

PSC-S44N / PSC-G44N Pyrometer Series

Self-Contained, Non-Contact Infrared Temperature Sensors



- **Stainless steel housing with variable or fixed focus optics**
- **RS485 interface for bus system integration**
- **Bright green LED or laser aiming**
- **Selection of temperature ranges from 250°C to 2500°C**
- **Integrated USB interface for sensor parameter settings**

The innovative Process Sensors Models PSC-S44N and PSC-G44N with digital technology are compact, rugged and designed for simplicity of installation.

The pyrometer's RS485 or 4-20mA linear output signal can be easily integrated into existing instrumentation for recording and process control.

The rugged stainless steel housing with protective window and cooling jacket with air purge ensures reliable operation in harsh environments.

Models PSC-S44N and PSC-G44N are suitable for mid to high temperature measurements from 250°C, with fast response time of 5 milliseconds.

The 44 Series sensors are ideal instruments for system integrators, machine builders (OEMs), and engineering construction companies.

Typical applications:

- Steel industry
- Furnace
- Welding
- Semiconductor
- Solar
- Ceramic industry
- Metal heat treating
- Induction heating
- Rotary kilns
- Sintering

The integrated green LED or LASER facilitates accurate focusing and target alignment. The projected size of the LED is identical to the measuring spot.

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.

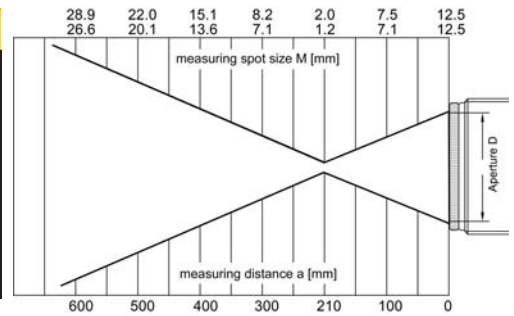
Software is provided for IR sensor adjustments, temperature measuring, and data acquisition evaluation.

TECHNICAL SPECIFICATIONS FOR PSC-S44N / PSC-G44N

| TECHNICAL DATA | | | | |
|---|---|-------------------|-------------------|-------------------|
| Type | PSC-S44N | | PSC-G44N | |
| 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 within temperature range, minimum span 51 °C | | | |
| Spectral range | 0.8 µm to 1.1 µm | | 1.5 µm to 1.8 µm | |
| Optics (refer tables) | Several fixed optics (type I, II, III and IV) | | | |
| Distance ratio | 100 : 1 | 200 : 1 | 100 : 1 | 200 : 1 |
| Measurement uncertainty | 0.5 % of meas. value ($T_U = 23\text{ °C}$, $\varepsilon = 1$, $t_{95} = 1\text{ s}$) | | | |
| Reproducibility | 0.1 % of meas. value ($T_U = 23\text{ °C}$, $\varepsilon = 1$, $t_{95} = 1\text{ s}$) | | | |
| Response time (t95) | 5 ms, adjustable up to 10s | | | |
| Emissivity | Adjustable, 0.05 to 1.00 | | | |
| Storage | Maximum value storage, adjustable via interface | | | |
| Output | 4...20 mA, linear, max. load: 700 Ω at 24 V | | | |
| Interface | Galvanically isolated RS485 interface, half duplex, 115 Kbd max. | | | |
| Software | PSC Spot for Windows® | | | |
| Aiming | Green LED or LASER aiming | | | |
| Parameters | Adjustable via software (emissivity, response time, temperature unit °C or °F, storage, sub range) with use of communications cable | | | |
| Power supply | 24 VDC ± 25 % and 5 V to 30 VDC (LED/laser) | | | |
| Power consumption | 1.5W Max. | | | |
| Operating temperature | 0 °C to 70 °C | | | |
| Storage temperature | -20 °C to 70 °C | | | |
| Weight | approx. 1 lb | | | |
| Dimensions | Thread M40 x 1.5, length 5 inches (125mm) | | | |
| 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-S44N or PSC-G44N, manual, inspection sheet, PSC Spot for Windows (without connecting cable, please order separately) | | | |
| Accessories, mechanical, electrical and optical | | | | |
| Connecting cable 12-pin | Length Feet 6.5', 16', 33', 49', 65', 82', 98' (2 m, 5 m, 10 m, 15 m, 20 m, 25 m or 30 m) | | | |
| Interface Module | RS485 to USB | | | |
| Power supply | 24 VDC, 0.6 A | | | |
| Mounting angle bracket | Fixed or adjustable | | | |
| Ball and socket mounting | Stainless steel, adjustable | | | |
| Air purge unit | Stainless steel, air pressure 0.1 to 1.0 bar, oil free | | | |
| Water cooling jacket | With integrated air purge and mounting angle | | | |
| Vacuum flange | KF 16, with quartz glass | | | |
| Protection window | Quartz or sapphire | | | |

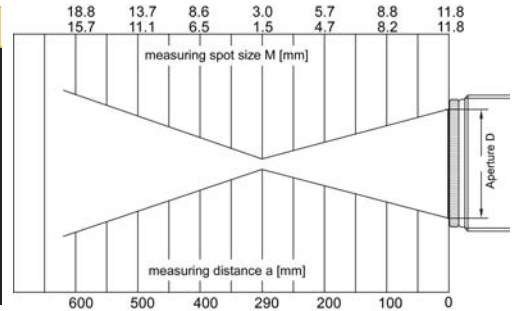
Optics I (focussed at a = 210mm measuring distance)

| Measuring distance a in inches (mm) | 0 | 4 (100) | 8.26 (210) | 12 (300) | 15.7 (400) | 19.6 (500) | 23.6 (600) |
|-------------------------------------|------------|------------|-------------------|------------|-------------|-------------|-------------|
| Measuring field diameter M in mm | | | | | | | |
| PSC-S44N (600°C to 1800°C) | 0.5 (12.5) | 0.3 (7.5) | 0.8 (2.0) | 0.33 (8.2) | 0.6 (15.1) | 0.88 (22.0) | 1.56 (28.9) |
| PSC-S44N (800°C to 2500°C) | 0.5 (12.5) | 0.28 (7.1) | 0.48 (1.2) | 0.28 (7.1) | 0.54 (13.6) | 0.8 (20.1) | 1.06 (26.6) |
| PSC-G44N (250°C to 1300°C) | 0.5 (12.5) | 0.3 (7.5) | 0.8 (2.0) | 0.33 (8.2) | 0.6 (15.1) | 0.88 (22.0) | 1.56 (28.9) |
| PSC-G44N (350°C to 1800°C) | 0.5 (12.5) | 0.28 (7.1) | 0.48 (1.2) | 0.28 (7.1) | 0.54 (13.6) | 0.8 (20.1) | 1.06 (26.6) |



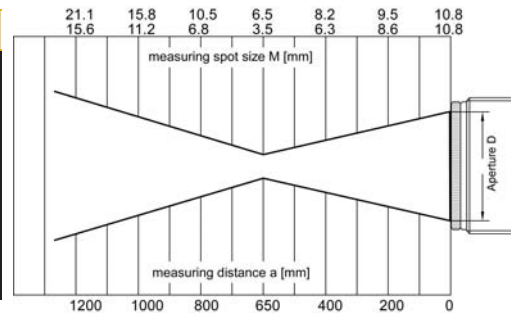
Optics II (focussed at a = 290mm measuring distance)

| Measuring distance a in inches (mm) | 0 | 4 (100) | 7.9 (200) | 11.6 (290) | 15.7 (400) | 19.6 (500) | 23.6 (600) |
|-------------------------------------|-------------|------------|------------|-------------------|------------|-------------|-------------|
| Measuring field diameter M in mm | | | | | | | |
| PSC-S44N (600°C to 1800°C) | 0.47 (11.8) | 0.35 (8.8) | 0.23 (5.7) | 0.12 (3.0) | 0.34 (8.6) | 0.55 (13.7) | 0.75 (18.8) |
| PSC-S44N (800°C to 2500°C) | 0.47 (11.8) | 0.33 (8.2) | 0.19 (4.7) | 0.60 (1.5) | 0.26 (6.5) | 0.44 (11.1) | 0.63 (15.7) |
| PSC-G44N (250°C to 1300°C) | 0.47 (11.8) | 0.35 (8.8) | 0.23 (5.7) | 0.12 (3.0) | 0.34 (8.6) | 0.55 (13.7) | 0.75 (18.8) |
| PSC-S44N (350°C to 1800°C) | 0.47 (11.8) | 0.33 (8.2) | 0.19 (4.7) | 0.60 (1.5) | 0.26 (6.5) | 0.44 (11.1) | 0.63 (15.7) |



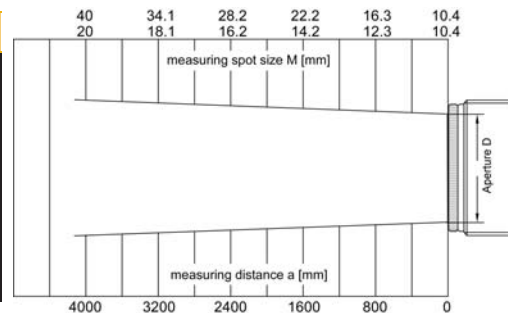
Optics III (focussed at a = 650mm measuring distance)

| Measuring distance a in inches (mm) | 0 | 7.9 (200) | 15.7 (400) | 25.59 (650) | 32 (800) | 40 (1000) | 48 (1200) |
|-------------------------------------|-------------|------------|------------|--------------------|-------------|-------------|-------------|
| Measuring field diameter M in mm | | | | | | | |
| PSC-S44N (600°C to 1800°C) | 0.43 (10.8) | 0.38 (9.5) | 0.33 (8.2) | 0.26 (6.5) | 0.42 (10.5) | 0.63 (15.8) | 0.84 (21.1) |
| PSC-S44N (800°C to 2500°C) | 0.43 (10.8) | 0.34 (8.6) | 0.25 (6.3) | 0.14 (3.5) | 0.27 (6.8) | 0.45 (11.2) | 0.62 (15.6) |
| PSC-G44N (250°C to 1300°C) | 0.43 (10.8) | 0.38 (9.5) | 0.33 (8.2) | 0.26 (6.5) | 0.42 (10.5) | 0.63 (15.8) | 0.84 (21.1) |
| PSC-G44N (350°C to 1800°C) | 0.43 (10.8) | 0.34 (8.6) | 0.25 (6.3) | 0.14 (3.5) | 0.27 (6.8) | 0.45 (11.2) | 0.62 (15.6) |



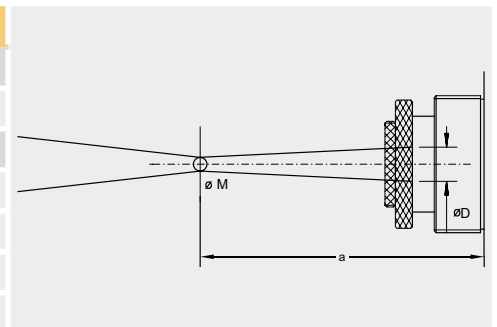
Optics IV (focussed at a = 4000mm measuring distance)

| Measuring distance a in inches (mm) | 0 | 15.7 (400) | 32 (800) | 64 (1600) | 96 (2400) | 128 (3200) | 160 (4000) |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|
| Measuring field diameter M in mm | | | | | | | |
| PSC-S44N (600°C to 1800°C) | 0.41 (10.4) | 0.54 (13.4) | 0.65 (16.3) | 0.89 (22.2) | 1.13 (28.2) | 1.36 (34.1) | 1.6 (40) |
| PSC-S44N (800°C to 2500°C) | 0.41 (10.4) | 0.56 (1.4) | 0.49 (12.3) | 0.57 (14.2) | 0.65 (16.2) | 0.72 (18.1) | 0.8 (20) |
| PSC-G44N (250°C to 1300°C) | 0.41 (10.4) | 0.54 (13.4) | 0.65 (16.3) | 0.89 (22.2) | 1.13 (28.2) | 1.36 (34.1) | 1.6 (40) |
| PSC-G44N (350°C to 1800°C) | 0.41 (10.4) | 0.56 (1.4) | 0.49 (12.3) | 0.57 (14.2) | 0.65 (16.2) | 0.72 (18.1) | 0.8 (20) |



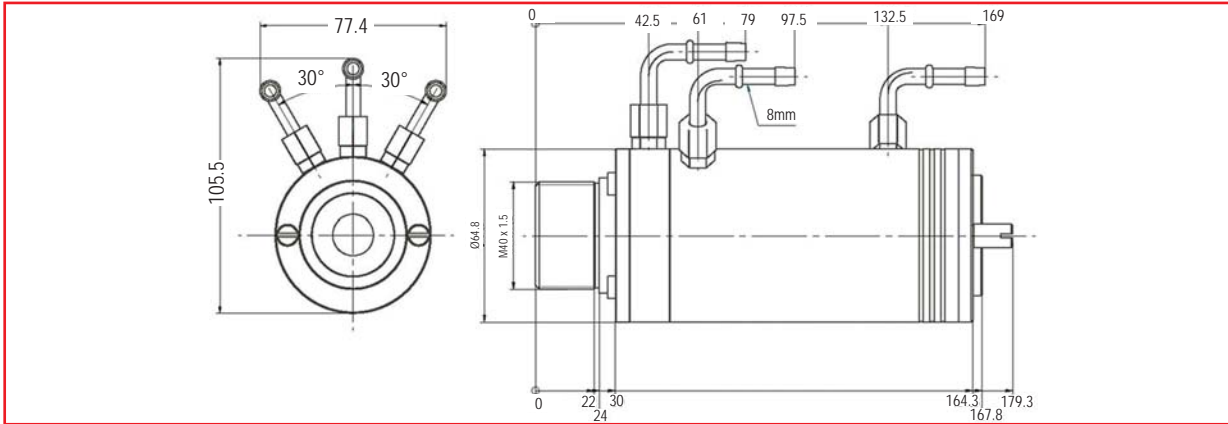
Variable Focus Optics

| Measuring distance a in mm | 0 | 300 | 400 | 500 | 600 | 700 | 800 |
|----------------------------------|----|-----|-----|-----|-----|-----|-----|
| Optics pullout in mm | 0 | 6.1 | 5.0 | 3.9 | 2.6 | 1.3 | 0 |
| Measuring field diameter M in mm | | | | | | | |
| PSC-S44N (600 °C to 1800 °C) | 10 | 3.0 | 4.0 | 5.2 | 6.5 | 7.5 | 8.6 |
| PSC-S44N (800 °C to 2500 °C) | 10 | 1.5 | 2.1 | 2.6 | 3.5 | 4.5 | 5.5 |
| PSC-G44N (250 °C to 1300 °C) | 10 | 3.0 | 4.0 | 5.2 | 6.5 | 7.5 | 8.6 |
| PSC-G44N (350 °C to 1800 °C) | 10 | 1.5 | 2.1 | 2.6 | 3.5 | 4.5 | 5.5 |

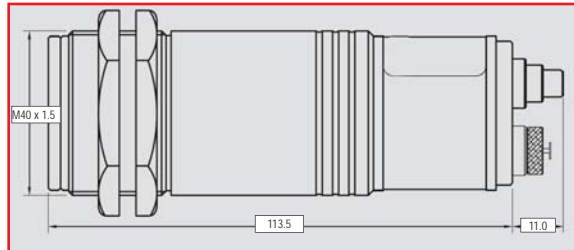


Dimensions in MM

Cooling Jacket & Air Purge



Pyrometer



Accessories

Adjustable mounting bracket
PN#PSC-3310A21011



Digital Display



Cooling jacket with air purge
PN#PSC-3310A23010



Power supply 24 VDC (din rail)
PN#950-004



Air purge unit
PN#PSC-3310A22010



Window Slide

