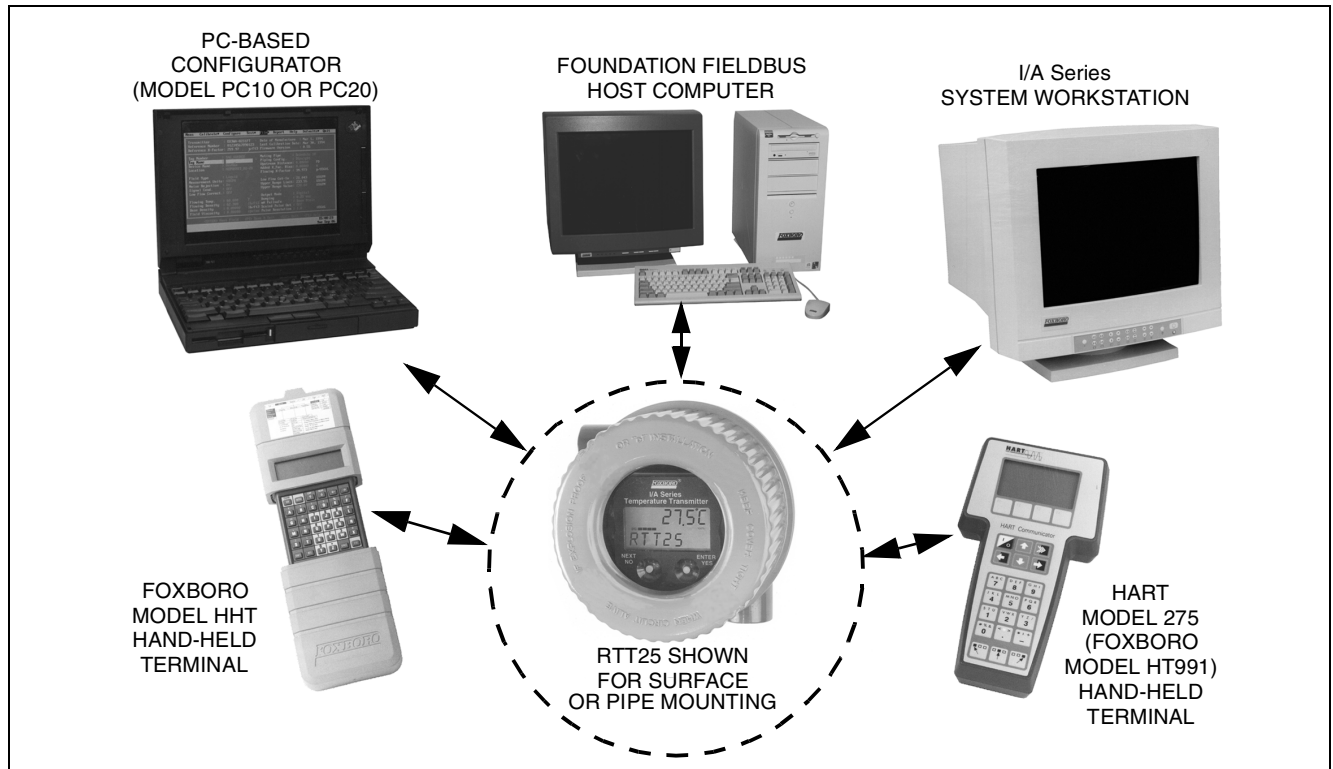


I/A Series® Intelligent Temperature Transmitters

Models RTT20 and RTT25

Options and Accessories



A wide variety of features, options, accessories, and services are available to enhance the performance and capabilities of the versatile I/A Series family of digital, analog, and multimeasurement temperature transmitters.

FEATURES/ACCESSORIES/SERVICES

- Intelligent Transmitters with FoxCom, HART, or FOUNDATION fieldbus Communication Protocols
- Transmitter with 4 to 20 mA Analog Output
- Hand-Held Terminals and PC-Based Configurator Software for FoxCom and HART
- Integral LCD Indicators/Configurators
- Remote Mounted 4 to 20 mA or Digital Indicators
- Large Selection of Sensors and Thermowells for Remote Mounting; the more Common Sensors and Thermowells can be Factory assembled to Transmitter, as specified.
- Bracket Set for Pipe or Surface Mounting
- DIN Rail Mounting Hardware for Basic Unit
- Custom Configurations Offered
- Quality Assurance and Calibration Certificates
- Custody Transfer Cover Lock and Seal
- Electrical Conduit Adapters
- Pipe Leveling Saddles
- Power Supply for Transmitters with 4 to 20 mA Output Signal
- Supplemental Customer Tag
- CD-ROM and/or Paper Instruction Books
- Accessories Conforming to European Union Directives marked with "CE" Logo
- Retrofit Kits for adapting RTT20 and RTT25 to Older Temperature Transmitter Versions
- Custom Options to User's Requirements

OPTIONAL FEATURES, ACCESSORIES, AND SPECIFICATION SHEETS

Match the Transmitter to the Application

- Select only the Options and Accessories Required
- Meet the Application Needs
- Contact Foxboro if Custom Option is required.

I/A Series Temperature Transmitters

(Also see Table 1)

- Model RTT20 (4 to 20 mA, FoxCom, and HART)
- Model RTT25 (FOUNDATION fieldbus)

Specifying Options and Accessories

Options with Model Code Suffix, such as an LCD Indicator/Configurator (-L1 or -L3) or Supplemental Customer Tag (-T), are specified by adding the 1- and/or 2-character suffix to the Model Number. For example, add "-L1T" to make a complete Model Number of RTT20-D1SNQFD-L1T.

For Other Options and Accessories, specify the "AS" Reference Code, Foxboro Part Number, or Accessory Model Code, as applicable.

For a summary of I/A Series Temperature Transmitter options and accessories, see Table 4.

Table 1. Transmitter and Configurator Specification Sheets

Temperature Transmitter and Configurator Type	Signal Output Code "-I"; 4 to 20 mA Analog Output	Signal Output Code "-D"; FoxCom Communication Protocol	Signal Output Code "-T"; HART Communication Protocol	Signal Output Code "-F"; Fieldbus (a) Communication Protocol
Model RTT20 Transmitter	PSS 2A-1F4 A	PSS 2A-1F4 A	PSS 2A-1F4 A	-
Model RTT25 Transmitter	-	-	-	PSS 2A-1F4 C
Model HHT Hand-Held Terminal	-	PSS 2A-1Z3 A	-	-
HART Model 275 Hand-Held Terminal(c)	-	-	HART Literature	-
Model PC10 PC-based Configurator	-	PSS 2A-1Z3 C	-	-
Model PC20 PC-based Configurator	-	PSS 2A-1Z3 E	PSS 2A-1Z3 E (b)	-
I/A Series System Communications	-	Contact Foxboro	-	-
Fieldbus Communications	-	-	-	Fieldbus Host

(a) Fieldbus refers to the Fieldbus Foundation Communication protocol.

(b) The PC20 can be used for HART Communication when Foxboro ABO991 Software is used.

(c) The Model 275 is also available from Foxboro as Foxboro Model HT991; see inside pages for HART Model 275 Configurator.

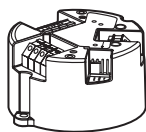
TRANSMITTER PACKAGE CONFIGURATION CODES

CODE "B"



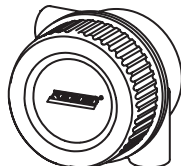
BASIC RTT20 PACKAGE

CODE "B"



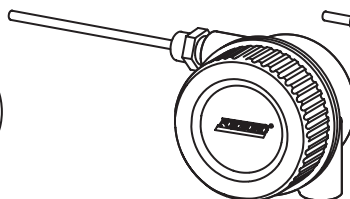
BASIC RTT25 PACKAGE

CODES "S" AND "T"



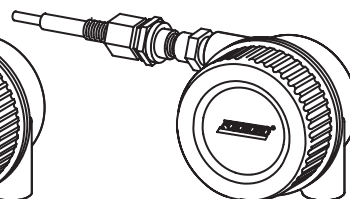
SURFACE OR PIPE MOUNTED PACKAGE

CODES "W" AND "Y"



PACKAGE WITH BARE SENSOR MOUNT

CODES "L" AND "M"



PACKAGE WITH THERMOWELL MOUNT

INTELLIGENT TRANSMITTER CONFIGURATORS

Model HHT Hand-Held Terminal

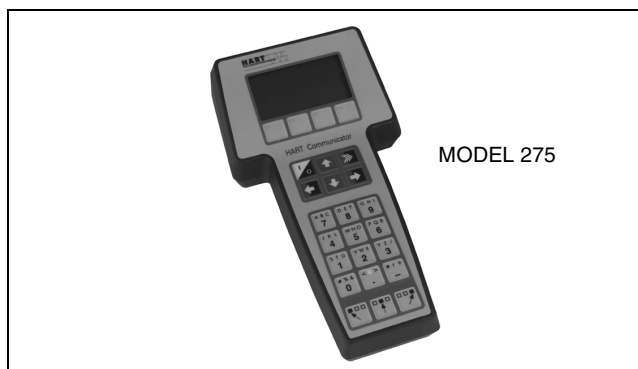
This Foxboro battery-powered Hand-Held Terminal permits remote testing, configuration, and diagnostic testing of most Foxboro Intelligent Transmitters using FoxCom protocol. Refer to PSS 2A-1Z3 A for standard specifications and ordering instructions.



MODEL HHT

HART Model 275 Hand-Held Terminal

This battery-powered configurator is the common interface with all microprocessor-based devices using the HART protocol. It will communicate the common commands to any HART device. Specific device descriptions (DDs) have been loaded by Foxboro to ensure complete functionality with various brands of HART devices. It is available from Foxboro as Model HT991. See adjacent table and notes.



MODEL 275

Foxboro Part Number	Approval or Certification	DDs Loaded into Configurator
D0165BF	FM	Foxboro (Note 1)
D0165BM	FM	Many (Note 2)
D0165BX	FM	All (Note 3)
D0165BN	CSA	Foxboro (Note 1)
D0165BP	CSA	Many (Note 2)
D0165BY	CSA	All (Note 3)
D0165BD	CENELEC	Foxboro (Note 1)
D0165BE	CENELEC	Many (Note 2)
D0165BW	CENELEC	All (Note 3)

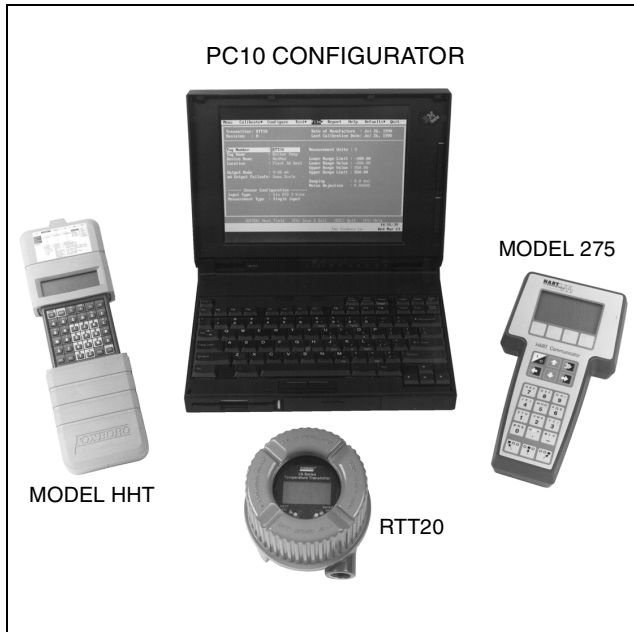
NOTES

1. DDs for Foxboro and Foxboro-Eckardt HART devices have been loaded into the configurator including Temperature (RTT20/RTT25/TI20), Vortex (83), Magnetic Flow (IMT25), Pressure (DMU130, DMU140, and I/A Series), SRD991, and TSV175.
2. DDs for all devices from all manufacturers registered through the HART Foundation have been loaded into the configurator: Bailey F&P, Eckardt, Foxboro, Honeywell, Micromotion, Robertshaw, Rosemount, Rosemount Analytical, Westlock Controls, and Yokogawa.
3. The DDs for all devices from all manufacturers registered through the HART Foundation have been loaded into the configurator, including all Foxboro and Foxboro-Eckardt DDs (Note 1).

INTELLIGENT TRANSMITTER CONFIGURATORS (Cont.)

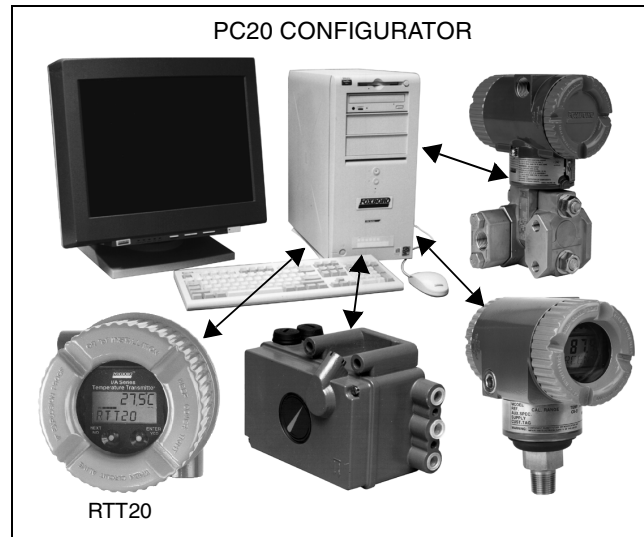
Model PC10 PC-Based Transmitter Configurator

This software/modem package for FoxCom transmitters combines the functionality of the Model HHT Hand-Held Terminal with the capabilities afforded by the large display, storage capacity, and keyboard flexibility of a personal computer. Below is shown a user-supplied PC with Foxboro and HART Hand-Held Terminals, and an RTT20 Temperature Transmitter. For Model PC10 Configurator specifications, refer to PSS 2A-1Z3 C.



Model PC20 PC-Based Configurator

The Model PC20 is used with FoxCom and HART Transmitters and is a powerful Windows 95/NT-based software and hardware package with external modem(s) providing remote bidirectional communications with Foxboro, Foxboro-Eckardt-HART, and FoxCom protocol intelligent field devices. The software also supports the Common Practice and Universal HART commands for all non-Foxboro HART devices. Shown below is a user-supplied PC with different Intelligent Field Devices. Refer to PSS 2A-1Z3 E for Model PC20 standard specifications and ordering instructions.



INDICATION OPTIONS

A wide choice of indicators gives you an easily viewed “window” into the process. These indicators are available as integrally mounted indicator/configurators, or for remote mounting.

Integral LCD Indicator/Configurator

Local indication and reconfiguration capabilities are provided for all RTT20 and RTT25 Intelligent Transmitters using this optional integrally mounted device. Transmitters with remote communication can also be reconfigured with a remote configurator (Output Codes “-D”, “-F”, and “-T”). For transmitters *without* remote communication capability (Output Code “-I”), the only reconfiguration and adjustment is via an Integral LCD Indicator/Configurator with on-board pushbuttons.

The Indicator/Configurator simply plugs into the transmitter (no tools required) allowing a single indicator to be used for multiple transmitters. It is completely non-interactive with the transmitter output (installing or removing the indicator, reading parameters, downloading data and indicator failure have no affect on the output).

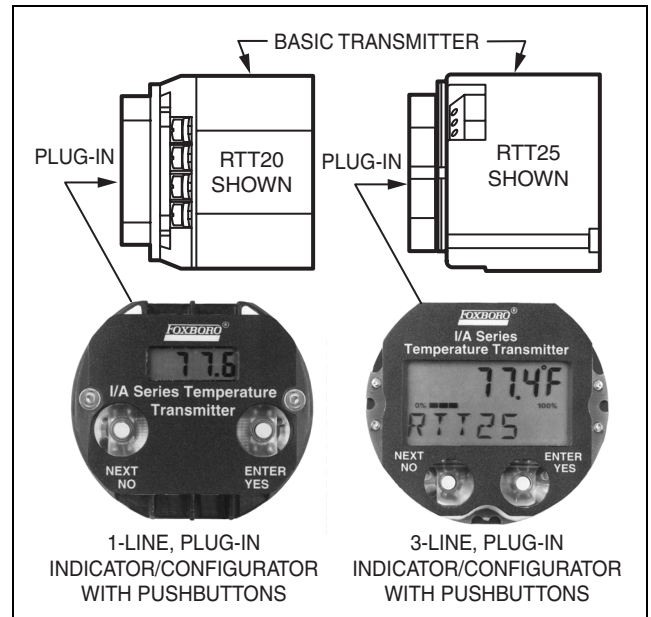
Two options are available: 1-Line Indicator and 3-Line Indicator. Both options have pushbuttons for transmitter configuration and adjustment.

The 1-Line Indicator (RTT20 only) provides:

- Highly accurate measurement readout from Indicator's microprocessor, regardless of output signal (no D/A conversion)
- Measurement displayed as any one of the following: EGU, mA, %, mA and EGU, or % and EGU
- Measurement readings, with 6 mm (0.25 in) high digits, from -9999 to +9999; values to 999.9 displayed to 0.1; negative values indicated by minus sign
- Flowchart inside transmitter housing allows numerically-coded menu messages to be interpreted when reconfiguring the transmitter

The 3-Line Indicator (both RTT20 and RTT25) has the *same* high accuracy and measurement display capabilities as the 1-Line Indicator and *additionally* provides:

- Menu displayed in English, French, German, or Spanish; user-configurable
- Measurement readings with larger, 8 mm (0.31 in) high, digits (top line only). Also displays temperature in °C or °F
- An eleven-segment bargraph (second line) that displays readings in percent of calibrated range. Temperatures outside the calibrated range are indicated by a left-pointing (underrange) or right-pointing (overrange) arrow.



- A seven-character alphanumeric display (third line) that displays a user-configurable tag number. This line also automatically displays the following fault messages:
 - FAIL SAFE - transmitter or sensor failure
 - D FAIL (Display **FAIL**) - temperature exceeds the limit of the display
- Configuration menu displayed on the alphanumeric display. Since no coded messages are used, a configuration flowchart is not necessary with the 3-Line Indicator.

Pushbuttons (two) provide the following configuration and calibration functions:

- Rerange without Calibration Equipment
- Sensor Type
- Calibration
- Display Format
- EGU °C or °F
- Pushbuttons can be disabled via remote configurators to provide custody transfer/security for either FoxCom or HART outputs.

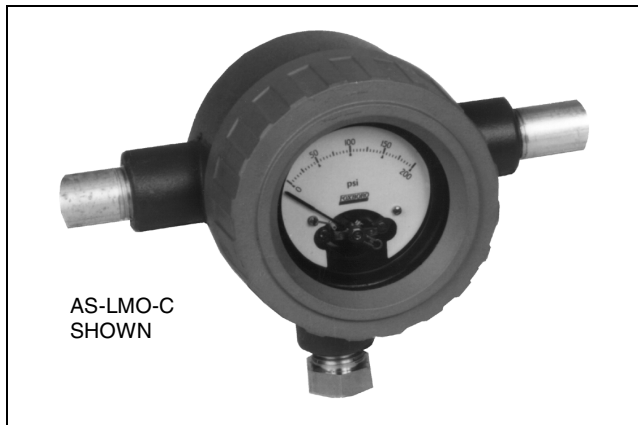
Model Code Suffix	Description
-L1	1-Line LCD Indicator/Configurator (RTT 20 only)
-L2	3-Line LCD Indicator/Configurator (both RTT20 and RTT25)

INDICATOR OPTIONS (Cont.)

**4 to 20 mA Output Indicator –
Conduit Mounting**

For 4 to 20 mA output signals only. This is a rugged, remotely-mounted (to conduit) indicator. It is weatherproof (per NEMA 4) and designed for use in various hazardous area locations. See MI 020-438 for details. Scales available are as follows:

“AS” Code	Indicator Scale
LMO-A	0 to 100 Percent Linear
LMO-C	Scale as Specified



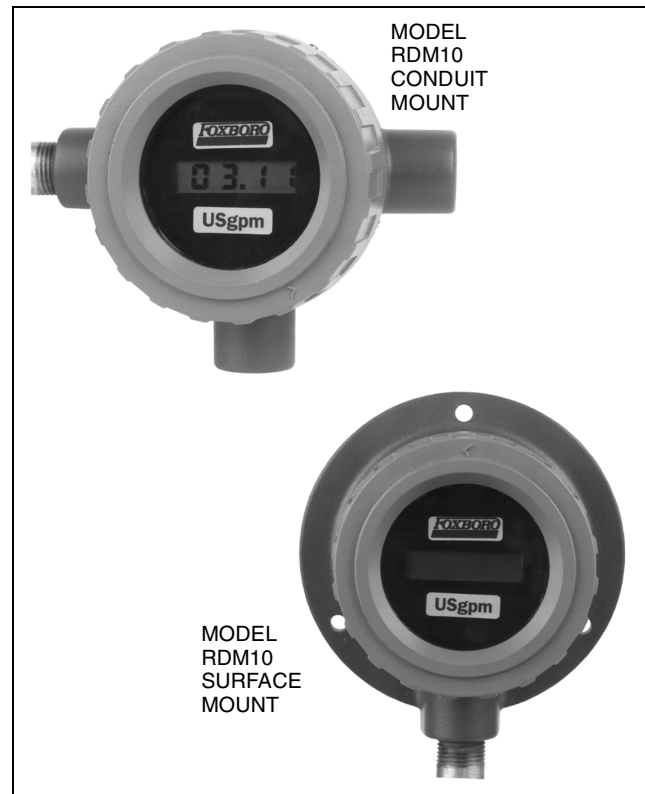
**4 to 20 mA Output Indicator –
Surface or Conduit Mounting**

For 4 to 20 mA output signals only. This Model 65FS indicator is mounted to a surface or conduit. It has a NEMA 4 rating, and classified for use in hazardous areas by BASEEFA, CSA, FM, PTB, and SAA. This indicator is offered with linear or custom scales. Order with a transmitter by specifying “AS” Code “FMI” plus the mounting, electrical classification, and scale required. Or order separately by specifying the Model Number per PSS 2A-3B1 C.



**Digital Indicator –
Surface or Conduit Mounting**

For FoxCom digital output signal (Signal Output Code “-D” only). This Model RDM10 Indicator connects to transmitter wiring to provide continuous remote monitoring of the digital measurement value. Indicator can only be used with output digitally configured to I/A Series System through FBM18, FBM39, FBM43, or FBM44. Mounts to a rigid conduit or to a surface. Enclosure meets IEC IP65 and provides the environmental and corrosion resistant protection of NEMA Type 4X. Refer to PSS 2A-1Z4 A to specify the indicator required.



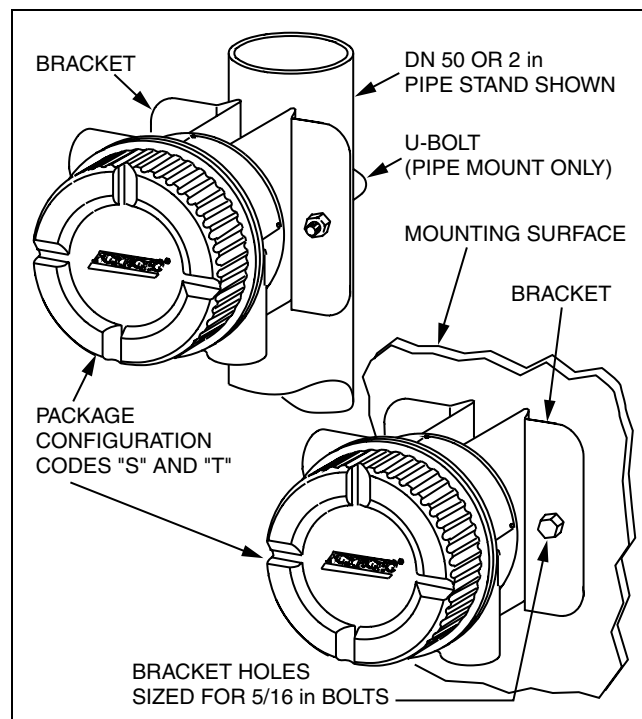
MOUNTING HARDWARE

These transmitters, because of their light weight and small size, can be mounted to a pipe, surface, or a DIN rail. Pipe and surface mounting hardware, for Package Configuration Codes “S” and “T”, and DIN rail mounting hardware assembled to Package Configuration Code “B”, are offered for these purposes.

Mounting Set

Used with the “Surface or Pipe Mount” transmitter (Package Configuration Codes “S” and “T”). Attaches transmitter to a user-supplied horizontal or vertical DN50 or 2-in pipe. Can also be used for mounting the transmitter to a surface.

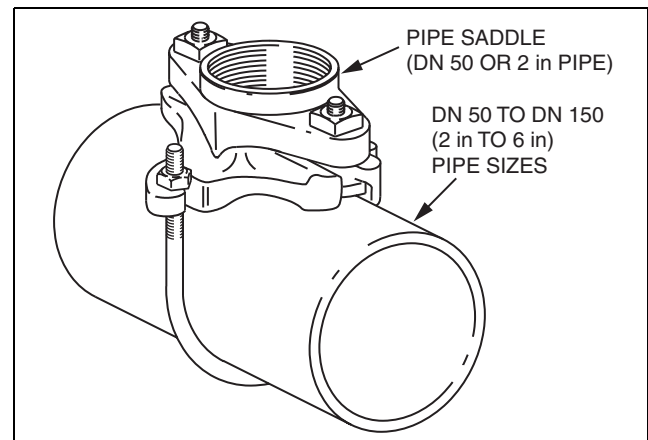
Model Code Suffix	Description
-M1	Painted Steel Bracket and Plated Steel Bolts
-M2	Stainless Steel Bracket and Bolts



Leveling Pipe Saddle

For quick and easy attachment of a DN50 or 2-in mounting pipe to another pipe. Saddle is cast iron and includes U-bolts and nuts.

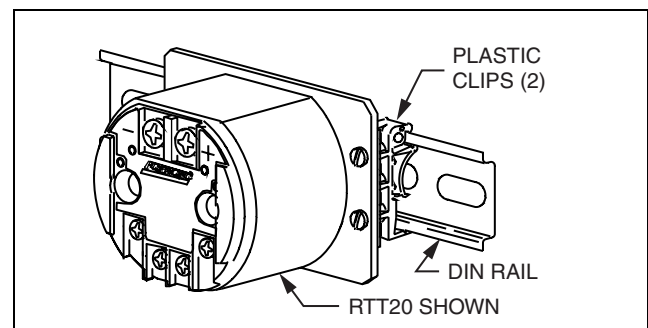
Foxboro Part No.	Description
0032017	For DN 50 or 2-in Pipe
0046935	For DN 80 or 3-in Pipe
0016508	For DN 100 or 4-in Pipe
0036694	For DN 150 or 6-in Pipe



DIN Rail Mounting Hardware

Adapts the Basic transmitter (Package Configuration Code “B”) for mounting on a DIN standard rail (DIN number 45277-3). Assembly consists of two plastic clips secured to an aluminum plate. Transmitter mounts on the aluminum plate which connects to the DIN rail via the plastic clips.

Model Code Suffix	Description
-D1	DIN Rail Mounting Hardware



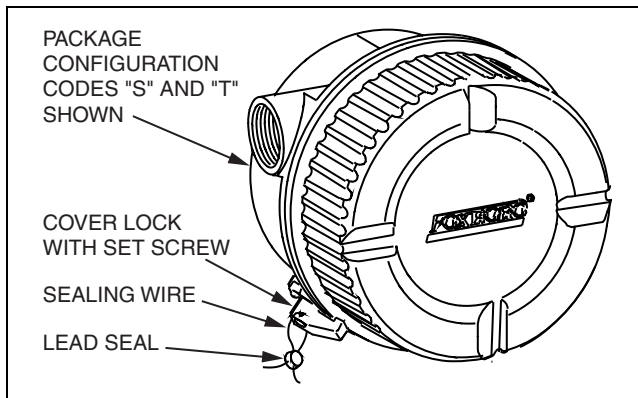
TRANSMITTER HOUSING FEATURES

These features apply to the package configurations indicated in the paragraphs below. These features are not applicable to Package Configuration Code “B”, since this basic unit does not have a housing.

Custody Transfer Lock and Seal

For Package Configuration Codes “S”, “T”, “W”, “Y”, “L”, and “M” in custody transfer applications. A cover lock is used to position and lock the housing cover. An approved custody transfer seal is used to indicate entry into the housing.

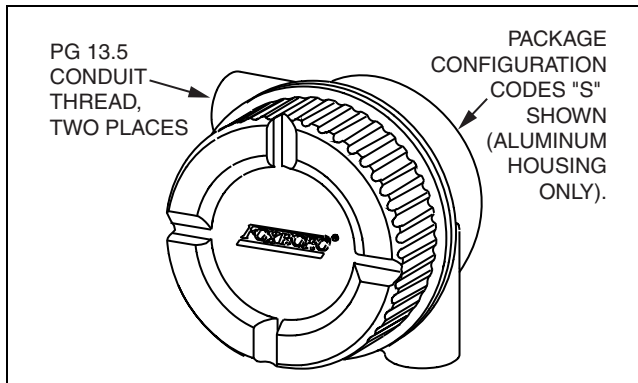
Model Code Suffix	Description
-A1	Custody Transfer Lock and Seal



PG 13.5 Conduit Thread

This feature is for use with aluminum housings, Package Configuration Codes “S”, “W”, and “L” only. The 1/2 NPT conduit thread in the housing is replaced with a PG 13.5 conduit thread. This option only available with Electrical Safety Codes “EA” and “ED”, and not offered if Option “-A3” is selected.

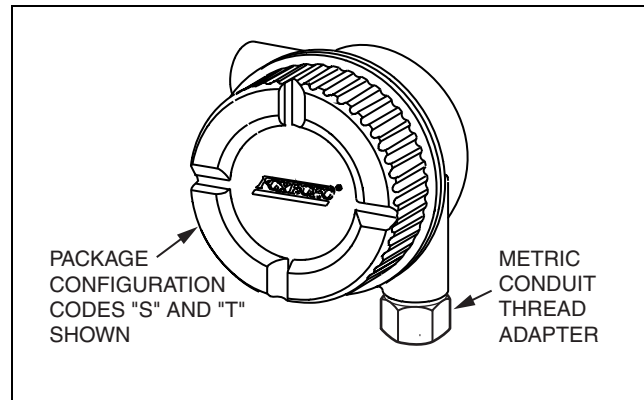
Model Code Suffix	Description
-A2	PG 13.5 Conduit Thread



Metric Conduit Thread Adapter

For Package Configuration Codes “S”, “T”, “W”, “Y”, “L”, and “M”. A stainless steel metric conduit thread adapter is threaded into the housing’s 1/2 NPT conduit connection to provide an M20 x 1.5-64 metric thread. This adapter is not offered with Electrical Safety Codes “AD”, “CC”, “CD”, “FC”, or “FD”; and also not offered with Option “-A2”.

Model Code Suffix	Description
-A3	Metric Conduit Thread Adapter; 1/2 NPT to M20 x 1.5-64



CONFIGURABLE PARAMETERS

Configurable Parameters Applicable to the Different Signal Output Codes

Configurable Parameters	Signal Output Code			
	Code I (a) 4 to 20 mA	Code D (b) FoxCom	Code T (c) HART	Code F (d) Fieldbus
Descriptors:				
Tag Number	Yes	Yes	Yes	No
Tag Name	Yes	Yes	Yes	No
Device Name	Yes	Yes	Yes	No
Location	Yes	Yes	Yes	No
Message	Yes	Yes	Yes	Yes
Resource State	No	No	No	Yes
Output:				
Output Type	Yes	Yes	Yes	No
Engineering Units (EGU) (e)	Yes	Yes	Yes	Yes
Percent (%)	No	No	No	Yes
Burst Mode	No	No	Yes	No
Linearization Mode	Yes	Yes	Yes	Yes
Input:				
Input Type (e)	Yes	Yes	Yes	Yes
Lower Range Value (LRV) (e)	Yes	Yes	Yes	Yes
Upper Range Value (URV) (e)	Yes	Yes	Yes	Yes
Cold Junction	Yes	Yes	Yes	Yes
Cold Junction EGU	Yes	Yes	Yes	Yes
Other Parameters:				
Sensor Fault Detection; On/Off (e)	Yes	Yes	Yes	Yes
Failsafe; On/Off (e)	Yes	Yes	Yes	No
Failsafe Direction; Upscale/Downscale (e)	Yes	Yes	Yes	No
Failsafe Value	Yes	Yes	Yes	No
Failsafe Reset; Auto/Locked	No	No	Yes	No
Power Supply Frequency; 50/60 Hz	Yes	Yes	Yes	Yes
Power Supply Filter; Standard/High	Yes	Yes	Yes	No
Damping	Yes	Yes	Yes	Yes
Sensor Validation	Yes	Yes	Yes	No
Intelligent Smoothing Time	Yes	Yes	Yes	Yes
mA Output Calibration(e)	Yes	Yes	Yes	No
Resource Diagnostic Parameters	No	No	No	No
FOUNDATION fieldbus Parameters	No	No	No	Yes
Calibration and Date of Last Calibration	No	No	No	Yes
Calibrator's Name	No	No	No	Yes
Calibrator's Initials	Yes	Yes	Yes	No

(a) Applicable to RTT20 Transmitter only. Configurable parameters can only be changed using the optional LCD Indicator/Configurator.

(b) Applicable to the RTT20 Transmitter only. Configurable using the Model PC10, Model PC20, Model HHT, or any I/A Series Workstation.

(c) Applicable to the RTT20 Transmitter only. Configurable using the Model PC20 and Hart Model 275 (Foxboro Model HT991).

(d) Applicable to RTT25 Transmitter only. Configurable using any FOUNDATION fieldbus certified host, or any I/A Series system with fieldbus support.

(e) This parameter is also accessible with the optional integrally mounted LCD Indicator/Configurator.

OPTIONAL TRANSMITTER CUSTOM CONFIGURATIONS AND DATABASE ON DISK

Transmitter Custom Configurations

Databases can be changed using integral and remote configurators. Foxboro will modify the default configuration per user's request when Optional Selection Code “-C1” or “-C2” is specified. See table below for standard configuration, and an example of optional configurations “-C1” and “-C2” with FoxCom protocol.

Standard Configuration, and Example of Optional Configuration Codes “-C1” and “-C2” for FoxCom

Configurable Parameters	Capability	Standard Configuration by Factory	Configurable with		Optional FoxCom Custom Configuration Examples	
			Integral LCD Configurator	Remote Configurator	-C1 Suffix(a)	-C2 Suffix
Descriptors						
Tag Number	12 Characters	Per S.O.	No	Yes	Per S.O.	FT102A
Tag Name	14 Characters	Tag Name	No	Yes	Tag Name	Boiler Temp
Location	14 Characters	Location	No	Yes	Location	Building 3
Device Name	6 Characters	DevNam	No	Yes	DevNam	DevNam
Message	32 Characters	Blank	No	Yes	Blank	Set to 110°C
Output						
Output Type	4 to 20 mA/Digital	4 to 20 mA	No	Yes	Digital	Digital
EGU(b)	°C, °F, K, °R, mV, Ω, %	Per S.O.	Yes	Yes	Per S.O.	Percent
Linearization Mode	EGU/Dewpoint	On	No	Yes	On	On
Input						
Input Type	See Transmitter PSS	Per Model No.	Yes	Yes	Per Model No.	Type J T/C
LRV(b)	See Transmitter PSS	Per S.O.	Yes	Yes	Per S.O.	80
URV(b)	See Transmitter PSS	Per S.O.	Yes	Yes	Per S.O.	120
Cold Junction	Integral/Remote/Fixed	Integral	No	Yes	Integral	Integral
Cold Junction EGU	°C, °F	°C	No	Yes	°C	°C
Other						
Sensor Fault Detection	On/Off	On	No	Yes	On	On
Failsafe(c)	On/Off	On	Yes	Yes	On	On
Failsafe Direction(c)	Upscale/Downscale	Upscale	Yes	Yes	Upscale	Upscale
Failsafe Value(c)	See Note (d).	3.6 and 21.0 mA	No	Yes	3.6/21.0 mA	21.50 mA
Failsafe Reset(c)	Auto/Locked	Auto	No	Yes	Auto	Auto
Supply Frequency	50/60 Hz	60 Hz	Yes	Yes	60 Hz	50 Hz
Supply Filter	Standard/High	High	Yes	Yes	High	High
Damping	0 to 32 s	0 s	No	Yes	0 s	1.0 s
Sensor Validation	0.0 to 10.0 s	0.5 s	No	Yes	0.5 s	0.5 s
Intel. Smoothing Time	0 to 30 s	10 s	No	Yes	10 s	10 s
Calibrator's Initials	6 Characters	CALINT	No	Yes	Blank	Blank
Integral LCD Indicators						
Pushbuttons	Enable/Disable	Enable	No	Yes	Enable	Enable
Language(e)	Eng, Fr, Ger, Span	English	Yes	Yes	English	English
Display; Top Line	See Note (f).	EGU	No	Yes	EGU	%/mA
Display; Bottom Line(e)	7 Characters	FOXBORO	No	Yes	FOXBORO	FT102A

(a) Code “-C1” changes FoxCom Output from standard 4 to 20 mA to digital output. See table below.

(b) EGU, LRV, and URV are configured for 0 to 100°C, unless otherwise specified.

(c) Failsafe parameters apply to mA output only.

(d) Failsafe value user-configurable between 3.6 and 3.8 mA downscale, or between 20.75 and 23.0 mA upscale.

(e) Language and bottom line display apply to 3-line Indicator/Configurator only.

(f) Can configure and display transmitter output as °C, °F, % of calibrated range, mA, alternating EGU/mA, or alternating %/mA.

Model Code Suffix	Description
-C1	Digital Output Configuration (FoxCom Output only). If not selected, default is 4 to 20 mA.
-C2	Custom Configuration. Full Factory Configuration per User's Requirement.

Database on Disk

For RTT20 Transmitters with FoxCom Communication protocol only. The configured database can be provided on disk for use with a Model PC20 Remote Configurator. Specify Option “-C3”.

Model Code Suffix	Description
-C3	Database on Disk; PC20 Format; RTT20 Transmitter with FoxCom Output only.

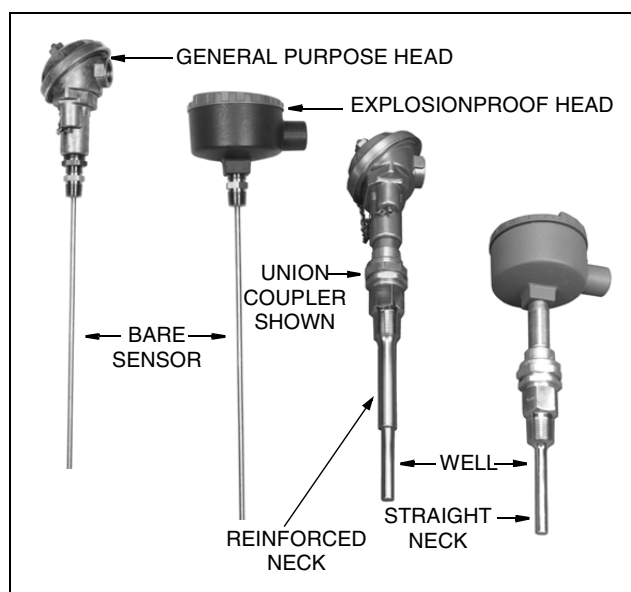
SENSORS AND THERMOWELLS

Foxboro offers sensors integrally mounted to transmitter package Configuration Codes W, Y, L, and M; wells integrally mounted to transmitter package Configuration Codes L and M; and both sensors and wells for remote mounting with package configuration Codes B, S, and T. The sensor and thermowell configurations are summarized in the sections that follow. Refer to the indicated Product Specifications Sheets (PSSs) for complete specifications.

Platinum Resistance Temperature Detectors for Integral or Remote Mounting

The PR Series Platinum Temperature Resistance Detectors (RTDs) are calibrated to ASTM-A (high-accuracy), ASTM-B (standard accuracy), or SAMA curves, as specified; and can be used for temperature measurement from -200 to +650°C (-320 to +1200°F). Available with single or dual sensor; sheath material of either 316 ss or Inconel; sensor lengths from 90 to 915 mm (3.5 to 36 in). Also available without well (bare sensor); or with a spring-loaded well; or with any of the wells listed in the “Thermowells” section further in this document. The RTDs can be provided with either a General Purpose or Explosionproof terminal connection head.

Refer to PSS 1-1B1 A for complete PR Series RTD specifications and ordering information.



Platinum RTD Usage Table

Model Code Selection	Platinum RTD Type	Used with Package Configuration Codes B, S, and T Note (a)	Mounted to Package Configuration Codes W, Y, L, and M Note (b)
Q	RTD, Platinum, DIN, 100 Ω, IEC 751 (ASTM-B Standard Accuracy)	YES	YES
A	RTD, Platinum, DIN, 100 Ω, IEC 751 (ASTM-A High Accuracy)	YES	YES
P	RTD, Platinum, 100 Ω, SAMA	YES	YES

(a) Platinum RTD is available from Foxboro for mounting remote from the transmitter.

(b) A bare platinum RTD can be provided integral with Package Configuration Codes W and Y; and a platinum RTD in a thermowell can be provided integral with Package Configuration Codes L and M. The connection heads are not included in the integrally mounted configuration.

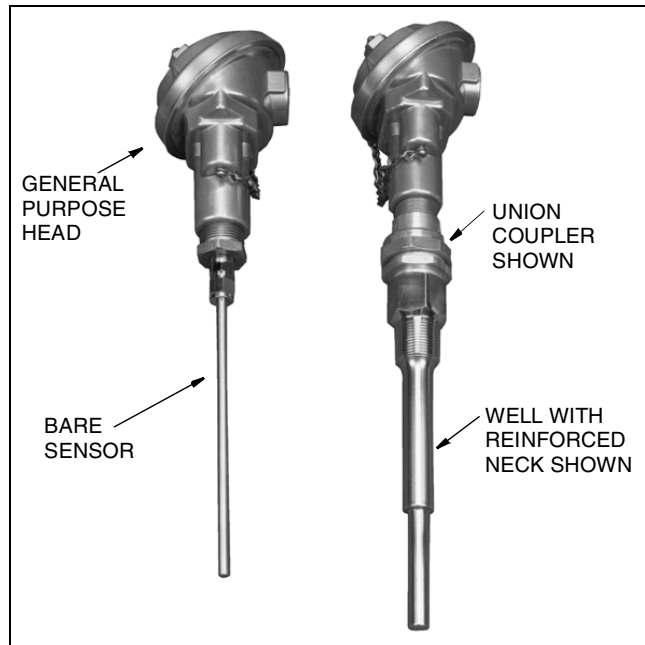
SENSORS AND THERMOWELLS (Cont.)

Nickel Resistance Temperature Detectors for Remote Mounting Only

The DB Series DYNATHERM RTDs are specially constructed to provide fast response to temperature variations and are normally used to measure temperatures from -40 to $+205^{\circ}\text{C}$ (-40 to $+400^{\circ}\text{F}$). They can also be calibrated for cryogenic and extended ranges from -130 to $+315^{\circ}\text{C}$ (-200 to $+600^{\circ}\text{F}$). The sensor is impregnated with a high-temperature compound and is housed in a 316 ss sheath. Sensor length ranges from 90 to 915 mm (3.5 to 36 in). They are available without a well (bare sensor); or with a spring-loaded well; or with any of the wells listed in the "Thermowells" section further in this document.

The aluminum terminal head with 3/4 NPT connections provides the environmental protection of NEMA Type 4 and IEC IP65. The "bare sensor" version is also available with a welded stainless steel tubular head and 3 m (10 ft) standard cable with longer cable lengths optionally available.

Refer to PSS 1-1B3 A for complete DB Series RTD specifications and ordering information.



Nickel RTD Usage Table

Model Code Selection	Nickel RTD - DYNATHERM DB Series	Used with Package Configuration Codes B, S, and T Note (a)	Mounted to Package Configuration Codes W, Y, L, and M Note (b)
D	RTD, Nickel, 200 Ω , Foxboro NR 226/227	YES	NO
G	RTD, Nickel, 120 Ω , Minco	YES	NO
I	RTD, Nickel, 100 Ω , DIN 43760	YES	NO

(a) Nickel RTD is available from Foxboro for mounting remote from the transmitter.

(b) The nickel RTD is available from Foxboro, but is not offered integrally mounted to the Package Configuration Codes W, Y, L, and M.

Copper Resistance Temperature Detectors for Remote Mounting Only

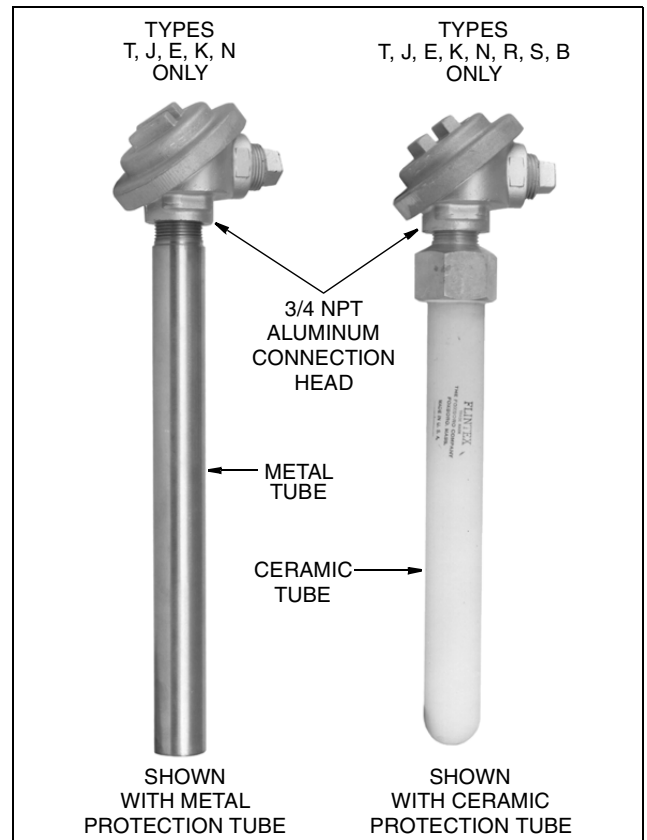
Copper RTDs, 10 Ω , per Foxboro CR 228/229, can be specified for use with the RTT20 and RTT25 Temperature Transmitters. Select Measurement Input Type "F".

Wire-Type Thermocouple Assemblies for Integral or Remote Mounting

The WT Series comprise a wide selection of Wire-Type Thermocouples. Thermocouple assemblies are available in ISA, IEC, and ANSI thermocouple types T, J, E, K, N, R, S, B, C, L, and U. The assemblies are used for temperature measurements ranging from -200 to +1700°C (-330 to +3100°F). Standard sensor lengths range from 305 to 1219 mm (12 to 48 in) for base metal; and 305 to 914 mm (12 to 36 in) for platinum thermocouples. Other lengths are also available on request. The thermocouples can be provided with a protection tube made from either Carbon Steel, Type 304 ss, Type 316 ss, Inconel 600, and FLINTEX Ceramic allowing their use in general purpose, corrosive, high temperature, and other special purpose environments.

The aluminum terminal connection head with 3/4 NPT connections provides the environmental protection of NEMA Type 4 and IEC IP65.

Refer to PSS 1-1B7 A for complete WT Series Thermocouple specifications and ordering information.



Wire-Type Thermocouple Usage Table

Model Code Selection	Wire-Type Thermocouple Assembly	Used with Package Configuration Codes B, S, and T Note (a)	Mounted to Package Configuration Codes W, Y, L, and M Note (b)
T	Type T, Copper vs. Copper-Nickel (Copper-Constantan)	YES	YES
J	Type J, Iron vs. Copper-Nickel (Iron-Constantan)	YES	YES
E	Type E, Nickel-Chromium vs. Copper-Nickel (Chromel-Constantan)	YES	YES
K	Type K, Nickel-Chromium vs. Nickel-Aluminum (Chromel-Alumel)	YES	YES
N	Type N, Nicrosil vs. Nisil (Nicrosil-Nisil)	YES	NO
R	Type R, Platinum - 13% Rhodium vs. Platinum	YES	NO
S	Type S, Platinum - 10% Rhodium vs. Platinum	YES	NO
B	Type B, Platinum - 30% Rhodium vs. Platinum - 6% Rhodium	YES	NO
C	Type C, Tungsten - 5% Rhenium vs. Tungsten - 26% Rhenium	YES	NO
L	Type L, Iron vs. Copper-Nickel	YES	NO
U	Type U, Copper vs. Copper-Low Nickel	YES	NO

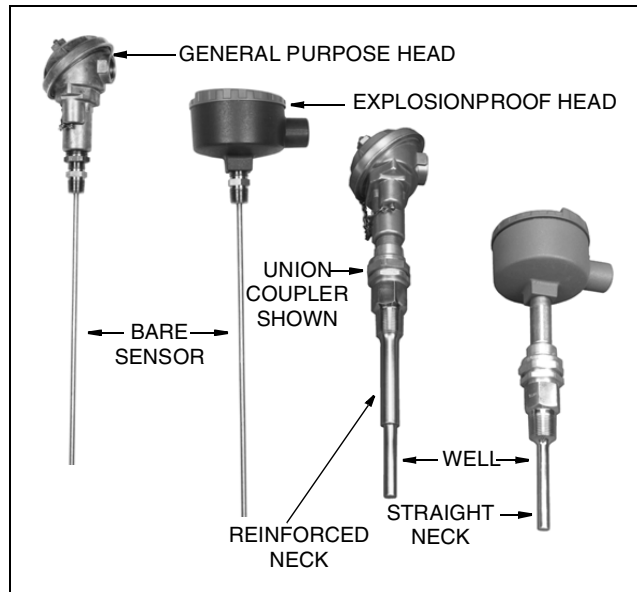
(a) Wire-Type thermocouple assemblies that can be mounted remote from the transmitter.

(b) YES in this column means that these wire-type thermocouples, Types T, J, E, and K, can be provided integrally mounted to the transmitter, excluding connection head.

SENSORS AND THERMOWELLS (Cont.)

MINOX Thermocouples for Integral and Remote Mounting

MINOX Thermocouple assemblies (MT Series) consist of a thermocouple wire with magnesium oxide insulation encased in an annealed metal sheath. This construction provides fast response, flexibility, increased strength and corrosion protection; and allows the sheath to be spring-loaded into thermowells. They are available in T/C Types T, J, E, K, and N. Single or dual thermocouples can be ordered with either earthed (grounded) or isolated (ungrounded) thermocouple wires. These thermocouple assemblies provide temperature measurements ranging from -200 to +1150°C (-328 to +2100°F). They are available without a well (bare sensor), with a spring-loaded well (with nipple or union coupler); or with any of the wells listed in the "Thermowells" section further in this document. They are also available with either a General Purpose or Explosionproof terminal connection head.



Refer to PSS 1-1B6 A for complete MINOX T/C specifications and ordering information.

MINOX Thermocouple Usage Table

Model Code Selection	MT MINOX Thermocouple Assembly	Used with Package Configuration Codes B, S, and T Note (a)	Mounted to Package Configuration Codes W, Y, L, and M Note (b)
T	Type T, Copper vs. Copper-Nickel (Copper-Constantan)	YES	YES
J	Type J, Iron vs. Copper-Nickel (Iron-Constantan)	YES	YES
E	Type E, Nickel-Chromium vs. Copper-Nickel (Chromel-Constantan)	YES	YES
K	Type K, Nickel-Chromium vs. Nickel-Aluminum (Chromel0Alumel)	YES	YES
N	Type N, Nicrosil vs. Nisil (Nicrosil-Nisil)	YES	NO

(a) MINOX thermocouple assemblies that can be mounted remote from the transmitter.

(b) YES in this column means that these MINOX T/C Types T, J, E, and K can be provided integrally mounted to the transmitter, excluding the connection head.

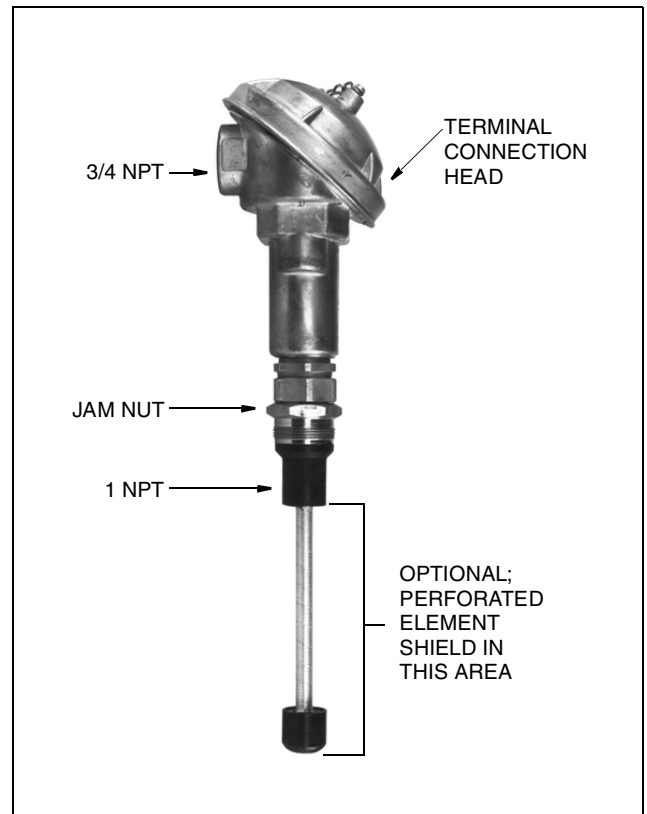
**Dew Point Element
for use with RTT20 Only**

Model 2781 Electrical DEWCEL Elements determine absolute moisture, such as dew point, in ambient temperatures from -45 to $+105^{\circ}\text{C}$ (-50 to $+220^{\circ}\text{F}$). They are available with a $100\ \Omega$ platinum RTD (SAMA or DIN), or T/C Type T, J, or K sensor for equilibrium-temperature measurement. Equilibrium temperature is generated by either 18 or 24 karat gold heater wires. The sensor sheath material is 316 ss with a Heresite coating to provide electrical insulation. The aluminum terminal head has a 3/4 NPT connection and provides the environmental protection of NEMA Type 4 and IEC IP65. The element is available for remote mounting only, and not as an integrally mounted sensor.

The DEWCEL requires a 25 V ac power source for the heater wires. Model 2740 Power Unit provides the necessary power and has a ballast to limit startup current. It can be operated from 100, 120, 220, or 240 V, 50 or 60 Hz power. The unit is for use in Ordinary locations only.

Refer to PSS 1-5A1 A for complete specifications and ordering information for Model 2781 Electrical DEWCEL Element and Model 2740 Power Unit.

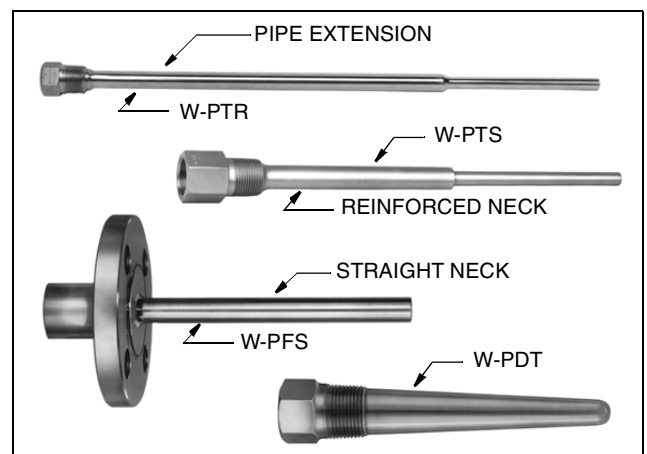
Specify RTT20 Measurement Input Type Code "W". The measurement input type is software selectable.



Thermowells

Foxboro high-quality, polished thermowells are offered in a variety of configurations, construction materials, and sizes. Most application requirements (including special applications such as the Dairy Industry and Pulp Digester applications) can be met by choosing from the wide selection of well and configuration options.

Tables 2 and 3 that follow summarize the various well configurations available. Table 2 lists the well types available and the description of each type; and Table 3 lists the Foxboro Part Numbers for the more commonly selected wells along with graphical representations. Refer to PSS 3-3C1 A for complete Thermowell specifications and ordering information.



SENSORS AND THERMOWELLS (Cont.)

Thermowells (Cont.)

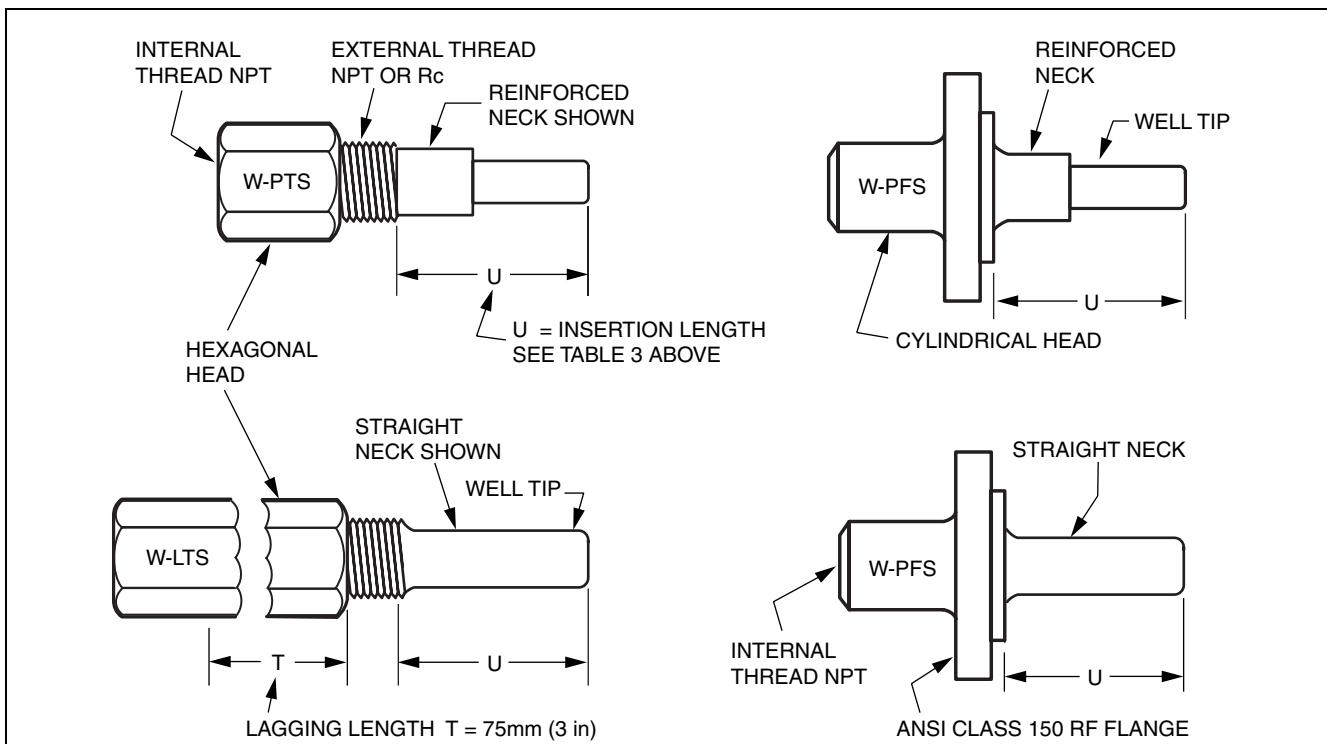
Table 2. Thermowell Types and Descriptions

Well Type	Description	Well Type	Description	Well Type	Description
W-PTS	Plain, Threaded, Solid	W-LTT	Lagged, Threaded, Tapered	W-PFT	Plain, Flanged, Tapered
W-LTS	Lagged, Threaded, Solid	W-PFS	Plain, Flanged, Solid	W-LFT	Lagged, Flanged, Tapered
W-PTR	Plain, Threaded, Welded	W-LFS	Lagged, Flanged, Solid	W-PDR	Plain, Dairy, Tapered
W-LTR	Lagged, Threaded, Welded	W-PFR	Plain, Flanged, Welded	Model 7110	Pulp Digester Well
W-PTT	Plain, Threaded, Tapered	W-LFR	Lagged, Flanged, Welded	—	—

Table 3. Part Numbers of Commonly Selected Thermowells (a)

Well Type See Figures Below	End Connection Note (b)	Well Material	Part Number						
			U = 2 in 50 mm	U = 3.5 in 90 mm	U = 5 in 125 mm	U = 6 in 150 mm	U = 8 in 200 mm	U = 10 in 255 mm	U = 12 in 305 mm
Plain W-PTS	3/4 NPT	304 ss	B0300EA	T0112PC	T0112PE	T0112PF	T0112PK	T0112PL	T0112PM
		316 ss	B0300EB	T0112PN	T0112PP	T0112PR	T0112PS	T0112PT	T0112PW
	1 NPT	316 ss	B0300EC	TP112PX	B0300EL	T0112PZ	T0112RA	T0112RB	T0112RC
	1 NPT	Hastelloy C	B0300FA	B0300FB	B0300FC	B0300FD	B0300FE	—	—
Lagging W-LTS Note (c)	3/4 NPT	316 ss	B0300ED	B0134RC	B0300EM	B0134RD	B0134RE	B0134RF	B0134RG
		304 ss	B0300EE	T0112WB	B0300EN	T0112WC	T0112WE	B0300EV	T0112WF
	1 NPT	316 ss	B0300EF	B0134RH	B0300EP	B0134RJ	B0134RK	B0134RL	B0134RM
Plain Flanged W-PFS	1 in CI 150 RF	316 ss	B0300EG	B0300EJ	B0300EQ	B0300ES	B0300ET	B0300EW	B0134RY
	1 1/2 in CI 150 RF	316 ss	B0300EH	B0300EK	B0300ER	B0134RZ	B0300EU	B0300EX	B0134UA

- (a) Thermowell I.D. = 6.6 mm (0.260 in).
- (b) Threaded NPT, or ANSI Class 150 Flanged End Connection
- (c) Lagging (Dimension T) = 75 mm (3 in); see figures below.



MISCELLANEOUS PRODUCT OPTIONS

Standard Data Plate

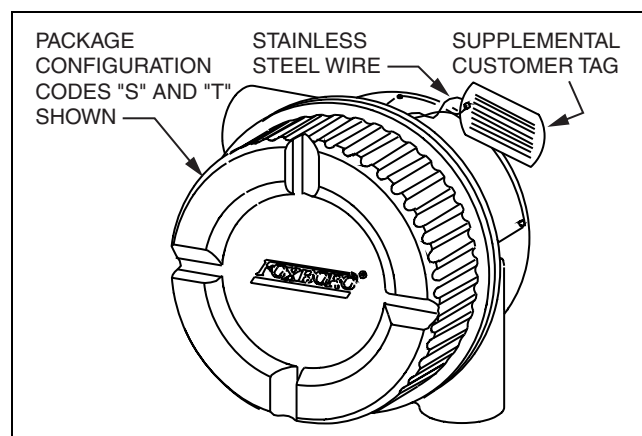
All Transmitter housings are supplied with a standard stainless steel data plate (in addition to labels on the basic transmitter module) using embossed characters. The data plate is attached to the outside surface of the housing and is secured with screws. If the sales order is supplied with tag data, this data is automatically included on the standard data plate (approximately a thirty character limit). For additional tag space, refer to "Supplemental Customer Tag" below.

Supplemental Customer Tag

For transmitters with Surface/Pipe, Bare Sensor, or Thermowell Mount (Package Configuration Codes S, T, W, Y, L, and M) Transmitters. The standard, permanently attached, stainless steel data plate provides only one line of space, 76 mm (3 in) long for customer tagging information. This option adds a 90 x 40 mm (3.5 x 1.5 in) stainless steel tag for additional customer data. The tag is fastened to the transmitter with stainless steel wire. It is selected as an "AS" Code for RTT20 Transmitters, and as a Model Code Suffix for RTT25 Transmitters. See tables below.

"AS" Reference Code	Description
MTS	Supplemental Customer Tag for RTT20 Transmitter

Model Code Suffix	Description
-T	Supplemental Customer Tag for RTT25 Transmitter



Transmitter Instruction Documentation

The standard transmitter is shipped with a full paper documentation set, typically including MIs, PL, DPs, and any other pertinent documents that would guide the user to properly and efficiently install, operate, and maintain the transmitter.

Optionally, the user can select options "-K1", "-K2", or "-K3", as follows:

- Option "-K1"; with this option, the standard full paper documentation set is deleted (not shipped with transmitter).
- Option "-K2"; with this option, the transmitter instructions are provided on a CD-ROM (no paper documents provided).
- Option "-K3"; with this option, the documentation set is provided on both CD-ROM and paper.

The above options provide the user with the flexibility of fulfilling specific needs without being inundated with a full paper document set for each transmitter shipped. For example, if the customer requires ten transmitters with one paper document set and nine CD-ROMs, then split the order as shown in the example below.

1st Transmitter (One Transmitter on Sales Order)

RTT25-F3SNQFD-L3M1

No "-K1", "-K2", or "-K3" optional suffix shown; therefore a full standard paper documentation set is provided.

2nd through 10th Transmitter (Nine Transmitters on Sales Order)

RTT25-F3SNQFD-L3M1K2

The K2 suffix shown means that a CD-ROM is provided with each of the nine transmitters (but no paper).

Note that numerous other document combinations are possible by either not using, or using the "-K1", "-K2", and "-K3" suffixes.

Model Code Suffix	Description
-K1	Delete Instruction Book
-K2	CD-ROM Instruction Book; No Paper
-K3	CD-ROM and Paper Instruction Book

MISCELLANEOUS PRODUCT OPTIONS (Cont.)

Quality Assurance (Q/A) Certificates

Q/A certificates for parts and products satisfy the needs of many customers. They are offered as listed in the table below. See TI 037-094 for a detailed description of the certificates.

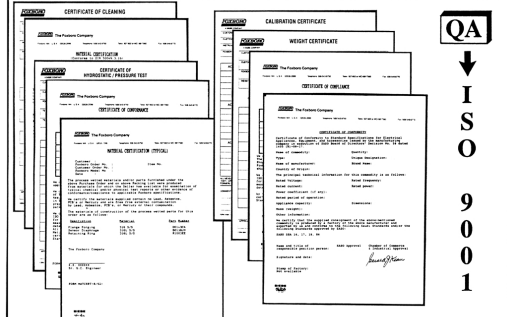
Order by Specifying	Description
CERT-A	Certificate of Compliance
CERT-B	Certificate of Conformance
CERT-E	Calibration Certificate
CERT-H	Weight Certificate
CERT-I	SASO Certificate
CERT-J	Electrical Agency Certificate
Other	Contact Foxboro

Calibration

All I/A Series Temperature Transmitters are factory calibrated to customer's specified range. This calibrated range is also stamped on the data plate. If a range is not specified, the transmitter will be calibrated at 0 to 100°C with the data plate left blank. Calibrations are done at reference ambient conditions, and recorded on a Calibration Data Sheet as shown below. This sample calibration sheet can be provided by specifying AS-CERT-E for RTT20 Transmitters, and Model Code Suffix "-B1" for RTT25 Transmitters.

Technical Information TI 037-094

Quality Assurance Certificates for Non-Nuclear Parts and Products



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INTRODUCTION
Foxboro offers certificates (and certifications) for non-nuclear parts and products to satisfy the sales order requirements of many customers. Quality assurance certificates offered by Foxboro are as follows:

- Certificate of Compliance
- Certificate of Conformance
- Material Certification (Parts Identified)
- Material Certification (Certificates Included)
- Calibration Certificate
- Certificate of Pressure Test
- Certificate of Cleaning
- Weight Certificate
- SASO Certification (Saudi Arabia Standards Organization)
- Electrical Agency Certificates

For certification not listed above, or certifications relating to nuclear products, contact Foxboro.

AVAILABILITY AND SPECIFICATION OF CERTIFICATES
The certificates (certifications) listed above may not be applicable to all Foxboro products. Therefore, only certificates applicable to a particular product are offered. For example, a Weight Certificate or an Oxygen Cleaning Certificate are not necessary where weight is not an issue, or oxygen cleaning is not required by the process. The certificates appropriate to a particular product will be identified within the Model Code (ordering code) of that product, or separately identified with a Foxboro Auxiliary Specification (AS) Number. In either situation, the certificate identification for the customer is simplified, and as stated previously, the selection is optional.

Unless otherwise noted on the customer's Sales Order, the Certificate(s) will normally be packaged with the instrument in the shipping container.

THE FOXBORO COMPANY
FOXBORO, MASS., U.S.A.

CALIBRATION DATA SHEET

Customer	XYZ, Inc.	Date	20 Mar 2000
Customer P.O.	OR-00-12345	Cal. by:	O.P. Dept. 0711
Customer Tag	BLANK		
Foxboro Order	00F12345-0001	Instr. type	RTT20-I
Serial #	00123456		

Input Range	0.00 to 100.00 DEG F	Output Range	4-20 mA
Actual Input in DEG F	Desired Output in mA	Actual Output in mA	Error in % of Span
0.00	4.000	4.000	0.00
25.00	8.000	8.002	0.01
50.00	12.000	12.003	0.02
75.00	16.000	16.001	0.01
100.00	20.000	20.001	0.01

Max ERROR 0.02% at 50% of Span

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST) or against certified standards which are traceable to the National Institute of Standards and Technology, formerly National Bureau of Standards.

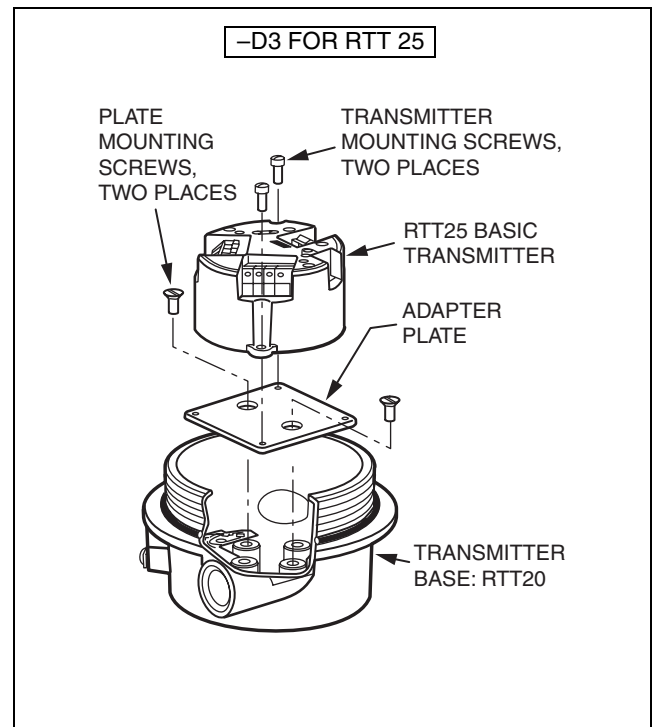
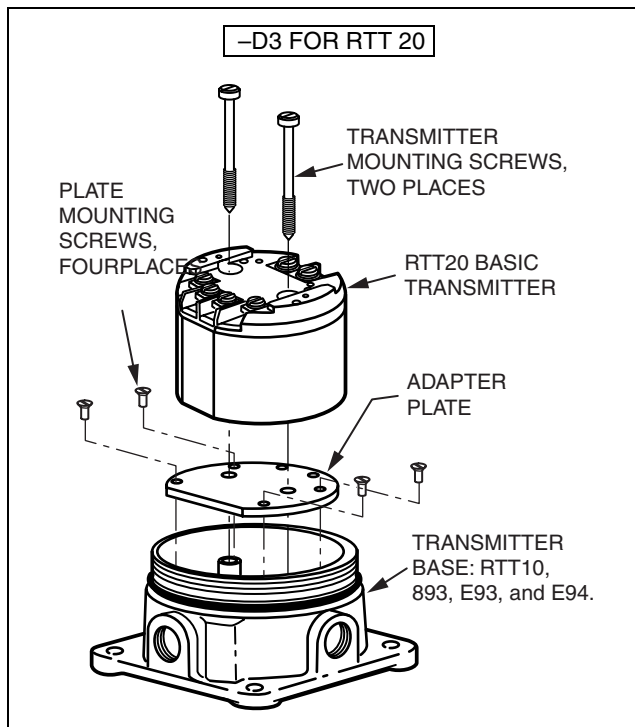
Approved by: _____ Date: _____

Retrofit Kits

Retrofit kits are used with the Basic Transmitter, Package Configuration Code “B”. Two kits are offered, and both use Model Code Suffix “-D”, as described below.

- Kit to substitute an RTT20 basic transmitter into installations currently using an older type temperature transmitter; Models RTT10, 893, E93, and E94. This kit provides an adapter plate and mounting screws.
- Kit to substitute an RTT25 basic transmitter into installations using an RTT20 Temperature Transmitter. This kit also provides an adapter plate and mounting screws.

Model Code Suffix	Description
(RTT20-□□□□□□-D3)	Retrofit Kit for adapting an RTT20 Basic Transmitter to an RTT10, 893, E93, or E94 Transmitter Base
(RTT25 -□□□□□□-D3)	Retrofit Kit for adapting an RTT25 Basic Transmitter to an RTT20 Transmitter Base.



MISCELLANEOUS OPTIONS (Cont.)

Ship with Thermowell Attached

This option is offered with Package Configuration Codes L and M. This is a required selection when Electrical Safety Codes AD, CC, CD, ED, FC, or FD are specified.

Specify Model Code Optional Suffix “-D2”.

Thermowell Supplied by User

Two options are offered with Package Configuration Codes “L” and “M”.

- The transmitter is provided to accept a Foxboro standard 3/4 NPT thermowell.
- The transmitter is provided to accept a 1/2 NPT thermowell.

These options are not available when Electrical Safety Codes AD, CC, CD, ED, FC, or FD are specified.

Specify Model Code Optional Suffix “-D4” for the 3/4 NPT configuration, and Model Code Optional Suffix “-D5” for the 1/2 NPT configuration.

Stainless Steel Union Coupling

A stainless steel union coupling is provided to interconnect the thermowell and bare sensor assembly. Offered with Package Configuration Codes L and M. Not offered with Optional Selection Code “-D5” (1/2 NPT configuration).

Specify Model Code Optional Suffix “-H2”.

Inconel Sheath on T/Cs and RTDs

This option is only offered with the RTT20 Transmitters. It extends the upper temperature limit from 870 to 1150°C (1600 to 2100°F) when an Inconel sheath is used rather than the standard 316 ss sheath. Note that the maximum operating temperature limit is determined by the upper range value of the sheath, sensor, or assembly, whichever is lowest. An epoxy compound seals the protective sheath to prevent entry of moisture.

Specify Model Code Optional Suffix “-S1”.

Dual Element Sensor

This option is only offered with the RTT20 Transmitters. Two 2-wire RTDs are included in one sheath. Available with Foxboro and HART outputs only; and with Sensor Input Types “Q” and “P” (DIN 100 Ω platinum RTD with standard accuracy, and a SAMA 100 Ω platinum RTD, respectively).

Specify Model Code Optional Suffix “-S2”.

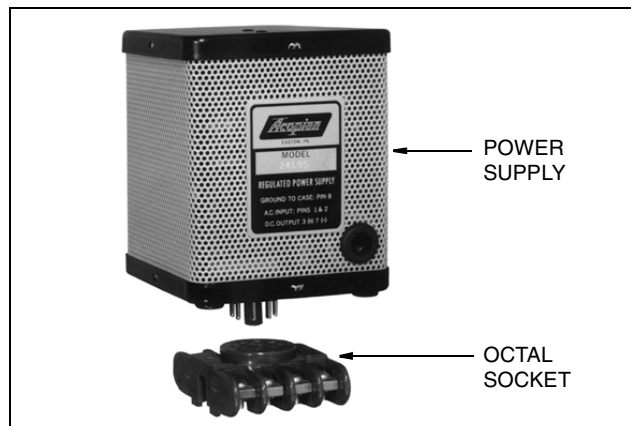
4-Wire RTD Sensor

This option is only offered with the RTT20 Transmitters. A 4-wire platinum RTD with a 316 ss sheath is provided in place of a 3-wire RTD. Available with Sensor Input Types “Q” and “P”.

Specify Model Code Optional Suffix “-S4”.

Power Supply

This Acopian plug-in power supply accessory is capable of powering as many as three transmitters that have a 4 to 20 mA dc output signal. Each power supply requires an octal socket.



Foxboro Part No.	Description
P0300BR	Power Supply, 4 to 20 mA dc
B0113AA	Octal Socket

CUSTOM OPTIONS

Many times a particular instrument or option with simple or complex modifications will greatly enhance the versatility of an I/A Series Temperature Transmitter. If you have the need for a custom option not listed in this document, please contact Foxboro.

Table 4. Summary Selection and Description Table - Options and Accessories

Option or Accessory, and Description		Model Code Optional Suffix(-), AS Code, Model No. or Part No. (PN); or PSS No.	I/A Series Intelligent Temperature Transmitter							
			Model RTT20 and RTT25 Transmitters with the following Package Configuration Codes (a)							
			B	S	T	W	Y	L	M	
Remote Configurators	Model HHT Hand-Held Terminal(b)		PSS 2A-1Z3 A	YES	YES	YES	YES	YES	YES	YES
	HART Model 275 Configurator(c)		Model HT991	YES	YES	YES	YES	YES	YES	YES
	Model PC10 Configurator(b)		PSS 2A-1Z3 C	YES	YES	YES	YES	YES	YES	YES
	Model PC20 Configurator(d)		PSS 2A-1Z3 E	YES	YES	YES	YES	YES	YES	YES
	HART Communication Software(d)		Model ABO991	YES	YES	YES	YES	YES	YES	YES
Integral Configurators	1-Line LCD Indicator/Configurator (e)		-L1 Suffix	YES	YES	YES	YES	YES	YES	YES
	3-Line LCD Indicator/Configurator (e)		-L3 Suffix	YES	YES	YES	YES	YES	YES	YES
Remote Indicators	4 to 20 mA Output Conduit Mounting(a)	0 to 100% Scale	AS-LMO-A	YES	YES	YES	YES	YES	YES	YES
		Scale as specified	AS-LMO-C	YES	YES	YES	YES	YES	YES	YES
	4 to 20 mA Output Only; Both Conduit and Surface Mounting (with Output Codes “-D” and “-T” only)		Model 65FS PSS 2A-3B1 C	YES	YES	YES	YES	YES	YES	YES
	Digital Output Only; Both Conduit and Surface Mounting (with FoxCom Output Code “-D” only)		Model RDM10 PSS 2A-1Z4 A	YES	YES	YES	YES	YES	YES	YES
Mounting Hardware	Surface or Pipe Mounting Set	Steel Bracket and Bolts	-M1 Suffix	NO	YES	YES	NO	NO	NO	NO
		ss Bracket and Bolts	-M2 Suffix	NO	YES	YES	NO	NO	NO	NO
	Leveling Pipe Saddle; attaches DN 50 or 2 in Pipe Perpendicular to another Pipe	For DN 50 or 2-in Pipe	PN 0032017	NO	YES	YES	NO	NO	NO	NO
		For DN 80 or 3-in Pipe	PN 0046935	NO	YES	YES	NO	NO	NO	NO
		For DN 100 or 4-in Pipe	PN 0016508	NO	YES	YES	NO	NO	NO	NO
		For DN 150 or 6-in Pipe	PN 0036694	NO	YES	YES	NO	NO	NO	NO
DIN Rail Mounting Hardware		-D1 Suffix	YES	NO	NO	NO	NO	NO	NO	
Transmitter Housing Features	Custody Transfer Lock and Seal		-A1 Suffix	NO	YES	YES	YES	YES	YES	YES
	PG 13.5 Conduit Thread		-A2 Suffix	NO	YES	NO	YES	NO	YES	NO
	Metric Conduit Thread Adapter		-A3 Suffix	NO	YES	YES	YES	YES	YES	YES
Supplemental Customer Tag	Additional Data Plate for RTT20 Transmitter		AS-MTS	YES	YES	YES	YES	YES	YES	YES
	Additional Data Plate for RTT25 Transmitter		-T Suffix	YES	YES	YES	YES	YES	YES	YES
Power Supply Accessory	Plug-in Power Supply for 4 to 20 mA Outputs		PN P0300BR	YES	YES	YES	YES	YES	YES	YES
	Octal Socket for Plug-in Power Supply		PN B0113AA	YES	YES	YES	YES	YES	YES	YES
Retrofit Kits	Adapts RTT20 Basic Package to an RTT10, 893, E93, or E94 Transmitter Base		-D3 Suffix	YES	NO	NO	NO	NO	NO	NO
	Adapts RTT25 Basic Package to an RTT20 Transmitter Base		-D3 Suffix	YES	NO	NO	NO	NO	NO	NO
Custom Configurations	Changes FoxCom Output from 4 to 20 mA Output to Digital Output		-C1 Suffix	YES	YES	YES	YES	YES	YES	YES
	Custom Configures FoxCom/HART/Fieldbus per Sales Order data		-C2 Suffix	YES	YES	YES	YES	YES	YES	YES
Database on Disk	Applicable to RTT20 Transmitter With FoxCom Output only; put on PC20 Format		-C3 Suffix	YES	YES	YES	YES	YES	YES	YES
Certificates	Quality Assurance (Calibration, Compliance, etc.)		Inside Pages	YES	YES	YES	YES	YES	YES	YES
	Calibration Certificate - RTT20 Only		AS-CERT-E	YES	YES	YES	YES	YES	YES	YES
	Calibration Certificate - RTT25 only		-B1 Suffix	YES	YES	YES	YES	YES	YES	YES

a) Refer to Page 2 for a pictorial representation of each Package Configuration Code.

(b) Model HHT and Model PC10 for use with FoxCom Output Code “-D” only.

(c) Model 275 Configurator for use with HART Output Code “-T” only. Also available as Foxboro Model HT991.

(d) Model PC20 for use with FoxCom Output Code “-D”. Also for HART Output Code “-T” when Model ABO991 Software is used.

(e) The 1-Line Indicator/Configurator is available with the RTT20 Transmitter only.

The 3-line Indicator/configurator is available with both the RTT20 and RTT25 Transmitters.

Table 4. Summary Selection and Description Table - Options and Accessories (Continued)

Option or Accessory, and Description		Model Code Optional Suffix(-), AS Code, Model No. or Part No. (PN); or PSS No.	I/A Series Intelligent Temperature Transmitter							
			Model RTT20 and RTT25 Transmitters with the following Package Configuration Codes (a)							
			B	S	T	W	Y	L	M	
Sensors and Thermowells - Offered for Remote or Integral Mounting; see Inside Pages for details.	Platinum RTDs for Integral Mounting	PSS 1-1B1 A	NO	NO	NO	YES	YES	YES	YES	
	Platinum RTDs for Remote Mounting	PSS 1-1B1 A	YES	YES	YES	NO	NO	NO	NO	
	Nickel RTDs (DYNATHERM) for Integral Mounting	PSS 1-1B3 A	NO	NO	NO	NO	NO	NO	NO	
	Nickel RTDs for Remote Mounting	PSS 1-1B3 A	YES	YES	YES	NO	NO	NO	NO	
	Copper RTDs, 10 Ω , for Integral Mounting	Inside Pages	NO	NO	NO	NO	NO	NO	NO	
	Copper RTDs, 10 Ω , for Remote Mounting	Inside Pages	YES	YES	YES	NO	NO	NO	NO	
	Wire-Type Thermocouples for Integral Mounting	PSS 1-1B7 A	NO	NO	NO	YES	YES	YES	YES	
	Wire Type Thermocouples for Remote Mounting	PSS 1-1B7 A	YES	YES	YES	NO	NO	NO	NO	
	MINOX Thermocouples for Integral Mounting	PSS 1-1B6 A	NO	NO	NO	YES	YES	YES	YES	
	MINOX Thermocouples for Remote Mounting	PSS 1-1B6 A	YES	YES	YES	NO	NO	NO	NO	
	Dew Point Sensor for Integral Mounting (f)	PSS 1-5A1 A	NO	NO	NO	NO	NO	NO	NO	
	Dew Point Sensor for Remote Mounting (f)	PSS 1-5A1 A	YES	YES	YES	NO	NO	NO	NO	
	Thermowells for Integral Mounting	PSS 3-3C1 A	NO	NO	NO	NO	NO	YES	YES	
Thermowells for Remote Mounting	PSS 3-3C1 A	YES	YES	YES	NO	NO	NO	NO		
Thermowell Related Options	Ship with Thermowell Attached to Transmitter	-D2 Suffix	NO	NO	NO	NO	NO	YES	YES	
	Well Supplied by User	3/4 NPT for Thermowell (g)	-D4 Suffix	NO	NO	NO	NO	NO	YES	YES
		1/2 NPT for Thermowell (g,h)	-D5 Suffix	NO	NO	NO	NO	NO	YES	YES
	Stainless Steel Union Coupling (j)	-H2 Suffix	NO	NO	NO	NO	NO	YES	YES	

(f) Dew Point Sensor (DEWCEL) elements are provided with a power unit. They are used with RTT20 Transmitters for remote mounting only.

(g) Options "-D4" and "-D5" are not available with Electrical Safety Codes AD, CC, CD, ED, FC, or FD.

(h) Option "-D5" is not available with Option "-H2".

(j) Coupling not available with "-D5" Option; see inside pages for details.

I/A Series INTELLIGENT AND ELECTRONIC TRANSMITTERS



PRODUCT SPECIFICATION SHEETS (PSSs) FOR INTELLIGENT FIELD DEVICES

Category	Device Types	Models	4-20 mA Analog	4-20 mA with FoxCom	4-20 mA with HART	FOUNDATION fieldbus	Other
Pressure	Transmitter - AP	IAP10 & 20	2A-1C13 C	2A-1C13 A	2A-1C13 B	2A-1C13 E	(1)(2)
	Transmitter - GP	IGP10 & 20	2A-1C13 C	2A-1C13 A	2A-1C13 B	2A-1C13 E	(1)(2)
	Transmitter - GP	IGP25/50	N/A	2A-1CTBD/TBD	2A-1CTBD/TBD	2A-1CTBD/TBD	N/A
	Transmitter - DP	IDP10	2A-1C14 C	2A-1C14 A	2A-1C14 B	2A-1C13 E	(1)(2)
Multivariable	Transmitter - DP	IDP25/50	N/A	2A-1CTBD/TBD	2A-1CTBD/TBD	2A-1CTBD/TBD	N/A
	Transmitter - P/T/Flow	IMV30	N/A	2A-1C15 A	N/A	N/A	(2)
Temperature	Transmitter - P/T	IMV25	N/A	2A-1C15 B	2A-1C15 B	2A-1C15 B	(2)
	Transmitter	RTT20	2A-1F4 A	2A-1F4 A	2A-1F4 A	N/A	(2)
Mass Flow	Transmitter	RTT25	N/A	N/A	N/A	2A-1F4 C	(2)
	Transmitter	CFT10	N/A	1-2B3 C	N/A	N/A	N/A
	Transmitter	CFT15	N/A	N/A	N/A	N/A	(3)
Magnetic Flow	Transmitter	CFT30	N/A	N/A	1-2B5 A	N/A	N/A
	Transmitter	IMT25	N/A	1-6F5 A	1-6F5 A	1-6F5 B	N/A
	Transmitter	IMT25L	N/A	1-6F6 A	N/A	N/A	N/A
Vortex Flow	Transmitter	IMT96	N/A	1-6F8 A	N/A	N/A	N/A
	Flanged/Wafer	83F/83W	1-8A1 D	1-8A1 E	1-8A1 E	1-8A1 F	(4)
	Sanitary	83S	1-8A2 E	1-8A2 D	1-8A2 D	N/A	(4)
Electro-Chemical Transmitters	pH, ORP, ISE (6)	870ITPH	6-1B1 B	6-1B1 B	N/A	N/A	N/A
	CC & R (6)	870ITCR	6-3C1 B	6-3C1 B	N/A	N/A	N/A
	EC (6)	870ITEC	6-3N2 A	6-3N2 A	N/A	N/A	N/A
Electro-Chemical Analyzers	pH, ORP, ISE (6)	875PH	6-3A1 E	N/A	6-3A1 E	N/A	N/A
	CC & R (6)	875CR	6-3A1 B	N/A	6-3A1 B	N/A	N/A
	EC (6)	875EC	6-3N1 C	N/A	6-3N1 C	N/A	N/A
Buoyancy	Transmitter	144LD	N/A	EML0610 A-(en)	EML0160 A-(en)	N/A	N/A
	Transmitter	144LVD	N/A	EML1610 A-(en)	EML1610 A-(en)	N/A	N/A
Valves	Positioner	SRD991	EVE0106 A-(en)	EVE0105 A-(en)	EVE0105 A-(en)	EVE0105 A-(en)	(5)

N/A= Field device not available in that protocol at time of printing. Refer to www.foxboro.com/measurement/pss.htm.

- (1) For low power voltage output (1 to 5 V) pressure transmitter family, refer to PSS 2A-1C13 D.
- (2) Options/Accessories: see PSS 2A-1Z9 E for Pressure and Multivariable Transmitters, and PSS 2A-1Z9 F for Temperature Transmitters.
- (3) For Modbus protocol mass meter Model CFT15, refer to PSS 1-2B3 D.
- (4) For pulse output vortex meter Model, refer to PSS 1-8A1 D (for 83F and 83W) or PSS 1-8A2 D (for 83S).
- (5) For Profibus Pa protocol valve positioner Model SRD991, refer to PSS EVE0105 A-(en).
- (6) ORP = Oxidation Reduction Potential; ISE = Ion Selective Electrode; CC = Contacting Conductivity; EC = Electrodeless Conductivity; and R = Resistivity.

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