T301 Precise and Advanced Temperature Monitoring System

Rugged design, compact and robust packaging, and reliable fiber optic temperature monitoring system for continuous online monitoring and testing applications in harsh operating conditions of energy, mobility, aerospace and defense, Oil & Gas and Industrial segments

RM's T301 is a specially designed fiber optic temperature monitor for continuous online monitoring and testing applications in energy, e-mobility, aerospace, defense, Oil & Gas and Industrial segments. The T301 Fiber optic temperature monitor comes with a user-friendly software. The system is based on proven zero-drift GaAs technology and designed for Plug and Play operation. The T301 has wide measuring range from -80 °C to +300 °C, with high accuracy (less than 1°C), 100% repeatability and faster response time (200ms per channel). It has capability to measure temperature from 4 to 24 Fiber Optic Temperature Sensors and can be extended upto 256 channels with an option to daisy chain with 32 units. The system supports a range of comminution options (Serial-RS485, Ethernet-RJ45, Fiber-FXP) for third party system integration.

The T301 monitor comes with remote monitoring and configuration software (Rugged Connect/ RM EYE), the software has advanced visualization, notification, easy configuration, and reporting features to suit different applications. The software also allows customers to program alarm conditions and relays based on their needs. The system supports all major industry standard protocols (Modbus, DNP3.0, IEC60780-104, IEC61850) and comes with drivers for MATLAB, LabView and python for easy data integration.

RUGGED MONITORING has a team of experts to provide customization to its sensors, monitors and software in very short time.

» Features

- Temperature; Speed of data acquisition
- up to 24 Channels on one monitor (4 to 24 channels)
- Immune to extreme EMI, ESD environment
- Most rugged and robust system for Extra High Voltage and outdoor environments
- Plug and Play Operation
- Easy to install in control box or enclosure
- Control function using programmable relays (Form-C)
- Robust datalogging and Analytics
- Software & Hardware capable to interface with other testing platform

Applications

- Transformer Monitoring
- Motors/Generators Monitoring
- Cable Monitoring
- Circuit Breaker
- Switchgear Monitoring

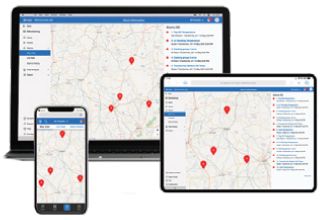
Benefits

- Rugged design, reliable and durable
- No shift over time and high stability
- Higher accuracy and 100% repeatability ensure early fault detection in monitored assets
- User programmable alarm conditions and relays to meet different customer needs
- Customizable according to customer specific applications

System Architecture

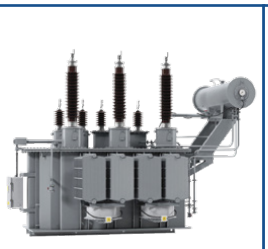
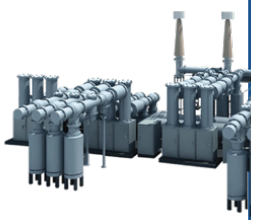
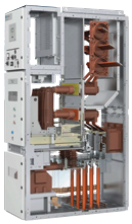
The advanced T301 Fiber Optic Temperature Monitor can be connected to various electrical assets individually to precisely monitor the temperature of the assets

T301
Temperature
Monitoring Solution



Enterprise APM Suite
RM EYE

Transformer or **Gas Insulated Switchgear** or **MV Panel Switchgear** or **Air Insulated Switchgear** or **Rotating Machines** or **Power Cable**


Technical Specifications

Measurement Range	-80 °C to +300 °C (cryogenic 4 °K range optional)
Measurement range (Optional Range extensions)	Down to to 2 °K / Up to +300 °C
Power Supply	24V to 48V DC, 30 W
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 Option	RJ-45 or Fiber Ethernet; Optional PRP support built-in 2 x RJ-45 or Fiber Ethernet; With advance communication protocols (IEC 61850, Modbus over Ethernet, IEC 60870-5-104 and DNP3)
Fiber Optic Communication	SFP module can be added to the Ethernet option; the standard SFP module is compatible with LC fiber connectors (850 nm multimode communication with a distance capability of 550 meters)
Analog Outputs	8 fully configurable 0-10 V / 4-20 mA optional module available - Optional
Max # 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 temperature	-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

Ordering Code

Number of Channels
2 up to 24 Channels (Max)
Ex: 08 = 8 Channels

Number of Analog Outputs
0 = No Analog Outputs
8 = 8 Analog Outputs

T301 = Transformer Fiber Monitor, 301 Series (Default)
Alternate Smart Part Number
T301LS = 62.5µm probes compatible (up to 8 channels max)
T301B : Low cost version

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Memory Size
0 = None (only with E0)
4 = 4 GB
8 = 8 GB

Number of Relays
0 = No Relays
8 = 8 Relays

Ethernet Protocols
0 = No Ethernet
1 = RJ45 only (100 Mbps / 1 Gbps)
2 = RJ45 + SFP (100 Mbps / 1 Gbps)
3 = Dual SFP (100 Mbps) => SFP2 remains configurable (100 Mbps or 1 Gbps)
4 = Dual SFP (1 Gbps) => SFP2 remains configurable (100 Mbps or 1 Gbps)
**SFP modules to be purchased separately*

CERTIFICATIONS

ISO 9001 | ISO 14001 | OHSAS 18001 | Lloyd's Register | Atex Certification | NIST Certification

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