thermo sensors corporation

Address: P.O. Box 461947 Garland, TX 75046
Phone: 972-494-1566 **Toll Free:** 1-800-889-5478
Website: www.thermosensors.com

A Leading Manufacturer of Quality Thermocouple and RTD Assemblies Since 1972

Thermo Sensors Accessories

Thermo Sensors accessories include everything to complete the assembly and protect the terminals and wire from the often hostile environments in which they function. These accessories include the explosion and weatherproof caps to compression fittings and terminal blocks.

Please refer to our order guide to assist in determining your needs. We can also provide technical design assistance and application suggestions. Give us a call.

Explosion Proof and Weather Proof Connection Heads

FM Approved Explosion Proof Head

	Material	Part Number	Compliances
 3/4" Conduit	Enamel Painted Cast Aluminum	1739-1	CSA / ATEX / FM Approved Explosion Proof Head meets NEC Class I Div I Groups B, C, D Class II Div I, Groups E, F, G NEMA 4X, 7, 9, II2G, Ex d, IIC, Gb, II2 D, Ex tb, IIIC Db, IECEx
	316 S.S	1740-1	
*DIN mounting holes to accept transmitter			

Terminal Block
 4 Pole Part Number : 1835-4
 6 Pole Part Number : 1835-6

Cast Iron Industrial Screw Cover Head

	Material	Part Number
 3/4" Conduit	Epoxy Coated Cast Iron	1750-1
*DIN mounting holes to accept transmitter		

Terminal Blocks	
 2 Pole	 4 Pole
Part No. 1840	Part No. 1850
Options	
1/2" NPT Conduit	

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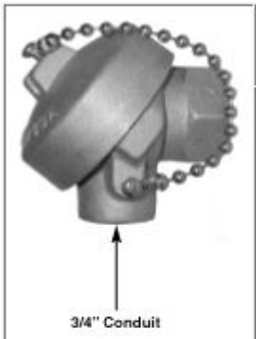
Cast Aluminum Industrial Screw Cover Head



Material	Instrument Connection	Part Number
Cast Aluminum	1/2" NPT	1720-1
	3/4" NPT	1720-2
	1" NPT	1720-3

Terminal Blocks	
 Single	 Dual
Part No. 1810A	Part No. 1820
Options	
1/2" NPT Conduit	-A

Aluminum General Purpose Screw Cover Head

Instrument Connection	Part Number
1/2" NPT	1755-1

Terminal Blocks		
 2 Pole	 4 Pole	 6 Pole
Part No. 1829	Part No. 1831	Part No. 1832
Options		
1/2" NPT Conduit	-A	

Nylon Screw Cover Head

Instrument Connection	Part Number
1/2" NPT	1790-1

Terminal Blocks	
 4 Pole	 6 Pole
Part Number : 1835-4	Part No. 1835-6

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Compression Fittings

Compression Fittings - Brass

Part Number	Sheath O.D.	Male Thread	Part Number	Sheath O.D.	Male Thread	Part Number	Sheath O.D.	Male Thread	
2022-B1	1/8"	1/8" NPT	2022-B2	1/8"	1/4" NPT	2023-B4	3/16"	1/2" NPT	 1/8" NPT Thru 1/2" NPT - Brass
2023-B1	3/16"		2023-B2	3/16"		2024-B4	1/4"		
2024-B1	1/4"		2024-B2	1/4"		2025-B4	5/16"		
			2025-B2	5/16"		2026-B4	3/8"		

Compression Fittings - Stainless Steel

Part Number	Sheath O.D.	Male Thread	Part Number	Sheath O.D.	Male Thread	Part Number	Sheath O.D.	Male Thread	
2021-S1	1/16"	NPT 1/8"	2022-S2	1/8"	NPT 1/4"	2023-S4	3/16"	NPT 1/2"	 1/8" NPT - Metal Collet - 304 S.S.
2022-S1	1/8"		2023-S2	3/16"		2024-S4	1/4"		
2023-S1	3/16"		2024-S2	1/4"		2025-S4	5/16"		 1/4" NPT & 1/2" NPT - Metal Collet - 316 S.S.
2024-S1	1/4"		2025-S2	5/16"		2026-S4	3/8"		

Compression Fittings - Stainless Steel - Re-adjustable (*Max. Temperature 350°F/176°C)

Part Number	Sheath O.D.	Male Thread	Part Number	Sheath O.D.	Male Thread	Part Number	Sheath O.D.	Male Thread	
2121-S1	1/16"	NPT 1/8"*	2122-S2	1/8"	NPT 1/4"	2123-S4	3/16"	NPT 1/2"	 1/8" NPT - Teflon Sealant - 304 S.S.
2122-S1	1/8"		2123-S2	3/16"		2124-S4	1/4"		
2123-S1	3/16"		2124-S2	1/4"		2125-S4	5/16"		 1/4" NPT & 1/2" NPT - Teflon Sealant - 316 S.S.
2124-S1	1/4"		2125-S2	5/16"		2126-S4	3/8"		

*For higher temperature service (up to 1000°F/538°C) lava sealants are available for the 1/8" NPT fittings. Sealant must be replaced at each tightening. To Specify: Select desired Part Number and add Suffix "-L". Example: 2122-S1-L.

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Male/Female Connectors

• Miniature plugs and jacks provide dependable, quick connections and easy installation of fine thermocouple wire and sheath. Accepts wire from .001" diameter to 20 gauge.

• Polarized pins make it virtually impossible to mismate. Large Double wipe jack inserts assure tight grip and low signal loss. Due to exclusive isolated screw design, contact is all thermocouple alloy from wire entrance to wire exit. ANSI calibration symbol and polarity symbol are molded on connector face.

• Alloys of prongs and inserts match ANSI calibrations to maintain sensing accuracy. Alloy and polarity are identified by symbols molded into body.

How To Order:

Select the desired connector and replace the(*) with calibration code.

Example: 6002K

Standard - Miniature	
Part Number	Description
6002(*)	Female Plug
6008(*)	Female Jack
High -Temp- Miniature	
Part Number	Description
6032H(*)	Female Plug
6038H(*)	Female Jack

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- 2-Pole Connector plugs and jacks are made to exacting specifications to provide rapid, dependable connections between thermocouples and extension wires.

- Alloys of prongs and inserts match ANSI calibrations to maintain sensing accuracy. Alloy and polarity are identified by symbols molded into body.

- Inserts are spring loaded collet type to assure positive full contact with the negative insert larger making it virtually impossible to mismate.

- Connector bodies molded of glass filled thermoset compounds (will not melt) for high strength and dependability. The color coded connectors will withstand ambient temperatures to 400° F (205° C) continuous and 500° F (260° C) intermittent. High- Temperature connectors will withstand ambient temperatures to 800° F (425° C) continuous and 1000° F (540° C) intermittent. (All Hi-Temp are color coded rust.

How To Order:

Select desired connector and specify the Part Number followed by Calibration Code.

Example: 6000J

Standard - 2-Pole	
Part Number	Description
6000 (Calib.)	Std. Male Plug
6001 (Calib.)	Solid Pin Plug
6005 (Calib.)	Female Jack

High-Temperature - 2-Pole	
Part Number	Description
6020 (Calib.)	Std. Male Plug
6021 (Calib.)	Solid Pin Plug
6025 (Calib.)	Female

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Single Panel Jacks

Style 1

Style 2

Style 3

Single circuit jacks designed for mounting into control panel or instrument case can be wired and installed completely from the front. Fits in standard 3/4" knockout (1 1/8" diameter). Permanently attached self-fastening device simplifies mounting, holds tight.

Style	Description	Part Number
1	Standard 2-Pole Jack w/Nickel Plated Steel Fram Fits 3/4" Knock-Out	6007M (x)
2	Standard 2-Pole Jack- Molded Polypropylene Body Fits Knock-Out 3/4" Max. Temp: 300 O F	6007P (x)
3	Miniature 2-Pole Jack w/Nickel Plated Steel Fits 3/4" Knock-Out	6052 (x)
x Specify Calibration Code: J, T, K, N, R, S, E, WR, W5, CU, Note: CU = Copper/Copper		Example: 6007MK

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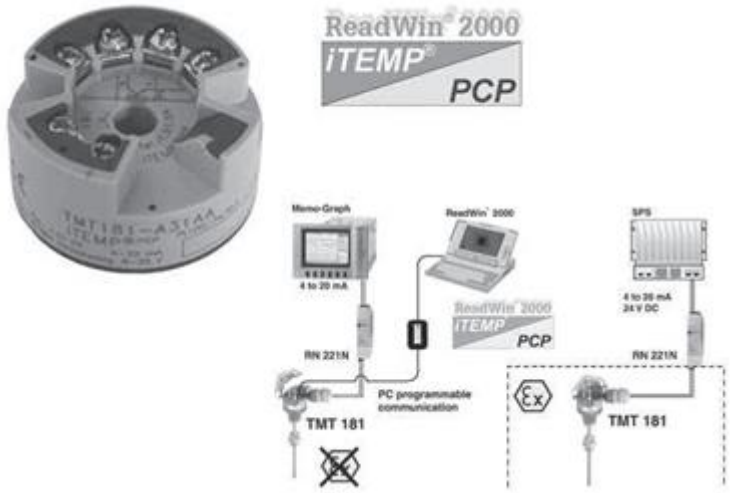
Temperature Head Transmitters

iTEMP PCP TMT 181	Application:
	• Economical and technical alternative to direct wiring to DCS or PLC • PC programmable (PCP) temperature head transmitter for converting various input signals into a scalable 4 to 20 mA analog output signal • Suitable for RTD thermometers, thermocouples TC, Ohm and mV inputs • 2-wire transmitter for a linear temperature proportional analog output

Features and benefits	and also:
• Operation, visualization and maintenance with PC, using ReadWin ® 2000 freeware • High accuracy: 0.08% of span • Breakdown information in event of sensor break or short-circuit, enables a quick maintenance intervention • Outstanding 3.75 kV AC galvanic isolation from the sensor input to the output • Online configuration during measurement using configuration kit for an easy setup • Output simulation for a quick and easy check of the loop • Customized measuring range setup or expanded SETUP, see questionnaire page 6	• Long term stability: <0.05% • Electromagnetic compatibility to IEC 61326 for use in noisy environments • Fully potted electronics and gold plated terminals allow humidity • Captive screws for ease of connection • Customer specific linearization • Linearization curve match improves accuracy • Approvals: FM, CSA and ATEX for high safety standards • UL recognized component to UL 3111-1 • GL German Lloyd marine approval

thermo sensors corporation

HP-(RANGE)-INPUT

Universal PC-Programmable 2-wire transmitter

FM APPROVED · IEC · IECEx · Ex · NFC · CE · 5 YEAR WARRANTY

IPAQ C330 is a universal, isolated, temperature transmitter with additional voltage and resistance input. Its robust design and high quality gives excellent performance and accuracy also under harsh conditions.

IPAQ C330 supports communication via NFC® (Near-field communication) and Bluetooth® which makes it possible to configure and monitor the transmitter remotely.

- High accuracy and long term stability
- 50-point Customized Linearization and Callendar-Van Dusen
- Accepts RTD, T/C, mV and Ω
- Sensor error and system (sensor/transmitter) error correction for highest total accuracy
- Low temperature drift
- Configuration via USB or NFC without external power
- Runtime counter - hour counter for elapsed operational time
- Rugged design tested for 10 g vibrations
- High security - Password protection and date of changes logged

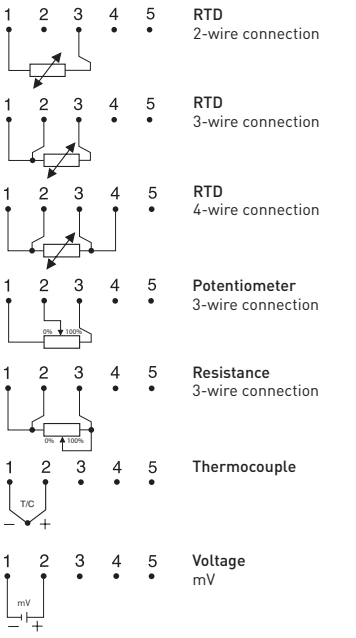
Specifications:

Input RTD		2-, 3-, 4-wire connection
Pt100 (α =0.00385)		-200 to +850 °C / -328 to +1562 °F
PtX 10 ≤ X ≤ 1000 (α =0.00385)		Upper range depending on X-value
Pt100 (α =0.003916)		-200 to +850 °C / -328 to +1562 °F
Ni100[1], Ni120[2]		-60 to +250 °C / -76 to +482 °F
Ni1000[1]		-50 to +180 °C / -58 to +356 °F
Cu10[3]		-50 to +200 °C / -58 to +392 °F
Input Resistance / potentiometer		0 to 10000 Ω / 100 to 10000 Ω
Input Thermocouples		Types B, C, D, E, J, K, N, R, S, T
Input mV		-10 to +1000 mV
Sensor failure		Upscale (≥21.0 mA) or downscale (≤3.6 mA) action
Adjustments - Zero		Any value within range limits
Adjustments - Minimum spans		
Pt100, Pt1000, Ni100, Ni1000		10 °C / 18 °F
Potentiometer		10 Ω
T/C, mV		2 mV
Output		4-20 / 20-4 mA, temperature linear
Operating temperature		-40 to +85 °C / -40 to +185 °F
Galvanic isolation		1500 VAC, 1 min
Power supply	IPAQ C330	8.0...36.0 VDC
	IPAQ C330X	8.0...30.0 VDC
Intrinsic safety		
IPAQ C330X ATEX:		II 1 G Ex ia IIC T6...T4 Ga[4]
IPAQ C330X IECEx:		Ex ia IIC T6...T4 Ga[4]
IPAQ C330X cFMus:		IS CL I Div 1 GP A-D, T6...T4 Cl I Zn 0 AEx/Ex ia IIC T6...T4 Ga[4]
Typical accuracy		±0.08°C or ±0.08% of span
Connection head		DIN B or larger

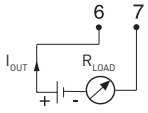
[1] DIN 43760, [2] Edison No.7, [3] Edison No.15 [4] For Tambient, see the manual

Input connections

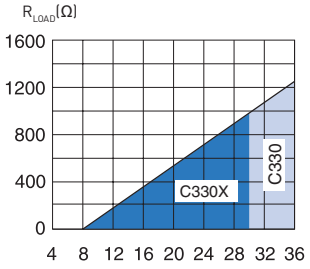
See data sheet for more alternatives



Output connections

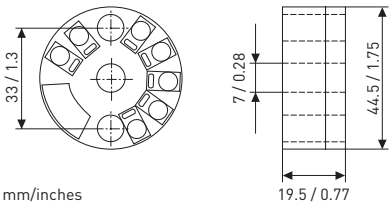


Output load diagram



$R_{LOAD}=(U-8)/0.022$

Dimensions



mm/inches

Ordering information

HP-(RANGE)-INPUT
HP-(RANGE)-INPUT-ATEX
HP-(RANGE)-INPUT-FM

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HPH-(RANGE)-INPUT

Universal HART-compatible 2-wire Transmitter

IPAQ C530 is a modern, HART® temperature transmitter developed to meet the highest standards of accuracy and reliability. A universal transmitter compatible with RTD, thermocouples, voltage and potentiometer sensors. It is fully compatible with HART® 7 and offers extended diagnostic information, for example device error, sensor and wiring conditions.
IPAQ C530 supports communication via NFC® (Near-field communication) and Bluetooth® which makes it possible to configure and monitor the transmitter remotely.

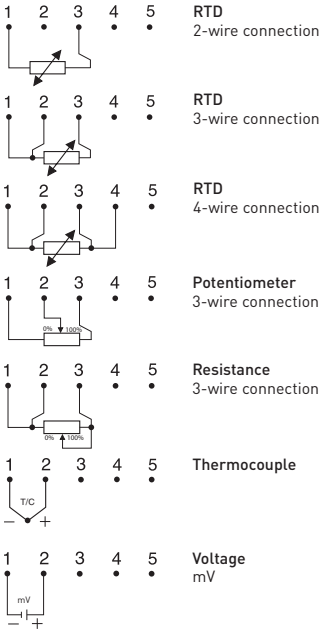
- High accuracy and long term stability
- Accepts RTD, T/C, mV and ohm
- Sensor error and system (sensor/transmitter) error correction
- 50-point Customized Linearization and Callendar-Van Dusen
- Rugged design tested for 10 g vibrations
- Configuration via USB, without external power
- Runtime counter - hour counter for elapsed operational time
- Communicates with HART Communicator or PC via modem
- Integrated in Emerson AMS and Siemens PDM systems

Specifications:

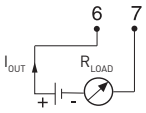
Input RTD		2-, 3-, 4-wire connection
Pt100 (α =0.00385)		-200 to +850 °C / -328 to +1562 °F
PtX 10 ≤ X ≤ 1000 (α =0.00385)		Upper range depending on X-value
Pt100 (α =0.003916)		-200 to +850 °C / -328 to +1562 °F
Ni100[1], Ni120[2]		-60 to +250 °C / -76 to +482 °F
Ni1000[1]		-50 to +180 °C / -58 to +356 °F
Cu10[3]		-50 to +200 °C / -58 to +392 °F
Input Resistance / potentiometer		0 to 10000 Ω / 100 to 10000 Ω
Input Thermocouples		Types B, C, D, E, J, K, N, R, S, T
Input mV		-10 to +1000 mV
Sensor failure		Upscale (≥21.0 mA) or downscale (≤3.6 mA) action
Adjustments - Zero		Any value within range limits
Adjustments - Minimum spans		
Pt100, Pt1000, Ni100, Ni1000		10 °C / 18 °F
Potentiometer		100 Ω
T/C, mV		2 mV
Output		4-20 / 20-4 mA, temperature linear
Operating temperature		-40 to +85 °C / -40 to +185 °F
Galvanic isolation		1500 VAC, 1 min
Power supply	IPAQ C530	8.5...36.0 VDC
	IPAQ C530X	8.5...30.0 VDC
Intrinsic safety		
IPAQ C530X ATEX:		II 1G Ex ia IIC T6...T4 Ga[4]
IPAQ C530X IECEx:		Ex ia IIC T6...T4 Ga[4]
IPAQ C330X cFMus:		IS CL I Div 1 GP A-D, T6...T4 Cl I Zn 0 AEx/Ex ia IIC T6...T4 Ga[4]
Typical accuracy		±0.08°C or ±0.08% of span
Connection head		DIN B or larger

[1] IEC 60751, α=0.00385 and Pt100 acc. to JIS 1604, α=0.003916 [2] DIN 43760
[3] Temperature, resistance or voltage linear, customized linearziation possible [4] For Tambient, see the manual

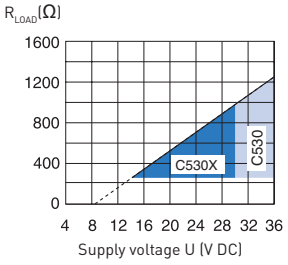
Input connections



Output connections

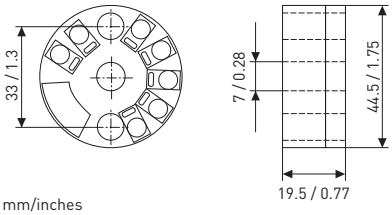


Output load diagram



$R_{LOAD}=(U-8.5)/0.022$

Dimensions



mm/inches

Ordering information

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HPH-(RANGE)-INPUT-ATEX
HPH-(RANGE)-INPUT-FM

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