS Notifications

RM EYE



Private Cloud (Customer Cloud),
Rugged Monitoring Cloud

IEC 60870-104

IEC 61850

FTP/SFTP

- XML, JSON
- CSV, COMTRADE



Data Collection

ODBC

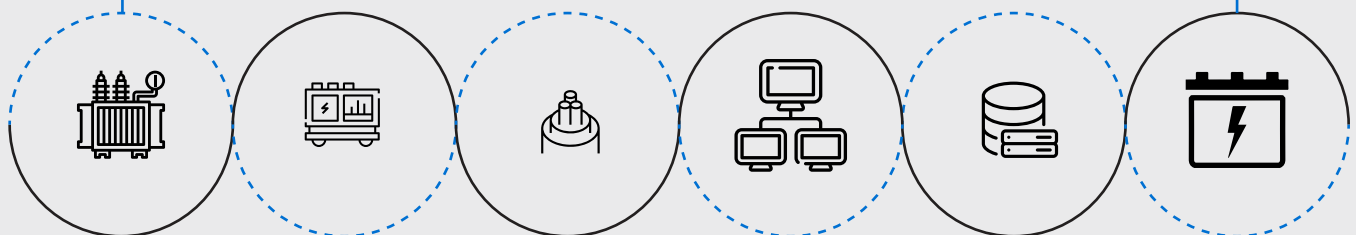
MODBUS

DNP 3.0

HTTPS

MQTT

Asset Data



Transformer
Monitoring
System

Switchgear
Monitoring
System

Power Cable
Monitoring
System

- Offline Test Results
- Inspection Records
- Name Plate

- Historian
- CMMS
- SCADA/ DCS

Power Electronics
(Battery, UPS,
VFD, Relay)

One Solution for Multi-Site Multi Asset Monitoring

**RM Eye - Unified platform to monitor entire network
of electrical assets**

Features

- **Advanced asset health monitoring** with analysis and recommendations to increase asset effectiveness in addition to maximizing equipment uptime
- **Modern remote monitoring solutions** provide valuable insights to Multiple Assets at Multiple Sites from time to time
- **Establish a real time and consistent monitoring** by getting the right information into right hands
- **Simple and user-friendly interface** providing easy and fast access to all the features
- **Everything about the asset at one place**
The raw data, analysis and recommendations
- **Advanced asset algorithms** for electrical assets to evaluate asset health
- **Advanced reporting technology with automated alerts**
- **An efficient, reliable partial discharge monitoring for all the assets**
- **A detailed comprehensive DGA analysis**
- **Built on well-established remote and cloud-based monitoring technology**
- **Quick configuration** so that you are not required to configure separately.
- **Protocols: MODBUS, MQTT, IEC61850**
- **Robust integration with 3rd party systems and devices** with industry standard protocols
- **Bulk configuration imports for fast deployment**
- **Encompasses a secure access to data and configuration**
- **QR code scanner on mobile devices**
- **Accessible on web browser and mobile app**
- **Historical data storage and on demand access** via export feature
- **Extended multilingual support** to handle product inquires or troubleshoot problems proactively
- **Systematic fleet management analysis**
- **Offline test data integration and analysis**

Why Customers Choose Us?

RM solution, the trusted monitoring solution for over 10000+ assets across 50+ countries. We are a leading High Value Electrical Asset Monitoring Company integrating fibre optic technology to the assets.



Attention to Details

It's our attention to the small stuff, scheduling of timelines and keen project management that makes us stand out from the rest.



A plan for Success

Our Customers are well satisfied with the advisory services that we offer to help them with best in class technological performance and a long durable life.



Experts only

We bring-in our diversified experienced team with over 100+ years of experience in Asset Monitoring



Meeting Deadlines

Work with us, and you'll work with seasoned professionals – vigilant of deadlines, and committed to exceeding client expectations.



Money Matters

We protect you against currency fluctuation with competitive and fair market prices



Rugged Monitoring Services

Rugged Monitoring provides customization of sensors, monitors & software. In addition we offer on-site commissioning services, maintenance contracts and technical support to all customers worldwide.

About Rugged Monitoring

Industry's leading team of asset condition monitoring experts with 100+ years of combined experience committed to delivering customizable solutions for challenging applications. We offer a range of reliable, high performance, customizable sensors and monitoring solutions that are immune to external influence.

Certification



ISO 9000



ISO 14000



ISO 45001/
OHSAS 18000



Lloyd's
Register



ATEX
Certification


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