

**Stationary good value infrared sensor for non-contact temperature measurement of non-metallic surfaces or painted, coated or anodized metals.**

**impac® IN 2000 • IN 3000**  
Infrared thermometry



IN 2000: Digital infrared sensor with 4-20 mA analog output and interface output for PC connection with USB

IN 3000: Analog infrared sensor with 3 different outputs: 10 mV/°C, thermocouple type K or J

- 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



**IN 2000** and **IN 3000** are good value stationary infrared sensors for non-contact temperature measurement of non-metallic surfaces or painted, coated or anodized metals.

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.

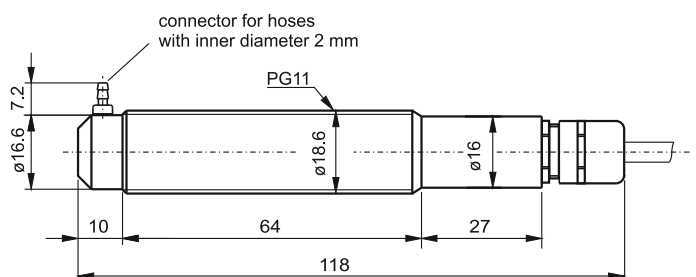
The **IN 3000** is an analog measuring device that provides 3 different outputs.

The **IN 2000** is a digital pyrometer equipped with a interface output for connection to an USB adapter. This enables the adjustment of all pyrometer parameters via PC.

**Typical applications are measurements of:**

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

**Dimensions:**



## 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 <sub>90</sub> :	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 <sub>90</sub> , settings of the max. / minimum value storage, temperatur sub range, ambient temperature compensation, adresse, baud rate	-
Maximum / minimum value storage:	Clear times t <sub>clear</sub> = OFF; 0.1 up to 25 s or automatically with the next measuring object	-
Uncertainty:	1% of measured value + 1°C <sup>1)</sup> (ε=1, T <sub>amb.</sub> =15...40°C) 1.4% of measured value + 1°C <sup>1)</sup> (ε=1, T <sub>amb.</sub> =0...15 or 40...70°C)	1.5% of temperature range or 2.5°C <sup>2)</sup>
Repeatability:	< 0.3% of measured value (ε=1)	1% of measured value or 1°C <sup>2)</sup>
Noise (NETD, σ=1):	< 0.2°C (ε=1, t <sub>90</sub> =min, T <sub>amb.</sub> =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	

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

Optics (distance ratio):	10:1 (IN 2000)	5:1 (IN 3000)
The graphics show the spot size in relation to the measuring distance.		
Please note that the measuring object must be at least as big as the spot size.		

## Reference numbers

	IN 2000	IN 3000				
Output:	4 to 20 mA	10 mV / °C	Type J	Type K	3 890 600	Power supply 24 V DC
0 to 120°C	-	3 885 710 (0 to 1.2 V)	3 885 720	3 885 730	3 826 650	USB adapter
0 to 300°C	-	3 885 750 (0 to 3 V)	3 885 760	3 885 770	3 837 180	Cooling jacket
100 to 500°C	-	3 885 810 (1 to 5 V)	3 885 820	3 885 830	3 835 250	90° mirror
-32 to 900°C	3 885 200	-	-	-	3 834 260	Mounting angle, fixed
					3 834 250	Mounting angle, adjustable

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