

PSC-G10N & PSC-S10N Pyrometer Series



SELF-CONTAINED PRECISION TEMPERATURE MEASUREMENT

OVERVIEW

The Process Sensors IR models PSC-G10N and PSC-S10N Series are 1-color, non-contact infrared temperature sensors offering an on-board temperature display/menu, adjustable focus optics with laser, through lens, or video sighting for precise aiming target alignment. The PSC-G10N covers temperature ranges from 200°C to 2500°C, while the PSC-S10N covers ranges from 550°C to 3000°C.

All measurement parameters — including sub-temperature range, peak picker, emissivity, response time, and analog output — are adjustable directly at the sensor via push-buttons and viewing the temperature display / menu, or remotely from a PC running PSC Spot software.

MODEL EXAMPLES:

- PSC-G10NL – laser sighting
- PSC-G10NT – through-lens
- PSC-G10NV – video sighting
- PSC-S10NL – laser sighting
- PSC-S10NT – through-lens
- PSC-S10NV – video sighting

APPLICATIONS / INDUSTRIES

- Steel & metals processing
- Induction heating
- Semiconductor
- Molten silicon & glass
- Silicon carbide
- Kilns & furnace applications
- Research & development
- Vacuum furnace
- Graphite
- Composites

HOW IT WORKS

Infrared radiation from the measured object passes through the sensor's focusable optics to the detector, is converted to an electrical signal, and processed by the micro controller to produce a linear temperature output (analog 0/4-20 mA and digital RS-485 modbus RTU).



PSC-G10N & PSC-S10N SERIES FEATURES

- Wide temperature ranges from 200°C to 3000°C (392°F to 5432°F)
- On-board display with push-button menu for sensor configuration via PSC Spot software
- Laser, through-lens, or color video sighting (PSC-G10NL / PSC-G10NT / PSC-SR10NV)
- Focusable optics from 250 mm (9.8 in) to 4000 mm (157.4 in) working distance
- Spot sizes down to 0.032" (0.8 mm)
- Fast response time: 2 ms, adjustable up to 100 s
- Emissivity adjustable from 0.050 to 1.000
- 0/4–20 mA linear analog output, galvanically isolated (500 Ω max. load)
- RS485 Modbus RTU digital output
- 24 VDC operation
- IP65-rated housing; CE compliant to EMV regulation 89/336/EWG



PSC-G10N & PSC-S10N Series

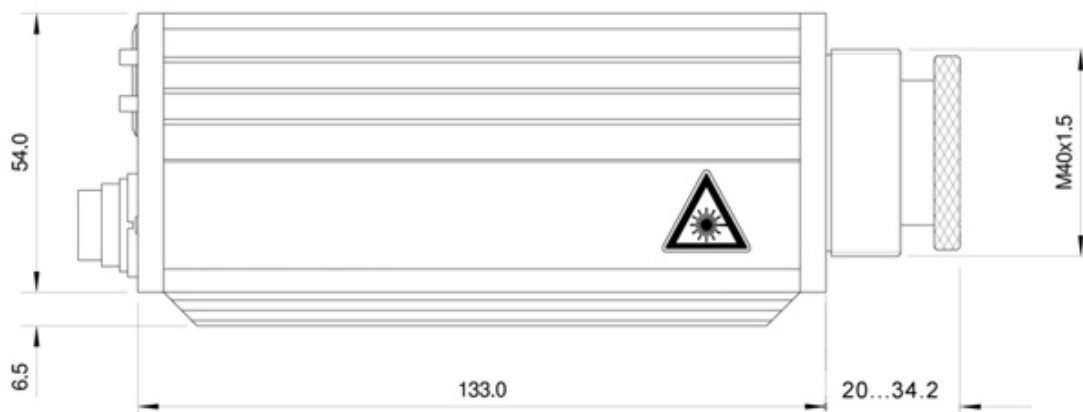


TECHNICAL DATA

Model	PSC-G10N	PSC-S10N
Temperature Range	200°C to 1200°C (392°F to 2192°F) 200°C to 2000°C (392°F to 3632°F) 250°C to 1500°C (482°F to 2732°F) 350°C to 2000°C (662°F to 3632°F) 350°C to 2500°C (662°F to 4532°F)	550°C to 1500°C (1022°F to 2732°F) 600°C to 1800°C (1112°F to 3272°F) 800°C to 2500°C (1472°F to 4532°F) 900°C to 3000°C (1652°F to 5432°F)
Accuracy	0.5% of measured value in °C + 1 K	
Repeatability	0.1% of measured value in °C + 0.5°C (typical, per configuration)	
Spectral Range	1.5 to 1.8 µm	0.8 to 1.1 µm
Sighting Method	Laser aiming light (630 to 680 nm, class II, < 1 mW), through-lens, or camera module (PSC-S10NV / PSC-G10NV)	
Adjustable Focus Optics	250 mm (9.8 in) to 4000 mm (157 in)	
Analog Output	0/4–20 mA, switchable via software, temperature linear, max. burden 500 Ω (galvanically isolated)	
Digital Output	RS-485 Modbus RTU	
Parameters	Ratio correction, emissivity, transmittance, ambient radiation, response time, temperature unit °C or °F, storage settings, sub temperature range of measurement output, switching thresholds of switching output, key lock. All adjustable via software and interface or directly at the device.	
Emissivity	0.050 to 1.000, adjustable at the device or via interface	
Response Time (t ₉₀)	2 ms, adjustable up to 100 s	
Relay	1 Opto relay min. 48 Ω / adjustable within temperature range	
Power Supply	24 VDC ± 25%	
Operating Temperature	0°C to 70°C (0°F to 158°F)	
Storage Temperature	-20°C to 70°C (-4°F to 158°F)	
Housing / Protection	IP65	
Software	PSC Spot for Windows®	
CE Rating	Conforms to EMV regulation 89/336/EWG	
Weight	Approx. 500 g (1.1 lbs)	
CE-Symbol	According to EU regulations (EN 50 011)	
Scope of Delivery	PSC-G10N / PSC-S10N, mounting screw nut, inspection sheet, manual, PSC-Spot for Windows® (without pyrometer cable, please order separately)	

Model# configuration — PSC-G10N**L**: 250°C to 1500°C (482°F to 2732°F) switchable range, **laser** sighting, variable focus optics from 250 mm (10 in) to 4000 mm (160 in), spot size diameter 0.8 mm (0.032 in) to 13.3 mm (0.52 in), FOV 300:1, accuracy ±0.5% of measured value in °C +1°C, repeatability ±0.1% of measured value in °C + 0.5°C, response time t₉₀ 2 ms (adjustable up to 10 s).

DIMENSIONS (IN MM)



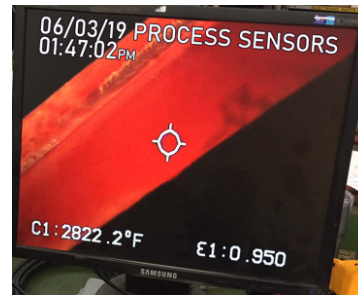
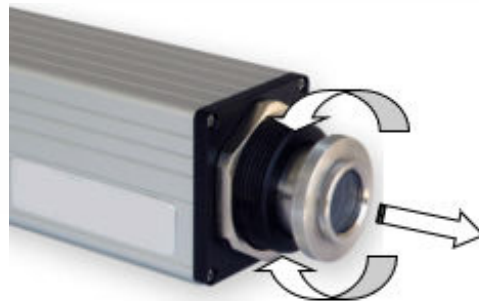
VARIABLE FOCUS OPTICS

Measuring distance in mm (in)	250 (9.8)	300 (11.8)	350 (13.8)	500 (19.7)	800 (31.5)	4000 (157.4)	Lens Aperture Diameter mm (in)	
							at	
Temperature Range	Spot Size mm (in)						a=250 mm (9.8 in)	a=4000 mm (157.4 in)
300°C to 1100°C	2.5 (0.10)	3.0 (0.12)	3.5 (0.14)	5.0 (0.20)	8.0 (0.31)	40.0 (1.57)	8.0 (0.31)	6.5 (0.26)
350°C to 1300°C	1.9 (0.07)	2.3 (0.09)	2.7 (0.26)	3.8 (0.15)	6.0 (0.24)	30.0 (1.18)	8.0 (0.31)	6.5 (0.26)
400°C to 1600°C	1.2 (0.05)	1.5 (0.06)	1.8 (0.07)	2.5 (0.10)	4.0 (0.16)	20.0 (0.79)	8.0 (0.31)	6.5 (0.26)
500°C to 2300°C	0.8 (0.03)	1.0 (0.04)	1.2 (0.05)	1.7 (0.07)	2.6 (0.10)	13.0 (0.51)	8.0 (0.31)	6.5 (0.26)

TECHNICAL DATA VIDEO CAMERA

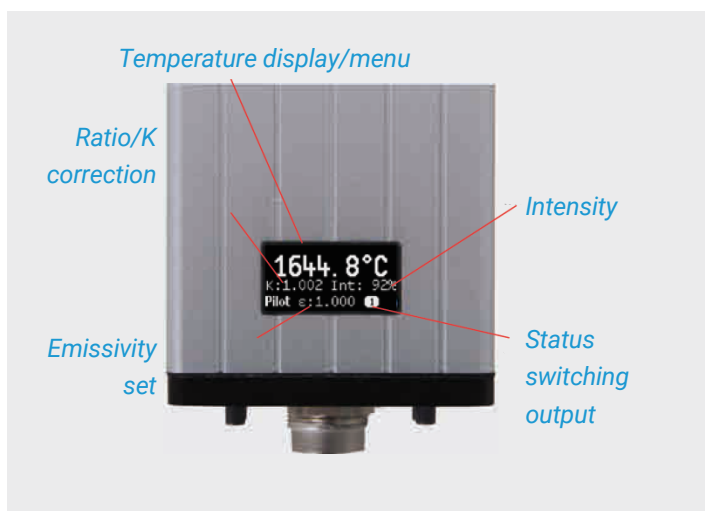
Video Signal	Composite video signal approx. 1Vss at 75 Ω (galvanically isolated, video signal can be deactivated via software)
Video Types	NTSC (M), 60 Hz or PAL (B), 50 Hz
Resolution	1/3 inch video chip 628 × 586 pixels (NTSC option: 510 × 496 pixels)
Exposure Control	Exposure control Automatic or manual via software or device
Visible Field of View	NTSC: 6.5 % × 5 % PAL: approx. 8 % × 6 % of adjusted measurement distance
Date/Time	Real-time clock with minimum 3 days power reserve, adjustable via software
Image displays	Target spot size displayed on imager. Ratio mode: measure temperature, K factor, intensity bar 1-channel mode: measurement temperature, emissivity
Display Values	Adjustable via software: serial number, device name or user-defined text (16 characters), date, time, temperature unit °C/°F, 12/24 hours display
White Balance	Automatic or manual via software or device

FOCUSING ADJUSTMENT AND VIDEO OUTPUT



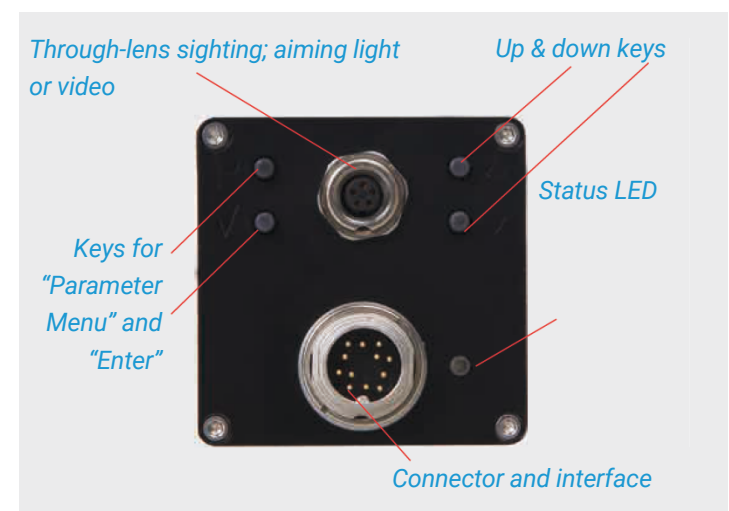
TEMPERATURE / MAIN DISPLAY

Depending on the selected operation mode and model, the main display is different. When in ratio mode, the device shows ratio correction (K) and the intensity, in addition to the emissivity.



REAR SENSOR PANEL

The parameters can be adjusted with the keys at the rear side of the device. The set value is taken over directly.



ELECTRICAL, MECHANICAL, AND OPTICAL ACCESSORIES (MORE ON REQUEST)

Part Number	Description
PSC-3310A11131	Pyrometer cable, 12 pin, right angle: 2 m length
PSC-3310A11132	Pyrometer cable, 12 pin, right angle: 5 m length
PSC-3310A11133	Pyrometer cable, 12 pin, right angle: 10 m length
PSC-3310A11134	Pyrometer cable, 12 pin, right angle: 15 m length
PSC-3310A11135	Pyrometer cable, 12 pin, right angle: 20 m length
PSC-3310A11136	Pyrometer cable, 12 pin, right angle: 25 m length
PSC-3310A11137	Pyrometer cable, 12 pin, right angle: 30 m length
PSC-3310A16521	Video connection cable: 2 m length
PSC-3310A16522	Video connection cable: 5 m length
PSC-3310A16523	Video connection cable: 10 m length
PSC-3310A16524	Video connection cable: 15 m length
PSC-3310A16525	Video connection cable: 20 m length
PSC-3310A16526	Video connection cable: 25 m length
PSC-3310A16527	Video connection cable: 30 m length
PSC-3310A14020	Interface adapter: RS-485 to USB converter
PSC-950-004	Din Rail Power Supply: 24 V DC, 1.5 Amps, Input 90 ... 265 VAC
PSC-3310A21020	Adjustable mounting bracket for pyrometer and protective jacket (PSC-3310A23040)
PSC-3310A22020	Air purge: Stainless steel, purge air 0.1 to 0.5 bar, oil-free
PSC-3310A21210	Window slide (without window)
PSC-3310A24015	Vacuum flange: KF 16 without window and with screw and sealing
PSC-3310A34021	Vacuum flange: with quartz glass
PSC-3310A34051	Vacuum flange: with sapphire glass (scratch-proof)
PSC-3310A23031	Steel cooling jacket with air purge
PSC-3310A23036	Mounting bracket for cooling jacket
PSC-3310A17010	Handheld programming device DHP 1040 (mobile device for pyrometer programming)
PSC-3310A16110 / PSC-3310A16120	TFT video monitor display: 3.5" with 2 m cable / Industrial TFT video monitor display: 3.5" with 2 m cable
PSC-3310A14030	Video/USB adapter



Adjustable mounting angle
P/N PSC-3310A21020



Ball & socket mount P/N PSC-3310A21025



Cooling jacket P/N PSC-3310A23031



RS-485 to USB
converter with
cable
P/N PSC-
3310A14020



Cooling plate
P/N PSC-
3310A23020



Air purge P/N PSC-3310A22020

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