

Technical Note

SmartLine Temperature Transmitter Integral Configuration Capability



SmartLine Transmitters deliver a new level of efficiency and safety throughout the plant lifecycle either when operating stand-alone or when integrated with a process control system. For example, in addition to conventional configuration techniques through a host system, computer or hand held configuration device, SmartLine offers options for local configuration without additional equipment.

SmartLine Configuration Techniques

Overview

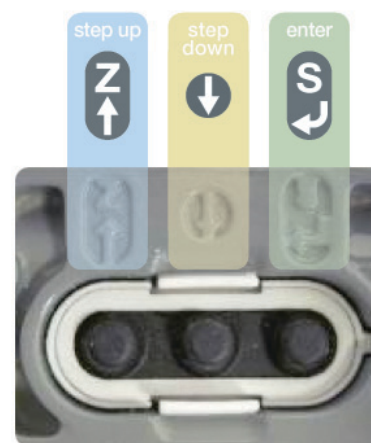
All digitally enabled field instruments offer conventional configuration capabilities through their communications protocol such as HART in combination with either PC-based configuration management software, a host control system, or through a handheld configuration product. SmartLine transmitters now offer a time saving and equipment savings method of configuration through an externally accessible 3-button keypad used in combination with either the SmartLine basic alphanumeric or advanced digital displays.

Three – Button Programming

Suitable for all electrical or environmental conditions, the optional configuration buttons are located under the transmitter nameplate tag located on the top of the device. The tag swings open to expose the buttons which are labeled for 1) zero/step up, 2) step down and 3) span/enter as shown in figure 1. Pressing <enter> will enter the configuration mode. Up/dn and enter keys may then be used to step through the configuration parameters to make and save changes.

Buttons with No Display

SmartLine products with the 3-button programming and without a display support setting zero and span. Depressing both the zero and the step down buttons together will set the zero value to the process temperature value (mV or Ohms) currently applied to the transmitter. Simultaneously depressing the span and step down buttons will set the span to the temperature value currently applied to the transmitter.



Buttons with Advanced or Basic Display

When specified with an integral basic or advanced display the simultaneous depressing action for setting zero and span is disabled. Zero & span as well as all configuration parameters are now set in conjunction with the basic and advanced display menus shown on the next page.

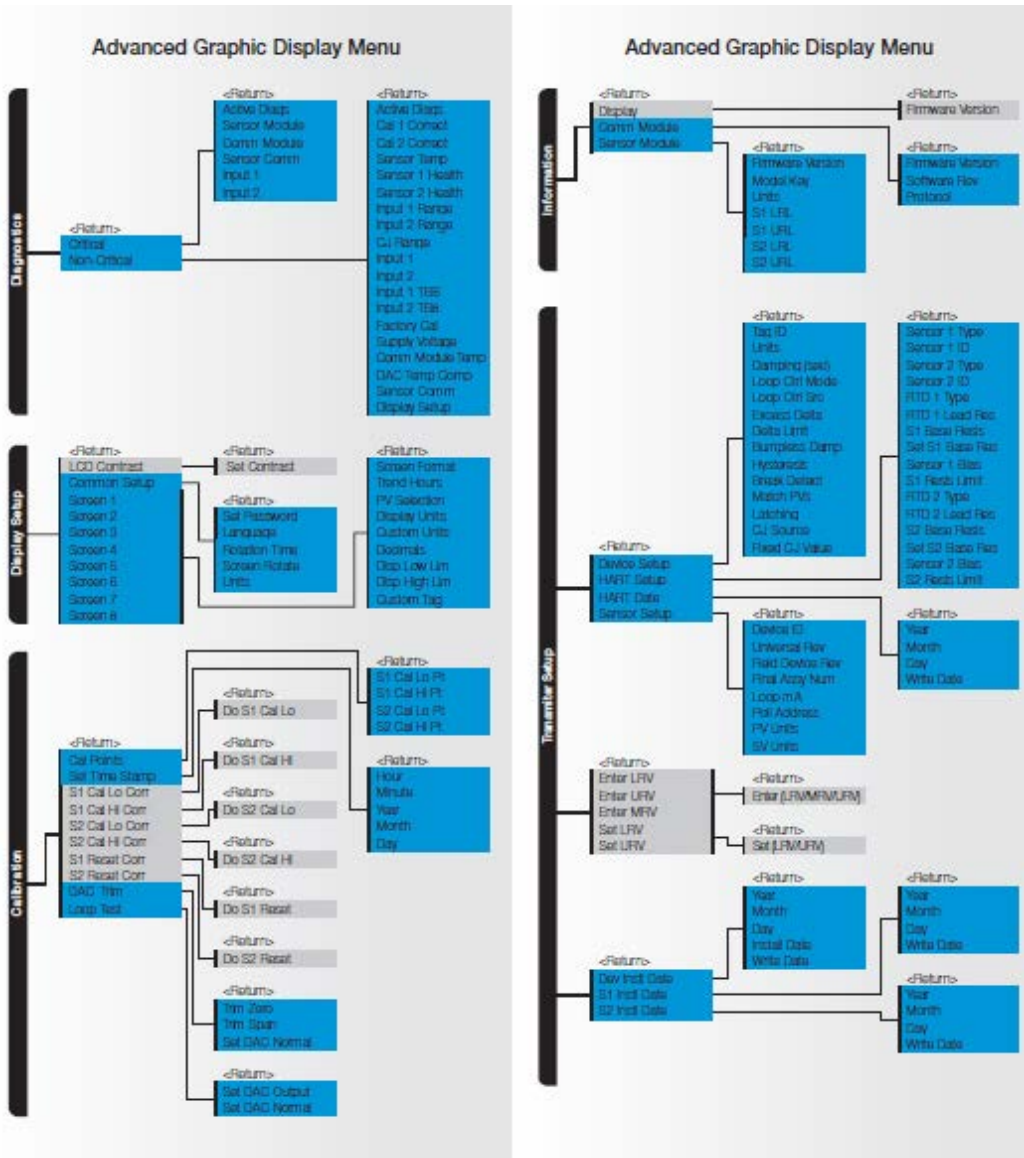
Safety First

To enhance operational safety, the configuration buttons can be disabled after configuration is completed. This is accomplished with the device write protection jumper or software settings available via handheld or remote configuration software. The jumper setting will always override the software setting in the write protect on mode. Additional safety is also available when the unique SmartLine Tamper Reporting² feature is employed.

Configuration Menus and Parameter Storage

SmartLine Pressure and Temperature products are modular in design and configuration parameters are stored in the various modules. This permits replacing modular components while minimizing reconfiguration requirements. Configuration parameters are stored as shown in figures 3-6 below. Similarity in the menu structure and configuration methods across SmartLine products significantly reduces training costs, improves efficiency and minimizes human error during commissioning as well as maintenance.

Advanced Display Configuration



Basic Display Configuration

Menu Selection	Visible	Locally Writable
LoLd/Contrast	Always	Yes
Rotation Time	Always	Yes
Screen Rotation	Always	Yes
Select Screen	Always	Yes
Screen x	Always	HART/DE
Screen x PV	Always	HART/DE
Screen x Decimal	Always	HART/DE
Screen x Units	Always	HART/DE
Range/Cal Units	Always	Yes
Select Input	DS* Only	Yes
Sensor n Type	Always	HART/DE
Sensor n ID	Always	HART/DE
RTD n Type	Always	HART/DE
RTD n Lead Wire	Always	HART/DE
Sensor n Bias	Always	HART/DE
Sens n Cal Lo Pt	HART/DE	Yes
Sens n Cal Hi Pt	HART/DE	Yes
Do Sens n Cal Lo	HART/DE	Yes
Do Sens n Cal Hi	HART/DE	Yes
Reset Sens n Cal	HART/DE	Yes
Match PVs	HART/DE DS* Only	Yes
Break Detect	Always	HART/DE
Latching	Always	HART/DE
CJ Type	Always	HART/DE
Fixed CJ Value	Always	HART/DE
Delta Limit	Always	HART/DE
Excess Delta	Always	HART/DE
Loop Contrl Mode	HART/DE DS* Only	Yes
Loop Source	HART/DE DS* Only	Yes
LRV	Always	HART/DE
URV	Always	HART/DE
Set LRV	HART/DE	Yes
Set URV	HART/DE	Yes
MRV	DS Only	HART/DE
Hysteresis	HART/DE DS* Only	Yes
Bumpless Damping	HART/DE DS* Only	Yes
Damping	Always	HART/DE
NAMUR Output	HART/DE	Yes
DAC Zero Trim	HART/DE	Yes
DAC Span Trim	HART/DE	Yes
Loop Test	HART/DE	Yes
Tag ID	HART/DE	Yes
HART Device ID	HART	Yes
HART PV Units	HART	Yes
HART SV Units	HART	Yes
Install Date	HART/FF	HART Only
Firmware	Always	No
Protocol	Always	No
Model Key	Always	No
Exit Menu	Always	N/A

*Dual Sensor Inputs

Storage Locations

Basic Display Parameters	Stored Location	Type
LCD Contrast	Comm Module	Read/Write
Rotation Time	Comm Module	Read/Write
Screen Rotate	Comm Module	Read/Write
Screen Format	Comm Module	Read/Write
PV Selection	Comm Module	Read/Write
Display Units	Comm Module	Read/Write
Decimals	Comm Module	Read/Write
Display Firmware Rev	Display	Read Only
Temperature Units	Comm Module	Read/Write
Sensor Module Parameters	Stored Location	Type
Sensor 1 Type	Sensor Board	Read/Write
Sensor 1 ID	Sensor Board	Read/Write
Sensor 2 Type	Sensor Board	Read/Write
Sensor 2 ID	Sensor Board	Read/Write
RTD 1 Type	Sensor Board	Read/Write
RTD 1 Lead Wire Resistance	Sensor Board	Read/Write
Sensor 1 Bias	Sensor Board	Read/Write
RTD 2 Type	Sensor Board	Read/Write
RTD 2 Lead Wire Resistance	Sensor Board	Read/Write
Sensor 2 Bias	Sensor Board	Read/Write
Break Detect	Sensor Board	Read/Write
Match PVs	Sensor Board	Read/Write
Latching	Sensor Board	Read/Write
CJ Compensation Source	Sensor Board	Read/Write
Fixed CJ Value	Sensor Board	Read/Write
S1 Cal Lo Pt	Sensor Board	Read/Write
S1 Cal Hi Pt	Sensor Board	Read/Write
S2 Cal Lo Pt	Sensor Board	Read/Write
S2 Cal Hi Pt	Sensor Board	Read/Write
Set Time Stamp	Sensor Board	Read/Write
Device Install Date	Sensor Board	One Time Write
Sensor 1 Install Date	Sensor Board	Read/Write
Sensor 2 Install Date	Sensor Board	Read/Write
S1 Cal Lo Corr	Sensor Board	Read/Write
S1 Cal Hi Corr	Sensor Board	Read/Write
S2 Cal Lo Corr	Sensor Board	Read/Write
S2 Cal Hi Corr	Sensor Board	Read/Write
S1 Reset Corr	Sensor Board	Read/Write
S2 Reset Corr	Sensor Board	Read/Write
Sensor Firmware Version	Sensor Board	Read Only
Model Key	Sensor Board	Read Only
Units(LRL/URL)	Comm Module	Read Only
LRL 1	Sensor Board	Read Only
LRL 2	Sensor Board	Read Only
URL 1	Sensor Board	Read Only
URL 2	Sensor Board	Read Only
Communication Module Parameters	Stored Location	Type
Tag ID	Comm Module	Read/Write
Damping (sec)	Comm Module	Read/Write
Loop Ctrl Mode	Comm Module	Read/Write
Loop Ctrl Src	Comm Module	Read Only
Excess Delta	Comm Module	Read/Write
Delta Limit	Comm Module	Read/Write
Bumpless Damping	Comm Module	Read/Write
Hysteresis	Comm Module	Read/Write
Device ID	Comm Module	Read Only
Universal Rev	Comm Module	Read Only
Field Dev Rev	Comm Module	Read Only
Final Assy Num	Comm Module	Read/Write
Loop mA	Comm Module	Read/Write
Poll Address	Comm Module	Read/Write
PV Units	Comm Module	Read/Write
SV Units	Comm Module	Read/Write
HART Data	Comm Module	Read/Write
LRV	Comm Module	Read/Write
URV	Comm Module	Read/Write
MRV	Comm Module	Read/Write
DAC Zero Trim	Comm Module	Read/Write
DAC Span Trim	Comm Module	Read/Write
Loop Test	Comm Module	Read/Write
Comm Module Firmware	Comm Module	Read Only
Comm Module Software Rev	Comm Module	Read Only
Protocol	Comm Module	Read Only

Advanced Display Parameters	Stored Location	Type
LCD Contrast	Comm Module	Read/Write
Set Password	Comm Module	Read/Write
Language	Comm Module	Read/Write
Rotation Time	Comm Module	Read/Write
Screen Rotate	Comm Module	Read/Write
Screen Format	Comm Module	Read/Write
Trend Hours	Comm Module	Read/Write
PV Selection	Comm Module	Read/Write
Display Units	Comm Module	Read/Write
Custom Units	Comm Module	Read/Write
Temperature Units	Comm Module	Read/Write
Decimals	Comm Module	Read/Write
Disp Low Lim	Comm Module	Read/Write
Disp High Lim	Comm Module	Read/Write
Custom Tag	Comm Module	Read/Write
Display Firmware Rev	Display	Read Only

For More Information

Learn more about how Honeywell's SmartLine Temperature transmitters deliver value across the entire plant lifecycle, visit www.honeywellprocess.com/smartline or contact your Honeywell distributor or account manager.

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