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Contact dial thermometer

Special features

- Temperature controller with process value display as panel-mounting or add-on device
- Class 1.5
- Protection rating IP 65
- Case sizes Ø: 100 mm

Brief description

Contact dial thermometer are devices with process value display for temperature measurement, control and monitoring and can be used universally.

The temperature depending volume change in a measuring system filled with liquid or the temperature depending pressure change in a measuring system filled with gas is converted to a rotational movement of the process value indicator by a bourdon tube, no transmission gear is required. The microswitch is actuated by the rotational movement of the indicator shaft via a tap system.



Type 608523/2210

Technical data

Case	Case with bayonet lock made of stainless steel (1.4301)
Protection class	IP 65 as per DIN EN 60529
Front pane	Polycarbonate
Scale	white, labeled in black
Display	Class 1.5 similar to DIN EN 13190
Anti-kink spring	for devices with capillary on the case and the temperature probe
Set point adjustment	by set point value setter in the front pane; with screwdriver, protected by screw-fitted cover
Display correction	on the rear, no display correction with design 20
Limit value temperatures	for transport and storage -20°C to +70°C (for display range 0 to +60°C up to max. 65°C; -40 to +40°C up to max. 50°C; -30 to +50°C up to max. 60°C)
Rated position	any

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Technical data

Display range (AB)	Display range in °C	Measuring range in °C	Tolerance in °C
469	-40...+40	-30...+30	1.5
566	-30...+50	-20...+40	1.5
643	-20...+120	-20...+100	3.0
807	0...+60	+10...+50	1.5
810	0...+80	+10...+70	1.5
814	0...+100	+10...+90	1.5
818	0...+120	+20...+100	3.0
826	0...+160	+20...+140	3.0
832	0...+200	+20...+180	3.0
834	0...+250	+30...+220	4.0
926	+50...+250	+70...+230	3.0
840	0...+300	+30...+270	6.0
927	+50...+300	+80...+270	4.0
843	0...+350	+50...+300	6.0
932	+50...+350	+80...+320	6.0
848	0...+400	+50...+350	6.0
851	0...+450	+50...+400	6.0
854	0...+500	+50...+450	8.0
858	0...+600	+100...+500	10.0

	Liquid filling	Gas filling
Measuring system	Display range (AB) ≤ 350°C	Display range (AB) ÷ 400°C
Time behavior	approx. 12 s, measured in water, with a probe Ø of 6 mm made of Cu.	approx. 4 s, measured in oil, with a probe Ø of 10 mm made of stainless steel.
Ambient temperature influence effect	In % of the display range (referring to the deviation from the reference value +23°C)	
on case	0.15% of the display range per K ambient temperature change	0.05% of the display range per K ambient temperature change
on capillary (per m)	0.03% of the display range per K ambient temperature change	no influence
	Higher ambient temperature – higher temperature display – lower switching point	

	standard	Extra code (TZ) 650
Electric contact	Single-pole microswitch with mechanically actuate change-over contact	
Type of contact		
Contact rating	AC 230 V, +10/-15 %, 48 to 63 Hz, cos φ = 1 (0.6)	
	5 (1.5) A	10 (3) A
Hysteresis	approx. 1.5% of the display range	1.5 to 3 % of the display range
Switching point accuracy	± 0.5% of the display range referring to the switch-off point with rising temperature	
Switching reliability	To ensure a high switching reliability, we recommend a minimum voltage of 24 V and a minimum current of 100 mA	

Electrical connection	Connection inlet: Cable cross section up to 2.5 mm ² , suitable for cable-Ø from 6.5 to 13 mm
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Note

Physical and toxic features of the expansion means, which could emerge in the event of a measuring system break.

Control range with scale limit value	Hazardous reactions	Fire and explosion hazard		hazardous to waters	Information about toxicology		
		Ignition temperature	Explosion limit		irritant	dangerous to health	toxic
≤ +200°C	no	+355°C	0.6 - 8V%	Yes	Yes	a	no
≥ +200°C ≤ +350°C		+490°C	- -				
> +350°C ≤ +500°C		no	0.6 - 8V%	no	no	no	

^a There is currently no statement by the health authority concerning hazards to health in the event of short-term exposure and low concentration, e.g. measuring system break.

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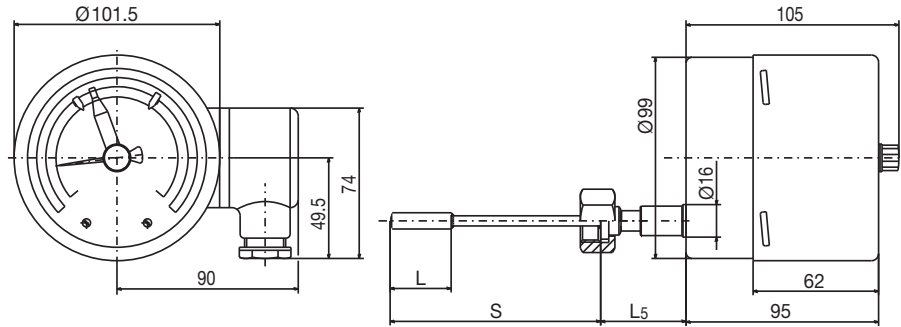
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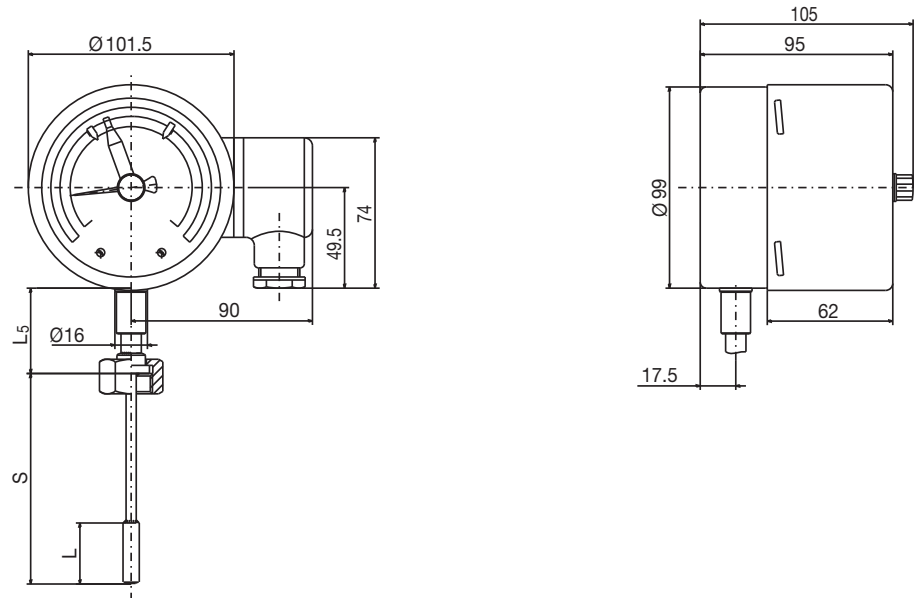


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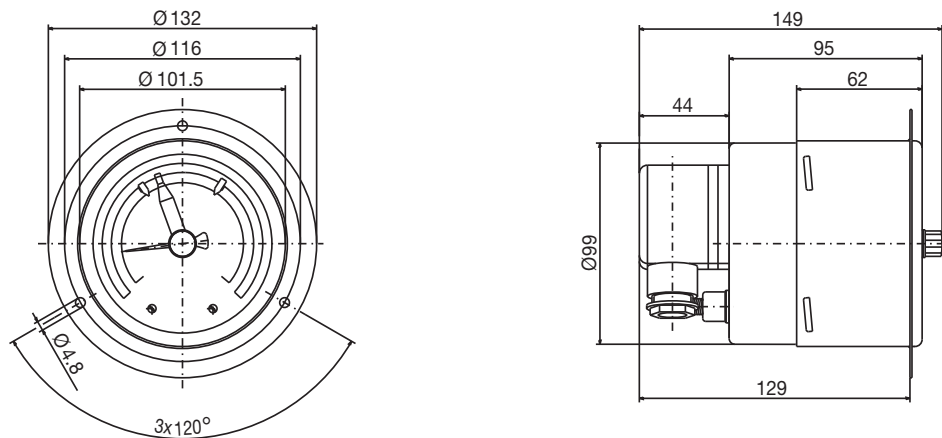
Type:
 608523/0210



Type:
 608523/1010



Type:
 608523/2010



Panel cut-out Ø 105 ^{+0.5}mm

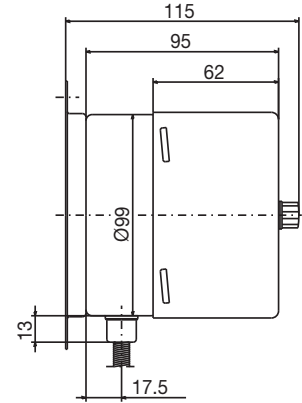
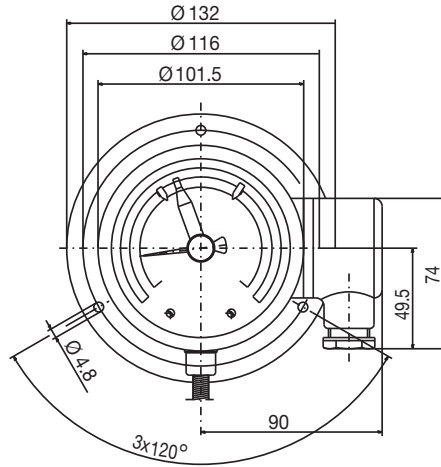
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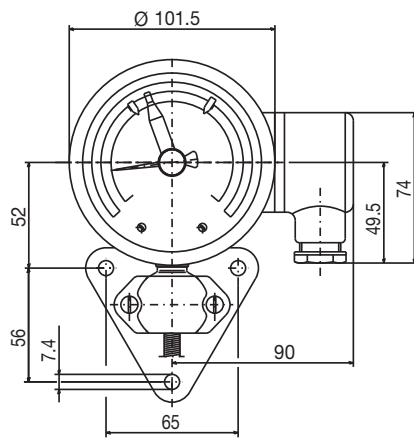


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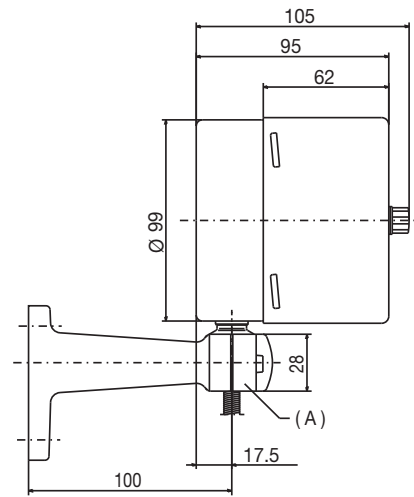


Panel cut-out $\varnothing 105^{+0.5}$ mm

Type:
 608523/2310



Holder for measuring device as per DIN 16281



(A) Spigot- $\varnothing 26$ mm

L_5	Immersion tube connection type
40 mm	TA 03, TA 30
≤ 69 mm	TA 02
42.5 mm	TA 21
51.5 mm	TA 22, TA 31

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Order details

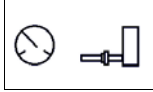

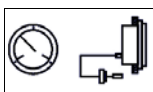

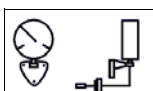
Order code

(1) Basic type

608523 Mechanical contact dial thermometer, class 1.5

(2) Basic type extension

Case size Ø

0210	Design 02		100 mm
1010	Design 10		100 mm
2010	Design 20		100 mm
2210	Design 22		100 mm
2310	Design 23		100 mm

(3) Display range in °C

469	-40...+40
566	-30...+50
643	-20...+120
807	0...+60
810	0...+80
814	0...+100
818	0...+120
826	0...+160
832	0...+200
834	0...+250
926	+50...+250
840	0...+300
927	+50...+300
843	0...+350
932	+50...+350
848	0...+400
851	0...+450
854	0...+500
858	0...+600

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Order code

(4) Capillary type (FL) ^a

00	Without (with rigid connection)
02	FL 02 Cu capillary with Cu textile braiding, approx. Ø 2.5 mm (up to AB limit value +300°C)
11	FL 11 Cu capillary with PE jacketing, approx. Ø 3.5 mm (up to AB limit value +120°C)
17	FL 17 Stainless steel capillary, approx. Ø 1.5 mm
21	FL 21 Cu capillary, approx. Ø 1.0 mm (up to AB limit value +300°C)

(5) Capillary ^b

0	Without (with rigid connection)
1000	1000 mm
2000	2000 mm
3000	3000 mm
4000	4000 mm
5000	5000 mm
...	Special length (specifications in plain text: 1000 mm steps, maximum length 10000 mm), further lengths on request

(6) Process connection (PA) ^a

750	TF 01	Temperature probe with stepped support tube	
752	TF 11	Temperature probe without support tube	
843	TA 02	Immersion tube with union nut and loose screw-connection ^b	
161	TA 03	Immersion tube with loose screw-connection	
847	TA 06	Immersion tube with displaceable crimp screw-connection on support tube ^b	
311	TA 20	Immersion tube with loose screw-connection and connection collar ^b	
872	TA 21	Immersion tube with loose screw-connection and sealing cone (only G 3/8 possible)	
873	TA 22	Immersion tube with loose pressure screw, sealing cone and loose screw-connection ^b	
401	TA 23	Immersion tube with pressure screw and contact pressure spring (only M 10x1 possible)	
913	SH 07	Screw-in sheath, multi-part, with clamping piece and locking screw (suitable for TF 01 and TF 11)	
820	SH 09	Weld-in sheath, multi-part, with clamping piece and locking screw ^b (not for FL 21 - welding collar with steel 1.4515)	
876	SH 10	Screw-in sheath, multi-part ^b (suitable for TA 21)	
871	SH 11	Screw-in sheath, multi-part ^b (suitable for TA 21)	

^a For the description and particularities, refer to data sheet 608730.

^b Screw-in spigot as per DIN 3852, form A.

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Order code	(7) Ø Process connection (PA) ^a
6	6 mm
8	8 mm
10	10 mm
11	11 mm
12	12 mm
(8) Thread type of process connection (PA)^a	
000	Without thread (for TA 01 and TF 11)
103	Screw connection G 3/8
104	Screw-connection G 1/2
105	Screw-connection G 3/4
114	Screw-connection M 10 x 1 (only for TA 23 and SH 11)
(9) Material, probe / support tube^a	
26	Stainless steel (CrNi, 1.4571)
96	Copper (Cu) / Brass (CuZn) (up to 200°C)
95	Stainless steel (CrNi, 1.4571) - probe / Brass (CuZn) - support tube from 250°C)
(10) Material of process connection (PA)^a	
00	Without (only TF 01 and TF 11)
26	Stainless steel (CrNi, 1.4571)
46	Brass (CuZn)
(11) Fitting length, process connection (PA)^a (dimension "EL" or "S")	
0	Minimum fitting length TF 11 (active probe dimension)
50	50 mm
100	100 mm
150	150 mm
200	200 mm
...	Special length (specifications in plain text - 50 mm steps)

^a For the description and particularities, refer to data sheet 608730.

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Order code

(12) Switching output

28	1 switch	
27	2 switches	
19	2 switches in fixed sequence	

(13) Extra codes (TZ)

000	Without extra codes
434	Fly back can be adjusted with a screwdriver, protected by a cover
650	Microswitch 10 (3) A (AC/DC 230 V, +10/-15 %, 48 to 63 Hz, cos φ = 1 (0.6))
518	Stop for Min. — or Max. — setpoint value limitation, factory set
522	Customized scale

Special versions on request !

Order code

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13)
 608523 / [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - [] / [] , ...

Order example

608523 / 2010 - 818 - 21 - 2000 - 750 - 10 - 000 - 26 - 00 - 100 - 28 / 000^a , ...

^a List extra codes in sequence, separated by commas.