

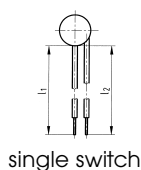
DIN EN ISO 9001



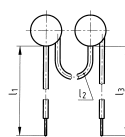
Ordering example:

S 01. 130. 05. 0600 / 0100 / 0100 / 0600

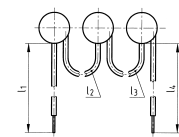
version
type
switching temperature ϑ (°C)
tolerance $\Delta\vartheta$ (±K)
lead length L₁
lead length L₂
lead length L₃
lead length L₄



single switch



duplex configuration



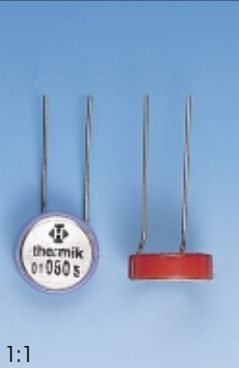
triplex configuration



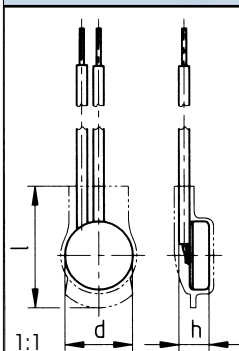
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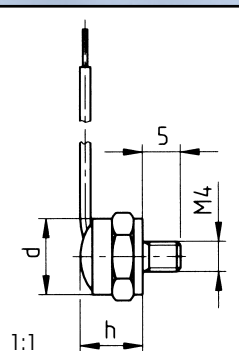
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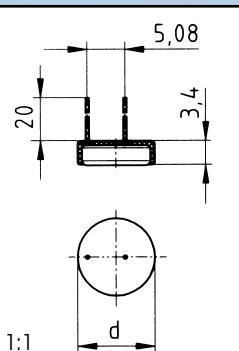
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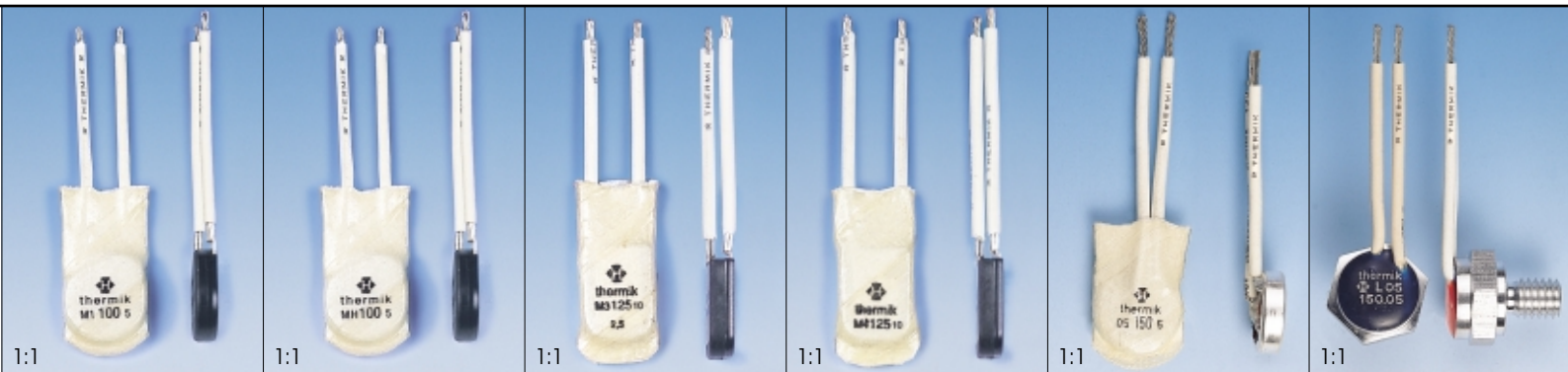
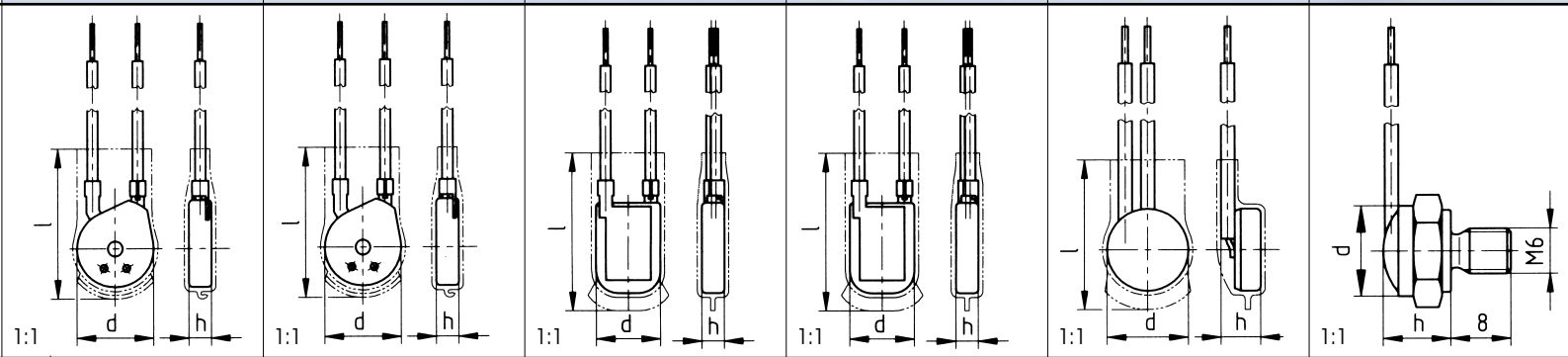


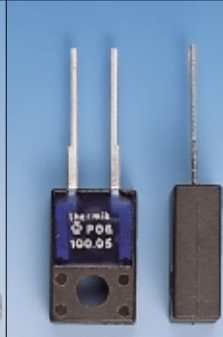
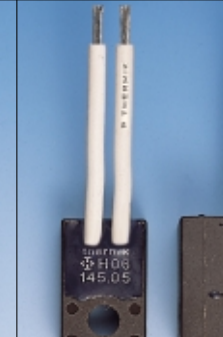
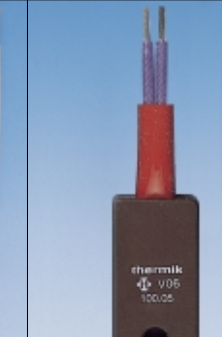
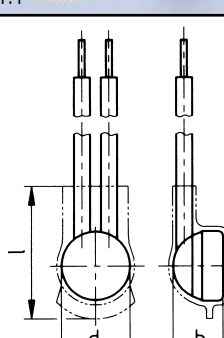
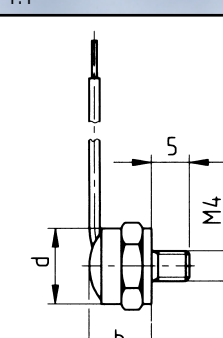
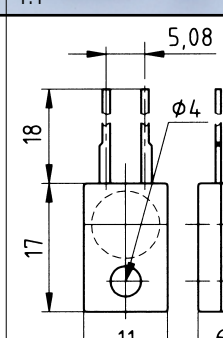
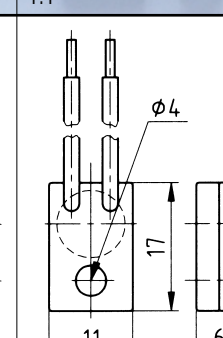
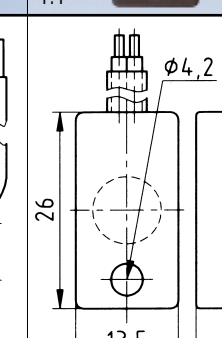
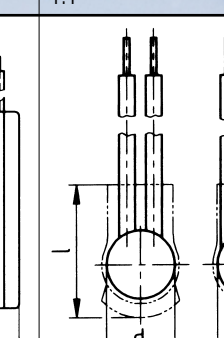
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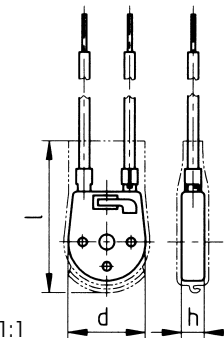
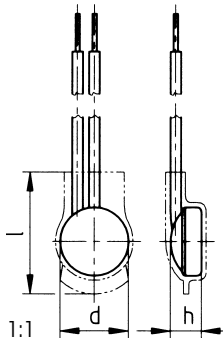
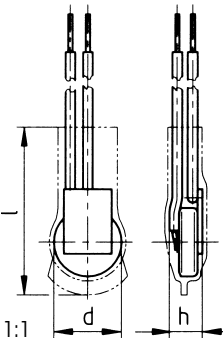
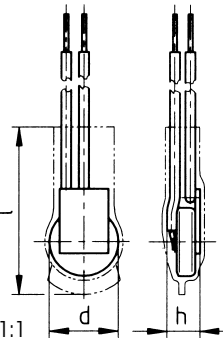
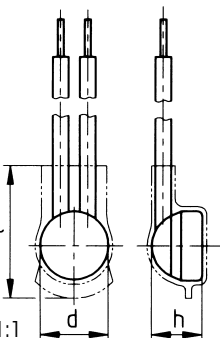
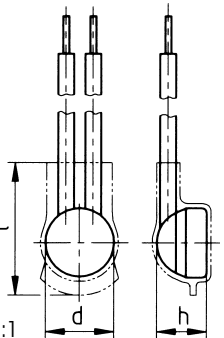


1:1

	Thermal Protectors	• with connection leads	• mount-on-housing • with connection leads	• with pcb-terminals
	Thermal Protectors with insulation cap without insulation cap	S01, SK1 / S02 C01, CK1 / C02	L01, LK1 / L02	N01, NK1 / N02
1	contact type	NC / NO	NC / NO	NC / NO
2	nominal switching temperature (NST) in steps of 5 °C	60 °C - 200 °C	60 °C - 200 °C	60 °C - 180 °C
3	standard tolerance	± 5 K	± 5 K	± 5 K
4	reset temperature range below NST (UL/CSA)	30 K ± 15 K	30 K ± 15 K	30 K ± 15 K
5	operating voltage ... AC/... DC	... 500 V~/...100 V=	... 500 V~/...100 V=	... 500 V~/...100 V=
6	rated voltage AC	250 V 500 V	250 V 500 V	250 V 500 V
7	rated current AC cos φ = 1,0 (ohmic load)	2,5 A 0,75 A	2,5 A 0,75 A	2,5 A 0,75 A
8	rated current AC cos φ = 0,6 (inductive load)	1,6 A 0,50 A	1,6 A 0,50 A	1,6 A 0,50 A
9	switching cycles at I _N and U _N	10.000	10.000	10.000
10	current sensitivity at I _N	no	no	no
11	max. switching current at 250 V~/switching cycles	5,0 A / 2.000	5,0 A / 2.000	5,0 A / 2.000
12	contact bounce time	< 1 ms	< 1 ms	< 1 ms
13	contact resistance (with reference MIL-stand. R 5757)	< 50 mΩ	< 50 mΩ	< 50 mΩ
14	impregnation resistance (acc. to Thermik-Test)	suitable	suitable	suitable
15	vibration proof at 10...60 Hz	100 m/s ²	100 m/s ²	100 m/s ²
16	pressure stability of housing (max. acc. to Thermik-Test)	450 N (45 kg)	450 N (45 kg)	450 N (45 kg)
17	high voltage insulation (without C-versions)	2 kV	2 kV	-
18	suitable for protection class	I	I	I
19	standard connection	lead 0,25 mm ²	lead 0,25 mm ²	pins 0,5 mm
20	diameter d (with/without insulation cap)	9,4 mm / 9,0 mm	10 mm	10 mm
21	height h (with/without insulation cap)	4,7 mm / 4,3 mm	7,7 mm	3,4 mm
22	length of insulation cap l	16 mm	-	-
23	screw / -length	-	M4 / 5 mm	-
24	wrench size / max. turning moment	-	10 / 2 Nm	-
25	approvals acc. to design for	VDE, UL, BEAB, CSA, SEMKO	VDE, UL, BEAB, SEMKO	VDE, UL, BEAB, CSA, SEMKO

					
					
• with crimp contacts • with/without connection leads • with pcb-terminals	• with crimp contacts • with/without connection leads • with pcb-terminals	• with defined current sensitivity	• current sensitive	• with connection leads	• mount-on-housing • with connection leads
SM1 (*VM1) CM1	SMH CMH	SM3 CM3	SM4 CM4	S05 / S09 C05 / C09	L05 / L09
1 NC	NC	NC	NC	NC / NO	NC / NO
2 70 °C - 180 °C	70 °C - 180 °C	70 °C - 160 °C	70 °C - 180 °C	50 °C - 200 °C	50 °C - 200 °C
3 ± 5 K	± 5 K	± 10 K	± 10 K	± 5 K	± 5 K
4 30 K ± 15 K	30 K ± 15 K	30 K ± 15 K	30 K ± 15 K	30 K ± 15 K	30 K ± 15 K
5 ... 500 V~/...100 V=	... 500 V~/...100 V=	230 V~	230 V~	... 500 V~/...100 V=	... 500 V~/...100 V=
6 250 V	250 V	250 V	250 V	250 V	250 V
7 2,5 A	4,0 A	2,5 A	2,5 A	6,3 A	6,3 A
8 1,6 A	2,5 A	1,6 A	1,6 A	4,0 A	4,0 A
9 10.000	10.000	10.000	10.000	10.000	10.000
10 no	no	yes	yes	no	no
11 5,0 A / 2.000	10,0 A / 2.000	4,0 A / 3.000	5,0 A / 2.000	20 A/300; 10 A/3.000	20 A/300; 10 A/3.000
12 < 1 ms	< 1 ms	< 1 ms	< 1 ms	< 1 ms	< 1 ms
13 < 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ
14 upon request (*suitable)	upon request	upon request	upon request	suitable	suitable
15 100 m/s²	100 m/s²	100 m/s²	100 m/s²	100 m/s²	100 m/s²
16 450 N (45 kg)	450 N (45 kg)	450 N (45 kg)	450 N (45 kg)	300 N (30 kg)	> 300 N (30 kg)
17 2 kV	2 kV	2 kV	2 kV	2 kV	2 kV
18 I	I	I	I	I	I
19 lead 0,25 mm²	lead 0,5 mm²	lead 0,25 mm²	lead 0,25 mm²	lead 0,5 mm²	lead 0,5 mm²
20 10,6 mm / 10,2 mm	10,6 mm / 10,2 mm	9,0 mm / 8,6 mm	9,0 mm / 8,6 mm	11,4 mm / 11,0 mm	12,0 mm
21 3,4 mm / 3,0 mm	3,4 mm / 3,0 mm	3,5 mm / 3,1 mm	3,5 mm / 3,1 mm	5,8 mm / 5,4 mm	9,0 mm
22 20 mm	20 mm	21,5 mm	21,5 mm	20 mm	-
23 -	-	-	-	-	M6 / 8 mm
24 -	-	-	-	-	13 / 8 Nm
25 VDE, UL, CSA	applied: VDE, UL, CSA	applied: VDE, UL, CSA	applied: VDE, UL, CSA	VDE, UL, CSA	VDE, UL, CSA

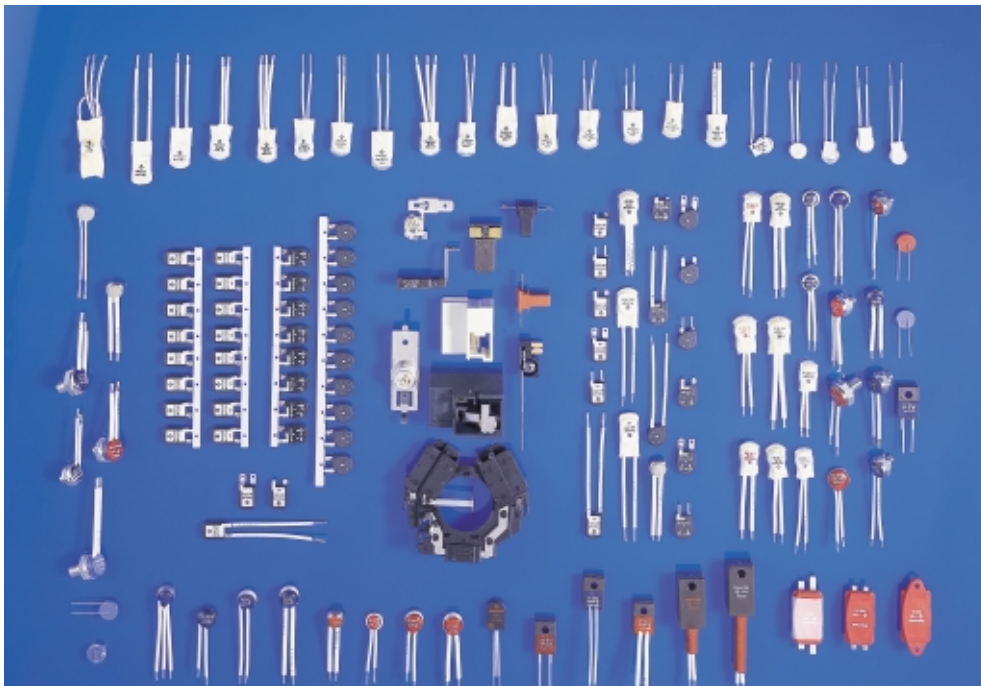
											
											
• with connection leads		• mount-on-housing • with connection leads		• mount-on-housing • with pcb-terminals		• mount-on-housing • with connection leads • with insulation displacement connectors		• mount-on-housing • with double insulation suitable for protection class II		• for higher performance • with connection leads	
S06 / S08 C06 / C08		L06 / L08		P06 / P08		H06 / H08		V06 / V08		SH6 CH6	
1 NC / NO		NC / NO		NC / NO		NC / NO		NC / NO		NC	
2 70 °C - 200 °C		70 °C - 200 °C		70 °C - 180 °C		70 °C - 180 °C		70 °C - 180 °C		70 °C - 180 °C	
3 ± 5 K		± 5 K		± 5 K		± 5 K		± 5 K		± 5 K	
4 30 K ± 15 K		30 K ± 15 K		30 K ± 15 K		30 K ± 15 K		30 K ± 15 K		depends on NST	
5 ... 500 V~ / ... 100 V=		... 500 V~ / ... 100 V=		... 500 V~ / ... 100 V=		... 500 V~ / ... 100 V=		... 500 V~ / ... 100 V=		... 500 V~ / ... 100 V=	
6 250 V 500 V		250 V 500 V		250 V 500 V		250 V 500 V		250 V 500 V		250 V	
7 10,0 A 3,5 A		10,0 A 3,5 A		10,0 A 3,5 A		10,0 A 3,5 A		10,0 A 3,5 A		13,5 A	
8 6,3 A 2,0 A		6,3 A 2,0 A		6,3 A 2,0 A		6,3 A 2,0 A		6,3 A 2,0 A		9,0 A	
9 10.000		10.000		10.000		10.000		10.000		10.000	
10 no		no		no		no		no		yes	
11 25 A / 2.000		25 A / 2.000		25 A / 2.000		25 A / 2.000		25 A / 2.000		42 A/300; 35 A/2.000	
12 < 1 ms		< 1 ms		< 1 ms		< 1 ms		< 1 ms		< 1 ms	
13 < 50 mΩ		< 50 mΩ		< 50 mΩ		< 50 mΩ		< 50 mΩ		< 50 mΩ	
14 suitable		suitable		suitable		suitable		suitable		suitable	
15 100 m/s ²		100 m/s ²		100 m/s ²		100 m/s ²		100 m/s ²		100 m/s ²	
16 600 N (60 kg)		> 600 N (60 kg)		> 600 N (60 kg)		> 600 N (60 kg)		> 600 N (60 kg)		600 N (60 kg)	
17 2 kV		2 kV		2 kV		2 kV		3,75 kV		2 kV	
18 I		I		I		I		II		I	
19 lead 0,75 mm ²		lead 0,75 mm ²		pins / connection pins		lead 0,75 mm ²		lead 0,5 mm ²		lead 0,75 mm ²	
20 9,7 mm / 9,3 mm		10,0 mm		width: 11,0 mm		width: 11,0 mm		width: 13,5 mm		9,7 mm / 9,3 mm	
21 7,6 mm / 7,2 mm		8,0 mm		height: 6,0 mm		height: 6,0 mm		height: 10,0 mm		7,6 mm / 7,2 mm	
22 18 mm		-		length: 17,0 mm		length: 17,0 mm		length: 26,0 mm		18 mm	
23 -		M4 / 5 mm		-		-		-		-	
24 -		10 / 2 Nm		- / 3,0 Nm		- / 3,0 Nm		- / 2,5 Nm		-	
25 VDE, UL, BEAB, CSA		VDE, UL, BEAB, CSA		VDE, UL, BEAB, CSA		VDE, UL, BEAB, CSA		VDE		VDE, UL, CSA	

											
1:1		1:1		1:1		1:1		1:1		1:1	
											
1:1		1:1		1:1		1:1		1:1		1:1	
• with PTC-non-automatic reset • with crimp contacts • with/without connection leads • with pcb-terminals		• with PTC-non-automatic reset • with connection leads		• with PTC-non-automatic reset • with defined current sensitivity		• with defined current sensitivity • with connection leads		• with non-automatic reset • with thick-film-resistor		• for higher performance • with non-automatic reset • with thick-film-resistor	
SM2 CM2		SP1 CP1		SW1 CW1		SZ1 CZ1		SR6 CR6		SRH CRH	
1 NC		1 NC		1 NC		1 NC		1 NC		1 NC	
2 70 °C - 180 °C		2 70 °C - (135) 180 °C		2 70 °C - (135) 160 °C		2 70 °C - 160 °C		2 70 °C - 135 °C / 140 °C - 180 °C		2 70 °C - 135 °C / 140 °C - 180 °C	
3 ± 5 K		3 ± 5 K		3 ± 5 K		3 ± 5 K		3 ± 5 K / ± 10 K		3 ± 5 K / ± 10 K	
4 depends on NST		4 depends on NST		4 depends on NST		4 depends on NST		4 depends on NST		4 depends on NST	
5 230 V~		5 (100) 200 V - 250 V AC		5 (100) 200 V - 250 V AC		5 ... 500 V~ / ... 100 V=		5 230 V (other on request)		5 230 V (other on request)	
6 250 V		6 250 V		6 250 V		6 250 V		6 230 V		6 230 V	
7 2,5 A		7 2,5 A		7 2,5 A		7 2,0 A		7 10,0 A		7 13,5 A	
8 1,6 A		8 1,6 A		8 1,6 A		8 1,6 A		8 6,3 A		8 9,0 A	
9 1.000		9 300		9 300		9 3.000		9 300		9 300	
10 no		10 no		10 yes		10 yes		10 no		10 yes	
11 10,0 A / 1.000		11 10,0 A / 300		11 9,6 A / 300		11 4,0 A / 3.000		11 25 A / 300		11 42 A / 300	
12 < 1 ms		12 < 1 ms		12 < 1 ms		12 < 1 ms		12 < 1 ms		12 < 1 ms	
13 < 50 mΩ		13 < 50 mΩ		13 < 50 mΩ		13 < 50 mΩ		13 < 50 mΩ		13 < 50 mΩ	
14 upon request		14 upon request		14 upon request		14 suitable		14 suitable		14 suitable	
15 100 m/s ²		15 100 m/s ²		15 100 m/s ²		15 100 m/s ²		15 100 m/s ²		15 100 m/s ²	
16 450 N (45 kg)		16 -		16 -		16 -		16 600 N (60kg)		16 600 N (60kg)	
17 2 kV		17 2 kV		17 2 kV		17 2 kV		17 2 kV		17 2 kV	
18 I		18 I		18 I		18 I		18 I		18 I	
19 lead 0,25 mm ²		19 lead 0,25 mm ²		19 wire 0,5 mm		19 wire 0,5 mm		19 lead 0,75 mm ²		19 lead 0,75 mm ²	
20 10,6 mm / 10,2 mm		20 9,4 mm / 9,0 mm		20 9,4 mm / 9,0 mm		20 9,4 mm / 9,0 mm		20 9,7 mm / 9,3 mm		20 9,7 mm / 9,3 mm	
21 3,4 mm / 3,0 mm		21 5,6 mm / 5,1 mm		21 5,5 mm / 5,1 mm		21 5,0 mm / 4,6 mm		21 7,6 mm / 7,2 mm		21 7,6 mm / 7,2 mm	
22 20 mm		22 18 mm		22 20 mm		22 20 mm		22 18 mm		22 18 mm	
23 -		23 -		23 -		23 -		23 -		23 -	
24 -		24 -		24 -		24 -		24 -		24 -	
25 applied: VDE, UL, CSA		25 VDE, UL, CSA		25 VDE		25 VDE, BEAB		25 VDE, UL, CSA		25 VDE, UL, CSA	

In this table you will find a variety of the most common temperature limiting switches. The indicated values can differ for special types. Special designs on request.
Information regarding special data, measurement methods, applications, approvals, etc. is available. We reserve the right to change technical specifications without notice.



THERMIK TEMPERATURE LIMITING SWITCHES

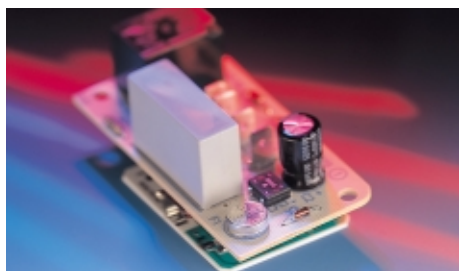
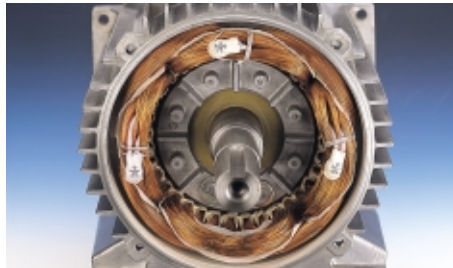


Thermik offers the widest range of standard and customized thermal cutouts. Presently we are producing about 2.000 different temperature limiting switches. All types are available in different cable lengths, qualities and colours.

APPLICATIONS



TYPICAL STANDARD APPLICATIONS



USE OF STANDARD AND CUSTOMIZED PRODUCTS IN PRINTED CIRCUIT BOARDS, TRANSFORMERS AND MOTORS



FULLY AUTOMIZED MOUNT-ON SOLUTIONS FOR SMALL MOTORS AND SUBSTRATE-HEATING PLATES



ADVANTAGES

SMALL DIMENSIONS

Thermik offers the smallest temperature limiting switches available on the market. With an outer diameter of 8,6 mm - 11 mm and a height of 3,0 mm - 7 mm they will fit almost anywhere.

HIGH MECHANICAL STRESS RESISTANCE

The extremely high mechanical stress resistance of Thermik temperature limiting switches allows the different versions to be integrated into, onto or at the windings of motors or transformers.

HIGH VIBRATION PROOF

up to 10 g in the frequency range 10 - 60 Hz. Contact bounce time less than 1 msec. Quick response is guaranteed by the favourable heat transfer from the switch surface to the bimetallic disc.

EXCELLENT LONG TERM STABILITY

Due to the unique and patented Thermik switching systems an instantaneous switching at reproducible switching temperature is guaranteed.

SPECIAL SOLUTIONS

Thermik is experienced in customized applications. In our laboratory we will find the most cost effective solutions to customers problems.

EXPANSION BY INNOVATION

Thermik was founded in 1968 in Pforzheim, Germany and has established itself as one of the leading manufacturers worldwide.

Customer orientated products based on the highest technical Know-how as well as continuous development have made Thermik the **worldwide market leader in quality and innovation.**

We produce and sell only self-developed and patented products, which are according to the highest technical level.

Thermik's headquarters is situated in Pforzheim, Germany. We are producing in an equivalent way in our subsidiaries in:

- Thermik Keramische Bauelemente/ Hermsdorf, Germany
- Thermik Thüringen / Sondershausen, Germany
- Thermik Technologies / Kuala Lumpur, Malaysia
- Thermik Corporation / NC, USA

Our efforts are guided by your needs and demands. Thermik means quality and reliability.

**More than 3.000 customers
on 5 continents rely
on us !**



AUTOMATION

The most sophisticated production equipment - for small as well as for large quantities - enables us to deliver on time. Reliability which stands alone.



QUALITY

Each Thermik product will be tested 70 times from production start until shipment. The fully automated quality control with self-constructed machinery guarantees optimum quality.



KNOW-HOW

More than 30 years of experience in our own special tooling department contributes to secure the most complex production steps and to manufacture with most efficiency.

Apart from Temperature Limiting Switches we offer:

- Series M - Temperature Limiting Switches
- PTC-Thermistors
- PTC - Heating Ceramics
- PTC - Resistors
- PTC - Sensors
- ZnO - Varistors

Specific product information is available. Please do not hesitate to ask.





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