

PSC-4LT

Pyrometer for Industrial, R&D and Medical applications

Compact digital pyrometer with 4-20 mA and RS-485 interface



Features

- Temperature range: 0 °C and 1000 °C
- 0/4 to 20 mA linear temperature output (switchable)
- RS-485 interface
- Two opto relay outputs
- Small sensor head
- Display and programming keyboard

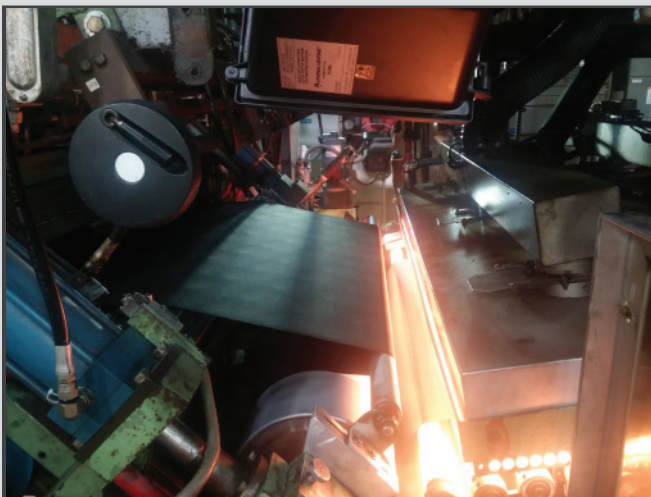
Description and applications

The PSC-4LT pyrometer is suitable for temperature measurement from 0 °C to 1000 °C on a variety of low reflection materials.

Solidly built, the PSC-4LT pyrometer works even under rough environmental conditions. The bright temperature display is visible over long distance for quick viewing. The small sensor head enables installation in very tight areas, for difficult measurement locations. The sensor head can be operated in high ambient temperatures up to 180°C / 356°F.

The IR sensor's linear output signal of 0/4 to 20 mA simplifies implementation into pre-existing measuring and controlling systems. The device is equipped with a galvanically isolated RS-485 Modbus RTU interface, which allows settings customization and software evaluation in bus systems.

All parameters are adjustable via push-buttons and displayed directly on the aluminum cast electronics box or via PSCSpot software.



Typical applications:

- Paper and packaging industry
- Infrared ovens and dryers
- Glass and ceramics industry
- Gypsum board
- Plastics
- Food
- Wood and powders
- Food and liquids

PSC-4LT

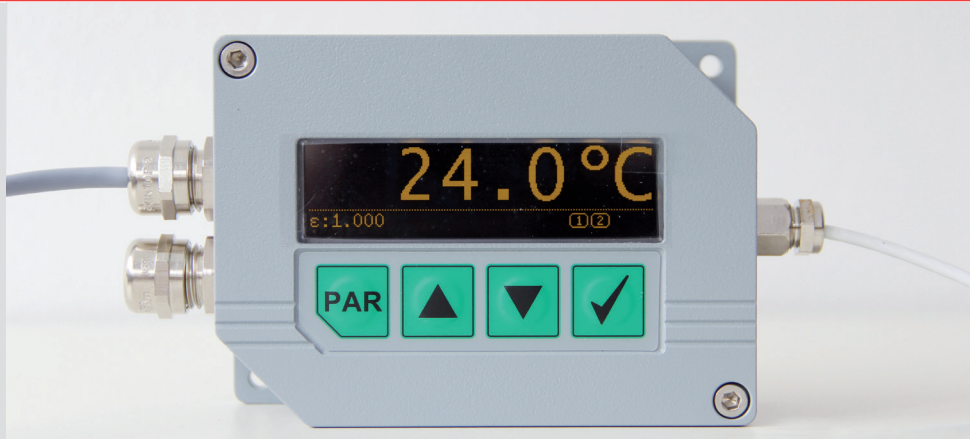
Pyrometer for Industrial, R & D and Medical Applications

Specifications

Model	PSC-4LT		
Temperature range	0 °C to 1000 °C		
IR sensor head cable length	2.5 m	5 m	15 m
Model number	PSC-4LT-CB2.5	PSC-4LT-CB5	PSC-4LT-CB15
Spectral range	8 to 14 μ m		
Fixed optics / FOV	20 : 1		
Alarm relays	2 $\times$ opto relay switching outputs, max. 60 V DC/42 V AC eff 500 mA		
Emissivity ϵ	0.200 to 1.000, adjustable (factory setting when delivered: 1.000)		
Sub temperature range	adjustable within temperature range, minimum span 50 °C		
Response time (t_{95})	100 ms, adjustable up to 100 seconds		
Measurement uncertainty ¹	1 % of measured value in °C or 1 K ²		
Reproducibility ¹	0.5 % of measured value in °C or 0.5 K ²		
NETD ³	< 0.1 K ⁴		
Output	0/4 to 20 mA, switchable, max. burden 700 Ω		
Interface	RS-485 (galvanically isolated), half duplex, max. baudrate 115 kBd, data protocol Modbus RTU		
Input Signal	input to delete maximum and minimum value storage		
Data storage	minimum and maximum value (peak picker)		
Controls	temperature display, keyboard and display for adjusting parameters		
Parameters ⁵	emissivity, transmission, response time, storage, analog output, sub temperature range, ambient compensation, relay output alarms, address, baudrate, temperature unit °C or °F		
Power supply	24 V DC $\pm$ 25 %, residual ripple 500 mV		
Power consumption	approx. 2 W		
Operating temperature	head: 0 to 180°C // 0 to 356°F, electronics box: 0 to 70°C // 0 to 158°F		
Storage temperature	-20 to 70 °C // -4 to 158°F		
Safety class	IP65 (DIN EN 60529, DIN 40050)		
Weight	approx. 500 g // 1.1 lbs		
Dimensions	approx. 110 mm $\times$ 80 mm $\times$ 40 mm // 4.3" $\times$ 3.1" $\times$ 1.5" (electronics box)		
CE symbol	according to EU regulations		
Test regulations	EN 55 011: 1998,		
Scope of delivery	PSC-4LT with sensor head, electronics box, manual, inspection sheet, PSCSpot software		

¹ Specifications for black body, $T_{\text{ambient}} = 23\text{ °C}$, $t_{95} = 1\text{ s}$. ² Whichever is higher value. ³ Noise equivalent temperature difference. ⁴ For $T_{\text{ambient}} = 23\text{ °C}$, $t_{95} = 500\text{ ms}$, $\epsilon = 1$, $T_{\text{Object}} = 100\text{ °C}$. ⁵ Adjustable via keyboard display, and software. Model example: PSC-4LT-CB2.5 -- A PSC-4LT unit with 2.5 meter sensor cable

Display and Keyboard



PSC-4LT

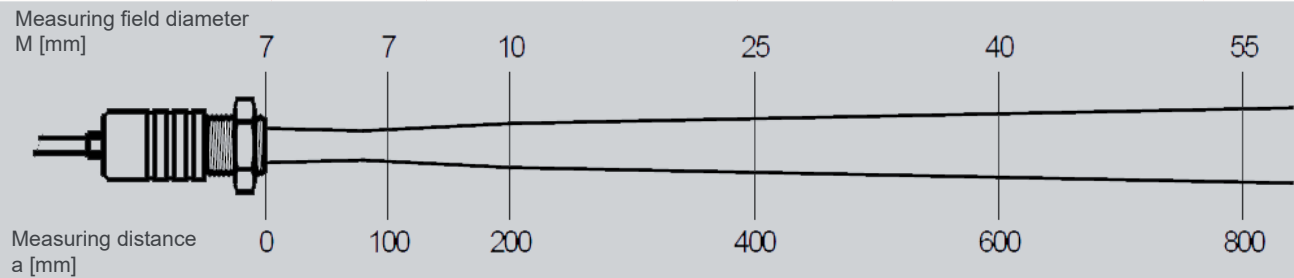
Pyrometer for Industrial, R&D and Medical applications

FOV 20:1

Distance to Spot Size

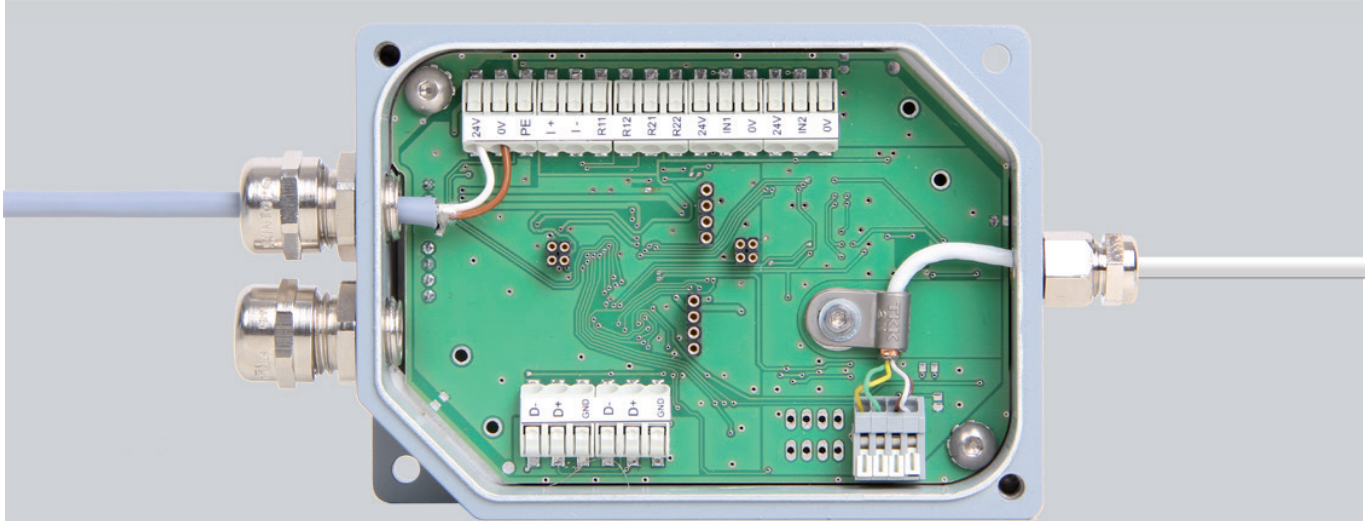
Measuring distance a [mm]	0	85	100	200	400	600	800
	Measuring field diameter M [mm]						
PSC-4LT (0 °C to 1000 °C)	7.0	6.0	7.0	10.0	25.0	40.0	55.0

Measuring field diameter



Electronics box

Opened electronics box



24V	Power supply +24 V DC	D–	D– RS-485
0V	Power supply 0 V DC	D+	D+ RS-485
PE	Potential GROUND, screen	GND	GND RS-485
I +	+ Analog output 0/4 to 20 mA	D–	D– RS-485
I –	– Analog output 0/4 to 20 mA	D+	D+ RS-485
R11	Digital output Relay 1 pin 1, max. 60 V DC/42 V AC _{eff} 500 mA	GND	GND RS-485
R12	Digital output Relay 1 pin 2, max. 60 V DC/42 V AC _{eff} 500 mA		
R21	Digital output Relay 2 pin 1, max. 60 V DC/42 V AC _{eff} 500 mA	NTC gb	Temperature detector, YELLOW (internal detector head)
R22	Digital output Relay 2 pin 2, max. 60 V DC/42 V AC _{eff} 500 mA	NTC gn	Temperature detector, GREEN (internal detector head)
24V	+ Feed-in for function input	DET br	Detector head, detector signal (–), BROWN
IN1	Function input 1, delete data storage	DET ws	Detector head, detector signal (+), WHITE
0V	– Feed-in for function input		
24V	+ Feed-in for function input		
IN2	Function input 2		
0V	– Feed-in for functional input		

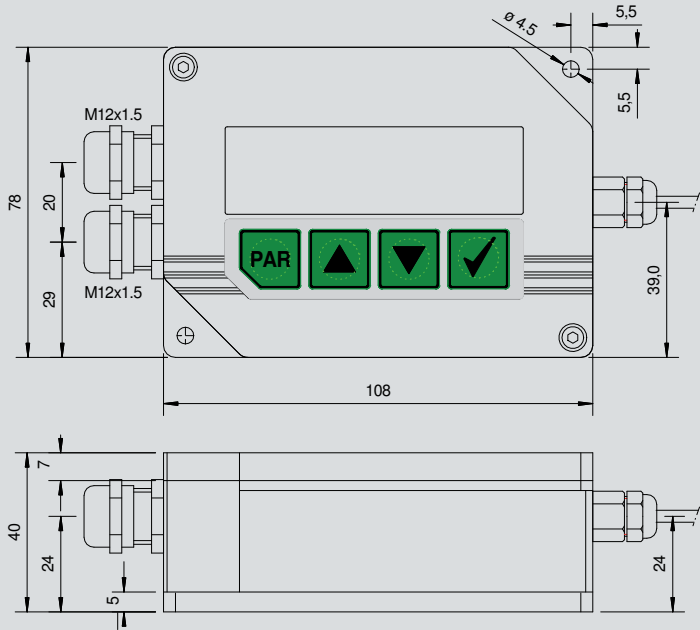
PSC-4LT

Pyrometer for industrial, R & D and medical applications

Electrical, mechanical and optical accessories ¹		Part number
Mounting bracket	fixed, stainless steel	PSC-3310A21014
Air purge		PSC-3310A22041
Air purge	Right angle	PSC-3310A22045
Compact housing	with air purge	PSC-3310A22040
Mirror (right angle)	90°	PSC-3310A31030
Interface module	RS-485 to USB	PSC-3310A14020

¹ More accessories available.

Accessories		
Mounting bracket	Air purge	Compact housing
Part number: PSC-3310A21014 	Part number: PSC-3310A22041 	Part number: PSC-3310A22040 
Air purge, right angle	Mirror	Power supply 24 VDC // 1.5 amp
Part number: PSC-3310A22045 	Part number: PSC-3310A31030 	Part number: 950-004 

Dimensional drawing - pyrometer and sensor head	
	

Process Sensors
787 Susquehanna Avenue
Franklin Lakes, NJ 07417
PH: 774-399-0461

PROCESS SENSORS CORPORATION
www.processsensorsir.com
irtemp@kpmanalytics.com

KPM Analytics
8 Technology Drive
Westborough, MA 01581
PH: 774-399-0500