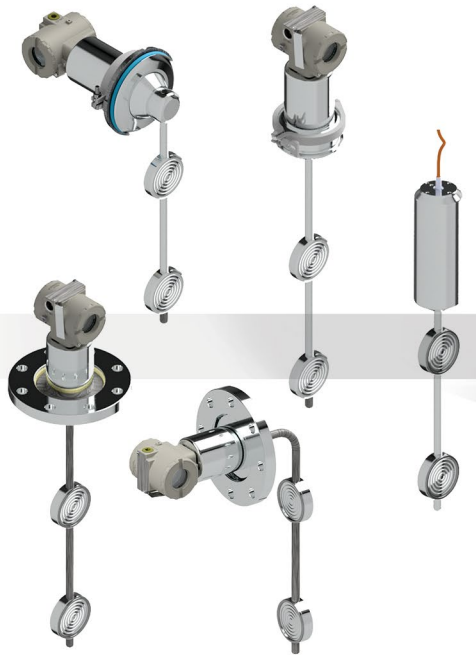
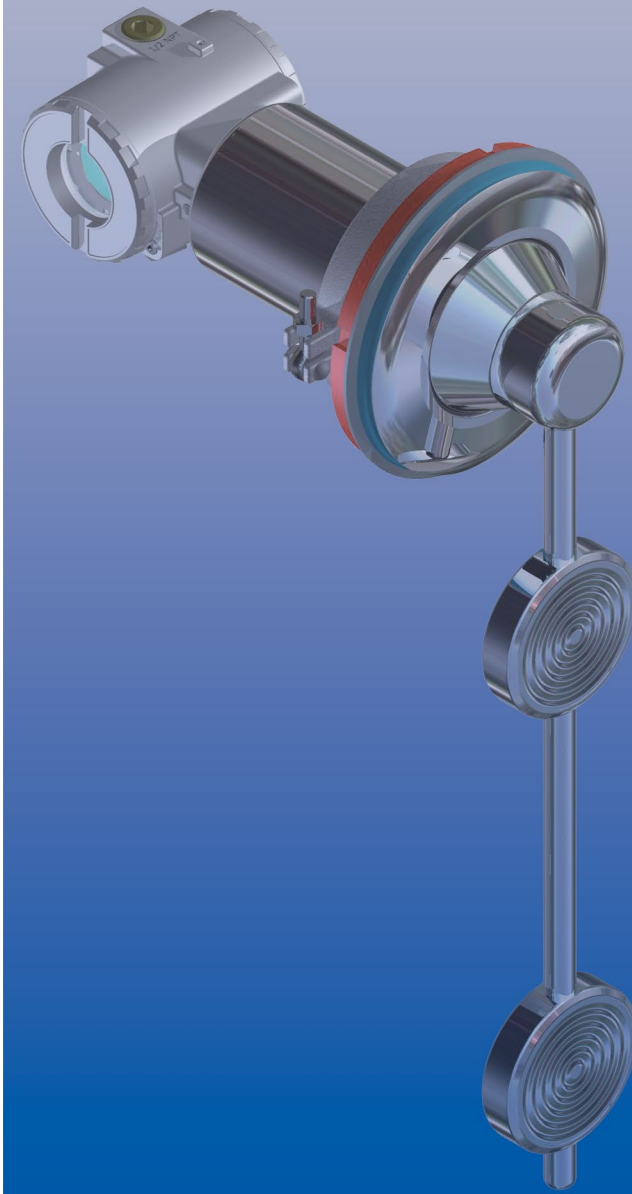


DT300 Series

301 - 302 - 303

DENSITY TRANSMITTERS

FOR DENSITY AND CONCENTRATION APPLICATIONS



- **Accuracy ± 0.0004 g/cm³ (± 0.1 °Brix)**
- **Range 0.5 g/cm³ – 10 g/cm³**
- **Direct density or concentration reading in engineering units such as g/cm³, Kg/m³, Specific Gravity, °Brix, °Baume, °Plato, °INPM, °GL, °API, % Solids, % Concentration, etc.**
- **Integral Temperature Sensor**
- **Suitable for Tank and Pipe Applications**
- **Factory Calibration and Self Calibration**
- **Advanced Diagnostics**
- **Extensive Library and Function Blocks Execution Capacity**
- **Industrial and Sanitary Models**
- **Instantiable Function Blocks**
- **Supported by DD, EDDL and FDT/DTM**
- **Density, Concentration and Temperature in three Analog Input Blocks**

Eletrobras Cepel

DEKRA EXAM GmbH

FM

Nemko ONE WORLD ○ OUR APPROVAL

smar

- Accuracy ±0.0004 g/cm³ (±0.1 °Brix);
- Temperature compensation;
- Range 0.5 g/cm³ - 10 g/cm³;
- Standard industrial and sanitary process connection;
- Digital LCD indicator;
- Direct density or concentration reading in engineering units;
- Suitable for dynamic and static liquids;
- Two wire loop powered;
- Several different wetted materials;
- Single integrated unit without moving parts;
- Factory calibration and Self calibration;
- In field re-calibration:
  - ✓ No standard reference required;
  - ✓ No lab calibration required;
  - ✓ No process shutdown.
- Continuous/Self diagnostics;
- Weather proof, explosion proof and intrinsically safe;
- The control strategy is built from direct instantiation and deletion of function blocks;
- Configuration, monitoring and remote diagnosis through Smar and other manufacturers tools;
- Use of the Analog Input function block;
- Totally digital; including sensor, electronics and communication;
- Configurable Local Adjustment (FOUNDATION fieldbus™ and PROFIBUS PA);
- Easy firmware upgrade (via Flash Memory Interface) for FOUNDATION fieldbus™ and PROFIBUS PA;
- 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;
- FOUNDATION fieldbus™ registered and ITK approved;
- MVC (Multivariable Container) enabled.

PROFIBUS PA

- 12mA consumption;
- Three Function blocks for analog inputs: density, concentration and temperature;
- Integrated to Simatic PDM;
- Supports DTM and EDDL;
- Profile 3.0 improves interchangeability.

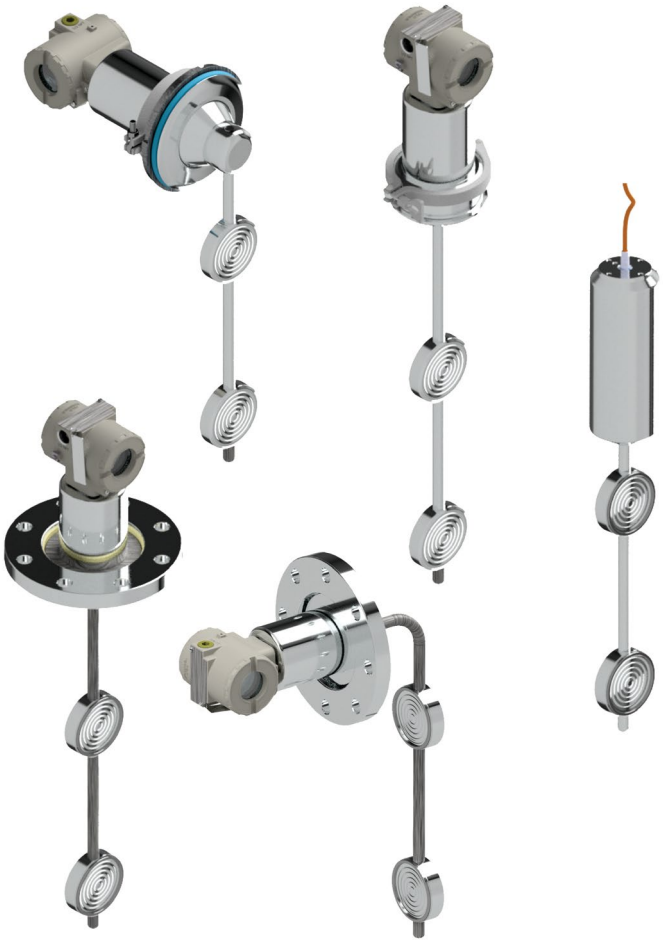
The DT300 Intelligent Density Transmitter is an instrument developed for the continuous, online measurement of liquid density and concentration, directly in the industrial process.

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.

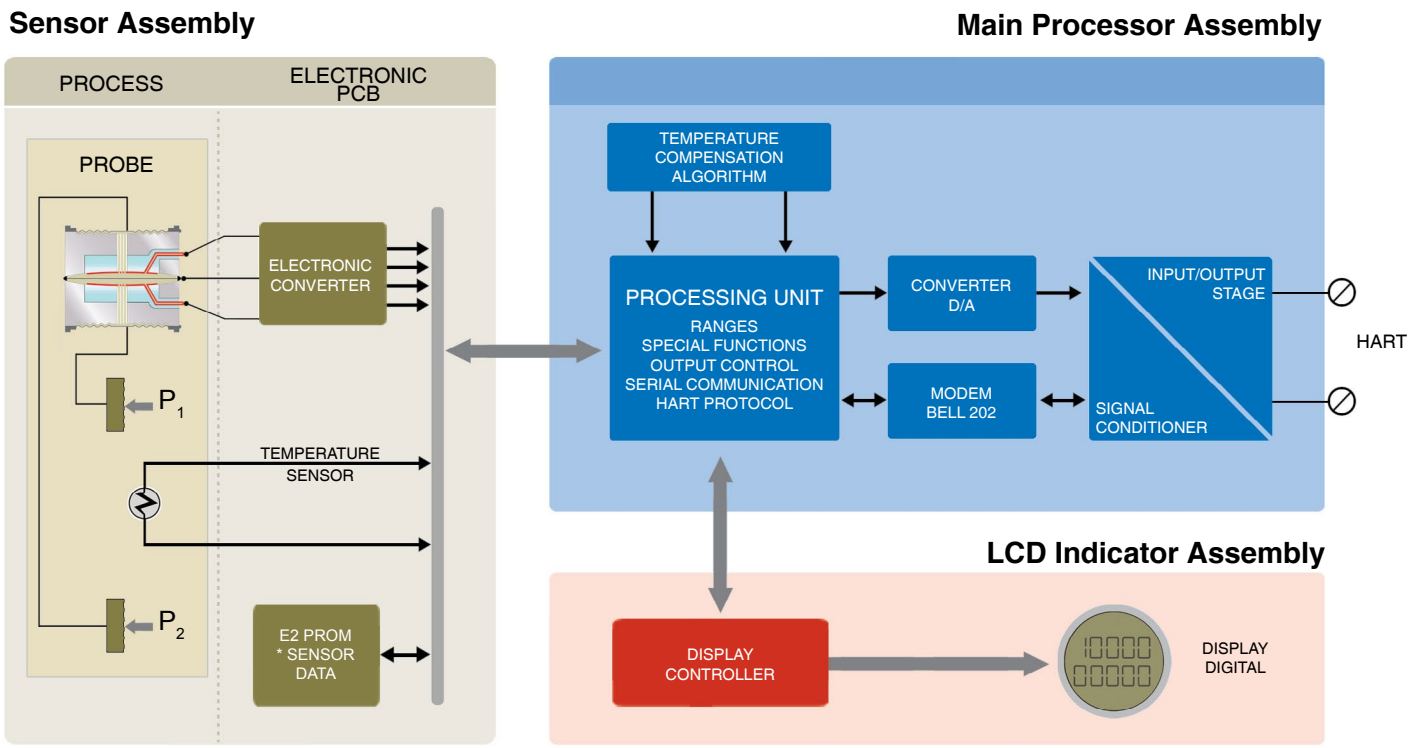
A dedicated software, by means of an algorithm, calculates the fluid density.

Depending on the industrial process, density may be expressed in g/cm³, Kg/m³, lb/ft³, Specific Gravity, Brix degree, Gay-Lussac degree, Baumé degree, Plato degree, INPM degree, API degree, 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



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 Asset View, 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, Asset View 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.

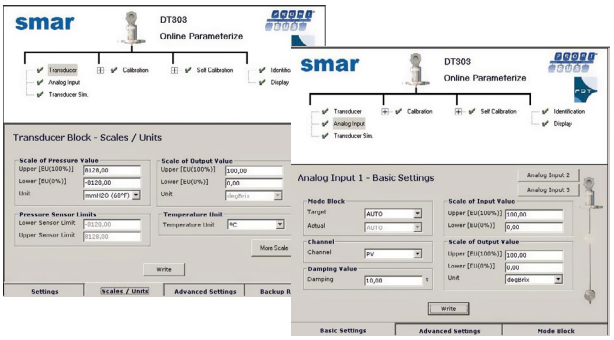
Configuration tools such as AMS™ and HHT375 can configure DT302 devices. DD (Device Description) and CF (Capability File) files can be downloaded at either the Smar or Fieldbus Foundation website.

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 Asset View diagnostics and status information from Foundation fieldbus result in a safer plant with longer availability.

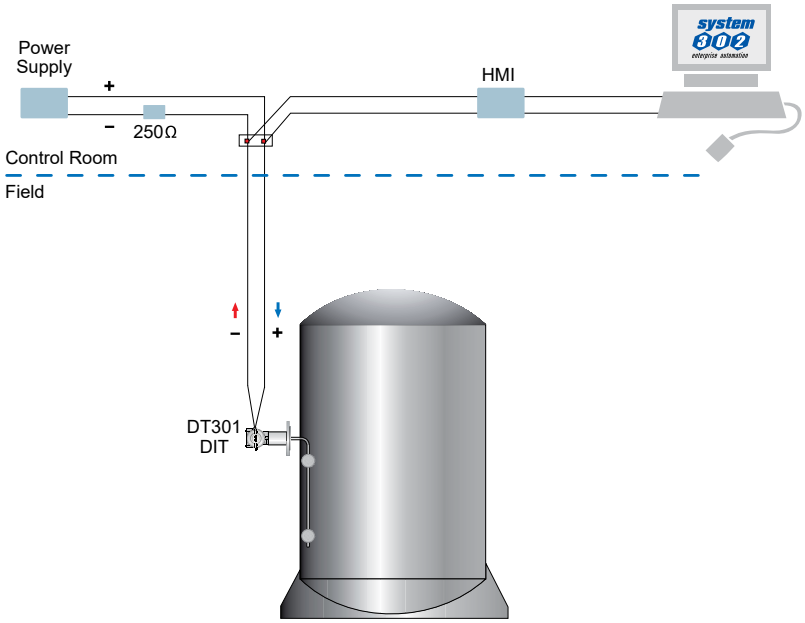
PROFIBUS PA - DT303

DT303 (PROFIBUS PA protocol) can be configured using 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.

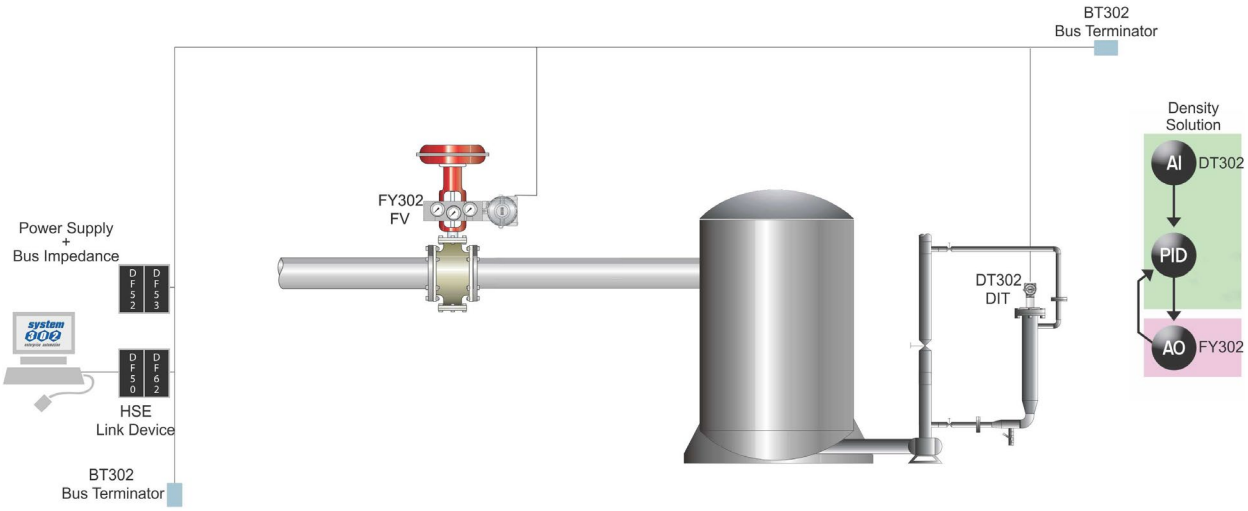
PROFIBUS PA also has quality and diagnostic information, improving plant management and maintenance.



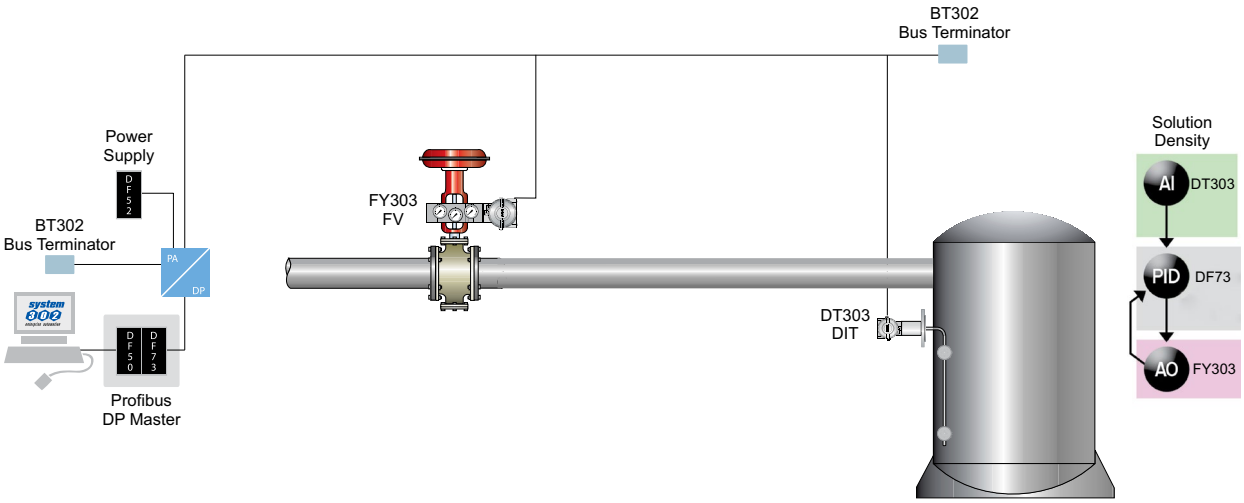
HART® - DT301



FOUNDATION fieldbus™ - DT302



PROFIBUS - DT303



Functional Specifications

Output and Communication Protocol	**HART®:** Two-wire, 4-20 mA with super-imposed digital communication (HART® Protocol). **FOUNDATION fieldbus™ and PROFIBUS PA:** Digital only. Complies with IEC 61158-2:2000 (H1): 31.25 kbit/s voltage mode, bus powered.
Power Supply/ Current Consumption	**HART®:** 12 to 45 Vdc. **FOUNDATION fieldbus™ and PROFIBUS PA:** Bus powered: 9 to 32 Vdc. Quiescent current consumption: 12 mA.
Indicator	4½-digit numerical and 5-character alphanumerical LCD indicator (optional).
Hazardous Area Certifications	**HART®, FOUNDATION fieldbus™ and PROFIBUS PA:** Explosion proof, intrinsically safe, CEPEL, Dekra/EXAM, FM and NEMKO. **FOUNDATION fieldbus™ and PROFIBUS PA:** FISCO Field Device Ex ia IIC T4 (CEPEL and Dekra/EXAM) and FNICO Field Device Ex nl IIC T4 (CEPEL and Dekra/EXAM).
Zero and Span Adjustments	Noninteractive, via digital communication or local adjustment. (only Foundation fieldbus and PROFIBUS-PA)
Failure Alarm (Diagnostics)	Detailed diagnostics through communication for all protocols. **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. **FOUNDATION fieldbus™:** For sensor circuit failures, events are generated and status is sent to link outputs. Detailed diagnostics are available in the contained parameters. **PROFIBUS PA:** For sensor or circuit failures, status is sent to output parameters. Detailed diagnostics are available in the contained parameters.
Temperature Limits	**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)
Turn-on Time	**HART®:** Performs within specifications in less than 5 seconds after power is applied to the transmitter. **FOUNDATION fieldbus™ and PROFIBUS PA:** Performs within specifications in less than 10 seconds after power is applied to the transmitter.
Configuration	**HART®:** By digital communication (HART® protocol) using the configuration software. It can also be configured using DD and FDT/DTM tools. **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.
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:** ±0.0004 g/cm³ (±0.1 °Bx) **For range 2:** ±0.0007 g/cm³ Linearity, hysteresis and repeatability effects are included.
Stability (for 12 months)	**For range 1:** 0.021 x 10^{-3} g/cm³ **For range 2:** 0.083 x 10^{-3} g/cm³
Ambient Temperature Effect (per 10 °C)	**For range 1:** 0.003 x 10^{-3} g/cm³ **For range 2:** 0.013 x 10^{-3} g/cm³
Static Pressure Effect	Zero Static Pressure **For range 1:** 0.001 x 10^{-3} g/cm³ **For range 2:** 0.004 x 10^{-3} g/cm³
Power Supply Effect	± 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:** 316 SST Flange ANSI B16.5 4”. DIN 2526 Form D flange, DN100 PN 25/40 **Sanitary Model:** 304 SST Tri-clamp 4”.
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	8 kg (18 lb) – Sanitary Model. 13 kg (26 lb) – Industrial Model.

MODEL	INDUSTRIAL CONCENTRATION/DENSITY TRANSMITTER
DT301 I **DT302 I** **DT303 I**	HART® & 4-20 mA FOUNDATION fieldbus™ PROFIBUS PA

Range

COD.				
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	

Wetted Parts Material

COD.	
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

Fill Fluid

COD.	
N	Neobee- M20 Propylene Glycol - Food Grade
S	DC 200/20 Silicone Oil

Local Indicator

COD.	
0	Without Indicator
1	With Digital Indicator

Electrical Connection

COD.		COD.	
0	½ - 14 NPT **(4)**	**A**	M20 X 1.5 **(4)**
1	1/2 - 14 NPT X 3/4 NPT (AI 316) - With Adapter **(5)**	**B**	PG 13.5 DIN
2	1/2 - 14 NPT X 3/4 BSP (AI316) - With Adapter	**Z**	Others – Specify
3	1/2 - 14 NPT X 1/2 BSP (AI 316) - With Adapter		

Mounting

COD.	
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

Process Connection

COD.	
5	4" ANSI B 16.5
A	DN 100 DIN 2526 - FORM D
Z	Others – Specify

Pressure Class

COD.	
1	150#
2	300#
3	600#
C	PN 25/40
Z	Others - Specify

Flange Face

COD.	
0	RF
2	RTJ

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	*

TYPICAL MODEL NUMBER

* Leave it blank for no optional items.

MODEL	INDUSTRIAL CONCENTRATION/DENSITY TRANSMITTER (CONTINUATION)

COD. — Identification Plate

COD.	
I1	FM: XP, IS, NI, DI (USA)
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)

COD.	
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)

COD.	
Z0	Not applicable
ZZ	See notes

COD. — Tag Plate

COD.	
J0	With Tag
J1	Blank

COD. — Display Unit

COD.	
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

COD.	
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
PG	Orange Safety Epoxy

COD. — Manufacturing Standard

COD.	
S0	Smar

COD. — Diaphragm Thickness

COD.	
N0	Standard

COD. — Probe Strengthening

COD.	
R0	Standard
R1	With probe strengthening

COD. — Mounting Position

COD.	
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.

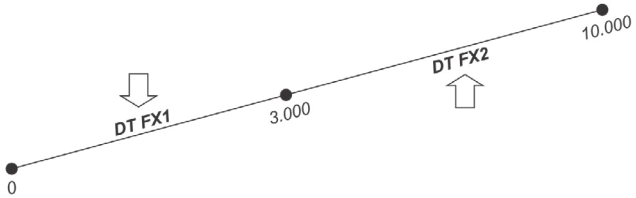
(4) Certification Ex d for FM / ATEX /INMETRO.

(5) Certification Ex d for INMETRO.

(6) Only for DT301.

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			
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 12.
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 **(8)**
S	DC 200/20 Silicone Oil

COD.	Local Indicator
0	Without Indicator
1	With Digital Indicator

COD.	Electrical Connection	COD.	
0	½ - 14 NPT **(4)**	**A**	M20 X 1.5 **(4)**
1	1/2 - 14 NPT X 3/4 NPT (316SST) - With Adapter **(5)**	**B**	PG 13.5 DIN
2	1/2 - 14 NPT X 3/4 BSP (316SST - With Adapter		
3	1/2 - 14 NPT X 1/2 BSP (316SST) - With Adapter		

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#

COD.	Wetted O-Rings Material
B	Buna-N
V	Viton
T	Teflon

COD.	Tank Adapter
0	Without Tank Adapter (Supplied by Customer)
1	With tank adapter in 316 SST
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	1	1	/	*	← TYPICAL MODEL NUMBER
DT302S	-	1	I	N	-	1	0	2	-	J	B	1	1	/	*	
DT303S	-	1	I	N	-	1	0	2	-	J	B	1	1	/	*	

* Leave it blank for no optional items.

Ordering Code - Sanitary Model

MODEL	SANITARY CONCENTRATION/DENSITY TRANSMITTER (CONTINUATION)

Identification Plate

COD.	
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)

Housing Material (1) (2)

COD.	
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)

Special (See notes)

COD.	
Z0	Not applicable
ZZ	See notes

Tag Plate

COD.	
J0	With Tag
J1	Blank

Display Unit

COD.	
Y0	Percentage
Y2	1: Density/Concentration (Eng. Unit)
YU	2: User's Specification

Painting

COD.	
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
PG	Orange Safety Epoxy

Manufacturing Standard

COD.	
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

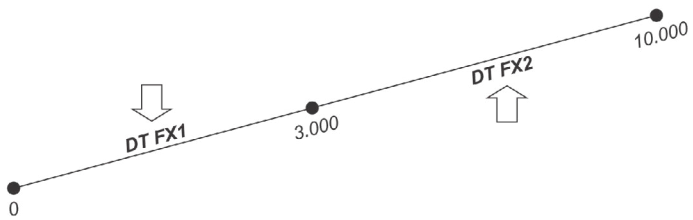
(3) IPW / TypeX tested for 200 hours according to NBR 8094 / ASTM B 117 standard.

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

(5) Certification Ex d for INMETRO..

(6) Only for DT301

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



MODEL DT301M	SUBMERSIBLE CONCENTRATION/DENSITY TRANSMITTER

COD. Range

COD.			
1	0	to	3 g/cm³
2	0	to	10 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 on this page.

COD. Diaphragm/ Probe Material

COD.	
I	316L SST / 316L SST

COD. Fill Fluid

COD.	
1	250 mm
2	500 mm

COD. Fill Fluid

COD.	
S	Silicone Oil DC 200/20

COD. Electrical Connection

COD.	
0	Without Tube
1	With 304 SST Tube

COD. Rod Type

COD.	
1	316 SST Tubular Rod
2	Flanged Hose

COD. Rod Length

COD.	
1	1m
2	2m
3	3m
4	4m
5	5m
6	6m
7	7m
8	8m

COD. Power Supply Cable Length

COD.	
1	10m
2	15m

DT301M	-	1	I	1	S	0	1	1	1

TYPICAL MODEL NUMBER

MODEL DT301M	SUBMERSIBLE CONCENTRATION/DENSITY TRANSMITTER (CONTINUATION)

COD. Identification Plate

COD.	
I6	Without Certification

COD. Tag Plate

COD.	
J0	With Tag
J1	Blank
J2	According notes

COD. Centralizer

COD.	
C0	Standard
C1	With Centralizer

COD. Probe Strengthening

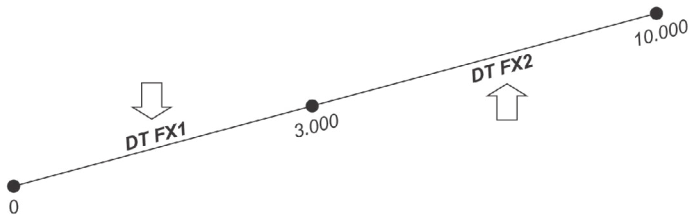
COD.	
R0	Standard

DT301M	-	I6	J0	C0	R0

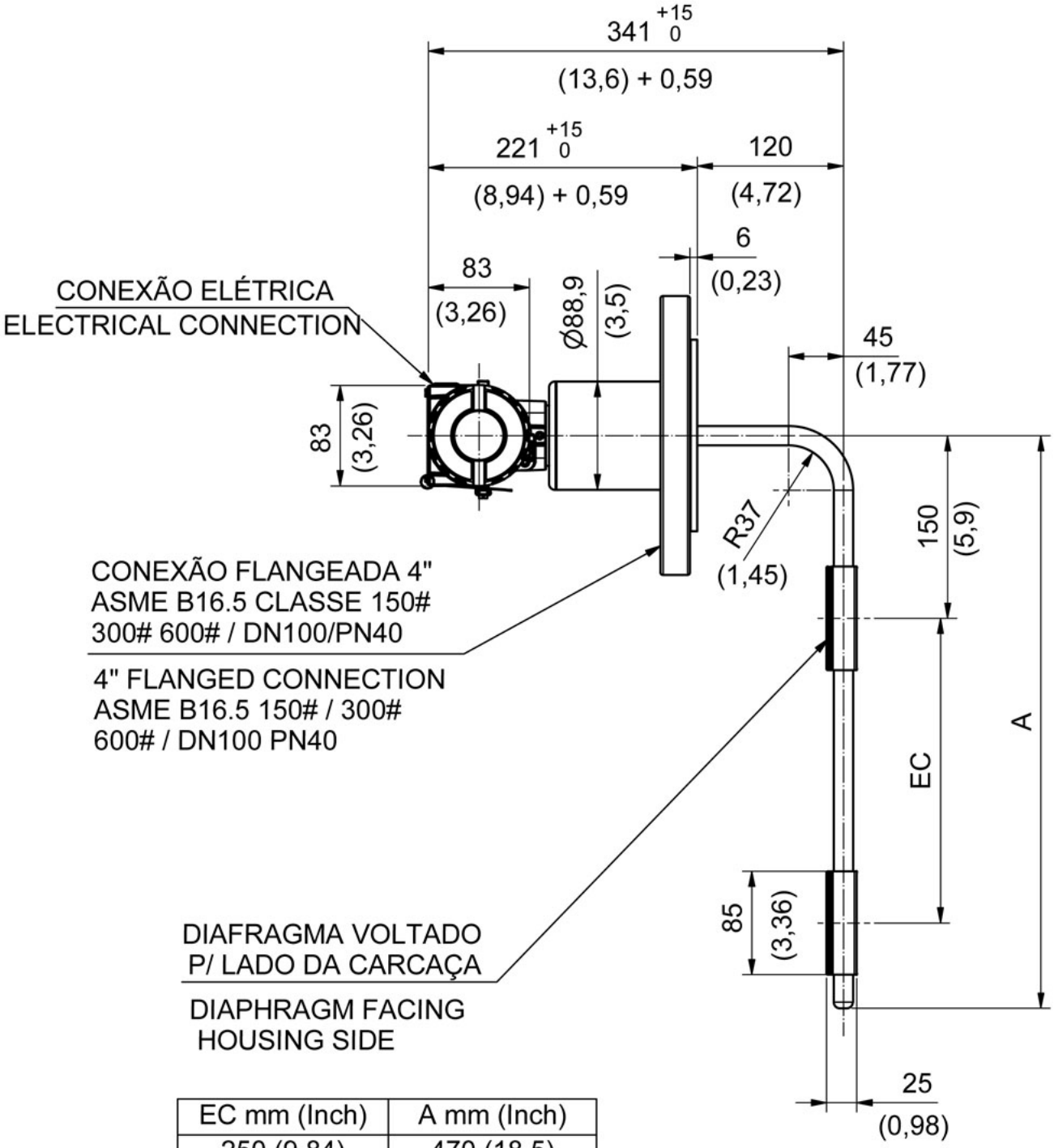
TYPICAL MODEL NUMBER

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



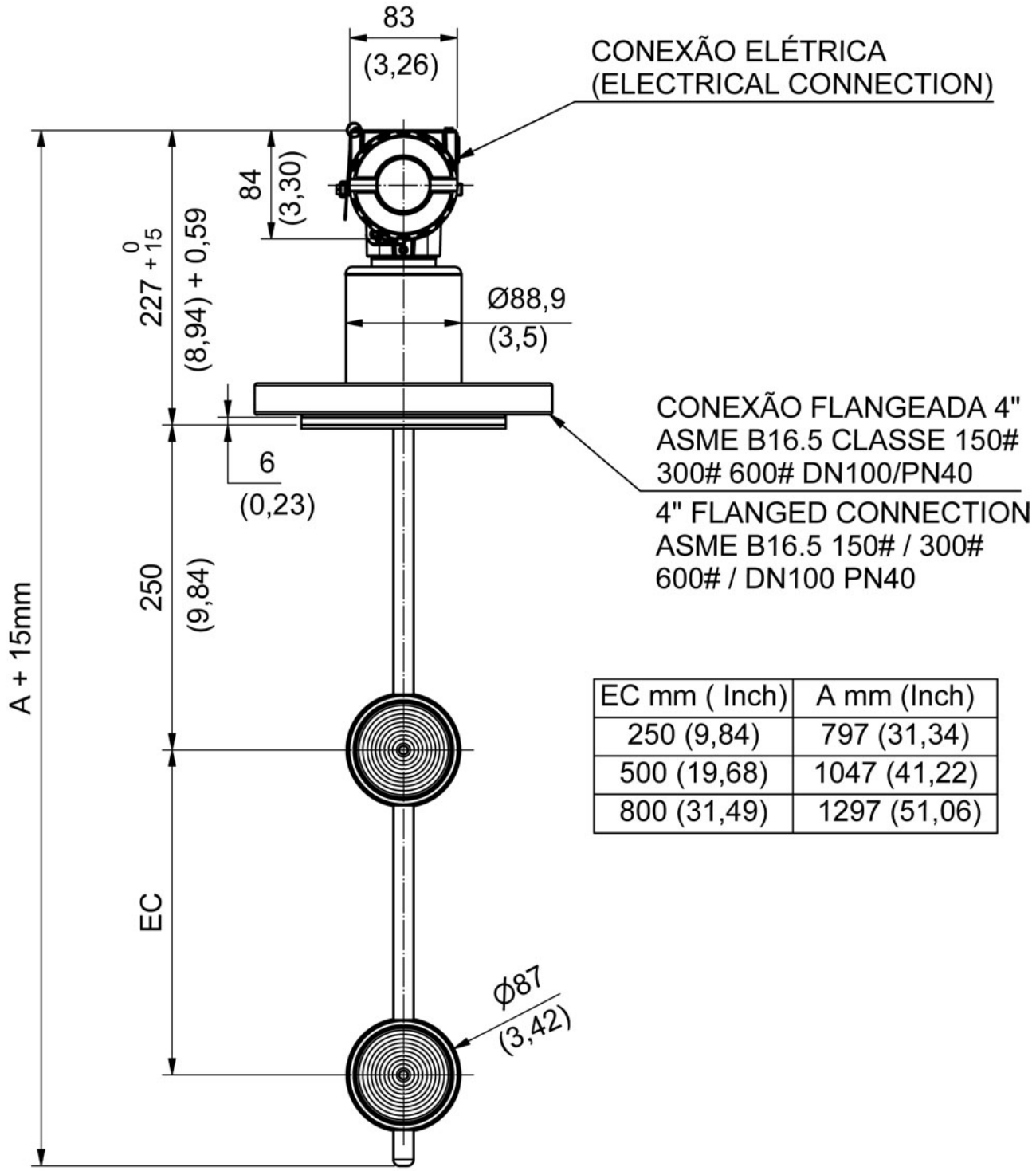
Industrial Model - Curved



EC mm (Inch)	A mm (Inch)
250 (9,84)	470 (18,5)
500 (19,68)	720 (28,34)
800 (31,49)	970 (38,19)

Dimensões em milímetros (polegadas)

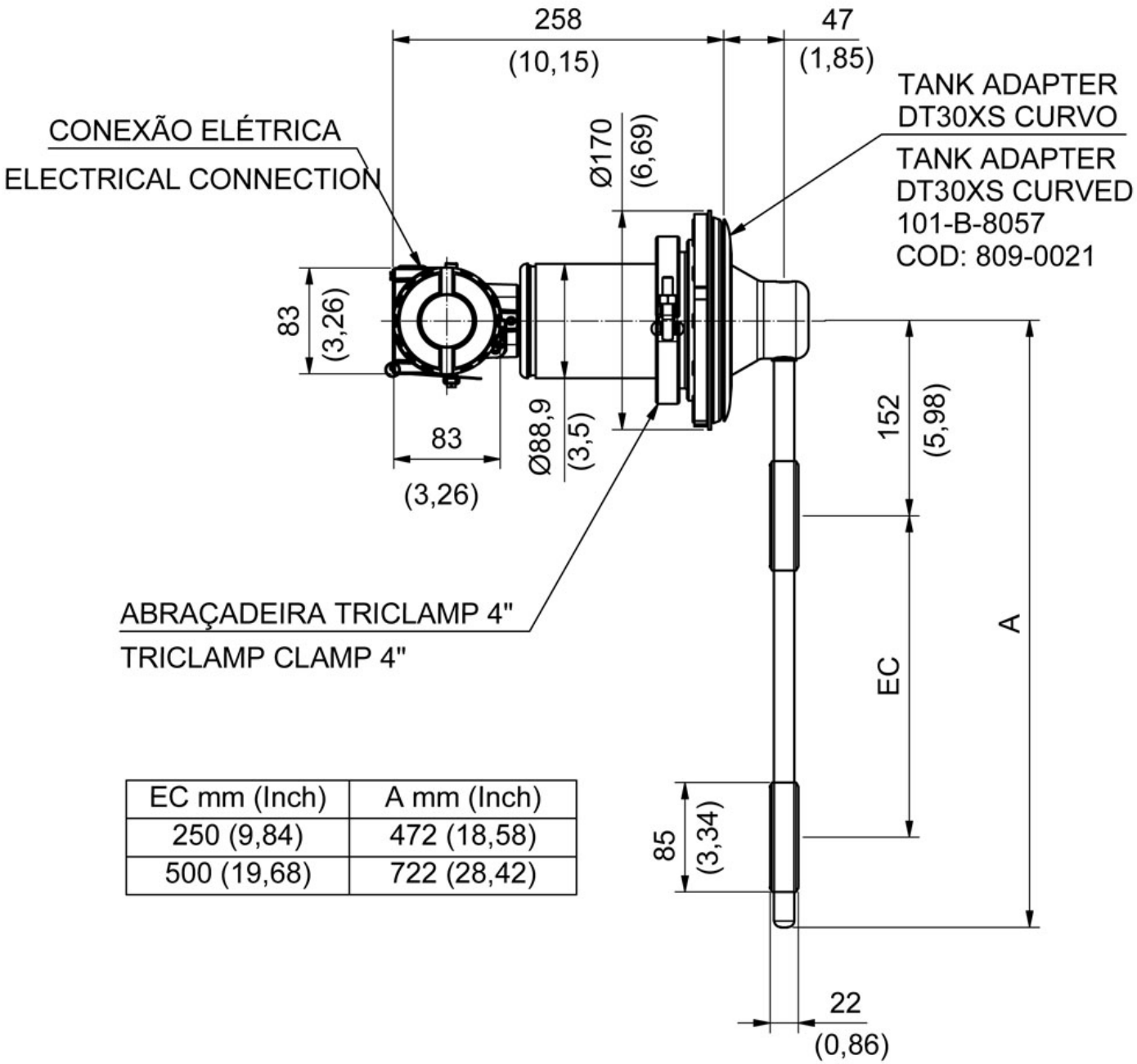
Industrial Model - Straight



EC mm (Inch)	A mm (Inch)
250 (9,84)	797 (31,34)
500 (19,68)	1047 (41,22)
800 (31,49)	1297 (51,06)

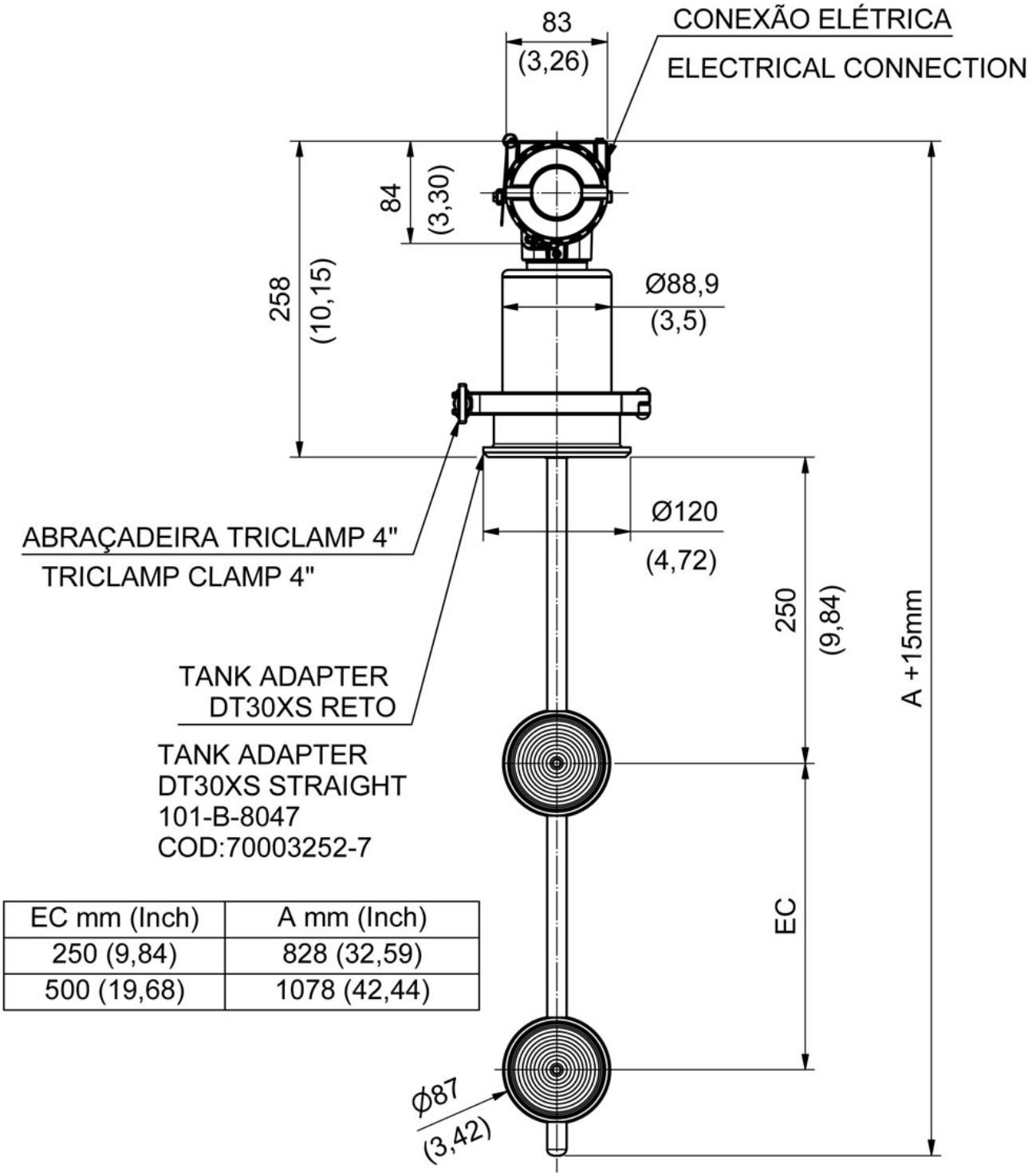
Dimensões em milímetros (polegadas)

Sanitary Model - Curved



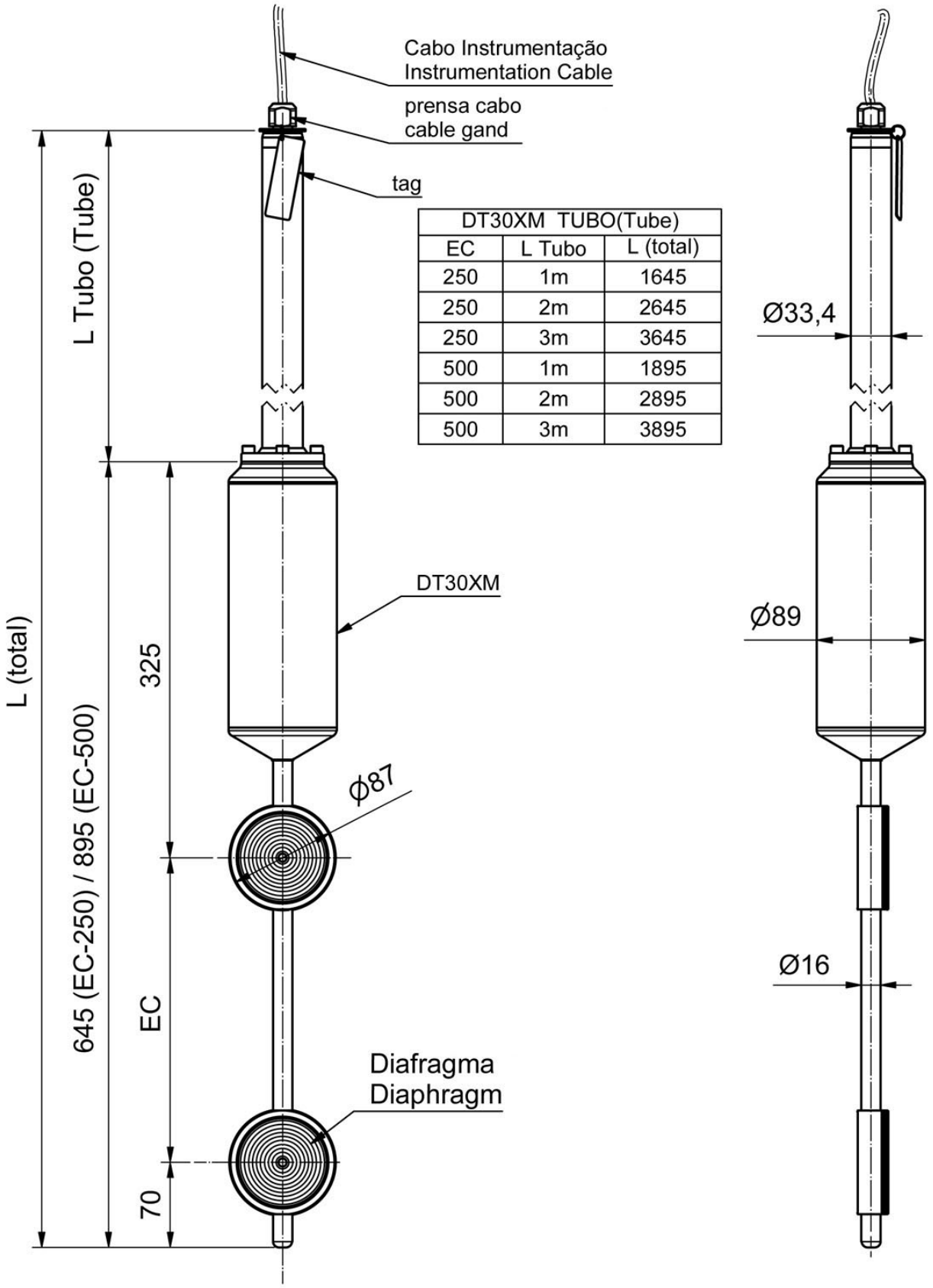
EC mm (Inch)	A mm (Inch)
250 (9,84)	472 (18,58)
500 (19,68)	722 (28,42)

Sanitary Model - Straight



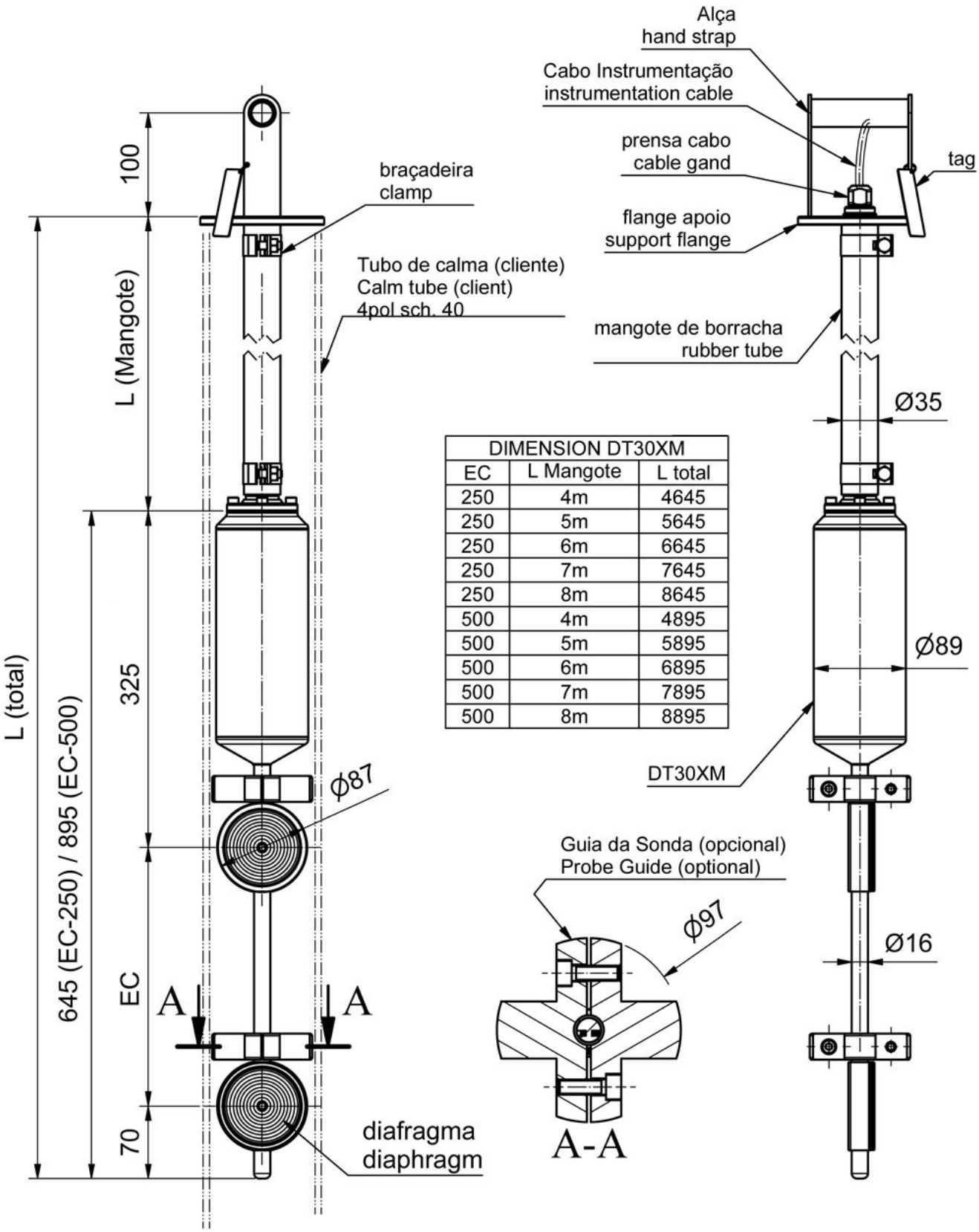
EC mm (Inch)	A mm (Inch)
250 (9,84)	828 (32,59)
500 (19,68)	1078 (42,44)

Submersible Model - SST Tubular Rod

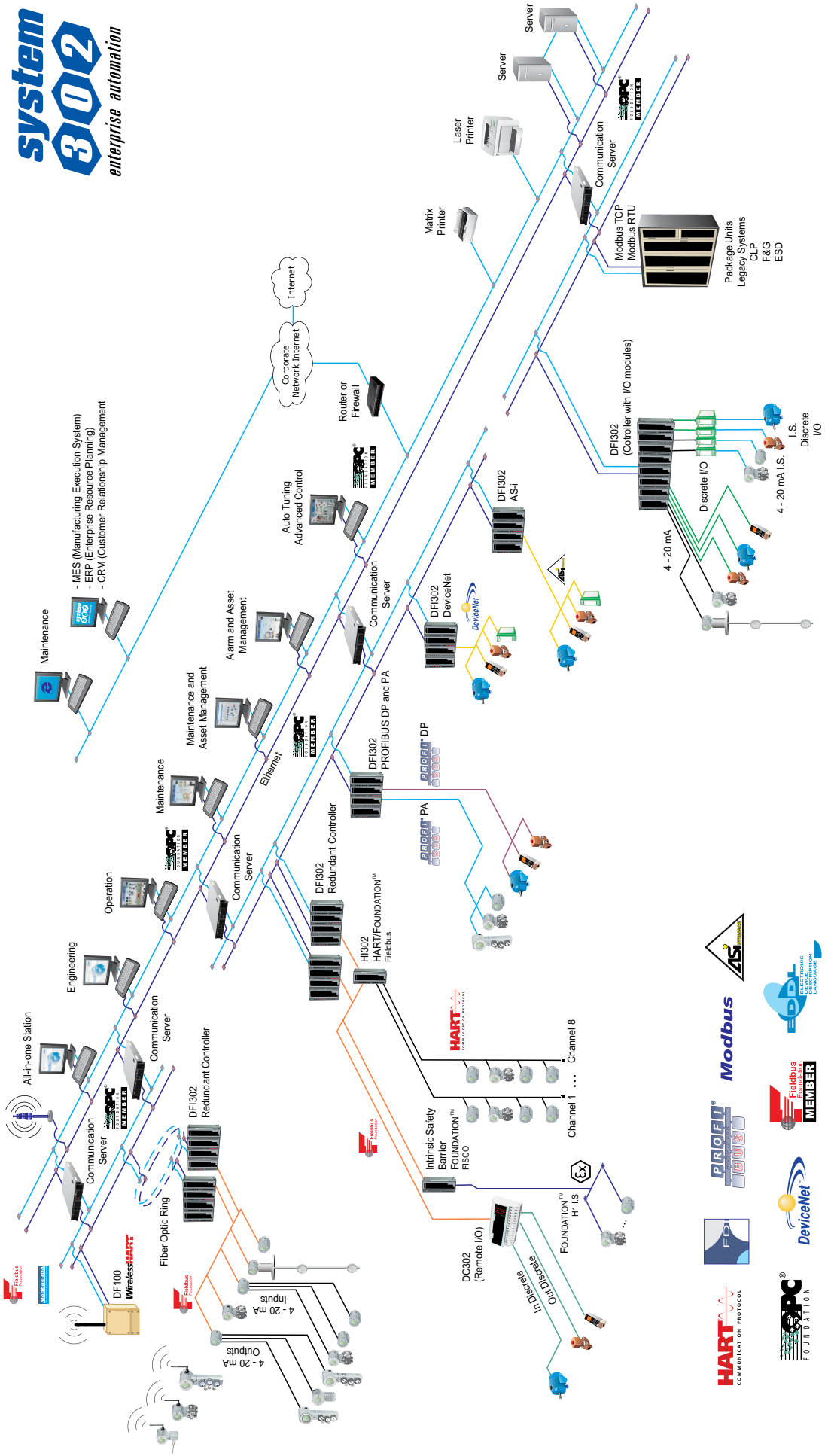


DT30XM TUBO(Tube)		
EC	L Tubo	L (total)
250	1m	1645
250	2m	2645
250	3m	3645
500	1m	1895
500	2m	2895
500	3m	3895

Submersible Model - Hose Rod



DIMENSION DT30XM		
EC	L Mangote	L total
250	4m	4645
250	5m	5645
250	6m	6645
250	7m	7645
250	8m	8645
500	4m	4895
500	5m	5895
500	6m	6895
500	7m	7895
500	8m	8895


system 302
enterprise automation
Server
Server
Laser Printer
Communication Server
Matrix Printer
Modbus TCP
Modbus RTU
Package Units
Legacy Systems
CLP
F&G
ESD
Internet
Corporate Network Internet
Router or Firewall
DFI302 (Cotroller with I/O modules)
I.S. Discrete I/O
4 - 20 mA I.S.
Discrete I/O
4 - 20 mA
- MES (Manufacturing Execution System)
- ERP (Enterprise Resource Planning)
- CRM (Customer Relationship Management
Maintenance
Auto Tuning Advanced Control
DFI302 AS-i
Alarm and Asset Management
Communication Server
DFI302 DeviceNet
Maintenance and Asset Management
Ethernet
DFI302 PROFIBUS DP and PA
PROFIBUS DP
PROFIBUS PA
Maintenance
Operation
Communication Server
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Engineering
All-in-one Station
Communication Server
DFI302 Redundant Controller
Intrinsic Safety Barrier FOUNDATION™ FISCO
Channel 1 ... Channel 8
FOUNDATION™ H1 I.S.
DC302 (Remote I/O)
In Distrate
Out Distrate
DF100 WirelessHART
Fiber Optic Ring
4 - 20 mA Inputs
4 - 20 mA Outputs
Modbus
PROFIBUS
DeviceNet
FDI
HART COMMUNICATION PROTOCOL
FOUNDATION

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DT300CE