

ST 3000 Smart Transmitter Flange Mounted Liquid Level Series 900

Model Selection Guide



Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table (I, II and IV), using the column below the proper arrow.
- Select as many Table III options as desired plus a communications option selection.
- A (↗) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IV.

Key Number	I	II	III (Optional)	IV
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KEY NUMBER

Span	Selection	Avail.
0-4 to 0-400 inH ₂ O / 0-10 to 0-1000 mbar - Compound Characterized	STF924	↓
0-1 to 0-100 psi / 0-0.07 to 0-7 bar - Compound Characterized	STF932	↓
0-4 to 0-400 inH ₂ O / 0-10 to 0-1,000 mbar	STF92F	↓
0-1 to 0-100 psi / 0-0.07 to 0-7 bar	STF93F	↓

Important Note: Base STF models no longer include a default communications option. All units now require the selection of a communication option from Table III (AN, DE, HC, H6 or FF).

TABLE I - METER BODY

	Design	Reference Head	Vent/Drain Valve on Ref. Head ²	Barrier Diaphragm (wetted)	Diaphragm Plate (wetted)	Extension (wetted)	Sel.		
Materials	Flush	Carbon Steel ¹	316 SS	316L SS	316L SS	N/A	A__	•	
				Hast C ³	316 SS		W__	•	
				Hast C ³	Hast C ³		B__	•	
		316 SS ⁵		316L SS	316L SS		E__	•	
				Hast C ³	316L SS		X__	•	
				Hast C ³	Hast C ³		F__	•	
		Hast C ^{3,6}	Hast C ³	Hast C ³	Hast C ³		J__	•	
	Extended	Carbon Steel ¹	316 SS	316L SS	316L SS	316 SS	M__	•	
				Hast C ³			N__	•	
				316L SS			R__	•	
		316 SS ⁵		Hast C ³		S__	•		
	Pseudo Flange	Carbon Steel ¹	316 SS	316L SS	N/A	N/A	A__		•
		Hast C ³		B__				•	
		316L SS		E__				•	
	316 SS ⁵		Hast C ³		F__		•		
Fill Fluid (Meter Body & Flange)	DC [®] 200 Silicone CTFE						_1_	•	•
							2	•	•
Process Connection	Reference Head			Flange					
	1/4 NPT			High Pressure Side			_ _ A	•	•
				Low Pressure Side			_ _ C		•
	1/2 NPT (with Adapter)			High Pressure Side			_ _ H	t	t
				Low Pressure Side			_ _ K		t

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 sealed with Teflon[®] or PTFE.

³ Hastelloy[®] C-276 or UNS N10276

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

STFxxx Availability
↓ ↓
924 92F
932 93F

TABLE II - FLANGE ASSEMBLY

TABLE II - FLANGE ASSEMBLY		Flange Material	Threaded Nut Ring Material	Selection	924 932	92F 93F
No Selection		None	None	0 _ _ _ _	•	
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	_ Y _ _ _			•		
Pseudo Flange on Standard DP						
2" ANSI Class 150 without Vent/Drain	316L SS (wetted)	Not applicable	_ S _ _ _		•	
2" ANSI Class 150 with Vent/Drain			_ T _ _ _		•	
3" ANSI Class 150 with Vent/Drain			_ R _ _ _		•	
3" ANSI Class 150 without Vent/Drain			_ P _ _ _		•	
Gasket Ring (wetted)	No Selection		_ _ 0 _ _		•	
	Flush Design	316L SS Hastelloy® C-276 ³	_ _ 1 _ _ _ _ 2 _ _	g g		
	Extended Design	316L SS	_ _ 5 _ _	v		
Extension (wetted)	No Selection		_ _ _ 0 _		•	
	Flush		_ _ _ F _	h		
	Diameter	Length				
	1.87 Inches (for 2", 3" or 4" spud) ⁹	2 inches 4 inches 6 inches	_ _ _ C _ _ _ _ D _ _ _ _ E _	v v v		
No Selection	No Selection		_ _ _ _ 0	•	•	

³ Hastelloy® C-276 or UNS N10276

⁹ For part numbers and pricing information on Tank Spuds refer to page ST-95 (Supplementary Accessories & Kits).

TABLE III - OPTIONS	Selection	Availability		
		924 932	92F 93F	
Communication Options (Must choose a communications option)				
Analog only (can be configured using appropriate Honeywell DE tool)	AN	•	•	b
DE Protocol communications	DE	•	•	
HART® 6.x Protocol Compatible Electronics	H6	•	•	
FOUNDATION™ Fieldbus Communications	FF	r	r	
Indicating Meter Options				
Analog Meter (0-100 Even 0-10 Square Root)	ME	•	•	b
Smart Meter	SM	•	•	
Custom Configuration of Smart Meter	CI	m	m	b
Local Zero	LZ	x	x	
Local Zero and Span	ZS	s	s	
Transmitter Housing & Electronics Options				
No housing conduit plugs or adaptors come standard with the ST 3000.				
For certain approval codes, you must select a certified conduit plug from below and it will come packaged in the box with your transmitter.				
316 SS ⁵ Electronics Housing - (with M20 conduit connections)	SH	n	n	b
316 SS ⁵ Electronics Housing - (with M20 to 1/2 NPT 316 SS conduit adapter for use with FM and CSA Approval codes)	A3	i	i	
1/2 NPT Male to M20 Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx)	A1	•	•	b
1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter (ATEX, CSA & IECEx)	A2	•	•	
M20 Male to 1/2 NPT Female 316 SS Certified Conduit Adaptor (ATEX, CSA & IECEx)	A4	•	•	
1/2 NPT Zinc-plated Certified Conduit Plug (ATEX, CSA & IECEx)	A5	•	•	
1/2 NPT 316 SS Certified Conduit Plug (ATEX, CSA & IECEx)	A6	•	•	
M20 316 SS Certified Conduit Plug (ATEX, CSA & IECEx)	A7	•	•	
1/2 NPT Non-certified Conduit plug (Zinc-plated carbon steel, general use)	A8	•	•	
NAMUR Failsafe Software	NE	15	15	
SIL 2 - TÜV Certified transmitter (requires HC or H6 and WP options)	SL	p	p	
Lightning Protection	LP	•	•	
Custom Calibration and I.D. in Memory	CC	•	•	
Transmitter Configuration - (non-Fieldbus)	TC	15	15	
Transmitter Configuration - (Fieldbus)	FC	21	21	
Write Protection (Delivered in the "enabled" position)	WP	•	•	
Write Protection (Delivered in the "disabled" position)	WX	•	•	
Stainless Steel Customer Wired-On Tag (4 lines, 26 characters per line, customer supplied information)	TG	•	•	
Stainless Steel Customer Wired-On Tag (blank)	TB	•	•	
Meter Body Options (Carbon Steel standard)				
NACE A286 SS Bolts	CR	•	•	b
316 SS Bolts	SS	•	•	
B7M Bolts	B7	•	•	b
316 SS ⁵ Adapter Flange - 1/2 NPT with CS Bolts	S2	c	c	
316 SS ⁵ Adapter Flange - 1/2 NPT with 316 SS Bolts	S3	c	c	
316 SS ⁵ Adapter Flange - 1/2 NPT with NACE A286 SS Bolts	S4	c	c	
316 SS ⁵ Adapter Flange - 1/2 NPT with B7M Bolts	S5	c	c	
Hastellov® C-276 ^{3,6} Adapter Flange - 1/2 NPT with CS Bolts	T2	c	c	
Hastellov® C-276 ^{3,6} Adapter Flange - 1/2 NPT with 316 SS Bolts	T3	c	c	
Monel 400 ^{4,7} Adapter Flange - 1/2 NPT with CS Bolts	V2	c	c	
Monel 400 ^{4,7} Adapter Flange - 1/2 NPT with 316 SS Bolts	V3	c	c	
316 SS ⁵ Blind Adapter Flange with CS Bolts	B3	•	•	
316 SS ⁵ Blind Adapter Flange with 316 SS Bolts	B4	•	•	
316 SS ⁵ Blind Adapter Flange with NACE A286 SS Bolts	B5	•	•	
316 SS ⁵ Blind Adapter Flange with B7M Bolts	B6	•	•	
316 SS Center Vent Drain and Bushing	CV	•	•	
Viton® ⁸ Process Head Gaskets (adapter gaskets ordered separately)	VT	•	•	
Viton® ⁸ Adapter Flange Gaskets	VF	17	17	
Services/Certificates/Marine Type Approval Options				
User's Manual Paper Copy (Standard, HC/H6, or FF ships accordingly)	UM	•	•	b
Clean Transmitter for Oxygen or Chlorine Service with Certificate (50039190)	OX	j	j	
Over-Pressure Leak Test with Certificate (F3392)	TP	•	•	
Calibration Test Report and Certificate of Conformance (F3399)	F1	•	•	
Certificate of Conformance (F3391)	F3	•	•	
Certificate of Origin (F0195)	F5	•	•	
SIL Certificate (SIL 2/3) (FC33337)	FE	22	22	
NACE Certificate (Process-Wetted & Non-Process Wetted) (FC33339)	F7	o	o	
NACE Certificate (Process-Wetted Only) (FC33338)	FG	o	o	
Material Traceability Certification per EN 10204 3.1 (FC33341)	FX	•	•	
Marine Type Approvals (DNV, ABS, BV, KR & LR) (FC33340)	MT	•	•	

Table III continued next page

³ Hastellov® C-276 or UNS N10276

⁴ Monel 400® or UNS N04400

⁵ Supplied as 316 SS or as Grade CF8M. the castino equivalent of 316 SS.

⁶ Supplied as indicated or as Grade CW12MW. the castino equivalent of Hastellov® C-276

⁷ Supplied as indicated or as Grade M30C. the castino equivalent of Monel 400®

⁸ Viton® or Fluorocarbon Elastomer

STFxxx Availability

TABLE III - OPTIONS (continued)

Selection	Availability	
	924 932	92F 93F
Warranty Options		
Additional Warranty - 1 year	W1	• •
Additional Warranty - 2 years	W2	• •
Additional Warranty - 3 years	W3	• •
Additional Warranty - 4 years	W4	• •

TABLE III - OPTIONS (continued)

Approval Body	Approval Type	Location or Classification	Selection		
No hazardous location approvals			9X	•	•
FM Approvals SM	Explosion Proof	Class I, Div. 1, Groups A,B,C,D	1C	•	•
	Dust-Ignitionproof	Class II, III Div. 1, Groups E,F,G			
	Non-Incendive	Class I, Div. 2, Groups A,B,C,D			
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
ATEX ¹⁰ (LCIE)	Intrinsically Safe, Zone 0	Ex ia IIC T4 (Ta = -50°C to +93°C); T5 (Ta = -50°C to +85°C); T6 (Ta = -50°C to +70°C) Enclosure IP 66/67	3S	•	•
	Intrinsically Safe, Zone 1	Ex ia IIC T4 (Ta = -50°C to +93°C); T5 (Ta = -50°C to +85°C); T6 (Ta = -50°C to +70°C) Enclosure IP 66/67			
	Dust-tight Enclosure, Zone 0	Ex tD A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) Enclosure IP 66/67	33	24	24
	Flameproof and Dust-tight Enclosure, Zone 1	Ex d IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C) Supply 11- 42Vdc Ex tD A21 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) Enclosure IP 66/67			
	Non-Sparking, Zone 2	Ex nA, IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C); Zone 2 Supply < 42Vdc, 23mA Ex tD A22 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) (Honeywell). Enclosure IP 66/67			
	Multiple Marking ¹¹ Int. Safe, Zone 0/1 and Dust-tight Enclosure, or Flameproof, Zone 1 and Dust-tight Enclosure, or Non-Sparking, Zone 2	Ex ia IIC T4 (Ta = -50°C to +93°C); T5 (Ta = -50°C to +85°C); T6 (Ta = -50°C to +70°C); Ui = 30V; li = 100mA Ex tD A20 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)	3C	24	24
		Ex d IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C) Supply 11- 42Vdc Ex tD A21 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C)			
		Ex nA, IIC T5 (Ta = -40°C to +93°C), T6 (Ta = -40°C to +78°C); Zone 2 Supply < 42Vdc, 23mA Ex tD A22 IP6X T95°C (at Ta = 93°C) or T80°C (at Ta = 78°C) (Honeywell) Enclosure IP 66/67			

Table III Approvals continued next page



TABLE III - OPTIONS (continued)

Approval Body	Approval Type	Location or Classification	Selection	24 32	2F 3F
Canadian Standards Association (CSA)	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	24	24
	Dust-Ignitionproof	Class II, III, Div. 1, Groups E,F,G			
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
IECEX	Flameproof, Zone 1	Ex d IIC T5 (Ta = -40 to +93°C), T6 (Ta = -40 to +78°C)	CA	24	24
	Intrinsically Safe, Zone 0/1	Ex ia IIC ; T3, T4, T5, T6 See Spec for detailed temperature codes by Communications option			
SAEx (South Africa)	Intrinsically Safe, Zone 0/1	Ex ia IIC T4, T5, T6	Z2	•	•
	Flameproof, Zone 1	Ex d IIC T5, T6 Enclosure IP 66/67	ZD	•	•
	Multiple Marking ¹¹ Int. Safe, Zone 0/1, or Flameproof, Zone 1	Ex ia IIC T4, T5, T6 Ex d IIC T5, T6 Enclosure IP 66/67	ZA	•	•
CERTUSP INMETRO (Brazil)	Flameproof, Zone 1	BR- Ex d IIC T5, T6	6D	•	•
	Intrinsically Safe, Zone 0/1	BR- Ex ia IIC ; T4, T5, T6 (See CERTUSP certificate for detailed temperature codes by Communications option)	6S	•	•

¹⁰ See ATEX installation requirements in the ST 3000 User's Manual

¹¹ The user must determine the type of protection required for installation of the equipment. The user shall then check the box [v] adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, subsequently the equipment shall not be reinstalled using any of the other certification types.

TABLE IV

Factory Identification	Selection		
	X X X X	•	•

RESTRICTIONS

Restriction Letter	Available Only With		Not Available With	
	Table	Selection	Table	Selection
b	Select only one option from this group			
c	I	__ H, __ K		
g	I	A __, B __, E __, F __, J __, W __, X __		
h			I II	M __, N __, R __, S __ __ 5, __, __ 0 __
i	III	1C or 2J		
j	I	__ 2 __		
m	III	SM		
n			III	1C, 2J
o	III	CR	III	S2, S3, S5, T2, T3, B3, B4, B6, V2, V3
p	III	HC or H6 and WP	III	FF
r	III	FISCO/FNICO compliance available only with 1C	III	TC, ME or FISCO/FNICO compliance not available with 3C, 3N, 33, 3S, 2J, CA, Z2, ZD, ZA, 6D & 6S
s			III	FF, ME
t		Select S2, S3, S4, S5, T2, T3, V2, V3		
v	I	M __, N __, R __, S __		
x	III	FF, SM		
15			III	FF
17	III	VT		
21	III	FF		
22	III	SL		
24	III	This approval code requires the selection of a certified conduit plug: A5, A6 or A7		

Ordering Example: STF924-A1A-01000-HC,1C+XXXX

Hastelloy[®] is a registered trademark of Haynes International

Monel 400[®] is a registered trademark of Special Metals Corporation.

DC[®] 200 is a registered trademark of Dow Corning

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