SmartLine

Honeywell

Technical Information

SLG 700 SmartLine Guided-Wave Radar Level Specification
34-SL-03-03, September 2015

Introduction

Part of the SmartLine® family of products, the SLG 700 series level transmitters feature high performance guided wave radar level technology. They provide high accuracy, stability, and applicability suitable for a variety of level and interface applications. SmartLine SLG 700 level transmitters are ideally suited for your demanding process tank level needs.

The SmartLine Level transmitter features the same powerful features with the other transmitters in the SmartLine family including modular design, polarity insensitivity, transmitter messaging, tamper notification, and integration with Experion® PKS thus providing the highest level of compatibility assurance and integration capabilities.
A new SmartLine Application and Validation Tool provides a new level of user experience and increases engineering productivity.

Best in Class Features:

- Two-wire, loop-powered 4-20 mA transmitter
- Accuracy ±3 mm or 0.03% of measured distance whichever is greater
- Repeatability ±1mm
- Integral dual seal design for safety based on ANSI/NFPA 70-202 and ANSI/ISA 12.27.01
- Automatic temperature compensation
- Selection of basic or advanced local display and local push buttons
- Polarity insensitive electrical connections
- Comprehensive on-board diagnostic capabilities
- Full compliance to SIL 2/3 requirements as a standard
- Modular design
- Dual compartment design
- 4-20 mA, HART and Foundation Fieldbus output
- External zero, span, & configuration capability
- 0.4 to 50 m range

Figure 1 - SLG 700 SmartLine Level Transmitter

Communications / Output Options:

- 4-20 mA DC
- HART® (version 7.0)
- FOUNDATION™ Fieldbus

SmartLine Level transmitters are available with the above listed communications protocols.

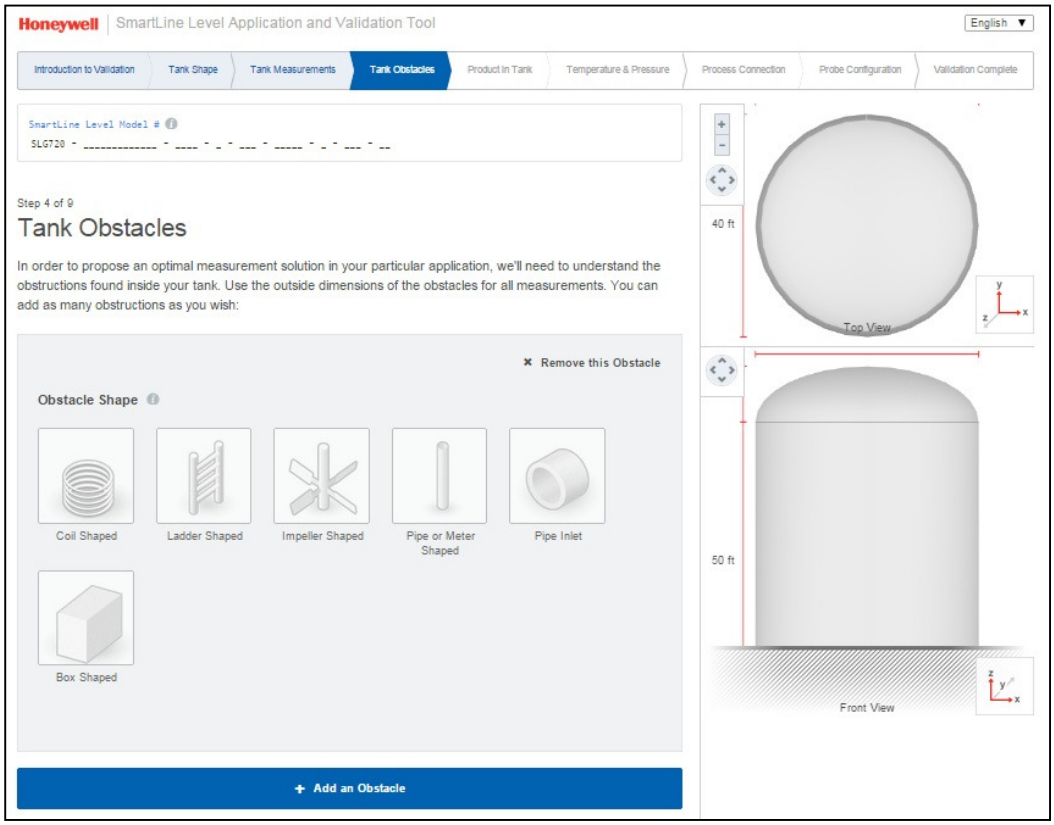

Figure 2. Inserting tank specific details into Application and Validation Tool.

Description

The SmartLine Guided Wave Radar Level transmitter utilizes Time Domain Reflectometry (TDR) technology which is proven to be effective for a majority of level measuring applications.

Unique Out-of-the-Box, Fool Proof User Experience

The user experience of the SmartLine Level transmitter addresses one of the most common failure modes associated with specifying, ordering and implementing level transmitters, which is the specification of the correct level transmitter for the tank level application. Unique to the SmartLine Level offering is a new, online SmartLine Application and Validation Tool (AVT), which allows users to specify their tank level application and the options desired for their level transmitter. The AVT intelligently guides the user through the engineering process and electronically captures and documents the choices and inputs. In addition to serving as engineering documentation, the AVT output also serves as input to the Honeywell order management system thus ensuring correct input of the transmitter model and the advantage of a transmitter with configuration parameters already specified to match the targeted tank application. Errors are eliminated and the engineering effort is preserved from start to finish.

The SmartLine Application and Validation Tool also allows users to collaboratively use and share the active session with any web connected colleague or expert. This interactive, collaborative capability eliminates roadblocks and delays, thus users can access resources to help start and finish the engineering task in a single effort. This online tool also dynamically reformats the user interface to correctly display on an Apple iPad®, iPhone® or Android™device.

Unique Indication/Display Options

The SmartLine SLG series level transmitter's modular design accommodates a basic alphanumeric LCD display or a unique advanced graphics LCD display with many unparalleled features.

Basic Alphanumeric LCD Display Features

- Modular (may be added or removed in the field)
- 0, 90,180, & 270 degree position adjustments
- Ft, in, m, cm, or mm for level measurement units and corresponding units supported for volume and level rate.
- 2 Lines, 16 Characters (4.13H x 1.83W mm)

Advanced Graphics LCD Display Features

- Modular (may be added or removed in the field)
- 0, 90, 180, & 270 degree position adjustments
- Standard and custom measurement units available. (custom measurement units applicable only for FF)
- Eight display screens with 3 formats are possible
- 128 by 64 dot matrix graphics display
- Large PV, Bar graph and Trend graph format supported" (for any of the 8 screens). Echo stem plots with Distance to Product and Distance to Interface Configurable screen rotation timing
- Advanced Display supports English, German, French, Spanish, Italian, Turkish & Russian

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 or FOUNDATION Fieldbus.
- Integration with Honeywell's Experion PKS offers the following unique advantages.
  - Transmitter messaging
  - Maintenance mode indication
  - Tamper reporting
  - FDM Plant Area Views with Health summaries
  - The SLG series is Experion tested to provide the highest level of compatibility assurance.

Modular Design

To help contain maintenance and inventory costs, all SLG series transmitters are modular in design supporting the user's ability to change electronic modules without affecting overall performance or approval body certifications. Electronic modules may be swapped with another electronics module without losing in-tolerance performance characteristics.

Modular Features

- Exchange / replace electronics / comms modules*
- 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.***

Configuration Tools

Integral Three Button Configuration Option

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

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 (MCT202 and MCT404).

The MCT202 and 404 are 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.

Field Service Tool – DTM based technology

SmartLine Level utilizes the standard unified DTM technology to access device parameters but utilizes its fullest potential in the creation of our new Field Service Tool. Using a commonly available DTM container, the SmartLine Level Field Service Tool provides both a novice mode and an expert user mode. Novice users are offered a guided experience to setup the device parameters while expert users can easily access the parameters desired through the well organized parameter pages. The Field Service Tool runs on any PC and avoids the need for a handheld configurator.

Personal Computer Configuration

Honeywell's Field Device Manager (FDM) Software and FDM Express are available for managing HART & FOUNDATION Fieldbus device configurations.

General Specifications

Parameter	Description		
Measurable media	Liquids and solids (future)		
Measurements performed	Level, volume, interface		
Process Storage Tank types	Vertical and horizontal cylinders, rectangular tanks, spheres, stilling / bypass wells		
SIL certification	SIL 2/3		
Measuring range	Liquids	50 m (164 ft)	
Available probe types	Rod, wire, coax		
Wetted materials	SS 316L, C-276 (future), PTFE (future)		
O-Ring Seal Materials Please see Figure 4	**Material**	**Min Temp**	**Max Temp**
	Viton® or Fluorocarbon	-26 degC	200 deg C
	Ethyelene Propylene (EPDM)	-40 degC	150 deg C
	Kalrez 6375 perfluorelastomer	-20 degC	200 degC (sat steam max 150 degC)
	Buna-N	-40 degC	120 degC
Electronic Housing	Pure polyester powder-coated low copper (<0.6%) aluminum Meets NEMA 4X, IP66, IP67 All stainless steel housing is optional		
User Interface	3 button keypad		
Display	Basic: 2 lines by 16 characters LCD (4.13H x 1.83W mm) Advanced: 128 x 64 pixels LCD		
Output Units	Level: ft, in, m, cm, or mm Volume: ft^3, in^3, US gal, Imp gal, barrels, yd^3, m^3, liters Rate: ft/s, m/s, in/min, m/h, ft/min, in/sec		
Output Process Variables	• Level • Percentage Level • Distance to Level • Level Rate • Volume • Vapor (Ullage) Thickness • Vapor (Ullage) Thickness % • Vapor (Ullage) Volume • Distance to Interface • Interface Level • Interface Level Rate • Upper Layer Thickness • % Interface Level • Lower Volume • Upper Volume		
Language	Basic: EN Advanced option: GR, IT, FR, SP, RU, TU, EN		
Electrical Connections	**SLG 700 series:** ½ -inch NPT(female), M20 (female)		
Wiring	Accepts up to 16 AWG (1.5 mm diameter).		
Mounting	Available with remote mount housing option. Bracket materials: carbon steel (zinc-plated) or 304 stainless steel angle bracket, or carbon steel flat bracket available with 2” pipe bracket.		
Dimensions	See page 12 for dimensional drawings.		
Net Weight	**SLG 700 series:** 3.2 kilograms (7 lbs) for aluminum housing		

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	-40 to 85	-40 to 185	-40 to 85	-40 to 185	-55 to 120	-67 to 248
Process Connector[2] SLG 700 series	25±1	77±2	-40 to 200	-40 to 392	-40 to 200	-40 to 392	-55 to 125	-67 to 257
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Maximum Allowable Working Pressure (MAWP)[3, 4]	SLG720: 40 bar (580 psi)							
Supply Voltage, Current, and Load Resistance (HART)	Voltage at HART terminal is 13.5 to 42.0 Vdc (IS versions limited to 30 Vdc) 0 to 1440 ohms (as shown in Figure 3)							

[1] LCD Display operating temperature -20°C to +70°C . Storage temperature -30°C to 80°C.

[2] rated Condition and Operative Limit temperatures subject to O-Ring selection and ambient temperature conditions. See Figure 4 for details.

[3] Units can withstand overpressure of 1.5 x MAWP without damage

[4] Consult factory for MAWP of SLG 700 transmitter with CRN approval

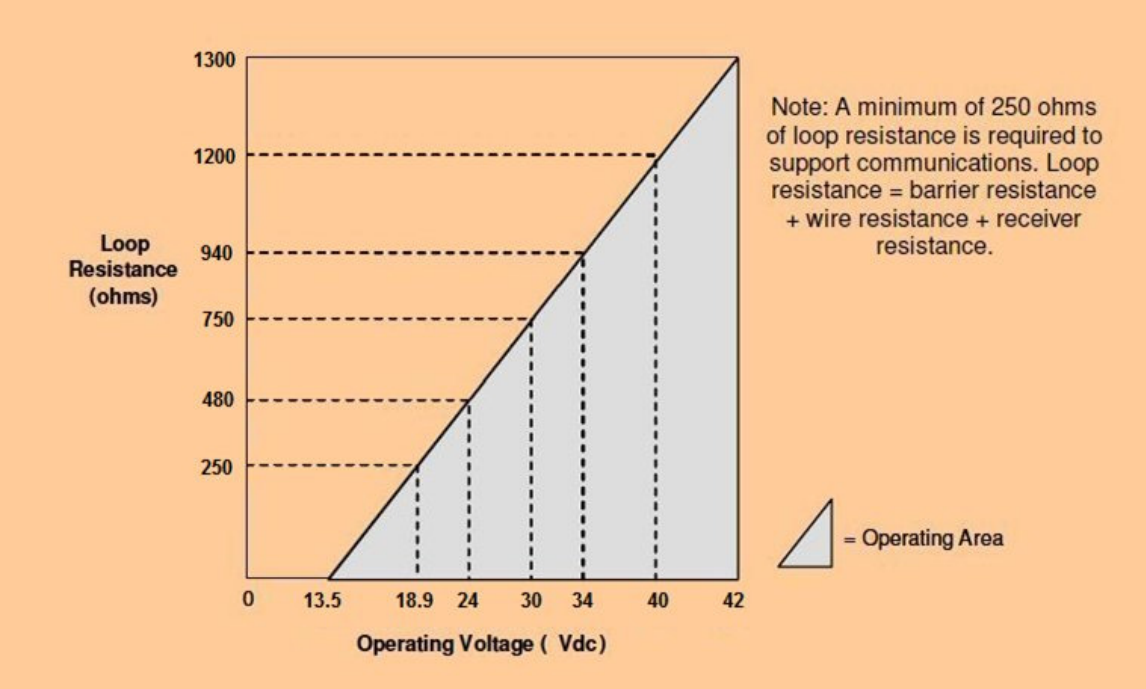

Figure 3 - Supply voltage and Loop resistance chart & calculations (not applicable for Fieldbus)

Performance Under Rated Conditions – All Models

Parameter	Description		
Measuring principle	Time Domain Reflectometry (TDR)		
Analog Output **Digital Communications**:	Two-wire, 4 to 20 mA (HART transmitters only) HART 7 protocol or FOUNDATION Fieldbus ITK 6.0.1 compliant All transmitters, irrespective of protocol have polarity insensitive connection.		
Output Failure Modes		**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
Span	0.4 m (15.75 inches) to 50 m (164 feet)		
Resolution	±1 mm (0.04 inch)		
Accuracy	Rod	0.03% of level or ± 3mm (whichever is greater)	
	Wire	0.03% of level or ± 3mm (whichever is greater)	
	Coax	0.03% of level or ± 3mm (whichever is greater)	
Ambient temperature Effect	±0.2mm/degree K or ±30 ppm/Deg K of measured value whichever is greater		
Repeatability	±1 mm (0.04 inch)		
Dielectric constant (minimum)	1.4		
Damping Time Constant	**HART:** Adjustable from 0 to 60 seconds in 0.1 increments. **Default Value:** 2 seconds		
Electromagnetic Compatibility	IEC61326 (All transmitters), NAMUR NE21 (HART & 4-20mA)		
Lightning Protection Option	**Leakage Current**: 10 uA max @ 42.0 VDC 93C **Impulse rating**: 8/20 uS 5000 A (>10 strikes) 10000 A (1 strike min.) 10/1000 uS 200 A (> 300 strikes)		

Sensor Details – All Models

Parameter	Description		
Probe	**Type**	**Min/ Max length**	**Materials**
	Rod	0.4m (1.3 ft) / 6.3m (20.7 ft)	SS 316L, C-276 (future)
	Wire	1.0m (3.3 ft) / 50m (164 ft)	SS 316
	Coax	0.4m (1.3 ft) / 6.3m (20.7 ft)	SS 316L, C-276 (future)

Centering Disk

Parameter	Description		
Centering Disk	**Type**	**Min/ Max length**	**Materials**
	Rod and Wire	5.08 cm (2 in) / 20.32 cm (8 in)	SS 316L

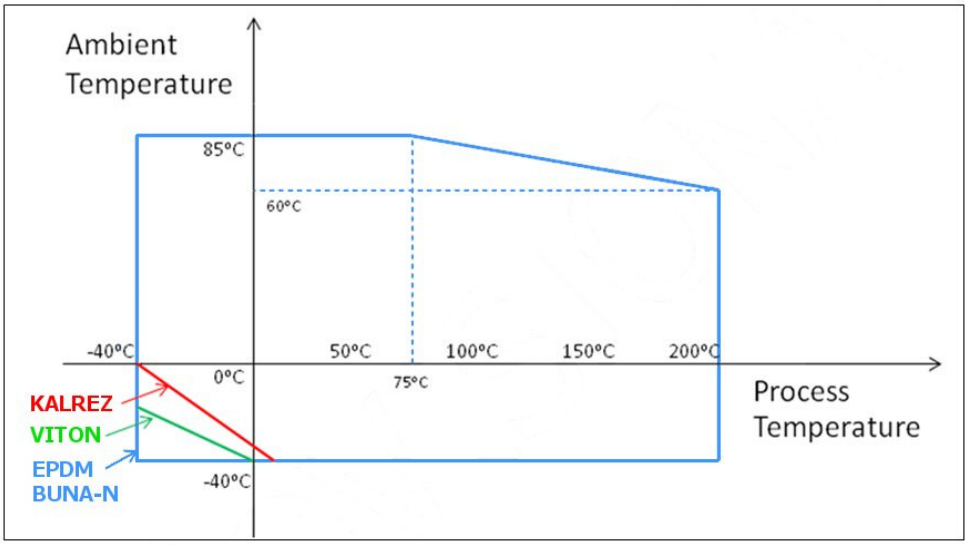

Figure 4. Transmitter O-Ring Seal Material Temperature Applicability

Communications Protocols & Diagnostics

HART Protocol

Version: HART 7

Power Supply

Voltage: 13.5 to 42.0 Vdc at terminals

Load: Maximum 1440 ohms. See Operating Conditions – All Models table.

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 32.0 Vdc at terminals

Steady State Current: 19.6 mAdc

Software Download Current: 29.4 mAdc

Block Type	Qty	Execution Time
Resource	1P	NA/a
Level Transducer	1P	NA
Level Auxillary Transducer	1P	NA
Diagnostic	1P	NA
LCD Display	1P	NA
Analog Input	1P 5I	30 ms
PID w/Autotune	1P 1I	45 ms
Arithmetic	1P 1I	30 ms
Input Selector	1P 1I	30 ms

P = Permanent Block

I = Instantiable Block

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

45 maximum schedule entries

50 maximum Links

Number of VCRs: 50 max

Compliance Testing: Tested according to ITK 6.1.2

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.

Standard Diagnostics

SLG 700 series top level diagnostics are reported as either critical or non-critical and readable via DD or DTM tools or integral display as shown below.

Other Certification Options

See Approval Certifications Table for details on page 8.

Materials

- NACE MRO175, MRO103, ISO15156
- For Hazardous Location certifications to: CSA (Canada and USA), ATEX, IECEx, SAEx or FM (future).
  - FM for Explosion Proof and Intrinsic Safety (future)
  - Canadian Standards (CSA) Explosion Proof and Intrinsic Safety
  - Cenelec ATEX Explosion Proof and Intrinsic Safety
  - IECEx Explosion Proof and Intrinsic Safety
- Steam Boiler Certification
- Pressure Equipment Directive (PED)
- CE Mark
- Overfill protection (future)
- CRN Registration (see table below for specifics)
- SIL 2/3 Level Compliance

Approval Certifications:

AGENCY	TYPE OF PROTECTION	COMM. OPTION	FIELD PARAMETERS	AMBIENT TEMP (Ta)
Canadian Standards Association (CSA) (Canada and USA)	**Explosion Proof with intrinsically safe output:** Class I, Division 1, Groups A, B, C, D; Class I, Zone 0/1 AEx d[ia] IIC T4 Ga/Gb Ex d[ia] IIC T4 Ga/Gb **Dust Ignition Proof:** Class II, Division 1, Groups E, F, G; T4 Class II Zone 21 AEx tb IIIC T95 °C DIP A21/II, III /1/EFG/Ex tb IIIC T95 °C	All	Note 1	-50 ℃ to 85 ℃
	Intrinsically Safe: Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4 Class 1 Zone 0 AEx ia IIC T4 Ga Ex ia IIC T4 Ga	4-20 mA / HART	Note 2a	-50 ℃ to 70 ℃
		FOUNDATION Fieldbus / FISCO	Note 2b/2c	-50 ℃ to 70 ℃
	Nonincendive with intrinsically safe output: Class I, Division 2, Groups A, B, C, D; T4 Class I, Zone 0/2 AEx nA[ia] IIC T4 Ga/Gc Ex nA[ia] IIC T4 Ga/Gc	4-20 mA / HART	Note 1	-50 ℃ to 85 ℃
		FOUNDATION Fieldbus / FISCO	Note 1	-50 ℃ to 85 ℃
	Enclosure: Type 4X/ IP66/ IP67	All	All	-
Canadian Registration Number (CRN):		All SLG 700 models are registered in all provinces and territories in Canada.		
FM Approvals™	**Explosion proof with intrinsically safe probe:** XP-IS Class I, Division 1, Groups A, B, C, D, T4 with Intrinsically safe probe Class 1, Zone 0/1 AEx ia/d IIC Ga/Gb T4 **Dust Ignition Proof with intrinsically safe probe:** DIP-IS Class II, Division 1, Groups E, F, G, T4 with Intrinsically Safe Probe Zone 21 AEx tb IIIC Db T95 °C Probe : Zone 20 AEx ia IIIC Da T95 °C	All	Note 1	-50 ℃ to 85 ℃
	Intrinsically Safe: IS Class I, II, III, Division 1, Groups A, B, C, D, E, F, G, T4 Class l, Zone 0, AEx ia IIC T4 Ga	4-20 mA / HART	Note 2	-50 ℃ to 70 ℃
		FOUNDATION Fieldbus / FISCO	Note 2	-50 ℃ to 70 ℃
	Nonincendive with intrinsically safe probe: NI-IS Class I, II, III, Division 2, Groups A, B, C, D, F, G, T4 with Intrinsically Safe Probe Class l, Zone 2, AEx nA IIC T4	4-20 mA / HART	Note 1	-50 ℃ to 85 ℃
		FOUNDATION Fieldbus / FISCO	Note 1	-50 ℃ to 85 ℃
	Enclosure: Type 4X/ IP66/ IP67	All	All	-

Approval Certifications: (Continued)

ATEX	**Flameproof with IS output:** 2[1] G Ex d[ia] IIC T4 Gb[Ga] **Dust Ignition Proof :** II 2 D Ex tb IIIC T 95°C IP 66	All	Note 1	-50 ºC to 85 °C
	Intrinsically Safe: II 1 G Ex ia IIC T4 Ga	4-20 mA / HART	Note 2a	-50 °C to 70 °C
		FOUNDATION Fieldbus / FISCO	Note 2b/2c	-50 °C to 70 °C
	Nonincendive with IS output: 3[1] G Ex nA[ia] IIC t4 Gb[Ga]	4-20 mA / HART	Note 1	-50 ºC to 85 °C
		FOUNDATION Fieldbus / FISCO	Note 1	-50 ºC to 85 °C
	Enclosure: IP66/ IP67	All	All	-
IECEx (World) CCoE (India)	**Flameproof with IS output:** Ex d[ia] IIC T4 Gb[Ga] **Dust Ignition Proof :** Ex tb IIIC T 95°C IP 66	All	Note 1	-50 ºC to 85 °C
	Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / HART	Note 2a	-50 °C to 70 °C
		FOUNDATION Fieldbus / FISCO	Note 2b/2c	-50 °C to 70 °C
	Nonincendive with IS output: Ex nA[ia] IIC T4 Gc[Ga]	4-20 mA / HART	Note 1	-50 ºC to 85 °C
		FOUNDATION Fieldbus / FISCO	Note 1	-50 ºC to 85 °C
	Enclosure: IP66/ IP67	All	All	-
SAEx (South Africa)	**Flameproof with IS output:** Ex d[ia] IIC T4 Gb[Ga] **Dust Ignition Proof :** Ex tb IIIC T 95°C IP 66	All	Note 1	-50 ºC to 85 °C
	Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / HART	Note 2a	-50 °C to 70 °C
		FOUNDATION Fieldbus	Note 2b	-50 °C to 70 °C
	Nonincendive with IS output: Ex nA[ia] IIC T4 Gc[Ga]	4-20 mA / HART	Note 1	-50 ºC to 85 °C
		FOUNDATION Fieldbus	Note 1	-50 ºC to 85 °C
	Enclosure: IP66/ IP67	All	All	-
INMETRO (Brazil) (future)	**Flameproof with IS output:** Ex d[ia] IIC T4 Gb[Ga] **Dust Ignition Proof :** Ex tb IIIC T 95°C IP 66	All	Note 1	-50 ºC to 85 °C
	Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / HART	Note 2a	-50 °C to 70 °C
		FOUNDATION Fieldbus	Note 2b	-50 °C to 70 °C
	Nonincendive with IS output: Ex nA[ia] IIC T4 Gc[Ga]	4-20 mA / HART	Note 1	-50 ºC to 85 °C
		FOUNDATION Fieldbus	Note 1	-50 ºC to 85 °C
	Enclosure : IP 66/67	All	All	-
NEPSI	**Flameproof with IS output:**	All	Note 1	-50 ºC to 85 °C

(China) (future)	Ex d[ia] IIC T4 Gb[Ga] **Dust Ignition Proof :** Ex tb IIIC T 95°C IP 66			
	Intrinsically Safe: Ex ia IIC T4 Ga	4-20 mA / HART	Note 2a	-50 ℃ to 70 ℃
		FOUNDATION Fieldbus	Note 2b	-50 ℃ to 70 ℃
	Nonincendive with IS output: Ex nA[ia] IIC T4 Gc[Ga]	4-20 mA / HART	Note 1	-50 º℃ to 85 ℃
		FOUNDATION Fieldbus	Note 1	-50 º℃ to 85 ℃
	Enclosure : IP 66/67	All	All	-

Notes:

1. Operating Parameters:
   Voltage= 13.5 to 42.0 V DC (HART) Current= 4-20 mA Normal (3.5 – 23 mA Faults) (HART)
   = 9 to 32 V (FF) = 29.4 mA Max (FF)
2. Intrinsically Safe Entity Parameters
   a. Analog/ HART Entity Values:
   Vmax= Ui = 30 V Imax= Ii= 225 mA Ci = 4 nF Li = 0 Pi =0.9 W
   b. Foundation Fieldbus- Entity Values
   Vmax= Ui = 30 V Imax= Ii= 225 mA Ci = 0 nF Li = 0 Pi =1.0 W
   c. Foundation Fieldbus (FISCO)- Entity Values
   Vmax= Ui = 17.5 V Imax= Ii= 380 mA Ci = 0 nF Li = 0 Pi =5.32 W
   When Installed as FISCO Ta= -50C to 45C

Overfill Protection (future)	WHG U1 TÜV-tested and approved for overfill protection according to the German WHG regulations
Marine Certificates (future)	This certificate defines the certifications covered for the SLG series transmitters. It represents the compilation of the five certificates Honeywell currently has covering the certification of these products into marine applications
	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.
	Bureau Veritas (BV) - Product Code: 389:1H.
	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.
	Korean Register of Shipping (KR)
	Lloyd's Register (LR)
SIL 2/3 Certification	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. **Note:** Only transmitters with SIL markings are certified for SIL applications. – Transmitters ordered with SIL certification will signify the SIL Level on the SLG700 Nameplate.

Mounting & Dimensional Drawings)

Reference Dimensions: millimeters / inches

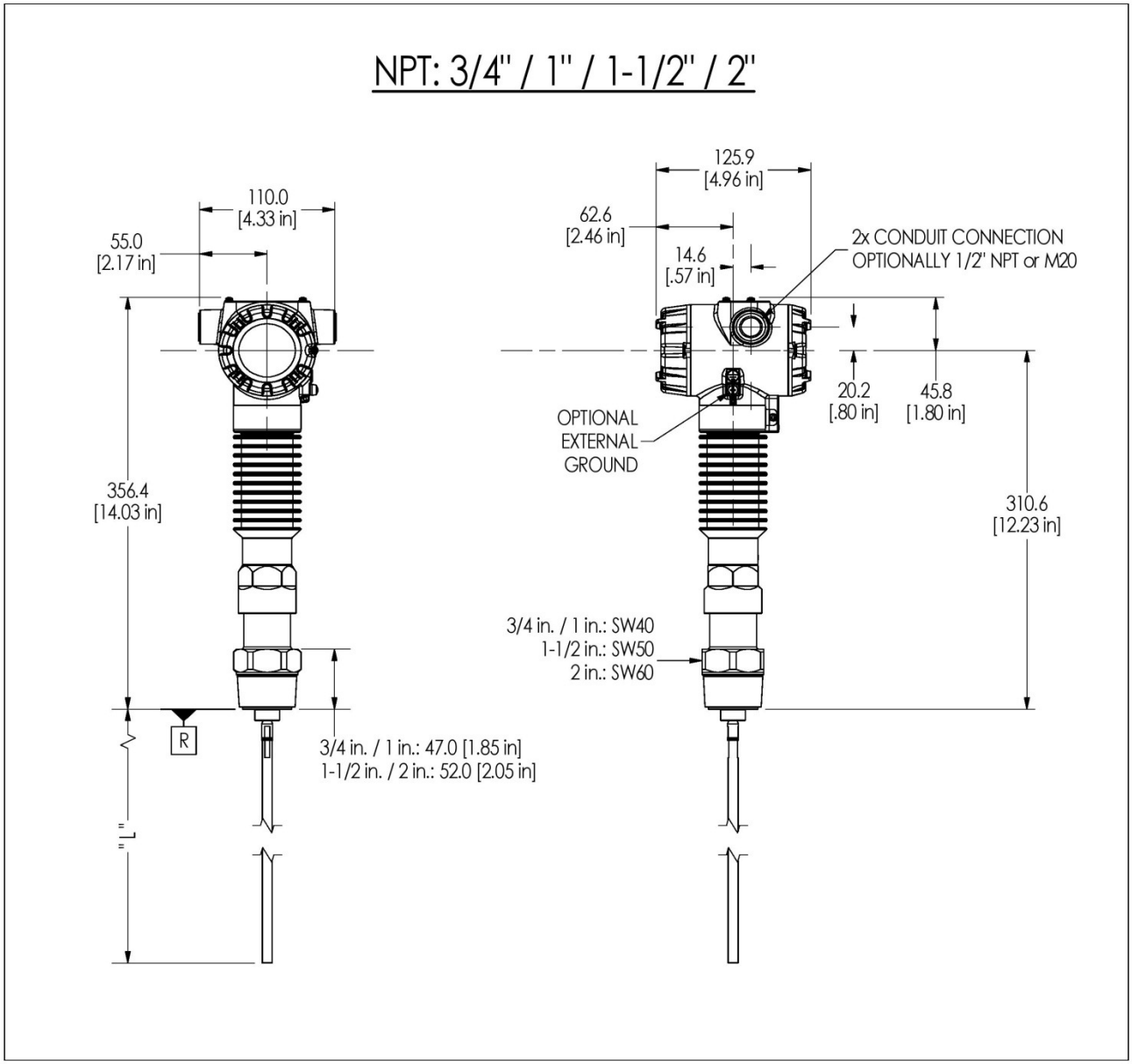

Figure 5 - SmartLine Level with NPT fitting

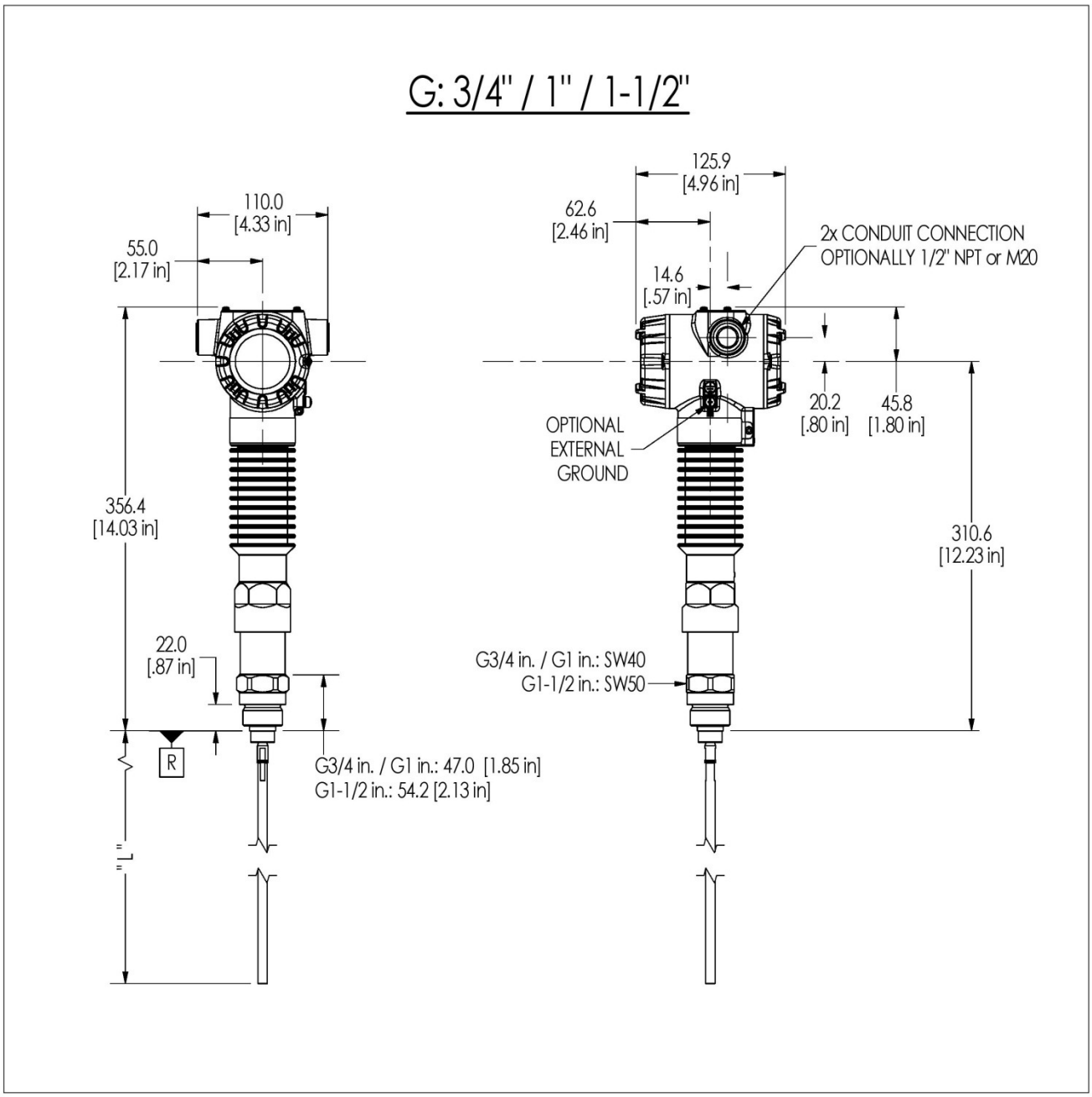

Figure 6 - SmartLine Level with BSP (British Standard Pipe) fitting

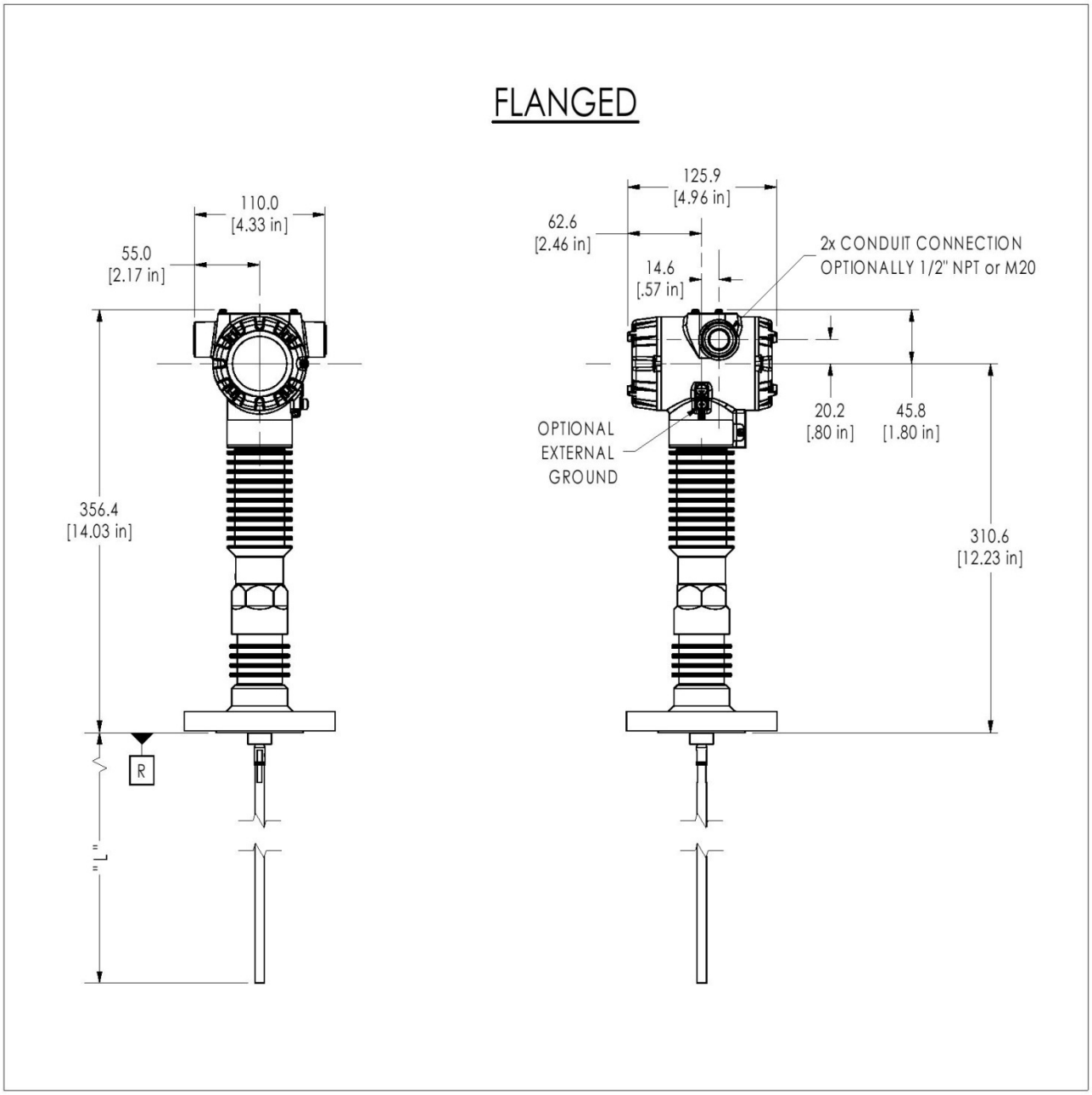

Figure 7 - SmartLine Level with flange

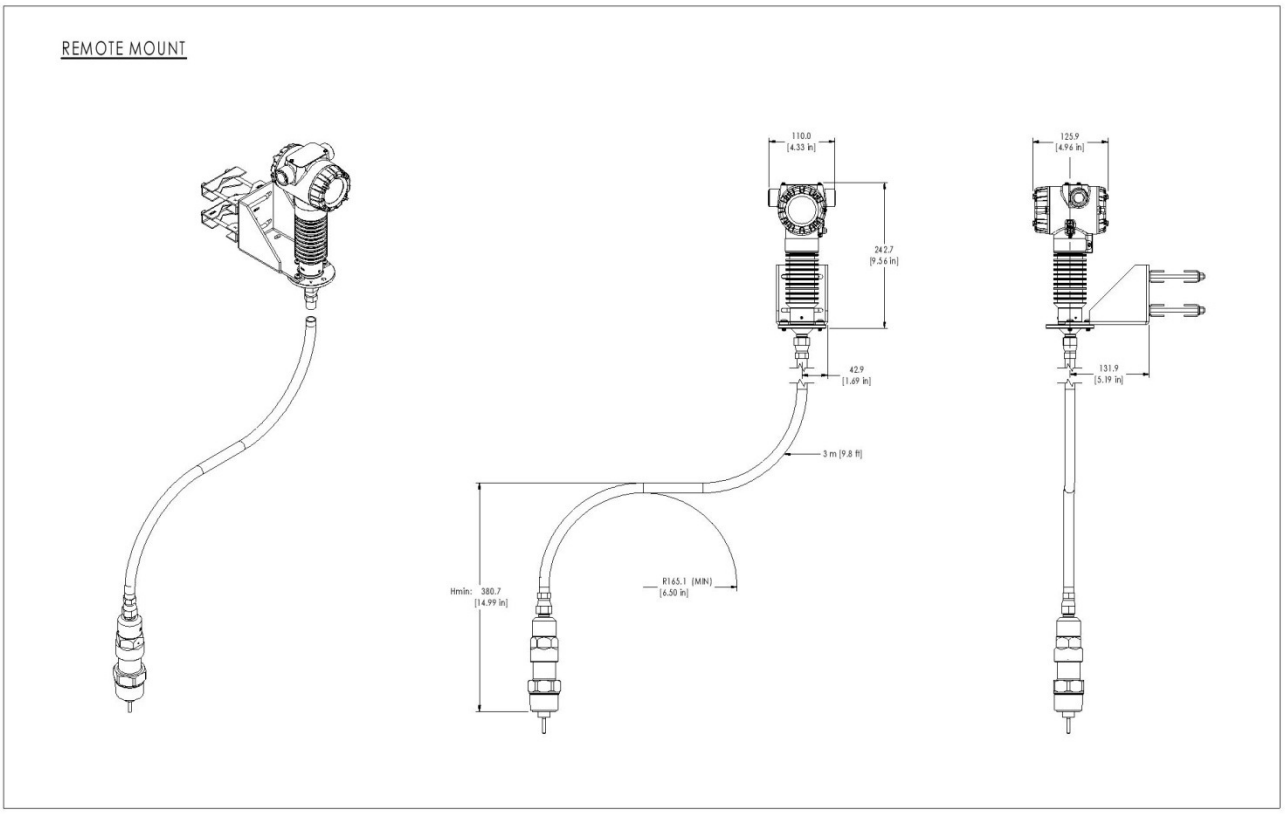

Figure 8 - SmartLine Level with remote housing option

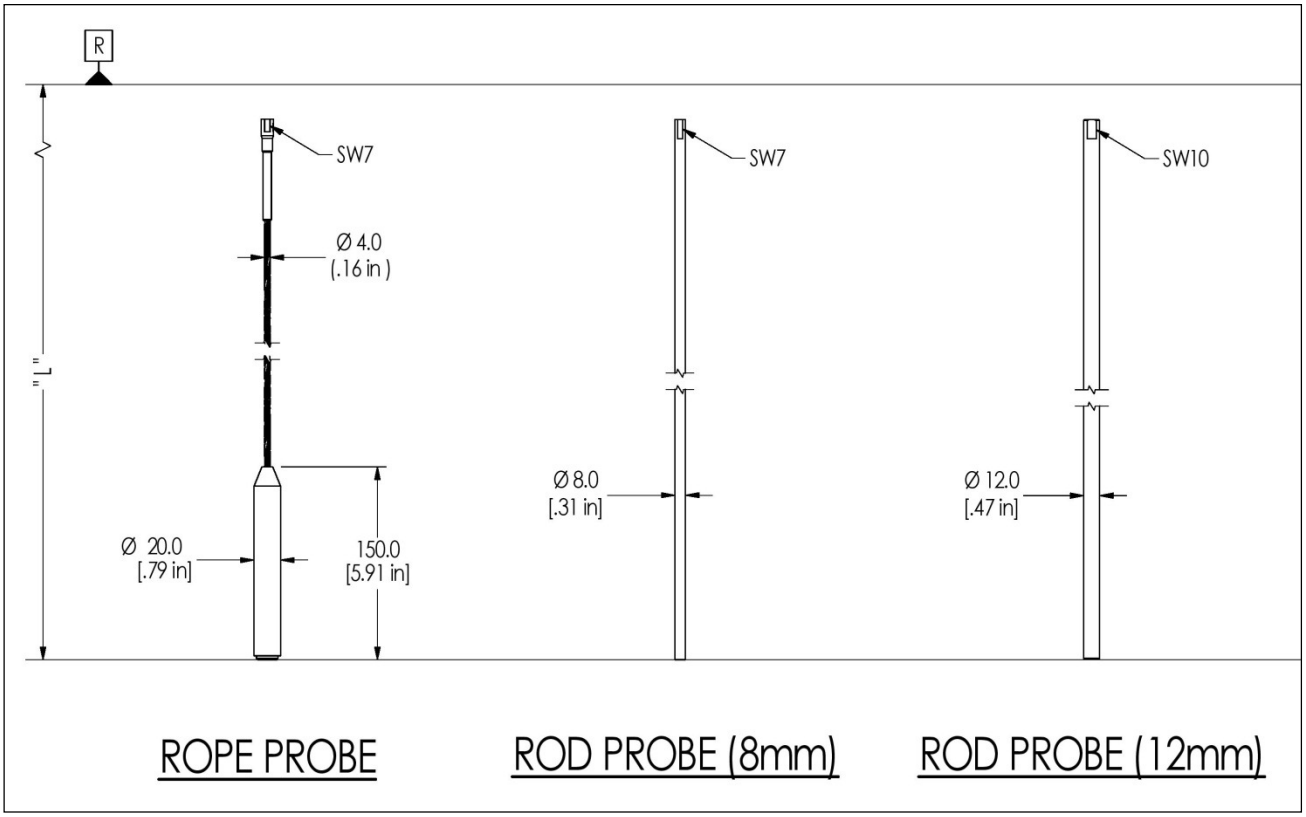

Figure 9 - SmartLine Level rod probes

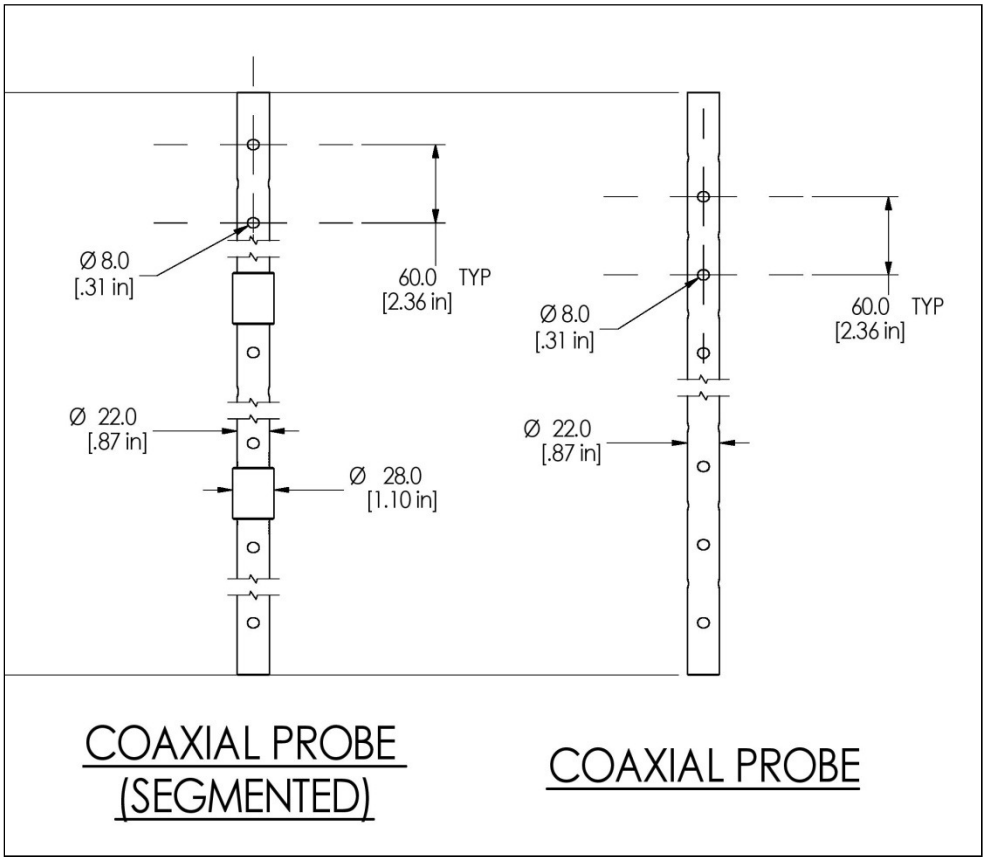

Figure 10 - SmartLine Level coaxial probes

Model Selection Guides are subject to change and are inserted into the specifications as guidance only.
Prior to specifying or ordering a model please check for the latest revision of the Model Selection Guides which are published at: **www.honeywellprocess.com/en-US/pages/default.aspx**

Model Selection Guide

Model SLG72X Series Liquid Measurement Guided Wave Radar Level Transmitter

Model Selection Guide

34-SL-16-01 Issue 3

Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each Table (I, II and IX) using the column below the proper arrow.
- A (•) denotes unrestricted availability. A letter denotes restricted availability.
- Restrictions follow Table IX.

Key Number	I	II	III	IV	V	VI	VII	VIII (Optional)	IX
SLG72 _	- _ _ _ _ _ _ _ _ _ _ _ _ _	- _ _ _ _	- _	- _ _ _	- _ _ _ _ _ _	- _	- _ _ _	- _ _ ' _ _	- _ _ _ _ _

KEY NUMBER	Application	Selection	Availability
	Standard T/P Liquid Level Measurement (-40 to 200C/-1 to 40 bar)	SLG720	↓

TABLE I	Probe and Material Selections				Selection	
	Probe Material	Measurement	Probe Type & Dia.	Min/Max Length Meters (Feet)		
a. Wetted materials and probe type			None - Customer Supplied (Single Rod and Wire Only)		0 0 0 _ _ _ _ _ _ _ _ _ _	•
	316/316L	General Liquids	Rod, Single 8 mm dia., segmented, 2000 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SRA _ _ _ _ _ _ _ _ _ _	d
			Rod, Single 12 mm dia., segmented, 2000 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SRB _ _ _ _ _ _ _ _ _ _	d
			Rod, segmented, 8 mm dia, 500 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SRH _ _ _ _ _ _ _ _ _ _	d
			Rod, segmented, 8 mm dia, 1000 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SRJ _ _ _ _ _ _ _ _ _ _	d
			Rod, segmented, 12 mm dia, 500 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SRM _ _ _ _ _ _ _ _ _ _	d
			Rod, segmented, 12 mm dia, 1000 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SRN _ _ _ _ _ _ _ _ _ _	d
			Wire, Single 4 mm dia	1.0m (3.3 ft) / 50m (164 ft)	SWA _ _ _ _ _ _ _ _ _ _	e
			Wire, Single 4 mm dia, max 300 mm nozzle height center rod	1.3m (4.3 ft) / 50m (164 ft)	SWB _ _ _ _ _ _ _ _ _ _	v
			Coaxial (22 mm OD), segmented, 2000 mm segments	0.4m (1.3 ft) / 6.3m (20.7 ft)	SCA _ _ _ _ _ _ _ _ _ _	h

TABLE I *(con't)*	Probe and Material Selections		Selection	20
b. Probe End Treatment	End Type	None	_ _ _ N _ _ _ _ _ _ _ _	u
		Weight	_ _ _ W _ _ _ _ _ _ _ _	p
c. Centering Disk		None	_ _ _ _ 0 0 _ _ _ _ _ _ _	•
	316/316L	2" Centering Disk (see Note 2 below)	_ _ _ _ S 2 _ _ _ _ _ _ _	q
		3" Centering Disk (see Note 2 below)	_ _ _ _ S 3 _ _ _ _ _ _ _	q
		4" Centering Disk (see Note 2 below)	_ _ _ _ S 4 _ _ _ _ _ _ _	q
		6" Centering Disk (see Note 2 below)	_ _ _ _ S 6 _ _ _ _ _ _ _	q
		8" Centering Disk (see Note 2 below)	_ _ _ _ S 8 _ _ _ _ _ _ _	q
d. Seal material	Viton® or Fluorocarbon Elastomer (-26 to 200C)		_ _ _ _ _ _ V _ _ _ _ _ _	•
	Kalrez 6375 perfluorelastomer (-20 to 200C; saturated steam max 150C)		_ _ _ _ _ _ K _ _ _ _ _ _	•
	EPDM (-40 to 150C)		_ _ _ _ _ _ E _ _ _ _ _ _	•
	Buna-N (-40 to 120C)		_ _ _ _ _ _ B _ _ _ _ _ _	•
e. Probe length units	Metric (millimeters)		_ _ _ _ _ _ _ M _ _ _ _ _	•
f. Probe length	400 mm to 50000 mm (in 100 mm increments)		_ _ _ _ _ _ _ _ XXXXX	•

Note: All flanges are 316L; when coated or C-276 wetted materials are selected a wetted material barrier is provided.
Note 2: A drilling jig needs to be ordered when ordering centering disk for rod probes. See accessory part numbers for drilling jig part.

TABLE II	Connection Types	Material	Size	Rating	Selection	20
	Flanges ANSI B16.5 (CRN)	316/316L	1-1/2"	Class 150lb RF	AS1A	•
				Class 300lb RF	AS1B	•
			2"	Class 150lb RF	AS2A	•
				Class 300lb RF	AS2B	•
			3"	Class 150lb RF	AS3A	•
				Class 300lb RF	AS3B	•
			4"	Class 150lb RF	AS4A	•
				Class 300lb RF	AS4B	•
			6"	Class 150lb RF	AS6A	•
			8"	Class 150lb RF	AS8A	•
	Flanges DIN EN 1092	316/316L	DN40	DN40 PN10-40	DS4A	•
			DN50	DN50 PN10/16	DS5A	•
				DN50 PN25/40	DS5B	•
			DN80	DN80 PN10/16	DS8A	•
				DN80 PN25/40	DS8B	•
			DN100	DN100 PN10/16	DS1A	•
				DN100 PN25/40	DS1B	•
			DN150	DN150 PN10/16	DS1Y	•
			DN200	DN200 PN16	DS2A	•
	Flanges Special	316/316L	Fisher 249B/259B	600lb	FS1C	•
			Fisher 249C	600lb	FS1D	•
			Masoneilan 7-1/2"	600 psi	MS1C	•
	Threaded Fittings ISO228 and ANS	316/316L		3/4" NPT (CRN)	NS7A	•
				1" NPT (CRN)	NS1A	•
				1 - 1/2" NPT (CRN)	NS5A	•
				2" NPT (CRN)	NS2A	•
				3/4" BSP (G 3/4")	GS7A	•
				1" BSP (G 1")	GS1A	•
				1-1/2" BSP/G 1-1/2	GS5A	•

TABLE III	Agency Approvals (see data sheet for Approval Code Details)	Selection	
Approvals	No Approvals Required	0	•
	FM Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof	A	•
	CSA Explosion proof, Intrinsically Safe, Non-incendive, & Dustproof	B	•
	ATEX Explosion proof, Intrinsically Safe & Non-incendive	C	•
	IECEx Explosion proof, Intrinsically Safe & Non-incendive	D	•
	SAEx Explosion proof, Intrinsically Safe & Non-incendive	E	•
	NEPSI Explosion proof, Intrinsically Safe & Non-incendive	G	•
	CCoE Explosion proof, Intrinsically Safe & Non-incendive	H	•

TABLE IV	TRANSMITTER ELECTRONICS SELECTIONS			Selection	
	Material	Connection	Lightning Protection		
a. Electronic Housing Material & Connection Type	Polyester Powder Coated Aluminum	1/2 NPT	None	A_ _	•
	Polyester Powder Coated Aluminum	M20	None	B_ _	•
	Polyester Powder Coated Aluminum	1/2 NPT	Yes	C_ _	•
	Polyester Powder Coated Aluminum	M20	Yes	D_ _	•
	316 Stainless Steel (Grade CF8M)	1/2 NPT	None	E_ _	•
	316 Stainless Steel (Grade CF8M)	M20	None	F_ _	•
	316 Stainless Steel (Grade CF8M)	1/2 NPT	Yes	G_ _	•
	316 Stainless Steel (Grade CF8M)	M20	Yes	H_ _	•
b. Output/ Protocol	Analog Output		Digital Protocol		
	4-20mA dc		HART Protocol	_H_	•
	n/a		Foundation Fieldbus	_F_	•
c. Customer Interface Selections	Indicator	Ext Zero, Span & Config Buttons	Languages		
	None	None	None	_ _0	•
	None	Yes (Zero/Span Only)	None	_ _A	f
	Basic	None	English	_ _B	•
	Basic	Yes	English	_ _C	•
	Advanced	None	EN, DE, IT, FR, SP, RU, TU	_ _D	•
	Advanced	Yes	EN, DE, IT, FR, SP, RU, TU	_ _E	•

TABLE V	CONFIGURATION SELECTIONS			Selection	20
a. Diagnostics	**Diagnostics**				
	Standard Diagnostics			1 _ _ _ _	•
b. Interface Measurement	**Interface Options**				
	None - Standard Level			_ 0 _ _ _	•
	Interface Measurement			_ 1 _ _ _	•
	Flooded Interface Measurement			_ 2 _ _ _	•
c. Compensations	None			_ _ 0 _ _	•
d. 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)	_ _ _ 1 _	f
	Disabled	Low< 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ _ _ 2 _	f
	Enabled	High> 21.0mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ _ _ 3 _	f
	Enabled	Low< 3.6mAdc	Honeywell Std (3.8 - 20.8 mAdc)	_ _ _ 4 _	f
	Enabled	N/A	N/A Fieldbus or Profibus	_ _ _ 5 _	g
	Disabled	N/A	N/A Fieldbus or Profibus	_ _ _ 6 _	g
e. General Configuration	Factory Standard			_ _ _ _ S	•
	Custom Configuration (Unit Data Required from customer)			_ _ _ _ C	•

[3] NAMUR Output Limits 3.8 - 20.5mAdc can be configured by the customer.

TABLE VI	CALIBRATION & ACCURACY SELECTIONS			Selection	
Accuracy and Calibration	**Accuracy**	**Calibrated Range**	**Calibration Qty**		
	Std Accuracy (+/-3mm or +/-0.03%)	Factory Std (uses RF cable calibrator)	Single Range	A	•
	Std Accuracy (+/-3mm or +/-0.03%)	Custom calibration w/ certificate (Unit Data	Single Range	B	t

TABLE VII	ACCESSORY SELECTIONS	Selection	
a. Customer Tag	No customer tag	0 _ _	•
	One Wired Stainless Steel Tag (Up to 4 lines 26 char/line)	1 _ _	•
	Two Wired Stainless Steel Tag (Up to 4 lines 26 char/line)	2 _ _	•
b. Unassembled Conduit Plugs & Adapters	No Conduit Plugs or Adapters Required	_ A0	•
	1/2 NPT Male to 3/4 NPT Female 316 SS Certified Conduit Adapter	_ A2	n
	1/2 NPT 316 SS Certified Conduit Plug	_ A6	n
	M20 316 SS Certified Conduit Plug	_ A7	m
	Minifast® 4 pin (1/2 NPT)	_ A8	n
	Minifast® 4 pin (M20)	_ A9	m

TABLE VIII	OTHER Certifications & Options: (String in sequence comma delimited (XX, XX, XX,....)	Selection	
Certifications & Warranty	**None**	00	•
	NACE MR0175; MR0103; ISO15156 Process wetted parts only	FG	u
	NACE MR0175; MR0103; ISO15156 Process wetted and non-wetted parts	F7	u
	EN10204 Type 3.1 Material Traceability; pressure retaining parts	FX	•
	Certificate of Conformance	F3	•
	Calibration Test Report & Certificate of Conformance	F1	•
	Certificate of Origin	F5	•
	FMEDA (SIL 2/3) Certification	FE	j
	WHG Overfill Protection	WG	•

TABLE IX	Manufacturing Specials	Selection	
Factory	**Application and Validation Tool (AVT) Configuration File Reference #**	_ _ _ _ _	•
	Factory Default Configuration, No AVT File	00000	•

MODEL RESTRICTIONS

Restriction Letter	Available Only with		Not Available with	
	Table	Selection(s)	Table	Selection(s)
b	Select only one option from this group			
c	If	probe length 400 mm to 6300 mm (_ _ _ _ _ _ _ _ _ _ 400 to _ _ _ _ _ _ _ _ _ 6300)	II	NS7A, NS1A, GS7A, GS1A
d	If	probe length 400 mm to 6300 mm (_ _ _ _ _ _ _ _ _ _ 400 to _ _ _ _ _ _ _ _ _ 6300)		
e	If	probe length 1000 mm to 50000 mm (_ _ _ _ _ _ _ _ _ _ 1000 to _ _ _ _ _ _ _ _ 50000)		
f			IVb	_ F _
g	IVb	_ F _		
h	If	probe length 400 mm to 6300 mm (_ _ _ _ _ _ _ _ _ _ 400 to _ _ _ _ _ _ _ _ _ 6300)	II	NS7A, GS7A
			If	probe length > 2000 mm
j	IVb	_ H _	Vd	_ _ _ 1 _, _ _ _ 2 _, _ _ _ 6 _
k	If	probe length 400 mm to 6300 mm (_ _ _ _ _ _ _ _ _ _ 400 to _ _ _ _ _ _ _ _ _ 6300)	II	NS7A, GS7A
m	IVa	B_ _, D_ _, F_ _, H_ _		
n	IVa	A_ _, C_ _, E_ _, G_ _		
p	Ia	SWA_ _ _ _ _ _ _ _ _ _, SWB_ _ _ _ _ _ _ _ _ _		
q	1a,1b	SWAW _ _ _ _ _ _ _ _ _, SWBW _ _ _ _ _ _ _ _ _, SRA_ _ _ _ _ _ _ _ _ _,SRB_ _ _ _ _ _ _ _ _ _, SRH_ _ _ _ _ _ _ _ _ _, SRJ_ _ _ _ _ _ _ _ _ _,SRM_ _ _ _ _ _ _ _ _ _, SRN_ _ _ _ _ _ _ _ _ _		
r	If	probe length 1000 mm to 50000 mm (_ _ _ _ _ _ _ _ _ _ 1000 to _ _ _ _ _ _ _ _ 50000)	II	NS7A, NS1A, GS7A, GS1A
t			Ia	SWA_ _ _ _ _ _ _ _ _ _, SWB_ _ _ _ _ _ _ _ _ _
			If	probe lengths more than 20 meters (>_ _ _ _ _ _ _ _ 20000)
u			Ia	SWA_ _ _ _ _ _ _ _ _ _, SWB_ _ _ _ _ _ _ _ _ _
v	If	probe length 1300 mm to 50000 mm (_ _ _ _ _ _ _ _ _ 1300 to _ _ _ _ _ _ _ _ 50000)		

Sales and Service

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

ASIA PACIFIC

Honeywell Process Solutions,
(TAC) hfs-tac-support@honeywell.com

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

Honeywell Process Solutions,
Phone: + 80012026455 or
+44 (0)1344 656000

Email: (Sales)
FP-Sales-Apps@Honeywell.com
or
(TAC)
hfs-tac-support@honeywell.com

AMERICAS

Honeywell Process Solutions,
Phone: (TAC) 1-800-423-9883 or
215/641-3610
(Sales) 1-800-343-0228

Email: (Sales)
FP-Sales-Apps@Honeywell.com
or
(TAC)
hfs-tac-support@honeywell.com

Specifications are subject to change without notice.

For more information
To learn more about SmartLine Transmitters,
visit www.honeywellprocess.com
Or contact your Honeywell Account Manager

Process Solutions
Honeywell
1250 W Sam Houston Pkwy S
Houston, TX 77042

Honeywell Control Systems Ltd
Honeywell House, Skimped Hill Lane
Bracknell, England, RG12 1EB

Shanghai City Centre, 100 Jungi Road
Shanghai, China 20061

www.honeywellprocess.com

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