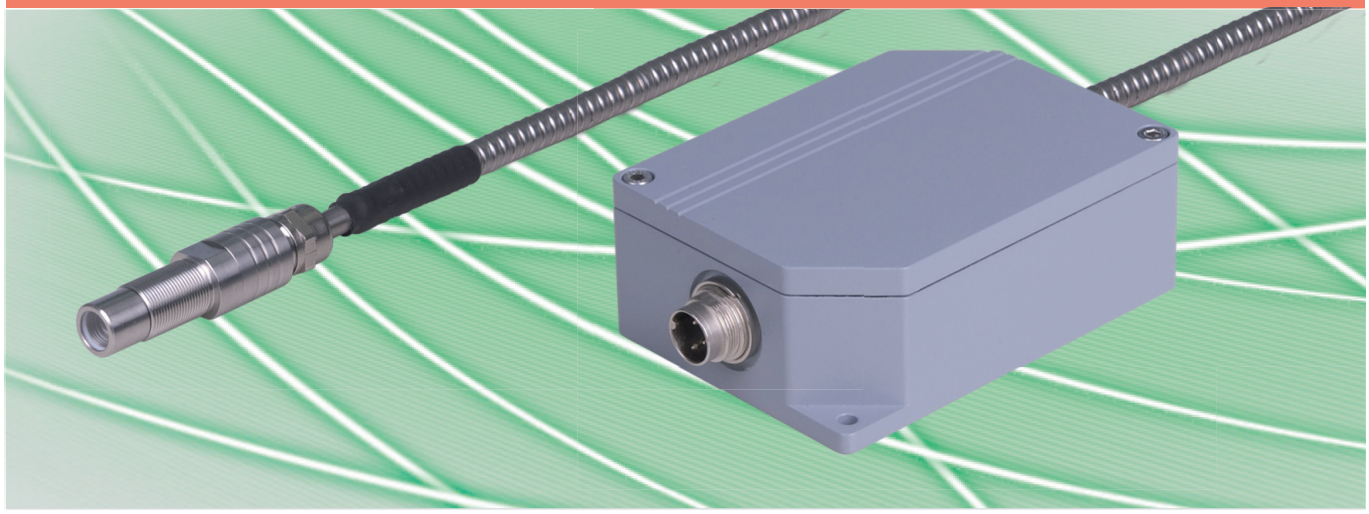
PYROSPOT DSF 30NG and DSF 34NG

Pyrometer with fibre cable for application in glass industry

DIAS Infrared Systems

Overview

Digital pyrometers with USB or RS-485 interface



Features

- For temperature measurements between 600 °C and 1800 °C
- Pyrometers specifically for glass industry
- Extremly robust aluminium housing
- Air purge unit with sighting tube for optical head
- Special mono fibre optics cable (length up to 30 m)
- Temperature linear standard output

Description and applications

The digital pyrometers PYROSPOT DSF 30NG and DSF 34NG are specifically designed for application in glass industry. Temperature measurement from 600 °C to 1800 °C in glass tank, working end, forehearth and feeder is easily realisable.

The solid construction in robust aluminium housing with special mono fibre optics cable (up to 30 m) allows usage even under rough environmental conditions and ambient temperatures of up to 250 °C.

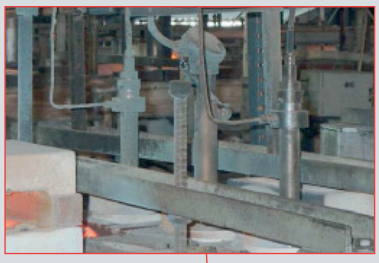
Several air purge units with inconel tubes of different lengths are available for the special optical head and can be mounted together. The lens can be easily cleaned or replaced.

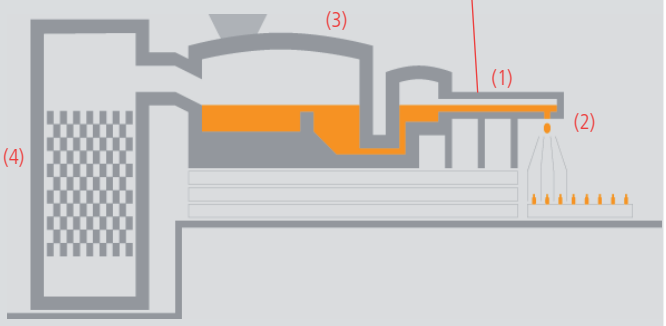
The temperature linear standard output signal (DSF 30NG: 4 to 20 mA, DSF 34 NG: 0/4 to 20 mA) allows easy implementation in existing measurement and controll systems.

The device is equipped with a galvanically isolated interface (DSF 30NG: USB, DSF 34NG: RS-485). Due to direct PC connection, parameters like sub range and response time can be easily adjusted by using the convenient parameterizing and evaluation software PYROSOFT Spot.

Typical application areas:

- Glass temperature measurement:
  – in forehearth (1)
  – in feeder (2)
  – in glass tank (3)
- Temperature measurement of brickworks:
  – tank side walls (3)
  – in regenerator (4)
  – tank roof (3)





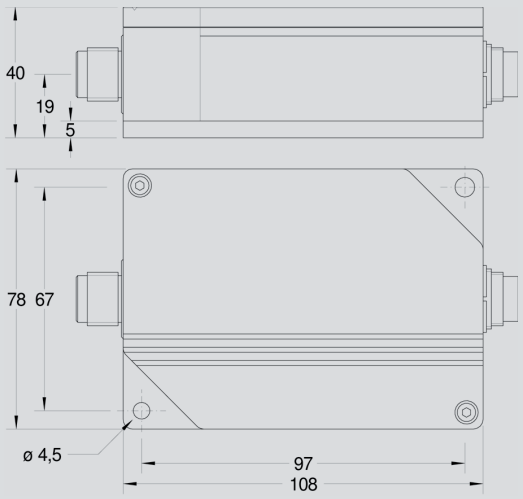
PYROSPOT DSF 30NG and DSF 34NG

Pyrometer with fibre cable for application in glass industry

Technical data		
Type (Order number)	**DSF 30NG** (4300040301)	**DSF 34NG** (4340040201)
Temperature range	600 °C to 1800 °C	600 °C to 1800 °C
Sub temperature range of analog output	adjustable within temperature range, minimum span 50 °C	
Spectral range	0.8 µm to 1.1 µm	0.8 µm to 1.1 µm
Optics	FOH-G, aperture diameter D = 11 mm	
Distance ratio	> 100 : 1	
Measurement uncertainty [1]	0.3 % of measured value in °C + 1 K	
Reproducibility [1]	0.1 % of measured value in °C + 0.5 K	
NETD [1,2]	0.1 K	
Response time t_{95}	200 ms, adjustable from 10 ms up to 100 s	
Emissivity	0.05 to 1.00, adjustable in the device	
Test signal	12 mA, switchable at the device	10/12 mA, according to adjustment 0/4 to 20 mA, switchable at the device
Output	4 to 20 mA, temperatur linear, max. burden 700 Ω at 24 V	0/4 to 20 mA [3], temperature linear, max. burden 500 Ω
Interface	USB (galvanically isolated)	RS-485 (galvanically isolated), half duplex, Modbus RTU
Aiming	none	
Software	PYROSOFT Spot for Windows®, optional: PYROSOFT Spot Pro	
Parameters	emissivity adjustable at the device, readout via software, response time, sub temperature range adjustable via interface and software	
Power supply	24 V DC ± 25 %	
Power consumption	max. 0.6 W	max. 1.5 W
Operating temperature	0 °C to 70 °C (pyrometer), up to 250 °C (fibre cable and optical head)	
Storage temperature	–20 °C to 70 °C	
Weight	appr. 500 g (without fibre cable and optical head)	
Dimensions	appr. 110 mm × 70 mm × 30 mm	
Housing	aluminium housing	
Safety class	IP 65 (according to DIN 40 050 and EN 60529)	
CE symbol	according to EU regulations (EN 50 011)	
Scope of delivery	PYROSPOT DSF 30NG or DSF 34NG, manual, inspection sheet, PYROSOFT Spot for Windows® (without connecting cable, fibre cable and optics, please order separately)	

[1] T_u = 23 °C, ε = 1, t_{95} = 1 s. [2] Noise equivalent temperature difference. [3] Switchable via software.

Dimensional drawing



PYROSPOT DSF 30NG and DSF 34NG

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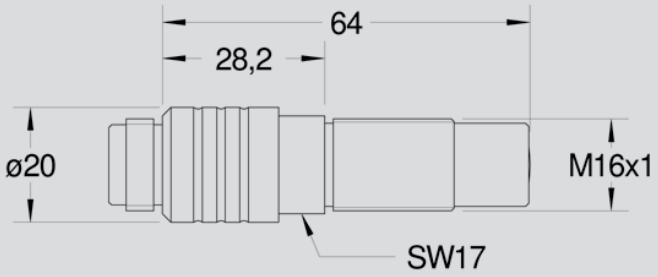
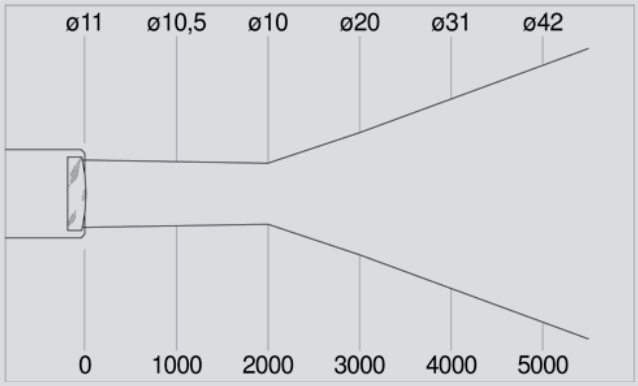
Optics type FOH-G (Order number 3310A50090)							
Measuring distance a [mm]	0	500	1000	2000	3000	4000	5000
	Measuring field diameter M [mm]						
DSF 30NG (600 °C to 1800 °C)	11.0	10.7	10.5	10.0	20.0	31.0	42.0
DSF 34NG (600 °C to 1800 °C)	11.0	10.7	10.5	10.0	20.0	31.0	42.0

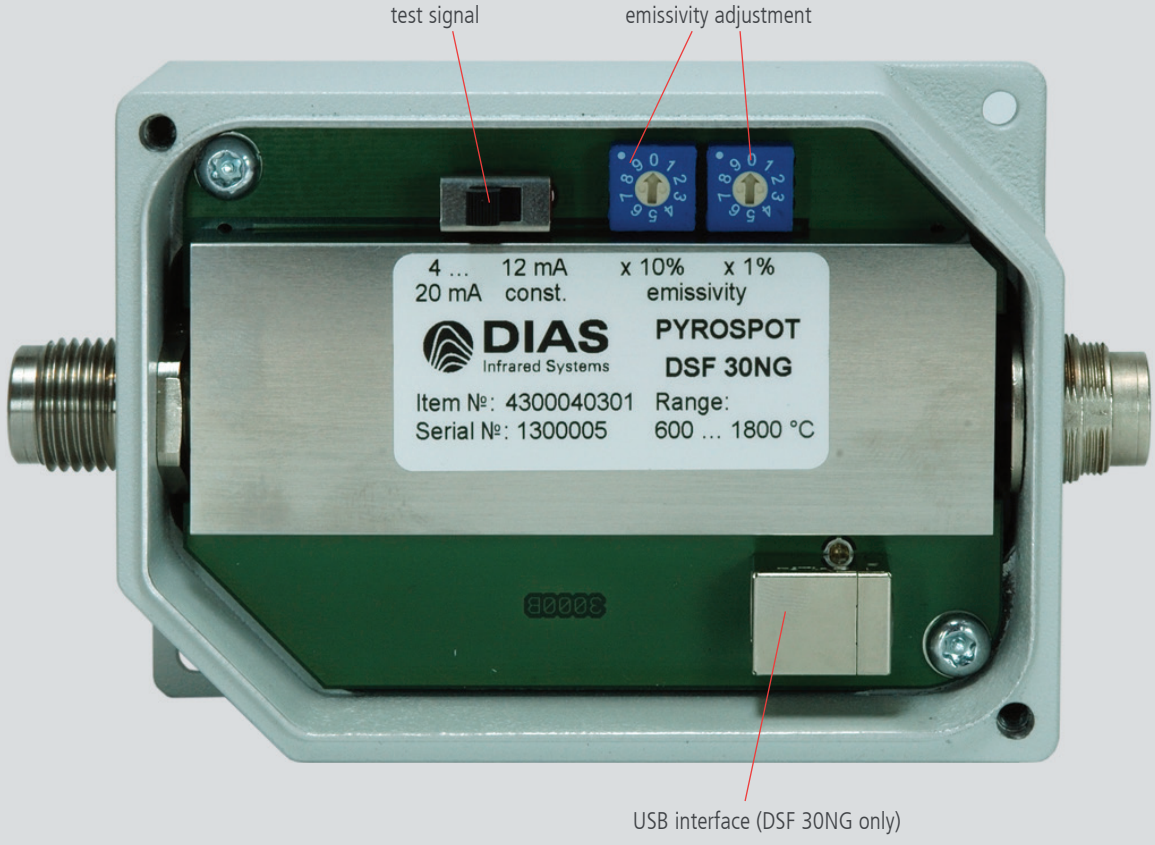
Dimensional drawing FOH-G



Measuring field optics FOH-G



Inside view pyrometer



PYROSPOT DSF 30NG

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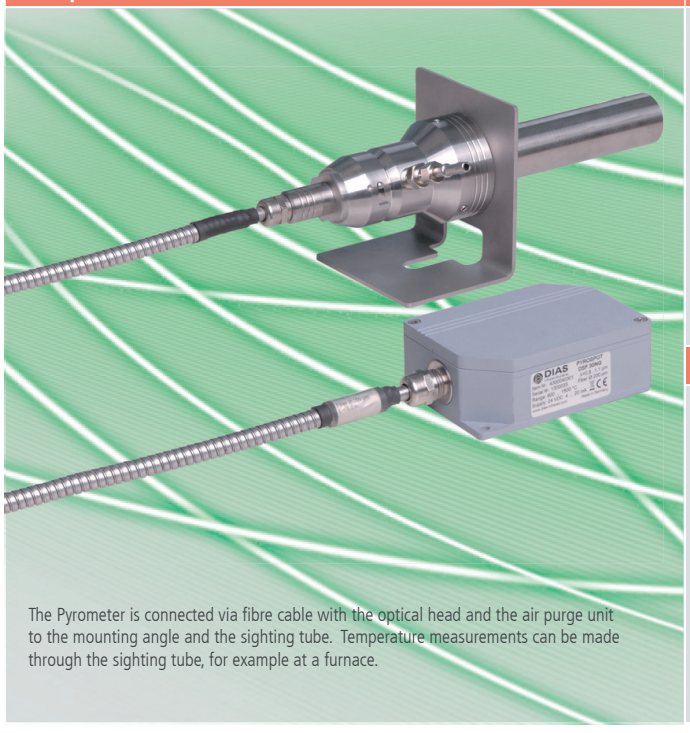
Accessories[1]			Order number	
Connection cable, 3 pin (DSF 30NG)	Connection cable, 12 pin, straight plug (DSF 34NG)	length 2 m length 5 m length 10 m length 15 m length 20 m length 25 m length 30 m	3310A15311 3310A15312 3310A15313 3310A15314 3310A15315 3310A15316 3310A15317	3310A11111 3310A11112 3310A11113 3310A11114 3310A11115 3310A11116 3310A11117
Fibre cable, stainless steel cable coating, twist proof		length 5 m length 6 m length 7,5 m length 10 m length 15 m length 20 m	3310A42104 3310A42109 3310A42105 3310A42106 3310A42107 3310A42108	
Optical head		FOH-G	3310A50090	
Screw cap with lens		for FOH-G (spare part)	3310A21530	
Power supply PSU 15		24 V DC/0,6 A	3310A12010	
Air purge unit for FOH-G		including mounting angle	3310A22529	
Sighting tubes for air purge unit		inconel tube, 140 mm	3310A25010	
		inconel tube, 600 mm	3310A25020	
		ceramics tube, 300 mm, opened end	3310A25050	
		ceramics tube, 600 mm, opened end/closed end	3310A25060/3310A25070	

[1] More accessories available.

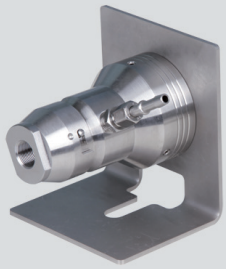
Air purge unit and mounting angle

Example

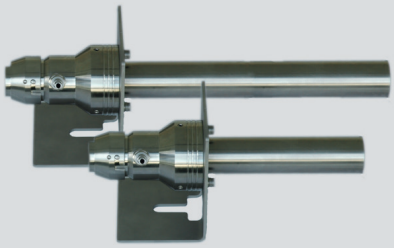


The Pyrometer is connected via fibre cable with the optical head and the air purge unit to the mounting angle and the sighting tube. Temperature measurements can be made through the sighting tube, for example at a furnace.

Air purge unit with mounting angle



Air purge unit with mounting angle and sighting tube



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