

# SMARTLINE PRESSURE SELECTION GUIDELINES



# Redefining Smart. SmartLine Pressure Transmitters

Honeywell's SmartLine® pressure measurement system sets the standard with its industry-leading total performance, even in harsh process environments. With the best control system integration and unique features such as modularity, a graphics display and universal terminals, SmartLine offers the lowest total cost of ownership.

## Leading Performance

SmartLine provides better performance with industry leading accuracy, response time and stability. When combined with Honeywell's proven static pressure and temperature compensation, the unbeatable total performance is better than 0.12% of span under actual process conditions.

## Lowest Total Cost of Ownership

- Honeywell's unique approach to modularity helps reduce maintenance costs and make repairs safer and faster. With the ability to repair the transmitter in place, the need to break a process line connection is avoided, even in an intrinsically safe environment. And with no need to stock complete units, inventory costs are lower.
- An advanced graphics display and three button external configuration option provide capabilities for field operators to more efficiently perform tasks, solve problems and avoid errors with no need for a handheld device. The display shows rich graphics, bar graphs, trends and messages from the control room.
- With SmartLine's universal terminals, wiring can be reversed without damaging or affecting the normal operation of the transmitter. This avoids costly rework on large installations where multiple contractors may use different wiring standards and eliminates return trips to re-wire "incorrectly wired" devices.

## SmartLine Connection Advantage

- Transmitter Messaging allows the operator to send and display custom messages to the display so field operators can quickly identify the right transmitter and task.
- Maintenance Mode Indication displays a message on the display that the transmitter and/or the loop is in a mode suitable for maintenance.
- Unique Tamper Reporting notifies the control room that an attempt to change a write-protected configuration has been made or that the write protection has been switched off.
- Field Device Manager (FDM) is Honeywell's centralized asset management system for smart field device configuration and maintenance. When SmartLine data is integrated into FDM, users can create hierarchical screen displays for quick and easy views of device health from areas of the plant or process.
- With comprehensive testing, Honeywell provides trouble-free integration for faster startups and reliability. The tests even include other suppliers' configuration tools.



	ST800	ST700	SMV800
<b>Performance Characteristics</b>			
<b>Accuracy</b>	<ul style="list-style-type: none"> <li>Up to 0.0375% span standard</li> <li>0.025% span optional high accuracy</li> </ul>	<ul style="list-style-type: none"> <li><b>Basic:</b> up to 0.065% of span</li> <li><b>Standard:</b> up to 0.05% of span</li> </ul>	<ul style="list-style-type: none"> <li>PV1 DP – up to 0.04% of span</li> <li>PV2 SP – up to 0.0375% of span</li> <li>PV3 PT – 0.2 °C RTD – Pt 100</li> <li>PV4 – mass flow accuracy up to 0.6%</li> </ul>
<b>Stability</b>	<ul style="list-style-type: none"> <li>Up to 0.01% per year for ten years</li> </ul>	<ul style="list-style-type: none"> <li><b>Basic:</b> up to 0.025% per year for 5 years</li> <li><b>Standard:</b> up to 0.02% per year for 5 years</li> </ul>	<ul style="list-style-type: none"> <li>Up to 0.0625% of URL per year</li> </ul>
<b>Response Time</b>	<ul style="list-style-type: none"> <li>As fast as 80 ms</li> </ul>	<ul style="list-style-type: none"> <li>As fast as 100 ms</li> </ul>	<ul style="list-style-type: none"> <li>As fast as 144 ms for DP (PV1)</li> </ul>
<b>Total Performance</b>	<ul style="list-style-type: none"> <li>Up to 0.12%</li> </ul>	<ul style="list-style-type: none"> <li>Up to 0.2%</li> </ul>	<ul style="list-style-type: none"> <li>Mass flow performance is up to 0.6%</li> </ul>
<b>Turndown Ratios up to 400:1</b>	<ul style="list-style-type: none"> <li>Turndown ratios up to 400:1</li> </ul>	<ul style="list-style-type: none"> <li>Turndown ratios up to 100:1</li> </ul>	<ul style="list-style-type: none"> <li>Turndown ratios up to 400:1</li> </ul>
<b>Compound Characterized Ranges</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>
<b>Temperature &amp; Static Pressure Compensated</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>
<b>Product Features &amp; Options</b>			
<b>Measured Parameters</b>	<ul style="list-style-type: none"> <li>Differential pressure static pressure</li> </ul>	<ul style="list-style-type: none"> <li>Differential pressure static pressure</li> </ul>	<ul style="list-style-type: none"> <li>Differential pressure, static pressure, process temperature</li> </ul>
<b>Calculated Parameters</b>	<ul style="list-style-type: none"> <li>Volume flow</li> </ul>	<ul style="list-style-type: none"> <li>Volume flow</li> </ul>	<ul style="list-style-type: none"> <li>Volume flow, mass flow</li> </ul>
<b>Support for Flow Algorithms</b>	<ul style="list-style-type: none"> <li>NA</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>	<ul style="list-style-type: none"> <li>ASME MFC-3M, ISO5167, Gost 8.586, AGA3, ASME MFC 14M</li> </ul>
<b>Support for Flow Elements</b>	<ul style="list-style-type: none"> <li>NA</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> </ul>	<ul style="list-style-type: none"> <li>Orifice, Venturi, Flow Nozzle, Pitotube, IFO, Standard V cone, Wafer cone, Wedge</li> </ul>
<b>HART® 7, DE &amp; FOUNDATION™ Fieldbus Communication Protocols</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>DE, HART 7</li> </ul>
<b>Universal Terminals</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Standard: Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>
<b>Modular Design Components</b>	<ul style="list-style-type: none"> <li>Simple faster repairs with less downtime</li> </ul>	<ul style="list-style-type: none"> <li>Simple faster repairs with less downtime</li> </ul>	<ul style="list-style-type: none"> <li>Simple faster repairs with less downtime</li> </ul>
<b>SmartLine Connection Advantage with Experion®</b>	<ul style="list-style-type: none"> <li>Transmitter Messaging*</li> <li>Maintenance Mode Indication</li> <li>Tamper Alerts*</li> <li>FDM Plant Area Views</li> <li>Comprehensive Experion integration testing</li> </ul>	<ul style="list-style-type: none"> <li>Tamper Alerts* (Standard only)</li> <li>FDM Plant Area Views</li> </ul>	<ul style="list-style-type: none"> <li>Transmitter Messaging*</li> <li>Maintenance Mode Indication</li> <li>Tamper Alerts*</li> <li>FDM Plant Area Views</li> <li>Comprehensive Experion integration testing</li> </ul>
<b>SIL 2 Certified/SIL 3 Capable Standard</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>No</li> </ul>
<b>Certified for Dual Seal Compliance</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>
<b>Comprehensive &amp; Advanced Diagnostics</b>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> </ul>
<b>User Interface Options</b>	<ul style="list-style-type: none"> <li>Optional basic alphanumeric display</li> <li>Optional advanced graphics display</li> <li>Multiple PV display screens including bar graph and trend displays</li> <li>Comprehensive diagnostic messages</li> <li>Supports transmitter messaging and maintenance mode indication</li> <li>Comprehensive EDDs &amp; DTMs for remote configuration</li> <li>Optional external 3-button programming capability</li> </ul>	<ul style="list-style-type: none"> <li><b>ST700 Basic:</b> supports Standard display with internal and/or external 2-button configuration</li> <li><b>ST700 Standard:</b> supports Standard display with internal 2-button configuration / Basic display with external three button configuration</li> <li>Diagnostic notifications</li> <li>Comprehensive EDDs &amp; DTMs for remote configuration</li> <li>Optional external two (Basic) or three (Standard) button programming capability</li> </ul>	<ul style="list-style-type: none"> <li>NA</li> <li>Optional advanced graphics display</li> <li>Multiple PV display screens including bar graph and trend displays</li> <li>Comprehensive diagnostic messages</li> <li>Supports transmitter messaging and maintenance mode indication</li> <li>Comprehensive EDDs &amp; DTMs for remote configuration</li> <li>Optional external 3-button limited programming cap</li> </ul>
<b>Optional Extended Warranties</b>	<ul style="list-style-type: none"> <li>1, 2, 3, 4 and 15 year warranties</li> </ul>	<ul style="list-style-type: none"> <li>1, 2, 3 and 4 year warranties</li> </ul>	<ul style="list-style-type: none"> <li>1, 2, 3, 4 and 15 year warranties</li> </ul>

\*Also compatible with other HART 7 enabled hosts



# LOWER YOUR TOTAL COST OF OWNERSHIP

With Plug-In Modules, Users Can Easily Add or Upgrade

All SmartLine Pressure Transmitters are modular in design, making it easy to replace hardware, add indicators, change electronic modules or even meter bodies without affecting overall performance or impinging on approval body certifications.

It takes only a matter of minutes to replace the electronics, even in the field under power with no re-calibration required. This avoids the time-consuming procedure of removing a sensor from a pipeline or network, particularly in highly critical processes.

Best of all, Honeywell's unique modularity reduces inventory requirements and lowers overall operating costs.

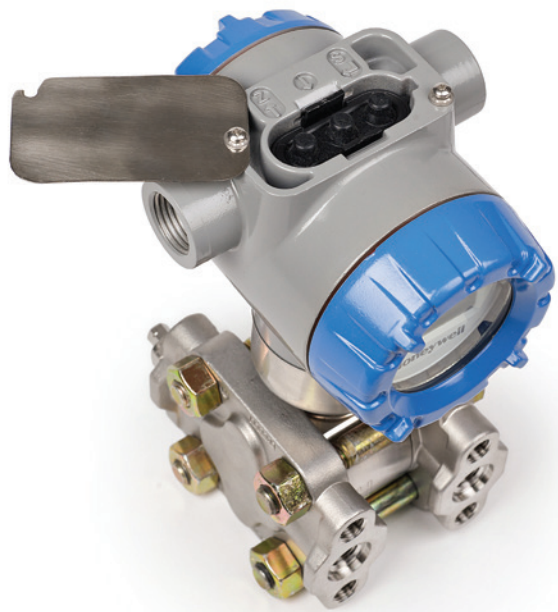


Field-exchangeable communication modules to deploy HART, Honeywell Digital Enhanced (DE) or FOUNDATION Fieldbus communication

Two- or three-button external configuration

Universal or traditional wiring terminal boards with standard or lightning-protected options

Standard, basic or advanced digital display as determined by the application requirements



### Flexible Configuration

In addition to configuring with any hand-held device or through asset management DTMs, users can configure the transmitters through externally accessible buttons, even in an intrinsically safe, Class I, Div. 1 environment.

Now, whether on the bench or in the field, configure, change tag information, change languages and even more without needing a handheld device.



### Advanced Graphics LCD Display

- Up to eight separate screens with three formats to meet unique display requirements: process variable, bar graph and trend
- Full library of engineering units with the ability to add custom units
- Configurable screen rotation timing
- Supports multiple languages
- Two diagnostic indications
- 90-degree position adjustments to facilitate all installation positions.



## SMARTLINE PRESSURE SELECTION GUIDE

Model Types, Ranges and Spans

Model	Upper Range Limit	Lower Range Limit	Max. Span	Min. Span	Units	Standard Accuracy % of Span	Turndown Capability	Model	Upper Range Limit	Lower Range Limit	Max. Span	Min. Span	Units	Standard Accuracy % of Span	Turndown Capability
<b>SmartLine ST800</b>								<b>SmartLine ST700</b>							
<b>Differential Pressure</b>								<b>Differential Pressure</b>							
STD810	10 (25.0)	-10 (-25.0)	10 (24.9)	0.1 (0.25)	H <sub>2</sub> O (mbar)	0.0750%	25:1	-	-	-	-	-	-	-	-
STD820	400 (1000)	-400 (-1000)	400 (1000)	1.0 (2.5)	H <sub>2</sub> O (mbar)	0.0375%	400:1	STD720/STD725	400 (1000)	-400 (-1000)	400 (1000)	1.0 (2.5)	H <sub>2</sub> O (mbar)	0.05%/0.065%	100:1
STD830	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.0500%	100:1	STD730/STD735	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.05%/0.065%	100:1
STD870	3000 (210)	-100 (-7.0)	3000 (210)	30 (2.1)	psi (bar)	0.0500%	100:1	STD770/STD775	3000 (210)	-100 (-7.0)	3000 (210)	30 (2.1)	psi (bar)	0.05%/0.065%	100:1
<b>Gauge Pressure</b>								<b>Gauge Pressure</b>							
<b>Dual Head</b>								<b>Dual Head</b>							
STG830	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.0550%	100:1	STG730/STG735	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.065%	100:1
STG840	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.0550%	100:1	STG740/STG745	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.065%	100:1
STG870	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.0550%	100:1	STG770/STG775	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.065%	100:1
<b>In-Line</b>								<b>In-Line</b>							
STG83L	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.0550%	100:1	STG73L/STG73S	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.065%	100:1
STG84L	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.0550%	100:1	STG74L/STG74S	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.065%	100:1
STG87L	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.0550%	100:1	STG77L/STG77S	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.065%	100:1
STG88L	6000 (420)	-14.7 (-1.0)	6000 (420)	60 (4.2)	psi (bar)	0.0550%	100:1	STG78L/STG78S	6000 (420)	-14.7 (-1.0)	6000 (420)	60 (4.2)	psi (bar)	0.065%	100:1
STG89L	10000 (690)	-14.7 (-1.0)	10000 (690)	100 (6.9)	psi (bar)	0.0550%	100:1	STG79L/STG79S	10000 (690)	-14.7 (-1.0)	10000 (690)	100 (6.9)	psi (bar)	0.065%	100:1
<b>Flush Mount</b>								<b>Flush Mount</b>							
-	-	-	-	-	-	-	-	STG73P/STG735P	100 (7)	-14.7 (-1.0)	100 (7)	1 (0.07)	psi (bar)	0.065%	100:1
<b>Absolute Pressure</b>								<b>Absolute Pressure</b>							
<b>Dual Head</b>								<b>Dual Head</b>							
STA822	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.055%	15:1	STA722/STA725	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.065%	100:1
STA840	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.055%	100:1	STA740/STA745	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.065%	100:1
<b>In-Line</b>								<b>In-Line</b>							
STA82L	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.055%	15:1	STA72L/STA72S	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.065%	100:1
STA84L	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.055%	100:1	STA74L/STA74S	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.065%	100:1
STA87L	3000 (210)	0 (0)	3000 (210)	30 (2.1)	psia (barA)	0.055%	100:1	STA77L/STA77S	3000 (210)	0 (0)	3000 (210)	30 (2.1)	psia (barA)	0.065%	100:1
<b>Flanged Mount Differential</b>								<b>Flanged Mount Differential</b>							
STF828	400 (1000)	-400 (-1000)	400 (1000)	4 (10.0)	H <sub>2</sub> O (mbar)	0.0375%	100:1	STF724/STF725	400 (1000)	-400 (-1000)	400 (1000)	4 (10.0)	H <sub>2</sub> O (mbar)	0.05%/0.065%	100:1
STF832	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.050%	100:1	STF732/STF735	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.05%/0.065%	100:1
STF82F	400 (1000)	-400 (-1000)	400 (1000)	1 (2.5)	H <sub>2</sub> O (mbar)	0.0375%	400:1	STF72F/STF72P	400 (1000)	-400 (-1000)	400 (1000)	1 (2.5)	H <sub>2</sub> O (mbar)	0.05%/0.065%	100:1
STF83F	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.050%	100:1	STF73F/STF73P	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.05%/0.065%	100:1
<b>Differential &amp; Absolute Remote Seals</b>								<b>Differential &amp; Absolute Remote Seals</b>							
STR82D	400 (1000)	-400 (-1000)	400 (1000)	4 (10.0)	H <sub>2</sub> O (mbar)	0.065%	100:1	STR73D/STR735D	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.075%	100:1
STR83D	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.065%	100:1	STR74G/STR745G	500 (35)	-14.7 (-1)	500 (35)	5 (0.35)	psi (bar)	0.075%	100:1
STR84A	500 (35)	5.0 (0.35)	500 (35)	5 (0.35)	psia (barA)	0.065%	100:1	-	-	-	-	-	-	-	
STR84G	500 (35)	-14.7 (-1)	500 (35)	5 (0.35)	psi (bar)	0.065%	100:1	-	-	-	-	-	-	-	
STR87G	3000 (210)	-14.7 (-1)	3000 (210)	30 (2.1)	psi (bar)	0.065%	100:1	-	-	-	-	-	-	-	
<b>SmartLine Multivariable SMV800</b>															
<b>PV1 - Differential Pressure</b>															
SMA810	25 (62.5)	-25 (-62.5)	25 (62.5)	1 (2.5)	H <sub>2</sub> O (mbar)	0.04%	25:1	-	-	-	-	-	-	-	-
SMA845	400 (1000)	-400 (-1000)	400 (1000)	1 (2.5)	H <sub>2</sub> O (mbar)	0.04%	400:1	-	-	-	-	-	-	-	-
SMG870	400 (1000)	-400 (-1000)	400 (1000)	1 (2.5)	H <sub>2</sub> O (mbar)	0.04%	400:1	-	-	-	-	-	-	-	-
<b>PV2 - Static Pressure</b>															
SMA810	100 (7)	0 (0)	100 (7)	5 (0.35)	psia (bar)	0.0375%	20:1	-	-	-	-	-	-	-	-
SMA845	1500 (104)	0 (0)	1500 (104)	30 (2.1)	psia (bar)	0.0375%	50:1	-	-	-	-	-	-	-	-
SMG870	4500 (310)	-14.7 (-1)	4500 (310)	60 (4.2)	psig (barg)	0.0375%	75:1	-	-	-	-	-	-	-	-
<b>PV3 - Process Temperature</b>															
SMA810/845/SMG870	Temp sensor specific	Temp sensor specific	Temp sensor specific	Temp sensor specific	°C	0.1 °C (Pt 100)	NA	-	-	-	-	-	-	-	-

Visit [www.honeywellprocess.com/smartline](http://www.honeywellprocess.com/smartline)

**For more information**

To learn more about Honeywell's  
SmartLine Pressure Transmitters, visit  
[www.honeywellprocess.com/smartline](http://www.honeywellprocess.com/smartline)  
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