Honeywell

STT850 SmartLine Temperature Transmitter Quick Start Guide

34-TT-25-04, Revision 5, September 2017

This document provides descriptions and procedures for the Quick Installation of Honeywell's family of SmartLine Temperature Transmitters.

The SmartLine Temperature Transmitter is available in a variety of models for measuring Ohms, mV and temperature from RTD's and thermocouples.

For full details refer to the manuals listed below for Protocols, User Interface (HMI) Operation, Installation, Configuration, Calibration, Maintenance, Parts, Safety and Approvals etc. including options.

Various other documents are available on the CD supplied with your shipment. Documents in hardcopy can be ordered.

Revision history
Rev.1 – 1st release
Rev.2 – Fieldbus added
Rev.3 – Digital Output and CDV added.
Rev.4 –Angle Brackets added. Operating ranges chart and Display table updated
Rev.5 – Mtg and wiring drwg updates

References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Title	Document #
STT850 SmartLine Transmitter User's Manual	34-TT-25-03
STT850 SmartLine Transmitter HART/DE User Manual	34-TT-25-06
STT850 Foundation Fieldbus Manual	34-TT-25-07
STT850 Safety Manual	34-TT-25-05
STT850 Pocket Configuration Guide	34-TT-00-01
STT850 Specification	34-TT-03-14
MC Toolkit User Manual (MCT202) MC Toolkit User Manual (MCT404)	34-ST-25-20 34-ST-25-50

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INSTALLATION

Evaluate the site selected for the Transmitter installation with respect to the process system design specifications and Honeywell's published performance characteristics for your particular model.
Temperature extremes can affect display quality. The display can become unreadable at temperature extremes; however, this is only a temporary condition. The display will again be readable when temperatures return to within operable limits.

FEATURES AND OPTIONS

The STT850 is packaged in one major assembly: the Electronics Housing.
The elements in the Electronic Housing are connected to the process sensors, measure the process variables, respond to setup commands and execute the software and protocol for the different temperature measurement types. Figure 1 shows the assemblies in the Electronics Housing with available options.

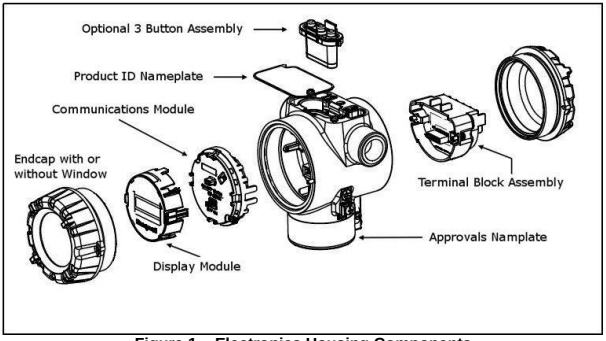


Figure 1 – Electronics Housing Components

The Transmitter measures process Temperature and outputs a signal proportional to the measured process variable (PV), including 4 to 20mA.

An optional 3-button assembly is located under the nameplate and provides a user interface and operation capability without opening the transmitter to set up and make adjustments to the Transmitter.

MOUNTING THE TRANSMITTER

Transmitter models can be attached to a two-inch (50 millimeter) vertical or horizontal pipe using Honeywell's optional angle; alternately you can use your own bracket. Honeywell's optional wall mounting bracket is also shown below:

For Housing with Adaptor refer to Honeywell drawings 50095917 (Pipe mount) and 50095918 (Wall mount) for detailed mounting specifications.
For Housing without adaptor refer to Honeywell drawings 32306827 (No-Adaptor, Pipe mount) and 32306828 (No-adaptor, Wall mount).
TRANSMITTER ENCLOSURE CAN BE ROTATED A TOTAL OF 90O FROM THE STANDARD MOUNTING POSITION

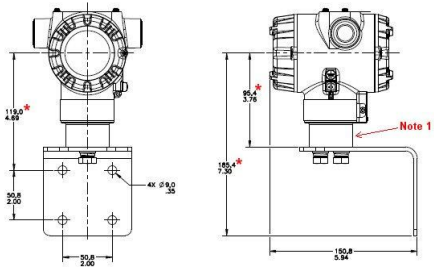


Figure 2 – STT850 with adapter housing - Horizontal Wall Mounting

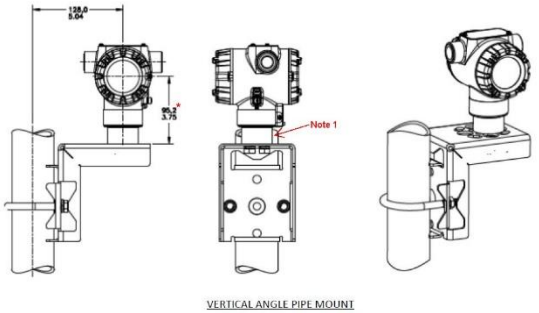
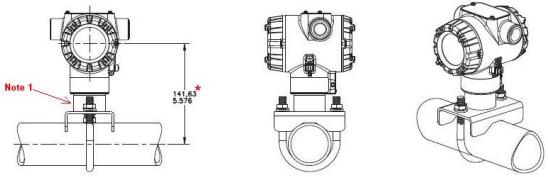
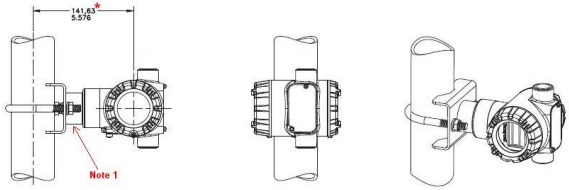


Figure 3 - STT850 Pipe Mount, Vertical



HORIZONTAL FLAT PIPE MOUNT



VERTICAL FLAT PIPE MOUNT

Figure 4 - STT850 Pipe Mount with adapter housing - Horizontal & Vertical

*** Note 1:** In Figures 2, 3 and 4, 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.

Refer to the User's manual for dimension drawings

Bracket Mounting

If you are using an optional bracket, start with Step 1.

1. Align the two mounting holes in the transmitter with the two slots in the mounting bracket and assemble the (2) M8 hex cap screws, (2) lockwashers and (2) flat washers provided. Rotate transmitter assembly to the desired position and torque the M8 hex cap screws to 27,0 Nm/20,0 Lb-ft maximum.

2. Pipe Mount Option: Refer to Figure 5. Position the bracket on a 2-inch (50.8 mm) horizontal or vertical pipe, and install a "U" bolt around the pipe and through the holes in the bracket. Secure the bracket with the nuts, flat washers and lock washers provided.

3. Wall Mount Option: Position the bracket on the mounting surface at the desired location and secure the bracket to the mounting surface using the appropriate hardware (Wall mount hardware requirements to be determined and supplied by the end user). Existing mounting bracket, see Figure 5

Optional Mounting Bracket

Position bracket on 2-inch (50.8 mm) and install "U" bolt around pipe and through holes in bracket. Secure with nuts and lock washers provided. Optional mounting bracket, see Figure 5

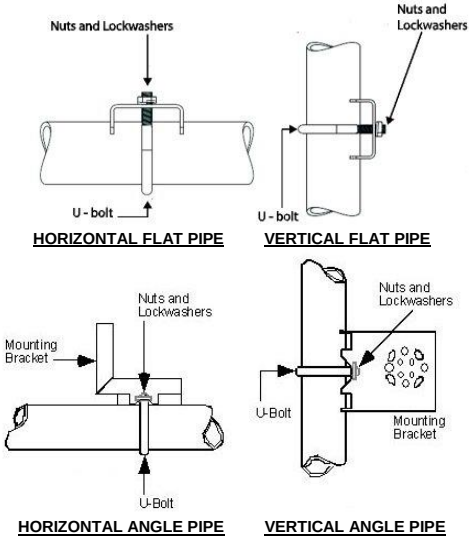


Figure 5: Flat and Angle Mounting Brackets secured to Horizontal or Vertical Pipe

CONDUIT ENTRY PLUGS AND ADAPTERS

Procedures
It is the User/Installer's responsibility to install the Transmitters in accordance with national and local code requirements. Conduit entry plugs and adapters shall be suitable for the environment, shall be certified for the hazardous location when required and acceptable to the authority having jurisdiction for the plant.

CONDUIT ENTRY PRECAUTIONARY NOTICE

THE CONDUIT/CABLE GLAND ENTRIES OF THIS PRODUCT ARE SUPPLIED WITH PLASTIC DUST CAPS WHICH ARE NOT TO BE USED IN SERVICE. IT IS THE USER'S RESPONSIBILITY TO REPLACE THE DUST CAPS WITH CABLE GLANDS, ADAPTORS AND/OR BLANKING PLUGS WHICH ARE SUITABLE FOR THE ENVIRONMENT INTO WHICH THIS PRODUCT WILL BE INSTALLED. THIS INCLUDES ENSURING COMPLIANCE WITH HAZARDOUS LOCATION REQUIREMENTS AND REQUIREMENTS OF OTHER GOVERNING AUTHORITIES AS APPLICABLE.

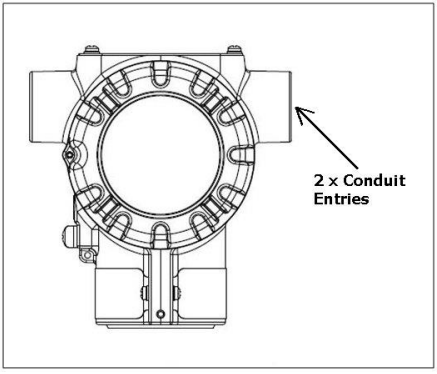


Figure 6: Electronic Housing Conduit Entries

Note. No plugs come installed in the housings. All housings come with temporary plastic dust protectors (red) installed and are not certified for use in any installation.

WIRING CONNECTIONS AND POWER UP

Summary

The transmitter is designed to operate in a two-wire power/current loop with loop resistance and power supply voltage within the HART operating range shown in Figure 7.

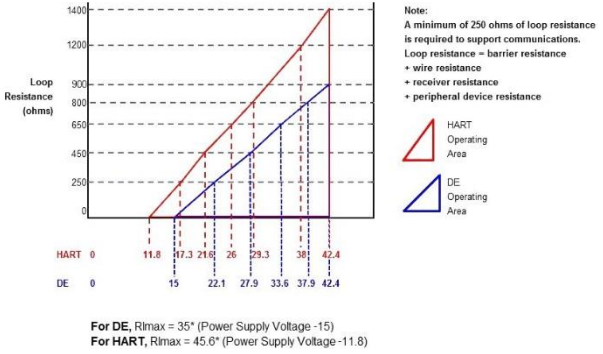


Figure 7: HART and DE Transmitter Operating Ranges

For DE operation, add 3.0V to these values.
Loop wiring is connected to the Transmitter by simply attaching the positive (+) and negative (–) loop wires to the positive (+) and negative (–) terminals on the Transmitter terminal block in the Electronics Housing shown in Figure 8.
Connect the Loop Power wiring shield to earth ground only at the power supply end.
Note that the Transmitter is not polarity-sensitive.

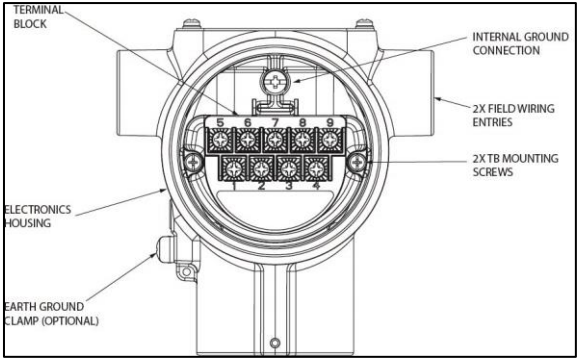


Figure 8: Transmitter 9-Screw Terminal Board and Grounding Screw

As shown in Figure 8, each Transmitter has an internal terminal to connect it to earth ground. Optionally, a ground terminal can be added to the outside of the Electronics Housing. Grounding the Transmitter for proper operation is required, as doing so tends to minimize the possible effects of noise on the output signal and affords protection against lightning and static discharge. An optional lightning terminal block can be installed in place of the non-lightning terminal block for Transmitters that will be installed in areas that are highly susceptible to lightning strikes. As noted above, the Loop Power wiring shield should only be connected to earth ground at the power supply end.

Wiring must comply with local codes, regulations and ordinances. Grounding may be required to meet various approval body certification, for example CE conformity. Refer to Appendix A of this document for details.

Note: Terminal #3 is for loop test and is not applicable for Fieldbus option. Terminal #4 is for Digital Output and is not applicable for Fieldbus option.

For HART and DE the Transmitter is designed to operate in a two-wire power/current loop with loop resistance and power supply voltage within the operating range; see Figure 7. With an optional remote meter, the voltage drop for this must be added to the basic power supply voltage requirements to determine the required Transmitter voltage and maximum loop resistance. Additional consideration is required when selecting intrinsic safety barriers to ensure that they will supply at least minimum Transmitter voltage, including the required 250 ohms of resistance (typically within the barriers) needed for digital communications.

Wiring Variations

The above procedures are used to connect power to a Transmitter. For loop wiring and external wiring, detailed drawings are provided for Transmitter installation in non-intrinsically safe areas and for intrinsically safe loops in hazardous area locations. This procedure shows the steps for connecting power to the transmitter.

Wiring must comply with local codes, regulations and ordinances. Grounding may be required to meet various approval body certification, for example CE conformity. Refer to the SmartLine Transmitter User's Manual 34-TT-25-03 (STT850) or 34-TT-25-06 (STT850) for details.

Input Sensor Wiring

Connect the input sensors as shown in Figures below:

Figure 9: DE Single Input Wiring Diagram.

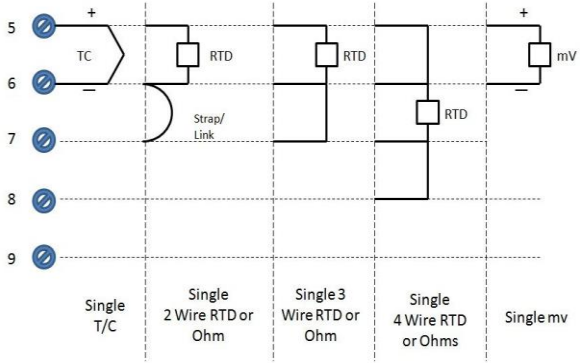


Figure 9: DE Single Input Wiring Diagram
RTD Thermocouple, mV and Ohm Connections

Figure 10: DE Dual Input Wiring Diagram

- Resistance temperature detector (RTD) measurements use the 3 or 4 wire approach.
- Dual-input units wired for a 4-wire RTD will automatically disable Input 2.
- To minimize common noise problems in the application, a strap/jumper should be wired between terminals 6 and 8.

For differential T/C operation on DE Models, a second strap/jumper should be wired between terminals 6 and 7. Do not install this strap for Non-DE models. The output for differential operation is calculated as T/C 1 - T/C 2.

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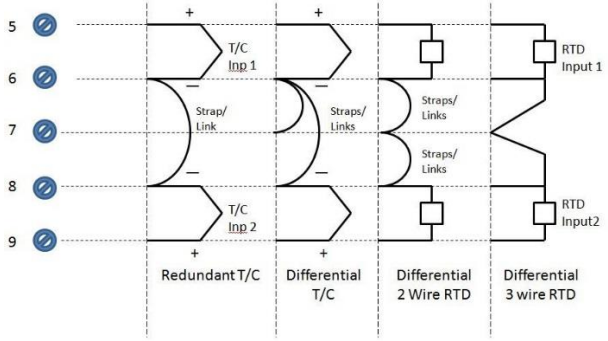

Figure 10: DE Dual Input Wiring Diagram
Thermocouple and RTD Connections (not applicable to single input sensor)

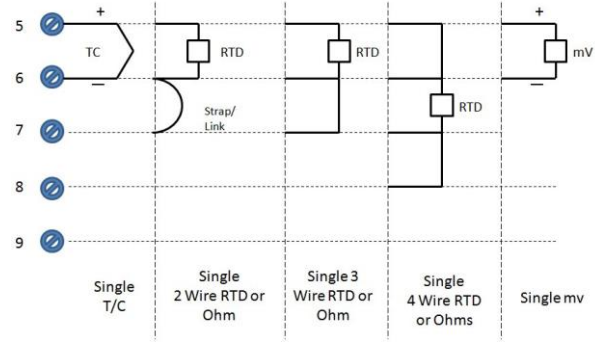

Figure 11: HART/FF – Single Input Wiring Diagram
RTD Thermocouple, mV and Ohm Connections

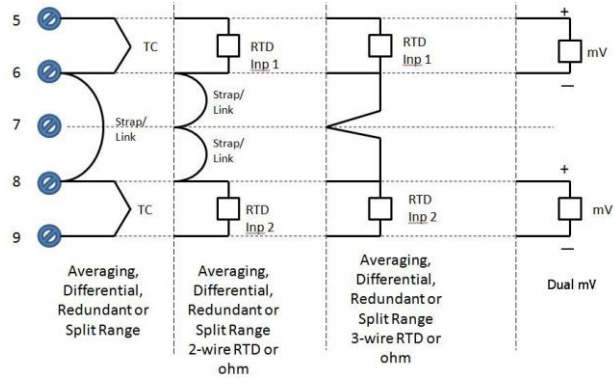

Figure 12: HART/FF – Dual Input Wiring Diagram
RTD Thermocouple, mV and Ohm Connections

Figure 13: HART/FF Dual Input Wiring Diagram

- For External C/J compensation, the first input is a thermocouple type and the second input is a 3-wire PT100 ohm RTD
- The STT850 can have different sensor types on its inputs for split range or averaging applications

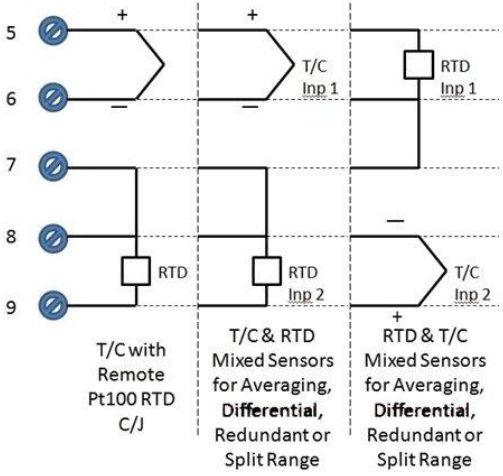

Figure 13: HART/FF Dual Input Wiring Diagram, mixed sensors
Remote C/J and Mixed Sensors Connections

Digital Output Wiring

Digital Output is available only on HART transmitters. The Digital Output should not use the same power supply as used to support the 4-20mA transmitter output. See Figure 14 and Figure 15.

For Intrinsically Safe (IS) applications, the 4-20mA and the Digital Output must use separate IS Barriers.

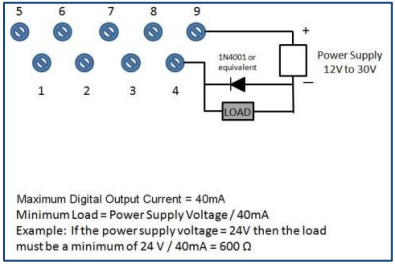

Figure 14: Digital Output Connections for mA Load (HART only)

For best performance, it is recommended that:

- Digital Output wires should be in a separate shielded twisted pair cable, do not use the same cable as used for the Loop or the Sensor wires
- If using the same power supply to operate both the 4-20mA Loop and the Digital Output, then make the interconnections to the power supply terminals directly at the power supply

NOTE: Intrinsically Safe Installations require the use of separate IS Barriers for the 4-20mA output and for the Digital Output connections

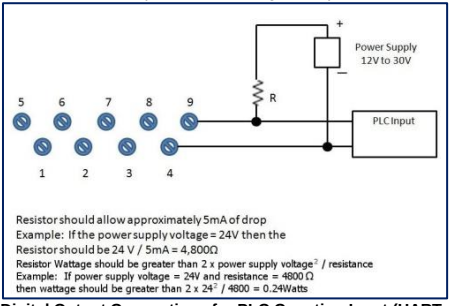

Figure 15: Digital Output Connections for PLC Counting Input (HART only)

EXPLOSION-PROOF CONDUIT SEAL

When installed as explosion proof in a Division 1 Hazardous Location, keep covers tight while the Transmitter is energized. Disconnect power to the Transmitter in the non-hazardous area prior to removing end caps for service.

When installed as non-incendive equipment in a Division 2 hazardous location, disconnect power to the Transmitter in the non-hazardous area, or determine that the location is non-hazardous before disconnecting or connecting the Transmitter wires.

Transmitters installed as explosion proof in Class I, Division 1, Group A Hazardous (classified) locations in accordance with ANSI/NFPA 70, the US National Electrical Code, require a LISTED explosion proof seal to be installed in the conduit, within 18 inches (457.2 mm) of the Transmitter. Crouse-Hinds type EYS/EYD or EYSX/EYDX are examples of LISTED explosion proof seals that meet this requirement. Transmitters installed as explosion proof in Class I, Division 1, Group B, C or D hazardous (classified) locations do not require that explosion proof seal be installed in the conduit.

Step	Action
1	See Figure 8, above, for parts locations. Loosen the end cap lock using a 1.5 mm Allen wrench.
2	Remove the end cap cover from the terminal block end of the Electronics Housing
3	Feed loop power leads through one end of the conduit entrances on either side of the Electronics Housing. The Transmitter accepts up to 16 AWG wire.
4	Connect the positive loop power lead to the positive (+) terminal and the negative loop power lead to the negative (-) terminal. **Note** that the Transmitter is not polarity-sensitive.
5	Feed input sensor wires through the 2nd conduit entrance and connect wire per wiring diagrams
6	Replace the end cap, and secure it in place

SET THE JUMPERS FOR HART/DE

Setting Failsafe Direction and Write Protect Jumpers

The SmartLine Temperature Transmitter (DE or HART) provides two jumpers to set the desired failsafe action and Write Protect option. See Figure 16

The top jumper on the electronics module sets the Failsafe direction. The default setting is up-scale failsafe.

Up Scale drives the loop to a value greater than 21mA while Down Scale drives the loop to a value less than 3.8mA.

You can change the failsafe direction by moving the Failsafe Jumper (top jumper) to the desired position (UP or DOWN).

If your transmitter is operating in DE mode, the upscale failsafe action will cause the transmitter to generate a
"+ infinity" digital signal, while a downscale failsafe will cause the transmitter to generate a "– infinity" digital signal.

The bottom jumper sets the Write Protect. The default setting is OFF (Un-protected).

When set to the On (Protected) position, Changed configuration parameters cannot be written to the transmitter.

When set to the OFF (Un-protected) position, Changed configuration parameters can be written to the transmitter.

	***ATTENTION**: Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices*
Step	***Action***
1	*Turn OFF Transmitter power.*
2	*Loosen the end-cap lock, and unscrew the end cap from the Electronics side of the Transmitter housing.*
3	*If there is a Display module, carefully depress the tabs on the sides of the Display Module and pull it off.* *If necessary, move the interface connector from the Communication Module. Do not discard connector*
4	*Set the Failsafe Jumper (top jumper) to the desired action (UP or DOWN).* *And the Write Protect jumper (Bottom jumper) to the desired behavior (Protected or Unprotected)* *See Figure 17 for jumper positioning.*
5	*If applicable, re-install the Display module as follows:* • *Orient the display as desired.* • *Install the Interface Connector in the Display module such that it will mate with the socket for the display in the Communication module.* • *Carefully line up the display, and snap it into place. Verify that the two tabs on the sides of the display latch.*
6	*Screw on the end cap and tighten the end-cap lock. Turn ON Transmitter power.*

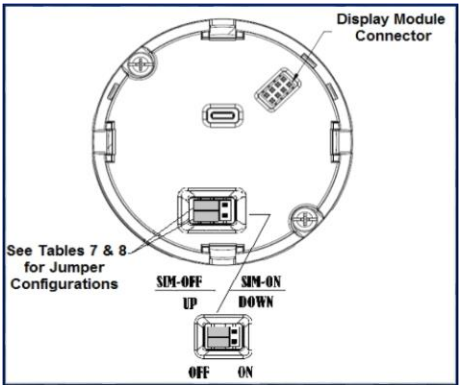

Figure 16: Jumper Location HART/DE

Jumper Settings	Description
	*Failsafe = UP (High)* *Write Protect = OFF (Not Protected)*
	*Failsafe = DOWN (Low)* *Write Protect = OFF (Not Protected)*
	*Failsafe = UP (High)* *Write Protect = ON (Protected)*
	*Failsafe = DOWN (Low)* *Write Protect = ON (Protected)*

Figure 17: Jumper Settings

WRITE PROTECT JUMPER ON FOUNDATION FIELDBUS (FF)

On Foundation Fieldbus transmitters there is no Failsafe jumper selection but there is a Write Protect jumper.

The bottom jumper sets the Write Protect. The default setting is OFF (Un-protected).

When set to the On (Protected) position, changed configuration parameters cannot be written to the transmitter.

When set to the OFF (Un-protected) position, changed configuration parameters can be written to the transmitter.

	ATTENTION: Electrostatic Discharge (ESD) hazards. Observe precautions for handling electrostatic sensitive devices.
	WARNING! PERSONAL INJURY: Risk of electrical shock. Disconnect power before proceeding. 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.
Step	**Action**
1	*Turn OFF Transmitter power.*
2	*Loosen the end-cap lock, and unscrew the end cap from the Electronics side of the Transmitter housing.*
3	*If applicable, carefully depress the tabs on the sides of the Display Module and pull it off. If necessary, move the interface connector from the Communication Module to the display module to provide the preferred orientation of the display module in the window.*
4	*Set the Write Protect jumper (Bottom jumper) to the desired behavior (Protected or Unprotected). See* Figure 18 *for jumper positioning.*
5	*Screw on the end cap and tighten the end-cap lock.*
6	*Turn ON Transmitter power.*

Image	*Description*
	*Fieldbus SIM Mode = OFF* *Write Protect = OFF (Not Protected)*
	*Fieldbus SIM Mode = OFF* *Write Protect = ON (Protected)*
	*Fieldbus SIM Mode = ON* *Write Protect = OFF (Not Protected)*

Figure 18: Fieldbus Write Protect

CONFIGURATION GUIDE

Table 2 shows the transmitter Basic Display Configuration.

Table 3 shows the Advanced Display Configuration. Use these tables to configure the transmitter.

Table 1 – Available Display Characteristics

Basic Display	• Suitable for basic process needs • 360° rotation in 90° increments • 8 configurable screens • 2 lines,16 characters • Standard units of measurement: °F, °C, °R, K, Ω, mV & % (Custom Units available for Fieldbus variant) • Diagnostic messaging

Advanced Display	• Suitable for custom and complex process needs
	• 360° rotation in 90° increments
	• Three (3) configurable screen formats with configurable rotation timing
	  ○ Large process variable (PV)
	  ○ PV with bar graph
	  ○ PV with trend (1-999 hours (allows 31+ days), configurable)
	• Eight (8) screens with 3-30 seconds rotation timing
	• Standard engineering units (Custom Units available for Fieldbus variant)
	• Diagnostic alerts and diagnostic messaging
	• Multiple language support:
	  ○ English, French, German, Spanish, Russian, Italian and Turkish
	  ○ English, Chinese (Kanji), Japanese
	• Supports 3-button configuration and calibration
	• Supports transmitter messaging, and maintenance mode indications

Table 2 – Basic Display Configuration

LCD Contrast	»»»»»»	Adjust the LCD contrast level. Range from » (1) to »»»»»»»»»» (9) Default: »»»»»»»» (7)	Press ↵ to enter menu selection ↑ and ↓ to select entry. ↵ to enter
Rotation Time			
Screen Rotate	Enabled Disabled	Select to enable or disable the automatic rotation of Screens	
Select Screen (HART/DE)	1 through 8	Select Screen to configure.	
Screen # (HART/DE)	Enabled/Disabled	Select to enable or disable the screen for display and configuration	
Select # PV (HART/DE) Database updates take 30 seconds to complete. Do not interrupt power.	Loop PV Sensor 1 Sensor 2 CJ Temperature Sensor 1 Resistance Sensor 2 Resistance Loop Output Percent Output	Select the Process Variable (PV) that will be shown on the screen. Sensor Resistance is only available for RTDs and will read 0 for thermocouples	
Screen Decimal (HART/DE)	None X.X X.XX X.XXX	Select the PV decimal resolution to be shown on selected screen from list.	
Screen Units (HART/DE) (Writable only for TC/RTD inputs)	°C, °F,°R, K	Choose appropriate engineering units from list	
Range/Cal Units (Visible for TC and RTD inputs only)	°C, °F, °R, K	Select the ranging and calibration temperature units	
Select Input (HART/FF) (Dual input only)	1, 2	Select Input number to configure, referred to as "n" in subsequent menu items	
Sensor n Type (Read only for FF) Database updates take 30 seconds to complete. Do not interrupt power.	mV, TC, RTD, Ohm	Select Sensor Type.	

Sensor n ID (HART/FF) (FF read only) Database updates take 30 seconds to complete. Do not interrupt power.	Sensor Identifier	Select Sensor ID for Input n for selected Sensor Type. (Input 1 selection or dual input model).	Press ↵ to enter menu selection ↑ and ↓ to select entry. ↵ to enter
Sensor n Wire Type (HART/FF) (FF read only)	2-Wire, 3-Wire, 4-Wire	Select the number of lead wires for RTD and Ohm sensors.	
Sensor n Lead (HART/FF) (FF read only)	####.##	Sensor lead wire resistance value. (only if RTD type is 2 wire)	
Sensor n Bias (HART/FF) (FF read only)	####.##	Bias on the measured value	
Sensor n Cal Lo Pt (HART/FF) (FF read only)	####.##	Calibration low point for Sensor n	
Sensor n Cal Hi Pt (HART/FF) (FF read only)	####.##	Calibration high point for Sensor n	
Do Sensor n Cal Lo (HART/DE)	Confirm	Executing this selection corrects the Cal Low Point based on the input measurement	
Do Sensor n Cal Hi (HART/DE)	Confirm	Executing this selection corrects the Cal High Point based on the input measurement	
Sensor n LRV (FF only)	####.##	Lower Range Value representing 0% output	Read Only Parameter
Sensor n URV (FF only)	####.##	Upper Range Value representing 100% output	Read Only Parameter
Reset Sensor n Cal (HART/DE)	Confirm	Executing this selection Resets the LRV, and URV Corrects back to Factory values	Press ↵ to enter menu selection ↑ and ↓ to select entry. ↵ to enter

Sensor n CVD (HART or FF) Applicable for Pt100, Pt200, Pt500 and Pt1000 RTDs only	Enabled, Disabled	Callendar - van Dusen RTD coefficients for Sensor n	Read Only Parameter
Match PVs (HART only)	Enable, Disable	For Redundant Loop Control Mode. When enabled, adds a constant bias value to the Sensor 2 measured value to equate it to the Sensor 1 measured value at the moment selected.	Press ↵ to enter menu selection ↑ and ↓ to select entry. ↵ to enter
Break Detect (FF read only)	Enable, Disable	Enable or disable detection of Input wire break	
Latching (FF read only)	Enabled, Disabled	When enabled, causes all critical sensor input failures to latch to the Critical Fault state. The fault may only be cleared by device reset. When disabled, the critical sensor input failure will be cleared if the input recovers.	
CJ Type (FF read only)	Internal, External, Fixed	Determines the source of the Cold Junction compensation for thermocouple Sensor types.	
Fixed CJ Value (FF read only)	####.##	When CJ Type is Fixed, specifies the Cold Junction temperature value for thermocouple Sensor types. Degrees Celsius. Fixed CJ temperatures below -50 degrees have no effect on measured values.	
Loop Ctrl Mode (HART/DE) (DE read only) (Dual input only)	Averaging, Differential, Sensor 1, Sensor 2, Split-Range, Redundant	Mode of Loop control	
Loop Source (HART/DE) (Dual input only)	Sensor 1, Sensor 2	Input sensor currently controlling the Loop	Read Only Parameter
LRV (HART/DE) URV (HART/DE)	#. ## #. ##	The limits are: the Lower Range Limit (LRL) and the Upper Range Limit (URL) of the selected Sensor 1 ID	

Set LRV (HART/DE)	Set Lower Range Value	**ATTENTION:** Executing this service will set the Lower Range Value (LRV) equal to the input pressure	Press ↵ to enter menu selection ↑ and ↓ to select entry. ↵ to enter
Set URV (HART/DE)	Set Upper Range Value	**ATTENTION:** Executing this service will set the Upper Range Value (URV) equal to the input pressure	
MRV (HART/FF) (FF read only)	Set Middle Range Value	Limits are the minimum URL and maximum LRL of the selected Sensor 1 and Sensor 2 IDs. Determines the point of transition of Loop Control between Sensor 1 and Sensor 2 for Split-Range Loop Control Mode.	
Hysteresis (HART/FF) (FF read only)	###.##	Hysteresis value relative to the MRV for the transition of Loop Control between Sensors when Loop Ctrl Mode is Split-Range	
Bumpless Damping (HART/FF) (FF read only)	##.#	Damping value for the transition of Loop Control between Sensors when Loop Ctrl Mode is Split-Range or Redundant	
Damping (HART/DE)	#. ##	Selection applies digital filtering to suppress noise effects on the PV. The limits for this value are 0.0 to 102.0 seconds	
NAMUR Output (HART/DE)	Enabled Disabled	Disabling sets the loop output and burnout levels to the Honeywell levels	
DAC Zero Trim (HART/DE) Loop must be removed from Automatic Control	DAC Zero Trim	This selection allows the loop zero output 4mA value to be trimmed. **Note:** You must connect a current meter to the transmitter to monitor the loop output.	
DAC Span Trim (HART/DE) Loop must be removed from Automatic Control	DAC Span Trim	This selection allows the loop span output 20mA value to be trimmed. **Note:** You must connect a current meter to the transmitter to monitor the loop output.	

Loop Test (HART/DE) Loop must be removed from Automatic Control	Loop Test 12.000	This selection allows the user to force the DAC output to any value between 3.8 and 20.8 mA. Note: This selection will put the DAC into Fixed Output Mode, as indicated by the flashing output value. Navigation away from this menu item will return the loop to Normal (Automatic) Mode.	

Alarm Type 1 Alarm Type 2	None PV High PV Low Critical Diagnostic Redundant Input Active Rate of Change* Deviation* (*Available only with Advanced Diagnostics Option).	Type of alarm.	Read Only Parameter
Tag ID (HART/DE)	□□□□□□□□	Enter Tag ID name up to 8 characters long. □ = any Alphanumeric value	Tag ID (HART/DE)
HART Device ID	Unique for each device	Unique ID for device	Read Only Parameter
HART PV Units	Units of transmitted PV	Units for the Primary Variable (Writable - for TC/RTD inputs Read only - mV and Ohm)	Press ↵ to enter menu selection ↑ and ↓ to select entry. ↵ to enter
HART SV Units	Units of transmitted SV	Units for the Secondary Variable	
Install Date (HART only)	DD MM YYYY	The Install Date is entered in sequence of Day, Month, and Year, followed by the new date and the prompt Write Date to confirm the entry. **CAUTION:** The Install Date can only be written once in the life of the Transmitter. You cannot erase or overwrite the Install Date once it has been written.	

Firmware	Display Electronics Sensor	Menu item shows the current Firmware versions of the Display, Electronics Module and the Sensor Module	Read Only Parameter
Protocol	HART, DE, FF	Menu item shows the communications protocol	Read Only Parameter
Model Key (HART/FF)		Identifies the type and range of the transmitter	Read Only Parameter
<Exit Menu>			

Table 3 – Advanced Display Configuration

Level 1	Level 2	Level 3
<Exit>	n/a	n/a
Diagnostics	Critical Non-Critical	For details on the Advanced Display menus please refer to the User's manual 34-TT-25-03
Display Setup	LCD Contrast Common Setup Screen 1 Screen 2 … Screen 8	For details on the Advanced Display menus please refer to the User's manual 34-TT-25-03
Calibration	Cal Points Set Time Stamp S1 CVD Cal Pts S2 CVD Cal Pts S1 Cal Hi Corr S1 Cal Lo Corr S2 Cal Hi Corr S2 Cal Lo Corr Reset S1 Corr Reset S2 Corr LRV/URV Reset Correct (DE only) DAC Trim (HART/DE) Loop Test (HART/DE)	For details on the Advanced Display menus please refer to the User's manual 34-TT-25-03
Transmitter Setup	Device Setup HART Setup HART Date Digital Output (HART only) Sensor Setup Sensor 1 CVD (Hart or FF) Sensor 2 CVD (Hart or FF) Range values (FF only)	For details on the Advanced Display menus please refer to the User's manual 34-TT-25-03

Level 1	Level 2	Level 3
	LRV (HART/DE) URV (HART/DE) MRV (HART only) Set LRV (HART/DE) Set URV (HART/DE) Dev Install Date (HART/FF) S1 Install Date (HART/FF) S2 Install Date (HART/FF)	
Information	Display Comm Module Sensor Module	For details on the Advanced Display menus please refer to the User's manual 34-TT-25-03

Sales and Service

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

ASIA PACIFIC (TAC) **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, Phone: + 80012026455 or +44 (0)1202645583. FAX: +44 (0) 1344 655554 Email: (Sales) **sc-cp-apps-salespa62@honeywell.com** or (TAC) **hfs-tac-support@honeywell.com**
AMERICAS Honeywell Process Solutions, Phone: 1-800-423-9883, Or 1-800-343-0228. Email: (Sales) **ask-ssc@honeywell.com** or (TAC) **hfs-tac-support@honeywell.com**

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Honeywell Process Solutions
1860 West Rose Garden Lane
Phoenix, Arizona 85027
www.honeywellprocess.com

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