

Digital pyrometers with miniature sensor head for non-contact temperature measurement of non-metallic or coated metallic surfaces between -40 to 700°C

**IN 510-N • IN 510 • IN 520-N • IN 520 • IN 530-N • IN 530**

- Sensor head and cable usable in ambient temperature up to 85 or 180°C without cooling
- Sensor head exchangeable without recalibration
- Close focus lens for small objects
- Switchable digital interface RS232 / RS485
- Isolated relays contact
- Selectable analog output
- Setting of parameters via keyboard or interface

**IN 510-N**



**IN 530**

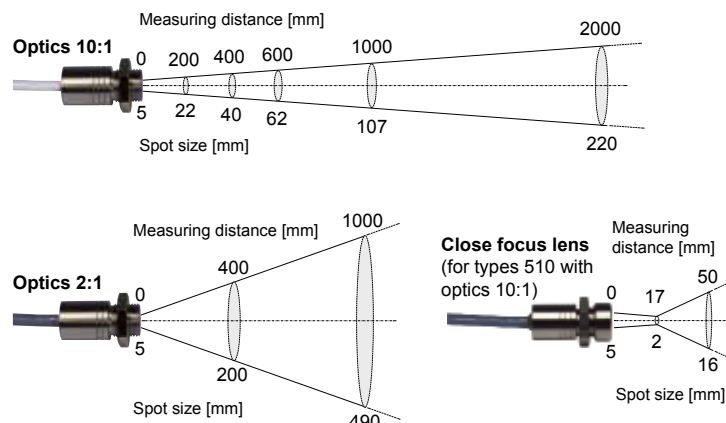


The pyrometers IN 510-N, IN 510, IN 520-N, IN 520, IN 530-N and IN 530 are digital pyrometers for non-contact temperature measurement of non-metallic or coated metallic objects.

The versions IN 510, IN 520, and IN 530 are equipped with an illuminated LC display which shows the actual temperature reading. All available parameters can be set via the integrated keyboard. The types IN 510-N, IN 520-N, and IN 530-N do not have display and keyboard, they will be parametrized via interface.

All pyrometers are equipped with a stainless steel miniature sensor head, the field of view is 10:1 or 2:1, they can be used in ambient temperatures up to 85°C or 180°C without cooling dependent on the type.

**Optics**

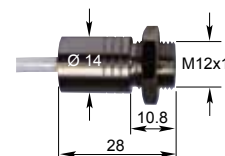


**Dimensions**

Converter:



Sensor head:



## Technical Data

Temperature range:	-40 ... 700°C
Sub range:	Adjustable; min. range 51°C; ex works preadjusted to 0 ... 500°C
Spectral range:	8 ... 14 µm
Optics:	10:1 or 2:1
Power supply:	10 ... 30 V DC, ripple < 0.5 V, current consumption max. 60 mA
Analog output:	Linear current (0/4 ... 20 mA), voltage (0 ... 5 V) or thermocouple (type J or K)
Output for sensor head temperature:	10 mV/°C
Load:	Max. 700 Ω at 24 V power supply (for current output) (500 Ω / 20 V)
Output impedance:	100 Ω (for thermocouple or voltage output)
Relays contact:	Isolated relays contact, 50 V DC, 0.2A; temperature and hysteresis adjustable
Digital interface:	switchable RS232/RS485
Emissivity ε:	10 ... 120% adjustable in steps of 0.1%
Max. / minimum value storage:	Clear time: OFF; 0.1 s; 0.25 s; 0.5 s; 1 s; 5 s; 25 s; extern; auto
Response time τ <sub>90</sub> :	180 ms; switchable: 0.5 s; 1 s; 2 s; 5 s; 10 s or 30 s

Temperature display (only IN 510 / 530):	LCD, 4 digit, 3 values per second, display illumination permanent
Resolution:	1/10°C (1/10°F, 1°F >1000°F measur. temp.)
Measurement uncertainty: (ε=1, τ <sub>90</sub> =1 s; T <sub>amb</sub> =15...30°C)	0 ... 700°C: 0.8% of reading in °C or 1° C *) 0 ... -20°C: 2°C; -20 ... -40°C: 3°C T <sub>K</sub> : 0.03%/°C or 0.05°C/°C (25°C) With thermocouple output: min. 2.5°C
Repeatability:	0.5% of reading in °C or 0.5°C *)
Max. ambient temp. converter:	0 ... 65 °C (storage temperature: -20 ... 70 °C)
Max. ambient temp. sensor head:	<b>types 510:</b> 0 ... 85°C <b>types 520:</b> 0 ... 180°C <b>types 530:</b> 0 ... 180°C (short-time 210°C) (storage temp.: -20 ... 85°C / 180°C)
Relative humidity:	10 ... 95%, non condensing
Protection class:	IP65 (converter, sensor head 10:1, IN 520 and IN 530-sensor head 2:1) IP20 (IN 510-sensor head 2:1)
Weight:	320 g
Housing:	Aluminium (converter) stainless steel (sensor head)

\*) The larger value is valid. The sensor head must be in constant ambient temperature for at least 15 min.

## Reference Numbers

Pyrometers:			3 m cable	15 m cable
IN 510-N	Optics 2:1	(85°C head)	3 874 160	3 874 170
	Optics 10:1		3 874 260	3 874 270
IN 510	Optics 2:1	(85°C head)	3 874 360	3 874 370
	Optics 10:1		3 874 460	3 874 470
IN 520-N	Optics 2:1	(180°C head)	3 874 180	3 874 190
	Optics 10:1		3 874 280	3 874 290
IN 520	Optics 2:1	(180°C head)	3 874 380	3 874 390
	Optics 10:1		3 874 480	3 874 490
IN 530-N	Optics 2:1	(180°C head)	3 874 500	3 874 510
	Optics 10:1		3 874 520	3 874 530
IN 530	Optics 2:1	(180°C head)	3 874 550	3 874 560
	Optics 10:1		3 874 570	3 874 580

### Accessories:

3 821 010 Connection cable (10 wire) 2 m, with additional digital cable (1 m) and InfraWin analysing software

3 821 020 Connecting cable 2 m for power supply and thermocouple output (compensating cable)

3 848 790 Close focus lens (only for 10:1 optics, max. 85°C ambient temperature, not in combination with air purge, cooling / purging unit or 90° mirror)

3 834 370 Fixed mounting angle (for sensor head or air purge with sensor head 10:1)

3 834 380 Adjustable mounting angle (for sensor head or air purge with sensor head 10:1)

3 835 330 Air purge (for sensor head 10:1)

3 835 410 Air purge (for sensor head 2:1)

3 834 250 Fixed mounting angle (for air purge with sensor head 2:1)

3 834 260 Adjustable mounting angle (for air purge with sensor head 2:1)

3 835 340 90° mirror (only for sensor head 10:1)

3 890 560 DA 6000-N: LED-digital display with possibility for pyrometer parameter setting; RS232 interface

3 890 570 DA 6000-N with RS485 interface

3 826 500 HT 6000: portable battery driven indicator and instrument for pyrometer parameter setting

3 852 290 DIN-rail-power supply NG DC; 100 ... 240 V AC, 50 ... 60 Hz => 24 V DC, 1 A

3 852 440 Protocol converter RS485 <-> Profibus DP (max. 1 instr.)

3 852 460 Protocol converter RS485 <-> Profibus-DP (max. 32 instruments)

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## Temperature and Gas Sensing Solutions

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