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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-pole jump-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 function

Temperature controller TR and safety temperature monitos STW
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.

Restart lock for temperature limiter TB and safety temperature limiter STB
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 (approx. 15 % with a limit value setting > +350 °C).

For limit values exceeding 120 °C, the limit value set in the STB must be secured against incorrect adjustment (e.g. by a seal).

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

The electrical circuit 1-2 opens when the probe of STW (STB) and STB cools down to the negative temperature range, but it closes again automatically if the temperature rises.

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.

Approvals / approval marks

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Types and DIN registry numbers

Version	Types	Switching function	DIN register no.	Important note
1 pole snap-action switches	EM-1 EM-2 EM-3* EM-4* EM-5	TR TW TW TB TB	TR 777 TW 778 TW 778 TB 780 TB 780	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 *Setpoint value / limit value permanently factory-set according to customer specifications
2 single-pole snap-action switches	EMF-13 EMF-23 EMF-33* EMF-14 EMF-24 EMF-44* EMF-54	TR/TW TW/TW TW/TW TR/TB TW/TB TB/TB TB/TB	TR 777 TW 778 TW 778 TR 777 TW 778 TB 780 TB 780	
3 single-pole snap-action switches (without VDE approval)	EMF-133 EMF-134 EMF-233 EMF-234 EMF-333* EMF-444* EMF-544	TR/TW/TW TR/TW/TB TW/TW/TW TW/TW/TB TW/TW/TW TB/TB/TB TB/TB/TB	TR 777 TR 777 TW 778 TW 778 TW 778 TB 780 TB 780	
4 single-pole snap-action switches (without VDE approval)	EMF-1333 EMF-2333 EMF-3333*	TR/TW/TW/TW TW/TW/TW/TW TW/TW/TW/TW	TR 777 TW 778 TW 778	
Fail-safe version	EM-40* EM-50 EM-20 EM-30*	STB STB STW (STB) STW (STB)	STB 782 STB 782 STW (STB) 775 S STW (STB) 775 S	

Technical data

Table of control ranges and probes for TR, TW, TB – liquid-filled

Control range/ limit value range °C	Switching differential %	Max. probe temperature °C	Max. switching head temperature °C	Max. capillary length in mm	Max. sequence contact gap °C	Probe length "L" in mm, probe Ø "d" in mm, Ø "6" = Standard	
						Ø 6	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	3000 3000 5000 5000	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	1000 1000 5000 5000	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	2000 2000 5000 5000	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	2000 2000 5000 5000	8 16 40 80	188 188 110 84	116 116 76 63
0 to 150	1 2.5 5	+173 +173 +200	+80	1000	15 30 75	113 113 72	78 78 57
0 to 200	1 2.5	+230 +230	+80	1000	20 40	113	78
50 to 200	1 2.5	+230 +230	+80	1000	15 30	139	92
50 to 250	1 2.5 5	+288 +288 +300	+80	1000 1000 5000	20 40 100	105 105 64	70 70 49
50 to 300	1 2.5	+345 +345	+80	2000	25 50	87	61

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Technical data

Table of control ranges and probes for TR, TW, TB – gas-filled

Control range/ limit value range °C	Switching differential %	Max. probe temperature °C	Max. switching head temperature °C	Max. capillary length in mm	Max. sequence contact gap °C	Probe length "L" in mm, probe Ø "d" in mm, Ø "6" = Standard	
						Ø 6	Ø 8
20 to 400	6 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	278 176 95	158 106 65

Control ranges and temperature probes for STB and STW (STB) – liquid-filled

Setting range °C	Scale range °C	Max. probe temperature °C	Max. switching head temperature °C	Max. capillary length in mm	Limit value tolerance °C	Probe length "L" in mm, probe Ø "d" in mm, Ø "6" = Standard	
						Ø 6	Ø 8
75 to 100	**78**	+125	+80	5000	0 -7	84	63
85 to 110	78	+135			0 -7		
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	–

Control ranges and temperature probes for STB and STW (STB) – gas-filled

Setting range °C	Scale range °C	Max. probe temperature °C	Max. switching head temperature °C	Max. capillary length in mm	Limit value tolerance °C	Probe length "L" in mm, probe Ø "d" in mm, Ø "6" = Standard	
						Ø 6	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 probes

Type	Scale limit value	Capillary	Temperature probe	Notes
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: 1000 mm, max. 5000 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-20 EM.-2... EM-30 EM.-3...	EM.-4... EM-40 EM.-5... EM-50	EM.-4.../U EM-40/U EM.-5.../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
Max. contact rating	Switching function Switching differential	N/C contact, terminal 2	N/O contact, terminal 4
	TR, TW, STW (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 % 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 %, 0.25A	
	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 (abbreviation "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 max. switching capacity		
Electrical connection	Standard	Tab connector A 6.3 × 0.8 DIN 46 244	
	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 % from the control range / limit value range	Switching function	With liquid-filled measuring system		
		Rated value	Possible actual value	
	TR, TW	2.5	Approx. 2.5 - 3.5	Standard
		5	Approx. 5 - 6	Upon request
		7	Approx. 7 - 8	Upon request
		1	Approx. 1 - 2	Surcharge
		With gas-filled measuring system		
		5	Approx. 5 - 11	Standard
		6	Approx. 6 - 14	Upon request
		10	Approx. 10 - 16	Upon request
		3	Approx. 2.5 - 4	Surcharge
	STW (STB)	With liquid-filled measuring system		
		5	Approx. 5 - 7	Standard
		With gas-filled measuring system		
		6	Approx. 6 - 16	Standard

Sequence contact gap on multi-pole version	With switching differential	Sequence contact gap relative to scale range		Switching point accuracy of the sequence contact gaps from the scale range
		Minimum	Maximum	
	1 % 2.5 % 3 %, 5 % 6 %, 7 %, 10 %	1 % 1 % 2 % 3 %	According to control range table	≤ 1 % ≤ 1 % < 2 % < 3 %
	The spacing of the additional contacts can be specified in °C in relation to the setpoint of contact 1. Prefix **-** = switching **before** reaching the setpoint value Prefix **+** = switching **after** reaching the setpoint value For the synchronized version, specify "0" as the sequence contact gap			

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Operating data

Switching point accuracy in % of control range/ limit value range	Switching function	Switching differential					In the upper third of the scale or limit value			
		Liquid-filled		Gas-filled						
	TR	1 %, 2.5 % 5 % 7 %		- 3 %, 5 % 6 %, 10 %			±1.5 % ±3 % ±4 %			
	TW	1 %, 2.5 % 5 % 7 %		- 3 %, 5 % 6 %, 10 %			±1.5 % ±3 % ±4 %			
	TB	-		-			0 % -5 %			
	STB, STW (STB)	See table for control ranges and probes on page 3								
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 temperatures = lower switching point Lower ambient temperature = higher switching point									
	For temperatures with scale limit value/limit value									
	< 200 °C			≥ 200 °C ≤ 350 °C			≥ 400 °C ≤ 500 °C			
	TR, TW, TB		STW, STB	TR, TW, TB		STW, STB	TR, TW, TB, STW, STB			
	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		0.04 × °C × m		0.07 × °C × m	0.05 × °C × m		
Temperature compensation* **(TK)**	* For detailed information see diagram on page 9									
Temperatures	Allowable storage temperature: -50 to +50 °C				Allowable ambient temperature for use: max. 80 °C					
Nominal position (NL)	Any									

Casing

Casing: galvanized sheet steel	Standard mounting	With 2 M3 screws, spaced 22 mm
	Extra code 704	With 2 M4 screws, spaced 28 mm
	Extra code 705	With 2 M3 screws, spaced 33 mm
	Extra code 710	Central mounting M10 × 1 with acorn nut (only for TB and STB)
Setpoint value setting	TR: Switching point adjustable from the outside using the rotary knob	TW, TB, STB, STW (STB): Switching point adjustable with a screwdriver
	Types EM-3, EM-4, EM-33, EM-44, EM-444, EM-3333, EM-30, EM-40 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 on page 3)	
Protection type	EN 60529-IP00	
Weight	Approx. 0.3 kg	

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 as per DIN 3852/2 and clamping piece with fixing screw for securing the probe	
Material	**Protection tube**	Up to 150 °C CuZn as standard Above 150 °C CrNi
Insertion length S	Standard lengths: 100, 120, 150, 200, or 300 mm (different lengths upon request)	
Immersion tube Ø	D = 8 mm, D = 10 mm	

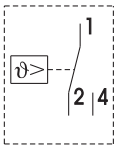
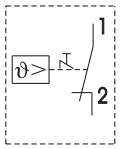
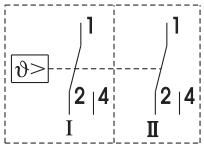
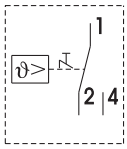
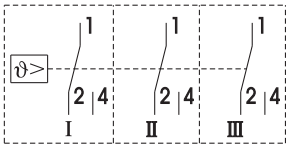
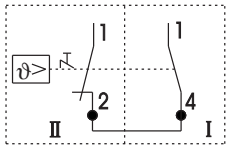
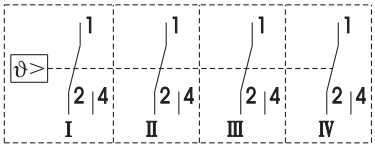
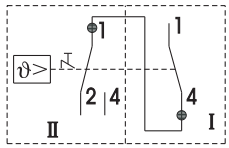
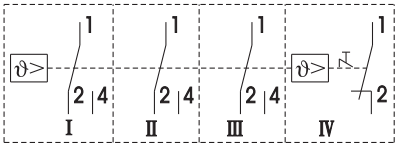
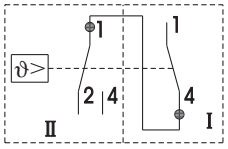
* See data sheet 606710 for additional process connections and protection tubes

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Connection diagrams

EM-1 EM-2 EM-3		EM-4 EM-5	
EMF-13 EMF-23 EMF-33 Setpoint value: I Sequence contact: II		EM-4/U EM-5/U	
EMF-133 EMF-233 EMF-333 Setpoint value: I Sequence contact: II, III		EM-40 EM-50 **I** = N/C contact with system break and T < -10°C: I **II** = Limit value: II	
EMF-1333 EMF-2333 EMF-3333 Setpoint value: I Sequence contact: II, III, IV		EM-40/U EM-50/U **I** = N/C contact with system break and T < -10°C: I **II** = Limit value: II	
Example: EMF-1334 For further type variants, combine the connection diagrams respectively		EM-20 EM-30 **I** = N/C contact with system break and T < -10°C: I **II** = Limit value: II	

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Approvals/approval marks

Approval marks	Inspection authority	Certificates / inspection number	Inspection basis	Valid for
DIN	DIN CERTCO/TÜV Süd	TR777	DIN EN 14597	EM.-1
DIN	DIN CERTCO/TÜV Süd	TW778	DIN EN 14597	EM.-2, EM.-3
DIN	DIN CERTCO/TÜV Süd	TB780	DIN EN 14597	EM-4, EM-5
DIN	DIN CERTCO/TÜV Süd	STW(STB)775 S	DIN EN 14597	EM-20, EM-30
DIN	DIN CERTCO/TÜV Süd	STB782	DIN EN 14597	EM-40, EM-50
DIN	TÜV Süd	B_{10d} = 250.000[a]	DIN EN ISO 13849-1	EM-20, EM-30, EM-40, EM-50
PED	TÜV Süd	Z-IS-TAF-MUC-18-06-2652099-07102504	2014/68/EU	EM-20, EM-30, EM-40, EM-50
CSA	KEMA/Holland	1701699; C481302	CSA standard, C 22.2	EM-1, EM-2, EM-4, EM-50
c CSA us	KEMA/Holland	C3337-01; C3337-81	Gas directive	EM-1, EM-2, EM-3, EM-4, EM-40, EM-50
UL	UL	E66358	UL 873, CSA-22.2 No. 24	EM-...
UL	UL	MH45736	UL 353, CSA-22.2 No. 24	EM-4, EM-5, EM-40, EM-50, EM-80, EM-14, EM-24, EM-44, EM-54, EM-134, EM-234, EM-444, EM-544, EM-1334, EM-2334, EM-4444, EM-5444
EAC[b]	Gost Norm AG	TC RU C-DE.AB98.B.00348	Technical rules of the customs union Russia/ Belarus/Kazakhstan	EM-...

[a] For detailed information please refer to safety manual JUMO EM: 602021, 602026.
[b] Russian documentation upon request.

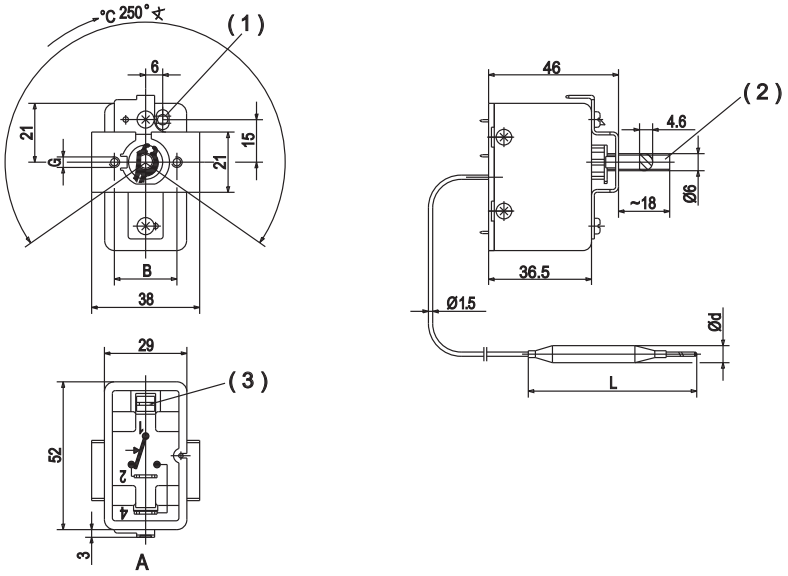
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Dimensions

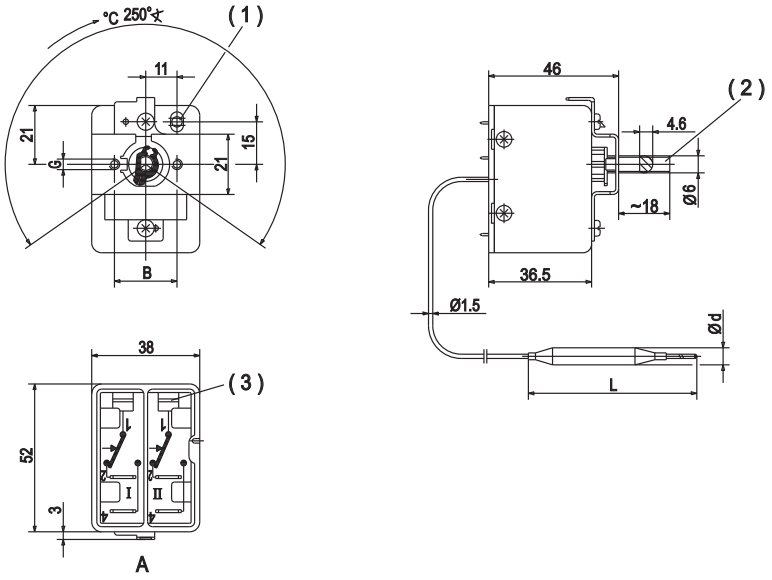
EM-1
EM-2
EM-3
EM-4
EM-5



(1) Restart knob only with abbreviation 4 and 5
(2) Not applicable with abbreviation 2, 3, 4, and 5
(3) Tab connector DIN 46244-A6.3-0.8

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

EMF-13
EMF-20
EMF-23
EMF-30
EMF-33
EMF-14
EMF-24
EMF-40
EMF-44
EMF-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

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

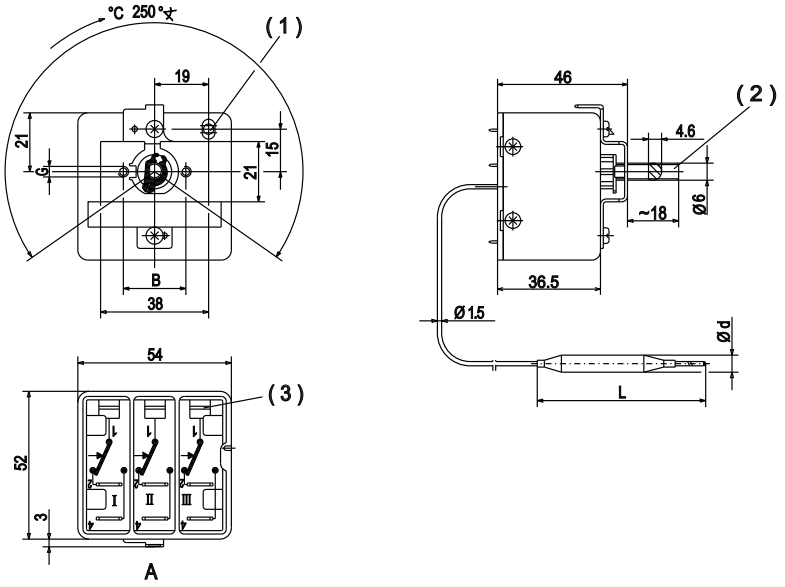
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Dimensions

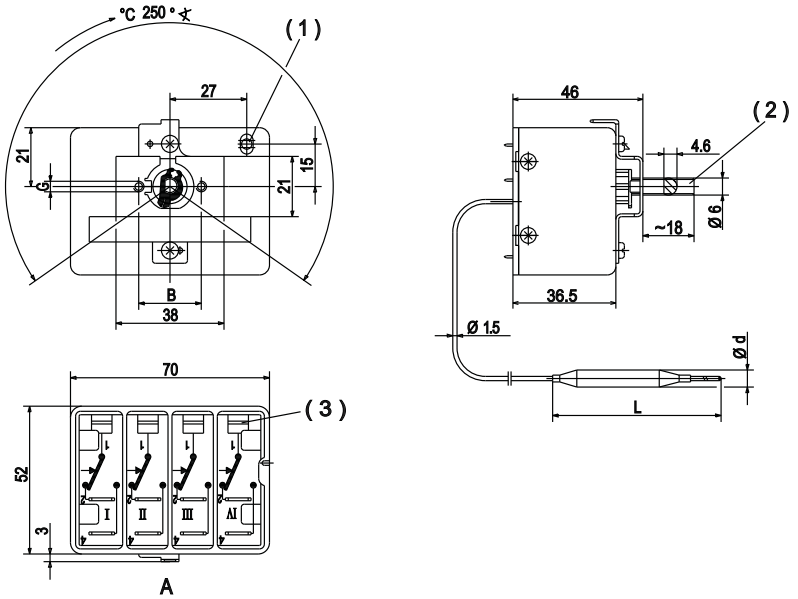
EMF-133
EMF-134
EMF-233
EMF-234
EMF-333
EMF-444
EMF-544



(1) Restart knob only with abbreviation 444, 544
(2) Not applicable with abbreviation 2, 3, 4, and 5
(3) Tab connector DIN 46244-A6.3-0.8

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

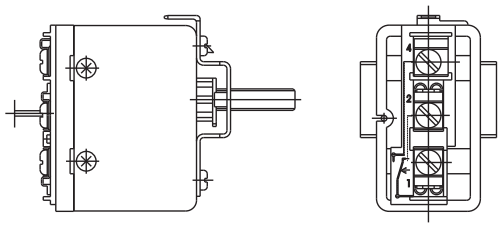
EMF-1333
EMF-2333
EMF-3333



(1) Restart knob only with abbreviation 4444
(2) Not applicable with abbreviation 2, 3, 4, and 5
(3) Tab connector DIN 46244-A6.3-0.8

	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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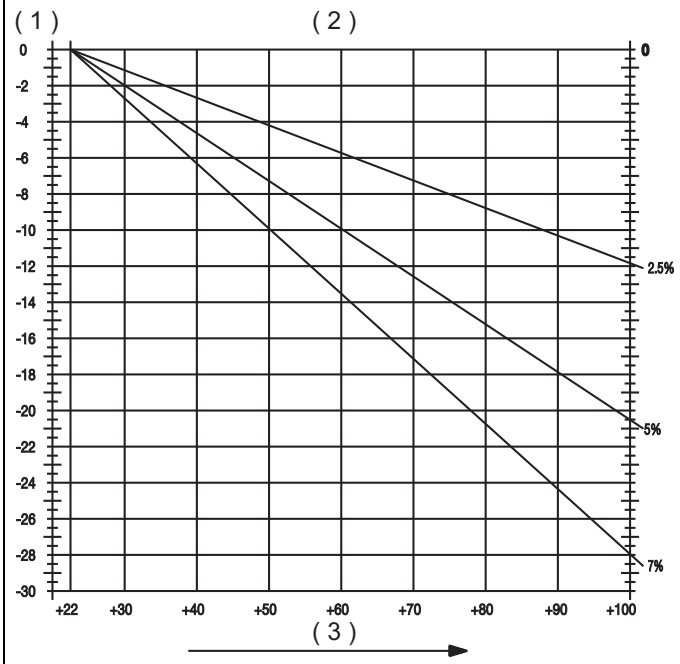
Temperature compensation (TK)

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 (extra code "TK").

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.

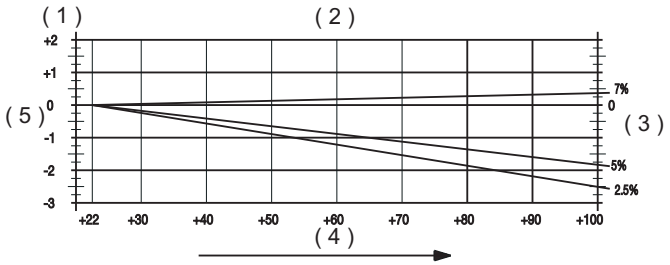
Version **without** temperature compensation	Version **with** temperature compensation
Scale limit value < +200 °C	
EM 1-pole/EM 2-pole	**EM 1-pole temperature compensation TK**



(1) % of the control range

(2) Without temperature compensation

(3) Ambient temperature [°C]



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 scope

(2) With temperature compensation

(3) Switching differential

(4) Ambient temperature [°C]

(5) Switching point deviation

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Stock items

(Delivery within 3 working days after receipt of order)

Part no.	Type	Control range °C	Switching differential %	Capillary mm	Process connection	Probe Ø × length mm
60001231	EM-1	-20 to +40	2.5	2000	**"10"** plain cylindrical probe	6×245
60000492	EM-1	0 to 50	2.5	1000		6×283
60001142	EM-1	20 to 90	2.5	1000		6×210
60000493	EM-1	20 to 90	7.0	1000		6×91
60000494	EM-1	0 to 100	2.5	1000		6×157
60000219	EM-1	0 to 100	2.5	2000		6×157
60000285	EM-1	30 to 110	7.0	1000		6×84
60000921	EM-1	0 to 150	2.5	1000		6×113
60001141	EM-1	0 to 200	2.5	1000		6×114
60000220	EM-1	0 to 200	2.5	2000		6×114
60000495	EM-1	50 to 300	2.5	1000		6×88
60000923	EM-1	50 to 300	2.5	2000		6×88
60002119	EM-1	20 to 400	6.0	1000		8×137
60002083	EM-1	20 to 500	5.0	1000		8×159
60000214	EM-2	0 to 50	2.5	1000		6×286
60000497	EM-2	0 to 150	2.5	1000		6×113
60000213	EM-2	0 to 150	2.5	2000		6×113
60001380	EM-2	50 to 300	2.5	1000		6×88
60002120	EM-2	20 to 400	6.0	1000		8×137
60002084	EM-2	20 to 500	5.0	1000		8×159
60002112	EM-2	20 to 500	6.0	2000		8×159
60000924	EM-5	0 to 150	2.5	1000		6×113
60000929	EM-5	0 to 200	2.5	1000		6×114
60000211	EM-5	50 to 300	2.5	1000		6×88
60002085	EM-5	20 to 500	5.0	1000		8×159
60002244	EM-50/574, 710	300 to 400	— —	1000		6×148
60002245	EM-50/574, 710	350 to 500	— —	1000		6×127

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Order details:

Panel-mounted thermostats, EM series

Order code	(1)	Basic type			
602021		EM panel-mounted thermostat with microswitch, with capillary			
	(2)	**Basic type extensions**			
0001		EM-1	Temperature controller	TR	
0002		EM-2	Temperature monitor	TW	
0003		EM-3*	Temperature monitor	TW	1-pole
0004		EM-4*	Temperature limiter	TB	
0005		EM-5	Temperature limiter	TB	
0013		EMF-13	Temperature controller	TR/TW	
0023		EMF-23	Temperature monitor	TW/TW	
0033		EMF-33*	Temperature monitor	TW/TW	
0014		EMF-14	Temperature controller	TR/TB	2-pole
0024		EMF-24	Temperature monitor	TW/TB	
0044		EMF-44*	Temperature limiter	TB/TB	
0054		EMF-54	Temperature limiter	TB/TB	
0133		EMF-133	Temperature controller	TR/TW/TW	
0134		EMF-134	Temperature controller	TR/TW/TB	
0233		EMF-233	Temperature monitor	TW/TW/TW	
0234		EMF-234	Temperature monitor	TW/TW/TB	3-pole
0333		EMF-333*	Temperature monitor	TW/TW/TW	
0444		EMF-444*	Temperature limiter	TB/TB/TB	
0544		EMF-544	Temperature limiter	TB/TB/TB	
1333		EMF-1333	Temperature controller	TR/TW/TW/TW	
2333		EMF-2333	Temperature monitor	TW/TW/TW/TW	4-pole
3333		EMF-3333*	Temperature monitor	TW/TW/TW/TW	
0020		EM-20	Safety temperature monitor	STW (STB)	
0030		EM-30*	Safety temperature monitor	STW (STB)	
0040		EM-40*	Safety temperature limiter	STB	
0050		EM-50	Safety temperature limiter	STB	
		* Setpoint value/limit value permanently set at the factory to customer requirements			

	(3)	Control ranges/limit value ranges
		For TR, TW, and TB
013		-20 to +40
021		0 to 50
041		20 to 90
025		0 to 100
052		30 to 110
027		0 to 150
028		0 to 200
062		50 to 200
063		50 to 250
064		50 to 300
045		20 to 400
046		20 to 500
		Adjustable for STB and STW (STB)
075		75 to 100
085		85 to 110
090		120 to 150
091		160 to 200
092		210 to 250
094		250 to 300
095		300 to 400
096		350 to 500
000		For limits with fixed settings

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Order details:

Panel-mounted thermostats, EM series

Order code		Limit value with fixed settings	
000		For adjustable control range/limit value range	
...		Specification in °C (must be only within the control ranges/limit value ranges)	
	(5)	**Switching differential**	
00		Without switching differential (-40 STB, -50 STB)	
10		1 %* of the scale range	with liquid-filled measuring systems
25		2.5 %* of the scale range	
50		5 %** of the scale range	
70		7 %** of the scale range	
30		3 %* of the scale range	with gas-filled measuring systems
50		5 %** of the scale range	
60		6 %* of the scale range	
01		10 %* of the scale range	
		* Only with TR + TW	
		** Only with TR, TW, and STW	
	(6)	**Capillary length**	
1000		1000 mm	
2000		2000 mm	
3000		3000 mm	
4000		4000 mm	
5000		5000 mm	
....		Special length, specification in mm (for the max. allowable length see "Technical data")	
	(7)	**Capillary material**	
40		Cu (Copper)	
20		CrNi (stainless steel)	
	(8)	**Process connection***	
10		Plain cylindrical probe	
20		Screw-in protection tube 	
		* For different types of connections and protection tube refer to data sheet 606710	
	(9)	**Thread of process connection**	
00		Without thread (process connection "10")	
13		External thread G 1/2	
	(10)	**Material of process connection**	
00		Only with process connection "10"	
46		CuZn (brass)	
20		CrNi (stainless steel 1.4571)	
	(11)	**Insertion length "S" (immersion tube length)**	
000		Without thermowell	
100		100 mm	
150		150 mm	
200		200 mm	
300		300 mm	
400		400 mm	
....		Special length, specification in mm (max. 500 mm)	

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Order details:

Panel-mounted thermostats, EM series

Order code	(12)	Diameter "D" (immersion tube diameter)
00		Without protection tube
8		8 mm
10		10 mm

	(13)	Diameter "d" (probe diameter)
6		6 mm
8		8 mm

	(14)	Extra codes*
000		Without extra codes
574		Microswitch with N/C contact, restart lock, and additional signal contact (only for TB and STB)
702		Snap-action switch contact, gold plated (only with 1-pole and 2-pole version)
699		Screw connection up to 2.5 mm^2 conductor cross section
704		Switching head mounting with 2 M4 screws, spaced 28 mm
705		Switching head mounting with 2 M3 screws, spaced 33 mm
710		Central mounting with acorn nut (only for TB and STB)
707		Temperature compensation (only with 1-pole and 2-pole version)

* State extra codes one after another, 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)

Order code

(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)		(12)		(13)		(14)				
602021	/	....	-	...	-	...	-	..	-	....	-	..	-	..	-	..	-	..	-	...	-	..	-	.	/	...	,	...	,	...

Order example

602021	/	0005	-	052	-	000	-	00	-	2000	-	40	-	10	-	00	-	00	-	000	-	00	-	6	/	574*	,	710		

***** State extra codes one after another, separated by commas.