PSC-A44G

Digital pyrometer for Glass industry applications

PROCESS SENSORS® CORPORATION

a KPM ANALYTICS brand

Overview

Digital pyrometer with analog and digital outputs

Features

- Temperature ranges from 50 °C to 2500 °C
- 0/4 to 20 mA output
- RS-485 Modbus RTU interface
- Fast response time from 5 ms
- Several fixed optics available (100, 300, and 800)
- Robust stainless steel housing

Description and applications

The digital pyrometer PSC-A44G is specifically designed to measure glass surface for applications in the glass industry.

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

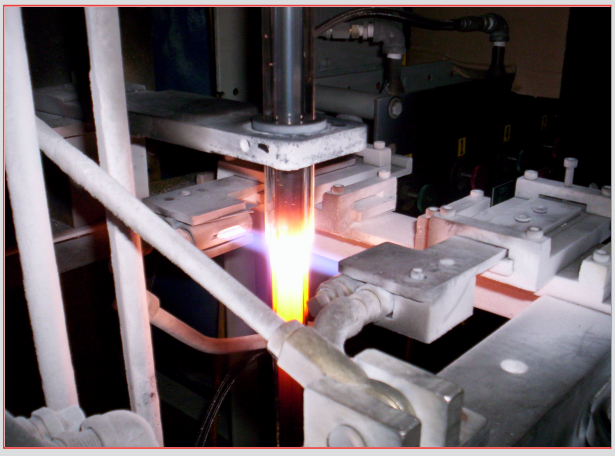
The stainless steel housing and rugged stainless steel cooling jacket with air purge ensures reliable operation in harsh environments. With a response time of only 5 ms (t_{95}), these pyrometers are suitable for fast measuring processes. Several fixed focus optic types enable small spot size diameters from 1.6 mm.

The optional integrated LED aiming light offers exact alignment to the measuring object. The LED size is almost identical to the measuring spot size and visible even at high temperatures.

By using a optional interface module (RS-485 to USB) parameters such as emissivity, sub range, response time, and peak picker can be easily adjusted by using the PSCSpot parameterizing and evaluation software.

Typical applications:

- Lamp glass
- Float glass
- Container glass
- Molten glass
- Automotive glass



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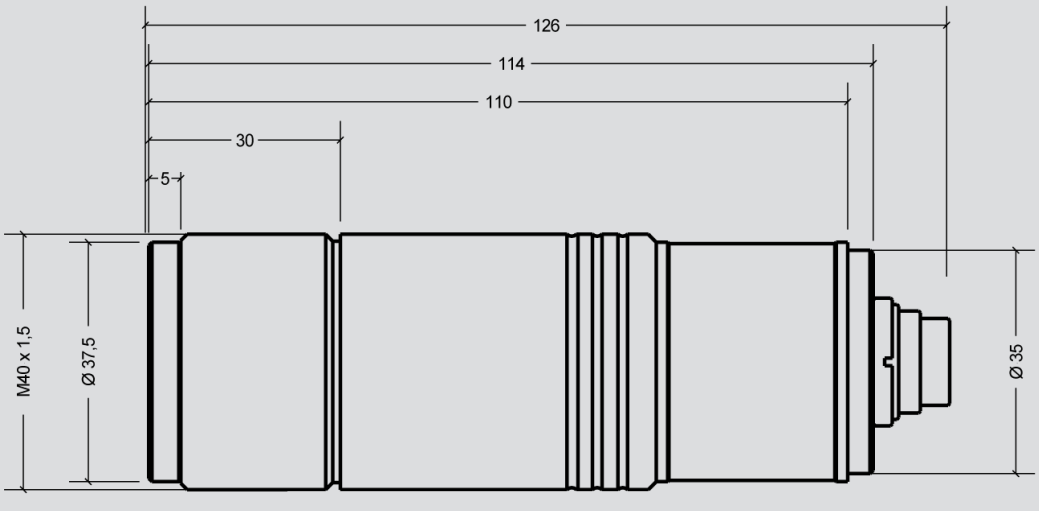
Technical data			
Model	**PSC-A44G**		
Measuring temperature range	50 °C to 1300 °C // 122°F to 2372°F	100 °C to 1800 °C // 212°F to 3272°F	500 °C to 2500 °C // 932°F to 4532°F
Sub temperature range	adjustable via RS-485 interface within temp. range, min. span 50 °C (requires software and RS485 to USB converter)		
Spectral range	5.0 µm		
Optics	several fixed optics (type 100, 300 and 800), aperture diameter D = 15 mm		
Distance ratio	approx. 50 : 1		
Measurement accuracy [1]	0.6 % of meas. value in °C or 1 K [2]		
Reproducibility [1]	0.3 % of meas. value in °C or 0.5 K [2]		
NETD [1]	0.1 K [4]		
Response time (t_{95})	5 ms (min.), adjustable via RS-485 interface		
Emissivity ε	0.050 to 1.000, adjustable via RS-485 interface		
Peak / Valley Picker	minimum and maximum value storage, adjustable via RS-485 interface		
Output	0/4 to 20 mA, temperature linear, max. burden: 700 Ω		
Interface	RS-485 (galvanically isolated), half duplex, max. baudrate 115 kBd, data protocol Modbus RTU		
Aiming	none, optional: integrated LED aiming light		
Software	PSC Spot for Windows®, optional: PSC Spot Pro		
Parameters	emissivity, response time, storage, sub range, adjustable via RS-485 interface and software		
Power supply	24 V DC ± 25 %, residual ripple 500 mV		
Power consumption	max. 1.5 W (without LED aiming light)		
Operating temperature	0 °C to 70 °C // 32°F to 158°F		
Storage temperature	–20 °C to 70 °C // -4°F to 158°F		
Weight	approx. 450 g // 1lb		
Dimensions	thread M40 × 1.5, length 126 mm		
Housing	stainless steel with connector		
Protection class	IP 65 (according to DIN EN 60529 and DIN 40050)		
CE symbol	according to EU regulations		
Scope of delivery	PSC-A44G, manual, inspection sheet, mounting screw nuts, PSC Spot for Windows® (without connecting cable, please order separately)		

[1] For black body radiator, $T_{ambient}$ = 23 °C, t_{95} = 1 s. [2] Whichever is higher value. [3] Noise equivalent temperature difference. [4] $T_{ambient}$ = 23 °C, ε = 1, t_{95} = 100 ms, $T_{Object\ (50\ °C\ to\ 1300\ °C)}$ = 200 °C, $T_{Object\ (100\ °C\ to\ 1800\ °C)}$ = 300 °C, $T_{Object\ (500\ °C\ to\ 2500\ °C)}$ = 700 °C .

Pyrometer drawing in mm



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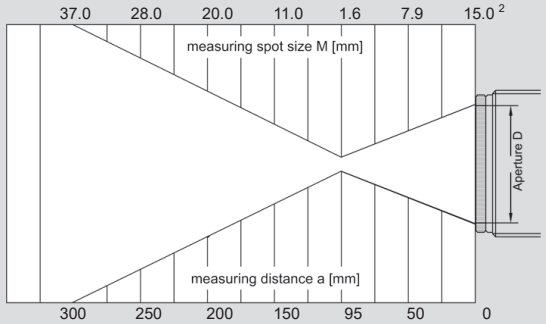
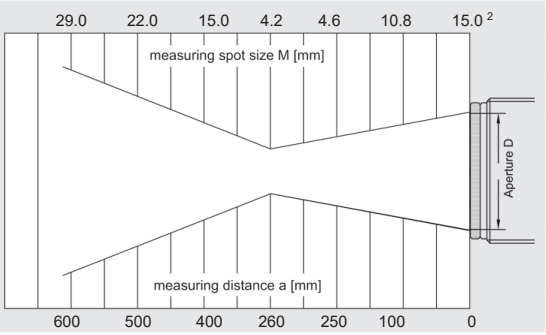
Optics 100, 300 and 800							
Optics 100 (focus point = 95 mm)							
Measuring distance [mm]	0	50	**95**	150	200	250	300
Temperature range	Measuring field diameter M [mm]						
PSC-A44G (50 to 2500 °C) without LED aiming light	15.0	7.9	**1.6**	11.0	20.0	28.0	37.0
PSC-A44G (50 to 2500 °C) with LED aiming light [1]	13.0	7.1	**1.7**	11.0	18.0	26.0	34.0

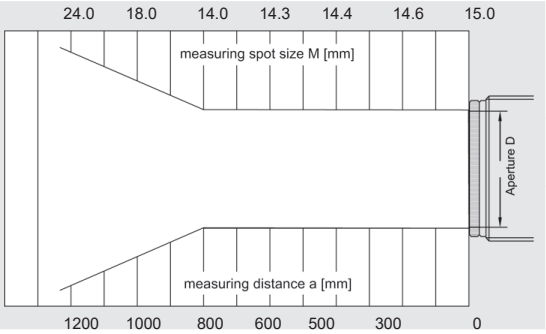


Optics 300 (focus point = 250/260 mm)							
Measuring distance [mm]	0	100	**250**	**260**	400	500	600
Temperature range	Measuring field diameter M [mm]						
PSC-A44G (50 to 2500 °C) without LED aiming light	15.0	10.8	4.6	**4.2**	15.0	22.0	29.0
PSC-A44G (50 to 2500 °C) with LED aiming light	15.0	11.0	**4.5**	5.3	17.0	25.0	32.0

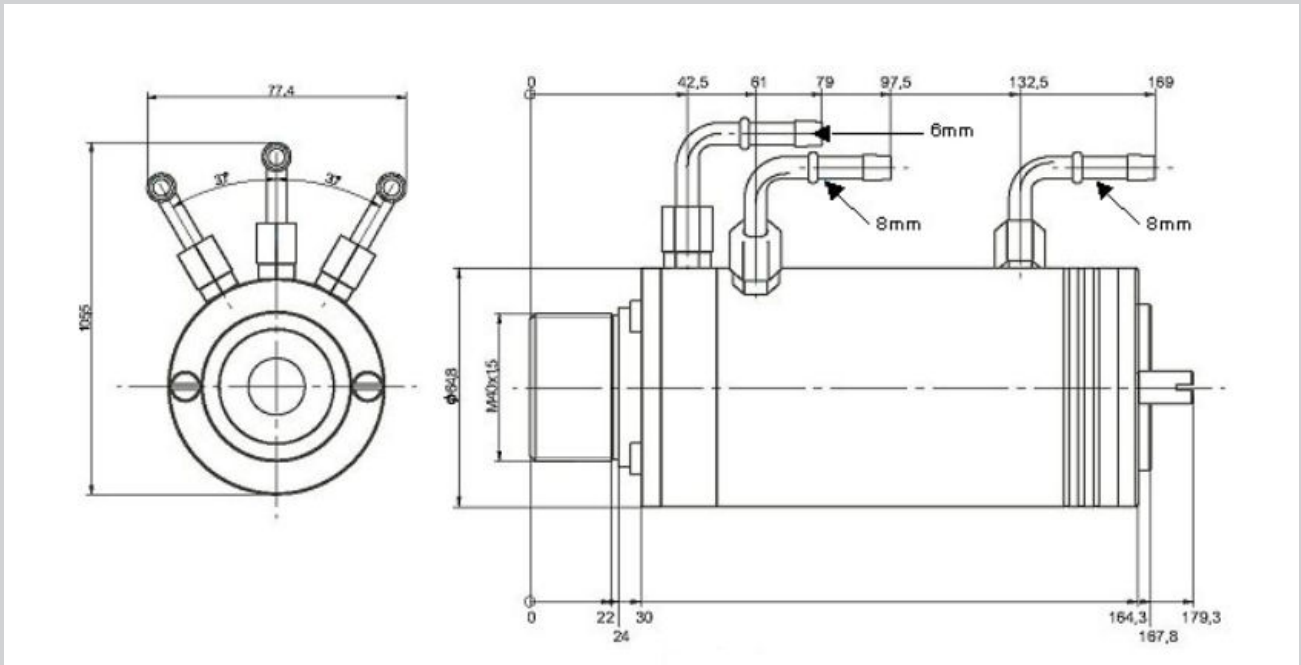


Optics 800 (focus point = 800 mm)							
Measuring distance [mm]	0	300	500	600	**800**	1000	1200
Temperature range	Measuring field diameter M [mm]						
PSC-A44G (50 to 2500 °C) without LED aiming light	15.0	14.6	14.4	14.3	**14.0**	18.0	24.0
PSC-A44G (50 to 2500 °C) with LED aiming light	15.0	14.6	14.4	14.3	**14.0**	18.0	24.0

[1] With attachment lens tubus. Aperture D = 13 mm, length 24 mm, ∅ 19 mm. [2] Target size without LED aiming light.



Drawing of Cooling Jacket (in mm)



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Electrical, mechanical and optical accessories[1]			Order number	
Connecting cable, straight plug, 12-pin	Connecting cable, with LED light button, right angle plug, 12-pin	length 2 m length 5 m length 10 m length 15 m length 20 m length 25 m length 30 m	PSC-3310A11111 PSC-3310A11112 PSC-3310A11113 PSC-3310A11114 PSC-3310A11115 PSC-3310A11116 PSC-3310A11117	PSC-3310A11151 PSC-3310A11152 PSC-3310A11153 PSC-3310A11154 PSC-3310A11155 PSC-3310A11156 PSC-3310A11157
Interface module		RS-485 to USB	PSC-3310A14020	
Power supply		24 V DC, 0.6 A	PSC-950-004	
Mounting bracket		fixed, adjustable	PSC-3310A21010 PSC-3310A21011	
Ball and socket mounting			PSC-3310A21012	
Air purge		stainless steel, purge air 0.1 to 0.5 bar, oil-free	PSC-3310A22010	
Cooling jacket		stainless steel, with integrated air purge unit	PSC-3310A23010	
Vacuum flange		KF 16 (without window) with zinc selenide window	PSC-3310A24010 PSC-3310A24010 / PSC-3310A34041	
Digital Display		For the connection in local networks and parameterizing		

[1] More accessories available.

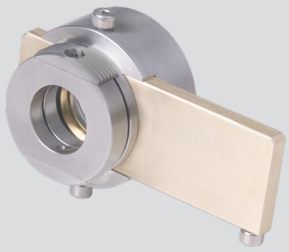
Accessories

Adjustable mounting bracket

Order number: PSC-3310A21011

Window slide (without window)

Order number: PSC-3310A21210



Air purge unit for series 40/42/44

Order number: PSC-3310A22010

Cooling jacket

Order number: PSC-3310A23010

24 VDC Power Supply

Order number: PSC-950-004

Digital display

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