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JUMO Instrument Co. Ltd.
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JUMO Process Control, Inc.
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JUMO heatTHERM

Type 602031

- Protection temperature limiter, as a panel-mounting thermostat
- Compensated for ambient temperature



Brief description

Thermostats control and monitor thermal processes. The JUMO heatTHERM, type 602031, is a protection temperature limiter STB.

The panel-mounting thermostat operates on the principle of liquid expansion. The electrical switching device is a snap-action switch.

The panel-mounting thermostat complies with RoHS and is free from cadmium.

Switching action

Protection temperature limiter STB with lock-out and self-monitoring facility

If the temperature at the probe exceeds the set limit, the snap-action switch is operated through a transmission mechanism, the circuit is opened and the snap-action switch is locked out mechanically.

After the temperature has fallen below the limit by about 10% of the limit value, the snap-action switch can be reset manually.




If the probe cools down to below -20°C (approx.), the circuit opens but will close again when the temperature rises.

Failure of the measuring system, i.e. a leakage of the expansion liquid, will cause the pressure under the diaphragm to drop, thus permanently opening the circuit. The thermostat can no longer be reset.

Temperature compensation

A deviation of the ambient temperature at the switch head and capillary from the +22C calibration ambient temperature will result in a shift of the switching point. The temperature compensation reduces this switching point shift to a minimum.

Approvals

DIN Reg. No.	Tests				
STB 116904	 ²	 ¹	PED ¹ 97/23/EC		You will find the Declarations of Conformity at: www.jumo.net or ask for them to be sent.

¹ limit: 180°C max.

² mode of operation as per EN 60 730-2-9: Type 2BFHKLP

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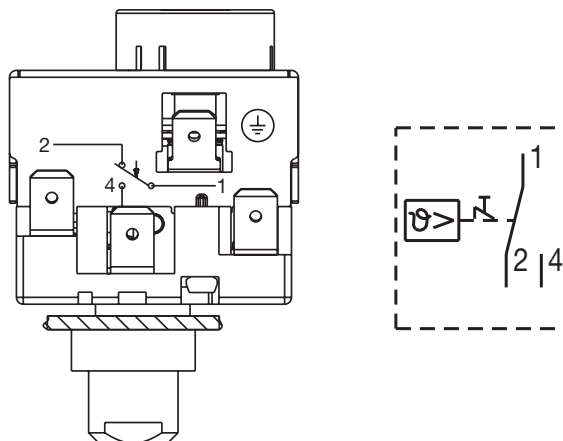
Technical data

Housing	sheet steel, zinc-plated	
Base	black polyester resin compound	
Fixing	M 10x1, with hexagon nut and protective cap	
Enclosure protection	IP00 to EN 60 529	
Limit temperatures	for transport and storage: -50 to +50°C in use: +80°C max.	
Nominal position (NL)	unrestricted	
Weight	approx. 0.12 kg	
Ambient temperature effect	A deviation from the ambient temperature at the switch head and capillary from the +22°C calibration ambient temperature will result in a switching point shift of about $-0.1^{\circ}\text{C}/^{\circ}\text{C}^1$ (measured at +120°C limit, permanently set, and with 3000 mm capillary length)	
Electrical contact	snap-action switch with single-pole break contact (SPST-NC), lock-out and signal contact break contact (SPST-NC), contacts 1-2: 16 (2.5) A, 230 V AC +10%, p.f. = 1 (0.6) 0.25A, 230 V DC +10% signal contact (contacts 1-4): 2 (0.4) A, 230 V AC +10%, p.f. = 1 (0.6) 0.25A, 230 V DC +10% gold-plated snap-action switch, code 702: AC / DC 24 V, 0.1A	
Connection		A 6.3-0.8 to DIN 46244
Switching point accuracy		see order details, page 4
Switching reliability		To ensure maximum switching reliability, we recommend a minimum loading of: AC/DC = 24 V, 20 mA with silver contacts AC/DC = 5 V, 5 mA with gold-plated contacts (code 702)

Probe length L in mm

Probe dia.	Limit value								
	95°C	100°C	110°C	120°C	350°C	70 to 130°C	95 to 120°C	120 to 150°C	150 to 180°C
4 mm		153			77	118	153		127
6 mm		72			--	60	72		63

Connection diagram



¹ (change of switching point referred to change in ambient temperature)

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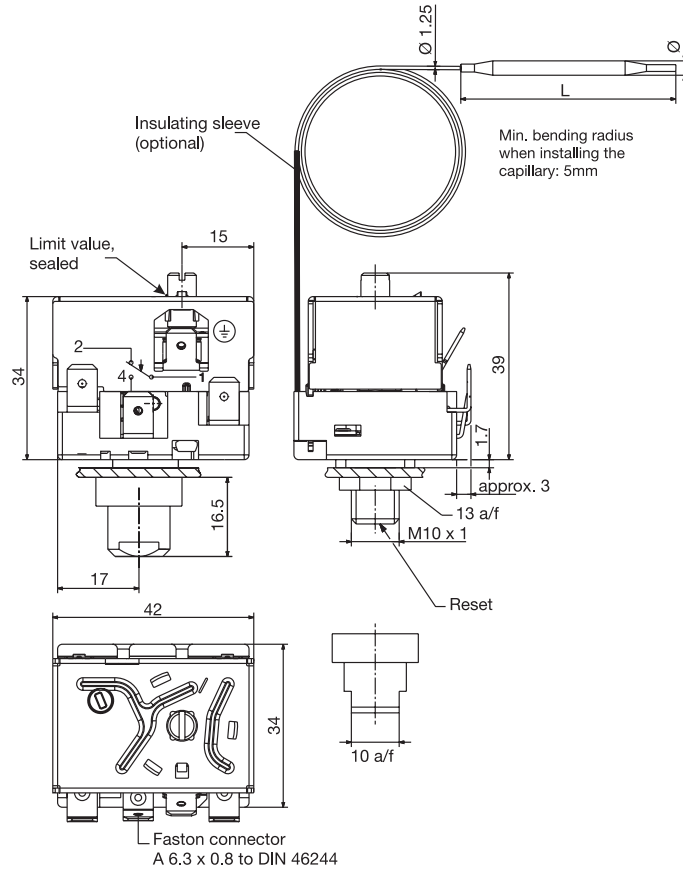
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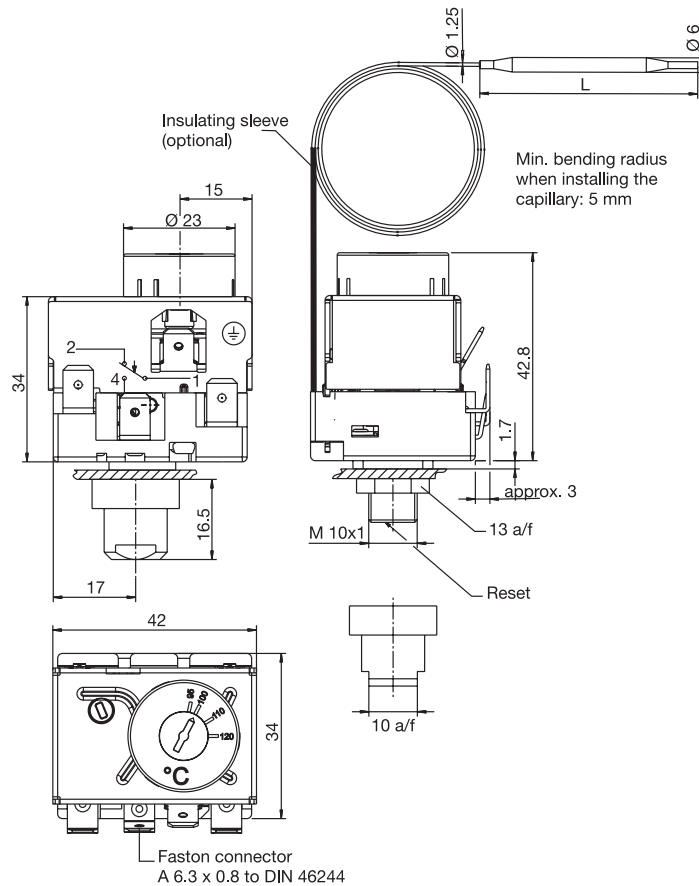


Dimensions

Type: 602031/80



Type: 602031/81



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shipment: 3 working days after receipt of order

Stock items

minimum order quantity: 10 items

Sales No.	Type	Limit °C	Limit setting	Capillary mm	Process connection	Probe dia. x length mm
60/60002994	602031/80	+100	fixed setting	2000	A	6 x 72
60/60002995	602031/81	+95 to +120	adjustable, notch positions at: +95, +100, +110 and +120°C			
60/60003136	602031/81	+70 to +130	freely adjustable			6 x 60

Instrument versions that differ from the stock models are available on request, minimum order quantity: 500 items

Order details

Panel-mounting thermostat JUMO heatTHERM, type 602031

Order code	(1) Basic type
602031	Panel-mounting thermostat JUMO heatTHERM, with single-pole snap-action switch
	(2) Basic type extensions
80	Protection temperature limiter (STB), permanently set, with break contact (SPST-NC), lock-out and signal contact
81	Protection temperature limiter (STB), adjustable, with break contact (SPST-NC), lock-out and signal contact
	(3) Limit value Switching point accuracy Max. probe temperature
000	with fixed limit setting
671	+ 70 to +130°C +0/-15°C +155°C (freely adjustable) ¹
666	+ 95 to +120°C +0/-5°C +145°C (adjustable, notch positions 95, 100, 110, 120°C) ¹
672	+120 to +150°C +0/-10°C +175°C (freely adjustable) ¹
673	+150 to +180°C +0/-10°C +210°C (freely adjustable) ¹
	(4) Fixed limit setting Switching point accuracy Max. probe temperature
000	with fixed limit setting
095	+ 95°C +0/-5°C +145°C
100	+100°C +0/-5°C +145°C
110	+110°C +0/-5°C +145°C
120	+120°C +0/-5°C +145°C
350	+350°C +0/-20°C +405°C
...	other limit values up to 350°C, specified in °C
	(5) Capillary length
1000	1000 mm
2000	2000 mm
2500	2500 mm
3000	3000 mm
....	special length (specify in plain text, in 1000 mm steps, max. length: 5000 mm)
	(6) Material of capillary
40	Cu (copper) 1.25 mm dia.
	(7) Insulation of capillary
00	without
13	with

¹ only with basic type extension 81

² see data sheet 60.6710 for additional probe mountings

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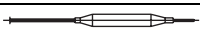

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Order details

Panel-mounting thermostat JUMO heatTHERM, type 602031

Order code	(8) Insulation length (starting from housing)
0	none
450	450 mm
...	special length (specify in plain text, in 1000 mm steps, max. length: 5000 mm)
	(9) Process connection (PA)²
10	A = plain cylindrical probe 
20	U = screw-in pocket 
	(10) Thread of process connection
00	no thread (process connection A)
13	external thread G 1/2
	(11) Material of process connection
00	only with process connection A
46	CuZn (brass)
01	St (steel)
20	CrNi (stainless steel 1.4571)
	(12) Fitting length S (immersion tube length)
000	no pocket
100	100mm
150	150mm
200	200mm
300	300mm
400	400mm
...	special length (specify in plain text)
	(13) Diameter D (immersion tube dia.)
0	no pocket
8	8 mm
	(14) Diameter d (probe dia.)
4	4 mm
6	6 mm
	(15) Extra codes (TZ)
000	no extra code
702	gold-plated snap-action switch contacts

Special versions on request!

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Order code	602031	/		-		-		-		-		-		-	
Order example	602031	/	80	-	000	-	110	-	2000	-	40	-	13	-	450

¹ only with basic type extension 81

² see data sheet 60.6710 for additional probe mountings