

## Technical Information

### STT750 SmartLine Temperature Transmitter Specification 34-TT-03-16, January 2020



#### Introduction

Part of the SmartLine® family of products, the SmartLine STT750 is a high-performance and value temperature transmitter offering high accuracy and stability over a wide range of process and ambient temperatures. SmartLine easily meets the most demanding needs for temperature measurement applications.

#### Best in Class Features:

#### Industry leading performance value

- Digital Accuracy up to .14 Deg C for RTD
- Stability up to +/-0.01% of URL per year for ten years
- 125 mSec update time

#### Reliable measurement

- Built in Galvanic Isolation
- Dual Compartment Housing
- Sensor Break detection
- Comprehensive on-board diagnostic capabilities
- Full compliance to SIL 2/3 requirements.
- Available with 4-year warranty
- Supports Namur 89 Wire break
- Direct entry of Callendar-van Dusen coefficients  $R_0$ ,  $\alpha$ ,  $\delta$  and  $\beta$  for calibrated RTD sensors.

#### Lower Cost of Ownership

- Universal input
- Basic digital display capabilities
- Modular construction
- External zero, span, & configuration capability
- Polarity insensitive loop wiring



Figure 1– SmartLine STT750 Temperature transmitter

#### Communications/Output Options:

- 4-20 mA DC
- HART® (version 7.0)

All transmitters are available with the above listed output and communication protocol option.

## Description

The STT750 SmartLine Temperature Transmitter is designed and manufactured to deliver high performance across varying ambient temperature.

## Unique Indication/Display Options

The STT750 modular design accommodates a basic alphanumeric LCD display.

### Basic Alphanumeric LCD Display Features

- Modular (may be added or removed in the field)
- 0, 90,180, & 270 degree position adjustments
- Deg C , F, R and Kelvin measurement units
- 2 Lines 16 Characters (4.13H x 1.83W mm)
- Up to 8 display screens with similar formats
- Configurable screen rotation timing (3 to 30 sec)
- Auto/Manual selection for screen rotation
- Displays up to 6 Data-points: Loop PV, CJ Temperature, Sensor, RTD Resistance, Loop output, Percent Loop.
- Out of Range Indication
- PV Status and critical fault indication

## Configuration Tools

### Integral Three Button Configuration Option

Suitable for all electrical and environmental requirements, SmartLine offers the ability to configure the transmitter and display via three externally accessible buttons. The button compartment is isolated from other internal components and thus keeps the sensitive electronics environmentally sound.

Zero/span capabilities are also optionally available via these buttons with or without selection of a display option.

### Hand Held Configuration

SmartLine transmitters feature two-way communication and configuration capability between the operator and the transmitter. This is accomplished via Honeywell's field-rated Multiple Communication Configuration tool.

The Honeywell Handheld MC Toolkit is capable of field configuring HART Devices and can also be ordered for use in intrinsically safe environments.

All Honeywell transmitters are designed and tested for compliance with the offered communication protocols and are designed to operate with any properly validated hand held configuration device.

### Personal Computer Configuration

Field Device Manager (FDM) Software and FDM Express are also available for managing HART device configurations.

## Diagnostics

SmartLine transmitters all offer digitally accessible diagnostics which aid in providing advanced warning of possible failure events minimizing unplanned shutdowns, providing **lower overall operational costs**

## System Integration

- All SmartLine products meet the most current published standards for HART.

## Modular Design

To help contain maintenance and inventory costs, all STT750 transmitters are modular in design supporting the user's ability to replace temperature boards, add indicators or change electronic modules without affecting overall performance or approval body certifications.

Each temperature board is uniquely characterized to provide in-tolerance performance over a wide range of application variations in temperature and due to the Honeywell advanced interface, electronic modules may be swapped with any electronics module without losing in-tolerance performance characteristics

### Modular Features

- Replace temperature board, terminal board, or lightning protection\*
- Replace electronics or communication modules\*
- Add or remove integral indicators\*
- Add or remove external configuration buttons

\* Field replaceable in all electrical environments (including IS) except flameproof without violating agency approvals.

With no performance effects, Honeywell's unique modularity results in **lower inventory needs and lower overall operating costs.**

## Performance Specifications<sup>1,3</sup>

### Reference Accuracy<sup>2</sup> (conformance to +/-3 Sigma)

Input Type	Maximum Range Limits		Digital Accuracy (+/-)	Output D/A Accuracy (% of span)	Standards
<b>RTD (2,3,4 wire)</b>	<b>° C</b>	<b>° F</b>	<b>° C</b>	<b>%</b>	
Pt25 <sup>5</sup>	-200 to 850	-328 to 1562	0.90	0.025	IEC751:1990 ( $\alpha=0.00385$ )
Pt100	-200 to 850	-328 to 1562	0.14	0.025	IEC751:1990 ( $\alpha=0.00385$ )
Pt200	-200 to 850	-328 to 1562	0.28	0.025	IEC751:1990 ( $\alpha=0.00385$ )
Pt500	-200 to 850	-328 to 1562	0.17	0.025	IEC751:1990 ( $\alpha=0.00385$ )
Pt1000	-200 to 500	-328 to 932	0.14	0.025	IEC751:1990 ( $\alpha=0.00385$ )
Ni120	-80 to 260	-112 to 500	0.12	0.025	Edison Curve #7 ( $\alpha=0.00672$ )
Cu10	-50 to 250	-58 to 482	1.40	0.025	Edison Copper Winding #15 ( $\alpha=0.00427$ )
<b>Thermocouples</b>	<b>° C</b>	<b>° F</b>	<b>° C</b>	<b>%</b>	
B	200 to 1820	392 to 3308	1.20	0.025	IEC 584-1 (ITS-90)
E	-200 to 1000	-328 to 1832	0.40	0.025	IEC 584-1 (ITS-90)
J	-200 to 1200	-328 to 2192	0.50	0.025	IEC 584-1 (ITS-90)
K	-200 to 1370	-328 to 2498	0.50	0.025	IEC 584-1 (ITS-90)
N	-200 to 1300	-328 to 2372	0.80	0.025	IEC 584-1 (ITS-90)
R	-50 to 1760	-58 to 3200	1.00	0.025	IEC 584-1 (ITS-90)
S	-50 to 1760	-58 to 3200	1.00	0.025	IEC 584-1 (ITS-90)
T	-250 to 400	-418 to 752	0.40	0.025	IEC 584-1 (ITS-90)
C (W <sub>5</sub> W <sub>26</sub> )	0 to 2300	32 to 4172	1.20	0.025	ANSI/ASTM E-230 (ITS-90)

Other Input Types	Maximum Range Limits	Digital Accuracy (+/-)	Output D/A Accuracy (% of span)	Standards
Millivolts	-100 to 1200 mV	0.17 mV	0.025	
Millivolts	-20 to 125 mV	0.021 mV	0.025	
Ohms	0 to 500 Ohms	0.30 Ohms	0.025	
Ohms	0 to 2000 Ohms	0.45 Ohms	0.025	
Ohms	0 to 3000 Ohms	0.65 Ohms	0.025	

1. Digital Accuracy is accuracy of the digital value accessed by the Host system and the handheld communicator

2. Total analog accuracy is the sum of digital accuracy and output D/A Accuracy

3. Output D/A Accuracy is applicable to the 4 to 20 mA Signal output

4. For TC inputs, CJ accuracy shall be added to digital accuracy to calculate the total digital accuracy

5. Custom Callendar-van Dusen not available for Pt25 sensors

### Performance under Rated Conditions – All Models

Parameter	Description									
Input Span Adjustment Range	No limits to adjustments within the maximum range except minimum span limit of 1 engineering unit									
Analog Output Digital Communications:	Two-wire, 4 to 20 mA (HART transmitters only) HART 7 protocol compliant									
Output Failure Modes (HART only)	<table> <tr> <td></td> <td>Honeywell Standard:</td> <td>NAMUR NE 43 Compliance:</td> </tr> <tr> <td><b>Normal Limits:</b></td> <td>3.8 – 20.8 mA</td> <td>3.8 – 20.5 mA</td> </tr> <tr> <td><b>Failure Mode:</b></td> <td>≤ 3.6 mA and ≥ 21.0 mA</td> <td>≤ 3.6 mA and ≥ 21.0 mA</td> </tr> </table>		Honeywell Standard:	NAMUR NE 43 Compliance:	<b>Normal Limits:</b>	3.8 – 20.8 mA	3.8 – 20.5 mA	<b>Failure Mode:</b>	≤ 3.6 mA and ≥ 21.0 mA	≤ 3.6 mA and ≥ 21.0 mA
	Honeywell Standard:	NAMUR NE 43 Compliance:								
<b>Normal Limits:</b>	3.8 – 20.8 mA	3.8 – 20.5 mA								
<b>Failure Mode:</b>	≤ 3.6 mA and ≥ 21.0 mA	≤ 3.6 mA and ≥ 21.0 mA								
Output Accuracy (HART only)	±0.025 % span									
Supply Voltage Effect	0.005 % span per volt.									
Transmitter Turn on Time (includes power up & test algorithms)	HART: 2.5 sec.									
Analog Input	<b>Stability:</b> 0.01% of URL per year for 10 years <b>Maximum Lead Wire Resistance:</b> Thermocouples: 50 ohms/leg RTD (all except Pt25) and ohms: 50 ohms/leg RTD Pt25: 10 ohms/leg									
Response Time (delay + time constant)	<b>HART Analog Output</b> 130 - 230 mSec									
Update time	125 mSec									
Damping Time Constant	<b>HART:</b> Adjustable from 0 to 102 seconds in 0.1 increments. <b>Default:</b> 0.50 seconds									
Ambient Temperature Effect	<b>Digital Accuracy</b> For RTD Inputs, 0.0025 °C/°C For T/C Inputs: 0.010 °C/°C <b>Output D/A:</b> 0.0010 % of span/°C									
Cold Junction Accuracy	±0.25 °C									
Total Reference Accuracy	<b>Digital Mode</b> Digital Accuracy + C/J Accuracy (T/C input types only) <b>Analog Mode (HART only)</b> Digital Accuracy + Output D/A Accuracy + C/J Accuracy (T/C input types only) Example: Transmitter in Analog Mode with Pt100 sensor and 0 to 200°C range Total Reference Accuracy = 0.14°C + (200 °C / 100 %) * 0.025 % = 0.19 °C									
Sensor Burnout	Burnout detection is user selectable. Upscale or down scale with critical status message. For RTD or ohm type inputs; broken wire/wires will be indicated									
Vibration Effect	Per IEC60770-1 field or pipeline, high vibration level (10-2000Hz: 0.21 displacement/3g max acceleration)									
Electromagnetic Compatibility	IEC 61326-3-1									
Isolation	2000 Vdc (1400Vrms) Galvanic isolation between inputs and output.									
Stray Rejection	<b>Common Mode</b> AC (50 or 60 Hz): 120 dB (with maximum source impedance of 100 ohms) or ± 1 LSB (least significant bit) whichever is greater with line voltage applied. DC: 120 dB (with maximum source impedance of 50 ohms) or a ±1 LSB whichever is greater with 120 Vdc applied. DC (to 1 KHz): 50 dB (with maximum source of impedance of 50 ohms) or ±1 LSB whichever is greater with 50 Vac applied. <b>Normal Mode</b> AC (50 or 60 Hz): 60 dB (with 100% span peak-to-peak maximum)									
EMC Compliance	EN 61326-1 and EN 61326-3-1 (SIL)									
Lightning Protection Option	<b>Leakage Current:</b> 10 uA max @ 42.4 VDC 85 °C <b>Impulse rating:</b> <table> <tr> <td>8/20 uS</td> <td>5000 A (&gt;10 strikes)</td> <td>10000 A (1 strike min.)</td> </tr> <tr> <td>10/1000 uS</td> <td>200 A (&gt; 300 strikes)</td> <td></td> </tr> </table>	8/20 uS	5000 A (>10 strikes)	10000 A (1 strike min.)	10/1000 uS	200 A (> 300 strikes)				
8/20 uS	5000 A (>10 strikes)	10000 A (1 strike min.)								
10/1000 uS	200 A (> 300 strikes)									

### Operating Conditions – All Models

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature <sup>1</sup> STT750	25±1	77±2	-40 to 85	-40 to 185	-40 to 85	-40 to 185	-55 to 120	-67 to 248
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Supply Voltage Load Resistance	<b>HART Models:</b> 11.8 to 42.4 Vdc at terminals (IS versions limited to 30 Vdc) 0 to 1,400 ohms (as shown in Figure 2)							

<sup>1</sup> LCD Display operating temperature -20°C to +70°C . Storage temperature -30°C to 80°C.

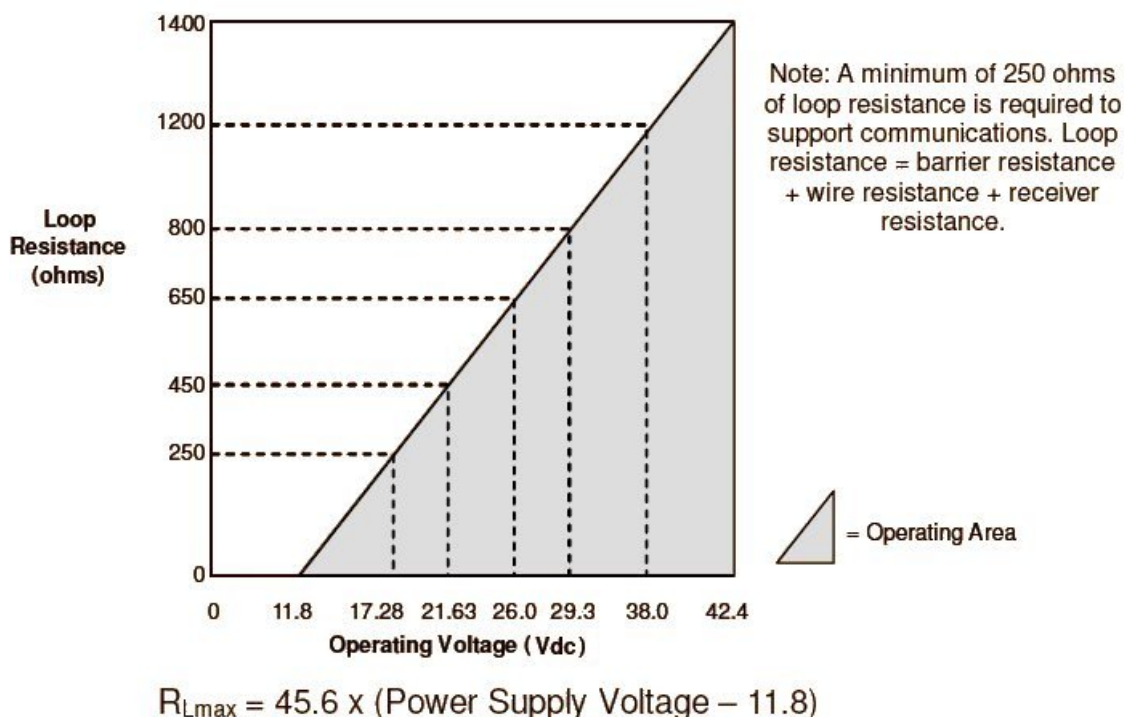


Figure 2 – HART Supply voltage and loop resistance chart & calculations

### Materials Specifications (see model selection guide for availability/restrictions with various models)

Parameter	Description
Mounting Bracket	Wall or 2" Pipe, Carbon Steel (Zinc-plated) or 316 Stainless Steel
Electronic Housing	Pure Polyester Powder Coated Low Copper (<0.4%)-Aluminum. Meets Type 4X, IP66, & IP67. All stainless steel housing is optional. Cover O Ring Material: Silicone
Sensor/Cable Entry	1/2 NPT electrical connection or M20x1.5
Mounting	Can be mounted in virtually any position using the standard mounting brackets. Brackets are designed to mount on to a wall or a 2-inch (50 mm) vertical or horizontal pipe.
Wiring	Accepts up to 16 AWG (1.5 mm diameter).
Dimensions	See Figures 4 to 9
Net Weight Lbs (kg)	Aluminum housing for transmitter with Display – 2.7 lbs (1.22 kg) Aluminum housing for transmitter w/o Display – 2.6 lbs (1.18 kg) Stainless Steel housing for transmitter with Display – 4.9 lbs (2.22 kg) Stainless Steel housing for transmitter w/o Display – 4.8 lbs (2.18 kg)

## Communications Protocols & Diagnostics

### HART Protocol

**Version:**

HART 7

**Power Supply**

Voltage: 11.8 to 42.4Vdc at terminals

Load: Maximum 1400 ohms See figure 2

Minimum Load: 0 ohms. (For handheld communications, a minimum load of 250 ohms is required)

IEC 61508 Safety Certified SIL 2 and SIL 3

### Standard Diagnostics

STT750 top level diagnostics are reported as either critical or non-critical as listed below. All diagnostics are readable via the DD/DTM tools. All critical diagnostics will appear on the Basic integral display.

**Critical Diagnostics**

Sensor Module Fault

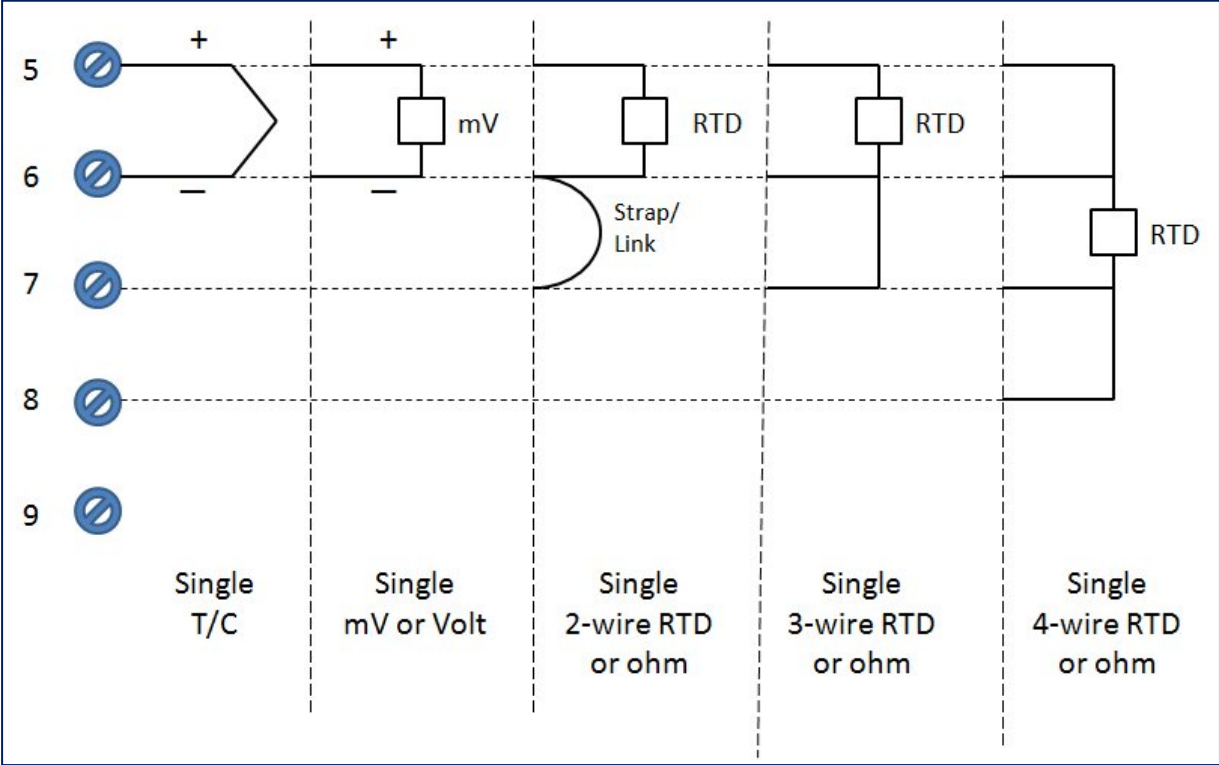
Communications Module Fault

Sensor Communications Fault

Input Fault

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**Wiring Diagram**



**Figure 3 STT750 Thermocouple, RTD, mV, ohm and Volt Connections**

## Approval Certifications:

MSG CODE	AGENCY	TYPE OF PROTECTION	COMM OPTION	Electrical Parameters	Ambient Temperature	
A	FM Approvals™ (USA)	<b>Explosion proof</b> , Certificate: FM16US0157X: Class I, Division 1, Groups A, B, C, D; <b>Dust Ignition Proof:</b> Class II, III, Division 1, Groups E, F, G; T6..T5  Class 1, Zone 1, AEx d IIC T6..T5 Gb Class 2, Zone 21, AEx tb IIIC T 95°C IP 66 Db	4-20 mA/ DE/HART/ FF/ PROFIBUS	Note 1	T5: Ta= -50°C to 85°C T6: Ta= -50°C to 65°C	
		<b>Intrinsically Safe</b> , Certificate: FM16US0157X: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4  Class I Zone 0 AEx ia IIC T4 Ga FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART /FF/ PROFIBUS	Note 2	-50°C to 70°C	
		<b>Non-Incendive</b> , Certificate: FM16US0157X: Class I, Division 2, Groups A, B, C, D; T4 Class I Zone 2 AEx nA IIC T4 Gc AEx nA IIC T4	4-20 mA/ DE/HART /FF/ PROFIBUS	Note 1	-50°C to 85°C	
		<b>Standards:</b> FM 3600:2011; ANSI/ ISA 60079-0: 2013 FM 3615:2006; ANSI/ ISA 60079-1 : 2015 FM 3616 : 2011 ; ANSI/ ISA 60079-31 : 2015 FM 3610:2010; ANSI/ ISA 60079-11 : 2014 FM 3810 : 2005 ; FM 3611:2004; ANSI/ ISA 60079-15 : 2012 ; FM 3810 : 2005 ; NEMA 250 : 2003 ; ANSI/ IEC 60529 : 2004				
		<b>Enclosure:</b> Type 4X/ IP66/ IP67	ALL	ALL	ALL	
B	CSA-Canada	<b>Explosion proof</b> , Certificate: 2689056: Class I, Division 1, Groups A, B, C, D; <b>Dust Ignition Proof:</b> Class II, III, Division 1, Groups E, F, G; T4  Zone 1 Ex d IIC T4 Gb Ex tb IIIC T 95°C IP 66 Db DIP A21 Class II, III	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C	
		<b>Intrinsically Safe</b> , Certificate: 2689056: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4  Ex ia IIC T4 Ga FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C	
		<b>Non-Incendive</b> , Certificate: 2689056: Class I, Division 2, Groups A, B, C, D; T4  Class I Zone 2 Ex nA IIC T4 Gc Ex nA IIC T4 Gc	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C	
		<b>Enclosure:</b> Type 4X/ IP66/ IP67	ALL	ALL	ALL	



B		<p><b>Standards:</b> CSA C22.2 No. 0-10; CSA 22.2 No. 25-1966 (reaffirmed 2009); CSA C22.2 No. 30-M1986 (reaffirmed 2012); CSA C22.2 No. 94-M91; CSA C22.2 No. 142-M1987 (reaffirmed 2009); CSA-C22.2No.157-92 (reaffirmed 2012); C22.2 No. 213-M1987(reaffirmed 2012); C22.2 No. 60529-05 C22.2 No. CSA 60079-0:2011; C22.2 No. 60079-1: 2011; C22.2 No. 60079-11: 2011; C22.2 No. 60079-15: 2012; C22.2 No. 60079-31: 2012;</p> <p>ANSI/ ISA12.12.01-2012; ANSI/ ISA 60079-0 (12.00.01): 2009 ; ANSI/ ISA 60079-1 (12.22.01): 2009 ; ANSI/ ISA 60079-11(12.02.01) : 2012; ANSI/ ISA 60079-26 (12.00.03) : 2011; ANSI/ ISA 60079-15(12.12.02) : 2012 ; ANSI/ ISA 60079-27 (12.02.04) : 2006; ANSI/ ISA 60079-31(12.10.03) : 2009 ; FM Class 3615: Aug 2006; FM Class 3616: Dec 2011; ANSI/ IEC 60529 : Edition 2.1 ANSI/ UL 913: Edition 7; ANSI/ UL 916 : Edition 4 ;</p>			
C	ATEX	<b>Flameproof</b> , Sira 14ATEX2046X: II 2 G Ex d IIC T4 Gb II 2 D Ex tb IIIC T 95°C Db IP 66/ IP67	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe</b> , Sira 14ATEX2046X: II 1 G Ex ia IIC T4 Ga FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C  FISCO: -50°C to 45°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
		<b>Standards:</b> EN 60079-0: 2012; EN 60079-1 : 2007; EN 60079-31 : 2009 EN 60079-11: 2011; EN 60079-26 : 2006; EN 60529 : 2000 + A1			
		<b>Non Sparking</b> , Sira 14ATEX4052X: II 3 G Ex nA IIC T4 Gc	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
		<b>Standards:</b> EN 60079-0: 2012; EN 60079-15 : 2010; IEC 60529 : 2009 with Corr 3			
D	IECEx	<b>Flameproof</b> , SIR 14.0020X Ex d IIC T4 Gb Ex tb IIIC T 95°C IP 66/ IP67	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe</b> , SIR 14.0020X Ex ia IIC T4 Ga FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C  FISCO: -50°C to 45°C
		<b>Non Sparking</b> , SIR 14.0020X Ex nA IIC T4 Gc	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
		<b>Standards:</b> IEC 60079-0: 2011, Edition 6; IEC 60079-1 : 2007-04, Edition 6; IEC 60079-11 : 2011, Edition 6; IEC 60079-15 : 2010, Edition 4 IEC 60079-26 : 2006, Edition 2; IEC 60079-31 : 2008, Edition 1 IEC 60529 : 2009 with Corr 3			
E	SAEx (South Africa)	<b>Flameproof:</b> Ex d IIC T4 Gb Ex tb IIIC T 85°C IP 66 Db	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe:</b> Ex ia IIC T4 Ga FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C
		<b>Non Sparking:</b> Ex nA IIC T4 Gc	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL

F	INMETRO	<b>Flameproof:</b> Ex d IIC T4 Gb Ex tb IIIC T 95°C IP 66 Db	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe:</b> Ex ia IIC T4 Ga FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C
		<b>Non Sparking:</b> Ex nA IIC T4 Gc	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
G	NEPSI (CHINA)	<b>Flameproof:</b> Ex d IIC T4 Gb Ex tb IIIC T 85°C IP 66	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe:</b> Ex ia IIC T4 FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C
		<b>Non Sparking:</b> Ex nA IIC T4	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
H	KOSHA (KOREA)	<b>Flameproof:</b> Ex d IIC T4 Gb Ex tD A21 T 95°C IP 66/ IP67	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe:</b> Ex ia IIC T4 FISCO Field Device (Only for FF Option) Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
J	EAC Ex (Russia, Belarus and Kazakhstan)	<b>Flameproof:</b> 1 Ex d IIC T4 Gb Ex tb IIIC T95°C Db	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Intrinsically Safe:</b> 0 Ex ia IIC T4 Ga Ex ia IIIC T4 Db FISCO Field Device (Only for FF Option) 0 Ex ia IIC T4	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C FISCO: -50°C to 45°C
		<b>Non Sparking:</b> 2 Ex nAc IIC T4	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C
		<b>Enclosure:</b> IP66/ IP67	ALL	ALL	ALL
P	CCoE (India)	Ex ia IIC T4 Ga	4-20 mA/ DE/HART/ FF	Note 2	-50°C to 70°C FISCO: -50°C to 45°C
		Ex d IIC T4 Gb	4-20 mA/ DE/HART/ FF	Note 1	-50°C to 85°C

## Notes

### 1. Operating Parameters:

4-20 mA/ HART (Loop Terminal)

Voltage= 11 to 42 V

Current= 4-20 mA Normal (3.8 – 23 mA Faults)

### 2. Intrinsically Safe Entity Parameters

For details see Control Drawing in the User's manual (34-TT-25-13)

**Mounting & Dimensional Drawings**

TRANSMITTER ENCLOSURE CAN BE ROTATED A TOTAL OF 90° FROM THE STANDARD MOUNTING POSITION

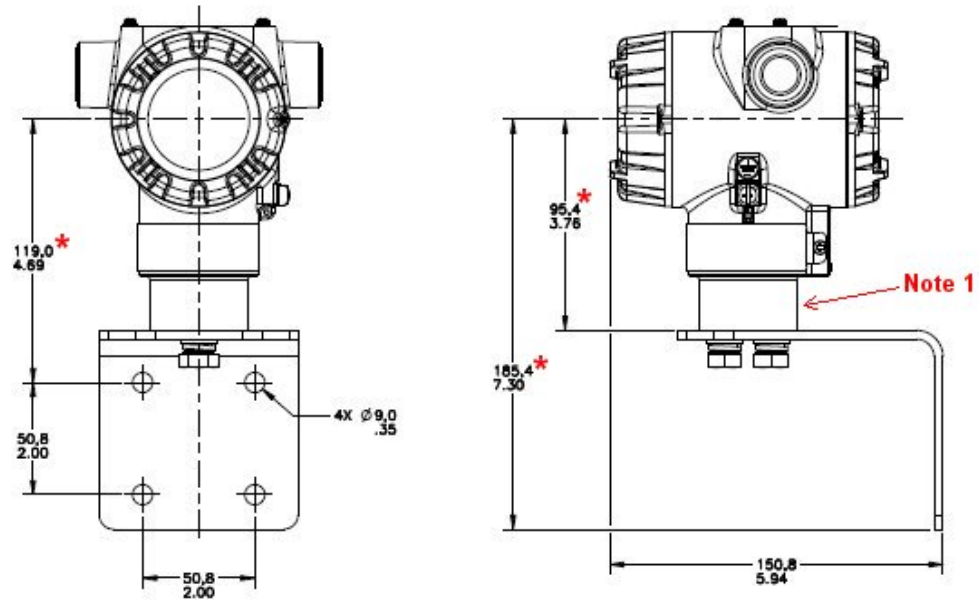
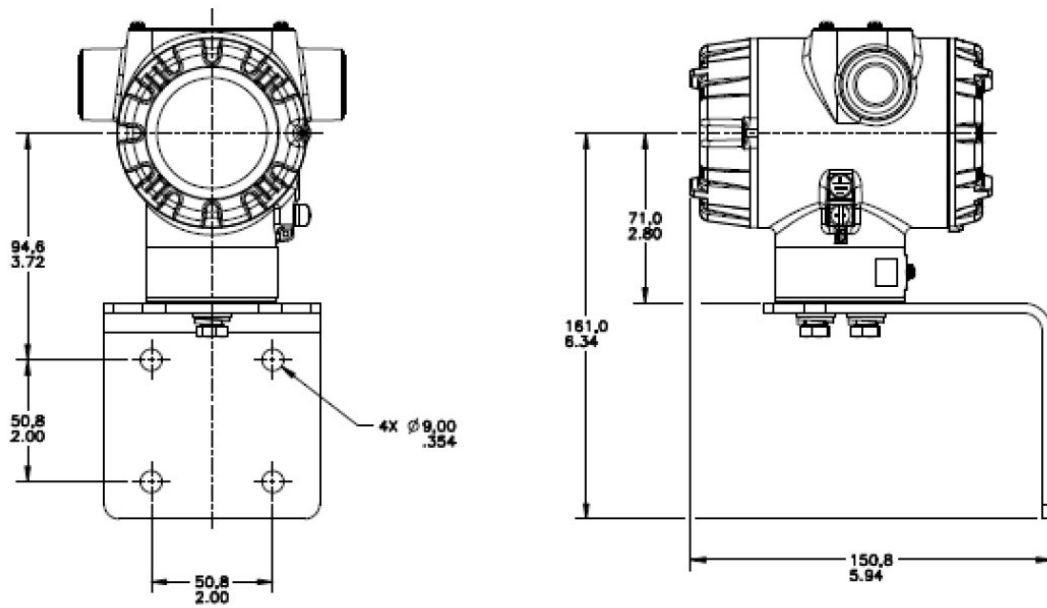


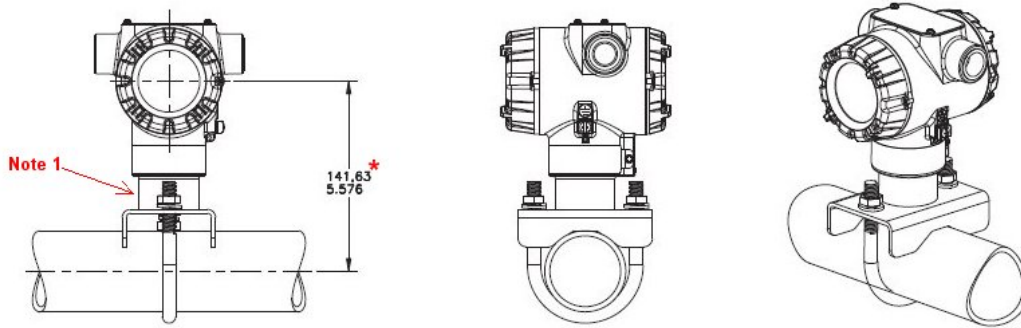
Figure 4 – STT750 with adapter housing - Horizontal Wall Mounting



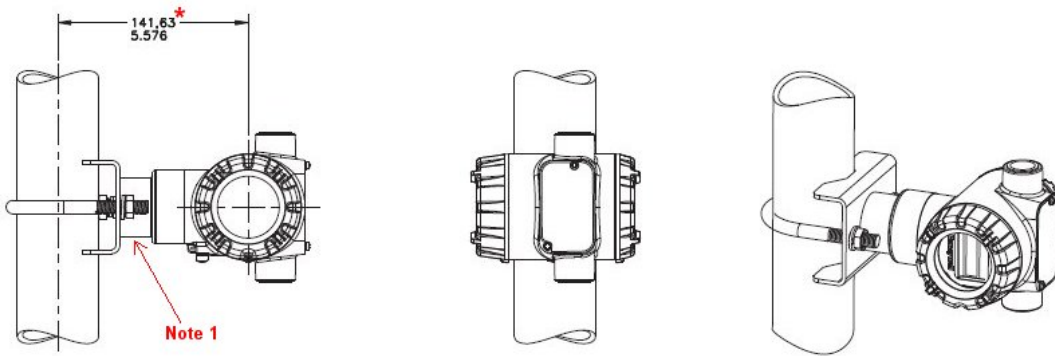
**HORIZONTAL WALL MOUNT**

TRANSMITTER ENCLOSURE CAN BE ROTATED A TOTAL OF 90° FROM THE MOUNTING POSITION SELECTED

Figure 5 – STT750 No-Adapter Horizontal Wall Mounting

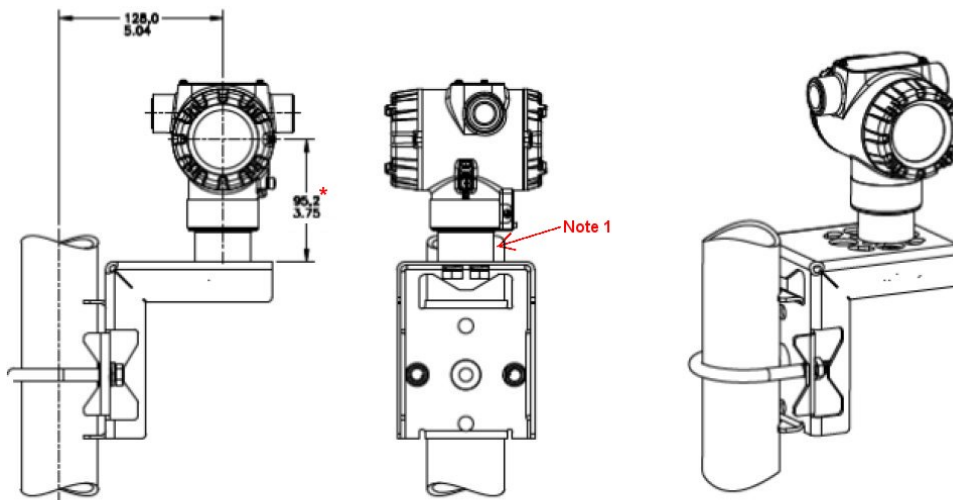


**HORIZONTAL FLAT PIPE MOUNT**



**VERTICAL FLAT PIPE MOUNT**

**Figure 6 – STT750 Pipe Mount with adapter housing - Horizontal & Vertical**



VERTICAL ANGLE PIPE MOUNT

**Figure 7 – STT750 Pipe Mount, Vertical**

\* **Note 1:** Figure 6 and 7. The housing adapter may not be present on all transmitter models. If the housing adapter is not present, subtract 24,5mm (0,96 inches) from the dimension specified.

## Mounting & Dimensional Drawings

Reference Dimensions:  $\frac{\text{millimeters}}{\text{inches}}$

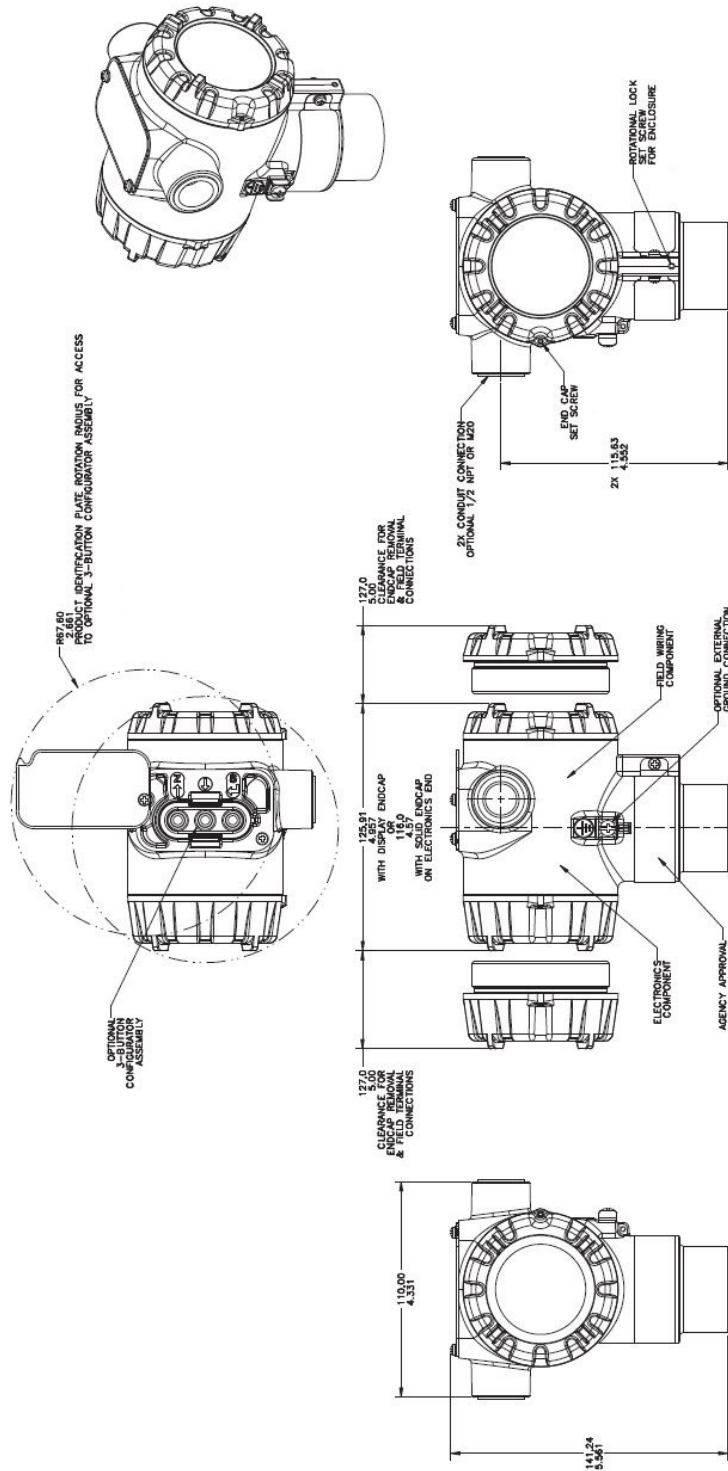


Figure 8 – STT750 with adapter housing - Dimensions

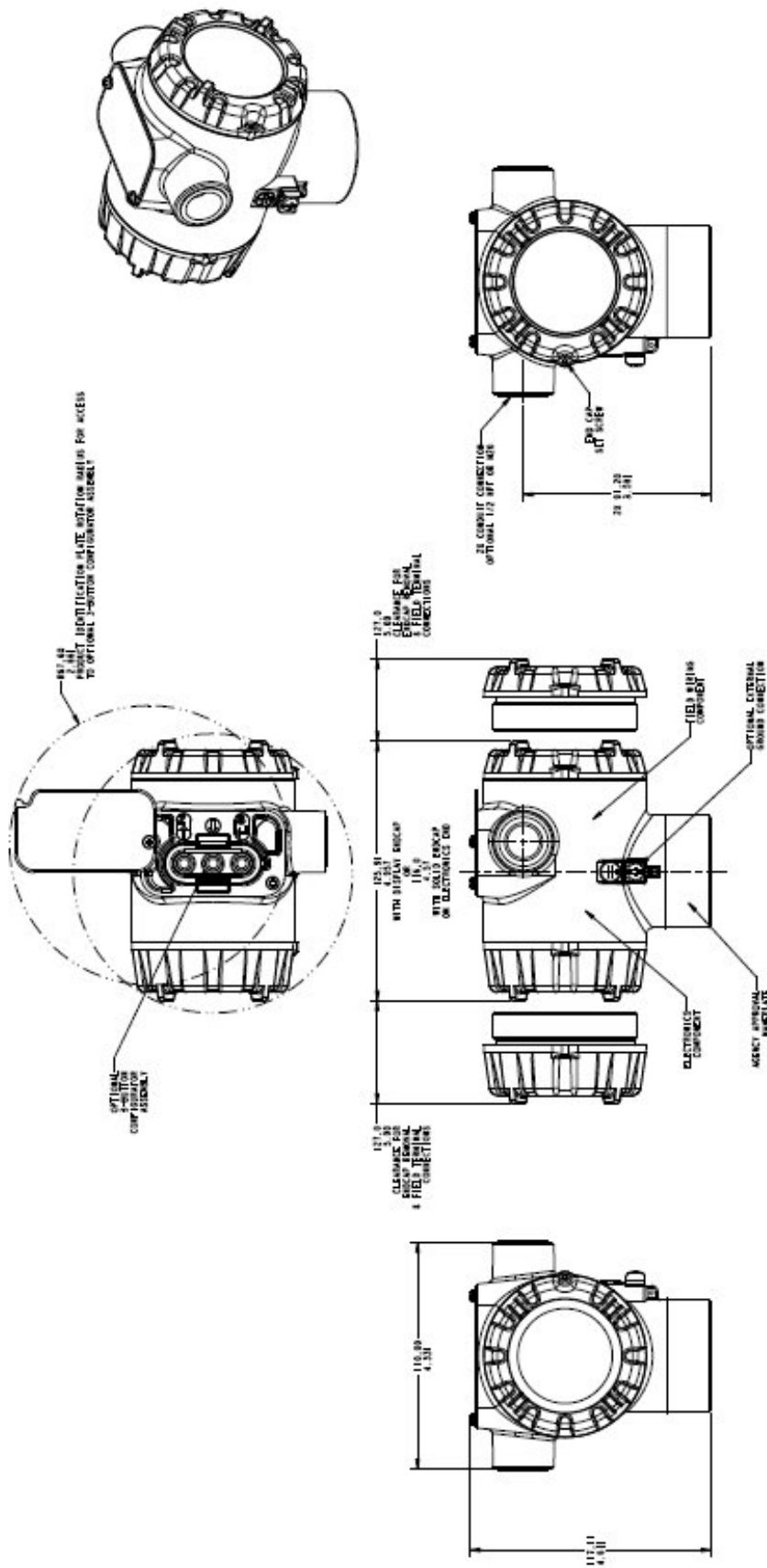


Figure 9 – STT750 no adapter housing dimensions

The Model Selection Guide is subject to change and is inserted into the specification as guidance only.

**Model Selection Guide**

### Model STT750 Smart Temperature Transmitter

Model Selection Guide:  
34-44-16-20 Issue 10 Rev 1

**Instructions:** Make selections from all Tables Key through XIII using column below the proper arrow. Asterisk indicates availability. Letter (a) refer to restrictions highlighted in the restrictions table. Tables delimited with dashes.

Key	I	II	III	IV	V	VI	VII	VIII	IX
STT750	-	-	-	-	-	-	-	-	X X X X

<b>KEY NUMBER</b>	<b>Input Type</b>	<b>Availability Selection</b>
	Universal Input	STT750 *

<b>Table I</b>	<b>No of Inputs</b>	
<b>Input Details</b>	Single	S *

<b>Table II</b>	<b>Digital output</b>	
<b>Digital Output</b>	No	0 *

<b>TABLE III</b>	<b>Agency Approvals (see data sheet for Approval Code Details)</b>	
<b>Approvals</b>	No Approvals Required FM Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof ATEX Explosion proof, Intrinsically Safe & Non-incendive IECEX Explosion proof, Intrinsically Safe & Non-incendive SAEx Explosion proof, Intrinsically Safe & Non-incendive INMETRO Explosion proof, Intrinsically Safe & Non-incendive NEPSI Explosion proof, Intrinsically Safe & Non-incendive KOSHA Explosion proof, Intrinsically Safe & Non-incendive EAC Explosion proof, Intrinsically Safe & Non-incendive CCoE Explosion proof, Intrinsically Safe & Non-incendive	0 * A * B * C * D * E * F * G * H * J * P *

<b>TABLE IV</b>	<b>TRANSMITTER ELECTRONICS SELECTIONS</b>			
<b>a. Electronic Housing Material &amp; Connection Type</b>	<b>Housing and Material</b>	<b>Connection</b>	<b>Lightning protection</b>	
	Polyester Powder Coated Aluminum	1/2 NPT	None	A__ *
	Polyester Powder Coated Aluminum	M20	None	B__ *
	Polyester Powder Coated Aluminum	1/2 NPT	Yes	C__ *
	Polyester Powder Coated Aluminum	M20	Yes	D__ *
	316 Stainless Steel (Grade CF8M)	1/2 NPT	None	E__ *
	316 Stainless Steel (Grade CF8M)	M20	None	F__ *
	316 Stainless Steel (Grade CF8M)	1/2 NPT	Yes	G__ *
316 Stainless Steel (Grade CF8M)	M20	Yes	H__ *	
<b>b. Output/ Protocol</b>	<b>Analog Output</b>		<b>Digital Protocol</b>	
	4-20mA dc		HART Protocol	
<b>c. Customer Interface Selections</b>	<b>Indicator</b>	<b>Config Buttons</b>		<b>Languages</b>
	None	None		None
	None	Yes (Zero/Span Only)		None
	Basic	None		English
Basic	Yes		English	

<b>TABLE V</b>	<b>CONFIGURATION SELECTIONS</b>			
<b>a. Application Software</b>	<b>Diagnostics</b>			
	Standard Diagnostics			1__ *
<b>b. Output Limit, Failsafe &amp; Write Protect Settings</b>	<b>Write Protect</b>	<b>Fail Mode</b>	<b>High &amp; Low Output Limits<sup>3</sup></b>	
	Disabled	High> 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)	
	Disabled	Low< 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)	
	Enabled	High> 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)	
Enabled	Low< 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)		
<b>c. General Configuration</b>	Factory Standard			__S *
	Custom Configuration			__C *

<sup>3</sup> NAMUR Output Limits 3.8 - 20.5mAdc can be configured by the customer or select custom configuration Table Vc

TABLE VI CALIBRATION & ACCURACY SELECTIONS			
a. Accuracy and Calibration	Accuracy	Calibrated Range	Calibration Qty
	Standard	Factory Std	Single Calibration
	Standard	Custom (Unit Data Required)	Single Calibration

A	*
B	*

TABLE VII ACCESSORY SELECTIONS		
a. Mounting Bracket	Bracket Type	Material
	None	None
	Flat Pipe Mounting Bracket	Carbon Steel
	Flat Pipe Mounting Bracket	316 SS
	Angle Pipe Mounting Bracket	Carbon Steel
	Angle Pipe Mounting Bracket	316 SS
	Wall Mounting Bracket	Carbon Steel
Wall Mounting Bracket	316 SS	
b. Customer Tag	Customer Tag Type	
	No customer tag	
	One Wired Stainless Steel Tag (Up to 4 lines 26 char/line)	
	Two Wired Stainless Steel Tag (Up to 4 lines 26 char/line)	
c. Unassembled Conduit Plugs & Adapters <th colspan="2">Unassembled Conduit Plugs &amp; Adapters</th>	Unassembled Conduit Plugs & Adapters	
	No Conduit Plugs or Adapters Required	
	1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter	
	1/2 NPT 316 SS Certified Conduit Plug	
	M20 316 SS Certified Conduit Plug	
	Minifast® 4 pin (1/2 NPT) (not suitable for X-Proof applications)	
Minifast® 4 pin (M20) (not suitable for X-Proof applications)		

0 ___	*
1 ___	*
3 ___	*
2 ___	*
4 ___	*
5 ___	*
6 ___	*

_ 0 _ _	*
_ 1 _ _	*
_ 2 _ _	*
_ 3 _ _	*

_ _ A0	*
_ _ A2	n
_ _ A6	n
_ _ A7	m
_ _ A8	n
_ _ A9	m

TABLE VIII Other Certifications and Options		
c. Certifications and Warranty	None - No additional options	
	Certificate of Conformance	
	Calibration Test Report & Certificate of Conformance	
	Certificate of Origin	
	SIL2/3 Certificate	
	Extended Warranty Additional 1 year	
	Extended Warranty Additional 2 years	
	Extended Warranty Additional 3 years	
	Extended Warranty Additional 4 years	

00	*	b
F3	*	
F1	*	
F5	*	
FE	j	b
01	*	
02	*	
03	*	
04	*	

TABLE IX Manufacturing Specials		
Factory	Factory Identification	

0000	*
------	---

**MODEL RESTRICTIONS**

Restriction Letter	Available Only with		Not Available with	
	Table	Selection(s)	Table	Selection(s)
j			Vb	_ 1,2 _
m	IVa	B, D,F, H, _ _		
n	IVa	A, C, E, G, _ _		
b	Select only one option from this group			

**FIELD INSTALLABLE REPLACEMENT PARTS**

Description	Kit Number
Integrally Mounted Basic Indicator Kit (Compatible with all Electronic Modules)	50049911-502
Single Input Terminal Strip w/o Lightning Protection for HART Modules	50086421-511
Single Input Terminal Strip w/Lightning Protection for HART Modules	50086421-513
HART Electronics Module Kit	50086423-501
HART Electronics Module w/connection for external configuration buttons	50086423-502

**PRODUCT MANUALS**

Description	Part Number
Product Manual STT750 Smart Temperature Transmitter User Manual - English	34-TT-25-13
Product Manual STT850/750 Smart Temperature Transmitter Safety Manual - English	34-TT-25-05
Product Manual STT850 Smart Temperature Transmitter HART Communications Manual - English	34-TT-25-15

All product documentation is available at [www.honeywellprocess.com](http://www.honeywellprocess.com).



## Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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[dfs-tac-support@honeywell.com](mailto:dfs-tac-support@honeywell.com)

*Specifications are subject to change without notice.*

For more information  
To learn more about SmartLine Temperature,  
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34-TT-03-16  
January 2020  
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