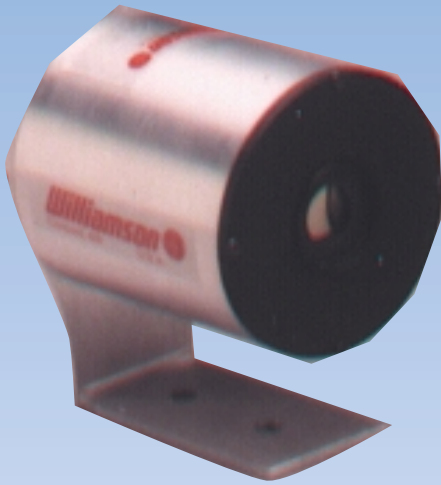
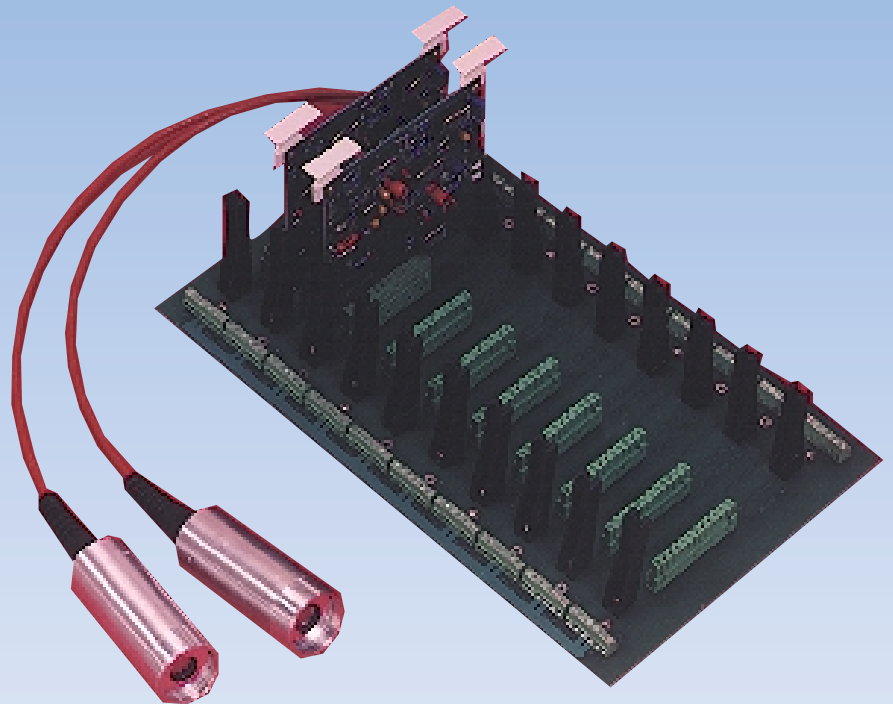


# TWO WIRE 2w TEMPERATURE TRANSMITTERS

For Noncontact Temperature Measurement and Control



TransTemp 500 Series



TransTemp 700 Series  
FiberView 710 Series



TransTemp 1000 Series  
FiberView 1100 Series

**Williamson**

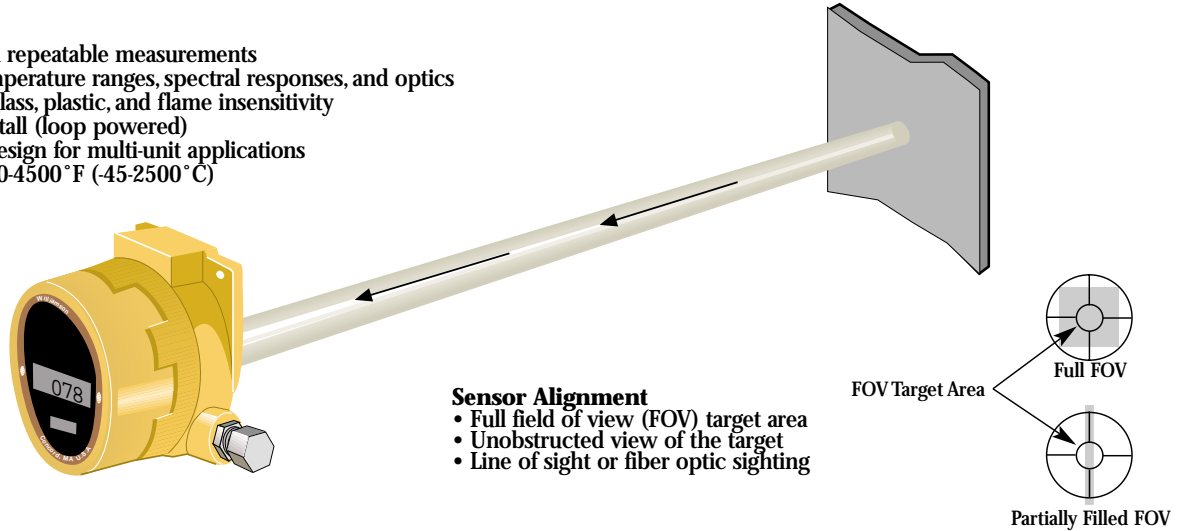
*Innovators in Noncontact Temperature Measurement*

## SOLUTIONS FOR MANY INDUSTRIAL APPLICATIONS

The two wire transmitter TransTemp and FiberView Series sensors are designed to provide high performance and low maintenance operation in demanding industrial environments. These single wavelength sensors are used to measure most common materials in general purpose applications. Typical applications are in the glass, steel, electronics, petrochemical, heat treating, paper, and plastics industries, as well as many others. As with all single wavelength designs, these sensors require an unobstructed view of the measured target and a relatively constant surface emissivity.

### Two-Wire Features

- Accurate, reliable, and repeatable measurements
- Wide selection of temperature ranges, spectral responses, and optics
- Infrared filtering for glass, plastic, and flame insensitivity
- Quick and easy to install (loop powered)
- Simple, economical design for multi-unit applications
- Temperature limits -50-4500 °F (-45-2500 °C)



## Improving Quality and Productivity Through Temperature Measurement

## HIGH PERFORMANCE FOR PROCESS MONITORING AND CONTROL

The two wire TransTemp and FiberView Series sensors are intended for use where accuracy and durability are essential to improve product quality, increase productivity, and reduce costs. With these sensors, Williamson offers superior value for temperature measurement with multi-unit and OEM applications.

**Selection of Infrared Wavelengths:** For most applications, it is recommended to select the sensor with the shortest possible wavelength in order to minimize any effects of changing emissivity. However, unique applications, such as the measurement of visually transparent materials like glass or plastics, require thoughtful wavelength selection. For these applications, Williamson offers a variety of precision narrow band infrared filters that are highlighted on the back page.

**Versatile, High Performance, Economical Design:** For optimal process monitoring and control, these sensors offer a wide variety of

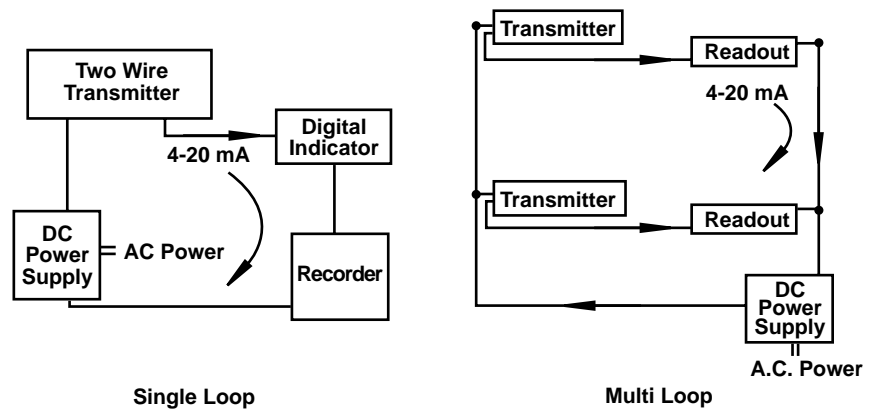
temperature ranges, infrared filters, optics, and accessories that can be used to provide accurate and repeatable temperature measurements. The two wire transmitters are available in three different configurations that will satisfy most application requirements.

- The 500 Series is a compact, self contained sensor.
- The 700 Series is a miniature sensor with remote electronics and optional fiber optic sighting.
- The 1000 Series is a rugged, compact, self contained sensor with a built in digital display and optional fiber optic sighting.

## QUICK AND EASY INSTALLATION

These simple, low price sensors all provide the convenience of a two wire installation that utilizes the same wires to transmit power and output signals. The sensors are available as a system configuration with a ¼ DIN remote digital display, which provides five simultaneous output signals, or as a stand alone sensor with a 4-20 mA output. Each series includes a protective NEMA 4 (IP65) enclosure, a standard mounting bracket for routine installations, and a variety of options and accessories to simplify installation. Remote PID control and alarm options are also available for closed loop control and turnkey applications. For optical alignment, the TransTemp Series sensors utilize a line of sight or viewing tube technique. The FiberView Series sensors use durable fiber optic cables to access targets in confined or obstructed areas, and to survive excessive heat and hostile conditions.

## Typical Two Wire Wiring Diagrams



# SYSTEM SPECIFICATIONS AND ACCESSORIES 2w

## SPECIFICATIONS FOR TWO THE WIRE TRANSMITTERS

Detailed information about the sensor temperature range, spectral response, and field of view options are included on the back page.

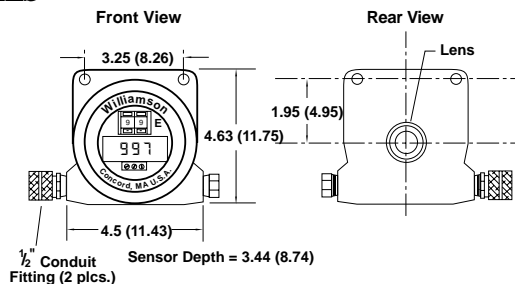
### SENSOR SPECIFICATIONS

<b>Accuracy</b>	±0.75% full scale	
<b>Repeatability</b>	±0.25% full scale	
<b>Field of View</b>	99% of the Measured Value	
<b>Input Power</b>	Standard: 10-40Vdc (50mA)	
<b>Output Signal</b>	Linear 4-20mA (0-500ohms)	
<b>Standard Sensor Adjustments</b>	Emissivity, Adjustable Response Time, and Adjustable Peak Hold (consult Williamson for exceptions with the 500 and 1000 series)	
<b>Response Time</b> (98% of reading, 4τ)	510/710/1100	Standard: 100ms to 5sec Fast (FRT): 75ms to 5sec Extended (XRT) 100ms to 15sec
	All Other 2-Wire Series	Standard: 200ms to 5sec Fast (FRT): 100ms to 5sec Extended (XRT): 200ms to 15sec
<b>Ambient Temperature Range</b>	500/1000	32-140 °F (0-60 °C)
	700	32-165 °F (0-75 °C)
	With Water Cooling: 200-350 °F (95-175 °C) max. Fiber Optic Cable: 400 °F (200 °C) max.	
<b>CE Certification</b>	EMI/RFI for Heavy Industry LVD - Low Voltage Directive	
<b>Enclosure Dimensions</b>	All Two Wire Models: NEMA 4 (IP65) Rating	
500 Series	3.125in x 2.75in dia. (7.94cm x 7cm dia.)	
700 Series	Sensor: 3.75in x 1.5in dia. (9.5cm x 3.8cm dia.) Board: 4in x 4.5in (10.2cm x 11.4cm)	
1000 Series	4.5in x 4.5in x 3.5in (11.5cm x 11.5cm x 8.9cm)	
<b>Weight</b>	500 Series	1.25 lbs (0.570kg)
	700 Series	Sensor 11.75oz (0.33kg) / Board 2.75oz (0.78kg)
	1000 Series	3.75 lbs. (1.7kg)
	<b>Warranty</b>	2 years

### SENSOR OPTIONS AND ACCESSORIES

<b>PS110/PS220</b>	Power Supply Module for Stand Alone Sensors 30Vdc (200mA) to 110/220Vac (50/60Hz)
<b>AP</b>	Air Purge
<b>WCAP</b>	Water Cooling Air Purge
<b>PM</b>	Pipe Mounting Bracket (2" NPT) (1000 only)
<b>2LN</b>	2 Lock Nuts for 700 Series Panel Mount
<b>700MB</b>	Mother Board for 700s (up to 10 Board Capacity)
<b>QD</b>	Quick Disconnect Connector (standard on 500s)
<b>Fiber Optic Cables</b>	3ft (91cm), 6ft (1.8m), 10ft (3m), 20ft (6m), 25ft (7.6m), 30ft (9.1m) (710/1100)
<b>S</b>	Sealed Fiber Cable for Protection (710/1100)
<b>GN</b>	Gooseneck System for Alignment (1100 only)
<b>AG</b>	ArmorGuard for Heavy Duty Protection (1100 only)
<b>SSB</b>	Stainless Steel Braid for Protection (1100 only)
For other accessories, consult with Williamson	

### 1000 SERIES



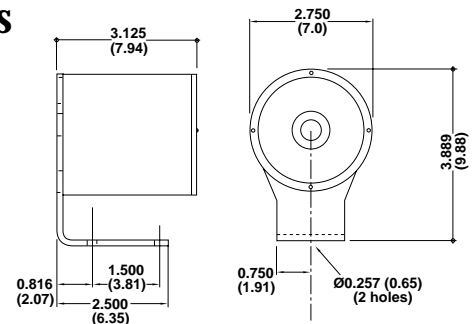
### DISPLAY SPECIFICATIONS

<b>Linear Output Signals</b>	4-20mA, 0-100mV, 0-1V, 0-10V, & 1mV/degree (scaled to temperature)
<b>Input Power</b>	110Vac (50/60Hz): 90 - 130Vac (250mA), or 220Vac (50/60Hz): 180 - 260Vac (125mA)
<b>Ambient Temperature Range</b>	32-140 °F (0-60 °C)
<b>Dimensions</b>	1/4 DIN: 8.95in x 3.78in x 3.78in (22.7cm x 9.6cm x 9.6cm)
<b>Weight</b>	4.0 lbs (1.8kg)

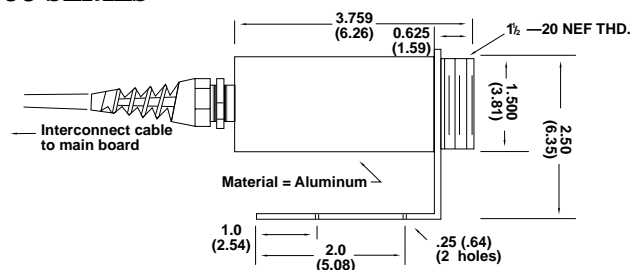
### DISPLAY MODELS AND OPTIONS

<b>20</b>	Display, Power Supply, and Five Linear Outputs
<b>22</b>	Display, Power Supply, Five Linear Outputs, and Dual Set Point Alarms and Dual Logic Controller
<b>25/25S/25RS</b>	PID Controllers with Power Supply, 4-20mA Output, and Signal Conditioning Options.
<b>RS232</b>	Optional RS232 Serial Output

### 500 SERIES



### 700 SERIES



## SENSOR SELECTION GUIDE FOR THE TWO WIRE TRANSMITTERS

FIBERVIEW 710 AND 1100 SERIES - Single-Wavelength / Two Wire Transmitters with Fiber Optics									
Sensor Model		Spectral Response (microns)	Temperature Range		Field Of View*			Fiber Cable Selection	
			(°F)	(°C)	Standard Resolution Optics (D/F)	High Resolution I Optics (D/F)	High Resolution II Optics (D/F)	Maximum Length	Cable Grade
710LT	1100LT	1.5 - 1.65	600-1100	325-575	D/2, D/12	n/a	D/50	6ft / 1.8m	Far IR
710A	1100A	1.5 - 1.65	700-1200	375-650	D/2, D/16	n/a	D/75	10ft / 3m	Far IR
710B	1100B	0.8 - 1.0	900-1500	475-800	D/.75, D/12	n/a	D/50	3ft / 91cm	Near IR
710C	1100C	0.8 - 1.0	1200-2000	650-1100	D/.75, D/16	n/a	D/75	10ft / 3m	Near IR
710D	1100D	0.8 - 1.0	1500-2500	800-1375	D/.75, D/16	D/50	D/75	20ft / 6m	Near IR
710E	1100E	0.8 - 1.0	1800-3000	975-1650	D/.75, D/16	D/50	D/75	30ft / 9.1m	Near IR
710F	1100F	0.8 - 1.0	2000-3500	1100-1925	D/.75, D/16	D/50	D/75	30ft / 9.1m	Near IR
710G	1100G	0.8 - 1.0	2500-4500	1375-2500	D/.75, D/16	D/50	D/75	30ft / 9.1m	Near IR

TRANSTEMP 500, 700, AND 1000 SERIES - Single Wavelength / Two Wire Transmitters							
Sensor Model			Spectral Response (microns)	Temperature Range		Application	
				(°F)	(°C)		
500LT	700LT	1100LT	1.5 - 1.65	500-900	260-475	High temperature applications such as metals, foundries, heat treating, glass melting, and semiconductor processing. Most effective for minimizing effects of changing emissivity.	
510A	710A	1100A	1.5 - 1.65	700-1200	375-650		
510B	710B	1100B	0.8 - 1.0	900-1500	475-800		
510C	710C	1100C	0.8 - 1.0	1200-2000	650-1100		
510D	710D	1100D	0.8 - 1.0	1500-2500	800-1375		
510E	710E	1100E	0.8 - 1.0	1800-3000	975-1650		
510F	710F	1100F	0.8 - 1.0	2000-3500	1100-1925		
510G	710G	1100G	0.8 - 1.0	2500-4500	1375-2500		
520A	720A	1200A	2.0 - 2.5	500-1100	250-575		Medium temperature measurements involving the production and processing of metals.
520B	720B	1200B	2.0 - 2.5	700-1500	375-800		
520C	720C	1200C	2.0 - 2.5	1000-2000	550-1100		
540LT	740LT	1400LT	3.7 - 3.9	400-1400	200-750	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.	
540A	740A	1400A	3.7 - 3.9	600-1800	300-975		
540B	740B	1400B	3.7 - 3.9	800-2200	425-1200		
540C	740C	1400C	3.7 - 3.9	1200-3200	650-1750		
540D	740D	1400D	3.7 - 3.9	2000-4000	1100-2200		
550A	750A	1500A	4.9 - 5.3	200-1000	100-550	Designed to measure glass surface temperatures in glass processing. Also for applications where quartz infrared heaters are used.	
550B	750B	1500B	4.9 - 5.3	500-1500	250-800		
550C	750C	1500C	4.9 - 5.3	500-2500	250-1375		
580A	780A	1800A	7.6 - 8.4	85-600	30-300	For plastic film and plastic-based materials. Also for high temperature products opaque at 8 microns. (i.e. thin glass)	
580B	780B	1800B	7.6 - 8.4	200-1000	100-550		
580C	780C	1800C	7.6 - 8.4	500-1500	250-800		
580D	780D	1800D	7.6 - 8.4	500-2500	250-1375		
590LT	790LT	1900LT	8.0 - 14.0	-50-200	-45-100		General purpose processing applications such as paper, textiles, plastics, food, printing and rubber.
590A	790A	1900A	8.0 - 14.0	0-500	0-250		
590B	790B	1900B	8.0 - 14.0	0-1000	0-550		
590C	790C	1900C	8.0 - 14.0	200-1000	100-550		
590D	790D	1900D	8.0 - 14.0	300-2000	150-1100		

Field of View Selection for Transtemp Series*			
Optical Resolution (D/F)	Standard Focal Distance (D)		
	Near 7in (18cm)	Standard 15in (38cm)	Distant 5ft (1.5m)
D/7 (fresnel Lens)	n/a n/a	2.0in @ 15in 5.4cm @ 38cm	8.5in @ 5ft 21cm @ 1.5m
D/15	0.5in @ 7in 1.2cm @ 18cm	1.0in @ 15in 2.5cm @ 38cm	4.0in @ 5ft 10cm @ 1.5m
D/20	0.35in @ 7in 0.9cm @ 18cm	0.75in @ 15in 1.9cm @ 38cm	3.0in @ 5ft 7.5cm @ 1.5m

\*FOV Selection:  $d = D/F$ ,  $d$  = Measured Target Diameter,  $D$  = Working Distance,  $F$  = Optical Resolution  
 Consult with Williamson for custom temperature ranges, wavelengths, optics, and fiber optic cable lengths.  
 Specifications are subject to change without notice. Made in USA

