

PSC-SRF11N

2-Color Fiber Optic Pyrometer for industrial applications



- **Digital pyrometer for 600 °C to 3000 °C**
- **Short response time 5 ms**
- **Small spot sizes from 0.7 mm**
- **RS485 - Interface**
- **Display and keys**

The digital pyrometers PSC-SRF11N are especially designed for industrial temperature measurement from 600 °C. They utilize the 2-color system which has the advantage of measurement widely independent from the emissivity.

The solid body with fiber optics cable allows usage even under rough environmental conditions. The bright temperature display is visible even over long distance.

With a fast response time of only 5 ms these pyrometers are also suitable for fast measuring processes.

The various optics for fiber optical head permits spot sizes from 0.7 mm diameter.

The integrated LASER aiming light enables to focus the measuring object exactly.

The temperature linear standard output signal of 0/4 to 20 mA allows easy implementation in existing measuring and controlling systems.

The device is equipped with integrated, galvanically isolated RS485 interface which allows parameterising and software evaluation even in bus systems.

All parameters are adjustable via push-buttons and display directly on the device. Also by using the comfortable parameterizing and evaluation software PSC-Spot the parameters can easily be adjusted to the application.

Typical pyrometer application areas:

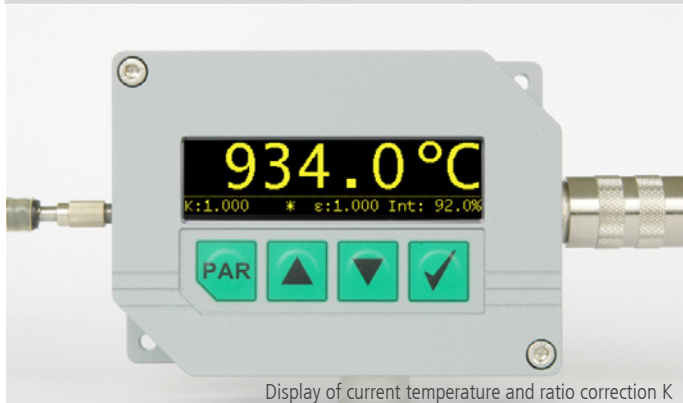
- Steel industry
- Kiln engineering
- Hardening
- Welding
- Metal industry

PSC-SRF11N

Ratio fiber optic pyrometers for industrial applications

Technical data				
Type	PSC-SRF11N			
Temperature range	600 °C to 1400 °C	700 °C to 1800 °C	800 °C to 2500 °C	900 °C to 3000 °C
Sub temperature range	adjustable within temperature range, minimum span 50 °C			
Spectral range	0.7 µm to 1.1 µm			
Optics	vario optics ROH I-100, ROH II-65, ROH II-250			
Distance ratio	see table			
Measurement uncertainty ¹	0.5 % of measured value			
Reproducibility ¹	0.1 % of measured value			
Transmissivity	50 % to 100 %			
NETD ^{1,2}	0.1 K ⁻¹			
Response time (t95)	5 ms, adjustable up to 100 s			
Ratio correction K	0.800 to 1.200			
Emissivity	0.050 to 1.000 (1-channel mode)			
Storage	minimum and maximum value storage			
Output	0/4 to 20 mA, switchable, temperaturlinear, max. burden: 500 Ω (galvanically isolated)			
Interface	RS-485 (galvanically isolated), half duplex, max. baudrate 115 kBd, Modbus RTU			
Aiming	laser aiming light, 630 nm to 680 nm, class II, < 1 mW			
Switching output/thresholds	1 solid state relay, R _{load} min. 48 Ω/adjustable within temperature range			
Software	PSC-Spot for Windows®			
Parameters	ratio correction, emissivity, transmissivity, response time, temperature unit °C or °F, storage, settings, sub temperature range of output, switching thresholds of switching output			
User controls	display and keyboard for parameter setting			
Power supply	24 V DC ± 25 %, residual ripple 500 mV			
Power consumption	max. 1.5 W (without load on switching output)			
Operating temperature	0 °C to 45 °C (electronics), 0 °C to 250 °C (optical head) 0 °C to 250 °C (fiber cable), 0 °C to 150 °C (fiber cable with 90° curve)			
Storage temperature	-20 °C to 70 °C			
Weight	appr. 600 g (without fiber cable and optical head)			
Dimensions	appr. 110 mm × 80 mm × 40 mm			
Housing	alu housing with plug connector, display and keyboard			
Safety class	IP 65 (DIN 40 050)			
CE symbol	according to EU regulations (EN 55 011)			
Scope of delivery	PSC-SRF11N, manual, inspection sheet, PSC-Spot for Windows® (no connection cable, fiber cable, and optical head, must order separately)			

¹ T_{ambient} = 23 °C, ε = 1, t95 = 1 s. ² Noise equivalent temperature difference.



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Optics

ROH I-100 (Order number PSC-3310A50011)

Measuring distance a [mm]	0	100	165	225	300	500	700	1000
Temperature range	Measuring field diameter M [mm]							
PSC-SRF11N (600 °C to 1400 °C)	6.0	1.8	2.8	4.0	5.5	9.0	13	18
PSC-SRF11N (700 °C to 1800 °C)	6.0	0.9	1.4	2.0	2.7	4.5	6.5	9.0
PSC-SRF11N (800 °C to 2500 °C)	6.0	0.9	1.4	2.0	2.7	4.5	6.5	9.0
PSC-SRF11N (900 °C to 3000 °C)	6.0	0.9	1.4	2.0	2.7	4.5	6.5	9.0
Aperture D [mm]	6.0							

ROH II-65 (Order number PSC-3310A50021)

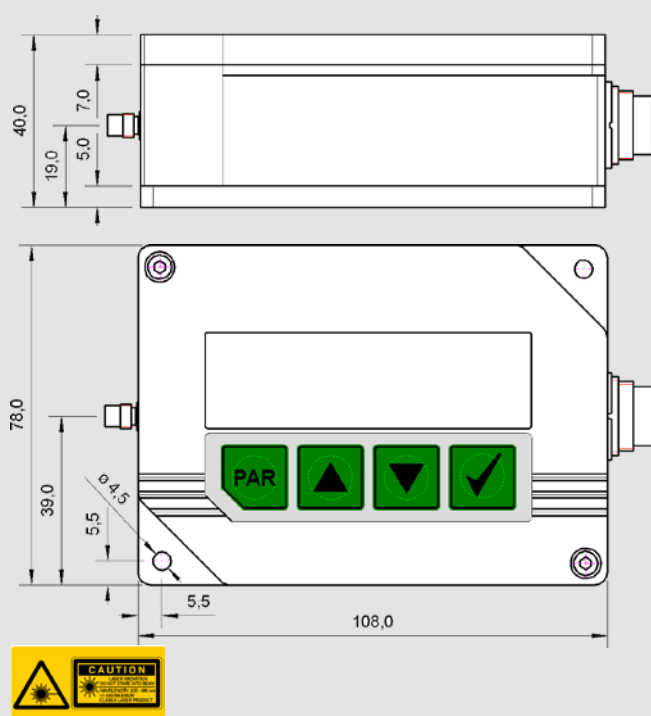
Measuring distance a [mm]	0	65	85	110	150	200	240	300
Temperature range	Measuring field diameter M [mm]							
PSC-SRF11N (600 °C to 1400 °C)	9.0	1.3	1.7	2.1	2.8	3.6	4.2	5.0
PSC-SRF11N (700 °C to 1800 °C)	9.0	0.7	0.9	1.1	1.4	1.8	2.1	2.5
PSC-SRF11N (800 °C to 2500 °C)	9.0	0.7	0.9	1.1	1.4	1.8	2.1	2.5
PSC-SRF11N (900 °C to 3000 °C)	9.0	0.7	0.9	1.1	1.4	1.8	2.1	2.5
Aperture D [mm]	9.0							

ROH II-250 (Order number PSC-3310A50026)

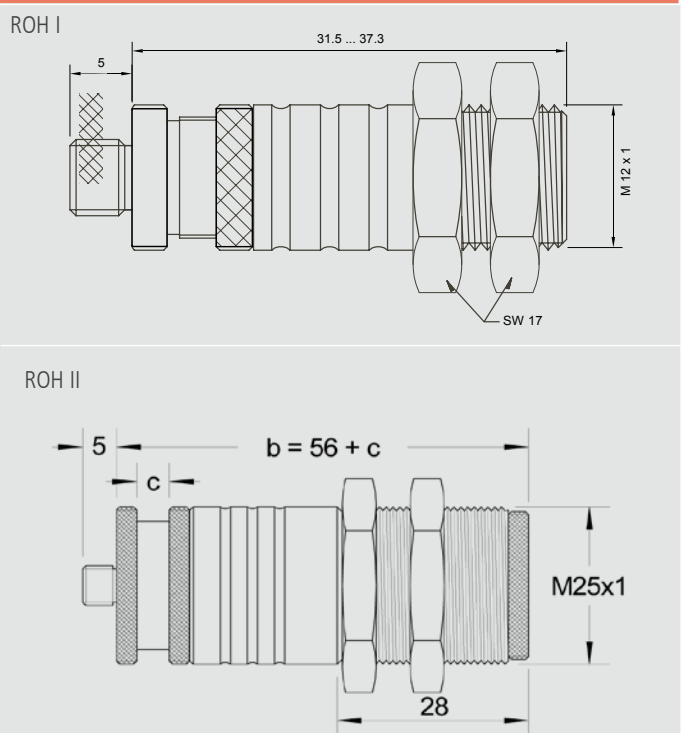
Measuring distance a [mm]	0	250	400	600	800	1000	2000	2500
Temperature range	Measuring field diameter M [mm]							
PSC-SRF11N (600 °C to 1400 °C)	9.0	3.0	5.0	7.2	9.2	12	24	31
PSC-SRF11N (700 °C to 1800 °C)	9.0	1.7	2.7	4.4	5.5	6.8	13.0	17.0
PSC-SRF11N (800 °C to 2500 °C)	9.0	1.7	2.7	4.4	5.5	6.8	13.0	17.0
PSC-SRF11N (900 °C to 3000 °C)	9.0	1.7	2.7	4.4	5.5	6.8	13.0	17.0
Aperture D [mm]	9.0							

Dimensional drawings

Dimensional drawing pyrometer

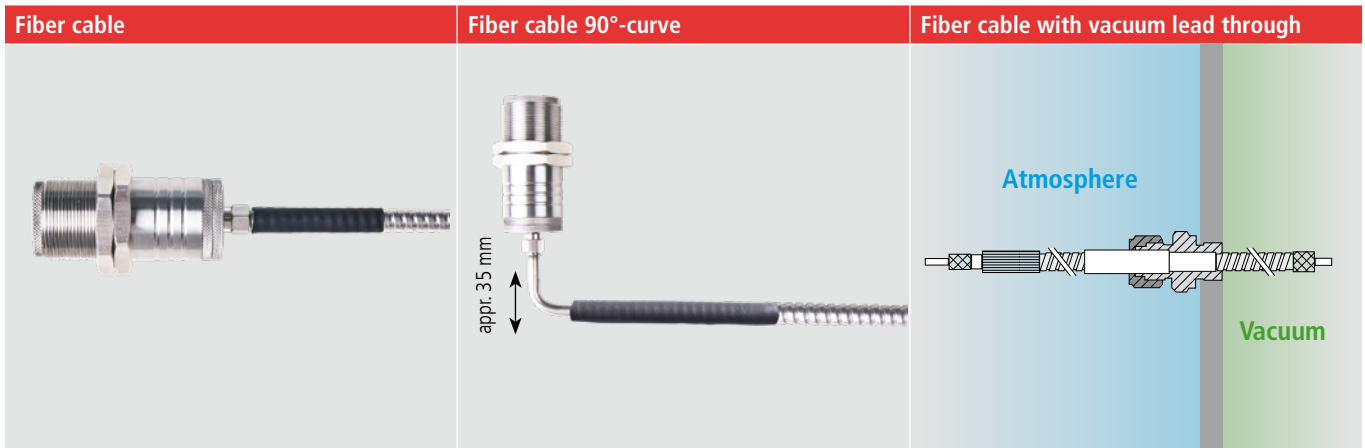


Dimensional drawings optical heads ROH



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Fiber cables, stainless steel \varnothing 200 μ m – Order numbers

Length	1.5 m	2.0 m	2.5 m	5.0 m	7.5 m	10 m	15 m
straight	PSC-3310A42001	PSC-3310A42002	PSC-3310A42003	PSC-3310A42004	PSC-3310A42005	PSC-3310A42006	PSC-3310A42007
90°-curve	PSC-3310A42011	PSC-3310A42012	PSC-3310A42013	PSC-3310A42014	PSC-3310A42015	PSC-3310A42016	PSC-3310A42017





Further lengths available on request.

Electrical accessories¹ - Order numbers

Connecting cable 12 pin	straight plug	Right angle plug	Mechanical and optical accessories ¹	
Length 2 m	PSC-3310A11111	PSC-3310A11131	Mounting angle fixed for optical head ROH I	PSC-3310A21510
Length 5 m	PSC-3310A11112	PSC-3310A11132	Mounting angle fixed for optical head ROH II	PSC-3310A21522
Length 10 m	PSC-3310A11113	PSC-3310A11133	Mounting angle adjustable for optical head ROH II	PSC-3310A21520
Length 15 m	PSC-3310A11114	PSC-3310A11134	Air purge unit for ROH II	PSC-3310A22520
Interface module RS-485 to USB	PSC-3310A14020		Sighting tube 100 mm	PSC-3310A22530
Interface module RS-485 to ProfiBus DP	PSC-3310A14021		Sighting tube 300 mm	PSC-3310A22535
Power supply PSU 15 (24 V DC, 1 A)	PSC-3310A12010		Mirror for ROH II, stainless steel, 90°	PSC-3310A31020

¹ Selected accessories.

Selected accessories - pictures

Mounting angle, fixed	Mounting angle, adjustable, for ROH II	Air purge unit for ROH II
Order number:: PSC-3310A21522 	Order number:: PSC-3310A21520 	Order number:: PSC-3310A22520 
Mirror 90° for ROH II	Power supply	Sighting tube (100 mm)
Order number:: PSC-3310A31020 	Order number:: PSC-950-0004 	Order number: PSC-3310A22030 

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