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
Email: 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 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com

Panel-Mounted Thermostats, EM Series

with 1, 2, 3, or 4 single-pole snap-action switches

Special features

- Available with 1, 2, 3 or 4 single-pole snap-action switches
- Approved according to the latest standards



Brief description

Thermostats control and monitor thermal processes. The devices of the EM series are available as temperature controllers TR, temperature monitors TW, temperature limiters TB, safety temperature monitors STW (STB), and safety temperature limiter STB. In the event of a malfunction, the STB switches the monitored machine to a safe operating status.

Panel-mounted thermostats operate according to the fluid expansion principle – a microswitch is used as an electrical switching element.

Switching functions

Temperature controller TR, temperature monitor TW, and safety temperatur monitor STW

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

Temperature limiter TB and safety temperature limiter STB
If the temperature at the temperature sensor exceeds the set limit value, the electrical circuit is opened or closed by a microswitch.

After the temperature has fallen below the limit value by approx. 10 % of the scale range (approx. 15 % with setpoint setting >350 °C), the microswitch can be unlocked manually.

For set points above 120 °C, the set point adjusted on the STB must be secured against adjustment (e.g. with a lead seal).

Use of the safety temperature monitor STW as a safety temperature limiter STB
The circuitry used with the thermostat must comply with DIN EN 14597 and VDE 0631.

Self-monitoring for safety temperature limiter STB and safety temperature monitor STW (STB)
If the measuring system is destroyed (i.e. if the expansion fluid escapes) the pressure in the membrane of the STB and STW (STB) drops and permanently opens the electrical circuit. Unlocking is then no longer possible.

When the STW (STB) and STB sensors cools down to the negative temperature range, the circuit 1 to 2 opens, but must be unlocked manually by the restart knob when the temperature rises. The STW (STB) restarts automatically.

Approvals and approval marks (see technical data)

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Types and DIN registry numbers

DIN-tested up to max. 500 °C.

The DIN registry no. will become null and void if thermowells are used that are not specified in our data sheet 606710.

Version	Types	Switching function	DIN registry numbers
1 pole snap-action switches	EM-1	TR	TR777
	EM-2	TW	TW778
	EM-3[a]	TW	TW778
	EM-4[a]	TB	TB780
	EM-5	TB	TB780
2 single-pole snap-action switches	EM-13	TR/TW	TR777
	EM-23[a]	TW/TW	TW778
	EM-33	TW/TW	TW778
	EM-14	TR/TB	TR777
	EM-24	TW/TB	TW778
	EM-44[a]	TB/TB	TB780
	EMF-54	TB/TB	TB780
3 single-pole snap-action switches	EMF-133	TR/TW/TW	TR777
	EMF-134	TR/TW/TB	TR777
	EMF-233	TW/TW/TW	TW778
	EMF-234	TW/TW/TB	TW778
	EMF-333[a]	TW/TW/TW	TW778
	EMF-444[a]	TB/TB/TB	TB780
	EMF-544	TB/TB/TB	TB780
4 single-pole snap-action switches	EMF-1333	TR/TW/TW/TW	TR777
	EMF-2333	TW/TW/TW/TW	TW778
	EMF-3333[a]	TW/TW/TW/TW	TW778
Fail-safe version	EM-40[a]	STB	STB782
	EM-50	STB	STB782
	EM-20	STW (STB)	STW(STB)775S
	EM-30[a]	STW (STB)	STW(STB)775S

[a] Setpoint value or limit value permanently factory-set according to customer specifications.

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Technical data

Control ranges and probe table

For TR, TW, TB – liquid-filled

Control range/ limit value range	Switching differential	Max. probe temperature	Max. switching head temperature	Max. capillary length	Max. sequence contact gap	Probe length "L", probe Ø "d" in mm	
°C	%	°C	°C	in mm	K	Ø 6 (Standard)	Ø 8
-20 to +40	1 2.5 5 7	50 50 95 100	50	5000	5 8 25 50	245 245 138 103	145 145 91 73
0 to 50	1 2.5 5 7	60 60 105 110	60		5 10 25 50	283 283 159 117	165 165 101 80
20 to 90	1 2.5 5 7	115 115 140 175	80		7 14 35 70	210 210 121 91	127 127 82 67
0 to 100	1 2.5 5 7	125 125 165 200	80		10 20 50 100	157 157 94 73	100 100 68 58
30 to 110	1 2.5 5 7	135 135 170 200	80		8 16 40 80	188 188 110 84	116 116 76 63
0 to 150	1 2.5 5	173 173 200	80		15 30 75	113 113 72	78 78 57
0 to 200	1 2.5	230 230	80		20 40	113	78
50 to 200	1 2.5	230 230	80		15 30	139	92
50 to 250	1 2.5 5	288 288 300	80		20 40 100	105 105 64	70 70 49
50 to 300	1 2.5	345 345	80		25 50	87	61

For TR, TW, TB – gas-filled

Control range/ limit value range	Switching differential	Max. probe temperature	Max. switching head temperature	Max. capillary length	Max. sequence contact gap	Probe length "L", probe Ø "d" in mm	
°C	%	°C	°C	in mm	K	Ø 6 (Standard)	Ø 8
20 to 400	5 10	460 500	80	5000	75 200	237 127	137 81
20 to 500	3/5 6 10	575	80	1000 5000 5000	48 95 250	278 276 95	158 106 65

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Control ranges and temperature probes

For STB and STW (STB) – liquid-filled

Setting range	Scale range	Max. probe temperature	Max. switching head temperature	Max. capillary length	Limit value tolerance	Probe length "L", probe Ø "d" in mm	
°C	°∠	°C	°C	in mm	K	Ø 6 (Standard)	Ø 8
75 to 100	78	125	80	5000	+0 -7	84	63
85 to 110	78	135					
120 to 150	77	173			+0 -9	80	57
160 to 200	79	230			+0 -12	64	49
210 to 250	71	288			+0 -13	61	47
250 to 300	79	345			+0 -16	55	-

For STB and STW (STB) – gas-filled

Setting range	Scale range	Max. probe temperature	Max. switching head temperature	Max. capillary length	Limit value tolerance	Probe length "L", probe Ø "d" in mm	
°C	°∠	°C	°C	in mm	K	Ø 6 (Standard)	Ø 8
300 to 400	70	460	80	3000	+0 -23	148	92
350 to 500	72	575			+0 -29	127	81

When the switching points are permanently factory-set, the deactivation value must be specified in addition to the control range (e.g. control range 80 to 100 °C, permanently set to 95 °C).

Capillary and temperature probe

Type	Scale limit value	Capillary	Probe
EM-...	Up to 200 °C	Copper (Cu) Ø 1.5 mm Material no. Cu-DHP	Copper (Cu) Material no. Cu-DHP Hard soldered
	Up to 350 °C	Copper (Cu) Ø 1.5 mm Material no. Cu-DHP	Stainless steel (CrNi) Material no. 1.4571 Hard soldered
	Up to 500 °C	Stainless steel (CrNi) Ø 1.5 mm	Stainless steel (CrNi) Material no. 1.4571 Welded
	Up to 350 °C	Stainless steel (CrNi) Ø 1.5 mm	Stainless steel (CrNi) Material no. 1.4571 Welded (available at extra cost)
Capillary length	Standard 1,000 mm, max. 5,000 mm		
Min. bending radius of capillary	5 mm		

NOTE:
Upon request the capillary length can be increased up to a maximum of 5,000 mm if the allowable temperature on the sensor, capillary, and switching head is not reached.
Please let us know the actual temperature values to which the thermostat is exposed.

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Electrical data

Switching element 1, 2, 3, or 4 single-pole snap-action switches	EM-1, EM-2, EM-3, EM-20, EM-30	EM-4, EM-5, EM-40, EM-50	EM-4.../U, EM-5.../U, EM-40/U, EM-50/U
	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	Switching function Switching differential	N/C contact, terminal 2	N/O contact, terminal 4
	TR, TW, STB (STB) 2.5 %, 5 %, 6 %, 7 %, 10 %	AC 230 V +10 % 16 (3) A, cos φ = 1 (0.6) DC 230 V +10 %, 0.25 A	AC 230 V +10 % 8 (1.5) A, cos φ = 1 (0.6) DC 230 V +10 %, 0.25 A
	TB, STB	AC 230 V +10 % 16 (3) A, cos φ = 1 (0.6) DC 230 V +10 %, 0.25 A	AC 230 V +10 % 2 (1) A, cos φ = 1 (0.6) DC 230 V +10 %, 0,25 A
	TR, TW 1 %, 3 %	AC 230 V +10 %, 6 (2) A, cos φ = 1 (0.6), DC 230 V +10 %, 0.25 A	
	TR, TW 2.5 %	Microswitch with gold plating, extra code 702, AC/DC 24 V, 0.1 A	
Contact reliability	To ensure the greatest possible switching reliability we recommend a minimum load of: For silver contacts: AC/DC 24 V, 100 mA For gold-plated contacts (extra code 702): AC/DC = 10 V, 5 mA		
Rating surge voltage	2500 V (via the switching contacts 400 V)		
Overvoltage category	II		
Required fuse rating	See maximum switching capacity		
Electrical connection	Standard: Tab connector A 6.3 × 0.8 DIN 46244 Extra code 699: Screw connection up to 2.5 mm^2 conductor cross section (available at extra cost), also suitable for retrofitting		

Operating data

Switching differential in % of control range/limit value range	Measuring system				
	Liquid-filled		Gas-filled		
	Nominal value	Possible actual value	Nominal value	Possible actual value	
Switching function					
TR, TW	2.5	Approx. 2.5 to 3.5	5	Approx. 5 to 11	Standard
	5	Approx. 5 to 6	6	Approx. 6 to 14	Upon request
	7	Approx. 7 to 8	10	Approx. 10 to 16	Upon request
	1	Approx. 1 to 2	3	Approx. 2.5 to 4	Extra cost
STW (STB)	5	Approx. 5 to 7	6	Approx. 6 to 16	Standard

Sequence contact gap on multi-pole versions	Switching differential	Sequence contact gap relative to scale range		Switching point accuracy of the sequence contact gaps from the scale range
		Minimum	Maximum	
	1 %	1 %	According to control range table	≤ 1 %
	2.5 %	1 %		≤ 1 %
	3 %, 5 %	2 %		≤ 1 %
	6 %, 7 %, 10 %	3 %		≤ 1 %
	The sequence contact gap can be specified in °C in relation to the setpoint of contact I. (The contact track no. is stamped on the back of the housing par.)			
	Prefix - = switching **before** reaching the setpoint value Prefix **+** = switching **after** reaching the setupoint value For the synchrozized version, specify "0" as the sequence contact gap.			

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Switching point accuracy in % of control range/limit value range	Switching differential		In the upper third of the scale or limit value
	Liquid-filled	Gas-filled	
Switching function			
TR	1 %, 2.5 %	-	±1.5 %
	5 %	3 %, 5 %	±3 %
	7 %	6 %, 10 %	±4 %
TW	1 %, 2.5 %	-	±1.5 %
	5 %	3 %, 5 %	±3 %
	7 %	6 %, 10 %	±4 %
TB	-	-	+0 %
			-5 %
STW (STB)	See table for control ranges and probes		

Mid ambient temperature influence	Deviation of the ambient temperature at the switching head and/or capillary from the 22 °C calibration ambient temperature produces a switching point offset. Higher ambient temperature = low switching point Lower ambient temperature = higher switching point									
	TR, TW, TB			STW, STB	TR, TW, TB		STW, STB	TR, TW, TB, STW, STB		
For temperatures with scale limit value/ limit value	< 200 °C				≥ 200 °C ≤ 350 °C			≥ 400 °C ≤ 500 °C		
Switching differential in %	1/2.5	5	7	7/-	1/2.5	5	7/-	3/5	6	10
Ambient temperature influence on the switching head in %/°C	0.15	0.26	0.34	0.43	0.12	0.21	0.35	0.12	0.17	0.24
Ambient temperature influence on the capillary in %/m	0.05 · °C · m		0.09 · °C · m		0.09 · °C · m		0.07 · °C· m	0.05 · °C · m		
Temperature compensation **(TK)**	For detailed information see diagram.									
Temperatures										
Admissible storage temperature	-50 to +50 °C									
Admissible ambient temperature for use	80 °C max.									
Nominal position (NL)	Any									
Operating medium	Water, oil, air, superheated steam									
Time constant $t_{0.632}$										
In water	≤ 45 s									
In oil	≤ 60 s									
In air or superheated steam	≤ 120 s									

Mode of operation	According to EN 60730-1, DIN EN 60730-2-9, DIN EN 14597
TR, TW	2 BL
TB	2 BFHLPV
STW (STB)	2 BKLNP
STB	2BFHKLNPV
	Declaration:
	2 Mode of operation type 2
	B Automatic mode of operation with micro disconnection
	F Only adjustable with tool
	H Release mechanism whose contacts can not be prevented from opening
	K With probe break protection
	L No auxiliary energy required
	P Mode of operation type 2, tested by declared temperature changes
	V Lockout

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Housing

Material	Galvanized sheet steel
Mounting	
Standard	With 2 M3 screws, spaced 22 mm
Extra code 704	Switching head mounting with 2 M4 screws, spaced 28 mm
Extra code 705	Switching head mounting with 2 M3 screws, spaced 33 mm
Extra code 710	Central mounting M10 × 1 with acorn nut (for TB and STB only)
Setpoint value setting	
TR	Switching point adjustable from outside with rotary knob.
TW, TB, STB, STW (STB)	Switching point adjustable with screwdriver.
Types EM-3, EM-4, EM-30, EM-33, EM-40, EM-44, EMF-444, EMF-3333	Permanently set at the factory to customer requirements.
Setpoint adjuster	See data sheet 606715
Scale range	Standard 250°∠ (for STB and STW (STB)), see table for control ranges and probes
Protection type	IP00 according to EN 60529
Weight	Approx. 300 g

Process connection

EM series with capillary	**Plain cylindrical probe** "10" (standard) **Screw-in protection tube** "20" (upon request) Screw-in sleeve with screw-in spigot G 1/2, form A, according to DIN 3852/2 and clamping piece with fixing screw for securing the probe
Material	
Protection tube up to 150 °C	CuZn (standard)
Protection tube above 150 °C	CrNi
Insertion length S	
Standard	100, 120, 150, 200 or 300 mm (other lengths upon request)
Protection tube Ø	D = 8 mm, D = 10 mm

For further process connections and protection tubes see data sheet 606710.

Approvals and approval marks

DIN	
Testing agency	DIN CERTCO/TÜV Süd
Certificates/certification numbers	TR777
Inspection basis	DIN EN 14597
Valid for	EM-1
DIN	
Testing agency	DIN CERTCO/TÜV Süd
Certificates/certification numbers	TW778
Inspection basis	DIN EN 14597
Valid for	EM-2, EM-3
DIN	
Testing agency	DIN CERTCO/TÜV Süd
Certificates/certification numbers	TB780
Inspection basis	DIN EN 14597
Valid for	EM-4, EM-5

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DIN	
Testing agency	DIN CERTCO/TÜV Süd
Certificates/certification numbers	STW(STB)775 S
Inspection basis	DIN EN 14597
Valid for	EM-20, EM-30
DIN	
Testing agency	TÜV Süd
Certificates/certification numbers	B_{10d} = 250.000[a]
Inspection basis	DIN EN ISO 13849-1
Valid for	EM-20, EM-30, EM-40, EM-50
PED	
Testing agency	TÜV Süd
Certificates/certification numbers	Z-IS-TAF-MUC-18-06-2652099-07102504
Inspection basis	2014/68/EU, DIN EN 14597
Valid for	EM-20, EM-30, EM-40, EM-50
UL	
Testing agency	UL
Certificates/certification numbers	E66358
Inspection basis	UL 873, CSA-22.2 No. 24
Valid for	EM-...
UL	
Testing agency	UL
Certificates/certification numbers	MH45736
Inspection basis	UL 353, CSA-22.2 No. 24
Valid for	EM-4, EM-5, EM-14, EM-24, EM-40, EM-44, EM-50, EMF-54, EMF-134, EMF-234, EMF-444, EMF-544, EMF-1334, EMF-2334, EMF-4444, EMF-5444
EAC[b]	
Testing agency	Gost Norm AG
Certificates/certification numbers	TC RU C-DE.AB98.B.00348
Inspection basis	Technical rules of the customs union Russia/Belarus/Kazakhstan
Valid for	EM-...
Railway application	
Testing agency	JUMO
Certificates/certification numbers	-
Inspection basis	EN 50155
Valid for	EM-... with extra code 950

[a] For detailed information please refer to safety manual JUMO EM602021, 602026

[b] Russian documentation upon request.

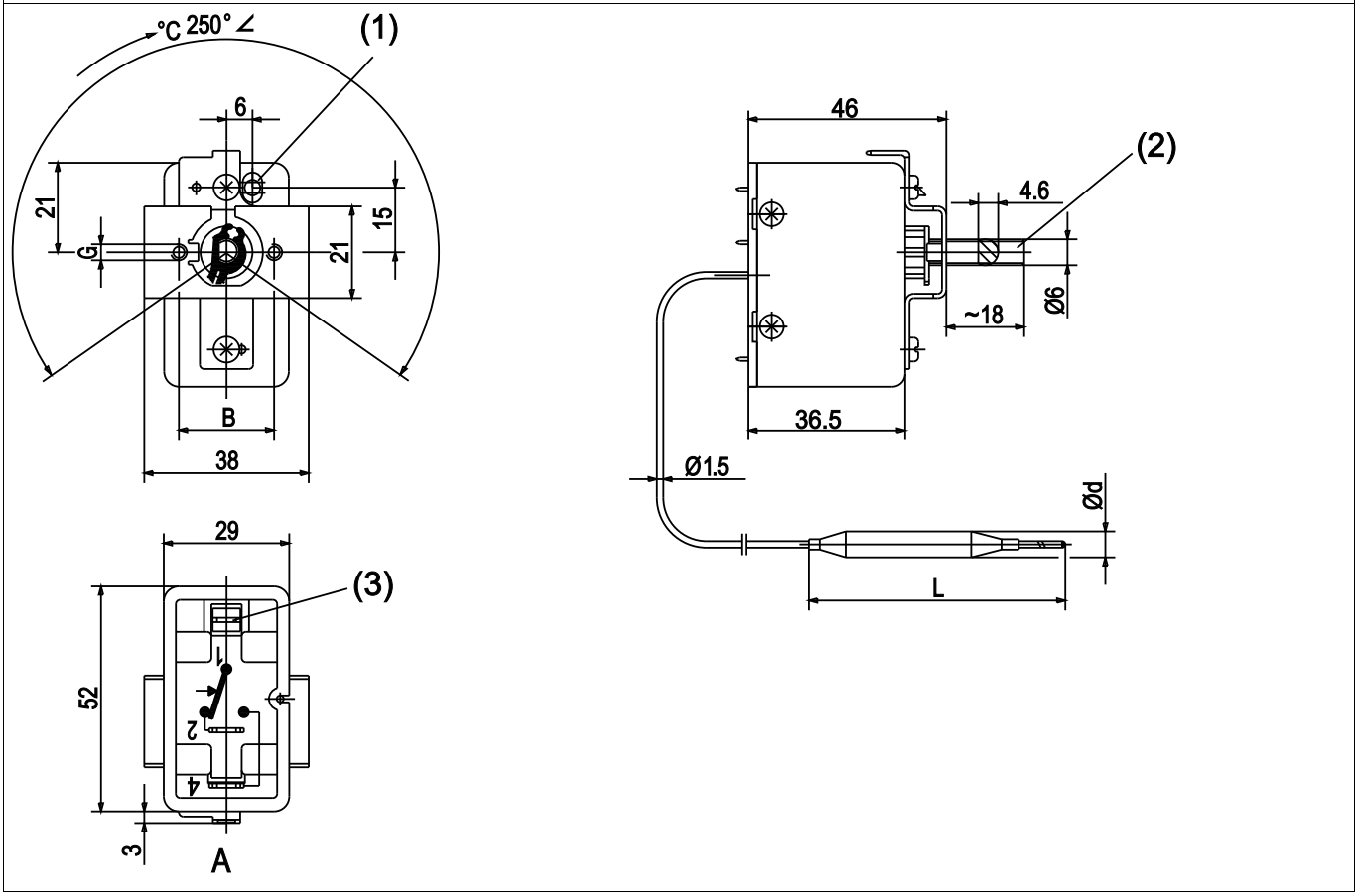
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Dimensions

EM-1, EM-2, EM-3, EM-4, EM-5



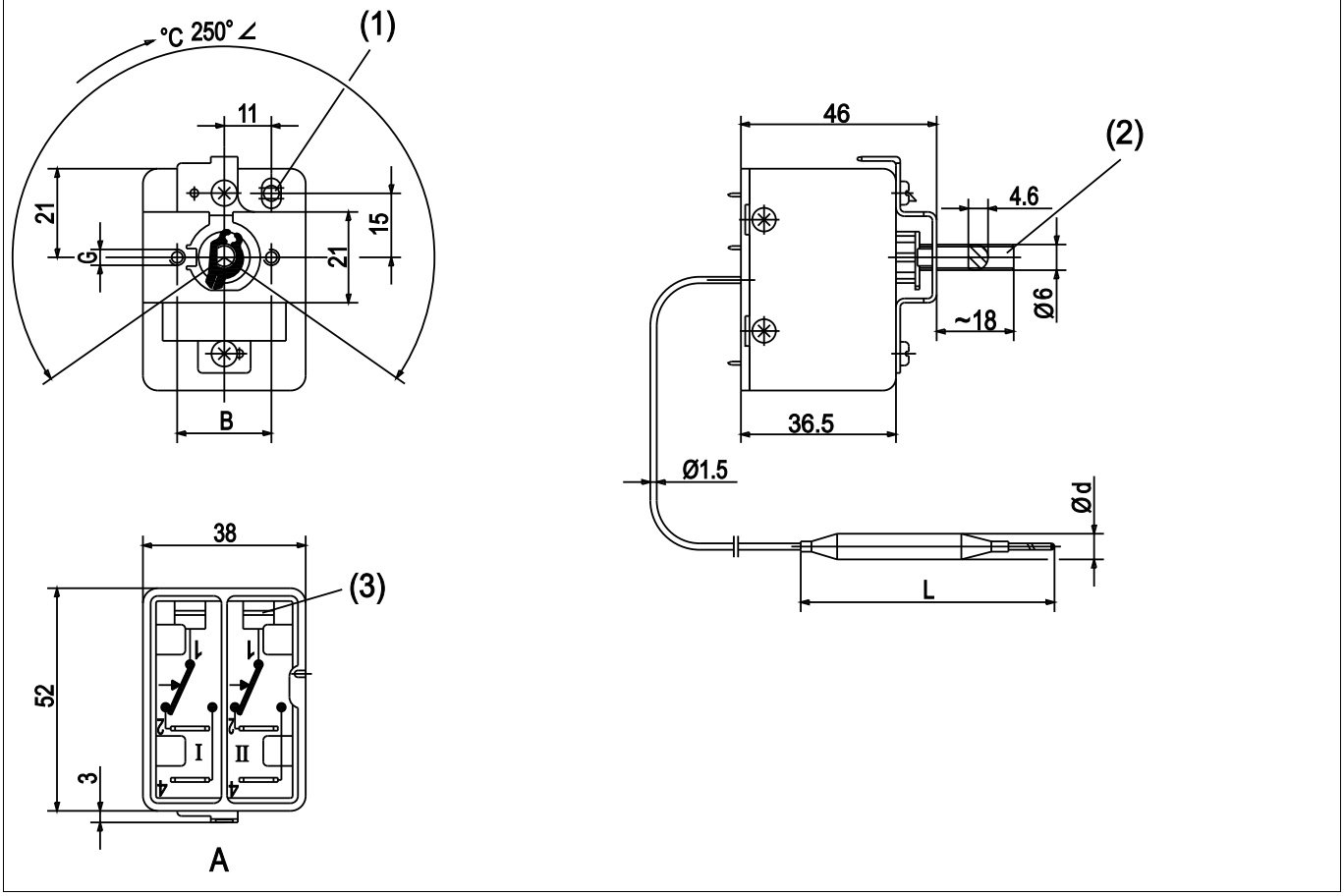
(1) Restart knob only with abbreviation 4 and 5
(2) Not applicable with abbreviation 2, 3, 4, 5
(3) Tab connector DIN 46244-A6,3-0,8
(A) Rear view

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EM-13, EM-14, EM-20, EM-23, EM-24, EM-30, EM-33, EM-40, EM-44, EM-50, EMF-54



(1) Restart knob only with abbreviation 40, 44, 50 and 5

(2) Not applicable with abbreviation 2, 3, 4, 5, 20, 30, 40 and 50

(3) Tab connector DIN 46244-A6,3-0,8

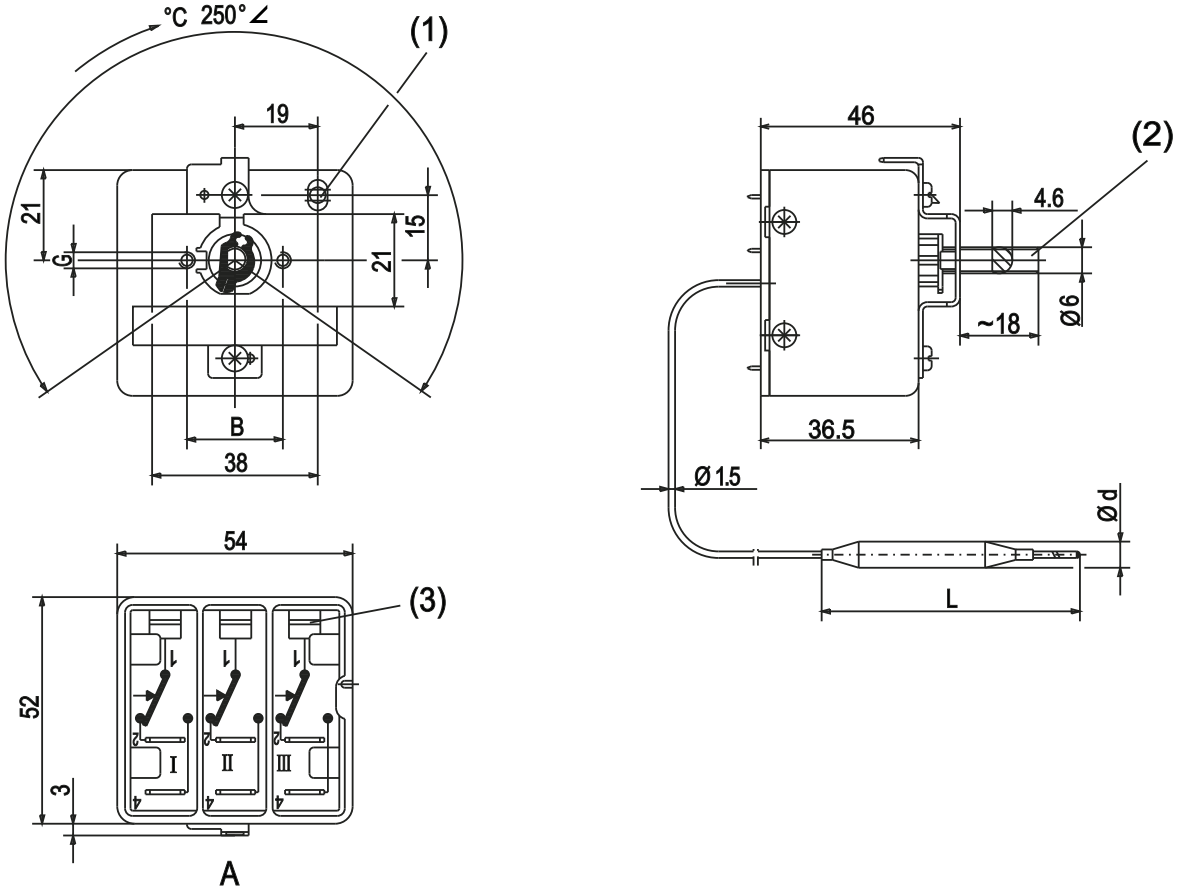
(A) Rear view

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
Email: 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 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com

EMF-133, EMF-134, EMF-233, EMF-234, EMF-333, EMF-444, EMF-544



(1) Restart knob only with abbreviation 444, 544

(2) Not applicable with abbreviation 2, 3, 4, 5

(3) Tab connector DIN 46244-A6,3-0,8

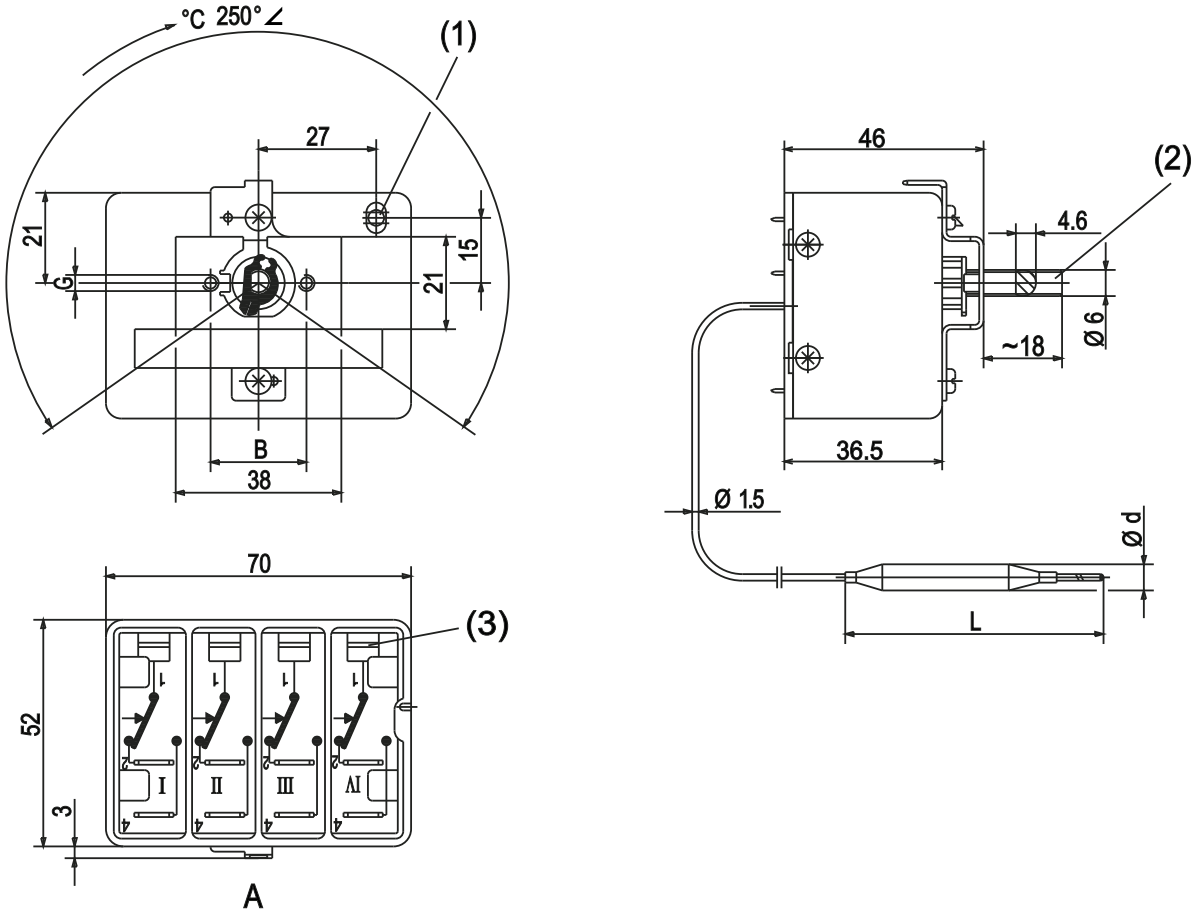
(A) Rear view

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Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
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EMF-1333, EMF-2333, EMF-3333



(1) Restart knob only with abbreviation 4444

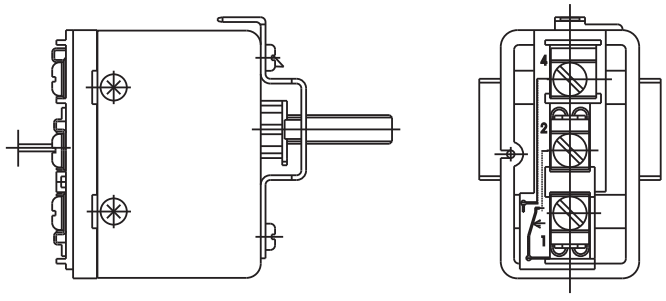
(2) Not applicable with abbreviation 2, 3, 4, 5

(3) Tab connector DIN 46244-A6,3-0,8

(A) Rear view

	B	G
Standard	22	M3
Extra code 704	28	M4
Extra code 705	33	M3

Screw connection EM-1, extra code 699



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Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
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Phone: +49 661 6003-0
Fax: +49 661 6003-607
Email: 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
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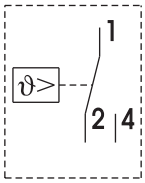
JUMO Process Control, Inc.
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
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Connection diagram

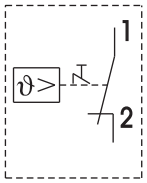
The connection diagram in the data sheet provides information on product selection.

For the electrical connection, only use the installation instructions or the operating manual.

EM-1, EM-2, EM-3

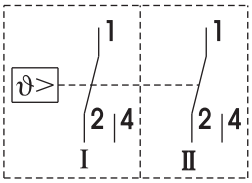


EM-4, EM-5

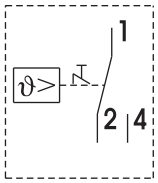


EM-13, EM-23, EM-33

Setpoint: I
Sequence contact: II

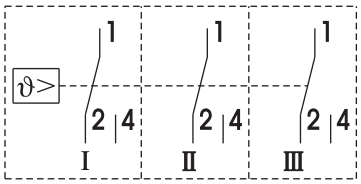


EM-4/574, EM-5/574



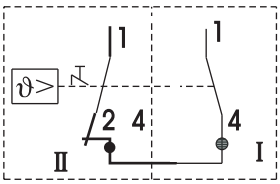
EMF-133, EMF-233, EMF-333

Setpoint: I
Sequence contact: II, III



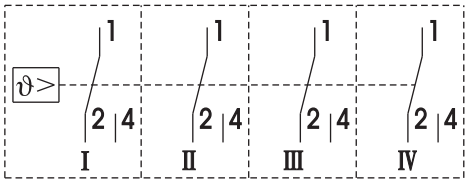
EM-40, EM-50

n.c. (break) contact
on measuring system failure
and T < -10 °C: I
Limit value: II

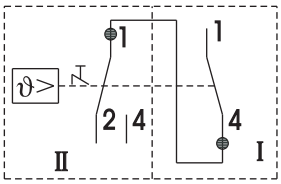


EMF-1333, EMF-2333, EMF-3333

Setpoint: I
Squence contact: II, III, IV

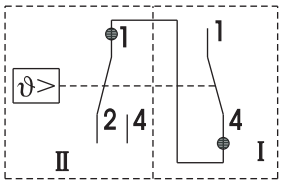


EM-40/574, EM-50/574



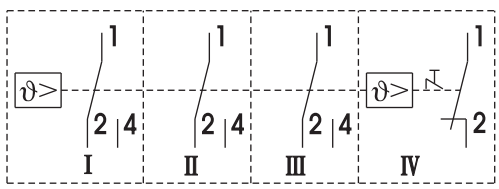
EM-20, EM-30

n.c. (break) contact
on measuring system failure
and T < -10 °C: I
Limit value: II



Example EMF-1334

For additional type variants, the connection diagrams are combined appropriately.



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
Email: 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 62 50 29
Email: sales@jumo.co.uk
Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
Email: info.us@jumo.net
Internet: www.jumousa.com

Temperature compensation

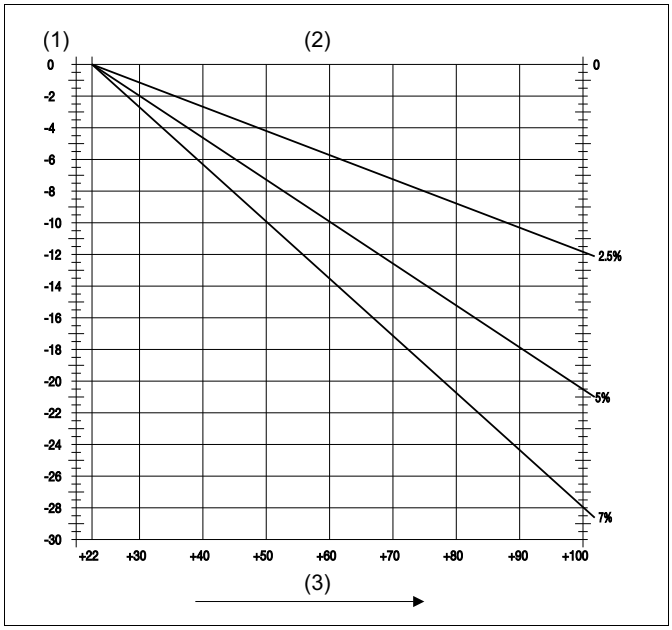
Any change in the temperature at the switching head from the 22 °C calibration ambient temperature will produce a deviation of the switching point. For ambient temperatures that fluctuate strongly, it is advisable to use thermostats with temperature compensation ("TK"; extra code 707).

The switching point deviation depends on the ambient temperature at the switching head and takes the switching differential into consideration. **The temperature influence on the capillary is not yet taken into account and can result in an additional error.**

Version **without** temperature compensation

Scale limit value < 200 °C

EM 1-pole, EM 2-pole



(1) % of the control range

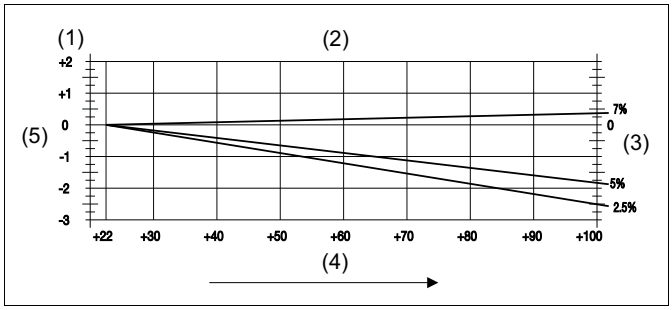
(2) Without temperature compensation

(3) Ambient temperature [°C]

Version **with** temperature compensation

Scale limit value < 200 °C

EM 1-pole temperature compensation TK



Note:

Additional graphs of the temperature compensation TK with higher scale limit values and for the EM 2-pole version are available upon request.

(1) % of the control range

(2) With temperature compensation

(3) Switching differential

(4) Ambient temperature [°C]

(5) Switching setpoint deviation

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
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Fax: +49 661 6003-607
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Internet: www.jumo.net

JUMO Instrument Co. Ltd.
JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
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Internet: www.jumo.co.uk

JUMO Process Control, Inc.
6724 Joy Road
East Syracuse, NY 13057, USA
Phone: +1 315 437 5866
Fax: +1 315 437 5860
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Order details

	(1)	Basic type	
602021		Panel-mounted thermostats, EM Series	
	(2)	**Basic type extensions**	
0001		EM-1	Temperature controller (TR), 1-pole
0002		EM-2	Temperature monitor (TW), 1-pole
0003		EM-3	Temperature monitor (TW), permanently set, 1-pole
0004		EM-4	Temperature limiter (TB), permanently set, 1-pole
0005		EM-5	Temperature limiter (TB, 1-pole
0013		EM-13	Temperature controller (TR/TW), 2-pole
0014		EM-14	Temperature controller (TR/TB), 2-pole
0020		EM-20	Safety temperature monitor (STW (STB))
0023		EM-23	Temperature monitor (TR/TB), 2-pole
0024		EM-24	Temperature monitor (TW/TB), 2-pole
0030		EM-30	Safety temperature monitor (STW (STB)), permanently set
0033		EM-33	Temperature monitor (TW/TW), 2-pole
0040		EM-40	Safety temperature limiter (STB), permanently set
0044		EM-44	Temperature limiter (TB/TB), 2-pole
0050		EM-50	Safety temperature limiter (STB)
0054		EMF-54	Temperature limiter (TB/TB), 2-pole
0133		EMF-133	Temperature controller (TR/TW/TW), 3-pole
0134		EMF-134	Temperature controller (TR/TW/TB), 3-pole
0233		EMF-233	Temperature monitor (TW/TW/TW), 3-pole
0333		EMF-333	Temperature monitor (TW/TW/TW), 3-pole
0444		EMF-444	Temperature limiter (TB/TB/TB), 3-pole
0544		EMF-544	Temperature limiter (TB/TB/TB), 3-pole
1333		EMF-1333	Temperature controller (TR/TW/TW/TW), 4-pole
2333		EMF-2333	Temperature monitor (TW/TW/TW/TW), 4-pole
3333		EMF-3333	Temperature monitor (TW/TW/TW/TW), 4-pole
	(3)	**Control range (TW)**	
000		For permanently set limit value	
013		-20 to +40 °C	
021		0 to 50 °C	
025		0 to 100 °C	
027		0 to 150 °C	
028		0 to 200 °C	
041		20 to 90 °C	
045		20 to 400 °C	
046		20 to 500 °C	
052		30 to 110 °C	
062		50 to 200 °C	
063		50 to 250 °C	
064		50 to 300 °C	
075		75 to 100 °C	
085		85 to 110 °C	
090		120 to 150 °C	
091		160 to 200 °C	
092		210 to 300 °C	
094		250 to 300 °C	
095		300 to 400 °C	

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Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
Phone: +49 661 6003-0
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JUMO House
Temple Bank, Riverway
Harlow, Essex, CM20 2DY, UK
Phone: +44 1279 63 55 33
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JUMO Process Control, Inc.
6724 Joy Road
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Phone: +1 315 437 5866
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096		350 to 500 °C	
	(4)	**Limit value (STW/STB)**	
000		For adjustable control range	
100		100 °C	
95		95 °C	
	(5)	**Switching differential**	
00		None	
		With liquid-filled measuring system	
10		1 %	Only with TR and TW
25		2.5 %	Only with TR and TW
50		5 %	Only with TR, TW and STW
70		7 %	Only with TR, TW and STW
		With gas-filled measuring system	
30		3 %	Only with TR and TW
50		5 %	Only with TR, TW and STW
60		6 %	Only with TR and TW
01		10 %	Only with TR and TW
	(6)	**Capillary length**	
0		None	
1000		1,000 mm	
2000		2,000 mm	
3000		3,000 mm	
4000		4,000 mm	
5000		5,000 mm	
	(7)	**Capillary material**	
20		CrNi (stainless steel)	
40		Cu (copper)	
	(8)	**Process connection**	
10		Plain cylindrical probe	
20		Screw-in protection tube 	
	(9)	**Thread of process connection**	
00		None	
13		G 1/2	
	(10)	**Process connection material**	
00		None	
20		CrNi (stainless steel)	
40		CuZn (brass)	
	(11)	**Insertion length**	
000		None	
100		100 mm	
120		120 mm	
150		150 mm	
200		200 mm	
300		300 mm	
	(12)	**Protection tube diameter**	
00		None	
10		10 mm	
8		8 mm	

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	(13)	**Probe diameter**
6		6 mm
8		8 mm
	(14)	**Extra codes**
000		None
025		Central mounting M10 × 1, metall
574		Microswitch with N/C contact, restart lock, and additional signal contact (only for TB and STB)
699		Screw connection up to 2.5 mm²
702		Snap-action contact, gold-plated
704		Switching head mounting with 2 M4 screws, spaced 28 mm
705		Switching head mounting with 2 M3 screws, spaced 33 mm
707		Temperature compensation
710		Central mounting M10 × 1, standard
950		Railway application

	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
Order code		/		-		-		-		-		-		-		-
Order example	602021	/	0005	-	052	-	000	-	00	-	2000	-	40	-	10	-

	(9)		(10)		(11)		(12)		(13)		(14)	
		-		-		-		-		/		, ...[a]
	00	-	00	-	000	-	00	-	6	/	574	

[a] List extra codes in sequence, separated by commas.

Sequence contact gap for 2-pole, 3-pole, and 4-pole devices: Specify in plain text (e.g. +2 °C, +5 °C, +8 °C)

Further process connections and protection tubes see data sheet 606710.

JUMO GmbH & Co. KG
Delivery address: Mackenrodtstraße 14
36039 Fulda, Germany
Postal address: 36035 Fulda, Germany
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Stock versions

Order code	Control range (TW)	Capillary length	Probe-Ø	Part no.
602021/0001-013-000-25-2000-40-10-00-00-000-00-6/000	-20 to +40 °C	2,000 mm	6 mm	60001231
602021/0001-021-000-25-1000-40-10-00-00-000-00-6/000	0 to 50 °C	1,000 mm	6 mm	60000492
602021/0001-041-000-70-1000-40-10-00-00-000-00-6/000	20 to 90 °C	1,000 mm	6 mm	60000493
602021/0001-025-000-25-1000-40-10-00-00-000-00-6/000	0 to 100 °C	1,000 mm	6 mm	60000494
602021/0001-025-000-25-2000-40-10-00-00-000-00-6/000	0 to 100 °C	2,000 mm	6 mm	60000219
602021/0001-052-000-70-1000-40-10-00-00-000-00-6/000	30 to 110 °C	1,000 mm	6 mm	60000285
602021/0001-027-000-25-1000-40-10-00-00-000-00-6/000	0 to 150 °C	1,000 mm	6 mm	60000921
602021/0001-027-000-25-2000-40-10-00-00-000-00-6/000	0 to 150 °C	2,000 mm	6 mm	60000217
602021/0001-028-000-25-1000-40-10-00-00-000-00-6/000	0 to 200 °C	1,000 mm	6 mm	60001141
602021/0001-028-000-25-2000-40-10-00-00-000-00-6/000	0 to 200 °C	2,000 mm	6 mm	60000220
602021/0001-064-000-25-1000-40-10-00-00-000-00-6/000	50 to 300 °C	1,000 mm	6 mm	60000495
602021/0001-064-000-25-2000-40-10-00-00-000-00-6/000	50 to 300 °C	2,000 mm	6 mm	60000923
602021/0001-046-000-50-1000-20-10-00-00-000-00-8/000	20 to 500 °C	1,000 mm	8 mm	60002083
602021/0002-021-000-25-1000-40-10-00-00-000-00-6/000	0 to 50 °C	1,000 mm	6 mm	60000214
602021/0002-027-000-25-1000-40-10-00-00-000-00-6/000	0 to 150 °C	1,000 mm	6 mm	60000497
602021/0002-027-000-25-2000-40-10-00-00-000-00-6/000	0 to 150 °C	2,000 mm	6 mm	60000213
602021/0002-028-000-25-1000-40-10-00-00-000-00-6/000	0 to 200 °C	1,000 mm	6 mm	60001263
602021/0002-064-000-25-1000-40-10-00-00-000-00-6/000	50 to 300 °C	1,000 mm	6 mm	60001380
602021/0002-046-000-50-1000-20-10-00-00-000-00-8/000	20 to 500 °C	1,000 mm	8 mm	60002084
602021/0002-046-000-50-2000-20-10-00-00-000-00-8/000	20 to 500 °C	2,000 mm	8 mm	60002112
602021/0005-027-000-25-1000-40-10-00-00-000-00-6/000	0 to 150 °C	1,000 mm	6 mm	60000924
602021/0005-028-000-25-1000-40-10-00-00-000-00-6/000	0 to 200 °C	1,000 mm	6 mm	60000929
602021/0005-064-000-25-1000-40-10-00-00-000-00-6/000	50 to 300 °C	1,000 mm	6 mm	60000211
602021/0005-046-000-50-1000-20-10-00-00-000-00-8/000	20 to 500 °C	1,000 mm	8 mm	60002085
602021/0050-095-000-00-1000-20-10-00-00-000-00-6/025, 574	300 to 400 °C	1,000 mm	6 mm	60002244
602021/0050-096-000-00-1000-20-10-00-00-000-00-6/025, 574	350 to 500 °C	1,000 mm	6 mm	60002245