

PYROSPOT DSRF 44N

Ratio pyrometer with fibre cable for industrial application

Overview

Digital ratio pyrometers with special optics and RS-485 interface



Features

- For temperature measurements between 700 °C and 1800 °C
- Measurement widely independent from emissivity
- Applicable up to 250 °C ambient temperature
- Very short response times from 5 ms
- Reliable even at not complete filled measurement spot
- RS-485 interface

Description and applications

The digital ratio pyrometers PYROSPOT DSRF 44N are specifically designed for industrial temperature measurement from 700 °C. They utilize the 2-color system which has the advantage of measurement widely independent from the emissivity.

The solid body with fibre optics cable allows usage even under rough environmental conditions. With a fast response time of only 5 ms (t95) these pyrometers are also suitable for fast measuring processes.

The special optics for the fibre cable enables reliable temperature measurement even the measuring spot is not filled completely (up to 10 %).

The pyrometers can be aimed at any time at the measuring object with the integrated laser aiming light even when the measurement is running.

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.

All parameters are adjustable via interface. By using the convenient parameterizing and evaluation software PYROSOFT Spot the parameters can be easily adjusted to the application. The parameters can also be adjusted via RS-485 interface with the optional available handheld programming device DHP 1040.

Typical application areas:

- Steel industry
- Kiln engineering
- Soldering installations
- Ceramic industry
- Metal industry



PYROSPOT DSRF 44N

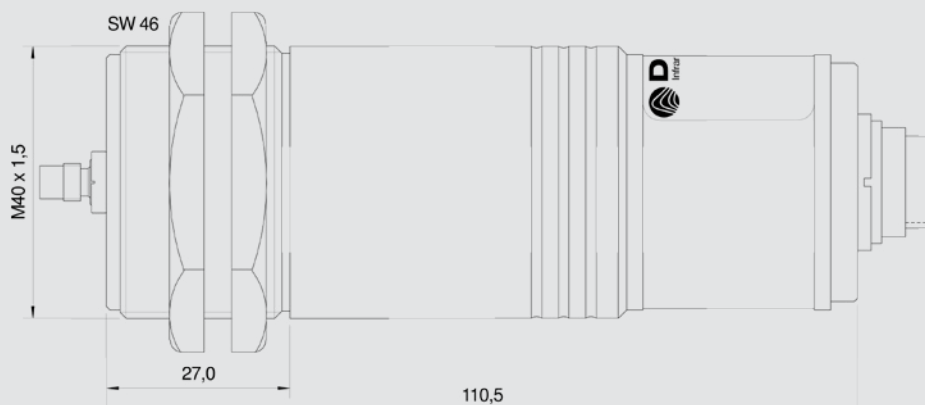
Ratio pyrometer with fibre cable for industrial application

Technical data

Type (Order number)	DSRF 44N (4442010203)
Temperature range	700 °C to 1800 °C
Sub temperature range	adjustable via RS-485 interface within temperature range, minimum span 50 °C
Spectral range	0.7 µm to 1.1 µm
Optics	ROH F44
Distance ratio	approx. 40 : 1
Measurement uncertainty ¹	0.5 % of measured value
Reproducibility ¹	0,2 % of measured value
NETD ²	0.1 K ⁻¹
Response time (t95)	5 ms, adjustable up to 100 s, adjustable via RS-485 interface
Ratio correction	0.800 to 1.200, adjustable via RS-485 interface
Emissivity	0.050 to 1.000, adjustable via RS-485 interface
Storage	minimum and maximum value storage, adjustable via RS-485 interface
Output	0/4 to 20 mA, switchable, temperature linear, max. burden: 700 Ω at 24 V
Interface	RS-485 (galvanically isolated), half duplex, max. baudrate 115 kBd, data protocol Modbus RTU
Aiming	laser aiming light
Software	PYROSOFT Spot for Windows®, optional: PYROSOFT Spot Pro
Parameters	ratio correction, emissivity, response time, storage, sub temperature range, baudrate, address, measurement mode (1- or 2-channel)
Power supply	24 V DC ± 25 %
Power consumption	max. 1.5 W
Operating temperature	0 °C to 70 °C (pyrometer), 0 °C to 250 °C (fibre cable and optical head)
Storage temperature	-20 °C to 70 °C
Weight	appr. 450 g (without fibre cable and optical head)
Dimensions	thread M40 × 1.5, length 125 mm
Housing	stainless steel housing with plug connector
Safety class	IP 65 (according to DIN EN 40050 and EN 60529)
CE symbol	according to EU regulations
Scope of delivery	PYROSPOT DSRF 44N, manual, inspection sheet, mounting screw nuts, PYROSOFT Spot for Windows® (without connection cable, fibre cable and optics, please order separately)

¹ Specifications for black body radiator, $T_u = 23 \text{ °C}$, $t_{95} = 1 \text{ s}$. ² Noise equivalent temperature difference.

Dimensional drawing pyrometer



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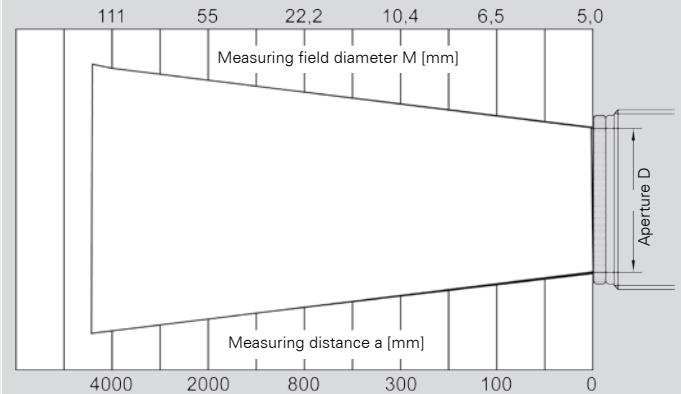
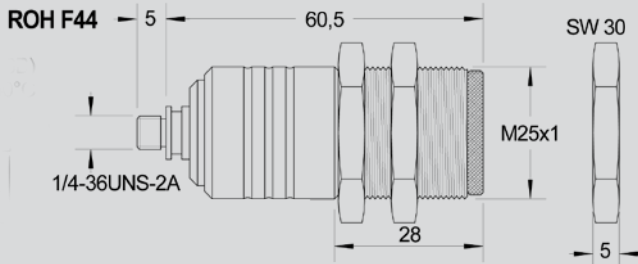
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Optics ROH F44 (Order number 3310A55010)

Measuring distance a in mm	0	100	300	800	1000	2000	3000	4000
	Measuring field diameter M in mm							
DSRF 44N (700 °C to 1800 °C)	5.0	6.5	10.4	22.2	27.5	55.0	83.0	111.0

Optics ROH F44

Measuring field

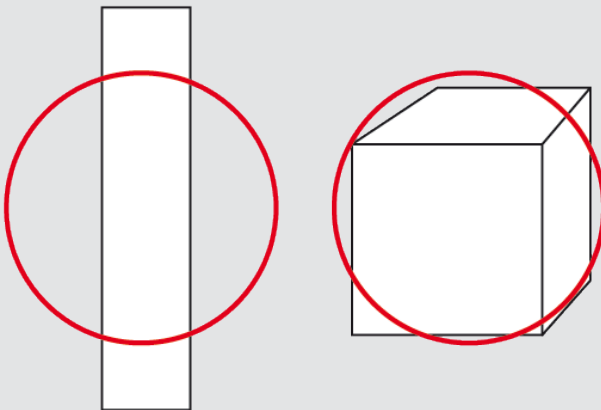


Not drawn to scale.

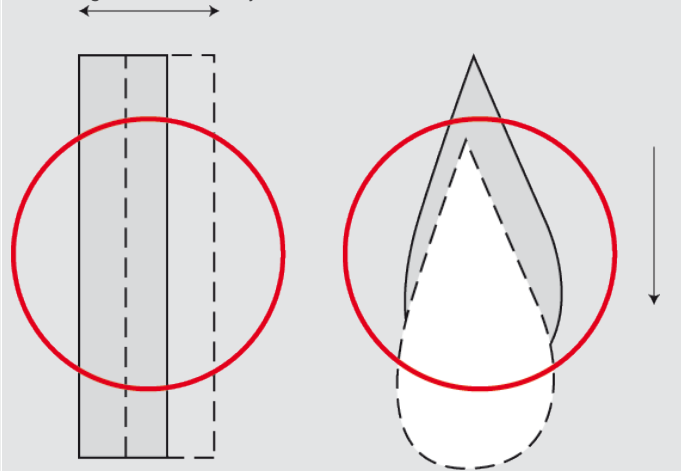
Special features of the special optics

The special optics guarantees an accurate temperature acquisition even for:

- not completely filled measuring spots



- moving measurement objects



Handheld programming device DHP 1040

The handheld programming device DHP 1040 is working with batteries and enables the user to easily change parameter settings of pyrometer series PYROSPOT.

A pyrometer can be connected to the DHP 1040 via USB or RS-485 interface. The connected pyrometer is detected automatically by the device.

The handheld programming device shows the actual measured temperature and the type of pyrometer in display mode. Several pyrometer parameters can be selected with buttons and an easy-to-use menu.



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Electrical, mechanical and optical accessories ¹			Order number	
Connecting cable, straight plug, 12-pin	Connecting cable, angulate plug, with aiming light button 12-pin	length 2 m	3310A11111	3310A11151
		length 5 m	3310A11112	3310A11152
		length 10 m	3310A11113	3310A11153
		length 15 m	3310A11114	3310A11154
		length 20 m	3310A11115	3310A11155
		length 25 m	3310A11116	3310A11156
		length 30 m	3310A11117	3310A11157
		Fibre cable, stainless steel	length 2 m	3310A46002
length 3 m	3310A46003			
length 6 m	3310A46005			
length 10 m	3310A46006			
length 15 m	3310A46007			
length 22 m	3310A46008			
Mounting angle for ROH F44	fixed	3310A21522		
	adjustable	3310A21520		
Air purge adaptor for ROH F44	stainless steel, purge air 0.1 to 0.5 bar, oil-free	3310A22520		
Ball and socket mounting		3310A21521		
Sighting tube for air purge adaptor	100 mm	3310A22530		
	300 mm	3310A22535		

¹ More accessories available.

Selected accessories		
Mounting angle, adjustable	Mounting angle, adjustable for ROH F44	Mirror 90° for ROH F44
Order number: 3310A21011 	Order number: 3310A21520 	Order number: 3310A31020 
Air purge unit for ROH F44	Power supply	Digital display DD 200/210
Order number: 3310A22520 	Order number: 3310A12010 	Order number: 3310A13020/3310A13025 

Technical details are subject to change. June 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