

## Temperature switch series T4 and T7

General purpose or Ex-proof according UL or ATEX (EEx d or EEx ia)

Accuracy:  $\pm 1\%$

### Features

- Ambient temperature up to 60 °C for EEx applications
- $\text{Ex}$  II 2 GD or  $\text{Ex}$  II 1 GD
- Class 1 Division 1 Gr. B, C and D according UL
- Protection IP54, IP66 or NEMA 4, 4X, 7, 9 and 13 (UL)
- Rigid stem and capillary types up to 15 m

### Ranges

-40/16 °C up to 260/400 °C

-40/60 °F up to 500/750 °F

### Applications

Chemical and petrochemical industry

Machine and apparatus construction

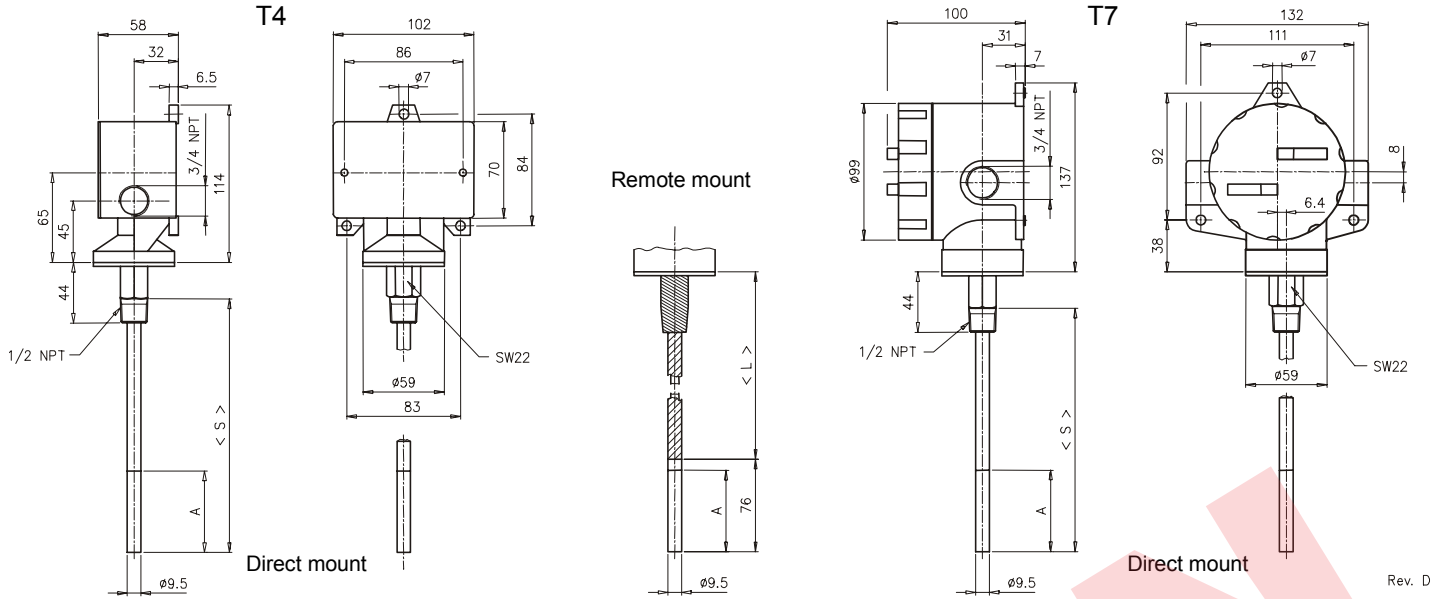
Food and beverage industry

Pulp and paper industry



Technical specification	T4 series	T7 series
Construction	Weatherproof	Ex-proof according UL CSA on request
Switch functions	One setpoint, single pole double throw (SPDT) or 2 times SPDT (2SPDT)	Ex-proof according CENELEC (ATEX) EN 50 0-14, -18, -20
Adjustable range	From 15 % to 100 %, below 15 % consult factory	
Deadband	From 0,5 % to 15 % F.S., depending on range and microswitch	
Measuring principle	Piston/cylinder system actuated by a vapor pressure thermal system, SAMA Class II system	
Range in °C	-40/16 -20/40 20/95 65/125 110/190 175/275 260/400	
in °F	-40/60 0/100 75/205 150/260 235/375 350/525 500/750	
Limits (temperature ranges)	-40/16 °C, -20/40 °C, 20/95 °C and 65/125 °C	110/190 °C 175/275 °C 260/400 °C
Max. temperature	204 °C	260 °C 371 °C 482 °C
Stem diameter	3/8" (9,5 mm)	
Stem length	2 3/4" (70 mm) 4" (102 mm) 6" (152 mm) 9" (229 mm) 12" (305 mm)	
Bulb length (capillary type)	3" (76 mm)	
Capillary length	5' (1,5 m) 10' (3,0 m) 15' (4,5 m) 20' (6,0 m) 25' (7,5 m) longer lengths on request	
Process connection	1/2 NPT male for rigid stem, 1/2 NPT bushing sliding on capillary or bulb	
Connection location	Lower	
Material		
Connection	Stainless steel 316 (1.4401)	
Bushing	Stainless steel 316 (1.4401)	
Capillary and armor	Stainless steel 316 (1.4401)	
Housing	Aluminum, epoxy coated black	
Accuracy	1,0 % F.S.	
<b>Electrical specification</b>		
Microswitch ratings	From 6 A 30 VDC up to 22 A 250 VAC (see microswitch table)	
Ex-proof	Class 1 Div. 1 Gr. B, C and D Class 2 Div. 1 Gr. E, F and G	EEx d IIC T6 Sira 02 ATEX 1391
Intrinsically safe		EEx ia IIC T4 Sira 04 ATEX 2081
Electrical connection	3/4 NPT female, optional cable glands, 1/2 NPT with reducer bushing, M20x1,5, others on request	
<b>General specification</b>		
Permissible		
Ambient temperature	-25 ... 65 °C	-20 ... 60 °C
Storage temperature	-40 ... 60 °C	
Effect	Max. 0,4 % / 10 K ref. 20 °C	
Protection according UL	NEMA 4, 4X and 13	NEMA 7 and 9
Protection according EN 60 529/IEC 529	IP54, optional IP66	IP66
CE-mark	Low voltage regulations EN 61 010-1, EN 60 947-1	
Mounting	Direct, wall mounted or rigid stem, 2" pipe mounting (TM) with capillary system	
Weight rigid stem/capillary in kg	1,2/1,7 (with 1 m capillary)	1,7/2,0 (with 1 m capillary)
Accessories, options	Thermowells screwed or flanged	

## General dimensions in mm



S = stem length (specify by customer), L = capillary length (specify by customer), A = active bulb, length 59 mm

## Order information

Switch element	Thermal system	Bulb length	Range	Engineering unit	Protection	Electrical connection	Options
<b>SPDT</b> (20) Narrow deadband <sup>1)</sup> (15 A 250/480 VAC, 0,4A 120VDC)	<b>With capillary</b>	<b>With capillary</b>	<b>-40/ 16</b> <b>-20/ 40</b> <b>20/ 95</b> <b>65/ 125</b> <b>110/ 190</b> <b>175/ 275</b> <sup>2)</sup> <b>260/ 400</b> <sup>1)</sup>	°C	(IP) Standard T4 IP54 T7 IP66	(=) Standard	(NH) Tagging wired
(21) Ammonia service (5A 250 VAC, 6 A 30 VDC)	(T05) 5' (1,5 m)	(030) bulb 3" (76 mm)			(IP65) IP66 (for T4)	(JL) ¾ to ½ NPT female reducing bushing	(FS) Factory adjusted setpoint
(22) Hermetically sealed (5 A 250 VAC)	(T10) 10' (3,0 m)				(UL) UL approval T4 NEMA 4 T7 NEMA 7 & 9	(JM) ¾ NPT to M20x1,5 female reducing bushing	(TM) 2" pipe mounting bracket
(23) Heavy duty AC (22 A 250 VAC)	(T15) 15' (4,5 m)		<b>-40/ 60</b> <b>0/ 100</b> <b>75/ 205</b> <b>150/ 260</b> <b>235/ 375</b> <b>350/ 525</b> <sup>2)</sup> <b>500/ 750</b> <sup>1)</sup>	°F	(CEN3) ATEX EEx d with cable gland EEx d PG13,5 (only for T7)	(K3) Terminal block (standard for T7 with 2xSPDT, not for T4)	(69C) Adjustable union connection on capillary
(24) General purpose <sup>1)</sup> (15 A 250 VAC, 6 A 30 VDC)	(T20) 20' (6,0 m)				(CEN4) ATEX EEx d ¾ NPT thread female (only for T7)	(KV2) Plastic cable gland IP65, PG11	(69H) Adjustable union connection on bulb
(26) Sealed environment proof <sup>1)</sup> (15 A 250 VAC, 0,4A 120VDC)	(T25) 25' (7,5 m)				(CEN6) ATEX EEx ia ¾ NPT thread female (only for T7)	(KV3) Plastic cable gland IP65, PG13,5	
(27) High temp. (max. 150°C) (15 A 250 VAC)	longer capillary on request	<b>Rigid stem</b>			(CEN7) ATEX EEx ia with cable gland EEx d PG13,5 (only for T7)	(KV4) Plastic cable gland IP65, PG16	
(31) Low level (gold) contacts (1 A 125 VAC, 500mA 28VDC)	<b>Rigid stem</b>	<b>(027) 2 ¾"</b> (70 mm) <sup>1)</sup>				(KV52) Plastic cable gland PG13,5	
(32) Hermetically sealed general purpose (11 A 250 VAC, 5 A 28 VDC)	(TS) direct mounted	<b>(040) 4"</b> (102 mm)					
(42) Hermetically sealed, gold contacts (1 A 125 VAC)		<b>(060) 6"</b> (152 mm)					
(50) Variable deadband (15 A 250 VAC)		<b>(090) 9"</b> (229 mm)					
<b>2xSPDT</b>		<b>(120) 12"</b> (305 mm)					
(61) see code (20)							
(62) see code (26)							
(63) see code (27)							
(64) see code (24)							
(65) see code (21)							
(67) see code (22) (not T4 series)							
(68) see code (32) (not T4 series)							
(70) see code (31)							
(71) see code (42) (not T4 series)							
<sup>1)</sup> VDC rating not UL listed		<sup>1)</sup> not for 175/275 °C and 350/525 °F					
			<sup>2)</sup> not for rigid stem 2 ¾"				

## How to order

Type	Switch element	Thermal system	Bulb length	Range	Engineering unit	Protection	Electrical connection	Option
T7	24	TS	060	20/95	C	UL	JL	NH

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