

JUMO GmbH & Co. KG

Delivery address: Mackenrodtstraße 14,
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
Fax: +49 661 6003-607
E-mail: mail@jumo.net
Internet: www.jumo.net

JUMO Instrument Co. Ltd.

JUMO House
Temple Bank, Riverway
Harlow - Essex CM20 2DY, UK
Phone: +44 1279 63 55 33
Fax: +44 1279 63 52 62
E-mail: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.

8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Panel-mounting thermostats

JUMO heatTHERM, type 602030 and 602031

Particularities

- Stable switch point position due to ambient temperature compensation (serial)
- max. contact rating 16 A, 400 V
- Service life, at least 250,000 switching cycles for TR and TW
- Control ranges of up to 500°C are possible
- STB with extensive setting range: 250K to 250° ∠
- Switch point deviation during the entire service life of max. ± 5%

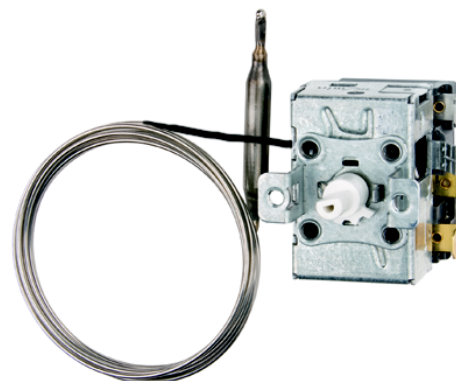
Brief description

Thermostats are used to control and monitor thermal processes.

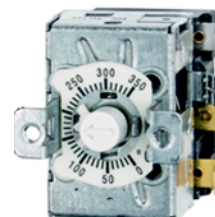
The JUMO heatTHERM is available as temperature controller TR, temperature monitor TW (type 602030), safety temperature monitor STW or safety temperature limiter STB (type 602031).

The built-in thermostat operates according to the fluid expansion principle. The electrical switching element is a snap switch.

The built-in thermostat meets the RoHS and is cadmium-free.



Type 602030 / 01



Type 602030 / 02

Type 602030 / 20
Type 602031 / 21Type 602030 / 80
Type 602031 / 81

Approval/approval marks (see Technical Data)



DGRL
97/23/EG



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Technical Data

Switching function

Temperature controller TR / temperature monitor TW	If the temperature exceeds the set point value set on the temperature probe, the micro switch will be tripped via the transmission mechanics and the current circuit opened or closed. The micro switch is reset to its original status once the set point value set is gone below (by the hysteresis).
Safety temperature monitor STW	If the temperature exceeds the set point value set on the temperature probe, the snap switch will be tripped and the current circuit opened or closed. The snap switch is reset to its original status once the set point value set is gone below (by the hysteresis). If the probe has cooled down to a temperature below approx. -20°C, the current circuit opens, however, automatically closes again, when the temperature rises. If the measuring system is destroyed, i.e. if the expansion fluid emerges, the pressure in the diaphragm drops and permanently opens the current circuit.
Safety temperature limiter STB with restart lock and self-monitoring	If the temperature exceeds the switching point set on the temperature probe, the snap switch is tripped, the current circuit opened and the snap switch mechanically locked. The snap switch can be manually unlocked again once the switching point temperature has gone below by approx. 10K. If the probe has cooled down to a temperature below approx. -20°C, the current circuit opens, however, automatically closes again, when the temperature rises. If the measuring system is destroyed, i.e. if the expansion fluid emerges, the pressure in the diaphragm drops and permanently opens the current circuit. Unlocking is impossible.

Temperature compensation

When the ambient temperature on the switch head and the long-distance line deviates from the calibration ambient temperature +22°C, a switch point offset occurs. This switching point offset is minimized due to the temperature compensation.

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Technical Data

Case

Case	Sheet steel, galvanized
Protection type	IP 00 as per EN 60 529
Switching socket	Polyester resin molding compound, black
max. admissible ambient temperature	for transport and storage: -50...+50°C during use: max. +80°C
Rated position	any
Weight	approx. 0.12 kg
Long-distance line	2000 mm incl. 460 mm protective hose as standard, min. bending radius of the long-distance line 5 mm Material No. Cu-DHP

Electrical data

Electric contact	Snap switch with single-pole change-over contact		
Contact rating	TR / TW	STW	STB
	On the N/C contact (contact deck 1-2): AC 400 V +10%, 16 A, AC 230 V +10%, 16 (2.5) A, cos φ = 1 (0.6), DC 230 V +10%, 0.25 A		
Contact rating	On the N/O contact (contact deck 1-4): AC 400 V +10%, 6.3 A, AC 230 V +10%, 6.3 (2.5) A, cos φ = 1 (0.6), DC 230 V +10%, 0.25 A		On the signal contact (contact deck 1-4): AC 400 V +10%, 2 A, AC 230 V +10%, 2 (0.4) A, cos φ = 1 (0.6), DC 230 V +10%, 0.25 A
Electrical connection	A 6.3-0.8 as per DIN 46244		
Switching reliability	To ensure a high switching reliability, we recommend a minimum load of: AC / DC = 24 V, 100 mA with silver contacts AC / DC = 10 V, 5 mA with gold-plated contacts (TZ 702)		

	Switching function	Rated value			
Hysteresis in % from the control range	TR / TW	2.5%	serial		
	TR / TW	7%	on request		
	STW	7%	serial		
Ambient temperature influence	When the ambient temperature on the switch head and the long-distance line deviates from the calibration ambient temperature +22°C, a switch point offset of approx. -0.1 K/K occurs.				
Switching point accuracy	Hysteresis		Scale beginning	upper third	
	TR / TW	2.5%	serial	± 6%	± 3%
		7%	on request	± 8%	± 4%
	STW / STB	7%	Control range	in the "first half"	in the "second half"
			+70...130°C	+0/-12 K	+0/-5 K
			+95...120°C	+0/-5 K	+0/-5 K
			+20...150°C	+0/-15 K	+0/-10 K
			+50...300°C	+0/-30 K	+0/-15 K

Approval/approval marks

Approval marks	Inspection authority	Certificates / Inspection number	Inspection basics	valid for
DIN	DIN CERTCO / TÜV Süd	STB116907	DIN EN 14597	heatTHERM (STB)
DIN	DIN CERTCO / TÜV Süd	STW(STB)119007	DIN EN 14597	heatTHERM (STW(STB))
c UL us	UL Germany	E66358 Vol. 1, Sec. 7	UL 873	heatTHERM
c UL us	UL Germany	MH45736 Vol. 1, Sec. 1	UL 353	heatTHERM (STB)
DGRL	TÜV Germany	IS-TAF-MUC 07113377017	97/23/EC	heatTHERM (STW/STB)
DIN	TÜV Germany)	TR116807	DIN EN 14597	heatTHERM (TR)
DIN	TÜV Germany	TW118907	DIN EN 14597	heatTHERM (TW)

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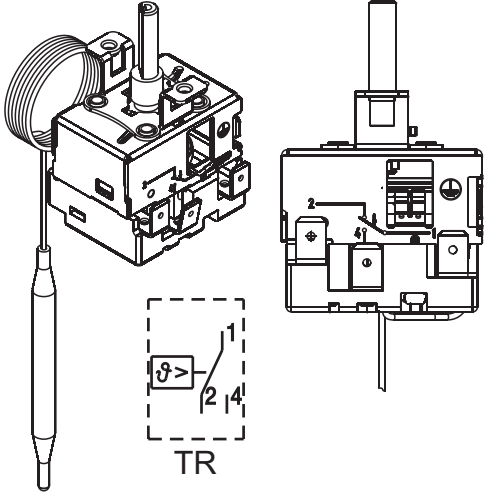
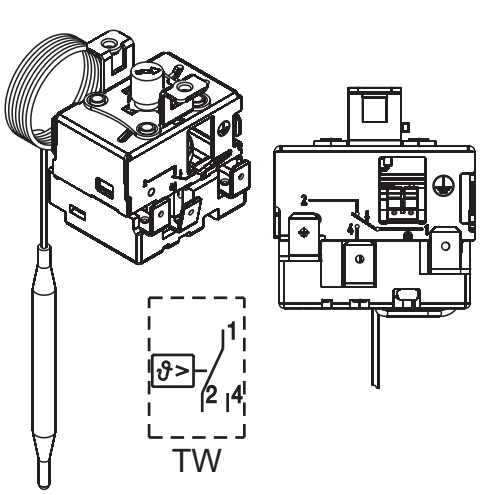
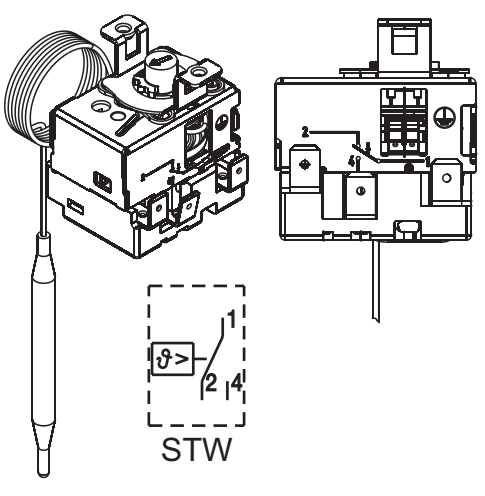
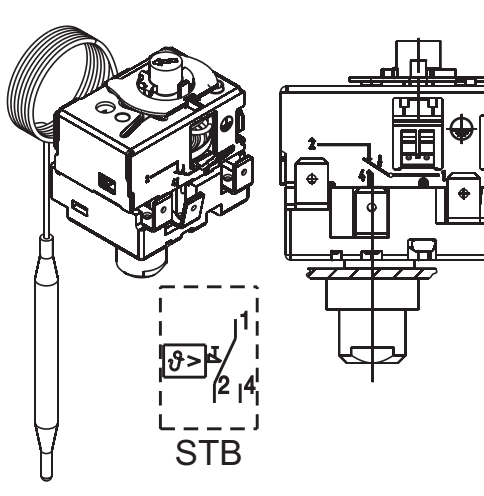
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Wiring diagrams

Type 602030	Type 602030/01 	Type 602030/02 
Type 602031	Type 602031/20 and 602031/21 	Type 602031/80 and 602031/81 

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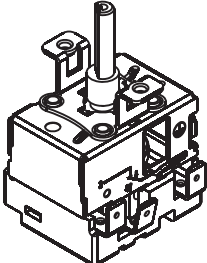
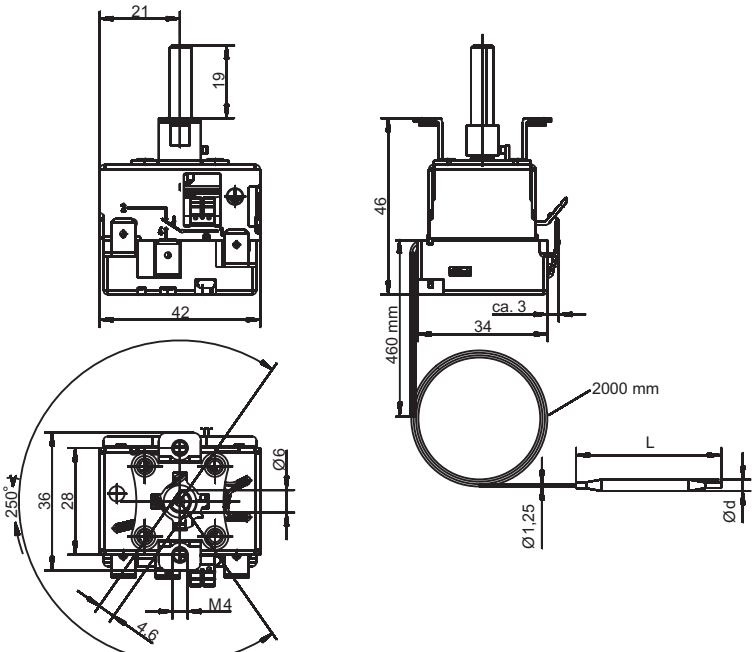
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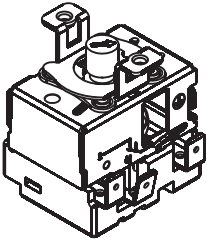
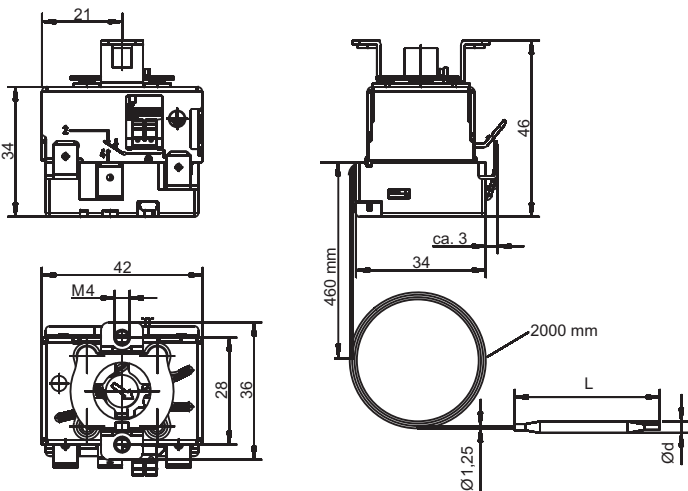
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Devices in stock

Dimensions

Type 602030/01 - Temperature controller - compensated ambient temperature (serial) - max. contact rating 16 A, 400 V - Service life, at least 250,00 switching cycles - Switch point deviation (drift) during the entire service life of max. $\pm 5\%$ 					
Part No.	Type	Control range °C	Long-distance line mm	Hysteresis	Probe Ø (d) x L
60/60003218	602030/01	+20...90	2000	approx. 2K	6 x 132 mm
60/60003280		+20...90		approx. 5K	6 x 79 mm
60/60003219		+0...120		approx. 3K	6 x 87 mm
60/60003220		+0...200		approx. 5K	6 x 78 mm
60/60003221		+50...300		approx. 6K	6 x 66 mm

Type 602030/01 - Temperature monitor - compensated ambient temperature (serial) - max. contact rating 16 A, 400 V - Service life, at least 250,000 switching cycles - Switch point deviation (drift) during the entire service life of max. $\pm 5\%$ 					
Part No.	Type	Control range °C	Long-distance line mm	Hysteresis	Probe Ø (d) x L
60/60003222	602030/02	+20...90	2000	approx. 2K	6 x 132 mm
60/60003281		+20...90		approx. 5K	6 x 79 mm
60/60003223		+0...120		approx. 3K	6 x 87 mm
60/60003224		+0...200		approx. 5K	6 x 78 mm
60/60003225		+50...300		approx. 6K	6 x 66 mm

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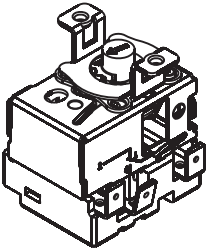
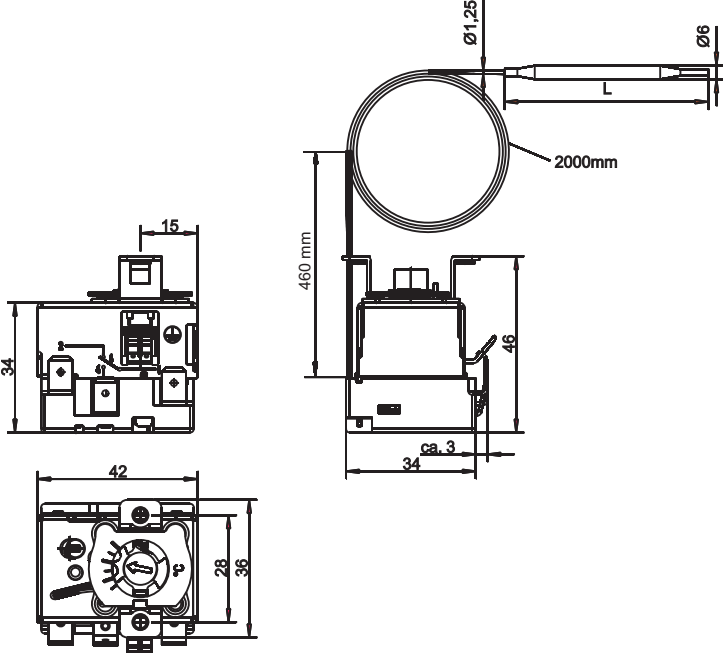
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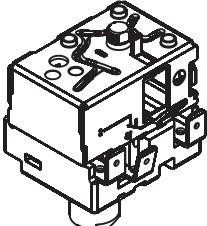
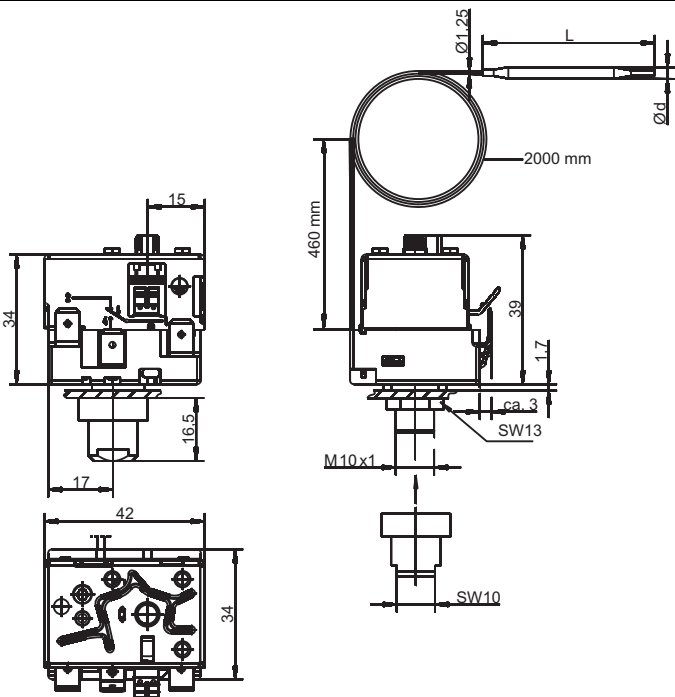
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Devices in stock

Dimensions

Type 602031/21 - Safety temperature monitor - compensated ambient temperature (serial) - max. contact rating 16 A, 400 V 					
Part No.	Type	Control range °C	Long-distance line mm	Hysteresis	Probe Ø (d) x L
60/60003226	602031/21	+70...130	2000	approx. 10K	6 x 60 mm

Type 602031/80 - Safety temperature limiter - compensated ambient temperature (serial) - max. contact rating 16 A, 400 V 					
Part No.	Type	Switching point °C	Long-distance line mm	Unlocking difference	Probe Ø (d) x L
60/60002994	602031/80	+100	2000	approx. 10K	6 x 72 mm

SW = width across flats = af

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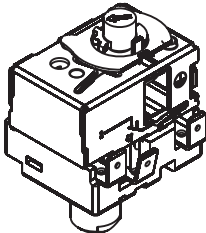
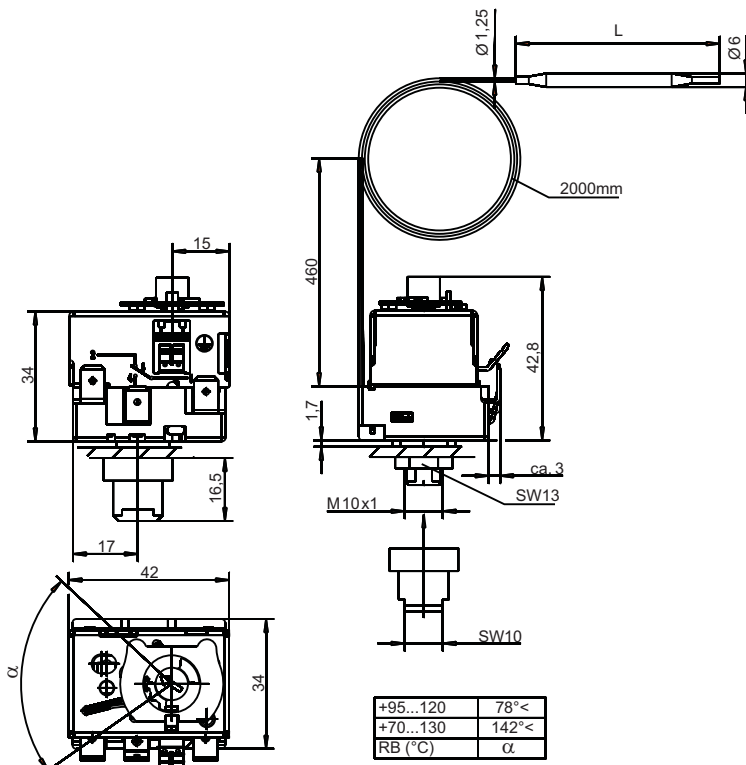
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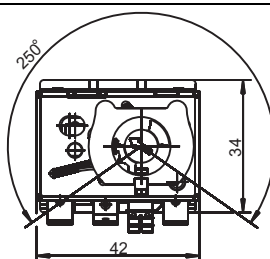


Devices in stock

Dimensions

Type 602031/81 • Safety temperature limiter • compensated ambient temperature (serial) • max. contact rating 16 A, 400 V 	<table><tr><td>+95...120</td><td>78°<</td></tr><tr><td>+70...130</td><td>142°<</td></tr><tr><td>RB (°C)</td><td>α</td></tr></table> SW = width across flats = at					+95...120	78°<	+70...130	142°<	RB (°C)	α
+95...120	78°<										
+70...130	142°<										
RB (°C)	α										
Part No.	Type	Control range °C	Long-distance line mm	Unlocking difference	Probe Ø (d) x L						
60/60002995	602031/81	+95...120	2000	approx. 10K	6 x 72 mm						
60/60003136		+70...130			6 x 60 mm						

SW = width across flats = af

Type 602031/81 • Safety temperature limiter • compensated ambient temperature (serial) • max. contact rating 16 A, 400 V • with extra code 749: 250° ∠					
Part No.	Type	Control range °C	Long-distance line mm	Unlocking difference	Probe Ø (d) x L
60/60003291	602031/81	+20...150	2000	approx. 10K	6 x 60 mm
60/60003292		+50...300			6 x 85 mm

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Order details

Panel-mounting thermostat JUMO heatTHERM type 602030 and 602031

Minimum purchase order 500 pieces

Order code		(1)	Basic type	
		602030	Panel-mounting thermostat JUMO heatTHERM with single-pole snap switch (TR/TW)	
		602031	Panel-mounting thermostat JUMO heatTHERM with single-pole snap switch (STW/STB)	
			(2)	Basic type extensions
X		01	Temperature controller	(TR) with change-over contact
X		02	Temperature monitor	(TW) with change-over contact
	X	20	Safety temperature monitor (STW)	Set permanently with change-over contact
	X	21	Safety temperature monitor (STW)	Adjustable with change-over contact
	X	80	Safety temperature limiter (STB)	Set permanently with change-over contact and restart lock
	X	81	Safety temperature limiter (STB)	Adjustable with change-over contact and restart lock
			(3)	Control / limit value range °C
				max. admissible probe temperature °C
X	X	000	with permanently set switching point	
X		026	0...+120	145
X		028	0...+200	230
X		041	+20...+90	115
X		064	+50...+300	345
			(temperature probe made of CrNi)	
	X	043	+20...+150	180
			(only with extra code 749)	
	X	640	+50...+300	345
			(temperature probe made of CrNi, only with extra code 749)	
	X	666	+95...+120	145
	X	671	+70...+130	155
			(further control/limit value ranges up to 350°C on request (up to +500°C without approval))	
			(4)	Limit value STW/STB permanently set °C
				max. admissible probe temperature °C
				Switching point tolerance
	X	000	with adjustable limit value	
	X	095	+95	145
	X	100	+100	145
	X	110	+110	145
			(further limit values up to 350°C on request (up to +500°C without approval))	
			(5)	Hysteresis %
	X	00	no specifications for STB	
X		25	2.5	
X	X	70	7	
			(6)	Long-distance line length mm
X	X	2000	2000	
X	X		Special length (specifications in plain text - 1000 mm steps, maximum length 5000 mm)	
			(7)	Long-distance line material
X	X	40	Cu (copper) Ø 1.25 mm	

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Order details

Built-in thermostat JUMO heatTHERM type 602030 and 602031

Order code

X	X	10	(8) Process connection (PC) A = plain cylindrical probe	
X	X	4	(9) Diameter "d" (probe diameter) mm 4	
X	X	6	6	
X	X	40	(10) Temperature probe material Cu (Copper)	
X	X	20	CrNi (stainless steel 1.4571)	
X	X	13	(11) Long-distance line insulation PVC hose, black	
X	X	460	(12) Insulation length mm (from housing) 460	
X	X		Special length on request (maximum length 700 mm)	
X	X	000	(13) Extra codes without extra codes	
X	X	702	Snap switch, gold-plated	
X	X	742	Straight plug	
X	X	749	Setting range with 250 angular degrees (only STB)	

X = selection possibility for the basic type

Special version on request! The minimum purchase quantity for special versions is 500 pieces.

Order code

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13)
 602031 / [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - [] - [] / [] , ...

Order example

602031 / [80] - [000] - [110] - [25] - [2000] - [40] - [10] - [6] - [40] - [13] - [460] / [000^a] , ...

^a State extra codes one after another, separated by commas.

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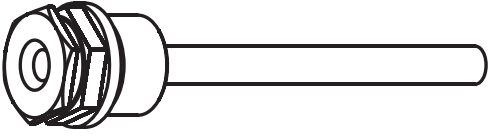
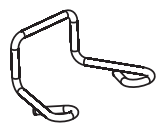
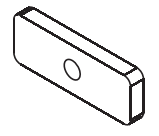
JUMO Process Control, Inc.

8 Technology Boulevard
Canastota, NY 13032, USA
Phone: 315-697-JUMO
1-800-554-JUMO
Fax: 315-697-5867
E-mail: info@jumo.us
Internet: www.jumo.us



Accessories

(as per product group 606710 and 606715)

Thermowell set	Thermowell with sealing collar		Clamp for strain relief	Disk for add-on thermostat	Screw for add-on thermostat
suitable for type 602030 and 602031					
Part No.	Type	Abbreviation	Connection	Fitting length EL in mm	Material
60/60003177	Screw-in sheath with sealing collar	28	G 1/2	100	Brass / nickel-plated
60/60003203				150	
60/60003171				200	
60/60003172				100	Stainless steel / 1.4571
60/60003205				150	
60/60003173				200	

Mounting set for support rail DIN EN 60715 TH 35-7,5 (as per product group 606710)

Part No.	Type			
60/00511794	Adapter set, support rail for heat-THERM/EM		 2 screws M3 x 4	 2 screws M4 x 5

Set point setter for type 602030/01 (as per product group 606715)

Part No.	Type	Control range °C	W 8			
60/60003091	W 8	+20...+90				
60/60003227		0...+120				
60/60003095		0...+200				
60/60003098		+50...+300				
			Rotary knob 07	Panel 23	adjustable stop 16	2 screws M4 x 8