SmartLine

Honeywell

Technical Information

STF700 SmartLine Flange Mounted Level
Specification 34-ST-03-123, September 2025

Introduction

Part of the SmartLine® family of products, the STF700 is a flange mounted level transmitter suitable for monitoring, control and data acquisition featuring piezoresistive sensor technology. STF700 transmitters may be directly mounted onto a tank flange and are offered with a variety of tank connections including various flush and extended diaphragm configurations. STF700 offers high accuracy and stability over a wide range of level applications.

The SmartLine family is also fully tested and compliant with Experion ® PKS providing the highest level of compatibility assurance and integration capabilities.

SmartLine easily meets the most demanding application needs for pressure measurement applications.

Best in Class Features:

- Accuracies up to 0.05% of span standard & 0.04% of span optional.
- Stability up to 0.020% of URL per year for 10 years.
- Automatic static pressure & temperature compensation.
- Rangeability up to 100:1.
- Response times as fast as 100ms.
- Easy to use and intuitive display capabilities.
- Intuitive External zero, span, & configuration capability.
- Comprehensive on-board diagnostic capabilities.
- Integral Dual Seal design for highest safety based on ANSI/NFPA 70-202 and ANSI/ISA 12.27.0.
- World class overpressure protection.
- Full compliance to SIL 2/3 requirements.
- Modular design characteristics.
- Available with additional 4-year warranty.

Communications/Output Options:

- HART ® (version 7.0)

Figure 1 – STF700 Flanged Level Transmitters feature field-proven piezoresistive sensor technology

Span & Range Limits:

Model	URL inH_2O (mbar)	LRL inH_2O (mbar)	Min Span inH_2O (mbar)
STF725	400 (1000)	-400 (-1000)	4.0 (10.0)
STF72P	400 (1000)	-400 (-1000)	4.0 (10.0)
Model	**psi (bar)**	**psi (bar)**	**psi (bar)**
STF735	100 (7.0)	-100 (-7.0)	1 (0.07)
STF73P	100 (7.0)	-100 (-7.0)	1 (0.07)

Description

The SmartLine family pressure transmitters are designed around a high performance piezo-resistive sensor. This one sensor actually integrates multiple sensors linking process pressure measurement with on-board static pressure (DP Models) and temperature compensation measurements.

Unique Indication/Display Option

Standard LCD Display Features

- Modular (may be added or removed in the field).
- Supports HART protocol variant.
- 0, 90,180, & 270 degree position adjustments.
- Four configurable screens.
- Standard and custom measurement units available.
- Display calculated flow (square root) value in addition to analog output signal.
- 2 Lines 6 digits PV (9.95H x 4.20W mm) 8 Characters.
- Write protect Indication.
- Built-in Basic Device Configuration through Internal or External Buttons – Range/Engineering Unit/Loop Test /Loop Calibration/Zero /Span Setting.
- Multiple language capabilities (EN, RU).

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

- SmartLine communications protocols all meet the most current published standards for HART.
- All ST 700 units are Experion tested to provide the highest level of compatibility assurance.

Configuration Tools

Integral Two 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 when either display option is selected. Zero/span capabilities are also optionally available via these buttons with or without selection of a display option.

Handheld Configuration

SmartLine transmitters feature two-way communication and configuration capability between the operator and the transmitter. All Honeywell transmitters are designed and tested for compliance with the offered communication protocols and are designed to operate with any standards compliant handheld configuration device, such as Honeywell Versatilis Configurator.

Personal Computer Configuration

On a personal computer or laptop, Honeywell Field Device Manager (FDM) Software and FDM Express can be used for managing HART device configurations.

Modular Design

To help contain maintenance & inventory costs, all ST 700 transmitters are modular in design supporting the user's ability to replace meter bodies, standard displays or electronic modules without affecting overall performance. Each meter body is uniquely characterized to provide in-tolerance performance over a wide range of application variations in temperature and pressure.

Modular Features

- Meter body replacement
- Add or remove standard displays
- Add or remove lightning protection (terminal connection)

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

Performance Specifications

Reference Accuracy (conformance to +/-3 Sigma)

Table 1

Model	URL	LRL	Min Span	Maximum Turndown Ratio	Stability (%URL/Year for 10 years)	Reference Accuracy[1,2] (% Span) Standard / Optional
STF725	400 in H_2O (1000mbar)	-400 in H_2O (1000mbar)	4 in H_2O (10.0mbar)	100:1	0.02	0.05 / 0.040
STF72P	400 in H_2O (1000mbar)	-400 in H_2O (1000mbar)	4 in H_2O (10.0mbar)	100:1	0.02	0.05 / 0.040
STF735	100 psi (7.0 bar)	-100 psi (-7.0 bar)	1 psi (0.07 bar)	100:1	0.03	0.05 / 0.040
STF73P	100 psi (7.0 bar)	-100 psi (-7.0 bar)	1 psi (0.07 bar)	100:1	0.03	0.05 / 0.040

Zero and span may be set anywhere within the listed (URL/LRL) range limits

Accuracy, Span, Temperature and Static Pressure Effect: (Conformance to +/-3 Sigma)

Table 2

			Accuracy[1,2] (% of Span)				Combined Zero & Span Temperature Effect (% Span / 28°C (50°F))		Combined Zero & Span Static Line Pressure Effect (% Span/300psi)	
	Model	URL	Reference Turndown	A	B	C (see URL units)	D	E	F	G
Standard Accuracy	STF725	400 in H_2O (1000 mbar)	16:1	0.005	0.045	25 (62.5)	0.280	0.045	0.110	0.0125
	STF72P	400 in H_2O (1000 mbar)					0.055	0.025	0.030	0.007
	STF735	100 psi (7.0 bar)	4:1			25 (1.75)	0.080	0.080	0.110	0.0125
	STF73P	100 psi (7.0 bar)					0.070	0.015	0.032	0.005
Standard Accuracy	STF725	400 in H2O (1000mbar)	16:1	0.005	0.045	25 (62.5)	0.280	0.045	0.110	0.0125
	STF72P	400 in H2O (1000mbar)					0.055	0.025	0.030	0.007
	STF735	100 psi (7.0 bar)	4:1	0.005	0.045	25 (1.75)	0.080	0.080	0.110	0.0125
	STF73P	100 psi (7.0 bar)					0.070	0.015	0.032	0.005
			Turn Down Effect				Temp Effect		Static Effect	
			$\pm[A+B]$ if $Span \geq C$ $\pm\left[A+B\left(\frac{C}{Span}\right)\right]$ if $Span < C$				$\pm[D+E\left(\frac{URL}{Span}\right)]$		$\pm[F+G\left(\frac{URL}{Span}\right)]$	

Total Performance (% of Span):

Total Performance = +/- √(Accuracy)² + (Temp Effect)²+ (Static Line Pressure Effect)²

Total Performance Examples: (standard accuracy, 5:1 Turndown, up to 50 °F shift & up to 300 psi Static Pressure)

STF725 @ 80 in H_2O: 0.536 **STF735 @ 20 psi: 0.514**

STF72P @ 80 in H_2O: 0.191 **STF73P@ 20 psi: 0.167**

Typical Calibration Frequency: Calibration verification is recommended every two (2) years

Notes:

1. Terminal Based Accuracy – Includes effects of linearity, hysteresis and repeatability. Analog output adds 0.006% of span
2. For zero based spans and reference conditions of 25ºC, 0 psig static pressure, 10 to 55% RH.

Operating Conditions – All Models

Parameter	Reference Condition		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature	25±1	77±2	-40 to 85	-40 to 185	-40 to 85	-40 to 185	-55 to 120	-67 to 248
Meter Body Temperature	25±1	77±2	-40 to 110	-40 to 230	-40 to 125	-40 to 257	-55 to 120	-67 to 248
Process Interface Temp. STF725, STF735 only	25±1	77±2	-40 to 110	-40 to 230	-40 to 175[1]	-40 to 350[1]	-55 to 125	-67 to 257
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Minimum Pressure **mmHg absolute** **inH$_2$O absolute**	atmospheric atmospheric		25 13		2 (short term[2]) 1 (short term[2])			
Supply Voltage	10.8 to 42.4 Vdc at terminals							
Load Resistance	0 to 1,440 ohms (as shown in **Figure 2**)							

1 For CTFE fill fluid, the maximum temperature rating is 150°C (300°F)

2 Short term equals 2 hours at 70°C (158 °F)

Maximum Allowable Working Pressure (MAWP) [4,5]

(ST 700 products are rated to Maximum Allowable Working Pressure. MAWP depends on Approval Agency and transmitter materials of construction.)

STF725 & STF735	Flange Material	Ambient Temperature -29 to 38°C [-20 to 100°F]	Max Meterbody Temperature 125°C [257°F]	Process Interface Temperature 175°C [350°F]
ANSI Class 150	Carbon Steel	285 [19.6]	245 [16.9]	215 [14.8]
psi [bar]	304 S.S.	275 [19.0]	218 [15.0]	198 [13.7]
	316 S.S.	275 [19.0]	225 [15.5]	205 [14.1]
ANSI Class 300	Carbon Steel	740 [51.0]	668 [46.0]	645 [44.5]
psi [bar]	304 S.S.	720 [49.6]	570 [39.3]	518 [35.7]
	316 S.S.	720 [49.6]	590 [40.7]	538 [37.1]
DN PN40	Carbon Steel	580 [40.0] [3]	574 [39.6]	559 [38.5]
psi [bar]	304 S.S.	534 [36.8] [3]	419 [28.9]	385 [26.5]
	316 S.S.	534 [36.8] [3]	434 [29.9]	399 [27.5]
STF72P& STF73P ANSI Class 150 psi [bar]	316L Stainless Steel	230 [15.9]	185 [12.8]	No rating at this temp

3 Ambient Temperature for DN PN40 is –10 to 50°C [14 to 122 F]

4 MAWP applies for temperature range -40 to 125°C. However, Static Pressure Limit is de-rated to 3,000 psi from -26°C to -40°C.

5 Consult factory for MAWP of ST 700 transmitters with CSA approval.

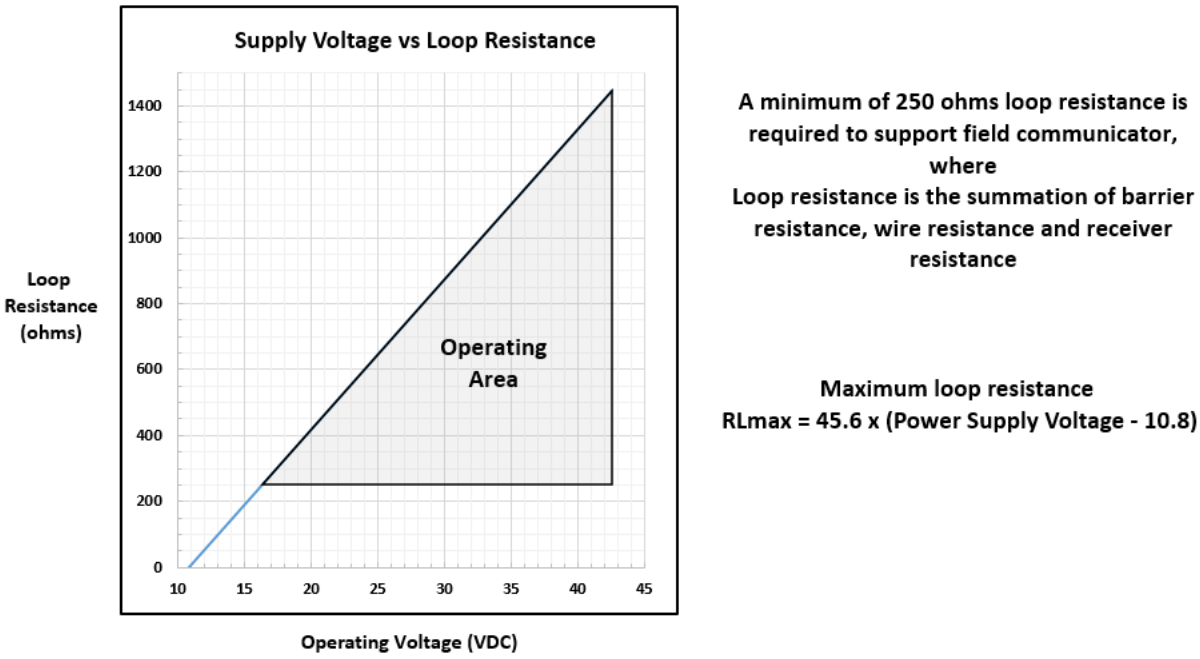


Figure 2 - Supply voltage and loop resistance chart & calculations

Performance Under Rated Conditions – All Models

Parameter	Description
Analog Output **Digital Communications**:	Two-wire, 4 to 20 mA Honeywell HART 7 protocol
Output Failure Modes	**Honeywell Standard** / **NAMUR NE 43 Compliance** **Normal Limits:** 3.8 – 20.8 mA / 3.8 – 20.5 mA **Failure Mode:** ≤ 3.6 mA and ≥ 21.0 / ≤ 3.6 mA and ≥ 21.0 mA
Supply Voltage Effect	0.005% span per volt
Transmitter Turn on Time (includes power up & test algorithms)	2.5 seconds
Response Time (delay + time constant)	100ms
Damping Time Constant	Adjustable from 0 to 32 seconds in 0.1 increments. **Default:** 0.50 seconds
Vibration Effect	Less than +/- 0.1% of URL w/o damping Per IEC60770-1 field or pipeline, high vibration level (10-2000Hz: 0.21 displacement/3g max acceleration)
Electromagnetic Compatibility	IEC 61326-3-1
Lightning Protection Option	**Leakage Current:** 10uA max @ 42.4VDC 93C **Impulse rating:** 8/20us 5000A (>10 strikes) 10000A (1 strike min.) 10/1000us 200A (> 300 strikes)

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

Parameter	Description
Barrier Diaphragms Material	316L SS, Hastelloy® C-276[2]
Process Head Material	316 SS[4], Carbon Steel (Zinc-plated) [5], Hastelloy® C-276*[6]
Vent/Drain Valves & Plugs [1]	316 SS[4], Hastelloy® C-276[2]
Gasket Ring Material (Wetted)	316/316L SS, Hastelloy® C-276*[2]
Extension Tube Material	316 SS[4]
Head Gaskets	Glass-filled PTFE standard. Viton® optional.
Meter Body Bolting	Carbon Steel (Zinc plated) standard. Options include 316 SS, NACE A286 SS bolts.
Optional Adapter Flange and Bolts	Adapter Flange materials include 316 SS[4], Hastelloy® C-276[6] Bolt material for flanges is dependent on process head bolts material chosen. Standard adaptor seal material is glass-filled PTFE. Viton optional.
Mounting Flange **STF725, STF735** **STF72P, STF73P**	**Flush or Extended Diaphragm:** Zinc Chromate plated Carbon Steel[5], 304 SS, or 316 SS[4]. 316L SS *(NOTE: Mounting Flange is process wetted.)*
Fill Fluid	Silicone 200, CTFE
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.
Mounting	See Figure 3 for typical flange mounting arrangement.
Process Connections **All Models** **STF725, STF735** **STF72P, STF73P**	 **Process Head:** 1/4-inch NPT; 1/2-inch NPT with adapter and DIN, standard options. **Flange:** 2, 3 or 4-inch Class 150 or 300 ANSI; DN50-PN40, DN80-PN40 or DN100-PN40 DIN flange. **Extended Diaphragm:** 2, 4, or 6 inches (50, 101, 152 mm) long. 2 or 3-inch, Class 150 ANSI flange.
Wiring	Accepts up to 16 AWG (1.5 mm diameter).
Dimensions	See Figure 4, Figure 5 & Figure 6
Net Weight	STF72P, STF73P:14-19 pounds (6.4 - 8.7Kg) with Aluminum Housing STF725, STF735: 18-32 pounds (8.2 - 14.5Kg) with Aluminum Housing

[1] Vent/Drains are sealed with Teflon®

[2] Hastelloy® C-276 or UNS N10276

[4] Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.

[5] Carbon Steel heads are zinc-plated and not recommended for water service due to hydrogen migration. For that service, use 316 stainless steel wetted Process Heads.

[6] Hastelloy® C-276 or UNS N10276. Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy® C-276

* Flush design only.

Communications Protocol & Diagnostics

HART Protocol

Version:

HART 7

Standard Diagnostics

ST 700 top level diagnostics are reported as either critical or non-critical and readable via the DD/DTM/FDI tools or Standard integral display. Some of the diagnostics are listed below:

Critical Diagnostics

- Electronics Module Fault.
- Meter body Memory Corruption.
- Config Data Corruption.
- Electronics Module Diagnostics Failure.
- Meter body Critical Failure.
- Sensor Communication Timeout.

Non-Critical Diagnostics

- Display Failure.
- Electronics Module Comm Failure.
- Meter body Excess Correct.
- Sensor Over Temperature.
- Fixed Current Mode.
- PV Out of Range.
- No DAC Compensation.

Refer to the product user manual for comprehensive list of diagnostics and details.

Hazardous Area Certifications:

MSG CODE	AGENCY	TYPE OF PROTECTION	COMM. OPTION	ELECTRICAL PARAMETERS	AMBIENT TEMP (Ta)
A	FM Approvals™ USA	Explosionproof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; T6..T5 Class I, Zone 0/1, AEx db IIC T6..T5 Ga/Gb Class II, Zone 21, AEx tb IIIC T95° Db	All	Note 1	T5: -50 ºC to 85ºC T6: -50 ºC to 65ºC
		Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G: T4 Class I, Zone 0, AEx ia IIC T4 Ga Ex ia IIC T4 Ga; Ex ic IIC T4 Gc	4-20 mA / HART	Note 2a	-50 ºC to 70ºC
		Nonincendive: Class I, Division 2, Groups A, B, C, D locations, T4 Class I, Zone 2, AEx nA IIC T4 Gc	4-20 mA / HART	Note 1	-50 ºC to 85ºC
		Enclosure: Type 4X/ IP66/ IP67	All	All	-
		STANDARDS: FM Class 3600:2011; FM Class 3610: 2010; FM Class 3611: 2004; FM Class 3615: 2006; FM Class 3616: 2011; FM Class 3810: 2005; ANSI/ISA 60079-0: 2013; ANSI/UL 60079-1: 2015; ANSI/UL 60079-11: 2014; ANSI/ISA 60079-15: 2012; ANSI/UL 60079-26: 2017; ANSI/UL 60079-31: 2015; ANSI/NEMA 250: 2003; ANSI/ IEC 60529: 2004			
B	Canadian Standards Association (CSA) USA and Canada	**Explosion Proof:** Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1, T6..T5 Class I Zone 1 AEx db IIC T6..T5 Ga/Gb Ex db IIC T6..T5 Ga/Gb Zone 22 AEx tb IIIC T95° Db Ex tb IIIC T95° Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G; Class III, Division 1, T4 Class I Zone 0, AEx ia IIC T4 Ga Class I Zone 2, AEx ic IIC T4 Gc Ex ia IIC T4 Ga Ex ic IIC T4 Gc	4-20 mA / HART	Note 2	-50°C TO 70°C
		Nonincendive: Class I, Division 2, Groups A, B, C, D; Class II, Division 2, Groups F, G; Class III, Division 2, T4 Class I Zone 2 AEx nA IIC T4 Gc Ex nA IIC T4 Gc	4-20 mA / HART	Note 1	-50°C to 85°C
		Enclosure: Type 4X/ IP66/ IP67	All	All	-
		STANDARDS: CSA C22.2 No. 0-10; CSA C22.2 No. 94-M91; CSA C22.2 No. 25-1966; CSA C22.2 No. 30-M1986; CSA C22.2 No. 142-M1987; CSA C22.2 No. 157-92; CSA C22.2 No. 213-M1987; CSA-C22.2 No. 60529:05; CSA-C22.2 No. 60079-0:11; CSA-C22.2 No. 60079-1:11; CSA-C22.2 No. 60079-11:11; CSA-C22.2 No. 60079-15:12; CSA-C22.2 No. 60079-31:12; ISA 12.12.01-			

MSG CODE	AGENCY	TYPE OF PROTECTION	COMM. OPTION	ELECTRICAL PARAMETERS	AMBIENT TEMP (Ta)
		2010; ISA 60079-0: 2009; ISA 60079-11: 2011; ISA 60079-15: 2009; ISA 60079-26: 2008; ISA-60079-27:2007 (12.02.04)-2006 (R2011); UL 913 Ed. 6; UL 916:1998; ANSI/ISA-12.27.01-2011			
C	ATEX	**Flameproof: SIRA 12ATEX2233X** II 1/2 G Ex db IIC T6..T5 Ga/Gb II 2 D Ex tb IIIC T95°C…T120°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: SIRA 12ATEX2233X II 1 G Ex ia IIC T4 Ga II 2 D Ex ia IIIC 125°C Db	4-20 mA / HART	Note 2	-50°C TO 70°C
		Zone 2, Increase Safety: SIRA 12ATEX4234X II 3 G Ex ec IIC T4 Gc	4-20 mA / HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: SIRA 12ATEX4234X II 3 G Ex ic IIC T4 Gc	4-20 mA / HART	Note 2	-50°C TO 85°C
		Enclosure: IP66/ IP67	All	All	-
		STANDARDS: EN 60079-0: 2018; EN 60079-1: 2014; EN 60079-7: 2015+A1: 2018; EN 60079-11: 2012; EN 60079-26: 2015; EN 60079-31: 2014			
	UKEX	**Flameproof: CSAE 22UKEX1021X** II 1/2 G Ex db IIC T6..T5 Ga/Gb II 2 D Ex tb IIIC T95°C…T120°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: CSAE 22UKEX1021X II 1 G Ex ia IIC T4 Ga II 2 D Ex ia IIIC 125°C Db	4-20 mA/ HART	Note 2	-50°C TO 70°C
		Zone 2, Increase Safety: CSAE 22UKEX1008X II 3 G Ex ec IIC T4 Gc	4-20 mA/ HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: CSAE 22UKEX1008X II 3 G Ex ic IIC T4 Gc	4-20 mA/ HART	Note 2	-50°C TO 85°C
		Enclosure: IP66/ IP67	All	All	-
		STANDARDS: EN 60079-0: 2018; EN 60079-1: 2014; EN 60079-7: 2015+A1: 2018; EN 60079-11: 2012; EN 60079-26: 2015; EN 60079-31: 2014			
D	IECEx World	**Flameproof: IECEx SIR 12.0100X** Ex db IIC T6..T5 Ga/Gb Ex tb IIIC T95°C…T120°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: IECEx SIR 12.0100X Ex ia IIC T4 Ga Ex ia IIIC T125oC Db	4-20 mA / HART	Note 2	-50°C TO 70°C

MSG CODE	AGENCY	TYPE OF PROTECTION	COMM. OPTION	ELECTRICAL PARAMETERS	AMBIENT TEMP (Ta)
		Zone 2, Increase Safety: IECEx SIR 12.0100X Ex ec IIC T4 Gc	4-20 mA / HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: IECEx SIR 12.0100X Ex ic IIC T4 Gc	4-20 mA / HART	Note 2	-50°C TO 85°C
		Enclosure: IP66/ IP67	All	All	-
		STANDARDS: IEC 60079-0: 2017; IEC 60079-1: 2014; IEC 60079-7: 2017; IEC 60079-11: 2011; IEC 60079-26: 2014; IEC 60079-31: 2013			

E	**SAEx South Africa**	**Flameproof :** Ex d IIC T6…T5 Ga/Gb Ex tb IIIC T95°C…T120°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: Ex ia IIC Ga T4	4-20 mA / HART	Note 2	-50°C TO 70°C
		Zone 2, Increase Safety: II 3 G Ex ec IIC T4 Gc	4-20 mA / HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: Ex ic IIC T4 Gc	4-20 mA / HART	Note 2	-50°C TO 85°C
		Enclosure: IP66/ IP67	All	All	-
F	**INMETRO Brazil**	**Flameproof:** Ex db IIC T6..T5 Ga/Gb Ex tb IIIC T95°C…T120°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / DE/ HART	Note 2	-50°C TO 70°C
		Zone 2, Increase Safety: II 3 G Ex ec IIC T4 Gc	4-20 mA / HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: Ex ic IIC T4 Gc	4-20 mA / HART	Note 2	-50°C TO 85°C
		Enclosure : IP 66/67	All	All	-
G	**NEPSI CHINA**	**Flameproof:** Ex db IIC T6..T5 Ga/Gb Ex tb IIIC T 95°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / HART	Note 2	-50°C TO 70°C
		Zone 2, Increase Safety: II 3 G Ex ec IIC T4 Gc	4-20 mA / HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: Ex ic IIC T4 Gc	4-20 mA / HART	Note 2	-50°C TO 85°C
		Enclosure : IP 66/67	All	All	-
I	**EAC Russia, Belarus and Kazakhstan**	**Flameproof:** Ga/Gb Ex d IIC T6..T5 Ex tb IIIC Db T 85°C	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: Ga Ex ia IIC T4 X	4-20 mA / HART	Note 2	-50°C TO 70°C
		Zone 2, Non Sparking: 2 Ex nA IIC T4 Gc X	4-20 mA / HART	Note 1	-50°C TO 85°C
		Zone 2, Intrinsically Safe: Ga Ex ic IIC T4 X	4-20 mA / HART	Note 2	-50°C TO 85°C

		Enclosure : IP 66/67	All	All	
J	**CCoE INDIA**	**Flameproof:** Ex d IIC T6..T5 Ga/Gb	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / HART	Note 2	-50°C TO 70°C
		Non Sparking Ex nA IIC T4 Gc	4-20 mA / DE/ HART	Note 1	-50°C TO 85°C
		Enclosure: IP66/ IP67	All	All	-
K	**UATR UKRAINE**	**Flameproof:** II 1/2 G Ex db IIC T6..T5 Ga/Gb II 2 D Ex tb IIIC T95°C…T120°C Db	All	Note 1	T5: -50°C TO 85°C T6: -50°C TO 65°C
		Intrinsically Safe: II 1 G Ex ia IIC T4 Ga	4-20 mA / HART	Note 2	-50°C TO 70°C
		Enclosure: IP66/ IP67	All	All	-

Notes:

1. Operating Parameters:
   Voltage = 11 to 42 V DC Current = 4-20 mA Normal

2. Intrinsically Safe Entity Parameters
   a. Analog/ HART Entity Values :

   Vmax= Ui = 30V Imax= Ii = 105mA Ci = 4.2nF Li = 984 uH Pi = 0.9W

   Transmitter with Terminal Block Revision E or Later

   Vmax= Ui = 30V Imax = Ii = 225mA Ci = 4.2nF Li = 0 Pi = 0.9W

   Note : Transmitter with Terminal Block Revision E or later
   The revision is on the label that is on the module. There will be two lines of text on the label:
   - First is the Module Part #: 50049839-001 or 50049839-002
   - Second line has the supplier information, along with the REVISION:

   XXXXXXX-EXXXX, THE "X" is production related, THE POSITION of the "E" IS THE REVISION.

Other Certification Options

Materials

- NACE MRO175, MRO103, ISO15156

SIL 2/3 Certification	IEC 61508 SIL 2 for non-redundant use and SIL 3 for redundant use according to EXIDA and TÜV Nord Sys Tec GmbH & Co. KG under the following standards: IEC61508-1: 2010; IEC 61508-2: 2010; IEC61508-3: 2010.

Dimensional Drawings

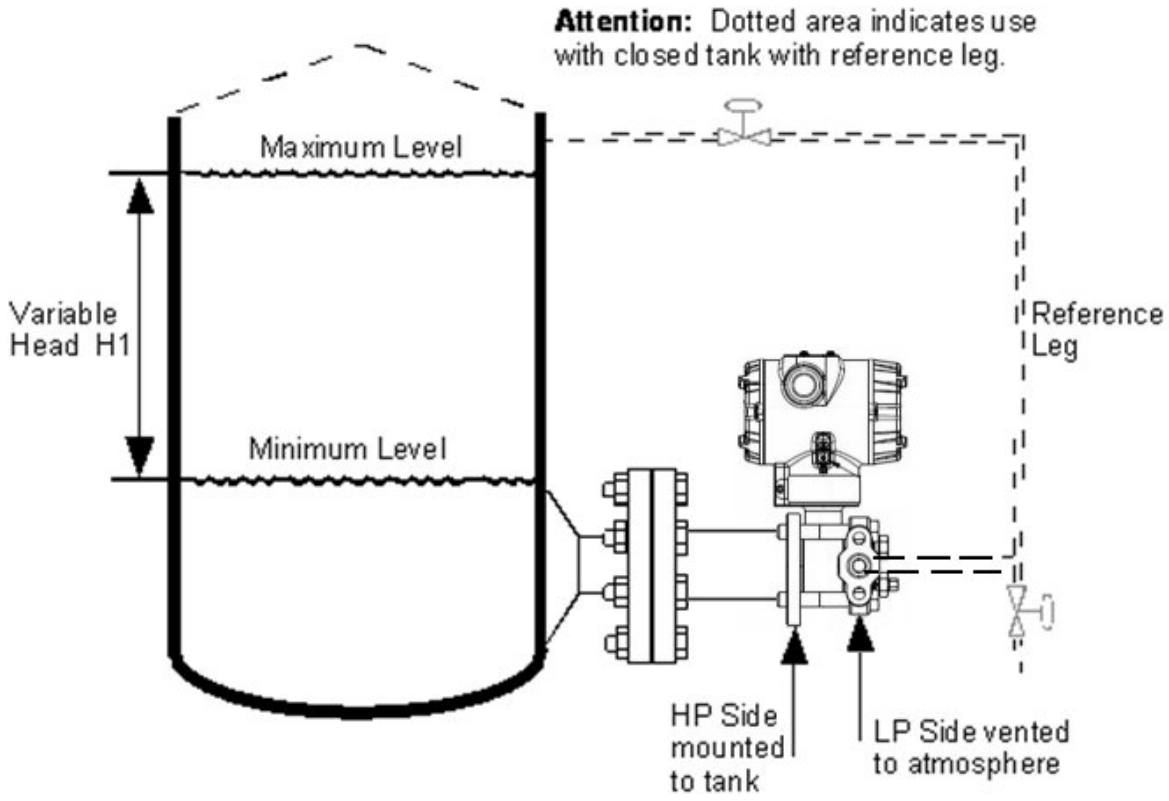
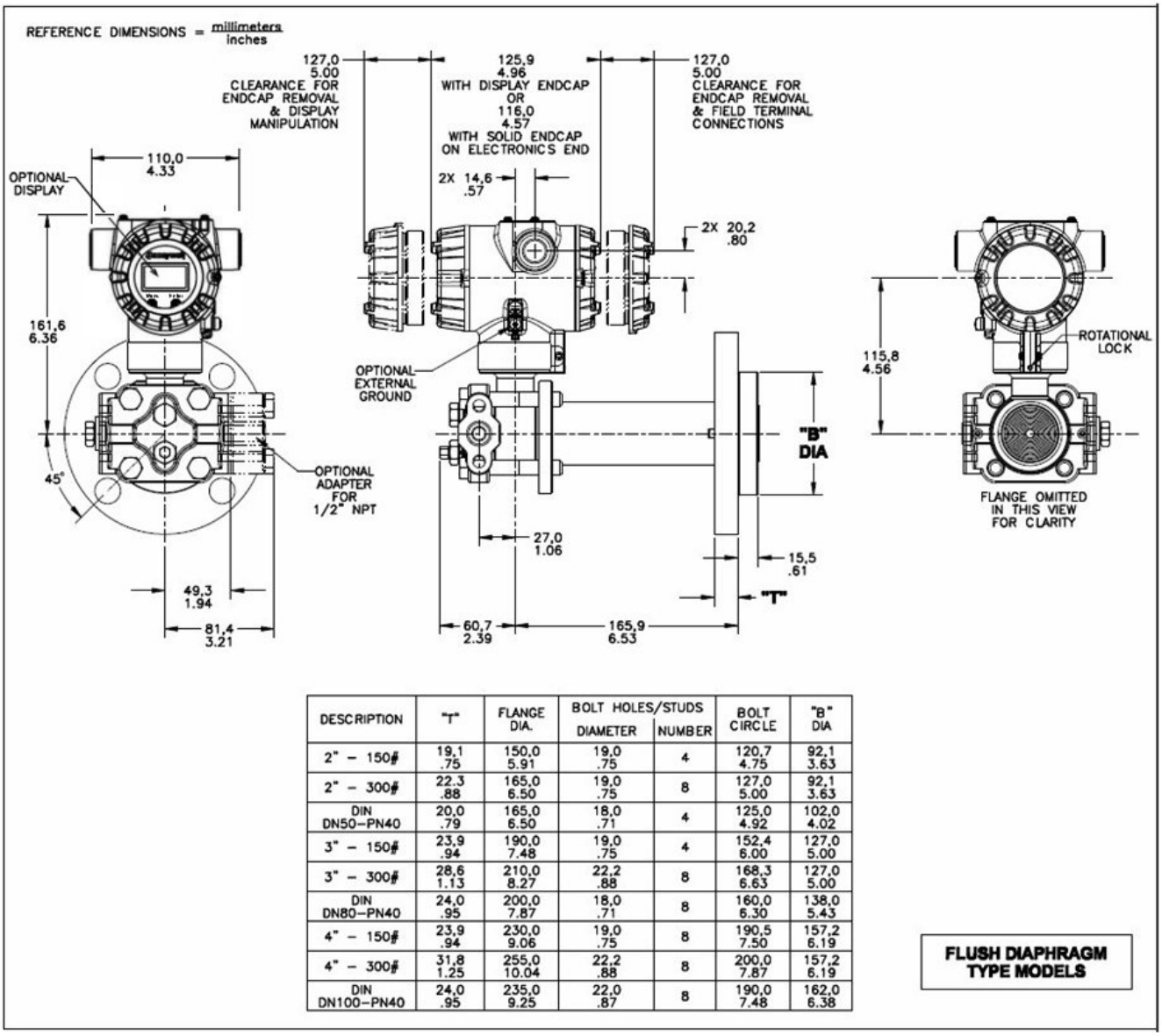


Figure 3 – Typical mounting for flange mounted level transmitter

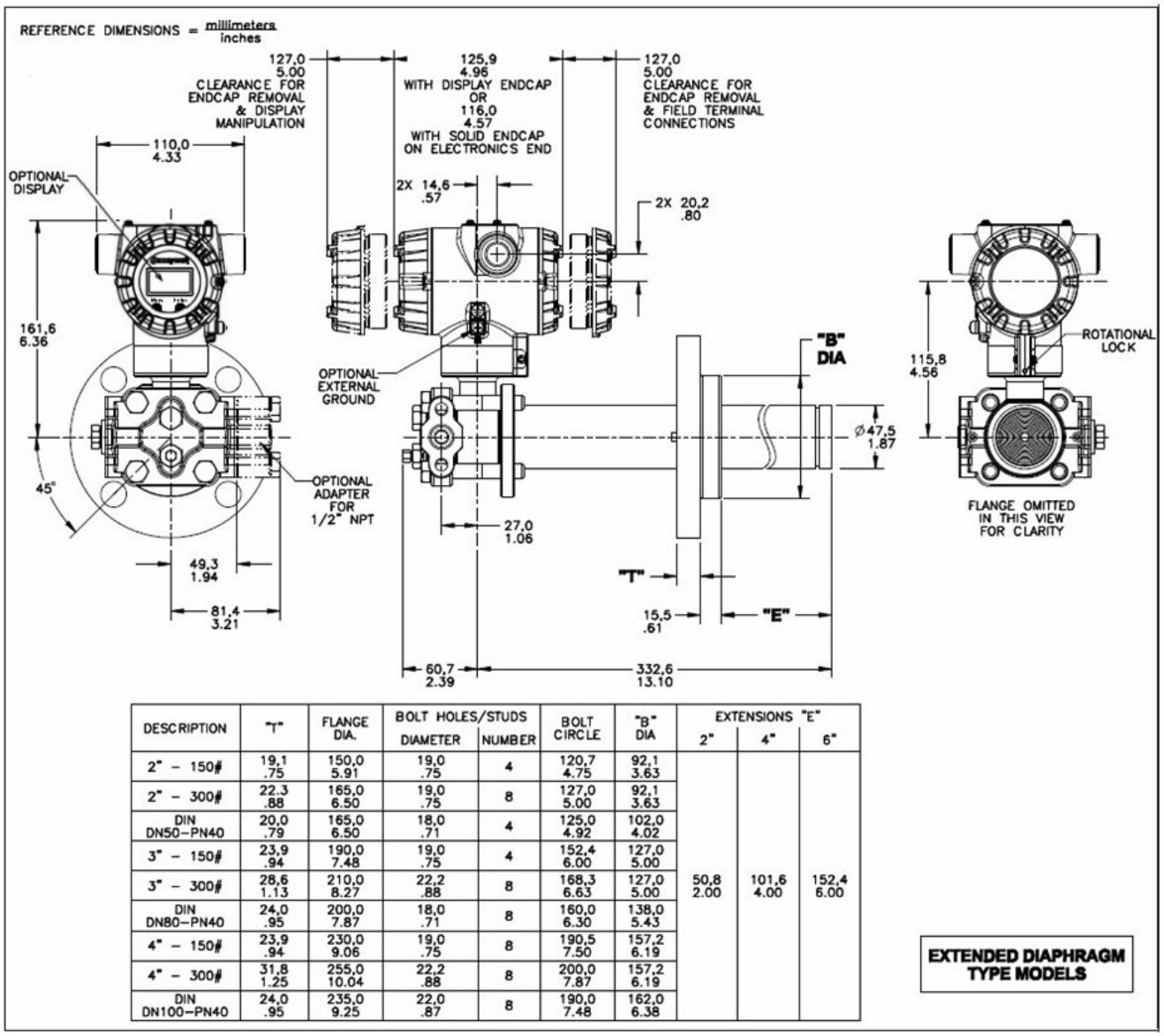
Dimensional Drawings (con't)



DESCRIPTION	"T"	FLANGE DIA.	BOLT HOLES/STUDS DIAMETER	BOLT HOLES/STUDS NUMBER	BOLT CIRCLE	"B" DIA
2" – 150#	19,1 .75	150,0 5.91	19,0 .75	4	120,7 4.75	92,1 3.63
2" – 300#	22,3 .88	165,0 6.50	19,0 .75	8	127,0 5.00	92,1 3.63
DIN DN50–PN40	20,0 .79	165,0 6.50	18,0 .71	4	125,0 4.92	102,0 4.02
3" – 150#	23,9 .94	190,0 7.48	19,0 .75	4	152,4 6.00	127,0 5.00
3" – 300#	28,6 1.13	210,0 8.27	22,2 .88	8	168,3 6.63	127,0 5.00
DIN DN80–PN40	24,0 .95	200,0 7.87	18,0 .71	8	160,0 6.30	138,0 5.43
4" – 150#	23,9 .94	230,0 9.06	19,0 .75	8	190,5 7.50	157,2 6.19
4" – 300#	31,8 1.25	255,0 10.04	22,2 .88	8	200,0 7.87	157,2 6.19
DIN DN100–PN40	24,0 .95	235,0 9.25	22,0 .87	8	190,0 7.48	162,0 6.38

Figure 4 – Typical mounting dimensions for flush diaphragm type models STF725 and STF735.

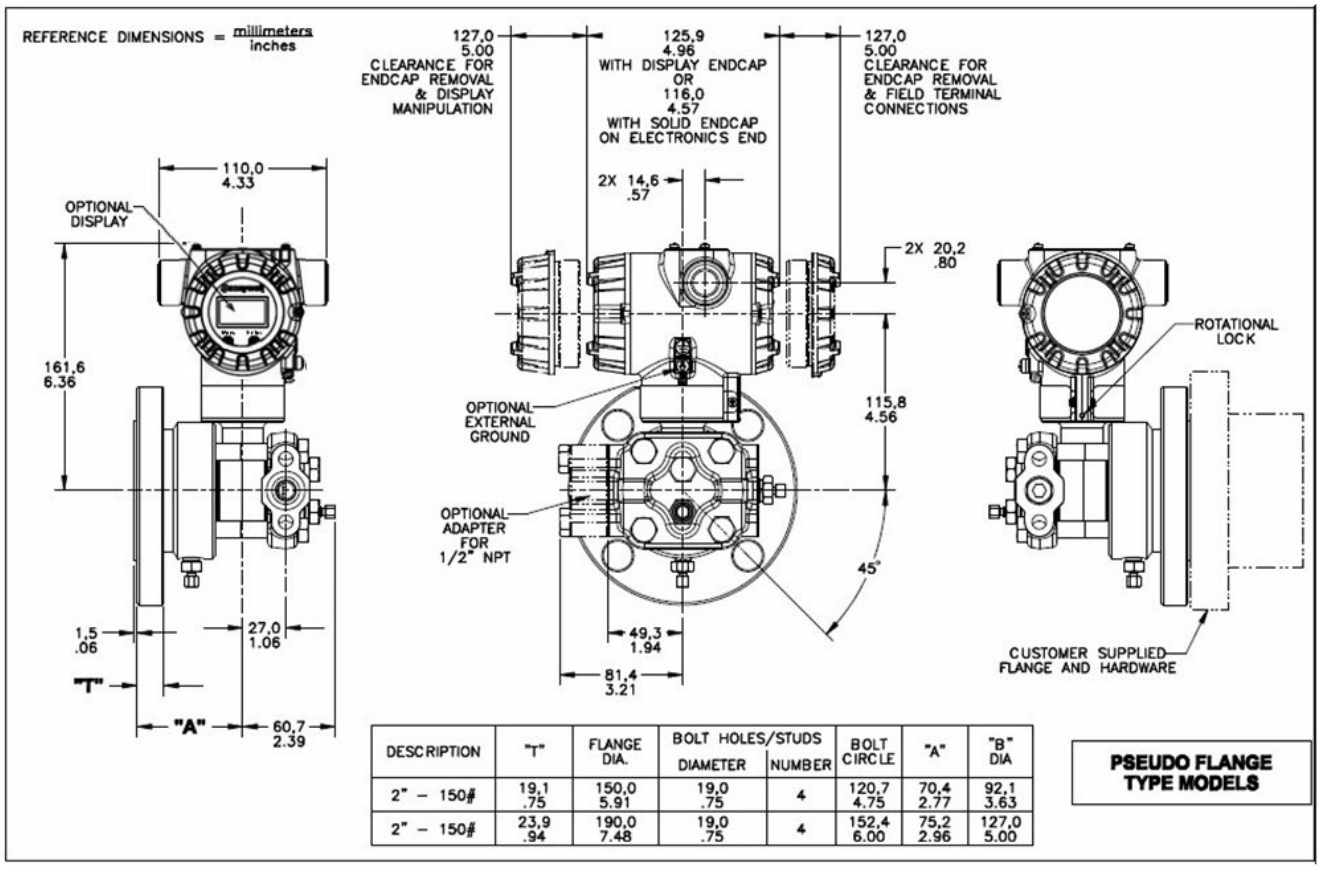
Dimensional Drawings (con't)



DESCRIPTION	"T"	FLANGE DIA.	BOLT HOLES/STUDS DIAMETER	BOLT HOLES/STUDS NUMBER	BOLT CIRCLE	"B" DIA	EXTENSIONS "E" 2"	EXTENSIONS "E" 4"	EXTENSIONS "E" 6"
2" – 150#	19,1 .75	150,0 5.91	19,0 .75	4	120,7 4.75	92,1 3.63	50,8 2.00	101,6 4.00	152,4 6.00
2" – 300#	22,3 .88	165,0 6.50	19,0 .75	8	127,0 5.00	92,1 3.63			
DIN DN50–PN40	20,0 .79	165,0 6.50	18,0 .71	4	125,0 4.92	102,0 4.02			
3" – 150#	23,9 .94	190,0 7.48	19,0 .75	4	152,4 6.00	127,0 5.00			
3" – 300#	28,6 1.13	210,0 8.27	22,2 .88	8	168,3 6.63	127,0 5.00			
DIN DN80–PN40	24,0 .95	200,0 7.87	18,0 .71	8	160,0 6.30	138,0 5.43			
4" – 150#	23,9 .94	230,0 9.06	19,0 .75	8	190,5 7.50	157,2 6.19			
4" – 300#	31,8 1.25	255,0 10.04	22,2 .88	8	200,0 7.87	157,2 6.19			
DIN DN100–PN40	24,0 .95	235,0 9.25	22,0 .87	8	190,0 7.48	162,0 6.38			

Figure 5 – Typical mounting dimensions for extended diaphragm type models STF725 and STF735.

Dimensional Drawings (con't)



DESCRIPTION	"T"	FLANGE DIA.	BOLT HOLES/STUDS DIAMETER	BOLT HOLES/STUDS NUMBER	BOLT CIRCLE	"A"	"B" DIA
2" – 150#	19,1 .75	150,0 5.91	19,0 .75	4	120,7 4.75	70,4 2.77	92,1 3.63
2" – 150#	23,9 .94	190,0 7.48	19,0 .75	4	152,4 6.00	75,2 2.96	127,0 5.00

PSEUDO FLANGE TYPE MODELS

Figure 6 – Typical mounting dimensions for pseudo flange type models STF72P and STF73P

Model Selection Guide

Model Selection Guides are subject to change and are inserted into the specifications as guidance only.

Model STF700
Flange Mounted Liquid Level Transmitter

Model Selection Guide 34-ST-16-123 Issue 21

Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table (I, II and IX) using the column below the proper arrow.
- A (●) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IX.

Key Number	I		II		III		IV		V		VI		VII		VIII		IX
STF7 _ _	-	_ _ _ _ _ _	-	_ _ _	-	_	-	_ _ _	-	_ _ _	-	_	-	_ _ _ _	-	_ _ , _ _	+	0 0 0 0

KEY NUMBER	URL	LRL	Max Span	Min Span	Units	Selection	Availability
Measurement Range Std Accuracy	400 (1000)	-400 (-1000)	400 (1000)	4 (10)	" H_2O (mbar)	STF725	↓
	100 (7)	-100 (-7)	100 (7)	1 (0.07)	psi (bar)	STF735	↓

TABLE I	Materials of Construction	Design	Ref. Head	Vent Drain Valve on Ref. Head [2]	Barrier Diaphrm. (wetted)	Diaphrm. Plate (wetted)	Extension (wetted)	Sel.	
Meter Body & Flange Design	a. Process Wetted Heads & Diaphragm Materials	Flush	Carbon [1] Steel	316 SS	316L SS Hast C [3] Hast C [3]	316L SS 316L SS Hast C [3]	N/A	A _ _ _ _ _ W _ _ _ _ _ B _ _ _ _ _	● ● ●
			316 SS [5]		316L SS Hast C [3] Hast C [3]	316L SS 316L SS Hast C [3]		E _ _ _ _ _ X _ _ _ _ _ F _ _ _ _ _	● ● ●
			Hast C [3, 6]	Hast C [3]	Hast C [3]	Hast C [3]		J _ _ _ _ _	●
		Extended	Carbon [1] Steel	316 SS	316L SS Hast C [3]	316L SS	316L SS	M _ _ _ _ _ N _ _ _ _ _	● ●
			316 SS [5]		316L SS Hast C [3]			R _ _ _ _ _ S _ _ _ _ _	● ●
	b. Fill Fluid (Meter Body & Flange)	Silicone Oil 200 Fluorinated Oil CTFE						_ 1 _ _ _ _ _ 2 _ _ _ _	● ●
	c. Process Connection	Reference Head: 1/4 NPT				Flange: High Pressure Side		_ _ A _ _ _	●
		Reference Head: 1/2 NPT Adapter - material matches head material and head bolt material [11]				Flange: High Pressure Side		_ _ H _ _ _	●
	d. Bolts for Process Heads	Carbon Steel Bolts						_ _ _ C _ _	●
		316 SS Bolts						_ _ _ S _ _	●
		A286 SS (NACE) Bolts						_ _ _ N _ _	●
	e. Vent/Drain Type/Location	Ref. Head Type	Vent Type	Location	Vent Material			Sel.	
		Single Ended	None	None	None			_ _ _ _ 1 _	●
		Single Ended	Std	Side	Matches Head Material [11]			_ _ _ _ 2 _	●
		Single Ended	Ctr	Side	Stainless Steel Only			_ _ _ _ 3 _	t
		Dual Ended	Std	End	Matches Head Material [11]			_ _ _ _ 4 _	●
		Dual Ended	Cntr	End	Stainless Steel Only			_ _ _ _ 5 _	t
		Dual Ended	Vent/Plug	Side/End	Matches Head Material [11]			_ _ _ _ 6 _	●
	f. Gasket Material	Teflon® or PTFE (Glass Filled)						_ _ _ _ _ A	●
		Viton® or Fluorocarbon Elastomer						_ _ _ _ _ B	●

[1] Carbon Steel heads are zinc-plated and not recommended for water service due to hydrogen migration. For that service, use the 316 stainless steel Wetted Reference Head.

[2] Vent/Drains are Teflon or PTFE coated for lubricity.

[3] Hastelloy® C-276 or UNS N10276

[5] Supplied as 316 SS or as Grade CF8M, the casting equivalent of 316 SS.

[6] Supplied as indicated or as Grade CW12MW, the casting equivalent of Hastelloy® C-276

[11] Except Carbon Steel Heads shall use 316SS Vent/Drain, Plugs & Adapters when required

TABLE II			Flange Material	Threaded Nut Ring Material	Selection	Availability
Flange Assembly	a. Flange (ANSI Flanges have 125-500 AARH Surface Finish)	3" ANSI Class 150	Carbon Steel (non-wetted)	Carbon Steel (non-wetted)	1 _ _	●
		3" ANSI Class 300			2 _ _	●
		DN80-PN40 DIN			3 _ _	●
		4" ANSI Class 150			4 _ _	●
		4" ANSI Class 300			5 _ _	●
		DN100-PN40 DIN			6 _ _	●
		2" ANSI Class 150			7 _ _	●
		2" ANSI Class 300			8 _ _	●
		DN50-PN40 DIN			9 _ _	●
		3" ANSI Class 150	304 SS (non-wetted)	304 SS (non-wetted)	A _ _	●
		3" ANSI Class 300			B _ _	●
		DN80-PN40 DIN			C _ _	●
		4" ANSI Class 150			D _ _	●
		4" ANSI Class 300			E _ _	●
		DN100-PN40 DIN			F _ _	●
		2" ANSI Class 150			Q _ _	●
		2" ANSI Class 300			U _ _	●
		DN50-PN40 DIN			V _ _	●
		3" ANSI Class 150	316 SS (non-wetted)	304 SS (non-wetted)	H _ _	●
		3" ANSI Class 300			J _ _	●
		DN80-PN40 DIN			K _ _	●
		4" ANSI Class 150			L _ _	●
		4" ANSI Class 300			M _ _	●
		DN100-PN40 DIN			N _ _	●
		2" ANSI Class 150			W _ _	●
		2" ANSI Class 300			X _ _	●
		DN50-PN40 DIN			Z _ _	●
	b. Gasket Ring (wetted)	Flush Design		316L SS	_ 1 _	s
				Hastelloy® C [3]	_ 2 _	s
		Extended Design		316L SS	_ 5 _	v
	c. Extension (wetted)	Flush			_ _ F	w
		Diameter		Length	Sel.	
		1.87 Inches (for 2", 3" or 4 " spud)[13]		2 inches	_ _ C	v
				4 inches	_ _ D	v
				6 inches	_ _ E	v

[3] Hastelloy® C-276 or UNS N10276

[13] For part numbers and pricing information on Tank Spuds refer to page ST-91 (Supplementary Accessories & Kits).

TABLE III	Agency Approvals (see data sheet for Approval Code Details)	Selection	
Approvals	No Approvals Required	0	*
	FM Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof	A	*
	CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof	B	*
	ATEX Explosion proof, Intrinsically Safe & Non-incendive	C	*
	IECEx Explosion proof, Intrinsically Safe & Non-incendive	D	*
	SAEx Explosion proof, Intrinsically Safe & Non-incendive	E	*
	INMETRO Explosion proof, Intrinsically Safe & Non-incendive	F	*
	NEPSI Explosion proof, Intrinsically Safe & Non-incendive	G	*
	KOSHA Explosion proof, Intrinsically Safe & Non-incendive	H	*
	EAC-Customs Union(Russia,Belarus and Kazakhstan)EX Approval Flameproof,Intrinsically Safe	I	*
	CCoE Explosion proof, Intrinsically Safe & Non-incendive	J	*
	UATR Flameproof, Intrinsically Safe & Dustproof	K	*

TABLE IV	TRANSMITTER ELECTRONICS SELECTIONS			Selection	
	Material	Connection	Lightning Protection		
a. Electronic Housing Material & Connection Type	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 _ _	*
	Dual Certified SS 316/316L (CF8M/CF3M)	1/2 NPT	None	E _ _	*
	Dual Certified SS 316/316L (CF8M/CF3M)	M20	None	F _ _	*
	Dual Certified SS 316/316L (CF8M/CF3M)	1/2 NPT	Yes	G _ _	*
	Dual Certified SS 316/316L (CF8M/CF3M)	M20	Yes	H _ _	*
b. Output/ Protocol	Analog Output	Digital Protocol			
	4-20mA dc	HART Protocol		_ H _	*
c. Customer Interface Selections	Indicator	Ext Zero, Span & Config Buttons	Languages		
	None	None	None	_ _ 0	*
	None	Yes (Zero/Span Only)	None	_ _ A	*
	Standard (w/Internal Zero,Span & Config Buttons)	None	EN, RU	_ _ S	*
	Standard (w/Internal Zero,Span & Config Buttons)	Yes	EN, RU	_ _ T	*

TABLE V	CONFIGURATION SELECTIONS			Selection	Availability
a. Application Software	Diagnostics				
	Standard Diagnostics			1 _ _	*
b. Output Limit, Failsafe & Write Protect Settings	Write Protect	Fail Mode	High & Low Output Limits[3]		
	Disabled	High> 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ 1 _	*
	Disabled	Low< 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ 2 _	*
	Enabled	High> 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ 3 _	*
	Enabled	Low< 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ 4 _	*
c. General Configuration	Factory Standard			_ _ S	*
	Custom Configuration (Unit Data Required from customer)			_ _ C	*

[3] NAMUR Output Limits 3.8 - 20.5mAdc can be configured by the customer or select custom configuration Table Vc

TABLE VI	CALIBRATION & ACCURACY SELECTIONS			Selection	
Accuracy and Calibration	Accuracy	Calibrated Range	Calibration Qty		
	Standard	Factory Std	Single Calibration	A	*
	Standard	Custom (Unit Data Required)	Single Calibration	B	*

TABLE VII	ACCESSORY SELECTIONS	Selection	
a. Mounting Bracket	None (not required with flange mount unit)	0 _ _ _	*
b. Customer Tag	No customer tag	_ 0 _ _	*
	One Wired Stainless Steel Tag (Up to 4 lines 26 char/line)	_ 1 _ _	*
c. Unassembled Conduit Plugs & Adapters	No Conduit Plugs or Adapters Required	_ _ A0	*
	1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter	_ _ A2	n
	1/2 NPT 316 SS Certified Conduit Plug	_ _ A6	n
	M20 316 SS Certified Conduit Plug	_ _ A7	m

TABLE VIII	OTHER Certifications & Options: (String in sequence comma delimited (XX, XX, XX,....)	Selection	
Certifications & Warranty	None - No additional options	00	*
	NACE MR0175; MR0103; ISO15156 Process wetted parts only	FG	*
	NACE MR0175; MR0103; ISO15156 Process wetted and non-wetted parts	F7	c
	Marine (DNV, ABS, BV, KR, LR)	MT	d
	EN10204 Type 3.1 Material Traceability	FX	*
	Certificate of Conformance	F3	*
	Calibration Test Report & Certificate of Conformance	F1	*
	Certificate of Origin	F5	*
	FMEDA (SIL 2/3) Certification	FE	j
	Over-Pressure Leak Test Certificate (1.5X MAWP)	TP	*
	Cert Clean for O_2 or CL_2 service per ASTM G93	OX	e
	PMI Certification[1]	PM	*
	Extended Warranty Additional 1 Year	01	*
	Extended Warranty Additional 2 Year	02	*
	Extended Warranty Additional 3 Year	03	*
	Extended Warranty Additional 4 Year	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)
b	Select only one option from this group			
c	Id	_ _ _ _ N _ _		
d	IVa	C, D, G, H _ _		
e	Ib	_ 2 _ _ _ _		
j			Vb	_ 1,2 _
m	IVa	B,D,F,H _ _		
n	IVa	A,C,E,G _ _		
s	Ia	A,W,B,E,X,F,J _ _ _ _ _		
t			Ia	J _ _ _ _ _
v	Ia	M,N,R,S _ _ _ _ _		
w			Ia	M,N,R,S _ _ _ _ _
			IIb	_ 5 _

[1]The PM option is available on all Smartline Pressure Transmitter process wetted parts such as process heads, flanges, bushings and vent plugs except plated carbon steel process heads and flanges. PM option information is also available on diaphragms except STG and STA in-line construction pressure transmitters.

FIELD INSTALLABLE REPLACEMENT PARTS

Description	Kit Number
Terminal Strip w/o Lightning Protection Kit for HART	50129832-501
Terminal Strip w/ Lightning Protection for HART Modules	50129832-502
HART Electronics Module	50129828-501
HART Electronics Module w/ connection for external configuration buttons	50129828-502
Standard Display Module	50126003-501

Note P - For part number pricing please refer to WEB Channel

PRODUCT MANUALS

Description	Part Number
ST 700 Smart Transmitter User Manual - English	34-ST-25-44
ST 700 Smart Transmitter HART Communications Manual - English	34-ST-25-47
ST 700 Smart Transmitter Safety Manual - English	34-ST-25-37

All product documentation is available at 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.

ASIA PACIFIC

Honeywell Process Solutions,
(TAC) hfs-tac-support@honeywell.com

Australia
Honeywell Limited
Phone: +(61) 7-3846 1255
FAX: +(61) 7-3840 6481
Toll Free 1300-36-39-36
Toll Free Fax:
1300-36-04-70

China – PRC - Shanghai
Honeywell China Inc.
Phone: (86-21) 5257-4568
Fax: (86-21) 6237-2826

Singapore
Honeywell Pte Ltd.
Phone: +(65) 6580 3278
Fax: +(65) 6445-3033

South Korea
Honeywell Korea Co Ltd
Phone: +(822) 799 6114
Fax: +(822) 792 9015

EMEA

Honeywell Process Solutions,
Phone: + 80012026455 or
+44 (0)1344 656000

Email: (Sales)
FP-Sales-Apps@Honeywell.com
or
(TAC)
hfs-tac-support@honeywell.com

AMERICA'S

Honeywell Process Solutions,
Phone: (TAC) 1-800-423-9883 or
215/641-3610
(Sales) 1-800-343-0228

Email: (Sales)
FP-Sales-Apps@Honeywell.com
or
(TAC)
hfs-tac-support@honeywell.com

Specifications are subject to change without notice.

For more information
To learn more about SmartLine Pressure Transmitters
visit www.process.honeywell.com
Or contact your Honeywell Account Manager

Process Solutions
Honeywell
1250 W Sam Houston Pkwy S
Houston, TX 77042

Honeywell Control Systems Ltd
Honeywell House, Skimped Hill Lane
Bracknell, England, RG12 1EB

Shanghai City Centre, 100 Jungi Road
Shanghai, China 20061

www.process.honeywell.com

34-ST-03-123
September 2025