



LD400 series

HART® & 4 to 20 mA

PRESSURE TRANSMITTERS

FOR PRESSURE, LEVEL AND FLOW APPLICATIONS

- $\pm 0.045\%$ Accuracy
- $\pm 0.2\%$ of URL Stability Guarantee For 12 Years
- 200:1 Rangeability
- 35 ms Total Response Time
- Non-volatile Flow Totalizer
- Tank Linearization
- PID Control Capability
- Advanced Diagnostics
- Bi-directional Flow Measurement
- Supports DD, EDDL, and FDT/DTM
- Non-polarity Power Input
- Built-in Transient Suppression
- SIL 2 - Safety Certified to IEC 61508 by TÜV



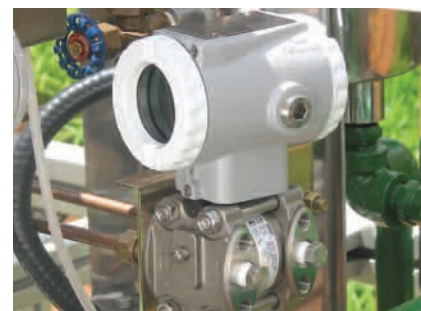
Rahpooyan Hooshmand Dena Co.

Tel: 0098 21 73051

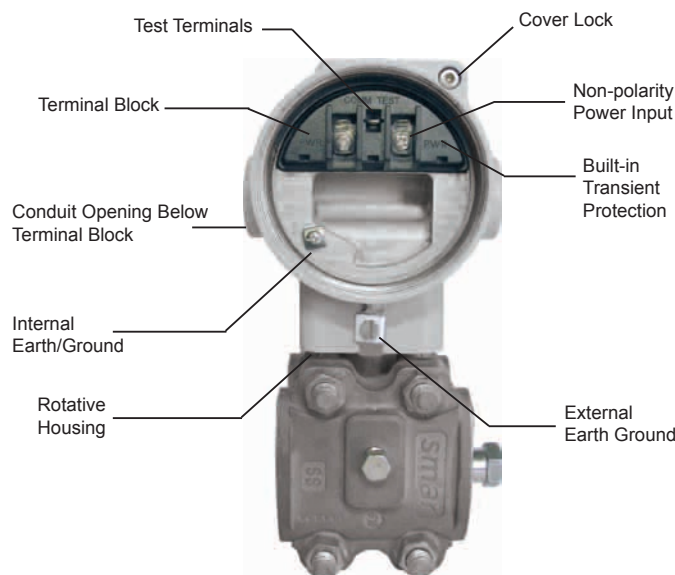
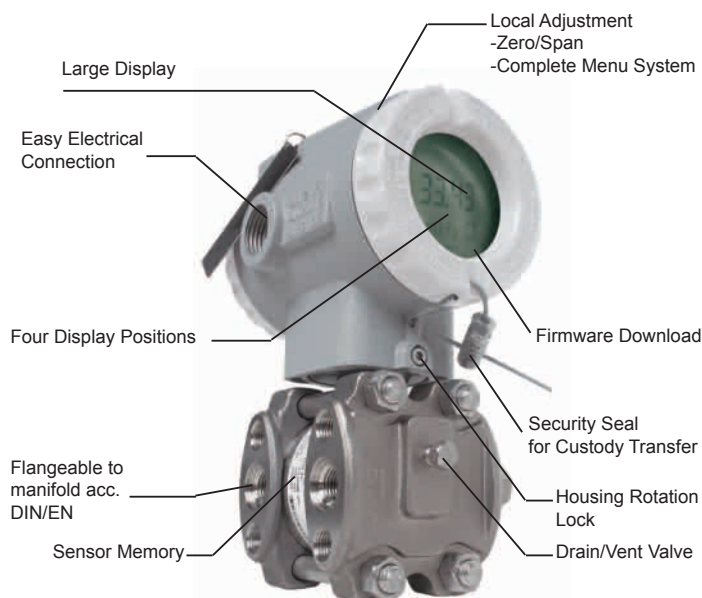
Fax: 0098 21 77009563

smar

- Output current with 0.75 μA resolution;
- Low Total Probable Error (TPE);
- Output Limits according to NAMUR NE43;
- Software Management according to NAMUR NE53;
- Direct digital capacitance sensing (No A/D conversion);
- Based on technology proven in use since the early '80s;
- HART® configurable;
- 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;
- Built-in surge protection;
- Modularity for all models;
- Persistent Flow Totalizer;
- Fully selectable constant mA output (Loop Test capability);
- 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;
- Single electronics board covers complete range;
- Easy specification simplifying customers' Total Cost of Ownership (TCO).
- It is certified to IEC61508 for SIL 1 and SIL 2 (non-redundant) and SIL 3 (redundant) applications.



Product Highlight



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

LD400 offers:

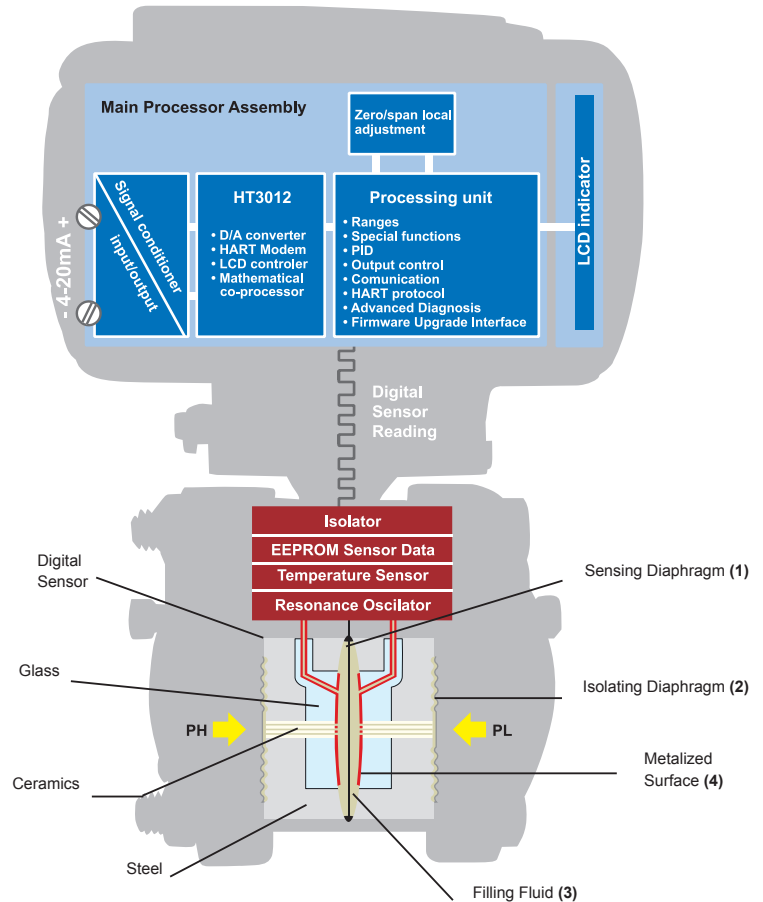
- $\pm 0.045\%$ accuracy for High Performance option;
- $\pm 0.2\%$ of URL stability guarantee for 12 years;
- 200:1 rangeability;
- Compactness and lightweight;
- Safe and reliable operation.

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.

Conclusion

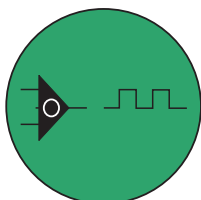
Smart **LD400** is designed to be rugged and a highly reliable solution in pressure measurement. It delivers great application flexibility using the direct digital capacitance sensing that keeps the signal digital all the way from sensor to the output, resulting in a

higher effective resolution. All the processing is made by HT3012, the powerful mathematical co-processor that ensure fast response time and high performance for the transmitter. **LD400** is the best choice for pressure measurement.



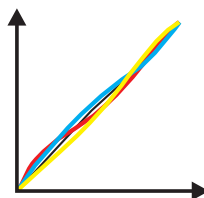
Capacitance Sensor

+



No A/D Conversion

+



Temperature Compensation

+



HT3012

=



LD400
Performance, Reliability
and Much More...

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

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

The transmitter has a flange-mounted unit for direct installation on vessels. Extended diaphragms are also available. The closed tank low side can compensate for ullage 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.

Tri-clamp and other connections are compliant to 3A-7403 standard for food grade applications.

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), Flanged with Extension (SR301E) and Pancake with Extension (SR301Q).

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.

**Manifold Valves**

Smar manifold valves provide all of the necessary safety for field maintenance of **LD400** transmitters. Working at pressures of up to 6,000 psi, they are easy to handle and lighter than others in the market. Pressure and leakage tests are present in 100% of the valves, also for models mounted on the transmitter. For further information, please see the Smar Manifold Valves Catalog.

**Certified for use in SIS Applications**

The **LD400 SIS** is certified by TÜV and meets IEC 61508 standard recommendations for SIS (Safety Instrumented Systems) applications. For more informations about SIS, please consult the **LD400** Operation and Maintenance Instruction Manual.

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.

LD400 with HART® protocol can be configured by:

- Smar CONF401 for Windows;
- Smar DDCON 100 for Windows;
- Smar HPC401 for most recent models of Palms;
- 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.



Universal HART® Configuration Software



HPC401

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.

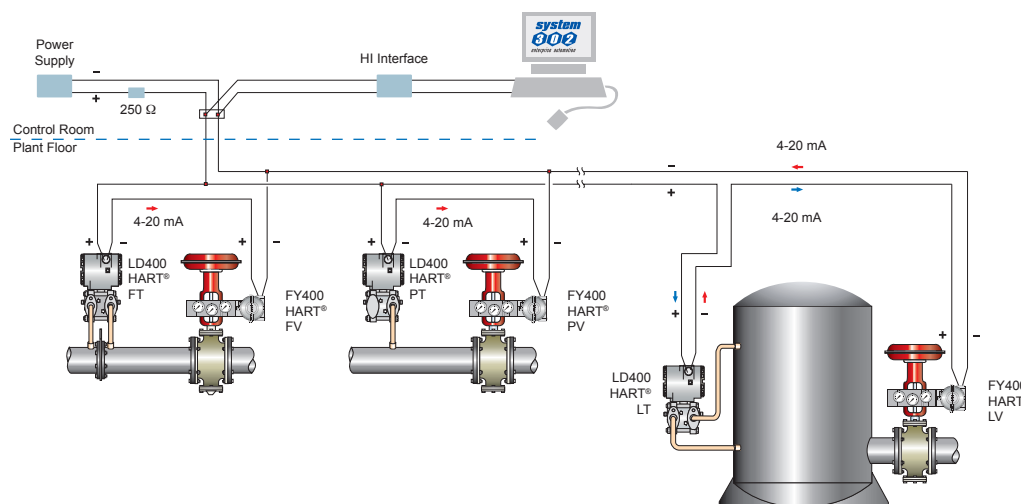
During the operation, the validity of the measured pressure is continuously checked. Using advanced algorithms, the transmitter can identify when there is a failure and if it is

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.

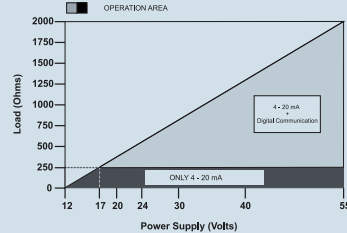
The **LD400 SIS** model not only includes all the previously mentioned diagnostics but also some extra ones to reach the required safety level. They are:

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

Applications - LD400 HART®



Functional Specifications

Process Fluid	Liquid, gas or steam.
Output and Communication Protocol	Two-wire, 4-20 mA controlled according to NAMUR NE43 specification, with super-imposed digital HART® Protocol.
Power Supply	12 to 55 Vdc. Input without polarization, with protection for transient suppressor and complemented by a Lightning Arrester. Transient Suppressor V_{max} = 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 capacitance
Indicator	Rotative LCD, with 4½-numerical digit and 5-character alphanumerical. Function and status icons.
Hazardous Area Certifications	Explosion Proof, intrinsically safe and increased safety (CEPEL) Explosion Proof, intrinsically safe and dust ignition proof (FM) (Pending)
European Directive Information	Authorized representative in European Community Smar GmbH-Rheingastrasse 9-55545 Bad Kreuznach PED Directive (97/23/EC) - Pressure Equipment Directive This product is in compliance with the directive and it was designed and manufactured in accordance with sound engineering practice using several standards from ANSI, ASTM, DIN and JIS. EMC Directive (2004/108/EC) - Electromagnetic Compatibility The EMC test was performed according to IEC standard: IEC61326-1:2006, IEC61326-2-3:2006, IEC61000-6-4:2006, IEC61000-6-2:2005. For use in environment only. Keep the shield insulated at the instrument side, connecting the other one to the ground if necessary to use shielded cable. ATEX Directive (94/9/EC) - Equipment and protective systems intended for use in potentially explosive atmospheres. This product was certified according European Standards at NEMKO and EXAM (old DMT). The certified body for manufacturing quality assessment is EXAM (number 0158). LVD Directive 2006/95/EC - Electrical Equipment designed for use within certain voltage limits According the LVD directive Annex II the equipment under ATEX "Electrical equipment for use in an explosive atmosphere" directive are excluded from scope from this directive. The EC declarations of conformity for all applicable European directives for this product can be found at www.smar.com.
Zero and Span Adjustments	Non-interactive, via local adjustment and digital communication. Local adjustment jumper with 3 positions: Simple, Disabled and Complete.
Load Limitation	The equation to determine the maximum load resistance this described below: Maximum Load Resistance = $[46.07 * (\text{Supply Voltage} - 10.5)]$ Ohms 
Failure Alarm (Diagnostics)	Detailed diagnostics through communication. 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.

Temperature Limits	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	By digital communication using the configuration software CONF401, DDCON 100 (for Windows) or HPC401 (for Palms), and can be partially configured through local adjustment. LD400 can be configured using third-party configuration tools. Firmware downloading via BDM. Writing-protection jumper.
Overpressure and Static Pressure Limits	From 3.45 kPa absolut (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 ranges 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 model M6, A6 Flange test pressure: 10000 psi (68.95 MPa) For ANSI/DIN Level flanges (Level Transmitters): 150#: 6 psia to 235 psi (-0.6 to 16 bar) at 199.4 °F (93 °C) 300#: 6 psia to 620 psi (-0.6 to 43 bar) at 199.4 °F (93 °C) 600#: 6 psia to 1240 psi (-0.6 to 85 bar) at 199.4 °F (93 °C) PN10/16: -60 kPa to 1.02 MPa (-0.6 to 10.2 bar) at 212 °F (100 °C) PN25/40: -60 kPa to 2.55 MPa (-0.6 to 25.5 bar) at 212 °F (100 °C) The above pressures will not damage the transmitter, but a new calibration may be necessary.
Turn-on Time	Performs within specifications in less than 3 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.
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Stability	For ranges 2, 3, 4, 5 or 6: High Performance: $\pm 0.2\%$ of URL for 12 years Standard: $\pm 0.15\%$ of URL for 7 years For $\pm 20\text{ }^{\circ}\text{C}$ temperature changes, 0-100% relative humidity, up to 7 MPa (70 bar) line pressure, installation according to the best practices and adequate assembling for processes in which atoms of hydrogen can be generated (hydrogen migration). For range 1: High Performance: $\pm 0.3\%$ of URL for 12 years Standard: $\pm 0.3\%$ of URL for 7 years For $\pm 20\text{ }^{\circ}\text{C}$ temperature changes, 0-100% relative humidity, up to 3.5 kPa (35 mbar) line pressure, installation according to the best practices and adequate assembling for processes in which atoms of hydrogen can be generated (hydrogen migration). For range 0: High Performance: $\pm 0.4\%$ of URL for 12 years Standard: $\pm 0.4\%$ of URL for 7 years For $\pm 20\text{ }^{\circ}\text{C}$ temperature changes, 0-100% relative humidity, up to 100 kPa (1 bar) line pressure, installation according to the best practices and adequate assembling for processes in which atoms of hydrogen can be generated (hydrogen migration).
Accuracy	STANDARD: Ranges D0 or M0: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.1\%$ of span $0.05\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0545 + 0.0073\text{ URL/span}] \%$ of span Ranges D1 or M1: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.06\%$ of span $0.025\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0364 + 0.0038\text{ URL/span}] \%$ of span Ranges D2, D3, D4, M2, M3, M4, H2, H3 or H4: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.06\%$ of span $0.025\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0364 + 0.0038\text{ URL/span}] \%$ of span $0.005\text{ URL} \leq \text{span} < 0.025\text{ URL}$: $\pm [0.0015 + 0.0047\text{ URL/span}] \%$ of span Ranges M5, H5, S2, S3, S4 or S5: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.065\%$ of span $0.025\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0326 + 0.0052\text{ URL/span}] \%$ of span $0.0083\text{ URL} \leq \text{span} < 0.025\text{ URL}$: $\pm [0.01 + 0.0058\text{ URL/span}] \%$ of span Range M6: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.08\%$ of span $0.025\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0504 + 0.0047\text{ URL/span}] \%$ of span $0.0083\text{ URL} \leq \text{span} < 0.025\text{ URL}$: $\pm [0.005 + 0.0059\text{ URL/span}] \%$ of span Range A1: $\pm [0.0667 + 0.0333\text{ URL/span}] \%$ of span Range A2: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.08\%$ of span $0.05\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0482 + 0.0051\text{ URL/span}] \%$ of span Ranges A3 or A4: $0.16\text{ URL} \leq \text{span} \leq \text{URL}$: $\pm 0.065\%$ of span $0.025\text{ URL} \leq \text{span} < 0.16\text{ URL}$: $\pm [0.0326 + 0.0052\text{ URL/span}] \%$ of span $0.0083\text{ URL} \leq \text{span} < 0.025\text{ URL}$: $\pm [0.005 + 0.0059\text{ URL/span}] \%$ of span

Accuracy	Range A5: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.075 \% \text{ of span}$ $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0443 + 0.0049 \text{ URL/span}] \% \text{ of span}$ $0.0083 \text{ URL} \leq \text{span} < 0.025 \text{ URL}: \pm [0.001 + 0.006 \text{ URL/span}] \% \text{ of span}$ Ranges A6, L2, L3, L4 or L5: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.08 \% \text{ of span}$ $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0504 + 0.0047 \text{ URL/span}] \% \text{ of span}$ $0.0083 \text{ URL} \leq \text{span} < 0.025 \text{ URL}: \pm [0.005 + 0.0059 \text{ URL/span}] \% \text{ of span}$ HIGH PERFORMANCE: Ranges D0 or M0: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.06\% \text{ of span}$ $0.05 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0009 + 0.0095 \text{ URL/span}] \% \text{ of span}$ Range D1 or M1: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.05 \% \text{ of span}$ $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0262 + 0.0038 \text{ URL/span}] \% \text{ of span}$ Ranges D2, D3, D4, M2, M3 or M4: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.045 \% \text{ of span}$ $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0209 + 0.0039 \text{ URL/span}] \% \text{ of span}$ $0.005 \text{ URL} \leq \text{span} < 0.025 \text{ URL}: \pm [0.0025 + 0.0043 \text{ URL/span}] \% \text{ of span}$ Range M5: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.055 \% \text{ of span}$ $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0263 + 0.0046 \text{ URL/span}] \% \text{ of span}$ $0.0083 \text{ URL} \leq \text{span} < 0.025 \text{ URL}: \pm [0.015 + 0.0049 \text{ URL/span}] \% \text{ of span}$ Range M6: $0.16 \text{ URL} \leq \text{span} \leq \text{URL}: \pm 0.075 \% \text{ of span}$ $0.025 \text{ URL} \leq \text{span} < 0.16 \text{ URL}: \pm [0.0463 + 0.0046 \text{ URL/span}] \% \text{ of span}$ $0.0083 \text{ URL} \leq \text{span} < 0.025 \text{ URL}: \pm [0.005 + 0.0056 \text{ URL/span}] \% \text{ of span}$ <i>Note: For SIS devices, please consider the standard model specifications.</i>
Power Supply Effect	$\pm 0.005\%$ of calibrated span per Volt.
Vibration Effect	$\pm 0.1\%$ 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 ranges 2, 3, 4, 5 or 6, except level and sanitary transmitters: $0.1 \text{ URL} \leq \text{span} \leq \text{URL}: \pm [0.0205\% \text{ URL} + 0.0795\% \text{ span}] \text{ per } 20^\circ\text{C} (68^\circ\text{F})$ $\text{span} < 0.1 \text{ URL}: \pm [0.021\% \text{ URL} + 0.075\% \text{ span}] \text{ per } 20^\circ\text{C} (68^\circ\text{F})$ For range 1: $0.1 \text{ URL} \leq \text{span} \leq \text{URL}: \pm [0.05\% \text{ URL} + 0.08\% \text{ span}] \text{ per } 20^\circ\text{C} (68^\circ\text{F})$ $\text{span} < 0.1 \text{ URL}: \pm [0.055\% \text{ URL} + 0.03\% \text{ span}] \text{ per } 20^\circ\text{C} (68^\circ\text{F})$ For range 0: $0.1 \text{ URL} \leq \text{span} \leq \text{URL}: \pm [0.1\% \text{ URL} + 0.1\% \text{ span}] \text{ per } 20^\circ\text{C} (68^\circ\text{F})$ $\text{span} < 0.1 \text{ URL}: \pm [0.105\% \text{ URL} + 0.05\% \text{ span}] \text{ per } 20^\circ\text{C} (68^\circ\text{F})$ For Level or Sanitary Transmitters: 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.

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		
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	20:1
	L3	120:1	20:1
	L4	120:1	20:1
	L5	120:1	20:1
	S2	120:1	20:1
	S3	120:1	20:1
S4	120:1	20:1	
S5	120:1	20:1	

Physical Specifications

Electrical Connection	½ - 14 NPT M20 X 1.5 PG 13.5 DIN ¾ - 14 NPT (with 316 SST adapter for ½ - 14 NPT) ¾ - 14 BSP (with 316 SST adapter for ½ - 14 NPT) ½ - 14 BSP (with 316 SST adapter for ½ - 14 NPT)
Process Connection	Process Connection: ¼ - 18 NPT or ½ -14 NPT (with adapter). See ordering code for more options. For level transmitters, please see ordering code.
Wetted Parts	Isolating Diaphragms: 316L SST, Hastelloy C276, Monel 400 or Tantalum. Drain/Vent Valves and Plug: Plated Carbon Steel, 316 SST, Hastelloy C276 or Monel 400. Flanges: Plated Carbon Steel, 316 SST CF8M (ASTM - A351), Hastelloy C276 - CW-12MW, (ASTM - A494) or Monel 400. Wetted O'Ring (For Flanges and Adapters): Buna-N, Viton™, PTFE or Ethylene-Propylene. The LD400 is available in NACE MR-01-75/ISO 15156 compliant materials.
Nonwetted Parts	Electronic Housing: Injected aluminum with epoxy painting or 316 SST - CF8M (ASTM - A351) housing. Complies with NEMA 4X/6P, IP66 or IP66W* and IP68 or IP68W*. *The IP66/68W sealing test (immersion) was performed at 1 bar for 24 hours. For any other situation, please consult Smar. IP66/68W tested for 200h according to NBR 8094 / ASTM B 117 standard. Blank Flange: When flange adapter and Drain/Vent material are in Carbon Steel, blank flange is in Carbon Steel, otherwise blank flange is in 316 SST CF8M (ASTM - A351). Level Flange (LD400L): 316 L. 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 Carbon Steel or 316 SST. Flange Bolts and Nuts: Plated Carbon Steel, Grade 8 or 316 SST. For NACE applications: Carbon Steel ASTM A193 B7M. Identification Plate: 316 SST.
Mounting	a) Flange mounted for Level models. 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.
Approximate Weights	3.15 kg (7 lb): all models, except level transmitters. 5.85 to 9.0 kg (13 lb to 20 lb): level transmitters depending on the flanges, extension and materials.
Control Functions Characteristics (Optional)	Control Block (PID) and Totalization (TOT). <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.
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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		
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	Note: 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	
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	mmHg	20	Due to differences in mechanical project, A1 range has turn-down lower than A0 range.	
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 Pressure for High Static Pressure	-50	50	kPa		-500	500	mbar	120		
H3	Differential Pressure for High Static Pressure	-250	250	kPa		-2500	2500	mbar	120		
H4	Differential Pressure for High Static Pressure	-2500	2500	kPa		-25	25	bar	120		
H5	Differential Pressure for High Static Pressure	-25	25	MPa		-250	250	bar	120		
COD. Diaphragm Material and Fill Fluid											
1	316L SST	Silicone Oil (9)	E	Hastelloy C276	Inert (Krytox Oil) (1) (12) (19)	S	Tantalum	Inert (Halocarbon 4.2 Oil) (3) (19)			
2	316L SST	Inert (Fluorolube Oil) (2) (19)	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) (19)	J	GP 316L SST - OP	Inert (Fluorolube Oil) (3) (4) (18) (19)	V	316L SST - OP	Inert (Fluorolube Oil) (3) (4) (18) (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) (18) (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) (18) (19)			
8	Tantalum	Inert (Fluorolube Oil) (2) (3) (19)	M	GP Monel 400	Silicone Oil (1) (3) (9)	Note: GP=Gold Plated OP= Over-Lay Pot					
9	316L SST	Fomblim Oil (12)	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)						
D	316L SST	Inert (Krytox Oil) (12) (19)	R	Hastelloy C276	Inert (Halocarbon 4.2 Oil) (19)						
COD. Performance Class											
0	Standard										
1	High Performance (15)										
COD. Communication Protocol											
H	HART® & 4 to 20 mA										
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											
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)										
M	Monel 400 Microcasting (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)										
COD. Wetted O'Ring Materials											
0	Without O'Rings										
B	Buna-N										
E	Ethylene - Propylene (12)									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										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											
0	1/4 - 18 NPT (Without Adapter)										
1	1/2 - 14 NPT (With Adapter)										
3	Flange Seal with welded plug for Remote Seal (3) (8)										
5	1/2 - 14 NPT Axial with PVDF Insert (5) (7) (16)										
9	Low Volume Flange for Remote Seal (3) (4) (8)										
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)										
F	High Side: 1/2 - 14 NPT and Low Side: Low Volume Flange for Remote Seal (10) (3)										
H	High Side: Low Volume Flange for Remote Seal and Low Side: 1/2 - 14 NPT (10) (3)										
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) (14)										

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									
										P Plated Carbon Steel (Default) (20)									
										I 316 SST									
										C Carbon Steel (ASTM A193 B7M) (1) (20)									
										H Hastelloy C276									
										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 (22)			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 (22)			B PG 13.5 DIN (22)																
Z User's Specification																			
COD. Blind Plug																			
I 316 SST			C Carbon Steel (Only available for ½" process connection) (20)																
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) (IP/TYPE)																
J 316 SST for Salines Atmospheres (IPW/TYPEX) (21)			B Aluminium for Salines Atmospheres (IPW/TYPEX) (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 (Dust ignition)																
COD. Certifying Body for Hazardous Locations																			
0 None			1 FM (Pending)																
5 CEPEL																			
COD. Tag Plate																			
0 With tag, when specified (Default)			1 Blank																
2 User's Specification																			
COD. HART Configuration																			
**																			
LD400-D210-H0-IBD11										P 0 1 - 0 I 1 - A 0 N 0 0 / **									
										← TYPICAL MODEL									

MODEL		FLANGED PRESSURE TRANSMITTER										
LD400		Smart Pressure Transmitter										
COD.	Type	Range Limits			Range Limits			Turn Down				
		Min	Max	Unit	Min	Max	Unit					
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)			E	Hastelloy C276	Inert (Krytox Oil) (1) (18)		S	Tantalum	Inert (Krytox 4.2 Oil) (18)	
2	316L SST	Inert (Fluorolube Oil) (3) (18)			G	Tantalum	Inert (Krytox Oil) (18)		T	GP 316L SST - OP	Inert (Krytox Oil) (16) (18)	
3	Hastelloy C276	Silicone Oil (1) (2)			I	GP 316L SST - OP	Silicone Oil (9) (16)		U	316L SST - OP	Silicone Oil (9) (16)	
4	Hastelloy C276	Inert (Fluorolube Oil) (1) (3) (18)			J	GP 316L SST - OP	Inert (Fluorolube Oil) (3) (16) (18)		V	316L SST - OP	Inert (Fluorolube Oil) (3) (16) (18)	
5	Monel 400	Silicone Oil (1) (2)			K	Monel 400	Inert (Krytox Oil) (1) (18)		W	316L SST - OP	Inert (Krytox Oil) (16) (18)	
7	Tantalum	Silicone Oil (2)			L	GP 316L SST - OP	Inert (Krytox Oil) (16) (18)		X	316L SST - OP	Inert (Krytox Oil) (16)	
8	Tantalum	Inert (Fluorolube Oil) (3) (18)			M	GP Monel 400	Silicone Oil (1) (2)		Note: GP=Gold Plated OP= Over-Lay Pot			
9	316L SST	Fomblim Oil			P	GP Monel 400	Inert (Krytox Oil) (1) (18)					
A	Monel 400	Fomblim Oil (1)			Q	316L SST	Inert (Krytox 4.2 Oil) (18)					
D	316L SST	Inert (Krytox Oil) (18)			R	Hastelloy C276	Inert (Krytox 4.2 Oil) (1) (18)					
COD. Performance Class												
0	Standard											
COD. Communication Protocol												
H	HART® & 4 to 20 mA											
COD. Safety Options												
0	Standard – For use in measurement and control						1	SIS (Safety Instrumented Systems) (25)				
COD. Flange(s), Adapter(s) and Drain/Vent Valves Material												
A	304L SST					F	Monel 400 Plated Bar (For HF Applications) (1)					
P	Plated CS (Drain/Vent In Stainless Steel) (19)					M	Monel 400 Microcasting (1)					
H	Hastelloy C276 (CW-12MW, ASTM - A494)					1	316 SST - CF8M (ASTM A351) (Drain/Vent In Hastelloy C276) (1)					
I	316 SST - CF8M (ASTM A351) (1)					2	316 SST - CF8M (ASTM A351) Flange with PVDF (Kynar) Insert (3) (4) (5)					
COD. Wetted O'Ring Materials												
0	Without O'Rings					K	Kalrez					Note: O'Rings are not available on the sides with Remote Seals.
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) (7)					V	Without Connection (Mounted with Gage Flange)					
5	1/2 - 14 NPT Axial with PVDF Insert (3) (4) (6)					Z	User's Specification					
9	Remote Seal (Low Volume Flange) (3) (7)											
COD. Special Applications												
0	No Special Cleaning											
1	Degrease Cleaning (Oxygen or Chlorine Service) (11)											
2	Vacuum Applications											
COD. Flanges Bolts and Nuts Material (Low Side)												
P	Plated Carbon Steel (Default) (19)					H	Hastelloy C276					
I	316 SST											
C	Carbon Steel (ASTM A193 B7M) (1) (19)											
COD. Flange Thread for Fixing Accessories (Adapters, Manifolds, Mounting Brackets, etc)												
0	7/16 UNF (Default)											
1	M10 X 1.5											
2	M12 X 1.75											
COD. Process Connection (High Side)												
U	1" 150 # (ANSI B16.5) (28)					D	4" 600 # (ANSI B16.5)					
V	1" 300 # (ANSI B16.5) (28)					5	DN 25 PN10/40 (DIN EN 1092-1) (28)					
W	1" 600 # (ANSI B16.5) (28)					R	DN 40 PN10/40 (DIN EN 1092-1) (22)					
O	1 1/2" 150 # (ANSI B16.5) (22)					E	DN 50 PN 10/40 (DIN EN 1092-1) (22)					
P	1 1/2" 300 # (ANSI B16.5) (22)					6	DN 80 PN 10/40 (DIN EN 1092-1) (22)					
Q	1 1/2" 600 # (ANSI B16.5) (22)					7	DN 100 PN 10/16 (DIN EN 1092-1) (22)					
9	2" 150 # (ANSI B16.5)					8	DN 100 PN 25/40 (DIN EN 1092-1) (22)					
A	2" 300 # (ANSI B16.5)					H	10K 100A (JIS 2202) (22)					
B	2" 600 # (ANSI B16.5)					F	10K 50A (JIS 2202) (22)					
1	3" 150 # (ANSI B16.5)					G	10K 80A (JIS 2202) (22)					
2	3" 300 # (ANSI B16.5)					M	20K 100 (JIS 2202) (22)					
C	3" 600 # (ANSI B16.5)					S	20K 40A (JIS 2202) (22)					
N	3" 600 # (ANSI B16.5 RTJ)					K	20K 50A (JIS 2202) (22)					
3	4" 150 # (ANSI B16.5)					L	20K 80A (JIS 2202) (22)					
4	4" 300 # (ANSI B16.5)					Z	User's Specification (22)					
COD. Type and Flange Material (High Side)												
I	316L SST (Integral Flange)					K	316 SST (Slip-on Flange)					
H	Hastelloy C276 (Integral Flange)					L	Carbon Steel (Slip-on Flange)					
J	304 SST (Slip-on Flange)					Z	User's Specification					
COD. Flange Facing Finish												
0	Raised Face - RF					4	Small Grooved Face (14) (15)					
1	Flat Face - FF (14)					5	Large Tongue Face (14) (15)					
2	Ring Joint Face - RTJ (13)					6	Large Grooved Face (14) (15)					
3	Small Tongue Face (14) (15)											

LD400

L2

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P

B

D

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P

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1

I

0

← TYPICAL MODEL

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																																	
Note: Extension Material: 316 SST																																			
COD.		Diaphragm Material (Level Tap)																																	
A		304L SST										T		Tantalum (10)						3		Tantalum with Teflon Lining													
L		316L SST										X		Titanium (10)																					
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) (8)										T		Syltherm 800 Oil																					
3		DC704 Silicone Oil										Z		User's Specification																					
4		Inert (Krytox Oil)																																	
COD.		Local Indicator																																	
0		Without Local Indicator																																	
1		With Digital Indicator																																	
COD.		Electrical Connection																																	
0		1/2 - 14 NPT (21)																		A		M20 X 1.5 (21)													
1		3/4 - 14 NPT (with 316 SST adapter for 1/2 - 14 NPT) (21)																		B		PG 13.5 DIN (21)													
2		3/4 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (9)																		Z		User's Specification													
3		1/2 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (9)																																	
COD.		Blind Plug																																	
I		316 SST										C		Carbon Steel (12) (19)																					
COD.		Housing Material (26) (27)																																	
A		Aluminum (IP/TYPE)																																	
I		316 SST - CF8M (ASTM - A351) (IP/TYPE)																																	
J		316 SST for Salines Atmospheres (IPW/TYPEX) (20)																																	
B		Aluminium for Salines Atmospheres (IPW/TYPEX) (20)																																	
COD.		Painting																																	
0		Gray Munsell N 6.5 Polyester																																	
8		Without Painting (16)																																	
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										1		FM (Pending)						5		CEPEL													
COD.		Tag Plate																																	
0		With tag, when specified (Default)																																	
1		Blank																																	
2		User's Specification																																	
COD.		Lower Housing Connection																																	
0		Without Lower Housing Connection (24)										3		Super Duplex (UNS 32750) (23)																					
1		Stainless Steel 316										4		Duplex (UNS 31803) (23)																					
2		Hasteloy C276										5		Stainless Steel 304L (23)																					
COD.		Gasket Material																																	
0		Without gasket										C		Copper																					
T		Teflon (Ptfe)										I		Stainless 316 SST																					
G		Grafoll (Flexible lead)																																	
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 18)

Notes:

- (1) Meets NACE MR-01-75/ISO 15156 recommendations.
- (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) For Remote Seal only 316 SST CF8M (ASTM A351) flange is available (7/16 UNF).
- (8) Fluorolube fill fluid is not available for Monel diaphragm.
- (9) Options not certified for use in hazardous locations.
- (10) Attention, check corrosion rate for the process, tantalum plate 0.1 mm, AISI 316L extension 3 to 6mm.
- (11) Degrease cleaning not available for carbon steel flanges.
- (12) Only available for 1/2" electrical connection.
- (13) Only available for flange ANSI B16.5.
- (14) Not available for flange JIS 2202.
- (15) For this option consult Smar.
- (16) Not available for Aluminum housing.
- (17) Effective for hydrogen migration process.

- (18) Inert Fluid: safe for oxygen service.
- (19) Not applicable for saline atmosphere.
- (20) IPW/TYPEX tested for 200h to according with standard NBR 8094 / ASTM B 117.
- (21) Certificate for use in Explosion Proof (CEPEL).
- (22) Not available for slip-on flange.
- (23) Item by inquiry.
- (24) Supplied without gasket.
- (25) SIL 1 and SIL 2 (non-redundant) and SIL 3 (redundant) applications.
- (26) IPX8 tested in 10 meters of water column for 24 hours.
- (27) Ingress Protection:

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

(28) Not available for integral flange.

MODEL	SANITARY PRESSURE TRANSMITTER											
LD400	Smart Pressure Transmitter											
	COD.	Type	Range Limits			Range Limits			Turn Down			
			Min	Max	Unit	Min	Max	Unit	Max			
	S2	Sanitary	-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.		
	S3	Sanitary	-250	250	kPa	-2500	2500	mbar	120			
	S4	Sanitary	-2500	2500	kPa	-25	25	bar	120			
	S5	Sanitary	-25	25	MPa	-250	250	bar	120			
	COD. Diaphragm Material and Fill Fluid											
	1	316L SST	Silicone Oil (2)					J	GP 316L SST - OP	Inert (Fluorolube Oil) (3) (14) (16)		Note: GP=Gold Plated OP= Over-Lay Pot
	2	316L SST	Inert (Fluorolube Oil) (3) (16)					K	Monel 400	Inert (Krytox Oil) (1) (16)		
3	Hastelloy C276	Silicone Oil (1) (2)					L	GP 316L SST - OP	Inert (Krytox Oil) (14) (16)			
4	Hastelloy C276	Inert (Fluorolube Oil) (1) (3) (16)					M	GP Monel 400	Silicone Oil (1) (2)			
5	Monel 400	Silicone Oil (1) (2)					P	GP Monel 400	Inert (Krytox Oil) (1) (16)			
7	Tantalum	Silicone Oil (2)					Q	316L SST	Inert (Halocarbon 4.2 Oil) (16)			
8	Tantalum	Inert (Fluorolube Oil) (3) (16)					R	Hastelloy C276	Inert (Halocarbon 4.2 Oil) (1) (16)			
9	316L SST	Fomblim Oil					S	Tantalum	Inert (Halocarbon 4.2 Oil) (16)			
A	Monel 400	Fomblim Oil (1)					T	GP 316L SST - OP	Inert (Halocarbon Oil) (14) (16)			
D	316L SST	Inert (Krytox Oil) (16)					U	316L SST - OP	Silicone Oil (9) (14)			
E	Hastelloy C276	Inert (Krytox Oil) (1) (16)					V	316L SST - OP	Inert (Fluorolube Oil) (3) (14) (16)			
G	Tantalum	Inert (Krytox Oil) (16)					W	316L SST - OP	Inert (Krytox Oil) (14) (16)			
I	GP 316L SST - OP	Silicone Oil (9) (14)					X	316L SST - OP	Inert (Halocarbon Oil) (14) (16)			
COD. Performance Class												
0	Standard											
COD. Communication Protocol												
H	HART® & 4 to 20 mA											
COD. Safety Options												
0	Standard– For use in measurement and control											
1	SIS (Safety Instrumented Systems) (20)											
COD. Flange(s), Adapter(s) and Drain/Vent Valves Material												
H	Hastelloy C276 (CW-12MW, ASTM - A494)							I	CF8M / 316 SST			
COD. Wetted O’Ring Materials (Low Side)												
0	Without O’Rings					K	Kalrez				Note: O’Rings are not available on the sides with Remote Seals.	
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) (7)							V	Without Connection (Mounted with Gage)			
5	1/2 - 14 NPT Axial with PVDF Insert (3) (4) (6)							Z	User’s Specification			
9	Remote Seal (Low Volume Flange) (3) (7)											
COD. Special Applications												
0	No Special Cleaning											
1	Degrease Cleaning (Oxygen or Chlorine Service) (11)											
2	For Vacuum Application											
COD. Flanges Bolts and Nuts Material (Low Side)												
P	Plated Carbon Steel (19)							H	Hastelloy C276			
I	316 SST											
C	Carbon Steel (ASTM A193 B7M) (1) (19)											
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											

LD400

S2

1

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H

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H

B

D

U

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P

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← TYPICAL MODEL

LD400-S210-H0-HBDU0-P0		SANITARY PRESSURE TRANSMITTER	
COD. Process Connection (High Side)			
8	DN25 DIN 11851 - With Extension / 316 SST	E	Thread SMS 2" - 316 SST
9	DN40 DIN 11851 - With Extension / 316 SST	M	Thread SMS 3" - With Extension / 316 SST
H	DN40 DIN 11851 - 316 SST	1	Thread SMS 3" - Without Extension / 316 SST
V	Thread DN50 DIN 11851 - With Extension/316 SST	F	Tri-Clamp 1 1/2" - 316 SST
U	Thread DN50 DIN 11851 - Without Extension/316 SST	Q	Tri-Clamp 1 1/2" HP (High Pressure) - 316 SST
X	Thread DN80 DIN 11851 - With Extension/316 SST	6	Tri-Clamp 2" - With Extension / 316 SST
W	Thread DN80 DIN 11851 - Without Extension/316 SST	D	Tri-Clamp 2" - 316 SST
4	Thread IDF 2" - With Extension / 316 SST	N	Tri-Clamp 2" HP (High Pressure) - With Extension / 316 SST
B	Thread IDF 2" - 316 SST	P	Tri-Clamp 2" HP (High Pressure) - 316 SST
K	Thread IDF 3" - With Extension / 316 SST	I	Tri-Clamp 3" - With Extension/ 316 SST
3	Thread IDF 3" - Without Extension / 316 SST	J	Tri-Clamp 3" - 316 SST
5	Thread RJT 2" - With Extension / 316 SST	G	Tri-Clamp 3" HP (High Pressure) - With Extension / 316 SST
C	Thread RJT 2" - 316 SST	R	Tri-Clamp 3" HP (High Pressure) - 316 SST
L	Thread RJT 3" - With Extension / 316 SST	A	Tri-Clamp DN50 - With Extension/316 SST
2	Thread RJT 3" - Without Extension / 316 SST	O	Tri-Clamp DN50 HP (High Pressure) - With Extension/ 316 SST
S	Thread SMS 1 1/2" - 316 SST	T	Tri-Clamp DN50 - 316 SST
7	Thread SMS 2" - With Extension / 316 SST	Z	User's Specification
COD. O-Ring Material (High Side)			
0	Without O-Ring (Supplied by customer)	T	Teflon
B	Buna-N	V	Viton (Approved 3A) (21)
K	Kalrez	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	4	Inert (Krytox Oil)
2	Inert (Fluorolube MO-10 Oil) (8)	N	Neobee M20 Propylene Glycol Oil (Approved 3A) (21)
3	DC704 Silicone Oil	T	Syltherm 800 Oil
		Z	User's Specification
COD. Local Indicator			
0	Without Indicator	1	With Digital Indicator
COD. Electrical Connection			
0	1/2 - 14 NPT (19)	A	M20 X 1.5 (19)
1	3/4 - 14 NPT (with 316 SST adapter for 1/2 - 14 NPT) (19)	B	PG 13.5 DIN (19)
2	3/4 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (9)	Z	User's Specification
3	1/2 - 14 BSP (with 316 SST adapter for 1/2 - 14 NPT) (9)		
COD. Blind Plug			
I	316 SST	C	Carbon Steel (12) (17)
COD. Housing Material (22) (23)			
A	Aluminum (IP/TYPE)	J	316 SST for Saline Atmospheres (IPW/TYPEX) (18)
I	316 SST - CF8M (ASTM - A351) (IP/TYPE)	B	Aluminium for Saline Atmospheres (IPW/TYPEX) (18)
COD. Painting			
0	Gray Munsell N 6.5 Polyester	C	Safety Blue Polyester - Electrostatic Painting
8	Without Painting (14)	Z	User's Specification
9	Safety Blue Epoxy - Electrostatic Painting		
COD. Certification Type for Hazardous Locations			
N	No Certification	F	Non-incendive + Intrinsic Safety
I	Intrinsic Safety	G	Explosion Proof + Increased Safety
E	Increased Safety	H	Intrinsic Safety + Explosion Proof + Increased Safety
D	Explosion Proof	I	Non-incendive + Intrinsic Safety + Dust (Dust ignition)
COD. Certifying Body for Hazardous Locations			
0	None	5	CEPEL
1	FM (Pending)		
COD. Tag Plate			
0	With tag, when specified (Default)	2	User's Specification
1	Blank		
COD. HART Configuration (Continues Next Page)			
**			

LD400-S210-H0-HBDU0-P0 - 4 B 1 0 - I 1 1 0 I - A 0 N 0 0 / **

← TYPICAL MODEL

** Fill in with HART® optional configuration (see page 18)

Notes:

- (1) Meets NACE MR-01-75/ISO 15156 recommendations.
 (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) For Remote Seal only 316 SST CF8M (ASTM A351) flange is available (7/16 UNF).
 (8) Fluorolube fill fluid is not available for Monel diaphragm.
 (9) Options not certified for use in hazardous locations.
 (10) Not recommended with extension.
 (11) Degrease cleaning not available for carbon steel flanges.
 (12) Only available for 1/2" electrical connection.
 (13) Only available for TRI-CLAMP connection.
 (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) Certificate for use in Explosion Proof (CEPEL).
 (20) SIL1 and SIL2 (non-redundant) and SIL3 (redundant)
 (21) Compliant with 3A-7403 standard for food and other applications where sanitary connections are required.
 (22) IPX8 tested in 10 meters of water column for 24 hours.
 (23) Ingress Protection:

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

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 LCD1: 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 LCD1: 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-P01-011-A010	/	BU	Y2	Y3	Y1	P2	F1	M0		ZZ	
LD400-L210-H0-PBD00-P01-I01-L110I-A010	/	BD	Y2	Y3	Y1	P2		M0	K1	ZZ	
LD400-S210-H0-HBDU0-P04-B10-I110I-A060	/	BD	Y2	Y3	Y1	P2		M0		ZZ	

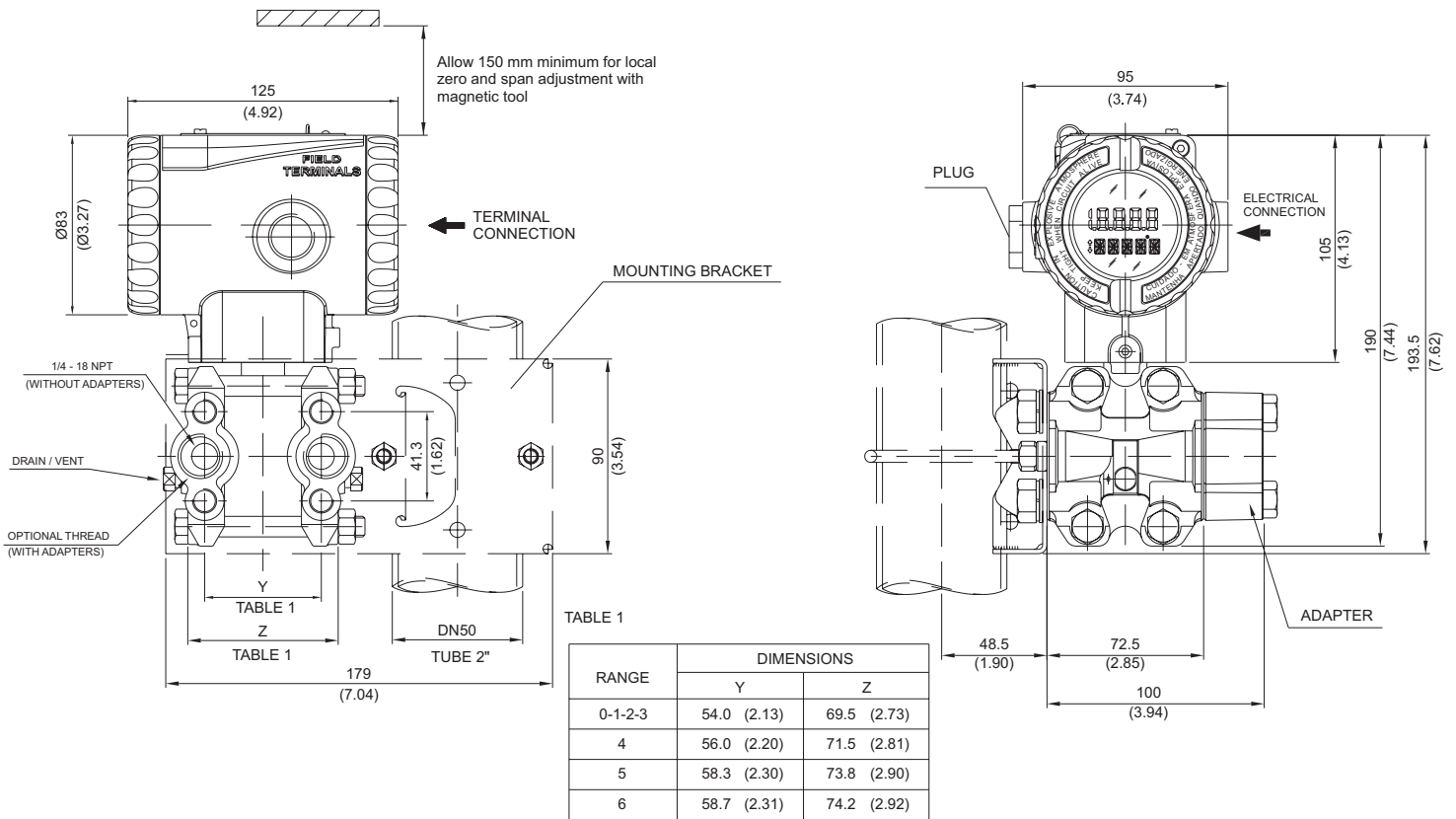
← TYPICAL MODEL

Notes:

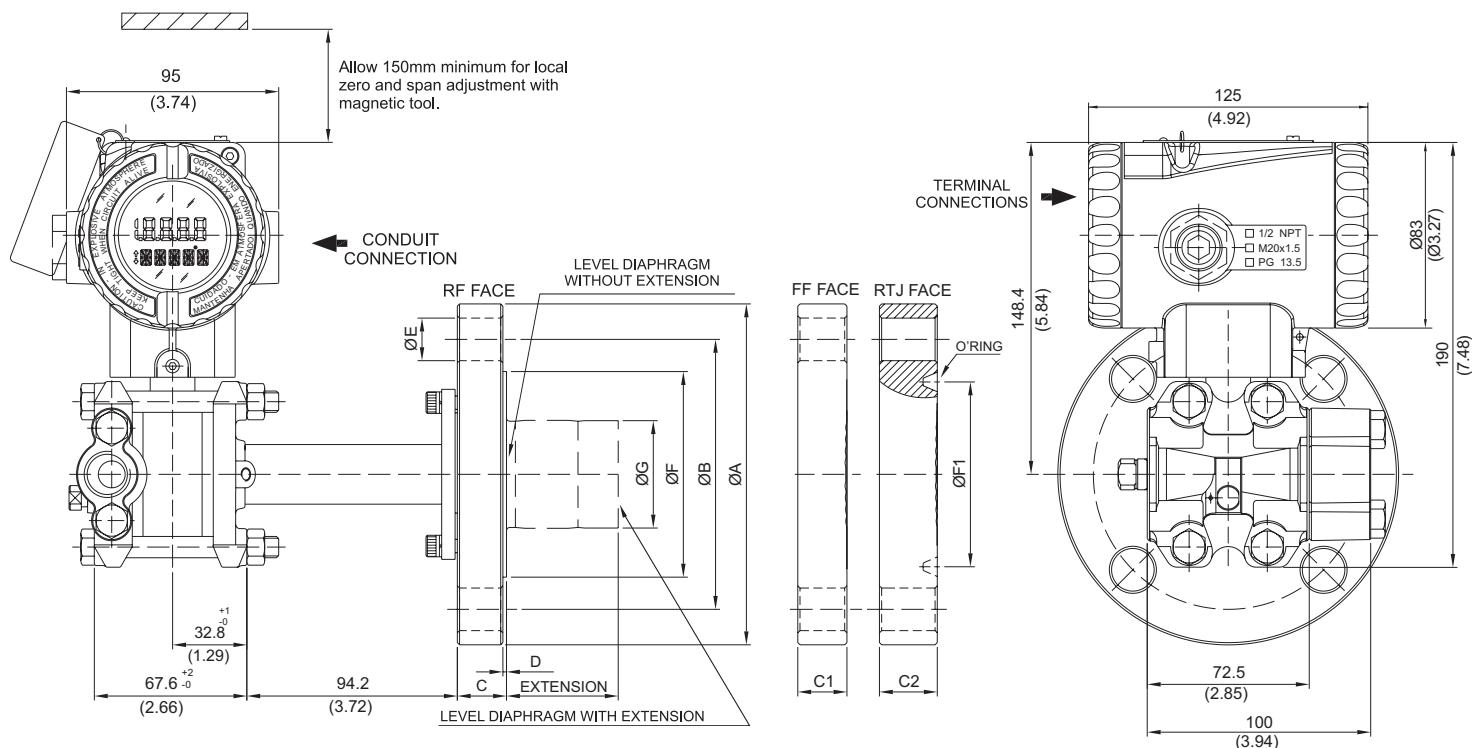
(1) Fill in only if selected option is different from the default value.
 (2) Values limited to 4 1/2 digits; unit limited to 12 characters.

(3) Only available for differential, gage, absolute and high static pressure models.
 (4) Only available for level models.

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



LD400L - Flanged Pressure Transmitter with Integral Flange

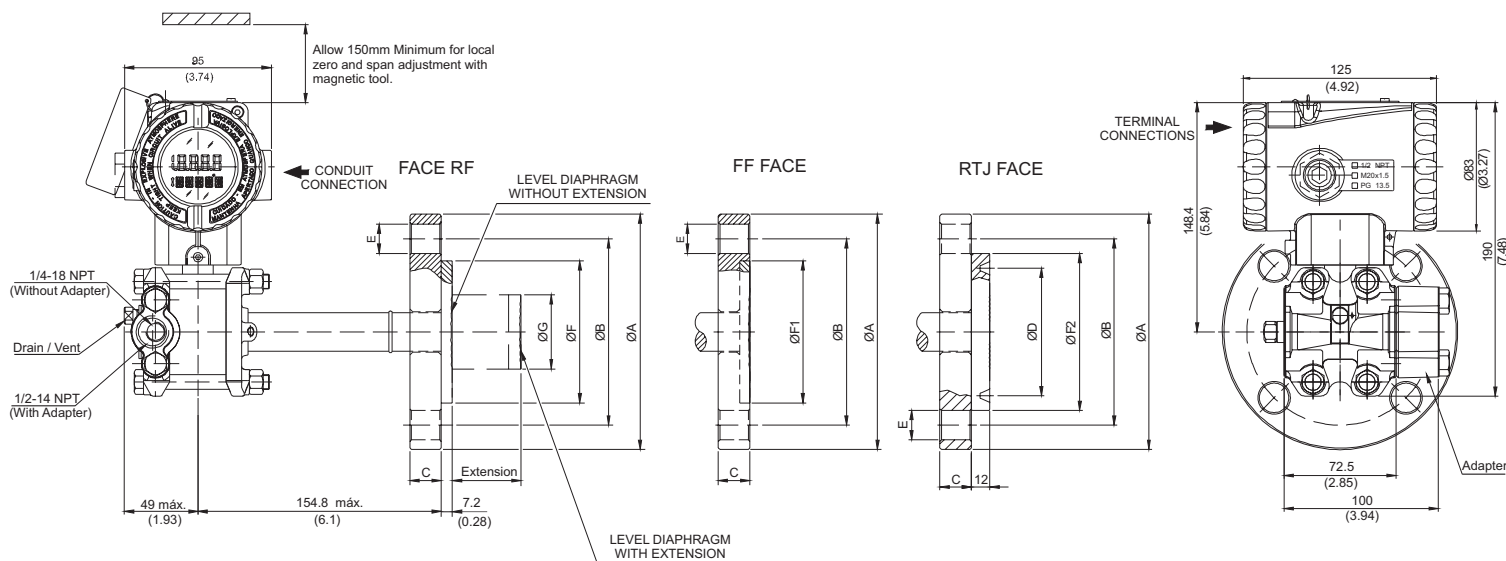


Notes:

- Extension length (mm): 0, 50, 100, 150 or 200
- Dimensions are mm (in)

ANSI-B 16.5 DIMENSIONS													
DN	CLASS	A	B	C (RF)	C1 (FF)	C2 (RTJ)	D (RF)	E	F (RF)	F1 (RTJ)	RTJ O-RING	G	HOLES
1.1/2"	150	127 (5)	98.6 (3.88)	20 (0.78)	19 (0.75)	24.4 (0.96)	1.6 (0.06)	16 (0.63)	73.2 (2.88)	65.1 (2.56)	R19	40 (1.57)	4
	300	155.4 (6.12)	114.3 (4.5)	21 (0.83)	21 (0.83)	27.4 (1.07)	1.6 (0.06)	22 (0.87)	73.2 (2.88)	68.3 (2.68)	R20	40 (1.57)	4
	600	155.4 (6.12)	114.3 (4.5)	29.3 (1.15)	29.3 (1.15)	29.3 (1.15)	6.4 (0.25)	22 (0.87)	73.2 (2.88)	68.3 (2.68)	R20	40 (1.57)	4
2"	150	152.4 (6)	120.7 (4.75)	22 (0.87)	20 (0.78)	25.9 (1.02)	1.6 (0.06)	19 (0.75)	91.9 (3.62)	82.6 (3.25)	R22	48 (1.89)	4
	300	165.1 (6.5)	127 (5)	22.8 (0.9)	22.8 (0.89)	30.8 (1.21)	1.6 (0.06)	19 (0.75)	91.9 (3.62)	82.6 (3.25)	R23	48 (1.89)	8
	600	165.1 (6.5)	127 (5)	32.3 (1.27)	32.3 (1.27)	32.3 (1.27)	6.4 (0.25)	19 (0.75)	91.9 (3.62)	82.6 (3.25)	R23	48 (1.89)	8
3"	150	190.5 (7.5)	152.4 (6)	24.4 (0.96)	24.4 (0.96)	30.7 (1.21)	1.6 (0.06)	19 (0.75)	127 (5)	114.3 (4.50)	R29	73 (2.87)	4
	300	209.5 (8.25)	168.1 (6.62)	29 (1.14)	29 (1.14)	36.9 (1.45)	1.6 (0.06)	22 (0.87)	127 (5)	123.8 (4.87)	R31	73 (2.87)	8
	600	209.5 (8.25)	168.1 (6.62)	38.7 (1.52)	38.7 (1.52)	40.2 (1.58)	6.4 (0.25)	22 (0.87)	127 (5)	123.8 (4.87)	R31	73 (2.87)	8
4"	150	228.6 (9)	190.5 (7.5)	24.4 (0.96)	24.4 (0.96)	30.7 (1.21)	1.6 (0.06)	19 (0.75)	158 (6.22)	149.2 (5.87)	R36	96 (3.78)	8
	300	254 (10)	200 (7.87)	32.2 (1.27)	32.2 (1.27)	40.2 (1.58)	1.6 (0.06)	22 (0.87)	158 (6.22)	149.2 (5.87)	R37	96 (3.78)	8
	600	273 (10.75)	215.9 (8.5)	45 (1.77)	45 (1.77)	46.5 (1.83)	6.4 (0.25)	25 (1)	158 (6.22)	149.2 (5.87)	R37	96 (3.78)	8
EN 1092-1 DIMENSIONS													
DN	PN	A	B	C (RF)	C1 (FF)		D	E	F (RF)			G	HOLES
DN40	10/40	150 (5.9)	110 (4.33)	20 (0.78)	20 (0.78)		3 (0.12)	18 (0.71)	88 (3.46)			40 (1.57)	4
DN50	10/40	165 (6.5)	125 (4.92)	20 (0.78)	22 (0.86)		3 (0.12)	18 (0.71)	102 (4.01)			48 (1.89)	4
DN80	10/40	200 (7.87)	160 (6.3)	24 (0.95)	24 (0.94)		3 (0.12)	18 (0.71)	138 (5.43)			73 (2.87)	8
DN100	10/16	220 (8.67)	180 (7.08)	20 (0.78)			3 (0.12)	18 (0.71)	158 (6.22)			96 (3.78)	8
	25/40	235 (9.25)	190 (7.5)	24 (0.95)			3 (0.12)	22 (0.87)	162 (6.38)			96 (3.78)	8
JIS B 2202 DIMENSIONS													
DN	CLASS	A	B	C			D	E	F (RF)			G	HOLES
40A	20K	140 (5.5)	105 (4.13)	26 (1.02)			2 (0.08)	19 (0.75)	81 (3.2)			40 (1.57)	4
50A	10K	155 (6.1)	120 (4.72)	26 (1.02)			2 (0.08)	19 (0.75)	96 (3.78)			48 (1.89)	4
	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)	26 (1.02)			2 (0.08)	19 (0.75)	126 (4.96)			73 (2.87)	8
	20K	200 (7.87)	160 (6.3)	26 (1.02)			2 (0.08)	19 (0.75)	132 (5.2)			73 (2.87)	8
100A	10K	210 (8.27)	175 (6.89)	26 (1.02)			2 (0.08)	19 (0.75)	151 (5.95)			96 (3.78)	8

LD400L - Flanged Pressure Transmitter with Slip-on Flange



ANSI-B 16.5 DIMENSIONS

DN	CLASS	A	B	C	D	E	F (RF)	F1 (FF)	F2 (RTJ)	G	HOLES
1"	150	108 (4.25)	79.4 (3.16)	14.3 (0.56)	-	16 (0.63)	50.8 (2)	50.8 (2)	-	-	4
	300/600	124 (4.88)	88.9 (3.5)	17.5 (0.69)	-	19 (0.75)	50.8 (2)	50.8 (2)	-	-	4
1 1/2"	150	127 (5)	98.4 (3.87)	17.5 (0.69)	-	16 (0.63)	73 (2.87)	73 (2.87)	-	40 (1.57)	4
	300/600	156 (6.14)	114.3 (4.5)	22.2 (0.87)	-	22 (0.87)	73 (2.87)	73 (2.87)	-	40 (1.57)	4
2"	150	152.4 (6)	120.7 (4.75)	17.5 (0.69)	82.6 (3.25)	19 (0.75)	92 (3.62)	92 (3.62)	101.6 (4.00)	48 (1.89)	4
	300	165.1 (6.5)	127 (5)	20.7 (0.8)	82.6 (3.25)	19 (0.75)	92 (3.62)	92 (3.62)	107.9 (4.25)	48 (1.89)	8
	600	165.1 (6.5)	127 (5)	25.4 (1)	82.6 (3.25)	19 (0.75)	92 (3.62)	92 (3.62)	107.9 (4.25)	48 (1.89)	8
3"	150	190.5 (7.5)	152.4 (6)	22.3 (0.87)	114.3 (4.50)	19 (0.75)	127 (5)	127 (5)	133.4 (5.25)	73 (2.87)	4
	300	209.5 (8.25)	168.1 (6.62)	27 (1.06)	123.8 (4.87)	22 (0.87)	127 (5)	127 (5)	146.1 (5.75)	73 (2.87)	8
	600	209.5 (8.25)	168.1 (6.62)	31.8 (1.25)	123.8 (4.87)	22 (0.87)	127 (5)	127 (5)	146.1 (5.75)	73 (2.87)	8
4"	150	228.6 (9)	190.5 (7.5)	22.3 (0.87)	149.2 (5.87)	19 (0.75)	158 (6.22)	158 (6.22)	171.5 (6.75)	89 (3.5)	8
	300	254 (10)	200 (7.87)	30.2 (1.18)	149.2 (5.87)	22 (0.87)	158 (6.22)	158 (6.22)	174.6 (6.87)	89 (3.5)	8
	600	273 (10.75)	215.9 (8.5)	38.1 (1.5)	149.2 (5.87)	25 (1)	158 (6.22)	158 (6.22)	174.6 (6.87)	89 (3.5)	8

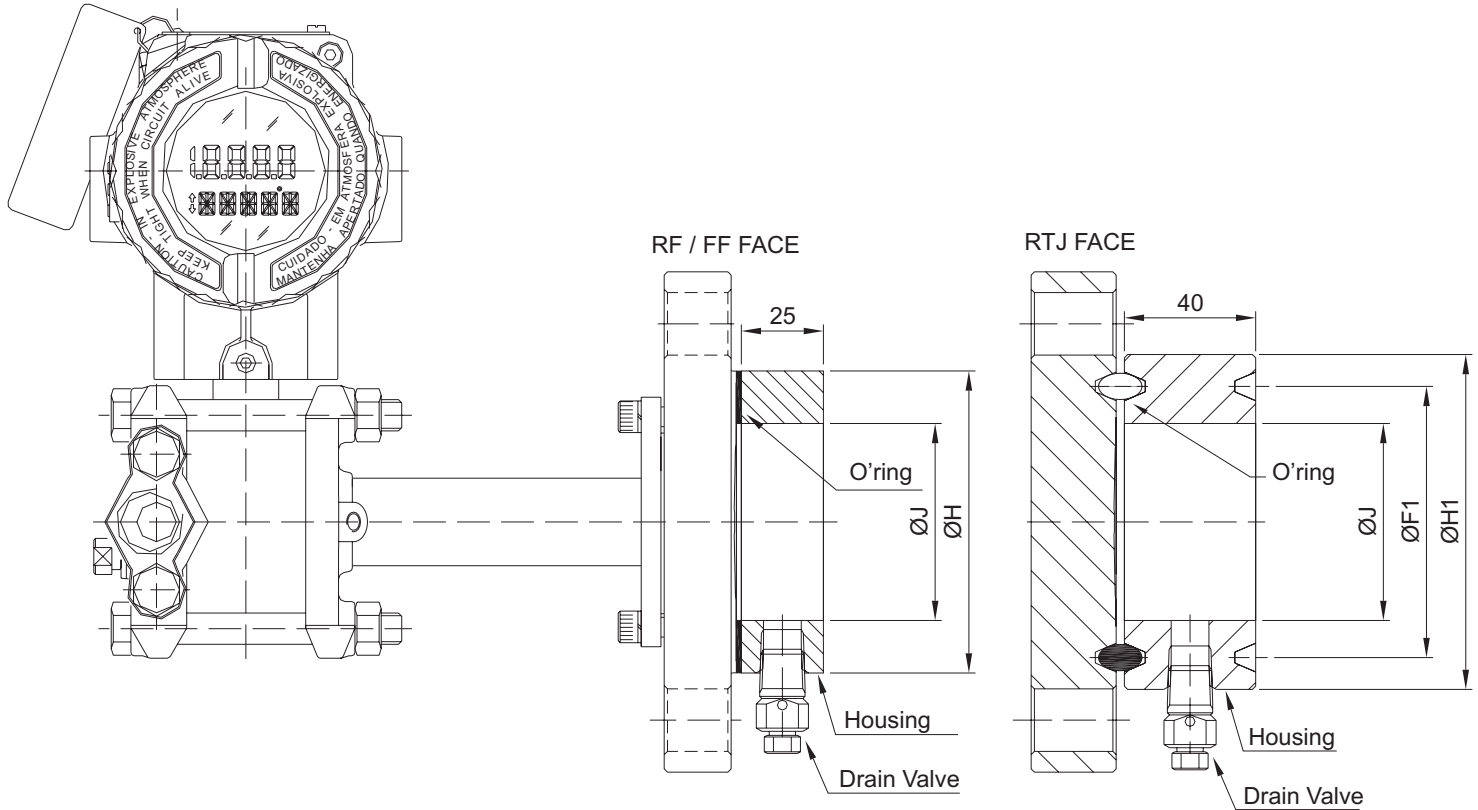
EN 1092-1 / DIN2501 DIMENSIONS- RF/ FF

DN	PN	A	B	C	E	F	G	HOLES
25	10/40	115 (4.53)	85 (3.35)	18 (0.71)	14 (0.55)	68 (2.68)	-	4
40	10/40	150 (5.91)	110 (4.33)	18 (0.71)	18 (0.71)	88 (3.46)	73 (2.87)	4
50	10/40	165 (6.50)	125 (4.92)	20 (0.78)	18 (0.71)	102 (4.01)	48 (1.89)	4
80	10/40	200 (7.87)	160 (6.30)	24 (0.95)	18 (0.71)	138 (5.43)	73 (2.87)	8
100	10/16	220 (8.67)	180 (7.08)	20 (0.78)	18 (0.71)	158 (6.22)	89 (3.5)	8
	25/40	235 (9.25)	190 (7.50)	24 (0.95)	22 (0.87)	162 (6.38)	89 (3.5)	8

NOTES:

- Extension Length mm (in): 0, 50 (1.96) 100 (3.93), 150 (5.9) ou 200 (7.87)
- Dimensions are mm (in)

LD400L - Flanged Pressure Transmitter with Housing



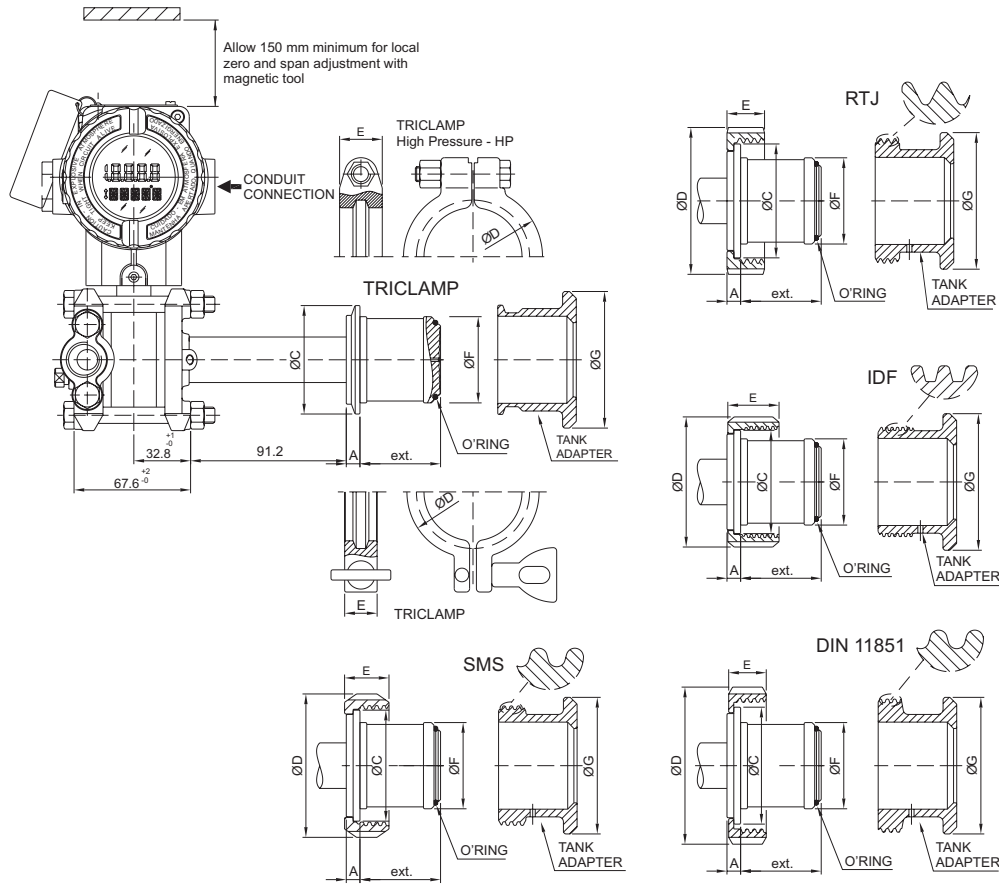
DIMENSIONS IN mm (")

ANSI-B 16.5 DIMENSIONS			
DN	CLASS	H	J
1.1/2"	ALL	73.2 (2.88)	48 (1.89)
2"		91.9 (3.62)	60 (2.36)
3"		127 (5.00)	89 (3.50)
4"		158 (6.22)	115 (4.53)
FORM D DIMENSIONS DIN EN1092-1/ DIN2501/2526			
DN	PN	H	J
40	ALL	88 (3.46)	48 (1.89)
50		102 (4.02)	60 (2.36)
80		138 (5.43)	89 (3.50)
100		158 (6.22)	115 (4.53)
JIS B 2202 DIMENSIONS			
DN	CLASS	H	J
40A	20K	81 (3.19)	48 (1.89)
50A	10K	96 (3.78)	60 (1.36)
	40K	105 (4.13)	60 (1.36)
80A	10K	126 (4.96)	89 (3.50)
	20K	132 (5.20)	89 (3.50)
100A	10K	151 (5.94)	115 (4.53)

DIMENSIONS IN mm (")

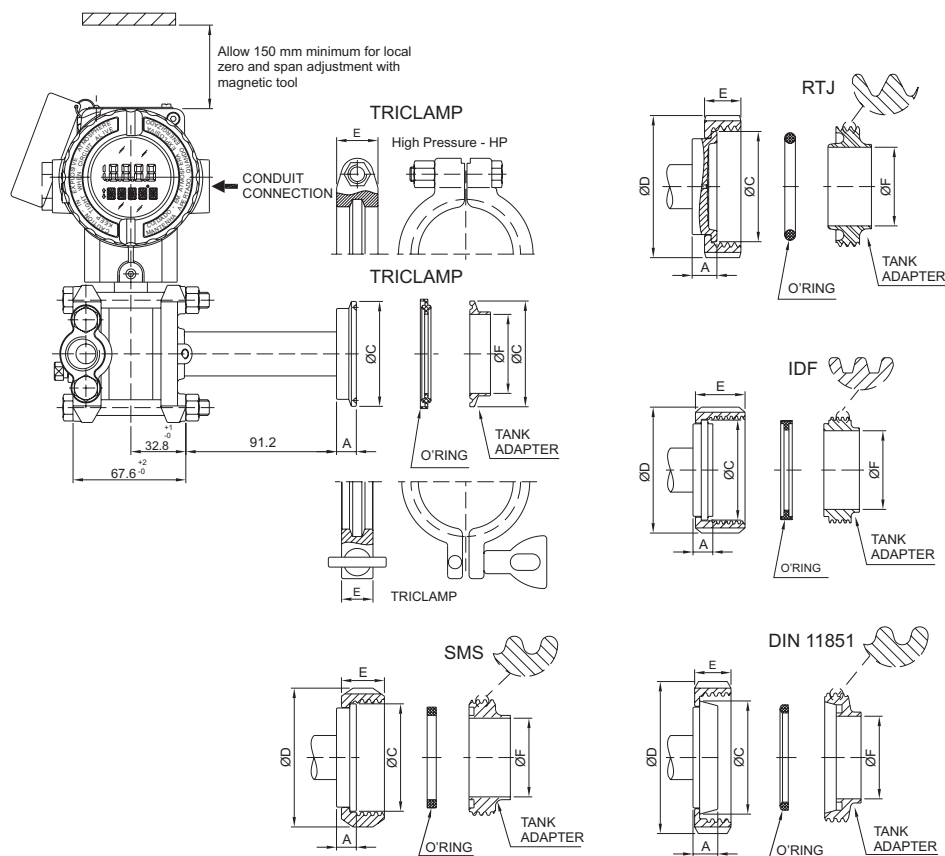
ANSI-B 16.5 DIMENSIONS - RTJ FACE					
DN	CLASSE	F1	O-RING	H1	J
1.1/2"	150	65.1 (2.56)	R19	82.5 (3.25)	48 (1.89)
	300	68.3 (2.69)	R20	90.5 (3.56)	48 (1.89)
	600	68.3 (2.69)	R20	90.5 (3.56)	48 (1.89)
	1500	68.3 (2.69)	R20	92 (3.62)	48 (1.89)
	2500	82.6 (3.25)	R23	114 (4.50)	48 (1.89)
2"	150	82.6 (3.25)	R22	102 (4.00)	60 (2.36)
	300	82.6 (3.25)	R23	108 (4.25)	60 (2.36)
	600	82.6 (3.25)	R23	108 (4.25)	60 (2.36)
	1500	95.3 (3.75)	R24	124 (4.88)	60 (2.36)
	2500	101.6 (4.00)	R26	133 (5.25)	60 (2.36)
3"	150	114.3 (4.50)	R29	133 (5.25)	89 (3.50)
	300	123.8 (4.87)	R31	146 (5.75)	89 (3.50)
	600	123.8 (4.87)	R31	146 (5.75)	89 (3.50)
4"	150	149.2 (5.87)	R36	171 (6.75)	115 (4.53)
	300	149.2 (5.87)	R37	175 (6.88)	115 (4.53)
	600	149.2 (5.87)	R37	175 (6.88)	115 (4.53)

LD400S - Sanitary Transmitter With Extension



LD400S							
CONNECTION WITH EXTENSION	Dimensions in mm (")						
	A	ØC	ØD	E	ØF	ØG	EXT.
Tri-Clamp DN50	8 (0.315)	63.5 (2.5)	76.5 (3.01)	18 (0.71)	52 (2.05)	80 (3.15)	47.2 (1.86)
Tri-Clamp DN50H P	8 (0.315)	63.5 (2.5)	81 (3.19)	25 (0.98)	52 (2.05)	80 (3.15)	47.2 (1.86)
Tri-Clamp-2 "	8 (0.315)	63.5 (2.5)	76.5 (3.01)	18 (0.71)	52 (2.05)	80 (3.15)	47.2 (1.86)
Tri-Clamp-2 "H P	8 (0.315)	63.5 (2.5)	81 (3.19)	25 (0.98)	52 (2.05)	80 (3.15)	47.2 (1.86)
Tri-Clamp-3 "	8 (0.315)	91 (3.58)	110 (4.33)	18 (0.71)	72.5 (2.85)	100 (3.94)	50 (1.96)
Tri-Clamp-3 "H P	8 (0.315)	91 (3.58)	115 (4.53)	25 (0.98)	72.5 (2.85)	100 (3.94)	50 (1.96)
Threaded DN25-D IN 11851	6 (0.24)	47.5 (1.87)	63 (2.48)	21 (0.83)	43.2 (1.7)	80 (3.15)	26.3 (1.03)
Threaded DN40-D IN 11851	8 (0.315)	56 (2.2)	78 (3.07)	21 (0.83)	52 (2.05)	80 (3.15)	47.2 (1.86)
Threaded DN50-D IN 11851	8 (0.315)	68.5 (2.7)	92 (3.62)	22 (0.86)	52 (2.05)	80 (3.15)	47.2 (1.86)
Threaded DN80-D IN 11851	8 (0.315)	100 (3.94)	127 (5)	29 (1.14)	72.5 (2.85)	100 (3.94)	50 (1.96)
Threaded SMS-2 "	8 (0.315)	65 (2.56)	84 (3.3)	26 (1.02)	52 (2.05)	80 (3.15)	47.2 (1.86)
Threaded SMS-3 "	8 (0.315)	93 (3.66)	113 (4.45)	32 (1.26)	72.5 (2.85)	100 (3.94)	50 (1.96)
Threaded RJT- 2"	8 (0.315)	66.7 (2.63)	86 (3.38)	22 (0.86)	52 (2.05)	80 (3.15)	47.2 (1.86)
Threaded RJT- 3"	8 (0.315)	92 (3.62)	112 (4.41)	22.2 (0.87)	72.5 (2.85)	100 (3.94)	50 (1.96)
Threaded IDF-2 "	8 (0.315)	60.5 (2.38)	76.2 (3)	30 (1.18)	52 (2.05)	80 (3.15)	47.2 (1.86)
Threaded IDF-3 "	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



LD400S							
CONNECTION WITHOUT EXTENSION	Dimensions in mm (")						
	A	ØC	ØD	E	ØF	ØG	EXT.
Tri-Clamp DN50	8 (0.315)	63.5 (2.5)	76.5 (3.01)	18 (0.71)	47.5 (1.87)	---	---
Tri-Clamp-11 /2"	12 (0.47)	50 (1.96)	61 (2.4)	18 (0.71)	35 (1.38)	---	---
Tri-Clamp-11 /2"H P	12 (0.47)	50 (1.96)	66 (2.59)	25 (0.98)	35 (1.38)	---	---
Tri-Clamp-2 "	12 (0.47)	63.5 (2.5)	76.5 (3.01)	18 (0.71)	47.6 (1.87)	---	---
Tri-Clamp-2 "H P	12 (0.47)	63.5 (2.5)	81 (3.19)	25 (0.98)	47.6 (1.87)	---	---
Tri-Clamp-3 "	12 (0.47)	91 (3.58)	110 (4.33)	18 (0.71)	72 (2.83)	---	---
Tri-Clamp-3 "H P	12 (0.47)	91 (3.58)	115 (4.53)	25 (0.98)	72 (2.83)	---	---
Threaded DN40-D IN 11851	13 (0.51)	56 (2.2)	78 (3.07)	21 (0.83)	38 (1.5)	---	---
Threaded DN50-D IN 11851	15 (0.59)	68.5 (2.7)	92 (3.62)	22 (0.86)	50 (1.96)	---	---
Threaded DN80-D IN 11851	16 (0.63)	100 (3.94)	127 (5)	29 (1.14)	81 (3.19)	---	---
Threaded SMS -11 /2"	12 (0.47)	55 (2.16)	74 (2.91)	25 (0.98)	35 (1.38)	---	---
Threaded SMS -2 "	12 (0.47)	65 (2.56)	84 (3.3)	26 (1.02)	48.6 (1.91)	---	---
Threaded SMS -3 "	12 (0.47)	93 (3.66)	113 (4.45)	32 (1.26)	73 (2.87)	---	---
Threaded RJT -2 "	15 (0.59)	66.7 (2.63)	86 (3.38)	22 (0.86)	47.6 (1.87)	---	---
Threaded RJT -3 "	15 (0.59)	92 (3.62)	112 (4.41)	22.2 (0.87)	73 (2.87)	---	---
Threaded IDF- 2"	12 (0.47)	60.5 (2.38)	76 (2.99)	30 (1.18)	47.6 (1.87)	---	---
Threaded IDF- 3"	12 (0.47)	87.5 (3.44)	101.6 (4)	30 (1.18)	73 (2.87)	---	---

Pressure

4-20 mA LD290



LD291

LD292

LD293

Pressure Transmitter

LD1.0



Gauge Economic Capacitive Pressure Transmitter

Pressure, Level and Flow



LD301

LD302

LD303

Pressure Transmitter

LD400



Pressure Transmitter with high performance

Level



RD400

Level Transmitter

Density/Concentration



DT301

DT302

DT303

Intelligent Density / Concentration Transmitter

Position



FY301

FY302

FY303

Valve Positioner



FY400

Valve Positioner with auto tuning



FY301

FY302

FY303

Valve Positioner with remote sensor



TP301

TP302

TP303

Position Transmitter

Temperature



TT301

TT302

TT303

Temperature Transmitter



TT411

Panel Mounting Temperature Transmitter



TT421

Head Mounting Temperature Transmitter

Junction Box



4-20 mA

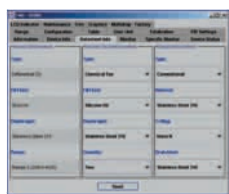
3 Ways Junction Box JM1



4-20 mA

4 Ways Junction Box JM400

Configurators



HART® Configurator Interface CONF401



HART® Configurator Interface DDCON 100



HART® Configurator for Palm HPC301

Interfaces



HART-RS232 Interface HI311



HART-USB Interface HI321

Converters



FP302
FOUNDATION
DeviceNet
ASi

Fieldbus to Pneumatic
Signal Converter



IF302
FOUNDATION
DeviceNet
ASi

Current to Fieldbus
Converter



FI302
FOUNDATION
DeviceNet
ASi

Fieldbus to Current
Converter



HI302
FOUNDATION
DeviceNet
ASi

HART® / Fieldbus
Interface HI302



HCC301
FOUNDATION
DeviceNet
ASi

HART® / Current
Converter HCC301

Controllers



LC700
FOUNDATION
DeviceNet
ASi

Programmable Logical
Controller
LC700



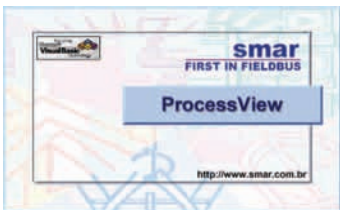
Digital Controller
CD600Plus



DFI302
FOUNDATION
DeviceNet
ASi

Interface Universal Fieldbus
DFI302

Systems



ProcessView
FOUNDATION
DeviceNet
ASi

ProcessView
Process Visualization Tool



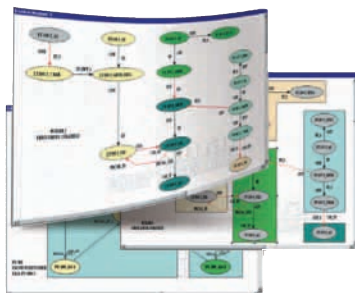
Studio302
FOUNDATION
DeviceNet
ASi

Studio302
System302 Management Tool



AssetView
FOUNDATION
DeviceNet
ASi

AssetView
On Line Plant Asset
Management Tool

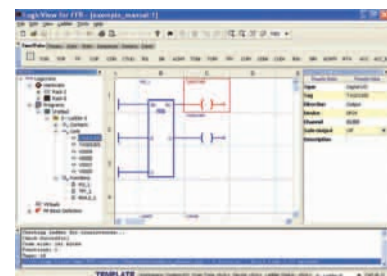


Syscon
FOUNDATION
DeviceNet
ASi

Syscon
System Configurator



Equipment Database
Plant Information Management



LogicView
IEC61131
Programming Tool

smar
www.smar.com

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Up-to-date address information is available on our website.

web: www.smar.com/contactus.asp

