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**JUMO Process Control, Inc.**  
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# Rod Thermostat with Microswitch

## STMA series

### Special features

- With microswitch
- Aluminum diecast case
- Protection class IP 54
- High excess-temperature protection
- High response sensitivity

### Brief description

Rod thermostats with microswitches operate according to the rod-length expansion principle. During this process, the change of the sensing-probe length (which depends on the temperature) is transmitted via an internal rod (that has a smaller expansion coefficient and that is fitted in the thermowell) to a transmission unit equipped with a microswitch in the switching head.

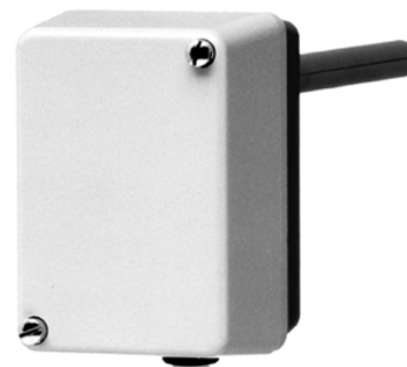
The thermostats of the STMA series are used, for example, in the heating and air conditioning industries.

Rod thermostats distinguish themselves by their high excess-temperature protection that functions independently of the control range (maximum. +345 °C), high response sensitivity (time constant 8 s), and negligible low-ambient temperature influence at the switching head.

When the sensing probe is damaged or bent, the thermostat changes to "Safe status" (heater off).



STMA-1



STMA-2

### Switching function

#### Temperature controller TR and temperature monitor TW

If the temperature on the temperature probe exceeds the setpoint value, the microswitch is activated by the transmission mechanics and the electrical circuit is opened or closed. If the temperature falls below the selected setpoint (by the amount of the switching differential), the microswitch is reset to its initial position.

#### Temperature limiter TB

If the temperature on the temperature probe exceeds the set limit value, the electrical circuit is opened and the microswitch is mechanically locked. The microswitch can be manually unlocked once the temperature has dropped by approx. 10 % of the scale range.

#### Temperature limiter TB with extra code 574

The additional N/O contact can be used as a signal contact.

### STMA types

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

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## Technical data

### General information

	Control ranges °C	Switching differential in °C	Immersion tube length S	Active immersion tube length
<b>Control ranges, switching differential, and immersion tube length</b>	-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

<b>Electrical data</b>	STMA-1	STMA-2	STMA-7	STMA-7 / 574
Switching element	Microswitch with changeover contact	Microswitch with changeover contact	Microswitch with N/C contact and restart lock	Microswitch with N/C contact, restart lock, and additional signal contact
Maximum switching capacity	230 VAC +10 %, 10 (2) A, cos φ = 1 (0.6) DC 230 V +10 %, 0.25A			

### Operating data

Switching point accuracy in %	± 1.5 % of the scale range, in the scale range center, referring to the switchoff point
Allowable storage temperature	-50 to +50 °C
Allowable ambient temperature when in use	-40 to +80 °C
Rated position	According to DIN 16 257, rated position 0 to rated position 90 (different rated positions upon request)

### Case

Case	Aluminum diecast, surface with impact-resistant textured paint; lid: RAL 7032, bottom section: RAL 7015	
Cable inlet	Standard: Clamping gland M 20 x 1.5 Available at extra cost: Cable screw-connection M 20 x 1.5 according to EN 50262 CuZn	
Setpoint value setting	<b>STMA-1</b> Switching point adjustable from the outside using the rotary knob	<b>STMA-2 / STMA-7</b> Switching point adjustable with a screwdriver once the case lid has been removed
Protection type	EN 60 529-IP 54	
Weight	Approx. 0.65 kg	

<b>Process connection</b>	Version	Material
Plain cylindrical probe	Collar Ø 19 mm between case and sensing probe (extra codes 574, 715, 764 can be retrofitted)	CuZn
Screw-in sleeve	Thermowell as a screw-in sleeve, screw-in spigot shape A according to DIN 3852/2 with fixing screw, immersion tube Ø 12 mm	Up to 150 °C CuZn, nickel plated / As of 150 °C CrNi
Extra code 715	Loose screw-connection M 18 x 1 with counter nut	CuZn nickel plated
Extra code 764	Mounting flange	Sheet steel, galvanized
Fixed screw-connection	With hexagon, width across flats 27, thread G1/2	CuZn nickel plated
Probe	Diameter 9 mm	CuZn nickel plated
Insertion length S	100, 150, 200, 250, and 300 mm	

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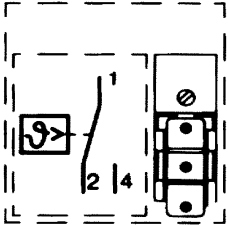
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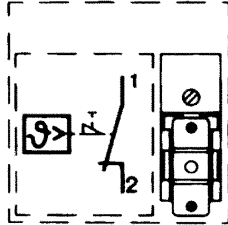


## Connection diagrams

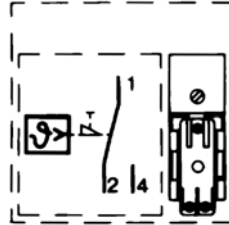
STMA-1 / STMA-2



STMA-7



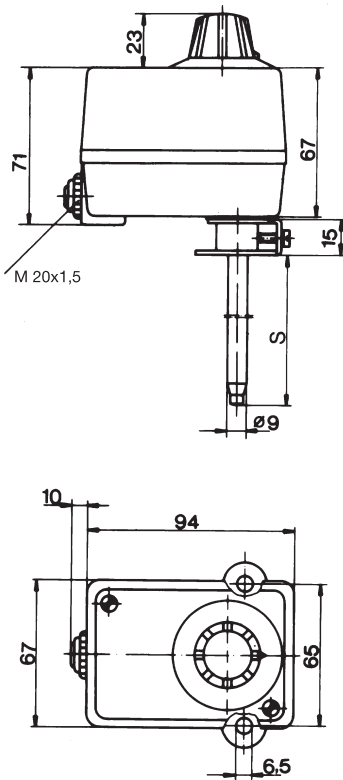
STMA-7 / 574



## Dimensions

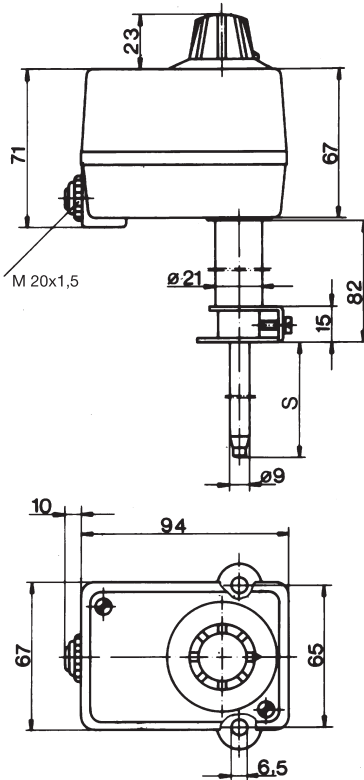
STMA-1

Extra code 764 mounting element,  
 up to +200 °C



STMA-1

Extra code 764 mounting element,  
 up to +300 °C



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# Dimensions

<p><b>STMA-2</b>          Process connection 54,          fixed screw connection with hexagon,          up to +200 °C</p>	<p><b>STMA-2</b>          Process connection 54,          fixed screw connection with hexagon,          up to +300 °C</p>	<p><b>STMA-2</b>          Process connections 20,          screw-in thermowell,          up to +200 °C</p>
<p><b>STMA-2</b>          Process connections 20,          screw-in thermowell,          up to +300 °C</p>	<p><b>STMA-1</b>          Extra code 715, loose screw-connection          M 18 x 1 with locknut,          up to +200 °C</p>	<p><b>STMA-1</b>          Extra code 715, loose screw-connection          M 18 x 1 with locknut,          up to +300 °C</p>

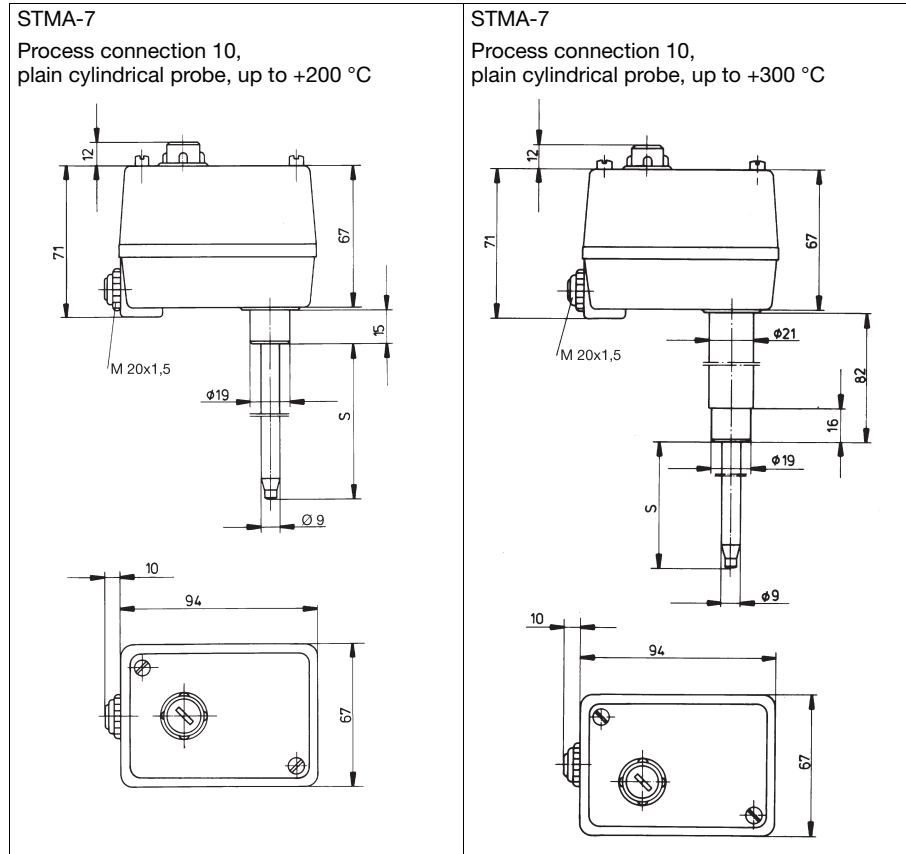
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## Order details

<b>Order code</b>	<b>(1) Basic type</b>		
601530	Rod thermostat, series type STMA		
	<b>(2) Basic type extensions</b>		
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 N/C contact	
	<b>(3) Control / limit value range</b>		
	Range in °C	Immersion tube length in mm	
020	0 to +40	300	
021	0 to +50	250	
015	-15 to +50	250	
023	0 to +75	150	
024	0 to +80	200 or 300	
010	-80 to +100	200	
017	-10 to +100	100	
026	0 to +120	200	
037	+15 to +120	150	
043	+20 to +150	250	
035	+5 to +160	100 or 150	
028	0 to +200	250	
044	+20 to +200	200	
029	0 to +240	150	
030	0 to +300	100	
064	+50 to +300	200	
	<b>(4) Process connection</b>		
10	Plain cylindrical probe	 Ø 9 mm	
20	Screw-in thermowell	 Ø 12 mm	
54	Fixed screw-connection with hexagon (special model)		
	<b>(5) Thread of process connection</b>		
00	Without thread		
13	External thread G 1/2		
	<b>(6) Material of process connection</b>		
46	CuZn (brass)	Only with process connection 10, 20, 54	
20	CrNi (stainless steel)	Only with process connection 20	
	<b>(7) Insertion length "S" (immersion tube length)</b>	Note the dependency of the control range to the immersion tube length!	
100	100 mm		
150	150 mm		
200	200 mm		
250	250 mm		
300	300 mm		
	<b>(8) Extra codes</b>		
574	Microswitch with N/C contact, restart lock, and additional signal contact (only for temperature limiter)		
715	Loose screw-connection M 18 x 1 with locknut		
764	Mounting element		

**Order code** (1) 601530 / (2) / (3) - (4) - (5) - (6) - (7) / (8) , ...  
**Order example** 601530 / 02 - 26 - 20 - 13 - 46 - 200 / 000<sup>a</sup> , ...

<sup>a</sup> State extra codes one after another, separated by commas.