Type designation

5450**abc** Profibus PA temperature transmitter

a A: Standard; EPL Gc and Dc
B: Intrinsic safety for ATEX only; EPL Ma, Ga, Gb and Db
D: Intrinsic safety for all Ex certifications; EPL Ma, Ga, Gb and Db
SIS: Variant with alternate Extension port interface; EPL Ma, Ga, Gb, Gc, Db and Dc

b 1: Single Sensor input, not applicable for a = SIS
2: Dual Sensor input

c Does not affect Ex protection

Thermal data

Temperature classification or maximum surface temperature per ambient temperature range:
Ex ia and EPL Ma: -40 °C to +85 °C.

Ex ia or ib and EPL Ga, Gb or Db:

	Conventional IS system	FISCO system
T6 or T85 °C:	-40 °C to +58 °C	-40 °C to +67 °C
T5 or T100 °C:	-40 °C to +73 °C	-40 °C to +82 °C
T4 or T110 °C:	-40 °C to +85 °C	-40 °C to +85 °C

Ex ic and EPL Gc or Dc:

	Conventional IS system	FISCO system
T6 or T85 °C:	-40 °C to +70 °C	-40 °C to +74 °C
T5 or T100 °C:	-40 °C to +85 °C	-40 °C to +85 °C
T4 or T110 °C:	-40 °C to +85 °C	-40 °C to +85 °C

Ex ec and EPL Gc:

T6:	-40 °C to +65 °C
T5:	-40 °C to +80 °C
T4:	-40 °C to +85 °C

Electrical data

For type of protection Ex ia, ib or ic:

Supply / Output circuit (terminals 1, 2):
in type of protection intrinsic safety Ex ia IIC or IIIC, Ex ib IIC, Ex ia I, or Ex ic IIC or IIIC,
for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = 30 VDC; I_i = 380 mA; P_i = any; C_i = 1 nF; L_i = 0 µH,
or
for connection to a certified intrinsically safe circuit in accordance with FISCO, with the following maximum values:
U_i = 17.5 VDC; I_i = 380 mA; P_i = any; C_i = 1 nF; L_i = 0 µH.

Sensor circuit (CH1 and CH2 terminals 3…9):
in type of protection intrinsic safety Ex ia IIC or IIIC, Ex ia I, or Ex ic IIC or IIIC with the following maximum values:
U_o = 7.2 V; I_o = 12.9 mA; P_o = 23.3 mW; C_o = 13.324 µF; L_o = 200 mH.
or
Sensor circuit (CH1 terminals 3…6, or CH2 terminals 3, 7…9):
in type of protection intrinsic safety Ex ia IIC or IIIC, Ex ia I, or Ex ic IIC or IIIC with the following maximum values:
U_o = 7.2 V; I_o = 7.3 mA; P_o = 13.2 mW; C_o = 13.324 µF; L_o = 667 mH.

For type 5450B** or 5450D**:
Extension port (COM_RX, COM_TX, SIM_Mode/Burnout, WriteProtect, VDD_EN, VDD, VSS):
in type of protection intrinsic safety Ex ia IIC or IIIC, Ex ia I, or Ex ic IIC or IIIC with the following maximum values:
U_o = 30 V; I_o = 2.93 mA; and U_o = 7 V; I_o = 1.768 A;
C_i = negligibly low; L_o = negligibly low.

C_o and L_o per ispark program 6.2:

Group	IIC	IIB or IIIC	IIA				I			
C_o [µF]	0.066	0.56	1.82	1	0.81	0.68	3	1.7	1	0.82
L_o [mH]	0.034	0.1	0.005	0.05	0.1	0.18	0.002	0.02	0.1	0.22

For thermal assessments, U_o = 30 V; I_o = 25 mA; P_o = 175 mW.

or for type 5450SIS*:
Extension port (COM_RX, COM_TX, SIM_Mode/Burnout, VDD, VSS):
in type of protection intrinsic safety Ex ia IIC or IIIC, Ex ia I, or Ex ic IIC or IIIC with the following maximum values:
U_o = 7 V; I_o = 400 mA;
C_i = negligibly low; L_o = negligibly low.

C_o and L_o per IEC 60079-11, Annex A.2:

Group	IIC	IIB	IIA	I
C_o [µF]	15.7	300	1000	3000
L_o [mH]	0.2	0.888	1.777	3

For thermal assessments, U_o = 7 V; I_o = 25 mA; P_o = 175 mW.

The sensor circuit is galvanically and infallibly isolated from the supply / output circuit and extension port.

<u>For type of protection Ex ec:</u>

Supply / Output circuit (terminals 1, 2):
U_{max} = 30 V, I_n = 11 mA.

Sensor circuit (CH1 and CH2 terminals 3…9):
U_{max} = 7.2 V.
or
Sensor circuit (CH1 terminals 3…6, or CH2 terminals 3, 7…9):
U_{max} = 7.2 V.