

PSC-SF40N / PSC-GF40N Pyrometer Series

Non-contact infrared fiber optic temperature sensors



- Digital 2-wire loop powered, self contained Pyrometer
- Laser or LED Aiming (using 4-wire)
- Selection of temperature ranges from 250°C to 2500°C
- Integrated USB interface for sensor parameter settings
- Built-in peak picker
- Robust stainless steel housing

The Innovative design of Process Sensors Models PSC-SF40N and PSC-GF40N with digital technology are compact, rugged and based on simplicity of installation.

Used in a 2 wire loop powered configuration the sensor's 4-20 mA linear output signal can be easily integrated into existing instrumentation for recording and process control.

The rugged stainless steel housing, sheathed fiber optic cable and focusable lens with protective window ensure reliable operation in harsh industrial environments.

An integrated Laser or LED facilitates accurate focusing and target alignment. The projected size of the red LED is identical to the measuring spot and can be as small as 0.7mm diameter.

Models PSC-SF40N and PSC-GF40N are suitable for mid to high temperature measurements from 250°C with fast response times of 10 milliseconds.

Equipped with USB interface, adjustment of all sensor parameters can be accessed via a PC, such as

emissivity, response time, temperature sub range, peak picker etc.

Software is provided for IR sensor adjustments, temperature measuring and data acquisition evaluation.

Benefits of fiber optic models:

- Used in high ambient environments without cooling
- Immune to RF / EMI influence
- Small and Flexible
- Can be installed in a vacuum

Typical application areas:

- Steel and metal industries
- Induction / Laser heating
- Semiconductor
- Vacuum
- Welding
- Furnace
- Metal molds

TECHNICAL SPECIFICATIONS FOR PSC-SF40N/PSC-GF40N

TYPE	PSC-SF40N	PSC-GF40N
Technical Data		
Temperature range	600°C to 1800°C 800°C to 2500°C	250°C to 1300°C 350°C to 1800°C
Sub temperature range	adjustable with temperature range, minimum span 50°C	
Spectral range	0.8 μm to 1.1 μm	1.5 μm to 1.8 μm
Optics (refer to table)	optical head FOH II, FOH III, aperture diameter 9mm	
Spot size ratio	100:1 200:1	100:1 200:1
Measurement uncertainty	0.5% of measurement value ($T_U = 23^\circ\text{C}$, $\varepsilon = 1$, $t_{95} = 1\text{s}$)	
Repeatability	0.1% of measurement value ($T_U = 23^\circ\text{C}$, $\varepsilon = 1$, $t_{95} = 1\text{s}$)	
Response time (t_{95})	< 10ms, adjustable up to 10s	
Emissivity	adjustable, 0.05 to 1.00	
Storage	maximum value storage, adjustable via interface	
Output	4...20 mA, temperature linear, max. burden: 700Ω at 24V	
Interface	galvanically isolated USB interface	
Software	PSC SPOT	
Aiming	Laser or red LED light	
Parameters	adjustable via interface and software (emissivity, response time, temperature unit °C or °F, storage, sub range)	
Power supply	24v dc ± 25% and 5V to 30v dc (aiming light)	
Power consumption	max 0.6 W (without LED aiming light)	
Operating temperature	0°C to 70°C	
Storage temperature	-20°C to 70°C	
Weight	approx 455 g	
Dimensions	thread M40 X 1.5, length 140mm	
Housing	stainless steel with plug connector and protection window	
Safety class	IP 65 (DIN 40 050)	
CE-Symbol	according to EU regulations (EN 50 011)	
Scope of delivery	PSC-SF40N OR PSC-GF40N, manual, inspection sheets, PSC SPOT software (without connecting cable, fiber optic cable and optical head, please order separately)	
Accessories, mechanical, electrical and optical		
Connecting cable 5-pin	Length 2m, 5m, 10m, 15m, 20m, 25m or 30m	
USB-connecting cable	Length 1.8m, screened	
Fiber cable	Length 1.5m, 2m, 2.5m, 5m, 7.5m, 10m, 15m, over 20m, stainless steel clad	
Power supply	24V DC/0.6A	
Mounting angle	fixed or adjustable, available for series 40 and FOH II	
Ball and socket mounting	stainless steel, adjustable, available for series 40 and FOH II	
Air purge unit for FOH II, FOH III	stainless steel, air pressure 0.1 bis 0.5 bar, oil free	
Mirror for FOH II, FOH III	stainless steel, 90°	
Protection window FOH II, FOH III	Quartz glass or sapphire glass	
Laser rejection filter	940 nm, 1065 nm or on request	

Fiber optic lens types FOH I & FOH II

Variable Focus Optics FOH I-100 (focus from 3.94" – 39.37")

Measuring Distance inches (mm)	0 (0)	3.94 (100)	5.12 (130)	6.50 (165)	8.86 (225)	11.81 (300)	19.69 (500)	27.56 (700)	39.37 (1000)
Optics length	–	1.47 (37.3)	1.40 (35.5)	1.36 (34.5)	1.32 (33.5)	1.29 (32.8)	1.26 (32.1)	1.25 (31.8)	1.24 (31.5)
Measuring spot size M in inches (mm)									
PSC-SF40N (600°C to 1800°C)	0.24 (6)	0.07 (1.8)	0.07 (2.2)	0.11 (2.8)	0.16 (4.0)	0.22 (5.5)	0.35 (9.0)	0.51 (13)	0.71 (18.0)
PSC-SF40N (800°C to 2500°C)	0.24 (6)	0.04 (0.9)	0.04 (1.1)	0.06 (1.4)	0.08 (2.0)	0.11 (2.7)	0.18 (4.5)	0.26 (6.5)	0.35 (9.0)
PSC-GF40N (250°C to 1300°C)	0.24 (6)	0.07 (1.8)	0.07 (2.2)	0.11 (2.8)	0.16 (4.0)	0.22 (5.5)	0.35 (9.0)	0.51 (13)	0.71 (18.0)
PSC-GF40N (350°C to 1800°C)	0.24 (6)	0.04 (0.9)	0.04 (1.1)	0.06 (1.4)	0.08 (2.0)	0.11 (2.7)	0.18 (4.5)	0.26 (6.5)	0.35 (9.0)

Variable Focus Optics FOH II-65 (focus from 2.56" – 11.81")

Measuring distance (a) in inches (mm)	0 (0)	2.56 (65)	3.35 (85)	4.33 (110)	5.91 (150)	7.87 (200)	9.45 (240)	11.81 (300)
Measuring spot size M in mm								
PSC-SF40N (600°C to 1800°C)	0.36 (9)	0.05 (1.2)	0.06 (1.6)	0.08 (2.0)	0.10 (2.7)	0.13 (3.4)	0.16 (4.0)	0.19 (4.8)
PSC-SF40N (800°C to 2500°C)	0.36 (9)	0.03 (0.7)	0.04 (0.9)	0.04 (1.0)	0.05 (1.3)	0.07 (1.7)	0.08 (2.0)	0.09 (2.4)
PSC-GF40N (250°C to 1300°C)	0.36 (9)	0.05 (1.2)	0.06 (1.6)	0.08 (2.0)	0.10 (2.7)	0.13 (3.4)	0.16 (4.0)	0.19 (4.8)
PSC-GF40N (350°C to 1800°C)	0.36 (9)	0.03 (0.7)	0.04 (0.9)	0.04 (1.0)	0.05 (1.3)	0.07 (1.7)	0.08 (2.0)	0.09 (2.4)

Variable Focus Optics FOH II-250 (focus from 9.84" – 98.43")

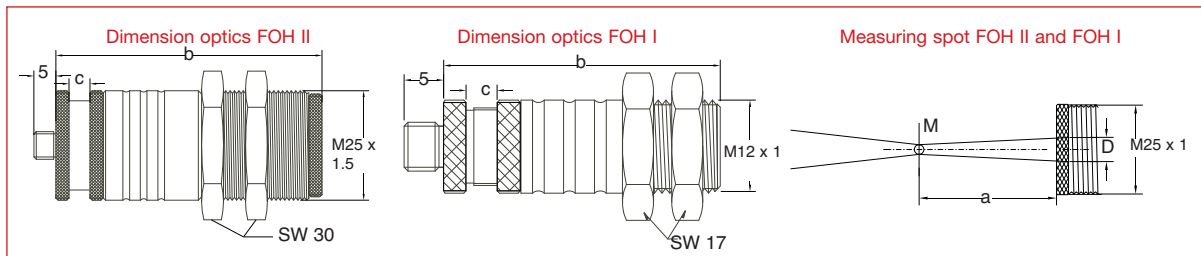
Measuring Distance (a) inches (mm)	0 (0)	9.84 (250)	11.81 (300)	15.75 (400)	23.62 (600)	31.50 (800)	39.37 (1000)	59.06 (1500)	78.74 (2000)	98.43 (2500)
Measuring spot size M in mm										
PSC-SF40N (600°C to 1800°C)	0.36 (9)	0.12 (3.0)	0.15 (3.7)	0.20 (5.0)	0.28 (7.2)	0.36 (9.2)	0.47 (12)	0.71 (18)	0.94 (24)	1.22 (31)
PSC-SF40N (800°C to 2500°C)	0.36 (9)	0.07 (1.7)	0.08 (2.1)	0.11 (2.7)	0.17 (4.4)	0.22 (5.5)	0.27 (6.8)	0.39 (10)	0.51 (13)	0.67 (17)
PSC-GF40N (250°C to 1300°C)	0.36 (9)	0.12 (3.0)	0.15 (3.7)	0.02 (5.0)	0.17 (7.2)	0.36 (9.2)	0.47 (12)	0.71 (18)	0.94 (24)	1.22 (31)
PSC-GF40N (350°C to 1800°C)	0.36 (9)	0.07 (1.7)	0.08 (2.1)	0.11 (2.7)	0.55 (4.4)	0.2 (5.5)	0.27 (6.8)	0.39 (10)	0.51 (13)	0.67 (17)

Fiber optic cables

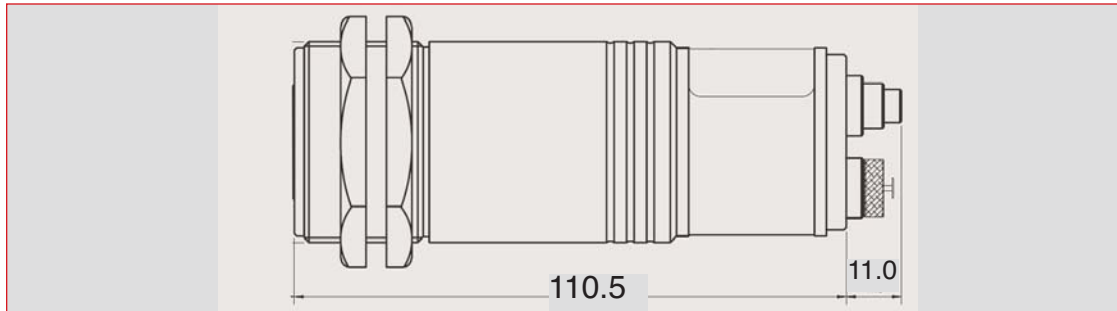
Measuring range	Core diameter in μm	Sheath
PSC-SF40N (600°C to 1800°C)	400	stainless steel
PSC-SF40N (800°C to 2500°C)	200	stainless steel
PSC-GF40N (250°C to 1300°C)	400	stainless steel
PSC-GF40N (350°C to 1800°C)	200	stainless steel

Dimensions

Field of view (for) calculations



Dimensions Pyrometer



Accessories

Mounting angle, adjustable, series 40



Mounting angle, adjustable, for FOH II and FOH III



Mirror 90° for FOH II and FOH III



Air purge unit for FOH II and FOH III



Digital Display



Power supply



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