Parts List

PL 008-662
February 2014

I/A Series® Temperature Transmitters — Model RTT15 with HART®, FOUNDATION Fieldbus™, or PROFIBUS® Communication Protocol

Give instrument Model Code when ordering.
*Parts preceded by an asterisk are recommended spare parts.
See Recommended Spare Parts Summary section for quantities.

TO ORDER PARTS, CALL INVENSYS SYSTEMS INC. AT 1-866-746-6477.

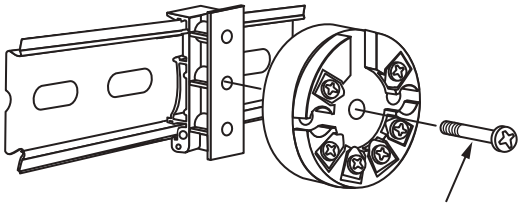
invensys
Foxboro®

Housing and Sensor Mounting Codes

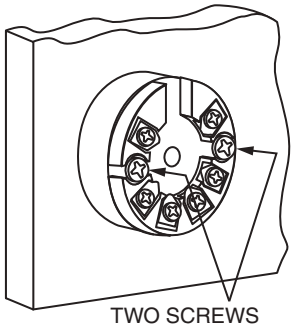
BASIC MODULE

CODE B
BASIC MODULE

CODE B
DIN RAIL MOUNT

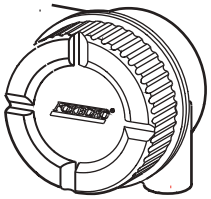


CODE B
SURFACE MOUNT

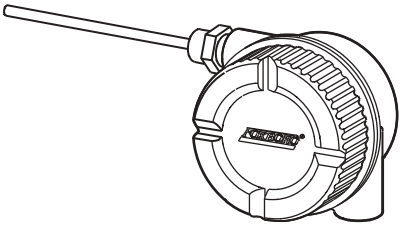


UNIVERSAL HOUSING

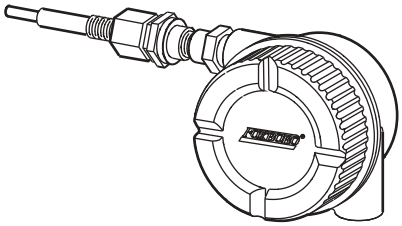
CODE S AND T
FOR SURFACE/PIPE MOUNTING



CODES W AND Y
WITH BARE SENSOR

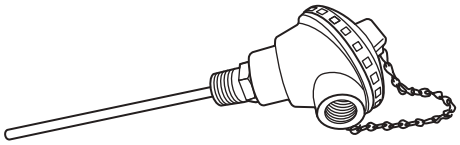


CODES L AND M
WITH SENSOR AND WELL

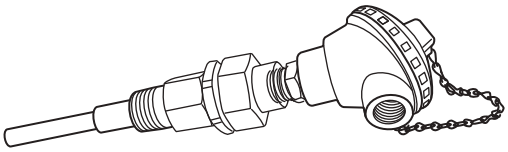


WEATHERPROOF CONNECTION HEAD

CODE C
WITH BARE SENSOR

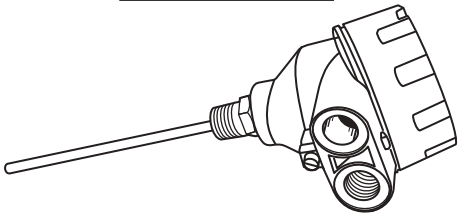


CODE E
WITH SENSOR AND WELL

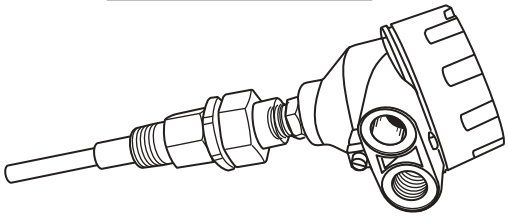


EXPLOSIONPROOF CONNECTION HEAD

CODE D
WITH BARE SENSOR



CODE F
WITH SENSOR AND WELL



MODEL CODE - BASIC MODULE CODE B

Remote sensors not provided, but can be ordered separately

Description	Model
I/A Series® Temperature Transmitter	RTT15
 HOUSING CODE B — HART MODULE SHOWN	
Output Version	
Intelligent; Digital HART® 7 and 4 to 20 mA dc	-H
Intelligent; Digital HART 5 and 4 to 20 mA dc	-T
Intelligent; Digital FOUNDATION Fieldbus™ H1	-F
Intelligent; Digital PROFIBUS® PA	-P
Input Configuration (a)	
Single Input; Configured for One Sensor	1
Dual Input; Configured for Average of two 2-wire sensors of same type (b)	4
Dual Input; Configured for Difference of two 2-wire sensors of same type (b)	5
Dual Input; Configured for Redundancy of two 2-wire sensors of same type (b) (Not available with HART Output Versions -H/-T)	6
Housing and Sensor Mounting (Basic Module - No Housing)	
Basic Module used for Surface Mount, DIN Rail Mount, or Module Replacement. Material Certificate (AS Reference CERT-C) not offered with this selection.	B
Sensor Length	
None - Sensor ordered separately	N
Measurement Input Type (Software Selectable) (c)	
Thermocouple, Type B, Platinum-Rhodium	B
Thermocouple, Type E, Chromel-Constantan	E
Thermocouple, Type J, Iron-Constantan	J
Thermocouple, Type K, Chromel-Alumel	K
Thermocouple, Type L, Iron-Copper/Nickel	L
Thermocouple, Type N, Nicrosil-Nisil	N
Thermocouple, Type R, Platinum-Rhodium	R
Thermocouple, Type S, Platinum-Rhodium	S
Thermocouple, Type T, Copper-Constantan	T
Thermocouple, Type U, Copper-Copper/Low Nickel	U
Thermocouple, Type W3, Tungsten - Rhenium	3
Thermocouple, Type W5, Tungsten - Rhenium	5
RTD, Platinum, 2-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath	2
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath (d)	Q
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath (d)	4
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath (d)	A
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath (d)	6
RTD, Nickel, 3-wire, 100 Ω, DIN 43760, 316 ss Sheath (d)	I
Ohm Input	O
Millivolt Input	M
Thermowell Assembled to Housing	
No Well, or Well is supplied separately	NA
Electrical Safety (see Electrical Safety Specifications section in PSS or MI for details)	
ATEX, Intrinsically Safe, Ex ia IIC	E
CSA, Intrinsically Safe and Division 2 (e)	C
FM, Intrinsically Safe and Division 2 (e)	F
IECEx, Intrinsically Safe (f)	T

MODEL CODE - BASIC MODULE CODE B (Continued)

Remote sensors not provided, but can be ordered separately

Description	Model
Optional Selections	
Custom Database Configuration (requires C2 Form filled out with all data specified)	-C2
Clip and Self-Tapping Screw provided to mount the Basic Module to a DIN Rail (g)	-D1
Adapter Plate and Screws to allow mounting the RTT Basic Transmitter Module into existing E93, E94, 893, and RTT10 Transmitter housings.	-D3
Omit Paper Instruction Manual and CD (h)	-K1
Example: RTT15-T1BNJNAC-C2D1	

a. Input configuration can be changed in the field by changing wiring terminations and reconfiguring.
b. For dual input with different type sensors (Output Versions -F and -P only), specify Input Configuration Code 1 and reconfigure the transmitter after shipment, or specify the -C2 option for custom configuration.
c. Transmitter is configured for measurement type specified, whether sensor is included or not. User can change configuration to a different type using the appropriate configurator for selected protocol.
d. Measurement input types Q, 4, A, 6, and I not available with Dual Input Configuration Codes 4, 5, and 6. User Configuration or -C2 Option can be used for dual input of one three-wire RTD and one TC (Output Versions -F and -P only).
e. At the time of printing, the HART 7 (-H) module is certified for Electrical Safety Design Codes C and F with Housing Code B only. Contact Invensys for availability of additional CSA and FM certifications with HART version 7 (-H).
f. Output versions -H and -T only.
g. Basic module is attached to mounting clip with a self-tapping screw, and shipped assembled for snapping onto the DIN rail.
h. Standard transmitter is shipped with a paper instruction manual that describes installation, operation, and configuration, and a CD that includes all pertinent documentation such as Parts Lists, Dimensional Prints, and more detailed instructions.

MODEL CODE - HOUSING CODES S AND T

Remote sensors not provided, but can be ordered separately

Description	Model
I/A Series Temperature Transmitter	RTT15
HOUSING CODES S AND T 	
Output Version	
Intelligent; Digital HART 7 and 4 to 20 mA dc	-H
Intelligent; Digital HART 5 and 4 to 20 mA dc	-T
Intelligent; Digital FOUNDATION Fieldbus H1	-F
Intelligent; Digital PROFIBUS PA	-P
Input Configuration (a)	
Single Input; Configured for One Sensor	1
Dual Input; Configured for Average of two 2-wire sensors of same type (b)	4
Dual Input; Configured for Difference of two 2-wire sensors of same type (b)	5
Dual Input; Configured for Redundancy of two 2-wire sensors of same type (b) (Not available with HART Output Versions -H/-T)	6
Housing and Sensor Mounting (Housing for Surface or Pipe Mounting)	
Universal Housing, Aluminum, for use with remote sensor Remote Sensor ordered separately	S
Universal Housing, 316 ss, for use with remote sensor Remote Sensor ordered separately	T
Sensor Length	
None - Sensor ordered separately	N
Measurement Input Type (Software Selectable) (c)	
Thermocouple, Type B, Platinum-Rhodium	B
Thermocouple, Type E, Chromel-Constantan	E
Thermocouple, Type J, Iron-Constantan	J
Thermocouple, Type K, Chromel-Alumel	K
Thermocouple, Type L, Iron-Copper/Nickel	L
Thermocouple, Type N, Nicrosil-Nisil	N
Thermocouple, Type R, Platinum-Rhodium	R
Thermocouple, Type S, Platinum-Rhodium	S
Thermocouple, Type T, Copper-Constantan	T
Thermocouple, Type U, Copper-Copper/Low Nickel	U
Thermocouple, Type W3, Tungsten - Rhenium	3
Thermocouple, Type W5, Tungsten - Rhenium	5
RTD, Platinum, 2-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath	2
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath (d)	Q
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath (d)	4
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath (d)	A
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath (d)	6
RTD, Nickel, 3-wire, 100 Ω, DIN 43760 (d)	I
Ohm Input	O
Millivolt Input	M
Thermowell Assembled to Housing	
No Well or Well ordered separately	NA
Electrical Safety (see Electrical Safety Specifications section in PSS or MI for details)	
ATEX, Intrinsically Safe, Ex ia IIC	E
ATEX, Flameproof, Ex d IIC	D
CSA Intrinsically Safe, Explosionproof, and Division 2 (e) (f)	C
FM, Intrinsically Safe, Explosionproof, and Nonincendive (e)	F
IECEx, Flameproof, Ex d IIC	V
IECEx, Intrinsically Safe (g)	T

MODEL CODE - HOUSING CODES S AND T (Continued)

Remote sensors not provided, but can be ordered separately

Description	Model
Optional Selections - Housing Features	
Custody Transfer Lock and Seal	-A1
PG 13.5 Conduit Thread (in lieu of 1/2 NPT) (h) (Not available with Option -A3)	-A2
Metric Conduit Thread Adapter (1/2 NPT to M20 x 1.5) (h) (Not available with Option -A2)	-A3
Optional Selections - Mounting Sets (i)	
Carbon Steel (with finish) Mounting Set	-M1
Stainless Steel (with finish) Mounting Set	-M2
Optional Selection - LED Indicator (with HART Output Versions -H/-T only)	
Loop Powered Indicator	-L1
Optional Selections - Miscellaneous	
Custom Database Configuration (Requires C2 Form filled out with all data specified)	-C2
Omit Paper Instruction Manual and CD (j)	-K1
Example: RTT15-T1SNJNAC-A2M2C2	

a. Input configuration can be changed in the field by changing wiring terminations and reconfiguring.
b. For dual input with different type sensors (Output Versions -F and -P only), specify Input Configuration Code 1 and reconfigure the transmitter after shipment, or specify the -C2 option for custom configuration.
c. Transmitter is configured for measurement type specified, whether sensor is included or not. User can change configuration to a different type using the appropriate configurator for selected protocol.
d. Measurement input types Q, 4, A, 6, and I not available with Dual Input Configuration Codes 4, 5, and 6. User Configuration or -C2 Option can be used for dual input of one three-wire RTD and one TC (Output Versions -F and -P only).
e. For HART version 7 (-H), contact Invensys for availability of CSA and FM certification.
f. With Option -L1, CSA is explosionproof only.
g. Output versions -H and -T only.
h. Options -A2 and -A3 not available with Electrical Safety Codes C and F explosionproof installations.
i. For mounting transmitter to a surface or nominal DN 50 or 2-in pipe.
j. Standard transmitter is shipped with a paper instruction manual that describes installation, operation, and configuration, and a CD that includes all pertinent documentation such as Parts Lists, Dimensional Prints, and more detailed instructions.

MODEL CODE - HOUSING CODES C, D, W, AND Y

Integral bare sensors provided

Description	Model
I/A Series Temperature Transmitter	RTT15
HOUSING CODE C  HOUSING CODE D  HOUSING CODES W AND Y 	
Output Version	
Intelligent; Digital HART 7 and 4 to 20 mA dc	-H
Intelligent; Digital HART 5 and 4 to 20 mA dc	-T
Intelligent; Digital FOUNDATION Fieldbus H1	-F
Intelligent; Digital PROFIBUS PA	-P
Input Configuration (a)	
Single Input; Configured for One Sensor	1
Housing and Sensor Mounting (Integral Bare Sensors)	
Weatherproof Connection Head, aluminum; with Integral Bare Sensor	C
Explosionproof Connection Head, aluminum; with Integral Bare Sensor	D
Universal Housing, aluminum; with Integral Bare Sensor	W
Universal Housing, 316 ss; with Integral Bare Sensor	Y
Sensor Length - Dimension A (b)	
2 in (50 mm), Sensor included	A
2.5 in (64 mm), Sensor included	B
3 in (76 mm), Sensor included	C
3.5 in (89 mm), Sensor included	D
4 in (102 mm), Sensor included	E
4.5 in (114 mm), Sensor included	F
5 in (127 mm), Sensor included	G
5.5 in (146 mm), Sensor included	H
6 in (152 mm), Sensor included	J
7 in (178 mm), Sensor included	K
8 in (203 mm), Sensor included	L
9 in (229 mm), Sensor included	M
10 in (254 mm), Sensor included	P
11 in (279 mm), Sensor included	Q
12 in (305 mm), Sensor included	R
18 in (457 mm), Sensor included	S
24 in (610 mm), Sensor included	T
30 in (762 mm), Sensor included	U
36 in (914 mm), Sensor included	V
Custom Lengths between 2 and 120 in (50 mm and 3 m), Sensor included	X
Measurement Input Type (Software Selectable) (c)	
Thermocouple, Type E, Chromel-Constantan	E
Thermocouple, Type J, Iron-Constantan	J
Thermocouple, Type K, Chromel-Alumel	K
Thermocouple, Type T, Copper-Constantan	T
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath	Q
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath	4
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath	A
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath	6
Ohm Input	O
Millivolt Input	M
Thermowell Assembled to Housing	
No Well	NA

MODEL CODE - HOUSING CODES C, D, W, AND Y (Continued)

Integral bare sensors provided

Description	Model
Electrical Safety (see Electrical Safety Specifications section in PSS or MI for details)	
Supplied without Agency Approval/Certification (with Housing Codes C and D only)	Z
ATEX, Intrinsically Safe; Ex ia IIC	E
ATEX, Flameproof; Ex d IIC (d)	D
CSA, Intrinsically Safe, Explosionproof, and Division 2 (e) (f)	C
FM, Intrinsically Safe, Explosionproof, and Nonincendive (e)	F
IECEx, Flameproof, Ex d IIC (d)	V
IECEx, Intrinsically Safe (g)	T
Optional Selections - Housing Features	
Custody Transfer Lock and Seal (with Housing Codes W and Y only)	-A1
PG 13.5 Conduit Thread in lieu of 1/2 NPT (with Housing Codes W and Y only) (h) (Not available with Option -A3)	-A2
Metric Conduit Thread Adapter (1/2 NPT to M20 x 1.5) (Not available with Option -A2)	-A3
Optional Selections - Mounting Sets for Surface or Pipe Mounting	
Carbon Steel (with finish) Mounting Set (with Housing Codes W and Y only)	-M1
Stainless Steel (with finish) Mounting Set (with Housing Codes W and Y only)	-M2
Optional Selection - LED Indicator (with HART Output Versions -H/-T only)	
Loop Powered Indicator (with Housing Codes W and Y only) With ATEX and FM intrinsically safe versions of the transmitter, and ATEX, CSA, FM, and IECEx Explosionproof/flameproof versions of the transmitter.	-L1
Optional Selections - Miscellaneous	
Custom Database Configuration (Requires C2 Form filled out with all data specified)	-C2
Omit Paper Instruction Manual and CD (i)	-K1
Inconel Sheath on Sensor (Not available with Measurement Input Types 4 and 6) (j)	-S1
Example: RTT15-T1WLJNAC-A2S1	

a. Input configuration can be changed in the field by changing wiring terminations and reconfiguring.
b. Quantity of one Foxboro sensor that is listed under Measurement Input Type. Length is Dimension A as shown in the Dimensions-Nominal section of PSS 2A-1F5 A and in DP 020-462. Dimension A is bare element insertion length.
c. Transmitter is configured for measurement type specified, whether sensor is included or not. User can change configuration to a different type using the appropriate configurator for selected protocol.
d. Not available with Housing Code C.
e. For HART version 7 (-H), contact Invensys for availability of CSA and FM certification.
f. With Option -L1, CSA is explosionproof only.
g. Output versions -H and -T only.
h. Option -A2 only available with Electrical Safety Codes D and E.
i. Standard transmitter is shipped with a paper instruction manual that describes installation, operation, and configuration, and a CD that includes all pertinent documentation such as Parts Lists, Dimensional Prints, and more detailed instructions.
j. Inconel sheath is 0.250 in (6.35 mm) outside diameter, and provides a moisture resistant assembly. The sheath O.D. is designed to fit into a well I.D. of 0.260 in (6.60 mm).

MODEL CODE - HOUSING CODES E, F, L, AND M

Housing provided with sensor and thermowell (or user-supplied thermowell)

Description	Model
I/A Series Temperature Transmitter	RTT15
HOUSING CODE E  HOUSING CODE F  HOUSING CODES L AND M 	
Output Version	
Intelligent; Digital HART 7 and 4 to 20 mA dc	-H
Intelligent; Digital HART 5 and 4 to 20 mA dc	-T
Intelligent; Digital FOUNDATION Fieldbus H1	-F
Intelligent; Digital PROFIBUS PA	-P
Input Configuration (a)	
Single Input; Configured for One Sensor	1
Housing and Sensor Mounting (Integral Sensor and Well)	
Weatherproof Connection Head, aluminum; with Integral Sensor and Well	E
Explosionproof Connection Head, aluminum; with Integral Sensor and Well	F
Universal Housing, aluminum; with Integral Sensor and Well	L
Universal Housing, 316 ss; with Integral Sensor and Well	M
Sensor Length - Dimension U or U + T (b)	
2 in (50 mm), Sensor included	A
2.5 in (64 mm), Sensor included	B
3 in (76 mm), Sensor included	C
3.5 in (89 mm), Sensor included	D
4 in (102 mm), Sensor included	E
4.5 in (114 mm), Sensor included	F
5 in (127 mm), Sensor included	G
5.5 in (146 mm), Sensor included	H
6 in (152 mm), Sensor included	J
7 in (178 mm), Sensor included	K
7.5 in (191 mm), Sensor included	W
8 in (203 mm), Sensor included	L
9 in (229 mm), Sensor included	M
10 in (254 mm), Sensor included	P
11 in (279 mm), Sensor included	Q
12 in (305 mm), Sensor included	R
13 in (330 mm), Sensor included	Y
13.5 in (343 mm), Sensor included	Z
14 in (356 mm), Sensor included	1
14.5 in (368 mm), Sensor included	2
16 in (406 mm), Sensor included	3
18 in (457 mm), Sensor included	S
19 in (483 mm), Sensor included	4
20 in (508 mm), Sensor included	5
24 in (610 mm), Sensor included	T
30 in (762 mm), Sensor included	U
36 in (914 mm), Sensor included	V
Custom Lengths between 2 and 120 in (50 mm and 3 m), Sensor included	X

MODEL CODE - HOUSING CODES E, F, L, AND M (Continued)

Housing provided with sensor and thermowell (or user-supplied thermowell)

Description	Well Type	Well Connection	Well Material	Available with Sensor Length Codes	Model
Measurement Input Type (Software Selectable) (c)					
Thermocouple, Type E, Chromel-Constantan					E
Thermocouple, Type J, Iron-Constantan					J
Thermocouple, Type K, Chromel-Alumel					K
Thermocouple, Type T, Copper-Constantan					T
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath					Q
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-B Standard Accuracy), 316 ss Sheath					4
RTD, Platinum, 3-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath					A
RTD, Platinum, 4-wire, 100 Ω, IEC 751 (ASTM-A High Accuracy), 316 ss Sheath					6
Ohms Input					O
Millivolts Input					M
Thermowell Assembled to Housing					
	Plain	3/4 NPT External	304 ss	A, D, G, J, L, P, and R	TA
	Plain	3/4 NPT External	316 ss	A, D, G, J, L, P, and R	TB
	Lagging (d)	3/4 NPT External	316 ss	G, L, M, and Q	TC
	Plain	1 NPT External	316 ss	A, D, G, J, and L	TD
	Plain	1 NPT External	Nickel Alloy (e)	A, D, G, J, and L	TE
	Lagging (d)	1 NPT External	304 ss	G, L, M, and Q	TF
	Lagging (d)	1 NPT External	316 ss	G, L, M, and Q	TG
	Plain	1 in ANSI Cl. 150 RF	316 ss	A, D, G, J, L, P, and R	TH
	Plain	1.5 in Cl. 150 RF	316 ss	A, D, G, J, L, P, R, and S	TI
	Other Types of Thermowells Assembled to Housing (f)				TX
	Thermowell Supplied by User (g)				NA
Electrical Safety (see Electrical Safety Specifications section in PSS or MI for details)					
Supplied without Agency Approval/Certification (with Housing Codes E and F only)					Z
ATEX, Intrinsically Safe, Ex ia IIC					E
ATEX, Flameproof, Ex d IIC (g) (h)					D
CSA, Intrinsically Safe, Explosionproof, and Division 2 (g) (i) (j)					C
FM, Intrinsically Safe, Explosionproof, and Nonincendive (g) (i)					F
IECEx, Flameproof, Ex d IIC (h)					V
IECEx, Intrinsically Safe (k)					T
Optional Selections - Housing Features					
Custody Transfer Lock and Seal (with Housing Codes L and M only)					-A1
PG 13.5 Conduit Thread in lieu of 1/2 NPT (with Housing Codes L and M only) (l) (Not available with Option -A3)					-A2
Metric Conduit Thread Adapter (1/2 NPT to M20 x 1.5) (Not available with Option -A2)					-A3
Optional Selections - Mounting Sets for Surface or Pipe Mounting					
Carbon Steel (with finish) Mounting Set (with Housing Codes L and M only)					-M1
Stainless Steel (with finish) Mounting Set (with Housing Codes L and M only)					-M2
Optional Selections - Housing Connection to Well					
Stainless Steel union and fittings, with Housing Codes E, F, and L; standard on Housing Code M					-S3
Union with 3/4 NPT External Thread instead of 1/2 NPT External Thread (m)					-D4
Optional Selection - LED Indicator (with HART Output Versions -H/-T only)					
Loop Powered Indicator (with Housing Codes L and M only) With ATEX and FM intrinsically safe versions of the transmitter, and with ATEX, CSA, FM, and IECEx explosionproof/flameproof versions of the transmitter.					-L1
Optional Selections - Miscellaneous					
Custom Database Configuration (Requires C2 Form filled out with all data specified)					-C2
Omit Paper Instruction Manual and CD (n)					-K1
Inconel Sheath on Sensor (Not available with Measurement Input Types 4 and 6) (o)					-S1
Example: RTT15-T1FGTTAF-N2C2					

a. Input configuration can be changed in the field by changing wiring terminations and reconfiguring.

b. Quantity of one Foxboro sensor that is listed under Measurement Input Type. Length is Dimension U or U + T as shown in the Dimensions-Nominal section of PSS 2A-1F5 A and in DP 020-462, where U is the insertion length, and T is the lagging length of 76 mm (3 in). See Note (d) below.
c. Transmitter is configured for measurement type specified, whether sensor is included or not. User can change configuration to a different type using the appropriate configurator for selected protocol.
d. Lagging wells have a lagging length T of 76 mm (3 in). If a different lagging length is required, select Code TX and specify Well Model or Part Number. Refer to PSS 3-3C1 A for W-Series Wells, and PSS 3-3D1 A and PSS 3-3D1 B for T-Series Wells.
e. Equivalent to Hastelloy® C. Hastelloy is a registered trademark of Haynes International, Inc.
f. Specify Well Model Number or Part Number. Refer to PSS 3-3C1 A, PSS 3-3D1 A, and PSS 3-3D1 B for other well types.
g. Flameproof and explosionproof approvals and certifications not available with Thermowell Code NA (user-supplied thermowell).
h. Not available with Housing Code E.
i. For HART version 7 (-H), contact Invensys for availability of CSA and FM certification.
j. With Option -L1, CSA is explosionproof only.
k. Output versions -H and -T only.
l. Option -A2 only available with Electrical Safety Codes D and E.
m. For use with customer's thermowell having 3/4 NPT internal thread. Available only with Housing Codes E, F, L, or M, and thermowell Code NA (thermowell by others). Not available with Option -S3.
n. Standard transmitter is shipped with a paper instruction manual that describes installation, operation, and configuration, and a CD that includes all pertinent documentation such as Parts Lists, Dimensional Prints, and more detailed instructions.
o. Inconel sheath is 0.250 in (6.35 mm) outside diameter, and provides a moisture resistant assembly. The sheath O.D. is designed to fit into a well I.D. of 0.260 in (6.60 mm).

PARTS

Figure 1. Basic Transmitter Module
Housing Code B

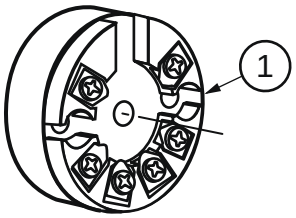


Table 1. Parts for Figure 1

Item	Part No.	Qty.	Part Name
*1	Below	1	Model, Basic Transmitter
	D0197WG		with HART 7 Protocol
	D0179CA		with HART 5 Protocol
	D0179CB		with FOUNDATION Fieldbus or PROFIBUS Protocol

Figure 2. Transmitter Assemblies without Sensors and Wells
Housing Codes S and T

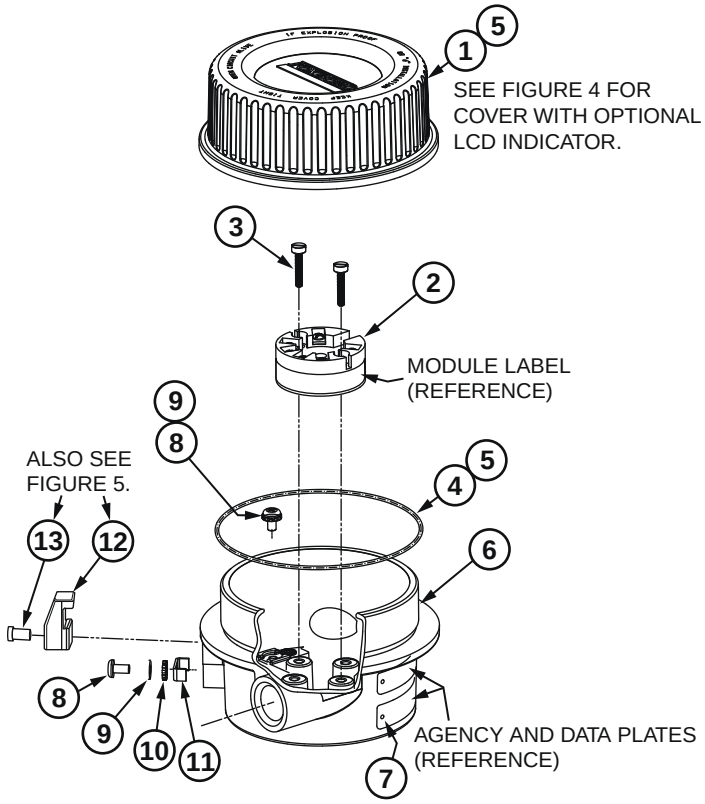


Table 2. Parts for Figure 2

Item	Part No.	Qty.	Part Name
1	Below	1	Cover, Solid
	D0158KN		Aluminum Cover
	B0300CD		Stainless Steel Cover
*2	Below	1	Module, Basic Transmitter
	D0197WG		HART 7 Protocol
	D0179CA		HART 5 Protocol
	D0179CB		FOUNDATION Fieldbus or PROFIBUS Protocol
–	D0179DE	1	DDs on CD-ROM, FOUNDATION Fieldbus Protocol (not shown)
–	D0179DF	1	DDs on CD-ROM, PROFIBUS Protocol (not shown)
*–	D0179EE	1	Special magnet, FOUNDATION Fieldbus or PROFIBUS Protocol (not shown) For use in Simulation Mode - See MI
3	Below	2	Screw, Module Mounting
	X0124KY		0.164-32 x 0.750, ss, with ss Housing Code T
	X0123VE		0.164-32 x 0.750, cs, with aluminum Housing Code S
*4	X0144MZ	1	O-Ring, Cover

Table 2. Parts for Figure 2 (Continued)

Item	Part No.	Qty.	Part Name
5	X0114AT	A/R	Lubricant; 14 ounce can
6	Below	1	Housing, Universal; Housing Codes L, S, and T
	B0300BJ		Aluminum; Housing Code S; not with ATEX Flameproof
	B0300BU		Aluminum; Housing Code S; use with ATEX Flameproof
	B0300CB		Stainless Steel; Housing Code T
7	B1276ZU	4	Screw, self-tapping; ss; 0.086-56 x 0.187
8	Below	2	Screw, Earth (Ground); 0.164-32 x 0.312
	X0169SB		Plated steel, cross-recessed; used w/alum. Housing Code S
	X0134FE		Stainless steel, cross-recessed; used w/ss Housing Code T
9	X0143SB	2	Washer, lock, stainless steel, 0.164
10	Below	1	Washer, plain
	0022454		Plated brass, 0.170 I.D.; used with aluminum housing
	0024818		Stainless steel, 0.195 I.D.; used with stainless steel housing
11	N0305RN	1	Clamp, Earth (Ground), stainless steel
12	Below	1	Cover Lock; with Housing Codes L, M, S, T, W, and Y
	B0300BW		Epoxy coated aluminum; with Housing Codes L, S, and W
	B0300AU		ss "L" piece, with Housing Codes M, T, and Y (a)
	B0300CU		ss "U" piece, with Housing Codes M, T, and Y (a)
13	Below	1	Screw, Lock; 0.190-32 x 0.375; with Housing Codes S and T
	N6004XX		Plated cs, hex socket hd; with Housing Code S
	X0133YD		ss, hex socket hd; with Housing Code M

a. The "L" and "U" pieces are mating parts and comprise Item 12 for the M, T, and Y stainless steel housings.

Figure 3. Transmitter Assemblies with Sensors and Wells
Housing Codes C, E, D, F, L, M, W and Y

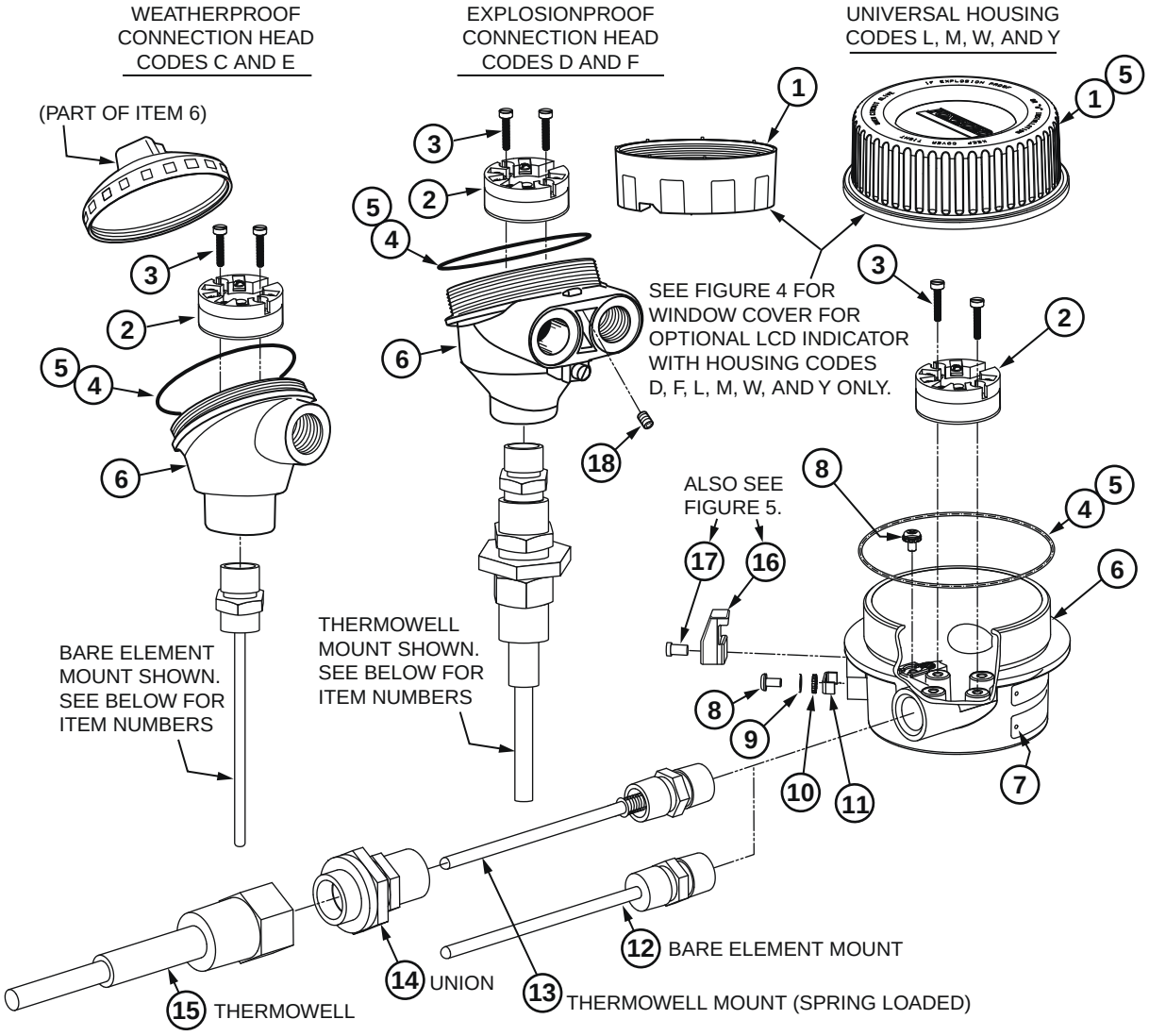


Table 3. Parts for Figure 3

Item	Part No.	Qty.	Part Name
1	Below	1	Cover, Solid Housing Codes D, F, L, M, W, and Y
	D0158KN		Aluminum; Housing Codes L and W
	B0300CD		Stainless Steel; Housing Codes M and Y
	D0179YV		Aluminum, Housing Codes D and F
*2	Below	1	Module, Basic Transmitter; also see Figure 1
	D0197WG		HART 7 Protocol
	D0179CA		HART 5 Protocol
	D0179CB		FOUNDATION Fieldbus or PROFIBUS Protocol
–	D0179DE	1	DDs on CD-ROM, FOUNDATION Fieldbus Protocol (not shown)
–	D0179DF	1	DDs on CD-ROM, PROFIBUS Protocol (not shown)

Table 3. Parts for Figure 3 (Continued)

Item	Part No.	Qty.	Part Name
*–	D0179EE	1	Special magnet, FOUNDATION Fieldbus or PROFIBUS Protocol (not shown) For use in Simulation Mode - See MI
3	Below	2	Screw, Module Mounting
	X0124KY		0.164-32 x 0.750, ss, with ss Housing Codes M and Y
	X0123VE		0.164-32 x 0.750, cs, with Aluminum Housing Codes L and W
	X0174CD		M4X1 x 20 mm, cs, with Aluminum Housing Codes C, D, E, and F
*4	Below	1	O-Ring, Cover
	X0144MZ		with Universal Housing, Housing Codes L, M, W, and Y
	D0179EF		with Weatherproof Connection Head, Housing Codes C and E
	D0179EG		with Explosionproof Connection Head, Housing Codes D and F
5	X0114AT	A/R	Lubricant; 14 ounce can
6	Below	1	Housing, Universal, Housing Codes L, M, W, and Y
	B0300BJ		Aluminum; Housing Codes L and W, not with ATEX Flameproof
	B0300BU		Aluminum; Housing Codes L and W, use with ATEX Flameproof
	B0300CB		Stainless Steel; Housing Codes M and Y
6	D0179CG	1	Connection Head Assembly, Weatherproof; Codes C and E Includes housing, cover, and gasket
6	D0179CH	1	Connection Head Assembly, Explosionproof; Codes D and F Includes housing and gasket (see Item 1 for Cover)
7	B1276ZU	4	Screw, self-tapping; ss; 0.086-56 x 0.187
8	Below	2	Screw, Earth (Ground); 0.164-32 x 0.312
	X0169SB		Plated steel, cross-recessed; used w/alum. Housing Codes L and W
	X0134FE		Stainless steel, cross-recessed; used w/ss Housing Codes M and Y
9	X0143SB	2	Washer, lock, stainless steel, 0.164
10	Below	1	Washer, plain
	0022454		Plated brass, 0.170 I.D.; used with aluminum housing
	0024818		Stainless steel, 0.195 I.D.; used with stainless steel housing
11	N0305RN	1	Clamp, Earth (Ground), stainless steel
12	Below	1	Bare Element Mount Assembly
	Figure 13		Platinum RTD; Standard Accuracy; Sensor Codes Q and 4
	Figure 14		Platinum RTD; High Accuracy; Sensor Codes A and 6
	Figure 15		Thermocouple Types E, J, K, and T

Table 3. Parts for Figure 3 (Continued)

Item	Part No.	Qty.	Part Name
13	Below	1	Spring-loaded Thermowell Mount Assembly
	Figure 16		Platinum RTD; Standard Accuracy; Sensor Codes Q and 4
	Figure 17		Platinum RTD; High Accuracy; Sensor Codes A and 6
	Figure 18		Thermocouple Types E, J, K, and T
14	Below	1	Union - used with spring loaded sensor and well; 1/2 NPT internal thread; 2.3 inches long
	B0107WC		Plated steel; 1/2 NPT external thread, standard
	D0179SJ		Stainless steel; 1/2 NPT external thread, Option -S3 (Figure 12)
	X0172VX		Plated steel; 3/4 NPT external thread, Option -D4 (Figure 10)
	K0174FZ		Stainless steel; 3/4 NPT external thread
15	Figure 19	1	Thermowells, Plain or Lagging
			Provided with Housing Codes E, F, L, and M
16	Below	1	Cover Lock; with Housing Codes L, M, W, and Y
	B0300BW		Epoxy coated aluminum; with Housing Codes L and W
	B0300AU		ss "L" piece, with Housing Codes M and Y
	B0300CU		ss "U" piece, with Housing Codes M and Y
17	Below	1	Screw, Lock; 0.190-32 x 0.375; with Housing Codes L, M, W, and Y
	N6004XX		Plated cs, hex socket hd; with Housing Codes L and W
	X0133YD		ss, hex socket hd; with Housing Codes M and Y
18	D0186ML	1	Screw. Set, Cover Lock

Figure 4. Optional LED Indicator (Option -L1)
Housing Codes S and T for Field Mounting, Housing Codes W and Y with Bare Sensor,
and Housing Codes L and M with Sensor and Well;
Available with HART Output (Versions -H and -T) Only

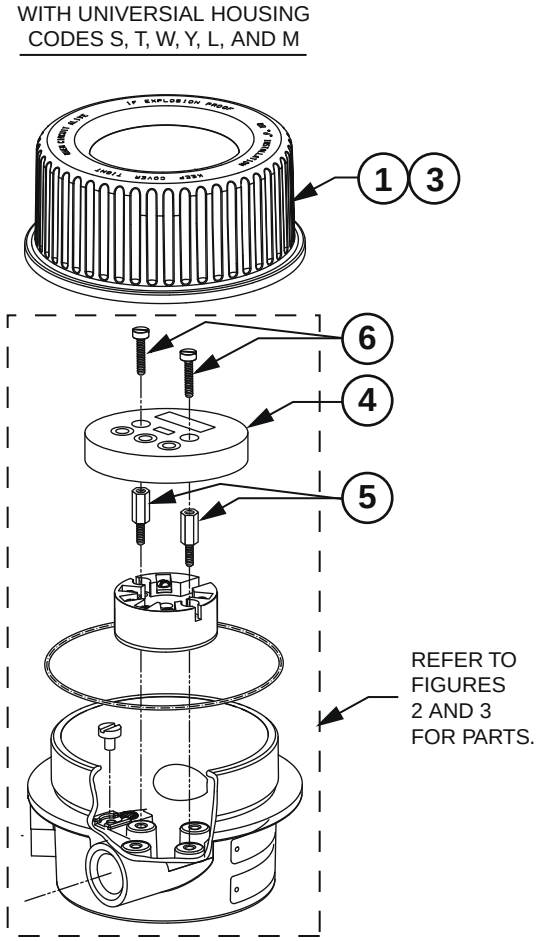


Table 4. Parts for Figure 4

Item	Part No.	Qty.	Part Name
1	Below	1	Cover, Window
	D0158KS		Stainless Steel; for Housing Codes T, Y, and M
	D0158KT		Aluminum; for Housing Codes S, W, and L
*2	D0197AM	1	Indicator, LED; Loop Powered
3	X0114AT	A/R	Lubricant; 14 ounce can
4	D0197AM	1	Indicator, LED; Loop Powered; (-L1)
5	X0201LW	2	Standoff; 0.164-32 external thread and 0.164-32 internal thread
6	Below	2	Screw, Indicator, and Module Mounting
	X0124KY		0.164-32 x 0.750, ss, with ss Housing Codes M, T, and Y
	X0123VE		0.164-32 x 0.750, cs, with Aluminum Housing Codes L, S, and W

Figure 5. Optional Custody Transfer Lock and Seal (Option -A1)
Housing Codes L, S, and W (Aluminum Housings) and Housing Codes M, T, and Y (ss Housings)

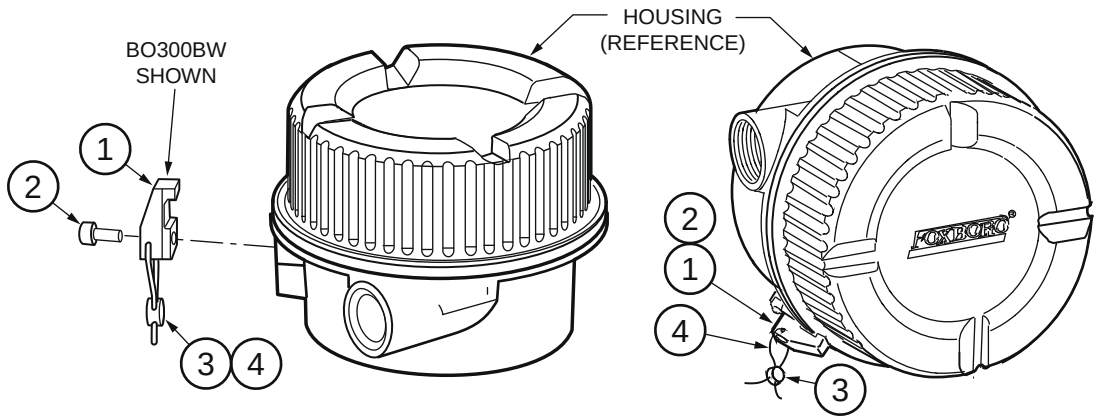


Table 5. Parts for Figure 5

Item	Part No.	Qty.	Part Name
1	Below	1	Cover Lock; with Housing Codes L, M, S, T, W, and Y
	B0300BW		Epoxy coated aluminum; with Housing Codes L, S, and W
	B0300AU		ss "L" piece, with Housing Codes M, T, and Y (a)
	B0300CU		ss "U" piece, with Housing Codes M, T, and Y (a)
2	Below	1	Screw, Lock; 0.190-32 x 0.375; with Housing Codes L, M, S, T, W, and Y
	N6004XX		Plated cs, hex socket hd; with Housing Codes L, S, and W
	X0133YD		ss, hex socket hd; with Housing Codes M, T, and Y
3	S001806	1	Lead Seal
4	S001807	A/R	Sealing Wire

a. The "L" and "U" pieces are mating parts and comprise Item 1 for the M, T, and Y stainless steel housings.

NOTE

Items 1 and 2 are standard construction with Electrical Safety Code D, ATEX flameproof. If, however, Items 3 and 4 (seal and wire) are also required with ATEX flameproof construction, then specify Option -A1 to also receive the seal and wire.

Figure 6. Optional PG 13.5 Conduit Thread (Option -A2)
Housing Codes L, M, S, T, W, and Y

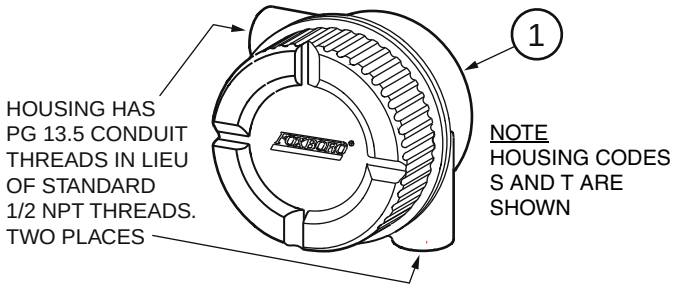


Table 6. Parts for Figure 6

Item	Part No.	Qty.	Part Name
1	Below	1	Housing, Universal, Codes L, M, S, T, W, and Y
	B0300CH		Aluminum; With Housing Codes L, S, and W and Electric Safety Code E With Housing Code L and Electric Safety Code D
	B0300KY		Stainless steel; With Housing Codes M, T, and Y and Electric Safety Code E With Housing Code M and Electric Safety Code D

Figure 7. Optional Metric Conduit Thread Adapter (Option -A3)
Housing Codes C, D, E, F, L, M, S, T, W, and Y

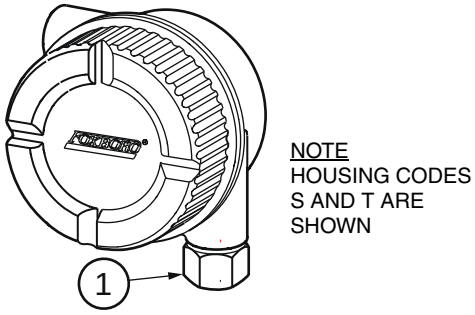


Table 7. Parts for Figure 7

Item	Part No.	Qty.	Part Name
1	N7141DX	1	Metric Conduit Thread Adapter; ss, 1/2 NPT to M20 x 1.5 - 6H

Figure 8. Optional DIN Rail Mounting (Option -D1)
Housing Code B (Basic Module)

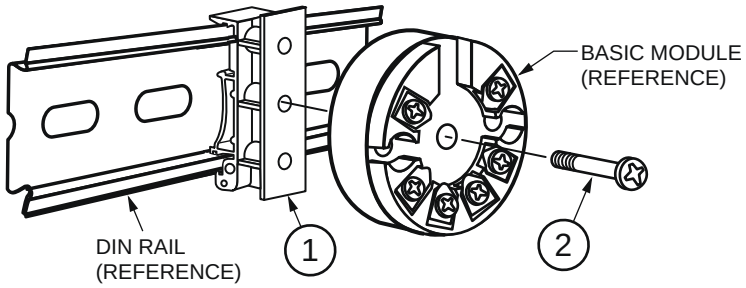


Table 8. Parts for Figure 8

Item	Part No.	Qty.	Part Name
1	X0175MJ	1	Mounting Clip, DIN Rail; gray plastic
2	X0154PW	1	Screw, self-tapping; plated steel, 0.138-32 x 0.750

Figure 9. Optional Adapter Plate and Screws (Option -D3)
Allows Mounting Basic Module (Housing Code B) into Existing E93, E94, 893, and RTT10 Temperature Transmitter Housings

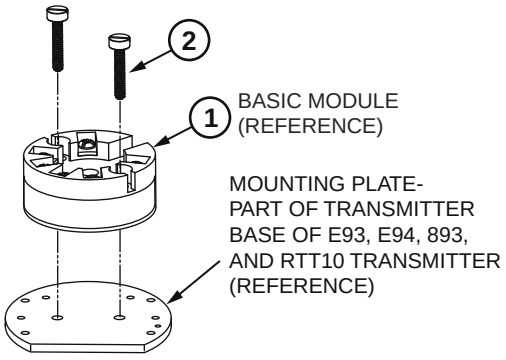


Table 9. Parts for Figure 9

Item	Part No.	Qty.	Part Name
1	Reference	1	Module, Basic - Refer to Figure 1
2	X0123VE	2	Screw, Module Mounting, 0.138-32 x 0.750, carbon steel

Figure 10. Optional Union - 3/4 NPT External Thread (Option -D4)
Housing Codes E, F, L, and M
(Also see Figure 3)

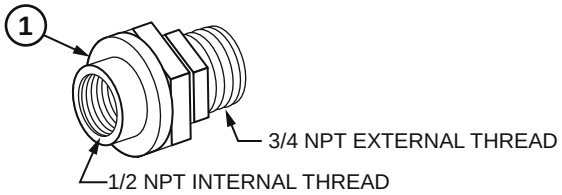


Table 10. Parts for Figure 10

Item	Part No.	Qty.	Part Name
1	X0172VX	1	Union, Plated Steel; 2.3 in long x 1.375 in O.D. (maximum) with 3/4 NPT External Thread

Figure 11. Optional Mounting Sets (Options -M1 and -M2)
Housing Codes S, T, W, Y, L, and M

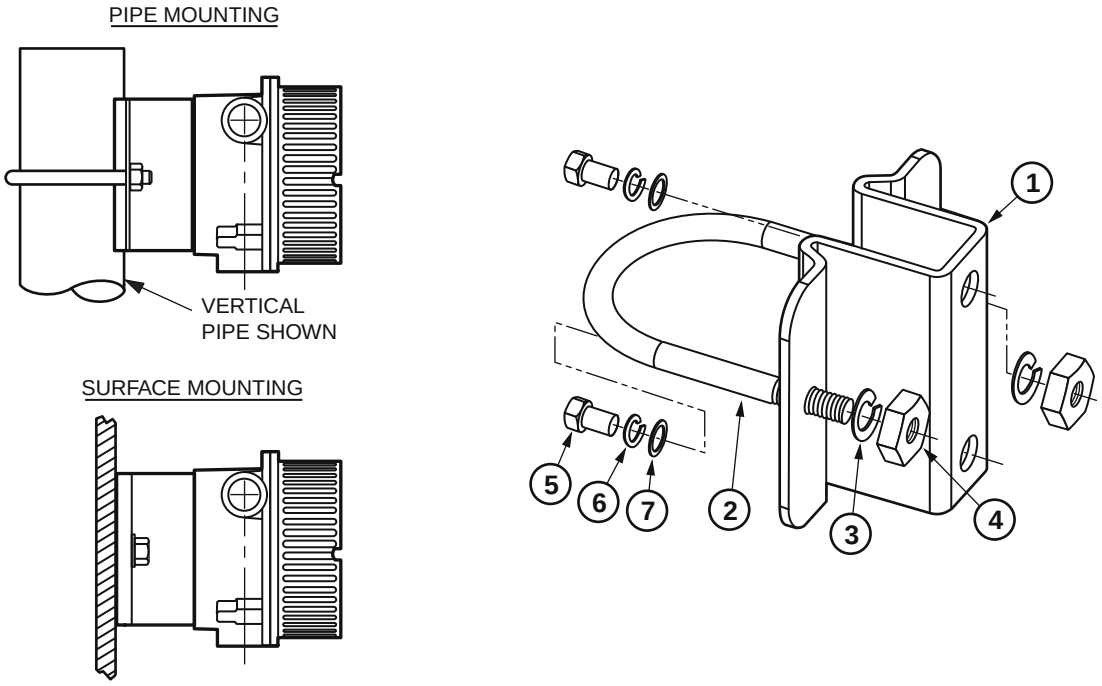


Table 11. Parts for Figure 11
Optional Selection -M1 – Finished Carbon Steel

Item	Part No.	Qty.	Part Name
–	B0300DR	–	Mounting Kit, carbon steel
1	B0300DQ	1	Bracket, Mounting; painted steel
2	D0114SM	1	U-Bolt; plated steel, 0.312-18, 2.75 x 3.375
3	A2015AB	2	Washer, lock; ss, 0.312
4	X0142BV	2	Nut, hex head, plated steel; 0.312-18
5	X0166YE	2	Screw, pnhd, cross-recessed; plated steel, 0.250-20 x 0.625
6	0036504	2	Washer, lock; ss, 0.250
7	0005653	2	Washer, plain; plated steel, 0.250 (wide)

Table 12. Parts for Figure 11
Optional Selection -M2 – Stainless Steel

Item	Part No.	Qty.	Part Name
–	B0601AB	–	Mounting Kit, stainless steel
1	B0601AA	1	Bracket, Mounting; ss
2	N1205MX	1	U-Bolt; ss, 0.312-18, 2.75 x 3.375
3	A2015AB	2	Washer, lock; ss, 0.312
4	X0142BW	2	Nut, hex head, ss; 0.312-18
5	X0128KT	2	Screw, pnhd, cross-recessed; ss, 0.250-20 x 0.625
6	0036504	2	Washer, lock; ss, 0.250
7	X0179DY	2	Washer, plain; ss, 0.250 (wide)

Figure 12. Optional 316 ss Union - 1/2 NPT External Thread (Option -S3)
Housing Codes E, F, and L (Standard with Housing Code M)

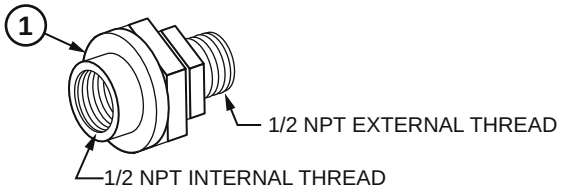


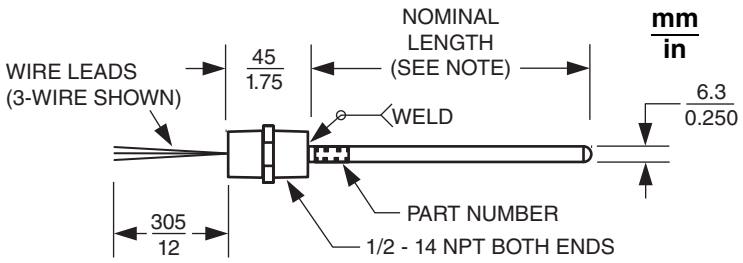
Table 13. Parts for Figure 12

Item	Part No.	Qty.	Part Name
1	D0179SJ	1	Union, 316 ss; 2.3 in long; 1.625 in O.D. (maximum) With 1/2 NPT external thread

NOTE

Union used in lieu of union coupler shown in Figure 3.

Figure 13. Platinum RTD, 100 Ohms, Types Q (3-wire) and 4 (4-wire) ASTM-B Standard Accuracy; IEC 751 Bare Element Mount Assembly with 316 ss or Optional Inconel Sheath Housing Codes C, D, W, and Y



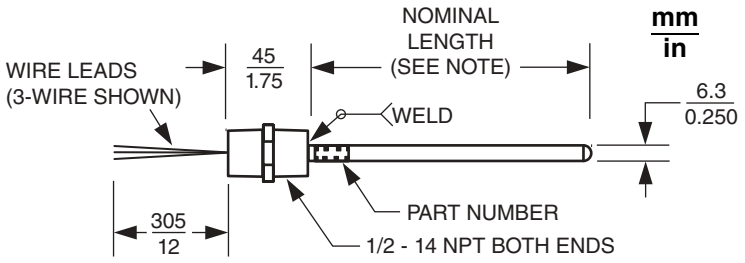
NOTE: Nominal length is equal to "A" length.

Table 14. Parts for Figure 13

Nominal Length			Type Q, 3-Wire		Type 4, 4-Wire	
Code	mm	in	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath
A	50	2	B0600AQ	B0300QU	B0500HW	N/A
B	64	2.5	B0600BQ	B0300QV	B0500HY	N/A
C	76	3	B0600CQ	B0300QW	B0500HZ	N/A
D	89	3.5	B0600DQ	B0300QX	B0500JH	N/A
E	102	4	B0600EQ	B0300QY	B0500JM	N/A
F	114	4.5	B0600FQ	B0300QZ	B0500JV	N/A
G	127	5	B0600GQ	B0300RA	B0500JW	N/A
H	140	5.5	B0600HQ	B0300RB	B0500JY	N/A
J	152	6	B0600JQ	B0300RC	B0500JZ	N/A
K	178	7	B0600KQ	B0300RD	B0500KH	N/A
L	203	8	B0600LQ	B0300RE	B0500KM	N/A
M	229	9	B0600MQ	B0300RF	B0500KV	N/A
P	254	10	B0600PQ	B0300RG	B0500KW	N/A
Q	279	11	B0600QQ	B0300RH	B0500KY	N/A
R	305	12	B0600RQ	B0300RJ	B0500KZ	N/A
S	457	18	B0600SQ	B0300RK	B0500LH	N/A
T	610	24	B0600TQ	B0300RL	B0500LM	N/A
U	762	30	B0600UQ	B0300RM	B0500LV	N/A
V	914	36	B0600VQ	B0300RN	B0500LW	N/A

a. The Inconel sheath is Optional Selection -S1.

Figure 14. Platinum RTD, 100 Ohms, Types A (3-wire) and 6 (4-wire) ASTM-A High Accuracy; IEC 751 Bare Element Mount Assembly with 316 ss or Optional Inconel Sheath Housing Codes C, D, W, and Y



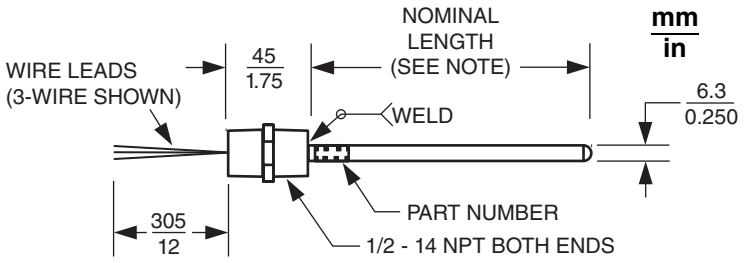
NOTE: Nominal length is equal to "A" length.

Table 15. Parts for Figure 14

Nominal Length			Type A, 3-Wire		Type 6, 4-Wire	
Code	mm	in	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath
A	50	2	B0600AA	B0300RP	B0500LY	N/A
B	64	2.5	B0600BA	B0300RQ	B0500LZ	N/A
C	76	3	B0600CA	B0300RR	B0500MH	N/A
D	89	3.5	B0600DA	B0300RS	B0500MM	N/A
E	102	4	B0600EA	B0300RT	B0500MV	N/A
F	114	4.5	B0600FA	B0300RU	B0500MW	N/A
G	127	5	B0600GA	B0300RV	B0500MY	N/A
H	140	5.5	B0600HA	B0300RW	B0500MZ	N/A
J	152	6	B0600JA	B0300RX	B0500NA	N/A
K	178	7	B0600KA	B0300RY	B0500NB	N/A
L	203	8	B0600LA	B0300RZ	B0500NC	N/A
M	229	9	B0600MA	B0300SA	B0500ND	N/A
P	254	10	B0600PA	B0300SB	B0500NE	N/A
Q	279	11	B0600QA	B0300SC	B0500NF	N/A
R	305	12	B0600RA	B0300SD	B0500NG	N/A
S	457	18	B0600SA	B0300SE	B0500NH	N/A
T	610	24	B0600TA	B0300SF	B0500NJ	N/A
U	762	30	B0600UA	B0300SG	B0500NK	N/A
V	914	36	B0600VA	B0300SH	B0500NL	N/A

a. The Inconel sheath is Optional Selection -S1.

Figure 15. Thermocouple Types E, J, K, and T Bare Element Mount Assembly with 316 ss or Optional Inconel Sheath Housing Codes C, D, W, and Y



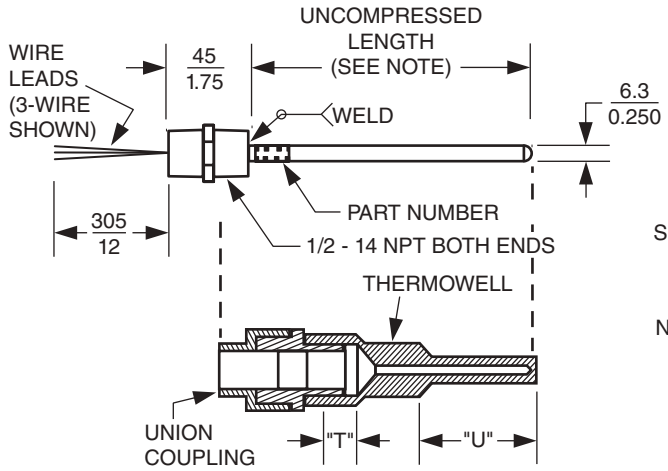
NOTE: Nominal length is equal to "A" length.

Table 16. Parts for Figure 15

Nominal Length			Type E		Type J		Type K		Type T	
Code	mm	in	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath (a)
A	50	2	B0600AE	B0300MQ	B0600AJ	B0300NK	B0600AK	B0300PE	B0600AT	B0300PZ
B	64	2.5	B0600BE	B0300MR	B0600BJ	B0300NL	B0600BK	B0300PF	B0600BT	B0300QA
C	76	3	B0600CE	B0300MS	B0600CJ	B0300NM	B0600CK	B0300PG	B0600CT	B0300QB
D	89	3.5	B0600DE	B0300MT	B0600DJ	B0300NN	B0600DK	B0300PH	B0600DT	B0300QC
E	102	4	B0600EE	B0300MU	B0600EJ	B0300NP	B0600EK	B0300PJ	B0600ET	B0300QD
F	114	4.5	B0600FE	B0300MV	B0600FJ	B0300NQ	B0600FK	B0300PK	B0600FT	B0300QE
G	127	5	B0600GE	B0300MW	B0600GJ	B0300NR	B0600GK	B0300PL	B0600GT	B0300QF
H	140	5.5	B0600HE	B0300MX	B0600HJ	B0300NS	B0600HK	B0300PM	B0600HT	B0300QG
J	152	6	B0600JE	B0300MY	B0600JJ	B0300NT	B0600JK	B0300PN	B0600JT	B0300QH
K	178	7	B0600KE	B0300MZ	B0600KJ	B0300NU	B0600KK	B0300PP	B0600KT	B0300QJ
L	203	8	B0600LE	B0300NA	B0600LJ	B0300NV	B0600LK	B0300PQ	B0600LT	B0300QK
M	229	9	B0600ME	B0300NB	B0600MJ	B0300NW	B0600MK	B0300PR	B0600MT	B0300QL
P	254	10	B0600PE	B0300NC	B0600PJ	B0300NX	B0600PK	B0300PS	B0600PT	B0300QM
Q	279	11	B0600QE	B0300ND	B0600QJ	B0300NY	B0600QK	B0300PT	B0600QT	B0300QN
R	305	12	B0600RE	B0300NE	B0600RJ	B0300NZ	B0600RK	B0300PU	B0600RT	B0300QP
S	457	18	B0600SE	B0300NF	B0600SJ	B0300PA	B0600SK	B0300PV	B0600ST	B0300QQ
T	610	24	B0600TE	B0300NG	B0600TJ	B0300PB	B0600TK	B0300PW	B0600TT	B0300QR
U	762	30	B0600UE	B0300NH	B0600UJ	B0300PC	B0600UK	B0300PX	B0600UT	B0300QS
V	914	36	B0600VE	B0300NJ	B0600VJ	B0300PD	B0600VK	B0300PY	B0600VT	B0300QT

a. The Inconel sheath is Optional Selection -S1.

Figure 16. Platinum RTD, 100 Ohms, Types Q (3-wire) and 4 (4-wire) ASTM-B Standard Accuracy; IEC 751 Spring-Loaded Thermowell Mount Assembly with 316 ss or Optional Inconel Sheath Housing Codes E, F, L, and M



mm
in

UNION & THERMOWELL
SHOWN FOR REFERENCE PURPOSE TO INDICATE METHOD OF ASSEMBLY WITH SENSOR

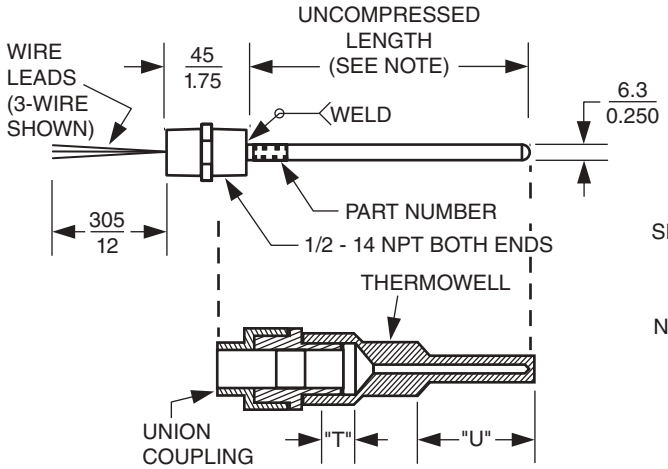
NOTE: The uncompressed length of the spring-loaded thermowell mounted sensor is equal to the "nominal" length listed in table below plus 89 mm (3.50 in). The nominal length is the "U" + "T" dimension of the thermowell.

Table 17. Parts for Figure 16

Nominal Length			Type Q, 3-Wire		Type 4, 4-Wire	
Code	mm	in	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath
A	50	2	B0500AQ	B0300KF	B0300WH	N/A
B	64	2.5	B0500BQ	B0300KG	B0300WJ	N/A
C	76	3	B0500CQ	B0300KH	B0300WK	N/A
D	89	3.5	B0500DQ	B0300KJ	B0300WL	N/A
E	102	4	B0500EQ	B0300KK	B0300WM	N/A
F	114	4.5	B0500FQ	B0300KL	B0300WN	N/A
G	127	5	B0500GQ	B0300KM	B0300WP	N/A
H	140	5.5	N/A	N/A	N/A	N/A
J	152	6	B0500JQ	B0300KP	B0300WR	N/A
K	178	7	B0500KQ	B0300KQ	B0300WS	N/A
L	203	8	B0500LQ	B0300KR	B0300WT	N/A
M	229	9	B0500MQ	B0300KS	B0300WU	N/A
P	254	10	B0500PQ	B0300KT	B0300WV	N/A
Q	279	11	B0500QQ	B0300KU	B0300WW	N/A
R	305	12	B0500RQ	B0300KV	B0300WX	N/A
S	457	18	B0500SQ	B0300KW	B0300WY	N/A
T	610	24	B0500TQ	B0300KX	B0300WZ	N/A
U	762	30	B0500UQ	B0300KY	B0300XA	N/A
V	914	36	B0500VQ	B0300KZ	B0300XB	N/A

a. The Inconel sheath is Optional Selection -S1.

Figure 17. Platinum RTD, 100 Ohms, Types A (3-wire) and 6 (4-wire) ASTM-A High Accuracy; IEC 751 Spring-Loaded Thermowell Mount Assembly with 316 ss or Optional Inconel Sheath Housing Codes E, F, L, and M



mm
in

UNION & THERMOWELL
SHOWN FOR REFERENCE PURPOSE TO INDICATE METHOD OF ASSEMBLY WITH SENSOR

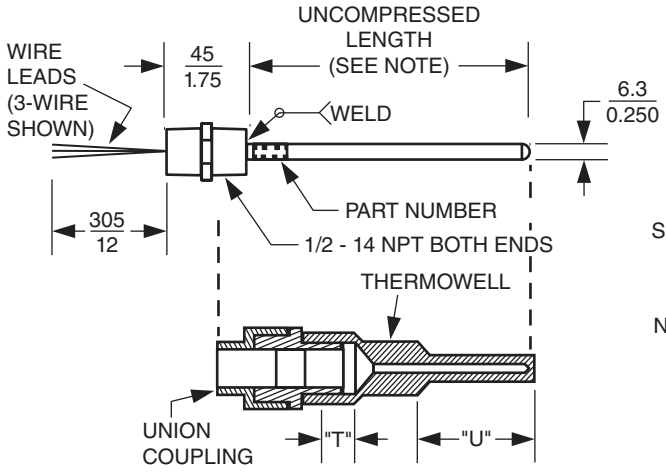
NOTE: The uncompressed length of the spring-loaded thermowell mounted sensor is equal to the "nominal" length listed in table below plus 89 mm (3.50 in). The nominal length is the "U" + "T" dimension of the thermowell.

Table 18. Parts for Figure 17

Nominal Length			Type A, 3-Wire		Type 6, 4-Wire	
Code	mm	in	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath
A	50	2	B0500AA	B0300LA	B0300XC	N/A
B	64	2.5	B0500BA	B0300LB	B0300XD	N/A
C	76	3	B0500CA	B0300LC	B0300XE	N/A
D	89	3.5	B0500DA	B0300LD	B0300XF	N/A
E	102	4	B0500EA	B0300LE	B0300XG	N/A
F	114	4.5	B0500FA	B0300LF	B0300XJ	N/A
G	127	5	B0500GA	B0300LG	B0300XK	N/A
H	140	5.5	N/A	N/A	N/A	N/A
J	152	6	B0500JA	B0300LJ	B0300XL	N/A
K	178	7	B0500KA	B0300LK	B0300XM	N/A
L	203	8	B0500LA	B0300LL	B0300XN	N/A
M	229	9	B0500MA	B0300LM	B0300XP	N/A
P	254	10	B0500PA	B0300LN	B0300XQ	N/A
Q	279	11	B0500QA	B0300LP	B0300XR	N/A
R	305	12	B0500RA	B0300LQ	B0300XS	N/A
S	457	18	B0500SA	B0300LR	B0300XT	N/A
T	610	24	B0500TA	B0300LS	B0300XU	N/A
U	762	30	B0500UA	B0300LT	B0300XV	N/A
V	914	36	B0500VA	B0300LU	B0300XW	N/A

a. The Inconel sheath is Optional Selection -S1.

Figure 18. Thermocouple Types E, J, K, and T Spring-Loaded Thermowell Mount Assembly with 316 ss or Optional Inconel Sheaths Housing Codes E, F, L, and M



mm
in

UNION & THERMOWELL
SHOWN FOR REFERENCE PURPOSE TO INDICATE METHOD OF ASSEMBLY WITH SENSOR

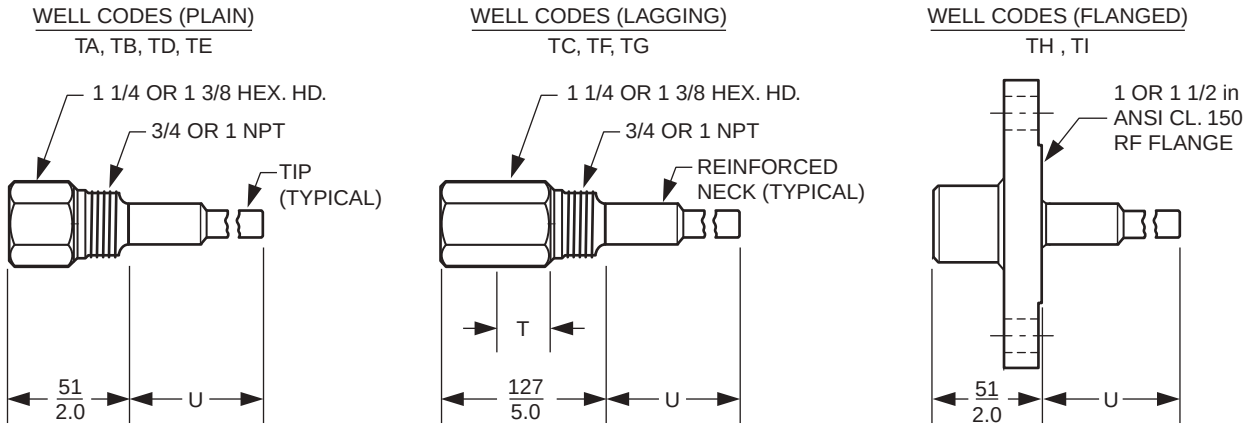
NOTE: The uncompressed length of the spring-loaded thermowell mounted sensor is equal to the "nominal" length listed in table below plus 89 mm (3.50 in). The nominal length is the "U" + "T" dimension of the thermowell.

Table 19. Parts for Figure 18

Nominal Length			Type E		Type J		Type K		Type T	
Code	mm	in	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath (a)	316 ss Sheath	Inconel Sheath (a)
A	50	2	B0500AE	B0300GA	B0500AJ	B0300GV	B0500AK	B0300HR	B0500AT	B0300JL
B	64	2.5	B0500BE	B0300GB	B0500BJ	B0300GW	B0500BK	B0300HS	B0500BT	B0300JM
C	76	3	B0500CE	B0300GC	B0500CJ	B0300GX	B0500CK	B0300HT	B0500CT	B0300JN
D	89	3.5	B0500DE	B0300GD	B0500DJ	B0300GY	B0500DK	B0300HU	B0500DT	B0300JP
E	102	4	B0500EE	B0300GE	B0500EJ	B0300GZ	B0500EK	B0300HV	B0500ET	B0300JQ
F	114	4.5	B0500FE	B0300GF	B0500FJ	B0300HA	B0500FK	B0300HW	B0500FT	B0300JR
G	127	5	B0500GE	B0300GG	B0500GJ	B0300HB	B0500GK	B0300HX	B0500GT	B0300JS
H	140	5.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
J	152	6	B0500JE	B0300GJ	B0500JJ	B0300HD	B0500JK	B0300HZ	B0500JT	B0300JU
K	178	7	B0500KE	B0300GK	B0500KJ	B0300HE	B0500KK	B0300JA	B0500KT	B0300JV
L	203	8	B0500LE	B0300GL	B0500LJ	B0300HF	B0500LK	B0300JB	B0500LT	B0300JW
M	229	9	B0500ME	B0300GM	B0500MJ	B0300HG	B0500MK	B0300JC	B0500MT	B0300JX
P	254	10	B0500PE	B0300GN	B0500PJ	B0300HH	B0500PK	B0300JD	B0500PT	B0300JY
Q	279	11	B0500QE	B0300GP	B0500QJ	B0300HJ	B0500QK	B0300JE	B0500QT	B0300JZ
R	305	12	B0500RE	B0300GQ	B0500RJ	B0300HK	B0500RK	B0300JF	B0500RT	B0300KA
S	457	18	B0500SE	B0300GR	B0500SJ	B0300HL	B0500SK	B0300JG	B0500ST	B0300KB
T	610	24	B0500TE	B0300GS	B0500TJ	B0300HM	B0500TK	B0300JH	B0500TT	B0300KC
U	762	30	B0500UE	B0300GT	B0500UJ	B0300HN	B0500UK	B0300JJ	B0500UT	B0300KD
V	914	36	B0500VE	B0300GU	B0500VJ	B0300HP	B0500VK	B0300JK	B0500VT	B0300KE

a. The Inconel sheath is Optional Selection -S1.

Figure 19. Selected Thermowells Offered with Housing Codes E, F, L and M



NOTE

A selection of thermowells is identified in the tables below. These thermowells can be ordered using the part numbers listed. For a much more complete listing of wells offered by Invensys, refer to PSS 3-3C1 A for W-Series wells, and to PSS 3-3D1 A for T-Series wells.

Table 20. Parts for Figure 19
Well Codes vs Sensor Lengths (a)

Well Code	Available with the following Sensor Length Codes									
	A	D	G	J	L	M	P	Q	R	S
TA	B0300AA	T0112PC	T0112PE	T0112PF	T0112PK	N/A	T0112PL	N/A	T0112PM	N/A
TB	B0300EB	T0112PN	T0112PP	T0112PR	T0112PS	N/A	T0112PT	N/A	T0112PW	N/A
TC	N/A	N/A	B0300ED	N/A	B0300EM	B0134RD	N/A	B0134RE	N/A	N/A
TD	B0300EC	T0112PX	B0300EL	T0112PZ	T0112RA	N/A	N/A	N/A	N/A	N/A
TE	B0300FA	B0300FB	B0300FC	B0300FD	B0300FE	N/A	N/A	N/A	N/A	N/A
TF	N/A	N/A	B0300EE	N/A	B0300EN	T0112WC	N/A	T0112WE	N/A	N/A
TG	N/A	N/A	B0300EF	N/A	B0300EQ	B0134RJ	N/A	B0300ET	N/A	N/A
TH	B0300EG	B0300EJ	B0300EQ	B0300ES	B0300ET	N/A	B0300EW	N/A	B0134RY	N/A
TI	B0300EH	B0300EK	B0300ER	B0134RZ	B0300EU	N/A	B0300EX	N/A	B0134UA	B0134UB

a. See Well and Sensor Length Code tables below.

Table 21. Well Codes

Code	Well Code Description		
TA	Plain	3/4 NPT External Well Connection	304 ss
TB	Plain	3/4 NPT External Well Connection	316 ss
TC	Lagging, 3 in (76 mm)	3/4 NPT External Well Connection	316 ss
TD	Plain	1 NPT External Well Connection	316 ss
TE	Plain	1 NPT External Well Connection	Nickel alloy (a)
TF	Lagging, 3 in (76 mm)	1 NPT External Well Connection	304 ss
TG	Lagging, 3 in (76 mm)	1 NPT External Well Connection	316 ss
TH	Plain	1 in ANSI Class 150 RF Flange	316 ss
TI	Plain	1.5 in ANSI Class 150 RF Flange	316 ss

a. Equivalent to Hastelloy® C.

Table 22. Sensor Length Codes
Length is "U" Length, or "U + T" Length with Lagging (a)

Code	Length
A	2 in (50 mm)
D	3.5 in (89 mm)
G	5 in (127 mm)
J	6 in (152 mm)
L	8 in (203 mm)

Code	Length
M	9 in (229 mm)
P	10 in (254 mm)
Q	11 in (279 mm)
R	12 in (305 mm)
S	18 in (457 mm)

a. U=Well insertion length; T=Well lagging length of 3 in (76 mm).

RECOMMENDED SPARE PARTS

Figure Number	Item Number	Part Number	Part Name	Number of Parts Recommended for		
				1 Inst.	5 Inst.	20 Inst.
1, 2, 3	2	Below D0197WG D0179CA D0179CB	Basic Module HART 7 Protocol (Version -H) HART 5 Protocol (Version -T) FOUNDATION Fieldbus or PROFIBUS Protocol (Versions -F/-P)	–	1	2
2, 3	Not shown	D0179EE	Special magnet for use with FOUNDATION Fieldbus and PROFIBUS units (a)	1	2	4
2	4	X0144MZ	O-Ring, Cover Universal Housing; Codes L, M, S, T, W, Y	1	2	4
3	4	Below X0144MZ D0179EF D0179EG	O-Ring, Cover Universal Housing; Codes L, M, S, T, W, Y Weatherproof Connection Head; Codes C, E Explosionproof Connection Head; Codes D, F	1	2	4
4	2	D0197AM	Indicator, LED; Loop Powered; Option -L1 (b)	1	2	4

a. Housing or connection head must first be removed. Magnet mounts on basic module terminals 1 and 2. This activates a reed switch and allows debugging/troubleshooting system in Simulation Mode. Refer to MI.
b. The loop powered LED Indicators are available only with HART output (versions -H and -T).

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