ST3000 Smart Pressure Transmitter Quick Start Installation Guide

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Notices and Trademarks

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WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

About This Document

This document provides descriptions and procedures for the Quick Installation of your ST3000 Transmitter.

Various other documents are available for reference that describes how to Install, Configure, and Operate the ST3000 Transmitter. These can be ordered on CD or hardcopy, or may be downloaded from http://honeywell.silverw.com . (Registration is required at this site)

Document Title	Document #
ST3000 Smart Transmitter and SFC Smart Field Communicator Model STS103	34-ST-25-14
ST3000 FF Transmitter with Foundation Fieldbus Option Installation and Device Reference Guide	34-ST-25-15
ST3000 Smart Transmitter Release 300 with HART Communications Option User Manual	
SMV3000 Smart Multivariable Transmitter User's Manual	
RMA Smart Meter User's Manual	
Smart Field Communicator Model STS103 Operating Guide	
Smartline Confoguration Toolkit SCT3000 Installation and Start-up Guide	
MC Toolkit User Manual	

Contacts

World Wide Web

The following lists Honeywell's World Wide Web sites that will be of interest to our customers.

Honeywell Organization	WWW Address (URL)
Corporate	<u>Http://www.honeywell.com</u>
Honeywell Process Solutions	http://hpsweb.honeywell.com/Cultures/en-US/
	http://content.honeywell.com/imc/fi/
International	http://www.honeywell.com/business/global.asp

Telephone

Contact us by telephone at the numbers listed below.

	Organization	Phone Number
United States and Canada	Honeywell Inc.	1-800-343-0228 Sales 1-800-525-7439 Service
Asia Pacific	Honeywell Asia Pacific Inc.	(852) 8298298 Hong Kong
Europe	Honeywell PACE	[32-2] 728-2111 Brussels
Latin America	Honeywell Inc	(305) 364-2355 Sunrise, Florida USA

Technical Assistance

By Telephone	Honeywell Solution Support Center Phone:	
	1-800-423-9883 (U.S. only)	
	Outside the U.S. call: 1-602-313-6510	
Additional Help	You may also seek additional help by contacting the Honeywell distributor who supplied your ST 3000 transmitter.	
By E Mail	You can also e-mail your technical questions or comments about this product to:	
	Honeywell Solution Support Center e-mail: ace@honeywell.com	
Problem Resolution	If it is determined that a hardware problem exists, a replacement transmitter or part will be shipped with instructions for returning the defective unit. Please do not return your transmitter without authorization from Honeywell's Solution Support Center or until the replacement has been received.	

Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	This CAUTION symbol on the equipment refers the user to the Product Manual for additional information. This symbol appears next to required information in the manual.
4	WARNING PERSONAL INJURY: Risk of electrical shock. This symbol warns the user of a potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible. Failure to comply with these instructions could result in death or serious injury.
	ATTENTION, Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices
	Protective Earth (PE) terminal. Provided for connection of the protective earth (green or green/yellow) supply system conductor.
Ē	Functional earth terminal. Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to protective earth at the source of supply in accordance with national local electrical code requirements.
<u> </u>	Earth Ground. Functional earth connection. NOTE: This connection shall be bonded to Protective earth at the source of supply in accordance with national and local electrical code requirements.
\rightarrow	Chassis Ground. Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

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1 Mounting The Transmitter

1.1 Typical Bracket mounted and Flange Mounted Installations





1.2 Bracket Mounting

Optional mounting bracket, see Figure 2.

Existing mounting bracket, see Figure 3.

Rotate the transmitter housing, see Figure 4.

Level a transmitter with small absolute or differential pressure spans, see Figure 5.

Optional Mounting Bracket

Position bracket on 2-inch (50.8 mm) or, and install "U" bolt around pipe and through holes in bracket. Secure with nuts and lockwashers provided.

Figure 2 Example - Angle mounting bracket secured to horizontal or vertical pipe.



Figure 2

Existing Mounting Bracket

Align appropriate mounting holes in transmitter with holes in bracket and secure with bolts and washers provided.

NOTE: If the meter body is hexagonal, you must use the additional bracket supplied. If meter body is round, discard the bracket

Figure 3 Example – LGP model transmitter mounted to optional angle mounting bracket.

If Transmitter is	Then
DP type with double-ended process heads and/or remote seals	Use alternate mounting holes in end of heads
GP and AP with single-ended head	Use mounting holes in side of meter body
In-line GP and AP (LGP model)	Use smaller "U" bolt provided to attach meter body to bracket See Figure 3.
Dual head GP	Use mounting holes in end of process head

LGP and LAP models



Rotating Transmitter Housing

Loosen set screw on outside neck of transmitter one full turn. Rotate Transmitter housing in maximum of 180 degree increment in left or right direction from center to position you require and tighten set screw (1.46 to 1.68 Nùm/13 to 15 lb-in).

Figure 4 Example – Rotating Transmitter Housing.



Figure 4

Leveling Transmitters with Small Absolute or Differential Pressure Spans

Mounting position of these transmitters is critical due to the smaller transmitter spans.

To minimize these positional effects on calibration (zero shift), take the appropriate mounting precautions that follow for the given transmitter model.

See Figure 5 and 5a for suggestions on how to level the transmitter using a spirit balance.

To perform a **Zero Trim** after leveling, refer to Section 2.

Models STA122 and STA922



For a model STA122 or STA922 transmitter, you must ensure that the transmitter is vertical when mounting it. You do this by leveling the transmitter side-to-side and front-to-back.



Mount transmitter vertically to assure best accuracy. Position spirit balance on pressure connection surface of AP body.

Figure 5a

1.3 Flange Mounting

To mount a flange mounted transmitter model, bolt the transmitter's flange to the flange pipe on the wall of the tank.

On insulated tanks, remove enough insulation to accommodate the flange extension.

It is the End User's responsibility to provide a flange gasket and mounting hardware that are suitable for the transmitter's service condition.

To prevent degradation of performance in Flush-Mounted Flanged Transmitters, exercise care to ensure that the internal diameter of the flange gasket does not obstruct the sensing diaphragm.

To prevent degradation of performance in Extended Mount Flanged Transmitters, ensure that there is sufficient clearance in front of the sensing diaphragm body.



Figure 6

1.4 Flush Mounting

To mount a flush mounted transmitter model, cut a hole for a 1-inch standard pipe in the tank or pipe where the transmitter is to be mounted. See Figure 7

Weld the 1-inch mounting sleeve to the wall of the tank or to the hole cut on the pipe. Insert the meter body of the transmitter into the mounting sleeve and secure with the locking bolt. Tighten the bolt to a torque of 6,4 Nm+/- 0,30 Nm [4.7 ft.-lbs. +/- 0.2 ft.-lbs.]

Once the transmitter is mounted, the transmitter housing can be rotated to the desired position. See Figure 4

On insulated tanks, remove enough insulation to accommodate the mounting sleeve.





1.5 High Temperature Transmitter Mounting

You can mount the high temperature transmitter directly to the process flange connection or the process piping. See Figure 8.

To mount a flange mounted transmitter model, bolt the transmitter's flange to the flange on the wall of the tank or process pipe.

It is the End User's responsibility to provide a flange gasket and mounting hardware that are suitable for the transmitter's service condition.

Once the transmitter is mounted, the transmitter housing can be rotated to the desired position. See Figure 4

On insulated tanks, remove enough insulation to accommodate the mounting sleeve.



1.6 Remote Seal Mounting

Mount the transmitter at a remote distance determined by length of capiliary tubing.

NOTE: The combination of tank vacuum and high pressure capillary head effect should not exceed 9 psi (300 mm Hg) absolute.

On insulated tanks, remove enough insulation to accommodate the mounting sleeve.

Figure 3 Example – Typical Remote Seal Transmitter installation

If Transmitter Model Number is	Then connect remote seal on
STR93D or STR12D	high pressure (HP) side of transmitter to lower flange mounting on tank wall for variable head H1.
STR13D	low pressure (LP) side of transmitter to lower flange mounting on tank wall for variable head H1.

STR93D or STR12D	low pressure (LP) side of transmitter to upper flange mounting on tank wall for <i>fixed</i> or constant head H2.
STR13D	high pressure (HP) side of transmitter to upper flange mounting on tank wall for <i>fixed</i> or constant head H2.
It is the End User's responsibility to provide a flange gasket and	

mounting hardware that are suitable for the transmitter's service condition



2 Trim the Transmitter

2.1 Procedure to Trim the Transmitter

For a transmitter with a small differential pressure span, you must ensure that the transmitter is vertical when mounting it. You do this by leveling the transmitter side-to-side and front-to-back. See Figure 5 for suggestions on how to level the transmitter using a spirit balance. You must also zero the transmitter by following the steps in this table.

Step	Action		
1	Attach the transmitter to the mounting bracket but do not completely tighten the mounting bolts		
2	Connect a tube between the input connections in the high pressure (HP) and low pressure (LP) heads to eliminate the affects of any surrounding air currents.		
3	Connect 24 Vdc power to the transmitter and connect a digital voltmeter or SFC to read the transmitter's output or connect a voltmeter across the 250 ohm resistor, if desired.		
4	Use applicable communicator to establish communications with the transmitter. For DE transmitter use SFC, SCT, or MCT. For Hart, use MCT or other Hart Communicator with applicable Honeywell DD's. For Fieldbus, use NI FBUS tools with applicable Honeywell DD's.		
5	While reading the transmitter's output on a communication tool or a voltmeter, position the transmitter so the output reading is at or near zero, then completely tighten the mounting bolts.		
6	Do an input zero correct function using the communication tool. This corrects the transmitter for any minor error that may occur after the mounting bolts are tightened.		
7	Remove the tube from between the input connections, the power, and the digital voltmeter or communication tool.		

3 Set the Jumpers

3.1 Changing Default Failsafe Direction

Transmitters are shipped with a default failsafe direction of upscale. This means that the transmitter's output will be driven upscale (maximum output) when the transmitter detects a critical status.

You can change the direction from upscale to downscale (minimum output) by cutting jumper W1 on the printed wiring assembly. If your transmitter is operating in the analog mode, an upscale failsafe action will drive the transmitter's output to greater than 21 mA or a downscale action will drive its output to less than 3.8 mA.

If your transmitter is operating in the DE mode an upscale failsafe action will cause the transmitter to generate a "+ infinity" digital signal, or a downscale failsafe action will cause it to generate a "- infinity" digital signal. The STIMV IOP module interprets either signal as "not a number" and initiates its own configured failsafe action for the control system. The STDC initiates the failsafe mode configured through the transmitter when either signal is generated.

NOTE: The failsafe direction display that you can access through the SFC only shows the state of the failsafe jumper in the transmitter as it correlates to analog transmitter operation. The failsafe action of the digital control system may be configured to operate differently than indicated by the state of the jumper in the transmitter.

	ATTENTION : Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices
Step	Action
1	With transmitter on bench and no power applied. Loosen end-cap lock and unscrew end cap from electronics side of transmitter housing.
2	If applicable, unsnap Local Smart Meter from PWA mounting bracket and unplug cable from connector on back of meter assembly. Loosen two retaining screws and carefully pull mounting bracket and PWA from housing. Using retaining clip remove flex-tape connector from PWA Remove 2-wire power connector from PWA, and then remove PWA and mounting bracket assembly.
3	With component side of PWA facing you, locate failsafe jumper W1 and cut it in half with small wire cutter such as dykes. See Figure 10. This changes failsafe action from upscale to downscale.
4	Reverse applicable previous steps to replace PWA.
5	Turn ON transmitter power.



3.2 Optional Write Protect Jumper

The ST 3000 transmitters are available with a "write protect option". When the write protect option is ordered, transmitters are shipped with a default jumper position for read-only. This means that the transmitter's configuration database can not be overwritten. To allow read/write access, the jumper can be moved to the read/write position. When the write protect option is not ordered access is read/write.

There is no need to check the jumper position unless you want to change it. Refer to the steps in the table in section 3.1 to remove the PWA from the transmitter and Figure 11 to reposition the jumper.



ATTENTION: Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices



4 Connect the Wiring and Power Up

4.1 Summary

The transmitter is designed to operate in a two-wire power/current loop with loop resistance and power supply voltage within the operating range shown in Figure 12.

Loop wiring is connected to the transmitter by simply attaching the positive (+) and negative (-) loop wires to the positive (+) and negative (-) SIGNAL screw terminals on the terminal block in the transmitter's electronics housing shown in the table in Section 4.2.

Each transmitter includes an internal ground terminal to connect the transmitter to earth ground. A ground terminal can be optionally added to the outside of the electronics housing. While it is not necessary to ground the transmitter for proper operation, we suggest that you do so to minimize the possible effects of "noise" on the output signal and provide additional protection against lightning and static discharge damage.



Figure 12

4.2 Wiring Connections

This procedure shows the steps for connecting power to the transmitter.

For loop wiring and external wiring diagrams, refer to the installation drawings presented in the Transmitter Manual.

Detailed drawings are provided for transmitter installation in nonintrinsically safe areas and for intrinsically safe loops in hazardous area locations.

ATTENTION

All wiring must comply with local codes, regulations, and ordinances.

If you will be using the transmitter in a hazardous area, be sure to review the hazardous location reference data included in Appendix B of the transmitter manual before operating the transmitter.

4.3 Lightning Protection

When your transmitter is equipped with optional lightning protection, you must connect a wire from the transmitter to ground as shown in Figure 13 to make the protection effective. We recommend that you use a size 8 (American Wire Gage) or (8.37mm²) bare or green covered wire.





Figure 13

4.4 Additional Considerations for Wiring SMV 3000 Transmitter





Connect RTD leads to the TC terminals 1, 2, 3, and 4 as appropriate for the given probe type.



Figure 15 RTD Input Wiring Connections.

Connect thermocouple leads to terminals 1 (–) and 3 (+), observing polarity.



Figure 16 Thermocouple Input Wiring Connections.

5 Certifications

5.1 Product Certifications

5.1.1 Approved Manufacturing Locations

Honeywell Industrial Measurement & Control Honeywell International Inc. 2500 West Union Hills Drive Phoenix, AZ 85027 USA

Honeywell (Tianjin) Limited 66 BaiHe Road, Tianjin Economic-Technological Development Area Tianjin, 300457, P.R. China

TATA Honeywell Limited 55-A, 8 & 9 Hadapsar Industrial Estate Pune 411 013, India

5.1.2 European Directive Information

The EC Declarations of Conformity for all applicable directives for this product can be found on the Honeywell website at www.honeywell.com/imc. A hard copy may be obtained by contacting your local Honeywell sales office.

European Pressure Equipment Directive (PED) 97/23/EC

The ST 3000 pressure transmitters are in conformity with the essential requirements of the PED. A formal statement from TÜV Industry Service Group of TÜV America, Inc., a division of TÜV Süddeutschland, a Notified Body regarding the Pressure Equipment Directive, is available upon request.

Electromagnetic Compatibility (EMC) 89/336/EEC

All ST 3000 Pressure Transmitters EN 50081-1: 1992; EN 50082-2: 1995; EN 61326: 1997 / A1: 1998 – Industrial

CE

5.2 Hazardous Location Certifications

5.2.1 North American Certifications

FM Approvals (USA)

Code	Comm	Description
1C	4-20 mA / DE	Intrinsically Safe for Class I, Division 1, Groups A, B, C, D, E, F & G, ENTITY, when installed per Honeywell Control Drawing 51204241. Nonincendive Class 1, Division 2, Groups A, B, C & D T4, (Ta \leq 93°C); Explosionproof for Class I, Division 1, Groups A, B, C & D; Dust-Ignitionproof for Class II, Division 1, Groups E, F & G; Suitable for Class II, Division 2, Groups F & G and Class III T5, (Ta \leq 93°C); Seal all conduits within 18 inches, Group A only; Enclosure Type 4X, IP 66/67
	4-20 mA / HART	Intrinsically Safe for Class I, Division 1, Groups A, B, C, D, E, F & G, ENTITY, when installed per Honeywell Control Drawing 51205784. Nonincendive for Class 1, Division 2, Groups A, B, C & D T4, (Ta \leq 93°C) Explosionproof for Class I, Division 1, Groups A, B, C & D Dust-Ignitionproof for Class II, Division 1, Groups E, F & G Suitable for Class II, Division 2, Groups F & G and Class III T5, (Ta \leq 93°C); Seal all conduits within 18 inches, Group A only; Enclosure Type 4X, IP 66/67
	FOUNDATION™ Fieldbus	Intrinsically Safe for Class I, Division 1, Groups A, B, C, D, E, F & G, ENTITY, when installed per Honeywell Control Drawing 51204301. Nonincendive Class 1, Division 2, Groups A, B, C & D T4, (Ta -40 to 40°C), T3A, (Ta -40 to 93°C) Explosionproof Class I, Division 1, Groups A, B, C & D Dust-Ignitionproof, Class II, Division 1, Groups E, F & G Suitable for Class II, Division 2, Groups F & G and Class III T4, (Ta -40 to 40°C), T3A, (Ta -40 to 93°C); Seal all conduits within 18 inches, Group A only; Enclosure Type 4X, IP 66/67

Canadian Standards Association (CSA)

Code	Comm	Description			
2J 4-20 mA / DE		Intrinsically Safe, Class I, Division 1, Groups A, B, C & D, Class II, Division 1, Groups E, F & G, Class III, Divisions 1 & 2, when installed per Honeywell Control Drawing 51204242			
		Non-Incendive Class I, Division 2, Groups A, B, C & D, Class II, Division 2, Groups E, F & G and Class III, Division 2			
		T4 (Ta ≤ 93°C)			
		Explosion Proof for Class I, Division 1, Groups B, C & D			
		Dust-Ignitionproof for Class II, Division 1, Groups E, F & G and Class III, Division 1			
		T4 (Ta ≤ 93°C) ; Enclosure Type 4X, IP 66/67			
	4-20 mA / HART	Intrinsically Safe, Class I, Division 1, Groups A, B, C & D, Class II, Division 1, Groups E, F & G, Class III, Divisions 1 & 2, when installed per Honeywell Control Drawing 51450806			
		Non-Incendive Class I, Division 2, Groups A, B, C & D, Class II, Division Groups E, F & G and Class III, Division 2			
		T4 (Ta ≤ 93°C)			
		Explosion Proof for Class I, Division 1, Groups B, C & D			
		Dust-Ignitionproof for Class II, Division 1, Groups E, F & G and Class III, Division 1			
		T4 (Ta \leq 93°C) ; Enclosure Type 4X, IP 66/67			
	FOUNDATION™ Fieldbus	Intrinsically Safe, Class I, Division 1, Groups A, B, C & D, Class II, Division 1, Groups E, F & G, Class III, Divisions 1 & 2, when installed per Honeywell Control Drawing 51204302.			
		Nonincendive Class 1, Division 2, Groups A, B, C & D			
		T4, (Ta -40 to 40°C), T3A, (Ta -40 to 93°C)			
		Explosion Proof Class I, Division 1, Groups A, B, C & D			
		Dust-Ignitionproof, Class II, Division 1, Groups E, F & G			
		Suitable for Class II, Division 2, Groups F & G and Class III			
		T4, (Ta -40 to 40°C), T3A, (Ta -40 to 93°C) ; Enclosure Type 4X, IP 66			

5.2.2 Atex Certification

Code	Comm	Description	
3D	ALL	LCIE 02 ATEX 6099, Ex II 2 G - Flameproof, EEx d IIC T5, (Ta -50 to 93°C), T6, (Ta -50 to 78°C); Enclosure IP 66/67	
3N	ALL	ATEX-Z2-51452622, Ex II 3 G - Non-Sparking, EEx nA, IIC, T5, (Ta -40 to 93°C), T6, (Ta -40 to 78°C); Enclosure IP 66/67	
		Special Conditions for Safe Use:	
		The installation of this equipment in Zone 2 hazardous areas must comply with IEC 60079-14, EN 50021 and/or valid national standards for installation and operation.	
		The power supply voltage cannot exceed the 42 Vdc maximum for 4-20 mA analog, DE and HART equipment, and 24 Vdc for Fieldbus equipment.	
		The electronic assemblies in these units are non-repairable items and if faulty must be replaced. The electrical power supply must be switched off before any replacement and during any time that the wiring terminations are being connected or disconnected.	
		The technical data supplied by the manufacturer must be adhered to.	
3S	4-20 mA / DE	LCIE 02 ATEX 6100X, Ex II 1 G - Intrinsically Safe, EEx ia IIC T4, (Ta -50 to 93°C), T5, (Ta -50 to 85°C), T6, (Ta -50 to 70°C); Enclosure IP 66/67	
		Special Conditions for Safe Use (X):	
		The transmitter is intrinsically safe apparatus; it may be installed in potentially explosive atmospheres.	
		For safety purposes, terminals + and – must be considered as eventually connected to ground.	
		The power terminals (+ and -) must only be connected to certified associated intrinsically safe equipment. The combinations must be compatible in accordance with intrinsic safety rules.	
3S	4-20 mA / HART	LCIE 02 ATEX 6101X, Ex II 1 G - Intrinsically Safe, EEx ia IIC T4, (Ta -50 to 93°C), T5, (Ta -50 to 63°C), T6, (Ta -50 to 48°C); Enclosure IP 66/67	
		Special Conditions for Safe Use (X):	
		The transmitter is intrinsically safe apparatus; it may be installed in potentially explosive atmospheres.	
		For safety purposes, terminals + and – must be considered as eventually connected to ground.	
		The power terminals (+ and -) must only be connected to certified associated intrinsically safe equipment. The combinations must be compatible in accordance with intrinsic safety rules.	

ATEX Certification, Europe (Assembled in Phoenix, AZ USA)

Code	Comm	Description	
3S FOUNDATION™ Fieldbus		LCIE 03 ATEX 6175X, Ex II 1 G - Intrinsically Safe, EEx ia IIC T3, (Ta -50 to 93°C), T4, (Ta -50 to 40°C); Enclosure IP 66/67	
		Special Conditions for Safe Use (X):	
		The transmitter is intrinsically safe apparatus; it may be installed in potentially explosive atmospheres.For safety purposes, terminals + and – must be considered as eventually connected to ground.	
		The power terminals (+ and -) must only be connected to certified associated intrinsically safe equipment. The combinations must be compatible in accordance with intrinsic safety rules.	
		The electrical parameters of certified equipment which can be connected to the transmitter exceed the following values:	
		$Uo \le 24 V$; $Io \le 250 mA$; $Po \le 1,2 W$.	

ATEX Certification, Europe (Assembled in Tianjin, P.R. China)

Code	Comm	Description			
3D	ALL	LCIE 03 ATEX 6396, Ex II 2 G - Flameproof, EEx d IIC T5, (Ta -50 to 93°C), T6, (Ta -50 to 78°C); Enclosure IP 66/67			
3N	ALL	ATEX-Z2-51453605, Ex II 3 G - Non-Sparking, EEx nA, IIC, T5, (Ta -40 to 93°C), T6, (Ta -40 to 78°C); Enclosure IP 66/67			
		Special Conditions for Safe Use:			
		The installation of this equipment in Zone 2 hazardous areas must comply with IEC 60079-14, EN 50021 and/or valid national standards for installation and operation.			
		The power supply voltage cannot exceed the 42 Vdc maximum for 4-20 mA analog, DE and HART equipment, and 24 Vdc for Fieldbus equipment. The electronic assemblies in these units are non-repairable items and if faulty must be replaced. The electrical power supply must be switched off before any replacement and during any time that the wiring terminations are being connected or disconnected.			
		The technical data supplied by the manufacturer must be adhered to.			
3S	4-20 mA / DE	LCIE 03 ATEX 6397X, Ex II 1 G - Intrinsically Safe, EEx ia IIC T4, (Ta -50 to 93°C), T5, (Ta -50 to 85°C), T6, (Ta -50 to 70°C); Enclosure IP 66/67			
		Special Conditions for Safe Use (X):			
		The transmitter is intrinsically safe apparatus; it may be installed in potentially explosive atmospheres.			
		For safety purposes, terminals + and – must be considered as eventually connected to ground.			
		The power terminals (+ and -) must only be connected to certified associated intrinsically safe equipment. The combinations must be compatible in accordance with intrinsic safety rules.			

Code	Comm	Description	
3S	4-20 mA / HART	LCIE 03 ATEX 6398X, Ex II 1 G – Intrinsically Safe, Eex ia IIC T4, (Ta –50 to 93°C), T5, (Ta –50 to 63°C), T6, (Ta –50 to 48°C); Enclosure IP 66/67	
		Special Conditions for Safe Use (X):	
		The transmitter is intrinsically safe apparatus; it may be installed in potentially explosive atmospheres.	
		For safety purposes, terminals + and – must be considered as eventually connected to ground.	
		The power terminals (+ and -) must only be connected to certified associated intrinsically safe equipment. The combinations must be compatible in accordance with intrinsic safety rules.	
3S	FOUNDATION™ Fieldbus	LCIE 04 ATEX 6118X, Ex II 1 G – Intrinsically Safe, Eex ia IIC T3, (Ta –50 to 93°C), T4, (Ta –50 to 40°C); Enclosure IP 66/67	
		Special Conditions for Safe Use (X):	
		The transmitter is intrinsically safe apparatus; it may be installed in potentially explosive atmospheres.	
		For safety purposes, terminals + and – must be considered as eventually connected to ground.	
		The power terminals (+ and -) must only be connected to certified associated intrinsically safe equipment. The combinations must be compatible in accordance with intrinsic safety rules.	
		The electrical parameters of certified equipment which can be connected to the transmitter exceed the following values:	
		$Uo \le 24 V$; $Io \le 250 mA$; $Po \le 1,2 W$.	

ATEX Certification (Apparatus Marked with Multiple Types of Protection)

Code	Description
ЗН	The 3H code provides a certification nameplate listing three types of protection: 3D – flameproof (zone 1), 3N – non-sparking (zone 2), and 3S – intrinsically safe (zones 0/1).
	The user must determine the type of protection required for installation of the equipment. The user shall then permanently mark the box $[\checkmark]$ adjacent to the type of protection used on the equipment certification nameplate. Once a type of protection has been checked on the nameplate, the equipment must not be reinstalled using any of the other unmarked certification types.

5.2.3 SA (Standards Australia) Certification, Australia

Code	Comm	Description			
4G	4-20 mA / DE	AUS-Ex 1371X-06, Intrinsically Safe, Ex ia IIC T4 (Ta \leq 93°C); Non-Sparking, Ex n IIC T4 (Ta \leq 93°C); Enclosure IP 66/67			
		Special Conditions for Safe Use (X):			
		The system installation instructions shall be followed when installing this equipment.			
		Cables are to be connected using a cable gland with IP rating of IP66 or greater.			
		If the temperature under rated conditions exceeds 75°C at the cable or conduit entry point or at the branching point of the conductors, a label shall be provided on the outside of the unit as a guide to the selection of the cable or the wiring in the conduit.			
4N	4-20 mA / DE	AUS Ex 3781X, Non-Sparking, Ex n IIC T4 (Ta \leq 93°C); Enclosure IP 66/67			
		Special Conditions for Safe Use (X):			
		The Maximum Input Voltage must not exceed 42 V.			
		The system installation instructions shall be followed when installing this equipment.			
		Tampering and replacement with non-factory components may adversely affect the safe use of the system.			
		Cables are to be connected using a cable gland with IP rating of IP66 or greater.			
		If the temperature under rated conditions exceeds 75°C at the cable or conduit entry point or at the branching point of the conductors, a label shall be provided on the outside of the unit as a guide to the selection of the cable or the wiring in the conduit.			

5.2.4 Russia Certification, Russia

Code	Comm	Description		
5D	ALL	RU-230, Flameproof, 1ExdIICT6X, T6 (Ta \leq 93°C), Enclosure IP 66/67		
5S	ALLRU-306, Intrinsically Safe, 0ExialICT5X, T5 (Ta \leq 93°C), Enclosure 66/67			

5.2.5 INMETRO Certification, Brazil

Code	Comm	Description	
6D	ALL	INMETRO-2002EC02CP031, CERTSUP/INMETRO, Flameproof, Ex d IIC T5, (Ta -50 to 93°C); Enclosure IP 66/67	

ST 3000 Smart Pressure Transmitter, Quick Start Installation Guide Write-protect option

34-ST-99-44 10/6/05

Addendum (to User Manual 34-ST-25-24)

Overview

The ST3000 Pressure Transmitter (DE or HART) is now being shipped with a newly designed printed wiring assembly (PWA) that allows user access to the optional write protect jumper without removing the PWA. This version of the PWA is functionally identical to the previous version, with the same performance and specifications. The new version PWA differs only in location of the optional write protect jumper and the associated bracket and hardware.

Approx. Page # in User Manual	Section		Description of Change
9	3.2 Optional Write Protect Jumper	Do not f Failsafe	remove the PWA as described in Section 3.1 Changing Default b Direction. Instead, follow the following steps. ATTENTION: Electrostatic Discharge (ESD) hazards. Observe ions for handling electrostatic sensitive devices.
		Disconr greater Failure serious	WARNING! PERSONAL INJURY: Risk of electrical shock. nect power before proceeding. HAZARDOUS LIVE voltages than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible. to comply with these instructions could result in death or injury.
		Step 1	Place transmitter on bench. Remove power. Loosen end-cap lock and unscrew end-cap from electronics side of transmitter housing.
		Step 2	If applicable, unsnap local smart meter from PWA mounting bracket.
		Step 3	Find the write protect jumper shown in Figure 11 below. Position the jumper for read-only or read/write.
		Step 4	Reverse applicable previous steps to install smart meter and end-cap.
		Step 5	Re-connect transmitter power.



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