



TRANSMITTER FOR DENSITY AND CONCENTRATION **DT300** SERIES

- Accuracy $\pm 0.0004 \text{ g/cm}^3$ (± 0.1 °Brix)
- Range $0 \text{ g/cm}^3 - 10 \text{ g/cm}^3$
- Multifunction rotary display LCD;
- Two-wire loop powered;
- Several different wetted materials;
- Single integrated unit, without moving parts;
- Factory calibration and self-calibration;
- Process recalibration without standardized reference, laboratory calibration and process interruption
- Self diagnostics;
- Explosion proof and intrinsically safe;
- Totally digital; including sensor, electronics, and communication;
- Configurable via local adjustment (FOUNDATION™ fieldbus and PROFIBUS PA);
- Easy firmware upgrade for FOUNDATION™ fieldbus and PROFIBUS PA.



Density and Concentration

DT300 Series

The DT300 Intelligent Density Transmitter is an instrument developed for the continuous, online measurement of liquid density and concentration, directly in the industrial process.



- Accuracy $\pm 0.0004 \text{ g/cm}^3$ ($\pm 0.1 \text{ }^\circ\text{Brix}$);
- Temperature compensation;
- Range $0 \text{ g/cm}^3 - 10 \text{ g/cm}^3$;
- Suitable for tank and pipe applications;
- Direct density or concentration reading in engineering units such as: g/cm^3 , Kg/m^3 , Specific Gravity, $^\circ\text{Brix}$, $^\circ\text{Baume}$, $^\circ\text{Plato}$, $^\circ\text{INPM}$, $^\circ\text{GL}$, $^\circ\text{API}$ (DT302 and DT303), % Solids, % Concentration, etc.
- Suitable for dynamic and static liquids;
- Factory calibration and Self calibration;
- Extensive library and function blocks execution capacity
- Advanced diagnostics;
- Supported by DD, EDDL and FDT/DTM;
- The control strategy is built from direct instantiation and deletion of function blocks;
- Configuration, monitoring and remote diagnosis through Smar and other manufacturers tools;
- Density, Concentration and Temperature in three Analog Input blocks;
- Easy maintenance;
- Three technology options: HART®, FOUNDATION™ fieldbus, and PROFIBUS PA.

HART® - 4 to 20 mA

- Multidrop operation mode;
- Supports DTM and EDDL.

FOUNDATION™ fieldbus

- 17 different types of function blocks for control strategies and advanced diagnostics;
- Up to 20 function blocks;
- Two analog inputs: density and concentration or temperature;
- Execution of up to 31 external links (19 Publisher and 12 Subscriber);
- 12 mA consumption;
- Dynamic block instantiation improves interchangeability;
- FieldComm Group registered and ITK approved;
- MVC (Multivariable Container) enabled.

PROFIBUS PA

- 12mA consumption;
- Three Function blocks for analog inputs: density, concentration and temperature;
- Configuration performed with ProfibusView by Smar or Simatic PDM;
- Supports DTM and EDDL;
- Profile 3.0 improves interchangeability.



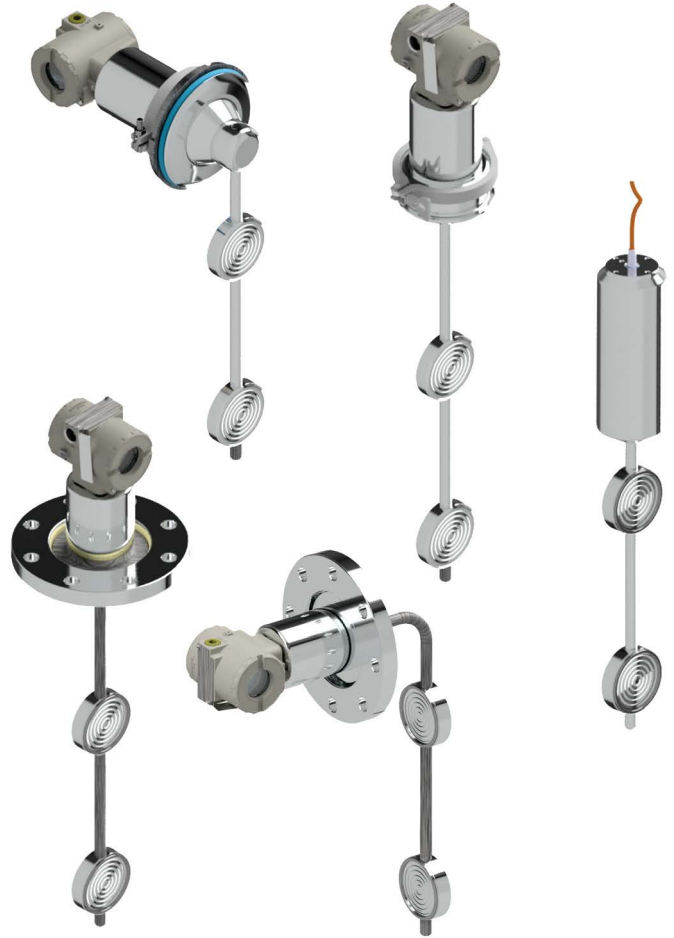
The DT300 Intelligent Density Transmitter is an instrument developed for the continuous, online measurement of liquid density and concentration, directly in the industrial process.

Its pioneer technology consists of a capacitive type differential pressure sensor coupled to a pair of pressure repeaters immersed in the process. A temperature sensor located between the two pressure repeaters is used to compensate the temperature variations in the process fluid.

A dedicated software, by means of an algorithm, calculates the fluid density.

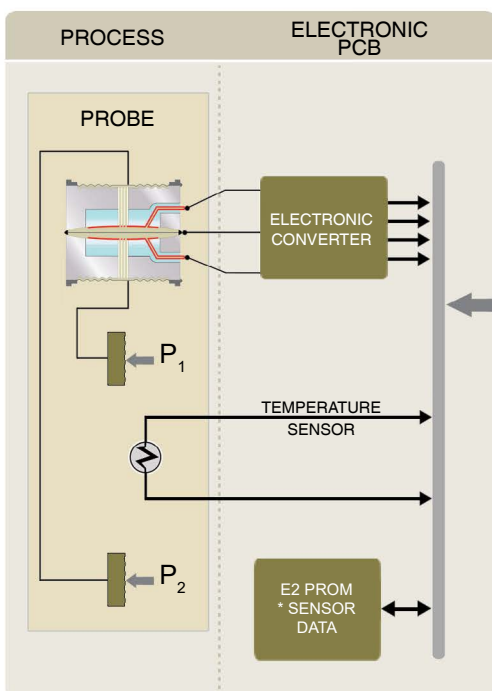
Depending on the industrial process, density may be expressed in g/cm^3 , Kg/m^3 , lb/ft^3 , Specific Gravity, Brix degree, Gay-Lussac degree, Baumé degree, Plato degree, INPM degree, API degree (DT302 and DT303), Solids %, Concentration %, etc.

Designed for process control applications, these 2-wire transmitters generate a signal proportional to the concentration/density. Digital communication for remote calibration and monitoring is also provided.

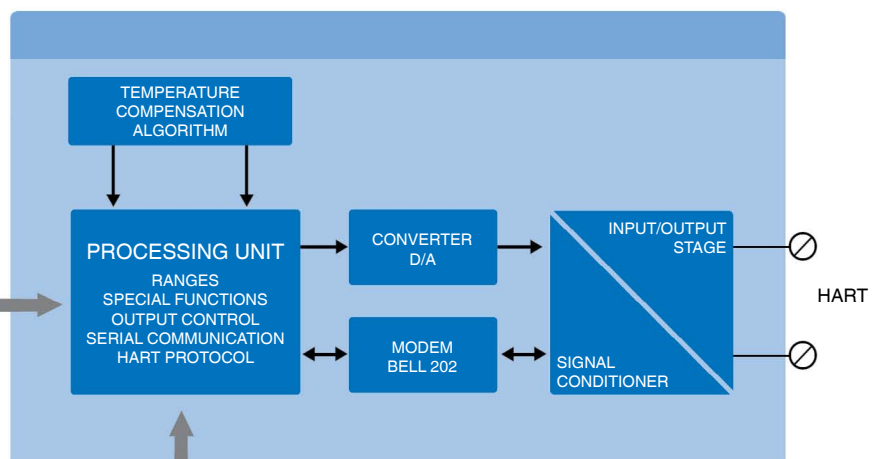


Block Diagram

Sensor Assembly



Main Processor Assembly



LCD Indicator Assembly



The DT30X is available in three models:

- DT30XI (Industrial Model) for general purpose;
- DT30XS (Sanitary Model) for food and other applications where sanitary connections are required.
- DT30XM (Submerged Model) mounting on the top of tank.

On models I and S, two types of mounting are available: top mounting (straight type) and side mounting (curved type) and in the M model only the straight type.

Installation may be done either in open or pressurized tanks, or directly in pipes since the DT300 is suitable for dynamic and static fluids.

The Sanitary model uses a Tri-Clamp connection to allow a quick and easy connection and disconnection from the process. The wetted surface finish is polished and then is free of crevices where food or bacteria can be collected.

Applications

- **Sugar and Alcohol Processing Plants:**

Brix of the sugarcane juice, brix of the must, brix of the syrup, brix of the molasses, brix of the solved juice, calcium solution of the Baumé, interface level of the hexane cycle, lime density, INPM degree of the hydrated alcohol, INPM degree of the anhydrid alcohol, etc.

- **Dairy Product Industries:**

Condensed milk, Lactose, Yogurt, Cream cheeses, Lactic Acids, etc.

- **Food Industry:**

Vegetable oils, miscellaneous extractions, fruit syrup, starch dilution, glucose, jams, jellies, sweets, honey, tomato pulp, citrus juices, etc.

- **Pulp and Paper Industries:**

Black liquor, green liquor, white liquor, red liquor, caustic soda concentration, ash dilution, talc dilution, pulp dilution, ink concentration, potassium hydroxide, etc.

- **Beverage Industry:**

Beer (Plato degree in the fermentation process) Soft Drinks (brix of the liquid sugar, etc.), liquors, wines, soluble coffee, malt, tequila, etc.

- **Chemical Industry:**

Acids, concentration/mixture, caustic soda, glycol, salt solution, detergent, toluene, urea, potassium, etc.

- **Mining Slurries:**

Mineral pulp, extraction of thins, flotation, thickening, acid concentration, starch dilution, scrapers, lime mud.

- **Petrochemical Industry:**

Gas washing water, lubricant oils, aromatic extraction, fuel oils, gasoline, kerosene, water/oil interface level.



DT300 Series are available in three different technologies: HART® (DT301), FOUNDATION™ fieldbus (DT302) and PROFIBUS PA (DT303). These instruments can be configured with Smar software and other manufacturers' configuration tools.

Local adjustment is available in DT302 and DT303. For these models is possible to configure concentration adjust, self-calibration, direct density or concentration reading in engineering units 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.

HART® - DT301

DT301 (HART® protocol) can be configured by configuration tools based on DD (Device Description) or DTM (Device Type Manager), such as AMS™, FieldCare™, PACTware™, HHT275 and HHT375, PRM Device Viewer, and DevComDroid.

For DT301 management and diagnostics, AssetView ensures continuous information monitoring.

FOUNDATION™ fieldbus - DT302

DT302 utilizes the FOUNDATION™ fieldbus H1 protocol, an open technology that allows any H1 enabled configuration tool to configure this device.

System302 is the system used to configure, maintain and operate the field devices.

Configuration tools such as AMS™ and HHT375 can configure DT302 devices. DD (Device Description) and CF (Capability File) files can be downloaded at either the Smar or FOUNDATION™ fieldbus website.

DT302 supports complex strategies configurations due to the high capacity and variety of dynamic instantiable function blocks.

Seventeen different types of function blocks are supported, and up to 20 function blocks can be running

simultaneously.

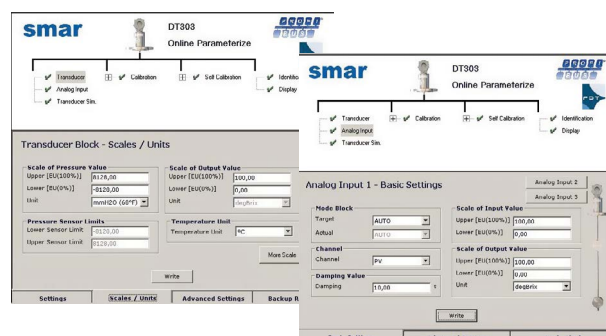
Maintenance procedures with AssetView diagnostics and status information from FOUNDATION™ fieldbus result in a safer plant with longer availability.



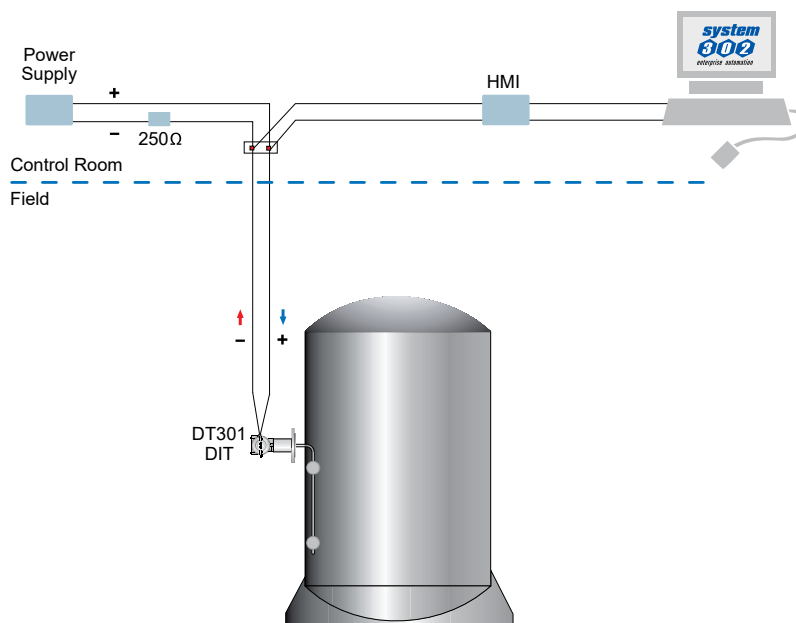
PROFIBUS PA - DT303

DT303 (PROFIBUS PA protocol) can be configured using ProfibusView or Simatic PDM and by the FDT (Field Device Tool) and DTM (Device Type Manager) concept tools, such as FieldCare™ and PACTware™. It can also be integrated by any PROFIBUS System using the GSD file.

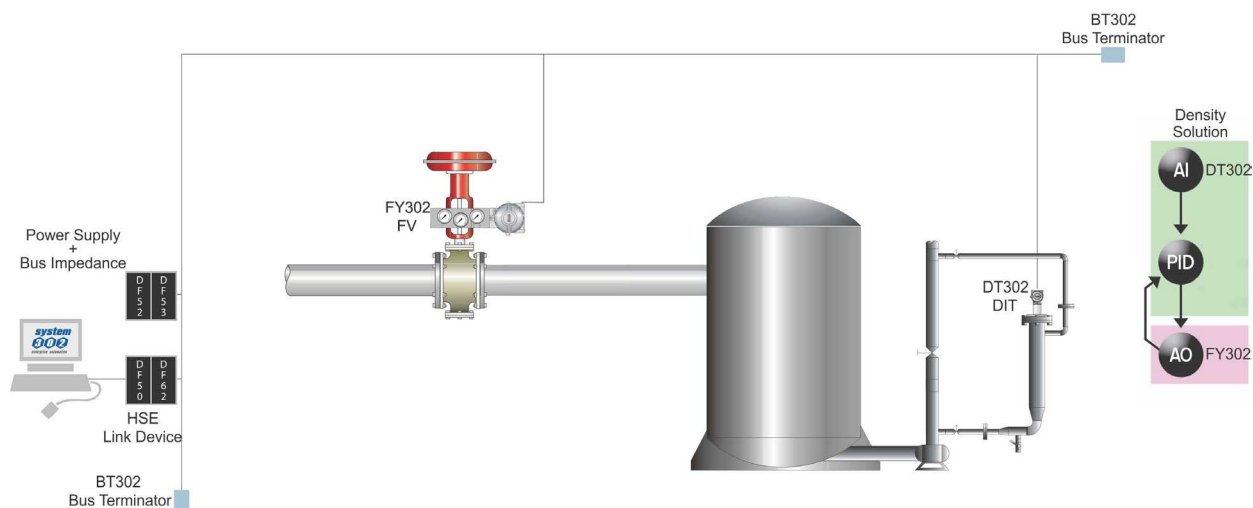
PROFIBUS PA also has quality and diagnostic information, improving plant management and maintenance.



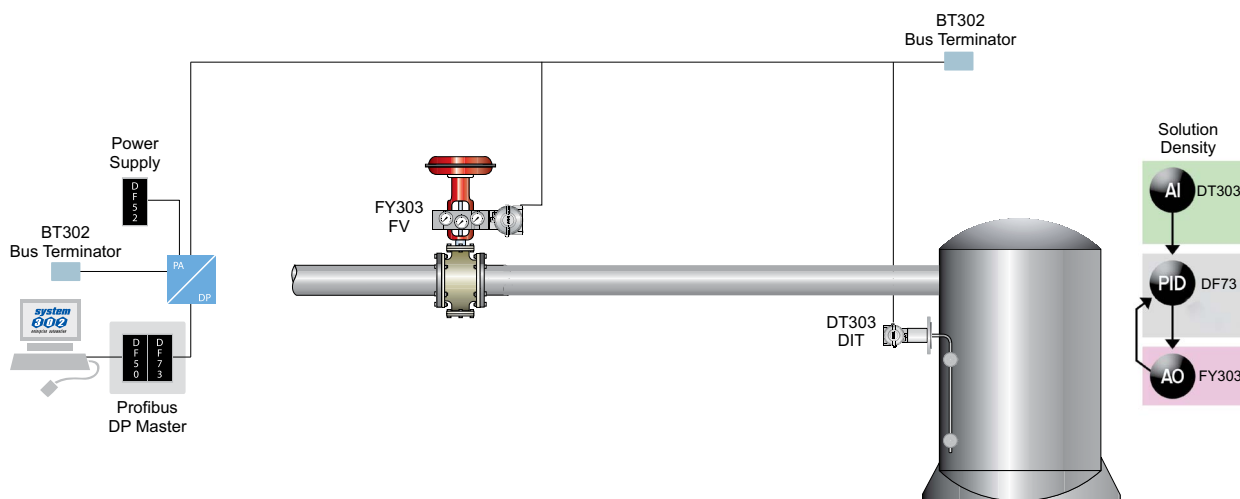
HART® - DT301



FOUNDATION™ fieldbus - DT302



PROFIBUS - DT303



Functional Specifications

Output and Communication Protocol	<p>HART®: Two-wire, 4-20 mA with super-imposed digital communication (HART® Protocol).</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: Digital only. Complies with IEC 61158-2:2000 (H1): 31.25 kbit/s voltage mode, bus powered.</p>
Power Supply/ Current Consumption	<p>HART®: 12 to 45 Vdc.</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: Bus powered: 9 to 32 Vdc. Quiescent current consumption: 12 mA.</p>
Indicator	4½-digit numerical and 5-character alphanumeric LCD indicator (optional).
Hazardous Area Certifications	<p>HART®, FOUNDATION™ fieldbus and PROFIBUS PA: INMETRO certification (CEPEL), FM, ATEX, and IECEx (Nemko-Presafe and Dekra-Exam) for intrinsically safe and explosion proof, INMETRO (CEPEL) and FM for dust ignition proof.</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: FISCO Field Device Ex ia IIC T4 FNICO Field Device Ex n1 IIC T4</p>
Zero and Span Adjustments	Noninteractive, via digital communication or local adjustment (only FOUNDATION™ fieldbus and PROFIBUS PA).
Failure Alarm (Diagnostics)	<p>Detailed diagnostics through communication for all protocols.</p> <p>HART®: 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.</p> <p>FOUNDATION™ fieldbus: For sensor circuit failures, events are generated and status is sent to link outputs. Detailed diagnostics are available in the contained parameters.</p> <p>PROFIBUS PA: For sensor or circuit failures, status is sent to output parameters. Detailed diagnostics are available in the contained parameters.</p>
Temperature Limits	<p>Ambient: -40 to 85 °C (-40 to 185 °F) Process: -20 to 150 °C (-04 to 302 °F) Storage: -40 to 100 °C (-40 to 212 °F) Digital Display: -10 to 60 °C (14 to 140 °F)</p>
Turn-on Time	<p>HART®: Performs within specifications in less than 5 seconds after power is applied to the transmitter.</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: Performs within specifications in less than 10 seconds after power is applied to the transmitter.</p>
Configuration	<p>HART®: By digital communication (HART® protocol) using the configuration software. It can also be configured using DD and FDT/DTM tools.</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: Basic configuration may be done using the local adjustment magnetic tool if device is fitted with display. Complete configuration is possible using configuration tools.</p>
Static Pressure Limit	7 MPa (70 kgf/cm²) (1015 psi).
Humidity Limits	0 to 100% RH.
Damping Adjustment	0 to 32 seconds in addition to intrinsic sensor response time (0.2 s) via digital communication.

Performance Specifications

Reference Conditions	Temperature of 25 °C (77 °F), atmospheric pressure, power supply of 24 Vdc, silicone oil fill fluid, isolating diaphragms in 316L SST and digital trim equal to lower and upper range values.
Accuracy	For range 1: $\pm 0.0004 \text{ g/cm}^3$ ($\pm 0.1 \text{ }^\circ\text{Bx}$) For range 2: $\pm 0.0007 \text{ g/cm}^3$ Linearity, hysteresis and repeatability effects are included.
Stability (for 3 months)	For range 1: $0.021 \times 10^{-3} \text{ g/cm}^3$ For range 2: $0.083 \times 10^{-3} \text{ g/cm}^3$
Ambient Temperature Effect (per 10 °C)	For range 1: $0.003 \times 10^{-3} \text{ g/cm}^3$ For range 2: $0.013 \times 10^{-3} \text{ g/cm}^3$
Static Pressure Effect	Zero Static Pressure For range 1: $0.001 \times 10^{-3} \text{ g/cm}^3$ For range 2: $0.004 \times 10^{-3} \text{ g/cm}^3$
Power Supply Effect	$\pm 0.005\%$ of calibrated span per volt.
Mounting Position Effect	It can be eliminated after installation.
Electro-Magnetic Interference Effect	Designed to comply with IEC 61326-1, IEC 61326-2-3 , IEC 61000-6-4 and IEC 61000-6-2.

Physical Specifications

Electrical Connection	1/2 - 14 NPT M20 X 1.5 PG 13.5 DIN
Process Connection	Industrial Model: AISI316L Stainless Steel Flange, in accordance with ASME B16.5 or EN1092-1 (Former DIN2526) Sanitary Model: AISI316L Stainless Steel Triclamp (Clamp 304/ Nut 316L)
Wetted Parts	Isolating Diaphragms: 316L SST or Hastelloy C276. Wetted O-Rings (For Sanitary Model): Buna N, Viton™ or Teflon™.
Nonwetted Parts	Electronic Housing: Injected aluminum with polyester painting or 316 SST. Complies with NEMA 4X, IP66/68 W. Fill Fluid: Silicone (DC200/20), Neobee M20 Propylene Glycol. Cover O-Rings: Buna N. Identification Plate: 316 SST.
Mounting	Side or top mounted.
Approximate Weights	9 kg (20 lb) – Sanitary Model. 12 kg (26 lb) – Industrial Model.

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

HART® is a trademark of FieldComm Group.

Foundation is a trademark of FieldComm Group.

Profibus is a trademark of Profibus International.

This product is protected by US patent numbers 6,234,019 and D439,855.

MODEL	INDUSTRIAL CONCENTRATION/DENSITY TRANSMITTER									
DT301 I	HART® & 4-20 mA									
DT302 I	FOUNDATION™ fieldbus									
DT303 I	PROFIBUS PA									
COD. Range										
1	0	to	3 g/cm³	Note: These measurement ranges are provided for our standard Density Transmitter, 250 mm of distance between diaphragms (centers) on the probe and are valid for straight and curved devices. For instruments with distance between centers of 500 and 800mm, please see table 1 page 10.						
2	0	to	10 g/cm³							
COD. Wetted Parts Material										
H	Hastelloy C276 / Hastelloy C276									
I	316L SST / 316L SST									
L	316L SST with HALAR coating / 316L SST with HALAR coating									
U	Hastelloy C276 / 316L SST									
Z	Others - Specify									
COD. Fill Fluid										
N	Neobee- M20 Propylene Glycol - Food Grade									
S	DC 200/20 Silicone Oil									
COD. Local Indicator										
0	Without Indicator									
1	With Digital Indicator									
COD. Electrical Connection										
0	½ - 14 NPT (4)					A	M20 X 1.5 (4)			
1	1/2 - 14 NPT X 3/4 NPT (316 SST) - With Adapter (5)					B	PG 13.5 DIN (7)			
2	1/2 - 14 NPT X 3/4 BSP (316 SST) - With Adapter (7)					Z	Others – Specify			
3	1/2 - 14 NPT X 1/2 BSP (316 SST) - With Adapter (7)									
COD. Mounting										
1	Top - Between Centre of the Sensors 500 mm									
2	Side - Between Centre of the Sensors 500 mm									
3	Top - Between Centre of the Sensors 800 mm									
4	Side - Between Centre of the Sensors 800 mm									
5	Top - Between Centre of the Sensors 250 mm									
6	Side - Between Centre of the Sensors 250 mm									
7	Top - Between Centre of the Sensors 250 mm with normalizer tube									
Z	Special - See notes									
COD. Process Connection										
5	4" ANSI B 16.5									
A	DN 100 DIN 2526 - FORM D									
Z	Others – Specify									
COD. Pressure Class										
1	150#									
2	300#									
3	600#									
C	PN 25/40									
Z	Others - Specify									
COD. Flange Face										
0	RF									
2	RTJ									
COD. Continues Next Page										

DT301I	-	1		I		S	-	1		0		7	-	5		1	/	0		*
DT302I	-	1		I		S	-	1		0		7	-	5		1	/	0		*
DT303I	-	1		I		S	-	1		0		7	-	5		1	/	0		*

* Leave it blank for no optional items.

← TYPICAL MODEL NUMBER

MODEL	INDUSTRIAL CONCENTRATION/DENSITY TRANSMITTER (CONTINUATION)										
	COD. Identification Plate										
	I1	FM: XP, IS, NI, DI (USA) (6)									
	I4	EXAM: EX-IA; NEMKO: EX-D (ATEX - GAS)									
	I5	CEPEL: EX-D, EX-IA (INMETRO - GAS)									
	I6	Without Certification									
	I7	EXAM, EX-IA (ATEX - MINING)									
	IO	CEPEL (Combustible dust)									
	COD. Housing Material (1) (2)										
	H0	Aluminum (IP/Type)									
	H1	316 SST (IP/Type)									
	H2	Aluminum for Saline Atmosphere (IPW/TypeX) (3)									
	H3	316 SST for Saline Atmosphere (IPW/TypeX) (3)									
	H4	Copper Free Aluminum (IPW/TypeX) (3)									
	COD. Special (See notes)										
	Z0	Not applicable									
	ZZ	See notes									
	COD. Tag Plate										
	J0	With Tag									
	J1	Blank									
	COD. Display Unit										
	Y0	Percentage									
	Y1	1: Current – I (mA)									
	Y2	1: Density/Concentration (Eng. Unit)									
	Y3	1: Temperature (°C)									
	Y4	2: Current – I (mA)									
	Y5	2: Density/Concentration (Eng. Unit)									
	Y6	2: Temperature (°C)									
	YU	2: User's Specification									
	COD. Painting										
	P0	Gray Munsell N 6.5 Polyester									
	P1	Safety Blue Epoxy – Immersion Condition-Petrobras N1021									
	P2	Safety Blue Epoxy – Atmospheric Zone - Petrobras N1021									
	P3	Black Polyester									
	P8	Without Painting									
	P9	Blue Safety Epoxy									
	COD. Manufacturing Standard										
	S0	Smar									
	COD. Diaphragm Thickness										
	N0	Standard									
	COD. Probe Strengthening										
	R0	Standard									
	R1	With probe strengthening									
	COD. Mounting Position										
	E0	Standard									
	E1	Reverse position									

DT301I-1IS-107-510	I6	H0	Z0	J0	Y5	P0	S0	N0	R0	E0
DT302I-1IS-107-510	I6	H0	Z0	J0	Y5	P0	S0	N0	R0	E0
DT303I-1IS-107-510	I6	H0	Z0	J0	Y5	P0	S0	N0	R0	E0

← TYPICAL MODEL NUMBER

* Leave it blank for no optional items.

Notes

(1) IPX8 tested in 10 meters of water column for 24 hours.

(2) Ingress Protection:

Product	CEPEL	NEMKO / EXAM	FM
DT30X	IP66/68/W	IP66/68/W	Type 4X/6

(3) IPW / TypeX tested for 200 hours according to NBR 8094 / ASTM B 117 standard.

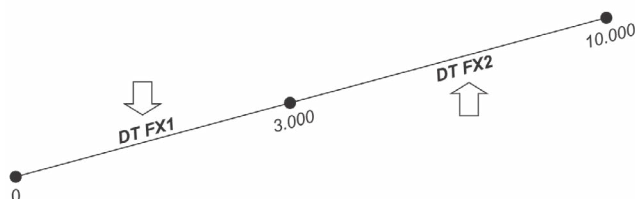
(4) Certification Ex d for FM / ATEX /INMETRO.

(5) Certification Ex d for INMETRO.

(6) Only for DT301.

(7) Options not certified for Explosive Atmosphere.

Table 1		
Dimensions between diaphragms (centers) mm	Limit Values	
	Measuring range fx1	Measuring range fx2
(mm)	(kg/m3)	(kg/m3)
250	0 - 3000	0 - 10000
500	0 - 2000	0 - 10000
800	unavailable	350 - 7000



MODEL	SANITARY CONCENTRATION/DENSITY TRANSMITTER										
DT301 S	HART® & 4-20 mA										
DT302 S	FOUNDATION™ fieldbus										
DT303 S	PROFIBUS PA										
COD.		Range								Note: These measurement ranges are provided for our standard Density Transmitter, 250 mm of distance between diaphragms (centers) on the probe and are valid for straight and curved devices. For instruments with distance between centers of 500mm, please see table 1 page 12.	
1	0	to		3 g/cm³							
2	0	to		10 g/cm³							
COD.		Diaphragm Material / Probe									
I	316L SST / 316L SST										
U	Hastelloy C276/ 316L SST										
COD.		Fill Fluid									
N	Neobee- M20 Propylene Glycol - Food Grade										
S	DC 200/20 Silicone Oil										
COD.		Local Indicator									
0	Without Indicator										
1	With Digital Indicator										
COD.		Electrical Connection									
0	½ - 14 NPT (4)						A B		M20 X 1.5 (4) PG 13.5 DIN (7)		
1	1/2 - 14 NPT X 3/4 NPT (316SST) - With Adapter (5)										
2	1/2 - 14 NPT X 3/4 BSP (316SST) - With Adapter (7)										
3	1/2 - 14 NPT X 1/2 BSP (316SST) - With Adapter (7)										
COD.		Mounting									
1	Top - Between Centre of the Sensors 500 mm										
2	Side - Between Centre of the Sensors 500 mm										
3	Top - Between Centre of the Sensors 250 mm										
4	Side - Between Centre of the Sensors 250 mm										
COD.		Process Connection									
J	Tri-clamp - 4" 300#										
K	SMS Thread Diameter 89 RD120-4										
COD.		Wetted O-Rings Material									
B	Buna-N										
V	Viton										
T	Teflon										
COD.		Tank Adapter									
0	Without Tank Adapter (Supplied by Customer)										
2	Curved DT30XS with adapter for D>4M tank										
3	Curved DT30XS with adapter for 1.2M < D < 3.8M tank										
4	Curved DT30XS with adapter for 0.5M < D < 1M tank										
5	Straight DT30XS with adapter (welded)										
COD.		Tri-Clamp									
0	Without Tri-clamp										
1	With Tri-clamp in 304 SST										
COD.		Continues Next Page									

DT301S	1	I	N	1	0	2	J	B	0	1	/	*
DT302S	1	I	N	1	0	2	J	B	0	1	/	*
DT303S	1	I	N	1	0	2	J	B	0	1	/	*

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* Leave it blank for no optional items.

MODEL	SANITARY CONCENTRATION/DENSITY TRANSMITTER (CONTINUATION)						
	COD.	Identification Plate					
	I1	FM: XP, IS, NI, DI (USA) (6)					
	I4	EXAM: EX-IA; NEMKO: EX-D (ATEX - GAS)					
	I5	CEPEL: EX-D, EX-IA (INMETRO - GAS)					
	I6	Without Certification					
	I7	EXAM, EX-IA (ATEX - MINING)					
	IO	CEPEL (Combustible dust)					
	COD.	Housing Material (1) (2)					
	H0	Aluminum (IP/Type)					
	H1	316 SST (IP/Type)					
	H2	Aluminum for Saline Atmosphere (3) (IPW/TypeX)					
	H3	316 SST for Saline Atmosphere (3) (IPW/TypeX)					
	H4	Copper Free Aluminum (3) (IPW/TypeX)					
	COD.	Special (See notes)					
	Z0	Not applicable					
	ZZ	See notes					
	COD.	Tag Plate					
	J0	With Tag					
	J1	Blank					
	COD.	Display Unit					
	Y0	Percentage					
	Y2	1: Density/Concentration (Eng. Unit)					
	YU	2: User's Specification					
	COD.	Painting					
	P0	Gray Munsell N 6.5 Polyester					
	P1	Safety Blue Epoxy – Immersion Condition-Petrobras N1021					
	P2	Safety Blue Epoxy – Atmospheric Zone - Petrobras N1021					
	P3	Black Polyester					
	P8	Without Painting					
	P9	Blue Safety Epoxy					
	COD.	Manufacturing Standard					
	S0	Smar					

DT301S-1IN-102-JB11 / I6 | H0 | Z0 | J0 | Y2 | P0 | S0

DT302S-1IN-102-JB11 / I6 | H0 | Z0 | J0 | Y2 | P0 | S0

DT303S-1IN-102-JB11 / I6 | H0 | Z0 | J0 | Y2 | P0 | S0

← TYPICAL MODEL NUMBER

* Leave it blank for no optional items.

Notes

(1) IPX8 tested in 10 meters of water column for 24 hours.

(2) Ingress Protection:

Product	CEPEL	NEMKO / EXAM	FM
DT30X	IP66/68/W	IP66/68/W	Type 4X/6

(3) IPW / TypeX tested for 200 hours according to NBR 8094 / ASTM B 117 standard.

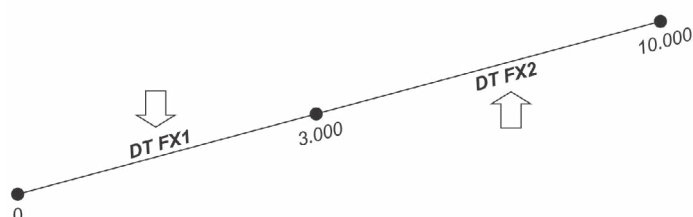
(4) Certification Ex d for FM / ATEX / INMETRO.

(5) Certification Ex d for INMETRO..

(6) Only for DT301

(7) Options not certified for Explosive Atmosphere.

Table 1		
Dimensions between diaphragms (centers) mm	Limit Values	
	Measuring range fx1	Measuring range fx2
(mm)	(kg/m ³)	(kg/m ³)
250	0 - 3000	0 - 10000
500	0 - 2000	0 - 10000



MODEL DT301M		SUBMERSIBLE CONCENTRATION/DENSITY TRANSMITTER										
COD.		Range										
1	0	to		3 g/cm³								Note: These measurement ranges are provided for our standard Density Transmitter, 250 mm of distance between diaphragms (centers) on the probe and are valid for straight and curved devices. For instruments with distance between centers of 500mm, please see table 1 on this page.
2	0	to		10 g/cm³								
COD.		Diaphragm Material										
H		Hastelloy C276										
COD.		Probe Material										
I		316L SST										
COD.		Mounting										
1	250 mm											
2	500 mm											
COD.		Fill Fluid										
S		Silicone Oil DC 200/20										
COD.		Normalizer Tube										
0		Without Tube										
1		With 304 SST Tube										
COD.		Rod Type										
1		316 SST Tubular Rod										
2		Flanged Hose										
COD.		Rod Length										
1		1m										
2		2m										
3		3m										
4		4m										
5		5m										
6		6m										
7		7m										
8		8m										
COD.		Power Supply Cable Length										
1		10m										
2		15m										

DT301M

1

H

I

1

S

0

1

1

1

1

←

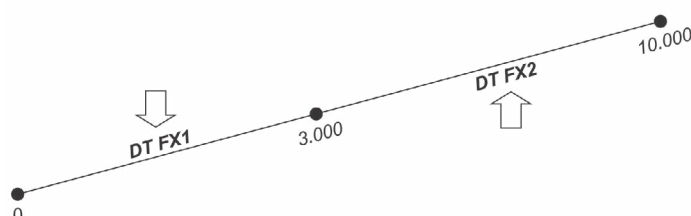
TYPICAL MODEL NUMBER

← TYPICAL MODEL NUMBER

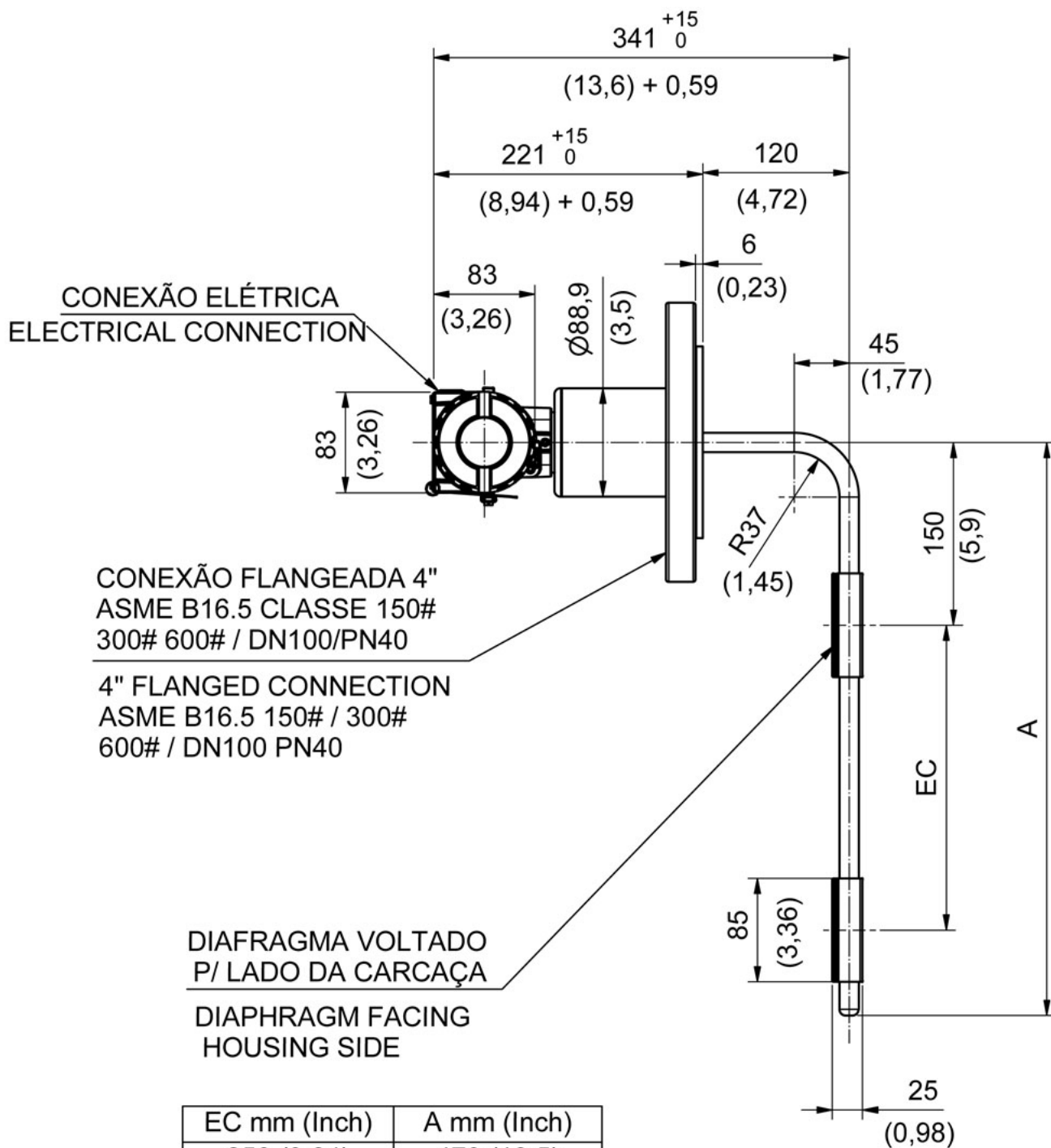
MODEL DT301M		SUBMERSIBLE CONCENTRATION/DENSITY TRANSMITTER (CONTINUATION)										
	COD.		Identification Plate									
	I6		Without Certification									
	COD.		Tag Plate									
	J0		With Tag Blank According notes									
	J1											
	J2											
	COD.		Centralizer									
	C0		Standard With Centralizer									
	C1											
	COD.		Probe Strengthening									
	R0		Standard									
DT301M	I6	J0	C0	R0	← TYPICAL MODEL NUMBER							

← TYPICAL MODEL NUMBER

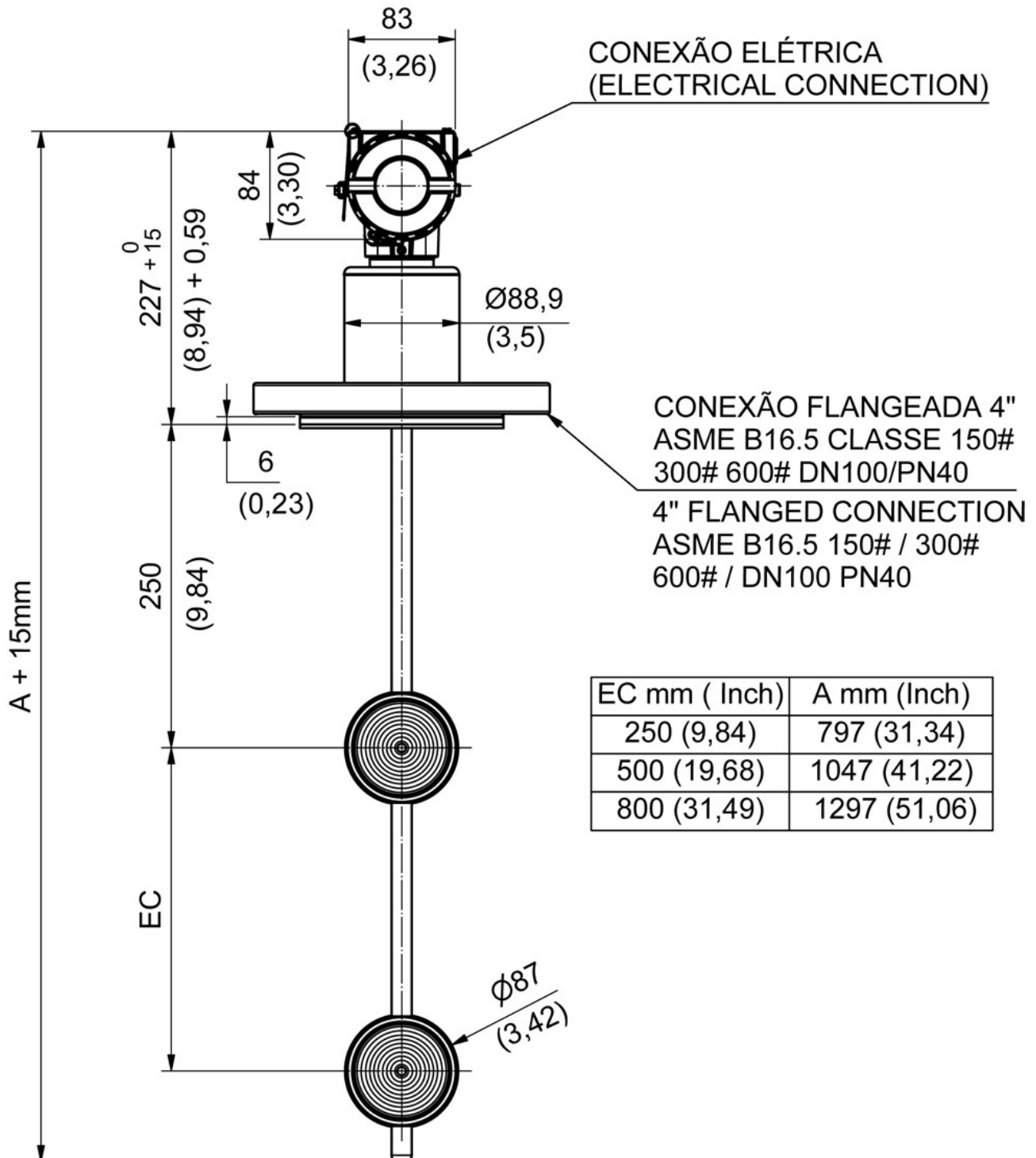
Table 1		
Dimensions between diaphragms (centers) mm	Limit Values	
	Measuring range fx1	Measuring range fx2
(mm)	(kg/m ³)	(kg/m ³)
250	0 - 3000	0 - 10000
500	0 - 2000	0 - 10000



Industrial Model - Curved

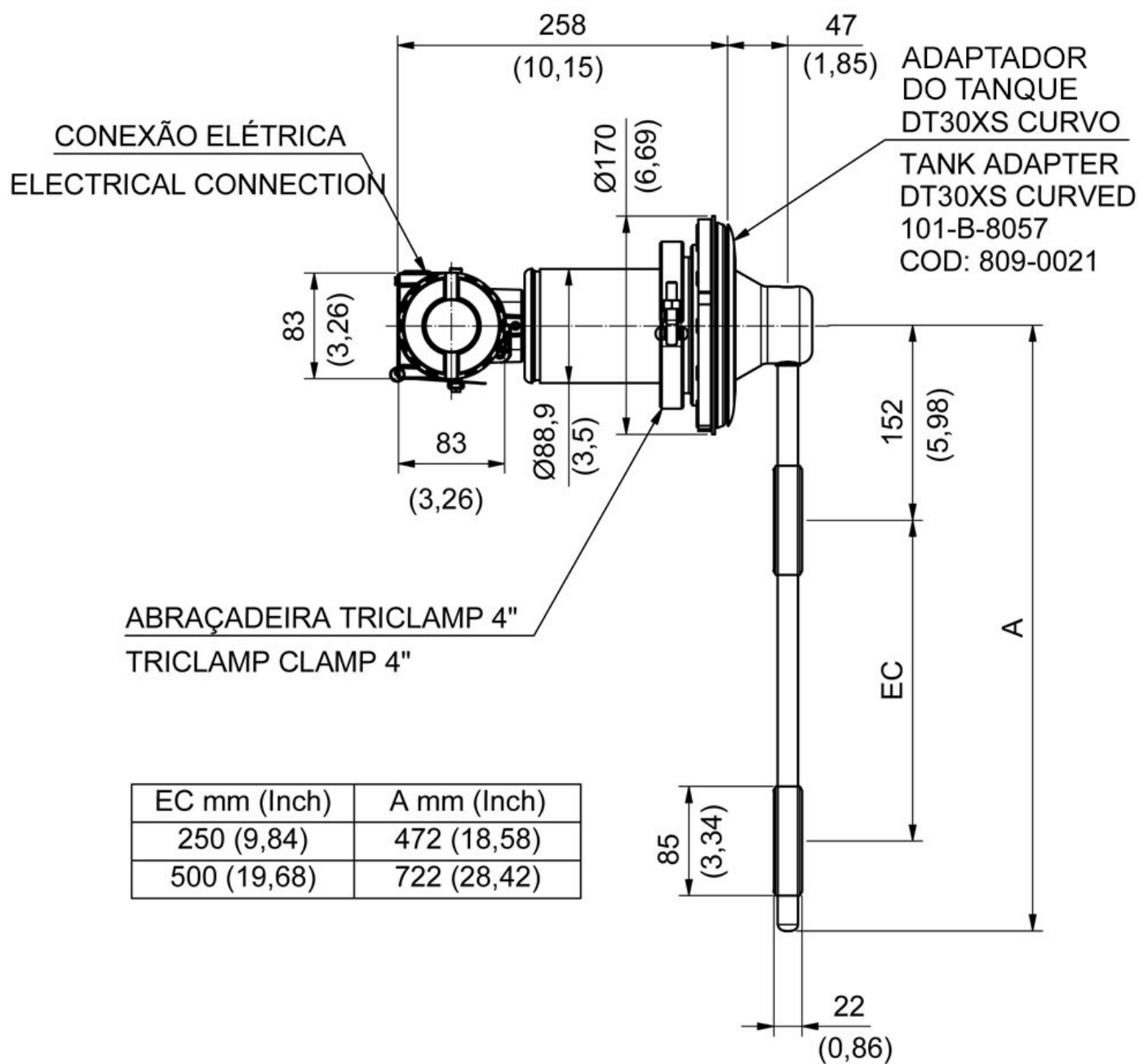


Industrial Model - Straight



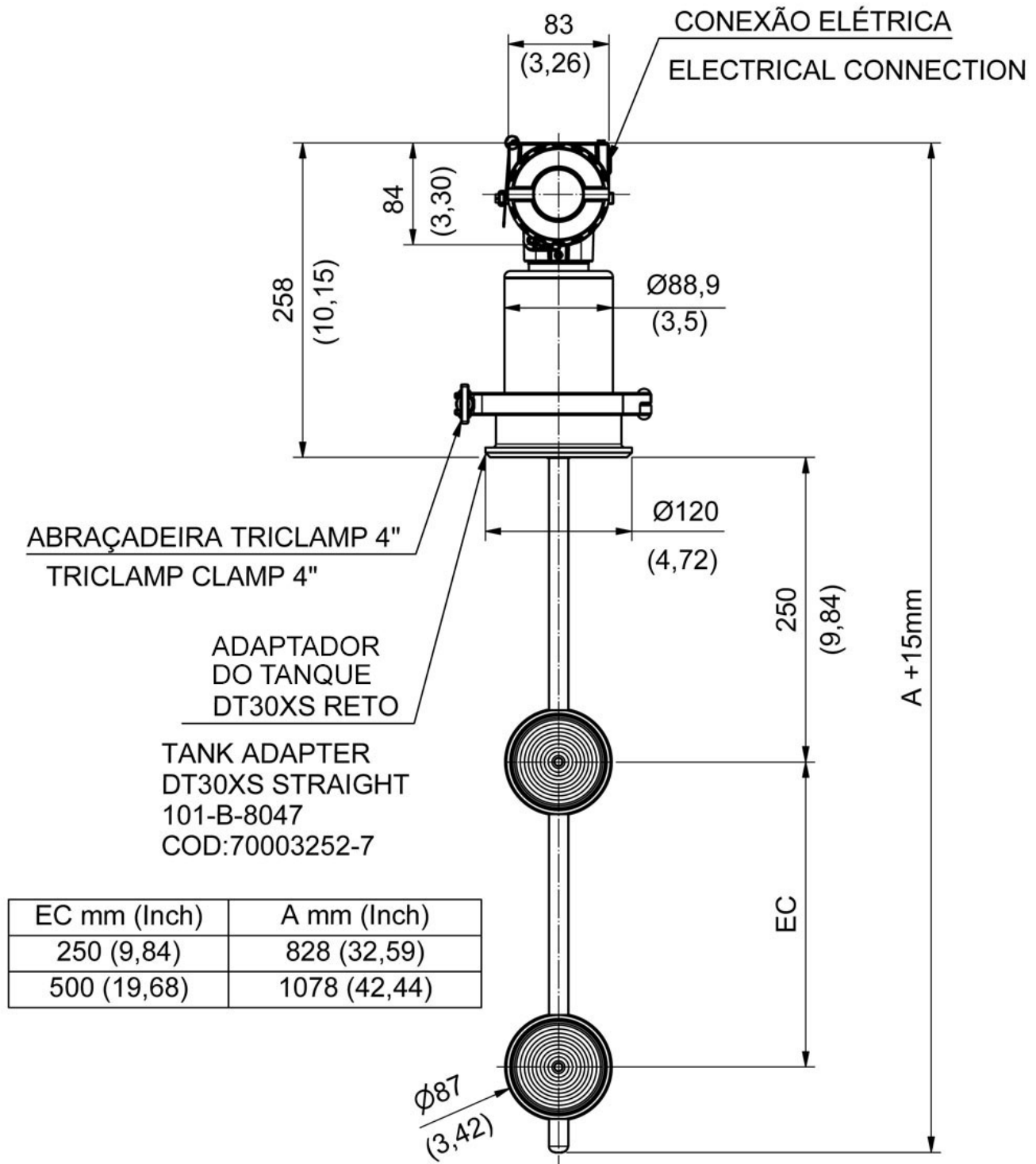
Dimensions in millimeters (inches)

Sanitary Model - Curved



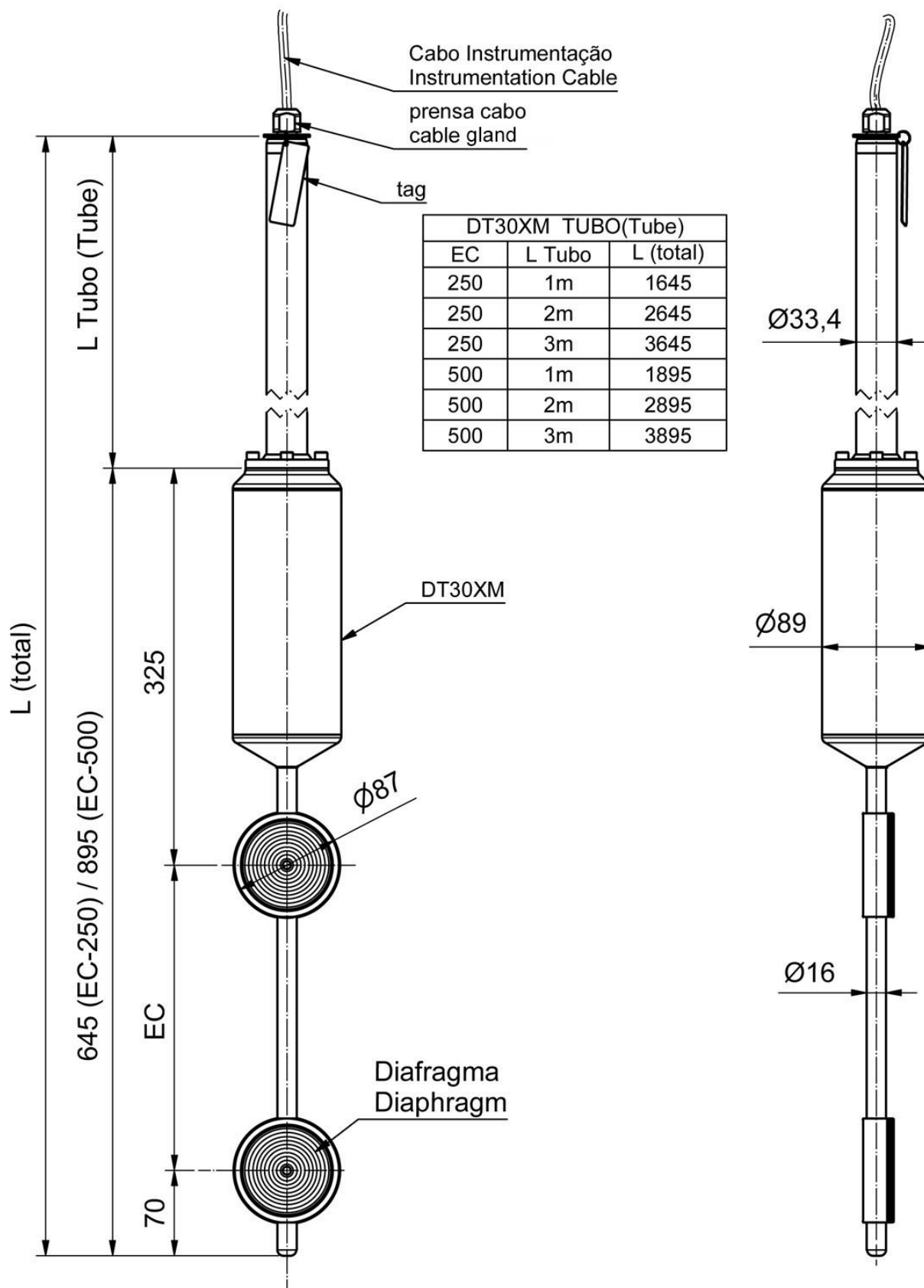
Dimensions in millimeters (inches)

Sanitary Model - Straight



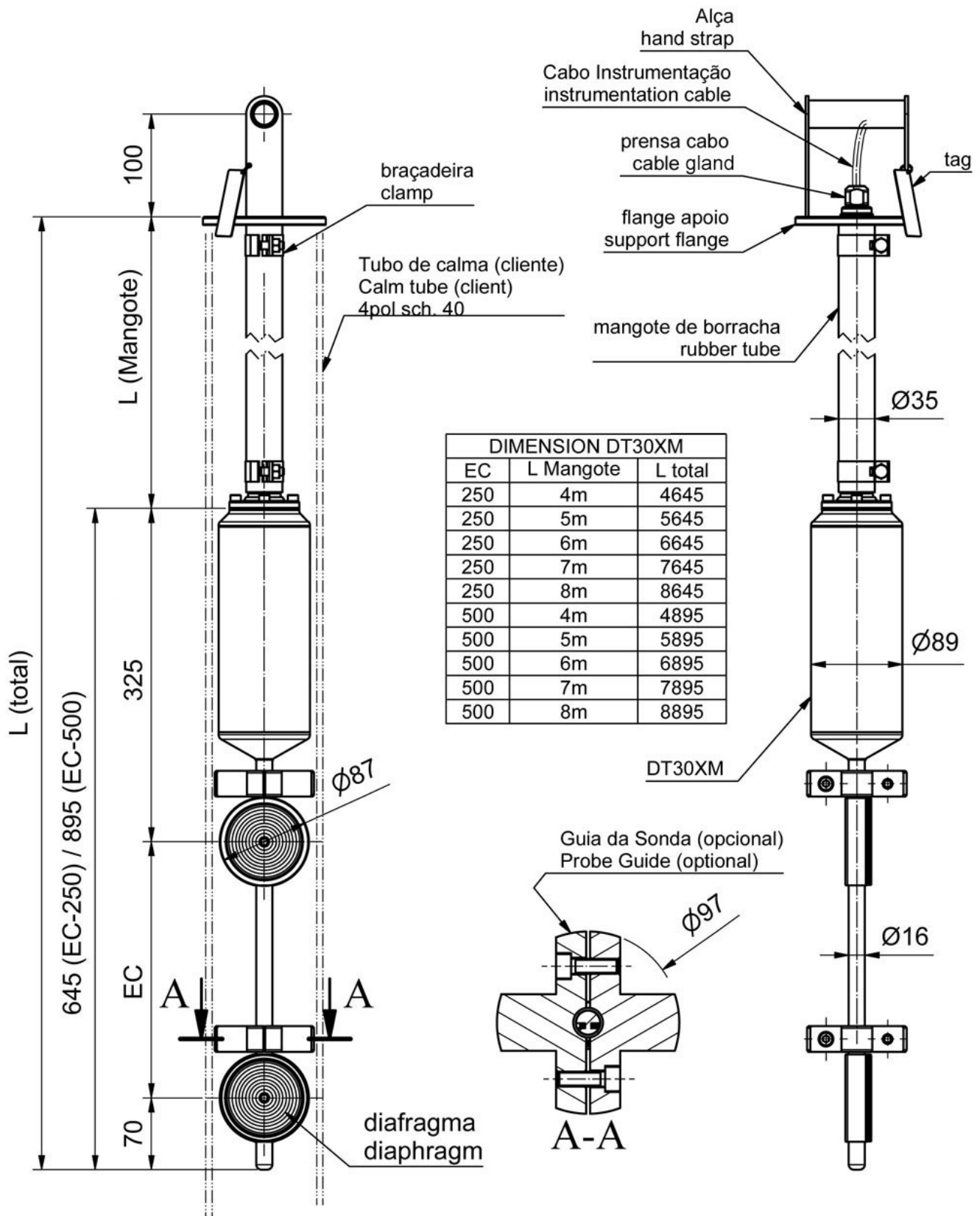
Dimensions in millimeters (inches)

Submersible Model - SST Tubular Rod



Dimensions in millimeters (inches)

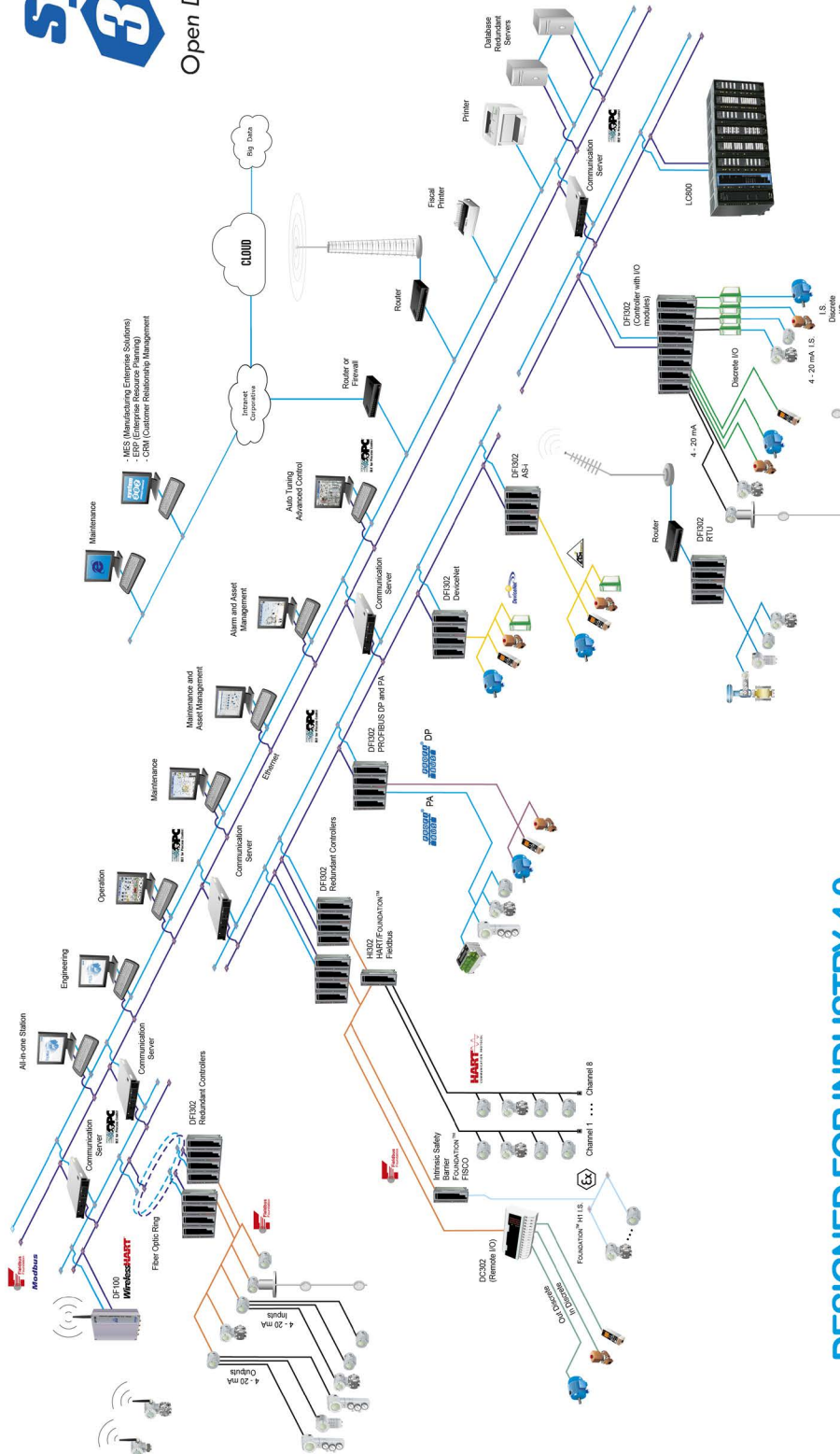
Submersible Model - Hose Rod



Dimensions in millimeters (inches)

system 302

Open Digital Ecosystem



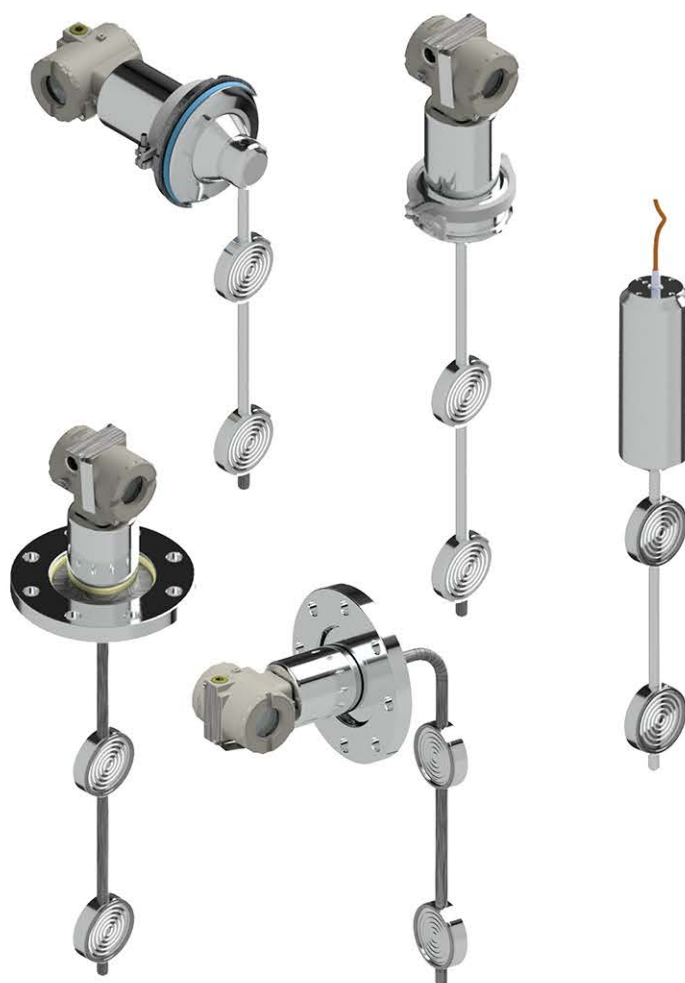
DESIGNED FOR INDUSTRY 4.0

PROVIDING RELIABLE CHOICES



DT300 Series

Transmitter for density and concentration



Contact us



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