

PSC-SRF11N

2-Color Fiber Optic Pyrometer for industrial applications



Features

- Temperature ranges from 600°C to 3000°C
- Short response time of 5 ms
- Small spot sizes from 0.7 mm
- 4-20mA and RS485 Interface
- Temperature display and menu keys
- Ambient temperature rating 250°C
- Immune to electromagnetic interference
- Accepts remote input from PLC
- Laser aiming

The digital ratio pyrometers PSC-SRF11N series are specifically designed for industrial temperature measurement starting from 600°C. The 2-color model is capable of a wide range of measurement, independent of emissivity.

The cast aluminum housing with fiber optics cable allows usage in harsh environmental conditions. The bright temperature display is visible over a long distance.

With a fast response time of 5 ms (t95) these pyrometers are suitable for quick measurement processes. The variable focus fiber optical lens provides spot sizes from 0.7 mm in diameter.

The integrated laser provides precision aiming to the measured object. The linear temperature output signal of 0/4 to 20 mA makes it easy to incorporate the pyrometer in existing measurement and control systems.

The device is equipped with a galvanically isolated RS-485 interface, which allows parameterizing & software evaluation even in field bus systems.

All parameters are adjustable via push-buttons and displayed directly on the electronics box. By using the convenient parameterizing & evaluation software PSCSpot, settings can easily be adjusted from a PC.

Typical pyrometer applications:

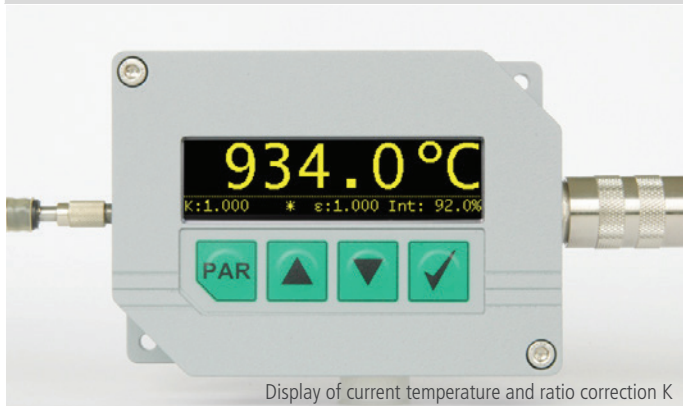
- Induction heating
- Semiconductor processes
- Heat treating
- Composites and Ceramics
- Kilns
- Vacuum Furnace/Reactors
- Steels and Metals

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)

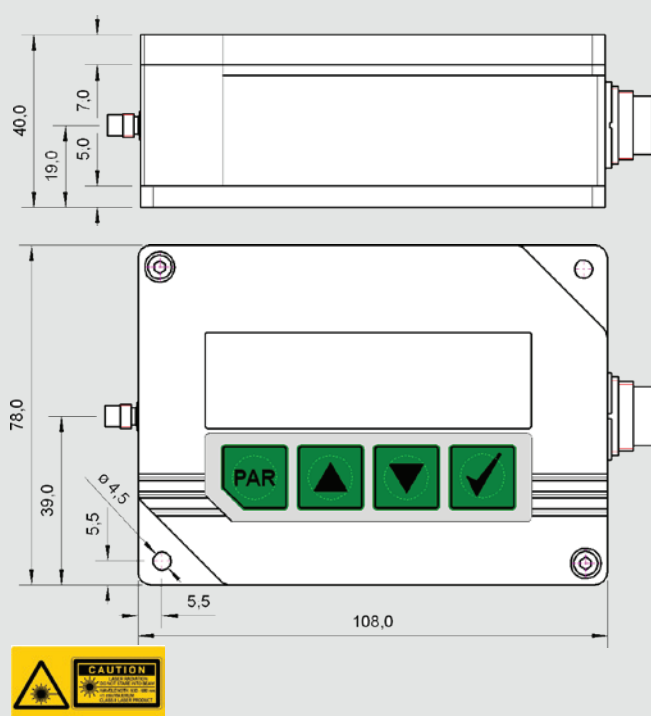
Measuring distance a [mm]	0	65	85	110	150	200	240	300
Temperature range	Measuring field diameter M [mm]							
PSC-SRF11N (600 °C to 1400 °C)	9.0	1.3	1.7	2.1	2.8	3.6	4.2	5.0
PSC-SRF11N (700 °C to 1800 °C)	9.0	0.7	0.9	1.1	1.4	1.8	2.1	2.5
PSC-SRF11N (800 °C to 2500 °C)	9.0	0.7	0.9	1.1	1.4	1.8	2.1	2.5
PSC-SRF11N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

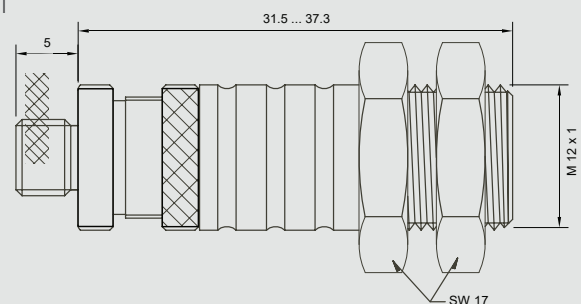
Dimensional drawings

Dimensional drawing pyrometer

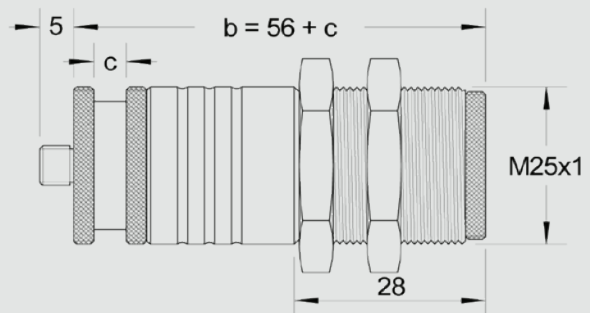


Dimensional drawings optical heads ROH

ROH I

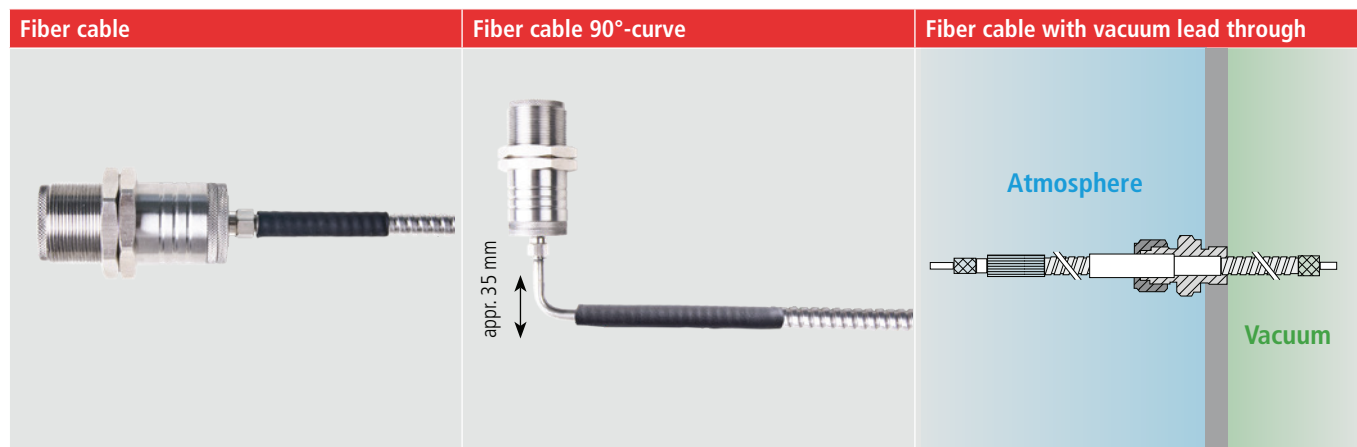


ROH II



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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
		

PROCESS SENSORS CORPORATION

Sales Office: 787 Susquehanna Avenue, Franklin Lakes, NJ USA • Tel: 774-399-0411 • www.ProcessSensorsIR.com • irtemp@kpm.com
Headquarters: 8 Technology Drive, Westborough, MA 01581 • Tel: 774-399-0500