



SmartLine Pressure Selection Guidelines



Redefining Smart.

Honeywell's SmartLine® smart measurement system sets the standard for total performance in harsh process environments.

SmartLine offers industry-leading performance, unique features such as modularity, a graphics display and polarity insensitivity that lower the total cost of ownership and is the only pressure transmitter equipped with Smart Connection Suite to deliver the best control system integration.

Leading Performance:

SmartLine provides better performance with industry leading accuracy, response time and stability. When combined with Honeywell's proven static pressure & temperature compensation you get unbeatable total performance 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 we can avoid the need to break a process line connection, even in an intrinsically safe environment. And with no need to inventory complete units, inventory costs are lower.
- An advanced graphic display and optional three button external configuration 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 polarity Insensitivity SmartLine transmitter wiring can be reversed without damaging or effecting 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.

Smart Connection Suite Features:

- 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-protect 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, we provide trouble-free integration for faster startups and reliability. Honeywell even tests with other supplier's configuration tools.



Smartline Pressure Selection Guide

Model Types, Ranges and Spans

SmartLine ST800

Model	Upper Range Limit	Lower Range Limit	Max Span	Min Span	Units	Standard Accuracy % of span	Turndown Capability
Differential Pressure							
STD810	10 (25.0)	-10 (-25.0)	10 (24.9)	0.1 (0.25)	H ₂ O (mbar)	0.0750%	25:1
STD820	400 (1000)	-400 (-1000)	400 (1000)	1.0 (2.5)	H ₂ O (mbar)	0.0375%	400:1
STD830	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.0500%	100:1
STD870	3000 (210)	-100 (-7.0)	3000 (210)	30 (2.1)	psi (bar)	0.0500%	100:1
Gauge Pressure							
Dual Head							
STG830	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.0550%	100:1
STG840	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.0550%	100:1
STG870	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.0550%	100:1
In-Line							
STG83L	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.0550%	100:1
STG84L	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.0550%	100:1
STG87L	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.0550%	100:1
STG88L	6000 (420)	-14.7 (-1.0)	6000 (420)	60 (4.2)	psi (bar)	0.0550%	100:1
STG89L	10000 (690)	-14.7 (-1.0)	10000 (690)	100 (6.9)	psi (bar)	0.0550%	100:1
Absolute Pressure							
Dual Head							
STA822	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.055%	15:1
STA840	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.055%	100:1
In-Line							
STA82L	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.055%	15:1
STA84L	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.055%	100:1
STA87L	3000 (210)	0 (0)	3000 (210)	30 (2.1)	psia (barA)	0.055%	100:1
Flanged Mount Differential							
STF828	400 (1000)	-400 (-1000)	400 (1000)	4 (10.0)	H ₂ O (mbar)	0.0375%	100:1
STF832	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.050%	100:1
STF82F	400 (1000)	-400 (1000)	400 (1000)	1 (2.5)	H ₂ O (mbar)	0.0375%	400:1
STF83F	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.050%	100:1
Differential & Absolute Remote Seals							
STR82D	400 (1000)	-400 (-1000)	400 (1000)	4 (10.0)	H ₂ O (mbar)	0.065%	100:1
STR83D	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.065%	100:1
STR84A	500 (35)	5.0 (0.35)	500 (35)	5 (0.35)	psia (bar A)	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

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), FOUNDATION fieldbus or Profibus communication

Basic or advanced digital display as determined by their application requirements





• Three-button local configuration



• Wiring terminal boards for standard or advanced lightning-protected applications



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 ST700

Model	Upper Range Limit	Lower Range Limit	Max Span	Min Span	Units	Standard Accuracy % of span	Turndown Capability
Differential Pressure							
—	—	—	—	—	—	—	25:1
STD720	400 (1000)	-400 (-1000)	400 (1000)	1.0 (2.5)	H ₂ O (mbar)	0.05%	100:1
STD730	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.05%	100:1
STD770	3000 (210)	-100 (-7.0)	3000 (210)	30 (2.1)	psi (bar)	0.05%	100:1
Gauge Pressure							
Dual Head							
STG730	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.065%	100:1
STG740	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.065%	100:1
STG770	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.065%	100:1
In-Line							
STG73L	50 (3.5)	-14.7 (-1.0)	50 (3.5)	0.5 (0.035)	psi (bar)	0.065%	100:1
STG74L	500 (35)	-14.7 (-1.0)	500 (35)	5 (0.35)	psi (bar)	0.065%	100:1
STG77L	3000 (210)	-14.7 (-1.0)	3000 (210)	30 (2.1)	psi (bar)	0.065%	100:1
STG78L	6000 (420)	-14.7 (-1.0)	6000 (420)	60 (4.2)	psi (bar)	0.065%	100:1
STG79L	10000 (690)	-14.7 (-1.0)	10000 (690)	100 (6.9)	psi (bar)	0.065%	100:1
Absolute Pressure							
Dual Head							
STA722	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.065%	100:1
STA740	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.065%	100:1
In-Line							
STA72L	780 (1040)	0 (0)	780 (1040)	50 (65.0)	mm HgA (mbarA)	0.065%	100:1
STA74L	500 (35)	0 (0)	500 (35)	5 (0.35)	psia (barA)	0.065%	100:1
STA77L	3000 (210)	0 (0)	3000 (210)	30 (2.1)	psia (barA)	0.065%	100:1
Flanged Mount Differential							
STF724	400 (1000)	-400 (1000)	400 (1000)	4 (10.0)	H ₂ O (mbar)	0.05%	100:1
STF732	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.05%	100:1
STF72F	400 (1000)	-400 (1000)	400 (1000)	1 (2.5)	H ₂ O (mbar)	0.05%	100:1
STF73F	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.05%	100:1
Differential & Absolute Remote Seals							
STR73D	100 (7.0)	-100 (-7.0)	100 (7.0)	1 (0.07)	psi (bar)	0.075%	100:1
STR74G	500 (35)	-14.7 (-1)	500 (35)	5 (0.35)	psi (bar)	0.075%	100:1

SmartLine Pressure Transmitters.

	ST800	ST700	SMV800
Performance Characteristics			
Accuracy	Up to 0.0375% of span standard 0.025% span optional high accuracy — —	Up to 0.05% of span standard — — —	PV1 DP - Up to 0.0375% of span PV2 SP - Up to 0.0375% of span PV3 PT - 0.01Deg C (RTD) PV4 - Mass flow accuracy up to 0.6%
Stability	Up to 0.01% per year for ten years	Up to 0.02% per year for five years	Up to 0.0625% of URL per year
Response Time	As fast as 80 ms	As fast as 100 ms	As fast as 144msec for DP (PV1)
Total Performance	Up to 0.12%	Up to 0.2%	Mass flow performance is up to 0.6%
Turndown Ratios up to 400:1	Turndown Ratios up to 400:1	Turndown Ratios up to 100:1	Turndown Ratios up to 400:1
Compound Characterized Ranges	Yes	Yes	Yes
Temperature & Static Pressure Compensated	Yes	Yes	Yes
Product Features & Options			
Measured parameters	Differential pressure, static pressure	Differential pressure, static pressure	Differential pressure, static pressure, process temperature
Calculated parameters	Volume flow	Volume flow	Volume flow, Mass flow
Support for Flow Algorithms	NA	NA	ASME MFC-3M, ISO5167, Gost 8.586, AGA3, ASME MFC 14M
Support for Flow Elements	NA	NA	Orifice, Venturi, Flow Nozzle, Pitotube, IFO, Standard V cone, Wafer cone, Wedge
HART 7, DE & Foundation Fieldbus Communication Protocols	Yes	Yes	DE, HART7
Polarity Insensitive Electrical Connections	Yes	Yes	Yes
Modular Design Components	Simple faster repairs with less downtime	Simple faster repairs with less downtime	Simple faster repairs with less downtime
Experion Smart Connection Suite	Transmitter Messaging *	Tamper Alerts *	Transmitter Messaging *
	Maintenance Mode Indication	FDM Plant Area Views	Maintenance Mode Indication
	Tamper Alerts *	—	Tamper Alerts *
	FDM Plant Area Views	—	FDM Plant Area Views
	Comprehensive Experion integration testing	—	Comprehensive Experion integration testing
SIL 2 Certified/SIL 3 Capable Standard	Yes	Yes	No
Certified for Dual Seal Compliance	Yes	Yes	Yes
Comprehensive & Advanced Diagnostics	Yes	Yes	Yes
User Interface Options	Optional basic alphanumeric display	Optional basic alphanumeric display	NA
	Optional advanced graphics display	—	Optional advanced graphics display
	Multiple PV display screens including bar graph and trend displays	—	Multiple PV display screens including bar graph and trend displays
	Comprehensive diagnostic messages	Diagnostic notifications	Comprehensive diagnostic messages
	Supports transmitter messaging and maintenance mode indication	—	Supports transmitter messaging and maintenance mode indication
	Comprehensive EDDs & DTMs for remote configuration	Comprehensive EDDs & DTMs for remote configuration	Comprehensive EDDs & DTMs for remote configuration
	Optional External 3 button programming capability	Optional external 3-button programming capability	Optional External 3 button limited programming cap
Optional Extended Warranties	1, 2, 3, 4, & 15 year warranties	NA	1, 2, 3, 4, & 15 year warranties

* Also compatible with other HART 7 enabled hosts

SmartLine SMV800

Dual Head Multivariable

Key Number	URL	LRL	Max Span	Min Span	Units	Standard Accuracy (% of span)	Turndown
PV1 - DP							
SMA810	25 (62.5)	-25 (-62.5)	25 (62.5)	1 (2.5)	H2O (mbar)	0.04%	25:1
SMA845	400 (1000)	-400 (-1000)	400 (1000)	1 (2.5)	H2O (mbar)	0.04%	400:1
SMG870	400 (1000)	-400 (-1000)	400 (1000)	1 (2.5)	H2O (mbar)	0.04%	400:1
PV2 - SP							
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
PV3 - Temp							
SMA 810/845/SMG870	Temp Sensor specific	Temp Sensor specific	Temp Sensor specific	Temp Sensor specific	Deg °C	0.1 Deg °C (Pt 100)	NA

Honeywell

For More Information

To learn more about Honeywell's SmartLine Pressure Transmitters, visit www.honeywellprocess.com/smartline or contact Klinger Denmark.

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