DIAS Infrared Systems

PYROSPOT DT 4L

Pyrometer for Industrial Applications

- **Digital pyrometer for –40 °C to 900 °C**
- **Very small head**
- **Programming keyboard and display**
- **Maximum and minimum value storage**
- **Robust and all-purpose**

The digital pyrometers PYROSPOT DT 4L are especially designed for industrial purpose. The devices are suitable for temperature measurement from –40 °C to 900 °C of many different nonmetallic or coated metallic surfaces.

The solid body in a compact housing with offset head allows usage even under rough environmental conditions and environment temperatures up to 180 °C without any additional cooling.

The very small head with a distance ratio of 20 : 1 allows even the acquisition of measuring object which are difficult of access.

Very small measuring objects from 0.6 mm on can be measured with an optional ancillary lens.

The temperature linear standard output signal allows easy implementation in existing measuring and controlling systems. Alternatively is a standard output signal 0/4 to 20 mA or 0 to 5/10 V or a thermocouple J/K output available. The output of alarm values can be effected with an optional relay-output.

Emissivity, sub temperature range, response time, storage parameters and alarm values can be easily and optional modified according to the applications via the integrated programming keyboard and display.

Typical applications of the pyrometers are:

- Paper-and packaging industry
- Kiln engineering
- Glass and ceramics industry
- Food industry
- Chemical industry

Technical Data and Accessories

Technical data		
Type	**DT 4L**	
Temperature range	–40 °C to 900 °C	
Sub temperature range	adjustable within temperature range	
Spectral range	8 μm to 14 μm	
Optics	fixed optics, aperture diameter D = 7 mm, add-on lens (optional)	
Distance ratio	20 : 1	
Measurement uncertainty	± 1.0 % of measured value or ± 1 K (T_U = 23 °C, ε = 1, t95 = 1s), when using thermocouple output: ± 1.0 % or ± 2.5 K	
Reproducibility	± 0.5 % of measured value or ± 0.5 K (T_U = 23 °C, ε = 1, t95 = 1s)	
NETD[1]	0,1 °C (T_U = 23 °C, ε = 1, t95 = 1s)	
Response time (t95)	150 ms	
Emissivity	0.100 to 1.000	
Transmittance	0.100 to 1.000	
Storage	maximum and minimum value storage	
Output	channel 1: object temperature (0/4 to 20 mA or 0 V to 5/10 V or thermocouple J/K), channel 2: head temperature (–20 °C to 180 °C as 0 V to 5/10 V), relay output (optional): alarm 1 and 2	
Aiming	none	
Parameters	emissivity, response time, storage, sub temperature range, alarm limit	
Power supply	8 V to 36 V DC	
Current consumption	max. 100 mA	
Operating temperature	electronics: 0 °C to 85 °C	head: –20 °C to 180 °C
Storage temperature	electronics: –40 °C to 85 °C	head: –40 °C to 180 °C
Weight	electronics: approx. 420 g	head: approx. 40 g
Dimensions	electronics: 120 mm × 70 mm × 30 mm	head: length 28 mm, M12 × 1, SW 14
Housing	electronics: diecasting	head: stainless steel
Safety class	IP 65	
CE symbol	according to EU regulations (EN 61326-1, EN 61010-1)	
Scope of delivery	head with 3 m cable and installation screw nut M12 × 1, electronics box, manual, (delivery **without** connecting cable)	

[1] Noise equivalent temperature difference.

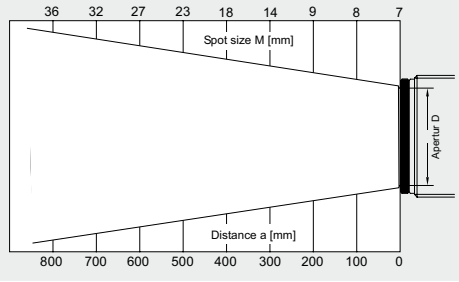
Accessories, mechanical, electrical and optical[1]	
Ancillary lens	1.5 : 1 (measuring field 0.6 mm at measuring distance 10 mm)
Power supply	24 V DC, 0.6 A
Mounting angle	adjustable in one axis
Air purge	stainless steel, purge air approx. 2 to 10 l/min, oil-free

[1] Additional accessories available on request.

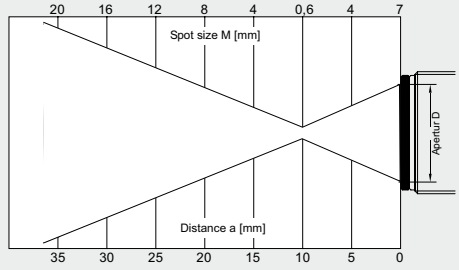
Contact: info@dias-infrared.de

Optics

Standard optics 20 : 1							
Measuring distance a in mm	0	100	200	300	400	600	800
Measuring field diameter M in mm							
DT 4L (–40 °C to 900 °C)	7	7	9	14	18	27	36

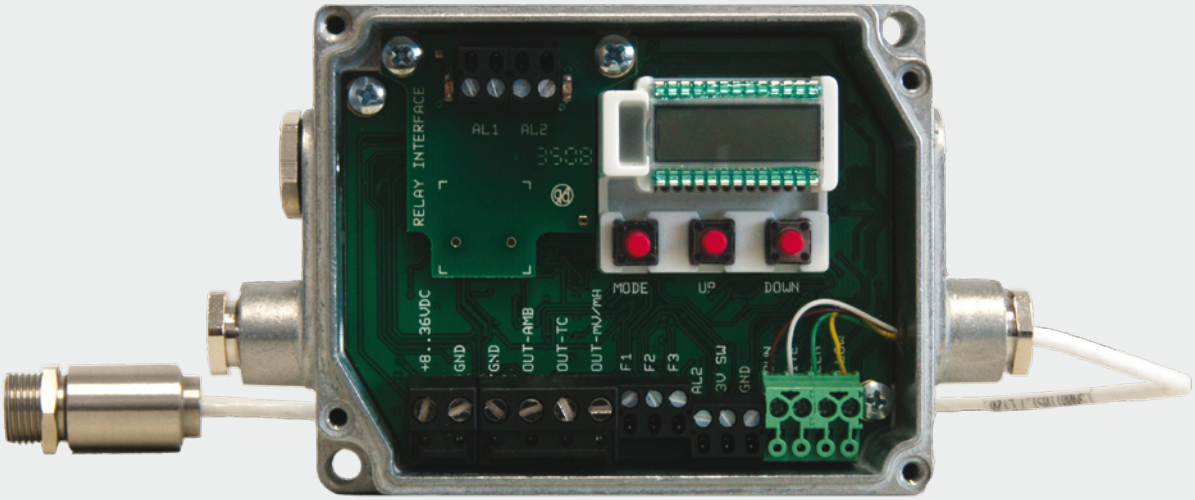


Optics with add-on lens 1.5 : 1							
Measuring distance a in mm	0	5	10	15	20	30	40
Measuring field diameter M in mm							
DT 4L (–40 °C to 900 °C)	7	4	0,6	4	8	16	24



Electronics Box

Opened electronics box with feeder clip and optional relay output



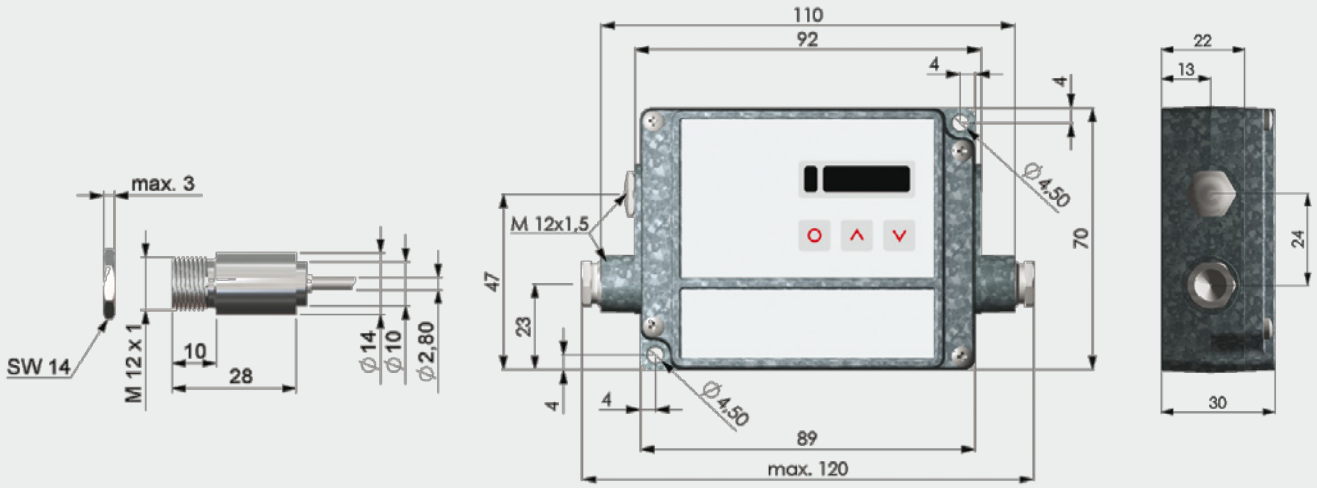
connections

+8..36VDC	power supply	F3	functional input 3
GND	ground (0 V) of power supply	AL2	alarm 2 (open-collector output)
GND	ground (0 V) of internal inputs and outputs	3V SW	3 VDC, shiftable, for laser aiming light
OUT-AMB	analog output head temperature (mV)	GND	ground (0 V) for laser aiming light
OUT-TC	analog output thermocouple (J or K)	BROWN	temperature probe head
OUT-mV/mA	analog output object temperature (mV or mA)	WHITE	temperature probe head
F1	functional input 1	GREEN	detector signal (–)
F2	functional input 2	YELLOW	detector signal (+)

Further information: www.dias-infrared.com

Dimensions and Accessories

Dimensions pyrometer (head and electronics)

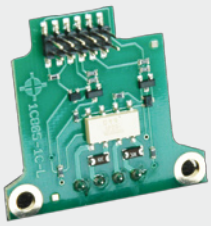


Accessories

Mounting angle, adjustable

Add-on lenses

Relay



Air purge

Digital displays DD 200 and DD 210

Power supply

Technical details are subject to change without notice. August 2010.

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