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JUMO Instrument Co. Ltd.
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MICROSTAT-M1

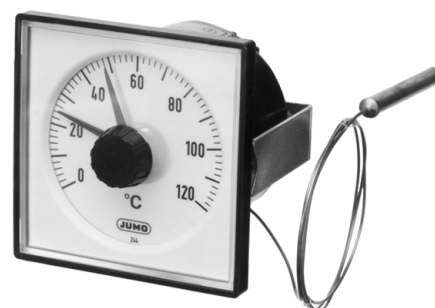
- Electromechanical temperature controller with indication
- Class 2 with one microswitch
- IP53 front protection

Brief description

The MICROSTAT-M1 is an electromechanical temperature controller with indication for universal use. The instrument has a plastic housing and a liquid-filled or gas-filled measuring system. The temperature-dependent change in volume of a liquid-filled measuring system, or the temperature-dependent change in pressure of a gas-filled system, is converted by a Bourdon tube into a rotary movement of the pointer, without any transmission gearing. The rotary movement of the pointer spindle operates the microswitch through a lever system.



Type 608504/2160



Type 608504/2572

Technical data

Housing or bezel	black plastic; housing fixing at rear, with bracket
Enclosure protection	front: IP53 to EN 60 529 rear: IP00 to EN 60 529 (IP54 with extra code 426)
Scale	white, black lettering
Accuracy class	Class 2 to EN 13 190
Setpoint adjustment	by setting device on the window
Limit temperatures	for transport and storage: -20 to +70°C (indication range -40 to +40°C: up to 50°C max.).
Nominal position	unrestricted

	liquid-filled	gas-filled
Measuring system	indication range (AB) ≤350°C	indication range (AB) ≥ 400°C
Time constant $t_{0.632}$	approx. 12 sec, measured in water bath, with a 6 mm dia. copper probe	approx. 4 sec, measured in oil bath, with a 10 mm dia. stainless steel probe
Ambient temperature effect	in % of indication range (referred to the deviation from the reference value +23°C)	
on housing	0.15% of indication range per °C change in ambient temperature	0.05% of indication range per °C change in ambient temperature
on capillary (per meter)	0.03% of indication range per °C change in ambient temperature	no effect
	higher ambient temperature – higher temperature indication – lower switching point	

Electrical contact	single-pole microswitch with a mechanically operated changeover contact
Contact type	
Contact rating	230 V AC +10/-15%, 48 – 63Hz, p.f. = 1 (0.6) 5 (1.5) A
Switching differential	< 3% of indication range
Switching point accuracy	± 0.5% of indication range referred to the switch-off point with rising temperature
Switching reliability	To ensure maximum switching reliability, we recommend a minimum voltage of 24 V and a minimum current of 20 mA.
Electrical connection	faston connectors A 6.3 x 0.8 to DIN 46 244

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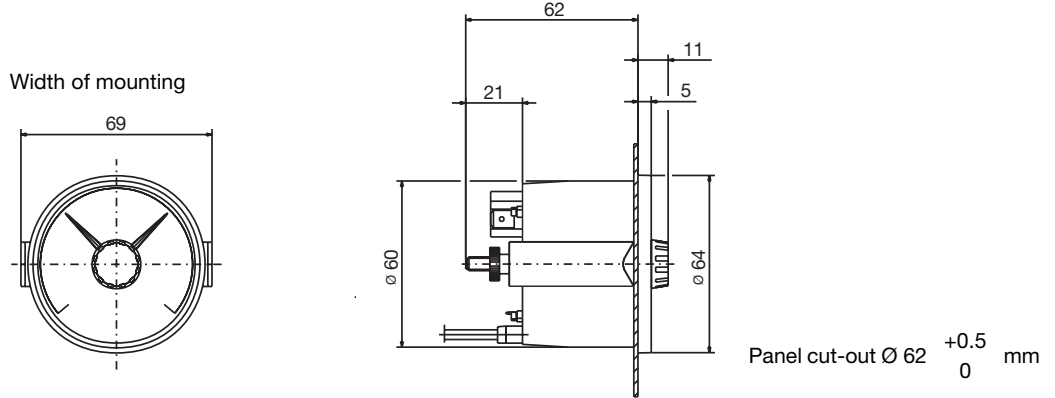
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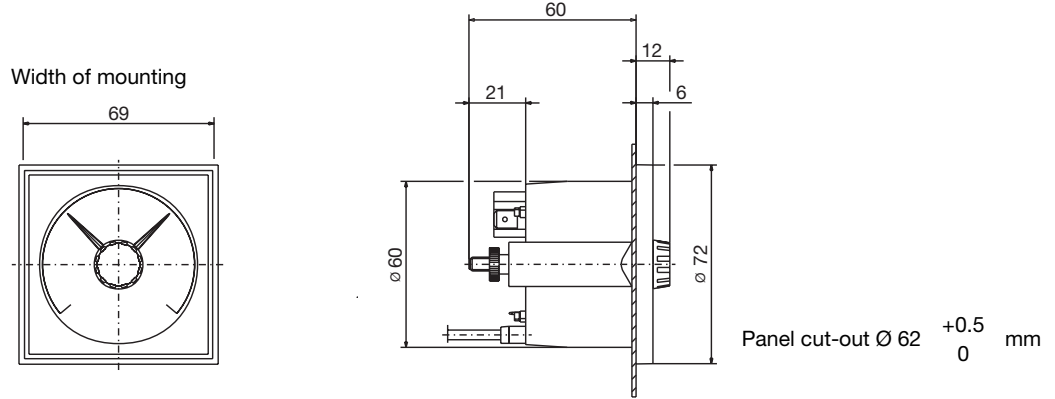


Dimensions

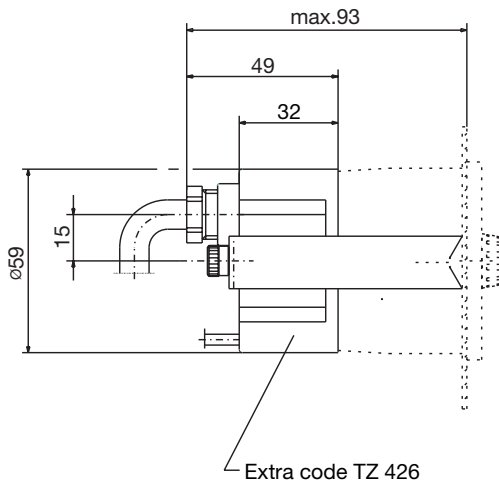
Type: 608504/2160



Type: 608504/2572



Extra code 426



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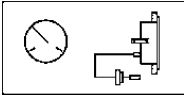
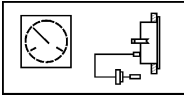











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Order details

MICROSTAT-M1 Type 608504

Order code	(1) Basic type	
608504	Mechanical temperature controller MICROSTAT-M1, Class 2, with one microswitch	
	(2) Basic type extensions	
2160	Style: 21; housing size: 60 mm dia.	
2572	Style: 25; housing size: 72 x 72 mm	
	(3) Indication range (AB)	
469	-40 to + 40°C; measuring range -30 to + 30°C, accuracy 2.0°C	
810	0 to + 80°C; measuring range +10 to + 70°C, accuracy 2.0°C	
818	0 to +120°C; measuring range +20 to +100°C, accuracy 4.0°C	
832	0 to +200°C; measuring range +20 to +180°C, accuracy 4.0°C	
840	0 to +300°C; measuring range +30 to +270°C, accuracy 10.0°C	
848	0 to +400°C; measuring range +50 to +350°C, accuracy 10.0°C	
854	0 to +500°C; measuring range +50 to +450°C, accuracy 10.0°C	
	(4) Capillary type (FL) ¹	
02	FL02 copper capillary with copper braiding, approx. 2.5 mm dia. (up to +300°C top of indication range)	
11	FL11 copper capillary with PE sleeve, approx. 3.5 mm dia. (up to +120°C top of indication range)	
17	FL17 stainless steel capillary, 1.5 mm dia.	
21	FL21 copper capillary, 1.0 mm dia. (up to +300°C top of indication range)	
	(5) Capillary length ¹	
1000	1000 mm	
2000	2000 mm	
3000	3000 mm	
4000	4000 mm	
5000	5000 mm	
...	special length (specify in plain text: in 1000 mm steps, maximum length: 10000 mm)	
	(6) Process connection (PA) ¹	
750	TF 01; temperature probe with stepped support tube	
752	TF 11; temperature probe without support tube	
161	TA 03; immersion tube with loose union nut	
847	TA 06; sliding clamp fitting on support tube ²	
311	TA 20; immersion tube with loose nipple and shoulder ²	
872	TA 21; immersion tube with loose plug and conical seal	
873	TA 22; immersion tube with loose plug, conical seal and loose nipple ²	
401	TA 23; immersion tube with plug and spring clip	
913	SH 07; screw-in pocket, assembled, with clamping clip and fixing screw ²	
876	SH10; screw-in pocket, assembled ²	
871	SH11; screw-in pocket, assembled ²	
	(7) Diameter of process connection (PA) ¹	
6	6 mm dia.	
8	8 mm dia.	
10	10 mm dia.	

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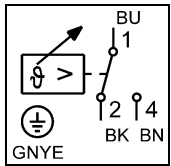
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Order details

MICROSTAT-M1 Type 608504

Order code	(8) Thread for process connection (PA) ¹
000	no thread (with TF 01 and TF 11)
103	G ³ / ₈ thread
104	G ¹ / ₂ thread
105	G ³ / ₄ thread
114	M 10 x 1 thread (with TA 23 and SH 11 only)
(9) Material of probe / support tube ¹	
26	stainless steel (CrNi, 1.4571)
96	copper (Cu) / brass (CuZn) (up to 200°C)
95	stainless steel (CrNi, 1.4571) - probe / brass (CuZn) - support tube (250°C and above)
(10) Material of process connection (PA) ¹	
00	none (TF01 and TF11 only)
26	stainless steel (CrNi, 1.4571)
46	brass (CuZn)
(11) Fitting length of process connection (PA) ¹ (dimension EL or S)	
0	minimum fitting length TF 11 (active probe dimension)
50	50 mm
100	100 mm
150	150 mm
200	200 mm
...	special length (specify in plain text, in 50 mm steps)
(12) Switching output (SA)	
20	SA 20 one contact 
(13) Extra codes (TZ)	
000	no extra code
315	capillary reinforcement on housing and probe (not with FL21)
411	metal bezel or flange
426	plastic cover to protect the faston connectors against touching and splashing water, IP54 (rear), with cable gland, suitable for 6 – 11 mm cable dia.
477	setpoint adjustment protected by cap, adjustment with screwdriver.
510	stop for upper or lower limit of setpoint adjustment, factory-set
520	switching point fixed at the factory
522	customized scale
577	capillary break protection

Special versions on request!

Order code	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
608504	608504	....	...	..	....	...	..	...	..	..	...	..	...
Order example	608504	2160	818	02	2000	750	8	000	96	00	100	20	000 ³

¹ See data sheet 60.8730 for description and features

² Screw-in spigot to DIN 3852 Form A

³ List extra codes in sequence, separated by commas.