

# PYROSPOT DGR 10N/DGR 10NV

## Pyrometers for industry and research

### Overview

#### Digital ratio pyrometers with RS-485 interface



### Features

- For temperature measurements between 300 °C and 2300 °C
- Display and keyboard for parameterization
- Widely independent from emissivity
- Aiming: aiming light, through-lens sighting or camera module
- Short response times from 5 ms
- Temperature linear output 0/4 to 20 mA

### Description and applications

The digital pyrometers PYROSPOT DGR 10N/DGR 10NV are specifically designed for industry and research applications. They utilize the 2-colour system which has the advantage of measurement widely independent from the emissivity.

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 5 ms ( $t_{95}$ ) these pyrometers are also suitable for fast measuring processes. The vario optics with quartz glass protection window realise measuring field diameters from 0.8 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 (PYROSPOT DGR 10NV) 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 control systems. The device is equipped with a galvanically isolated RS-485 interface which allows parameterising and software evaluation even in bus systems.

All parameters are adjustable via push-buttons and display directly on the device or by using the convenient software PYROSOFT Spot.

Typical pyrometer application areas:

- Tempering of cast iron
- Tempering
- Hardening
- Stress relief annealing
- Soft annealing





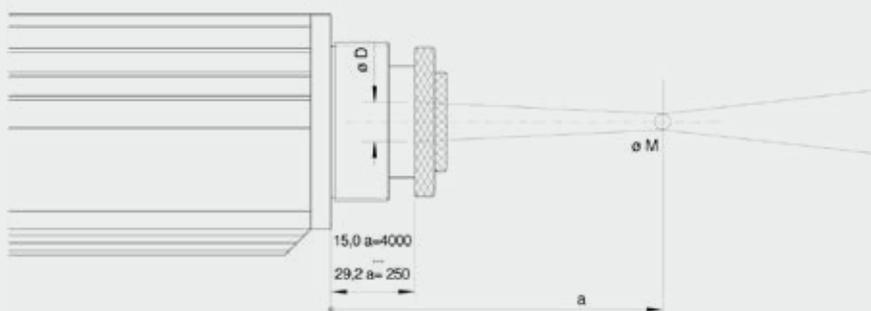
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### Vario optics

Measuring distance a [mm]	250	300	350	500	800	4000	Aperture diameter Ø D [mm]	Part number		
Optics pullout [mm]	29.2	25.5	23.5	20.3	18.0	15.0	at	LED	Laser	
Temperature range	Measuring field diameter M [mm]						a = 250 mm	a = 4000 mm	Through-lens sighting	Video module
300 °C to 1100 °C	2.5	3.0	3.5	5.0	8.0	40	8.0	6.5	5103001202 5103021202	5103011202 5103031202
350 °C to 1300 °C	1.9	2.3	2.7	3.8	6.0	30	8.0	6.5	5103001203 5103021203	5103011203 5103031203
400 °C to 1600 °C	1.2	1.5	1.8	2.5	4.0	20	8.0	6.5	5103001204 5103021204	5103011204 5103031204
500 °C to 2300 °C	0.8	1.0	1.2	1.7	2.6	13	8.0	6.5	5103001205 5103021205	5103011205 5103031205

### Dimensional drawing vario optics



### Technical data video camera (DGR 10NV)

Video signal	Composite video signal approx. 1V <sub>ss</sub> at 75 Ω (galvanically isolated, video signal can be deactivated via software)
Video norm	PAL (B), 50 Hz (optional video norm NTSC (M), 60 Hz)
Resolution	1/3 inch video chip 628 × 586 pixels (NTSC option: 510 × 496 pixels)
Exposure control	Automatic or manual via software or device
Visible field	approx. 8 % × 6 % of adjusted measurement distance (NTSC option: 6.5 % × 5 %)
Date/Time	Real-time clock with minimum 3 days power reserve, adjustable via software
Durable image displays	Target mark in measurement spot size; ratio pyrometers: ratio mode: meas. temperature, K factor, intensity bar 1-channel mode: measurement temperature, emissivity
Optional displays	Via software: serial number, device name or user-defined text (16 characters), date, time, temperature unit °C/°F, 12/24 hours display
White balance	Automatic or manual via software or device

### Detailed view: Display

Depending on the selected operation mode, the main display is different. When in ratio mode, the device shows in addition to the emissivity the ratio correction (K) and the intensity.

Current measured temperature

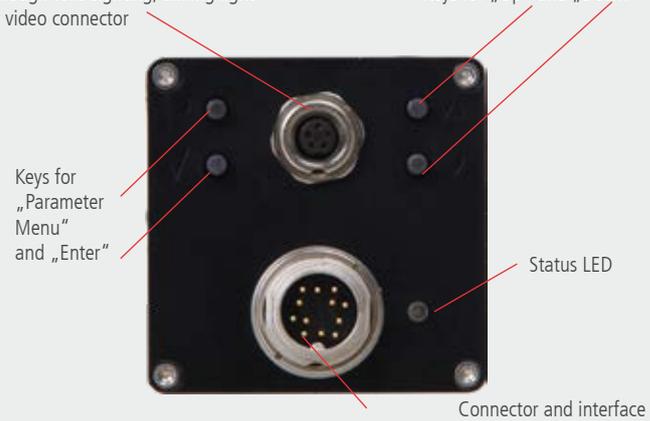


### Detailed view: Rear side

The parameters can be adjusted with the keys at the rear side of the device. The set value is taken over directly.

Through-lens sighting, aiming light or video connector

Keys for „Up“ and „Down“



Connector and interface

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Electrical, mechanical and optical accessories (more accessories on request)		Part number	
Connection cable, 12 pin, angled plug	Length 2 m	3310A11131	
	Length 5 m	3310A11132	
	Length 10 m	3310A11133	
	Length 15 m	3310A11134	
	Length 20 m	3310A11135	
	Length 25 m	3310A11136	
	Length 30 m	3310A11137	
Video connection cable	Length 2 m	3310A16521	
	Length 5 m	3310A16522	
	Length 10 m	3310A16523	
	Length 15 m	3310A16524	
	Length 20 m	3310A16525	
	Length 25 m	3310A16526	
	Length 30 m	3310A16527	
Interface adapter	RS-485 to USB	3310A14020	
Power supply PSU 15	24 V DC, 0.6 A	3310A12010	
Mounting angle	Adjustable	3310A21020	
Air purge unit	Stainless steel, purge air 0.1 to 0.5 bar, oil-free	3310A22020	
Window slide	without window	3310A21210	
Vacuum flange	KF 16	3310A24015	
	with quartz glass	3310A34021	
	with sapphire glass (scratch-proof)	3310A34051	
Cooling jacket	including air purge unit	3310A23031	
Mounting angle	for cooling jacket	3310A23036	
ATEX housing		3310A23100	
Handheld programming device DHP 1040	mobile device for pyrometer parameterization	3310A17010	
TFT display	TFT display industrial	3.5" with 2 m cable	3310A16110      3310A16120
Adapter	Video/USB	3310A14030	

### Selected accessories – images

#### Mounting angle, adjustable

Part number: 3310A21020



#### Ball and socket mounting

Part number: 3310A21025



#### Cooling jacket

Part number: 3310A23031



#### Cooling plate

Part number: 3310A23020



#### Air purge unit

Part number: 3310A22020



#### ATEX housing

Part number: 3310A23100

