

Rugged, Industrial, Infrared Temperature Transmitters with 4 to 20 mA Output

OS1600/1700/1800 Series



- ✓ Wide Temperature Range of -45 to 2500°C (-50 to 4500°F)
- ✓ 3 Models to Choose From
- ✓ 6 Infrared Spectral Responses



OS1800 Series sensor with integral electronics/display.

OS1600 Series OEM style sensor and remote electronics.



Shown smaller than actual size.



OS1700 Series sensor with integral electronics.

- ✓ Linear 4 to 20 mA Output
- ✓ Simple 2-Wire Installation
- ✓ 10 to 40 Vdc Power Operation
- ✓ Response Time Adjustable from 0.2 to 5.0 Seconds
- ✓ Interfaces with Panel Meters, Controllers, Recorders, Dataloggers, and Computers



Standard 4 to 20 mA output can be used with data acquisition equipment for computer-based monitoring and control.

Applications

- | | |
|--------------------|----------------------------|
| ✓ Web Drying | ✓ Food Processing |
| ✓ Thermoforming | ✓ Printing |
| ✓ Glass Processing | ✓ Wave Soldering |
| ✓ Heat Treating | ✓ Semiconductor Processing |

The OS1600, OS1700, and OS1800 Series are a complete family of non-contact infrared 2-wire temperature transmitters, with temperature ranges from -45 to 2500°C (-50 to 4500°F). This family provides the ultimate in performance and versatility at an economical price, with 2-wire simplicity, a choice of 6 infrared spectral responses, and a broad range of temperature capabilities. The linear 4 to 20 mA output

RUGGED!

INDUSTRIAL!



Rear view showing sensor.



OS1811-112-S shown actual size.

signal allows the sensor to be interfaced with a variety of remote devices: indicators, controllers, recorders, and/or computers, etc.

For fine tuning, the sensors have an adjustable response time of 0.2 to 5.0 seconds, an emissivity adjustment of 0.1 to 0.99, and an adjustable peak hold option. Accessories include an air purge collar to protect the lens and a water cooling/air purge unit for high ambient exposure temperatures up to 120°C (250°F).

Completely self-contained in a rugged, compact NEMA 4 (IP66) enclosure, the OS1800 Series sensor offers the additional convenience of a built-in digital display for local on-site readings. The OS1800 Series is supplied complete with OS1800-SB swivel mounting bracket for aligning the sensor (on the back of the unit) to “look” at the surface being measured.

The OS1700 Series is completely self-contained in a rugged, compact housing. Combining the electronics with the infrared sensor, the OS1700 is ideal for OEM and multi-unit installations. Mounting

The OS1800 Series sensor offers the convenience of a built-in digital display for local on-site readings and a swivel mounting bracket for ease of alignment.

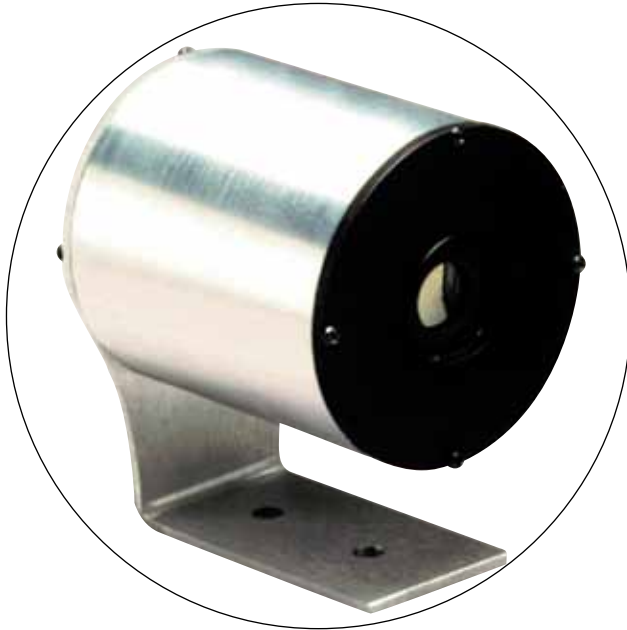
accessories for the OS1700 are optional and must be ordered separately (see accessory ordering matrix on the following pages).

The OS1600 Series rugged sensor combines a miniature sensing head with remote electronics for applications in restricted areas. It is designed for OEM and multi-unit applications where cost and space are limiting factors. The OS1600 Series comes complete with infrared sensing head, 3 m (10') of interconnecting cable, electronics board, OS1600-2LN mounting lock nuts, OS1600-MB mounting base, and complete operator's manual.

Infrared Temperature Transmitters Available in OEM Style with Remote Electronics, with Integral Electronics or with Integral Display in a NEMA 4 (IP66) Enclosure.



OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.



OS1700 units are compatible with current input process indicators. DP25-E meter (shown) sold separately. See omega.com

To Order		
Model No.	Description	Applications
OS1611(*)-(**)	Remote IR sensing head and electronics	High-temperature applications such as metals, foundries, heat treating, glass melting and semiconductor processing
OS1711(*)-(**)	Combined IR sensor head with electronics	
OS1811(*)-(**)	Combined IR sensor, electronics, NEMA 4 housing and integral display	
OS1621(*)-(**)	Remote IR sensing head and electronics	Medium temperature measurements involving the production and processing of metals
OS1721(*)-(**)	Combined IR sensor head and electronics	
OS1821(*)-(**)	Combined IR sensor, electronics, NEMA 4 housing and integral display	
OS1631(*)-(**)	Remote IR sensing head and electronics	Insensitive to combustion gases and flames; ideal for measuring surface temperatures inside furnaces and combustion chambers where flames are present, e.g., lime kilns and reheat furnaces
OS1731(*)-(**)	Combined IR sensor head and electronics	
OS1831(*)-(**)	Combined IR sensor, electronics, NEMA 4 housing and integral display	
OS1641(*)-(**)	Remote IR sensing head and electronics	Designed to measure glass surface temperatures in glass processing; also for drying where quartz infrared heaters are used
OS1741(*)-(**)	Combined IR sensor head and electronics	
OS1841(*)-(**)	Combined IR sensor, electronics, NEMA 4 housing and integral display	
OS1651(*)-(**)	Remote IR sensing head and electronics	For plastic film and plastic based materials; also for high-temperature products opaque at 8 microns
OS1751(*)-(**)	Combined IR sensor head and electronics	
OS1851(*)-(**)	Combined IR sensor electronics, NEMA 4 housing and integral display	
OS1661(*)-(**)	Remote IR sensing head and electronics	General purpose low-temperature processing applications such as paper, textiles, plastics, food, printing, and rubber
OS1761(*)-(**)	Combined IR sensor head and electronics	
OS1861(*)-(**)	Combined IR sensor electronics, NEMA 4 housing and integral display	

* Specify temperature range code from temperature range table.

** Specify focal option from focal option table.

Ordering Example: OS1811-16-C, combined IR sensor, electronics, NEMA 4 housing and integral display, plus OS1800-AP, air purge. OCW-3, OMEGACARESM extends standard 1-year warranty to a total of 4 years.



DP41-E process indicator sold separately. See omega.com



Focal Options
(see optical diagrams/ fields of view on next page)

Focal Option Code	Description
S	Standard optics (1" @ 15")
C	Close focus optics (0.5" @ 7")
D	Distant optics (3" @ 5')

Specifications

- Accuracy:** ±0.75% FS
- Repeatability:** ±0.5% rdg
- Working Distance:** 6" to infinity
- Response Time:** Adjustable from 0.2 to 5.0 sec (to reach 99% of final value)
- Emissivity:** OS1800 is digitally adjustable from 0.1 to 0.99; OS1600/ OS1700 are adjustable by analog trim pot from 0.1 to 0.99
- Output:** Linear 4 to 20 mA DC, isolated
- Input Power:** 10 to 40 Vdc
- Ambient Temperature Range:**
 OS1600: 0 to 75°C (32 to 165°F)
 OS1700, OS1800: 0 to 60°C (32 to 140°F)
- Enclosure:** OS1800; NEMA 4 (IP65)
- Dimensions:**
 OS1600: Sensor 3.8 x 9.5 cm (1.5 x 3.75"), circuit board 10.2 x 11.4 cm (4 x 4.5")
 OS1700: 10.8 x 7.0 cm (4.5 x 2.75")
 OS1800: 11.5 x 11.5 x 8.9 cm (4.5 x 4.5 x 3.5")
- Weight:**
 OS1600: Sensor 333 g (11.75 oz), circuit board 78 g (2.75 oz)
 OS1700: 0.55 kg (1 lb 3 oz)
 OS1800: 1.7 kg (3.75 lb)

Accessories for OS1600, OS1700 and OS1800 Series

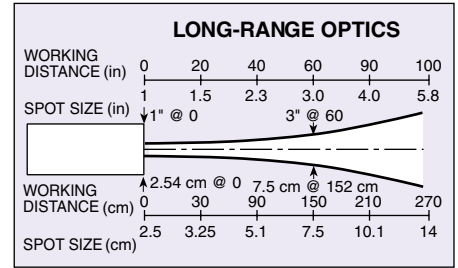
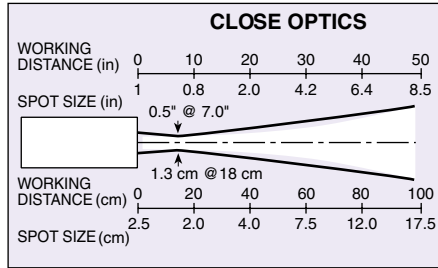
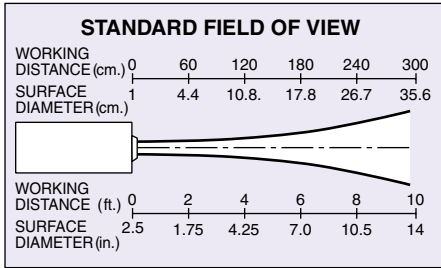
Model No.	Description
OS1600-AP	Air purge for OS1600
OS1700-AP1	Air purge for OS1700
OS1800-AP	Air purge for OS1800
OS1600-WCAP	Water cooling/air purge for OS1600
OS1800-WCAP	Water cooling/air purge for OS1800
OS1700-PMB	Pipe mounting bracket for OS1700
OS1800-PMB	Pipe mounting bracket for OS1800
OS1700-SB	Swivel bracket for OS1700 Series
OS1800-SB	Swivel bracket for OS1800 Series
OS1600-2LN	2 locknuts for OS1600 Series
OS1600-MB	Mounting base for OS1600 Series
OS1600-C-10	Replacement cable for OS1600, 3 m (10')
OS1600-C-25	Replacement cable for OS1600, 7.6 m (25')
OS1600-C-50	Replacement cable for OS1600, 15 m (50')
OS1600-C-100	Replacement cable for OS1600, 30 m (100')
PSR-24S	Regulated power supply, US plug, 90 to 264 Vac input, 24 Vdc output, 400 mA, screw terminals, UL
PSR-24L	Regulated power supply, US plug, 90 to 264 Vac input, 24 Vdc output, 400 mA, stripped leads, UL
PSR-24L-230	Regulated power supply, European plug, 230 Vac input, 24 Vdc output, 400 mA, stripped leads, CE
PSU-93	Unregulated power supply, 16 to 23 Vdc, 300 mA max, screw terminal

Options

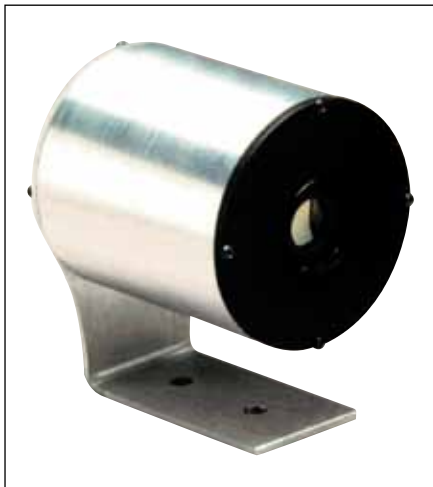
Ordering Suffix	Description
-APH	Adjustable peak hold†

† Replaces adjustable response time feature in OS1700 and OS1800 Series.

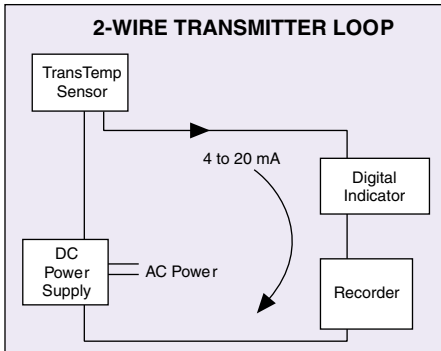
Focal Options Available for OS1600, OS1700, and OS1800 Series



Standard 4 to 20 mA output can be used with data acquisition equipment for computer-based monitoring and control.



OS1700 features screw terminal connectors for fast, easy hook-up.



Example of 2-wire transmitter loop for OS1600, OS1700 and OS1800 Series.

Temperature Range and Emissivity Table

Model No.	Spectral Response (Microns)	Temperature Range Code	Temperature Range	
OS1611 OS1711 OS1811	1.5 to 1.65*	11	260 to 475°C	
	1.5 to 1.65*	12	375 to 650°C	
	0.8 to 1.0	13	475 to 800°C	
	0.8 to 1.0	14	650 to 1100°C	
	0.8 to 1.0	15	800 to 1375°C	
	0.8 to 1.0	16	975 to 1650°C	
	0.8 to 1.0	17	1100 to 1925°C	
	0.8 to 1.0	18	1375 to 2500°C	
	1.5 to 1.65*	19	500 to 900°F	
	1.5 to 1.65*	110	700 to 1200°F	
	0.8 to 1.0	111	900 to 1500°F	
	0.8 to 1.0	112	1200 to 2000°F	
	0.8 to 1.0	113	1500 to 2500°F	
	0.8 to 1.0	114	1800 to 3000°F	
	0.8 to 1.0	115	2000 to 3500°F	
	0.8 to 1.0	116	2500 to 4500°F	
OS1621 OS1721 OS1821	2.0 to 2.5	21	250 to 575°C	
	2.0 to 2.5	22	375 to 800°C	
	2.0 to 2.5	23	538 to 1100°C	
	2.0 to 2.5	24	538 to 1100°F	
	2.0 to 2.5	25	700 to 1500°F	
	2.0 to 2.5	26	1000 to 2000°F	
OS1631 OS1731 OS1831	3.7 to 3.9	31	300 to 975°C	
	3.7 to 3.9	32	425 to 1200°C	
	3.7 to 3.9	33	650 to 1750°C	
	3.7 to 3.9	34	1100 to 2200°C	
	3.7 to 3.9	35	600 to 1800°F	
	3.7 to 3.9	36	800 to 2200°F	
	3.7 to 3.9	37	1200 to 3200°F	
	3.7 to 3.9	38	2000 to 4000°F	
OS1641 OS1741 OS1841	4.9 to 5.3	41	100 to 550°C	
	4.9 to 5.3	42	250 to 800°C	
	4.9 to 5.3	43	250 to 1375°C	
	4.9 to 5.3	44	200 to 1000°F	
	4.9 to 5.3	45	500 to 1500°F	
	4.9 to 5.3	46	500 to 2500°F	
OS1651 OS1751 OS1851	7.6 to 8.4	51	30 to 300°C	
	7.6 to 8.4	52	100 to 550°C	
	7.6 to 8.4	53	250 to 800°C	
	7.6 to 8.4	54	250 to 1375°C	
	7.6 to 8.4	55	100 to 600°F	
	7.6 to 8.4	56	200 to 1000°F	
	7.6 to 8.4	57	500 to 1500°F	
	7.6 to 8.4	58	500 to 2500°F	
	OS1661 OS1761 OS1861	8 to 14*	61	-45 to 100°C
		8 to 14	62	0 to 250°C
8 to 14		63	0 to 550°C	
8 to 14		64	100 to 550°C	
8 to 14		65	150 to 1100°C	
8 to 14*		66	-50 to 200°F	
8 to 14		67	0 to 500°F	
8 to 14		68	0 to 1000°F	
8 to 14		69	200 to 1000°F	
8 to 14		610	100 to 2000°F	

* Additional cost for all ranges.