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# Dial Thermometer

## Particularities

- Temperature indicator for panel or surface mounting
- Class 1.5
- IP65 protection max.
- Housing sizes: 60 mm dia., 80 mm dia. and 100 mm dia.  
 Bezel: 72 x 72 mm and 96 x 96 mm



Type 608201/2160

## Brief description

Dial thermometers are temperature indicators for universal use. The instruments feature a stainless steel housing with a liquid-filled or gas-filled measuring system.

The temperature-dependent change in volume of a liquid-filled measuring system (or the temperature-dependent change of pressure in a gas-filled system) is converted into a rotary movement of the pointer by a Bourdon tube, without any intermediate gearing.



Type 608201/2572

## Technical data

<b>Housing or bezel</b>	stainless steel (1.4301)	
<b>Protection</b>	IP55 as per EN 60 529 (IP65 with extra code 404)	
<b>Window</b>	glass, with styles 24 and 25, and with extra codes 473 and 404: PMMA (plexiglass)	
<b>Scale</b>	white, black lettering (silver, black lettering with extra codes 473 and 404)	
<b>Accuracy class</b>	Class 1,5 to EN 13190	
<b>Indication adjustment</b>	at the housing rear, no indication adjustment with extra codes 473 and 404	
<b>Limit temperatures</b>	storage and transport -30 to +70°C (for indication range -40 to +40°C: up to 50°C; -30 to +50°C: up to 60°C)	
<b>Nominal position</b>	unrestricted	

	liquid-filled	gas-filled
<b>Measuring system</b>	indication range (AB) ≤ 350°C	indication range (AB) ≥ 400°C
<b>Time constant</b> τ <sub>0,632</sub>	approx. 12 sec, measured in water bath, with a 6 mm dia. copper probe	approx. 4 sec, measured in oil bath, with a 10 mm dia. stainless steel probe
<b>Ambient temperature effect</b>	in % of indication range (referred to the deviation from the reference value +23°C)	
<b>on housing</b>	0.15% of indication range per °C change in ambient temperature	0.05% of indication range per °C change in ambient temperature
<b>on capillary (per meter)</b>	0.03% of indication range per °C change in ambient temperature	no effect
	at higher ambient temperature – higher temperature indication	

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## Technical Data

Display range (AB)	Display range in °C	Measuring range in °C	Tolerance in °
469	-40...+40	-30...+30	1,5
566	-30...+50	-20...+40	1,5
643	-20...+120	0...+100	3,0
807	0...+60	+10...+50	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

**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 - 8 V%	yes	yes	<sup>1)</sup>	no
≥ 200°C ≤ +350°C		+ 490°C	--	yes	yes	<sup>1)</sup>	
> 350°C ≤ +500°C		no	no	no	no	no	

<sup>1)</sup> 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

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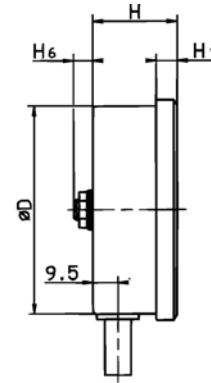
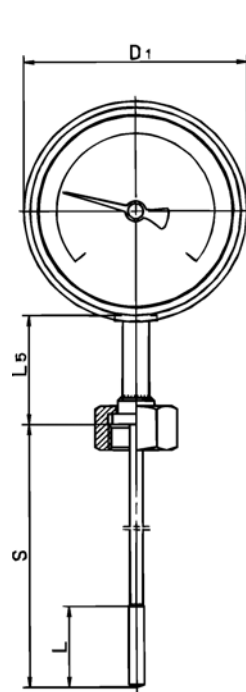
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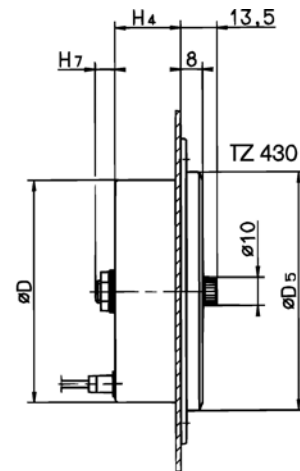
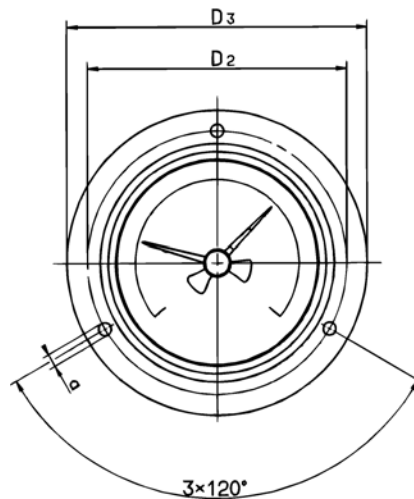


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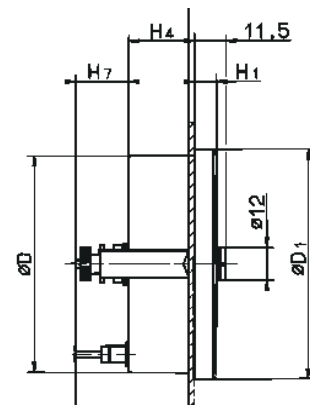
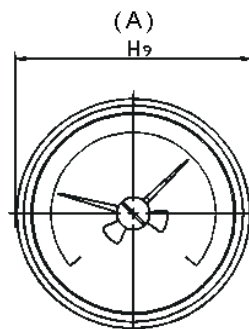
Types: 608201/1060  
 608201/1080  
 608201/1010



Types: 608201/2060  
 608201/2080  
 608201/2010



Types: 608201/2160  
 608201/2180  
 608201/2110



(A) Width of mounting bracket

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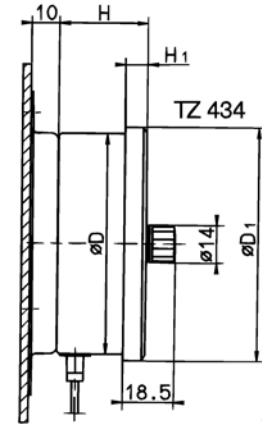
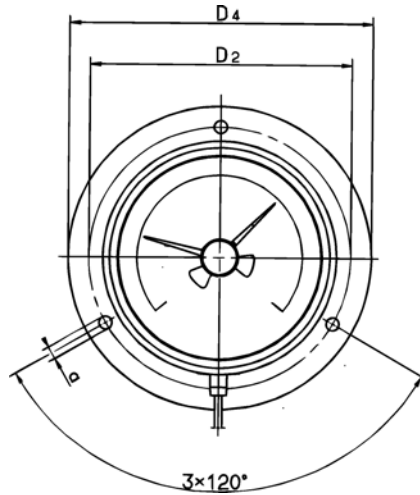
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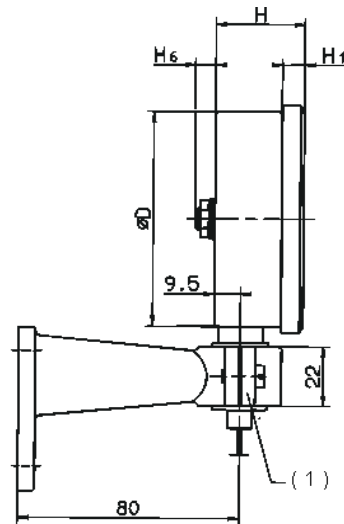
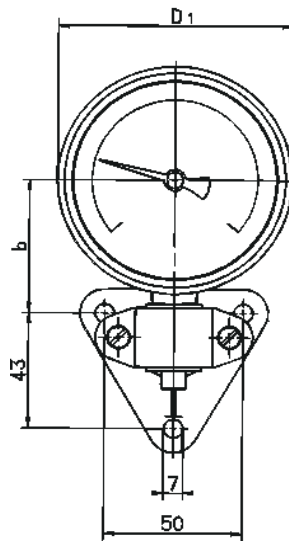


## Dimensions

Types: 608201/2260  
 608201/2280  
 608201/2210



Types: 608201/2360  
 608201/2380  
 608201/2310



(1) Spigot 20 mm dia.

Housing dia.	Diameter of panel cut-out
60 mm	62 <sup>0.5</sup> mm
80 mm	82 <sup>0.5</sup> mm
100 mm	102 <sup>0.5</sup> mm

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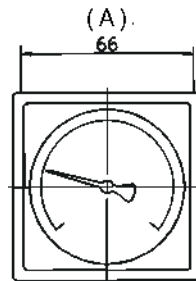
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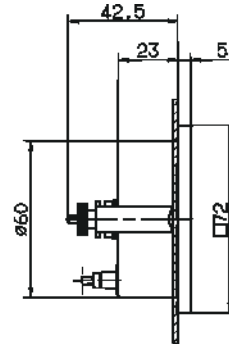


## Dimensions

Type: 608201/2572

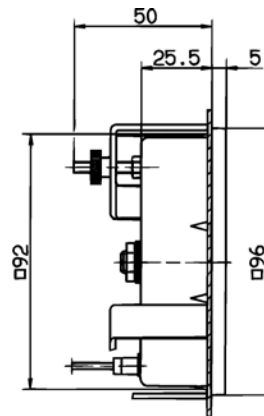
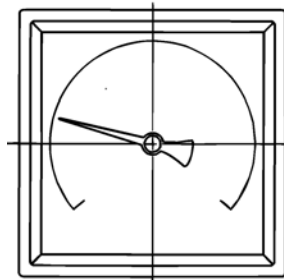


(A) Width of mounting bracket



Panel cut-out:  $62^{+0.5}_0$  mm dia.

Type: 608201/2496



Panel cut-out:  $92 \times 92^{+0.8}_0$  mm

Housing dia.	H	H <sub>1</sub>	H <sub>4</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>9</sub>	D	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>	a	b	L <sub>5</sub>
60	30 (36)	7	23 (28)	approx. 7.5	19.5	66	60	65	75	85	86	66	4.8	39.5 (50)	41.5*
80	32.5	8	24.5			86	80	85	95	110	110	86		49.5	
100	33 (36)		25 (28)			106	100	106	116	132	132	107.5		59.5 (70)	

All dimensions in mm

\* on probe mounting TA 02 L<sub>5</sub> = ≤ 70.5 mm  
 on probe mountings TA 22 and TA 31 L<sub>5</sub> = 49.5 mm  
 values in brackets apply to TZ 473 or TZ 404

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## Order details

### Dial thermometer Class 1.5, Type 608201

**Order code (1) Basic type**

608201 Mechanical dial thermometer Class 1.5

**(2) Basic type extensions**

1060	Style: 10; housing size: 60 mm dia.	
1080	Style: 10; housing size: 80 mm dia.	
1010	Style: 10; housing size: 100 mm dia.	
2060	Style: 20; housing size: 60 mm dia.	
2080	Style: 20; housing size: 80 mm dia.	
2010	Style: 20; housing size: 100 mm dia.	
2160	Style: 21; housing size: 60 mm dia.	
2180	Style: 21; housing size: 80 mm dia.	
2110	Style: 21; housing size: 100 mm dia.	
2260	Style: 22; housing size: 60 mm dia.	
2280	Style: 22; housing size: 80 mm dia.	
2210	Style: 22; housing size: 100 mm dia.	
2360	Style: 23; housing size: 60 mm dia.	
2380	Style: 23; housing size: 80 mm dia.	
2310	Style: 23; housing size: 100 mm dia.	
2496	Style: 24; housing size: 96 x 96 mm	
2572	Style: 25; housing size: 72 x 72 mm	

**(3) Indication range (AB)**

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

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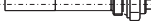

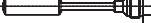
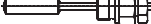






## Order details

### Dial thermometer Class 1.5, Type 608201

#### Order code

(4) Capillary type (FL) <sup>1</sup>	
00	none (with rigid connection)
02	FL02 copper capillary with copper braiding, approx. 2.5 mm dia. (up to +300°C top of indication range)
11	FL11 copper capillary with PE sleeve, approx. 3.5 mm dia. (up to +120°C top of indication range)
17	FL17 stainless steel capillary, 1.5 mm dia.
21	FL21 copper capillary, 1.0 mm dia. (up to +300°C top of indication range)

(5) Capillary length <sup>1</sup>	
0	none (with rigid connection)
1000	1000 mm
2000	2000 mm
3000	3000 mm
4000	4000 mm
5000	5000 mm
...	special length (specify in plain text: 1000 mm steps, maximum length 10000 mm)

(6) Process connection (PA) <sup>1</sup>		
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 nipple <sup>2</sup>	
161	TA 03; immersion tube with loose union nut	
847	TA 06; sliding clamp fitting on support tube <sup>2</sup>	
311	TA 20; immersion tube with loose nipple and shoulder <sup>2</sup>	
872	TA 21; immersion tube with loose plug and conical seal	
873	TA 22; immersion tube with loose plug, conical seal and loose nipple <sup>2</sup>	
401	TA 23; immersion tube with plug and spring clip	
848	TA 25; sliding clamp fitting on capillary <sup>2</sup> (with FL 17 and FL 21 only)	
913	SH 07; screw-in pocket, assembled, with clamping clip and fixing screw <sup>2</sup> (with TF 01)	
820	SH 09; screw-in pocket, assembled, with clamping clip and fixing screw (not with FL21 - welding shoulder with steel 1.4515) (with TF 01)	
876	SH10; screw-in pocket, assembled <sup>2</sup>	
871	SH11; screw-in pocket, assembled <sup>2</sup>	

(7) Diameter of process connection (PA) <sup>1</sup>	
6	6 mm dia.
8	8 mm dia.
10	10 mm dia.
11	11 mm dia.
12	12 mm dia.

<sup>1</sup> See Data Sheet 608730 for description and features

<sup>2</sup> Screw-in spigot to DIN 3852 Form A.

<sup>3</sup> List extra codes in sequence, separated by commas.

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## Order details

### Dial thermometer Class 1.5, Type 608201

**Order code**

<b>(8) Thread for process connection (PA)<sup>1</sup></b>	
000	no thread (with TF 01 and TF 11)
103	G <sup>3</sup> / <sub>8</sub> thread
104	G <sup>1</sup> / <sub>2</sub> thread
105	G <sup>3</sup> / <sub>4</sub> thread
114	M 10 x 1 thread (with TA 23 and SH 11 only)
<b>(9) Material of probe / support tube<sup>1</sup></b>	
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 (above 250°C)
<b>(10) Material of process connection (PA)<sup>1</sup></b>	
00	none (TF01 and TF11 only)
01	steel (St)
26	stainless steel (CrNi, 1.4571)
46	brass (CuZn)
<b>(11) Fitting length of process connection (PA)<sup>1</sup> (dimension EL or S)</b>	
0	minimum fitting length TF 11 (active probe dimension)
50	50 mm
100	100 mm
150	150 mm
200	200 mm
...	special length (specify in plain text, in 50 mm steps)
<b>(12) Extra codes (TZ)</b>	
000	no extra code
430	peak-reading pointer, with housing diameters 60, 80 and 100 mm (not with TZ 473 or TZ 404)
440	housing with bimetal compensation
315	capillary reinforcement on housing and probe (not with FL 21)
404	IP65 enclosure protection to EN 60 529 (only with basic type extension: 2060, 2260, 2360, 2010, 2210, 2310)
522	customized scale
434	peak-reading pointer adjustable with screwdriver; protected by screw-on cap (not available with TZ 473 or TZ 404)

Special versions on request!

**Order code**

(1) 608201 / (2) .... - (3) ... - (4) .. - (5) .... - (6) ... - (7) .. - (8) ... - (9) .. - (10) .. - (11) ... / (12) .. , ...

**Order example**

608201 / 1010 - 818 - 00 - 0 - 750 - 8 - 000 - 26 - 26 - 100 / 000<sup>3</sup>

<sup>1</sup> See Data Sheet 608730 for description and features

<sup>2</sup> Screw-in spigot to DIN 3852 Form A.

<sup>3</sup> List extra codes in sequence, separated by commas.