

Temperature switch series T4 and T7

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

Accuracy: ±1 %

Features

- Ambient temperature up to 60 °C for Ex applications
- (Ex) II 2 GD or (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

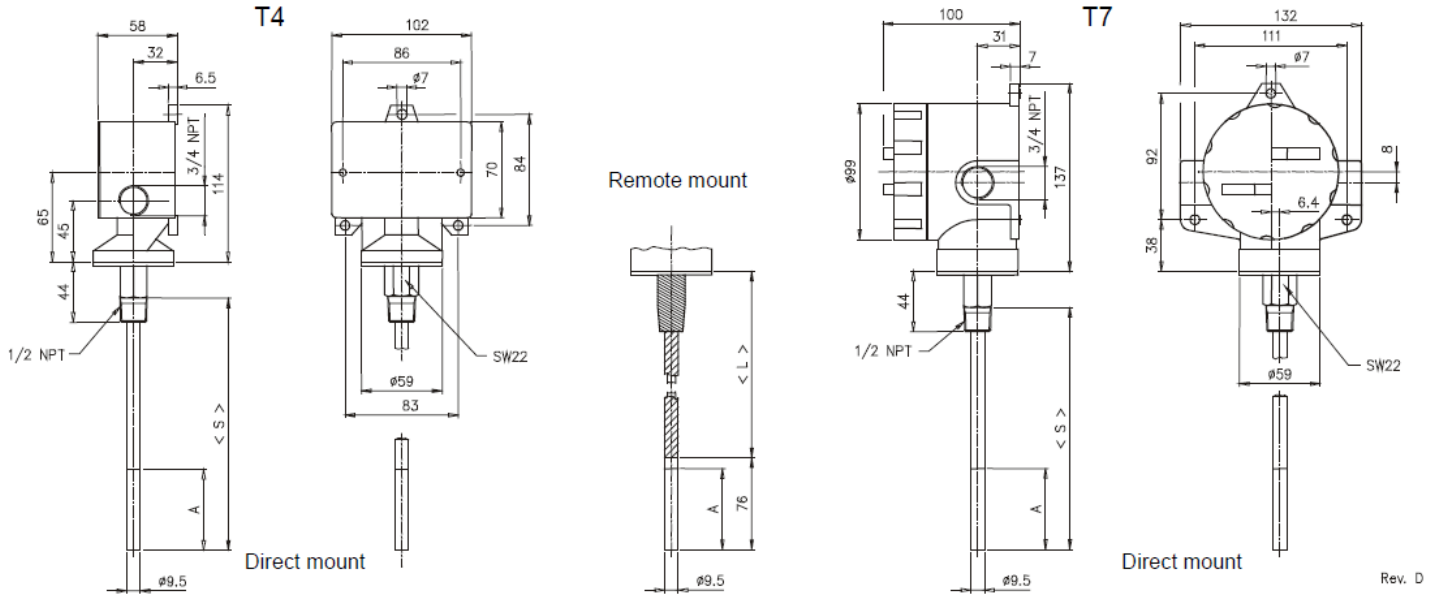
Food and beverage industry

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)	
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	Stainless steel 316 (1.4401)	
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.	
Electrical specification		
Microswitch ratings	From 6 A 30 VDC up to 22 A 250 VAC (see microswitch table)	
Flameproof and dust ignition protection by enclosure	Class 1 Div. 1 Gr. B, C and D Class 2 Div. 1 Gr. E, F and G	(Ex) II 2GD Ex d IIC T6 Gb Ex t IIIC T85°C Db IP6X SIRA 02 ATEX 1391X
Intrinsically safe and dust ignition protection by enclosure		(Ex) II 1 GD Ex ia IIC T4 Ga Ex ia IIIC T135°C Da SIRA 04 ATEX 2081
Electrical connection	3/4 NPT female, optional cable glands, 1/2 NPT with reducer bushing, M20x1,5, others on request	
General specification		
Permissible	-25 ... 65 °C	
Ambient temperature	-40 ... 60 °C	
Storage temperature	Max. 0,4 % / 10 K ref. 20 °C	
Effect		
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			
SPDT	With capillary	With capillary	-40/ 16 -20/ 40 20/ 95 65/ 125 110/ 190 175/ 275 ²⁾ 260/ 400 ¹⁾	°C	(IP) Standard T4 IP54 T7 IP66	(=) Standard	(NH) Tagging wired			
(20) Narrow deadband ¹⁾ (15 A 250/480 VAC, 0,4A 120VDC)								(030) bulb 3" (76 mm)	(JL) ¼ to ½ NPT female reducing bushing	(FS) Factory adjusted setpoint
(21) Ammonia service (5A 250 VAC, 6 A 30 VDC)								(T05) 5' (1,5 m)	(JM) ¼ NPT to M20x1,5 female reducing bushing	(TM) 2" pipe mounting bracket
(22) Hermetically sealed (5 A 250 VAC)								(T10) 10' (3,0 m)	(K3) Terminal block (standard for T7 with 2xSPDT, not for T4)	(69C) Adjustable union connection on capillary
(23) Heavy duty AC (22 A 250 VAC)								(T15) 15' (4,5 m)	Only for protection IP	(69H) Adjustable union connection on bulb
(24) General purpose ¹⁾ (15 A 250 VAC, 6 A 30 VDC)								(T20) 20' (6,0 m)	(KV2) Plastic cable gland IP65, PG11	
(26) Sealed environment proof ¹⁾ (15 A 250 VAC, 0,4A 120VDC)								(T25) 25' (7,5 m)	(KV3) Plastic cable gland IP65, PG13,5	
(27) High temp. (max. 150°C) (15 A 250 VAC)								longer capillary on request	(KV4) Plastic cable gland IP65, PG16	
(31) Low level (gold) contacts (1 A 125 VAC, 500mA 28VDC)								Rigid stem	(KV52) Plastic cable gland PG13,5	
(32) Hermetically sealed general purpose (11 A 250 VAC, 5 A 28 VDC)								(027) 2 ¼" (70 mm) ¹⁾		
(42) Hermetically sealed, gold contacts (1 A 125 VAC)								(040) 4" (102 mm)		
(50) Variable deadband (15 A 250 VAC)								(060) 6" (152 mm)		
2xSPDT	(TS) direct mounted	Rigid stem	°F	(UL) UL approval T4 NEMA 4 T7 NEMA 7 & 9	(CEN3) ATEX Ex d and Ex t with cable gland Ex d PG13,5 (only for T7)	(KV2) Plastic cable gland IP65, PG11	(69C) Adjustable union connection on capillary			
(61) see code (20)								(090) 9" (229 mm)	(CEN4) ATEX Ex d and Ex t ¼ NPT thread female (only for T7)	(69H) Adjustable union connection on bulb
(62) see code (26)								(120) 12" (305 mm)	(CEN6) ATEX Ex ia ¼ NPT thread female (only for T7)	
(63) see code (27)									(CEN7) ATEX Ex ia with cable gland Ex d PG13,5 (only for T7)	
(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)										

¹⁾ VDC rating not UL listed

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