



PRESSURE MEASUREMENT TRANSMITTERS

LD400 SERIES

- $\pm 0.045\%$ Accuracy
- $\pm 0.2\%$ of URL Stability Guarantee For 12 Years
- 200:1 Rangeability
- 35 ms Total Response Time
- Non-volatile Totalizer (not available for WirelessHART™)
- Tank Linearization
- PID Control Capability (not available for WirelessHART™)
- Advanced Diagnostics
- Bi-directional Flow Measurement
- Supports DD, EDDL, and FDT/DTM
- Non-polarity Power Input
- Built-in Transient Suppression
- TUV certified for safety applications



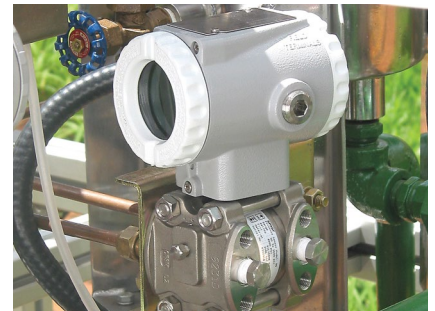
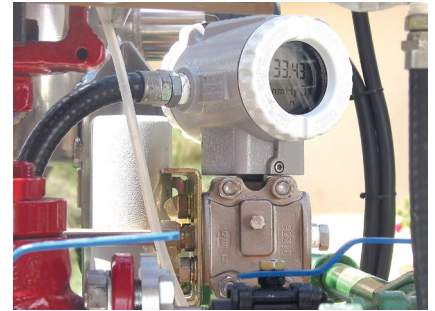
Pressure, Level and Flow

LD400 Series

The Smar LD400 transmitter was developed to be a robust and highly reliable solution for pressure measurement. Offers great flexibility in applications due to the use of a capacitive sensor that maintains the digital signal from the sensor reading to the transmitter output, resulting in high effective resolution.



- Low Total Probable Error (TPE);
- User-friendly rotative display;
- Local Span/Zero calibration and easy on-site configuration;
- Easy installation, quick commissioning and setup;
- Online continuous sensor and electronic diagnostics reduce troubleshooting time and eliminate unnecessary trips to the field;
- Modularity for all models;
- Persistent Totalizer (not available for *WirelessHART™*);
- Transfer functions: linear, linearization table, $\sqrt{x}$, $\sqrt{x^3}$, $\sqrt{x^5}$;
- Configurable user unit;
- Span as small as 50 Pa (0.2 inH₂O) up to a range limit of 40 MPa (5800 psi);
- Up to 32 MPa static pressure (4600 psi);
- 10,000 psi Burst Pressure Limit;
- Wide pressure ranges and applications.



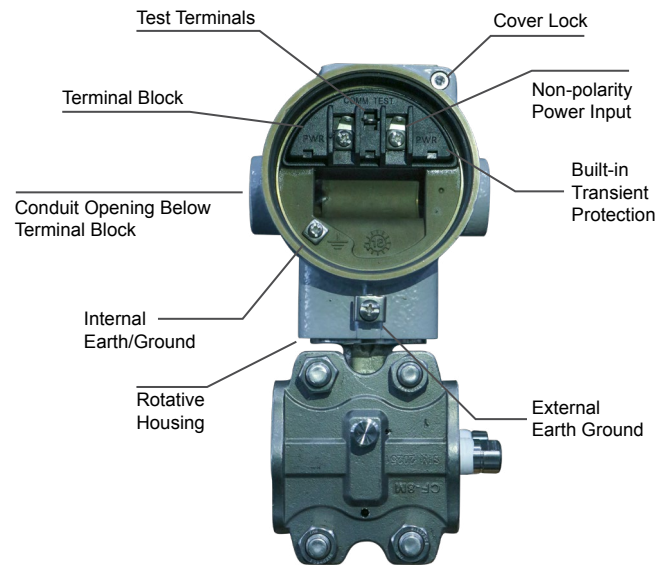
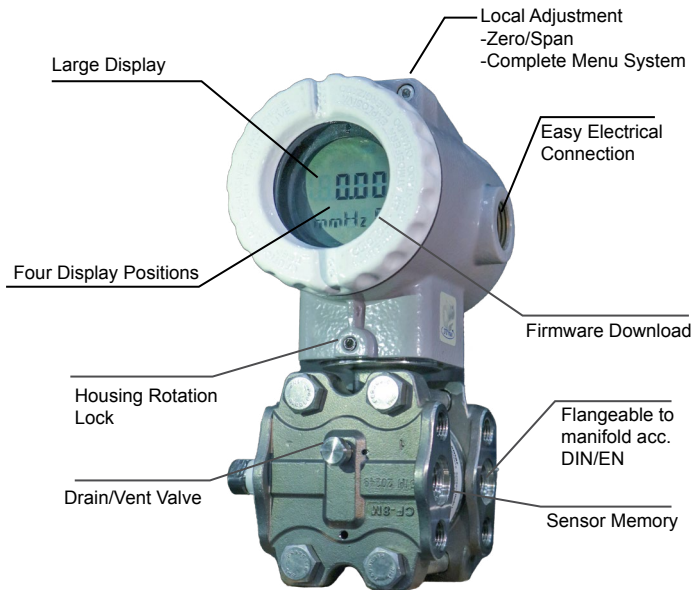
HART®

- Output current with 0.75 μ A resolution;
- Output Limits according to NAMUR NE43;
- Software Management according to NAMUR NE53;
- Based on technology proven in use since the early '80s;
- Built-in surge protection;
- Fully selectable constant mA output (Loop Test capability);
- The LD400SIS is certified to IEC61508 for SIL 1 and SIL 2 (non-redundant) and SIL 3 (redundant) applications.

WirelessHART™

- Repeaters/Routers function in the mesh network;
- "Burst Mode" for periodical sending of commands;
- Powered by long life battery;
- HART® 7 / *WirelessHART™* protocol;
- Status diagnostics;
- Distance up to 250 m from other network equipment;
- Mesh network topology;
- Hardware and software write protection;
- Wireless standard IEEE 802.15.4-2006 @ 250 kbps;
- Frequency band 2.4 GHz.





LD400 HART® Functional Description

LD400 consists of differential, absolute and gauge pressure transmitters as well as models for sanitary, level, and remote seal applications. The **LD400** offers the best solution for all field applications and those demanding high performance.

LD400 offers:

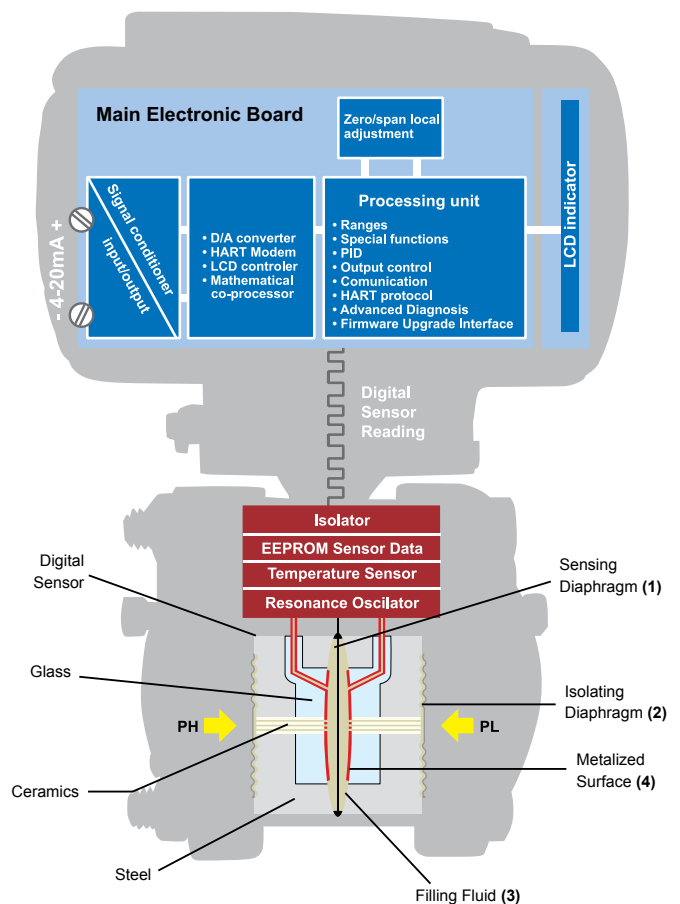
- $\pm 0.045\%$ accuracy for High Performance option;
- $\pm 0.2\%$ of URL stability guarantee for 12 years;
- 200:1 rangeability;
- Compact and lightweight;
- Safe and reliable operation.

LD400 uses the field-proven technique of capacitance cell sensor measurement.

The sensor is shown in the picture on side. The sensing diaphragm **(1)** is at the cell center. The diaphragm deflects as a result of the difference between the pressures applied to the left and right sides of the sensor (PH and PL). Pressure is directly applied to the isolating diaphragms **(2)**, which provide resistance against process fluid corrosion. The pressure is transmitted to the sensing diaphragm through the filling fluid **(3)**.

The sensing diaphragm is a moving capacitor plate while the two metallized surfaces **(4)** are fixed plates. The sensing diaphragm deflection results in capacitance variations between the moving and fixed plates.

The electronic resonance circuit reads capacitance variation between the moving and fixed plates. The CPU conditions the measurement and communicates according to protocol. As there is no A/D conversion, errors and drifts during conversions are eliminated. A temperature



sensor provides temperature compensations, which combined with the sensor precision, results in high accuracy and rangeability for the **LD400**.

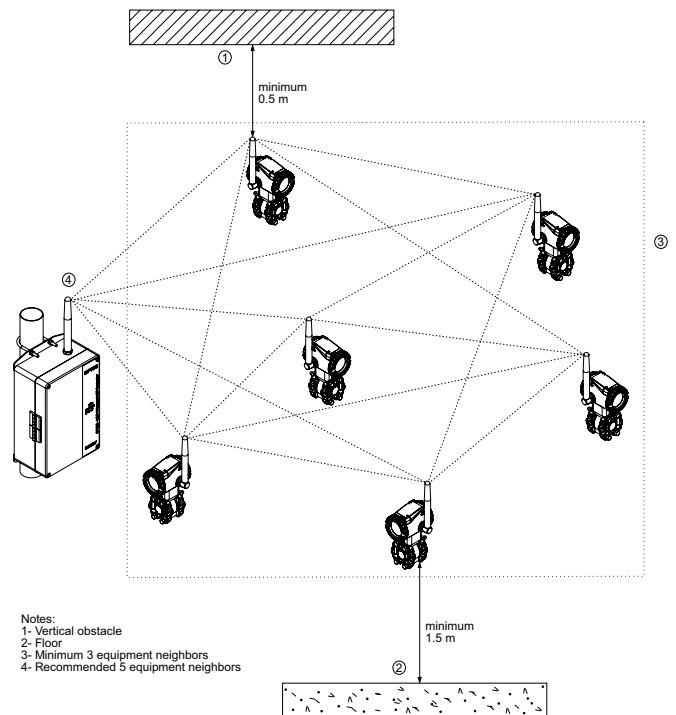
The process variable, as well as monitoring and diagnostics information, is provided by digital communication protocol.

WirelessHART™ Technology

The world dedicated HART® technology now offers a robust protocol designed for numerous applications, with the advantage of the wireless feature. Economy installation and efficient management of energy, quick access to information from the field, strength in communication and information integrity, network security: this and so many other advantages that make *WirelessHART™* technology (more on www.fieldcommgroup.org) which came to the world of automation to innovate and revolutionize.

Based on a communication protocol for wireless mesh network, the *WirelessHART™* protocol ensures compatibility between instruments, commands and existing HART® tools. Basically, a *WirelessHART™* network is composed of elements like the figure beside.

The picture elements on the network, constitute the mesh network. They are:



- **Host** – The host, usually connected to the control network, is a workstation in which a Human Machine Interface application can be installed, which allows an operator to interact with the process through the Gateway. It commonly uses protocols such as Profibus, High Speed Ethernet (HSE), among others.
- **WirelessHART™ Gateway** – This is a “translator” device. This converts both data from the host to the WirelessHART protocol, used by instruments connected to the WirelessHART network, and data from the instruments to the host. In general, the WirelessHART Gateway incorporates Network Manager, Security Manager, and Access Point functionality.
- **WirelessHART Field Devices** – These are devices connected directly to the process, such as the TT400 and the LD400 WirelessHART by Smar. They act, in addition to their functionalities of process variables transducers, as transmitters and routers (repeaters), being able to retransmit messages to/from other instruments on the network.
- **WirelessHART Adapter** – is a “bridge” instrument, capable of making data from a HART 4 to 20mA field device (wired) available to the WirelessHART host (wireless), thus allowing a conventional HART field device to be part of a network like the one discussed.

The *WirelessHART™* instruments should be field installed and configured the same way as conventional HART® instruments. This is possible with the DD (Device Description) files updated and uploaded to the HART configurator, that can be used normally. The *WirelessHART™* instruments can be either configured previously in bench or at the time of installation.

Differential Pressure - LD400D and LD400H

Pressure is applied to high and low side and differential pressure is measured. High static pressure is supported for **LD400H** models.

Flow - LD400D and LD400H

The differential pressure is generated by a primary flow element and the square root function computes the flow measurement.

Gage Pressure - LD400M and LD400G

The pressure is measured at the high side of the transmitter and the low side is open to the atmosphere, providing true local atmospheric reference.

Absolute Pressure - LD400A

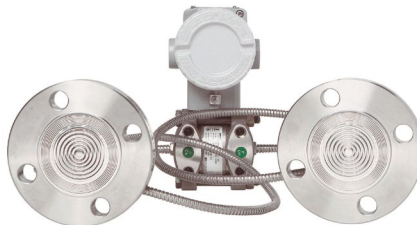
The pressure is measured at the high side of the transmitter and the low side is at zero absolute pressure to a sealed chamber with vacuum.

Level - LD400L and LD400I

The transmitter has a flange-mounted unit for direct installation on vessels. Extended diaphragms are also available. For closed tank applications, the low side can compensate the internal pressure.

Sanitary - LD400S

LD400S is especially designed for food and other applications where sanitary connections are required. With threaded or "tri-clamp" connections, it allows quick and easy cleaning and maintenance. The flush connection enables deposit removal without disconnecting the seal. For further information, see the Smar SR301 Series Catalog.


Remote Seals


SR301 is a remote seal designed for chemical and thermal isolation. **LD400** can be assembled with separate diaphragm seals in either one or both sides of the sensor. SR301 options include: "T" Type Flanged (SR301T), Threaded (SR301R), Pancake (SR301P) where those three models with an optional flush connection, Sanitary (SR301S), and Flanged with Extension (SR301E).

Typical applications for **LD400** with remote seals:

- Corrosive process fluid;
- Suspended solids or viscous process fluid;
- Process fluids that may freeze or solidify;
- Process temperatures higher than supported by transmitters;
- Replaces impulse lines and condensate legs;
- Bubble system.

See the SR301 Series Catalog for further information regarding application and specification.

LD400 HART SIS is certified by TUV and meet the recommendations IEC 61508 standard for SIS (Safety Instrumented Systems) applications. For more information about SIS, please consult LD400 Operations, Maintenance and Instructions Manual.

Note:

The **LD400 HART® SIS** has a red cover to differentiate it from the standard model.

Parameterization and Diagnostics

LD400 is available in HART® technology. These instruments can be configured with Smar software and other manufacturer configuration tools. Local adjustment is available in all **LD400**. It is possible to configure zero and span, totalization, setpoint and other control functions using the magnetic screwdriver.

Smar has developed AssetView, which is a user-friendly Web Tool that can be accessed anywhere and anytime

using an internet browser. It is designed for management and diagnostics of field devices, to ensure reactive, preventive, predictive and proactive maintenance.

Local
Adjustment



LD400 with HART® protocol can be configured by:

- DEVCOMDROID Smar software, used with HI331 (Bluetooth Interface);
- Other manufacturers' configuration tools based on DD (Device Description), Simatic PDM, and FDT/DTM, such as AMSTM, FieldCare™, PACTware™, HHT275 and HHT375, PRM Device Viewer.

For **LD400** management and diagnostics, AssetView ensures continuous information monitoring.

Advanced Diagnostics

Smar **LD400** provides diagnostics on several levels allowing quick maintenance and in a safe way:

- Sensor Level
- Electronics Level
- Loop integrity Level

The **LD400** performs advanced diagnostics upon powering up the instrument. It verifies the integrity of important data in order for the device to work properly: the characterization data, the customer entered data, the calibration data and the RAM memory.

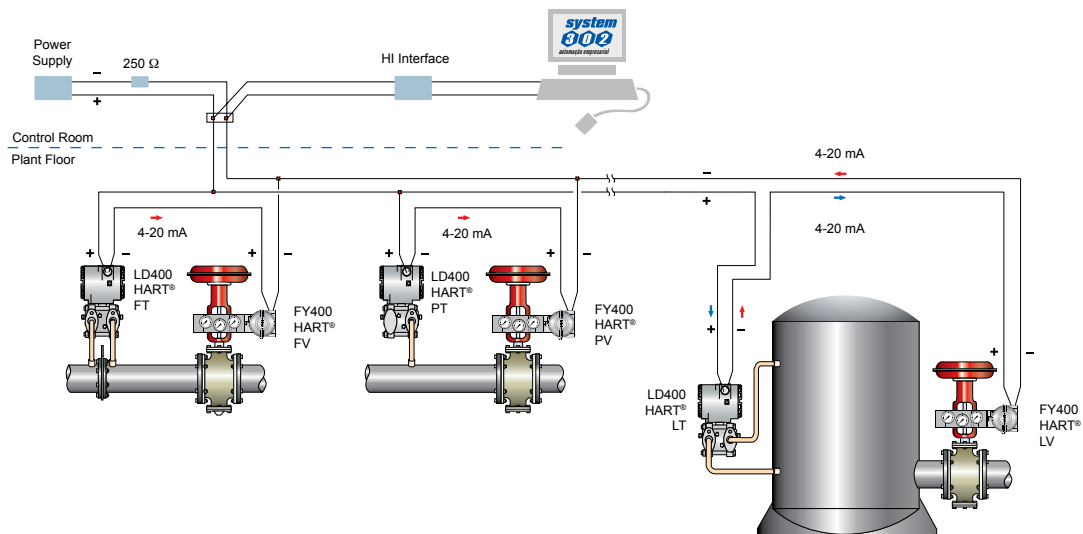
During the operation, the validity of the measured pressure is continuously checked. Using advanced algorithms, the transmitter can identify when there is a failure and if it is

due to a hardware failure or a process overload condition. It also checks over and under temperature conditions. The user can configure the safe condition according to NAMUR NE43. When the result is failure it can cause an incorrect output, the transmitter will immediately switch the output current allowing actions by the user to identify and correct the problem.

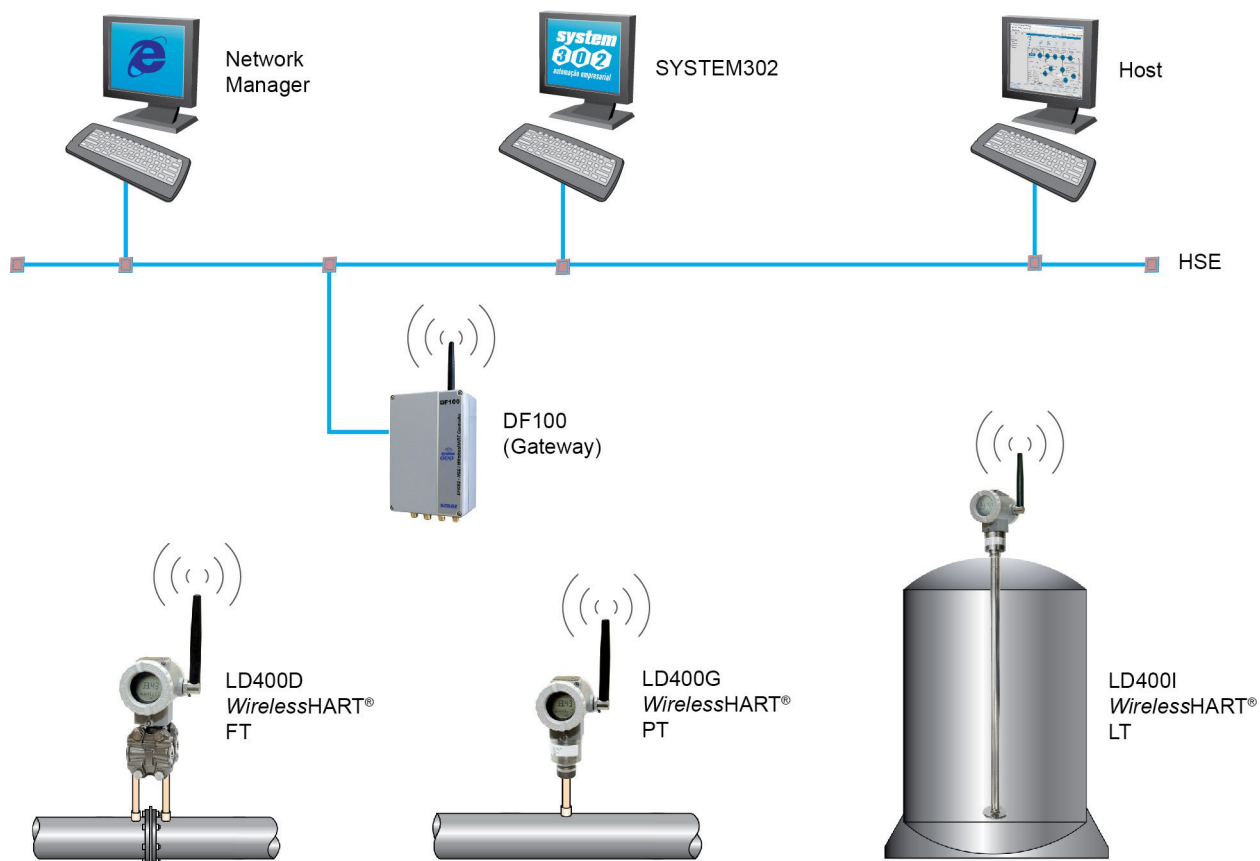
The **LD400 SIS** model not only includes all the previously mentioned diagnostics but also some extra ones to reach the required safety level. They are:

- 4-20 mA Current Output Monitoring;
- Memory and CPU Integrity Checking;
- Crystal Monitoring;
- Firmware Execution Sequence Monitoring.

HART®

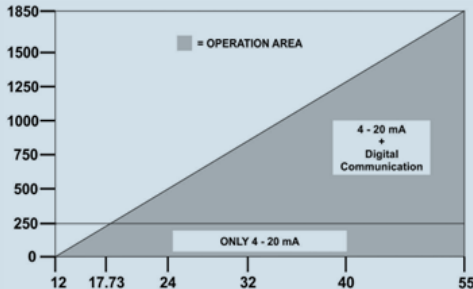


WirelessHART™



Functional Specifications

Process Fluid	Liquid, gas or steam.
Output and Communication Protocol	HART®: Two-wire, 4-20 mA controlled according to NAMUR NE43 specification, with super-imposed digital HART® Protocol. WirelessHART™: HART® Version 7 protocol, with LD400 <i>WirelessHART™</i> command set. A HART® transmitter specific review must be managed according to the LD400 <i>WirelessHART™</i> transmitter.
Power Supply	HART®: 12 to 55 Vdc. Input without polarization, with protection for transient suppressor and complemented by a surge arrester. Transient Suppressor: Vmax = 65 Vp; Differential Mode - bi-directional; Low current leak and capacitance; Meets the standards: IEEE61000-4-4 and IEEE61000-4-5; Less than 5 ns response time. Lightning Arrester: V = 1000 Vdc; Discharge current peak = 10 kA; Nominal current = 10 A for 1 s; Common mode - low leak current and low capacitance WirelessHART™: The battery pack consists of two primary lithium batteries of 3.6 V, totaling 7.2 V. Battery duration: - Update every 8s: 4 years.
Indicator	Rotative LCD, with 4½-numerical digit and 5-character alphanumerical. Function and status icons.
Hazardous Area Certifications	HART®: INMETRO (Explosion Proof and Intrinsic Safety), ATEX (Explosion Proof and Intrinsic Safety) and IECEx (Intrinsic Safety) WirelessHART™: INMETRO, ATEX and IECEx (Intrinsic Safety)
European Directive Information	PED Directive 2014/68/EU - "Pressure Equipment" This product is in compliance with Article 4 paragraph 3 of the Pressure Equipment Directive 2014/68/EU and was designed and manufactured in accordance with the sound engineering practice. This equipment cannot bear the CE marking related to PED compliance. However, the product bears the CE marking to indicate compliance with other applicable European Community Directives. EMC Directive 2014/30/EU - "Electromagnetic Compatibility" (applicable from 20 April 2016) For products evaluation the standard IEC 61326-1 were consulted and to comply with the EMC directive the installation must follow these special conditions: Use shielded, twisted-pair cable for powering the instrument and signal wiring. Keep the shield insulated at the instrument side, connecting the other one to the ground. ATEX Directive 2014/34/EU - "Equipment for explosive atmospheres" The EC-Type Examination Certificate is released by DNV Product Assurance AS (CE2460) and UL International Demko AS (CE0539). Designated certification body that monitors manufacturing and released QAN (Quality Assurance Notification) and QAR (Quality Assessment Report) is Nemko AS (CE0470) and UL International Demko AS (CE0539).

European Directive Information (continuation)	LVD Directive 2014/35/EU – "Low Voltage" According the LVD directive Annex II, electrical equipment for use in an explosive atmosphere is outside the scope of this directive. According to IEC 61010-1 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements. ROHS Directive 2011/65/EU - "Restriction of the use of certain hazardous substances in electrical and electronic equipment" For the evaluation of the products the following standards were consulted: EN 50581																																								
Zero and Span Adjustments	HART®: Local adjustment jumper with 3 positions: Simple, Disabled and Complete. WirelessHART™: Jumper of local adjustment with two positions: Enabled and Disabled.																																								
Load Limitation																																									
Failure Alarm (Diagnostics)	HART®: Detailed diagnostics through HART communicator. Sensor failure indication and overpressure indication. In case of sensor or circuit failure, the self-diagnostics drives the output to 3.6 or 21.0 mA, according to the user's choice and NAMUR NE43 specification. WirelessHART™: Detailed diagnostics via HART® communicator and via display. Indication of sensor failure and overpressure.																																								
Temperature Limits	<table><tr><td>Ambient:</td><td>-40 to 85 °C</td><td>(-40 to 185 °F)</td><td></td></tr><tr><td>Process:</td><td>-40 to 100 °C</td><td>(-40 to 212 °F)</td><td>(Silicone Oil)</td></tr><tr><td></td><td>-40 to 85 °C</td><td>(-40 to 185 °F)</td><td>(Inert Halocarbon Oil)</td></tr><tr><td></td><td>0 to 85 °C</td><td>(32 to 185 °F)</td><td>(Fluorolube Oil)</td></tr><tr><td></td><td>-20 to 85 °C</td><td>(-4 to 185 °F)</td><td>(Inert Krytox Oil and Fomblim Oil)</td></tr><tr><td></td><td>-25 to 100 °C</td><td>(-13 to 212 °F)</td><td>(Viton O'Ring)</td></tr><tr><td></td><td>-40 to 150 °C</td><td>(-40 to 302 °F)</td><td>(Level Model)</td></tr><tr><td>Storage:</td><td>-40 to 100 °C</td><td>(-40 to 212 °F)</td><td></td></tr><tr><td>Digital Display:</td><td>-20 to 80 °C</td><td>(-4 to 176 °F)</td><td></td></tr><tr><td></td><td>-40 to 85 °C</td><td>(-40 to 185 °F)</td><td>(Without Damage)</td></tr></table>	Ambient:	-40 to 85 °C	(-40 to 185 °F)		Process:	-40 to 100 °C	(-40 to 212 °F)	(Silicone Oil)		-40 to 85 °C	(-40 to 185 °F)	(Inert Halocarbon Oil)		0 to 85 °C	(32 to 185 °F)	(Fluorolube Oil)		-20 to 85 °C	(-4 to 185 °F)	(Inert Krytox Oil and Fomblim Oil)		-25 to 100 °C	(-13 to 212 °F)	(Viton O'Ring)		-40 to 150 °C	(-40 to 302 °F)	(Level Model)	Storage:	-40 to 100 °C	(-40 to 212 °F)		Digital Display:	-20 to 80 °C	(-4 to 176 °F)			-40 to 85 °C	(-40 to 185 °F)	(Without Damage)
Ambient:	-40 to 85 °C	(-40 to 185 °F)																																							
Process:	-40 to 100 °C	(-40 to 212 °F)	(Silicone Oil)																																						
	-40 to 85 °C	(-40 to 185 °F)	(Inert Halocarbon Oil)																																						
	0 to 85 °C	(32 to 185 °F)	(Fluorolube Oil)																																						
	-20 to 85 °C	(-4 to 185 °F)	(Inert Krytox Oil and Fomblim Oil)																																						
	-25 to 100 °C	(-13 to 212 °F)	(Viton O'Ring)																																						
	-40 to 150 °C	(-40 to 302 °F)	(Level Model)																																						
Storage:	-40 to 100 °C	(-40 to 212 °F)																																							
Digital Display:	-20 to 80 °C	(-4 to 176 °F)																																							
	-40 to 85 °C	(-40 to 185 °F)	(Without Damage)																																						

Configuration	Through digital communication, using DevComDroid configuration software (Android DDL Interpreter), used with HART interfaces, such as HI331 bluetooth interface. However, the old Palm with HPC301 or CONF401, which are obsolete, are still operable with the latest versions of HART transmitters. It can also be configured using DD and FDT/DTM tools, and can be partially configured through local adjustment. LD400 and LD400 WirelessHART™ can be configured using third-party configuration tools. Writing-protection jumper.
Static Pressure Limits	70 psi (5 bar) for range 0 1200 psi (80 bar) for range 1 2300 psi (160 bar) for ranges 2, 3, and 4 4600 psi (320 bar) for H2 to H5 models Except for LD400A, LD400M, LD400G, and LD400I <i>Static pressure, in differential pressure measurement, is the pressure applied on both measuring chambers, simultaneously. For example, in flow measurement with restriction elements, the static pressure is the line pressure, present in both measuring chambers, simultaneously.</i>
Overpressure Limits	From 3.45 kPa abs. (0.5 psia) to: 0.5 MPa (72.52 psi) for range 0 8 MPa (1150 psi) for range 1 16 MPa (2300 psi) for range 2, 3 and 4 32 MPa (4600 psi) for models H and A5 40 MPa (5800 psi) for model M5 52 MPa (7500 psi) for models M6 and A6 Flange Test Pressure: 68.95 MPa (10000 psi) <i>Flange test is the maximum pressure applied to the transmitter without damage to the measuring set.</i> Overpressures above will not damage the transmitter, but a new calibration may be necessary. <i>Overpressure is the pressure applied to only one of the transmitter chambers when this pressure is higher than the sensor's reading pressure limit (URL). The concept applies to differential, gauge or absolute pressure transmitters. above will not damage the transmitter, but a new calibration may be necessary.</i>

WARNING

It is described here only the maximum pressures of the materials referenced in each standard, others materials on request.

Temperatures above 150 °C are not available in standard models.

PRESSURES TABLE FOR SEAL AND LEVEL FLANGES DIN EN 1092-1 2008 STANDARD

Material Group	Pressure Class	Maximum Temperature Allowed						
		RT	100	150	200	250	300	350
		Maximum Pressure Allowed (bar)						
10E0 AISI 304/304L	PN 16	16	13.7	12.3	11.2	10.4	9,6	9.2
	PN 25	25	21.5	19.2	17.5	16.3	15.1	14.4
	PN 40	40	34.4	30.8	28	26	24.1	23
	PN 63	63	54.3	48.6	44.1	41.1	38.1	36.3
	PN 100	100	86.1	77.1	70	65.2	60.4	57.6
	PN 160	160	137.9	123.4	112	104.3	96.7	92.1
	PN 250	250	215.4	192.8	175	163	151.1	144

Pressure Limits
for Flanges

Material Group	Pressure Class	Maximum Temperature Allowed						
		RT	100	150	200	250	300	350
		Maximum Pressure Allowed (bar)						
14E0 AISI 316/316L	PN 16	16	16	14.5	13.4	12.7	11.8	11.4
	PN 25	25	25	22.7	21	19.8	18.5	17.8
	PN 40	40	40	36.3	33.7	31.8	29.7	28.5
	PN 63	63	63	57.3	53.1	50.1	46.8	45
	PN 100	100	100	90.9	84.2	79.5	74.2	71.4
	PN 160	160	160	145.5	134.8	127.2	118.8	114.2
	PN 250	250	250	227.3	210.7	198.8	185.7	178.5

Material Group	Pressure Class	Maximum Temperature Allowed						
		RT	100	150	200	250	300	350
		Maximum Pressure Allowed (bar)						
16E0 1.4410 Super Duplex 1.4462 Duplex	PN 16	16	16	16	16	16	-	-
	PN 25	25	25	25	25	25	-	-
	PN 40	40	40	40	40	40	-	-
	PN 63	63	63	63	63	63	-	-
	PN 100	100	100	100	100	100	-	-
	PN 160	160	160	160	160	160	-	-
	PN 250	250	250	250	250	250	-	-

RT: Reference Temperature (-10 to 50 °C)

PRESSURES TABLE FOR SEAL AND LEVEL FLANGES ASME B16.5 2017 STANDARD

Material Group	Pressure Class	Maximum Temperature Allowed								
		-29 to 38	50	100	150	200	250	300	325	350
		Maximum Pressure Allowed (bar)								
Hastelloy C276	150	20	19.5	17.7	15.8	13.8	12.1	10.2	9.3	8.4
	300	51.7	51.7	51.5	50.3	48.3	46.3	42.9	41.4	40.3
	600	103.4	103.4	103	100.3	96.7	92.7	85.7	82.6	80.4
	1500	258.6	258.6	257.6	250.8	241.7	231.8	214.4	206.6	201.1
	2500	430.9	430.9	429.4	418.2	402.8	386.2	357.1	344.3	335.3

Material Group	Pressure Class	Maximum Temperature Allowed								
		-29 to 38	50	100	150	200	250	300	325	350
		Maximum Pressure Allowed (bar)								
S31803 Duplex S32750 Super Duplex	150	20	19.5	17.7	15.8	13.8	12.1	10.2	9.3	8.4
	300	51.7	51.7	50.7	45.9	42.7	40.5	38.9	38.2	37.6
	600	103.4	103.4	101.3	91.9	85.3	80.9	77.7	76.3	75.3
	1500	258.6	258.6	253.3	229.6	213.3	202.3	194.3	190.8	188.2
	2500	430.9	430.9	422.2	382.7	355.4	337.2	323.8	318	313.7

Pressure Limits
for Flanges
(continuation)

Material Group	Pressure Class	Maximum Temperature Allowed								
		-29 to 38	50	100	150	200	250	300	325	350
		Maximum Pressure Allowed (bar)								
AISI316L	150	15.9	15.3	13.3	12	11.2	10.5	10	9.3	8.4
	300	41.4	40	34.8	31.4	29.2	27.5	26.1	25.5	25.1
	600	82.7	80	69.6	62.8	58.3	54.9	52.1	51	50.1
	1500	206.8	200.1	173.9	157	145.8	137.3	130.3	127.4	125.4
	2500	344.7	333.5	289.9	261.6	243	228.9	217.2	212.3	208.9

Material Group	Pressure Class	Maximum Temperature Allowed								
		-29 to 38	50	100	150	200	250	300	325	350
		Maximum Pressure Allowed (bar)								
AISI316	150	19	18.4	16.2	14.8	13.7	12.1	10.2	9.3	8.4
	300	49.6	48.1	42.2	38.5	35.7	33.4	31.6	30.9	30.3
	600	99.3	96.2	84.4	77	71.3	66.8	63.2	61.8	60.7
	1500	248.2	240.6	211	192.5	178.3	166.9	158.1	154.4	151.6
	2500	413.7	400.9	351.6	320.8	297.2	278.1	263.5	257.4	252.7

PRESSURES TABLE FOR SEAL AND LEVEL FLANGES ASME B16.5 2017 STANDARD

Material Group	Pressure Class	Maximum Temperature Allowed								
		-29 to 38	50	100	150	200	250	300	325	350
		Maximum Pressure Allowed (bar)								
AISI304	150	19	18.3	15.7	14.2	13.2	12.1	10.2	9.3	8.4
	300	49.6	47.8	40.9	37	34.5	32.5	30.9	30.2	29.6
	600	99.3	95.6	81.7	74	69	65	61.8	60.4	59.3
	1500	248.2	239.1	204.3	185	172.4	162.4	154.6	151.1	148.1
	2500	413.7	398.5	340.4	308.4	287.3	270.7	257.6	251.9	246.9

Pressure Limits
for Flanges
(continuation)

PRESSURES TABLE FOR SEAL AND LEVEL FLANGES JIS 2220 - 2012 STANDARD

Material Group	Pressure Class	Maximum Temperature Allowed			
		Tamb 120°	220°w	300°	350°
		Maximum Temperature Allowed (bar)			
AISI316L	10k	14	12	10	--
	20k	34	31	29	26
	40k	68	62	57	52

PRESSURES TABLE FOR TRICLAMP CONNECTIONS BS4825 P3

DN	PN normal		HP (High pressure)	
	20°C (68°F)	120°C (248°F)	20°C (68°F)	120°C (248°F)
	Maximum Temperature Allowed (bar)			
1.1/2"	34	20	100	60
2" – DN50	28	17	70	42
3"	22	13	70	42

Pressure Limits
for Sanitary
Connections

PRESSURES TABLE FOR THREADED CONNECTIONS

Sanitary Threads – Temperature Limits				
DN	RJT	IDF	SMS	DIN
	120°C (248°F)	120°C (248°F)	120°C (248°F)	120°C (248°F)
	BS4825 P5	BS4825 P4	SMS1145	DIN11851
	Maximum Temperature Allowed (bar)			
DN25	--	--	--	40
1.1/2"-DN40	10	16	40	40
2-DN50	10	16	25	25
3-DN80	10	16	25	25

Turn-on Time	HART®: Performs within specifications in less than 3 seconds after power is applied to the transmitter. WirelessHART™: Performs within specifications in less than 10 seconds after power is applied to the transmitter.
Humidity Limits	0 to 100% RH (Relative Humidity).
Volumetric Displacement	Less than 0.15 cm ³ (0.01 in ³).
Damping Adjustment	User configurable from 0 to 128 seconds (via digital communication or local adjustment).

Performance Specifications

Reference Conditions	Span starting at zero, temperature of 25 °C (77 °F), atmospheric pressure, power supply of 24 Vdc, Halocarbon or Silicone oil fill fluid, isolating diaphragms in 316L SST and digital trim equal to lower and upper range values.
Stability	For ranges 2, 3, 4, 5 or 6: High Performance: ± 0.2% of URL for 12 years Standard: ± 0.15% of URL for 7 years For ± 20 °C temperature changes, up to 7 MPa (70 bar) of static pressure. For range 1: High Performance: ± 0.3% of URL for 12 years Standard: ± 0.3% of URL for 7 years For ± 20 °C temperature changes, up to 3.5 kPa (35 mbar) of static pressure. For range 0: High Performance: ± 0.4% of URL for 12 years Standard: ± 0.4% of URL for 7 years For ± 20 °C temperature changes, up to 100 kPa (1 bar) of static pressure. Note: Installation according to the best practices and adequate assembling for processes in which atoms of hydrogen can be generated (hydrogen migration).
Accuracy	Standard Class: For range 0 and gage or differential model: ± (0.1) % of the span, for 0.16 URL ≤ span ≤ URL; ± (0.0545 + 0.00728 * URL/span) % of the span, for 0.05 URL ≤ span ≤ 0.16 URL For range 1 and differential or gage model: ± (0.06) % of the span, for 0.16 URL ≤ span ≤ URL; ± (0.0364 + 0.003776 * URL/span) % of the span, for 0.025 URL ≤ span ≤ 0.16 URL For ranges 2, 3 or 4 and differential, high static pressure or gage models: ± (0.06) % of the span, for 0.16 URL ≤ span ≤ URL; ± (0.0364 + 0.003776 * URL/span) % of the span, for 0.025 URL ≤ span ≤ 0.16 URL; ± (0.00024 + 0.00468 * URL/span) % of the span, for 0.005 URL ≤ span ≤ 0.025 URL For range 5 and gage or high static pressure or any sanitary model: ± (0.065) % of the span, for 0.16 URL ≤ span ≤ URL; ± (0.0326 + 0.005184 * URL/span) % of the span, for 0.025 URL ≤ span ≤ 0.16 URL; ± (0.00636 + 0.00584 * URL/span) % of the span, for 0.00833 URL ≤ span ≤ 0.025 URL

Accuracy
(continuation)**For range 6 and gage model:**

- $\pm (0.08) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$
- $\pm (0.0504 + 0.004736 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$;
- $\pm (0.00304 + 0.00592 * \text{URL}/\text{span}) \%$ of the span, for $0.00833 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

For range 1 and absolute model:

- $\pm [0.0667 + 0.0333 \text{ URL}/\text{span}] \%$ span

For range 2 and absolute model:

- $\pm (0.08) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.0482 + 0.005088 * \text{URL}/\text{span}) \%$ of the span, for $0.05 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$

For ranges 3 or 4 and absolute model:

- $\pm (0.065) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.0326 + 0.005184 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$;
- $\pm (0.00636 + 0.00584 * \text{URL}/\text{span}) \%$ of the span, for $0.00833 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

For range 5 and absolute model:

- $\pm (0.075) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.0443 + 0.004912 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$
- $\pm (0.00406 + 0.005918 * \text{URL}/\text{span}) \%$ of the span, for $0.00833 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

For range 6 and absolute model or for range 2, 3, 4 or 5 and level model:

- $\pm (0.08) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.0504 + 0.004736 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$;
- $\pm (0.00616 + 0.005842 * \text{URL}/\text{span}) \%$ of the span, for $0.00833 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

For ranges 2, 3 or 4 Inline model (G):

- $\pm 0.06\%$ of the span for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm [0.0364 + 0.0038 \text{ URL}/\text{span}] \%$ of the span for $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}$
- $\pm [0.0015 + 0.0047 \text{ URL}/\text{span}] \%$ of the span for $0.005 \text{ URL} \leq \text{span} < 0.025 \text{ URL}$;

For range 5 Inline model (G):

- $\pm 0.065 \%$ of the span for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm [0.0326 + 0.0052 \text{ URL}/\text{span}] \%$ of the span for $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}$;
- $\pm [0.01 + 0.0058 \text{ URL}/\text{span}] \%$ of the span for $0.0083 \text{ URL} \leq \text{span} < 0.025 \text{ URL}$;

For Insertion model:

- $\pm 0.2\%$ of span

Performance High Class:

For range 0 and gage or differential model:

- $\pm (0.06) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.0145 + 0.00728 * \text{URL}/\text{span}) \%$ of the span, for $0.05 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$

For range 1 and differential or gage model:

- $\pm 0.05 \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.0264 + 0.003776 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$

For ranges 2, 3 or 4 and differential, high static pressure or gage models:

- $\pm 0.045 \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$;
- $\pm (0.021 + 0.00384 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$;
- $\pm (0.0002 + 0.00436 * \text{URL}/\text{span}) \%$ of the span, for $0.005 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

For range 5 and gage or high static pressure:

- $\pm (0.055) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$
- $\pm (0.0257 + 0.004688 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$;
- $\pm (0.00466 + 0.005214 * \text{URL}/\text{span}) \%$ of the span, for $0.00833 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

For range 6 and gage model:

- $\pm (0.075) \%$ of the span, for $0.16 \text{ URL} \leq \text{span} \leq \text{URL}$
- $\pm (0.0454 + 0.004736 * \text{URL}/\text{span}) \%$ of the span, for $0.025 \text{ URL} \leq \text{span} \leq 0.16 \text{ URL}$;
- $\pm (0.00316 + 0.005792 * \text{URL}/\text{span}) \%$ of the span, for $0.00833 \text{ URL} \leq \text{span} \leq 0.025 \text{ URL}$

Note: For SIS devices, please consider the standard model specifications.

Power Supply Effect	± 0.005% of calibrated span per Volt.
Vibration Effect	± 0.1% URL for field with high vibration level or pipeline with high vibration, according to IEC 60770-1 specification: 10-60 Hz, 0.21 mm peak displacement / 60-2000 Hz, 29.4 m/s ² acceleration amplitude.
Temperature Effect	For any model ranges 2, 3, 4, 5 or 6, except level or sanitary models: $\pm (0.0795 + 0.0205 * \text{URL}/\text{span})$ % of the span, per 20 °C for $0.1 \text{ URL} \leq \text{span} \leq \text{URL}$; $\pm (0.0345 + 0.025 * \text{URL}/\text{span})$ % of the span, per 20 °C for $\text{span} \leq 0.1 \text{ URL}$ For any model range 1: $\pm (0.08 + 0.05 * \text{URL}/\text{span})$ % of the span, per 20 °C for $0.1 \text{ URL} \leq \text{span} \leq \text{URL}$; $\pm (0.06 + 0.052 * \text{URL}/\text{span})$ % of the span, per 20 °C for $\text{span} \leq 0.1 \text{ URL}$ For any model range 0: $\pm (0.1 + 0.1 * \text{URL}/\text{span})$ % of the span, per 20 °C for $0.1 \text{ URL} \leq \text{span} \leq \text{URL}$; $\pm (0.05 + 0.105 * \text{URL}/\text{span})$ % of the span, per 20 °C for $\text{span} \leq 0.1 \text{ URL}$ For any level or sanitary model: 6 mmH₂O per 20 °C for flange 4" and DN100 17 mmH₂O per 20 °C for flange 3" and DN80 Consult for other flange dimensions and fill fluid. For ranges 2, 3, 4 or 5 of Inline model: $\pm [0.0205\% \text{ URL} + 0.0795\% \text{ span}]$, per 20 °C for $0.1 \text{ URL} \leq \text{span} \leq \text{URL}$ $\pm [0.021\% \text{ URL} + 0.075\% \text{ span}]$ per 20 °C for $\text{span} < 0.1 \text{ URL}$ Insertion Model It depends on the insertion probe size to determine the variation by temperature. Contact Smar.
Static Pressure Effect **	Zero Error: For range 5*: ± 0.05% URL (± 0.1% for Tantalum diaphragm) per 7 MPa (1000 psi) For range 2, 3 or 4*: ±0.025% URL (± 0.1% for Tantalum diaphragm) per 7 MPa (1000 psi) For range 1: 0.05 % URL per 1.7 MPa (250 psi) For range 0: ± 0.1% URL per 0.5 MPa (5 bar) For Level or Sanitary Transmitters: ± 0.1% URL per 3.5 MPa (500 psi) The zero error is a systematic error that can be eliminated by calibrating at the operating static pressure. Span Error: For ranges 2, 3, 4 or 5*: Correctable to ± 0.1% of reading per 7 MPa (1000 psi) For range 1: Correctable to ± 0.1% of reading per 1.7 MPa (250 psi) For range 0: Correctable to ± 0.2% of reading per 0.5 MPa (5 bar) For Level or Sanitary Transmitters: Correctable to ± 0.1% URL per 3.5 MPa (500 psi) *Except for level or sanitary transmitters **It does not apply to LD400A, LD400M, LD400G, and LD400I models.
Mounting Position Effect	Zero shift of up to 250 Pa (1 inH ₂ O) which can be calibrated out. No span effect.
Electromagnetic Interference Effect	According to IEC61326-1:2006, IEC61326-2-3:2006, IEC61000-6-4:2006, IEC61000-6-2:2005

Rangeability	MODEL	RANGEABILITY FOR LD400	RANGEABILITY FOR LD400 SIS
	D0	20:1	10:1
	D1	40:1	10:1
	D2	200:1	20:1
	D3	200:1	20:1
	D4	200:1	20:1
	M0	20:1	10:1
	M1	40:1	10:1
	M2	200:1	20:1
	M3	200:1	20:1
	M4	200:1	20:1
	M5	120:1	20:1
	M6	120:1	20:1
	A0	20:1	-
	A1	4:1	4:1
	A2	20:1	10:1
	A3	120:1	20:1
	A4	120:1	20:1
	A5	120:1	20:1
	A6	120:1	-
	H2	120:1	20:1
	H3	120:1	20:1
	H4	120:1	20:1
	H5	120:1	20:1
	L2	120:1	10:1
	L3	120:1	20:1
	L4	120:1	20:1
	L5	120:1	20:1
	S2	200:1	20:1
	S3	200:1	20:1
	S4	200:1	20:1
	S5	120:1	20:1
	G2	200:1	20:1
	G3	200:1	20:1
	G4	200:1	20:1
	G5	200:1	20:1
	I2	120:1	-

Physical Specifications

Electrical Connection	HART® $\frac{1}{2}$ - 14 NPT $\frac{3}{4}$ - 14 NPT (with 316 SST adapter for $\frac{1}{2}$ - 14 NPT) M20 X 1.5 $\frac{3}{4}$ - 14 BSP (with 316 SST adapter for $\frac{1}{2}$ - 14 NPT) PG 13.5 DIN $\frac{1}{2}$ - 14 BSP (with 316 SST adapter for $\frac{1}{2}$ - 14 NPT) WirelessHART™: Only M20 X 1.5
Process Connection	Process Connection: $\frac{1}{4}$ - 18 NPT or $\frac{1}{2}$ - 14 NPT (with adapter). See ordering code for more options. For level transmitters, please see ordering code.
Wetted Parts	Sensor Isolating Diaphragms: 316L SST, Hastelloy C276, Monel 400 or Tantalum. Drain/Vent Valves and Plug 1/4NPT: 316 SST, Hastelloy C276 or Monel 400. Transmitter's Flanges (1/4 NPT) and 1/2 NPT Adapter: Plated Carbon Steel, 316 SST (ASTM - A351 CF8M), Hastelloy C276 (ASTM - A494 CW-12MW) or Monel 400. Wetted O'Ring (For Flanges and Adapters): Buna-N, Viton™, PTFE or Ethylene-Propylene. Level Flanges (LD400L – ASME / DIN / JIS) 316L SST; 304L SST; Hastelloy C276; Duplex UNS S31803 / S32205; Super Duplex UNS S32750 / S32760 Flanges Isolating Diaphragms 316L SST; 304L SST; Hastelloy C276; Super Duplex UNS S32750 / S32760; 316L SST with Halar coating; 316L SST gold plated; Monel gold plated Flange's Gaskets PTFE; Grafoil Sanitary connections 316L SST (without extension) 316L SST; Hastelloy C276 (extension end of connection) Sanitary Diaphragms 316L SST; Hastelloy C276 Sanitary connections - Sealing rings Nitrile; PTFE; Viton Insertion probe: 316L SST/ 304L SST Insertion Model Diaphragm: 316L SST The LD400 is available in NACE MR-01-75/ISO 15156 compliant materials.

Nonwetted Parts	Electronic Housing: Aluminum or 316 SST with polyester or epoxy painting or 316 SST without painting housing. Complies with NEMA 4X/6P, IP66 or IP66W*, IP68 or IP68W*. <i>*The IP68 sealing test (immersion) was performed at 10m for 24 hours. The W condition or 4X was tested for 200h and refer to saline atmosphere.</i> Absolute/Gage Flange; reduced volume flange and Plug Flange: 316 SST (ASTM - A351 CF8M) Fill Fluid: Silicone, Fluorolube, Krytox, Halocarbon 4.2 or Fomblim oils. Cover O'Ring: Buna-N. Mounting Bracket: Plated Carbon Steel or 316 SST. Accessories (bolts, nuts, washers and U-clamps) in Plated Carbon Steel or 316 SST. Flange Bolts and Nuts: 316 SST. For NACE applications: Carbon steel B7M; Hastelloy; Super duplex Identification Plate: 316 SST. The LD400 is available in NACE MR-01-75/ISO 15156 compliant materials.
Mounting	a) Flange mounting or sanitary connection for LD400L or LD400S. b) Optional universal mounting bracket for surface or vertical/horizontal 2"-pipe (DN 50). c) Manifold Valve integrated to the transmitter. d) Directly on piping for closely coupled transmitter/orifice flange combinations or LD400G.
Approximate Weights	3.15 kg (7 lb): all models with aluminum housing, except L models. 4.6 to 23.5 kg (10 lb to 52 lb): L models depending of diameter; class and material flanges and extension
Control Functions Characteristics (Optional)	Control Block (PID) and Totalization (TOT) (not available for <i>WirelessHART™</i>). <i>Note: The PID block isn't available for use in SIS mode.</i>

Hastelloy is a trademark of the Cabot Corp.

Monel is a trademark of International Nickel Co.

Viton and Teflon are trademarks of E. I. DuPont de Nemours & Co.

Fluorolube is a trademark of Hooker Chemical Corp.

Halocarbon is a trademark of Halocarbon.

HART® is a trademark of HART® Communication Foundation.

All other trademarks are the property of their respective owners

Smar Pressure Transmitters are protected by US patent number 6,433,791

MODEL	DIFFERENTIAL, FLOW, GAGE, ABSOLUTE AND HIGH STATIC PRESSURE TRANSMITTER										
LD400	Smart Pressure Transmitter										
COD.	Type	Range Limits				Range Limits			Turn Down		
		Min	Max	Unit		Min	Max	Unit	Max		
D0	Differential (23)	-1	1	kPa		-10	10	mbar	20	Notes: The range can be extended up to 0.75 LRL* and 1.2 URL** with small degradation of accuracy. *LRL = Lower range limit **URL = Upper range limit Due to differences in mechanical project, A1 range has turn-down lower than A0 range.	
D1	Differential and Flow	-5	5	kPa		-50	50	mbar	40		
D2	Differential and Flow	-50	50	kPa		-500	500	mbar	200		
D3	Differential and Flow	-250	250	kPa		-2500	2500	mbar	200		
D4	Differential and Flow	-2500	2500	kPa		-25	25	bar	200		
M0	Gage	-1	1	kPa		-10	10	mbar	20		
M1	Gage	-5	5	kPa		-50	50	mbar	40		
M2	Gage	-50	50	kPa		-500	500	mbar	200		
M3	Gage	-100	250	kPa		-1000	2500	mbar	200		
M4	Gage	-100	2500	kPa		-1	25	bar	200		
M5	Gage	-0.1	25	MPa		-1	250	bar	120		
M6	Gage	-0.1	40	MPa		-1	400	bar	120		
A0	Absolute	0	1	kPa		0	7.5	mmHga	20		
A1	Absolute	0	5	kPa		0	37	mmHga	4		
A2	Absolute	0	50	kPa		0	500	mbar	20		
A3	Absolute	0	250	kPa		0	2500	mbar	120		
A4	Absolute	0	2500	kPa		0	25	bar	120		
A5	Absolute	0	25	MPa		0	250	bar	120		
A6	Absolute	0	40	MPa		0	400	bar	120		
H2	Differential - High Static Pressure	-50	50	kPa		-500	500	mbar	120		
H3	Differential - High Static Pressure	-250	250	kPa		-2500	2500	mbar	120		
H4	Differential - High Static Pressure	-2500	2500	kPa		-25	25	bar	120		
H5	Differential - High Static Pressure	-25	25	MPa		-250	250	bar	120		
COD.	Diaphragm Material and Fill Fluid										
1	316L SST	Silicone Oil (9) (30)	E	Hastelloy C276	Inert (Krytox Oil) (1) (12) (19)	S	Tantalum	Inert (Halocarbon 4.2 Oil) (3) (19)	Note: GP= Gold Plated OP= Over-Lay Pot		
2	316L SST	Inert (Fluorolube Oil) (2) (19) (30)	G	Tantalum	Inert (Krytox Oil) (3) (19)	T	GP 316L SST - OP	Inert (Halocarbon Oil) (3) (18) (19)			
3	Hastelloy C276	Silicone Oil (1) (9)	I	GP 316L SST - OP	Silicone Oil (3) (9) (18)	U	316L SST - OP	Silicone Oil (3) (9) (18)			
4	Hastelloy C276	Inert (Fluorolube Oil) (1) (2) (19)	J	GP 316L SST - OP	Inert (Fluorolube Oil) (3) (4) (18) (19)	V	316L SST - OP	Inert (Fluorolube Oil) (3) (4) (19)			
5	Monel 400	Silicone Oil (1) (3) (9)	K	Monel 400	Inert (Krytox Oil) (1) (3) (19)	W	316L SST - OP	Inert (Krytox Oil) (3) (19)			
7	Tantalum	Silicone Oil (3) (9)	L	GP 316L SST - OP	Inert (Krytox Oil) (3) (18) (19)	X	316L SST - OP	Inert (Halocarbon Oil) (3) (19)			
8	Tantalum	Inert (Fluorolube Oil) (2) (3) (19)	M	GP Monel 400	Silicone Oil (1) (3) (9)						
9	316L SST	Fomblim Oil (12) (30)	P	GP Monel 400	Inert (Krytox Oil) (1) (3) (19)						
A	Monel 400	Fomblim Oil (1) (3)	Q	316L SST	Inert (Halocarbon 4.2 Oil) (19) (30)						
D	316L SST	Inert (Krytox Oil) (12) (19) (30)	R	Hastelloy C276	Inert (Halocarbon 4.2 Oil) (19)						
COD.	Performance Class										
0	Standard										
1	High Performance (14)										
COD.	Communication Protocol										
H	HART® & 4 to 20 mA			W	WirelessHART™						
COD.	Safety Options										
0	Standard - For use in measurement and control										
1	SIS (Safety Instrumented Systems) (24)										
COD.	Flange(s), Adapter(s) and Drain/Vent Valves Material										
0	Without Flanges, Adapters, and Drain/Vent Valves										
P	Plated CS (Drain/Vent In) (20)										
H	Hastelloy C276 (CW-12MW, ASTM - A494) (1)										
I	316 SST - CF8M (ASTM A351)										
F	Monel 400 Plated Bar (For HF Applications) (1)										
1	316 SST - CF8M (ASTM A351) (Drain/Vent In Hastelloy C276) (1)										
2	316 SST - CF8M (ASTM A351) Flange with PVDF (Kynar) Insert (5) (7) (11)										
3	316 SST - CF8M (Drain/Vent and plug in Monel) NACE Standard										
COD.	Wetted O'Ring Materials										
0	Without O'Rings										
B	Buna-N										
E	Ethylene - Propylene									Note: O'Rings are not available on the sides with Remote Seals.	
K	Kalrez (3)										
T	Teflon										
V	Viton										
COD.	Drain/Vent Position										
0	Without Drain/Vent										
A	Drain/Vent (Opposite to Process Connection)									Note: For better drain/vent operation, vent valves are strongly recommended. Drain/vent valve not available on the sides with remote seals.	
D	Bottom										
U	Top										
COD.	Process Connection										
0	1/4 - 18 NPT (Without Adapter)										
1	1/2 - 14 NPT (With Adapter)										
2	CF 16 (Without Adapter) (29)										
3	Flange Seal with welded plug for Remote Seal (3) (8)										
5	1/2 - 14 NPT Axial with PVDF Insert (5) (7) (16)										
6	Flange for third party remote seal - 1/4 NPT										
8	Flange for third party remote seal - Weld										
9	Low Volume Flange for Remote Seal (3) (4) (8)										
A	High Side: 1/4 NPT and Remote Seal (with plug) (3)										
B	High Side: 1/2 - 14 NPT and Low Side: Flange with plug for Remote Seal (10) (3)										
D	High Side: Flange with plug for Remote Seal and Low Side: 1/2 - 14 NPT (10) (3)										
E	High Side: Remote Seal (with plug) and Low Side: 1/4 NPT (3) (10) (12)										
F	High Side: 1/2 - 14 NPT and Low Side: Low Volume Flange for Remote Seal (10) (3) (4)										
G	High Side: 1/4 NPT and Low Side: Remote Seal (Low Volume Flange) (3) (4) (10) (12)										
H	High Side: Low Volume Flange for Remote Seal and Low Side: 1/2 - 14 NPT (10) (3) (4)										
I	High Side: Remote Seal (Low Volume Flange) and Low Side: 1/4 NPT (3) (4) (10) (12)										
Q	8 mm hole without thread (According to DIN 19213) (13)										
T	1/2 - 14 BSP (With Adapter)										
V	Manifold Valve integrated to the transmitter										
Z	User's Specification										
COD.	Special Applications										
0	Without Special Cleaning										
1	Degrease Cleaning (Oxygen, Hydrogen Peroxide or Choline Service) (15)										

LD400 - D2 | 1 | 0 - H | 0 - I | B | D | 1 | 1

TYPICAL MODEL

LD400-D210-H0-IBD11											DIFFERENTIAL, FLOW, GAGE, ABSOLUTE AND HIGH STATIC PRESSURE TRANSMITTER										
COD.											Flanges Bolts and Nuts Material										
I C H											316 SST Carbon Steel (ASTM A193 B7M) (1) (19) Hastelloy C276										
A											Super Duplex Stainless Steel NACE MR0175 / MR0103 Compliant										
COD.											Flange Thread for Fixing Accessories (Adapters, Manifolds, Mounting Brackets, etc)										
0											7/16 UNF										
1											M10 X 1.5										
2											M12 X 1.75										
COD.											Local Indicator										
0											Without Indicator										
1											With Digital Indicator										
COD.											Electrical Connection										
0											1/2 - 14 NPT (28)										
1											3/4 - 14 NPT (with 316 SST adapter for 1/2 - 14 NPT) (22)										
2											3/4 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (6)										
3											1/2 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (6)										
A											M20 X 1.5 (28)										
B											PG 13.5 DIN (6)										
Z											User's Specification										
COD.											Plug										
I											316 SST										
COD.											Mounting Bracket for 2" Pipe or Surface Mounting										
0											Without bracket										
1											Carbon Steel bracket and accessories (20)										
2											316 SST bracket and accessories										
5											L type, Carbon Steel bracket and accessories (20)										
6											L type, 316 SST bracket and accessories										
7											Carbon Steel bracket. Accessories: 316 SST (20)										
9											L type, Carbon Steel bracket. Accessories: 316 SST (20)										
A											Flat, 304 SST bracket and 316 SST accessories										
Z											User's Specification										
COD.											Housing Material (25) (26)										
A											Aluminum (Default) (IP/TYPE)										
I											316 SST - CF8M (ASTM - A351)										
J											316 SST for Salines Atmospheres (21)										
B											Aluminium for Salines Atmospheres (21)										
COD.											Painting										
0											Gray Munsell N 6,5 Polyester										
8											Without Painting (17)										
9											Safety Blue Epoxy - Electrostatic Painting										
C											Safety Blue Polyester - Electrostatic Painting										
Z											User's Specification										
COD.											Certification Type for Hazardous Locations										
N											No Certification										
I											Intrinsic Safety										
E											Increased Safety										
D											Explosion Proof										
F											Non-incendive + Intrinsic Safety										
G											Explosion Proof + Increased Safety										
H											Intrinsic Safety + Explosion Proof + Increased Safety										
J											Non-incendive + Intrinsic Safety + Dust Ignition										
COD.											Certifying Body for Hazardous Locations										
0											None										
2											ATEX										
5											INMETRO (CEPEL)										
8											INMETRO (UL BR)										
9											IECEX										
COD.											Tag Plate										
0											With tag, when specified (Default)										
1											Blank										
2											User's Specification										
COD.											HART® Configuration										
**																					
LD400-D210-H0-IBD11											- I 0 1 - 0 I 1 - A 0 N 0 0 0 / **										
											← TYPICAL MODEL										

 TYPICAL MODEL

** Fill in with HART® optional configuration (see page 28)

Notes:

- (1) Meets NACE MR-01-75/ISO 15156 recommendations.
 (1a) Meets NACE MR-0103
 (2) Not available for absolute models nor for vacuum applications.
 (3) Not available for range 0 and 1.
 (4) Not recommended for vacuum service.
 (5) Maximum pressure 24 bar.
 (6) Options not certified for use in hazardous locations.
 (7) Drain/Vent not applicable.
 (8) For remote seal only 316 SST - CF8M (ASTM A351) flange is available (7/16UNF and M10x1.5)
 (9) Silicone Oil is not recommended for oxygen (O₂) or Chlorine service.
 (10) Only available for differential pressure transmitters.
 (11) O'Ring should be Viton or Kalrez.
 (12) Not available for range 0.
 (13) Only available for pressure transmitters D4 or H4 and 7/16 UNF or M10 x 1.5 flang thread for fixing accessories.
 (14) Only available for differential and gage models.
 (15) Degrease cleaning not available for carbon steel flanges.
 (16) Only available for flange with PVDF (Kynar) insert.
 (17) Not available for aluminum housing.

- (18) Effective for hydrogen migration process.
 (19) Inert Fluid: Oxygen Compatibility, safe for oxygen service.
 (20) Not applicable for saline atmosphere.
 (21) IPW/TYPEx tested for 200h to according NBR 8094 / ASTM B 117 standard.
 (22) Certification Ex-d for INMETRO.
 (23) The D0 range should not be used for flow measurement.
 (24) SIL 1 and SIL 2 (non-redundant) and SIL 3 (redundant) applications.
 (25) IPX8 tested in 10 meters of water column for 24 hours.
 (26) Ingress Protection:

Products	CEPEL	NEMKO / EXAM	FM
LD400	IP66/68W	IP66/68W	Type 4X/6P

- (27) Not available for WirelessHART™ protocol.
 (28) Certification Ex-d for FM / ATEX / IECEx / INMETRO.
 (29) LD400A exclusive connection.
 (30) Sensors in 316L stainless steel ranges 0, 1, and 2 are mounted with Hastelloy C276 diaphragm.

MODEL	FLANGED PRESSURE TRANSMITTER																				
LD400	Smart Pressure Transmitter																				
COD.	Type	Range Limits			Range Limits			Turn Down													
		Min	Max	Unit	Min	Max	Unit	Max													
L2	Level	-50	50	kPa	500	500	mbar	120	Note: The range can be extended up to 0.75 LRL and 1.2 URL with small degradation of accuracy. The upper range value must be limited to the flange rating.												
L3	Level	-250	250	kPa	-2500	2500	mbar	120													
L4	Level	-2500	2500	kPa	-25	25	bar	120													
L5	Level	-25	25	MPa	-250	250	bar	120													
COD. Diaphragm Material and Fill Fluid																					
1	316L SST	Silicone Oil (2) (26)			E	Hastelloy C276	Inert (Krytox Oil) (1) (16)	S	Tantalum	Inert (Krytox 4.2 Oil) (16)											
2	316L SST	Inert (Fluorolube Oil) (3)(16)(26)			G	Tantalum	Inert (Krytox Oil) (16)	T	GP 316L SST - OP	Inert (Krytox Oil) (15) (16)											
3	Hastelloy C276	Silicone Oil (1) (2)			I	GP 316L SST - OP	Silicone Oil (9) (15)	Note: GP= Gold Plated OP= Over-Lay Pot													
4	Hastelloy C276	Inert (Fluorolube Oil) (1) (3) (16)			J	GP 316L SST - OP	Inert (Fluorolube Oil) (3) (15) (16)														
5	Monel 400	Silicone Oil (1) (2)			K	Monel 400	Inert (Krytox Oil) (1) (16)														
7	Tantalum	Silicone Oil (2)			L	GP 316L SST - OP	Inert (Krytox Oil) (15) (16)														
8	Tantalum	Inert (Fluorolube Oil) (3) (16)			M	GP Monel 400	Silicone Oil (1) (2)														
9	316L SST	Fomblim Oil (26)			P	GP Monel 400	Inert (Krytox Oil) (1) (16)														
A	Monel 400	Fomblim Oil (1)			Q	316L SST	Inert (Krytox 4.2 Oil) (16) (26)														
D	316L SST	Inert (Krytox Oil) (16) (26)			R	Hastelloy C276	Inert (Krytox 4.2 Oil) (1) (16)														
COD. Performance Class																					
0	Standard																				
COD. Communication Protocol																					
H	HART® & 4 to 20 mA				W	WirelessHART™															
COD. Safety Options																					
0	Standard – For use in measurement and control						1	SIS (Safety Instrumented Systems) (23)													
COD. Flange(s), Adapter(s) and Drain/Vent Valves Material																					
A	304L SST			F	Monel 400 Plated Bar (For HF Applications)																
P	Plated CS (Drain/Vent In Stainless Steel) (17)			1	316 SST - CF8M (ASTM A351) (Drain/Vent In Hastelloy C276) (1)																
H	Hastelloy C276 (CW-12MW, ASTM - A494) (1)			2	316 SST - CF8M (ASTM A351) Flange with PVDF (Kynar) Insert (3) (4) (5) (6)																
I	316 SST - CF8M (ASTM A351)																				
COD. O'Ring Materials																					
0	Without O'Rings				K	Kalrez															
B	Buna-N				T	Teflon															
E	Ethylene - Propylene				V	Viton															
COD. Drain/Vent Position (Low Side)																					
0	Without Drain/Vent				Note: For better drain/vent operation, vent valves are strongly recommended. Drain/vent valve not available on the sides with remote seals																
A	Drain/Vent (Opposite to Process Connection)																				
D	Bottom																				
U	Top																				
COD. Process Connection (Low Side)																					
0	1/4 - 18 NPT (Without Adapter)				T	1/2 - 14 BSP (With Adapter)															
1	1/2 - 14 NPT (With Adapter)				U	Flange for Level with Welded Plug															
3	Remote Seal (With Plug) (4)				Z	User's Specification															
5	1/2 - 14 NPT Axial with PVDF Insert (3) (4)																				
9	Remote Seal (Low Volume Flange) (3) (4)																				
COD. Special Applications																					
0	No Special Cleaning																				
1	Degrease Cleaning (Oxygen or Chlorine Service) (10)																				
2	Vacuum Applications																				
COD. Flanges Bolts and Nuts Material (Low Side)																					
I	316 SST			A	Super Duplex Stainless Steel NACE MR0175																
C	Carbon Steel (ASTM A193 B7M) (1) (18)			/ MR0103 Compliant (1a)																	
H	Hastelloy C276																				
COD. Flange Thread for Fixing Accessories (Adapters, Manifolds, Mounting Brackets, etc)																					
0	7/16 UNF (Default)																				
1	M10 X 1.5																				
COD. Process Connection (High Side)																					
U	1" 150 # (ANSI B16.5)				D	4" 600 # (ANSI B16.5)															
V	1" 300 # (ANSI B16.5)				5	DN 25 PN10/40 (DIN EN 1092-1)															
W	1" 600 # (ANSI B16.5)				R	DN 40 PN10/40 (DIN EN 1092-1)															
O	1 1/2" 150 # (ANSI B16.5)				E	DN 50 PN 10/40 (DIN EN 1092-1)															
P	1 1/2" 300 # (ANSI B16.5)				6	DN 80 PN 10/40 (DIN EN 1092-1)															
Q	1 1/2" 600 # (ANSI B16.5)				7	DN 100 PN 10/16 (DIN EN 1092-1)															
9	2" 150 # (ANSI B16.5)				8	DN 100 PN 25/40 (DIN EN 1092-1)															
A	2" 300 # (ANSI B16.5)				H	10K 100A (JIS 2220)															
B	2" 600 # (ANSI B16.5)				F	10K 50A (JIS 2220)															
1	3" 150 # (ANSI B16.5)				G	10K 80A (JIS 2220)															
2	3" 300 # (ANSI B16.5)				M	20K 100 (JIS 2220)															
C	3" 600 # (ANSI B16.5)				S	20K 40A (JIS 2220)															
N	3" 600 # (ANSI B16.5 RTJ)				K	20K 50A (JIS 2220)															
3	4" 150 # (ANSI B16.5)				L	20K 80A (JIS 2220)															
4	4" 300 # (ANSI B16.5)				Z	User's Specification															
COD. Type and Flange Material (High Side)																					
I	316L SST (Integral Flange)																				
H	Hastelloy C276 (Integral Flange)																				
Z	User's Specification																				
COD. Flange Facing Finish																					
0	Raised Face - RF																				
1	Flat Face - FF (12)																				
2	Ring Joint Face - RTJ (11)																				

LD400-L210-H0-PBD00-P01-10												
FLANGED PRESSURE TRANSMITTER												
COD.		Extension Length										
0	0 mm (0")											
1	50 mm (2")											
2	100 mm (4")											
3	150 mm (6")											
4	200 mm (8")											
Z	User's Specification											
COD.		Diaphragm Material (Level Tap)										
A	304L SST	T	Tantalum (9)	3	Tantalum with Teflon Lining							
L	316L SST	X	Titanium (9)									
H	Hastelloy C276	1	316L SST with Teflon Lining (For 2" and 3")									
M	Monel 400	2	316L SST Gold Plated									
COD.		Fill Fluid (Level Tap)										
1	DC-200/20 Silicone Oil				N	Neobee M20 Propylene Glycol Oil						
2	Inert (Fluorolube MO-10 Oil) (7) (16)				T	Syltherm 800 Oil						
3	DC704 Silicone Oil				Z	User's Specification						
4	Inert (Krytox Oil) (16)											
COD.		Local Indicator										
0	Without Local Indicator											
1	With Digital Indicator											
COD.		Electrical Connection										
0	1/2 - 14 NPT (20) (24)				A	M20 X 1.5 (20)						
1	3/4 - 14 NPT (with 316 SST adapter for 1/2 - 14 NPT) (19) (24)				B	PG 13.5 DIN (8) (24)						
2	3/4 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (8) (24)				Z	User's Specification						
3	1/2 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (8) (24)											
COD.		Plug										
I	316 SST											
COD.		Housing Material (21) (22)										
A	Aluminum (IP/TYPE)											
I	316 SST - CF8M (ASTM - A351) (IP/TYPE)											
J	316 SST for Salines Atmospheres (IPW/TYPEX) (18)											
B	Aluminium for Salines Atmospheres (IPW/TYPEX) (18)											
COD.		Painting										
0	Gray Munsell N 6,5 Polyester											
8	Without Painting (14)											
9	Safety Blue Epoxy - Electrostatic Painting											
C	Safety Blue Polyester - Electrostatic Painting											
Z	User's Specification											
COD.		Certification Type for Hazardous Locations										
N	No Certification				F	Non-incendive + Intrinsec Safety						
I	Intrinsec Safety				G	Explosion Proof + Increased Safety						
E	Increased Safety				H	Intrinsec Safety + Explosion Proof + Increased Safety						
D	Explosion Proof				J	Non-incendive + Intrinsec Safety + Dust (Dust ignition)						
COD.		Certifying Body for Hazardous Locations										
0	None				8	INMETRO (UL BR)						
2	ATEX				9	IECEX						
5	INMETRO (CEPEL)											
COD.		Tag Plate										
0	With tag, when specified (Default)											
1	Blank											
2	User's Specification											
COD.		Lower Housing Material										
0	Without Lower Housing Connection (25)				3	Super Duplex (UNS 32750) (13)						
1	Stainless Steel 316				4	Duplex (UNS 31803) (13)						
2	Hasteloy C276				5	Stainless Steel 304L (13)						
COD.		Gasket Material										
0	Without gasket				G	Grafoil						
T	Teflon (PTFE)				I	Stainless 316 SST						
COD.		HART® Configuration										
**												
LD400-L210-H0-PBD00-P01-10 - 1 L 1 1 0 I - A 0 N 0 0 2 T / **												
TYPICAL MODEL												

LD400-L210-H0-PBD00-P01-10 - 1 | L | 1 | 1 | 0 | I - A | 0 | N | 0 | 0 | 2 | T | **

← TYPICAL MODEL

** Fill in with HART® optional configuration (see page 28)

Notes:

- (1) Meets NACE MR-01-75/ISO 15156 recommendations.
- (1a) Meets NACE MR-0103
- (2) Silicone Oil is not recommended for Oxygen (O₂) or Chlorine service.
- (3) Not applicable for vacuum service.
- (4) Drain/Vent not applicable.
- (5) O'Ring should be Viton or Kalrez.
- (6) Maximum pressure 24 bar.
- (7) Fluorolube fill fluid is not available for Monel diaphragm.
- (8) Options not certified for use in hazardous locations.
- (9) Attention, check corrosion rate for the process, tantalum plate 0.1 mm, AISI 316L extension 3 to 6mm.
- (10) Degrease cleaning not available for carbon steel flanges.
- (11) Only available for flange ANSI B16.5.
- (12) Not available for flange JIS 2220.
- (13) For this option consult Smar.
- (14) Not available for Aluminum housing.
- (15) Effective for hydrogen migration process.

- (16) Inert Fluid: safe for oxygen service.
- (17) Not applicable for saline atmosphere.
- (18) IPW/TYPEX tested for 200h to according with standard NBR 8094 / ASTM B 117.
- (19) Certification Ex-d for INMETRO.
- (20) Certification Ex-d for FM / ATEX / IECEx / INMETRO.
- (21) IPX8 tested in 10 meters of water column for 24 hours.
- (22) Ingress Protection:

Products	CEPEL	NEMKO / EXAM	FM
LD400	IP66/68W	IP66/68W	Type 4X/6P

- (23) SIL 1 and SIL 2 (non-redundant) and SIL 3 (redundant) applications.
- (24) Not available for WirelessHART™ protocol.
- (25) Supplied without Gasket.
- (26) Sensors in 316L stainless steel, range 2, are mounted with Hastelloy C276 diaphragm.

MODEL	PRESSURE TRANSMITTER WITH EXTENDED PROBE																		
LD400	Pressure Transmitter With Extended Probe																		
	COD.	TYPE	Range Limits																
			Min	Max	Unit														
	I2	Level	12.5	500	mbar														
	COD. Diaphragm material and Fill Fluid (Low Side)																		
	1	316L SST	Silicon Oil (1) (9)																
	COD. Performance Class																		
	0	Default																	
	COD. Communication Protocol																		
	H	HART® and 4 to 20 mA										W	WirelessHART™						
	COD. Security Option																		
	0	Default- For use in measurement and control																	
	COD. Probe Material / Diaphragm																		
	A	304L SST / 316L SST																	
	H	304L SST / Hastelloy C276																	
	I	316L SST / 316L SST																	
	U	316L SST / Hastelloy C276																	
	Z	User's Specification																	
	COD. Probe Length																		
	1	500 mm										6	1600 mm						
	2	630 mm										7	2000 mm						
	3	800 mm										8	2500 mm						
	4	1000 mm										9	3200 mm						
	5	1250 mm										Z	User's Specification						
	COD. Probe Fill Fluid																		
	N	Propilen Glicol Oil (Neobee M20)																	
	COD. Fixing Transmitter																		
	1	Support in L										4	Fixed Flanged Support						
	2	Adjustable Flanged Support										Z	User's Specification						
	3	Triclamp diameter 3"																	
	COD. Special Applications																		
	0	Without Special Aplications																	
	COD. Local Indicator																		
	0	Without Local Indicator																	
	1	With Local Indicator																	
	COD. Electrical Connection																		
	0	1/2 - 14 NPT (2)																	
	1	3/4- 14 NPT (With Adapter 316 SST para 1/2 - 14 NPT) (4)																	
	2	3/4- 14 BSP (With Adapter 316 SST para 1/2 - 14 NPT) (3)																	
	3	1/2 - 14 BSP (With Adapter 316 SST para 1/2 - 14 NPT) (3)																	
	A	M20 X 1.5 (2)																	
	B	PG 13.5 DIN (3)																	
	Z	User's Specification																	
	COD. Blanket Plug																		
	I	316 SST																	
	COD. Housing Material (6)																		
	A	Aluminium																	
	I	316 SST - CF8M (ASTM - A351)																	
	J	316 SST - saline atmosphere (5)																	
	B	Aluminium - saline atmosphere (5)																	
	COD. Painting																		
	0	Gray Munsell N6,5 Polyesters																	
	1	Safety Blue Epoxy – Immersion Condition-Petrobras N1021																	
	2	Safety Blue Epoxy – Atmospheric Zone - Petrobras N1021																	
	8	Without painting (7)																	
	9	Safety Blue Epoxy - Electrostatic Painting																	
	C	Safety Blue Polyesters - Electrostatic Painting																	
	G	Orange Safety Epoxy																	
	Z	Special Painting																	
	COD. Certification Type for Hazardous Locations																		
	N	Without certification																	
	I	Intrinsic Safety																	
	E	Increased Safety																	
	D	Explosion Proof																	
	F	Non-incendive + Intrinsic Safety																	
	G	Explosion Proof + Increased Safety																	
	H	Intrinsic Safety + Explosion Proof + Increased Safety																	
	J	Non-incendive + Intrinsic Safety + Dust																	
	COD. Certifying Body for Hazardous Locations																		
	0	None										8	INMETRO (UL BR)						
	2	ATEX										9	IECEX						
	5	INMETRO (CEPEL)																	
	COD. Tag Plate																		
	0	With tag, when specified																	
	1	Blanket																	
	2	User's Specification																	
	** Optional HART Configuration																		
LD400	I2	1	0	H	0	I	9	N	2	0	I	0	1	A	0	N	0	0	
TYPICAL MODEL																			

Notes:

- (1) Silicone Oil is not recommended for Oxygen (O₂) or Chlorine service.
 (2) Certification Ex-d for FM / ATEX / IECEx / INMETRO
 (3) Options not certified for use in hazardous locations.
 (4) Certification Ex-d for INMETRO.
 (5) IPW/TYPEx tested for 200h to according NBR 8094 / ASTM B 117 standard.
 (6) Ingress Protection:

- (7) Not available for aluminum housing.
 (8) Limited values to 4 ½ digits; limited units to 5 characters.
 (9) Sensors in 316L stainless steel, range 2, are mounted with Hastelloy C276 diaphragm.

Product	CEPEL	NEMKO / EXAM	FM
LD400	IP66/68W	IP66/68W	Type 4X/6P

SPECIAL OPTIONS	CONTINUATION OF TRANSMITTER MAIN CODE						
	COD. Burn-out						
	B0 Without Burn-out indication						
	BD Start Scale (According NAMUR NE43 specifications)						
	BU End Scale (According NAMUR NE43 specifications)						
	COD. LCD Indication						
	Y0 Percentage (Default)						
	Y1 Current - I (mA)						
	Y2 Pressure (Engineering Unit)						
	Y3 Temperature (Engineering Unit)						
	YU User's specifications (8)						
	COD. PID Availability						
	P0 PID do not available						
	P1 Available and disabled (Default)						
	P2 Available and enabled						
	COD. Special Characteristics						
	M0 Without special characteristics (Default)						
	M4 Calibration with reading on the top and bottom (Hysteresis)						
	M5 Calibration with 10 points						
	M6 Special method of Acquisition disabled						
	COD. Diaphragm Material (High Side)						
	C5 Mounting according to NACE						
	COD. Certification for Telecommunications						
	W1 ANATEL						
	COD. Special						
	ZZ See notes						
LD400I-210-H0-I9N20-I01-A0N00	4	B	1	0	I	1	1

← TYPICAL MODEL

MODEL	SANITARY PRESSURE TRANSMITTER												
LD400	Smart Pressure Transmitter												
COD.	Type	Range Limits				Range Limits				Turn Down Max			
		Min	Max	Unit		Min	Max	Unit					
S2	Sanitary	-50	50	kPa		-500	500	mbar		200	Note: The range can be extended up to 0.75 LRL and 1.2 URL with small degradation of accuracy. The upper range value must be limited to the flange rating.		
S3	Sanitary	-250	250	kPa		-2500	2500	mbar		200			
S4	Sanitary	-2500	2500	kPa		-25	25	bar		200			
S5	Sanitary	-25	25	MPa		-250	250	bar		120			
COD. Diaphragm Material and Fill Fluid													
1	316L SST	Silicone Oil (2) (19)											
2	316L SST	Inert (Fluorolube Oil) (3) (9) (19)											
3	Hastelloy C276	Silicone Oil (1) (2)											
4	Hastelloy C276	Inert (Fluorolube Oil) (1) (3) (9)											
COD. Performance Class													
0	Standard												
COD. Communication Protocol													
H	HART® & 4 to 20 mA						W	WirelessHART™					
COD. Safety Options													
0	Standard– For use in measurement and control												
1	SIS (Safety Instrumented Systems) (15)												
COD. Flange(s), Adapter(s) and Drain/Vent Valves Material													
I	316 SST												
COD. O'Ring Materials (Low Side)													
0	Without O'Rings						T	Teflon		Note: O'Rings are not available on the sides with Remote Seals.			
B	Buna-N						V	Viton					
E	Ethylene - Propylene												
COD. Drain/Vent Position (Low Side)													
0	Without Drain/Vent												Note: For better drain/vent operation, vent valves are strongly recommended. Drain/vent valve not available on the sides with remote seals.
A	Drain/Vent (Opposite to Process Connection)												
D	Bottom												
U	Top												
COD. Process Connection (Low Side)													
0	1/4 - 18 NPT (Without Adapter)								9	Remote Seal (Low Volume Flange) (3) (4)			
1	1/2 - 14 NPT (With Adapter)								T	1/2 - 14 BSP (With Adapter)			
3	Remote Seal (With Plug) (4)								Z	User's Specification			
COD. Special Applications													
0	No Special Cleaning												
1	Degrease Cleaning (Oxygen or Chlorine Service) (6)												
2	For Vacuum Application												
COD. Flanges Bolts and Nuts Material (Low Side)													
I	316 SST								A	Super Duplex SST - According to NACE MR0175 / MR0103 (1a)			
C	Carbon Steel (ASTM A193 B7M) (1) (10)												
H	Hastelloy C276												
COD. Flange Thread for Fixing Accessories (Adapters)													
0	7/16 UNF												
1	M10 X 1.5												

LD400

S2

1

0

H

0

I

B

D

1

0

I

0

CONTINUE IN THE NEXT PAGE

LD400

- S2 | 1 | 0 | H | 0 | - | I | B | D | 1 | 0 | - | I | 0

CONTINUE IN THE NEXT PAGE

LD400-S210-H0-IBD10-P0		SANITARY PRESSURE TRANSMITTER	
COD. Process Connection (High Side) (18)			
8	DN25 DIN 11851 - With Extension / 316 L SST	E	Thread SMS 2" - 316 L SST
9	DN40 DIN 11851 - With Extension	M	Thread SMS 3" - With Extension
H	DN40 DIN 11851 - 316 L SST	F	Thread SMS 3" - Without Extension / 316 L SST
V	Thread DN50 DIN 11851 - With Extension	1	Tri-Clamp 1 1/2" - 316 L SST
U	Thread DN50 DIN 11851 - 316 L SST	Q	Tri-Clamp 1 1/2" HP (High Pressure) - 316 L SST
X	Thread DN80 DIN 11851 - With Extension	6	Tri-Clamp 2" - With Extension
W	Thread DN80 DIN 11851 - 316 L SST	D	Tri-Clamp 2" - 316 L SST
4	Thread IDF 2" - With Extension	N	Tri-Clamp 2" HP (High Pressure) - With Extension
B	Thread IDF 2" - 316 L SST	P	Tri-Clamp 2" HP (High Pressure) - 316 L SST
K	Thread IDF 3" - With Extension	I	Tri-Clamp 3" - With Extension
3	Thread IDF 3" - Without Extension / 316 L SST	G	Tri-Clamp 3" - 316 L SST
5	Thread RJT 2" - With Extension	J	Tri-Clamp 3" HP (High Pressure) - With Extension
C	Thread RJT 2" - 316 L SST	R	Tri-Clamp 3" HP (High Pressure) - 316 L SST
L	Thread RJT 3" - With Extension	A	TRI-CLAMP DN50 - With Extension
2	Thread RJT 3" - Without Extension / 316 L SST	O	TRI-CLAMP DN50 HP (High Pressure) - With Extension
S	Thread SMS 1 1/2" - 316 L SST	Z	User's Specification
7	Thread SMS 2" - With Extension		
COD. O-Ring Material (High Side)			
0	Without O-Ring (Supplied by customer)	B	Buna-N
		T	Teflon
		V	Viton
		Z	User's Specification
COD. Tank Adapter			
0	Without Tank Adapter (Supplied by customer)	1	With tank, adapter in 316 SST
		Z	User's Specification
COD. TRI-CLAMP			
0	Without TRI-CLAMP (Supplied by customer)	2	With TRI-CLAMP in 304 SST (13)
		Z	User's Specification
COD. Diaphragm Material (High Side)			
I	316L SST	H	Hastelloy C276
COD. Fill Fluid (High Side)			
1	DC-200/20 Silicone Oil	N	Neobee M20 Propylene Glycol Oil
2	Inert (Fluorolube MO-10 Oil) (3)	Z	User's Specification
3	DC704 Silicone Oil		
COD. Local Indicator			
0	Without Indicator	1	With Digital Indicator
COD. Electrical Connection			
0	1/2 - 14 NPT (17) (16)	A	M20 X 1.5 (17)
1	3/4 - 14 NPT (with 316 SST adapter for 1/2 - 14 NPT) (12) (16)	B	PG 13.5 DIN (5) (16)
2	3/4 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (5) (16)	Z	User's Specification
3	1/2 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (5) (16)		
COD. Plug			
I	316 SST		
COD. Housing Material (13) (14)			
A	Aluminum (IP/TYPE)	J	316 SST for Saline Atmospheres (IPW/TYPEx) (18)
I	316 SST - CF8M (ASTM - A351) (IP/TYPE)	B	Aluminum for Saline Atmospheres (IPW/TYPEx) (18)
COD. Painting			
0	Gray Munsell N 6,5 Polyester	C	Safety Blue Polyester - Electrostatic
8	Without Painting (8)		Painting
9	Safety Blue Epoxy - Electrostatic Painting	Z	User's Specification
COD. Certification Type for Hazardous Locations			
N	No Certification	F	Non-incendive + Intrinsec Safety
I	Intrinsec Safety	G	Explosion Proof + Increased Safety
E	Increased Safety	H	Intrinsec Safety + Explosion Proof + Increased Safety
D	Explosion Proof	I	Non-incendive + Intrinsec Safety + Dust (Dust ignition)
COD. Certifying Body for Hazardous Locations			
0	None	8	INMETRO (UL BR)
2	ATEX	9	IECEX
5	INMETRO (CEPEL)		
COD. Tag Plate			
0	With tag, when specified (Default)	2	User's Specification
1	Blank		
COD. HART® Configuration (Continues Next Page)			
**			

LD400-S210-H0-IBD10-P0 - 4 B 1 0 - I 1 1 0 I - A 0 N 0 0 0 / **

** Fill in with HART® optional configuration (see page 28)

← TYPICAL MODEL

Notes:

- (1) Meets NACE MR-01-75/ISO 15156 recommendations.
- (1a) Meets MR103
- (2) Silicone Oil is not recommended for Oxygen (O₂) or Chlorine service.
- (3) Not applicable for vacuum service.
- (4) Drain/Vent not applicable.
- (5) Options not certified for use in hazardous locations.
- (6) Degrease cleaning not available for carbon steel flanges.
- (7) Only available for TRI-CLAMP connection.
- (8) Not available for Aluminum housing.
- (9) Inert Fluid: safe for oxygen service.
- (10) Not applicable for saline atmosphere.
- (11) IPW/TYPEx was performed in a saturated solution of NaCl 5% at 35°C for 200 hours.
- (12) Certification Ex-d for INMETRO.
- (13) IPX8 tested in 10 meters of water column for 24 hours.

(14) Ingress Protection:

Products	CEPEL	NEMKO / EXAM	FM
LD400	IP66/68W	IP66/68W	Type 4X/6P

- (15) SIL1 and SIL2 (non-redundant) and SIL3 (redundant).
- (16) Not available for WirelessHART™ protocol.
- (17) Certification Ex-d for FM / ATEX / IECEx / INMETRO.
- (18) LD400S without extension always 316L SST/316L SST or Hastelloy C276; connections with extension, the wet tip follows 316L SST or Hastelloy C276 diaphragm material.
- (19) Sensors in 316L stainless steel, range 2, are mounted with Hastelloy C276 diaphragm.

** Optional HART® Configuration ⁽¹⁾

MODEL	/	MAIN CODE CONTINUED (FOR HART® TRANSMITTERS)									
		COD. Burn-out									
		BD Down Scale (According to NAMUR NE43 specification) (Default)									
		BU Up Scale (According to NAMUR NE43 specification)									
		COD. LCD1 Indication									
		Y0 LCD1: Percentage (Default)									
		Y1 LCD1: Current - I (mA)									
		Y2 LCD1: Pressure (Engineering Unit)									
		Y3 LCD1: Temperature (Engineering Unit)									
		YU LCD1: User's Specification (2)									
		COD. LCD2 Indication									
		Y0 LCD2: Percentage (Default)									
		Y1 LCD2: Current - I (mA)									
		Y2 LCD2: Pressure (Engineering Unit)									
		Y3 LCD2: Temperature (Engineering Unit)									
		YU LCD2: User's Specification (2)									
		COD. LCD3 Indication									
		Y0 LCD3: Percentage (Default)									
		Y1 LCD3: Current - I (mA)									
		Y2 LCD3: Pressure (Engineering Unit)									
		Y3 LCD3: Temperature (Engineering Unit)									
		YU LCD3: User's Specification (2)									
		COD. PID Availability									
		P0 PID not available		P1 Available and disabled (Default)		P2 Available and enabled					
		COD. Transfer Function for Flow Measurement									
		F0 Linear (Default)									
		F1 SQRT - Square Root. Considering the pressure input X varying between 0 and 100%, the output will be $10\sqrt{x}$. This function is used in flow measurement with, e.g., orifice or Venturi tube etc. (3)									
		F2 SQRT**3 - Square Root of the Third Power. The output will be $0.1\sqrt{x^3}$. This function is used in open channel Flow measurement with weirs or flumes. (3)									
		F3 SQRT**5 - Square Root of the Fifth Power. The output will be $0.001\sqrt{x^5}$. This function is used in open channel Flow measurement with V-notch weirs. (3)									
		F4 TABLE - The output is a curve formed by 16 points. These points may be edited directly on the XY Table of the LD400. For example, it may be used as a camber table for tanks in applications where the tank volume is not linear in relation to the measured pressure.									
		F5 SQRT & TABLE - Square root and Table. Same application as square roots, but also allows additional compensation of, e.g., varying Reynolds number. (3)									
		F6 SQRT**3 & TABLE - Square Root of the Third Power and Table. (3)									
		F7 SQRT**5 & TABLE - Square Root of the Fifth Power and Table. (3)									
		F8 TABLE & SQRT - Table and Square root. Same application as square roots, but also allows bi-directional flow measurement by correcting the inverse flow, transforming the negative flow in positive flow, via table. (3)									
		COD. Special Features									
		M0 No Special Features (Default)									
		M4 Calibration by increasing and decreasing the pressure (Hysteresis)									
		M5 10-point calibration									
		M6 Special acquisition disabled									
		COD. Insulation Kit									
		K0 Without Insulation Kit									
		K1 With Insulation Kit (4)									
		COD. Special Features									
		ZZ User's Specification									
LD400-D210-H0-IBD11-I01-0I1-A010	/	BU	Y2	Y3	Y1	P2	F1	M0		ZZ	
LD400-L210-H0-PBD00-I01-I01-L110I-A010	/	BD	Y2	Y3	Y1	P2		M0	K1	ZZ	
LD400-S210-H0-HBDU0-I04-B10-I110I-A060	/	BD	Y2	Y3	Y1	P2		M0		ZZ	

TYPICAL MODEL

← TYPICAL MODEL

Notes:

- (1) Fill in only if selected option is different from the default value.
 (2) Values limited to 4 1/2 digits; unit limited to 5 characters.
 (3) Only available for differential, gage, absolute and high static pressure models.
 (4) Only available for level models.

MODEL	GAGE INLINE PRESSURE TRANSMITTER									
LD400	Smart Pressure Transmitter									
	COD.	Type	Range Limits						Turn Down	
			Min	Max	Unit		Min	Max	Unit	Max
G2	Gage Inline	-50	50	KPa		-500	500	mbar	200	Note: The range can be extended up to 0.75 LRL and 1.2 URL with small degradation of accuracy. The upper range value must be limited to the flange rating.
G3	Gage Inline	-100	250	KPa		-1000	2500	mbar	200	
G4	Gage Inline	-100	2500	KPa		-1	25	bar	200	
G5	Gage Inline	-0,1	25	MPa		-1	250	bar	200	
COD. Diaphragm material and Fill Fluid (Low Side)										
1	316L SST	Silicon Oil (3) (14)						D	316 SST L	Inert (Krytox Oil) (2) (14)
2	316L SST	Inert (Fluorolube Oil) (2) (4) (14)						E	Hastelloy C276	Inert (Krytox Oil) (2)
3	Hastelloy C276	Silicon Oil (1) (3)						Q	316 SST L	Inert (Halocarbon 4.2 Oil) (2) (14)
4	Hastelloy C276	Inert (Fluorolube Oil) (1) (2) (4)						R	Hastelloy C276	Inert (Halocarbon 4.2 Oil) (1) (2)
COD. Performance Class										
0	Default		1		High Performance					
COD. Communication Protocol										
H	HART® and 4 to 20 mA				W		WirelessHART™			
COD. Security Option										
0	Default - For use in measurement and control							1	SIS - Safety Instrumented Systems (5)	
COD. Process Connection										
1	1/2 - 14 NPT - Female						U	1/2 BSP - Male		
A	M20X1,5 - Male						V	Manifold Valve Integrated to the Transmitter		
G	DIN EN 837-1 G1/2B Male (6)						X	1" NPT Sealed (Diaphragm 316L SST/ Fill fluid Silicone DC200/20)		
H	DIN EN 837-1 G1/2B HP Male (6)						Y	1 ½ NPT Sealed (Diaphragm 316L SST/ Fill fluid Silicone DC200/20)		
M	1/2 - 14 NPT - Male						Z	Special – See notes		
R	Remote Seal – See notes									
COD. Process Connection Material										
H	Hastelloy C276 (1)				I	316L SST		Z	User's Specification	
COD. Special Applications										
0	Without Special Applications									
1	Degrease Cleaning									
COD. Local Indicator										
0	Without Local Indicator							1	With Local Indicator	
COD. Electrical Connection										
0	1/2 - 14 NPT (7)									
1	3/4- 14 NPT (With Adapter 316 SST para 1/2 - 14 NPT) (8)									
2	3/4- 14 BSP (With Adapter 316 SST para 1/2 - 14 NPT) (9)									
3	1/2 - 14 BSP (With Adapter 316 SST para 1/2 - 14 NPT) (9)									
A	M20 X 1.5 (7)									
B	PG 13.5 DIN (9)									
Z	User's Specification									
COD. Plug										
I	316 SST									
COD. Mounting Bracket										
0	Without Bracket									
1	Carbon steel bracket and accessories									
2	316 SST bracket and accessories									
7	Carbon steel bracket. Accessories: 316 SST									
COD. Housing Material (12)										
A	Aluminium (Default)									
I	316 SST - CF8M (ASTM - A351)									
J	316 SST - saline atmospheres (10)									
B	Aluminium - saline atmospheres (10)									
COD. Painting										
0	Gray Munsell N6,5 Polyester									
1	Blue Safety N4845 (1374 STANDARD – PETROBRAS)									
2	Blue Safety N4845 (1735 STANDARD – PETROBRAS)									
8	Without painting (11)									
9	Blue Safety Epoxy – Electrostatic Painting									
C	Blue Safety Polyester - Electrostatic Painting									
G	Orange Safety Epoxy – Electrostatic Painting									
Z	Special Painting									
COD. Certification Type for Hazardous Locations										
N	Without Certification									
I	Intrinsic Safety									
E	Increased Safety									
D	Explosion Proof									
F	Non-incendive + Intrinsic Safety									
G	Explosion Proof + Increased Safety									
H	Intrinsic Safety + Explosion Proof + Increased Safety									
J	Non-incendive + Intrinsic Safety + Dust									
COD. Certifying Body for Hazardous Locations										
0	None				8	INMETRO (UL BR)				
2	ATEX				9	IECEX				
5	INMETRO (CEPEL)									
COD. Tag Plate										
0	With tag, when specified									
1	Blank									
2	User's Specification									

Notes:

- (1) Meets NACE MR - 01 - 75/ISO 15156 recommendations.
 (2) Inert Fluid: Oxygen Compatibility, safe for oxygen service.
 (3) Silicone Oil is not recommended for Oxygen (O₂) or Chlorine service.
 (4) Not applicable for vacuum service.
 (5) SIL 1 and SIL 2 (non-redundant) and SIL 3 (redundant) applications.
 (6) The DIN16288 standard was replaced by DIN EN 837-1 standard.
 (7) Certification Ex-d for FM / ATEX / IECEx / INMETRO.
 (8) Certification Ex-d for INMETRO.
 (9) Options not certified for use in hazardous locations.
 (10) IPW/TYPEx was performed in a saturated solution of NaCl 5% at 35°C for 200 hours.
 (11) Do not available for aluminum housing.

(12) Ingress Protection:

Product	CEPEL	NEMKO / EXAM	FM
LD400	IP66/68W	IP66/68W	Type 4X/6P

(13) Limited values to 4 ½ digits; limited units to 5 characters.

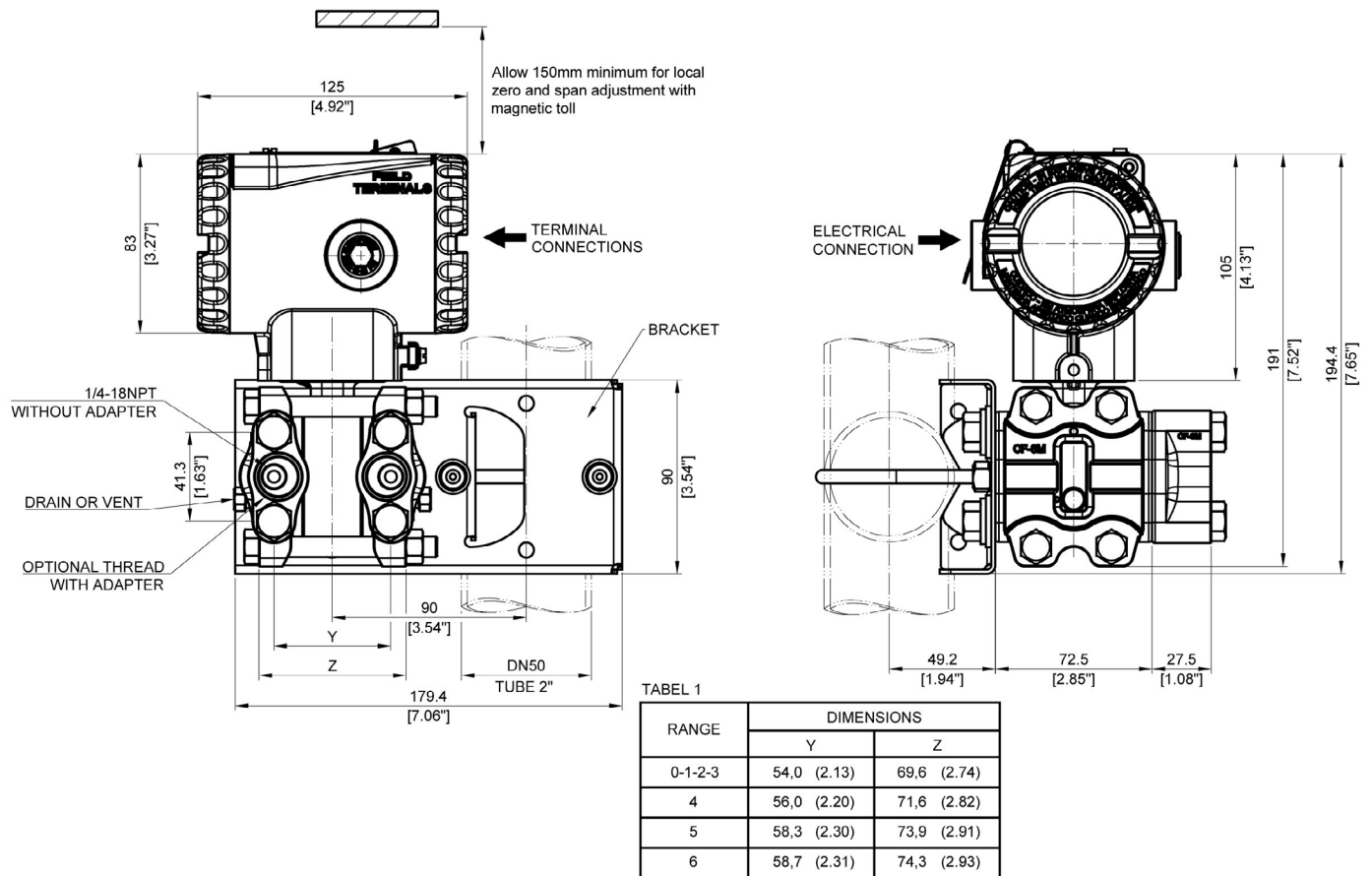
(14) Sensors in 316L stainless steel, range 2, are mounted with Hastelloy C276 diaphragm.

SPECIAL OPTIONS

SPECIAL OPTIONS	MAIN CODE OF HART TRANSMITTER (CONTINUATION)									
	COD. Burn-out									
	B0 Without Burn-out indication									
	BD Start Scale (According NAMUR NE43 specifications)									
	BU End Scale (According NAMUR NE43 specifications)									
	COD. LCD Indication									
	Y0 Percentage (Default)									
	Y1 Current (mA)									
	Y2 Pressure (Engineering Unit)									
	Y3 Temperature (Engineering Unit)									
	YU User's specification (13)									
	COD. PID availability									
	P0 PID do not available									
	P1 Available and disable (Default)									
	P2 Available and enable									
	COD. Special Characteristics									
	M0 Without special characteristics (Default)									
	M4 Calibration with reading on the top and bottom (Hysteresis)									
	M5 Calibration with 10 points									
	M6 Special method of Acquisition disabled									
	COD. Special Procedure									
	C5 Mounting according to NACE									
	COD. Certification for Telecommunications									
	W0 Without certification									
	W1 ANATEL									
	COD. Mounting Position									
	D1 Vertical									
	D2 Horizontal									
	COD. Manufacturing Standard									
	S0 SMAR SJ 316 SST Sensor									
LD400G-210-H0-11010-11 - A0N00	BU	Y2	P0	M0	*	W0	D1	S0		

 TYPICAL MODEL NUMBER

LD400 - Differential Pressure, Flow, Gage, Absolute and High Static Pressure Transmitter with Mounting Bracket



LD400 - Pressure, Level, and Flow Wireless Transmitter

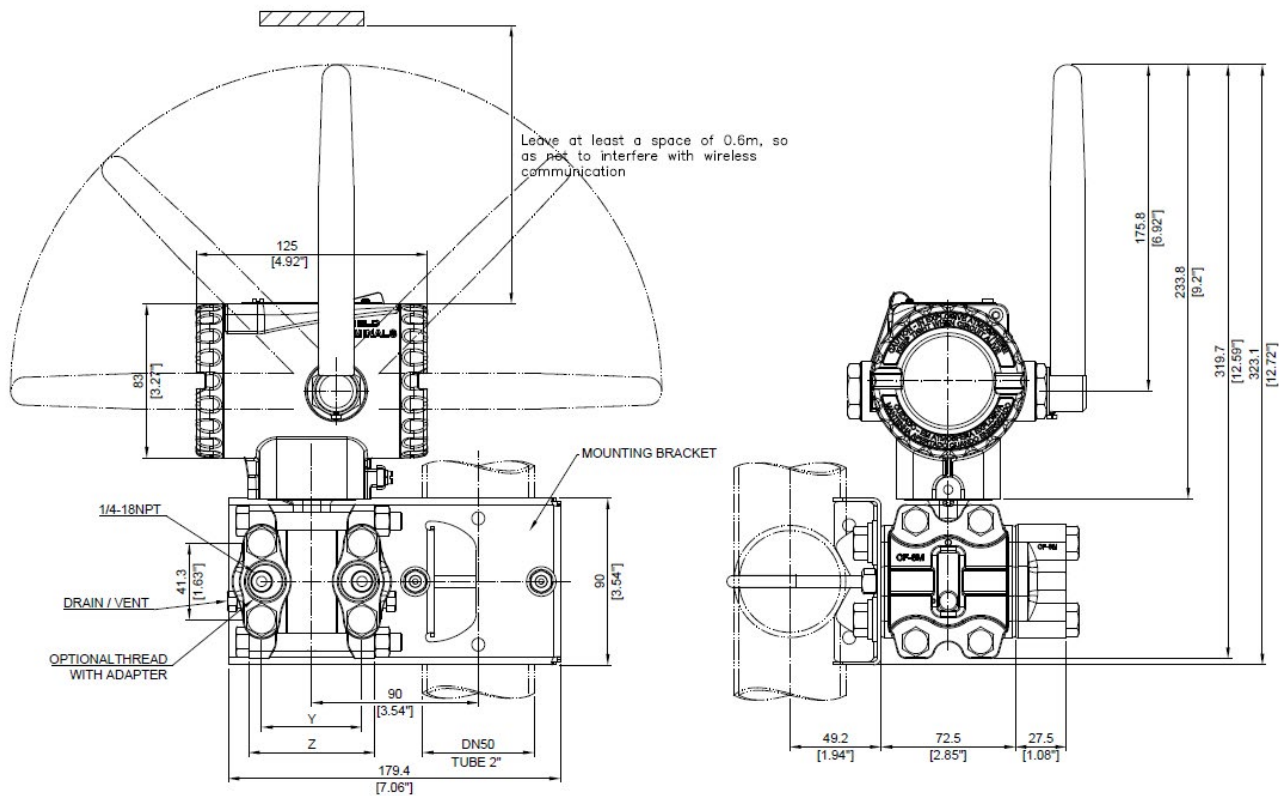
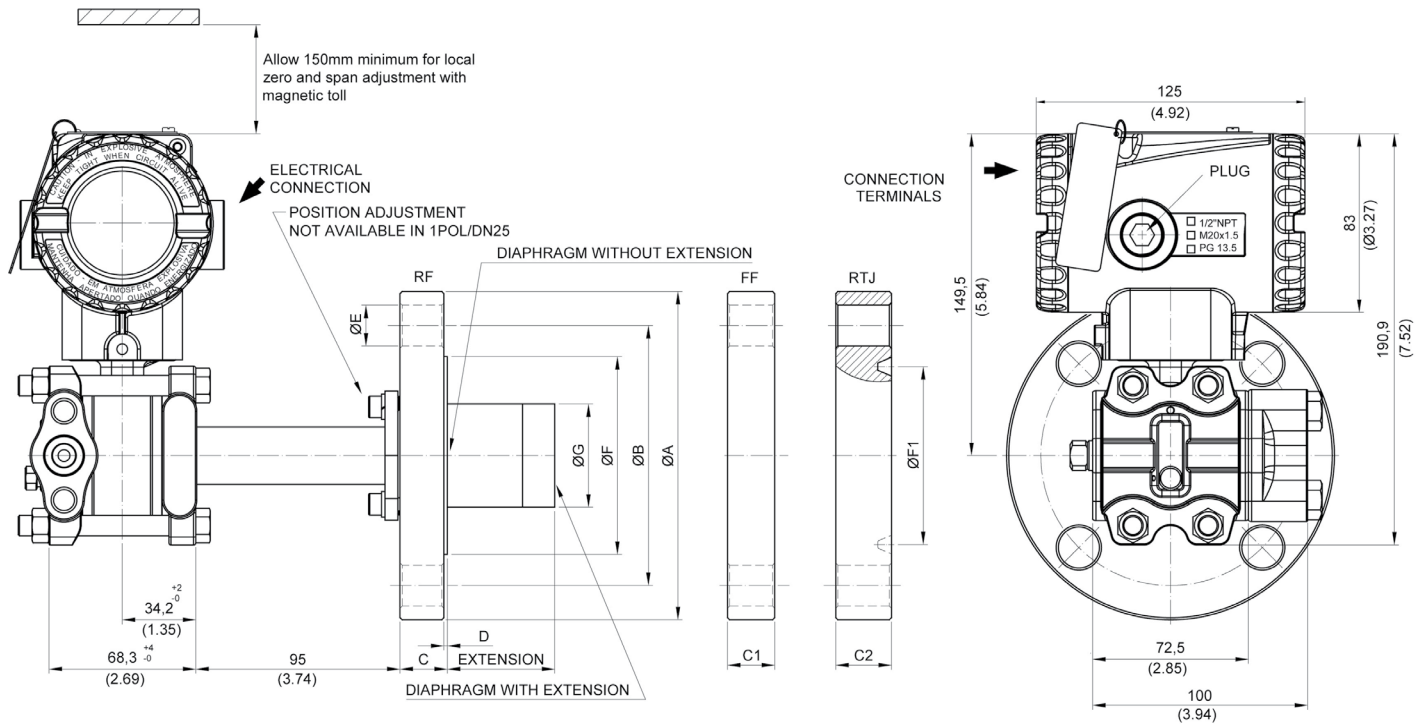


TABLE 1

RANGE	DIMENSIONS	
	Y	Z
0-1-2-3	54,0 (2.13)	69,6 (2.74)
4	56,0 (2.20)	71,6 (2.82)
5	58,3 (2.30)	73,9 (2.91)
6	58,7 (2.31)	74,3 (2.93)

LD400L - Flanged Pressure Transmitter with Integral Flange



DIMENSIONS IN mm (inch)
 EXTENSION LENGTHS: 0, 50, 100, 150 or 200
 EXTENSIONS AVAILABLE IN RF ONLY

ASME-B 16.5 - 2017 DIMENSIONS

DN	CLASS	A	B	C	C1 (FF)	C2 (RTJ)	D	E	F	F1 (RTJ)	RING	G	HOLES
1"	150	110 (4.33)	79.2 (3.12)	17 (0.67)	17 (0.67)	21 (0.83)	2 (0.06)	16 (0.63)	50.8 (2)	47.6 (1.87)	R15	40 (1.57)	4
	300	125 (4.92)	88.9 (3.50)	19 (0.75)	19 (0.75)	25 (0.98)	2 (0.06)	19 (0.75)	50.8 (2)	50.8 (2)	R16		4
	600	125 (4.92)	88.9 (3.50)	25 (0.96)	25 (0.96)	7 (0.25)	19 (0.75)	50.8 (2)	50.8 (2)	50.8 (2)	R16		4
1.1/2"	150	125 (4.92)	98.6 (3.88)	20 (0.78)	20 (0.78)	24.4 (0.96)	2 (0.06)	16 (0.63)	73.2 (2.88)	65.1 (2.56)	R19	40 (1.57)	4
	300	155 (6.10)	114.3 (4.5)	21 (0.83)	20 (0.79)	28.7 (1.13)	2 (0.06)	22 (0.87)	73.2 (2.88)	68.3 (2.68)	R20	40 (1.57)	4
	600	155 (6.10)	114.3 (4.5)	29.3 (1.15)	28.7 (1.13)	7 (0.25)	22 (0.87)	73.2 (2.88)	68.3 (2.68)	68.3 (2.68)	R20	40 (1.57)	4
2"	150	150 (5.90)	120.7 (4.75)	20 (0.79)	20 (0.79)	23.9 (0.94)	2 (0.06)	19 (0.75)	92 (3.62)	82.6 (3.25)	R22	48 (1.89)	4
	300	165 (6.50)	127 (5)	22.7 (0.89)	20.7 (0.81)	28.6 (1.13)	2 (0.06)	19 (0.75)	92 (3.62)	82.6 (3.25)	R23	48 (1.89)	8
	600	165 (6.50)	127 (5)	32.3 (1.27)	33.3 (1.31)	7 (0.25)	19 (0.75)	92 (3.62)	82.6 (3.25)	82.6 (3.25)	R23	48 (1.89)	8
3"	150	190 (7.48)	152.4 (6)	24.3 (0.96)	22.3 (0.88)	28.7 (1.13)	2 (0.06)	19 (0.75)	127 (5)	114.3 (4.5)	R29	73 (2.87)	4
	300	210 (8.27)	168.1 (6.62)	29 (1.14)	27 (1.06)	34.9 (1.37)	2 (0.06)	22 (0.87)	127 (5)	123.8 (4.87)	R31	73 (2.87)	8
	600	210 (8.27)	168.1 (6.62)	38.8 (1.53)	39.7 (1.56)	7 (0.25)	22 (0.87)	127 (5)	123.8 (4.87)	123.8 (4.87)	R31	73 (2.87)	8
4"	150	228.6 (9)	190.5 (7.5)	24.3 (0.96)	22.3 (0.88)	28.7 (1.13)	2 (0.06)	19 (0.75)	157 (6.19)	149.2 (5.87)	R36	89 (3.50)	8
	300	255 (10)	200 (7.87)	32.2 (1.27)	30.2 (1.19)	38.1 (1.50)	2 (0.06)	22 (0.87)	157 (6.19)	149.2 (5.87)	R37	89 (3.50)	8
	600	275 (10.83)	215.9 (8.5)	45.1 (1.77)	46 (1.81)	7 (0.25)	25 (1)	157 (6.19)	149.2 (5.87)	149.2 (5.87)	R37	89 (3.50)	8

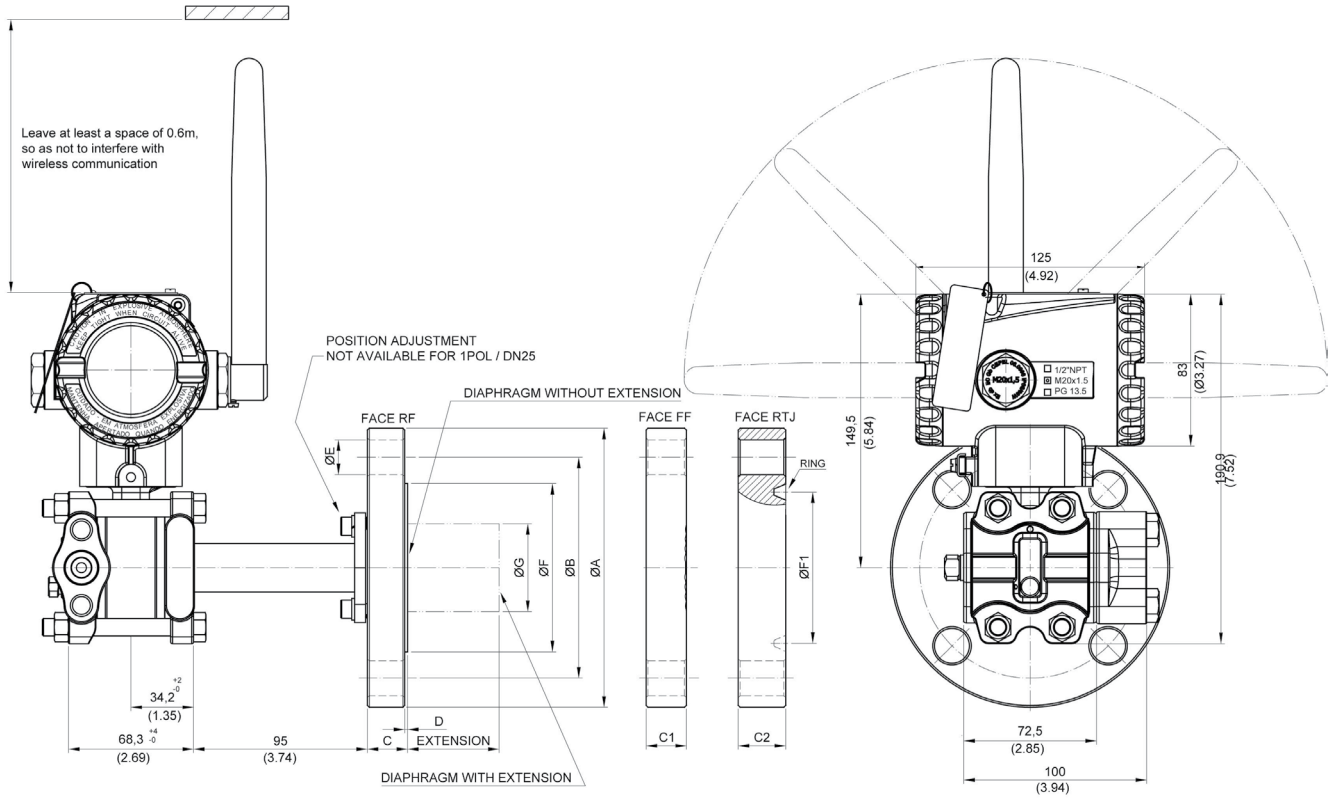
EN 1092-1-2008 DIMENSIONS

DN	PN	A	B	C	C1 (FF)	D	E	F	G	HOLES
25	10/40	115 (4.53)	85 (3.35)	19 (0.75)	19 (0.75)	2 (0.08)	14 (0.55)	68 (2.67)	40 (1.57)	4
40	10/40	150 (5.91)	110 (4.33)	20 (0.78)	20 (0.78)	3 (0.12)	18 (0.71)	88 (3.46)		4
50	10/40	165 (6.50)	125 (4.92)	20 (0.78)	20 (0.78)	3 (0.12)	18 (0.71)	102 (4.01)		4
80	10/40	200 (7.87)	160 (6.3)	24 (0.95)	24 (0.95)	3 (0.12)	18 (0.71)	138 (5.43)	73 (2.87)	8
100	10/16	220 (8.67)	180 (7.08)	20 (0.78)		3 (0.12)	18 (0.71)	158 (6.22)	89 (3.50)	8
	25/40	235 (9.25)	190 (7.5)	24 (0.95)		3 (0.12)	22 (0.87)	162 (6.38)	89 (3.50)	8

JIS B 2220 DIMENSIONS

	CLASS	A	B	C	D	E	F	G	HOLES
40A	20K	140 (5.5)	105 (4.13)	20 (0.78)	2 (0.08)	19 (0.75)	81 (3.2)	40 (1.57)	4
	10K	155 (6.1)	120 (4.72)	20 (0.78)	2 (0.08)	15 (0.59)	96 (3.78)	48 (1.89)	4
50A	20K	155 (6.1)	120 (4.72)	20 (0.78)	2 (0.08)	19 (0.75)	96 (3.78)	48 (1.89)	8
	40K	165 (6.5)	130 (5.12)	26 (1.02)	2 (0.08)	19 (0.75)	105 (4.13)	48 (1.89)	8
	10K	185 (7.28)	150 (5.9)	22 (0.87)	2 (0.08)	19 (0.75)	126 (4.96)	73 (2.87)	8
80A	20K	200 (7.87)	160 (6.3)	22 (0.87)	2 (0.08)	19 (0.75)	132 (5.2)	73 (2.87)	8
	10K	210 (8.27)	175 (6.89)	20 (0.78)	2 (0.08)	19 (0.75)	151 (5.95)	89 (3.50)	8

LD400L - Wireless Flanged Pressure Transmitter with Integral Flange Wireless



DIMENSIONS IN mm (INCH)
EXTENSION LENGTHS: 0, 50, 100, 150 ou 200
ONLY AVAILABLE IN RF FLANGES

ASME-B 16.5 - 2017 DIMENSIONS

DN	CLASS	A	B	C	C1 (FF)	C2 (RTJ)	D	E	F	F1 (RTJ)	ANEL RTJ	G	N° FUROS
1"	150	110 (4.33)	79.2 (3.12)	15 (0.59)	17 (0.67)	21 (0.83)	2 (0.06)	16 (0.63)	50.8 (2)	47.6 (1.87)	R15	40 (1.57)	4
	300	125 (4.92)	88.9 (3.50)	18 (0.71)	19 (0.75)	23.9 (0.94)	2 (0.06)	19 (0.75)	50.8 (2)	50.8 (2)	R16		4
	600	125 (4.92)	88.9 (3.50)	24.5 (0.96)	23.9 (0.94)	7 (0.25)	19 (0.75)	50.8 (2)	50.8 (2)	50.8 (2)	R16		4
1.1/2"	150	125 (4.92)	98.6 (3.88)	20 (0.78)	20 (0.79)	24.4 (0.96)	2 (0.06)	16 (0.63)	73.2 (2.88)	65.1 (2.56)	R19	40 (1.57)	4
	300	155 (6.10)	114.3 (4.5)	21 (0.83)	20 (0.79)	28.7 (1.13)	2 (0.06)	22 (0.87)	73.2 (2.88)	68.3 (2.68)	R20	40 (1.57)	4
	600	155 (6.10)	114.3 (4.5)	29.3 (1.15)	20.7 (0.81)	7 (0.25)	22 (0.87)	73.2 (2.88)	68.3 (2.68)	68.3 (2.68)	R20	40 (1.57)	4
2"	150	150 (5.90)	120.7 (4.75)	20 (0.79)	20 (0.79)	23.9 (0.94)	2 (0.06)	19 (0.75)	92 (3.62)	82.6 (3.25)	R22	48 (1.89)	4
	300	165 (6.50)	127 (5)	22.7 (0.89)	20.7 (0.81)	28.6 (1.13)	2 (0.06)	19 (0.75)	92 (3.62)	82.6 (3.25)	R23	48 (1.89)	8
	600	165 (6.50)	127 (5)	32.3 (1.27)	33.3 (1.31)	7 (0.25)	19 (0.75)	92 (3.62)	82.6 (3.25)	82.6 (3.25)	R23	48 (1.89)	8
3"	150	190 (7.48)	152.4 (6)	24.3 (0.96)	22.3 (0.88)	28.7 (1.13)	2 (0.06)	19 (0.75)	127 (5)	114.3 (4.5)	R29	73 (2.87)	4
	300	210 (8.27)	168.1 (6.62)	29 (1.14)	27 (1.06)	34.9 (1.37)	2 (0.06)	22 (0.87)	127 (5)	123.8 (4.87)	R31	73 (2.87)	8
	600	210 (8.27)	168.1 (6.62)	38.8 (1.53)	39.7 (1.56)	7 (0.25)	22 (0.87)	127 (5)	123.8 (4.87)	123.8 (4.87)	R31	73 (2.87)	8
4"	150	228.6 (9)	190.5 (7.5)	24.3 (0.96)	22.3 (0.88)	28.7 (1.13)	2 (0.06)	19 (0.75)	157 (6.19)	149.2 (5.87)	R36	89 (3.50)	8
	300	255 (10)	200 (7.87)	32.2 (1.27)	30.2 (1.19)	38.1 (1.50)	2 (0.06)	22 (0.87)	157 (6.19)	149.2 (5.87)	R37	89 (3.50)	8
	600	275 (10.83)	215.9 (8.5)	45.1 (1.77)	46 (1.81)	7 (0.25)	25 (1)	157 (6.19)	149.2 (5.87)	149.2 (5.87)	R37	89 (3.50)	8

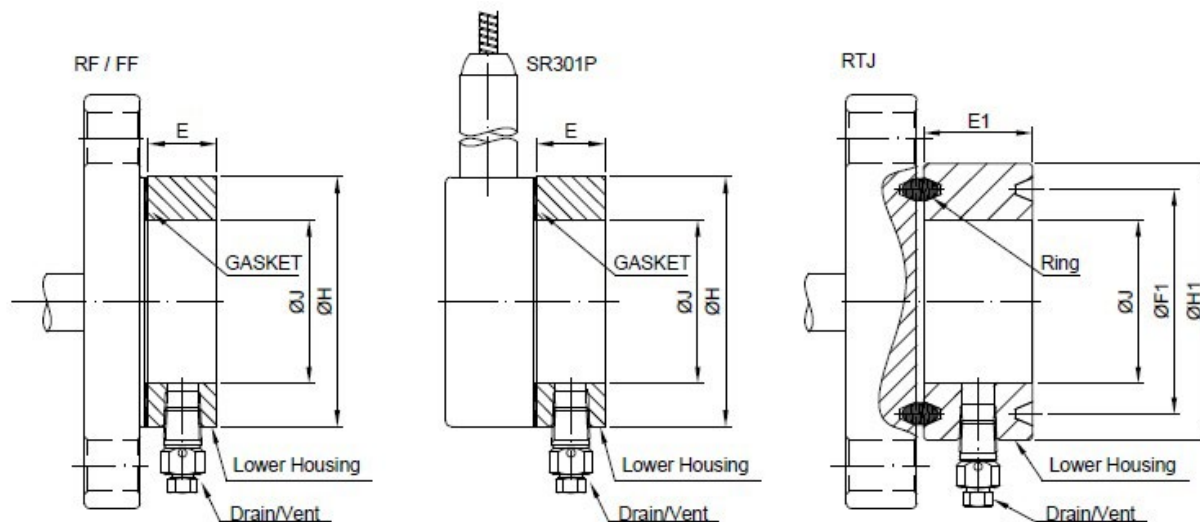
EN 1092-1-2008 DIMENSIONS

DN	PN	A	B	C	C1 (FF)	D	E	F	G	N° FUROS
25	10/40	115 (4.53)	85 (3.35)	19 (0.75)	19 (0.75)	2 (0.08)	14 (0.55)	68 (2.67)	40 (1.57)	4
40	10/40	150 (5.91)	110 (4.33)	20 (0.78)	20 (0.78)	3 (0.12)	18 (0.71)	88 (3.46)		4
50	10/40	165 (6.50)	125 (4.92)	20 (0.78)	20 (0.78)	3 (0.12)	18 (0.71)	102 (4.01)		4
80	10/40	200 (7.87)	160 (6.3)	24 (0.95)	24 (0.95)	3 (0.12)	18 (0.71)	138 (5.43)		8
100	10/16	220 (8.67)	180 (7.08)	20 (0.78)		3 (0.12)	18 (0.71)	158 (6.22)		8
	25/40	235 (9.25)	190 (7.5)	24 (0.95)		3 (0.12)	22 (0.87)	162 (6.38)	89 (3.50)	8

JIS B 2220 DIMENSIONS

	CLASS	A	B	C	D	E	F	G	N° FUROS
40A	20K	140 (5.5)	105 (4.13)	20 (0.78)	2 (0.08)	19 (0.75)	81 (3.2)	40 (1.57)	4
	10K	155 (6.1)	120 (4.72)	20 (0.78)	2 (0.08)	15 (0.59)	96 (3.78)	48 (1.89)	4
50A	20K	155 (6.1)	120 (4.72)	20 (0.78)	2 (0.08)	19 (0.75)	96 (3.78)	48 (1.89)	8
	40K	165 (6.5)	130 (5.12)	26 (1.02)	2 (0.08)	19 (0.75)	105 (4.13)	48 (1.89)	8
80A	10K	185 (7.28)	150 (5.9)	22 (0.87)	2 (0.08)	19 (0.75)	126 (4.96)	73 (2.87)	8
	20K	200 (7.87)	160 (6.3)	22 (0.87)	2 (0.08)	19 (0.75)	132 (5.2)	73 (2.87)	8
100A	10K	210 (8.27)	175 (6.89)	20 (0.78)	2 (0.08)	19 (0.75)	151 (5.95)	89 (3.50)	8

LD400L - Flanged Pressure Transmitter With Lower Housing

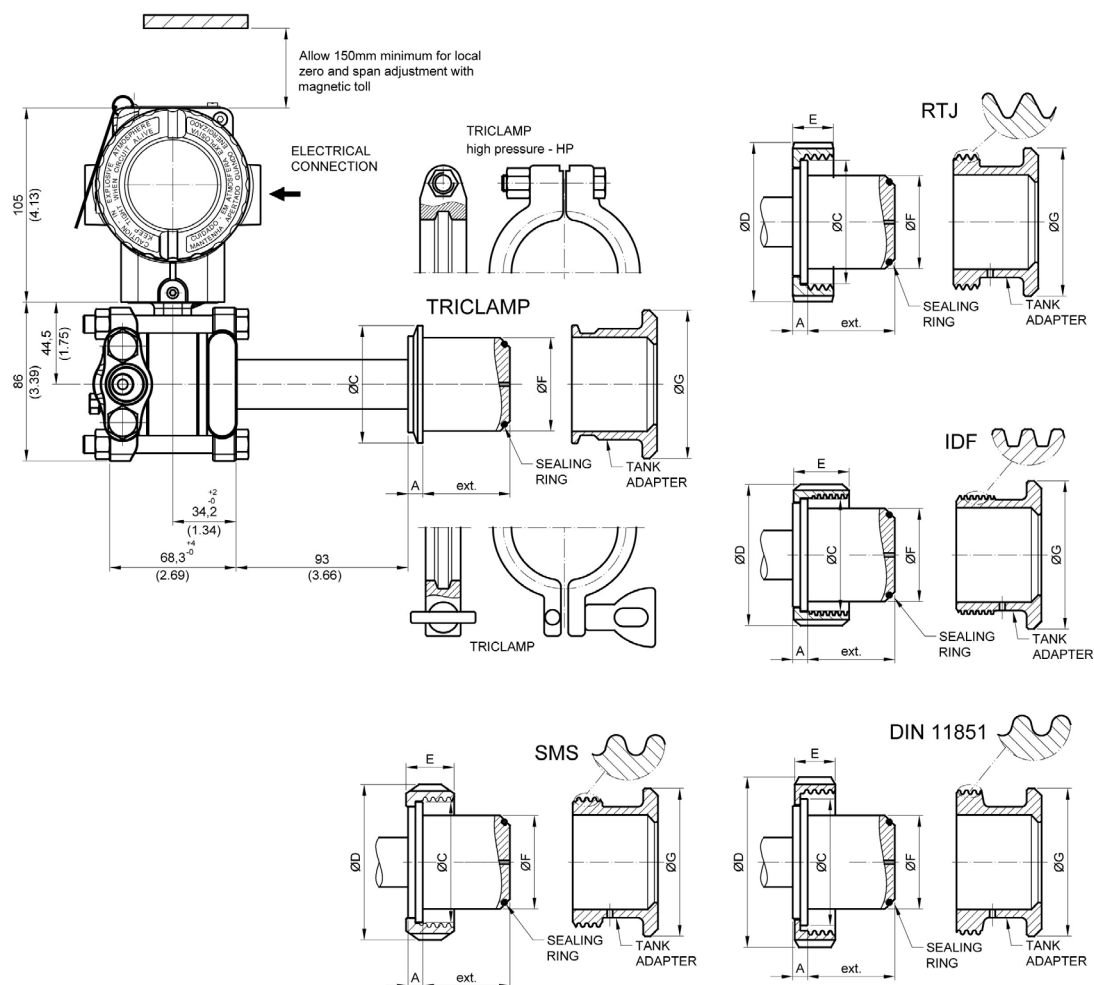


DIMENSIONS - RF / FF - mm (inch)						
STANDARD	DN	CLASS	H	J	E	
					1/4"NPT	1/2"NPT
ASME B16.5	1"	ALL	60,8 (2,00)	35 (1,38)	25	35
	1.1/2"		73,2 (2,88)	48 (1,89)	25	35
	2"		91,9 (3,62)	60 (2,36)	25	35
	3"		127 (5,00)	89 (3,50)	25	35
	4"		158 (6,22)	115 (4,53)	25	35
DIN EN 1092-1	25	ALL	68 (2,68)	35 (1,38)	25	35
	40		88 (3,46)	48 (1,89)	25	35
	50		102 (4,02)	60 (2,36)	25	35
	80		138 (5,43)	89 (3,50)	25	35
	100		158 (6,22)	115 (4,53)	25	35
JIS B 2220	40A	20K	81 (3,19)	48 (1,89)	25	35
	50A	10K	96 (3,78)	60 (1,36)	25	35
	50A	40K	105 (4,13)	60 (1,36)	25	35
	80A	10K	126 (4,96)	89 (3,50)	25	35
	80A	20K	132 (5,20)	89 (3,50)	25	35
	100A	10K	151 (5,94)	115 (4,53)	25	35

DIMENSIONS - RTJ - mm (inch) - ASME B16.5							
DN	CLASS	F1	RING	H1	J	E1	
						1/4"NPT	1/2"NPT
1"	150	47,6 (1,87)	R15	63,5 (2,50)	35 (1,38)	40	45
	300	50,8 (2,00)	R16	70 (2,75)	35 (1,38)	40	45
	600	50,8 (2,00)	R16	70 (2,75)	35 (1,38)	40	45
	1500	50,8 (2,00)	R16	71,5 (2,81)	35 (1,38)	40	45
	2500	60,3 (2,37)	R18	73 (2,88)	35 (1,38)	40	45
1.1/2"	150	66,1 (2,56)	R19	82,5 (3,25)	48 (1,89)	40	45
	300	68,3 (2,69)	R20	90,5 (3,56)	48 (1,89)	40	45
	600	68,3 (2,69)	R20	90,5 (3,56)	48 (1,89)	40	45
	1500	68,3 (2,69)	R20	92 (3,62)	48 (1,89)	40	45
	2500	82,6 (3,25)	R23	114 (4,50)	48 (1,89)	40	45
2"	150	82,6 (3,25)	R22	102 (4,00)	60 (2,36)	40	45
	300	82,6 (3,25)	R23	108 (4,25)	60 (2,36)	40	45
	600	82,6 (3,25)	R23	108 (4,25)	60 (2,36)	40	45
	1500	95,3 (3,75)	R24	124 (4,88)	60 (2,36)	40	45
	2500	101,6 (4,00)	R26	133 (5,25)	60 (2,36)	40	45
3"	150	114,3 (4,50)	R29	133 (5,25)	89 (3,50)	40	45
	300	123,8 (4,87)	R31	146 (5,75)	89 (3,50)	40	45
	600	123,8 (4,87)	R31	146 (5,75)	89 (3,50)	40	45
4"	150	149,2 (5,87)	R36	171 (6,75)	115 (4,53)	40	45
	300	149,2 (5,87)	R37	175 (6,88)	115 (4,53)	40	45
	600	149,2 (5,87)	R37	175 (6,88)	115 (4,53)	40	45

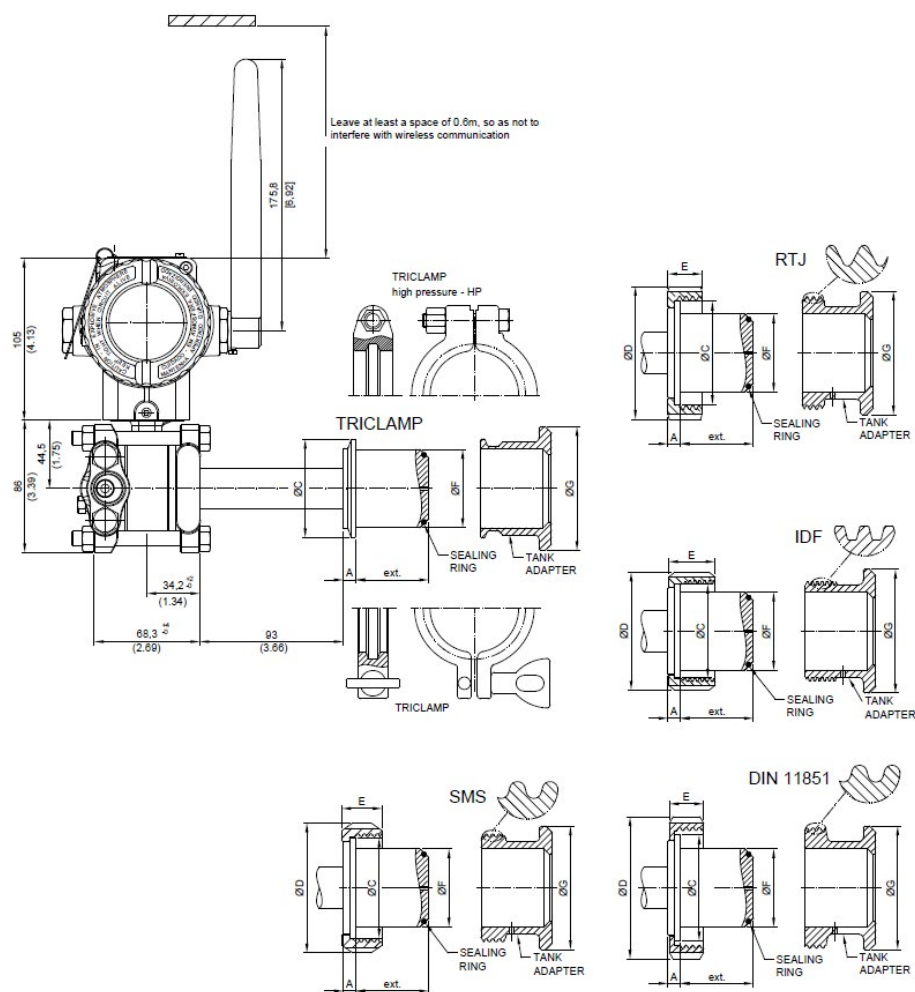
LOWER HOUSING 1/2NPT SUPPLIED WITH PLASTIC PROTECTION
NOT LOWER HOUSING 1/2 NPT FOR 1 INCH

LD400S - Sanitary Transmitter With Extension



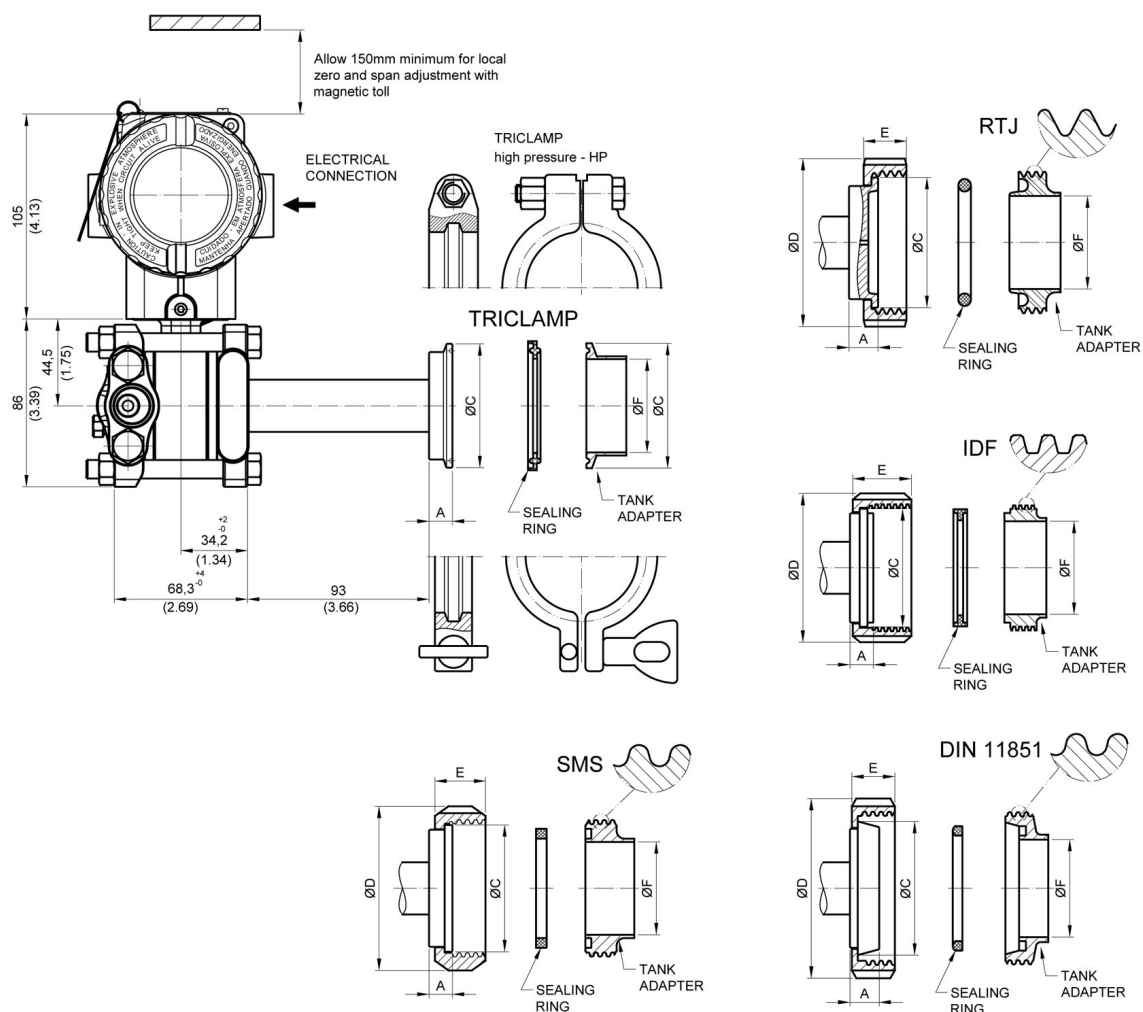
SR301S / LD30XS / LD400S							
CONNECTIONS WITH EXTENSION	Dimensions in mm (inch)						
	A	ØC	ØD	E	ØF	ØG	EXT.
Tri-Clamp DN50 - with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp DN50 HP - with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp - 2" - with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp - 2" HP -with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp - 3" - with extension	8 (0.315)	91 (3.58)	---	---	72,5 (2.85)	100 (3.94)	50 (1.96)
Tri-Clamp - 3" HP - with extension	8 (0.315)	91 (3.58)	---	---	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread DN25 - DIN 11851 - with extension	6 (0.24)	47,5 (1.87)	63 (2.48)	21 (0.83)	43,2 (1.7)	80 (3.15)	26,3 (1.03)
Thread DN40 - DIN 11851 - with extension	8 (0.315)	56 (2.2)	78 (3.07)	21 (0.83)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread DN50 - DIN 11851 - with extension	8 (0.315)	68,5 (2.7)	92 (3.62)	22 (0.86)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread DN80 - DIN 11851 - with extension	8 (0.315)	100 (3.94)	127 (5)	29 (1.14)	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread SMS - 2" - with extension	8 (0.315)	65 (2.56)	84 (3.3)	26 (1.02)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread SMS - 3" - with extension	8 (0.315)	93 (3.66)	113 (4.45)	32 (1.26)	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread RJT - 2" - with extension	8 (0.315)	66,7 (2.63)	86 (3.38)	22 (0.86)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread RJT - 3" - with extension	8 (0.315)	92 (3.62)	112 (4.41)	22,2 (0.87)	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread IDF - 2" - with extension	8 (0.315)	60,5 (2.38)	76,2 (3)	30 (1.18)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread IDF - 3" - with extension	8 (0.315)	87,5 (3.44)	101,6 (4)	30 (1.18)	72,5 (2.85)	100 (3.94)	50 (1.96)

LD400S - Wireless Sanitary Transmitter With Extension



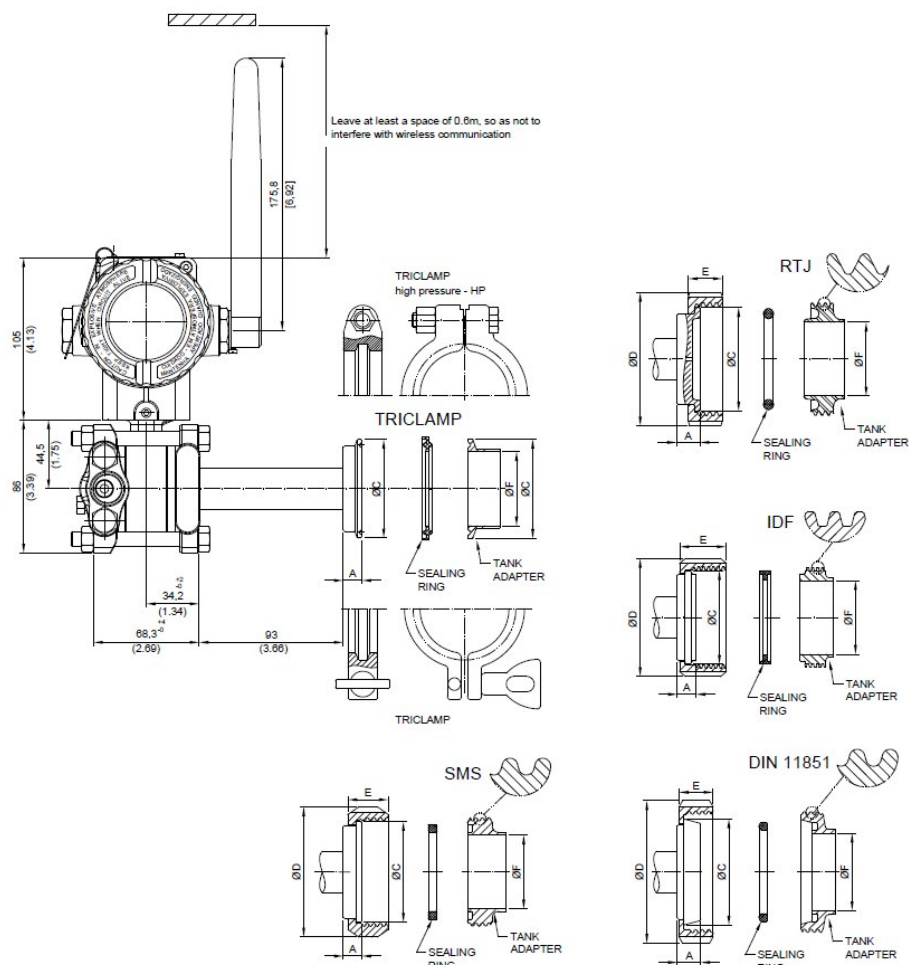
SR301S / LD30XS / LD400S							
CONNECTIONS WITH EXTENSION	Dimensions in mm (inch)						
	A	ØC	ØD	E	ØF	ØG	EXT.
Tri-Clamp DN50 - with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp DN50 HP - with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp - 2" - with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp - 2" HP -with extension	8 (0.315)	64 (2.52)	---	---	50,5 (1.99)	80 (3.15)	48 (1.89)
Tri-Clamp - 3" - with extension	8 (0.315)	91 (3.58)	---	---	72,5 (2.85)	100 (3.94)	50 (1.96)
Tri-Clamp - 3" HP - with extension	8 (0.315)	91 (3.58)	---	---	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread DN25 - DIN 11851 - with extension	6 (0.24)	47,5 (1.87)	63 (2.48)	21 (0.83)	43,2 (1.7)	80 (3.15)	26,3 (1.03)
Thread DN40 - DIN 11851 - with extension	8 (0.315)	56 (2.2)	78 (3.07)	21 (0.83)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread DN50 - DIN 11851 - with extension	8 (0.315)	68,5 (2.7)	92 (3.62)	22 (0.86)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread DN80 - DIN 11851 - with extension	8 (0.315)	100 (3.94)	127 (5)	29 (1.14)	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread SMS - 2" - with extension	8 (0.315)	65 (2.56)	84 (3.3)	26 (1.02)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread SMS - 3" - with extension	8 (0.315)	93 (3.66)	113 (4.45)	32 (1.26)	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread RJT - 2" - with extension	8 (0.315)	66,7 (2.63)	86 (3.38)	22 (0.86)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread RJT - 3" - with extension	8 (0.315)	92 (3.62)	112 (4.41)	22,2 (0.87)	72,5 (2.85)	100 (3.94)	50 (1.96)
Thread IDF - 2" - with extension	8 (0.315)	60,5 (2.38)	76,2 (3)	30 (1.18)	50,5 (1.99)	80 (3.15)	48 (1.89)
Thread IDF - 3" - with extension	8 (0.315)	87,5 (3.44)	101,6 (4)	30 (1.18)	72,5 (2.85)	100 (3.94)	50 (1.96)

LD400S - Sanitary Transmitter Without Extension



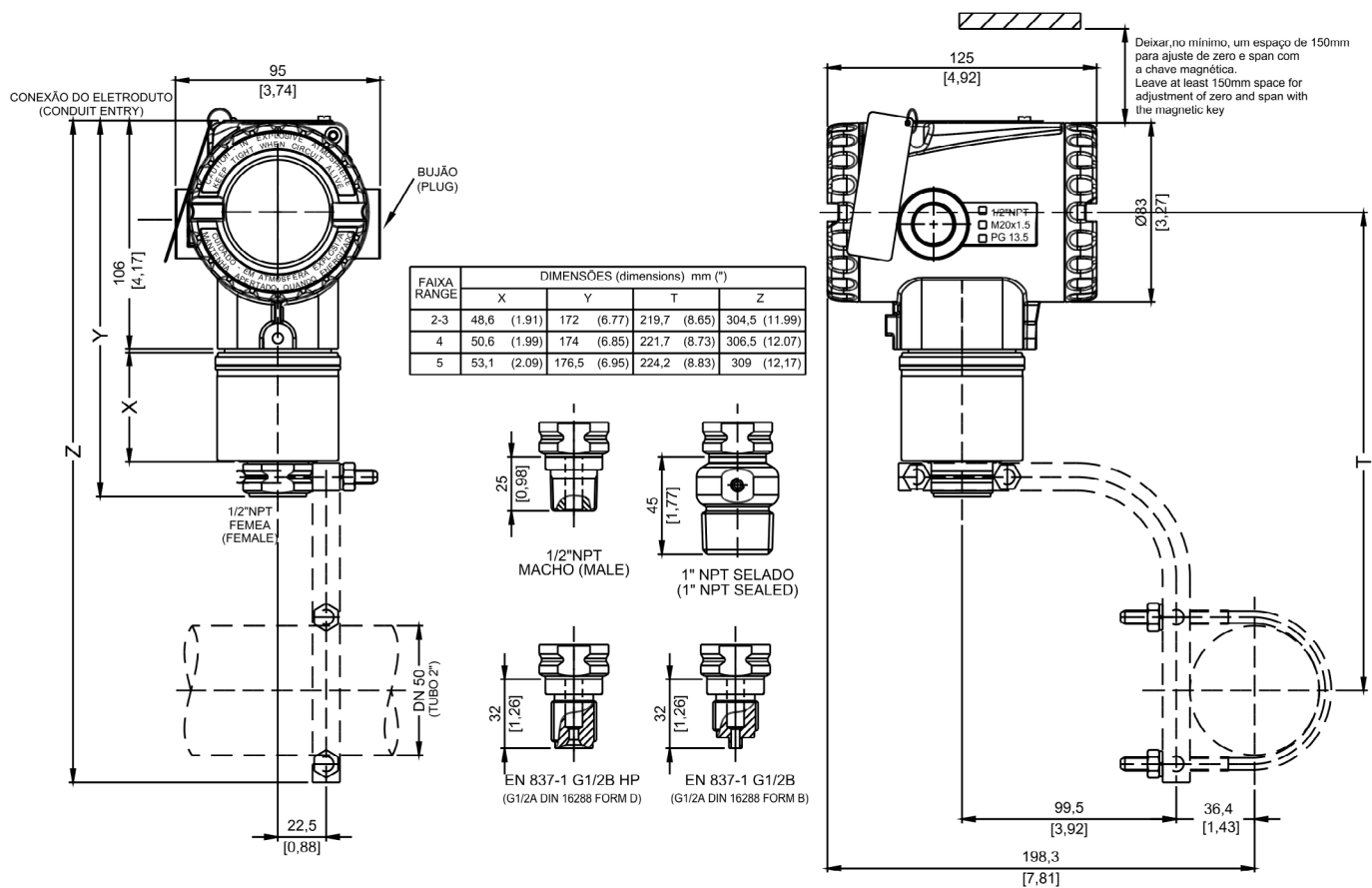
SR301S / LD30xS / LD400S							
CONNECTIONS WITHOUT EXTENSION	Dimensions in mm (inch)						
	A	ØC	ØD	E	ØF	ØG	EXT.
Tri-Clamp - 1 1/2" - without extension	12 (0.47)	50 (1.96)	---	---	35 (1.38)	---	---
Tri-Clamp - 1 1/2" HP - without extension	12 (0.47)	50 (1.96)	---	---	35 (1.38)	---	---
Tri-Clamp - 2" - without extension	12 (0.47)	63,5 (2.5)	---	---	47,6 (1.87)	---	---
Tri-Clamp - 2" HP - without extension	12 (0.47)	63,5 (2.5)	---	---	47,6 (1.87)	---	---
Tri-Clamp - 3" - without extension	12 (0.47)	91 (3.58)	---	---	72 (2.83)	---	---
Tri-Clamp - 3" HP - without extension	12 (0.47)	91 (3.58)	---	---	72 (2.83)	---	---
Thread DN40 - DIN 11851 - without extension	13 (0.51)	56 (2.2)	78 (3.07)	21 (0.83)	38 (1.5)	---	---
Thread DN50 - DIN 11851 - without extension	15 (0.59)	68,5 (2.7)	92 (3.62)	22 (0.86)	50 (1.96)	---	---
Thread DN80 - DIN 11851 - without extension	16 (0.63)	100 (3.94)	127 (5)	29 (1.14)	81 (3.19)	---	---
Thread SMS - 1 1/2" - without extension	12 (0.47)	55 (2.16)	74 (2.91)	25 (0.98)	35 (1.38)	---	---
Thread SMS - 2" - without extension	12 (0.47)	65 (2.56)	84 (3.3)	26 (1.02)	48,6 (1.91)	---	---
Thread SMS - 3" - without extension	12 (0.47)	93 (3.66)	113 (4.45)	32 (1.26)	73 (2.87)	---	---
Thread RJT - 2" - without extension	15 (0.59)	66,7 (2.63)	86 (3.38)	22 (0.86)	47,6 (1.87)	---	---
Thread RJT - 3" - without extension	15 (0.59)	92 (3.62)	112 (4.41)	22,2 (0.87)	73 (2.87)	---	---
Thread IDF - 2" - without extension	12 (0.47)	60,5 (2.38)	76 (2.99)	30 (1.18)	47,6 (1.87)	---	---
Thread IDF - 3" - without extension	12 (0.47)	87,5 (3.44)	101,6 (4)	30 (1.18)	73 (2.87)	---	---

LD400S - Wireless Sanitary Transmitter Without Extension

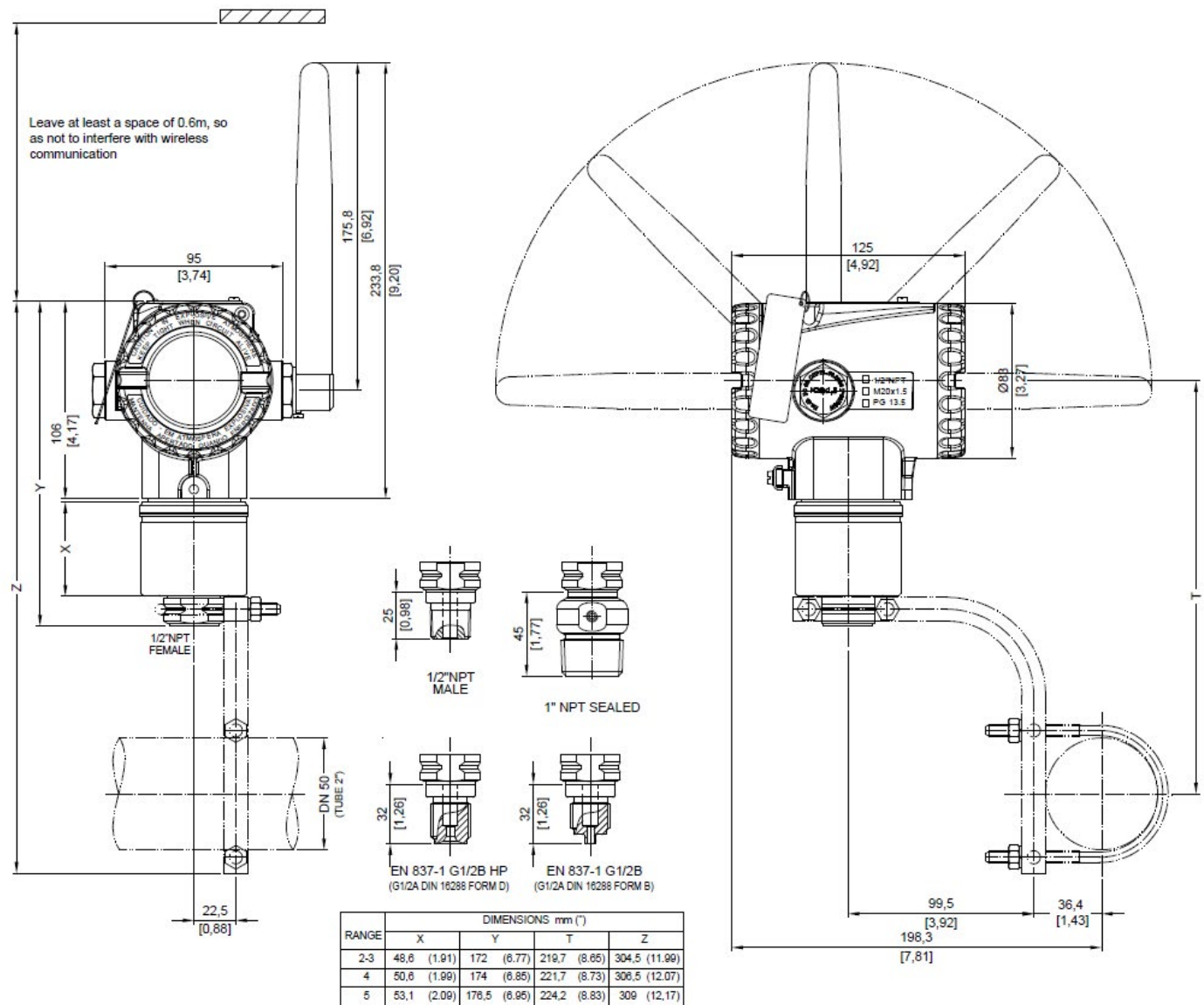


SR301S / LD30xS / LD400S							
CONNECTIONS WITHOUT EXTENSION	Dimensions in mm (inch)						
	A	ØC	ØD	E	ØF	ØG	EXT.
Tri-Clamp - 1 1/2" - without extension	12 (0.47)	50 (1.96)	---	---	35 (1.38)	---	---
Tri-Clamp - 1 1/2" HP - without extension	12 (0.47)	50 (1.96)	---	---	35 (1.38)	---	---
Tri-Clamp - 2" - without extension	12 (0.47)	63,5 (2.5)	---	---	47,6 (1.87)	---	---
Tri-Clamp - 2" HP - without extension	12 (0.47)	63,5 (2.5)	---	---	47,6 (1.87)	---	---
Tri-Clamp - 3" - without extension	12 (0.47)	91 (3.58)	---	---	72 (2.83)	---	---
Tri-Clamp - 3" HP - without extension	12 (0.47)	91 (3.58)	---	---	72 (2.83)	---	---
Thread DN40 - DIN 11851 - without extension	13 (0.51)	56 (2.2)	78 (3.07)	21 (0.83)	38 (1.5)	---	---
Thread DN50 - DIN 11851 - without extension	15 (0.59)	68,5 (2.7)	92 (3.62)	22 (0.86)	50 (1.96)	---	---
Thread DN80 - DIN 11851 - without extension	16 (0.63)	100 (3.94)	127 (5)	29 (1.14)	81 (3.19)	---	---
Thread SMS - 1 1/2" - without extension	12 (0.47)	55 (2.16)	74 (2.91)	25 (0.98)	35 (1.38)	---	---
Thread SMS - 2" - without extension	12 (0.47)	65 (2.56)	84 (3.3)	26 (1.02)	48,6 (1.91)	---	---
Thread SMS - 3" - without extension	12 (0.47)	93 (3.66)	113 (4.45)	32 (1.26)	73 (2.87)	---	---
Thread RJT - 2" - without extension	15 (0.59)	66,7 (2.63)	86 (3.38)	22 (0.86)	47,6 (1.87)	---	---
Thread RJT - 3" - without extension	15 (0.59)	92 (3.62)	112 (4.41)	22,2 (0.87)	73 (2.87)	---	---
Thread IDF - 2" - without extension	12 (0.47)	60,5 (2.38)	76 (2.99)	30 (1.18)	47,6 (1.87)	---	---
Thread IDF - 3" - without extension	12 (0.47)	87,5 (3.44)	101,6 (4)	30 (1.18)	73 (2.87)	---	---

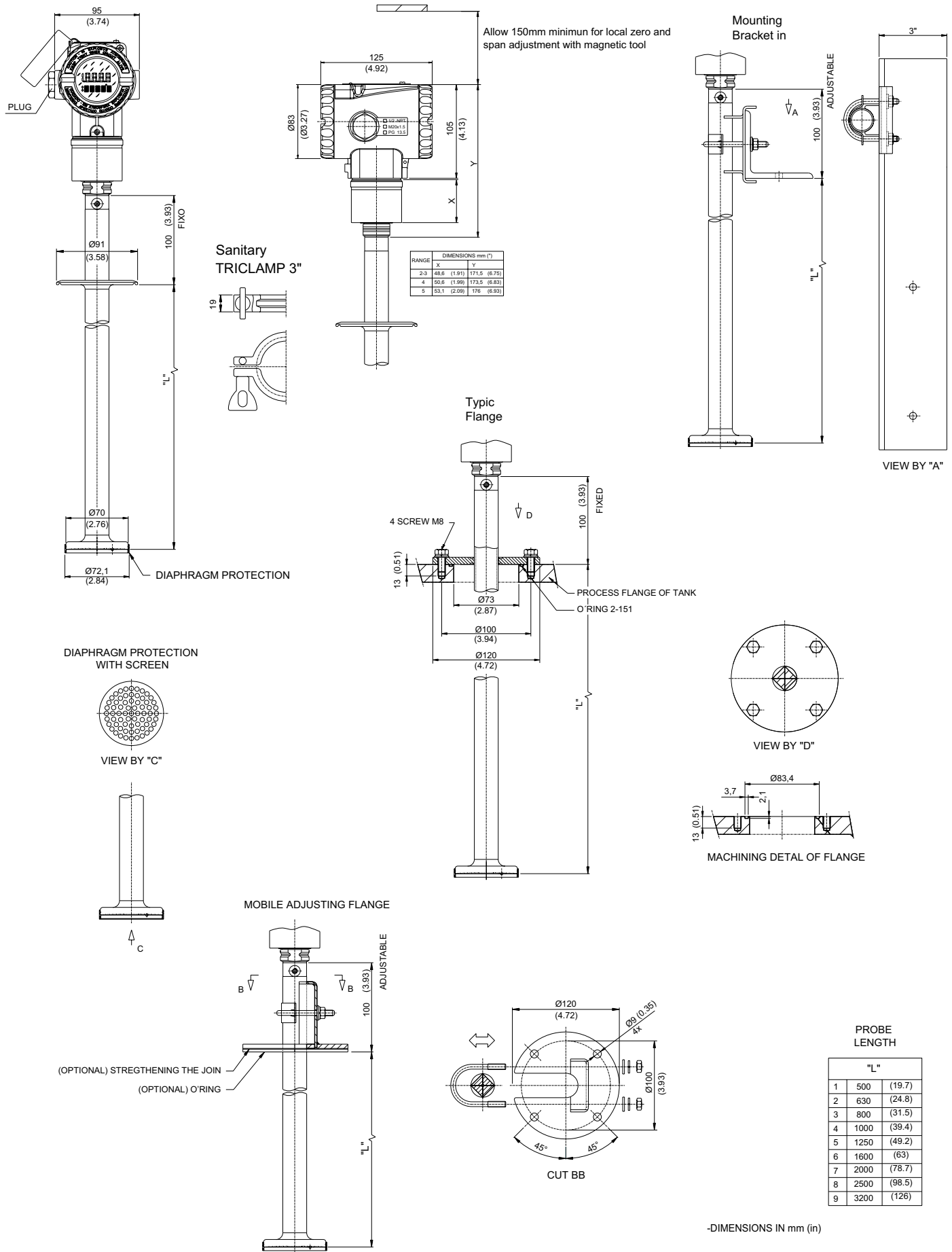
LD400G - Gage Inline Pressure Transmitter



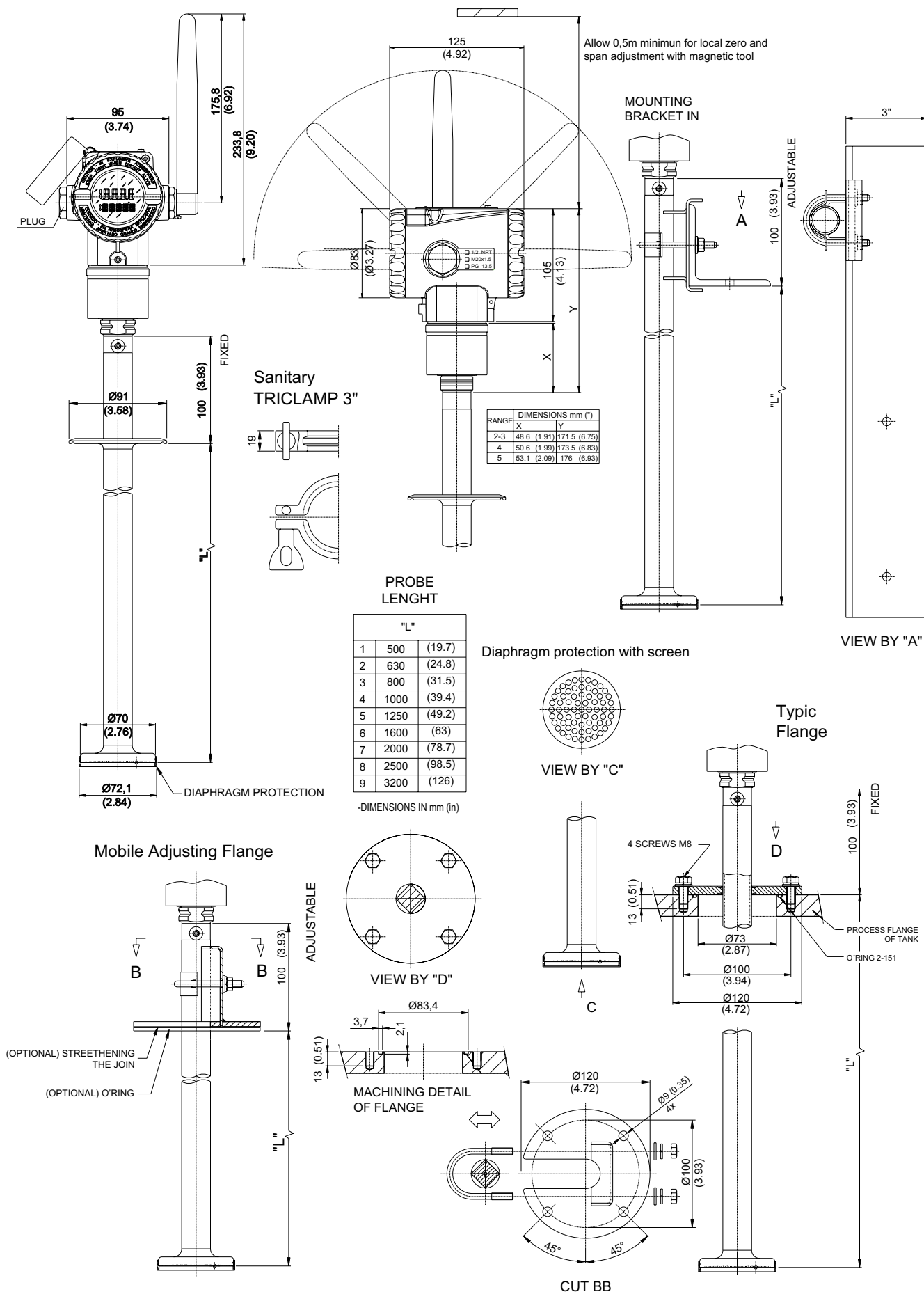
LD400G - Wireless Gage Inline Pressure Transmitter



LD400I - Pressure Transmitter with Extended Probe



LD400I - Wireless Pressure Transmitter with Extended Probe



LD400 Series

Pressure Measurement Transmitters



Remote Flanged Connection



SMS Sanitary Connection



LD400SIS - For Safety Instrumented Systems



Integral Flanged Connection

Consult our
representatives



Rua Dr. Antônio Furlan Junior, 1028 - Sertãozinho, SP - CEP: 14170-480
insales@smar.com.br | +55 (16) 3946-3599 | www.smar.com