TRANSMITTERS

MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER

The Reotemp Model W Explosion Proof Field Mounted HART Temperature Transmitter features a local display, HART compatibility, and a 4-20mA output. The field mounted transmitter is available as a complete RTD or thermocouple assembly customized to your process.



























HIGH DEFINITION DISPLAY

- 0, 90, 180, & 270 degree position adjustments
- Monitoring, programming and diagnostics view
- Extensive diagnostics with flashing red or white backlight

LOCAL OPERATOR INTERFACE (LOI)

- 3 optical buttons; up, down and enter
- Dynamically adaptive to wear or accumulation of dirt
- Immune to interference from ambient light sources
- Useable with or without gloves

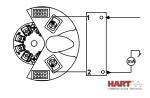
CONFIGURATION

- From the LOI through guided menu
- PReset and HART modem
- HHC, DCS or AMS via HART

MOUNTING / INSTALLATION

- For installation in zone 0, 1, 2 and zone 20, 21, 22 and in Class 1, Division 1 and 2 applications
- Hardware assessed for use in SIL 2 applications
- Mounting on 1.5"-2" pipe bracket or on wall / bulkhead

2-wire Output and HART



Ex ia: 10-30 VDC (12-30 VDC with backlight) Other: 10-35 VDC (12-35 VDC with backlight)

4-20 mA

FEATURES / BENEFITS

- RTD or TC Input, Analog Output
- High Definition Local Operator Interface (LOI) with 3 **Optical Buttons**
- Selectable Red or White Backlight
- Ex d Explosion Proof / Flame Proof Aluminum Head
- HART 7 Functionality with HART 5 Compatibility

APPLICATION

- Linearized temperature measurement with TC and RTD sensors e.g. Pt100 and Ni100
- HART communication and 4...20 mA analog PV output for individual, difference or average temperature measurement of up to two RTD or TC input sensors
- Up to 63 transmitters (HART 7) can be connected in a multidrop communication setup

TECHNICAL CHARACTERISTICS

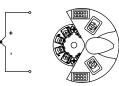
- NAMUR NE43 and NE89
- HART protocol revision can be changed by user configuration to either HART 5 or HART 7 protocol

RTD to 4-20 mA



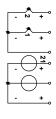


TC to 4-20 mA



Difference or Average RTD, TC or mV







MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER

SPECIFICATIONS

Environmental Conditions		
Operating Temperature	-40°C to +85°C	
Storage Temperature	-40°C to +85°C	
Calibration Temperature	2028°C	
Relative humidity	0100% RH (condensing)	
Protection degree	IP54 / IP66 / IP68 / type 4X	
Mechanical Specifications		
Dimensions Ø 110 mm		
Dimensions (HxWxD), aluminum	109.3 x 145 x 126 mm	
Weight approx.	1.3kg	
Wire size	0.13 x1.5 mm ² / AWG 2616 stranded wire	
Screw terminal torque	0.4 Nm	
Vibration	IEC 60068-2-6	
225 Hz	±1.6 g	
25100 Hz	±4 g	
Number of digits	5	
Backlight	Selectable ON/OFF	
Backlight color	Selectable white or red	
Commor	Specifications	
Supply voltage, DC: Ex ia, intrinsically safe	10 (12 - with backlight)30 VDC	
Supply voltage, DC: Other	10 (12 - with backlight)35 VDC	
Isolation voltage, test / working	1.5 kVAC / 50 VAC	
Response time (programmable)	160 s	
Signal / noise ratio	> 60 dB	
Programming	HART	
Start-up time, transmitter to display	Max. 5 s	
Long-term stability, better than	±0.1% of span / year	
Transmitter Accuracy	Better than 0.05% of selected range	
Signal dynamics, input	22 bit	
Signal dynamics, output.	16 bit	
EMC immunity influence	< ±0.1% of span	
Extended EMC immunity: NAMUR NE21, A criterion, burst	< ±1% of span	
Max. offset.	50% of selected max. value	

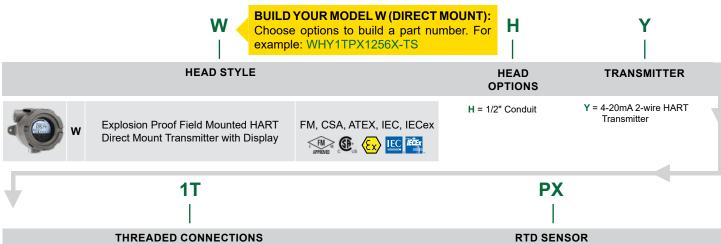
Input S	Specifications
RTD type	Pt50/100/200/500/1000; Ni50/100/120/1000
Cable resistance per wire	$5~\Omega$ (up to $50~\Omega$ per wire is possible with reduced measurement accuracy)
Sensor current	Nom. 0.2 mA
Thermocouple type	B, E, J, K, N, R, S, T
Cold junction compensation (CJC)	Constant, internal or external via a Pt100 or Ni100 sensor
Output	Specifications
Signal range	420 mA
Min. signal range	16 mA
Load (@ current output)	\leq (Vsupply - 10) / 0.023 [Ω]
Load resistance, with backlight	≤ (Vsupply - 12) / $0.023 [\Omega]$
Sensor error indication	Programmable 3.523 mA
NAMUR NE43 Upscale/ Downscale	23 mA / 3.5 mA
Updating time	440 ms
HART protocol revisions	HART 7 and HART 5
Observed Aut	hority Requirements
EMC	2014/30/EU
EAC	TR-CU 020/2011
A	pprovals
EU RO Mutual Recognition Type Approval	MRA0000009
ATEX 2014/34/EU	DEKRA 15 ATEX 0058 X
IECEx	IECEx DEK 15.0039 X
FM	FM16US0009X / FM16CA0010X
CSA	70024231
EAC Ex TR-CU 012/2011	RU C-DK.GB08.V.01316
INMETRO	DEKRA 15.0014 X
NEPSI	GYJ15.1336X, GYJ15.1337X and GYJ15.1338X
SIL	Hardware assessed for use in SIL applications

TRANSMITTERS

155

± 0.50%

MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER (DIRECT MOUNT RTD)



Use a spring loaded connection with a thermowell. Use a welded connection when the stem goes directly into the process medium. All threaded connections have 316 stainless steel fittings.

Threaded Connections

- 1T = Spring-loaded 316SS Hex Bushing
- 4T = 5" Nominal Spring Loaded Nipple-Union-Nipple 316SS
- 2T = 2.5" Spring Loaded Nipple 316SS
- 7T = Spring Loaded Explosion Proof **Bushing 316SS**
- 5T = Nipple-Union-Nipple Spring Loaded Explosion Proof Bushing, Explosion Proof Union

Welded Fittings

- 1F = Welded Hex Bushing 316SS
- 4F = Nipple-Union-Nipple Welded 316SS
- 6F = Stainless Steel Bushing, 1/2" NPT, No Process Threads

Welded Fittings with Compression Fitting Loose on Stem

- 6FT = SS Welded Bushing with 1/4" NPT Comp Fitting "Set Once" Loose On Stem
- 6FU = SS Welded Bushing with 1/2" NPT Comp Fitting "Set Once" Loose On Stem
- 6FV = SS Welded Bushing with 1/8" NPT Comp Fitting "Set Once" Loose On Stem

Other Nipple-Union-Nipple (N-U-N)

- 4T3 = 3" Nominal Spring Loaded N-U-N
- 4T4 = 4" Nominal Spring Loaded N-U-N
- 4T6 = 6" Nominal Spring Loaded N-U-N
- 4T7 = 7" Nominal Spring Loaded N-U-N

Nipples

- 2T3 = 3" Spring Loaded Nipple 2T4 = 4" Spring Loaded Nipple
- 2T5 = 5" Spring Loaded Nipple
- 2T6 = 6" Spring Loaded Nipple
- 2T7 = 7" Spring Loaded Nipple
- 2T8 = 8" Spring Loaded Nipple

Special Fittings

8T = Spring Loaded Terminal Block, No Fitting 1/2" NPT Female Head Opening

Туре	Code	Material/Class	Ω at 0°C	0°C(Ω)
Standard DIN B PX Platinum 100Ω		Pt/385/B	100Ω	± 0.12%
Platinum 100Ω with Other Accuracies	PA*	Pt/385/A	100Ω	± 0.06%
	PD*	Pt/385/A3	100Ω	± 0.03%
	PE*	Pt/385/A5 (1/10 B)	100Ω	± 0.01%
Other RTDs	PK*	Pt/385/B	1000Ω	± 0.12%
	PH*	Pt/385/A	1000Ω	± 0.06%
	PM	Pt/385/B	500Ω	± 0.12%

Nickel/6725

120Ω

*Available in Reotemp Extended temperature RTDs.

NI





- 1 = -328°F/400°F (Standard)
- 2 = Extended Range -328°F/1100°F (Only Available on PX, PA, PD, PH, PE, or PK RTDs)
- **25** = 0.250" **12** = 0.125" 18 = 0.188

37 = 0.375'

- ? = Stem Length in Inches
 - XX = Duplex 3-wire Y = Single 4-wire YY = Duplex 4-wire
 - W = Single 2-wire WW = Duplex 2-wire

X = Single 3-wire

- -TS = Tag, Stainless
- -R1 = One Point Calibration Cert (Reotemp Chooses Points)
- -R3 = Three Point Calibration Cert (Reotemp Chooses Points)

Additional Options Available

Transmitters

MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER (REMOTE MOUNT RTD)

BUILD YOUR MODEL W (REMOTE MOUNT): Choose options on this page to begin the remote mount RTD stem part number. Then, add the stem part number to lead wire part number generated on page 157. For example: APX1256X-LR3A36T2RHWYA-TS



STYLE - X н Spring Loaded Bushing Plain Stem (Lead Assembly) В P 1/2" NPT Nipple w/ Bayonet Welded SS Bushing R S Bayonet Cap w/ Spring Load Spring Only **4T** 5" Nominal Spring Loaded N-U-N 316SS

Leave blank for no stem option. U* 1.8" 1.5" 1/4" NPT Sliding Compression 1/2" NPT Sliding Compression Fitting Loose On Plain 316SS Fitting Loose On Plain 316SS Stem, 1.5" Length Stem, 1.8" Length

STEM OPTIONS (OPTIONAL)

Length Weld Pad, 1"x1"x1/8" *These fittings decrease usable stem length by the length of the fitting as pictured above. Add the fitting size to the required stem length or your stem may be short.

PX **RTD SENSOR**

Туре	Code	Material/Class	Ω at 0°C	Accuracy at 0°C(Ω)
Standard DIN B Platinum 100Ω	PX*	Pt/385/B	100Ω	± 0.12%
Platinum 100Ω with Other Accuracies	PA*	Pt/385/A	100Ω	± 0.06%
	PD*	Pt/385/A3	100Ω	± 0.03%
	PE*	Pt/385/A5 (1/10 B)	100Ω	± 0.01%
Other RTDs	PK*	Pt/385/B	1000Ω	± 0.12%
	PH*	Pt/385/A	1000Ω	± 0.06%
	PM	Pt/385/B	500Ω	± 0.12%
	NI	Nickel/6725	120Ω	± 0.50%
*Available in Reotemp Extended temperature RTDs.				

1			
1			
'			
TEMPERATURE			
RANGE			

1 = -328°F/400°F
(Standard)
2 = Extended Range
-328°F/1100°F
(Only Available
on PX, PA, PE,
PK, PD, or PH
RTDs)

25 **STEM**

1.3"

1/8" Compression Fitting Loose

on Plain 316SS Stem, 1.3"

25 = 0.250" 12 = 0.125" 18 = 0.188" 37 = 0.375"	



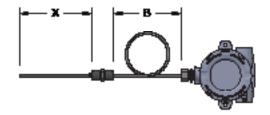
? = Stem Length

in Inches

NUMBER OF RTDs/LEADS **X** = Single 3-wire

XX = Duplex 3-wire Y = Single 4-wire YY = Duplex 4-wire

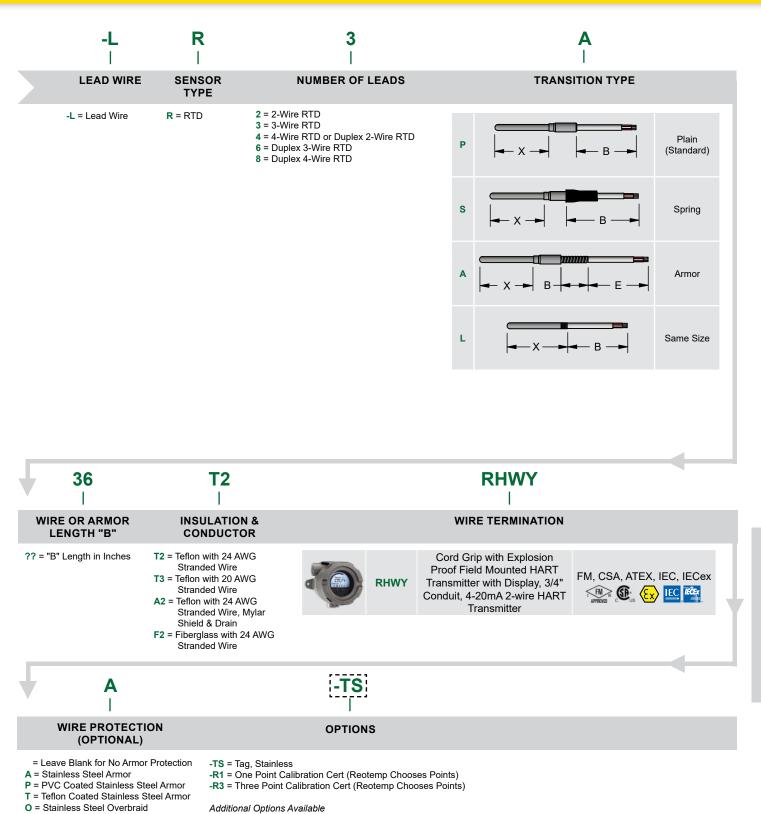
W = Single 2-wire WW = Duplex 2-wire



TRANSMITTERS

157

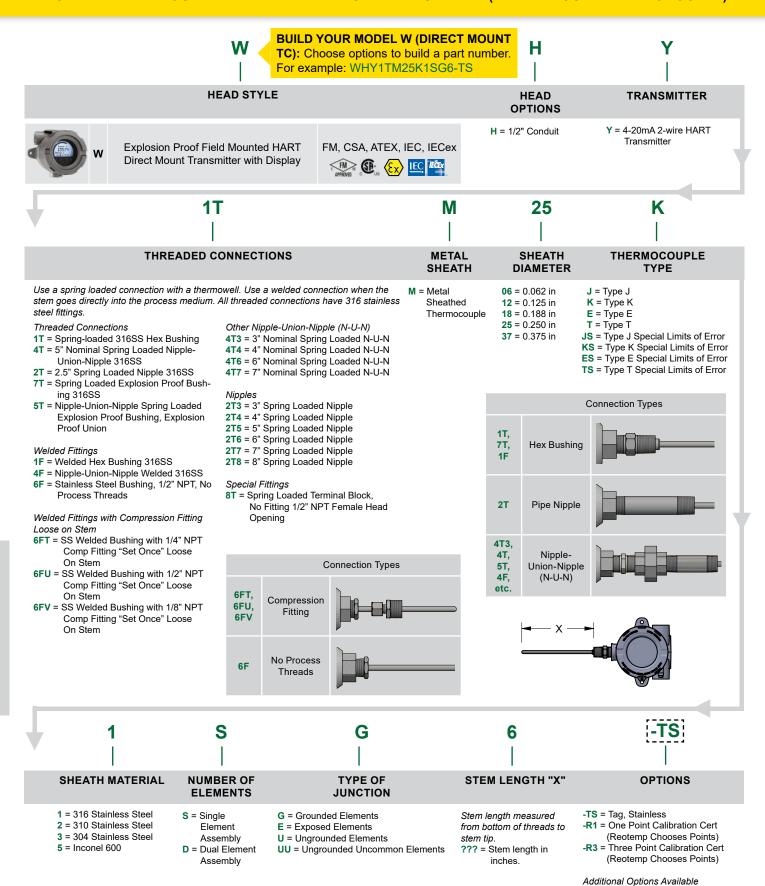
MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER (REMOTE MOUNT RTD)



(800) 648-7737 reotemp.com

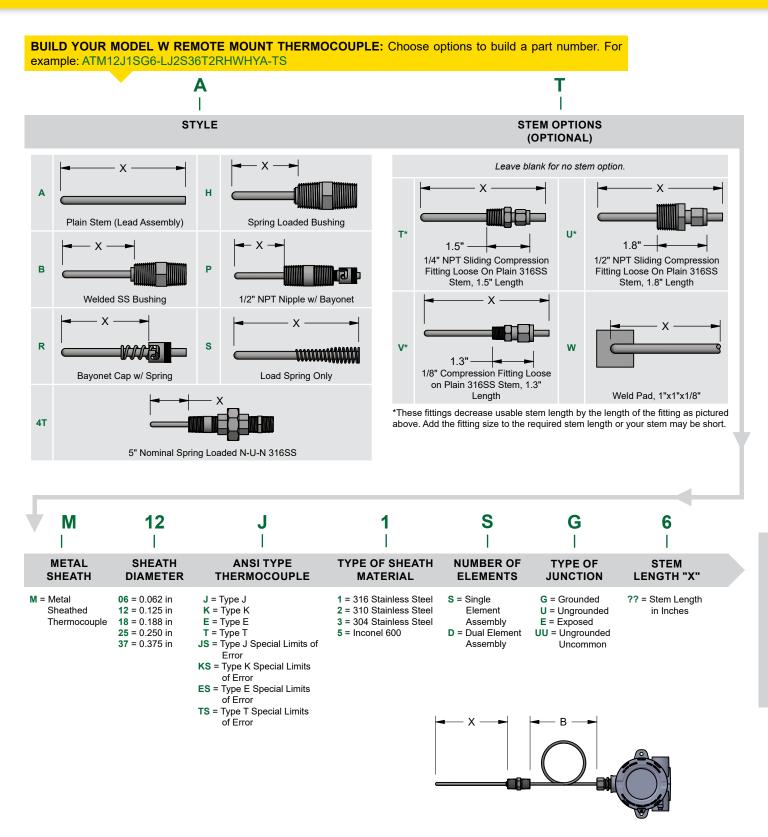
TRANSMITTERS

MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER (DIRECT MOUNT THERMOCOUPLE)

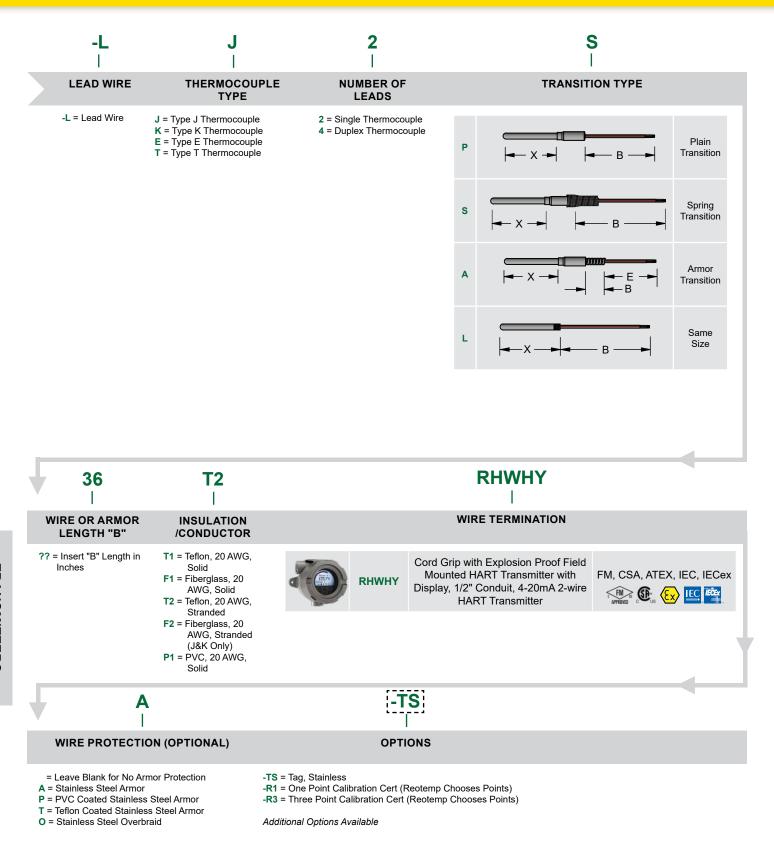


158 (800) 648-7737 reotemp.com TRC-0225

MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER (REMOTE MOUNT THERMOCOUPLE)



MODEL W FIELD MOUNTED HART TEMPERATURE TRANSMITTER (REMOTE MOUNT THERMOCOUPLE)



HAZARDOUS LOCATION CERTIFIED THERMOCOUPLE & RTD OPTIONS

		Thermocouple	RTD
CERTIFICATION OPTIONS			
-R1	1 Point Calibration Certification, Reotemp Chooses	✓	✓
-R3	3 Point Calibration Certification, Reotemp Chooses	✓	✓
-C1	1 Point Calibration Certification, Customer Chooses	✓	✓
-C3	3 Point Calibration Certification, Customer Chooses	✓	✓
-CC	Certificate of Conformance	✓	✓
-cs	NIST Calibration Sticker (No Logged Points)	✓	✓
OTHER OPTIONS			
-VB	Hi-Vibration	N/A	✓
-AC	Hi-Accuracy	N/A	✓
-PS	Pointed Stem	✓	✓
-HT	Heat Transfer Compound (2 oz)	✓	✓
	TAG OPTION		
-TS	Stainless Steel Tag (1-10 Characters)	✓	
-TM	Stainless Steel Tag (11-80 Characters)	✓	
-TP	Paper Tag	✓	
✓	Indicates that the option is available with this model.		
N/A	Indicates the option is not available with this model.		
STD	Indicates standard options with no additional cost.		