

IMPAC SERIES 600

Digital, modular pyrometer with exchangeable sensor heads for non-contact temperature measurement of non-metallic or coated metallic surfaces between -40 to 700°C (-40 to 1292°F).



The Impac® Series 600 is a digital, modular pyrometer series that provides a highly customizable design with easy installation and maintenance. The IN 600 is a long wavelength digital pyrometer best suited for non-contact temperature measurement on non-metallic or coated metallic objects.

The modular concept allows for various combinations of system components: converter box, sensor cables, sensor heads, multi-sensor box. The standard configuration includes an electronic converter box, a sensor cable, and a removable sensor head to allow for easy exchange. Each converter box can alternatively connect up to two sensor heads or up to two optional multi-sensor boxes that connects up to four sensor heads each.

PRODUCT HIGHLIGHTS

- Removeable sensor heads for easy exchange without the need to remove the complete sensor cable and without recalibration
- Connection of up to 8 sensor heads to one converter box (8 measuring points in one pyrometer system)
- Converter box available with or without display
- Optional communications: analog and/or RS-232/RS-485

AT A GLANCE

Temperature Range

IN 600

-40 to 700°C (-40 to 1292°F)

Spectral Range

Sensor Heads IN 600: 8 to 14 μm

Repeatability

0.5% of reading in °C or 0.8°C

TECHNICAL DATA¹

Measurement Specifications	
Temperature Range	-40 to 700°C (-40 to 1292°F)
Sub Range	Adjustable; min. range 51°C
Spectral Range	8 to 14 μm
Resolution	1/10°C (1/10°F, 1°F > 1000°F measuring temp.)
Emissivity ϵ	10 to 120% adjustable in steps of 0.1%
Measurement Uncertainty ($\epsilon = 1$, $t_{90} = 1$ s, $T_{\text{amb}} = 15$ to 30°C)	0 to 700°C: 0.7% of reading in °C or 1°C ²
	0 to -20°C: 2°C
	-20 to -40°C: 3°C
	T_K : 0.03% per °C or 0.05°C per °C (25°C ambient temperature)
Repeatability	0.5% of reading in °C or 0.8°C ²
Optics	Distance Ratio: 2:1, 10:1, or 20:1

Electrical Specifications	
Power Supply	5 VDC (when connected via USB) or 10 to 30 VDC, ripple < 0.5 V, current consumption dependent on configuration
Load	Max 500 Ω
Output Impedance	18 Ω (for thermocouple or voltage output)

Environmental Specifications		
Protection Class	IP 65	
Max Ambient Temperature	Converter box	0 to 65°C (32 to 149°F)
	Sensor head (IN 600), multi-sensor box, sensor cables	0 to 80°C (32 to 176°F)
Storage Temperature	Converter box	-20 to 70°C (-4 to 158°F)
	Sensor head, sensor cables, multi-sensor box	-20 to 85 (-4 to 185°F)
Relative Humidity	10 to 95%, non-condensing	
Weight	Converter box with display	~395 g (~13 oz)
	Converter box without display	~380 g (~13.4 oz)
	Standard sensor head	~40 g (~1.4 oz)
	Multi-sensor box	~260 g (~9.2 oz)
Housing	Converter box: Aluminium	
	Sensor head: Stainless steel	

¹ The determination of the technical data of this pyrometer is carried out in accordance with VDI/VDE IEC TS 62942-2, the calibration / adjustment in accordance with VDI/VDE 3511, Part 4.4.

² The larger value is valid. The sensor head must be in constant ambient temperature for at least 15 minutes.

TECHNICAL DATA CONTINUED

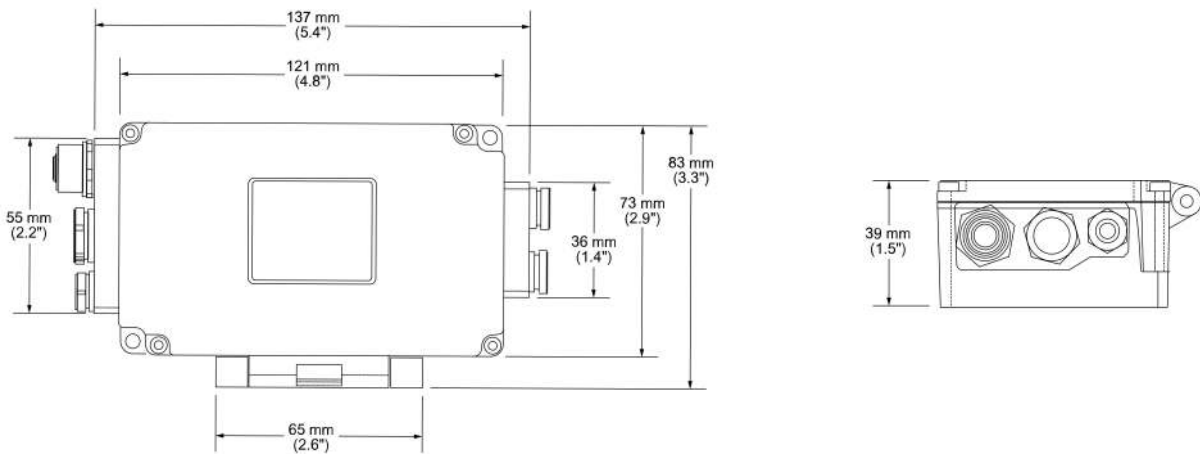
Interface and Communication	
Digital Interface	Optional: RS-232/RS-485 (switchable)
Analog Output	Selectable: Linear current (0/4 to 20 mA), voltage (0 to 5 V) or thermocouple (type J or K)
Max Value Storage	Clear time: OFF, 0.1 s, 0.25 s, 0.5 s, 1 s, 5 s, 25 s, external, auto
Response Time t_{90}	180 ms, switchable: 0.5 s, 1 s; 2 s; 5 s; 10 s or 30 s
Output for Sensor Head Temp	10 mV/°C or 10 mV/°F
Relays Contact	Isolated relays contact, 50 VDC, 0.2A; temperature and hysteresis adjustable
Temp Display ¹	Color LCD (262,000 colors)

¹ Only for versions with integrated display

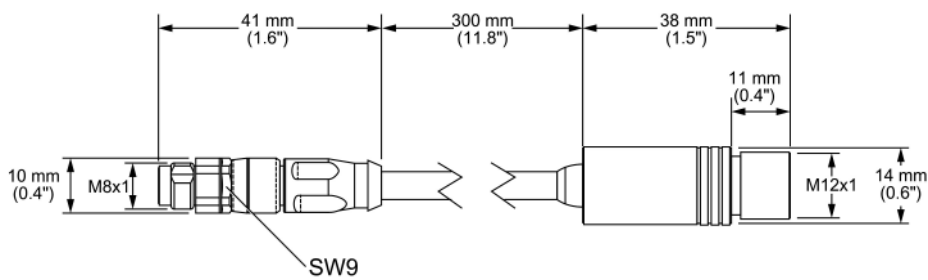
IMPAC SERIES 600

DIMENSIONS

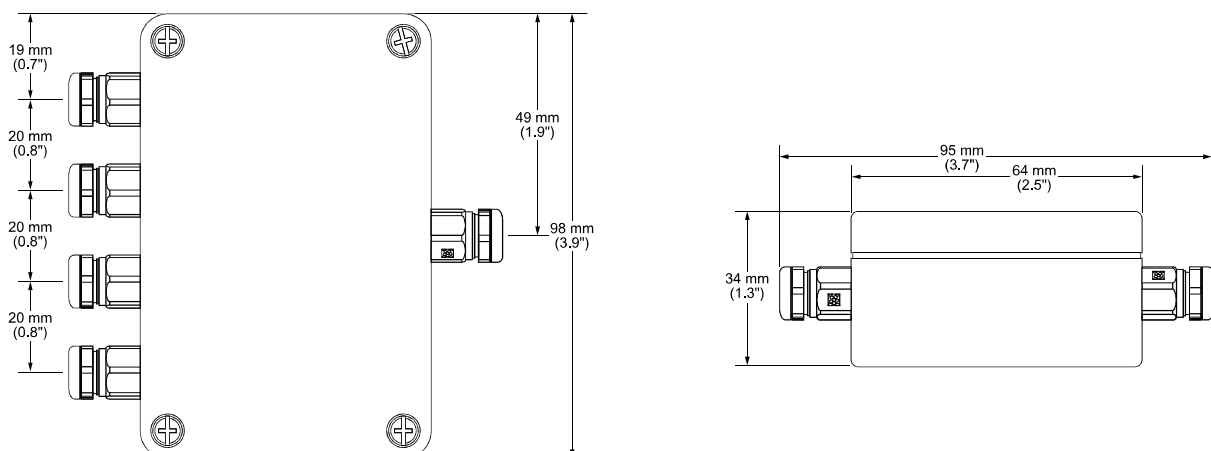
Converter Box



Sensor Head and Connector



Multi-Sensor Box

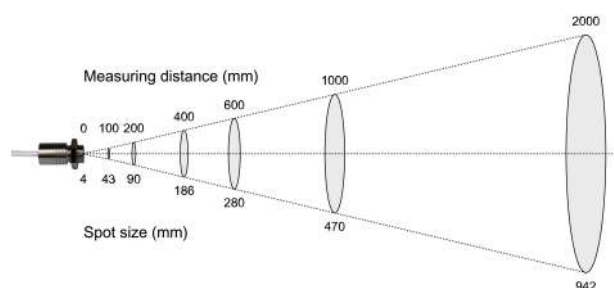


OPTICS

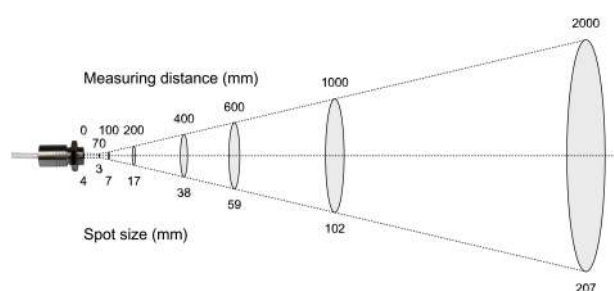
The IN 600 sensor heads are available with 3 different optics: 1N (2:1 distance ratio), 2N (10:1 distance ratio) and 3N (20:1 distance ratio).

The spot sizes at different measuring distances are shown in the tables below; intermediate values have to be interpolated.

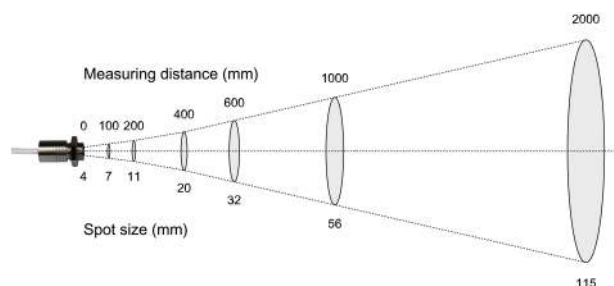
Optics 1N, 2:1	
Measuring Distance a [mm]	Spot Size M [mm]
0	4.1
100	43.2
200	90
400	186
600	280
1000	470
2000	942



Optics 2N, 10:1	
Measuring Distance a [mm]	Spot Size M [mm]
0	4.1
70	3.3
100	6.6
200	17
400	38.1
600	59.3
1000	101.8
2000	207.4



Optics 3N, 20:1	
Measuring Distance a [mm]	Spot Size M [mm]
0	4.1
100	7.4
200	10.6
400	19.8
600	31.8
1000	55.7
2000	115.2



REFERENCE NUMBERS

Converter Box	
PN	Description
3 917 010	ICB 600 converter box with display, no digital interface
3 917 020	ICB 600-RS converter box with display, RS-232/RS-485
3 917 080	ICB 600-N converter box without display, no digital interface
3 917 090	ICB 600-N-RS converter box without display, RS-232/RS-485

Sensor Heads	
PN	Description
3 917 200	IN 600, MB 7, 8 to 14 µm, -40 to 700°C, optics 1N (2:1)
3 917 210	IN 600, MB 7, 8 to 14 µm, -40 to 700°C, optics 2N (10:1)
3 917 220	IN 600, MB 7, 8 to 14 µm, -40 to 700°C, optics 3N (20:1)

Other	
PN	Description
3 917 150	Multi-sensor box

Sensor and Extension Cables	
PN	Description
3 921 200	Sensor cable, with connector, 3 m
3 921 210	Sensor cable, with connector, 15 m
3 921 220	Extension cable, with connector, 15 m
3 921 230	Sensor cable, w/o connector, 1 m
3 921 240	Sensor cable, w/o connector, 3 m
3 921 250	Sensor cable, w/o connector, 15 m

Electrical Connection Cables	
PN	Description
3 821 010	Electrical connection cable, 2 m, 10-wire, with digital connection (1 m)
3 821 980	Electrical connection cable, 15 m, 10-wire, with digital connection (1 m)
3 921 260	Electrical connection cable, 2 m, for power supply and thermocouple output
3 921 270	Electrical connection cable, 2 m, 7-wire, analog out only
3 921 280	Electrical connection cable, 15 m, 7-wire, analog out only

REFERENCE NUMBERS (CONTINUED)

Other Accessories	
PN	Description
3 834 370	Fixed mounting angle (for sensor head or air purge with sensor head 10:1)
3 834 380	Adjustable mounting angle (for sensor head or air purge with sensor head 10:1)
3 835 800	DIN rail mount adapter for converter box
3 835 810	Air purge (for sensor head 10:1 and 20:1)
3 835 820	Air purge (for sensor head 2:1)
3 835 840	Cooling jacket for optical head, with air purge, cooling hose 0.75 m
3 835 850	Cooling jacket for optical head, with air purge, cooling hose 2.5 m
3 835 830	90° mirror (only for sensor head 10:1)
3 890 560	DA 6000-N: LED digital display with digital input RS-232 and possibility for pyrometer parameter settings
3 890 570	DA 6000-N digital display, to allow adjustment of pyrometer through RS-485 interface
3 826 500	HT 6000: portable battery driven indicator and instrument for pyrometer parameter settings; RS-232 / RS-485
3 852 290	Power supply NG DC for DIN rail mounting; 100 to 240 VAC $\Rightarrow$ 24 VDC, 1 A



ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

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