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**JUMO Process Control, Inc.**  
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# Rod Thermostats with microswitch STMA Series

## Brief description

Rod thermostats with microswitch operate on the principle of rod expansion. A temperature change produces a change in the length of the stem. This change is transmitted through a low-expansion rod inside the stem to a mechanism with a microswitch in the thermostat head.

Rod thermostats in the STMA series are used, for example, in HVAC applications.

Rod thermostats have the advantage that they are largely unaffected by excess temperatures, irrespective of the range (max. +345°C), have a fast response (time constant 8 sec) and negligible ambient temperature error at the thermostat head.

The thermostats have a fail-safe action (heating switches off) if the stem is damaged or bent.

## Switching function

### Temperature controller TR and temperature monitor TW

When the temperature at the probe exceeds the selected setpoint, the microswitch is operated through the mechanism and the circuit is opened or closed. When the temperature has fallen below the selected setpoint (by the switching differential), the microswitch returns to its initial position.

### Temperature limiter TB

If the temperature at the probe exceeds the set limit, the circuit is opened and the microswitch is locked out mechanically.

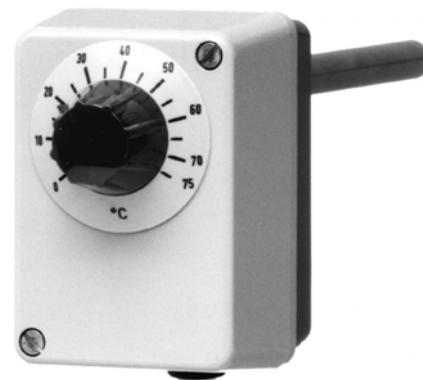
After the temperature has fallen below the safe temperature limit by about 10 % of span, the microswitch can be reset manually.

### Temperature limiter TB with Code U

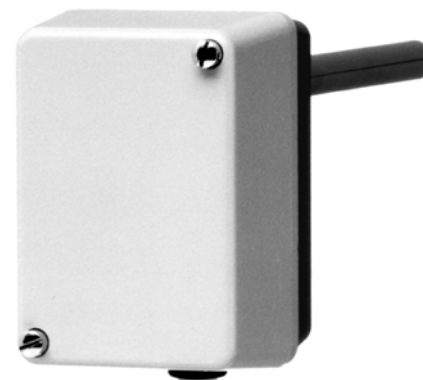
The additional make contact can be used as a signal contact.

## Types

Types	Switching function
STMA-1	Temperature controller TR
STMA-2	Temperature monitor TW
STMA-7	Temperature limiter TB



STMA-1



STMA-2



## Technical data

### Control ranges, switching differential and stem lengths

Ranges °C	Switching differential in °C	Stem length S	Active stem length
-10 to +100 + 5 to +160 0 to +300	4 ± 1	100 mm	100 mm
0 to + 75 +15 to +120 + 5 to +160 0 to +240	3 ± 0.7	150 mm	150 mm
0 to + 80 0 to +120 +20 to +200 +50 to +300 -80 to +100	2.5 ± 0.4	200 mm	200 mm
0 to + 50 +20 to +150 0 to +200 -15 to + 50	1.9 ± 0.4	250 mm	250 mm
0 to + 40 0 to + 80	1.6 ± 0.4	300 mm	300 mm

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**Electrical data**

Switching device	STMA-1 / STMA-2	STMA-7	STMA-7/U
	microswitch with changeover contact	microswitch with break contact and lock-out	microswitch with break contact, lock-out and additional signal contact
max. rating	10 (2) A, 230 V AC +10%, p.f. = 1 (0.6) 0.25A, 230 V DC +10%		

**Operating data**

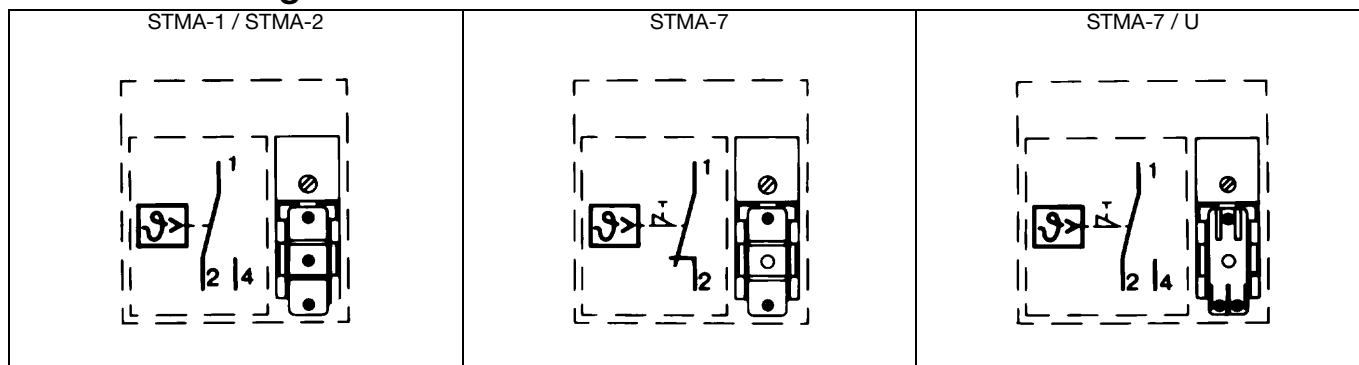
Switching point accuracy in %	± 1.5% of scale span, based on the switch-off point at mid-span
Permissible storage temperature	-50 to +50°C
Permissible ambient temperature in operation	-40 to +80°C
Nominal position (NL)	to DIN 16 257, NL 0 – NL 90 (other NL on request)

**Case**

Case	die-cast aluminium surface with impact-resistant textured paint; cover: RAL 7032, base: RAL 7015	
Cable entry	standard: clamping nipple M 20 x 1.5 at extra cost: cable gland M 20 x 1.5 to EN 50 262 CuZn (brass)	
Setpoint adjustment	STMA-1	STMA-2 / STMA-7
	switching point adjustable from the outside by turning the knob	switching point adjustable by screwdriver after taking off case cover
Protection	EN 60 529-IP54	
Weight	approx. 0.65 kg	

Process connection	Version	Material
A	boss 19 mm dia. between case and stem (process connections U, g, b can be retrofitted)	CuZn (brass)
U	screw-in pocket, screw-in spigot Form A to DIN 3852/2 with fixing screw, stem 12 mm dia.	up to 150°C nickel-plated brass / above 150°C St (CrNi at extra cost)
g	loose nipple M 18 x 1 with locknut	nickel-plated brass
b	mounting flange	galvanized steel
D	fixed screw thread with hexagon, 27 a/f, pipe thread G <sup>1</sup> / <sub>2</sub>	nickel-plated brass
Probe	diameter 9 mm	nickel-plated brass
Fitting (stem) length S	100, 150, 200, 250 und 300 mm	

**Connection diagrams**



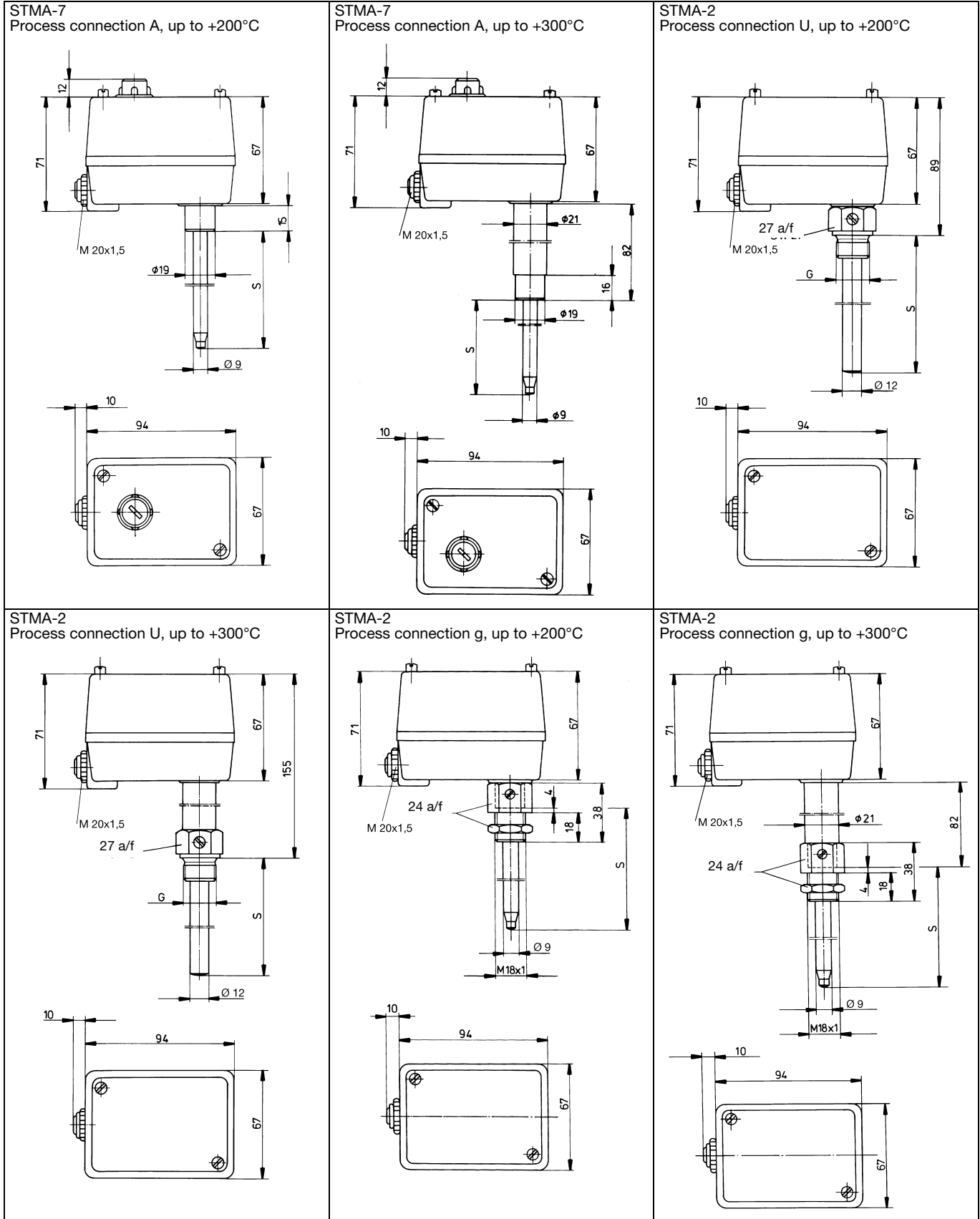
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**Dimensions**



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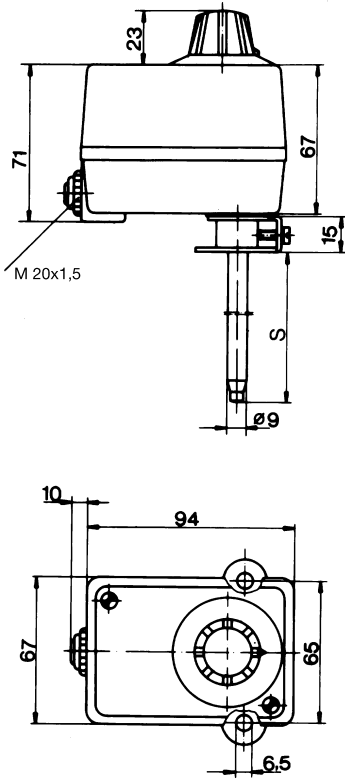
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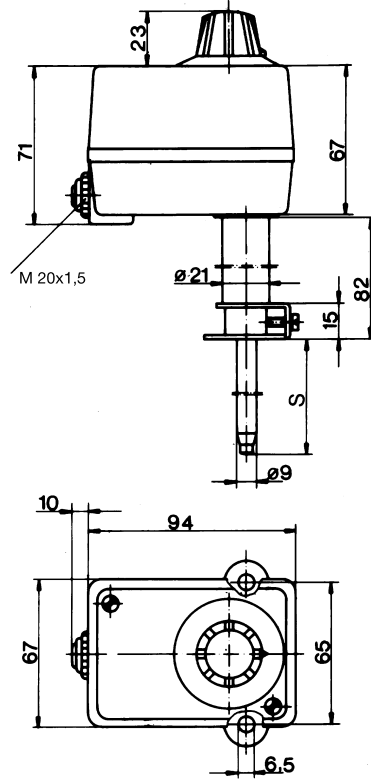


## Dimensions

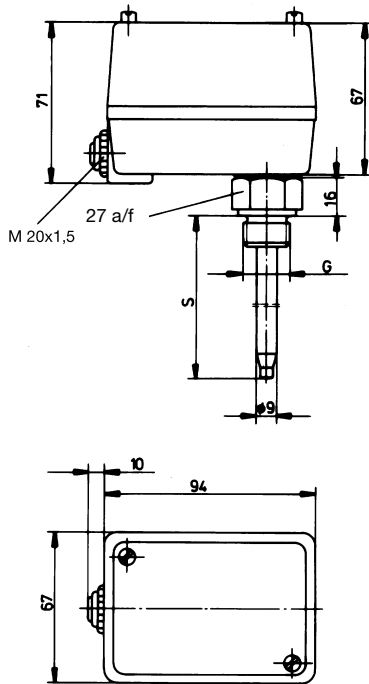
STMA-1  
 Process connection b, up to +200°C



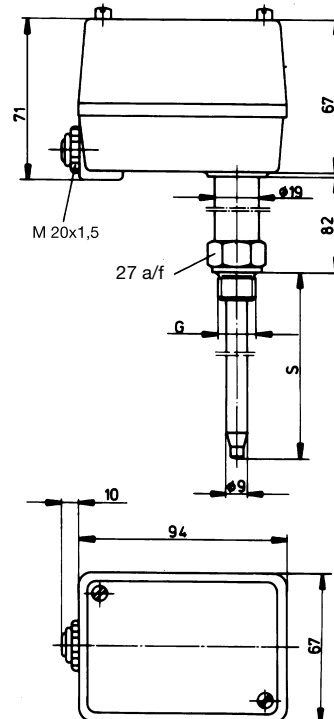
STMA-1  
 Process connection b, up to +300°C



STMA-2  
 Process connection D, up to +200°C



STMA-2  
 Process connection D, up to +300°C



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**Stock items**

delivery 3 working days after receipt of order

Sales No.	Type	Control range °C	Process connection	Stem length mm
60/60000354*	STMA-1	0 to + 75	U G <sup>1</sup> / <sub>2</sub>	150
60/60000355*	STMA-1	0 to + 80	U G <sup>1</sup> / <sub>2</sub>	300
60/60000361*	STMA-1	+ 5 to +160	U G <sup>1</sup> / <sub>2</sub>	150
60/60000362*	STMA-1	0 to +200	U G <sup>1</sup> / <sub>2</sub>	250
60/60000371*	STMA-2	+15 to +120	U G <sup>1</sup> / <sub>2</sub>	150
60/60000372*	STMA-2	+20 to +200	U G <sup>1</sup> / <sub>2</sub>	200

\* model is being phased out

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## Order details

### STMA Series

Order code	(1) Basic type
601530	Rod Thermostat, STMA Series
	(2) Basic type extensions
01	STMA-1 Temperature controller TR with changeover contact
02	STMA-2 Temperature monitor TW with changeover contact
07	STMA-7 Temperature limiter TB with break contact
	(3) Control / limit ranges
	<b>Range</b> Stem length
020	0 to + 40°C 300 mm
021	0 to + 50°C 250 mm
015	-15 to + 50°C 250 mm
023	0 to + 75°C 150 mm
024	0 to + 80°C 200 or 300 mm
010	-80 to + 100°C 200 mm
017	-10 to + 100°C 100 mm
026	0 to + 120°C 200 mm
037	+15 to + 120°C 150 mm
043	+20 to + 150°C 250 mm
035	+ 5 to + 160°C 100 or 150 mm
028	0 to + 200°C 250 mm
044	+20 to + 200°C 200 mm
029	0 to + 240°C 150 mm
030	0 to + 300°C 100 mm
064	+50 to + 300°C <sup>2</sup> 200 mm
	(4) Process connection
10	A = plain cylindrical probe
20	U = screw-in pocket 
54	D = fixed screw thread with hexagon <sup>z</sup>
	(5) Thread for process connection
00	no thread (process connection A)
13	external thread G 1/2
	(6) Material of process connection
46	CuZn (brass) with process connections A, U and D only
01	St (steel) <sup>2</sup> with process connection U only
20	CrNi (stainless steel) with process connection U only
	(7) Fitting length S (stem length)*
100	100 mm <sup>z</sup>
150	150 mm
200	200 mm
250	250 mm
300	300 mm
	* please note the relationship of control range to stem length!
	(8) Extra codes <sup>1</sup>
000	no extra code
574	<b>U</b> TB with break contact, lock-out + additional signal contact (for basic type STMA -7 only)
715	<b>g</b> loose nipple M 18 x 1 with locknut
764	<b>b</b> mounting flange

**Order code**  
 (1) (2) (3) (4) (5) (6) (7) (8)  
 601530 / .. - ... - .. - .. - .. - ... / ... , ...

**Order example**  
 601530 / 02 - 026 - 20 - 13 - 46 - 200 / 000<sup>1</sup>

<sup>1</sup> List extra codes in sequence, separated by commas.

<sup>2</sup> Special version