



CATEGORIES:

- Thermocouples
- RTDs
- Thermowell & Protection Tubes
- Sensor Box™
- Transmitters
- Accessories

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CONNECTION HEAD WITH WELDED NPT PROCESS CONNECTION

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

15 – Sheath with cast aluminum head and 1/2" NPT welded stainless steel

process connection; head conforms to NEMA 4 requirements; 3/4" NPT conduit connection; ceramic terminal block; gasketed screw cover with stainless steel chain
(Note: for spring-loaded assembly, see Style 75 and add optional head)

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600

CALIBRATION – Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

HOT JUNCTION

G – Grounded junction

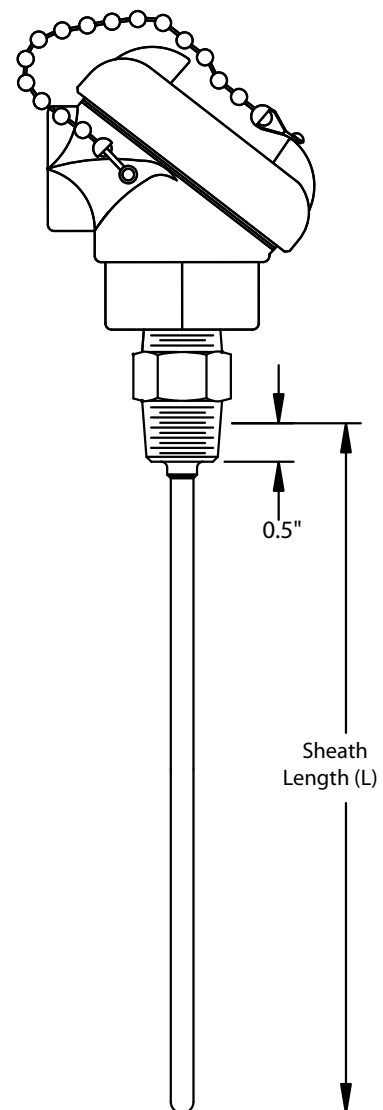
U – Ungrounded junction

E – Exposed junction

SHEATH LENGTH (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# – (e.g., L6 = 6" sheath, L12.5 = 12.5" length)

OPTIONS – see page 1-1b



STYLE 15

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
PC25	1/4" NPT process connection
PC75	3/4" NPT process connection
CAL1	NIST traceable calibration [specify point(s)]
TRANSMITTERS – For complete specs, see Transmitters section	
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range, units of measure (e.g., 0-200°C) and optional terminal head with *.

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"
*can be used with TR11 transmitter			

Notes:

1. See Accessories for additional information.
2. For former Style 60, use option HD20.
3. For former Style 29, use option HD32.

CONNECTION HEAD WITH SPRING-LOADED ASSEMBLY AND MOUNTING HARDWARE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	CONNECTION	CONNECTION LENGTH	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

45 – Sheath with cast aluminum head; spring-loaded; head conforms to NEMA 4 requirements; 3/4" NPT conduit connection; ceramic terminal block; 1/2" NPT carbon steel process connection; gasketed screw cover with stainless steel chain; maximum head temperature 100°C

CONNECTION

H – Head only, no mounting hardware; 1/2" NPT (female) instrument connection

N – 1/2" NPT carbon steel nipple

NU – 1/2" NPT carbon steel nipple and union

NUN – 1/2" NPT carbon steel nipple, union and nipple

(For stainless steel hardware, see page 1-2b)

CONNECTION LENGTH

(e.g., 006 = 6 inch)

(See page 1-2b for standard available lengths)

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

CALIBRATION – Standard limits

J – Single J **JJ** – Dual J

K – Single K **KK** – Dual K

T – Single T **TT** – Dual T

E – Single E **EE** – Dual E

Special limits are available – consult AST

HOT JUNCTION

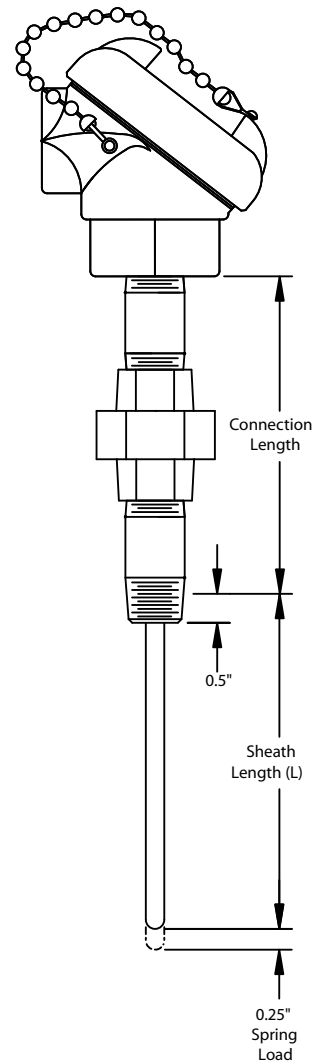
G – Grounded junction

U – Ungrounded junction

SHEATH LENGTH (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

OPTIONS – see page 1-2b



STYLE 45

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
NUN1S	304 stainless hardware (see chart below) – add suffix "1S" to NUN
NUN2S	316 stainless hardware (see chart below) – add suffix "2S" to NUN
Transmitters: see Style 48	

STANDARD AVAILABLE CONNECTION LENGTHS		
N	NU	NUN
N/A	2.00	2.50
0.50	2.50	3.00 *
1.00	3.00	4.00 *
1.50	3.50	5.00
2.00	4.00	6.00 *
3.00	5.00	8.00
5.00	7.00	12.00
6.00	8.00	14.00
* 2S OPTION AVAILABLE IN THESE LENGTHS ONLY.		
DIMENSIONS ARE GIVEN IN INCHES		

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10	HD11	1/2"	1/2"
Std.	HD13	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50	HD51	1/2"	1/2"
HD52	HD53	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20	HD21	1/2"	1/2"
HD22	HD23	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40	HD41	1/2"	3/4"

Notes:

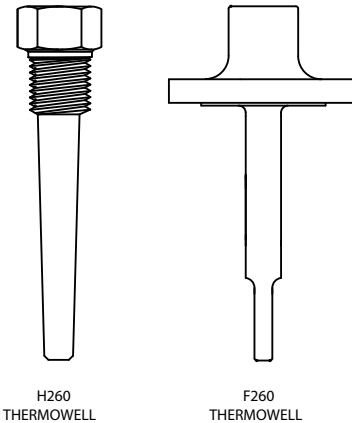
1. See Accessories for additional information
2. For former Style 46, use option HD20

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.



EXPLOSION-PROOF CONNECTION HEAD WITH WELDED NPT PROCESS CONNECTION

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

78 – Sheath with cast aluminum head and 1/2" NPT welded stainless steel process connection; head CSA/FM approved for Class I, Division 1, Groups B, C, D; Class II, Groups E, F, G; screw cover with chain and gasketed o-ring, meets NEMA 4; ceramic terminal block; 1/2" NPT conduit connection (Note: for spring-loaded fitting, see Style 75 and add optional head).

SHEATH DIAMETER (in inches)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

- 3** - 316 stainless steel
- 5** - Inconel® 600

CALIBRATION – Standard limits

- J** – Single J **JJ** – Dual J
- K** – Single K **KK** – Dual K
- T** – Single T **TT** – Dual T
- E** – Single E **EE** – Dual E

Special limits are available – consult AST

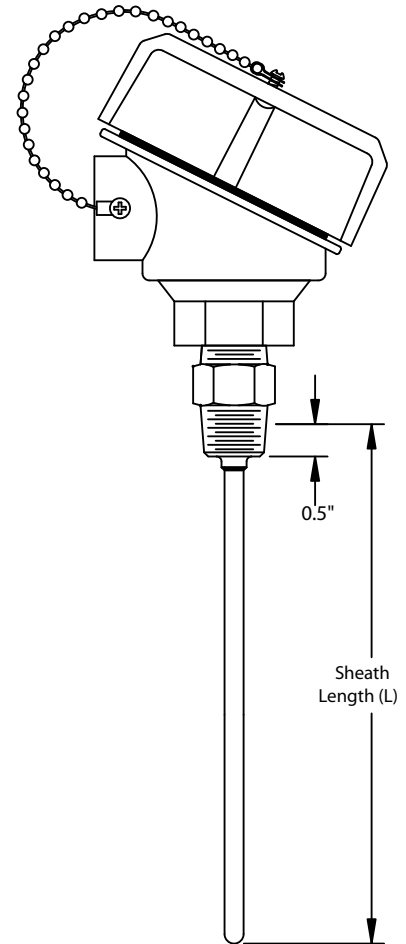
HOT JUNCTION

- G** – Grounded junction
 - U** – Ungrounded junction
 - E** – Exposed junction
- (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

SHEATH LENGTH

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

OPTIONS – see page 1-3b



STYLE 78

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
PC25	1/4" NPT process connection
PC75	3/4" NPT process connection
CAL1	Calibration, NIST traceable calibration [specify point(s)]
TRANSMITTERS – For complete specs, see Transmitters section	
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range and units of measure (e.g., 0-200°C)

EXPLOSION-PROOF TERMINAL HEAD OPTIONS		
Option Code	Process Connection	Conduit Connection
Cast aluminum; screw cover with chain; o-ring gasket (Gasket rated to 100°C exposure); ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C and D; Class II Groups E, F and G; internal ground screw.		
HD71	1/2"	3/4"
Epoxy-coated, same specs as HD71		
HD80	1/2"	1/2"
HD81	1/2"	3/4"

Note: See Accessories section for additional specs.

EXPLOSION-PROOF CONNECTION HEAD WITH SPRING-LOADED ASSEMBLY AND MOUNTING HARDWARE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	CONNECTION	CONNECTION LENGTH	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

77 – Sheath with cast aluminum head; spring-loaded; CSA/FM approved head for Class I, Division 1, Groups B, C, D; Class II, Groups E, F, G; screw cover with chain and gasketed o-ring; designed for NEMA 4; ceramic terminal block; 1/2" NPT conduit and process connections.

CONNECTION

H – Head only, no mounting hardware; 1/2" NPT (female) instrument connection

N – 1/2" NPT carbon steel nipple

NU – 1/2" NPT carbon steel nipple and plated steel explosion-proof union

NUN – 1/2" NPT carbon steel nipples and plated steel explosion-proof union
(For 304 stainless steel nipples, see page 1-4b)

CONNECTION LENGTH

(e.g., 006 = 6 inch)

(See page 1-4b for standard available lengths)

SHEATH DIAMETER

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

CALIBRATION - Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

HOT JUNCTION

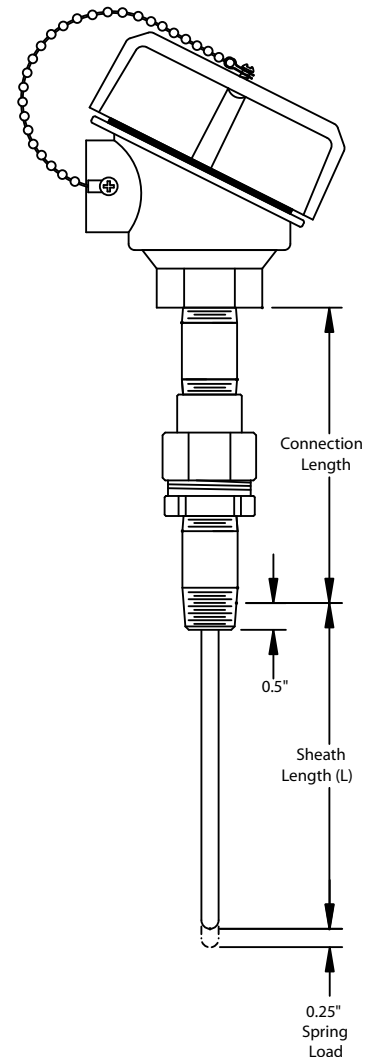
G – Grounded junction

U – Ungrounded junction

SHEATH LENGTH: (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# - (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

OPTIONS – see page 1-4b



STYLE 77

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Codes	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
NUN1S	304 stainless steel nipples with plated steel union (see chart below) – add suffix "1S" to NUN.
TRANSMITTERS	
See Style 48 for available transmitters	

STANDARD AVAILABLE CONNECTION LENGTHS		
N	NU	NUN
N/A	2.00	2.50
0.50	2.50	3.00
1.00	3.00	4.00
1.50	3.50	5.00
2.00	4.00	6.00
3.00	5.00	8.00
5.00	7.00	12.00
6.00	8.00	14.00
DIMENSIONS ARE GIVEN IN INCHES		

EXPLOSION-PROOF TERMINAL HEAD OPTIONS		
Option Code	Process Connection	Conduit Connection
Cast aluminum; screw cover with chain; o-ring gasket; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C and D; Class II Groups E, F and G (Gasket rated to 100°C exposure); internal ground screw		
HD71	1/2"	3/4"
Same as above, except epoxy-coated		
HD80	1/2"	1/2"
HD81	1/2"	3/4"

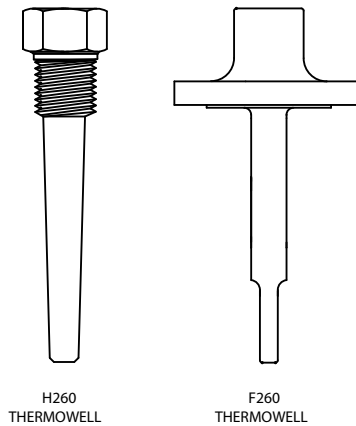
Note: See Accessories section for outline drawings and additional specs.

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.



CONNECTION HEAD WITH WELDED HEX FITTING

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

21 – Sheath with cast aluminum head and welded stainless steel connection; for use as ambient sensor or with compression fitting for process mounting; head conforms to NEMA 4 requirements; 3/4" conduit connection; ceramic terminal block; gasketed screw cover with stainless steel chain. See page 1-7b for other head options.

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600

CALIBRATION – Standard Limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

HOT JUNCTION

G – Grounded junction

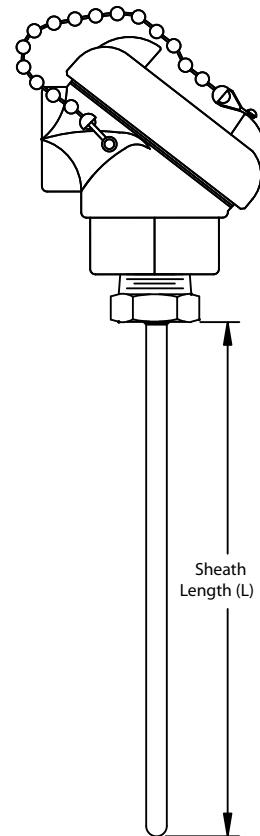
U – Ungrounded junction

E – Exposed junction

SHEATH LENGTH (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# – (e.g., L6 = 6" sheath, L12.5 = 12.5" length)

OPTIONS – see page 1-7b



Style 21

STYLE 21

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS			
Option Code	Description		
TAG1	Stainless steel tag and wire		
B90-	90° bend in sheath [specify length from tip in inches e.g., B90-6]		
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)		
CAL1	NIST traceable calibration [specify point(s)]		
COMPRESSION FITTINGS (for diameters 4, 6, 7)			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass
TRANSMITTERS - for complete specs, see Transmitters section			
TR11	4-20 mA, 2-wire, single input, isolated output; specify range, units of measure (e.g., 0-200°C) and optional head with *. See Accessories section for additional information.		
WELD PADS			
Option Code	Radius To Fit Pipe		
WP00	Horizontal pad/flat		
WP10	1" nominal pipe size		
WP15	1.5" nominal pipe size		
WP20	2" nominal pipe size		
WP25	2.5" nominal pipe size		
WP30	3" nominal pipe size		
WP35	3.5" nominal pipe size		
WP40	4" nominal pipe size		

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated, cast aluminum, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover; NEMA 4X			
HD40*	HD41*	1/2"	3/4"
Polypropylene, white, screw cover			
HD30	N/A	1/2"	3/4"
Polypropylene, black screw cover			
HD31	N/A	1/2"	3/4"
Nylon, screw cover			
HD32	N/A	1/2"	1/2"
EXPLOSION-PROOF TERMINAL HEAD OPTIONS			
Option Code	Process Connection	Conduit Connection	
Cast aluminum, screw cover with chain; o-ring gasket rated to 100°C; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C, D; Class II, Groups E, F, G; internal ground screw			
HD70*	1/2"	1/2"	
HD71*	1/2"	3/4"	
Epoxy-coated			
HD80*	1/2"	1/2"	
HD81*	1/2"	3/4"	
Cast aluminum; ATEX approved for EEx d IIC; screw cover with chain; silicone rubber o-ring gasket; ceramic terminal block; rated for NEMA 4X, IP66 to IP68; internal and external ground screws			
HD72*	1/2"	1/2"	
HD73*	1/2"	3/4"	
Cast aluminum (Formerly Style 60); screw cover; plastic terminal block; UL/CSA approved for Class I Div. 1, Groups C and D; Class II Groups E, F and G.			
HD60	1/2"	1/2"	
HD61	1/2"	3/4"	
*can be used with TR11 transmitter			

Note: See Accessories section for outline drawings and additional specs.

DOUBLE-SIDED, SPRING-LOADED PROCESS MOUNTING WITH TERMINAL HEAD OPTIONS

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTION

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

75 – Sheath with double-sided, spring-loaded fitting; Teflon® insulated conductors; 1/2" NPT stainless steel connection. (Note: a variety of terminal heads may be added to this style – see page 1-5b)

SHEATH DIAMETER (in inches)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

- 3** – 316 stainless steel
- 5** – Inconel® 600

CALIBRATION Standard limits

- J** – Single J **JJ** – Dual J
- K** – Single K **KK** – Dual K
- T** – Single T **TT** – Dual T
- E** – Single E **EE** – Dual E

Special limits are available – consult AST

HOT JUNCTION

- G** – Grounded junction
- U** – Ungrounded junction

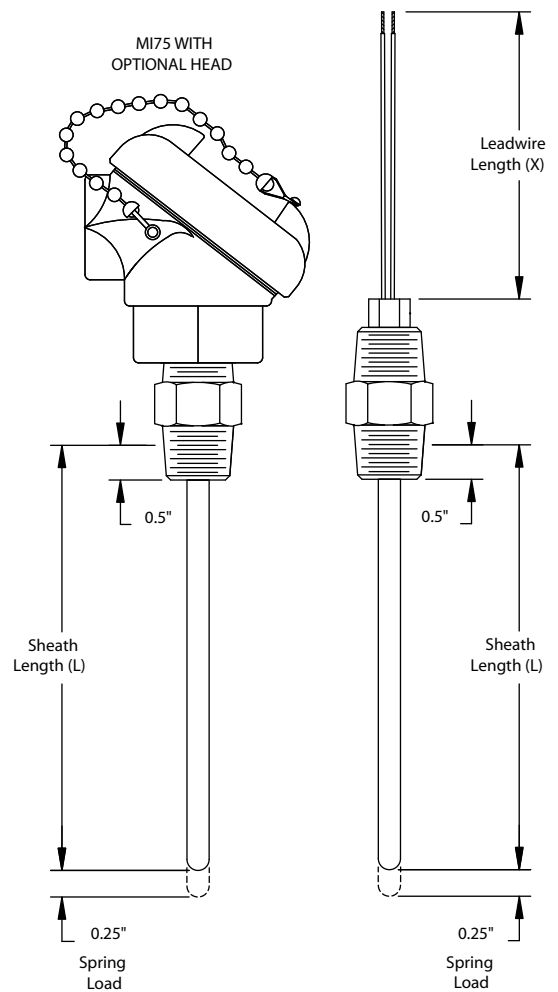
SHEATH LENGTH (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12-1/2" length)

LEADWIRE LENGTH

X# - (e.g., X3 = 3 inch length; X3 is standard if specifying a terminal head)

OPTIONS – see page 1-5b



STYLE 75

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
TRANSMITTERS	
TR11	4-20 mA, 2-wire; single input; isolated output; specify range, units of measure (e.g., 0-200°C) and terminal head with *. See Accessories section for additional information.

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
HD12*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"
EXPLOSION-PROOF TERMINAL HEAD OPTIONS			
Option Code	Process Connection	Conduit Connection	
Cast aluminum, screw cover with chain; o-ring gasket rated to 100°C; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C, D; Class II, Groups E, F, G; internal ground screw			
HD70*	1/2"	1/2"	
HD71*	1/2"	3/4"	
Epoxy-coated (same spec as H6/H7)			
HD80*	1/2"	1/2"	
HD81*	1/2"	3/4"	
Cast aluminum; ATEX approved for EEx d IIC; screw cover with chain; silicone rubber o-ring gasket; ceramic terminal block; rated for NEMA 4X, IP66 to IP68; internal and external ground screws			
HD72*	1/2"	3/4"	
HD73*	1/2"	1/2"	
Cast aluminum (Formerly Style 60); screw cover; plastic terminal block; UL/CSA approved for Class I Div. 1, Groups C and D; Class II Groups E, F and G.			
HD60	1/2"	1/2"	
HD61	1/2"	3/4"	
*can be used with TR11 transmitter			

SPRING-LOADED PROCESS MOUNTING HARDWARE WITH OPTIONAL TERMINAL HEAD

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection.

SENSOR TYPE	ASSEMBLY STYLE	CONNECTION TYPE AND MATERIAL	CONN. LENGTH	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

48 – Sheath with spring-loaded hex connector and connection hardware; head as option

CONNECTION TYPE AND MATERIAL

Code	Union Type	Union Material	Lower Nipple Material
NU	Ordinary location	Carbon steel	None
NUS	Ordinary location	Stainless steel	None
NUX	Explosion-proof	Electroplated steel	None
NUN	Ordinary location	Carbon steel	Carbon steel
NUNS	Ordinary location	Stainless steel	Stainless steel
NUNX	Explosion-proof	Electroplated steel	Carbon steel
NUNXS	Explosion-proof	Electroplated steel	Stainless steel

CONNECTION LENGTH (For NU, NUX, NUS, use 002.5)

(e.g., 006 = 6 inch)

(See page 1-6b for chart of available standard lengths)

SHEATH DIAMETER (in inches)

4 – 1/8" (0.125)

6 – 3/16" (0.188)

7 – 1/4" (0.250)

9 – 3/8" (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600

CALIBRATION – Standard limits

J – Single J **JJ** – Dual J

K – Single K **KK** – Dual K

T – Single T **TT** – Dual T

E – Single E **EE** – Dual E

Special limits are available – consult AST

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

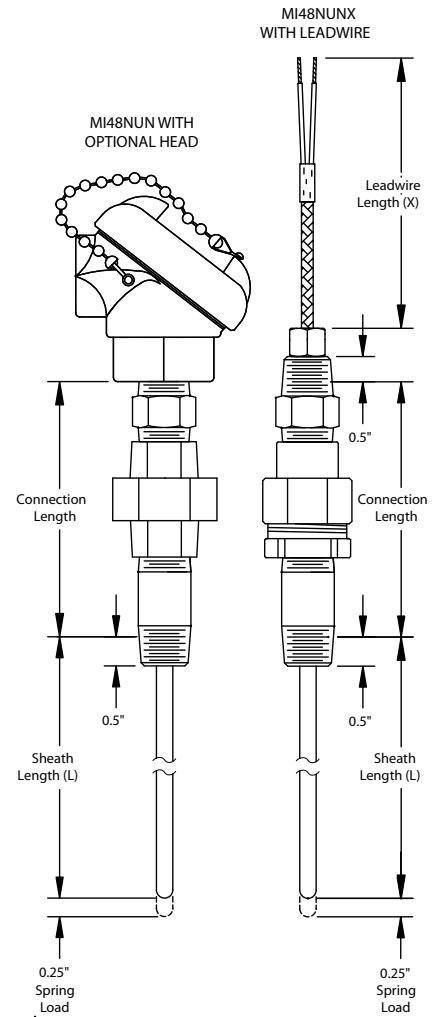
SHEATH LENGTH (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

LEADWIRE LENGTH

X# – (e.g., X3 = 3 inch length; X3 is standard if specifying optional head)

OPTIONS – see page 1-6b



STYLE 48

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
TRANSMITTERS - for complete specs, see Transmitters section	
TR11	4-20 mA, 2-wire; single input; isolated output; specify range, units of measure (e.g., 0-200°C) and terminal head with *. See Accessories section for additional information.

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.

STANDARD AVAILABLE CONNECTION LENGTHS FOR NUN CONNECTIONS
3.00
3.50
4.00
4.50
5.00
6.00
8.00
DIMENSIONS ARE GIVEN IN INCHES

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
HD12*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"
EXPLOSION-PROOF TERMINAL HEAD OPTIONS			
Option Code	Process Connection	Conduit Connection	
Cast aluminum, screw cover with chain; o-ring gasket rated to 100°C; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C, D; Class II, Groups E, F, G; internal ground screw			
HD70*	1/2"	1/2"	
HD71*	1/2"	3/4"	
Epoxy-coated (same specs as H6/H7)			
HD80*	1/2"	1/2"	
HD81*	1/2"	3/4"	
Cast aluminum; ATEX approved for EEx d IIC; screw cover with chain; silicone rubber o-ring gasket; ceramic terminal block; rated for NEMA 4X, IP66 to IP68; internal and external ground screws			
HD72*	1/2"	3/4"	
HD73*	1/2"	1/2"	
Cast aluminum (Formerly Style 60); screw cover; plastic terminal block; UL/CSA approved for Class I Div. 1, Groups C and D; Class II Groups E, F and G.			
HD60	1/2"	1/2"	
HD61	1/2"	3/4"	
*can be used with TR11 transmitter			

NOBLE METAL THERMOCOUPLE WITH TERMINAL HEAD AND PROTECTION TUBE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	STYLE	PROTECTION TUBE CONFIGURATION	CALIBRATION	WIRE GAUGE	BEAD MATERIAL	PRIMARY TUBE LENGTH	OPTIONS

SENSOR TYPE

BTC – Beaded construction

STYLE

81N – Noble metal element with primary protection tube only; threaded connection between head and tube; NEMA 4 aluminum terminal head and ceramic terminal block; 3/4" NPT conduit connection; gasketed screw cover with stainless steel chain

PROTECTION TUBE CONFIGURATION

(e.g., **00A6** = 3/8" O.D. tube with 6" nipple and 1/2" NPT connection. See page 1-8b for available combinations of OD and thread size)

Protection tube diameter

- 0** – 3/8" O.D.
- 1** – 1/2" O.D.
- 2** – 11/16" O.D.
- 3** – 3/4" O.D.

Process thread size and material

- | | |
|---------------------|----------------------------|
| <i>Carbon Steel</i> | <i>316 stainless steel</i> |
| 0 – 1/2" NPT | 3 – 1/2" NPT |
| 1 – 3/4" NPT | 4 – 3/4" NPT |
| 2 – 1" NPT | 5 – 1" NPT |

Protection tube material

- A** – Alumina (98.8% aluminum oxide)
- M** – Mullite (not recommended over 1200°C)

Connection Length ("CL")

- 1** – hex fitting only
- #** – length of nipple

CALIBRATION

Single junction

- R** – Platinum and Platinum/13% Rhodium
- S** – Platinum and Platinum/10% Rhodium
- B** – Platinum/6% Rhodium and Platinum/30% Rhodium

Dual junctions

- RR**
- SS**
- BB**

WIRE GAUGE

24 – 24 AWG

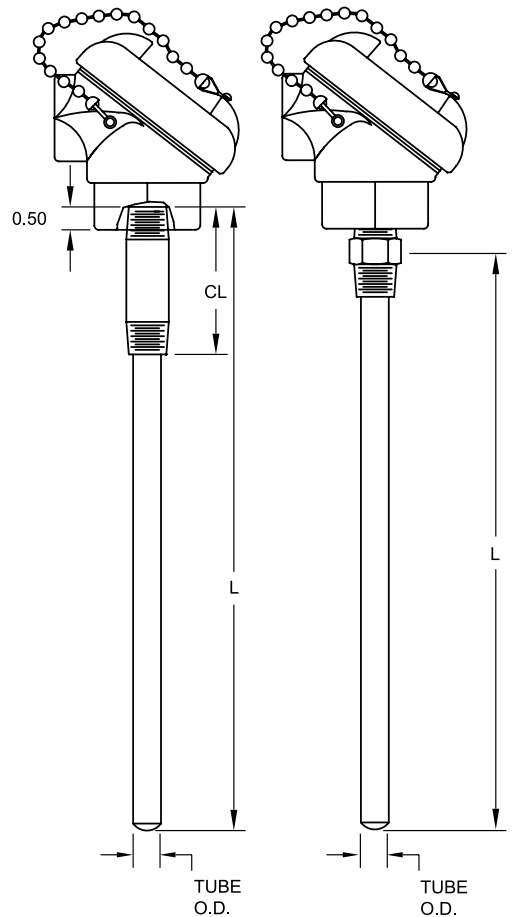
BEAD MATERIAL

A – Alumina beads (0.125" OD for single junction, 0.188" for dual)

PROTECTION TUBE LENGTH

L# – (e.g., L12 = 12" protection tube length)

OPTIONS – see page 1-8b



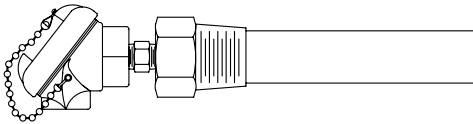
STYLE 81N

GENERAL OPTIONS

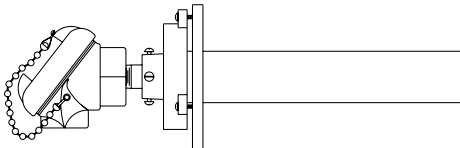
TAG1 Stainless steel tag and wire
 CAL1 Calibration, NIST traceable; specify calibration point(s)

For additional Noble Metal Thermocouple styles, see:

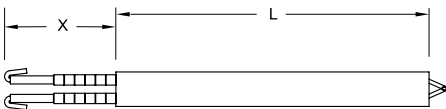
Style 81B – Secondary tube with mounting bushing



Style 81F – Secondary tube with slip flange mounting



Style 51 – Replacement Sensor



TERMINAL HEAD OPTIONS

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"

*can be used with TR11 transmitter

Notes:

- Not all materials and process thread sizes are compatible with all tubing O.D.'s. Use the chart below as a guide for the possible combinations.

PROCESS THREAD (NPT)

TUBE O.D.	Carbon steel			316 Stainless		
	0 (1/2")	1 (3/4")	2 (1")	3 (1/2")	4 (3/4")	5 (1")
0 (3/8")	Yes			Yes		
1 (1/2")	Yes	Yes		Yes	Yes	
2 (11/16")		Yes			Yes	
3 (3/4")		Yes	Yes		Yes	Yes

- Applied Sensor Technologies recommends alumina protection tubes when using platinum thermocouples. Mullite, although less expensive when compared to alumina, can contaminate the platinum, causing drift.
- In many cases platinum thermocouples can be recycled, thereby reducing the long-term overall cost. Please contact Applied Sensor Technologies for further information.
- Applied Sensor Technologies offers many other temperatures sensor designs and technologies, including base metal thermocouples, RTDs, thermistors and Integrated Circuit chips, along with a full line of accessory items such as thermowells, transmitters, etc. Please visit our website or contact us for further information.

NOBLE METAL THERMOCOUPLE WITH SECONDARY PROTECTION TUBE & BUSHING

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	STYLE	SECONDARY TUBE CONFIGURATION	CALIBRATION	WIRE GAUGE	BEAD MATERIAL	SECONDARY TUBE LENGTH	OPTIONS

SENSOR TYPE

BTC – Beaded construction

STYLE

81B – Noble metal element with inner and outer protection tubes; threaded bushing process attachment; NEMA 4 aluminum terminal head and ceramic terminal block; 3/4" NPT conduit connection; gasketed screw cover with stainless steel chain

SECONDARY TUBE CONFIGURATION

(e.g., **9C5A** = 1.75" O.D. silicon carbide protection tube with 2" NPT carbon steel bushing. See page 1-9b for available combinations of materials and sizes)

Outer protection tube diameter

- | | |
|-------------------------|------------------------|
| 3 – 3/4" O.D. | 7 – 1-1/4" O.D. |
| 4 – 7/8" O.D. | 8 – 1-1/2" O.D. |
| 5 – 1" O.D. | 9 – 1-3/4" O.D. |
| 6 – 1-1/10" O.D. | |

Outer protection tube material

- | | |
|---|----------------------|
| C – Silicon Carbide, oxide bonded* | H – Hexalloy® |
| S – Sialon® | L – LT1 |

* Other grades of silicon carbide available upon request. Consult AST.

Bushing thread and material

- | | |
|-----------------------|----------------------------|
| <i>Carbon Steel</i> | <i>316 Stainless steel</i> |
| 2 – 1" NPT | 6 – 1" NPT |
| 3 – 1-1/4" NPT | 7 – 1-1/4" NPT |
| 4 – 1-1/2" NPT | 8 – 1-1/2" NPT |
| 5 – 2" NPT | 9 – 2" NPT |

Inner protection tube material

- A** – Alumina (98.8% aluminum oxide)
M – Mullite (not recommended over 1200°C)

CALIBRATION

Single junction

- R** – Platinum and Platinum/13% Rhodium
S – Platinum and Platinum/10% Rhodium
B – Platinum/6% Rhodium and Platinum/30% Rhodium

Dual junctions

- RR**
SS
BB

WIRE GAUGE

24 – 24 AWG

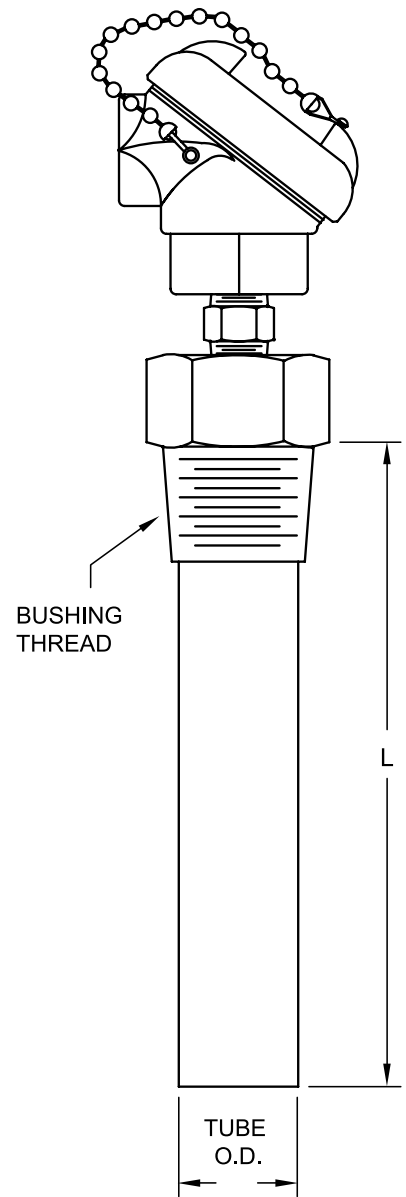
BEAD MATERIAL

A – Alumina beads (0.125" OD for single junction, 0.188" for dual)

SECONDARY TUBE LENGTH

L# – (e.g., L12 = 12" outer protection tube length)

OPTIONS – see page 1-9b



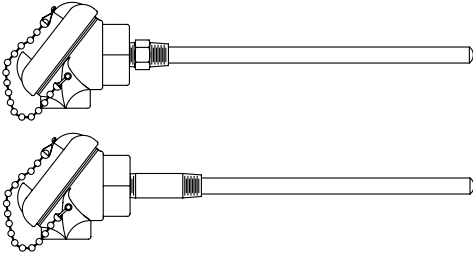
STYLE 81B

GENERAL OPTIONS

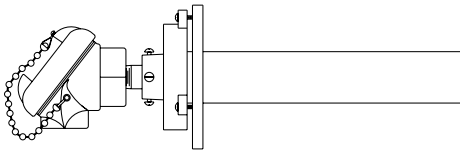
TAG1 Stainless steel tag and wire
 CAL1 Calibration, NIST traceable; specify calibration point(s)

For additional Noble Metal Thermocouple styles, see:

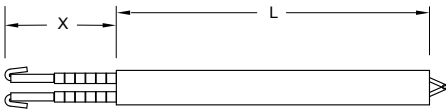
Style 81N – Single, primary protection tube only



Style 81F – Secondary tube with slip flange mounting



Style 51 – Replacement Sensor



TERMINAL HEAD OPTIONS

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"
*can be used with TR11 transmitter			

Notes:

- Not all materials and process thread sizes are compatible with all tubing O.D.'s. Use the chart below as a guide for the possible combinations. For each combination of thread and O.D., available materials are noted - Silicon Carbide (C), Sialon® (S), Hexalloy® (H) and LT1 (L).

PROCESS THREAD (NPT)

OUTER TUBE O.D.	CARBON STEEL				316 STAINLESS			
	2 (1")	3 (1-1/4")	4 (1-1/2")	5 (2")	6 (1")	7 (1-1/4")	8 (1-1/2")	9 (2")
3 (3/4")	H	H	H	H	H	H	H	H
4 (7/8")	L,S	L,S	L,S	L,S	L,S	L,S	L,S	L,S
5 (1")		H	H	H		H	H	H
6 (1-1/10")		S	S	S		S	S	S
7 (1-1/4")			H	H			H	H
8 (1-1/2")			H	H			H	H
9 (1-3/4")				C				C

- Applied Sensor Technologies recommends alumina protection tubes when using platinum thermocouples. Mullite, although less expensive when compared to alumina, can contaminate the platinum, causing drift.
- In many cases platinum thermocouples can be recycled, thereby reducing the long-term overall cost. Please contact Applied Sensor Technologies for further information.
- Applied Sensor Technologies offers many other temperatures sensor designs and technologies, including base metal thermocouples, RTDs, thermistors and Integrated Circuit chips, along with a full line of accessory items such as thermowells, transmitters, etc. Please visit our website or contact us for further information.

NOBLE METAL THERMOCOUPLE WITH SECONDARY PROTECTION TUBE & SLIP FLANGE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	STYLE	PROTECTION TUBE CONFIGURATION	CALIBRATION	WIRE GAUGE	BEAD MATERIAL	OUTER PROTECTION TUBE LENGTH	OPTIONS

SENSOR TYPE

BTC – Beaded construction

STYLE

81F – Noble metal element with primary and secondary protection tubes; slip flange process attachment; NEMA 4 aluminum terminal head and ceramic terminal block; 3/4" NPT conduit connection; gasketed screw cover with stainless steel chain

PROTECTION TUBE CONFIGURATION

(e.g., **9C5A** = 1.75" O.D. silicon carbide protection tube with 4-7/8" mounting flange and alumina inner protection tube)

Outer protection tube diameter

9 - 1-3/4" O.D.

Outer protection tube material

C - Silicon carbide, oxide bonded*

* Other grades of silicon carbide available upon request. Consult AST.

Flange size

5 - 4-7/8" O.D.

Inner protection tube material

A – Alumina (98.8% aluminum oxide)

M – Mullite (not recommended over 1200°C)

CALIBRATION

Single junction

R – Platinum and Platinum/13% Rhodium

S – Platinum and Platinum/10% Rhodium

B – Platinum/6% Rhodium and Platinum/30% Rhodium

Dual junctions

RR

SS

BB

WIRE GAUGE

24 – 24 AWG

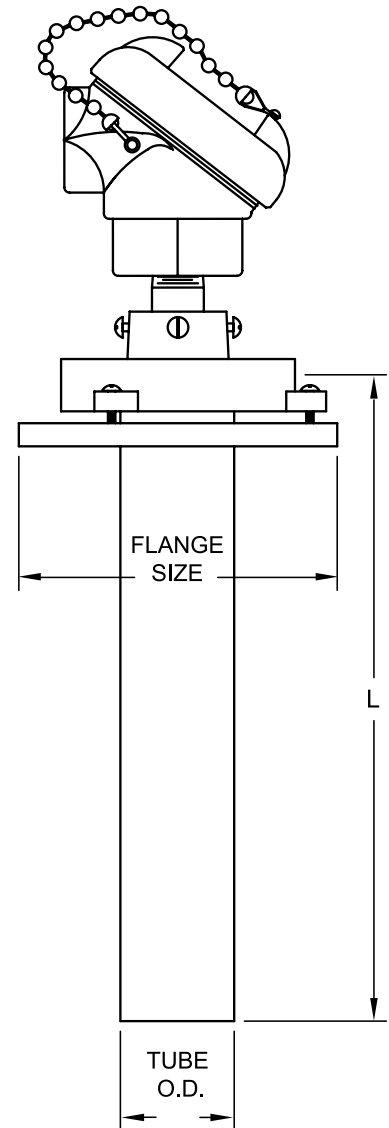
BEAD MATERIAL

A – Alumina beads (0.125" OD for single junction, 0.188" for dual)

OUTER PROTECTION TUBE LENGTH

L# – (e.g., L12 = 12" outer protection tube length)

OPTIONS – see page 1-10b



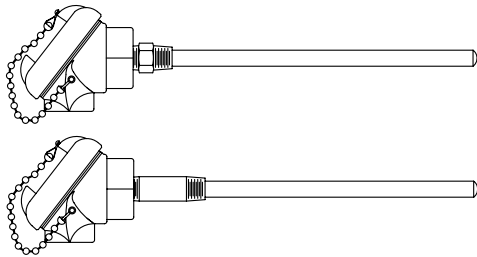
STYLE 81F

GENERAL OPTIONS

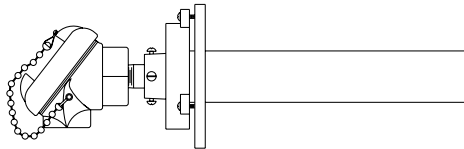
TAG1 Stainless steel tag and wire
 CAL1 Calibration, NIST traceable; specify calibration point(s)

For additional Noble Metal Thermocouple styles, see:

Style 81N – Single, primary protection tube only



Style 81B – Secondary tube with mounting bushing



Style 51 – Replacement Sensor



TERMINAL HEAD OPTIONS

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"
*can be used with TR11 transmitter			

Notes:

1. Applied Sensor Technologies recommends alumina protection tubes when using platinum thermocouples. Mullite, although less expensive when compared to alumina, can contaminate the platinum, causing drift.
2. In many cases platinum thermocouples can be recycled, thereby reducing the long-term overall cost. Please contact Applied Sensor Technologies for further information.
3. Applied Sensor Technologies offers many other temperatures sensor designs and technologies, including base metal thermocouples, RTDs, thermistors and Integrated Circuit chips, along with a full line of accessory items such as thermowells, transmitters, etc. Please visit our website or contact us for further information.

SHEATH WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE*

GP – General purpose thermocouple

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

02 – Sheath with leadwire; fiberglass insulated conductors; fiberglass jacket

04 – Sheath with leadwire; fiberglass insulated conductors; fiberglass jacket; stainless steel overbraid overall

28 – Sheath with Teflon® insulated conductors; Teflon® jacketed cable

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600 (MI only)

CALIBRATION - Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

Dual junction not available with all GP Thermocouples in sheath diameter 4 and GP04 diameter 6

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

E – Exposed junction

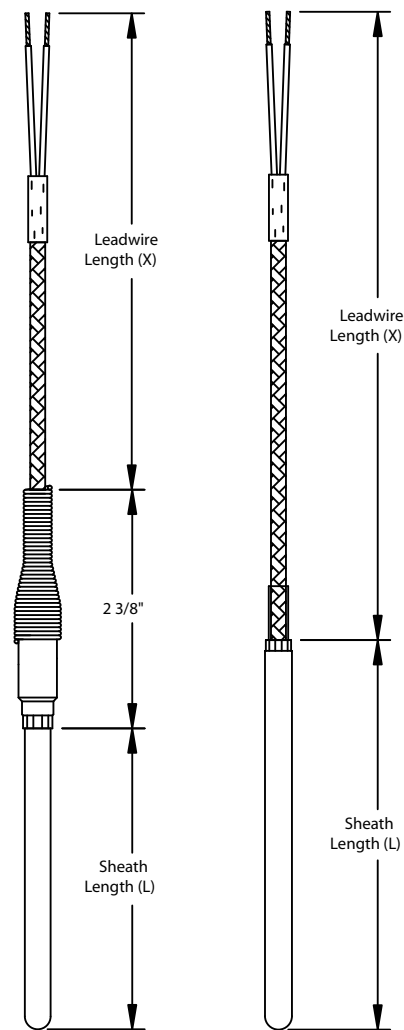
SHEATH LENGTH (Note: maximum L=96" for GP; for MI, lengths over L84 will be shipped coiled unless otherwise specified)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-11b



MI Type

GP Type

*Note: GP thermocouples, manufactured using hollow tubing and wire, tend to be lower cost than MI, but cannot be bent in the field and are standardly designed for sensing temperatures below 500°F. MI thermocouples are more rugged than GP due to compacted magnesium-oxide powder insulation, can be bent in the field, and are appropriate for the temperature range of the sensor and sheath.

STYLES 02, 04, 28

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)
CAL1	NIST traceable calibration [specify point(s)]
HT10	High temperature (900°F) transition. (Standard transition on Styles 02 and 04 is 500°F/260°C)

WIRING CONNECTION OPTIONS	
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals

For plugs and jacks, see Styles 05, 07, 69.

COMPRESSION FITTINGS (for diameters 4, 6, 7)			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass

WELD PADS	
WP00	Horizontal pad/flat
WP10	1" nominal pipe size
WP15	1.5" nominal pipe size
WP20	2" nominal pipe size
WP25	2.5" nominal pipe size
WP30	3" nominal pipe size
WP35	3.5" nominal pipe size
WP40	4" nominal pipe size

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

SHEATH WITH LEADWIRE AND ARMOR

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	ARMOR CABLE LENGTH	OPTIONS

SENSOR TYPE*

GP – General purpose thermocouple

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

03 – Sheath with leadwire and flexible armor cable; fiberglass-insulated conductors; fiberglass jacket.

03P – PVC-coated armor

03T – Teflon® coated armor

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600 (MI only)

CALIBRATION Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

Dual junction not available with GP thermocouples in sheath diameter 4

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

E – Exposed junction

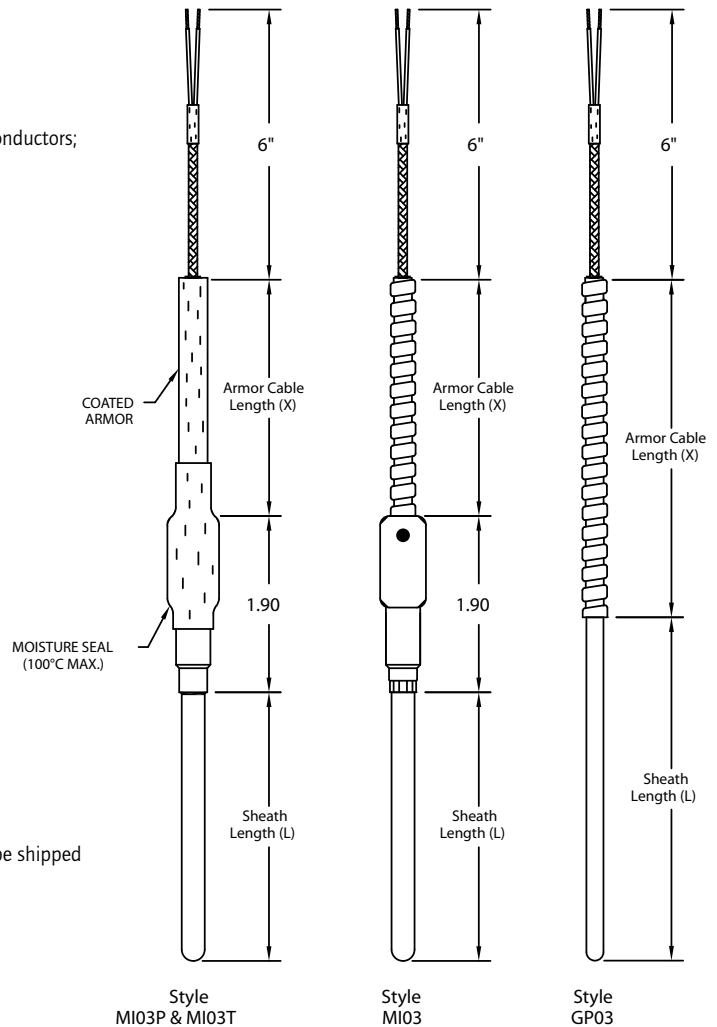
SHEATH LENGTH (Note: maximum L=96" for GP; for MI, lengths over L84 will be shipped coiled unless otherwise specified)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

ARMOR CABLE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-12b



*Note: GP thermocouples, manufactured using hollow tubing and wire, tend to be lower cost than MI, but cannot be bent in the field and are standardly designed for sensing temperatures below 500°F. MI thermocouples are more rugged than GP due to compacted magnesium-oxide powder insulation, can be bent in the field, and are appropriate for the temperature range of the sensor and sheath.

STYLE 03

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS			
Option Code	Description		
TAG1	Stainless steel tag and wire		
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)		
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)		
CAL1	NIST traceable calibration [specify point(s)]		
HT10	High temperature (900°F) transition. (Standard transition rated 500°F/260°C)		
COMPRESSION FITTINGS			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass
LEADWIRE AND ARMOR OPTIONS			
BA50	Bayonet cap on armor, no spring (formerly Style 25)		
Note: For assembly with sheath, armor and terminal head, see Style 66.			

WIRING CONNECTION OPTIONS	
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)
PJ30	Miniature plug, rated to 177°C (350°F)
PJ40	Miniature jack, rated to 177°C (350°F)
PJ50	High temp. plug, rated to 260°C (500°F)
PJ60	High temp. jack, rated to 260°C (500°F)
BX CONNECTORS	
WC40	1/2"
WC50	3/4"
WELD PADS	
WP00	Horizontal pad/flat
WP10	1" nominal pipe size
WP15	1.5" nominal pipe size
WP20	2" nominal pipe size
WP25	2.5" nominal pipe size
WP30	3" nominal pipe size
WP35	3.5" nominal pipe size
WP40	4" nominal pipe size

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

SHEATH WITH LEADWIRE AND PLUG

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE*

GP – General purpose thermocouple

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

05 – Sheath with leadwire; standard male plug; fiberglass insulated conductors; fiberglass jacket

07 – Sheath with leadwire; stainless steel overbraid; standard male plug; fiberglass insulated conductors; fiberglass jacket

69 – Sheath with leadwire; miniature plug; fiberglass insulated conductors; fiberglass jacket

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600 (MI only)

CALIBRATION – Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

Dual junctions not available with all GP Thermocouples in sheath diameter 4 and GP07 diameter 6

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

E – Exposed junction

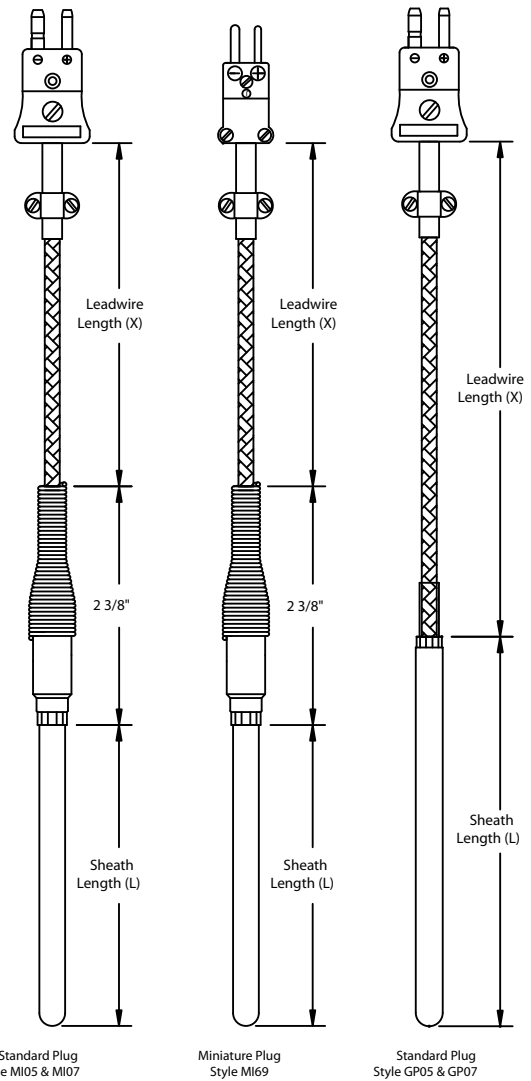
SHEATH LENGTH (Note: maximum L=96" for GP; for MI, lengths over L84 will be shipped coiled unless otherwise specified)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-13b



*Note: GP thermocouples, manufactured using hollow tubing and wire, tend to be lower cost than MI, but cannot be bent in the field and are standardly designed for sensing temperatures below 500°F. MI thermocouples are more rugged than GP due to compacted magnesium-oxide powder insulation, can be bent in the field, and are appropriate for the temperature range of the sensor and sheath.

STYLES 05, 07, 69

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)
CAL1	NIST traceable calibration [specify point(s)]
HT10	High temperature (900°F) transition. (Standard transition rated 500°F/260°C)
PLUG AND JACK OPTIONS	
PJ20	Standard jack, rated to 177°C (350°F)
PJ40	Miniature jack, rated to 177°C (350°F)
PJ50	High temp. standard plug, rated to 260°C (500°F)
PJ60	High temp. standard jack, rated to 260°C (500°F)

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

COMPRESSION FITTINGS (for diameters 4, 6, 7)			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass
WELD PADS			
WP00	Horizontal pad/flat		
WP10	1" nominal pipe size		
WP15	1.5" nominal pipe size		
WP20	2" nominal pipe size		
WP25	2.5" nominal pipe size		
WP30	3" nominal pipe size		
WP35	3.5" nominal pipe size		
WP40	4" nominal pipe size		

Note: Many non-standard options, including additional sheath diameters and materials, may also be available – consult AST for specific requirements.

SHEATH WITH MALE PLUG

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE*

GP – General purpose thermocouple

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

14 – Sheath with standard male plug; maximum termination temperature 177°C (350°F)

74 – Sheath with miniature male plug; maximum sheath diameter 3/16" OD; maximum termination temperature 177°C (350°F)

SHEATH DIAMETER (in inches)

3 – 1/16 (0.063) (Style MI 74 only)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250) (Style 14 only)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600 (MI only)

CALIBRATION – Standard limits

J – Single J

K – Single K

T – Single T

E – Single E

Special limits are available – consult AST

HOT JUNCTION

G – Grounded junction

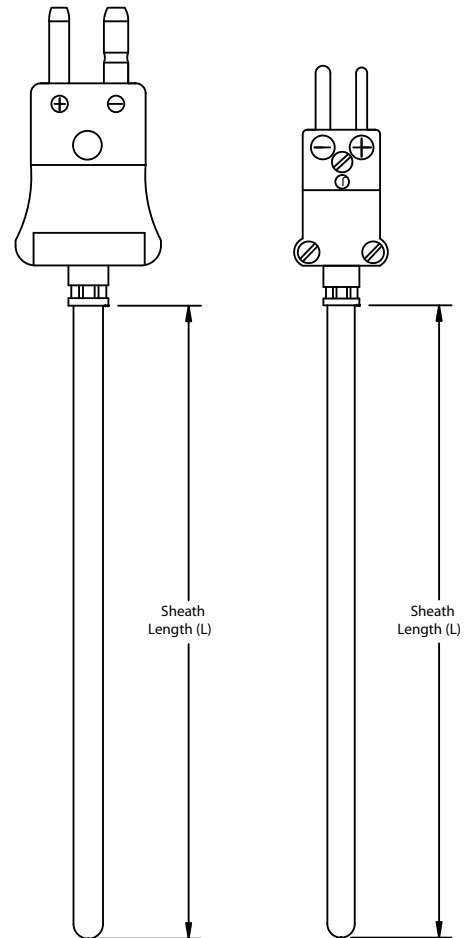
U – Ungrounded junction

E – Exposed junction

SHEATH LENGTH (Note: maximum L=96" for GP; for MI, lengths over L84 will be shipped coiled unless otherwise specified)

L# – (e.g., L6 = 6" sheath, L12.5 = 12.5" length)

OPTIONS – see page 1-14b



Style 14

Style 74

*Note: GP thermocouples, manufactured using hollow tubing and wire, tend to be lower cost than MI, but cannot be bent in the field and are standardly designed for sensing temperatures below 500°F. MI thermocouples are more rugged than GP due to compacted magnesium-oxide powder insulation, can be bent in the field, and are appropriate for the temperature range of the sensor and sheath.

STYLES 14 & 74

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
PLUGS AND JACKS	
PJ20	Standard jack, rated to 177°C (350°F) (Style 14 only)
PJ40	Miniature jack, rated to 177°C (350°F) (Style 74 only)

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

COMPRESSION FITTINGS (for diameters 4, 6, 7)			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass

CUTABLE SHEATH WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE

GP – General purpose thermocouple

ASSEMBLY STYLE

38 – Field cuttable sheath length with leadwire; fiberglass insulated conductors; fiberglass jacket; stainless steel overbraid; (cannot be shortened to less than 4")

SHEATH DIAMETER (in inches)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

SHEATH MATERIAL

3 – 316 stainless steel

CALIBRATION - Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available- consult AST

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

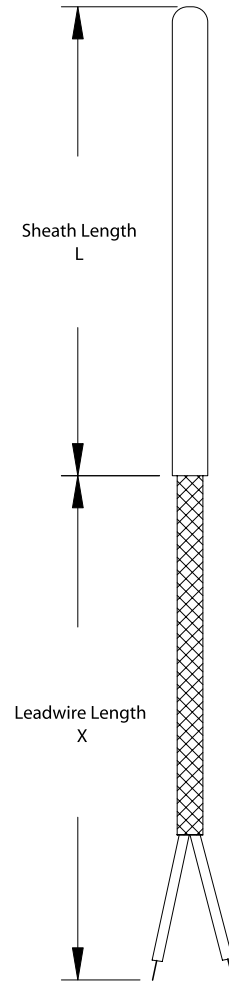
SHEATH LENGTH (Maximum L=96")

L# – (e.g., L24 = 24 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-15b



STYLE 38



EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

Many additional components are available in our Sensor Box program, including spring-loaded fittings and plugs and jacks.

The Sensor Box allows you to build sensor assemblies on-site, saving time and expense. See the Sensor Box literature for further details.

SPRING LOADED BAYONET FITTING WITH ARMOR

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	ARMOR CABLE LENGTH	OPTIONS

SENSOR TYPE*

- GP – General purpose thermocouple
- MI – Mineral insulated thermocouple

ASSEMBLY STYLE

71 – Sheath with stainless steel armor; fiberglass insulated conductors; fiberglass jacket; spring-loaded bayonet cap; (use with Bayonet Adapter- see options on page 1-16b)

SHEATH DIAMETER (in inches)

6 – 3/16 (0.188)

SHEATH MATERIAL

3 – 316 stainless steel

CALIBRATION - Standard limits

- J – Single J JJ – Dual J
- K – Single K KK – Dual K
- T – Single T TT – Dual T
- E – Single E EE – Dual E

HOT JUNCTION

- G – Grounded junction
- U – Ungrounded junction

SHEATH LENGTH (Note: maximum L=96" for GP; for MI, lengths over L84 will be shipped coiled unless otherwise specified)

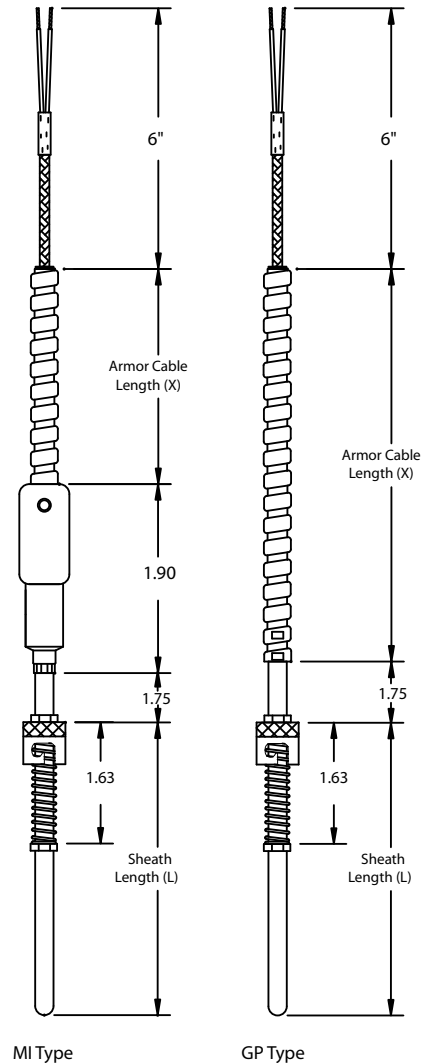
L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

ARMOR CABLE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-16b

*Note: GP thermocouples, manufactured using hollow tubing and wire, tend to be lower cost than MI, but cannot be bent in the field and are standardly designed for sensing temperatures below 500°F. MI thermocouples are more rugged than GP due to compacted magnesium-oxide powder insulation, can be bent in the field, and are appropriate for the temperature range of the sensor and sheath.



STYLE 71

AVAILABLE OPTIONS and MODIFICATIONS

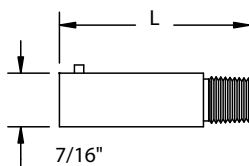
ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
BD90	90° bend in sheath, 3/4" from back end of cap Formerly Style 35	
BD45	45° bend in sheath, 3/4" from back end of cap Formerly Style 70	
CAL1	NIST traceable calibration [specify point(s)]	
HT10	High temperature (900°F) transition. (Standard transition rated 500°F/260°C)	
BAYONET ADAPTERS (PLATED STEEL)		
Option Code	Thread Size	Length (L)
BA20	1/8" - 27 NPT	7/8"
BA22	1/8" - 27 NPT	1-1/2"
BA24	1/8" - 27 NPT	2-1/2"
PIPE CLAMP AND BAYONET ADAPTERS		
Option Code	Band Diameter	Adapter Length (l)
BA30	11/16" to 1-1/4"	2"
BA31	1-1/16" to 2"	2"
BA32	2-1/16" to 3"	2"
BA33	3-5/16" to 4-1/4"	2"
BA34	4-1/8" to 5"	2"

WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)
PJ30	Miniature plug, rated to 177°C (350°F)
PJ40	Miniature jack, rated to 177°C (350°F)
PJ50	High temp. standard plug, rated to 260°C (500°F)
PJ60	High temp. standard jack, rated to 260°C (500°F)
BX CONNECTORS	
WC40	1/2"
WC50	3/4"

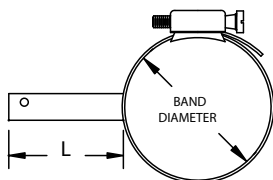
EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

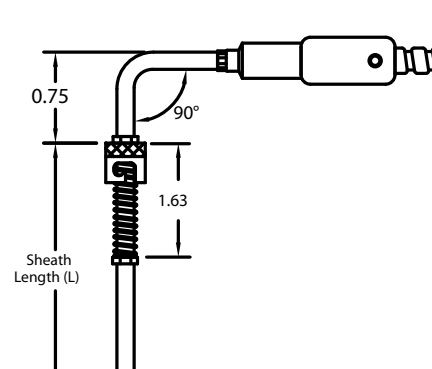
BAYONET ADAPTER
(PLATED STEEL)



PIPE CLAMP WITH
BAYONET ADAPTER



BD90 OPTION VIEW
ON MI71 STYLE



SHEATH WITH WELDED PROCESS MOUNTING

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

23P – Sheath with single-sided process mounting; fiberglass insulated conductors; fiberglass jacket; 1/2" NPT stainless steel connection with leadwire

23I – Sheath with single-sided instrument mounting; fiberglass insulated conductors; fiberglass jacket; 1/2" NPT stainless steel connection with leadwire

24 – Sheath with double-sided hex fitting; fiberglass insulated conductors and jacket; 1/2" NPT stainless steel connection with leadwire

SHEATH DIAMETER (in inches)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

5 – Inconel® 600

CALIBRATION – Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

E – Exposed junction

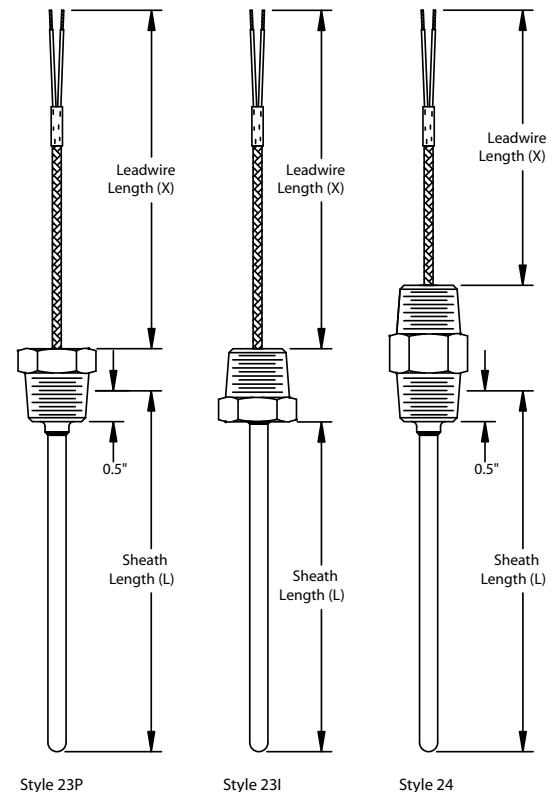
SHEATH LENGTH (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-17b



STYLE 23I, 23P, 24

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
B90-	90° bend in sheath [specify length from tip in inches e.g., B90-6]
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)
CAL1	NIST traceable calibration [specify point(s)]
HT10	High temperature (900°F) transition. (Standard transition rated 500°F/260°C)

WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)
PJ30	Miniature plug, rated to 177°C (350°F)
PJ40	Miniature jack, rated to 177°C (350°F)
PJ50	High temp. standard plug, rated to 260°C (500°F)
PJ60	High temp. standard jack, rated to 260°C (500°F)
WELD PADS (Style 23I only)	
WP00	Horizontal pad/flat
WP10	1" nominal pipe size
WP15	1.5" nominal pipe size
WP20	2" nominal pipe size
WP25	2.5" nominal pipe size
WP30	3" nominal pipe size
WP35	3.5" nominal pipe size
WP40	4" nominal pipe size

WASHER WITH LEADWIRE AND ARMOR

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	WASHER SIZE	MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	ARMOR CABLE LENGTH	OPTIONS

SENSOR TYPE*

GP – General purpose thermocouple

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

32 – Washer with leadwire; fiberglass insulated conductors; fiberglass jacket; armor cable; stainless steel washer thickness 1/4" (0.250); sheath diameter 0.188" only

WASHER SIZE (in inches)

FOR BOLT SIZE	ID	OD
6 – 3/16 (0.188)	0.193	0.375
7 – 1/4 (0.250)	0.255	0.500
9 – 3/8 (0.375)	0.380	0.750
10 – 1/2 (0.500)	0.510	1.000

WASHER AND SHEATH MATERIAL

3 – 316 stainless steel

CALIBRATION Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

Special limits are available – consult AST

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

SHEATH LENGTH (Note: maximum L=96" for GP; for MI, lengths over L84 will be shipped coiled unless otherwise specified)

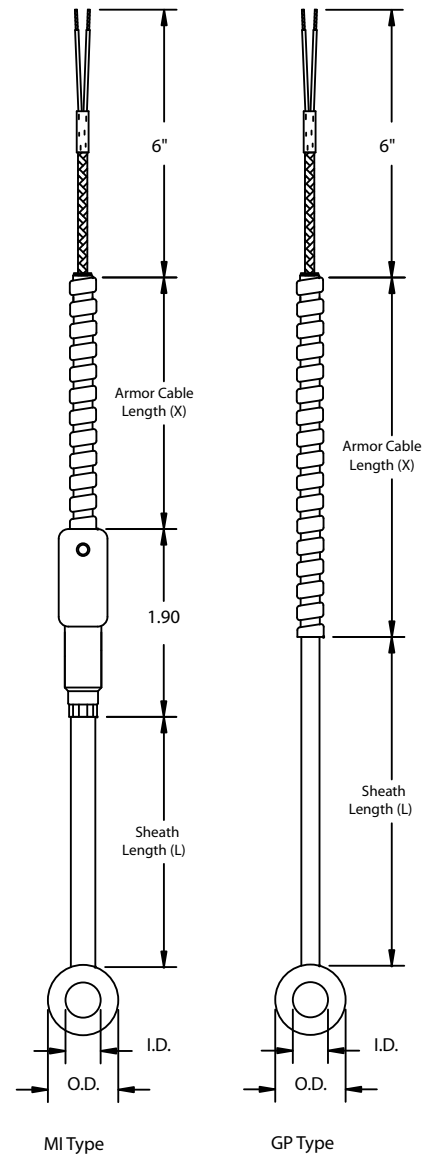
L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

ARMOR CABLE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 1-18b

*Note: GP thermocouples, manufactured using hollow tubing and wire, tend to be lower cost than MI, but cannot be bent in the field and are standardly designed for sensing temperatures below 500°F. MI thermocouples are more rugged than GP due to compacted magnesium-oxide powder insulation, can be bent in the field, and are appropriate for the temperature range of the sensor and sheath.



STYLE 32

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
B90-	90° bend in sheath [specify length from tip in inches e.g., B90-6]
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)
CAL1	NIST traceable calibration [specify point(s)]
HT10	High temperature (900°F) transition. (Standard transition rated 500°F/260°C)

WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)
PJ30	Miniature plug, rated to 177°C (350°F)
PJ40	Miniature jack, rated to 177°C (350°F)
PJ50	High temp. plug, rated to 260°C (500°F)
PJ60	High temp. jack, rated to 260°C (500°F)
BX CONNECTORS	
WC40	1/2"
WC50	3/4"

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

MOUNTING LUG WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	LUG HOLE SIZE	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE

GP – General purpose thermocouple

ASSEMBLY STYLE

41F – Stainless steel mounting lug with fiberglass leadwire; diameter 0.312" only; 500°F max.

41T – Stainless steel mounting lug with Teflon® leadwire; diameter 0.312" only; 400°F max.

LUG HOLE SIZE - diameter of hole (in inches)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

CALIBRATION - Standard limits

J – Single J

JJ – Dual J

K – Single K

KK – Dual K

T – Single T

TT – Dual T

E – Single E

EE – Dual E

HOT JUNCTION

G – Grounded junction

U – Ungrounded junction

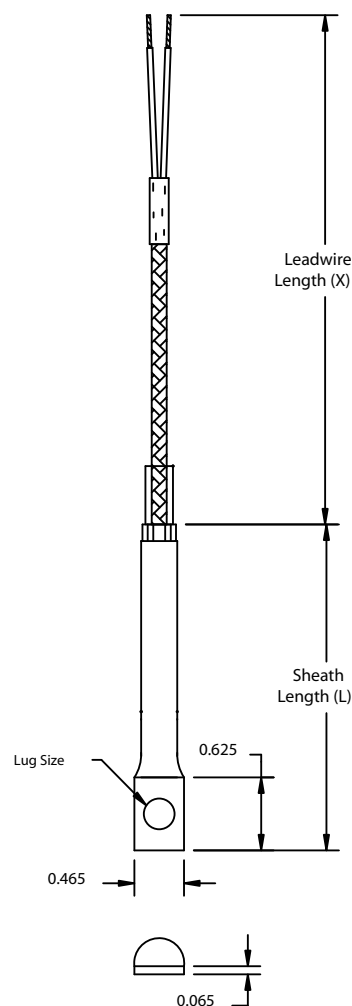
SHEATH LENGTH (Maximum L=96")

L# - (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# - (e.g., X72 = 72 inch length)

OPTIONS – see page 1-19b



STYLES 41F & 41T

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire

WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)
PJ30	Miniature plug, rated to 177°C (350°F)
PJ40	Miniature jack, rated to 177°C (350°F)
PJ50	High temp. standard plug, rated to 260°C (500°F)
PJ60	High temp. standard jack, rated to 260°C (500°F)

EXTENSION WIRE

A selection of extension-grade thermocouple wire is available to connect the sensor to its input device. Consult Accessories section.

ATEX-APPROVED, CONNECTION HEAD WITH WELDED NPT PROCESS CONNECTION

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	CALIBRATION	HOT JUNCTION	SHEATH LENGTH	OPTIONS

SENSOR TYPE

MI – Mineral insulated thermocouple

ASSEMBLY STYLE

22 – Sheath with cast aluminum head and 1/2" NPT welded stainless steel process connection; head ATEX approved for EEx d IIC; IP66 to 68; screw cover with chain and gasketed o-ring, meets NEMA 4X; ceramic terminal block; 3/4" NPT conduit connection; internal and external ground screws (Note: for spring-loaded fitting, see Style 75 and add optional head).

SHEATH DIAMETER (in inches)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

- 3** – 316 stainless steel
- 5** – Inconel® 600

CALIBRATION – Standard limits

- J** – Single J **JJ** – Dual J
- K** – Single K **KK** – Dual K
- T** – Single T **TT** – Dual T
- E** – Single E **EE** – Dual E

Special limits are available – consult AST

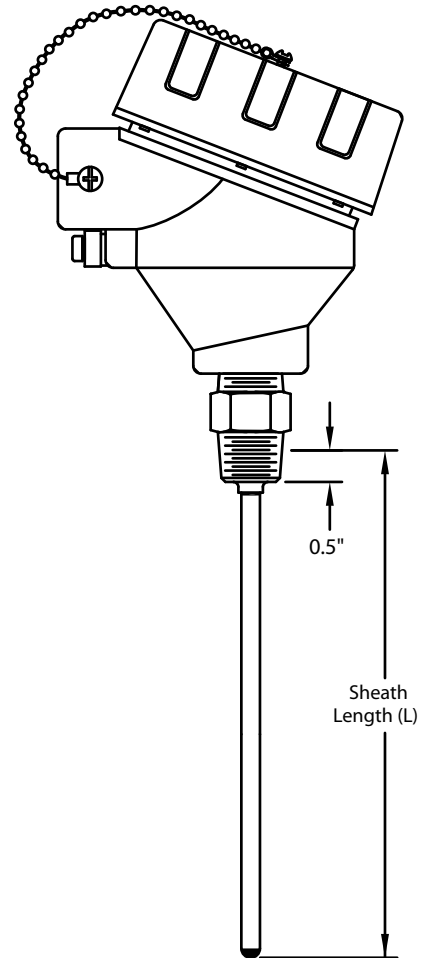
HOT JUNCTION

- G** – Grounded junction
 - U** – Ungrounded junction
 - E** – Exposed junction
- (Note: lengths over L84 will be shipped coiled unless otherwise specified at time of order)

SHEATH LENGTH

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

OPTIONS – see page 1-20b



STYLE 22

AVAILABLE OPTIONS and MODIFICATIONS

TERMINAL HEAD OPTION		
Same specification as standard head		
Option Code	Process Connection	Conduit Connection
HD73	1/2"	1/2"
ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
PC25	1/4" NPT process connection	
PC75	3/4" NPT process connection	
CAL1	Calibration, NIST traceable calibration [specify point(s)]	
TRANSMITTERS – For complete specs, see Transmitters section		
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range and units of measure (e.g., 0-200°C)	

NEMA 4 CONNECTION HEAD WITH WELDED PROCESS CONNECTION

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-1b for optional elements)

RTPT1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction (For dual element, add prefix "D", e.g., DRTP1)

ASSEMBLY STYLE

15 – Sheath with cast aluminum head and 1/2" NPT welded stainless steel process connection; head conforms to NEMA 4 requirements; 3/4" NPT conduit connection; ceramic terminal block; gasketed screw cover with stainless steel chain

SHEATH DIAMETER (in inches) (see page 2-1b for restrictions)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

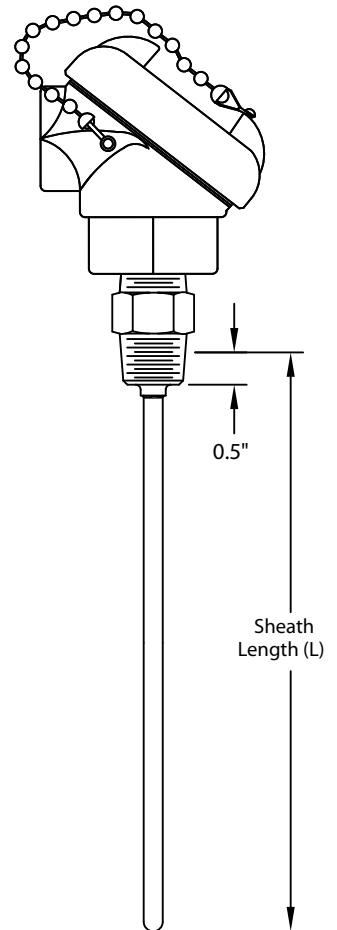
TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)
- 2** – -45 to 482°C (-50 to 900°F)
- 3** – -45 to 788°C (-50 to 1450°F)
- 4** – -200 to 260°C (-328 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-1b



STYLE 15

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
TRANSMITTERS – For complete specs, see Transmitters section		
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range, units of measure (e.g., 0-200°C) and optional terminal head with *.	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP6)		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

NEMA 4 OR 4X TERMINAL HEAD OPTIONS							
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection				
Cast aluminum, screw cover with chain, NEMA 4							
HD10*	HD11*	1/2"	1/2"				
Std.*	HD13*	1/2"	3/4"				
Epoxy-coated aluminum, screw cover with chain, NEMA 4X							
HD50*	HD51*	1/2"	1/2"				
HD52*	HD53*	1/2"	3/4"				
Cast iron, screw cover with chain, NEMA 4							
HD20*	HD21*	1/2"	1/2"				
HD22*	HD23*	1/2"	3/4"				
316 stainless steel, screw cover with chain, NEMA 4X							
HD40*	HD41*	1/2"	3/4"				
White polypropylene, screw cover with chain, NEMA 4							
HD30	N/A	1/2"	3/4"				
Black polypropylene, screw cover with chain, NEMA 4							
HD31	N/A	1/2"	3/4"				
Nylon, screw cover with chain, NEMA 4							
HD32	N/A	1/2"	3/4"				
*can be used with TR11 transmitter							
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

Notes:

1. See Accessories for additional information
2. For former Style 16, use option HD20
3. For former Style 29, use option HD32

NEMA 4 CONNECTION HEAD WITH SPRING-LOADED ASSEMBLY AND MOUNTING HARDWARE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	CONNECTION	CONNECTION LENGTH	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-2b for optional elements)

RTPT1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

45 – Sheath with cast aluminum head; spring-loaded; conforms to NEMA 4 requirements; 3/4" NPT conduit connection; ceramic terminal block; 1/2" NPT process connection; gasketed screw cover with stainless steel chain

CONNECTION

H – Head only; 1/2" NPT (female) instrument connection

N – 1/2" NPT carbon steel nipple only

NU – 1/2" NPT carbon steel nipple and union

NUN – 1/2" NPT carbon steel nipple, union and nipple

See page 2-2b for optional connection materials

CONNECTION LENGTH

– (e.g., 006 = 6 inch)

See page 2-2b for standard available lengths

SHEATH DIAMETER (in inches) (see page 2-2b for restrictions)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

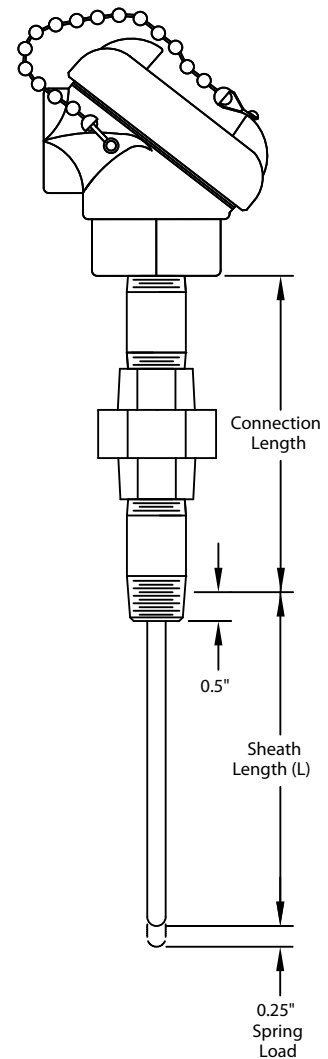
3 – -45 to 788°C (-50 to 1450°F)

4 – -200 to 260°C (-328 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-2b



STYLE 45

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
NUN15	304 stainless hardware (see chart below) – add suffix "15" to NUN	
NUN25	316 stainless hardware (see chart below) – add suffix "25" to NUN	
Transmitters: see Style 48		
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP6)		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

STANDARD AVAILABLE CONNECTION LENGTHS		
N	NU	NUN
N/A	2.00	2.50
0.50	2.50	3.00 *
1.00	3.00	4.00 *
1.50	3.50	5.00
2.00	4.00	6.00 *
3.00	5.00	8.00
5.00	7.00	12.00
6.00	8.00	14.00
* 25 OPTION AVAILABLE IN THESE LENGTHS ONLY.		
DIMENSIONS ARE GIVEN IN INCHES		

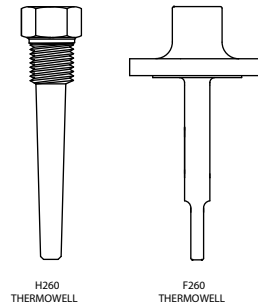
NEMA 4 OR 4X TERMINAL HEAD OPTIONS							
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection				
Cast aluminum, screw cover with chain, NEMA 4							
HD10	HD11	1/2"	1/2"				
Std.	HD13	1/2"	3/4"				
Epoxy-coated aluminum, screw cover with chain, NEMA 4X							
HD50	HD51	1/2"	1/2"				
HD52	HD53	1/2"	3/4"				
Cast iron, screw cover with chain, NEMA 4							
HD20	HD21	1/2"	1/2"				
HD22	HD23	1/2"	3/4"				
316 stainless steel, screw cover with chain, NEMA 4X							
HD40	HD41	1/2"	3/4"				
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

Note:

- For former Style 46, use option HD20

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.



EXPLOSION-PROOF CONNECTION HEAD WITH WELDED PROCESS CONNECTION

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-3b for optional elements)

RTPI – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D" - e.g., DRTP1)

ASSEMBLY STYLE

78 – Sheath with cast aluminum head and 1/2" NPT welded stainless steel process connection; head CSA/FM approved for Class I, Division I, Groups B, C, D; Class II, Groups E, F, G; screw cover with chain and gasketed o-ring; meets NEMA 4; ceramic terminal block; 1/2" NPT conduit connection

SHEATH DIAMETER (in inches) (see page 2-3b for restrictions)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

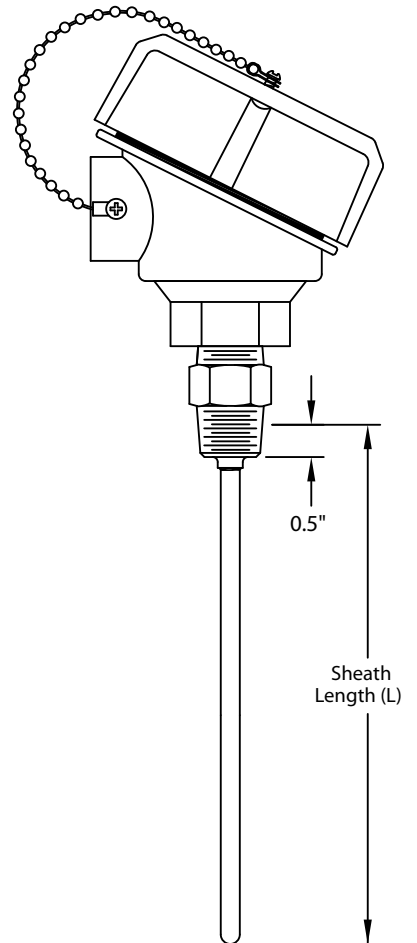
TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)
- 2** – -45 to 482°C (-50 to 900°F)
- 3** – -45 to 788°C (-50 to 1450°F)
- 4** – -200 to 260°C (-328 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-3b



STYLE 78

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
PC25	1/4" NPT process connection	
PC75	3/4" NPT process connection	
CAL1	Calibration, NIST traceable calibration [specify point(s)]	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes: 1. For dual element, add prefix "D" (e.g., DRTP6) 2. Additional materials, curves and resistance values are available - see Capabilities brochure.		
TRANSMITTERS – For complete specs, see Transmitters section		
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range and units of measure (e.g., 0-200°C)	

EXPLOSION-PROOF TERMINAL HEAD OPTIONS							
Option Code	Process Connection			Conduit Connection			
Cast aluminum; screw cover with chain; o-ring gasket (Gasket rated to 100°C exposure); ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C and D; Class II Groups E, F and G; internal ground screw.							
HD71	1/2"			3/4"			
Epoxy-coated, same specs as HD71							
HD80	1/2"			1/2"			
HD81	1/2"			3/4"			
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

Note: See Accessories section for additional specs.

EXPLOSION-PROOF CONNECTION HEAD WITH SPRING-LOADED ASSEMBLY AND MOUNTING HARDWARE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	CONNECTION	CONNECTION LENGTH	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-4b for optional elements)

RTPT1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

77 – Sheath with cast aluminum head; spring-loaded; head CSA/FM approved for Class I, Division I, Groups B, C, D; Class II, Groups E, F, G, including union; screw cover with chain and gasketed o-ring. Ceramic terminal block; 1/2" NPT conduit and process connections

CONNECTION

H – Head only; 1/2" NPT (female) instrument connection
N – 1/2" NPT carbon steel nipple only
NU – 1/2" NPT carbon steel nipple and plated steel union
NUN – 1/2" NPT carbon steel nipples and plated steel union

CONNECTION LENGTH

– (e.g., 006=6 inch)
See page 2-4b for standard available lengths.

SHEATH DIAMETER (in inches) (see page 2-4b for restrictions)

4 – 1/8 (0.125)
6 – 3/16 (0.188)
7 – 1/4 (0.250)
9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

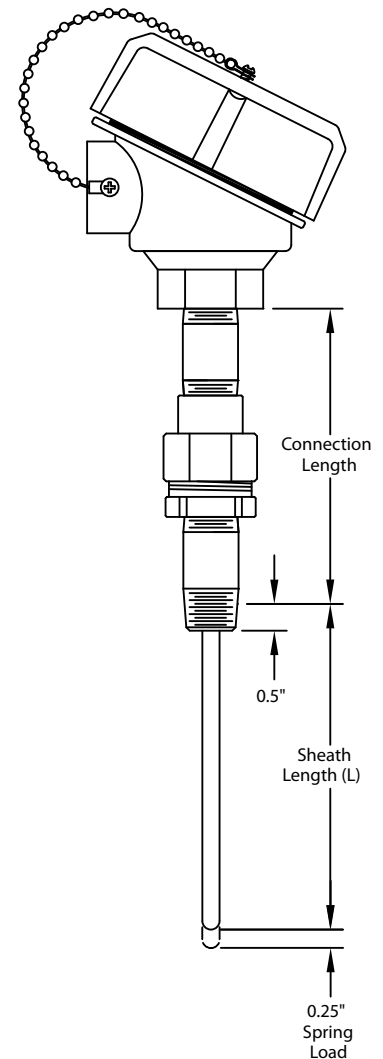
TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)
2 – -45 to 482°C (-50 to 900°F)
3 – -45 to 788°C (-50 to 1450°F)
4 – -200 to 260°C (-328 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-4b



STYLE 77

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Codes	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
NUN1S	304 stainless steel nipples with plated steel union (see chart below) – add suffix "1S" to NUN.
TRANSMITTERS	
See Style 48 for available transmitters	
OPTIONAL ELEMENTS	
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.	
Option Code	Accuracy (at 0°C)
RTP1 (std.)	±0.12%
RTP1A	±0.06%
RTP1AA	±0.01%
RTP6	±0.12%
RTP7	±0.12%
RTP7A	±0.06%
RTP7AA	±0.01%
Construction	
RTP1 (std.)	3-wire
RTP1A	3-wire
RTP1AA	3-wire
RTP6	2-wire
RTP7	4-wire
RTP7A	4-wire
RTP7AA	4-wire
Notes:	
1. For dual element, add prefix "D" (e.g., DRTP6)	
2. Additional materials, curves and resistance values are available - see Capabilities brochure.	

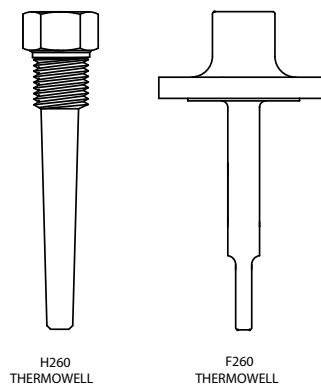
STANDARD AVAILABLE CONNECTION LENGTHS		
N	NU	NUN
N/A	2.00	2.50
0.50	2.50	3.00
1.00	3.00	4.00
1.50	3.50	5.00
2.00	4.00	6.00
3.00	5.00	8.00
5.00	7.00	12.00
6.00	8.00	14.00
DIMENSIONS ARE GIVEN IN INCHES		

EXPLOSION-PROOF TERMINAL HEAD OPTIONS							
Option Code	Process Connection			Conduit Connection			
Cast aluminum; screw cover with chain; o-ring gasket; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C and D; Class II Groups E, F and G (Gasket rated to 100°C exposure); internal ground screw							
HD71	1/2"			3/4"			
Same as above, except epoxy-coated							
HD80	1/2"			1/2"			
HD81	1/2"			3/4"			
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

Note: See Accessories section for outline drawings and additional specs.

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.



CONNECTION HEAD WITH WELDED HEX FITTING

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-5b for optional elements)

RTPI – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

21 – Sheath with head; for use as ambient sensor or with compression fitting for process mounting. See page 2-5b for head options.

SHEATH DIAMETER (in inches) (see page 2-5b for restrictions)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

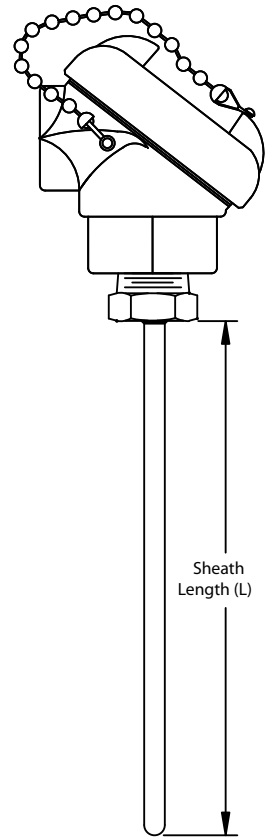
TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)
- 2** – -45 to 482°C (-50 to 900°F)
- 3** – -45 to 788°C (-50 to 1450°F)
- 4** – -200 to 260°C (-328 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6" sheath)

OPTIONS – see page 2-5b



Style 21

STYLE 21

ASSEMBLY OPTIONS			
Option Code	Description		
TAG1	Stainless steel tag and wire		
B90-	90° bend in sheath [specify length from tip in inches e.g., B90-6]		
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)		
CAL1	NIST traceable calibration [specify point(s)]		
TRANSMITTERS - for complete specs, see Transmitters section			
TR11	4-20 mA, 2-wire, single input, isolated output; specify range, units of measure (e.g., 0-200°C) and optional head with *		
COMPRESSION FITTINGS (for diameters 4, 6, 7)			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass
NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover with chain, NEMA 4			
HD32	N/A	1/2"	3/4"
*can be used with TR11 transmitter			

Note: Many non-standard options, including additional sheath diameters and materials, may also be available - consult AST for specific requirements.

AVAILABLE OPTIONS and MODIFICATIONS

EXPLOSION-PROOF TERMINAL HEAD OPTIONS							
Option Code	Process Connection			Conduit Connection			
Cast aluminum, screw cover with chain; o-ring gasket rated to 100°C; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C, D; Class II, Groups E, F, G; internal ground screw							
HD70*	1/2"			1/2"			
HD71*	1/2"			3/4"			
Epoxy-coated (same specs as HD70)							
HD80*	1/2"			1/2"			
HD81*	1/2"			3/4"			
Cast aluminum; ATEX approved for EEx d IIC; screw cover with chain; silicone rubber o-ring gasket; ceramic terminal block; rated for NEMA 4X, IP66 to IP68; internal and external ground screws							
HD72*	1/2"			3/4"			
HD73*	1/2"			1/2"			
Cast aluminum (formerly Style 60); screw cover; plastic terminal block; UL/CSA approved for Class I Div. 1, Groups C and D; Class II Groups E, F and G.							
HD60	1/2"			1/2"			
HD61	1/2"			3/4"			
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8"	1/8"	1/8"	1/8"	3/16"	3/16"	3/16"
2	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"	3/16"
3	3/16"			3/16"	3/16"		
4	1/8"			1/8"	3/16"		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16"	3/16"	3/16"	3/16"			
2	1/4"	1/4"	1/4"	3/16"			
3	1/4"			1/4"			
4	3/16"			3/16"			
OPTIONAL ELEMENTS							
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.							
Option Code	Accuracy (at 0°C)		Construction				
RTP1 (std.)	±0.12%		3-wire				
RTP1A	±0.06%		3-wire				
RTP1AA	±0.01%		3-wire				
RTP6	±0.12%		2-wire				
RTP7	±0.12%		4-wire				
RTP7A	±0.06%		4-wire				
RTP7AA	±0.01%		4-wire				

Notes:

- For dual element, add prefix "D" (e.g., DRTP6)
- Additional materials, curves and resistance values are available - see Capabilities brochure.

DOUBLE-SIDED, SPRING-LOADED PROCESS MOUNTING WITH TERMINAL HEAD OPTIONS

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-6b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

75 – Sheath with double-sided, spring-loaded fitting; Teflon® insulated conductors; 1/2" NPT stainless steel connection. (Note: a variety of terminal heads may be added to this style – see page 2-6b)

SHEATH DIAMETER (in inches) (see page 2-6b for restrictions)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)
- 2** – -45 to 482°C (-50 to 900°F)
- 3** – -45 to 788°C (-50 to 1450°F)
- 4** – -200 to 260°C (-328 to 500°F)

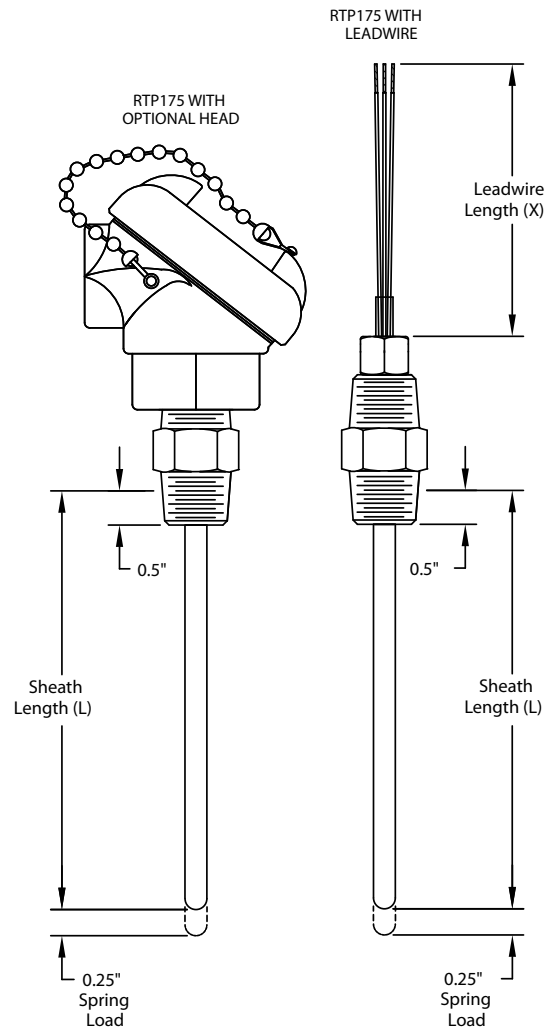
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X3=3 inch length; X3 is standard if specifying a terminal head)

OPTIONS – see page 2-6b



STYLE 75

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
WIRING CONNECTION OPTIONS		
Option Code	Description	
WC76	#6 spade terminals, plated copper	
WC70	#10 spade terminals, plated copper	
WC84	1/4" push-on insulated terminals, plated copper	
WC90	#10 ring terminals	
WC98	#8 ring terminals	
TRANSMITTERS		
TR11	4-20 mA, 2-wire; single input; isolated output; specify range, units of measure (e.g., 0-200°C) and terminal head with *. See Accessories section for additional information.	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes: 1. For dual element, add prefix "D" (e.g., DRTP6) 2. Additional materials, curves and resistance values are available - see Capabilities brochure.		
EXPLOSION-PROOF TERMINAL HEAD OPTIONS		
Option Code	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain; o-ring gasket rated to 100°C; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C, D; Class II, Groups E, F, G; internal ground screw		
HD70*	1/2"	1/2"
HD71*	1/2"	3/4"
Epoxy-coated (same spec as H6/H7)		
HD80*	1/2"	1/2"
HD81*	1/2"	3/4"
Cast aluminum; ATEX approved for EEx d IIC; screw cover with chain; silicone rubber o-ring gasket; ceramic terminal block; rated for NEMA 4X, IP66 to IP68; internal and external ground screws		
HD72*	1/2"	3/4"
HD73*	1/2"	1/2"
Cast aluminum (formerly Style 60); screw cover; plastic terminal block; UL/CSA approved for Class I Div. 1, Groups C and D; Class II Groups E, F and G.		
HD60	1/2"	1/2"
HD61	1/2"	3/4"

AVAILABLE OPTIONS and MODIFICATIONS

NEMA 4 OR 4X TERMINAL HEAD OPTIONS							
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection				
Cast aluminum, screw cover with chain, NEMA 4							
HD10*	HD11*	1/2"	1/2"				
HD12*	HD13*	1/2"	3/4"				
Epoxy-coated aluminum, screw cover with chain, NEMA 4X							
HD50*	HD51*	1/2"	1/2"				
HD52*	HD53*	1/2"	3/4"				
Cast iron, screw cover with chain, NEMA 4							
HD20*	HD21*	1/2"	1/2"				
HD22*	HD23*	1/2"	3/4"				
316 stainless steel, screw cover with chain, NEMA 4X							
HD40*	HD41*	1/2"	3/4"				
White polypropylene, screw cover with chain, NEMA 4							
HD30	N/A	1/2"	3/4"				
Black polypropylene, screw cover with chain, NEMA 4							
HD31	N/A	1/2"	3/4"				
Nylon, screw cover with chain, NEMA 4							
HD32	N/A	1/2"	3/4"				
*can be used with TR11 transmitter							
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.

SPRING-LOADED PROCESS MOUNTING HARDWARE WITH OPTIONAL TERMINAL HEAD

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection.

SENSOR TYPE	ASSEMBLY STYLE	CONNECTION TYPE AND MATERIAL	CONNECTION LENGTH	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-7b for optional elements)

RTPT1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

48 – Sheath with spring-loaded hex connector and connection hardware; head as option

CONNECTION TYPE AND MATERIAL

Code	Union Type	Union Material	Lower Nipple Material
NU	Ordinary location	Carbon steel	None
NUS	Ordinary location	Stainless steel	None
NUX	Explosion-proof	Electroplated steel	None
NUN	Ordinary location	Carbon steel	Carbon steel
NUNS	Ordinary location	Stainless steel	Stainless steel
NUNX	Explosion-proof	Electroplated steel	Carbon steel
NUNXS	Explosion-proof	Electroplated steel	Stainless steel

CONNECTION LENGTH (For NU, NUX, NUS, use 002.5)

(e.g., 006 = 6 inch)
(See chart on right for available standard lengths)

SHEATH DIAMETER (in inches) (see page 2-7b for restrictions)

- 4** – 1/8" (0.125)
- 6** – 3/16" (0.188)
- 7** – 1/4" (0.250)
- 9** – 3/8" (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)
- 2** – -45 to 482°C (-50 to 900°F)
- 3** – -45 to 788°C (-50 to 1450°F)
- 4** – -200 to 260°C (-328 to 500°F)

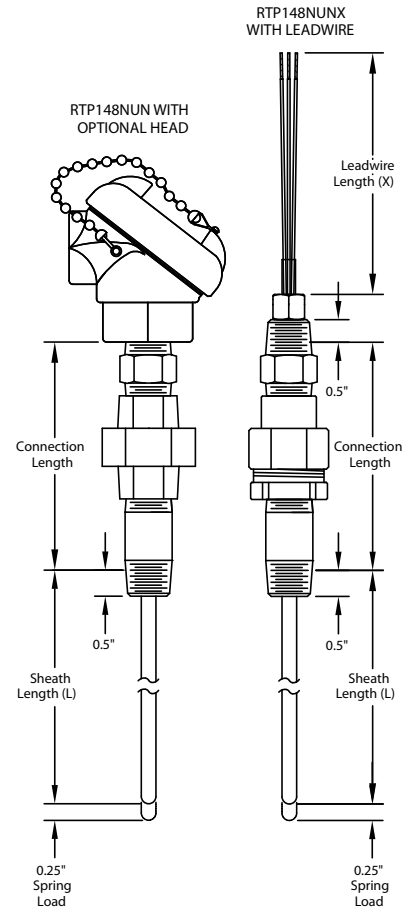
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X3 = 3 inch length; X3 is standard if specifying optional head)

OPTIONS – see page 2-7b



STANDARD AVAILABLE CONNECTION LENGTHS FOR NUN CONNECTIONS
3.00
3.50
4.00
4.50
5.00
6.00
8.00
DIMENSIONS ARE GIVEN IN INCHES

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
WIRING CONNECTION OPTIONS		
Option Code	Description	
WC76	#6 spade terminals, plated copper	
WC70	#10 spade terminals, plated copper	
WC84	1/4" push-on insulated terminals, plated copper	
WC90	#10 ring terminals	
WC98	#8 ring terminals	
TRANSMITTERS - for complete specs, see Transmitters section		
TR11	4-20 mA, 2-wire; single input; isolated output; specify range, units of measure (e.g., 0-200°C) and terminal head with *. See Accessories section for additional information.	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes: 1. For dual element, add prefix "D" (e.g., DRTP6) 2. Additional materials, curves and resistance values are available - see Capabilities brochure.		
EXPLOSION-PROOF TERMINAL HEAD OPTIONS		
Option Code	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain; o-ring gasket rated to 100°C; ceramic terminal block; FM/CSA approved for Class I Div. 1, Groups B, C, D; Class II, Groups E, F, G; internal ground screw		
HD70*	1/2"	1/2"
HD71*	1/2"	3/4"
Epoxy-coated (same specs as H6/H7)		
HD80*	1/2"	1/2"
HD81*	1/2"	3/4"
Cast aluminum; ATEX approved for EEx d IIC; screw cover with chain; silicone rubber o-ring gasket; ceramic terminal block; rated for NEMA 4X, IP66 to IP68; internal and external ground screws		
HD72*	1/2"	3/4"
HD73*	1/2"	1/2"
Cast aluminum (Formerly Style 60); screw cover; plastic terminal block; UL/CSA approved for Class I Div. 1, Groups C and D; Class II Groups E, F and G.		
HD60	1/2"	1/2"
HD61	1/2"	3/4"

AVAILABLE OPTIONS and MODIFICATIONS

NEMA 4 OR 4X TERMINAL HEAD OPTIONS							
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection				
Cast aluminum, screw cover with chain, NEMA 4							
HD10*	HD11*	1/2"	1/2"				
HD12*	HD13*	1/2"	3/4"				
Epoxy-coated aluminum, screw cover with chain, NEMA 4X							
HD50*	HD51*	1/2"	1/2"				
HD52*	HD53*	1/2"	3/4"				
Cast iron, screw cover with chain, NEMA 4							
HD20*	HD21*	1/2"	1/2"				
HD22*	HD23*	1/2"	3/4"				
316 stainless steel, screw cover with chain, NEMA 4X							
HD40*	HD41*	1/2"	3/4"				
White polypropylene, screw cover with chain, NEMA 4							
HD30	N/A	1/2"	3/4"				
Black polypropylene, screw cover with chain, NEMA 4							
HD31	N/A	1/2"	3/4"				
Nylon, screw cover with chain, NEMA 4							
HD32	N/A	1/2"	3/4"				
*can be used with TR11 transmitter							
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

Note: See Accessories section for outline drawings and additional specs.

THERMOWELLS & PROTECTION TUBES

For a complete offering of metal, ceramic and composite material thermowells and protection tubes, please see the Thermowell and Protection Tube sections.

SANITARY PROCESS CONNECTION WITH TERMINAL HEAD

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	CAP SIZE	CAP STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-8b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

33 – Sheath with sanitary process connection and white polypropylene head; 3/4" NPT conduit connection; ceramic terminal block; maximum termination temperature 104°C (220°F)

CAP SIZE

- A** – 0.50* **E** – 2.00
- B** – 0.75* **F** – 2.50
- C** – 1.00 **G** – 3.00
- D** – 1.50 **H** – 4.00

*Available in cap style C only.

CAP STYLE

- A** – 16 A Tri Clamp® cap
- C** – 16AMP Tri Clamp® cap

SHEATH DIAMETER

- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)

SHEATH MATERIAL

- 3** – 316 stainless steel

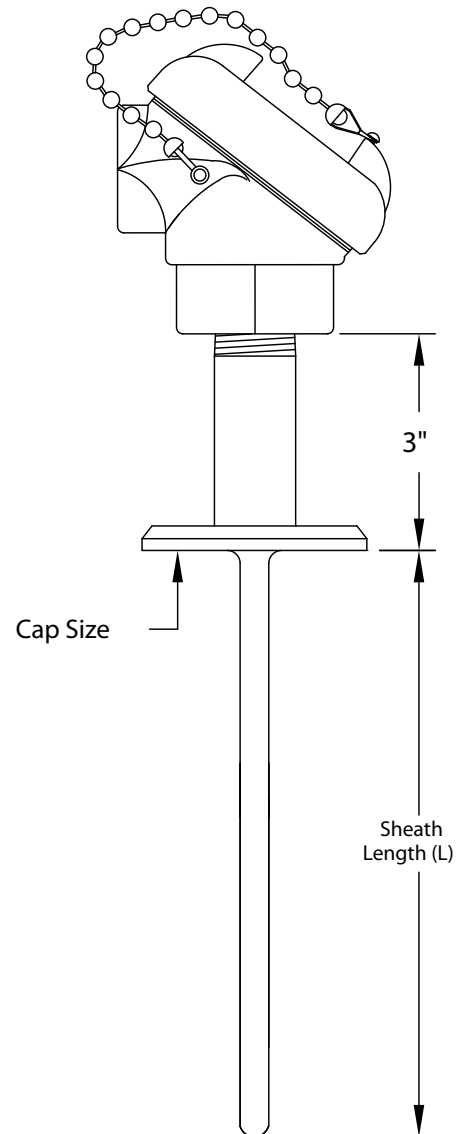
TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

- L#** – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-8b



STYLE 33

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
TRANSMITTERS		
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range, units of measure (e.g., 0-200°C) and head with *.	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP1)		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4 (Formerly Style 67)			
HD10*	HD11 *	1/2"	1/2"
HD12*	HD13 *	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51 *	1/2"	1/2"
HD52*	HD53 *	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41 *	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
*can be used with TR11 transmitter			

SANITARY CONNECTION WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	CAP SIZE	CAP STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-9b for optional elements)

RTPI – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction

ASSEMBLY STYLE

58 – Sheath with leadwire; sanitary process connection; Teflon® insulated conductors; Teflon® jacketed cable

CAP SIZE (in inches)

- A** – 0.50* **E** – 2.00
- B** – 0.75* **F** – 2.50
- C** – 1.00 **G** – 3.00
- D** – 1.50 **H** – 4.00

*Available in Cap Style C only.

CAP STYLE

- A** – 16 A Tri Clamp® cap
- C** – 16AMP Tri Clamp® cap

SHEATH DIAMETER (in inches)

- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)

SHEATH MATERIAL

- 3** – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)

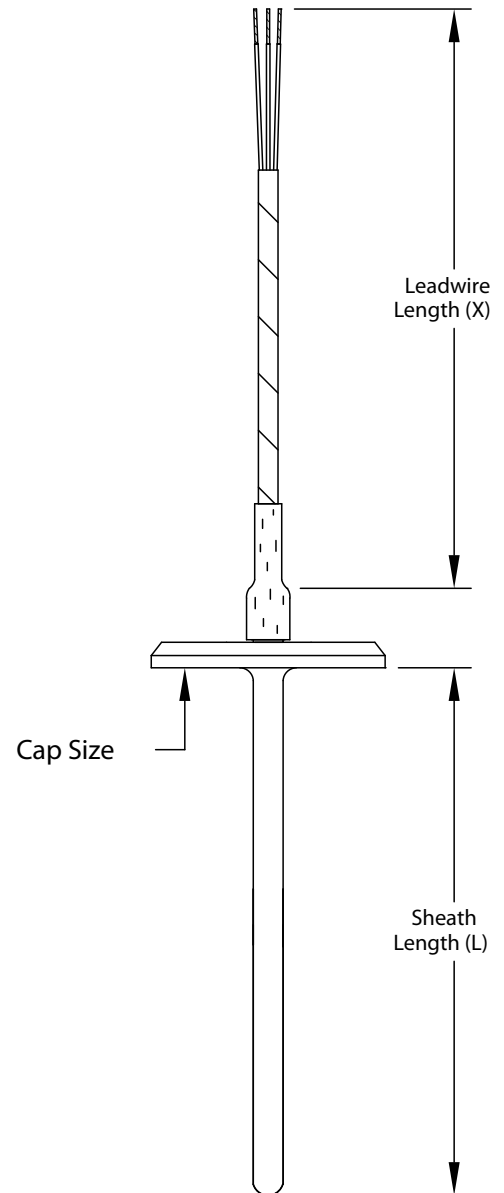
SHEATH LENGTH (for lengths greater than L=48", consult AST)

- L#** – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

- X#** – (e.g., X72 = 72 inch length)

OPTIONS – see page 2-9b



STYLE 58

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify points]	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
Note: additional materials, curves and resistance values are available - see Capabilities brochure.		

WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminal
WC98	#8 ring terminal

SHEATH WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-10b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

20 – Sheath with leadwire: Teflon® insulated conductors; no jacket

28 – Sheath with Teflon® jacketed cable: Teflon® insulated conductors

SHEATH DIAMETER (in inches) (see page 2-10b for restrictions)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

3 – -45 to 788°C (-50 to 1450°F)

4 – -200 to 260°C (-328 to 500°F)

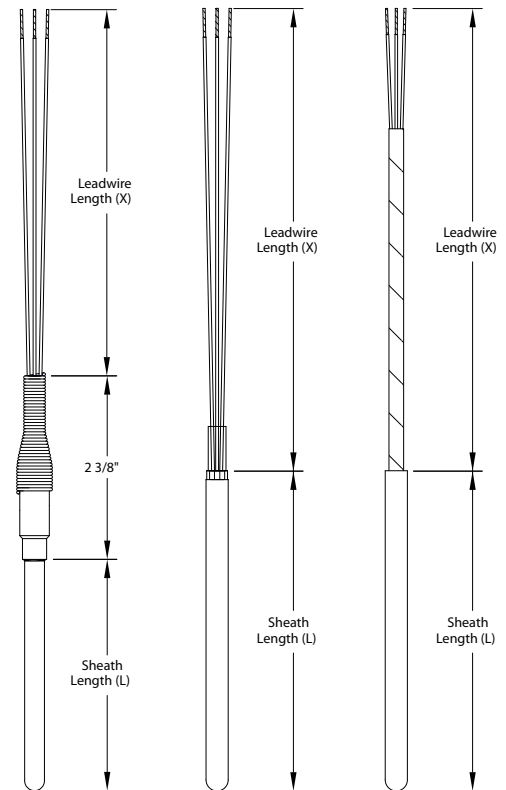
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath, L12.5 = 12.5 inch length)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 2-10b



Temperature Range 3 view
for Style 20 & 28

Style 20

Style 28

Temperature Range 2 & 4
view for Style 28

STYLES 20 & 28

ASSEMBLY OPTIONS			
Option Code	Description		
TAG1	Stainless steel tag and wire		
CAL1	NIST traceable calibration [specify point(s)]		
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6 [minimum length = 3"])		
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6 [minimum length = 3"])		
WIRING CONNECTION OPTIONS			
Option Code	Description		
WC76	#6 spade terminals, plated copper		
WC70	#10 spade terminals, plated copper		
WC84	1/4" push-on insulated terminals, plated copper		
WC90	#10 ring terminals		
WC98	#8 ring terminals		
PLUGS AND JACKS (for 2 and 3 wire constructions only)			
PJ10	Standard plug, rated to 177°C (350°F)		
PJ20	Standard jack, rated to 177°C (350°F)		
For flexible stainless steel armor, see Style 03			
OPTIONAL ELEMENTS			
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.			
Option Code	Accuracy (at 0°C)	Construction	
RTP1 (std.)	±0.12%	3-wire	
RTP1A	±0.06%	3-wire	
RTP1AA	±0.01%	3-wire	
RTP6	±0.12%	2-wire	
RTP7	±0.12%	4-wire	
RTP7A	±0.06%	4-wire	
RTP7AA	±0.01%	4-wire	
Notes: 1. For dual element, add prefix "D" (e.g., DRTP6) 2. Additional materials, curves and resistance values are available - see Capabilities brochure.			
COMPRESSION FITTINGS (for diameters 4, 6, 7)			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass

AVAILABLE OPTIONS and MODIFICATIONS

Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
Style 20, SINGLE							
Temp Range	RTP 1	RTP 1A		RTP 6	RTP 7	RTP 7A	
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
Style 20, DUAL							
Temp Range	DRTP 1			DRTP 6	DRTP 7		
1	3/16	3/16	3/16	3/16	1/4	1/4	1/4
2	1/4	1/4	1/4	3/16	3/8	3/8	3/8
3	1/4			1/4	1/4		
4	3/16			3/16	1/4		
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
Style 28, SINGLE ONLY							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8				
2	3/16	3/16	3/16				
3	3/16						
4	1/8						

SHEATH WITH LEADWIRE AND ARMOR CABLE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-11b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

03 – Sheath with leadwire: Teflon® insulated conductors; flexible stainless steel armor cable

03P – PVC coated armor

03T – Teflon® coated armor

SHEATH DIAMETER (in inches) (see page 2-11b for restrictions)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

3 – -45 to 788°C (-50 to 1450°F)

4 – -200 to 260°C (-328 to 500°F)

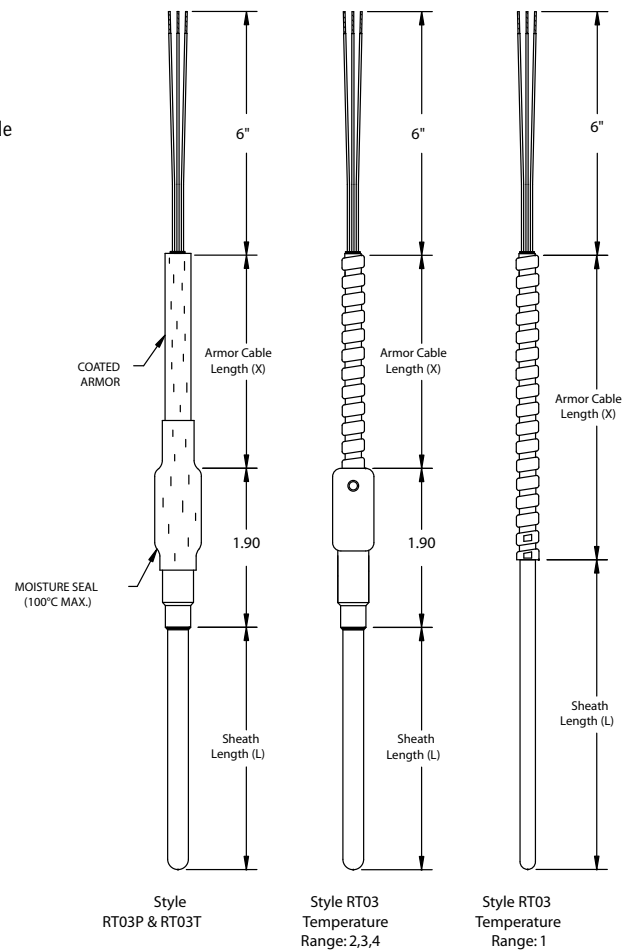
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

ARMOR CABLE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 2-11b



STYLE 03

AVAILABLE OPTIONS AND MODIFICATIONS

ASSEMBLY OPTIONS			
Option Code	Description		
TAG1	Stainless steel tag and wire		
CAL1	NIST traceable calibration [specify point(s)]		
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)		
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)		
ARMOR OPTIONS			
BA50	Bayonet cap on armor (Style 03, temperature range 1 only) – formerly Style 25		
PLUGS AND JACKS (2 and 3-wire construction only)			
PJ10	Standard plug, rated to 177°C (350°F)		
PJ20	Standard jack, rated to 177°C (350°F)		
WELD PADS			
WP00	Horizontal pad/flat		
WP10	1" nominal pipe size		
WP15	1.5" nominal pipe size		
WP20	2" nominal pipe size		
WP25	2.5" nominal pipe size		
WP30	3" nominal pipe size		
WP35	3.5" nominal pipe size		
WP40	4" nominal pipe size		
COMPRESSION FITTINGS			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass

Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16	1/4	1/4	1/4
2	1/4	1/4	1/4	3/16	3/8	3/8	3/8
3	1/4			1/4	1/4		
4	3/16			3/16	1/4		
OPTIONAL ELEMENTS							
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.							
Option Code	Accuracy (at 0°C)		Construction				
RTP1 (std.)	±0.12%		3-wire				
RTP1A	±0.06%		3-wire				
RTP1AA	±0.01%		3-wire				
RTP6	±0.12%		2-wire				
RTP7	±0.12%		4-wire				
RTP7A	±0.06%		4-wire				
RTP7AA	±0.01%		4-wire				
Notes:							
1. For dual element, add prefix "D" (e.g., DRTP6)							
2. Additional materials, curves and resistance values are available - see Capabilities brochure.							
WIRING CONNECTION OPTIONS							
Option Code	Description						
WC76	#6 spade terminals						
WC70	#10 spade terminals, plated copper						
WC84	1/4" push-on insulated terminals, plated copper						
WC90	#10 ring terminals						
WC98	#8 ring terminals						
BX CONNECTORS							
WC40	1/2"						
WC50	3/4"						
Note: for assembly with sheath, armor and terminal head, see Style 66.							

SHEATH WITH MALE PLUG

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-12b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction

ASSEMBLY STYLE

14 – Sheath with standard male plug; hollow pins; maximum termination temperature 177°C (350°F)

SHEATH DIAMETER (in inches)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

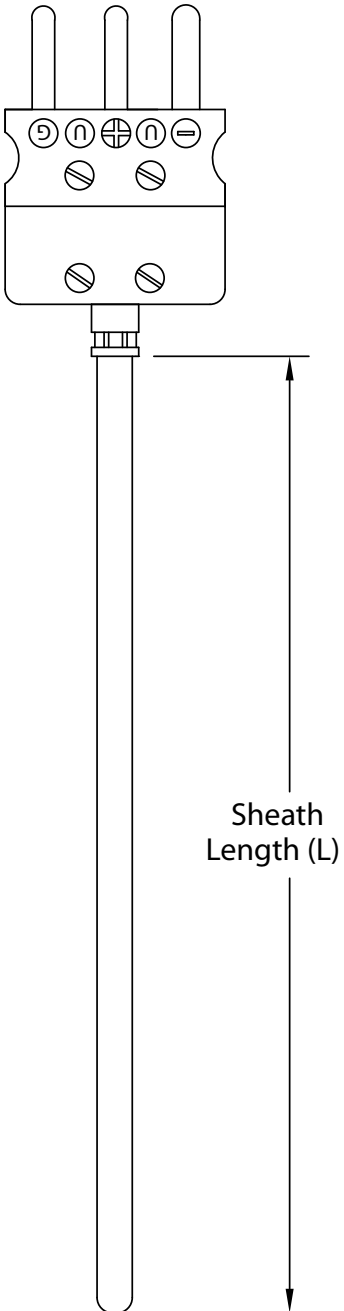
1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-12b



STYLE 14

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
PJ20	Standard jack included	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
Note: additional materials, curves and resistance values are available - see Capabilities brochure.		

COMPRESSION FITTINGS			
Option Code	NPT	Material	Ferrule
CF10	1/8"	Stainless steel	Stainless steel
CF11	1/8"	Stainless steel	Teflon®
CF12	1/8"	Brass	Brass
CF20	1/4"	Stainless steel	Stainless steel
CF21	1/4"	Stainless steel	Teflon®
CF22	1/4"	Brass	Brass
CF30	1/2"	Stainless steel	Stainless steel
CF31	1/2"	Stainless steel	Teflon®
CF32	1/2"	Brass	Brass

CUTABLE SHEATH WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH

SENSOR TYPE

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction

ASSEMBLY STYLE

38 – Field cutable sheath length with leadwire; Teflon® insulated conductors for temperature range 1; Fiberglass insulated conductors for temperature range 2; cannot be cut to less than 4"

SHEATH DIAMETER

6 – 3/16 (0.188)

7 – 1/4 (0.250)

SHEATH MATERIAL

3 – stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

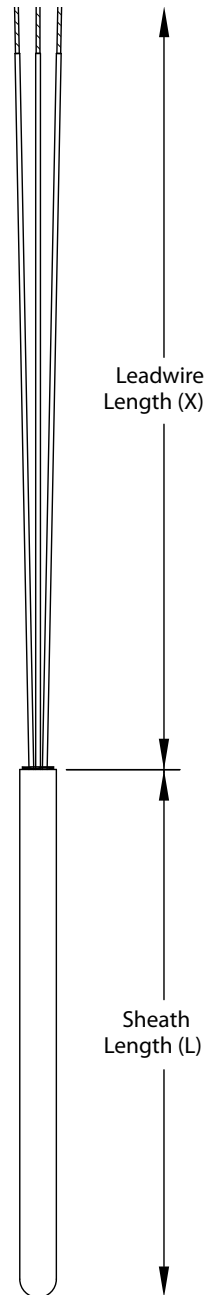
2 – -45 to 482°C (-50 to 900°F)

SHEATH LENGTH

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)



Style 38

STYLE 38



Many additional components are available in our Sensor Box program, including spring-loaded fittings and plugs and jacks.

The Sensor Box allows you to build sensor assemblies on-site, saving time and expense. See the Sensor Box literature for further details.

WELD PAD WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-14b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction

ASSEMBLY STYLE

39 – Sheath with flat weld pad and leadwire; Teflon® insulated conductors; Teflon® jacket; pad same material as sheath, 1" X 1" pad size; 1/8" pad thickness; radiused pad available as an option.

SHEATH DIAMETER

6 – 3/16 (0.188)

7 – 1/4 (0.250)

SHEATH MATERIAL

3 – stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

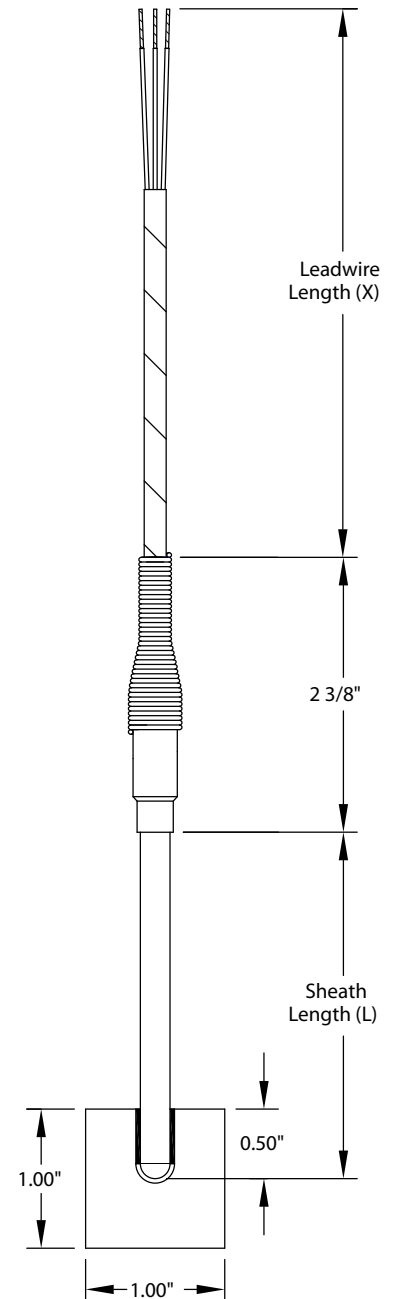
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 2-14b



STYLE 39

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)	
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)	
WIRING CONNECTION OPTIONS		
Option Code	Description	
WC76	#6 spade terminals, plated copper	
WC70	#10 spade terminals, plated copper	
WC84	1/4" push-on insulated terminals, plated copper	
WC90	#10 ring terminals	
WC98	#8 ring terminals	
PLUGS AND JACKS		
PJ10	Standard plug, rated to 177°C (350°F)	
PJ20	Standard jack, rated to 177°C (350°F)	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
Note: additional materials, curves and resistance values are available - see Capabilities brochure.		

WELD PADS	
Pads are normally supplied flat. For matching a pipe radius, use the codes below:	
WP10	1" nominal pipe size
WP15	1.5" nominal pipe size
WP20	2" nominal pipe size
WP25	2.5" nominal pipe size
WP30	3" nominal pipe size
WP35	3.5" nominal pipe size
WP40	4" nominal pipe size

SHEATH WITH WELDED PROCESS MOUNTING

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-15b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction (For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

23I – Sheath with single sided instrument mounting; Teflon® insulated conductors; 1/2" NPT stainless steel connection with leadwire

23P – Sheath with single sided process mounting; Teflon® insulated conductors; 1/2" NPT stainless steel connection with leadwire

24 – Sheath with double-sided mounting; Teflon® insulated conductors; 1/2" NPT stainless steel connection

SHEATH DIAMETER (in inches) (see page 2-15b for restrictions)

4 – 1/8 (0.125)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

3 – -45 to 788°C (-50 to 1450°F)

4 – -200 to 260°C (-328 to 500°F)

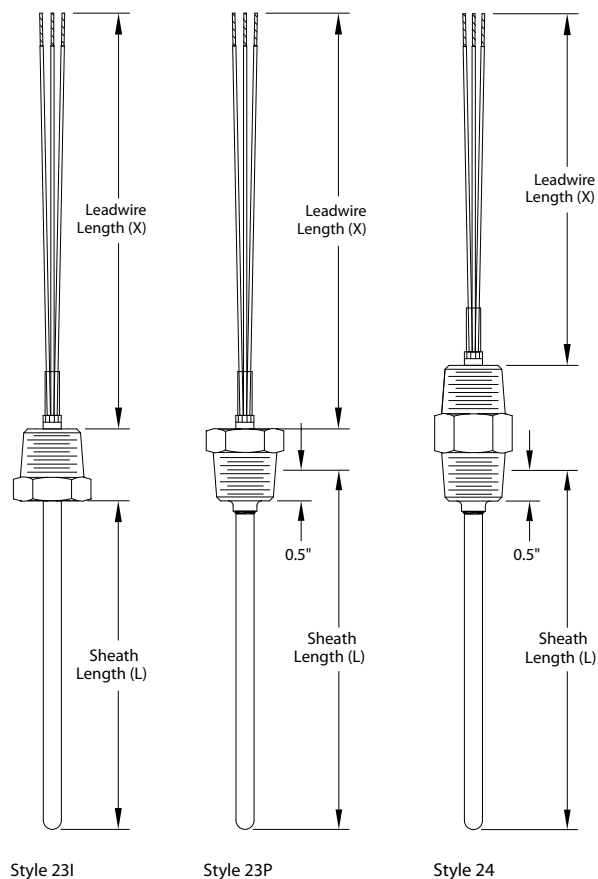
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 2-15b



STYLES 231, 23P & 24

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)	
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)	
For spring-loaded design, see Style 75		
For terminal heads, see Styles 15 and 21		
WIRING CONNECTION OPTIONS		
Option Code	Description	
WC76	#6 spade terminals, plated copper	
WC70	#10 spade terminals, plated copper	
WC84	1/4" push-on insulated terminals, plated copper	
WC90	#10 ring terminals	
WC98	#8 ring terminals	
PLUGS AND JACKS (available on 23P only, 2 and 3 wire constructions only)		
PJ10	Standard plug, rated to 177°C (350°F)	
PJ20	Standard jack, rated to 177°C (350°F)	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP6)		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16	1/4	1/4	1/4
2	1/4	1/4	1/4	3/16	3/8	3/8	3/8
3	1/4			1/4	1/4		
4	3/16			3/16	1/4		
WELD PADS (Style 231 only)							
WP00	Horizontal pad/flat						
WP10	1" nominal pipe size						
WP15	1.5" nominal pipe size						
WP20	2" nominal pipe size						
WP25	2.5" nominal pipe size						
WP30	3" nominal pipe size						
WP35	3.5" nominal pipe size						
WP40	4" nominal pipe size						

WASHER STYLE WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	WASHER SIZE	WASHER MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-16b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1) (see page 2-16b for restrictions)

ASSEMBLY STYLE

32 – Washer with leadwire; Teflon® insulated conductors; armor cable; washer thickness 3/16" (0.188"); Sheath diameter 0.188" only

WASHER SIZE (in inches)

	Washer	
	ID	OD
6 – 3/16 (0.188)	0.193	0.375
7 – 1/4 (0.250)	0.255	0.500
9 – 3/8 (0.375)	0.380	0.750
10 – 1/2 (0.500)	0.510	1.000

WASHER MATERIAL

3 – stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

2 – -45 to 482°C (-50 to 900°F)

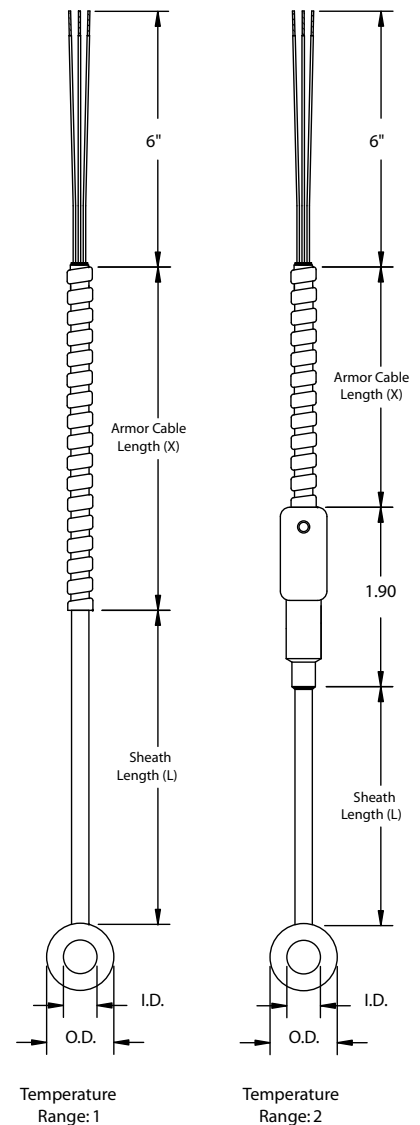
SHEATH LENGTH (for lengths greater than L=48, consult AST)

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X6 = 6 inch length)

OPTIONS – see page 2-16b



STYLE 32

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)
WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)
BX CONNECTORS	
WC40	1/4"
WC50	1/2"

OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP6). Dual available on 2 and 3-wire constructions only.		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

MOUNTING LUG WITH LEADWIRE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	LUG HOLE SIZE	TEMPERATURE RANGE	SHEATH LENGTH	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-17b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

41 – Stainless steel mounting lug with Teflon® leadwire; diameter 0.312" only

LUG HOLE SIZE (in inches)

6 – 3/16 (0.188)

7 – 1/4 (0.250)

9 – 3/8 (0.375)

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

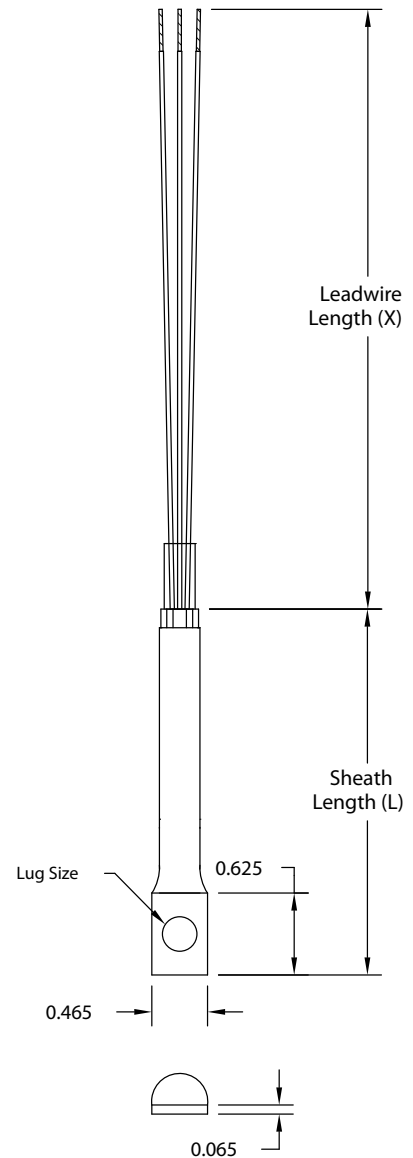
SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

LEADWIRE LENGTH

X# – (e.g., X72 = 72 inch length)

OPTIONS – see page 2-17b



STYLE 41

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
WIRING CONNECTION OPTIONS	
Option Code	Description
WC76	#6 spade terminals, plated copper
WC70	#10 spade terminals, plated copper
WC84	1/4" push-on insulated terminals, plated copper
WC90	#10 ring terminals
WC98	#8 ring terminals
PLUGS AND JACKS	
PJ10	Standard plug, rated to 177°C (350°F)
PJ20	Standard jack, rated to 177°C (350°F)

OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP6)		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

SHEATH WITH LEADWIRE AND PROTECTIVE TEFLON® SLEEVE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	TEFLON® SLEEVE	LEADWIRE LENGTH	OPTIONS

SENSOR TYPE (See page 2-18b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction
(For dual element, add prefix "D"- e.g., DRTP1)

ASSEMBLY STYLE

42 – Sheath with protective Teflon® sleeve; Teflon® insulated leadwire extension beyond Teflon® sleeve

SHEATH DIAMETER (in inches) (see page 2-18b for restrictions)

- 6** – 3/16 (0.188) Finished OD = 0.240
- 7** – 1/4 (0.250) Finished OD = 0.300

SHEATH MATERIAL

3 – 316 stainless steel

TEMPERATURE RANGE - Minimum and maximum operating temperatures

1 – -45 to 260°C (-50 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

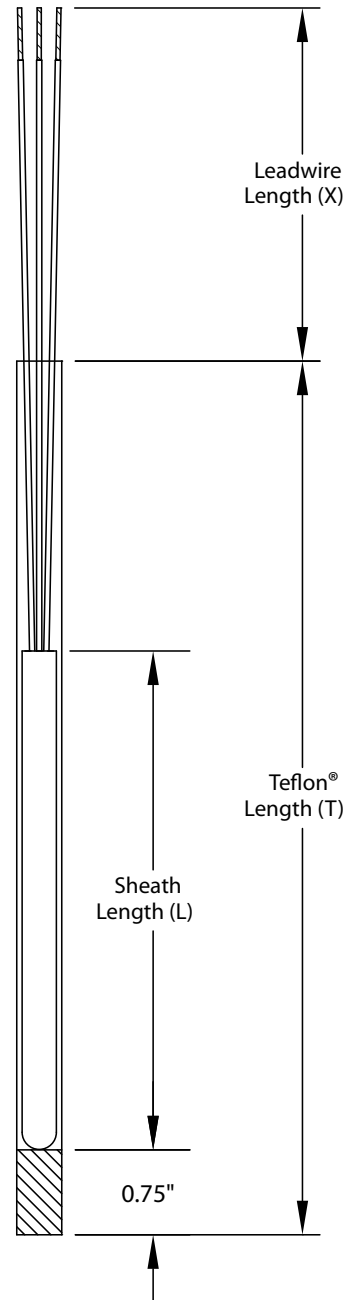
TEFLON® SLEEVE

T# – (e.g., T12 = 12" of Teflon®)

LEADWIRE LENGTH

X# – (e.g., X12.5 = 12.5 inch length beyond Teflon® sleeve)

OPTIONS – see page 2-18b



STYLE 42

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
CAL1	NIST traceable calibration [specify point(s)]	
B45-	45° bend in sheath (specify length from tip in inches e.g., B45-6)	
B90-	90° bend in sheath (specify length from tip in inches e.g., B90-6)	
WIRING CONNECTION OPTIONS		
Option Code	Description	
WC76	#6 spade terminals, plated copper	
WC70	#10 spade terminals, plated copper	
WC84	1/4" push-on insulated terminals, plated copper	
WC90	#10 ring terminals	
WC98	#8 ring terminals	
PLUGS AND JACKS		
PJ10	Standard plug, rated to 177°C (350°F)	
PJ20	Standard jack, rated to 177°C (350°F)	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes:		
1. For dual element, add prefix "D" (e.g., DRTP6)		
2. Additional materials, curves and resistance values are available - see Capabilities brochure.		

Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	3/16	3/16	3/16	3/16	3/16	3/16	3/16
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16	1/4	1/4	1/4

ATEX APPROVED CONNECTION HEAD WITH WELDED PROCESS CONNECTION

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	ASSEMBLY STYLE	SHEATH DIAMETER	SHEATH MATERIAL	TEMPERATURE RANGE	SHEATH LENGTH	OPTIONS

SENSOR TYPE (See page 2-3b for optional elements)

RTP1 – Platinum; DIN 0.00385; 100 ohm +/- 0.12% @ 0°C; 3-wire construction (For dual element, add prefix "D" - e.g., DRTP1)

ASSEMBLY STYLE

22 – Sheath with cast aluminum head and 1/2" NPT welded stainless steel process connection; head ATEX approved for EEx d IIC; IP66 to 68; screw cover with chain and gasketed o-ring; meets NEMA 4X; ceramic terminal block; 1/2" NPT conduit connection; internal and external ground screws (Note: For spring-loaded fitting, see Style 75 and add optional head).

SHEATH DIAMETER (in inches) (see page 2-3b for restrictions)

- 4** – 1/8 (0.125)
- 6** – 3/16 (0.188)
- 7** – 1/4 (0.250)
- 9** – 3/8 (0.375)

SHEATH MATERIAL

3 – 316 stainless steel

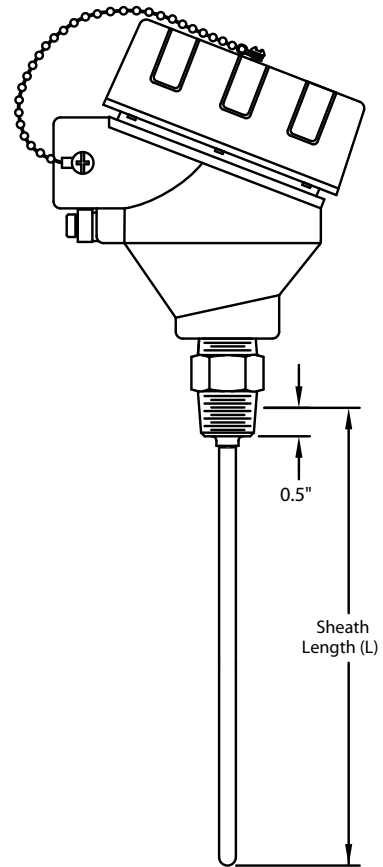
TEMPERATURE RANGE - Minimum and maximum operating temperatures

- 1** – -45 to 260°C (-50 to 500°F)
- 2** – -45 to 482°C (-50 to 900°F)
- 3** – -45 to 788°C (-50 to 1450°F)
- 4** – -200 to 260°C (-328 to 500°F)

SHEATH LENGTH (for lengths greater than L=48", consult AST)

L# – (e.g., L6 = 6 inch sheath)

OPTIONS – see page 2-19b



STYLE 22

AVAILABLE OPTIONS and MODIFICATIONS

ASSEMBLY OPTIONS		
Option Code	Description	
TAG1	Stainless steel tag and wire	
PC25	1/4" NPT process connection	
PC75	3/4" NPT process connection	
CAL1	Calibration, NIST traceable calibration [specify point(s)]	
OPTIONAL ELEMENTS		
RTDs are standardly platinum, 100-ohm, DIN-curve elements with a 0.00385 alpha.		
Option Code	Accuracy (at 0°C)	Construction
RTP1 (std.)	±0.12%	3-wire
RTP1A	±0.06%	3-wire
RTP1AA	±0.01%	3-wire
RTP6	±0.12%	2-wire
RTP7	±0.12%	4-wire
RTP7A	±0.06%	4-wire
RTP7AA	±0.01%	4-wire
Notes: 1. For dual element, add prefix "D" (e.g., DRTP6) 2. Additional materials, curves and resistance values are available - see Capabilities brochure.		
TRANSMITTERS – For complete specs, see Transmitters section		
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range and units of measure (e.g., 0-200°C)	

EXPLOSION-PROOF TERMINAL HEAD OPTIONS							
Option Code	Process Connection			Conduit Connection			
Same specifications as standard							
HD73	1/2"			1/2"			
Smallest Diameter Sheath Available By Sensor Type and Temperature Range							
SINGLE							
Temp Range	RTP 1	RTP 1A	RTP 1AA	RTP 6	RTP 7	RTP 7A	RTP 7AA
1	1/8	1/8	1/8	1/8	3/16	3/16	3/16
2	3/16	3/16	3/16	3/16	3/16	3/16	3/16
3	3/16			3/16	3/16		
4	1/8			1/8	3/16		
DUAL							
Temp Range	DRTP 1	DRTP 1A	DRTP 1AA	DRTP 6	DRTP 7	DRTP 7A	DRTP 7AA
1	3/16	3/16	3/16	3/16			
2	1/4	1/4	1/4	3/16			
3	1/4			1/4			
4	3/16			3/16			

BAR STOCK, NPT CONNECTION, NO LAG

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 1 - 1/2" NPT
- 2 - 3/4" NPT
- 3 - 1" NPT
- 5 - 1-1/2" NPT

STYLE

- S - Stepped stem (0.260" bore only; for straight stem, see Options)
- H - Tapered stem

BORE

- 260 - 0.260" bore
- 385 - 0.385" bore

WELL LENGTH (in inches)

L# - Specify length of thermowell (e.g., L4=4")

Standard lengths:

- L4 - L=4"; U=2.5"
- L6 - L=6"; U=4.5"
- L9 - L=9"; U=7.5"
- L12 - L=12"; U=10.5"
- L15 - L=15"; U=13.5"
- L18 - L=18"; U=16.5"
- L24 - L=24"; U=22.5"

Specify other (L = U + 1.5")

WELL MATERIAL

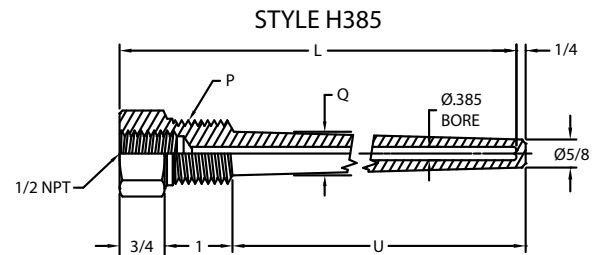
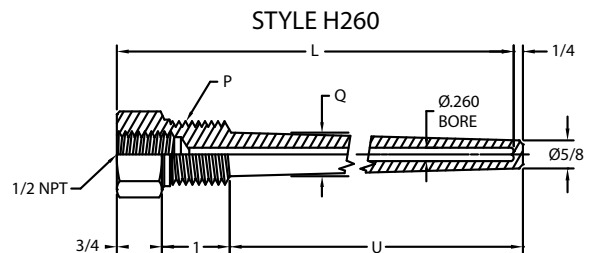
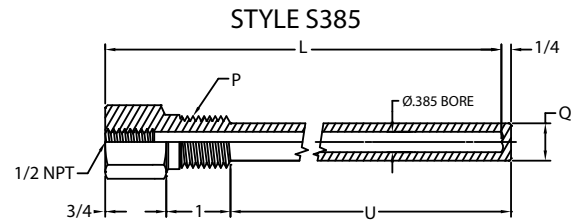
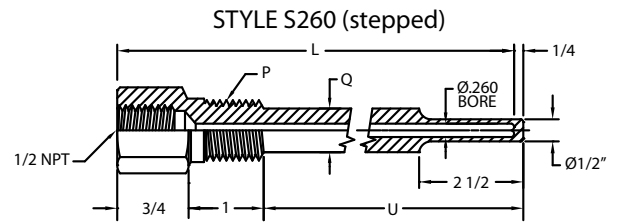
- 304 - 304 stainless steel
- 310 - 310 stainless steel
- 316 - 316 stainless steel
- INC - Inconel 600®
- 321 - 321 stainless steel
- 6061 - 6061 aluminum
- HAST - Hastelloy C®
- 316L - 316L stainless steel
- 400 - Monel 400®
- F11 - F11 carbon steel (forged)
- F91 - F91 carbon steel (forged)
- A20 - Alloy 20
- TTNM - Titanium

OPTIONS

- TW01 - Cap and chain assembly
- TAG2 - Stamped tag #
- STRT - Straight stem
- MTR1 - Material Test Report
- WFC1 - Wake Frequency Calculation

Root Diameter (Q)

Process Connection =	1/2" NPT	3/4" NPT	1" NPT	1-1/2" NPT
S260 and S385	.63"	.75"	.88"	.88"
H260 and H385	.63"	.88"	1.06"	1.63"



BAR STOCK, NPT CONNECTION WITH LAG

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	LAG EXTENSION	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 1 – 1/2" NPT
- 2 – 3/4" NPT
- 3 – 1" NPT
- 5 – 1-1/2" NPT

STYLE

- SL – NPT connection, stepped stem with lag extension (for straight stem, see Options)
- HL – NPT connection, tapered stem, with lag extension

BORE

- 260 – 0.260" bore
- 385 – 0.385" bore

WELL LENGTH (in inches)

L# – Specify length of thermowell (e.g., L9=9")

Standard lengths:

Length (L) =	U =	
	If T = 2"	If T = 3"
L6	6"	2.5"
L9	9"	5.5"
L12	12"	8.5"
L15	15"	11.5"
L18	18"	14.5"
L24	24"	17.5"

Specify other (L = U+T+1.5")

LAG EXTENSION (in inches)

T# – Specify length of lagging (e.g., T2 = 2" lag)

T2 – 2"

T3 – 3"

Specify other

WELL MATERIAL

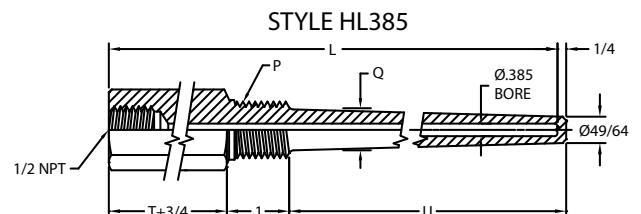
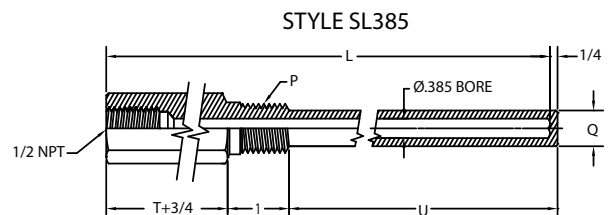
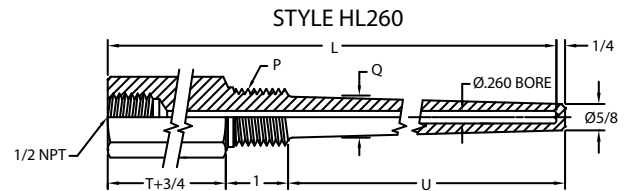
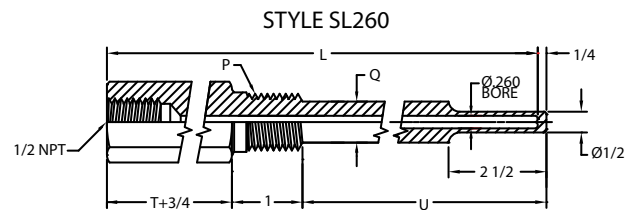
- 304 – 304 stainless steel
- 310 – 310 stainless steel
- 316 – 316 stainless steel
- INC – Inconel 600®
- 321 – 321 stainless steel
- 6061 – 6061 aluminum
- HAST – Hastelloy C®
- 316L – 316L stainless steel
- 400 – Monel 400®
- F11 – F11 carbon steel (forged)
- F91 – F91 carbon steel (forged)
- A20 – Alloy 20
- TTNM – Titanium

OPTIONS

- TW01 – Cap and chain assembly
- TAG2 – Stamped tag #
- STRT – Straight stem
- MTR1 – Material Test Report
- WFC1 – Wake Frequency Calculation

Root Diameter (Q)

Process Connection =	1/2" NPT	3/4" NPT	1" NPT	1-1/2" NPT
SL260 and SL385	.63"	.75"	.88"	.88"
HL260 and HL385	.68"	.88"	1.06"	1.63"



BAR STOCK, NPT CONNECTION, LIMITED SPACE

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 1 - 1/2" NPT
- 2 - 3/4" NPT
- 3 - 1" NPT

STYLE

LS - Limited space, straight stem

BORE

- 260** - 0.260" bore
- 385** - 0.385" bore

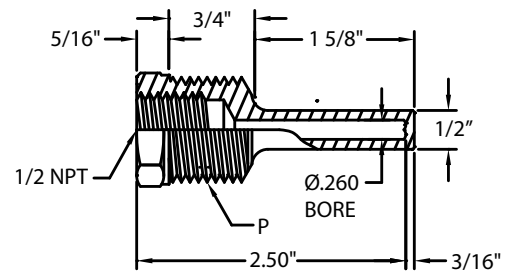
WELL MATERIAL

- | | |
|----------------------------------|--|
| 304 - 304 stainless steel | 316L - 316L stainless steel |
| 310 - 310 stainless steel | 400 - Monel 400® |
| 316 - 316 stainless steel | F11 - F11 carbon steel (forged) |
| INC - Inconel 600® | F91 - F91 carbon steel (forged) |
| 321 - 321 stainless steel | A20 - Alloy 20 |
| 6061 - 6061 aluminum | TTNM - Titanium |
| HAST - Hastelloy C® | |

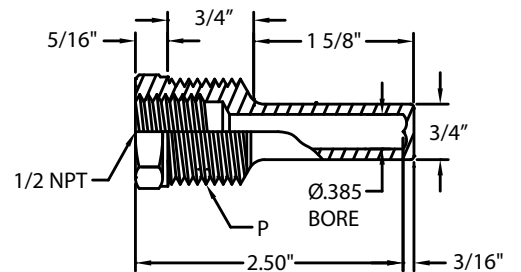
OPTIONS

- TW01** - Cap and chain assembly
- TAG2** - Stamped tag #
- MTR1** - Material Test Report

STYLE LS260



STYLE LS385



BAR STOCK, FLANGE CONNECTION

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	BORE	INSERTION LENGTH	WELL & FLANGE MATERIAL	FLANGE SIZE	FLANGE RATING	FLANGE TYPE	OPTIONS

STYLE

F – Flanged connection, stepped stem (for straight stem, see Options)

FH – Flanged connection, tapered stem

BORE

260 – 0.260" bore

385 – 0.385" bore

INSERTION LENGTH (in inches)

U# – Specify length below the flange (e.g., U4 = 4")

Standard lengths:

U4 – U=4"; L=6"

U7 – U=7"; L=9"

U10 – U=10"; L=12"

U13 – U=13"; L=15"

U16 – U=16"; L=18"

U22 – U=22"; L=24"

Specify other (L = U + 2")

WELL AND FLANGE MATERIAL

304 – 304 stainless steel

316L – 316L stainless steel

310 – 310 stainless steel

400 – Monel 400®

316 – 316 stainless steel

F11 – F11 carbon steel (forged)

INC – Inconel 600®

F91 – F91 carbon steel (forged)

321 – 321 stainless steel

A20 – Alloy 20

6061 – 6061 aluminum

TTNM – Titanium

HAST – Hastelloy C®

FLANGE SIZE

1 – 1" flange

1.5 – 1.5" flange

2 – 2" flange

3 – 3" flange

4 – 4" flange

FLANGE RATING

150 – 150# rating

300 – 300# rating

600 – 600# rating

900/1500 – 900/1500# rating

FLANGE TYPE

RF – Welded, raised face (standard)

FF – Welded, flat face

RTJ – Ring type joint

OPTIONS

TW01 – Cap and chain assembly

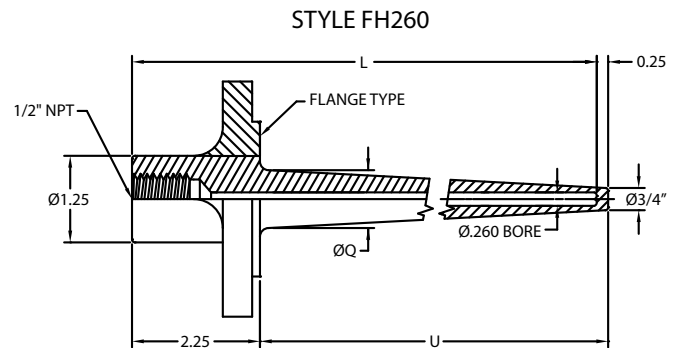
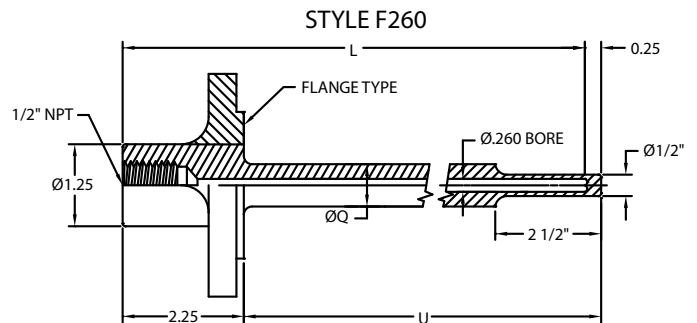
TAG2 – Stamped tag #

STR1 – Straight stem

MTR1 – Material Test Report

WFC1 – Wake Frequency Calculation

TFLN – Teflon sleeve or coating



	Root Diameter (Q)
F260	0.75"
F385	0.75"
FH260 & 385	1" flange = .88" 1.5" flange = 1.06" All others = 1.25"

BAR STOCK, SOCKET-WELD CONNECTION, NO LAG

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 2** – 3/4" pipe (OD = 1.05")
- 3** – 1" pipe (OD = 1.315")
- 5** – 1-1/2" pipe (OD = 1.90")

STYLE

- SW** – Socket-weld connection, stepped stem, no lag (for straight stem, see Options)
- SWH** – Socket-weld connection, tapered stem, no lag

BORE

- 260** – 0.260" bore
- 385** – 0.385" bore

WELL LENGTH (in inches)

L# – Specify length of thermowell (e.g., L4 = 4")

Standard lengths:

- L4** – L=4"; U=2.5"
- L6** – L=6"; U=4.5"
- L9** – L=9"; U=7.5"
- L12** – L=12"; U=10.5"
- L15** – L=15"; U=13.5"
- L18** – L=18"; U=16.5"
- L24** – L=24"; U=22.5"

Specify other (L = U+1.5")

WELL MATERIAL

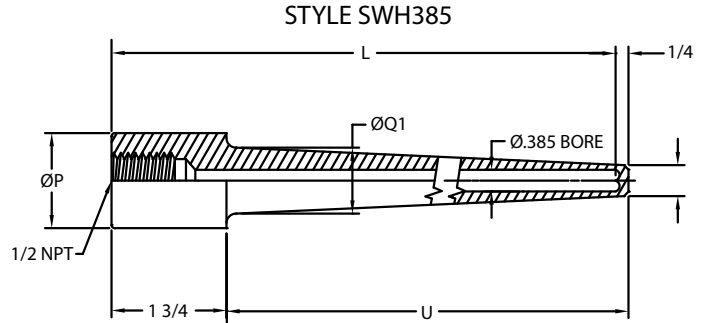
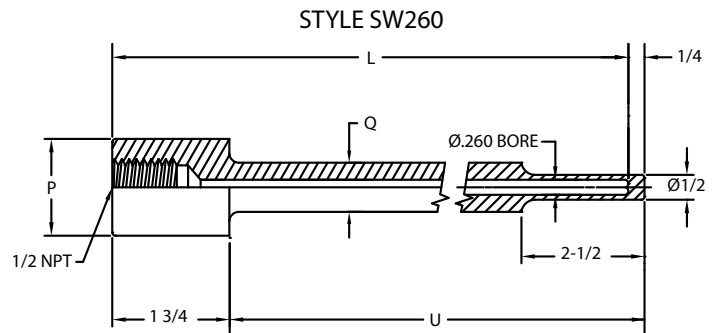
- 304** – 304 stainless steel
- 310** – 310 stainless steel
- 316** – 316 stainless steel
- INC** – Inconel 600®
- 321** – 321 stainless steel
- 6061** – 6061 aluminum
- HAST** – Hastelloy C®
- 316L** – 316L stainless steel
- 400** – Monel 400®
- F11** – F11 carbon steel (forged)
- F91** – F91 carbon steel (forged)
- A20** – Alloy 20
- TTNM** – Titanium

OPTIONS

- TW01** – Cap and chain assembly
- TAG2** – Stamped tag #
- STRT** – Straight stem
- MTR1** – Material Test Report
- WFC1** – Wake Frequency Calculations

Root Diameter (Q)

Process Connection =	3/4" pipe	1" pipe	1.5" pipe
SW260 & 385	.75"	.88"	1.13"
SWH260 & 385	.75"	1.00"	1.25"
SWH Tip Diameter	.63"	.75"	.75"



BAR STOCK, SOCKET-WELD CONNECTION WITH LAG

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	LAG EXTENSION	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 2** – 3/4" pipe (OD = 1.05")
- 3** – 1" pipe (OD = 1.315")
- 5** – 1-1/2" pipe (OD = 1.90")

STYLE

- SWL** – Socket-weld connection, stepped stem, no lag (for straight stem, see Options)
- SWLH** – Socket-weld connection, tapered stem, no lag

BORE

- 260** – 0.260" bore
- 385** – 0.385" bore

WELL LENGTH (in inches)

- L#** – Specify length of thermowell (e.g., L9 = 9")
- Standard lengths:

	Length (L) =	U =	
		If T = 2"	If T = 3"
L6	6"	2.5"	1.5"
L9	9"	5.5"	4.5"
L12	12"	8.5"	7.5"
L15	15"	11.5"	10.5"
L18	18"	14.5"	13.5"
L24	24"	17.5"	16.5"

Specify other (L = U+T+1.5")

LAG EXTENSION (in inches)

- T#** – Specify length of lagging (e.g., T2=2" lag)
- T2** – 2" **T3** – 3" Specify other

WELL MATERIAL

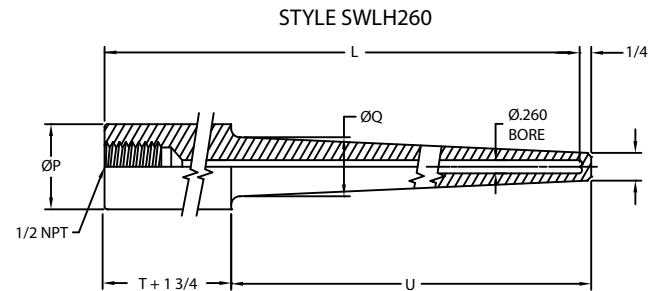
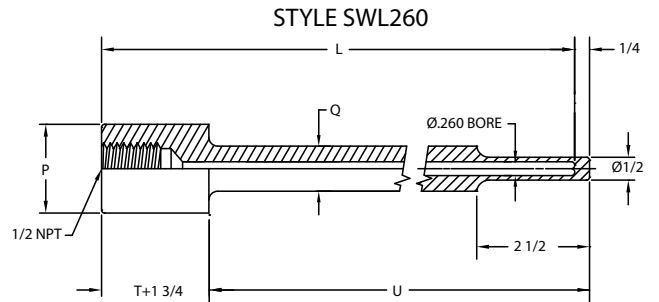
- 304** – 304 stainless steel
- 310** – 310 stainless steel
- 316** – 316 stainless steel
- INC** – Inconel 600®
- 321** – 321 stainless steel
- 6061** – 6061 aluminum
- HAST** – Hastelloy C®
- 316L** – 316L stainless steel
- 400** – Monel 400®
- F11** – F11 carbon steel (forged)
- F91** – F91 carbon steel (forged)
- A20** – Alloy 20
- TTNM** – Titanium

OPTIONS

- TW01** – Cap and chain assembly
- MTR1** – Material Test Report
- TAG2** – Stamped tag #
- WFC1** – Wake Frequency Calculations
- STRT** – Straight stem

Root Diameter (Q)

Process Connection =	3/4" pipe	1" pipe	1.5" pipe
SWL260 & 385	.75"	.88"	1.25"
SWLH260 & 385	.75"	1.00"	1.25"
SWLH Tip Diameter	.63"	.75"	.75"



BAR STOCK, WELD-IN CONNECTION, NO LAG

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 2** – 3/4" pipe (OD = 1.05")
- 3** – 1" pipe (OD = 1.315")
- 5** – 1-1/2" pipe (OD = 1.90")

STYLE

WIH – Weld-in, tapered stem, no lag

BORE

- 260** – 0.260" bore
- 385** – 0.385" bore

WELL LENGTH (in inches)

L# – Specify length of thermowell (e.g., L4 = 4")

Standard lengths:

- | | |
|-----------------------------|-----------------------------|
| L4 – L=4"; U=2.5" | L6 – L=6"; U=4.5" |
| L9 – L=9"; U=7.5" | L12 – L=12"; U=10.5" |
| L15 – L=15"; U=13.5" | L18 – L=18"; U=16.5" |
| L24 – L=24"; U=22.5" | |

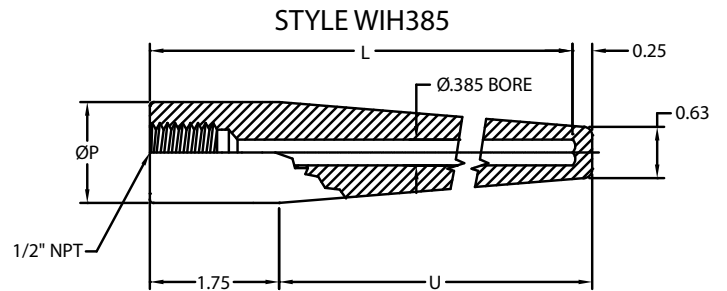
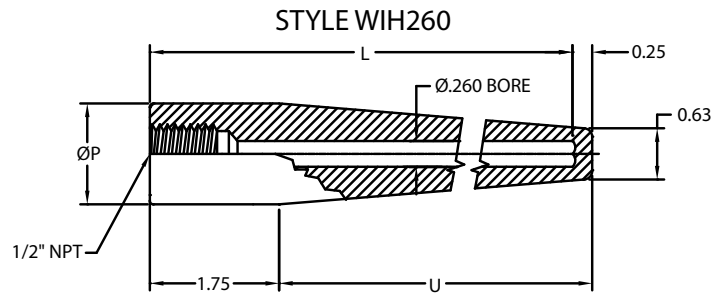
Specify other (L = U+1.5")

WELL MATERIAL

- | | |
|----------------------------------|--|
| 304 – 304 stainless steel | 316L – 316L stainless steel |
| 310 – 310 stainless steel | 400 – Monel 400® |
| 316 – 316 stainless steel | F11 – F11 carbon steel (forged) |
| INC – Inconel 600® | F91 – F91 carbon steel (forged) |
| 321 – 321 stainless steel | A20 – Alloy 20 |
| 6061 – 6061 aluminum | TTNM – Titanium |
| HAST – Hastelloy C® | |

OPTIONS

- TW01** – Cap and chain assembly
- TAG2** – Stamped tag #
- MTR1** – Material Test Report
- WFC1** – Wake Frequency Calculations



BAR STOCK, WELD-IN CONNECTION WITH LAG

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	WELL LENGTH	LAG EXTENSION	WELL MATERIAL	OPTIONS

PROCESS CONNECTION (P)

- 2** – 3/4" pipe (OD = 1.05")
- 3** – 1" pipe (OD = 1.315")
- 5** – 1-1/2" pipe (OD = 1.90")

STYLE

WIHL – Weld-in, tapered stem with lag extension

BORE

- 260** – 0.260" bore
- 385** – 0.385" bore

WELL LENGTH (in inches)

L# – Specify length of thermowell (e.g., L9 = 9")

Standard lengths:

	Length (L) =	U =	
		If T = 2"	If T = 3"
L6	6"	2.5"	1.5"
L9	9"	5.5"	4.5"
L12	12"	8.5"	7.5"
L15	15"	11.5"	10.5"
L18	18"	14.5"	13.5"
L24	24"	17.5"	16.5"

Specify other (L = U+T+1.5")

LAG EXTENSION (in inches)

T# – Specify length of lagging (e.g., T2=2" lag)

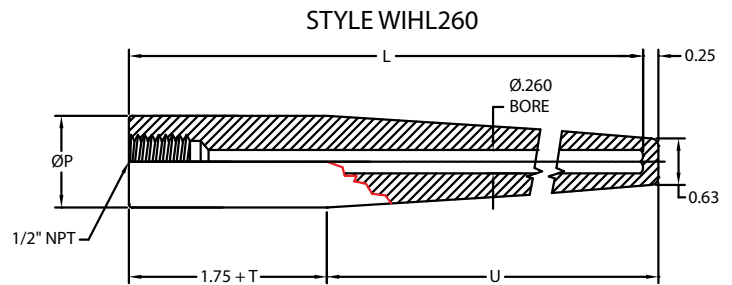
T2 – 2" **T3** – 3" **Specify other**

WELL MATERIAL

- | | |
|----------------------------------|--|
| 304 – 304 stainless steel | 316L – 316L stainless steel |
| 310 – 310 stainless steel | 400 – Monel 400® |
| 316 – 316 stainless steel | F11 – F11 carbon steel (forged) |
| INC – Inconel 600® | F91 – F91 carbon steel (forged) |
| 321 – 321 stainless steel | A20 – Alloy 20 |
| 6061 – 6061 aluminum | TTNM – Titanium |
| HAST – Hastelloy C® | |

OPTIONS

TW01 – Cap and chain assembly



BAR STOCK, VAN STONE FLANGE CONNECTION

How to build a part number:

To order an Applied Sensor Technologies thermowell, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

PROCESS CONNECTION	STYLE	BORE	INSERTION LENGTH	WELL MATERIAL	FLANGE MATERIAL	FLANGE RATING	OPTIONS

PROCESS CONNECTION (P)

3 – 1" pipe (OD = 1.315", R = 2")

5 – 1-1/2" pipe (OD = 1.90", R = 2-7/8")

STYLE

VS – Van Stone Flange, straight stem with step

BORE

260 – 0.260" bore (Q = 3/4")

385 – 0.385" bore (Q = 7/8")

INSERTION LENGTH (in inches)

U# – Specify length below the flange (e.g., U4 = 4")

Standard lengths:

U2 – U=2"; L=4"

U4 – U=4"; L=6"

U7 – U=7"; L=9"

U10 – U=10"; L=12"

U13 – U=13"; L=14"

U16 – U=16"; L=18"

U22 – U=22"; L=24"

Specify other (U = L-2")

WELL MATERIAL

304 – 304 stainless steel

316L – 316L stainless steel

310 – 310 stainless steel

400 – Monel 400®

316 – 316 stainless steel

F11 – F11 carbon steel (forged)

INC – Inconel 600®

F91 – F91 carbon steel (forged)

321 – 321 stainless steel

A20 – Alloy 20

6061 – 6061 aluminum

TTNM – Titanium

HAST – Hastelloy C®

FLANGE MATERIAL

304 – 304 stainless steel

316 – 316 stainless steel

FLANGE RATING

150 – 150# rating

300 – 300# rating

600 – 600# rating

900/1500 – 900/1500# rating

OPTIONS

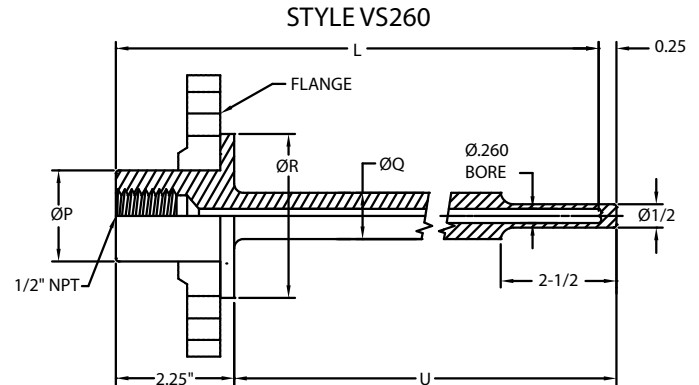
TW01 – Cap and chain assembly

TAG2 – Stamped tag #

MTR1 – Material Test Report

WFC1 – Wake Frequency Calculations

TFLN – Teflon coating



CERAMIC TUBE, NO MOUNTING FITTING

How to build a part number:

To order an Applied Sensor Technologies protection tube, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	TUBE DIAMETER	TUBE MATERIAL	LENGTH

STYLE

CT1 – Ceramic protection tube, no mounting fitting

TUBE DIAMETER

O.D.

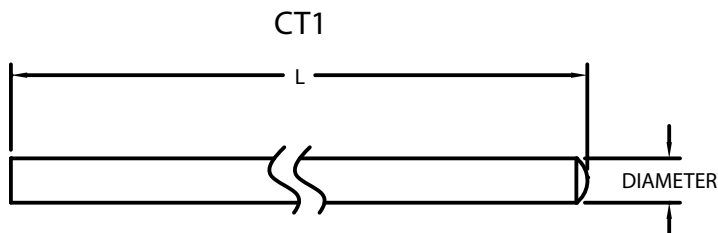
- 0** – 0.375"
- 1** – 0.5"
- 2** – 0.688"
- 3** – 0.75"
- 4** – 0.875"
- 5** – 1"
- 6** – 1.1"
- 7** – 1.25"
- 8** – 1.5"
- 9** – 1.75"

TUBE MATERIAL

- A** – Alumina
- M** – Mullite – not recommended for noble metal thermocouples
- H** – Hexalloy®
- L** – LT-1
- S** – Sialon
- C** – Silicon carbide, oxide bonded

LENGTH (in inches)

L# – Specify length (e.g., L6 = 6" overall length)



CERAMIC TUBE, WITH MOUNTING FITTING OR NIPPLE

How to build a part number:

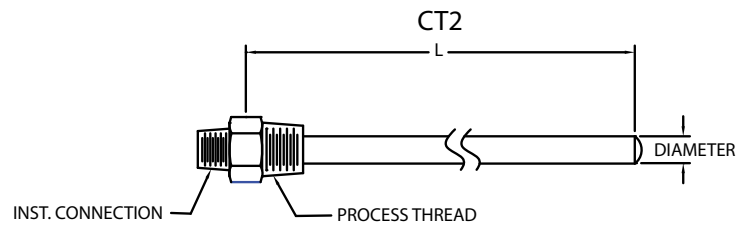
To order an Applied Sensor Technologies protection tube, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	TUBE DIAMETER	TUBE MATERIAL	INSTRUMENT CONNECTION	PROCESS CONNECTION	CONNECTION MATERIAL	CONNECTION LENGTH	LENGTH

STYLE

CT2 – Ceramic protection tube with threaded hex fitting

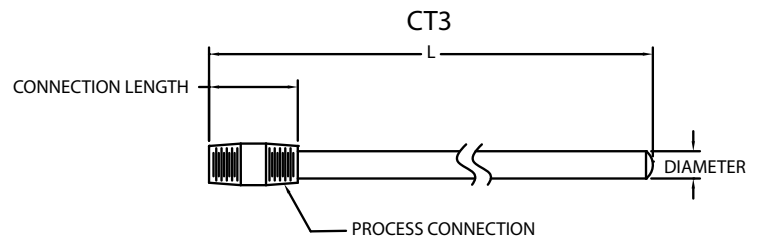
CT3 – Ceramic protection tube with pipe nipple



TUBE DIAMETER

O.D.

- 0** – 0.375"
- 1** – 0.5"
- 2** – 0.688"
- 3** – 0.75"
- 4** – 0.875"
- 5** – 1"
- 7** – 1.25"



TUBE MATERIAL

- A** – Alumina
- M** – Mullite – not recommended for noble metal thermocouples
- H** – Hexalloy®
- L** – LT-1

INSTRUMENT CONNECTION*

- 0** – 1/2" NPT
- 1** – 3/4" NPT
- 2** – 1" NPT
- 3** – 1-1/4" NPT

PROCESS CONNECTION*

- 0** – 1/2" NPT
- 1** – 3/4" NPT
- 2** – 1" NPT
- 3** – 1-1/4" NPT

CONNECTION MATERIAL

- 304** – 304 stainless steel
- 316** – 316 stainless steel
- CS** – Carbon steel

CONNECTION LENGTH

- 1** – CT2 only (hex fitting length)
- #** – CT3 only (length of nipple in inches; e.g., 6 = 6" nipple)

LENGTH (in inches)

L# – Specify length (For CT2, U is approximately L – 1"; for CT3, U is approximately L – the nipple length)

*Note: For CT3, Instrument and Process Connection sizes must be the same.

METAL TUBE, PLAIN OR WITH MOUNTING BUSHING

How to build a part number:

To order an Applied Sensor Technologies protection tube, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	PIPE SIZE/ INSTRUMENT CONNECTION	PIPE SCHEDULE	PIPE & BUSHING MATERIAL	BUSHING SIZE	OVERALL LENGTH	INSERTION LENGTH

STYLE

- MT1** – Metal protection tube, threaded, no bushing
- MT2** – Metal protection tube, threaded, with bushing

PIPE SIZE/INSTRUMENT CONNECTION

Pipe Size	Connection
1 – 1/2" pipe (0.840" dia.)	1/2" NPT
2 – 3/4" pipe (1.050" dia.)	3/4" NPT
3 – 1" pipe (1.315" dia.)	1" NPT

PIPE SCHEDULE

- 40** – Schedule 40
- 80** – Schedule 80
- 160** – Schedule 160

PIPE AND BUSHING MATERIAL

- 304** – 304 stainless steel
- 310** – 310 stainless steel
- 316** – 316 stainless steel
- 316L** – 316L stainless steel
- 321** – 321 stainless steel
- A20** – Alloy 20
- INC** – Inconel 600®
- 400** – Monel 400®

BUSHING SIZE

- 1** – 1/2" NPT
- 2** – 3/4" NPT
- 3** – 1" NPT
- 4** – 1-1/4" NPT
- 5** – 1-1/2" NPT
- 7** – 2" NPT

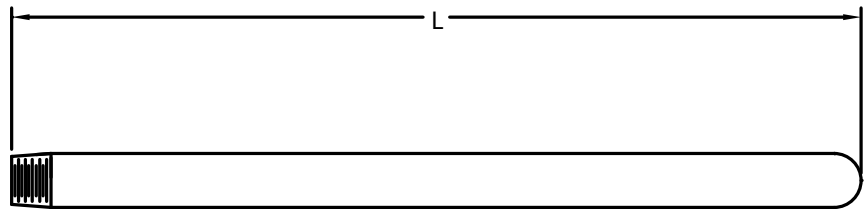
OVERALL LENGTH (in inches)

L# – Specify overall length of tube (e.g., L24 = 24" long tube)

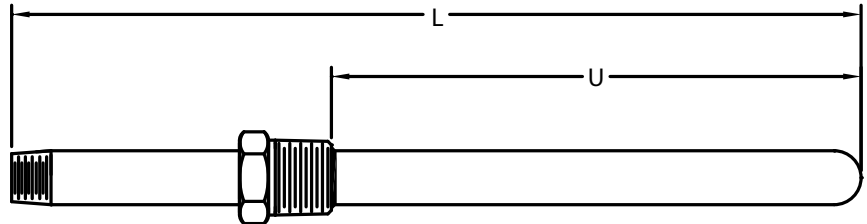
INSERTION LENGTH (MT2 only, in inches)

U# – Specify length below bushing connection (e.g., U6 = 6" below thread)

STYLE MT1



STYLE MT2



METAL TUBE WITH MOUNTING FLANGE

How to build a part number:

To order an Applied Sensor Technologies protection tube, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	PIPE SIZE/ INSTRUMENT CONNECTION	PIPE SCHEDULE	PIPE & FLANGE MATERIAL	FLANGE SIZE	FLANGE RATING	FLANGE TYPE	OVERALL LENGTH	INSERTION LENGTH

STYLE

MT4 – Metal protection tube, threaded, with flange

PIPE SIZE/INSTRUMENT CONNECTION

Pipe Size	Connection
1 – 1/2" pipe (0.840" dia.)	1/2" NPT
2 – 3/4" pipe (1.050" dia.)	3/4" NPT
3 – 1" pipe (1.315" dia.)	1" NPT

PIPE SCHEDULE

- 40** – Schedule 40
- 80** – Schedule 80
- 160** – Schedule 160

PIPE AND FLANGE MATERIAL

- 304** – 304 stainless steel
- 310** – 310 stainless steel
- 316** – 316 stainless steel
- 316L** – 316L stainless steel
- 321** – 321 stainless steel
- A20** – Alloy 20
- INC** – Inconel 600®
- 400** – Monel 400®

FLANGE SIZE

- 1** – 1" flange
- 1.5** – 1.5" flange
- 2** – 2" flange
- 3** – 3" flange
- 4** – 4" flange

FLANGE RATING

- 150** – 150# flange rating
- 300** – 300# flange rating
- 600** – 600# flange rating
- 900/1500** – 900/1500# flange rating

FLANGE TYPE

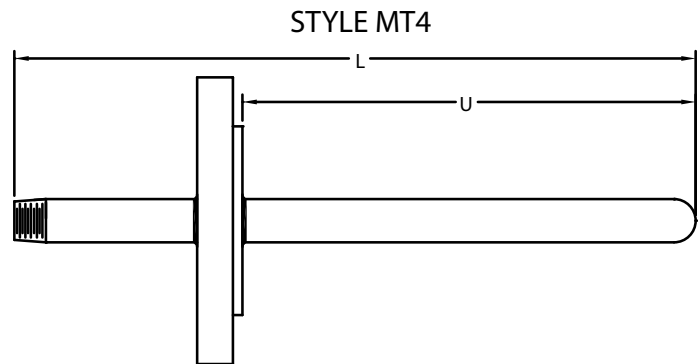
- RF** – Raised face
- FF** – Flat face
- RTJ** – Ring type joint

OVERALL LENGTH (in inches)

L# – Specify overall length of tube (e.g., L24 = 24" long tube)

INSERTION LENGTH (in inches)

U# – Specify length below flange (e.g., U6 = 6" below flange)



SPECIAL SECONDARY (OUTER) TUBE WITH MOUNTING BUSHING

How to build a part number:

To order an Applied Sensor Technologies protection tube, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	TUBE DIAMETER	TUBE MATERIAL	INSTRUMENT CONNECTION	PROCESS CONNECTION	BUSHING MATERIAL	OVERALL LENGTH

STYLE

PT2 – Outer protection tube, with bushing, to be used with inner ceramic protection tube (Style CT2 or CT3)

TUBE DIAMETER

- 3** – 3/4" O.D.
- 4** – 7/8" O.D.
- 5** – 1" O.D.
- 6** – 1-1/10" O.D.
- 7** – 1-1/4" O.D.
- 8** – 1-1/2" O.D.
- 9** – 1-3/4" O.D.

TUBE MATERIAL

- SC** – Silicon carbide, oxide bonded
- SI** – Sialon®
- HX** – Hexalloy®
- LT** – LT1 metal ceramic

INSTRUMENT CONNECTION

- 0** – 1/2" NPT
- 1** – 3/4" NPT

PROCESS CONNECTION

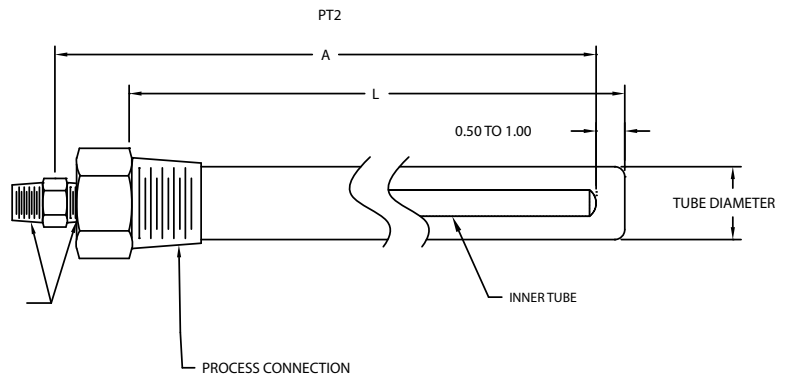
- 2** – 1" NPT
- 3** – 1-1/4" NPT
- 4** – 1-1/2" NPT
- 5** – 2" NPT

BUSHING MATERIAL

- C** – Carbon steel
- S** – 316 stainless steel

OVERALL LENGTH (in inches)

L# – Specify length of tube including threads
(e.g., L24=24" long tube)



Use CT2/CT3 spec sheet to specify inner protection tube, using appropriate O.D. from chart below:	
OUTER TUBE O.D.	INNER TUBE O.D.
3/4"	.375"
7/8"	.375"
1"	.375"
1.10"	.375"
1-1/4"	.688"
1-1/2"	.688"
1-3/4"	.75"

Note: to match inner tube length to outer, inner length (A) = outer tube length (L) + 0.75"

OUTER TUBE O.D.	PROCESS THREAD (NPT)			
	CODE	2 (1")	3 (1-1/4")	4 (1-1/2")
3 (3/4")	H	H	H	H
4 (7/8")	LS	LS	LS	LS
5 (1")		H	H	H
6 (1-1/10")		S	S	S
7 (1-1/4")			H	H
8 (1-1/2")			H	H
9 (1-3/4")				C

Notes:

- Not all materials and process thread sizes are compatible with all tubing O.D.'s. Use the chart below as a guide for the possible combinations. For each combination of thread and O.D., available materials are noted – Silicon Carbide (C), Sialon® (S), Hexalloy® (H) and LT1 (L).
- Applied Sensor Technologies recommends alumina protection tubes when using platinum thermocouples. Mullite, although less expensive when compared to alumina, can contaminate the platinum, causing drift.

SPECIAL SECONDARY (OUTER) TUBE WITH SLIP FLANGE MOUNTING

How to build a part number:

To order an Applied Sensor Technologies protection tube, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

STYLE	TUBE DIAMETER	TUBE MATERIAL	SLIP FLANGE SIZE	OVERALL LENGTH

STYLE

PT3 – Outer protection tube, with 4-7/8" slip flange for mounting, to be used with inner ceramic protection tube (Style CT2 or CT3)

TUBE DIAMETER

9 – 1-3/4" O.D.

TUBE MATERIAL

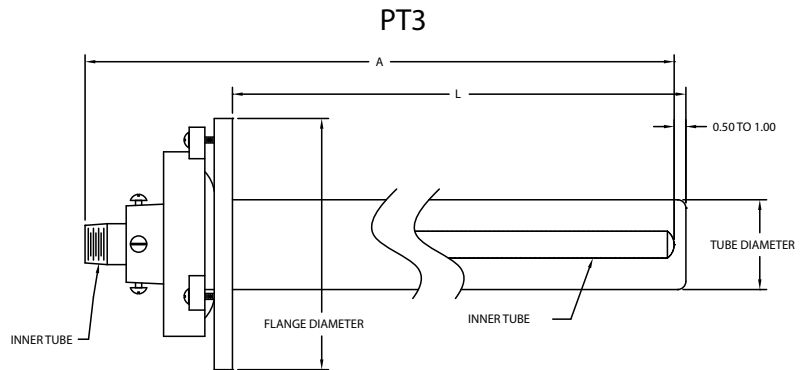
SC – Silicon carbide, oxide bonded

SLIP FLANGE SIZE

5 – 4-7/8"

OVERALL LENGTH (in inches)

L# – Specify length of tube below flange
(e.g., L24=24" long tube)



Notes – when inner protection tube is required:

1. Use CT2/CT3 spec sheet to specify inner tube.
2. Style should be CT3 with a 3/4" diameter to match up with 1-3/4" outer tube.
3. Minimum nipple length should be 4" in order to extend past the collar.
4. Length of inner tube (A) should be equal to outer tube length (L) + 2.5".
5. Applied Sensor Technologies recommends alumina inner protection tubes when using platinum thermocouples. Mullite, although less expensive when compared to alumina, can contaminate the platinum, causing drift.

TEMPERATURE SENSOR ASSEMBLY SYSTEM FOR THE MAINTENANCE PROFESSIONAL

How to build a part number:

The basic Sensor Box™, part number EK1000, comes complete with the common parts listed below, along with your choice of any 6 of the sensor pods listed on this page, e.g., "EK1000 with (3) RT1260, (1) MI1113JU and (2) MI1113KU."

EK1000 Common Parts:

Part Number	Description	Quantity
HS2524	Housing, 0.250" O.D. x 24" long, 316 stainless steel	6
PH02	Aluminum terminal head for NEMA 4, 1/2" NPT process connection and 3/4" conduit connection with 4-post ceramic terminal block.	3
AC1087	Spring-loading kit for PH02 head	6
NC1002	Nipple, 1/2" NPT x 2" long, carbon steel	6
UC1011	Union, 1/2" NPT, carbon steel	3
TS1092	Wire guide grommet for housing	1 bag of 10
Tools:	Crimper, tube cutter, screwdriver, tape measure, wire stripper	1 each

Standard Sensor Pods* (pick 6, any combination)

Part Number	Description
RT1260	100-ohm platinum RTD, 3-wire, Teflon® insulation
RT1254	100-ohm platinum RTD, 3-wire, fiberglass insulation
MI1113_U	Ungrounded thermocouple, fiberglass leads, specify calibration (J, K, E, T) – e.g., MI1113JU
MI1113_G	Grounded thermocouple, fiberglass leads, specify calibration (J, K, E, T) – e.g., MI1113JG
MI1113TF_U	Ungrounded thermocouple, Teflon® leads, specify calibration (J, K, E, T) – e.g., MI1113TFJU
MI1113TF_G	Grounded thermocouple, Teflon® leads, specify calibration (J, K, E, T) – e.g., MI1113TFJG

Options:

Many parts can be added to the basic EK1000 to address specific needs. See page 4-1b for a listing of additional parts.



***Notes:**

1. Standard pods are 4" long and have 48" leads; designed to fit into 0.250" housings.
2. Pods with fiberglass leads are rated to 900°F; those with Teflon® leads are rated to 400°F.

THE SENSOR BOX™ EK1000

AVAILABLE ACCESSORIES

RTD Sensor Pods (100-ohm, Class B, 0.00385 alpha with 48" leads)	
Part Number	Description
<i>Pods for 0.250" O.D. Housings</i>	
RT1254	3-wire, fiberglass insulation (std)
RT1260	3-wire, Teflon® insulation (std)
RT1257	4-wire, Teflon® insulation
RT1276	4-wire, fiberglass insulation
<i>Pods for 0.188" O.D. Housings</i>	
RT1184	3-wire, fiberglass insulation
RT1256	3-wire, Teflon® insulation
Thermocouple Sensor Pods* (standard limits of error with 48" leads)	
<i>Pods for 0.250" O.D. Housings</i>	
MI1113_U	Ungrounded junction, fiberglass insulation (specify J, K, E or T calibration; e.g., MI1113KU)
MI1113_G	Grounded junction, fiberglass insulation (specify J, K, E or T calibration; e.g., MI1113KG)
MI1113TF_U	Ungrounded junction, Teflon® insulation (specify J, K, E or T calibration; e.g., MI1113TFJU)
MI1113TF_G	Grounded junction, Teflon® insulation (specify J, K, E or T calibration; e.g., MI1113TFJG)
<i>Pods for 0.188" O.D. Housings</i>	
MI1115_U	Ungrounded junction, fiberglass insulation (specify J, K, E or T calibration; e.g., MI1115KU)
MI1115_G	Grounded junction, fiberglass insulation (specify J, K, E or T calibration; e.g., MI1115KG)
MI1115TF_U	Ungrounded junction, Teflon® insulation (specify J, K, E or T calibration; e.g., MI1115TFJU)
MI1115TF_G	Grounded junction, Teflon® insulation, 48" long (specify J, K, E or T calibration; e.g., MI1115TFJG)
*For dual element, specify as JJ, KK, EE or TT	
Housings (stainless steel, one closed end)	
HS2512	0.250" O.D. x 12" long
HS2524	0.250" O.D. x 24" long (std. with kit)
HS2536	0.250" O.D. x 36" long
HS2548	0.250" O.D. x 48" long
HS1812	0.188" O.D. x 12" long
HS1824	0.188" O.D. x 24" long
HS1836	0.188" O.D. x 36" long
HS1848	0.188" O.D. x 48" long
Compression Fittings	
<i>For 0.250" housings</i>	
PF65	1/4" NPT, 316 stainless steel body and ferrule
PF66	1/4" NPT, 316 stainless steel body; Teflon® ferrule
PF73	1/2" NPT, 316 stainless steel body and ferrule
PF74	1/2" NPT, 316 stainless steel body; Teflon® ferrule
<i>For 0.188" housings</i>	
PF55	1/4" NPT, 316 stainless steel body and ferrule
PF56	1/4" NPT, 316 stainless steel body; Teflon® ferrule
PF59	1/2" NPT, 316 stainless steel body and ferrule
PF60	1/2" NPT, 316 stainless steel body; Teflon® ferrule
Unions (1/2" NPT)	
UC1011	Carbon steel, ordinary location
US1011	Stainless steel, ordinary location
HF1091	Plated steel, explosion-proof

Terminal Heads with 4-Post Terminal Block Included (1/2" NPT process conn.)		
Part Number	Conduit Connection	Description
PH01	1/2"	Aluminum, ordinary locations
PH02	3/4"	Aluminum, ordinary locations (Std. with kit)
PH04	1/2"	Cast iron, ordinary locations
PH05	3/4"	Cast iron, ordinary locations
PH23	3/4"	Black polypropylene, ordinary locations
PH24	3/4"	White polypropylene, ordinary locations
PH47	3/4"	316 stainless steel, ordinary locations
PH50	1/2"	Aluminum, explosion-proof, 3-post block
PH51	3/4"	Aluminum, explosion-proof, 3-post block
Terminal Blocks		
Part Number	Description	
PH44	4-post, ceramic	
PH48	3-post, ceramic, for PH50 and PH51 heads	
Carbon Steel Nipples (1/2" NPT)		
NC1001	1" long	
NC1002	2" long	
NC1003	3" long	
NC1004	4" long	
NC1006	6" long	
Stainless Steel Nipples (1/2" NPT)		
NS1001	1" long	
NS1002	2" long	
NS1003	3" long	
NS1004	4" long	
NS1006	6" long	
Spring-Loaded Kits		
AC1088	For 0.188" housings	
AC1087	For 0.250" housings	
Spring-Loaded Hex Fittings		
PF14	Stainless steel, for 0.250" housings	
PF13	Stainless steel, for 0.188" housings	
Plugs and Jacks		
PT05-	Thermocouple plug (specify J, K, E or T); e.g., PT05-J	
PT05-3	3-pin RTD plug	
PT06-	Thermocouple jack (specify J, K, E or T); e.g., PT06-K	
PT06-3	3-pin RTD jack	
PT10	Wire clamp	
B1250	Brass crimp insert, for 0.250" housings	
B1188	Brass crimp insert, for 0.188" housings	
Strain Reliefs (Bag of 10)		
TS1092	Nylon grommet for 0.250" housings	
TS1094	Teflon® strain relief for 0.188" housings	
Armor Cable Kit		
TS1093	3' stainless armor and adaptor for 0.250" housings	

Note: Pods with fiberglass insulation are rated to 900°F; those with Teflon® leads are rated to 400°F.
Note: Many non-standard options, including additional sheath diameters and materials, may also be available - consult AST for specific requirements.

4-20 MA OUTPUT, ISOLATED

How to build a part number:

To order an Applied Sensor Technologies transmitter, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

TRANSMITTER TYPE	INPUT	RANGE	UNITS OF MEASURE	OPTION

TRANSMITTER TYPE*

UN15-S – Isolated transmitter with single 4-20mA output for terminal head mounting

INPUT

J – J type thermocouple

K – K type thermocouple

E – E type thermocouple

T – T type thermocouple

Pt100 – 100-ohm platinum RTD

Pt250 – 250-ohm platinum RTD

Pt500 – 500-ohm platinum RTD

Pt1000 – 1000-ohm platinum RTD

R – R type thermocouple

S – S type thermocouple

B – B type thermocouple

Ni100 – 100-ohm nickel RTD

Ni500 – 500-ohm nickel RTD

Ni1000 – 1000-ohm nickel RTD

Cu10 – 10-ohm copper RTD

Cu100 – 100-ohm copper RTD

RANGE (specify minimum and maximum values, e.g., 0-100)*

– **Minimum Range Value** (temperature value that equals 4 mA)

– **Maximum Range Value** (temperature value that equals 20 mA)

UNITS OF MEASURE

Specify °F or °C

OPTION

DS01 – Downscale open circuit protection

*See chart below for available sensor ranges and minimum spans

Specifications

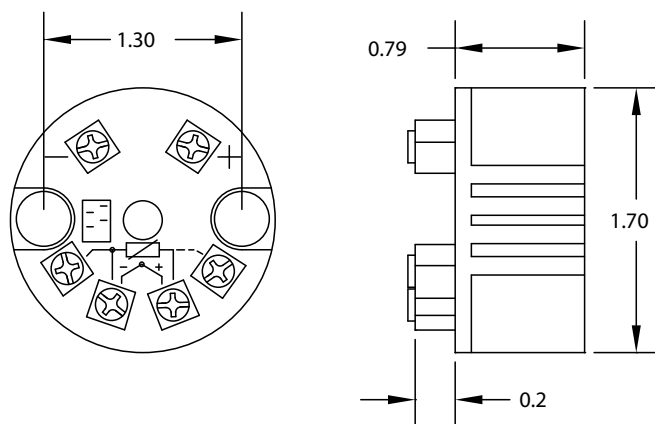
Isolation (I/O):	500 VDC
Supply Voltage:	10-40 VDC, polarity protected
Sensor Lead Resistance:	RTD: 500 ohms max. T/C: 10,000 ohms max. Effect: 0.001 °C/ohm
Maximum Load:	$R_{max} = (V_{supply} - 10V) / 20 \text{ mA}$
Stability:	Zero drift: 0.02 °C/°C Span drift: 0.01 °C/°C
Ambient Temperature:	-40 to + 85 °C
Housing:	Epoxy-coated zinc alloy
Start-up Time:	20 seconds
Warm-up Time:	5 minutes
Open Circuit Detection:	Upscale standard

*Available sensor ranges and limitations

Sensor Type	Min. Temp.	Max. Temp.	Min. Span
J T/C	-200°C	1200°C	50°C
K T/C	-270°C	1370°C	50°C
E T/C	-270°C	1000°C	50°C
T T/C	-270°C	400°C	50°C
R or S T/C	-60°C	1760°C	250°C
B T/C	0°C	1820°C	600°C
Pt100, Pt250, Pt500 and Pt1000 RTD	-200°C	850°C	25°C
Ni100, Ni500 and Ni1000 RTD	-60°C	250°C	25°C
Cu10 and Cu100 RTD	-200°C	250°C	25°C

*Note: when used as an option in combination with a temperature sensor assembly, use option code **TR11** at end of assembly part #.

UN15-S



4-20 MA/HART® OUTPUT, ISOLATED

How to build a part number:

To order an Applied Sensor Technologies transmitter, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

TRANSMITTER TYPE	INPUT	RANGE	UNITS OF MEASURE	OPTION

TRANSMITTER TYPE

UNI5-H – Isolated transmitter with single 4-20mA/HART® output for terminal head mounting

INPUT

J – J type thermocouple

K – K type thermocouple

E – E type thermocouple

T – T type thermocouple

Pt100 – 100-ohm platinum RTD

Pt250 – 250-ohm platinum RTD

Pt500 – 500-ohm platinum RTD

Pt1000 – 1000-ohm platinum RTD

R – R type thermocouple

S – S type thermocouple

B – B type thermocouple

Ni100 – 100-ohm nickel RTD

Ni500 – 500-ohm nickel RTD

Ni1000 – 1000-ohm nickel RTD

Cu10 – 10-ohm copper RTD

Cu100 – 100-ohm copper RTD

RANGE (specify minimum and maximum values, e.g., 0-100)*

– **Minimum Range Value** (temperature value that equals 4 mA)

– **Maximum Range Value** (temperature value that equals 20 mA)

UNITS OF MEASURE

Specify °F or °C

OPTION

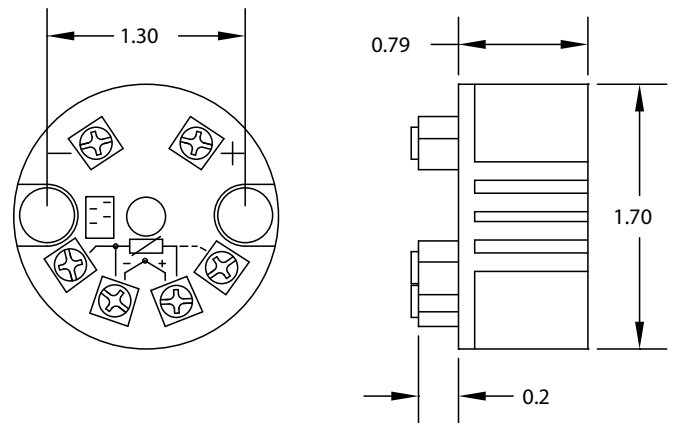
DS01 – Downscale open circuit protection

*See chart below for available sensor ranges and minimum spans

Specifications

Input:	Thermocouple or 3-wire/4-wire RTD
Isolation (I/O):	500 VDC
Supply Voltage:	10-40 VDC, polarity protected
Output:	4-20mA or 20-4 mA
Digital Output:	HART® protocol
Sensor Lead Resistance:	RTD: 500 ohms max. T/C: 10,000 ohms max.
Maximum Load:	$R_{max} = (V_{supply} - 10) / 20 \text{ mA}$
Stability:	0.005%/°C (zero & span drift)
Ambient Temperature:	-40 to +85 °C
Housing:	Epoxy-coated zinc alloy
Open Circuit Detection:	Upscale standard

UNI5-H



*Available sensor ranges and limitations

Sensor Type	Min. Temp.	Max. Temp.	Min. Span
J T/C	-200°C	1200°C	50°C
K T/C	-270°C	1370°C	50°C
E T/C	-270°C	1000°C	50°C
T T/C	-270°C	400°C	50°C
R or S T/C	-60°C	1760°C	250°C
B T/C	0°C	1820°C	600°C
Pt100, Pt250, Pt500 and Pt1000 RTD	-200°C	850°C	25°C
Ni100, Ni500 and Ni1000 RTD	-60°C	250°C	25°C
Cu10 and Cu100 RTD	-200°C	250°C	25°C

4-20 MA OUTPUT, NON-ISOLATED

How to build a part number:

To order an Applied Sensor Technologies transmitter, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

TRANSMITTER TYPE	INPUT	RANGE	UNITS OF MEASURE

TRANSMITTER TYPE

TC2 – Non-isolated transmitter with thermocouple input and single 4-20 mA output for terminal head mounting

RTD2 – Non-isolated transmitter with RTD input and single 4-20 mA output for terminal head mounting

INPUT

J – J type thermocouple

K – K type thermocouple

E – E type thermocouple

T – T type thermocouple

R – R type thermocouple

S – S type thermocouple

B – B type thermocouple

Pt100 – 100-ohm platinum RTD (RTD2 only)

RANGE (specify minimum and maximum values, e.g., 0-100)*

– **Minimum Range Value** (temperature value that equals 4 mA)

– **Maximum Range Value** (temperature value that equals 20 mA)

UNITS OF MEASURE

Specify °F or °C

Specifications

Supply Voltage: 8-38 VDC, polarity protected

Maximum Load: $R_{max} = (V_{supply} - 8V) / 20 \text{ mA}$

Stability (both zero and span drift): RTD: 0.03% of span/°C (100°C span)
T/C: 0.04% of span/°C (25 mV span)

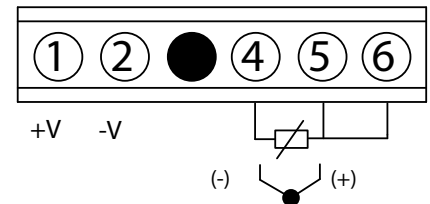
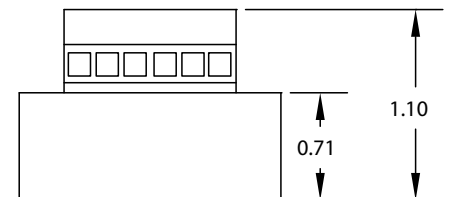
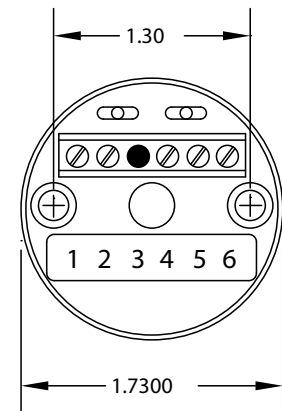
Linearity: RTD: better than +/- 0.05% of span
T/C: better than +/- 0.03% of span

Ambient Temperature: -20 to + 70°C

Humidity: 0-95% RH, non-condensing

*Input span: RTD: 20°C min., 500°C max.
T/C: 10 mV min.

RTD2 AND TC2

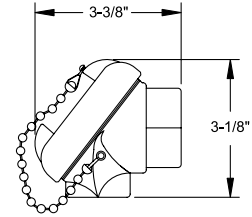


NEMA 4 & 4X REPLACEMENT HEADS AND TERMINAL BLOCKS

CAST ALUMINUM – gasketed screw cover

NEMA 4 with gasketed screw cover and stainless steel chain;
4-post ceramic terminal block included. For epoxy-coated, NEMA
4X, add suffix-E to part#. (e.g., PH01E)

Ordering Code	Process Conn.	Conduit Conn.
PH01	1/2"	1/2"
PH02	1/2"	3/4"
PH03	3/4"	3/4"

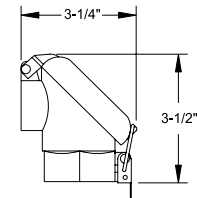


PH01 - PH06

CAST IRON – NEMA 4, gasketed screw cover

NEMA 4 with gasketed screw cover and stainless steel chain;
4-post ceramic terminal block included. For epoxy-coated, NEMA
4X, add suffix-E to part #. (e.g., PH04E)

Ordering Code	Process Conn.	Conduit Conn.
PH04	1/2"	1/2"
PH05	1/2"	3/4"
PH06	3/4"	3/4"

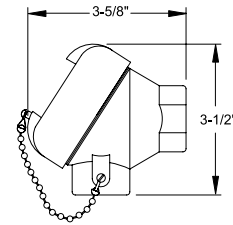


PH45

CAST ALUMINUM – flip-top cover

NEMA 4 with flip-top cover and latching closure, 4-post ceramic
terminal block included.

Ordering Code	Process Conn.	Conduit Conn.
PH45	1/2"	3/4"



PH47

316 STAINLESS STEEL – NEMA 4X, gasketed screw cover

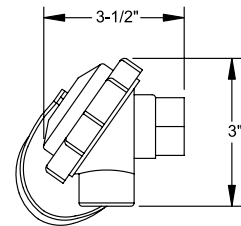
NEMA 4X with gasketed screw cover and stainless steel chain;
4-post ceramic terminal block included.

Ordering Code	Process Conn.	Conduit Conn.
PH47	1/2"	3/4"

BLACK POLYPROPYLENE – NEMA 4, gasketed screw cover

NEMA 4 with gasketed screw cover, 4-post ceramic terminal block
included.

Ordering Code	Process Conn.	Conduit Conn.
PH23	1/2"	3/4"

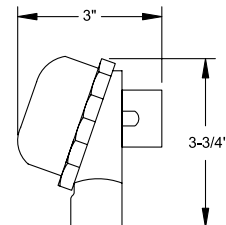


PH23 - PH24

WHITE POLYPROPYLENE – NEMA 4, gasketed screw cover

NEMA 4 with gasketed screw cover and stainless steel chain;
4-post ceramic terminal block included.

Ordering Code	Process Conn.	Conduit Conn.
PH24	1/2"	3/4"



PH26

NYLON – NEMA 4, gasketed screw cover

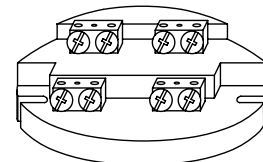
NEMA 4 with gasketed screw cover, 4-post ceramic terminal block
included.

Ordering Code	Process Conn.	Conduit Conn.
PH26	1/2"	1/2"

CERAMIC TERMINAL BLOCK REPLACEMENTS

For NEMA 4 heads, brass terminals

Ordering Code	No. of Terminals	Max. Wire Size
PH39	2	8 AWG.
PH40	3	8 AWG.
PH41	4	8 AWG.
PH42	6	14 AWG.



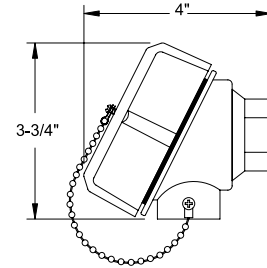
PH41

EXPLOSION-PROOF REPLACEMENT HEADS AND TERMINAL BLOCKS

CAST ALUMINUM – FM/CSA approved

FM/CSA approved for Class I, Div. 1, Groups B, C, D; Class II, Groups E, F, G; gasketed screw cover and stainless steel chain; 3-post ceramic terminal block included. For epoxy-coated, add suffix-E to part #. (e.g., PH50E)

Ordering Code	Process Conn.	Conduit Conn.
PH50	1/2"	1/2"
PH51	1/2"	3/4"
PH52	3/4"	3/4"

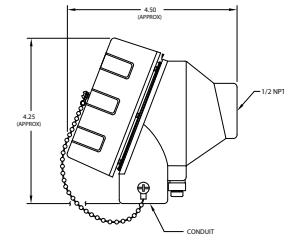


PH50-52

CAST ALUMINUM – ATEX approved

ATEX approved for EEx d IIC, gasketed screw cover and stainless steel chain; 3-post ceramic terminal block included.

Ordering Code	Process Conn.	Conduit Conn.
PH53	1/2"	3/4"

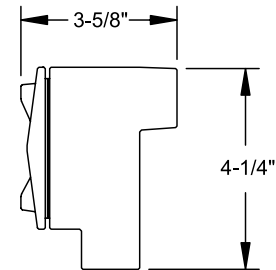


PH53

CAST ALUMINUM – UL/CSA approved

UL/CSA approved for Class I, Div. 1, Groups C, D; Class II, Groups E, F, G; screw cover; 4-post plastic terminal strip included. For epoxy-coated, add suffix-E to part #. (e.g., PH17E)

Ordering Code	Process Conn.	Conduit Conn.
PH17	1/2"	1/2"
PH18	1/2"	3/4"
PH19	3/4"	3/4"

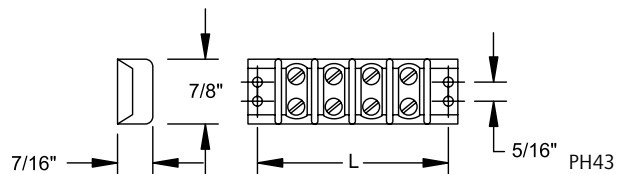


PH17-22

PLASTIC TERMINAL STRIP REPLACEMENTS

For explosion-proof heads (PH17-PH22), brass terminals

Ordering Code	No. of Terminals	Length of Strip
PH43-4	4	2.16"
PH43-6	6	2.91"

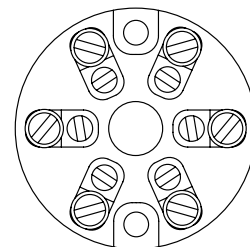


PH43

CERAMIC TERMINAL BLOCK REPLACEMENTS

For explosion-proof heads (PH50-PH52), brass terminals

Ordering Code	No. of Terminals	Max. Wire Size
PH48	3	8 AWG.
PH49	6	14 AWG.



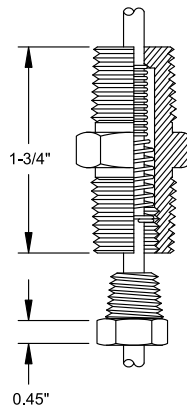
PH49

PARTS TO CONNECT TO WIRING OR THE PROCESS

COMPRESSION FITTINGS			
For 1/8" diameter sheath			
Part Number	NPT	Body/Nut	Ferrule
PF38	1/8"	304 stst	304 stst
PF39	1/8"	304 stst	Teflon®
PF40	1/4"	304 stst	304 stst
PF41	1/4"	304 stst	Teflon®
For 3/16" diameter sheath			
PF52	1/8"	304 stst	304 stst
PF53	1/8"	304 stst	Teflon®
PF54	1/8"	Brass	Brass
PF55	1/4"	304 stst	304 stst
PF56	1/4"	304 stst	Teflon®
PF59	1/2"	304 stst	304 stst
PF60	1/2"	304 stst	Teflon®
For 1/4" diameter sheath			
PF63	1/8"	304 stst	304 stst
PF65	1/4"	304 stst	304 stst
PF66	1/4"	304 stst	Teflon®
PF67	1/4"	Teflon®	Teflon®
PF68	1/4"	Brass	Brass
PF73	1/2"	304 stst	304 stst
PF74	1/2"	304 stst	Teflon®
PF75	1/2"	Brass	Brass

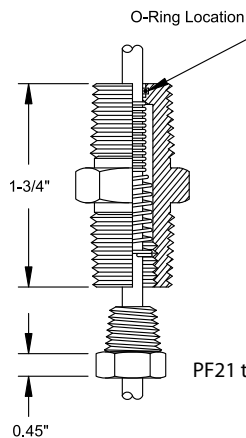


PF38 to PF75



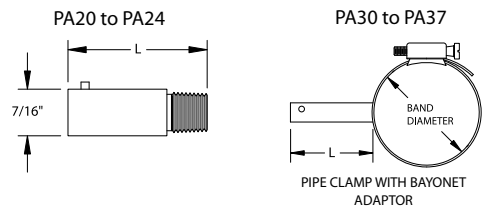
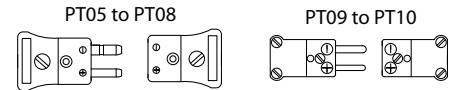
PF13 to PF18

SPRING-LOADED FITTINGS			
Standard, Non-sealed			
Part Number	Process Conn.	Conduit Conn.	Sensor Diameter
PF13	1/2" NPT	1/2" NPT	3/16"
PF14	1/2" NPT	1/2" NPT	1/4"
PF17	3/4" NPT	3/4" NPT	3/16"
PF18	3/4" NPT	3/4" NPT	1/4"
O-Ring Sealed*			
PF21	1/2" NPT	1/2" NPT	3/16"
PF22	1/2" NPT	1/2" NPT	1/4"
PF25	3/4" NPT	3/4" NPT	3/16"
PF26	3/4" NPT	3/4" NPT	1/4"
Notes:			
1. Maximum pressure rating 15 psi			
2. Buna N O-ring rated for -23 to 93°C (-10 to 200°F)			



PF21 to PF26

PLUGS AND JACKS	
(Note: specify J, K, E or T calibration. e.g., PT05-J)	
PT05	Standard plug, rated to 177°C (350°F)
PT06	Standard jack, rated to 177°C (350°F)
PT07	High Temp. plug, rated to 260° (500°F)
PT08	High Temp. jack, rated to 260° (500°F)
PT09	Miniature plug, rated to 177°C (350°F)
PT10	Miniature jack, rated to 177°C (350°F)
PA9	Rubber boot for use with PT05/PT06
PA10	Cable clamp for PT05 to PT08
PA11	Neoprene bushing for use with PA10 to prevent wire abrasion



BAYONET ADAPTERS (PLATED STEEL)		
Part Number	Thread Size	Length (L)
PA20	1/8" - 27 NPT	7/8"
PA21	1/8" - 27 NPT	1"
PA22	1/8" - 27 NPT	1-1/2"
PA23	1/8" - 27 NPT	2"
PA24	1/8" - 27 NPT	2-1/2"
PIPE CLAMP AND BAYONET ADAPTERS		
Part Number	Band Diameter	Adapter Length (L)
PA30	1-1/4" to 2-1/4"	1"
PA31	1-1/4" to 2-1/4"	2"
PA32	2-1/4" to 3-1/4"	1"
PA33	2-1/4" to 3-1/4"	2"
PA34	3-1/4" to 4-1/4"	1"
PA35	3-1/4" to 4-1/4"	2"
PA36	4-1/4" to 5"	1"
PA37	4-1/4" to 5"	2"

THERMOCOUPLE AND EXTENSION-GRADE WIRE

THERMOCOUPLE GRADE WIRE

Used to either fabricate thermocouples by creating a junction in one end of the wire pair, or as extension wire between the thermocouple and the measuring device. The conditions of measurement determine the type of thermocouple wire and insulation that should be used. Temperature range, wire gauge, environment, protection, insulation requirements, response and service life should all be considered.

THERMOCOUPLE EXTENSION WIRE

Has approximately the same thermoelectric characteristics as thermocouple grade wire, but its purpose is only to carry the signal, not to measure temperature. Thermocouple extension wire is usually lower in cost.

Insulation Characteristics			
Description (individual conductors/overall)	Temperature Limits	Moisture Resistance	Abrasion Resistance
Teflon®/Teflon® FEP	204°C (400°F)	Excellent	Excellent
Teflon®/ Teflon® TFE or PFA Tape	260°C (500°F)	Excellent	Excellent
Fiberglass/Fiberglass	482°C (900°F)	Fair	Fair
Fiberglass (Filaflex®)/Fiberglass (Filaflex®) High Temp	760°C (1400°F)	Fair	Fair

Calibration	Part Number		
	TC Grade, Stranded Wire	TC Grade, Solid Wire	Extension Grade, Stranded
Teflon®/ Teflon® FEP insulated, 20 Gauge			
Type J	20JST58	20JS58	20JXST58
Type K	20KST58	20KS58	20KXST58
Type T	20TST58	20TS58	20TXST58
Type E	20EST58	20ES58	20EXST58
Teflon®/ Teflon® TFE Tape insulated, 20 Gauge			
Type J	20JST60	20JS60	20JXST60
Type K	20KST60	20KS60	20KXST60
Type T	20TST60	20TS60	20TXST60
Type E	20EST60	20ES60	20EXST60
Fiberglass/Fiberglass insulated, 20 Gauge			
Type J	20JST57	20JS57	20JXST57
Type K	20KST57	20KS57	20KXST57
Type T	20TST57	20TS57	20TXST57
Type E	20EST57	20ES57	20EXST57
Fiberglass (Filaflex®)/Fiberglass (Filaflex®) insulated, 20 Gauge			
Type J	20JST70	20JS70	20JXST70
Type K	20KST70	20KS70	20KXST70
Type T	20TST70	20TS70	20TXST70
Type E	20EST70	20ES70	20EXST70
Fiberglass (Filaflex®)/ Fiberglass (Filaflex®) insulated, stainless steel overbraid, 20 Gauge			
Type J	20JST71	20JS71	20JXST71
Type K	20KST71	20KS71	20KXST71
Type T	20TST71	20TS71	20TXST71
Type E	20EST71	20ES71	20EXST71

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