PYROSPOT DG 10N

Pyrometers for industry and research

Overview

Digital pyrometers with RS-485 interface

Features

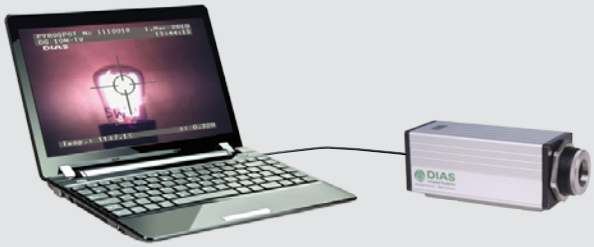
- For temperature measurement between 200 °C and 2500 °C
- Keyboard and display for emissivity and temperature
- Temperature linear output 0/4 to 20 mA
- Aiming: aiming light, through-lens sighting or camera module
- Short response times from 2 ms
- Vario optics

Description and applications

The digital pyrometers PYROSPOT DG 10N are especially designed for industry and research applications. The devices are suitable for temperature measurement from 200 °C on many different surfaces, for example metals, ceramics or graphite.

The solid construction in form of a compact housing with a protection window for optics allows usage even under rough environmental conditions. With a short response time of only 2 ms (t95) these pyrometers are also suitable for fast measuring processes. The vario optics with quartz glass protection window realise measuring field diameters from 1.2 mm.

The integrated LED or laser aiming light or, the alternative through-lens sighting, enables an exact focus on the measurement object. With the optional color video module the alignment of the pyrometers to the target can be monitored visually and the entire process can be recorded and documented.



The temperature linear standard output signal of 0/4 to 20 mA allows easy implementation in existing measurement and controll systems. The device is equipped with a galvanically isolated RS-485 interface which allows parameterising and software evaluation even in bus systems.

The emissivity is also adjustable via push-buttons and display directly on the device. All parameters can be easily adjusted to the application by using the convenient parameterizing and evaluation software PYROSOFT Spot.

Typical pyrometer application areas:

Steel industry, metal industry, ceramic industry, kiln engineering, soldering installations

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Technical data					
Type	**DG 10N**	**DG 10N**	**DG 10N**	**DG 10N**	**DG 10N**
Temperature range	200 °C to 1200 °C	200 °C to 2000 °C	250 °C to 1500 °C	350 °C to 2000 °C	350 °C to 2500 °C
Sub temperature range	adjustable within temperature range, minimum span 50 °C				
Spectral range	1.5 µm to 1.8 µm				
Optics	vario optics with quartz glass protection window, measuring field diameters from 1.2 mm				
Distance ratio	approx. 200 : 1				
Measurement uncertainty [1]	0.5 % of measured value				
Reproducibility [1]	0.1 % of measured value				
NETD [2]	0.1 K [1]				
Response time (t95)	2 ms, adjustable up to 100 s				
Emissivity	0.050 to 1.000, adjustable at the device or via RS-485 interface				
Storage	minimum and maximum value storage, adjustable via interface				
Output	0/4 to 20 mA, switchable via software, temperature linear, max. burden 500 Ω				
Interface	RS-485 (galvanically isolated), half duplex, baudrate up to 115 kBd, data protocol Modbus RTU				
Aiming	LED aiming light, laser aiming light, through-lens sighting or camera module				
Software	PYROSOFT Spot for Windows®, optional: PYROSOFT Spot Pro				
Parameters	emissivity, response time, temperature unit °C or °F, storage, sub temperature range, adjustable via software and interface				
User controls	emissivity control push-buttons (resolution 0.001), aiming light push-button, display				
Power supply	24 V DC ± 25 %				
Power consumption	max. 1.5 W				
Operating temperature	0 °C to 70 °C				
Storage temperature	–20 °C to 70 °C				
Weight	appr. 520 g				
Dimensions	54 × 54 mm, length 170 mm				
Housing	compact housing with plug connector, display, push-buttons and optics protection window				
Safety class	IP 65 (DIN 40 050)				
CE symbol	according to EU regulations (EN 50 011)				
Scope of delivery	PYROSPOT DG 10N, mounting screw nut, inspection sheet, manual, PYROSOFT Spot for Windows® (**without** connection cable, please order separately)				

[1] T_U = 23 °C, ε = 1, t95 = 1 s. [2] Noise equivalent temperature difference.

Dimensional drawing pyrometer (with through-lens sighting)

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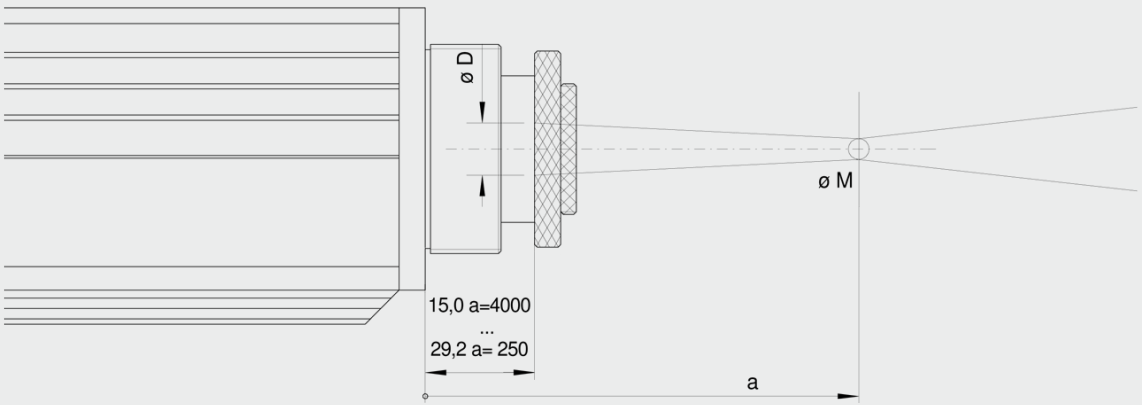
Vario optics

Measuring distance a [mm]	250	300	350	500	800	4000	Aperture diameter ∅ D [mm]		Order number	
Optics pullout [mm]	29.2	25.5	23.5	20.3	18.0	15.0	at		LED aiming light	Laser aiming light
Device	Measuring field diameter M [mm]						a = 250 mm	a = 4000 mm	Throug-lens sighting	Camera module
DG 10N (200 °C to 1200 °C)	1.2	1.5	1.7	2.5	4.0	20.0	13.0	10.5	5101001204	5101011204
									5101021204	5101031204
DG 10N (200 °C to 2000 °C)	1.2	1.5	1.7	2.5	4.0	20.0	8.0	6.5	5101001208	5101011208
									5101021208	5101031208
DG 10N (250 °C to 1500 °C)	1.2	1.5	1.7	2.5	4.0	20.0	10.0	8.5	5101001205	5101011205
									5101021205	5101031205
DG 10N (350 °C to 2000 °C)	1.2	1.5	1.7	2.5	4.0	20.0	8.0	6.5	5101001206	5101011206
									5101021206	5101031206
DG 10N (350 °C to 2500 °C)	1.2	1.5	1.7	2.5	4.0	20.0	5.5	4.3	5101001207	5101011207
									5101021207	5101031207

Dimensional drawing vario optics

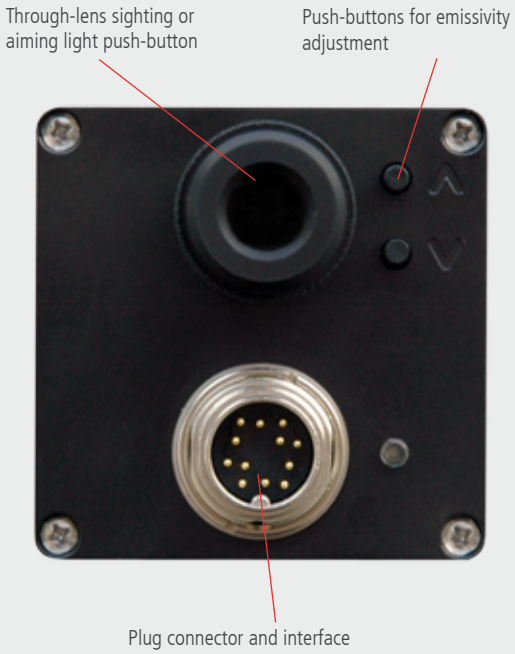


Detailed view: display

The digital display shows current temperature value and emissivity setting.

Detailed view: back side

The emissivity can be adjusted by using the two keys on the back side of the device. The value settings will be stored automatically.



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Electrical, mechanical and optical accessories[1]		Order number
Connection cable, 12 pin, angulate plug	length 2 m length 5 m length 10 m length 15 m length 20 m length 25 m length 30 m	3310A11131 3310A11132 3310A11133 3310A11134 3310A11135 3310A11136 3310A11137
Interface module	RS-485 to USB	3310A14020
Power supply PSU 15	24 V DC, 0.6 A	3310A12010
Mounting angle	adjustable	3310A21020
Air purge adaptor	stainless steel, purge air 0.1 to 0,5 bar, oil-free	3310A22020
Window slide	without window	3310A21210
Vacuum flange	KF 16 with quartz window with sapphire window (scratch-proof)	3310A24015 3310A34021 3310A34051
Mounting angle	for cooling jacket	3310A23036
DHP 1040	handheld programming device for parameterizing	3310A17010

[1] More accessories available.

Selected accessories

Mounting angle, adjustable

Order number: 3310A21020

Ball and socket mounting

Order number: 3310A21025

Cooling jacket

Order number: 3310A23031

Cooling plate

Order number: 3310A23020

Air purge unit for cooling jacket

Order number: 3310A22020

Mirror 90°

Order number: 3310A24110

Technical details are subject to change. November 2012.

We are certified for many years according to ISO 9001

Phone: +49 351 871 7228
Fax: +49 351 871 7230
E-Mail: info@dias-infrared.de
Internet: www.dias-infrared.com

DIAS Infrared GmbH
Gostritzer Straße 65
01217 Dresden
Germany