

JUMO GmbH & Co. KG

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JUMO Instrument Co. Ltd.

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JUMO Process Control, Inc.

6733 Myers Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
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Email: info.us@jumo.net
Internet: www.jumousa.com



Contact Dial Thermometer

Special features

- Class 1.5
- Display ranges -40 to +600 °C
- Electromechanical temperature controller as add-on device with actual value indicator in polyamide (PA6) housing
- With one or two microswitches
- Housing size: Ø 80 mm

Brief description

The contact dial thermometer is a universal device with actual value display for temperature measurement, control and monitoring.

The temperature-dependent volume change in a measuring system filled with liquid or the temperature-dependent pressure change in a measuring system filled with gas is converted to a rotational movement of the actual 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 608540/1080

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Technische Daten

Housing, bezel, and cover cap	Plastic (PA 6), grey, UV-stabilized
Protection type	IP54 according to DIN EN 60529
Front pane	PMMA (Plexiglas)
Scale	White, with black lettering
Accuracy class	Class 1.5, similar to EN 13190

	Liquid filling	Gas filling
Measuring system	Display range (AB) ≤ 350 °C	Display range (AB) ≥ 400 °C
Time constant $t_{0.632}$	Approx. 12 s, measured in water, with a probe \varnothing of 6 mm made of Cu	Approx. 4 s, measured in oil, with a probe \varnothing of 10 mm made of stainless steel
Influential effect of the ambient temperature	In % of the display range (referring to the deviation from the reference value 23 °C)	
On housing	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	kein Einfluss
	At higher ambient temperature – higher temperature display – lower switching point	

	Standard	Extra code 650
Electrical contact	Single-pole microswitch with mechanically actuated changeover contact	
Contact type	AC 230V, +10/-15%, 48 to 63 Hz, $\cos \varphi = 1$ (0.6)	
Switching capacity	5 (1,5) A	10 (3) A
Switching differential	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 20 mA.	
Electrical connection	Screw terminals: conductor cross-section 2.5 mm ² , protected by cover cap with cable fitting. Suitable for cable diameter from 6.5 to 16 mm.	
Setpoint value adjustment	With a screwdriver, protected by a cover.	
Limit value temperatures	-30 to +70 °C (storage and transport -30 to +70 °C)	
Rated position (NL)	NL90, position symbol \perp	

Display range (AB)	Display range in °C	Measuring range in °C	Tolerance in K (+/-)
469	-40 to +40	-30 to +30	1.5
643	-20 to +120	0 to 100	3.0
807	0 to 60	10 to 50	1.5
814	0 to 100	10 to 90	1.5
818	0 to 120	20 to 100	3.0
832	0 to 200	20 to 180	3.0
840	0 to 300	30 to 270	6.0
848	0 to 400	50 to 350	6.0
854	0 to 500	50 to 450	8.0
858	0 to 600	100 to 500	10.0

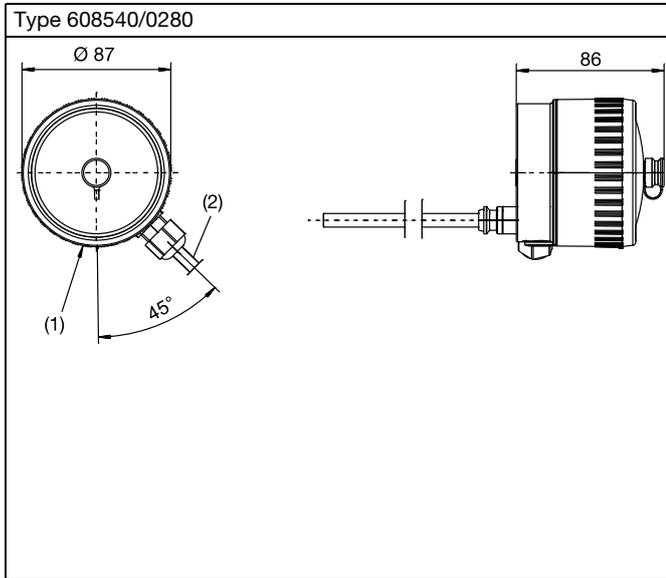
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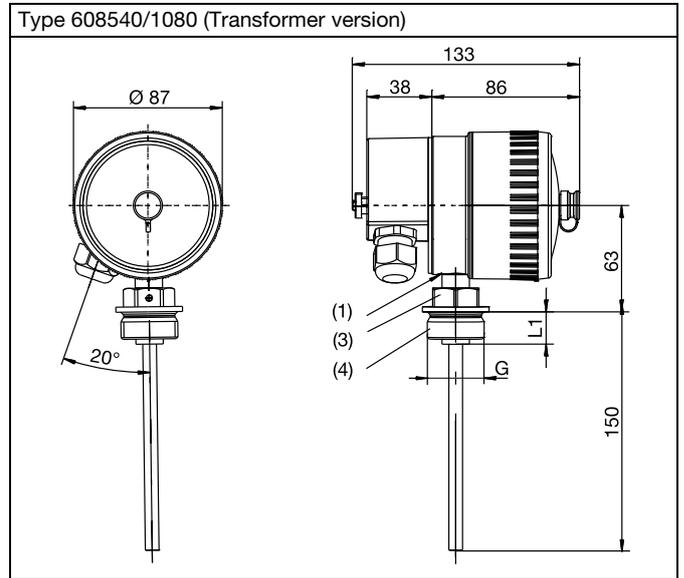
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Dimensions

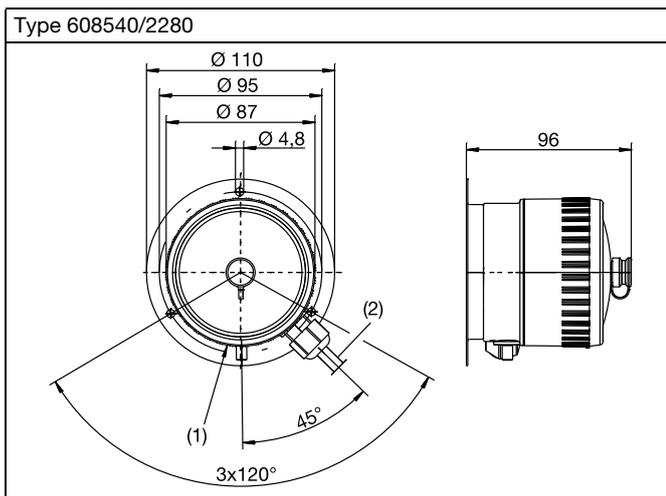


- (1) Ventilation aperture
- (2) Connection cable, 0.5 m long

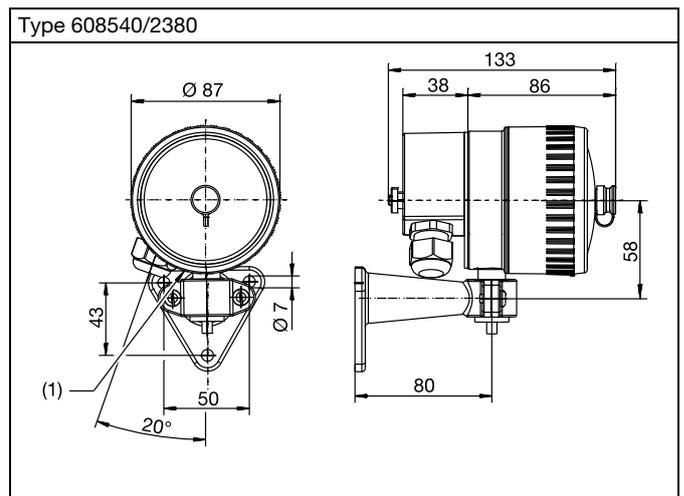


- (1) Ventilation aperture
- (3) Width across flats
- (4) Screw-in spigot DIN 3852, Form A

G 1/2A	27	14
G 3/4A	32	16
G 1A	27	16
G	Width across flats	L1



- (1) Ventilation aperture
- (2) Connection cable, 0.5 m long



- (1) Ventilation aperture

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Order details

(1) Basic type		
608540/0280	Contact dial thermometer, design type 02, housing size Ø 80 mm	
608540/1080	Contact dial thermometer, design type 10, housing size Ø 80 mm	
608540/2280	Contact dial thermometer, design type 22, housing size Ø 80 mm	
608540/2380	Contact dial thermometer, design type 23, housing size Ø 80 mm	
(2) Display range		
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	
832	0 to 200 °C	
834	0 to 250 °C	
840	0 to 300 °C	
843	0 to 350 °C	
848	0 to 400 °C	
851	0 to 450 °C	
854	0 to 500 °C	
858	0 to 600 °C	
921	20 to 120 °C	
926	50 to 250 °C	
927	50 to 300 °C	
931	50 to 350 °C	
(3) Capillary type		
00	Without (with rigid connection)	
02	FL 02 Cu capillary with Cu textile braiding, approx. Ø 2.5 mm (up to AB and value 300 °C)	
11	FL 11 Cu capillary with PE coating, approx. Ø 3.5 mm (up to AB end value 120 °C)	
17	FL 17 Stainless steel capillary, Ø 1.5 mm	
21	FL 21 Cu capillary, Ø 1.0 mm	
(4) Capillary length		
0	Without	
1000	1000 mm	
2000	2000 mm	
3000	3000 mm	
4000	4000 mm	
5000	5000 mm	

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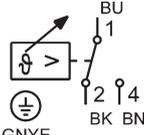
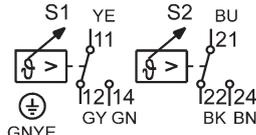
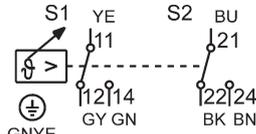
(5) Process connection		
161	TA 03: Protection tube with loose union nut (with TF 01)	
311	TA 20: Protection tube with loose screw connection and connection collar	
401	TA 23: Protection tube with pressure screw and contact pressure spring	
750	TF 01: Temperature probe with stepped extension tube	
752	TF 11: Temperature probe without support tube	
820	SH 09: Weld-in sleeve, multi-sectional, with clamping piece and fixing screw (with TF 01)	
843	TA 02: Protection tube with union nut and loose screw connection	
847	TA 06: Displaceable threaded fitting on support tube (max. 20 bar)	
871	SH 11: Screw-in sleeve, multi-sectional	
872	TA 21: Protection tube with loose pressure screw and conical seal	
873	TA 22: Protection tube with loose pressure screw, conical seal, and loose screw connection	
874	TA 24: Protection tube with screw-connection, O-ring, seal, and clamping screw	
876	SH 10: Screw-in sleeve, multi-sectional	
913	SH 07: Screw-in sleeve, multi-sectional, with clamping piece and fixing screw	
(6) Diameter		
6	6 mm	
8	8 mm	
10	10 mm	
12	12 mm	
(7) Thread of process connection		
000	Without	
103	G 3/8	
104	G 1/2	
105	G 3/4	
106	G 1	
114	M10 × 1 (only for TA 23 and SH 11)	

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(8) Material probe, support tube	
26	CrNi (stainless steel)
95	Probe: CrNi (stainless steel), support tube: CuZn (brass)
96	Probe: Cu (copper), support tube: CuZn (brass)
(9) Material of process connection	
00	Without
26	CrNi (stainless steel)
46	CuZn (brass)
(10) Insertion length	
0,00	Without thermowell
50,00	50 mm
100,00	100 mm
150,00	150 mm
200,00	200 mm
(11) Switching output	
20	SA 20: 1 microswitch 
21	SA 21: 2 microswitches 
22	SA 22: 2 microswitches in fixed sequence 
(12) Extra code	
000	Without
430	Drag indicator
518	Stop for min. or max. setpoint value limitation, default setting
522	Customized scale
650	Microswitch 10(3) A

Order code (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) / ...^a
 Order example 608540/2280 - 818 - 02 - 2000 - 843 - 8 - 104 - 96 - 46 - 100 - 20 / 000

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

Stock versions

Order code	Part no.
608540/1080-643-00-0-874-8-106-26-46-150-21/430, 522	00491256