FIBER OPTIC THERMOMETER

FOTEMP T2

KEY FEATURES

- Easy integration of up to 16 channels
- Rugged and easy to use
- Small footprint
- Possible Measuring range - 200 °C to + 300 °C
- Possible standard deviation* +/- 1 K
- USB/RS232/RS485 Modbus RTU interface
- Analog output (0-10 V or 4-20 mA)
- 4 relays

APPLICATIONS

- EHV/UHV/HVDC Transformers
- Power Transformers
- Distribution Transformers
- Reactors, Generators
- Load Tap Changers
- Switchgear
- Bus Bars

WEIDMANN
Technologies Deutschland GmbH

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DESCRIPTION

Power transformers often take the brunt of an overload Condition. They are the most likely to be damaged without the appropriate control and protection.
Weidmann InsuLogix® T is designed to measure transformer winding hot spots in real time. The drift-free, re-calibration-free and maintenance-free FOTEMP T2 allows an optimized operation of the transformer at safe load capacity during normal and emergency conditions.
The temperature measurement is based on Gallium Arsenide crystal sensor mounted on 200 µm all-silica fiber. The probe consists of a glass fiber with PTFE sheath, which is also protected by a PTFE spiral wrap.
The sensor possesses a resilient construction and has dielectric resistant materials featuring complete immunity to EMI and RFI environments. The optic cable is specially designed for permanent installation in a liquid-immersed transformer.
Unlike conventional top oil temperature measurements which can lag hours behind in response time, optics provide direct, real-time accurate measurements of the transformer winding temperature, suitable for dynamic load control or as a valuable input to calibrate thermal models.

- Choice of 2 to 16 measurement channels,
- watchdog function
- one system fault relay
- one relay for probe error
- two relays for temperature thresholds
- Configurable at factory 4-20mA or 0-10 V DC analog outputs
- No drift, no re-calibration required, light source does not change for the lifetime of the transformer
- MODBUS communication protocol RTU or TCP
- Can be supplied with Weidmann SmartSpacer®

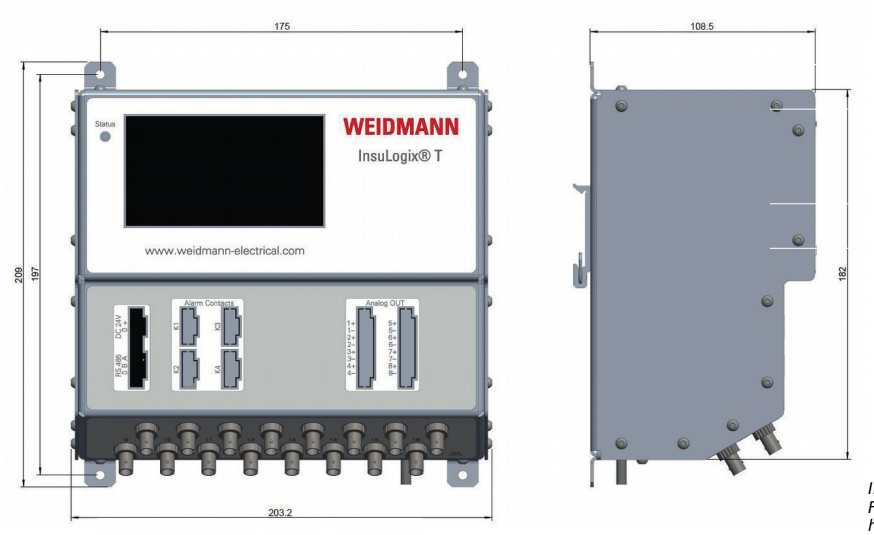
Depending on the measurement environment, several sensor designs are available with different ruggisation of the fiber tube and sensor tip (see specific sensor data sheets). Customized sensor designs can be offered for enquiry.

On request a back-tracing according ISO 17025 can be offered.

TECHNICAL SPECIFICATION

Channels	4, 8, 12, 16
Silica Fiber Core	200 um
Fiber Optic Connectors	ST
Fiber Protection Jackets	PTFE sheath, PTFE spiral wrap
Measuring Range	-40 to 200 °C
Accuracy*	< +/- 1 K
Resolution	0.1 K
Measuring Time per Channel**	250 ms
Operating Temperature	-20 to 60 °C
Storage Temperature	-20 to 70 °C
Light Source Lifetime	Lifetime of the transformer
Humidity	95% RH non-condensing
Communication Ports	Factory Configuration: • USB, RS232, Ethernet (Modbus TCP) for up to 8 channel devices • RS485 (Modbus RTU) for up to 16 channel devices
Analog Output	4-20 mA or 0-10 VDC, configurable at factory
Relays	2 for temperature thresholds
System Fault Relay	dedicated system fault relay for instrument and one relay for probe operation
System Status Indicatior	LED
Data Recodring	8GB MicroSD-Card or other interface
Auto Diagnostics	Light Level, Signal Level
Power Supply	24 VDC (40W)
Instrument Mounting	DIN Rail or standard mounting brackets
Warranty	2 years

DIMENSIONS



** The "expanded uncertainty of measurement" is the Product of the reported standard deviation and the coverage factor k=2. It corresponds to a normal distribution to a coverage probability of approximately 95 %.*

*** Mean value. This value depends on the used sensor and its enviromental temperature.*

Information:
For 4- and 8-channel devices software can be found on http://www.optocon.de/support/downloads-fotemp/.
For 9- up to 16-channel devices contact us for further information.

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