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JUMO exTHERM S200

Surface-mounted thermostat for intrinsically safe applications [Ex-ia]

Areas of application

- Process industry
- Plastics industry
- Mechanical and plant engineering

Special features

- PUSH IN terminal technology
- NAMUR circuit optional
- Temperature compensation
- Free of cadmium

Description

The surface-mounted thermostat monitors and controls temperatures.

The device is used as temperature monitor TW, safety temperature monitor STW or safety temperature limiter STB in recycling and distillation plants as well as in temperature control units. In conjunction with ATEX protective sleeves, the device is suitable for installation in explosion-protected areas of zones 0, 1 or 2 (gases, vapors and mists) or 21 or 22 (conductive and non-conductive dusts).



Type 605058/0002-/0070



Type 605058/0270-/2070



Type 605058/0002-/0070-74

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Approval marks and certificates



Observe "Special conditions for safe use" in hazardous areas.

Certificates for approved device versions are available for download on the manufacturer's website.

Technical data

Electrical data

Maximum switching capacity for [Ex-i] applications	
Snap-action switch, gold-plated	AC/DC 24 V, 0.1 A
Minimum switching capacity	Minimum load for greatest possible switching reliability:
With silver contacts	AC/DC = 24 V, 100 mA
With gold-plated contacts	AC/DC = 10 V, 5 mA
Rating surge voltage	4000 V
Maximum voltage supply	$U_i \leq 30 \text{ V}$
Maximum current	$I_i \leq 100 \text{ mA}$
Maximum power	$P_i \leq 750 \text{ mW}$
Inner inductance	$\sim 0 \mu\text{H}$
Inner capacity	$\sim 0 \text{ pF}$
Protection rating	I
Overvoltage category	3

Control ranges and probe table

Type 605058/0020, Type 605058/0070

Control ranges		Max. probe temperature	Probe length			Tolerance ^a	Max. capillary length
			4 mm	6 mm	8 mm		
40 to 110 °C	SD 5 % Type 605058/0020	135 °C	—	75	—	-9 K	5 m
80 to 200 °C	SD 5 % Type 605058/0020	230 °C	—	60	—	-9 K	5 m
150 to 350 °C	SD 5 % Type 605058/0020	370 °C	82	—	—	-14 K	5 m
300 to 400 °C	SD 6 % Type 605058/0020	460 °C	—	151	94	-23 K	3 m
350 to 500 °C	SD 6 % Type 605058/0020	575 °C	—	130	83	-29 K	3 m

^a Measured in the upper third of the scale or at the limit value.

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Type 605058/0002

Control ranges		Max. probe temperature	Probe length			Tolerance ^a	Max. capillary length
			4 mm	6 mm	8 mm		
0 to 100 °C	SD 2,5 %	125 °C	—	157	100	±1,5 K	5 m
0 to 200 °C	SD 2,5 %	230 °C	—	113	78	±3 K	5 m
50 to 300 °C	SD 2,5 %	345 °C	—	87	61	±4 K	5 m
20 to 400 °C	SD 5 %	460 °C	—	237	137	±12 K	5 m
20 to 500 °C	SD 5 %	575 °C	—	278	158	±15 K	5 m

^a Measured in the upper third of the scale or at the limit value.

Environmental influences

Average ambient temperature influence	If the ambient temperature at the switching head and/or the capillary deviates from the calibration ambient temperature 22 °C, a switching point shift occurs. Higher ambient temperature = low switching point Lower ambient temperature = higher switching point
Permissible storage temperature/ permissible ambient temperature in use	-40 to +75 °C
Maximum probe temperature	15 % of the limit value or the max. set value or 25 K
Rated position (NL)	DIN 16257 NL 0 to 90
Mode of operation	DIN EN IEC 60730-2-9:2021 Type 2 STB (2B, 2F, 2H, 2K, 2L, 2N, 2P, 2V) TW (2B, 2L)

Mechanical features

Capillary and temperature probe

Material Capillary Ø 1.5 mm Up to 200 °C Up to 350 °C Up to 500 °C Temperature probe Ø 6 mm Up to 200 °C Up to 350 °C Up to 500 °C	Copper (Cu), material no. Cu-DHP Copper (Cu), material no. Cu-DHP Stainless steel (CrNi) Stainless steel (CrNi) Copper (Cu), material no. Cu-DHP, hard soldered Stainless steel (CrNi), material no. 1.4571, hard soldered Stainless steel (CrNi), material no. 1.4571, welded Stainless steel (CrNi), material no. 1.4571, welded
Capillary Length Bending radius	≤ 5000 mm ≥ 5 mm

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Housing

Material	Polyester, glass fiber reinforced, black ^a
Protection type	IP65
Pollution level	2
Weight	
Single thermostat	1.2 kg
Double thermostat	2.0 kg
Sealing range of Ex cable gland	
M20 × 1.5	6 to 13 mm
M25 × 1.5	7 to 17 mm
Installation position	Any
Mounting type	Independently mountable

^a Due to the conductive carbon black-doped surface with a low surface resistance, static charging is not possible.

Process connections

With rigid shaft and extra code 702 [Ex-i]

Max. medium temperature	Max. permissible ambient temperature		
	Without NAMUR clamps	With NAMUR clamps	
	T6 - T1	T6	T5 - T1
40 °C	72 °C	20 °C	72 °C
60 °C	70 °C	18 °C	70 °C
80 °C	65 °C	13 °C	65 °C
100 °C	64 °C	12 °C	64 °C
120 °C	60 °C	8 °C	60 °C
140 °C	57 °C	5 °C	57 °C
160 °C	53 °C	1 °C	53 °C
180 °C	52 °C	0 °C	52 °C
200 °C	47 °C	—	47 °C

With capillary

Max. medium temperature	Max. permissible ambient temperature		
	Without NAMUR clamps	With NAMUR clamps	
	T6 - T1	T6	T5 - T1
Any	75 °C	23 °C	75 °C

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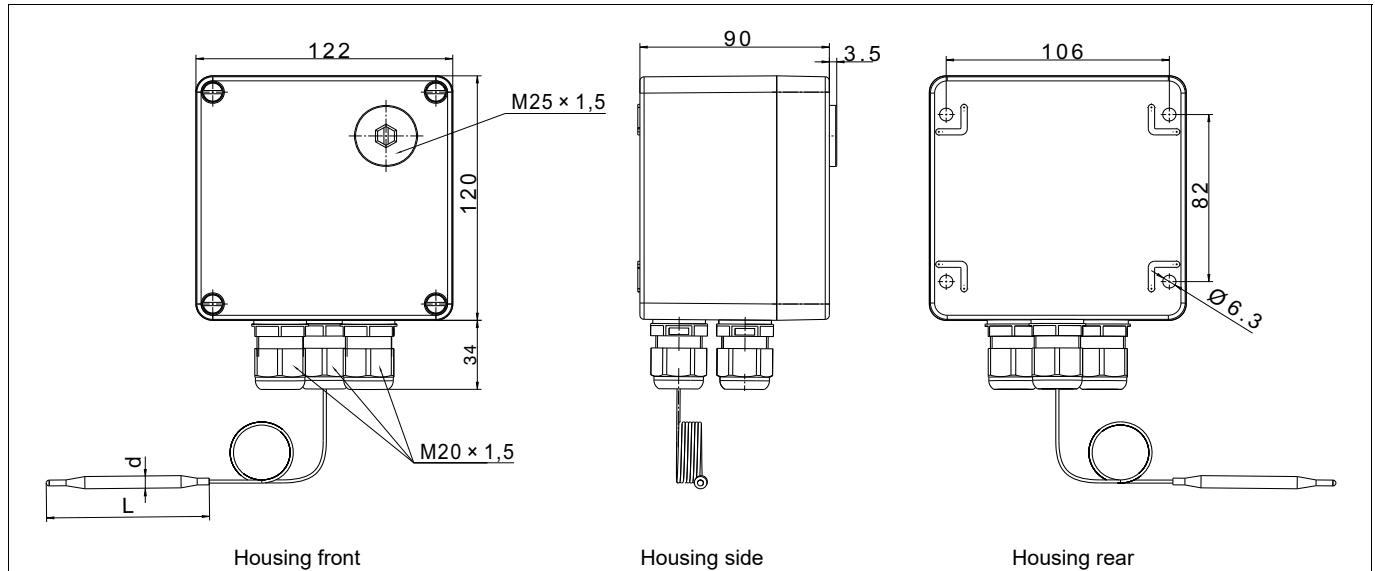
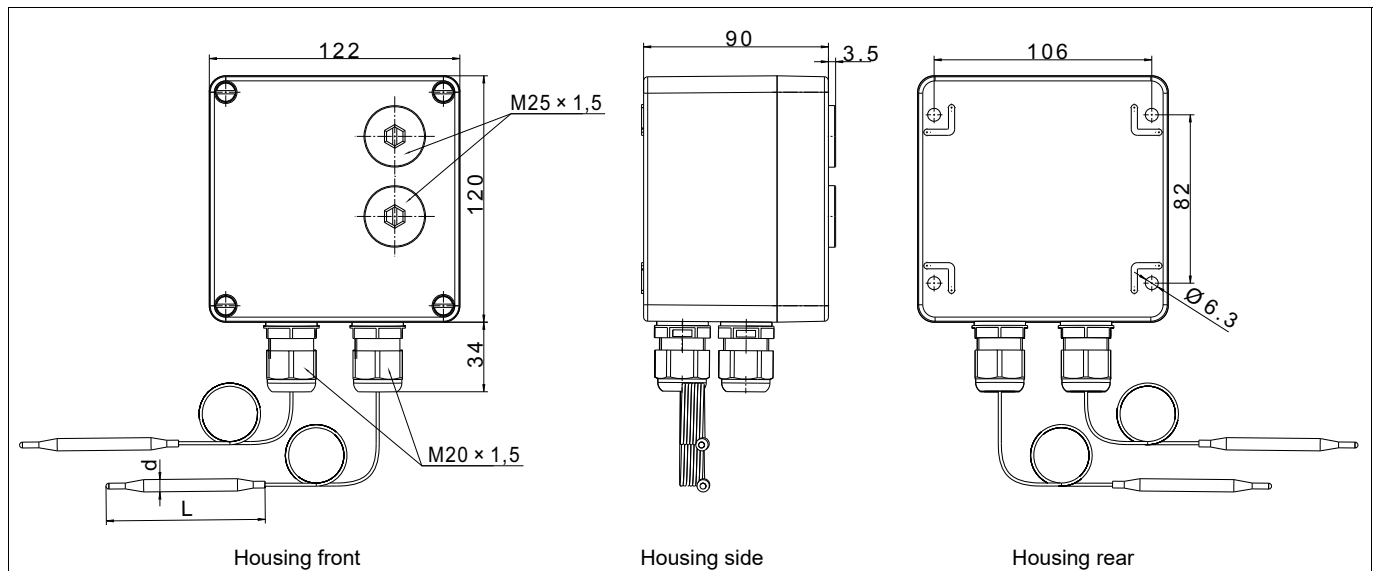
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**Dimensions****Device version as single thermostat****Device version as double thermostat**

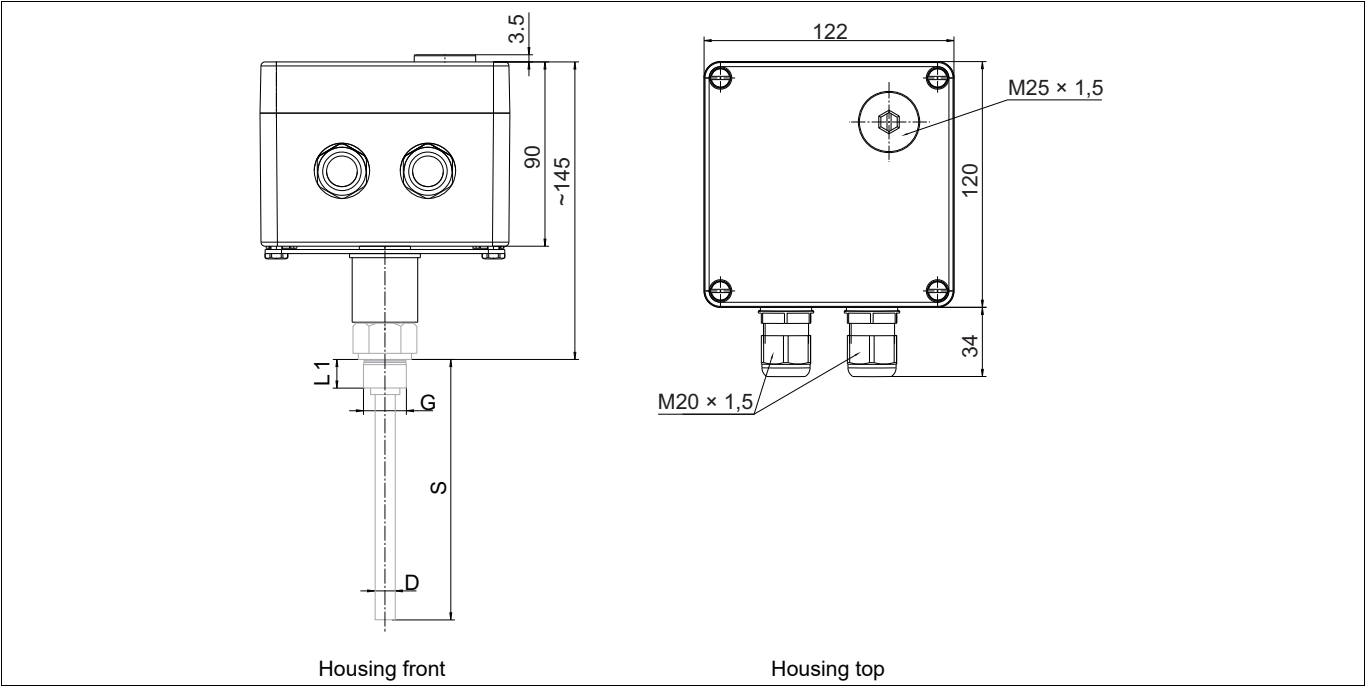
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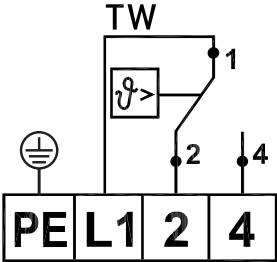
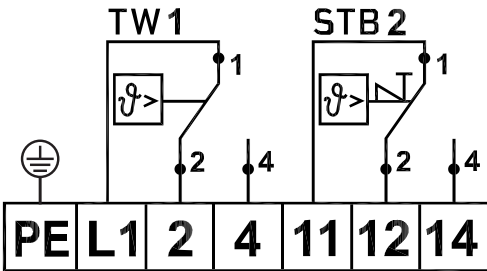
Device version with mounting adapter for protective sleeves



ATEX protective sleeves are available as accessories.

Connection diagram

The connection diagram in the data sheet provides information on product selection.
For the electrical connection, only use the installation instructions or the operating manual.

Designation		Assignment
TW	 = upward adjustment	
TW, STB	 = upward adjustment	

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Order details

	(1) Basic type
605058	JUMO exTHERM S200 – Surface-mounted thermostat for intrinsically safe applications [Ex-ia]
	(2) Basic type extension
0002	Temperature monitor TW
0020	Safety temperature monitor STW
0070	Safety temperature limiter STB
0202	Temperature monitor TW/Temperature monitor TW
0220	Temperature monitor TW/Safety temperature monitor STW
0270	Temperature monitor TW/Sicherheitstemperaturbegrenzer STB
2020	Safety temperature monitor STW/Safety temperature monitor STW
2070	Safety temperature monitor STW/Safety temperature limiter STB
7070	Safety temperature limiter STB/Safety temperature limiter STB
	(3) Design
1	Rigid thermowell
2	Capillary
	(4) Control range 1
000	With permanently set limit value
025	0 to 100 °C
028	0 to 200 °C
045	20 to 400 °C
046	20 to 500 °C
055	40 to 110 °C
063	50 to 250 °C
064	50 to 300 °C
081	80 to 200 °C
554	150 to 350 °C
095	300 to 400 °C
096	350 to 500 °C
	(5) Control range 2
000	With permanently set limit value
025	0 to 100 °C
028	0 to 200 °C
045	20 to 400 °C
046	20 to 500 °C
055	40 to 110 °C
063	50 to 250 °C
064	50 to 300 °C
081	80 to 200 °C
554	150 to 350 °C
095	300 to 400 °C
096	350 to 500 °C
	(6) Switching capacity
12	P/U/I 0.75 W; 30 V; 0.1 A
	(7) Switching differential 1
00	Without
25	2.5 %
70	7 %

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Accessories

Designation	Part no.
Ex-i Isolating switch amplifier	00734357
Designation	Data sheet
ATEX Thermowell for zone separation 0/1 or 20/21	605057
Process connections for thermostats: Temperature probes, screw fittings, pockets	606710