

## PSC-SSS (Smart Small Sensor)

Precise non-contact temperature measurement from -50°C to 975°C



### FEATURES

- One of the smallest infrared sensors worldwide with 22:1 optical resolution
- Rugged and usable up to 180°C ambient temperature without cooling
- Separate electronics with easy accessible programming keys and LCD backlit display
- Selectable analog output: 0/4-20 mA, 0-5 V, 0-10 V, thermocouple type K or J
- Optional USB, RS485, RS232 interface, relay outputs (2 x optically isolated), CAN-Bus, Profibus DP, Ethernet
- Installation of up to 32 sensing heads

#### General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20°C to 180°C (130°C at LT02) electronics: 0°C to 85°C
Storage temperature	sensing head: -40 to 180°C (130°C at LT02) electronics: -20°C to 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g electronics 420 g

#### Electrical Specifications

Outputs/analog	channel 1: 0/4 - 20 mA, 0-5/10 V, thermocouple J, K channel 2: sensind head temperature (-20°C - 180°C as 0-5 V or 0-10 V), alarm output
Output/alarm	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485 (optional), CAN-Bus, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	1 m (standard), 3 m, 8 m, 15 m
Current draw	max. 100 mA
Power Supply	8-36 V DC

#### Measurement Specifications

Temperature range (scalable via programming keys or software)	-50°C to 975°C (LT22) -50°C to 600°C (LT15) -50°C to 600°C (LT02)
Spectral range	8-14 μm
Optical resolution (90% energy)	22:1 (precision glass optics) 15:1 (precision glass optics) 2:1 (with flat front window)
CF-lens (optional)	0.6 mm @ 10 mm (LT22) 0.8 mm @ 10 mm (LT15) 2.5 mm @ 23 mm (LT02)
System accuracy <sup>1),2)</sup> (at ambient temp. 23 ±5°C)	± 1% or ± 1°C
Repeatability <sup>1),2)</sup> (at ambient temp. 23 ±5°C)	± 0.5% or ± 0.5°C
Temperature resolution (display)	0.1°C
NETD <sup>2),3)</sup>	0.05 K (LT22/LT15) 0.1 K (LT02)
Response time	150 ms (95 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSCconnect

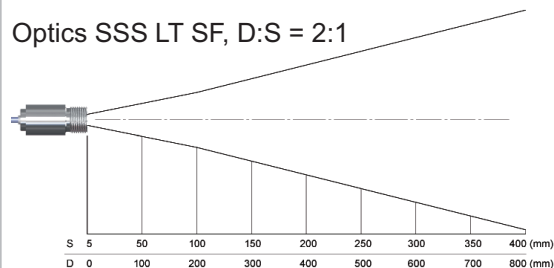
<sup>1)</sup> whichever is greater

<sup>2)</sup> at object temperatures > 0°C, ε = 1

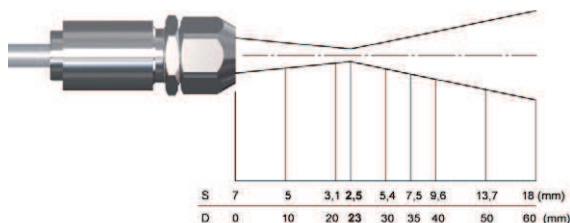
<sup>3)</sup> at time constant 200 ms and T<sub>obj</sub> 25°C

**Optical Specifications**

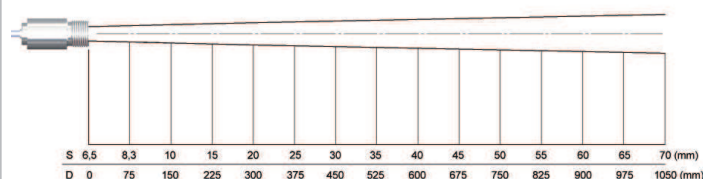
Optics SSS LT SF, D:S = 2:1



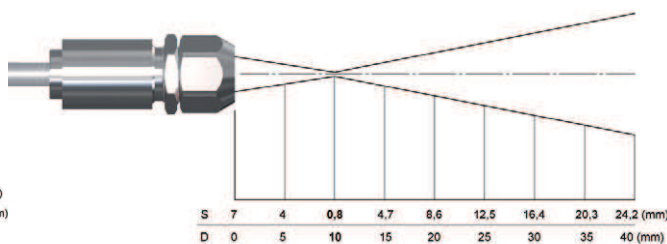
Optics SSS LT CF, D:S = 2:1 (farfield = 2.5:1)



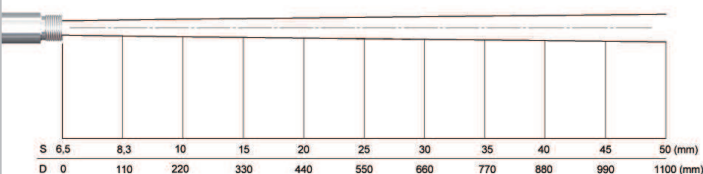
Optics SSS LT SF, D:S = 15:1



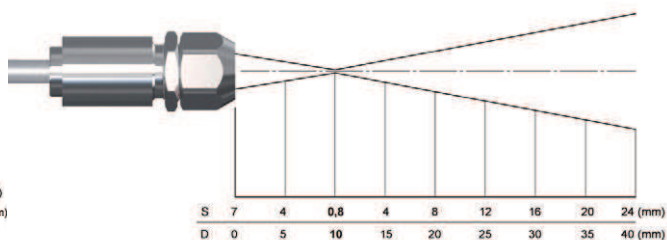
Optics SSS LT CF, D:S = 15:1 (far field = 1.5:1)



Optics SSS LT SF, D:S = 22:1

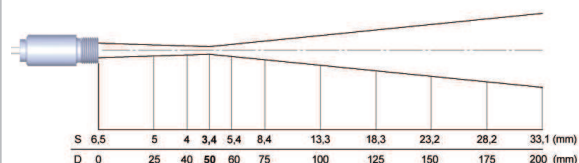


Optics SSS LT CF, D:S = 22:1 (far field = 1.5:1)

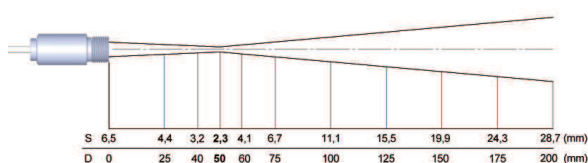


**Versions with built-in CF lenses**

Optics SSS LT CF, D:S = 15:1 (far field = 5:1)

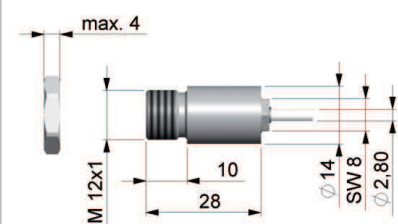


Optics SSS LT CF, D:S = 22:1 (far field = 6:1)

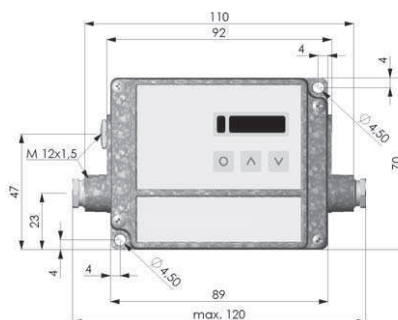


**Dimensions**

**Sensing head**



**Electronics**



# High Speed

## PSC **Small Smart Sensorfast** Precise noncontact temperature measurement from -50 to 975°C



### FEATURES

- One of the smallest infrared sensors worldwide with extremely short response time down to 6 ms (90 % signal)
- A variety of analog and digital outputs
- Instant digital 0/10 V output with a response time of 4 ms (50% signal)
- Easy to assemble in multiple arrays for line scanning application using a RS485 bus communication
- 120°C sensor ambient temperature without cooling

Model Selection: PSC-SSS-LT15F or PSC-SSS-LT25F

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 120°C electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 120°C electronics: -40 - 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11 - 200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g electronics 420 g
Electrical specifications	
Analog output	0/4 - 20 mA, 0 - 5/10 V or thermocouple J, K
Alarm output	Open - collector (24V / 50mA)
Digital output	0/10 V (10 mA) optional: relay: 2 x 60 V DC/42 V AC; 0.4 A; optically isolated
Digital interface (optional)	USB, RS232 or RS485 , CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8 - 36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	1 m (standard), 3 m, 8 m, 15 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

Measurement specifications	
Temperature range (scalable via programming keys or software)	-50°C bis 975°C
Spectral range	8 - 14 μm
Optical resolution (90% energy)	LT15F 15:1 LT25F 25:1
System accuracy (at ambient temperature 23 ±5°C)	±1% oder ±2°C <sup>1), 2)</sup>
Repeatability (at ambient temperature 23 ±5°C)	±0.75% oder ±0.75°C <sup>1), 2)</sup>
Temperature resolution (NETD)	LT15F 0.2 K <sup>2), 3)</sup> LT25F 0.4 K <sup>2), 3)</sup>
Response time <sup>4)</sup>	analog output (90%): LT15F 9 ms LT25F 6 ms digital output (50%): LT15F 4 ms LT25F 3 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

<sup>1)</sup> whichever is greater with dynamic noise compression

<sup>2)</sup> at object temperatures  $\geq 20^\circ\text{C}$

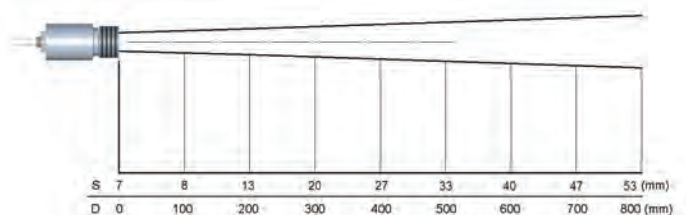
<sup>3)</sup> at time constant 100 ms with smart averaging and  $T_{\text{obj}} 25^\circ\text{C}$

<sup>4)</sup> with dynamic adaption at low signal levels

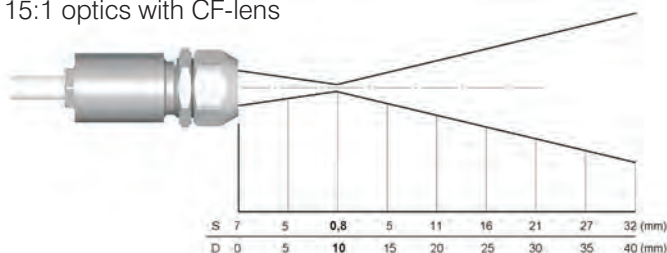
# PSC Small Smart Sensorfast

## Optical specifications

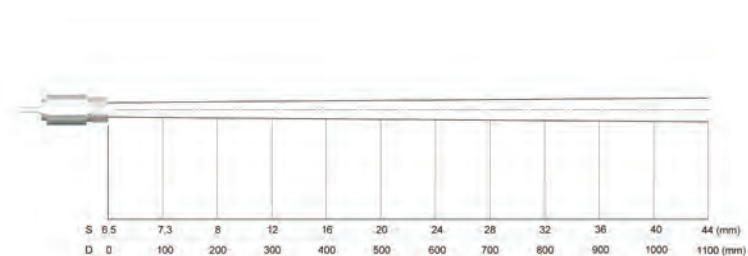
15:1 optics



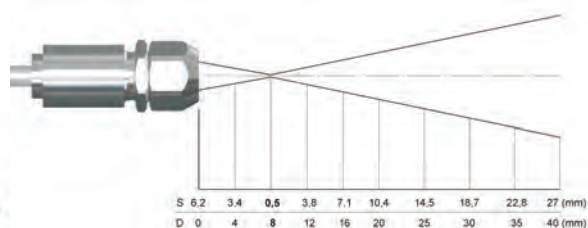
15:1 optics with CF-lens



25:1 optics

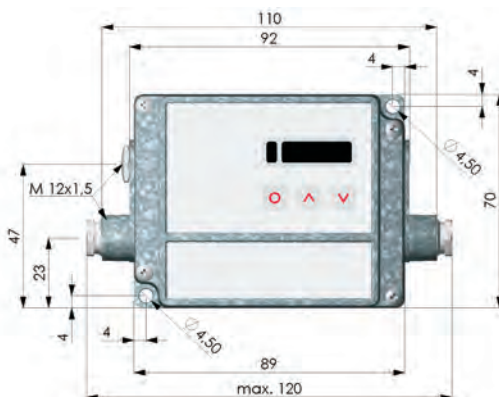
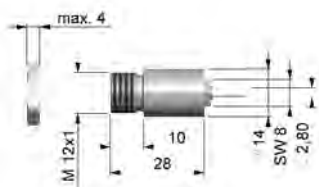


25:1 optics with CF-lens



## Dimensions

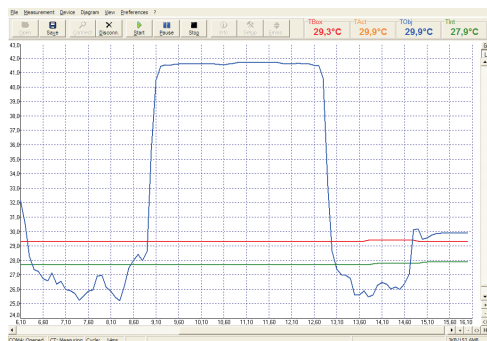
### Sensing head



### Electronics



## PSC Connect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software allows to customize the sensor to application needs of the user

# More Precision.

## PSC-SSS-1M/2M

Precise non-contact temperature measurement from 250°C to 1800°C



## FEATURES

- New: Infrared Thermometer with short wavelengths of 1.0 or 1.6  $\mu\text{m}$  for measurement of metals, molten glass, composites and ceramic materials.
- Miniature sensing head of 14 mm diameter and 28 mm length - fits anywhere
- Ambient temperature rating of sensor head up to 125°C without cooling
- Temperature ranges from 250°C to 1800°C
- Small spot sizes down to 1.8 mm
- **Fast Response time of 1 ms**
- Short wave lengths of 1.0 and 1.6  $\mu\text{m}$  reduce temperature errors on measured materials with low or unknown emissivity

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 100°C (1M) / 125°C (2M) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 100°C (1M) / 125°C (2M) electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g electronics 420 g
Electrical specifications	
Outputs/analog	0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K, alarm
Alarm output	Open - collector (24V/50mA)
Optional:	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 $\Omega$ (with 8 - 36 V DC) mV min. 100 k $\Omega$ load impedance thermocouple 20 $\Omega$
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

Measurement specifications	
Temperature ranges (scalable via programming keys or software)	485 - 1050°C (1ML)
	650 - 1800°C (1MH)
	250 - 800°C (2ML)
	385 - 1600°C (2MH)
Spectral ranges	1.0 $\mu\text{m}$ (1M) / 1.6 $\mu\text{m}$ (2M)
Optical resolution SSS-1ML/2ML	40:1 (3.5mm@140mm)
Optical resolution SSS-1MH/2MH	75:1 (0.8mm@140mm)
System accuracy <sup>1)</sup> (at ambient temperature 23 $\pm$ 5°C)	$\pm$ (0.3% of reading + 2°C)
Repeatability (at ambient temperature 23 $\pm$ 5°C)	$\pm$ (0.1% of reading + 1°C)
Temperature resolution (digital)	0.1 K
Exposure time <sup>2)</sup>	1 ms (90 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

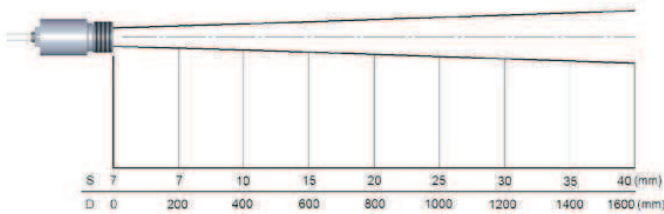
<sup>1)</sup> E=1, Response time 1 s

<sup>2)</sup> with dynamic adaptation at low signal levels

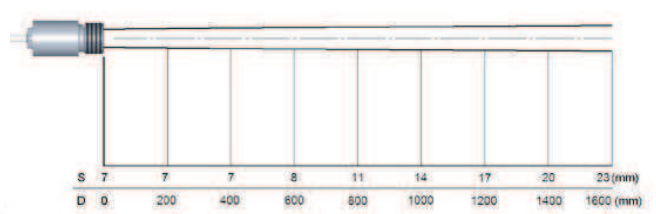
# PSC-SSS-1M/2M

Optical specifications

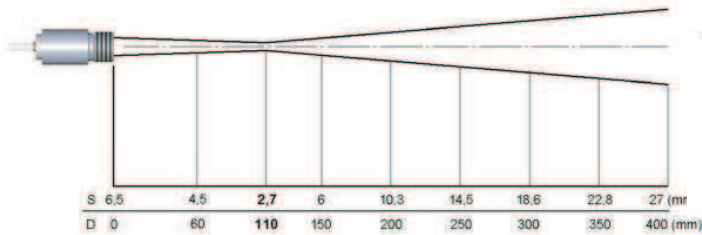
SSS 1ML/2ML SF (Std. Focus) D:S = 40:1



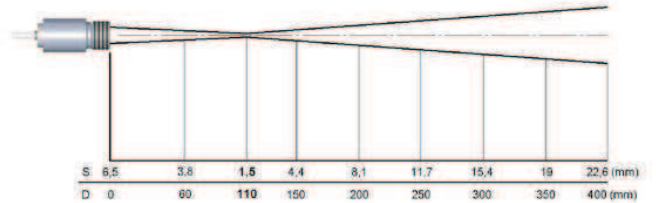
SSS 1MH/2MH SF (Std. Focus) D:S = 75:1



SSS 1ML/2ML CF (Close Focus) D:S = 40:1 (far field 12:1)

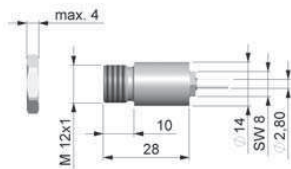


SSS 1MH/2MH CF (Close Focus) D:S = 75:1 (far field 14:1)

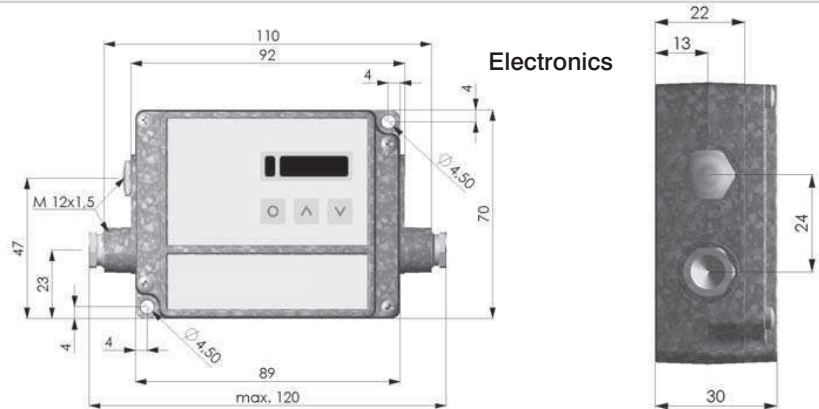


## Dimensions

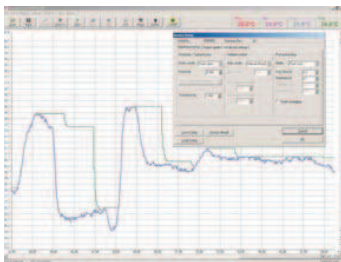
### Sensing head



### Electronics



## PSC CompactConnect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- PSC CompactConnect software allows to customize the sensor the application needs of the user

## PSC-SSS-3M

Precise non-contact temperature measurement from 50°C to 1800°C



## FEATURES

- New: Miniaturized Infrared Thermometer with 2.3  $\mu\text{m}$  wave length range for measurements of metals, of secondary metal processing, metal oxides and ceramic materials
- Very small sensing head of 14 mm diameter and 28 mm length fits everywhere
- Usable up to 85°C ambient temperature without cooling
- For measurements on metal surfaces with a very low start temperature of 50°C
- Short wave length range of 2.3  $\mu\text{m}$  to reduce error of reading with measurements on materials with unknown emissivity

### General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -40 - 85°C electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 125°C electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g electronics 420 g

### Electrical Specifications

Outputs/analog	0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K, alarm
Alarm output	Open - collector (24V/50mA)
Optional:	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 $\Omega$ (with 8 - 36 V DC) mV min. 100 k $\Omega$ load impedance thermocouple 20 $\Omega$
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

### Measurement Specifications

Temperature ranges (scalable via programming keys or software) <sup>1)</sup>	50 - 400°C (3ML) 100 - 600°C (3MH) 150 - 1000°C (3MH1) 200 - 1500°C (3MH2) 250 - 1800°C (3MH3)
Spectral ranges	2.3 $\mu\text{m}$
Optical Resolution SSS 3ML <sup>4)</sup>	22:1
Optical Resolution SSS 3MH <sup>4)</sup>	33:1
Optical Resolution SSS 3MH1 - H3 <sup>4)</sup>	75:1
System accuracy <sup>2)</sup> (at ambient temperature 23 $\pm$ 5°C)	$\pm$ (0.3% of reading +2°C)
Repeatability (at ambient temperature 23 $\pm$ 5°C)	$\pm$ (0.1% of reading +1°C)
Temperature resolution (digital)	0.1 K
Exposure time <sup>3)</sup>	1 ms (90 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

<sup>1)</sup> Tobject > Tsensing head +25°C

<sup>2)</sup> E=1, Response time 1 s

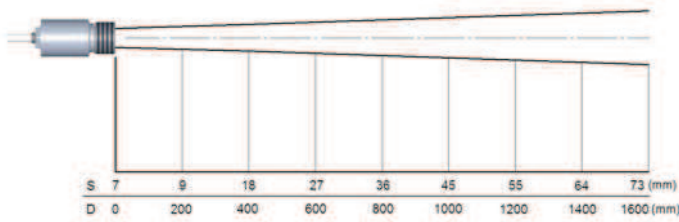
<sup>3)</sup> with dynamic adaptation at low signal levels

<sup>4)</sup> 90 % Energy

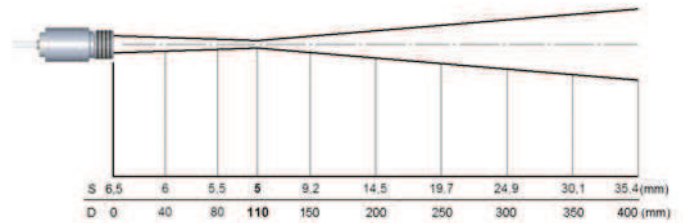
## PSC-SSS-3M

### Optical Specifications

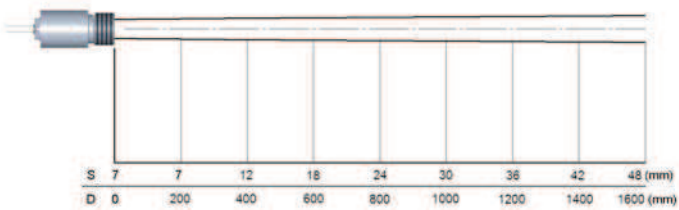
SSS 3ML SF D:S = 22:1



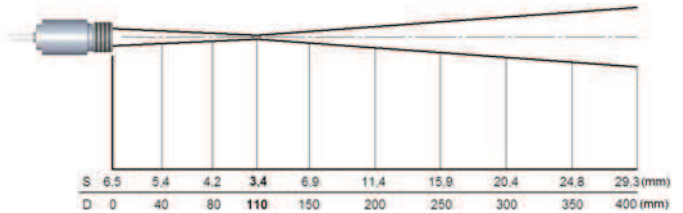
SSS 3ML CF D:S = 22:1 (far field = 9:1)



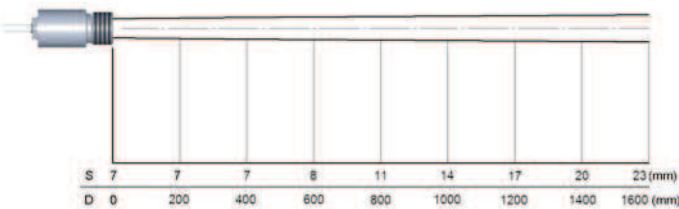
SSS 3MH SF D:S = 33:1



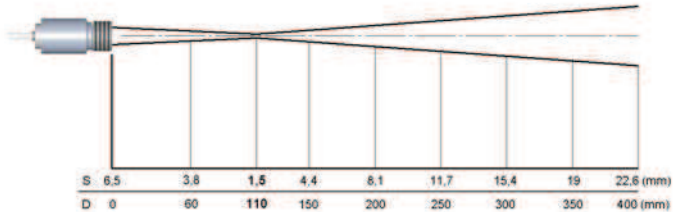
SSS 3MH CF D:S = 33:1 (far field = 11:1)



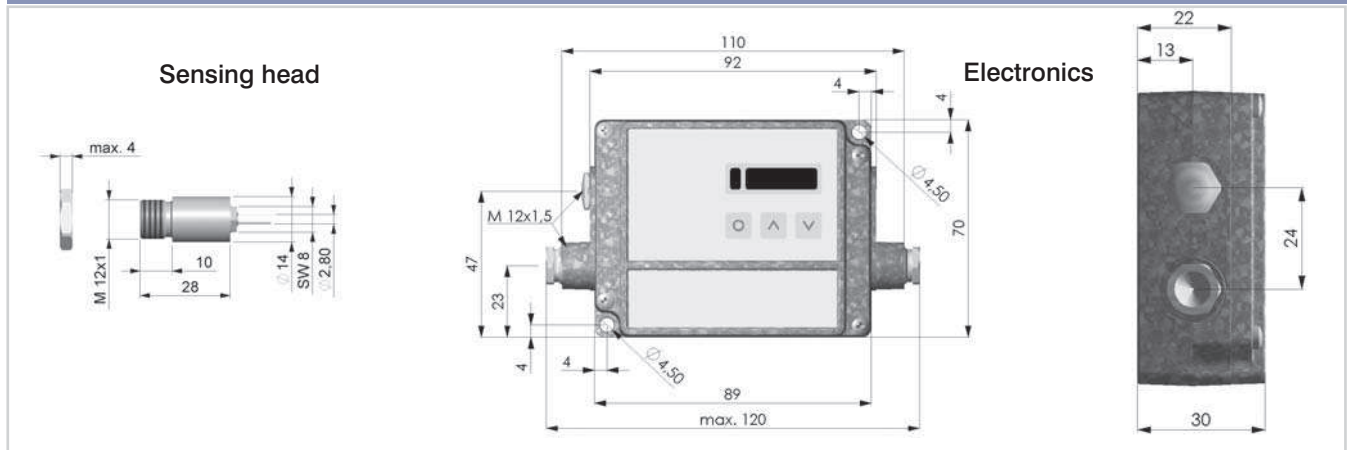
SSS 3MH1-H3 SF D:S = 75:1



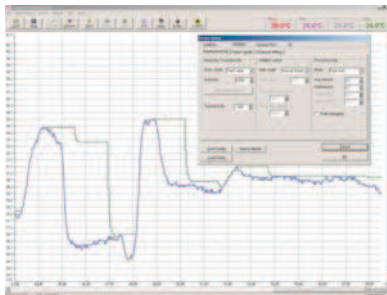
SSS 3MH1-H3 CF D:S = 75:1 (far field = 40:1)



### Dimensions



### PSC Connect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software PSC Connect allows to customize the sensor to application needs of the user




# High Accuracy

PSC **S**mall **S**mart **S**ensorex  
Intrinsically safe non-contact infrared sensor  
system for use in hazardous locations



## FEATURES

- Cost saving solution by simple concept
- Sensing head as simple electrical device enables installations in hazardous locations without problems
- Energy limitation with appropriate zener barriers (STAHL) with approval for zone 1 (PTB 01 ATEX 2053/ E II (1/2) G [Ex ia/ib] IIC/IIB) 

- PSC **SSS** sensing heads are defined as simple electrical devices (according to EN 50014)
- no special approval for intrinsic safety necessary
- PSC **SSS** gets intrinsically safe by limitation of the energy with two double zener barriers, type 9002/22-032-300-111 (R. STAHL AG)

Model	Temperature Ranges	Field of View FOV
PSC-SSS-EX	-40 to 1112°F (-40 to 600°C)	15 : 1
	-40 to 1652°F (-40 to 900°C)	22 : 1

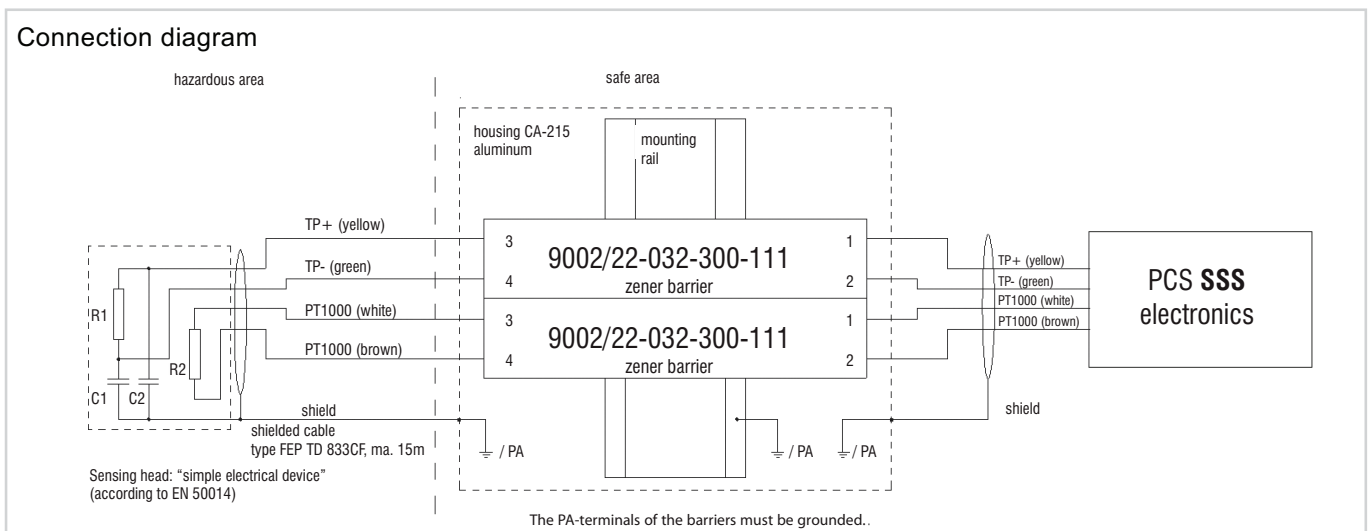
NOTE: Available sensor head cable lengths:  
3m, 8m and 15m (maximum)

### Scope of supply

- aluminum housing with mounting appliance for two zener barriers and **SSS** electronics
- pre-assembled cable for **SSS** electronics
- CD with software tool for calibrating the barrier resistance into the head code

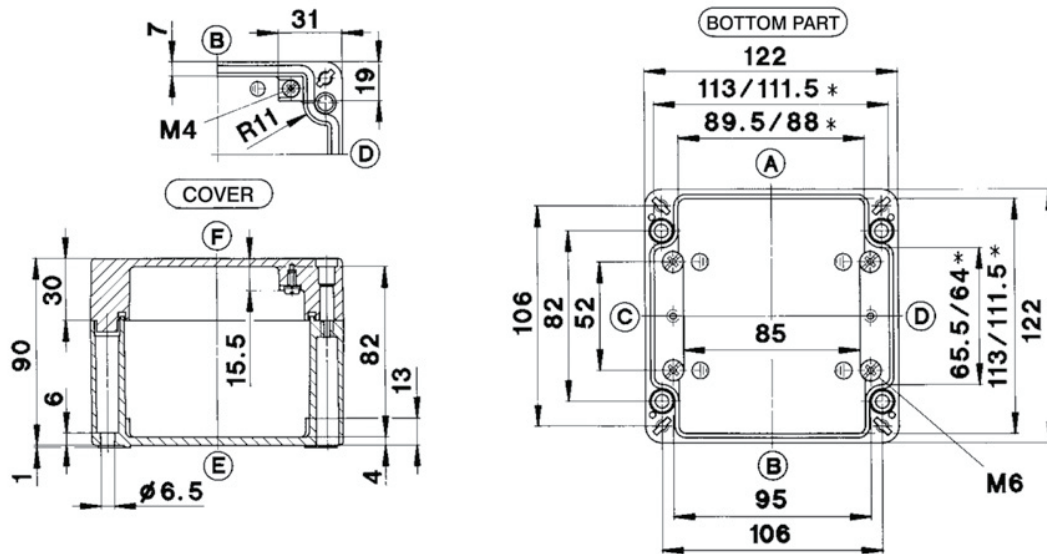
<sup>1)</sup>NOTE: The functionality and correct reading of the **SSS** sensor can only be guaranteed, if the recommended barriers are used.

### Connection diagram



# PSC Small Smart Sensorex

Dimensions (housing/alu)



## Technical data (zener barriers) <sup>2)</sup>

Type 9002/22-032-300-111

Approvals	Europe (CENELEC)	for zone 1: PTB 01 ATEX 2053
		for zone 2: PTB 01 ATEX 2054
	USA	FM approval 3010778
	Canada	CSA 1284580 (LR 43394)
Explosion protection	Europe (CENELEC)	for zone 1: E II (1/2) G [EEx ia/ib] IIC/IIB
		for zone 2: E II 3 G EEx nA II T4
	USA	I.S. circuits for: class I, II, III, division 1, groups A, B, C, D, E, F, G
		I.S. circuits for: class I, zone 0, group IIC
		class I, division 2, groups A, B, C, D
	Canada	class I, zone 2, group IIC
		I.S. circuits for: class I, groups A, B, C, D; class II, groups E, F, G
		class III
		class I, division 2, groups A, B, C, D
	class I, zone 2, groups IIC	
Installation	in zone 2, division 2 and in safe area	
Environmental rating	acc. to IEC 60529/terminal IP 20/housing IP 40	
Ambient temperature	-20°C to 60°C	

787 Susquehanna Avenue  
Franklin Lakes, NJ 07417  
PH: 201-485-8773  
FX: 201-485-8770

PROCESS SENSORS CORPORATION  
www.processsensorsIR.com  
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113 Cedar Street, S-1  
Milford, MA 01757  
PH: 508-473-9901  
FX: 508-473-0715

## PSC-SSS-G5

Precise noncontact temperature measurement of glass and photovoltaic cells from 100 to 1650°C



General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 85°C electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 85°C electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 42 g electronics 420 g
Electrical specifications	
Outputs/analog	channel 1: 0/4 - 20 mA, 0 - 5/10 VDC, thermocouple J, K channel 2: sensing head temperature (-40 - 85°C as 0 - 5 V or 0 - 10 V), alarm output
Alarm output	Open - collector (24V/5mA)
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485 (optional), CAN-Bus, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8 - 36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger
Cable length	3 m/9.8 ft (std), 8 m/26 ft, 15 m/49 ft
Current draw	max. 100 mA
Power supply	8 - 36 V DC

## FEATURES

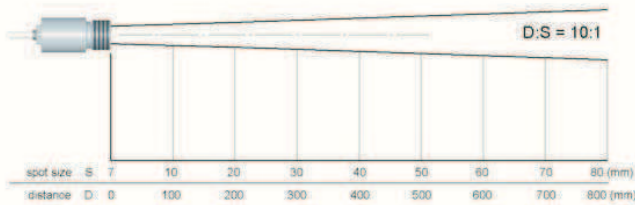
- Accurate glass temperature measurements on float glass lines, container glass machines, bulb manufacturing, automotive glass tempering lines and the production of solar cells in the range of 100°C up to 1650°C
- Ultra-small sensor head
- Wide temperature range
- Rugged and useable up to 85° ambient temperature without cooling
- Analog outputs: 0/4-20 mA, 0 - 5 / 0 - 10 VDC thermocouple type J or K
- Optional: USB, RS485, RS232 interface, relay outputs (2X optically isolated)
- Temperature measurement in manufacturing processes from 100°C (212°F) to 1650°C (3002°F)

Measurement specifications	
Temperature range (scalable via programming keys or software)	100°C - 1200°C (G5L)
	250°C - 1650°C (G5H)
Spectral range	5.2 μm
Optical resolution (90 % Energy)	10:1 (G5L)
	20:1 (G5H)
System accuracy (at ambient temperature 23 ±5°C)	±1 % or ±2°C <sup>1</sup>
Repeatability (at ambient temperature 23 ±5°C)	±0.5 % or ±0.5°C <sup>1</sup>
Temperature resolution (NETD)	0.1°C (G5L) / 0.2°C (G5H)
Response time (90 % Signal)	80 ms (G5H) / 120 ms (G5L)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

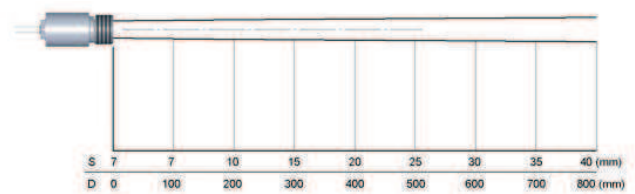
<sup>1</sup> whichever is greater

**PSC-SSS-G5**  
Optical Specification

10:1 optics

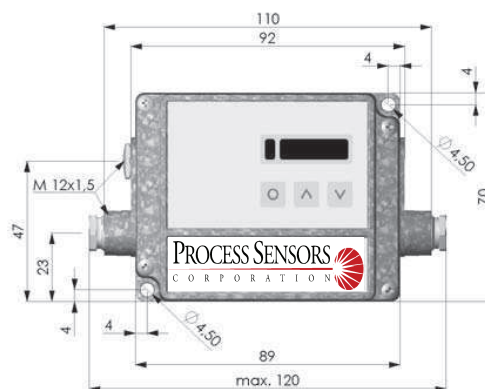
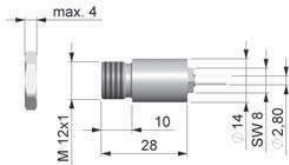


20:1 optics

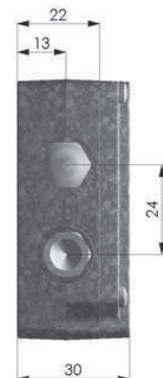


**Dimensions**

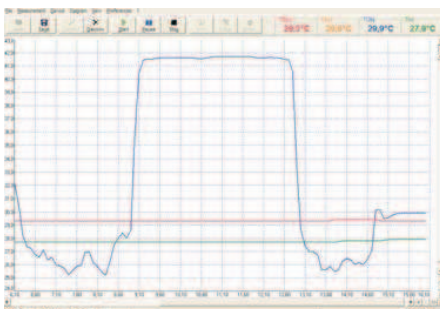
**Sensing head**



**Electronics**



**PSC Connect Software**



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software PSC Connect allows to customize the sensor to application needs of the user

**Process Sensors Corporation**

787 Susquehanna Ave, Franklin Lakes, NJ USA - Tel: 201-485-8772/8773 Fax: 201-485-8770  
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## PSC SSS-Hot

Precise non-contact temperature measurement from -40°C to 975°C under rough environmental conditions



## FEATURES

- New innovative infrared thermometer for hot ambient temperatures up to 250°C (482°F) without the need for cooling
- Applications in dryers, ovens, heat treatment lines, metal and glass industry, paper, plastic, textile manufacturing and semiconductor processing . Temperature range of -40°C to 975°C (-40°F to 1787°F) with a response time from 100 ms.
- Choice of Optics: 10:1 or 2:1
- Electronics box for programming and temperature display
- Analog outputs 0/4-20mA, 0-5V/10V, thermocouple type K or J and integrated digital interfaces (optional) Profibus DP, USB, RS232, RS485

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 250°C electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 250°C electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g (without massive housing) electronics 420 g
Electrical specifications	
Outputs/analog	channel 1: 0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K channel 2: sensing head temperature (-40 - 250°C as 0 - 5 V or 0 - 10 V), alarm output
Alarm output	Open - collector (24V/50mA)
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP
Output impedances	mA max. 500 Ω (with 5 - 36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

Measurement specifications	
Temperature range (scalable via programming keys or software)	-40° to 1787°F (-40° to 975°C)
Spectral range	8 - 14 μm
Optical resolution	10:1, 2:1
System accuracy <sup>2</sup> (at ambient temperature 23 ±5°C)	± 1 % or ± 1.5°C <sup>1</sup>
Repeatability <sup>2</sup> (at ambient temperature 23 ±5°C)	± 0.5 % or ± 0.5°C <sup>1</sup>
Temperature resolution (NETD)	0.25°C
Response time	100 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

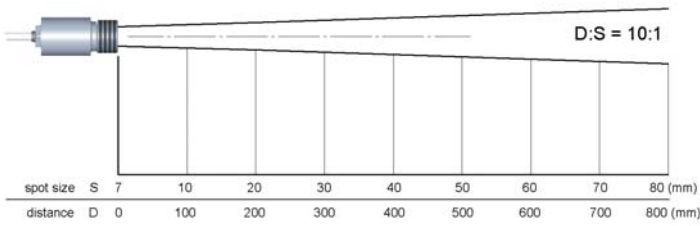
<sup>1</sup> whichever is greater

<sup>2</sup> at object temperatures > 20°C

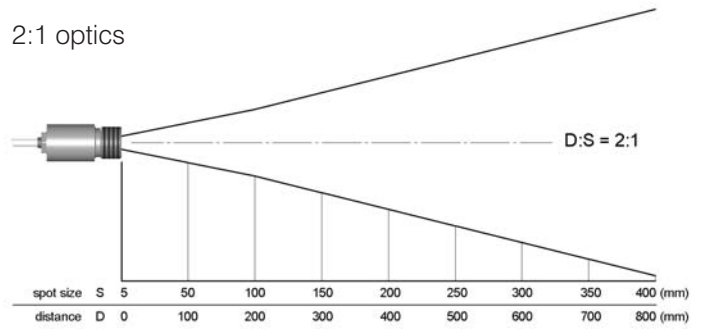
# PSC-SSS-Hot

## Optical specifications

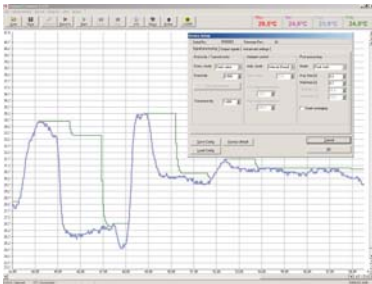
10:1 optics



2:1 optics



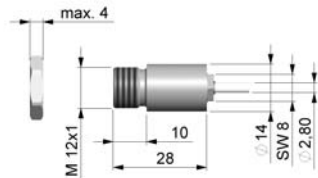
## PSCConnect Software



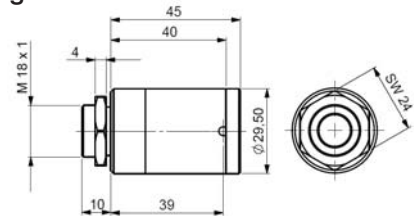
- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software PSCConnect allows to customize the sensor to application needs of the user

## Dimensions

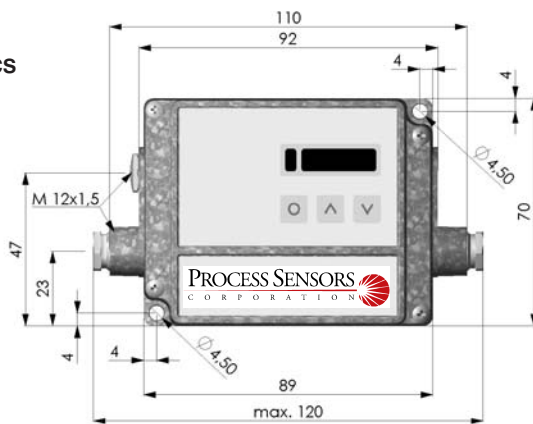
Sensing head



Massive housing



Electronics



## PSC-SSS-P7

Precise non-contact measurement of plastic materials from 0 - 710°C / 32 - 1310°F



### FEATURES

- Accurate temperature measurement of thin plastic film materials: PET, PU, PTFE, PA
- Rugged and usable up to 85°C ambient temperature without cooling
- Separate electronics with easy accessible programming keys and LCD backlit temperature display
- Selectable analog output: 0/4 - 20 mA, 0 - 5 V, 0 - 10 V, thermocouple type K or J
- Optional USB, RS485, RS232 interface, relay outputs (2x optically isolated), CAN-Bus, Profibus DP, Ethernet

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 85°C electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 85°C electronics: -40 - 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11 - 200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 200 g (with massive housing) electronics 420 g
Electrical specifications	
Outputs/analog	channel 1: 0/4 - 20 mA, 0 - 5/10 V, thermocouple J, K channel 2: sensing head temperature (-20 - 180°C as 0 - 5 V or 0 - 10 V), alarm output
Alarm output	Open - collector (24 V /50 mA)
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485, CAN, Profibus DP
Output impedances	mA max. 500 Ω (with 5 - 36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m
Current draw	max. 100 mA
Power supply	8 - 36 V DC

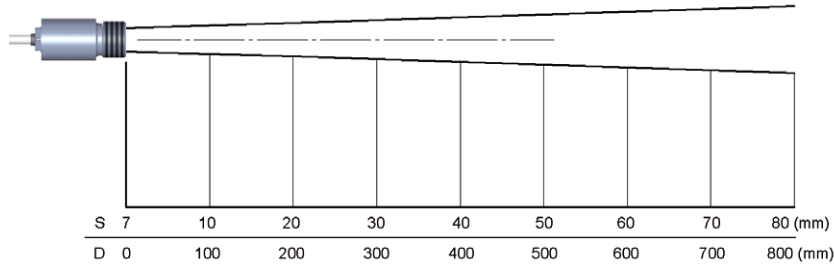
Measurement specifications	
Temperature range (scalable via programming keys or software)	0 - 710°C / 32 - 1310°F
Spectral range	7.9 μm
Optical resolution (90% energy)	10:1
System accuracy <sup>2</sup> (at ambient temperature 23 ±5°C)	±1% or ±1.5°C <sup>1</sup>
Repeatability <sup>2</sup> (at ambient temperature 23 ±5°C)	±0.5% or ±0.5°C <sup>1</sup>
Temperature resolution (NETD)	0.5°C
Response time	150 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis

<sup>1</sup> whichever is greater

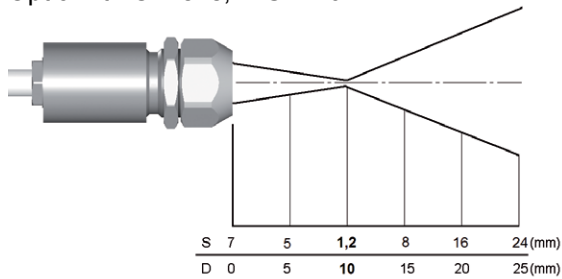
<sup>2</sup> at object temperatures ≥ 25°C

# PSC-SSS-P7

Optic, D:S = 10:1

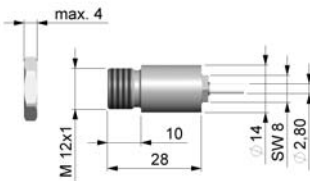


Optic with CF lens, D:S = 10:1

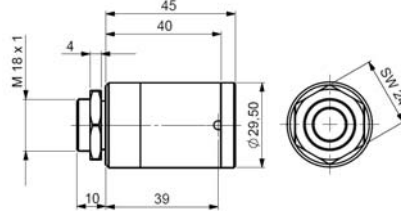


## Dimensions

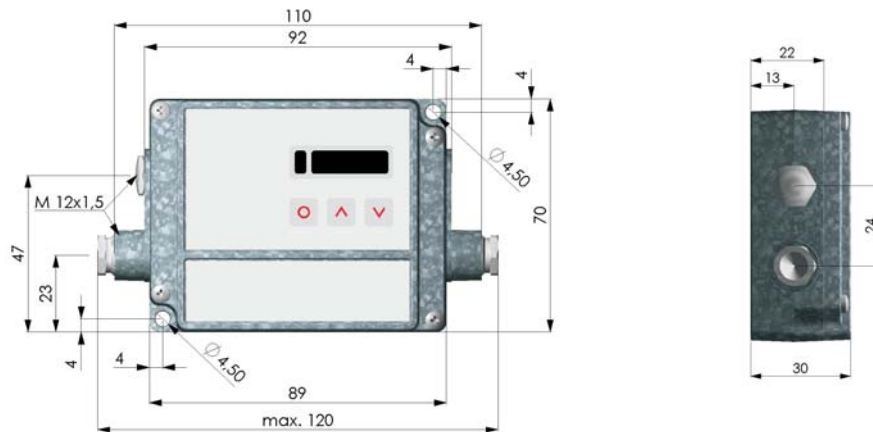
### Sensing head



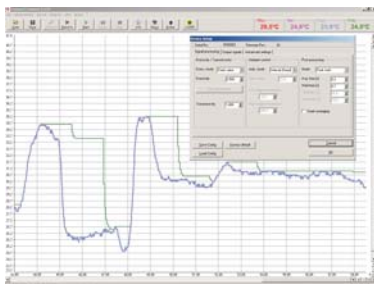
### Massive housing



### Electronics



## PSC Connect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software PSC Connect allows to customize the sensor to application needs of the user



# 2-Color, Infrared Temperature Sensor

## PSC-SSS-Ratio-1M

Glass fiber ratio thermometer for noncontact temperature measurement from 700°C to 1800°C



### FEATURES

- 2-Color Sensor Benefits: Sees through dirty windows/ dusty environments, measures weighted peak temperature within FOV and compensates for emissivity.
- 5 ms fast temperature measurements of hot objects
- Rugged stainless steel sensing head withstands 250°C without cooling
- Built in laser marks actual spot size at any distance
- Programmable 1 or 2 color mode

General specifications	
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20 - 250°C (70°C with laser ON) electronics: 0 - 85°C
Storage temperature	sensing head: -40 - 250°C electronics: -40 - 85°C
Relative humidity	10 - 95 %, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	fiber cable (3 m) with head 375 g electronics 420 g
Electrical specifications	
Output/analog	0/4 - 20 mA, 0 - 5/10 V
Output impedances	mA max. 500Ω (with 5 - 36 V DC) mV min. 100 kΩ load impedance
Digital Interfaces (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff</sub> ; 0.4 A; optically isolated
Digital I/O pins	two programmable in-/outputs; selectable as alarm output (open collector 24 V/1 A) or input for triggered signal output and peak-hold function
Fiberoptics length	3 m (standard), 6 m, 10 m, 15 m, 22 m stainless steel armour
Current draw	max. 200 mA
Power supply	8 - 36 V DC or USB powered
Aiming laser	Laser 650 nm, 1mW, ON/OFF via electronic box or software

Measurement specifications	
Temperature range	700°C - 1800°C
Spectral range	0.7 - 1.1 μm
Optical resolution (95% Energy)	40:1
System accuracy <sup>1)</sup> (at ambient temperature 23 ± 5°C)	± (0.5% of reading + 1°C)
Repeatability <sup>1)</sup> (at ambient temperature 23 ± 5°C)	± (0.2% of reading + 1°C)
Temperature resolution (> 900°C)	0.1 K
Exposure time (95% signal) <sup>2)</sup>	5 ms - 10 s
Slope (adjustable via programming keys or software)	0.800 - 1.200
Emissivity (adjustable via programming keys or software)	0.100 - 1.000
Signal processing (parameter adjustable via programming keys or software, respectively)	1 color / 2 color mode; attenuation monitoring / alarms; peak hold, valley hold, average; extended hold function with threshold and hysteresis

<sup>1)</sup> E = 1, response time 1s

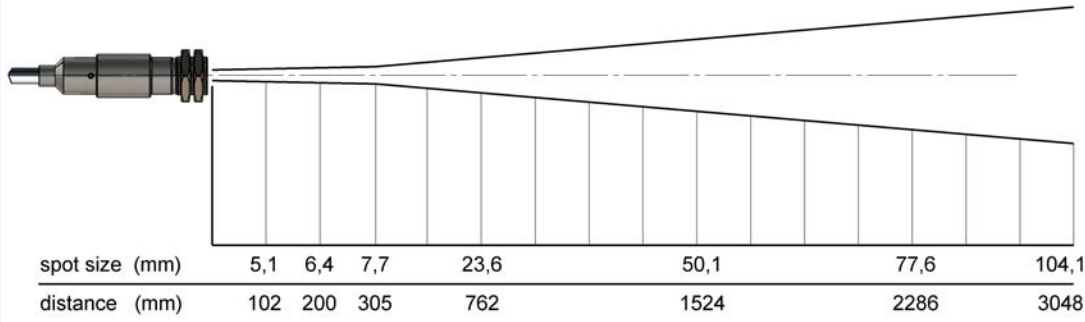
<sup>2)</sup> with dynamic adaptation at low signal levels

# PSC-SSS-Ratio-1M

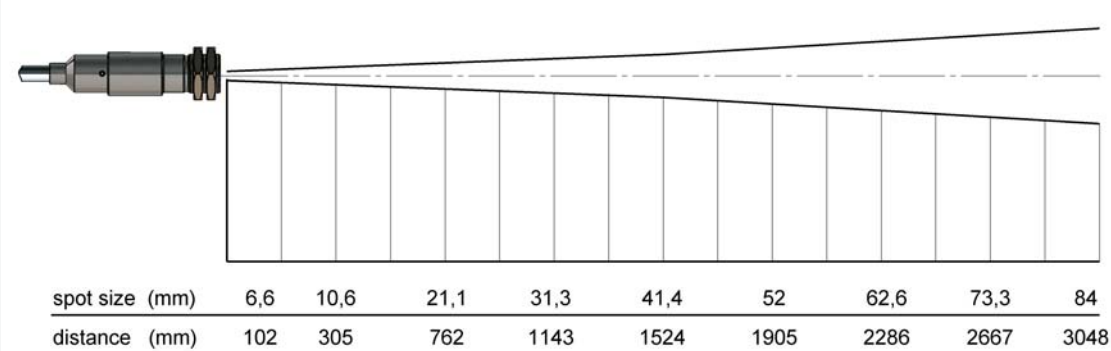
## Optical specification

### Optical specification

#### CF-optics



#### SF-optics

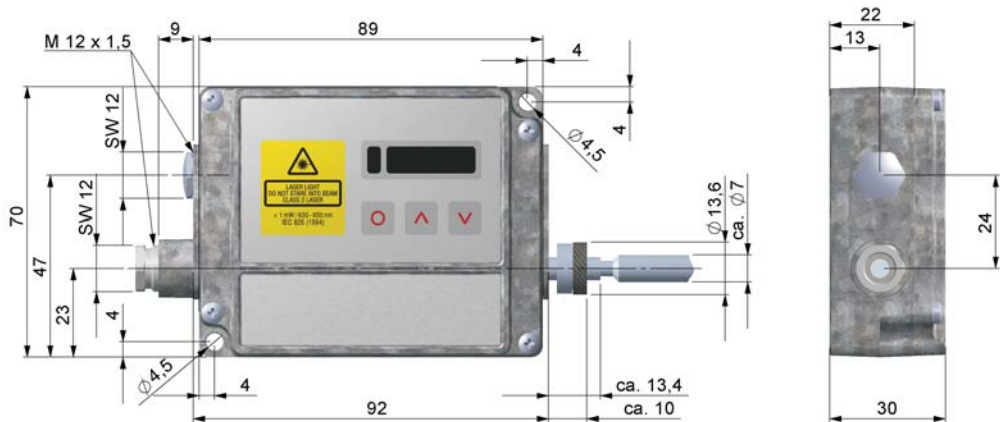


## Dimensions

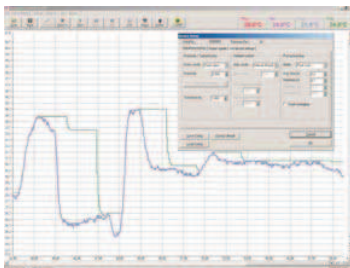
### Sensing head



### Electronics



## PSC Connect Software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 5 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- The PSC Connect software allows to customize the sensor to application needs of the user

## PSC-SSS-P3

Precise, non-contact temperature measurement of thin plastic films from 50° to 400 °C (122° to 752 °F)

### Features

- Accurate temperature measurement of thin plastic films including: Polypropylene (PP), Polyethylene (PE), Polystyrene (PS)
- Rugged and usable in up to 75 °C ambient temperature without cooling
- Electronic box for programming and temperature display
- Analog output: 0/4 - 20 mA, 0-5 V/0 -10V, thermocouple type K or J and integrated digital interfaces (optional) Profibus DP, USB, RS232, RS485



### General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	0 °C – 75 °C (32°-167°F) (sensing head) 0 °C – 75 °C (32°-167°F) (electronics)
Storage temperature	-40° – 85°C (-40°-185°F) (sensing head) -40° – 85°C (-40°-185°F) (electronics)
Relative humidity	10 – 95 %, non-condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11 – 200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	200 g (head with massive housing) 420 g (electronics)

### Electrical specifications

Outputs / analog	0/4 – 20 mA, 0 – 5/10 V, Thermocouple J, K, Open Collector Alarm Output
Output/alarm	24 V / 50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC <sub>eff.</sub> ; 0.4 A; optically isolated
Outputs / digital (optional)	USB, RS232, RS485, CAN, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m
Current draw	max. 100 mA
Power Supply	8-36 V DC

### Measurement specifications

Temperature range (scalable via programming keys or software) <sup>1)</sup>	50 °C - 400 °C (122 °F - 752 °F)
Spectral range	3.43 μm
Optical resolution (90 % energy)	15:1
System accuracy <sup>2)</sup> (at ambient temp. 23 ±5°C)	±3 °C or ±1 % <sup>3)</sup>
Repeatability (at ambient temp. 23 ±5°C)	±1.5 °C
NETD <sup>4)</sup>	0.1 K
Exposure time (90% signal)	100 ms
Emissivity/Gain (adjustable via programming keys or software)	0.100 – 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 – 1.100
Signal processing (adjustable via programming keys or software)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSC Connect

<sup>1)</sup>  $T_{object} > T_{sensing\ head} + 25\text{ °C}$

<sup>2)</sup> Specification valid at  $T_{Object} \geq 75\text{ °C}$

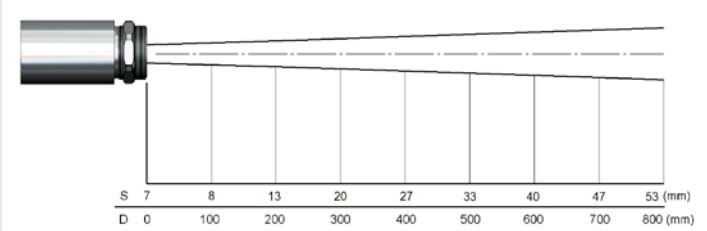
<sup>3)</sup> Whichever is greater

<sup>4)</sup> 125 °C  $T_{obj}$ , 100 ms time constant

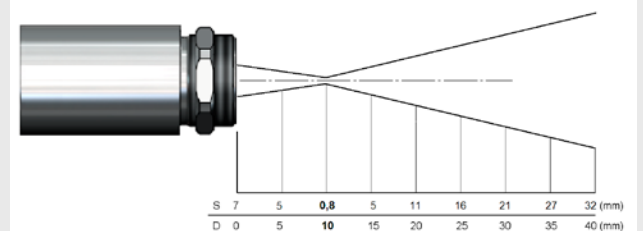
# PSC-SSS-P3

## Optical parameters

Optics, D:S = 15:1

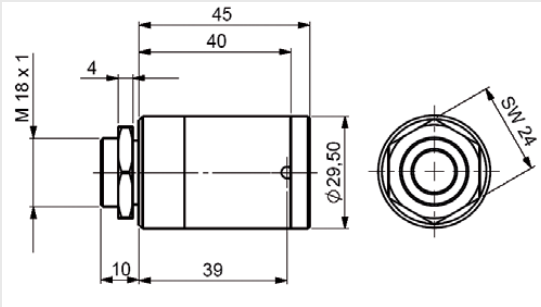


Optics with CF-lens, D:S = 15:1

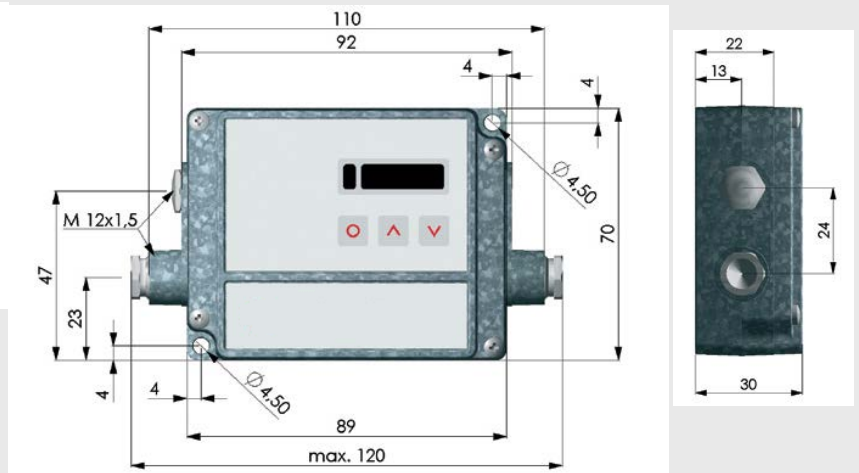


## Dimensions

Dimensions massive housing incl. sensing head

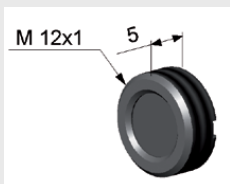


Electronics

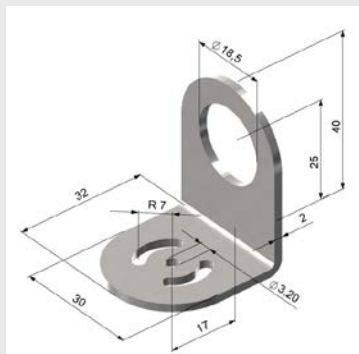


## Accessories (examples)

CF-lens with external thread (AC-SSS-CFE)



Mounting bracket, adjustable in one axis (AC-SSS-FBMH)



Air purge collar (AC-SSS-APMH)

