



TT300 Series

301-302-303

TEMPERATURE TRANSMITTERS

- 0.02% Basic Accuracy
- Single Unit and Several Options for Sensors and Connections
- Input Signal Isolation
- PID Control Capability
- Advanced Diagnostics
- Largest Library of Function Block Execution Capacity
- Supported by DD, EDDL, and FDT/DTM
- Dual Channel
- Sensor Backup
- Three Bus Technology Options



smar

- 0.02% Accuracy;
- Built-in thermocouples and RTDs linearization;
- True non-interactive zero and span;
- Local zero and span adjustment;
- Remote configuration via Hand-Held Terminal or via PC;
- Alphanumerical LCD indication;
- Small and lightweight;
- Explosion proof and weather proof housing approved (IP66/68 ou IP66/68W);
- Intrinsically safe certification;
- Signal simulation for loop tests;
- Signal isolation;
- Configurable user unit;
- Configurable local adjustment;
- EMC (Electromagnetic Compatibility) according to IEC 61000-6-2: 1999, IEC 61000-6-4: 1997 and IEC 61326: 2002;
- Write protection function;
- Three technology options: HART®, FOUNDATION™ fieldbus, and PROFIBUS PA;
- Sensor backup*;
- Universal input accepts several thermocouples, RTDs, mV and Ohm.



HART® - 4 to 20 mA

- Excellent long term stability due to auto-zero at the input circuit;
- 2-wire, 4-20 mA output plus direct digital communication;
- Special 16-point sensor characterization;
- Update output current in 0.5 s with 1.5 μ A/bit resolution;
- Improved performance due to dedicated math coprocessor;
- Multidrop operation mode;
- PID control function;
- Match sensor (Callendar Van Dusen equation);
- Maximum, minimum and average input sensor selection, also working with two sensors simultaneously;
- Pt1000 included in sensor list;
- Setpoint generator function;
- Supports DTM, DD and EDDL.



FOUNDATION™ fieldbus

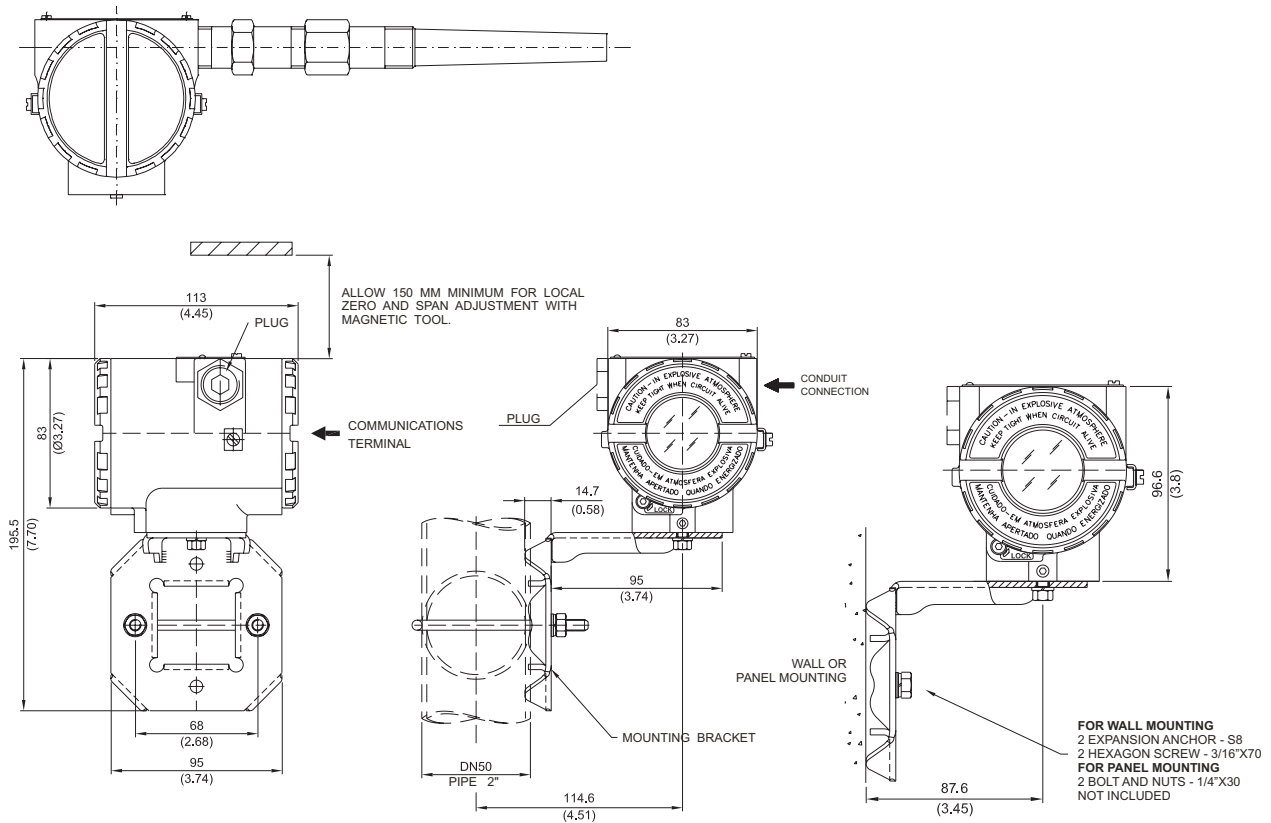
- Self-diagnosis;
- Dual channel;
- 12 mA consumption;
- 19 different types of function blocks for control strategies and advanced diagnostics;
- Up to 20 function blocks;
- Execution of up to 29 external links;
- Dynamic block instantiation improves interchangeability;
- Fieldbus Foundation™ registered and ITK (Interoperability Test Kit) approved;
- LAS (Link Active Scheduler) capability;
- MVC (Multivariable Container) enabled.



PROFIBUS PA

- Self-diagnosis;
- Dual channel;
- 12mA consumption;
- 2 analog input function blocks;
- Integrated to Smar Profibus View and Simatic PDM;
- Supports DTM and EDDL;
- Profile 3.0 improves interchangeability.





Functional Description

TT300 Series offers:

- ± 0.02% accuracy;
- Built-in thermocouples and RTDs linearization;
- Compact and lightweight;
- Interchangeable protocols.

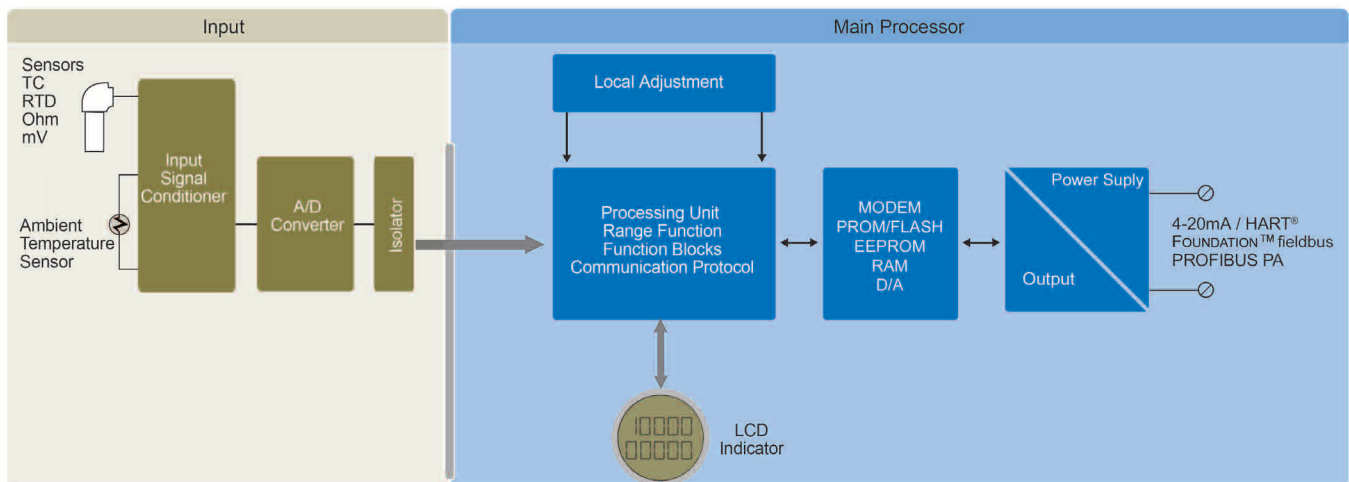
The Smar TT300 Series is a transmitter mainly intended for measurement of temperature using RTDs or thermocouples. However, it can also accept other sensors with resistance or mV output such as pyrometers, load cells, resistance position indicators, etc. The TT300 Series accepts up to two sensors and may operate in one of the modes below*:

- Single channel with single sensor measurement;
- Dual channel with dual sensor measurement (except HART protocol device);
- Single channel with two sensors (same type) in differential measurement;
- Single channel with two sensors (same type) in backup measurement;

- Single channel with two sensors (same type) with maximum, minimum or average signal selection (only HART protocol device).

The Smar TT300 Series is a powerful and extremely versatile smart temperature transmitter. The digital technology used in the TT300 Series enables a single device to accept several types of sensors, wide ranges, single or multiple-ended measurement and an easy interface between the field and the control room. It also includes several features which reduce considerably the installation, operation and maintenance costs. The transmitter accepts two channels, i.e., two measurements. It reduces the cost per channel.

The TT300 Series is suitable for direct field installation, being weather proof and explosion proof, as well as intrinsically safe, for use in hazardous areas.



* Please consult your Smar representative to check the option availability.



TT300Series is available in three different technologies: HART® (**TT301**), FOUNDATION™ fieldbus (**TT302**), and PROFIBUS PA (**TT303**). These instruments can be configured with Smar software and other manufacturer configuration tools. Local adjustment is available in all **TT300 Series**. It is possible

to configure zero and span, setpoint and other control functions using the magnetic tool (SD1). With Smar AssetView, an user-friendly Web Tool, user can access the plant assets 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® - TT301

TT301 (HART® protocol) can be configured by:

- Smar CONF401 for Windows;
- Smar DDCON100 for Windows;
- Smar HPC301 and HPC401 for several models of Palm;
- Other manufacturers' configuration tools based on DD (Device Description) or DTM (Device Type Manager), such as AMS™, FieldCare, PACTware™, HHT275, HHT375 and PRM Device Viewer.

For management and diagnostics, AssetView ensures continuous information monitoring.



DDCON100 - Configuration Software



HPC401- Configuration Software

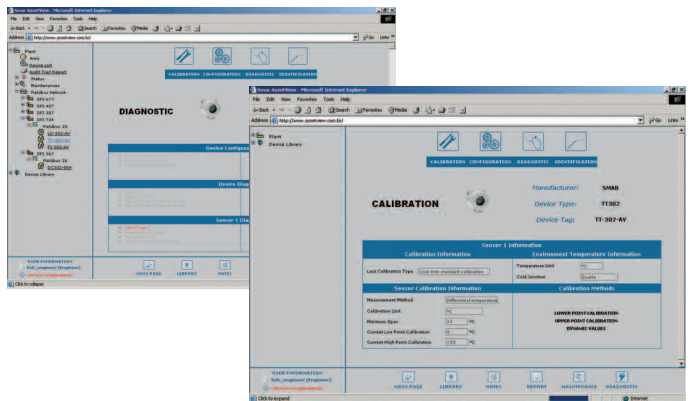
FOUNDATION™ fieldbus - TT302

TT302 utilizes the FOUNDATION™ fieldbus H1 protocol, an open technology that allows any H1 enabled configuration tool to configure this device.

Syscon (System Configuration Tool) is a software tool used to configure, and operate the field devices. Syscon offers efficient and friendly interaction with the user, using Windows.

Configuration tools such as AMS™, FieldCare and HHT375 can configure **TT302** devices. DD (Device Description) and CF (Capability File) files can be downloaded at either the Smar or Fieldbus Foundation™ website.

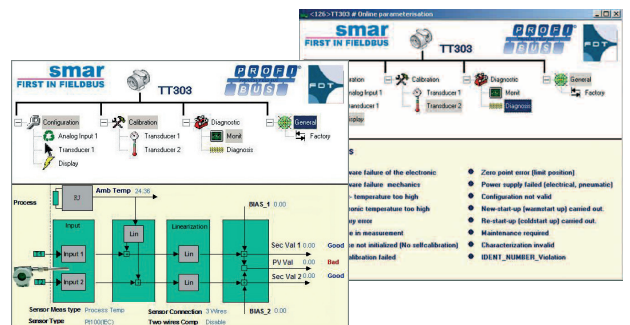
TT302 supports complex strategies configuration due to the high capacity and variety of dynamic instantiable function blocks.



PROFIBUS PA - TT303

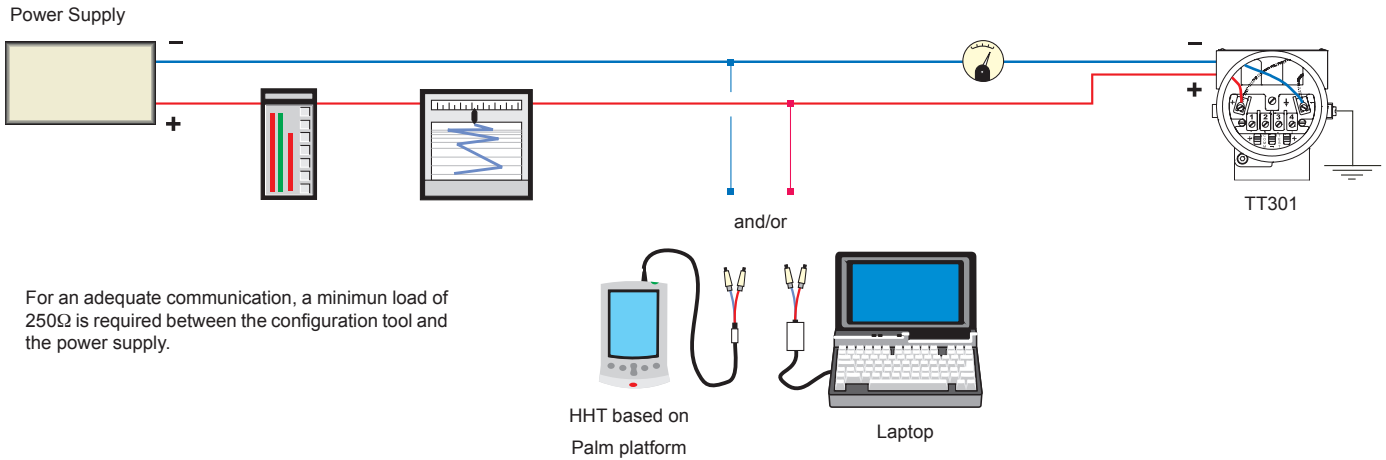
TT303 (PROFIBUS PA protocol) can be configured using configuring Smar Profibus View, Simatic PDM, FDT (Field Device Tool) and DTM (Device Type Manager) concept tools, such as FieldCare and PACTware™. It can also be integrated by any PROFIBUS System using the GSD (General Station Description) file.

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

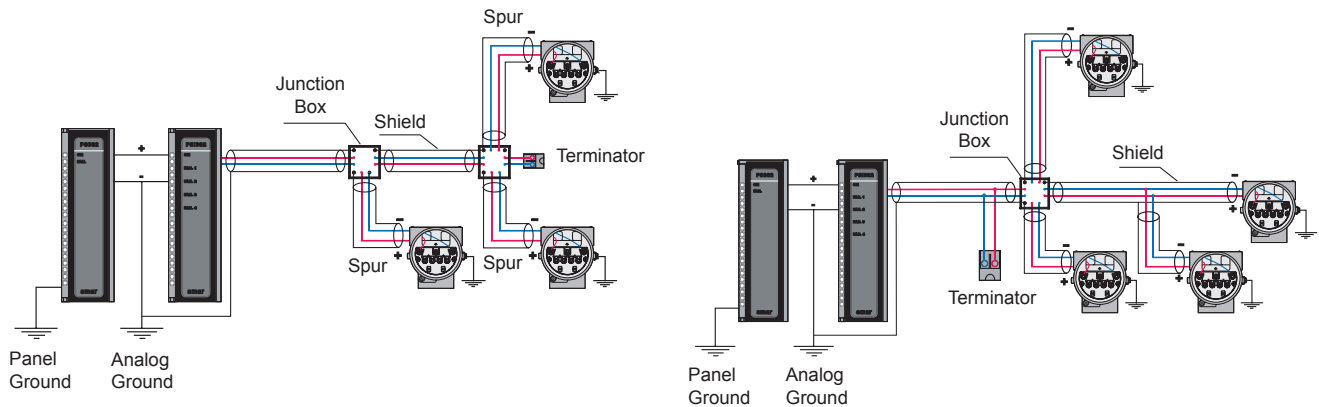


Smar and SYSTEM302 are trademarks or registered trademarks of Smar Equipamentos Industriais Ltda. in Brazil and/or other countries. Other marks are the properties of their respective owners.

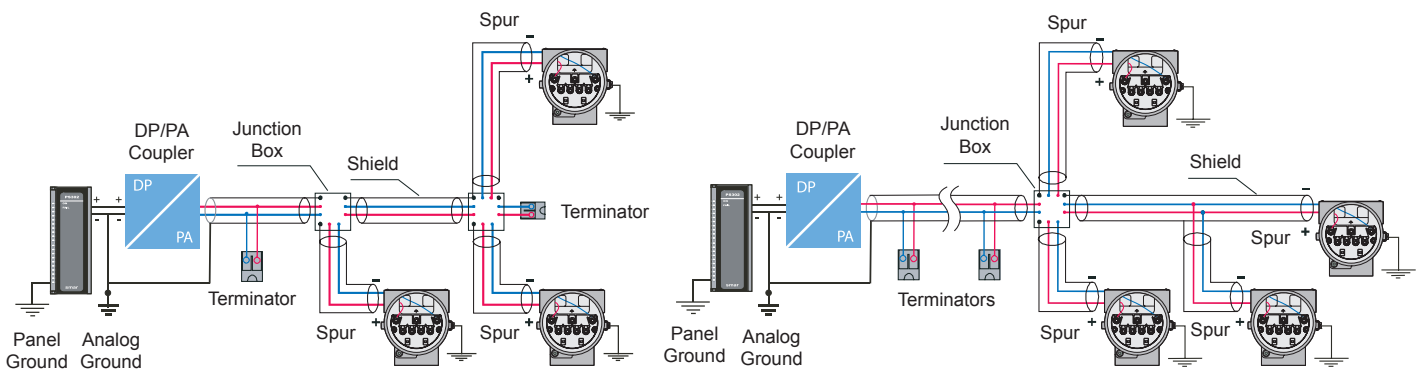
HART® - TT301



FOUNDATION™ fieldbus - TT302

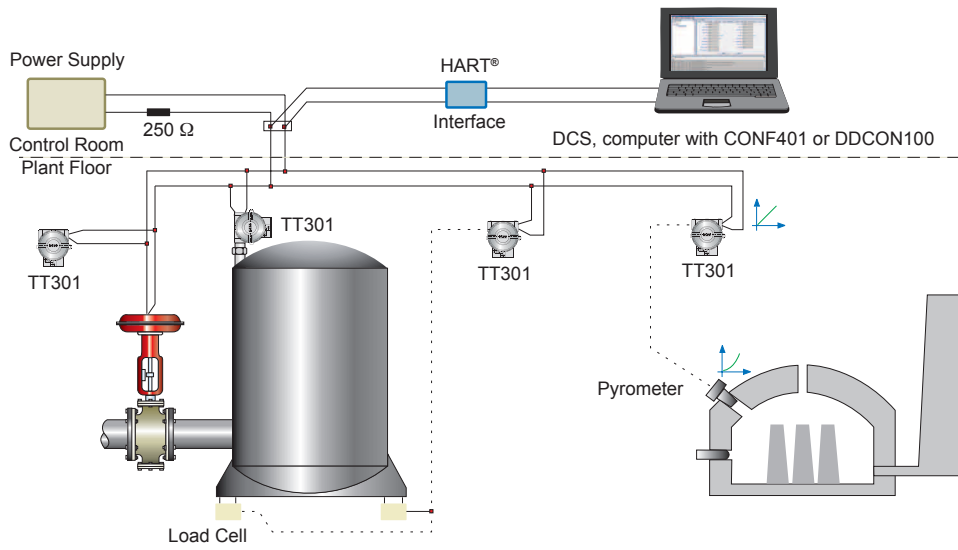


PROFIBUS - TT303

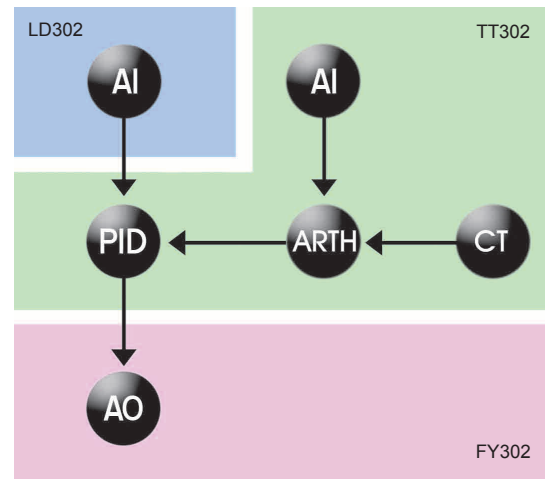
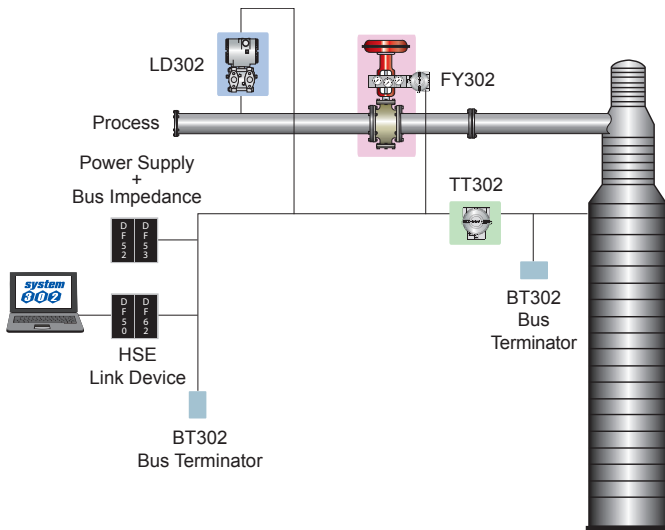


* For some DP/PA couplers, the bus terminator is built-in.

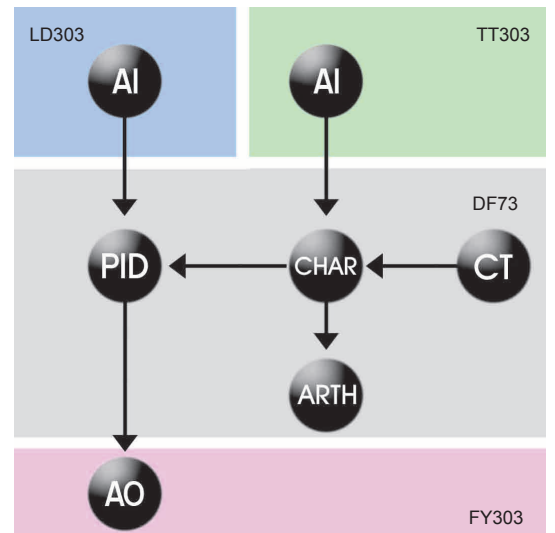
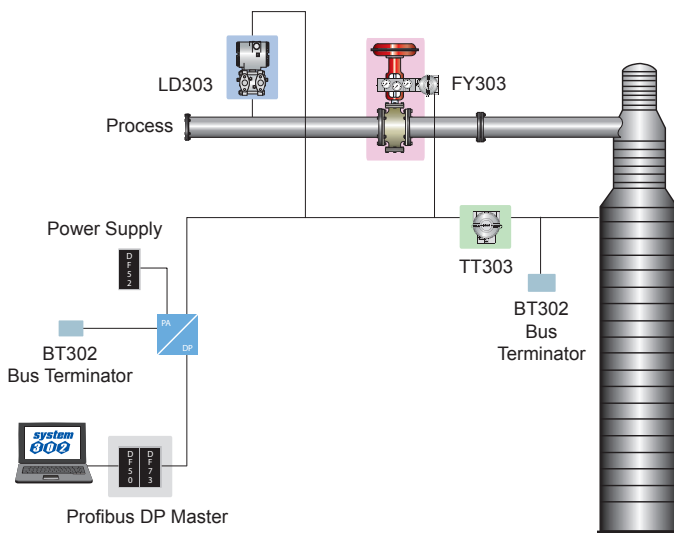
HART® - TT301



FOUNDATION™ fieldbus - TT302



PROFIBUS - TT303



Functional Specifications

Inputs	See table 1, 2 and 3.
Output and Communication Protocol	<p>HART®: 2-wire, 4-20 mA according to NAMUR NE43 specification, 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 - 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: Intrinsic Safety (FM, CSA, NEMKO, EXAM, CEPEL, NEPSI), Explosion Proof (FM, CSA, NEMKO, CEPEL), Dust Ignition Proof (FM), Non-incendive (FM)</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: FISCO (FM, CSA, NEMKO, EXAM, CEPEL, NEPSI) and FNICO (FM, CSA, NEMKO, EXAM, CEPEL)</p>
European Directive Information	<p>Authorized representative in European Community Smar GmbH-Rheingaustrasse 9-55545 Bad Kreuznach</p> <p>EMC Directive (89/336/EEC) - Electromagnetic Compatibility The EMC test was performed according to IEC standard: IEC61326:2002. For use only in industrial environment.</p> <p>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 (former DMT). The certified body for manufacturing quality assessment is EXAM (number 0158).</p> <p>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.</p>
Zero and Span Adjustments	Noninteractive, via local adjustment and digital communication.
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 and NAMUR NE43 specification.</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 link outputs. Detailed diagnostics are available in the contained parameters.</p>
Temperature Limits	<p>Ambiente: -40 °C to 85°C (-40 to 185 °F)</p> <p>Storage: -40 °C to 100 °C (-40 to 212 °F)</p> <p>Digital Display: -20 °C to 80°C (-4 to 176 °F) (normal operation)</p> <p> -40 °C to 85°C (-40 to 185 °F) (without damage)</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 CONF401, DDCON100 (for Windows) or HPC301 and HPC401 (for Palm). It can also be configured using DD and FDT/DTM tools, and can be partially configured through local adjustment , since the transmitter is supplied with display.</p> <p>FOUNDATION™ fieldbus and PROFIBUS PA: Basic configuration may be done using the local adjustment magnetic tool if device is supplied with display. Complete configuration is possible using configuration tools such as Syscon (System Configuration Tool), AMS™, FieldCare and HHT375. The TT303 can be configured via Smar Profibus View and Simatic PDM using EDDL.</p>
Humidity Limits	0 to 100% Relative Humidity.
Damping Adjustment	User configurable from 0 to 32 seconds (via digital communication).

Performance Specifications

Accuracy	See tables 1, 2 and 3.	
Digital Stability	<p>±0.1% of reading or 0.1 °C (0.18 °F), whichever is greater, for 2 years for RTDs;</p> <p>±0.1% of reading or 0.1 °C (0.18 °F), whichever is greater, for 1 year for thermocouples.</p>	
Temperature Effect	<p>For a 10 °C variation:</p> <p>mV (-6 to 22 mV), TC (NBS: B, R, S,T): ± 0.03% of the input millivoltage or 0.002 mV whichever is greater;</p> <p>mV (-10 to 100 mV), TC (NBS: E, J, K, N; DIN: L, U): ± 0.03% of the input millivoltage or 0.01 mV whichever is greater;</p> <p>mV (-50 to 500 mV): ± 0.03% of the input millivoltage or 0.05 mV whichever is greater;</p> <p>Ohm (0 to 100Ω), RTD (GE: Cu10): ± 0.03% of the input resistance or 0.01Ω whichever is greater;</p> <p>Ohm (0 to 400Ω), RTD (Edison Curve #7: Ni120; IEC: Pt50, Pt100; JIS: Pt50, Pt100): ± 0.03% of the input resistance or 0.04Ω whichever is greater;</p> <p>Ohm (0 to 2000Ω), RTD (IEC: Pt500), RTD (IEC: Pt1000): ±0.03% of the input resistance or 0.2Ω whichever is greater;</p>	
Power Supply Effect	± 0.005% of calibrated span per volt.	
Electromagnetic Interference Effect	Approved according to IEC 61326: 2002.	
Electrical Connection	<p>1/2 - 14 NPT M20 X 1.5 PG 13.5 DIN</p>	<p>1/2 - 14 NPT X 3/4 NPT (316 SST) - with adapter 1/2 - 14 NPT X 3/4 BSP (316 SST) - with adapter 1/2 - 14 NPT X 1/2 BSP (316 SST) - with adapter</p>

Note: Explosion proof approvals do not apply to adapter, only to transmitter.

Physical Specifications

Mounting	Can be attached directly to the sensor. With an optional bracket can be installed on a 2" pipe or fixed on a wall or panel.
Approximate Weights	Without display and mounting bracket: 0.80 kg. Add for digital display: 0.13 kg. Add for mounting bracket: 0.60 kg.
Control Functions Characteristics (Optional)	<p>HART®: PID Control, Alarm and Setpoint Ramp Generator.</p> <p>FOUNDATION™ fieldbus Function Blocks: Resource, Transducer, Display Transducer, Diagnostic Transducer, Analog Input, PID Control, Enhanced PID Control, Arithmetic, Integrator, Input Selector, Signal Characterizer, Splitter, Analog Alarm, Timer, Lead Lag, Output Selector/Dynamic Limiter, Setpoint Generator and Constant.</p> <p>PROFIBUS PA Function Blocks: Physical Block, Transducer, Display Transducer and Analog Input.</p> <p>Note: Additional information can be found in the Function Blocks Instruction Manual.</p>

Inputs

SENSOR	TYPE	2, 3 or 4 wires				DIFFERENTIAL			
		RANGE °C	RANGE °F	MINIMUM SPAN °C	°C DIGITAL ACCURACY*	RANGE °C	RANGE °F	MINIMUM SPAN °C	°C DIGITAL ACCURACY*
RTD	Cu 10 GE	-20 to 250	-4 a 482	50	± 1.0	-270 to 270	-486 to 486	50	± 2.0
	Ni120 Edison Curve #7	-50 a 270	-58 a 518	5	± 0.1	-320 a 320	-576 a 576	5	± 0.5
	Pt50 IEC	-200 to 850	-328 to 1562	10	± 0.25	-1050 to 1050	-1890 to 1890	10	± 1.0
	Pt100 IEC	-200 to 850	-328 to 1562	10	± 0.2	-1050 to 1050	-1890 to 1890	10	± 1.0
	Pt500 IEC	-200 to 450	-328 to 842	10	± 0.2	NA	NA	NA	NA
	Pt1000 IEC	-200 to 300	-328 to 572	10	± 0.2	NA	NA	NA	NA
	Pt50 JIS	-200 to 600	-328 to 1112	10	± 0.25	-800 to 800	-1440 to 1440	10	± 1.0
	Pt100 JIS	-200 to 600	-328 to 1112	10	± 0.25	-800 to 800	-1440 to 1440	10	± 1.5
	Pt100 MILT	-40 a 540	-40 a 1000	10	± 0.2	-580 a 580	-1040 a 1040	10	± 1.0
	Ni120 MILT	-40 a 205	-40 a 400	5	± 0.13	-245 a 245	-440 a 440	5	± 0.5
	Pt100 IEC	-200 a 850	-328 a 1562	10	± 0.2	-1050 a 1050	-1890 a 1890	10	± 1.0
	Pt100 GOST	-200 a 850	-328 a 1562	10	± 0.2	-1050 a 1050	-1890 a 1890	10	± 1.0
	Pt50 GOST	-200 a 850	-328 a 1562	10	± 0.2	-1050 a 1050	-1890 a 1890	10	± 1.0
	Cu100 GOST	-50 a 200	-58 a 392	10	± 0.15	-350 a 350	-450 a 450	10	± 1.0
Cu50 GOST	-50 a 200	-58 a 392	10	± 0.15	-350 a 350	-450 a 450	10	± 1.0	
THERMO-COUPLE	B NBS	100 to 1800	212 to 3272	50	± 0.5**	-1700 to 1700	-3060 to 3060	60	± 1.0**
	E NBS	-100 to 1000	-148 to 1832	20	± 0.2	-1100 to 1100	-1980 to 1980	20	± 1.0
	J NBS	-150 to 750	-238 to 1382	30	± 0.3	-900 to 900	-1620 to 1620	30	± 0.6
	K NBS	-200 to 1350	-328 to 2462	60	± 0.6	-1550 to 1550	-2790 to 2790	60	± 1.2
	N NBS	-100 to 1300	-148 to 2372	50	± 0.5	-1400 to 1400	-2520 to 2520	50	± 1.0
	R NBS	0 to 1750	32 to 3182	40	± 0.4	-1750 to 1750	-3150 to 3150	40	± 2.0
	S NBS	0 to 1750	32 to 3182	40	± 0.4	-1750 to 1750	-3150 to 3150	40	± 2.0
	T NBS	-200 to 400	-328 to 752	15	± 0.15	-600 to 600	-1080 to 1080	15	± 0.8
	L DIN	-200 to 900	-328 to 1652	35	± 0.35	-1100 to 1100	-1980 to 1980	35	± 0.7
	U DIN	-200 to 600	-328 to 1112	50	± 0.5	-800 to 800	-1440 to 1440	50	± 2.5

Table 1 - Sensor Characteristics

SENSOR	RANGE mV	MINIMUM SPAN mV	DIGITAL* ACCURACY %
mV	-6 to 22	0.40	± 0.02% or ± 2 µV
	-10 to 100	2.00	± 0.02% or ± 10 µV
	-50 to 500	10.00	± 0.02% or ± 50 µV

Table 2 - mV Sensor Characteristics

SENSOR	RANGE Ohm	MINIMUM SPAN Ohm	DIGITAL* ACCURACY %
Ohm	0 to 100	1	± 0.02% or ± 0.01 Ohm
	0 to 400	4	± 0.02% or ± 0.04 Ohm
	0 to 2000	20	± 0.02% or ± 0.20 Ohm

Table 3 - Ohm Sensor Characteristics

* Accuracy of value read on display and accessed by communication. The 4-20 mA accuracy is the digital accuracy ±0.03%.

** Not applicable for the first 20% of the range (up to 440 °C).

NA: Not applicable.

MODEL	TEMPERATURE TRANSMITTER									
TT301 TT302 TT303	HART® & 4 to 20 mA FOUNDATION™ fieldbus PROFIBUS PA									
COD. Local Indicator										
0 Without Indicator 1 With Digital Indicator										
COD. Mounting Bracket										
A Flat, 304 SST bracket and 316 SST accessories 1 Carbon Steel Bracket 7 Carbon Steel Bracket with 316 SST Fasteners 0 Without Bracket 2 316 SST Bracket										
COD. Set this code as "1" for TT301 and exclude for the others										
COD. Electrical Connections										
0 1/2 - 14 NPT (8) 3 1/2 - 14 NPT X 1/2 BSP (316 SST) - With adapter (2) Z According to user's notes 1 1/2 - 14 NPT X 3/4 NPT (316 SST) - With adapter (9) A M20 x 1.5 (10) 2 1/2 - 14 NPT X 3/4 BSP (316 SST) - With adapter (2) B PG 13.5 DIN (11)										
COD. Housing Material (13) (14)										
H0 Aluminum (IP/TYPE) H2 Aluminum for saline atmosphere (IPW/TYPEX) (15) H4 Copper Free Aluminium (IPW/TYPEX) (15) H1 316 SST (IP/TYPE) H3 316 SST for saline atmospheres (IPW/TYPEX) (15)										
COD. Identification Plate (12)										
I1 FM: XP, IS, NI, DI I4 EXAM (DMT): Ex-ia IE NEPSI: Ex-ia (3) I2 NEMKO: Ex-d, Ex-ia (4) I5 CEPEL: Ex-d, Ex-ia IF CEPEL: Ex-d (4) I3 CSA: XP, IS, NI, DI (5) I6 Without Certification IG CEPEL (Ex-d, Ex-ia) +IPW (6)										
COD. Tag Plate (12)										
J0 With tag, when specified (Default) J1 Blank J2 According to user's notes										
COD. Sensor Connection										
L2 2-wire L4 4-wire LD Double 2-wire (3) L3 3-wire LF Differential LB Backup										
COD. PID Configuration - (4)										
M0 With PID (Default) M1 Without PID										
COD. LCD1 Indication - (4)										
Y0 LCD1: Percentage (Default) Y3 LCD1: Temperature (Engineering Unit) Y1 LCD1: Current - I (mA) YU LCD1: According to user notes (1) (7)										
COD. LCD2 Indication - (4)										
Y0 LCD2: Percentage (Default) Y6 LCD2: Temperature (Engineering Unit) Y4 LCD2: Current - I (mA) YU LCD2: According to user notes (1) (7)										
COD. Painting										
P0 Gray Munsell N 6,5 Polyester (Default) P5 Yellow Polyester P3 Black Polyester P8 Without Painting P4 White Epoxy P9 Safety Blue Epoxy - Electrostatic Painting										
COD. Sensor Type										
T1 RTD Cu10 - GE TB Thermocouple type E - NBS TQ 22 mV T2 RTD Ni120 - Edison Curve #7 TC Thermocouple type J - NBS TR 100 mV T3 RTD PT50 - IEC TD Thermocouple type K - NBS TS 500 mV T4 RTD PT100 - IEC TE Thermocouple type N - NBS TT Special mV (4) T5 RTD PT500 - IEC TF Thermocouple type R - NBS TV RTD Pt100 MILT T6 RTD PT50 - JIS TG Thermocouple type S - NBS TW RTD Ni120 MILT T7 RTD PT100 - JIS TH Thermocouple type T - NBS TX RTD Pt100 - IEC (4) TU RTD PT1000 - IEC (4) TK Thermocouple type L - DIN 10 RTD Pt100 - GOST (4) T8 2K OHM TP Thermocouple type U - DIN 11 RTD Pt50 - GOST (4) T9 400 OHM TN 100 OHM 12 Cu100 - GOST (4) TA Thermocouple type B - NBS TO Special OHM (4) 13 Cu50 - GOST (4)										
COD. Burn-out (4)										
BD Down Scale BU Up Scale										

TT301	1	2	1	0	H1	I1	J0	L2	M0	Y0	Y0	P8	T1	BU
TT302	1	2		0	H1	I1	J0	L2				P8	T1	
TT303	1	2		0	H1	I1	J0	L2				P8	T1	

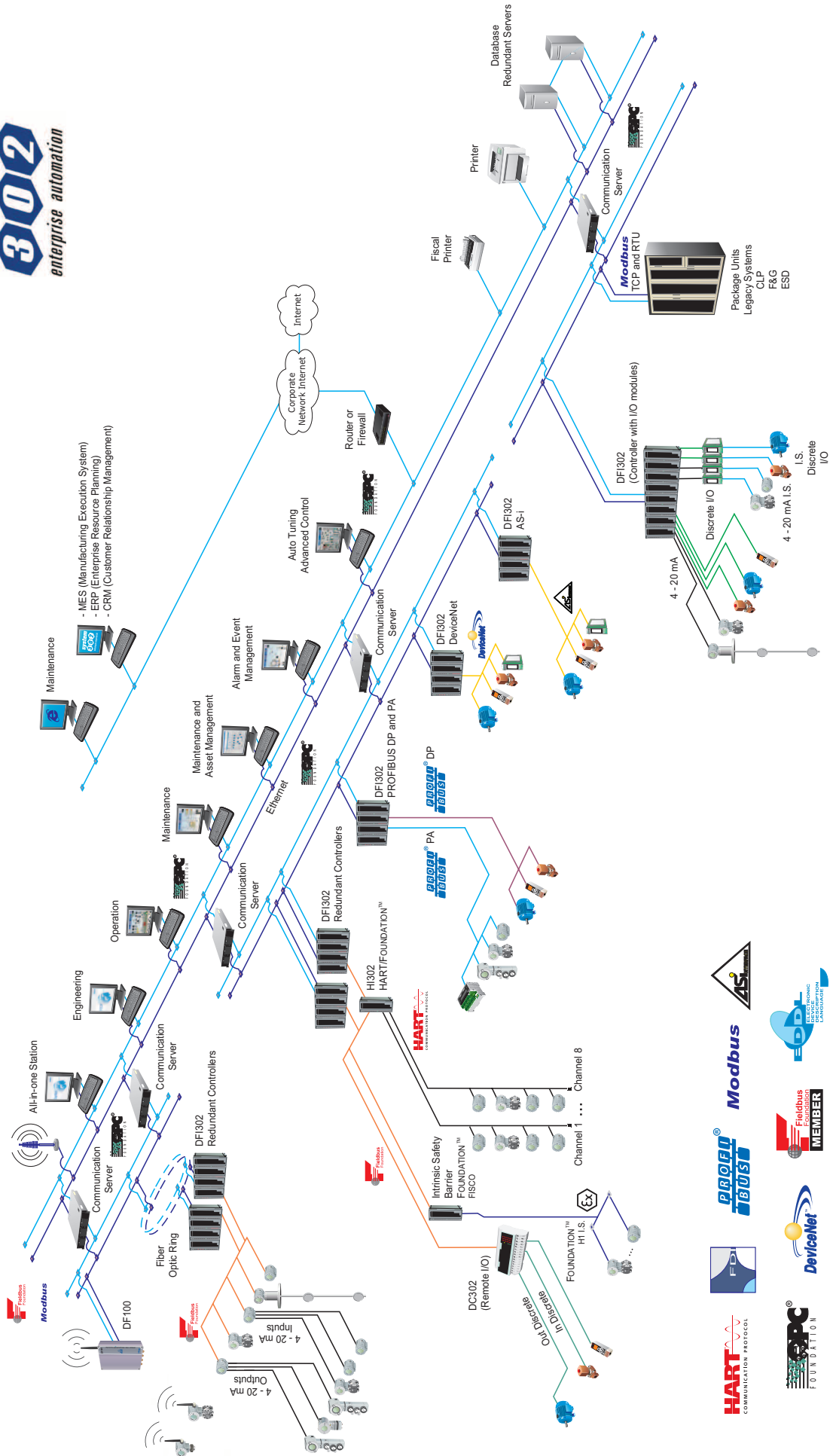
Note:

- (1) Values limited to 4 ½ digits; units limited to 5 characters.
- (2) Not certified for use in hazardous locations.
- (3) Only available for TT302 and TT303.
- (4) Only available for TT301.
- (5) Only available for TT301 and TT302.
- (6) Not available for Aluminum housing.
- (7) For TT301, this code will be available only if the chosen sensor is Ohm or mV special.
- (8) Certified for use in hazardous locations (CEPEL, CSA, FM, NEPSI, NEMKO, EXAM).
- (9) Certified for use in hazardous locations (CEPEL, CSA, FM).
- (10) Certified for use in hazardous locations (CEPEL, FM, NEPSI, NEMKO, EXAM).

- (11) Certified for use in hazardous locations (CEPEL, NEPSI, NEMKO, EXAM).
- (12) Rectangular plate in 316 SST.
- (13) IPX8 tested in 10 meters of water column for 24 hours.
- (14) Ingress Protection:

Product	CEPEL	NEMKO / EXAM	FM	CSA	NEPSI
TT300	IP66/68W	IP66/68W	Type 4X/6 (6P)	Type 4X	IP67

(15) IPW/TYPE testes for 200 hours according to NBR 8094 / ASTM B 117 standard.



Pressure Pressure and Level Pressure, Level and Flow

<p>4-20 mA LD290 HART LD291 PROFIBUS LD292 PROFIBUS LD293</p> <p>Pressure Transmitter "In Line"</p>	<p>HART LD1.0</p> <p>Gauge Economic Capacitive Pressure Transmitter</p>	<p>4-20 mA LD290 HART LD291 PROFIBUS LD292 PROFIBUS LD293</p> <p>Flanged Transmitter</p>	<p>4-20 mA LD290 HART LD291 PROFIBUS LD292 PROFIBUS LD293</p> <p>Pressure Transmitter with Extended Probe</p>	<p>HART LD301 PROFIBUS LD302 PROFIBUS LD303</p> <p>Pressure Transmitter</p>	<p>HART LD400</p> <p>Pressure Transmitter with High Performance</p>	<p>WirelessHART LD400</p> <p>WirelessHART Pressure Transmitter</p>
--	---	---	--	---	---	--

Level Density/Concentration Position

<p>RD400</p> <p>Guided Wave Level Transmitter</p>	<p>HART DT301 PROFIBUS DT302 PROFIBUS DT303</p> <p>Intelligent Density / Concentration Transmitter</p>	<p>HART FY301 PROFIBUS FY302 PROFIBUS FY303</p> <p>Valve Positioner</p>	<p>HART FY400</p> <p>Valve Positioner with Auto Tuning</p>
---	--	---	--

Position

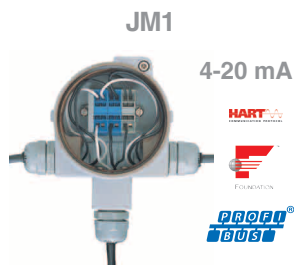
<p>HART FY400 HART FY301 PROFIBUS FY302 PROFIBUS FY303</p> <p>Valve Positioner with Remote Sensor</p>	<p>HART ACP400 HART ACP301 PROFIBUS ACP302 PROFIBUS ACP303</p> <p>Pneumatic Linear Cylindric Actuator</p>	<p>HART ACP400 HART ACP301 PROFIBUS ACP302 PROFIBUS ACP303</p> <p>Pneumatic Rotary Cylindric Actuator</p>	<p>4-20 mA TP290 HART TP301 PROFIBUS TP302 PROFIBUS TP303</p> <p>Position Transmitter</p>
---	---	---	--

Temperature

<p>HART TT301 PROFIBUS TT302 PROFIBUS TT303</p> <p>Temperature Transmitter</p>	<p>PROFIBUS TT383</p> <p>Eight Input Temperature Transmitter</p>	<p>HART TT400 HART® SIS</p> <p>Smart Temperature Transmitter</p>	<p>WirelessHART TT400</p> <p>WirelessHART Temperature Transmitter</p>	<p>HART TT411</p> <p>Panel Mounting Temperature Transmitter</p>	<p>HART TT421</p> <p>Head Mounting Temperature Transmitter</p>
--	--	--	---	---	--

Junction Box

Didactic Products



3 Ways Junction Box

4 Ways Junction Box

Didactic Plant

Didactical Kits

Configurators

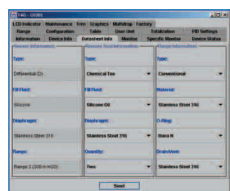
Interfaces

HART® CONF401

HART® DDCON 100

HART® HI311/HI321

PBI-PLUS



HART® Configurator Interface

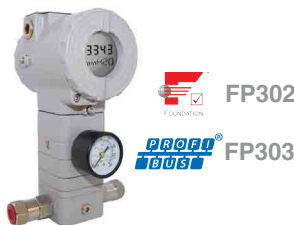
HART® Configurator Interface

HART® Configurator

HART-USB Interface for PC

Advanced PROFIBUS PA Interface

Converters



FOUNDATION™ / PROFIBUS PA to Pneumatic Signal Converter

Triple Channel Current to FOUNDATION™ / PROFIBUS PA Converters

Triple Channel FOUNDATION™ / PROFIBUS PA to Current Converters

FOUNDATION™ / PROFIBUS PA Relay and Digital Input

HART® / Fieldbus Interface

HART® / Current Converter

Controllers

DFI302

LC700

CD600Plus



Interface Universal Fieldbus

Programmable Logical Controller

Digital Controller

Controllers - Remote Input and Output

WirelessHART DF100



HSE Controller and WirelessHART Gateway

DC303



FOUNDATION™ fieldbus / PROFIBUS PA Remote Input and Output

DC302



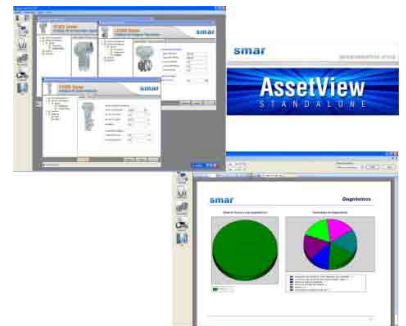
SYSTEM302



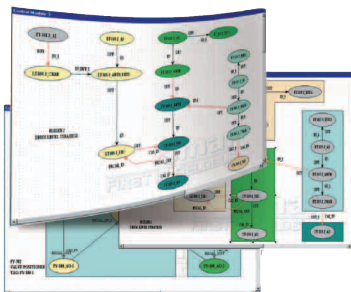
ProcessView Supervision / Operation System



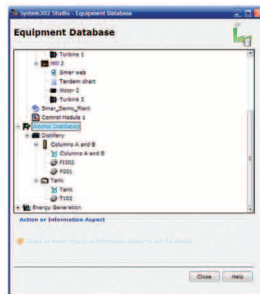
SimulationView Control Strategy Simulator



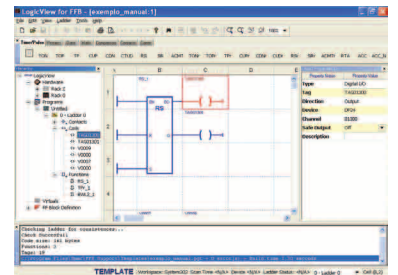
AssetView STANDALONE Asset Management System



Syscon Control Strategy and Industrial Network Configurator



Process Equipment Database Plant Information Management



LogicView for FFB IEC61131 Programming Tool



smar
www.smar.com

Specifications and information are subject to change without notice.
Up-to-date address information is available on our website.

web: www.smar.com/contactus.asp

