

Non-contact Infrared Temperature Sensors **TF-2000**

Digital infrared sensor with 4-20 mA analog output and interface output for PC connection with USB - 32°C und + 900 °C

Built-in air purge unit to keep clean the lens in dusty environments

Easy installation and connecting

Stainless steel housing with PG 11 thread for easy mounting

Very small housing dimensions, suited for use in confined spaces

Up to 70°C operating temperature without cooling



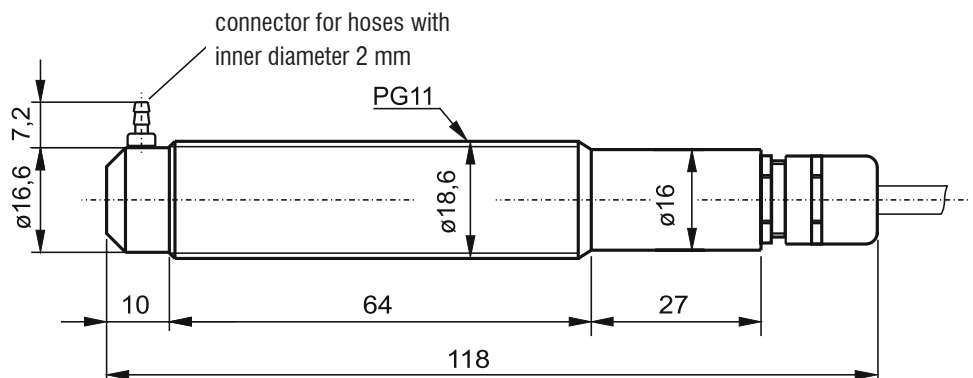
STANDARD DELIVERY FOR ALL TF DEVICES

- TF with 2m cable
- inspection sheet
- User Guide

The small housing dimensions enable the integration of the instruments in compact production machines; the solid and robust design of the instrument guarantees reliability even in rough industrial environments. With the built-in air purge the lens can be protected from contamination with dust and moisture. This enables the instrument to be adapted to various measuring tasks.

TYPICAL APPLICATIONS ARE MEASUREMENTS OF:

- Plastics
- Textile
- Asphalt
- Rubber
- Paint
- Glass
- Wood
- Varnish
- Ceramic
- Paper
- Liquids
- Food
- Painted metals
- Coated metals
- Anodized metals



Technical data

	IN 2000	IN 3000
Temperatur range(s):	-32 to 900 °C	0 to 120°C / 0 to 300°C / 100 to 500°C
Sub range:	Any range adjustable within the temperature range, minimum span 51°C	–
Spectral range:	8 to 14 µm	
Internal signal processing:	Digital	Analog
Power supply:	15 to 30 V DC	18 to 30 V DC
Output:	Analog output 4 to 20 mA, digital output for connecting a USB adapter	10 mV/°C or thermocouple type J or K
Load:	max. 375 Ω at 15 V up to max. 1125 Ω at 30 V	min. 50 kΩ
Resolution:	0.1°C on interface, < 0.025% of temp. range at the analog output	
Emissivity ε:	10.0 to 100.0% (adjustable via interface)	95% (fixed)
Transmissionsgrad τ:	10.0 to 100.0% (adjustable via interface)	–
Exposure time t ₉₀ :	95 ms (adjustable to 0.5 up to 120 s)	300 ms
Interface parameters:	Temp. display in °C or °F, emissivity ε, exposure time t ₉₀ , settings of the max. / minimum value storage, temperatur sub range, ambient temperature compensation, adresse, baud rate	–
Maximum / minimum value storage:	Clear times t _{clear} = OFF; 0.1 up to 25 s or automatically with the next measuring object	–
Uncertainty:	1% of measured value + 1°C ¹⁾ (ε=1, T _{amb.} =15...40°C) 1.4% of measured value + 1°C ¹⁾ (ε=1, T _{amb.} =0...15 or 40...70°C)	1.5% of temperature range or 2.5°C ²⁾
Repeatability:	< 0.3% of measured value (ε=1)	1% of measured value or 1°C ²⁾
Noise (NETD, σ=1):	< 0.2°C (ε=1, t ₉₀ =min, T _{amb.} =23°C)	< 0.2°C
Ambient temperature:	0 to 70°C	
Storage temperature:	-20 to 70°C	
Relative humidity:	No condensing conditions	
Housing:	Stainless steel	
Weight:	150 g	
Mounting position:	Any	
Connection cable:	2 m	1 m
Air purge unit:	For connecting hose with 2 mm inner diameter	
Protection class:	IP65 (DIN 40050)	
CE label:	According to EU directives about electromagnetic immunity	

¹⁾ The instrument must be at a constant ambient temperature for a minimum of 15 minutes and has to be connected to the power supply. ²⁾ the larger value is valid

The optics is fixed to a distance of 50 mm, i.e. at this distance the optic achieves its smallest spot size in relation to the measuring distance. The spot size will enlarged in any other distance (shorter or longer). Please note that the measuring object must be at least as big as the spot size

