

STG73P SmartLine Flush Mount Gauge Pressure Specification 34-ST-03-108, November 2018



Introduction

Part of the SmartLine® family of products, the STG73P is a gauge pressure transmitter with a flush mounted diaphragm. Installed using a 1" sleeve welded to the process piping the diaphragm face may be situated flush with the process piping wall. Typically applied to applications such as head boxes in pulp and paper mills, flush mounting eliminates the possibility of clogging. In addition the transmitter mounting facilitates rapid and trouble free replacement.

Best in Class Features:

- Flush mounting design.
- Accuracy up to 0.065 % of calibrated span
- Stability up to 0.025% of URL per year for five years
- Automatic temperature compensation
- Rangeability up to 100:1
- Response times as fast as 100ms
- Alphanumeric display capabilities
- External zero, span, & configuration capability
- Polarity insensitive electrical connections
- On-board diagnostic capabilities
- Integral Dual Seal design for safety based on ANSI/NFPA 70-202 and ANSI/ISA 12.27.0
- Full compliance to SIL 2/3 requirements as a standard.
- Modular design characteristics

Span & Range Limits:

| Model | URL/Max Span psig (barg) | LRL psig (barg) | Min Span | Turn down |
|--------|-----------------------------|--------------------|----------|-----------|
| STG73P | 100 (7.0) | -14.7 (-1.0) | 1 (0.07) | 100:1 |



Figure 1 – STG73P Flush Mount Gauge Pressure Transmitters feature field-proven piezoresistive sensor technology

Communications/Output Options:

- Honeywell Digitally Enhanced (DE)
- HART® (version 7.0)
- FOUNDATION™ Fieldbus

All transmitters are available with the above listed communications protocols.

Description

The SmartLine family pressure transmitters are designed around a high performance piezo-resistive sensor. This one sensor actually integrates multiple sensors linking process pressure measurement with on-board static pressure (DP Models) and temperature compensation measurements. This level of performance allows the ST 700 to replace most competitive transmitters available today.

Indication/Display Option

The ST 700 modular design accommodates a basic alphanumeric LCD display.

Basic Alphanumeric LCD Display Features

- Modular (may be added or removed in the field)
- 0, 90,180, & 270 degree position adjustments
- Configurable and standard (Pa, KPa, MPa, KGcm², Torr, ATM, inH₂O, mH₂O, bar, mbar, inH₂O, inHG, FTH₂O, mmH₂O, mm HG, & psi) measurement units
- 2 Lines 16 Characters (4.13H x 1.83W mm)
- Square root output indication (√)

Simple LCD Display Features

- Modular (may be added or removed in the field)
- Supports HART protocol variant
- 0, 90,180, & 270 degree position adjustments
- Configurable (HART only) and standard (Pa, KPa, MPa, KGcm², Torr, ATM, inH₂O, mH₂O, bar, mbar, inH₂O, inHG, FTH₂O, mmH₂O, mm HG, & psi) measurement units.
- Supports Flow engineering units
- 2 Lines 6 digits PV (9.95H x 4.20W mm) 8 Characters
- Square root output indication (√) and Write protect Indication
- Built in Basic Device Configuration through Internal Buttons – Range/Engineering Unit/Loop Test /Loop Calibration/Zero /Span Setting

Diagnostics

SmartLine transmitters all offer digitally accessible diagnostics which aid in providing advanced warning of possible failure events minimizing unplanned shutdowns, providing **lower overall operational costs**

System Integration

- SmartLine communications protocols all meet the most current published standards for HART/DE/Fieldbus.
- Integration with Honeywell's Experion PKS offers the following unique advantages.
 - Tamper reporting
 - FDM Plant Area Views with Health summaries
 - All ST 700 units are Experion tested to provide the highest level of compatibility assurance

Configuration Tools

External Three Button Configuration Option

Suitable for all electrical and environmental requirements, SmartLine offers the ability to configure the transmitter and display via three externally accessible buttons when a display option is selected. Zero/span capabilities are also optionally available via these buttons with or without selection of the display option.

Internal Two Button Configuration Option

The Simple display has two buttons that can be used for Basic configuration such as re ranging, PV Engineering unit setting, Zero/Span settings and Loop testing and calibration functions.

Hand Held Configuration

SmartLine transmitters feature two-way communication and configuration capability between the operator and the transmitter. This is accomplished via Honeywell's field-rated Multiple Communication Configurator (MCT404). The MCT404 is capable of field configuring DE and HART Devices and can also be ordered for use in intrinsically safe environments. All Honeywell transmitters are designed and tested for compliance with the offered communication protocols and are designed to operate with any properly validated hand held configuration device.

Personal Computer Configuration

Honeywell's SCT 3000 Configuration Toolkit provides an easy way to configure Digitally Enhanced (DE) instruments using a personal computer as the configuration interface. Field Device Manager (FDM) Software and FDM Express are also available for managing HART & Fieldbus device configurations.

Modular Design

To help contain maintenance & inventory costs, all ST 700 transmitters are modular in design supporting the user's ability to replace meter bodies, add indicators or change electronic modules without affecting overall performance or approval body certifications. Each meter body is uniquely characterized to provide in-tolerance performance over a wide range of application variations in temperature and pressure and due to the Honeywell advanced interface, electronic modules may be swapped with any electronics module without losing in-tolerance performance characteristics.

Modular Features

- Meter body replacement
- Exchange/replace electronics/comms modules*
- Add or remove integral indicator*
- Add or remove lightning protection (terminal connection)*

* Field replaceable in all electrical environments (including IS) except flameproof without violating agency approvals.

With no performance effects, Honeywell's unique modularity results in **lower inventory needs and lower overall operating costs**.

Performance Specifications

Reference Accuracy: (conformance to +/-3 Sigma)

| Model | URL | LRL | Min Span | Maximum Turndown Ratio | Stability (%URL/Year for five years) | Reference Accuracy ^{1,2} (%Span) |
|--------|-------------------|----------------------|--------------------|------------------------|--------------------------------------|-------------------------------------------|
| STG73P | 100 psi (7.0 bar) | -14.7 psi (-1.0 bar) | 1.0 psi (0.07 bar) | 100:1 | 0.025% | 0.065% |

Zero and span may be set anywhere within the listed (URL/LRL) range limits

Accuracy, Span and Temperature Effect: (conformance to +/-3 Sigma)

| Model | URL | Accuracy ^{1,2} (% of Span) | | | | Combined Zero & Span Temperature Effect (% Span/50°F) | |
|--------------------------------------------------------------------------------------------|-------------------|-------------------------------------|-------|------|-------------|----------------------------------------------------------------------------------------------------------------|-------|
| | | For Turndowns Greater Than | A | B | C psi (bar) | D | E |
| STG73P | 100 psi (7.0 bar) | 5:1 | 0.025 | 0.04 | 20 (1.4) | 0.050 | 0.050 |
| Turn Down Effect $\pm \left[A + B \left(\frac{C}{\text{Span}} \right) \right]$ % Span | | | | | | Temp Effect $\pm \left[D + E \left(\frac{\text{URL}}{\text{Span}} \right) \right]$ % Span per 28°C (50°F) | |

Total Performance (% of Span):

Total Performance Calculation: = +/- $\sqrt{(\text{Accuracy})^2 + (\text{Temperature Effect})^2}$

Total Performance Examples (for comparison): @ 5:1 Turndown, +/-50 °F (28°C) shift

STG73P @20 psi: 0.307% of span

Typical Calibration Frequency:

Calibration verification is recommended every two (2) years

Notes:

1. Terminal Based Accuracy - Includes combined effects of linearity, hysteresis, and repeatability. Analog output adds 0.005% of span.
2. For zero based spans and reference conditions of: 25°C (77°F), for LRV >= 0 psia, 10 to 55% RH.

Operating Conditions – All Models

| Parameter | Reference Condition | | Rated Condition | | Operative Limits | | Transportation and Storage | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|------|-----------------|----------|--------------------------------------------------------------|----------|----------------------------|------------|
| | °C | °F | °C | °F | °C | °F | °C | °F |
| Ambient Temperature ¹ | 25±1 | 77±2 | -15 to 65 | 5 to 149 | -15 to 65 | 5 to 149 | -55 to 75 | -67 to 167 |
| Process Interface Temperature | 25±1 | 77±2 | -15 to 65 | 5 to 149 | -15 to 95 ² | 5 to 203 | N/A | N/A |
| Humidity %RH | 10 to 55 | | 0 to 100 | | 0 to 100 | | 0 to 100 | |
| Vac. Region – Min. Pressure mmHg absolute inH ₂ O absolute | Atmospheric Atmospheric | | 300 150 | | 2 (short term) ³ 1 (short term) ³ | | | |
| Supply Voltage Load Resistance | 10.8 to 42.4 Vdc at terminals 0 to 1,440 ohms (as shown in Figure 2) | | | | | | | |
| Maximum Allowable Working Pressure (MAWP) ^{4,5} (ST700 products are rated to Maximum Allowable Working Pressure. MAWP depends on Approval Agency and transmitter materials of construction.) | STG73P: 100 psi (7.0 bar) | | | | | | | |

- ¹ LCD Display Storage temperature lower limit is -30°C.
- ² Process temperatures above 65°C (149°F) require a 1:1 reduction in maximum ambient temperature.
- ³ Short term equals 2 hours at 70°C (158°F)
- ⁴ Units can withstand overpressure of 1.5 x MAWP without damage
- ⁵ Consult factory for MAWP of ST 700 transmitters with CRN approval

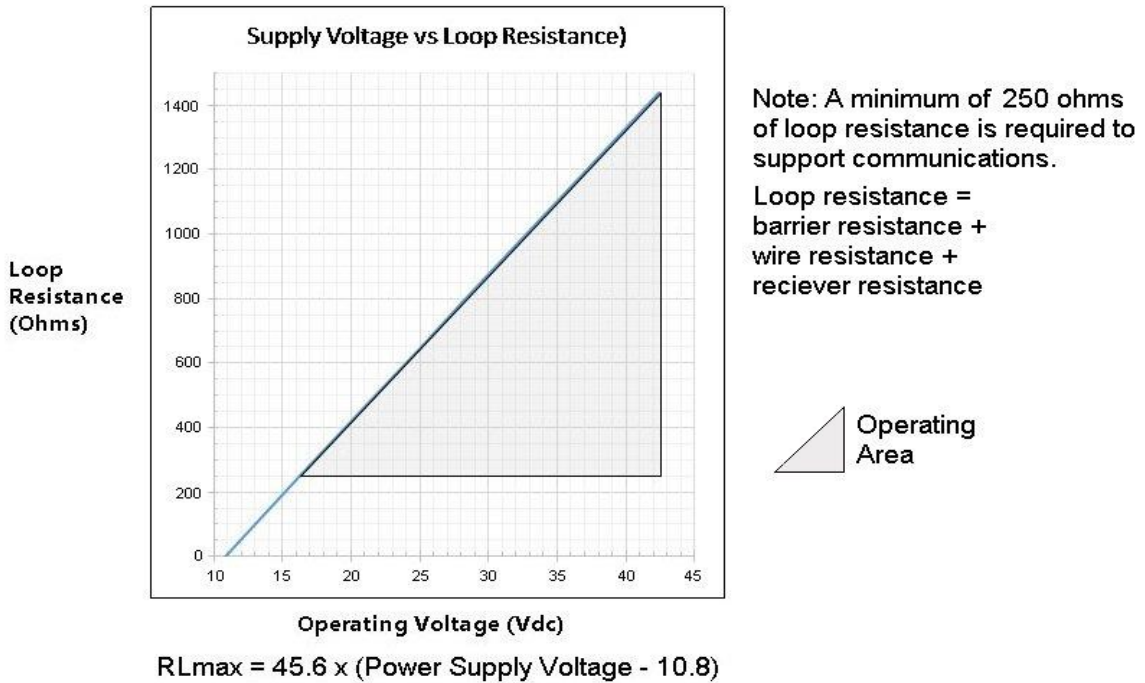


Figure 2 - Supply voltage and loop resistance chart & calculations

Performance Under Rated Conditions – All Models

| Parameter | Description | | | | | | | | | |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------|--------------------------------|------------------------|----------------------|---------------|---------------|------------------------|------------------------|
| Analog Output Digital Communications: | Two-wire, 4 to 20 mA (HART & DE Transmitters only) Honeywell DE, HART 7 protocol or FOUNDATION Fieldbus ITK 6.0.1 compliant All transmitters, irrespective of protocol have polarity insensitive connection. | | | | | | | | | |
| Output Failure Modes (configurable) | <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">Honeywell Standard:</td> <td style="width: 33%; text-align: center;">NAMUR NE 43 Compliance:</td> </tr> <tr> <td>Normal Limits:</td> <td style="text-align: center;">3.8 – 20.8 mA</td> <td style="text-align: center;">3.8 – 20.5 mA</td> </tr> <tr> <td>Failure Mode:</td> <td style="text-align: center;">≤ 3.6 mA and ≥ 21.0 mA</td> <td style="text-align: center;">≤ 3.6 mA and ≥ 21.0 mA</td> </tr> </table> | | Honeywell Standard: | NAMUR NE 43 Compliance: | Normal Limits: | 3.8 – 20.8 mA | 3.8 – 20.5 mA | Failure Mode: | ≤ 3.6 mA and ≥ 21.0 mA | ≤ 3.6 mA and ≥ 21.0 mA |
| | Honeywell Standard: | NAMUR NE 43 Compliance: | | | | | | | | |
| Normal Limits: | 3.8 – 20.8 mA | 3.8 – 20.5 mA | | | | | | | | |
| Failure Mode: | ≤ 3.6 mA and ≥ 21.0 mA | ≤ 3.6 mA and ≥ 21.0 mA | | | | | | | | |
| Supply Voltage Effect | 0.005% span per volt. | | | | | | | | | |
| Transmitter Turn on Time (includes power up & test algorithms) | HART or DE: 2.5 sec Foundation Fieldbus: Host dependant | | | | | | | | | |
| Response Time (delay + time constant) | <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;"><u>DE/HART Protocol</u></td> <td style="width: 50%; text-align: center;"><u>FOUNDATION Fieldbus</u></td> </tr> <tr> <td style="text-align: center;">100ms</td> <td style="text-align: center;">150ms (Host Dependant)</td> </tr> </table> | <u>DE/HART Protocol</u> | <u>FOUNDATION Fieldbus</u> | 100ms | 150ms (Host Dependant) | | | | | |
| <u>DE/HART Protocol</u> | <u>FOUNDATION Fieldbus</u> | | | | | | | | | |
| 100ms | 150ms (Host Dependant) | | | | | | | | | |
| Damping Time Constant | HART: Adjustable from 0 to 32 seconds in 0.1 increments. Default Value: 0.5 seconds DE: Discrete values 0, 0.16, 0.32, 0.48, 1, 2, 4, 8, 16, 32 seconds. Default Value: 0.48 seconds | | | | | | | | | |
| Vibration Effect: | Less than +/- 0.1% of URL w/o damping Per IEC60770-1 field or pipeline, high vibration level (10-2000Hz: 0.21 displacement/3g max acceleration) | | | | | | | | | |
| Electromagnetic Compatibility | IEC 61326-3-1 | | | | | | | | | |
| Lightning Protection Option | Leakage Current: 10uA max @ 42.4VDC 93C Impulse rating: <table style="width: 100%; border: none;"> <tr> <td style="width: 33%; text-align: center;">8/20uS</td> <td style="width: 33%; text-align: center;">5000A (>10 strikes)</td> <td style="width: 33%; text-align: center;">10000A (1 strike min.)</td> </tr> <tr> <td style="text-align: center;">10/1000uS</td> <td style="text-align: center;">200A (> 300 strikes)</td> <td></td> </tr> </table> | 8/20uS | 5000A (>10 strikes) | 10000A (1 strike min.) | 10/1000uS | 200A (> 300 strikes) | | | | |
| 8/20uS | 5000A (>10 strikes) | 10000A (1 strike min.) | | | | | | | | |
| 10/1000uS | 200A (> 300 strikes) | | | | | | | | | |

Materials Specifications (see model selection guide for availability/restrictions with various models)

| Parameter | Description |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Process Diaphragms (wetted) | Hastelloy [®] C-276 ² |
| Meter Body Materials (wetted) | 316L Stainless Steel |
| Process Seal | Viton [®] O-ring |
| Fill Fluid | Silicone oil 200 |
| Mounting Bracket | Carbon Steel (Zinc-Chromate plated) or 304 Stainless Steel or 316 Stainless Steel.. See Figures 4 & 5 |
| Electronic Housing | Pure Polyester Powder Coated Low Copper (<0.4%)-Aluminum. Meets NEMA 4X, IP66, IP67 and NEMA 7 (explosion proof). All stainless steel housing is optional. |
| Process Connection Type | STG73P: Flush mount in 1" sleeve with O-ring and locking bolt. |
| Wiring | Accepts up to 16 AWG (1.5 mm diameter). |
| Dimensions | See Figures 4 |
| Net Weight | STG73P: 3.9 pounds (1.8 Kg) with Aluminum Housing |

² Hastelloy[®] C-276 or UNS N10276

Communications Protocols & Diagnostics

HART Protocol

Version:

HART 7

Power Supply

Voltage: 10.8 to 42.4Vdc at terminals

Load: Maximum 1440 ohms See figure 2

Minimum Load: 0 ohms. (For handheld communications a minimum load of 250 ohms is required)

Foundation Fieldbus (FF)

Power Supply Requirements

Voltage: 9.0 to 32.0Vdc at terminals

Steady State Current: 17.6mAdc

Software Download Current: 27.4mAdc

Available Function Blocks

| Block Type | Qty | Execution Time |
|------------------|-----|----------------|
| Resource | 1 | n/a |
| Transducer | 1 | n/a |
| Diagnostic | 1 | n/a |
| Analog Input | 1* | 30 ms |
| PID w/Autotune | 1 | 45 ms |
| Integrator | 1 | 30 ms |
| Signal Char (SC) | 1 | 30 ms |
| LCD Display | 1 | n/a |
| Flow Block | 1 | 30 ms |
| Input Selector | 1 | 30 ms |
| Arithmetic | 1 | 30 ms |

* AI block may have two (2) additional instantiations.

All available function blocks adhere to FOUNDATION Fieldbus standards. PID blocks support ideal & robust PID algorithms with full implementation of Auto-tuning.

Link Active Scheduler

Transmitters can perform as a backup Link Active Scheduler and take over when the host is disconnected.

Acting as a LAS, the device ensures scheduled data transfers typically used for the regular, cyclic transfer of control loop data between devices on the Fieldbus.

Number of Devices/Segment

Entity IS model: 6 devices/segment

Schedule Entries

18 maximum schedule entries

Number of VCR's: 24 max

Compliance Testing: Tested according to ITK 6.0.1

Software Download

Utilizes Class-3 of the Common Software Download procedure as per FF-883 which allows the field devices of any manufacturer to receive software upgrades from any host.

Honeywell Digitally Enhanced (DE)

DE is a Honeywell proprietary protocol which provides digital communications between Honeywell DE enabled field devices and Hosts.

Power Supply

Voltage: 10.8 to 42.4Vdc at terminals

Load: Maximum 1440 ohms See figure 2

Standard Diagnostics

ST 700 top level diagnostics are reported as either critical or non-critical and readable via the DD/DTM tools or integral display as shown

Critical Diagnostics

| HART DD/DTM Tools | Basic Display | Simple Display |
|--------------------------------|--------------------------|----------------|
| Electronic Module DAC Failure | Electronics module fault | Fault Comm EI |
| Meter Body NVM Corrupt | Meter Body fault | Fault Mtrbody |
| Config. Data Corrupt | Electronics module fault | Fault Comm EI |
| Electronic Module Diag Failure | Electronics module fault | Fault Comm EI |
| Meter Body Critical Failure | Meter Body fault | Fault Mtrbody |
| Sensor Comms Timeout | Meter Body Comm fault | Fault Mbd Com |

Non-Critical Diagnostics

| HART DD/DTM Tools |
|-------------------------------------|
| Display Failure |
| Electronic Module Comm Failure |
| Meter Body Excess Correct |
| Sensor Over Temperature |
| Fixed Current Mode |
| PV Out of Range |
| No Factory Calibration |
| No DAC Compensation |
| LRV Set Error – Zero Config. Button |
| URV Set Error – Zero Config. Button |
| AO Out of Range |
| Loop Current Noise |
| Meter Body Unreliable Comm |
| Tamper Alarm, |
| No DAC Calibration |
| Sensor Supply Voltage Low |

Refer to ST 700 manuals for additional level diagnostic information.

Approval Certifications:

| AGENCY | TYPE OF PROTECTION | COMM. OPTION | FIELD PARAMETERS | AMBIENT TEMP (Ta) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------|
| FM Approvals™ | Explosionproof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; T4 Class I, Zone 0/1, AEx d IIC Ga/Gb Class II, Zone 21, AEx tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| | Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Class I, Zone 0, AEx ia IIC Ga T4 FISCO Field Device (Only for FF Option) Ex ia IIC T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Class I, Division 2, Groups A, B, C, D locations, Class I, Zone 2, AEx nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: Type 4X/ IP66/ IP67 | All | All | - |
| | Canadian Standards Association (CSA) | Explosion Proof: Class I, Division 1, Groups A, B, C, D; Dust Ignition Proof: Class II, III, Division 1, Groups E, F, G; Ex d IIC Ga Ex tb IIIC Db T 95°C | All | Note 1 |
| Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Ex ia IIC Ga T4 FISCO Field Device (Only for FF Option) Ex ia IIC T4 | | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| Nonincendive: Class I, Division 2, Groups A, B, C, D; T4 Ex nA IIC Gc T4 | | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| Enclosure: Type 4X/ IP66/ IP67 | | All | All | - |

Approval Certifications: (Continued)

| | | | | |
|--------------------------------|------------------------------------------------------------------------------|--------------------------------------------------|---------|------------------------------------------|
| ATEX | Flameproof: II 1/2 G Ex d IIC Ga/Gb II 2 D Ex tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| | Intrinsically Safe: II 1 G Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: II 3 G Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: IP66/ IP67 | All | All | - |
| IECEX (World) | Flameproof : Ex d IIC Ga/Gb T4 Ex tb IIIC Db T 95°C | All | Note 1 | T5: -50 °C to 85°C T6: -50 °C to 65°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: IP66/ IP67 | All | All | - |
| SAEx (South Africa) | Flameproof : Ex d IIC Ga/Gb T4 Ex tb IIIC Db T 95°C | All | Note 1 | -50 °C to 85°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure: IP66/ IP67 | All | All | - |
| INMETRO (Brazil) | Flameproof: Ex d IIC Ga/ Gb T4 Ex tb IIIC Db T 95°C | All | Note 1 | -50 °C to 85°C |
| | Intrinsically Safe: Ex ia IIC Ga T4 | 4-20 mA / DE/ HART | Note 2a | -50 °C to 70°C |
| | FISCO Field Device (Only for FF Option) Ex ia IIC T4 | Foundation Fieldbus | Note 2b | -50 °C to 70°C |
| | Nonincendive: Ex nA IIC Gc T4 | 4-20 mA / DE/ HART/ Foundation Fieldbus | Note 1 | -50 °C to 85°C |
| | Enclosure : IP 66/67 | All | All | - |

Note : Transmitter with Terminal Block Revision F or later

The revision is on the label that is on the module. There will be two lines of text on the label:

- First is the Module Part #: 50049839-003 or 50049839-004
- Second line has the supplier information, along with the REVISION:

XXXXXX-EXXX, THE "X" is production related, THE POSITION of the "E" IS THE REVISION.

Approval Certifications: (Continued)

| | |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Marine Certificates | <p>This certificate defines the certifications covered for the ST 800 Pressure Transmitter family of products, including the SMV 800 Smart Multivariable Transmitter. It represents the compilation of the five certificates Honeywell currently has covering the certification of these products into marine applications.</p> <p>For SmartLine Pressure Transmitter and SMV800 Smart Multivariable Transmitter</p> |
| | <p>American Bureau of Shipping (ABS) - 2009 Steel Vessel Rules 1-1-4/3.7, 4-6-2/5.15, 4-8-3/13 & 13.5, 4-8-4/27.5.1, 4-9-7/13. Certificate number: 04-HS417416-PDA</p> |
| | <p>Bureau Veritas (BV) - Product Code: 389:1H. Certificate number: 12660/B0 BV</p> |
| | <p>Det Norske Veritas (DNV) - Location Classes: Temperature D, Humidity B, Vibration A, EMC B, Enclosure C. For salt spray exposure; enclosure of 316 SST or 2-part epoxy protection with 316 SST bolts to be applied. Certificate number: A-11476</p> |
| | <p>Korean Register of Shipping (KR) - Certificate number: LOX17743-AE001</p> |
| | <p>Lloyd's Register (LR) - Certificate number: 02/60001(E1) & (E2)</p> |
| SIL 2/3 Certification | <p>IEC 61508 SIL 2 for non-redundant use and SIL 3 for redundant use according to EXIDA and TÜV Nord Sys Tec GmbH & Co. KG under the following standards: IEC61508-1: 2010; IEC 61508-2: 2010; IEC61508-3: 2010.</p> |

Other Certification Options

Materials

- NACE MRO175, MRO103, ISO15156

Dimension (Inline Design)

Reference Dimensions: $\frac{\text{millimeters}}{\text{inches}}$

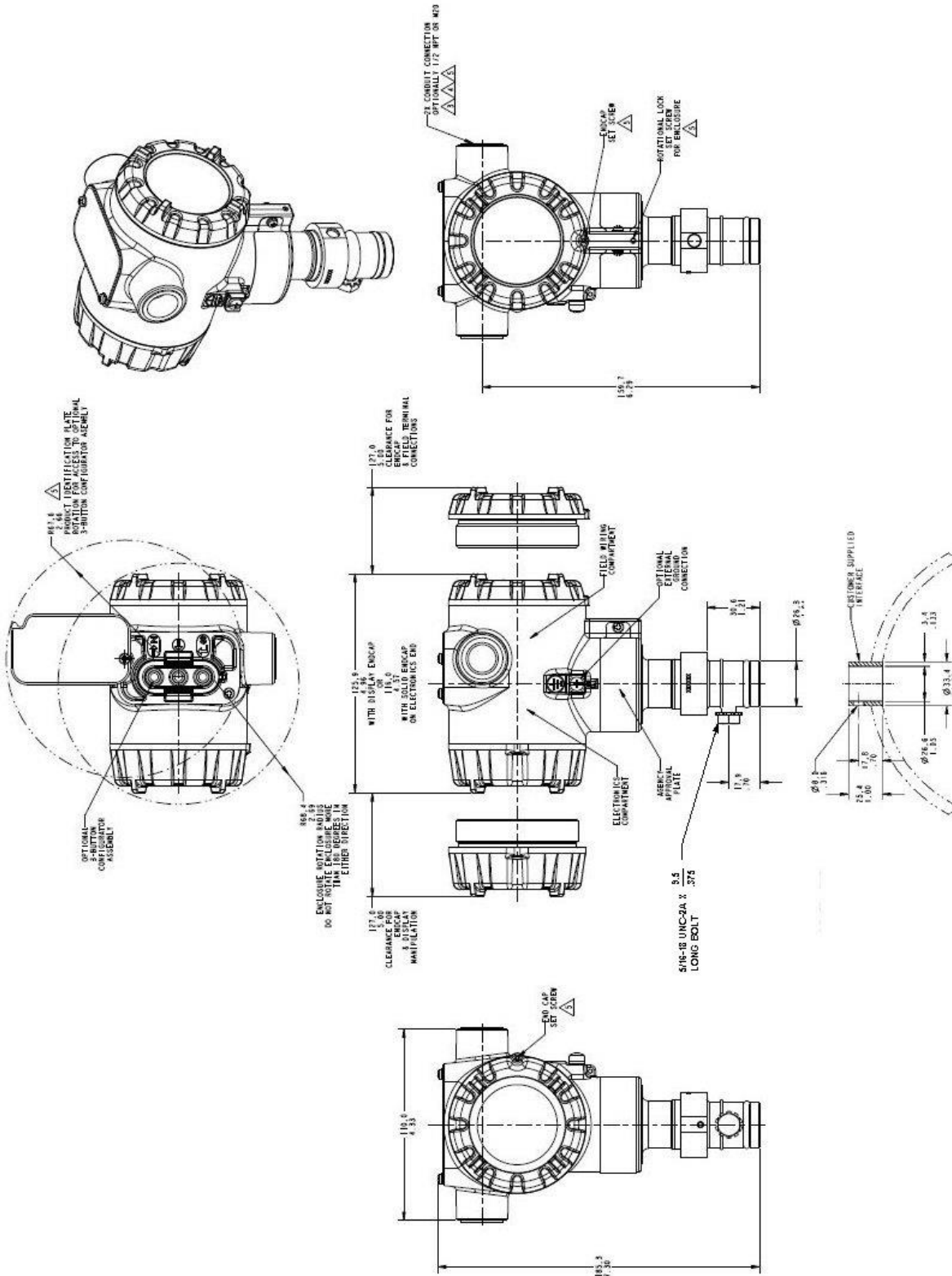


Figure 3 Typical dimensions of STG73P

Model Selection Guide

Model Selection Guides are subject to change and are inserted into the specifications as guidance only.

Model STG73P Flush Mount Pressure Transmitter

Model Selection Guide
34-ST-16-113 Issue 13

Instructions: Make selections from all Tables using column below the proper arrow. Asterisk indicates availability. Letter (a) refers to restrictions highlighted in the restrictions table. Tables delimited with dashes.

Key I II III IV V VI VII VIII IX
STG73P - - - - - - - - - - 0000

| KEY NUMBER | URL/Max Span | LRL | Min Span | Units |
|-------------|--------------|--------------|-----------|-----------|
| Flush Mount | 100 (7.0) | -14.7 (-1.0) | 1.0 (0.7) | psi (bar) |

| Selection | Availability |
|-----------|--------------|
| STG73P | ↓ |

| TABLE I | | METER BODY SELECTIONS | |
|---------------------------------------------|----------------------------------------------------------------|---------------------------------|--|
| a. Process Interface & Diaphragm | Process Interface Material | Barrier Diaphragm Material | |
| | 316L Stainless Steel | Hastelloy® C - 276 ¹ | |
| b. Fill Fluid | Silicone 200 | | |
| c. Process Connection | 1" Slip in with locking screw (sleeve optional see table VIII) | | |
| d. Bolt/Nuts Materials | None | | |
| e. Vent/Drain | None | | |
| f. Gasket/Seal | Viton O-ring | | |

| | |
|-------------|---|
| F | * |
| _ 1 | * |
| _ _ 1 | * |
| _ _ _ 0 | * |
| _ _ _ _ 0 | * |
| _ _ _ _ _ B | * |

¹ Hastelloy® C-276 or UNS N10276

| TABLE II | | Meter Body & Connection Orientation | |
|--------------------------|------|-------------------------------------|--|
| Head/Connect Orientation | None | | |

| | |
|---|---|
| 0 | * |
|---|---|

| TABLE III | | AGENCY APPROVALS | |
|------------------|--------------------------------------------------------------------------------------|------------------|--|
| Approvals | No Approvals Required | | |
| | <FM> Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof | | |
| | CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof | | |
| | ATEX Explosion proof, Intrinsically Safe & Non-incendive | | |
| | IECEX Explosion proof, Intrinsically Safe & Non-incendive | | |
| | SAEx/CCoE Explosion proof, Intrinsically Safe & Non-incendive | | |
| | INMETRO Explosion proof, Intrinsically Safe & Non-incendive | | |
| | NEPSI Explosion proof, Intrinsically Safe & Non-incendive | | |
| | KOSHA Explosion proof, Intrinsically Safe & Non-incendive | | |
| | EAC Customs Union (Russia,Belarus,Kazakhstan) Ex Approval Flame proof, Intrinsically | | |

| | |
|---|---|
| 0 | * |
| A | * |
| B | * |
| C | * |
| D | * |
| E | * |
| F | * |
| G | * |
| H | * |
| I | * |

| TABLE IV | | TRANSMITTER ELECTRONICS SELECTIONS | | |
|-------------------------------------------------------------|-------------------------------------------------|------------------------------------|------------------------------------|--|
| a. Electronic Housing Material & Connection Type | Material | Connection | Lightning Protection | |
| | Polyester Powder Coated Aluminum | 1/2 NPT | None | |
| | Polyester Powder Coated Aluminum | M20 | None | |
| | Polyester Powder Coated Aluminum | 1/2 NPT | Yes | |
| | Polyester Powder Coated Aluminum | M20 | Yes | |
| | 316 Stainless Steel (Grade CF8M) | 1/2 NPT | None | |
| | 316 Stainless Steel (Grade CF8M) | M20 | None | |
| | 316 Stainless Steel (Grade CF8M) | 1/2 NPT | Yes | |
| 316 Stainless Steel (Grade CF8M) | M20 | Yes | | |
| b. Output/ Protocol | Analog Output | | Digital Protocol | |
| | 4-20mA dc | | HART Protocol | |
| | 4-20mA dc none | | DE Protocol Foundation Fieldbus | |
| c. Customer Interface Selections | Indicator | Ext Zero, Span & Config Buttons | Languages | |
| | None | None | None | |
| | None | Yes (Zero/Span Only) | None | |
| | Basic | None | EN | |
| | Basic | Yes | EN | |
| | Standard (w/internal Zero, Span & Conf Buttons) | None | EN | |

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| A | * |
| B | * |
| C | * |
| D | * |
| E | * |
| F | * |
| G | * |
| H | * |
| _ H | * |
| _ D | * |
| _ F | * |
| _ _ 0 | * |
| _ _ A | f |
| _ _ B | * |
| _ _ C | * |
| _ _ S | u |

| TABLE V | | CONFIGURATION SELECTIONS | | |
|----------------------------------------------------|---------------------------------------------------------|--------------------------|---------------------------------------|----------|
| a. Application Software | Diagnostics | | | |
| | Standard Diagnostics | | | |
| b. Output Limit, Failsafe & Write Protect Settings | Write Protect | Fail Mode | High & Low Output Limits ³ | |
| | Disabled | High> 21.0mAdc | Honeywell Std (3.8 - 20.8 mAdc) | |
| | Disabled | Low< 3.6mAdc | Honeywell Std (3.8 - 20.8 mAdc) | |
| | Enabled | High> 21.0mAdc | Honeywell Std (3.8 - 20.8 mAdc) | |
| | Enabled | Low< 3.6mAdc | Honeywell Std (3.8 - 20.8 mAdc) | |
| | Enabled | N/A | N/A | Fieldbus |
| Disabled | N/A | N/A | Fieldbus | |
| c. General Configuration | General Configuration | | | |
| | Factory Standard | | | |
| | Custom Configuration (Unit Data Required from customer) | | | |

³ NAMUR Output Limits are configurable by customer

STG73P ↓

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| 1 _ _ | * |
| _ 1 _ | f |
| _ 2 _ | f |
| _ 3 _ | f |
| _ 4 _ | f |
| _ 5 _ | g |
| _ 6 _ | g |
| _ _ S | * |
| _ _ C | * |

| TABLE VI | | CALIBRATION & ACCURACY SELECTIONS | | |
|-----------------------------|----------|-----------------------------------|--|--------------------|
| a. Accuracy and Calibration | Accuracy | Calibrated Range | | Calibration Qty |
| | Standard | Factory Standard | | Single Calibration |
| | Standard | Custom (Unit Data Required) | | Single Calibration |

| | |
|---|---|
| A | * |
| B | * |

| TABLE VII | | ACCESSORY SELECTIONS | | |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--|--|
| a. Mounting Bracket | None(Not required with Flush Mount Unit) | | | |
| b. Customer Tag | Customer Tag Type | | | |
| | No customer tag | | | |
| | One Wired Stainless Steel Tag (Up to 4 lines 26 char/line) Two Wired Stainless Steel Tag (Up to 4 lines 26 char/line) | | | |
| c. Unassembled Conduit Plugs & Adapters | Unassembled Conduit Plugs & Adapters | | | |
| | No Conduit Plugs or Adapters Required | | | |
| | 1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter | | | |
| | 1/2 NPT 316 SS Certified Conduit Plug | | | |
| | M20 316 SS Certified Conduit Plug | | | |
| | Minifast [®] 4 pin (1/2 NPT) (not suitable for X-Proof applications) Minifast [®] 4 pin (M20) (not suitable for X-Proof applications) | | | |

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| _ 1 _ _ | * |
| _ 2 _ _ | * |

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|--------|---|
| _ _ A0 | * |
| _ _ A2 | n |
| _ _ A6 | n |
| _ _ A7 | m |
| _ _ A8 | n |
| _ _ A9 | m |

| TABLE VIII | | OTHER Certifications & Options : (String in sequence comma delimited (XX, XX, XX,....)) | | |
|--------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--|--|
| Certifications & Warranty | No additional options | | | |
| | NACE MR0175; MR0103; ISO15156 (FC33338) Process wetted parts only | | | |
| | NACE MR0175; MR0103; ISO15156 (FC33339) Process wetted and non-wetted parts | | | |
| | Marine (DNV, ABS, BV, KR, LR) (FC33340) | | | |
| | EN10204 Type 3.1 Material Traceability (FC33341) | | | |
| | Certificate of Conformance (F3391) | | | |
| | Calibration Test Report & Certificate of Conformance (F3399) | | | |
| | Certificate of Origin (F0195) | | | |
| | FMEDA (SIL 2/3) Certification (FC33337) | | | |
| | Calibration Fixture (w/1/4" NPT port) | | | |
| | PMI Certification ¹ | | | |
| | 316L Stainless 1" Mounting Sleeve (requires customer installation to process piping) | | | |
| | Extended Warranty Additional 1 year | | | |
| | Extended Warranty Additional 2 years | | | |
| Extended Warranty Additional 3 years | | | | |
| Extended Warranty Additional 4 years | | | | |

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| 00 | * | b |
| FG | * | |
| F7 | * | b |
| MT | d | |
| FX | * | b |
| F3 | * | |
| F1 | * | b |
| F5 | * | |
| FE | j | b |
| CF | * | |
| PM | * | b |
| MS | * | |
| 01 | * | b |
| 02 | * | |
| 03 | * | b |
| 04 | * | |

| TABLE IX | | Manufacturing Specials | | |
|----------|------------------------|------------------------|--|--|
| Factory | Factory Identification | | | |

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|---------|---|

RESTRICTIONS

| Restriction Letter | Available Only with | | Not Available with | |
|--------------------|----------------------------------------|--------------|--------------------|--------------|
| | Table | Selection(s) | Table | Selection(s) |
| d | Iva | C,D,G,H __ | | |
| f | | | IV b | _ F _ |
| g | | | IVb | _ H,D _ |
| j | IVb | _ H _ | Vb | _ 1,2,6 _ |
| m | IVa | B,D,F,H __ | | |
| n | IVa | A,C,E,G __ | | |
| u | IVb | _ H _ | | |
| b | Select Only one option from this group | | | |

¹The PM option is available on all Smartline Pressure Transmitter process wetted parts such as process heads, flanges, bushings and vent plugs except plated carbon steel process heads and flanges. PM option information is also available on diaphragms except STG and STA in-line construction pressure transmitters.

FIELD INSTALLABLE ACCESSORY KITS

| Description | Kit Number |
|---------------------------------------------------------------------------------|--------------|
| Integrally Mounted Basic Indicator Kit (Compatible with all Electronic Modules) | 50049911-501 |
| Terminal Strip w/Lightning Protection Kit for HART or DE Modules | 50075472-532 |
| Terminal Strip w/Lightning Protection Kit for FFB Module | 50075472-534 |
| Terminal Strip w/o Lightning Protection for HART or DE Modules | 50075472-531 |
| Terminal Strip w/o Lightning Protection FFB-Module | 50075472-533 |
| HART Electronics Module | 50049849-501 |
| HART Electronics Module w/connection for external configuration buttons | 50049849-502 |
| DE Electronics Module | 50049849-503 |
| DE Electronics Module w/connection for external configuration buttons | 50049849-504 |
| FFB Electronics Module Kit | 50049849-509 |
| FFB Electronics Module w/connection for external configuration buttons | 50049849-510 |
| Standard Display Module | 50126003-501 |

Note P - For part number pricing please refer to WEB Channel

PRODUCT MANUALS

| Description | Part Number |
|----------------------------------------------------------------------|-------------|
| ST 700 SmartLine Transmitter User Manual - English | 34-ST-25-44 |
| ST 700 SmartLine Transmitter HART/DE Communications Manual - English | 34-ST-25-47 |
| ST 700 SmartLine Transmitter Safety Manual - English | 34-ST-25-37 |
| ST700 SmartLine Transmitter Foundation Fieldbus Manual - English | 34-ST-25-48 |
| ST 700 SmartLine Transmitter Function Block Manual - English | 34-ST-25-49 |

All product documentation is available at www.honeywellprocess.com.

Sales and Service

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

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FP-Sales-Apps@Honeywell.com

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(TAC)

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Specifications are subject to change without notice.

For more information

To learn more about SmartLine Transmitters,
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