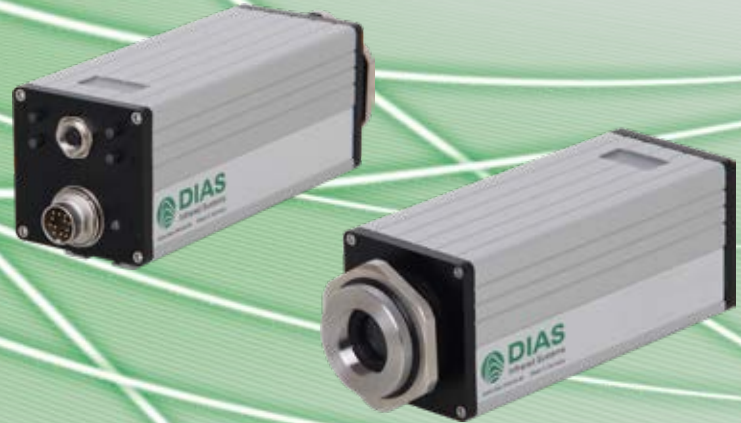
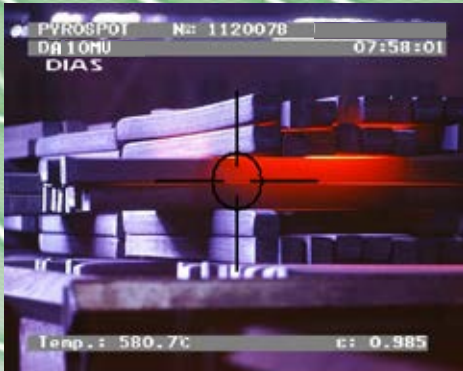


PYROSPOT DA 10M/DA 10MV

Pyrometer for industry and research

Overview

Digital pyrometers with RS-485 interface



Features

- For temperature measurements between 30 °C and 1400 °C
- Display and keys for displaying the temperature and parameterizing
- Vario optics with aiming light, through-lens sighting or video color module
- Short response times from 1 ms
- Standard 0/4 to 20 mA temperature linear output signal

Description and applications

The digital pyrometers PYROSPOT DA 10M/DA 10MV are specially designed for industry and research applications. The devices are suitable for temperature measurement from 30 °C especially on metal, ceramics and graphite.

The solid construction in form of a compact housing allows usage even under rough environmental conditions. With a short response time of only 1 ms (t_{95}) these pyrometers are also suitable for fast measuring processes. The vario optics realize measuring field diameters from 1.0 mm.

The integrated LED or laser aiming light or the alternative through-lens sighting enables to focus the measuring object exactly.

Use the optional integrated color video modul (DA 10MV) to monitor the aiming of the pyrometer at the measurement object.

The parameters of the pyrometer are adjustable via push-buttons and display directly on the device or by using the convenient parameterizing and evaluation software PYROSOFT Spot.

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 parameterizing and software evaluation even in bus systems. The connection to local area networks can be supported by an Ethernet interface box DCU^{loP}.

Typical pyrometer application areas:

- Steel industry
- Kiln engineering
- Soldering installations
- Ceramic industry
- Metal industry
- Welding, forging
- Hardening
- Sintering
- Soldering
- Quenching and tempering



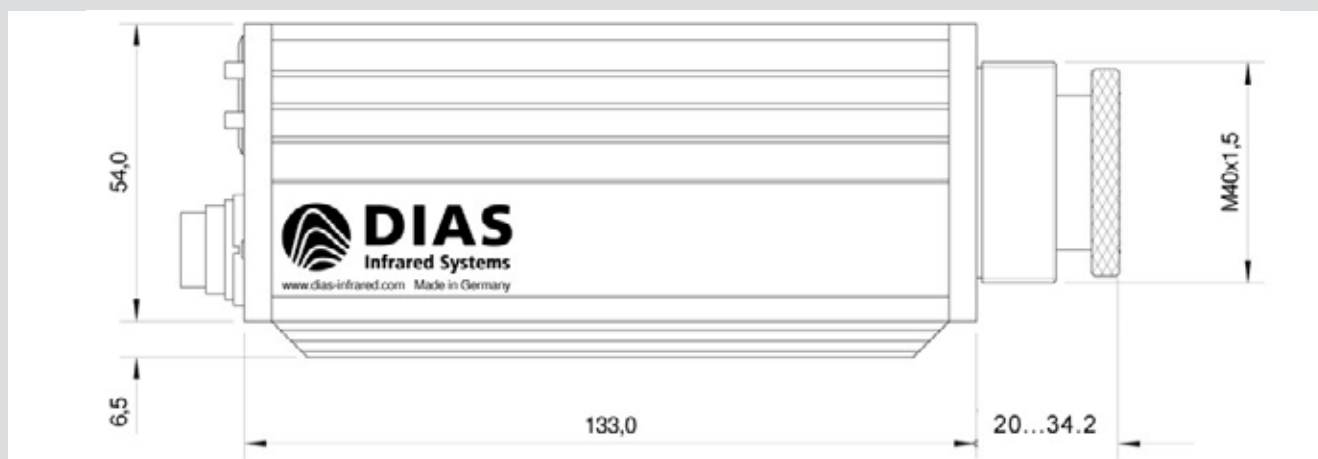
PYROSPOT DA 10M/DA 10MV

Pyrometer for industry and research

Technical data		
Type	DA 10M/DA 10MV	DA 10M/DA 10MV
Measuring temperature range	30 °C to 850 °C	75 °C to 1400 °C
Sub temperature range	adjustable within measuring temperature range, minimum span 50 °C	
Spectral range	3 μm to 5 μm	
Optics	vario optics, measuring field diameters from 1.0 mm, distance ratio approx. up to 130 : 1	
Measurement uncertainty ¹	0.6 % of measured value in °C or 1 K ^{3,4}	
Reproducibility ¹	0.3 % of measured value in °C or 0.5 K ^{3,4}	
NETD ²	0.1 K ⁵	
Response time (t ₉₅)	1 ms, adjustable up to 100 s via RS-485 interface or directly at the device	
Emissivity ε	0.010 to 1.000, adjustable via RS-485 interface or directly at the device	
Data Storage	minimum/maximum value storage, adjustable via RS-485 interface or directly at the device	
Output	0/4 to 20 mA, switchable via RS-485 interface or directly at the device, temperature linear, max. burden 700 Ω	
Interface	RS-485 (galvanically isolated), half duplex, baudrate up to 115 kBd, data protocol Modbus RTU	
Switching output/Switching threshold	1 opto relay, R _{Burden} min. 48 Ω (galvanically isolated)/adjustable within temperature range	
Aiming	LED aiming light, laser aiming light, through-lens sighting or color video module (DA 10MV)	
Software	PYROSOFT Spot for Windows®, optional: PYROSOFT Spot Pro	
Parameters	emissivity, response time, temperature unit °C or °F, storage, sub temperature range, transmittance, ambience compensation, video parameter, adjustable via RS-485 interface or directly at the device	
User controls	aiming light push-button, four control keys, display	
Power supply	24 V DC ± 25 %, residual ripple 500 mV	
Power consumption	max. 2 W	
Operating temperature	0 °C to 70 °C	
Storage temperature	-20 °C to 70 °C	
Weight	appr. 500 g	
Dimensions	54 mm × 54 mm, length 170 mm	
Housing	compact housing with plug connector, display and push-buttons	
Protection class	IP65 (DIN 40 050, DIN EN 60529)	
CE symbol	according to EU regulations (EN 50 011)	
Scope of delivery	PYROSPOT DA 10M/DA 10MV, mounting screw nut, inspection sheet, manual, PYROSOFT Spot for Windows® (without connection cable, please order separately)	

¹ Specifications for black body radiator, T_{ambient} = 23 °C, ε = 1, t₉₅ = 1 s. ² Noise equivalent temperature difference. ³ Whichever is higher value. ⁴ From T_{Object} = 50 °C. ⁵ At T_{ambient} = 23 °C, t₉₅ = 100 ms, ε = 1, T_{Object} (30 °C to 850 °C) = 150 °C, T_{Object} (75 °C to 1400 °C) = 250 °C.

Dimensional drawing pyrometer (LED aiming light version)

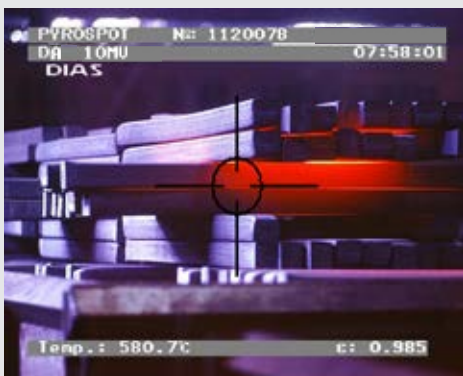


PYROSPOT DA 10M/DA 10MV

Pyrometer for industry and research

Vario optics					Part number			
Optics	Temperature measurement range	Target size M [mm]	Measurement distance a [mm]	Aperture D [mm]	LED aiming light	Laser aiming light	Through-lens sighting	Color video module
I	30 °C to 850 °C	1.0 to 1.3	130 to 140	11.6	5109101201	5109111201	5109121201	5109131201
	75 °C to 1400°C				5109101202	5109111202	5109121202	5109131202
II	30 °C to 850 °C	1.3 to 1.9	170 to 190	11.6	5109102201	5109112201	5109122201	5109132201
	75 °C to 1400°C				5109102202	5109112202	5109122202	5109132202
III	30 °C to 850 °C	1.8 to 2.9	230 to 290	11.6	5109103201	5109113201	5109123201	5109133201
	75 °C to 1400°C				5109103202	5109113202	5109123202	5109133202
IV	30 °C to 850 °C	3.2 to 7.1	360 to 710	11.6	5109104201	5109114201	5109124201	5109134201
	75 °C to 1400°C				5109104202	5109114202	5109124202	5109134202

Color video module (DA 10MV)



- PAL (50 Hz), optional NTSC (60 Hz)
- 628 × 586 pixels (PAL) or 510 × 496 pixels (NTSC)
- Composite video signal approx. 1 V_{SS} at 75 Ω (galvanically isolated)
- Target mark in size of measurement field, display of measurement, temperature, emissivity
- Exposure control automatically or manually



Detailed view: Display

The digital display shows the current measurement value and the emissivity set.

Current measurement temperature

Set emissivity value



Status switching output

Detailed view: Rear side of the device

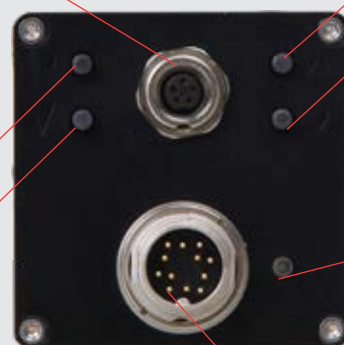
The parameters can be set by using the control keys at the rear side of the device. The value set is transferred directly.

Through-lens sighting, pilot light or video connector

Keys for „Up“ and „Down“

Keys for „Parameter Menu“ and „Enter“

Status LED



Plug connection and interface

PYROSPOT DA 10M/DA 10MV

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Electrical, mechanical and optical accessories ¹			Order number	
Connection cable, straight plug, 12 pin	Connection cable, angulate plug, 12 pin	length 2 m	3310A11111	3310A11131
		length 5 m	3310A11112	3310A11132
		length 10 m	3310A11113	3310A11133
		length 20 m	3310A11115	3310A11135
Video connection cable		length 2 m	3310A16521	
		length 5 m	3310A16522	
		length 10 m	3310A16523	
		length 20 m	3310A16525	
Mounting angle		adjustable	3310A21020	
Air purge adapter		stainless steel, purge air 0.1 to 0.5 bar, oil-free	3310A22020	
Vacuum flange		KF 16 with calcium fluoride window	3310A24015 3310A34031	
Mirror 90°		including air purge	3310A24110	
Power supply PSU 15		24 V DC, 0.6 A	3310A12010	
Interface module		RS-485 to USB	3310A14020	
Adapter		Video/USB	3310A14030	
TFT display/TFT display industrial		3.5" with 2 m cable	3310A16110/3310A16120	
Ethernet Interface-Box DCU ^{loP}		for the connection in local networks and parameterizing	3310A13500	

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

Order number: 3310A22020



Ethernet interface box DCU^{loP}

Order number: 3310A13500



Technische Änderungen vorbehalten. Technical details are subject to change. 22.03.21



Phone: +49 351 896 74-0
 Fax: +49 351 896 74-99
 Email: info@dias-infrared.de
 Internet: www.dias-infrared.com

DIAS Infrared GmbH
 Pforzheimer Straße 21
 01189 Dresden
 Germany