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ABB MEASUREMENT & ANALYTICS | DATA SHEET

# TTF300

## Field-mount temperature transmitter



## ... Use in potentially explosive atmospheres in accordance with ATEX and IECEx

### Temperature data

#### Transmitter

##### ATEX / IECEx intrinsic safety, ATEX non-sparking

Temperature class	Permissible ambient temperature range	
	Device category 1 use	Device category 2 / 3 use
T6	-50 to 44 °C (-58 to 111.2 °F)	-50 to 56 °C (-58 to 132.8 °F)
T4 to T1	-50 to 60 °C (-58 to 140.0 °F)	-50 to 85 °C (-58 to 185.0 °F)

##### ATEX / IECEx Flameproof (Enclosure)

Temperature class	Permissible ambient temperature range on the connection head
T6	-40 to 67 °C (-40 to 152 °F)
T4 to T1	-40 to 85 °C (-40 to 185 °F)

#### LCD indicator

##### ATEX / IECEx intrinsic safety, ATEX non-sparking

Temperature class	Permissible ambient temperature range	
	Device category 1 use	Device category 2 / 3 use
T6	-40 to 44 °C (-40 to 111.2 °F)	-40 to 56 °C (-40 to 132.8 °F)
T4 to T1	-40 to 60 °C (-40 to 140 °F)	-40 to 85 °C (-40 to 185 °F)

### Electrical data

#### Transmitter

##### Intrinsic safety type of protection Ex ia IIC (Part 1)

Supply circuit	TTF300-E1H	TTF300-E1P / -H1P	
	TTF300-H1H	FISCO*	ENTITY
Max. voltage	$U_i = 30 \text{ V}$	$U_i \leq 17.5 \text{ V}$	$U_i \leq 24.0 \text{ V}$
Short-circuit current	$I_i = 130 \text{ mA}$	$I_i \leq 183 \text{ mA}^{**}$	$I_i \leq 250 \text{ mA}$
Max. power	$P_i = 0.8 \text{ W}$	$P_i \leq 2.56 \text{ W}^{**}$	$P_i \leq 1.2 \text{ W}$
Internal inductance	$L_i = 0.5 \text{ mH}$	$L_i \leq 10 \mu\text{H}$	$L_i \leq 10 \mu\text{H}$
Internal capacitance	$C_i = 0.57 \text{ nF}^{***}$	$C_i \leq 5 \text{ nF}$	$C_i \leq 5 \text{ nF}$

\* FISCO in accordance with 60079-27

\*\* II B FISCO:  $I_i \leq 380 \text{ mA}$ ,  $P_i \leq 5.32 \text{ W}$

\*\*\* Only applies for HART variants. From HW Rev. 1.07, previously 5 nF

##### Intrinsic safety type of protection Ex ia IIC (Part 2)

Measurement current circuit	Resistance thermometers, resistors	Thermocouples, voltages
	Max. voltage	$U_o = 6.5 \text{ V}$
Short-circuit current	$I_o = 25 \text{ mA}$	$I_o = 50 \text{ mA}$
Max. power	$P_o = 38 \text{ mW}$	$P_o = 60 \text{ mW}$
Internal inductance	$L_i = 0 \text{ mH}$	$L_i = 0 \text{ mH}$
Internal capacitance	$C_i = 49 \text{ nF}$	$C_i = 49 \text{ nF}$
Maximum permissible external inductance	$L_o = 5 \text{ mH}$	$L_o = 5 \text{ mH}$
Maximum permissible external capacitance	$C_o = 1.55 \mu\text{F}$	$C_o = 1.05 \mu\text{F}$

##### Intrinsic safety type of protection Ex ia IIC (Part 3)

LCD indicator interface	
Max. voltage	$U_o = 6.2 \text{ V}$
Short-circuit current	$I_o = 65.2 \text{ mA}$
Max. power	$P_o = 101 \text{ mW}$
Internal inductance	$L_i = 0 \text{ mH}$
Internal capacitance	$C_i = 0 \text{ nF}$
Maximum permissible external inductance	$L_o = 5 \text{ mH}$
Maximum permissible external capacitance	$C_o = 1.4 \mu\text{F}$

**Type of protection flameproof (enclosure) Ex db IIC****Supply circuit**

Maximum voltage	$U_S = 30\text{ V}$
Maximum current	$I_S = 32\text{ mA}$ , limited by the upstream fuse (rated fuse current 32 mA)

**Measurement current circuit**

Maximum voltage	$U_O = 6.5\text{ V}$
Maximum current	$I_O = 17.8\text{ mA}$
Maximum power	$P_O = 39\text{ mW}$

**Dust explosion protection type of protection Ex tb IIIC T135°C Db, Ex tc IIIC T135°C Dc****Non-intrinsically safe power supply****Supply circuit**

Maximum voltage	$U_S = 30\text{ V}$
Maximum current	$I_S = 32\text{ mA}$ , limited by the upstream fuse (rated fuse current 32 mA)

**Measurement current circuit**

Maximum permissible power dissipation in the measuring inset (sensor)	$P_i = 0.5\text{ W}$
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**Intrinsically safe power supply**

If in the dust explosion protection type of protection, the transmitter is supplied with power from a power supply unit which is designed as intrinsically safe in the 'Ex ia' or 'Ex ib' type of protection, a limitation of the power supply circuit by an upstream fuse is not required.

In this case, the electric data of the transmitter for the intrinsic safety type of protection Ex ia IIC (Part 1) for TTF300-E1H and TTF300-H1H, Ex ia IIC (Part 2) as well Ex ia IIC (Part 3) should be complied with.

Refer to **Transmitter** on page 20.

**LCD indicator****Intrinsic safety type of protection Ex ia IIC****Supply circuit**

Max. voltage	$U_i = 9\text{ V}$
Short-circuit current	$I_i = 65.2\text{ mA}$
Max. power	$P_i = 101\text{ mW}$
Internal inductance	$L_i = 0\text{ mH}$
Internal capacitance	$C_i = 0\text{ nF}$

## Use in potentially explosive atmospheres in accordance with FM and CSA

### Note

- Further information on the approval of devices for use in potentially explosive atmospheres can be found in the explosion protection test certificates (at [www.abb.com/temperature](http://www.abb.com/temperature)).
- Depending on the design, a specific marking in accordance with FM or CSA applies.

## Ex marking

### Transmitter

#### FM Intrinsically Safe

Model TTF300-L1H	
Control Drawing	SAP_214832
Model TTF300-L1P	
Control Drawing	TTF300-L1..P (IS)
Model TTF300-L1F	
Control Drawing	TTF300-L1..F (IS)
Class I, Div. 1 + 2, Groups A, B, C, D	
Class I, Zone 0, AEx ia IIC	

#### FM Non-Incendive

Model TTF300-L2H	
Control Drawing	SAP_214830 (NI_PS) SAP_214828 (NI_AA)
Model TTF300-L2P	
Control Drawing	TTF300-L2..P (NI_PS) TTF300-L2..P (NI_AA)
Model TTF300-L2F	
Control Drawing	TTF300-L2..F (NI_PS) TTF300-L2..F (NI_AA)
Class I, Div. 2, Groups A, B, C, D	
Class I Zone 2 Group IIC T6	

#### FM Explosion proof

Model TTF300-L3	
XP,NI, DIP Class I, II, III, Div. 1 + 2, Groups A-G, factory sealed	

#### CSA Intrinsically Safe

Model TTF300-R1H	
Control Drawing	SAP_214825
Model TTF300-R1P	
Control Drawing	TTF300-R1..P (IS)
Model TTF300-R1F	
Control Drawing	TTF300-R1..F (IS)
Class I, Div. 1 + 2, Groups A, B, C, D	
Class I, Zone 0, Ex ia IIC	

#### CSA Non-Incendive

Model TTF300-R2H	
Control Drawing	SAP_214827 (NI_PS) SAP_214895 (NI_AA)
Model TTF300-R2P	
Control Drawing	TTF300-R2..P (NI_PS) TTF300-R2..P (NI_AA)
Model TTF300-R2F	
Control Drawing	TTF300-R2..F (NI_PS) TTF300-R2..F (NI_AA)
Class I, Div. 2, Groups A, B, C, D	

#### CSA Explosion proof

Model TTF300-R3	
XP,NI, DIP Class I, II, III, Div. 1 + 2, Groups A-G, factory sealed	

#### CSA Explosion Proof and Intrinsically Safe

Model TTF300-R7H (R1H + R3H)	
Control Drawing	SAP_214825
Model TTF300-R7P (R1P + R3P)	
Control Drawing	TTF300-R1..P (IS)
Model TTF300-R7F (R1F + R3F)	
Control Drawing	TTF300-R1..F (IS)
XP,NI, DIP Class I, II, III, Div. 1 + 2, Groups A-G, factory sealed	
Class I, Div. 1 + 2, Groups A, B, C, D	
Class I, Zone 0, Ex ia Group IIC T6	

**LCD indicator****FM Intrinsically Safe**


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Control Drawing	SAP_214 748
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I.S. Class I Div 1 and Div 2, Group: A, B, C, D or

I.S. Class I Zone 0 AEx ia IIC T\*

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$$U_i / V_{\max} = 9 \text{ V}, I_i / I_{\max} < 65.2 \text{ mA}, P_i = 101 \text{ mW}, C_i = 0.4 \text{ }\mu\text{F}, L_i = 0$$


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**FM Non-Incendive**


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Control Drawing	SAP_214 751
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N.I. Class I Div 2, Group: A, B, C, D oder Ex nL IIC T\*\*, Class I Zone 2

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$$U_i / V_{\max} = 9 \text{ V}, I_i / I_{\max} < 65.2 \text{ mA}, P_i = 101 \text{ mW}, C_i = 0.4 \text{ }\mu\text{F}, L_i = 0$$


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**CSA Intrinsically Safe**


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Control Drawing	SAP_214 749
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I.S. Class I Div 1 and Div 2; Group: A, B, C, D or

I.S. Zone 0 Ex ia IIC T\*

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$$U_i / V_{\max} = 9 \text{ V}, I_i / I_{\max} < 65.2 \text{ mA}, P_i = 101 \text{ mW}, C_i < 0.4 \text{ }\mu\text{F}, L_i = 0$$


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**CSA Non-Incendive**


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Control Drawing	SAP_214 750
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N.I. Class I Div 2, Group: A, B, C, D oder Ex nL IIC T\*\*, Class I Zone 2

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$$U_i / V_{\max} = 9 \text{ V}, I_i / I_{\max} < 65.2 \text{ mA}, P_i = 101 \text{ mW}, C_i < 0.4 \text{ }\mu\text{F}, L_i = 0$$


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\* Temp. Ident: T6 T<sub>amb</sub> 56 °C, T4 T<sub>amb</sub> 85 °C\*\* Temp. Ident: T6 T<sub>amb</sub> 60 °C, T4 T<sub>amb</sub> 85 °C

## Ordering Information

### TTF300

Base model	TTF300	XX	X	X	X	XX
TTF300 Field Mounted Temperature Transmitter, Pt100 (RTD), thermocouples, electrical isolation						
<b>Explosion Protection</b>						
Without explosion protection		Y0				
ATEX Intrinsic Safety type of protection: Zone 0: II 1 G Ex ia IIC T6 Ga, Zone 1 (0): II 2 (1) G Ex [ia IIC Ga] ib IIC T6 Gb, Zone 1 (20): II 2 G (1D) Ex [ia IIIC Da] ib IIC T6 Gb		E1				
ATEX Non-sparking type of protection: Zone 2 / Zone 22: II 3 G Ex nA IIC T1-T6 Gc und II 3 D Ex tc IIIB T135°C Dc (Not for application in explosive hybrid mixtures)		E5				
ATEX Dust Explosion Protection: Zone 21: II 2D Ex tb IIIC T135°C Db, Zone 22: II 3D Ex tc IIIC T135°C Dc		D5**				
ATEX Dust Explosion Protection and Intrinsic Safety (IS): Zone 21 / Zone 0: II 2D Ex tb IIIC T135°C Db and II 1 G Ex ia IIC T6 Ga (Not for application in explosive hybrid mixtures)		D6* **				
ATEX Flameproof type of protection: Zone 1: II 2 G Ex db IIC T6/T4 Gb		E3				
ATEX Flameproof and Intrinsic Safety type of protection: Zone 1 / Zone 0: II 2 G Ex db IIC T6/T4 Gb and II 1 G Ex ia IIC T6 Ga		E4				
IECEX Intrinsic Safety type of protection:						
Zone 0: Ex ia IIC T6 Ga, Zone 1 (0): Ex [ia IIC Ga] ib IIC T6 Gb, Zone 1 (20): Ex [ia IIIC Da] ib IIC T6 Gb		H1				
IECEX Dust Explosion Protection: Zone 21: Ex tb IIIC T135°C Db, Zone 22: Ex tc IIIC T135°C Dc		J5**				
Flameproof type of protection: Zone 1: Ex db IIC T6/T4 Gb		H5				
FM Intrinsic Safety (IS): Class I, Div. 1+2, Groups A, B, C, D, Class I, Zone 0, AEx ia IIC T6		L1				
FM Non-incendive (NI): Class I, Div. 2, Groups A, B, C, D oder Class I Zone 2 Group IIC T6		L2				
FM Explosion-proof (XP): XP, NI, DIP, Class I, II, III, Div. 1+2, Groups A-G, factory sealed		L3				
CSA Intrinsic Safety (IS): Class I, Div. 1+2, Groups A, B, C, D, Class I, Zone 0, Ex ia IIC		R1				
CSA Non-incendive (NI): Class I, Div. 2, Groups A, B, C, D		R2				
CSA Explosionproof (XP): XP, NI, DIP, Class I, II, III, Div. 1+2, Groups A-G, factory sealed		R3				
CSA Explosionproof (XP) and Intrinsic Safety (IS): XP, NI, DIP, Class I, II, III, Div. 1+2, Groups A-G, factory sealed und IS, Class I, Div. 1+2, Groups A, B, C, D, Class I, Zone 0, Ex ia IIC		R7				
GOST Russia - metrological approval		G1				
GOST Russia - metrological approval and EAC-Ex, Ex i - Zone 0		P2				
GOST Russia - metrological approval and EAC-Ex, Ex d		P3				
GOST Kazakhstan - metrological approval		G3				
GOST Kazakhstan - metrological approval and EAC-Ex, Ex i - Zone 0		T2				
GOST Kazakhstan - metrological approval and EAC-Ex, Ex d		T3				
GOST Belarus - metrological approval		M5				
GOST Belarus - metrological approval and EAC-Ex, Ex i - Zone 0		U2				
GOST Belarus - metrological approval and EAC-Ex, Ex d		U3				
Inmetro Ex ia IIC T6...T4 Ga, Ex ib [ia Ga] IIC T6...T4 Gb Exib [ia IIIC Da] IIC T6...T4 Gb		C1				
NEPSI Ex ia IIC T6		S1				
KOSHA Ex ia IIC T6		S5				

\* According EN 60079-0 and EN 61241-0, the application in explosive hybrid mixtures (concomitance of potentially explosive dust and gas) is currently not allowed

\*\* Only available with Communication Protocol code H (HART®)

<b>Main ordering information TTF300</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>XX</b>
<b>Housing / Display</b>				
Single-compartment housing (aluminium) / Without display	A			
Single-compartment housing (stainless steel) / Without display	B			
Single-compartment housing (aluminium) / With LCD-display HMI	C			
Single-compartment housing (stainless steel) / With LCD-display HMI	D			
<b>Cable Entry</b>				
Thread 2 × M20 × 1.5		1 <sup>1</sup>		
Thread 2 × 1/2 in NPT		2		
Thread 2 × 3/4 in NPT		3 <sup>2</sup>		
Cable gland 2 × M20 × 1.5 (plastic version with limited temperature range)		4 <sup>3</sup>		
<b>Communication Protocol</b>				
HART®, programmable, output signal 4 to 20 mA, dual input			H	
PROFIBUS PA®			P	
FOUNDATION fieldbus®			F	
<b>Configuration</b>				
Standard configuration				BS
Customer-specific configuration, except user curve				BF <sup>4</sup>
Customer-specific configuration, including user curve				BG

1 Not available with Explosion Protection code L1, L2, L3, R1, R2, R3, R7, D5, D6, J5

2 Only available with Housing / Display code A, C

3 Not available with Explosion Protection code L3, R3, R7

4 E.g. set measuring range, TAG no.

## ... Ordering Information

### Additional ordering information

TTF300 Field Mounted Temperature Transmitter	XX	XX	XXX	XX	XX	XX	XX	XX	XX	XX
<b>Declarations and Certificates</b>										
SIL2 - Declaration of Conformity	CS*									
Declaration of compliance according EN 10204-2.1, with the order	C4									
Inspection certificate according EN 10204-3.1, visual, dimensional and functional test	C6									
MID Parts Certificate for Custody Transfer	CO*									
<b>Calibration Certificates</b>										
With 5-point factory certificate		EM								
Inspection certificate according EN 10204-3.1, 5-point calibration		EP								
<b>Handling of Certificates</b>										
Send via e-mail			GHE							
Send via mail			GHP							
Send via mail express			GHD							
Send with instrument			GHA							
Only archived			GHS							
<b>Mounting Bracket</b>										
Wall mounting / 2 in pipe mounting bracket (stainless steel)						K2				
<b>Cable Entry Options</b>										
Cable gland 2 × ½ in NPT								U5**		
<b>Extended Ambient Temperature Range</b>										
-50 to 85 °C (-58 to 185 °F)									SE	
<b>Device Identification Plate</b>										
Stainless steel										TO
<b>Additional Tag Plate</b>										
Stainless steel										I1
<b>Customer-specific Versions</b>										
(Please specify)										Z9
<b>Documentation Language</b>										
German										M1
English										M5
Language package Western Europe / Scandinavia (Languages: DE, EN, DA, ES, FR, IT, NL, PT, FI, SV)										MW
Language package Eastern Europe (Languages: DE, EL, CS, ET, LV, LT, HU, PL, SK, SL, RO, BG)										ME

\* Only available with Communication Protocol code H (HART®)

\*\* Only available with Cable Entry code 2

Accessories	Order code
TTF300 Commissioning Instruction, German	3KXT221001R4403
TTF300 Commissioning Instruction, English	3KXT221001R4401
TTF300 Commissioning Instruction, Language package Western Europe / Scandinavia	3KXT221001R4493
TTF300 Commissioning Instruction, Language package Eastern Europe	3KXT221001R4494



## Order form configuration

### HART device design

Customer-specific configuration	Selection
Number of sensors	<input type="checkbox"/> 1 sensor (standard) <input type="checkbox"/> 2 sensors
Measurement type (for 2-sensor selection only)	<input type="checkbox"/> Sensor redundancy / sensor backup <input type="checkbox"/> Sensor drift monitoring ____ °C / K sensor drift differential ____ s time limit for drift overshoot <input type="checkbox"/> Difference measurement <input type="checkbox"/> Average measurement
IEC 60751      Resistance thermometer	<input type="checkbox"/> Pt10 <input type="checkbox"/> Pt50 <input type="checkbox"/> Pt100 (Standard) <input type="checkbox"/> Pt200 <input type="checkbox"/> Pt500 <input type="checkbox"/> Pt1000
JIS C1604	<input type="checkbox"/> Pt10 <input type="checkbox"/> Pt50 <input type="checkbox"/> Pt100
MIL-T-24388	<input type="checkbox"/> Pt10 <input type="checkbox"/> Pt50 <input type="checkbox"/> Pt100 <input type="checkbox"/> Pt200 <input type="checkbox"/> Pt1000
DIN 43760	<input type="checkbox"/> Ni50 <input type="checkbox"/> Ni100 <input type="checkbox"/> Ni120 <input type="checkbox"/> Ni1000
OIML R 84	<input type="checkbox"/> Cu10 <input type="checkbox"/> Cu100
Resistance measurement	<input type="checkbox"/> 0 ... 500 Ω <input type="checkbox"/> 0 ... 5000 Ω
IEC 60584      Thermocouple	<input type="checkbox"/> Type K <input type="checkbox"/> Type J <input type="checkbox"/> Type N <input type="checkbox"/> Type R <input type="checkbox"/> Type S <input type="checkbox"/> Type T <input type="checkbox"/> Type E <input type="checkbox"/> Type B
DIN 43710	<input type="checkbox"/> Type L <input type="checkbox"/> Type U
ASTM E-988	<input type="checkbox"/> Type C <input type="checkbox"/> Type D
Voltage measurement	<input type="checkbox"/> -125 ... 125 mV <input type="checkbox"/> -125 ... 1100 mV
Sensor circuit (for resistance thermometer and resistance measurement only)	<input type="checkbox"/> Two-wire <input type="checkbox"/> Three-wire (standard) <input type="checkbox"/> Four-wire Two-wire circuit: Compensation of sensor-wire resistance max. 100 Ω <input type="checkbox"/> Sensor 1: ____ Ω <input type="checkbox"/> Sensor 2: ____ Ω
Reference junction (for thermocouples only)	<input type="checkbox"/> Internal (for standard thermocouple, except type B) <input type="checkbox"/> None (type B) <input type="checkbox"/> External / temperature: ____ °C
Measuring range	<input type="checkbox"/> Lower range value :      _____ (standard: 0) <input type="checkbox"/> Upper range value :      _____ (standard: 100)
Unit	<input type="checkbox"/> Celsius (default) <input type="checkbox"/> Fahrenheit <input type="checkbox"/> Rankine <input type="checkbox"/> Kelvin
Characteristic behavior	<input type="checkbox"/> Rising 4 ... 20 mA (standard) <input type="checkbox"/> Falling 20 ... 4 mA
Output behavior for error	<input type="checkbox"/> Overrange / 22 mA (standard) <input type="checkbox"/> Underrange / 3.6 mA
Output damping ( $T_{63}$ )	<input type="checkbox"/> Off (standard) <input type="checkbox"/> ____ seconds (1 ... 100 s)
Sensor number	<input type="checkbox"/> Sensor 1: _____ <input type="checkbox"/> Sensor 2: _____
Resistor value at 0 °C / $R_0$	Sensor 1: $R_0$ :      _____      Sensor 2: $R_0$ :      _____
Callendar-Van Dusen coefficient A	A:      _____      A:      _____
Callendar-Van Dusen coefficient B	B:      _____      B:      _____
Callendar-Van Dusen coefficient C	C:      _____      C:      _____
(optional, for resistance thermometers only)	
User characteristics based on linearization table	<input type="checkbox"/> Based on attached table of variate pairs
TAG number	<input type="checkbox"/> _____ (maximum 8 characters)
HART revision	<input type="checkbox"/> HART5 (standard) <input type="checkbox"/> HART7
Software write protection	<input type="checkbox"/> Off (standard) <input type="checkbox"/> On
'Maintenance required' alarm pulse or continuous signaling in accordance with NE 107	<input type="checkbox"/> Off (standard) pulse width ____ s (0.5 ... 59.5 s increment 0.5 s)

## ... Order form configuration

### PROFIBUS PA / FOUNDATION Fieldbus device design

Customer-specific configuration	Selection
Number of sensors	<input type="checkbox"/> 1 sensor (standard) <input type="checkbox"/> 2 sensors
Measurement type (for 2-sensor selection only)	<input type="checkbox"/> Sensor redundancy / sensor backup <input type="checkbox"/> Sensor drift monitoring ____°C / K sensor drift differential ____s time limit for drift overshoot <input type="checkbox"/> Difference measurement <input type="checkbox"/> Average measurement
IEC 60751      Resistance thermometer	<input type="checkbox"/> Pt10 <input type="checkbox"/> Pt50 <input type="checkbox"/> Pt100 (Standard) <input type="checkbox"/> Pt200 <input type="checkbox"/> Pt500 <input type="checkbox"/> Pt1000
JIS C1604	<input type="checkbox"/> Pt10 <input type="checkbox"/> Pt50 <input type="checkbox"/> Pt100
MIL-T-24388	<input type="checkbox"/> Pt10 <input type="checkbox"/> Pt50 <input type="checkbox"/> Pt100 <input type="checkbox"/> Pt200 <input type="checkbox"/> Pt1000
DIN 43760	<input type="checkbox"/> Ni50 <input type="checkbox"/> Ni100 <input type="checkbox"/> Ni120 <input type="checkbox"/> Ni1000
OIML R 84	<input type="checkbox"/> Cu10 <input type="checkbox"/> Cu100
Resistance measurement	<input type="checkbox"/> 0 ... 500 Ω <input type="checkbox"/> 0 ... 5000 Ω
IEC 60584      Thermocouple	<input type="checkbox"/> Type K <input type="checkbox"/> Type J <input type="checkbox"/> Type N <input type="checkbox"/> Type R <input type="checkbox"/> Type S <input type="checkbox"/> Type T <input type="checkbox"/> Type E <input type="checkbox"/> Type B
DIN 43710	<input type="checkbox"/> Type L <input type="checkbox"/> Type U
ASTM E-988	<input type="checkbox"/> Type C <input type="checkbox"/> Type D
Voltage measurement	<input type="checkbox"/> -125 ... 125 mV <input type="checkbox"/> -125 ... 1100 mV
Sensor circuit (for resistance thermometer and resistance measurement only)	<input type="checkbox"/> Two-wire <input type="checkbox"/> Three-wire (standard) <input type="checkbox"/> Four-wire Two-wire circuit: Compensation of sensor-wire resistance max. 100 Ω <input type="checkbox"/> Sensor 1: ____ Ω <input type="checkbox"/> Sensor 2: ____ Ω
Reference junction (for thermocouples only)	<input type="checkbox"/> Internal (for standard thermocouple, except type B) <input type="checkbox"/> None (type B) <input type="checkbox"/> External / temperature: ____°C
Unit	<input type="checkbox"/> Celsius (default) <input type="checkbox"/> Fahrenheit <input type="checkbox"/> Rankine <input type="checkbox"/> Kelvin
Resistor value at 0 °C / R <sub>0</sub>	Sensor 1: R <sub>0</sub> :      _____      Sensor 2: R <sub>0</sub> :      _____
Callendar-Van Dusen coefficient A	A:      _____      A:      _____
Callendar-Van Dusen coefficient B	B:      _____      B:      _____
Callendar-Van Dusen coefficient C	C:      _____      C:      _____
(optional, for resistance thermometers only)	
IDENT_number (PROFIBUS)	<input type="checkbox"/> device-specific 0x3470 (standard) <input type="checkbox"/> profile 0x9700 (1 AI Block)
Bus address PROFIBUS PA	<input type="checkbox"/> PA: 0 ... 125 <input type="checkbox"/> Standard PA: 126
TAG number	<input type="checkbox"/> _____ (maximum 16 characters)
Software write protection	<input type="checkbox"/> Off (standard) <input type="checkbox"/> On

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## Trademarks

HART is a registered trademark of FieldComm Group, Austin, Texas, USA

PROFIBUS and PROFIBUS PA are registered trademarks of PROFIBUS & PROFINET International (PI)

FOUNDATION Fieldbus is a registered trademark of FieldComm Group, Austin, Texas, USA.

Sales



Service



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## Notes