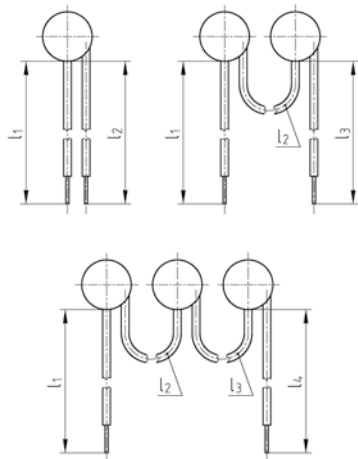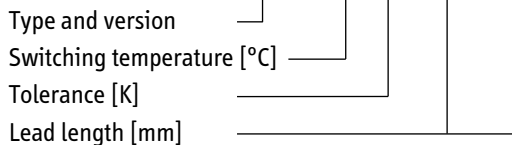**Ordering example**   S01 - 155.05 0100 / 0100
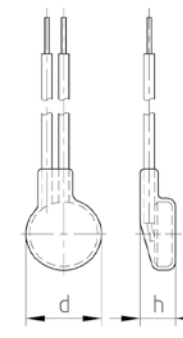
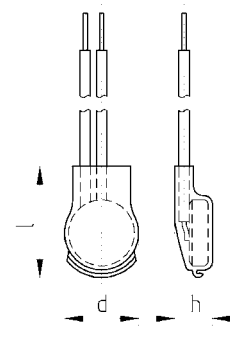Type and version
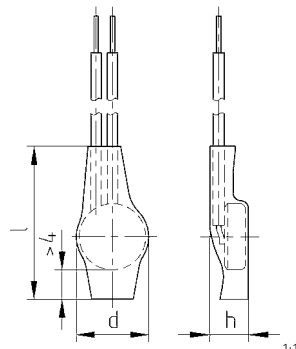Switching temperature [°C]
Tolerance [K]
Lead length [mm]

Automatic resetting,
with connection leads

Automatic resetting,
with connection leads

High Temperature Series
Automatic resetting,
with connection leads

	Thermal-Protectors		e1	C01 / S01 / CF1 / SF1 / CK1 / SK1 / C02 / S02	C01 / S01
	with insulation cap			S01 / SK1 / SF1 / S02	S01
	without insulation cap		Epoxy	C01 / CK1 / CF1 / C02	C01
1	Contact type, normally closed / normally open		NC	NC / NO	NC
2	Nominal switching temperature (NST) in steps of 5 °C		70 °C - 180 °C	60 °C - 200 °C	205 °C - 250 °C
3	Standard tolerance		± 5K	± 5K	± 10K
4	Reset temperature range below NST		-35 °C ± 15 K	-35 K ± 15 K	135° C / ± 15K
5	Operating voltage . . . AC / DC - available, values on inquiry		up to 500 V ~	up to 500 V ~	up to 500 V ~
6	Rated voltage U$_{AC}$		250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V
7	Rated current AC cos φ = 1.0 (ohmic load) / switching cycles		2,5 A / 10.000	2.5 A / 10,000	2.5 A / 1,000
			5,0 A / 300	6.3 A / 3,000 (C01 / S01 / CK1 / SK1)	–
			–	7.5 A / 300 (C01 / S01 / CK1 / SK1)	–
8	Rated current AC cos φ = 0.6 acc. to IEC 60730-2-9 / switching cycles		1.6 A / 10,000	1.6 A / 10,000	1.6 A / 1,000
9	Rated current AC cos φ = 0.4 - 0.5 acc. to IEC 60730-2-3 / switching cycles		–	1.8 A / 10,000 (C01 / S01 / CK1 / SK1)	–
10	Max. switching current at 250V ~ / cos φ = 0.4 - 0.5 / switching cycles		–	7.2 A / 1,000 (C01 / S01 / CK1 / SK1)	–
11	Contact bounce time		< 1 ms	< 1 ms	< 1 ms
12	Contact resistance (acc. to MIL-Std. R 5757)		< 50 mΩ	< 50 mΩ	< 50 mΩ
13	Impregnation resistance with- or without resin (acc. to requirements)*		suitable	suitable	suitable
14	Vibration proof at 10 . . . 60 Hz		100 m/s²	100 m/s²	100 m/s²
15	Pressure stability of housing *		150 N	450 N	450 N
16	High voltage insulation (not C - versions)		1.450 V	2 kV	2 kV
17	Suitable for predection class I or II		suitable	suitable	suitable
18	Standard wiring connection		Lead wire 0.25 mm²	Lead wire 0.25 mm² / AWG22	AWG 22
19	Diameter (with / without insulation cap) Ød [mm]		10.1 mm	9.4 mm / 9.0 mm	9.5 / 9.0 mm
20	Heigth (with / without insulation cap) h [mm]		4.0 mm	4.7 mm (2.9mm SF1) / 4.3 mm (3.0mm CF1)	5.3 / 4.8 mm
21	Length of insulation cap l [mm]		–	15.0 mm (14 mm SF1)	22 mm
22	Length of housing l / b [mm]		–	–	–
23	Length of Pin lp [mm]		–	–	–
24	Screw / -length		–	–	–
25	Wrench size / max. turning moment		–	–	–
26	Approvals available (according to design) **		IEC; ENEC; VDE; UL	IEC; ENEC; VDE; UL; CSA; CQC ; CMJ	IEC; ENEC; VDE

* acc. to Thermik test / ** please specify which approval is needed

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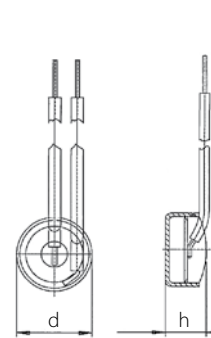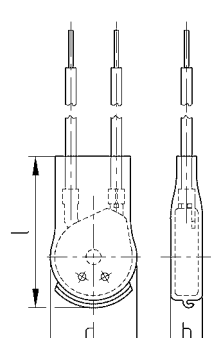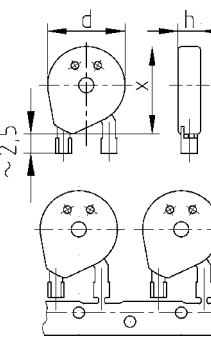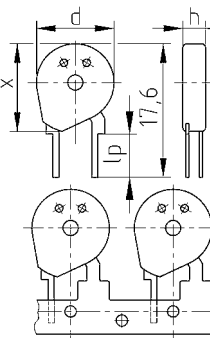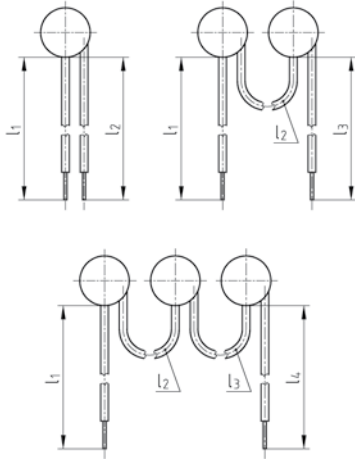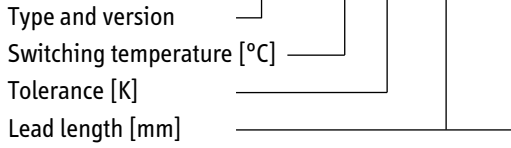|					
Automatic resetting, with two solid non insulated connection wires either vertical or horizontal	Automatic resetting, with connection leads	Automatic resetting, with connection cables and plastic housing	Automatic resetting, with connection leads	Automatic resetting, single / or on tape with crimp contacts suitable for automated further processing	Automatic resetting, single / or on tape with Pins for direct mounting on PCBs
N01 / NK1 / N02	**F01**	**B01**	**CM1 / SM1 / VM1**	**UM1**	**PM1**
	F01	-	SM1 / VM1	-	-
N01 / NK1 / N02	-	B01	CM1	UM1	PM1
NC / NO	NC	NC	NC	NC	NC
60 ℃ – 180 ℃	70℃-200℃	70℃-250℃	70 ℃ – 180 ℃	70 ℃ – 180 ℃	70 ℃ – 180 ℃
± 5K	± 5K	± 5K	± 5K	± 5K	± 5K
-35 K ± 15 K	-35 K ± 15 K	-35 K ± 15 K	-35 K ± 15 K	-35 K ± 15 K	-35 K ± 15 K
up to 500 V ~	up to 500 V ~	up to 500 V ~	up to 500 V ~	up to 500 V ~	up to 500 V ~
250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)
2.5 A / 10,000	2.5 A / 10,000	2.5 A / 10,000	2.5 A / 10,000	2.5 A / 10,000	2.5 A / 10,000
6.3 A / 3,000 (N01 / NK1)	6.3 A / 3,000 (F01)	6.3 A / 3,000	6.3 A / 3,000	6.3 A / 3,000	6.3 A / 3,000
7.5 A / 300 (N01 / NK1)	7.5 A / 300 (F01)	7.5 A / 300	-	-	-
1.6 A / 10,000	1.6 A / 10,000	1.6 A / 10,000	1.6 A / 10,000	1.6 A / 10,000	1.6 A / 10,000
1.8 A / 10,000 (N01 / NK1)	1.8 A / 10,000 (F01)	1.8 A / 10,000	1.8 A / 10,000	1.8 A / 10,000	1.8 A / 10,000
7.2 A / 1,000 (N01 / NK1)	7.2 A / 1,000 (F01)	7.2 A / 1,000	7,2 A / 1,000	7.2 A / 1,000	7.2 A / 1,000
< 1 ms	< 1 ms	< 1 ms	< 1 ms	< 1 ms	< 1 ms
< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ
suitable	suitable	suitable	on request	on request	on request
100 m/s²	100 m/s²	100 m/s²	100 m/s²	100 m/s²	100 m/s²
450 N	650N	450 N	300 N	300N	300N
–	2 kV	2 kV	2 kV	-	-
suitable	suitable	suitable	suitable	suitable	suitable
Single wire 0.5 mm	Lead wire 0.25 mm² / AWG22	Lead wire 0.25 mm² / AWG22	Lead wire 0.25 mm² / AWG22	Crimp	Pin 0.4 mm x 0.8 mm
10.0 mm	9.4mm	10.0 mm	10.6 mm / 10.2 mm / (10.9 mm VM1)	10.2 mm	10.2 mm
3.4 mm	5.6mm	5.3 mm	3.4 mm / 3.0 mm / (4.0 mm VM1)	3.0 mm	3.0 mm
-	-	-	19.0 mm	-	-
-	-	-	11.5 mm	11.5 mm	11.5 mm
14.0 mm / 20.0 mm	-	-	-	-	5.6 mm
-	-	-	-	-	-
-	-	-	-	-	-
IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; cUL	IEC; ENEC; VDE; UL; cUL	IEC; ENEC; VDE; UL; cUL

Part usage guidelines by the orderer which vary from our standards will not be inspected for application usability and/or norm conformity. The user solely is obligated to inspect the suitability of Thermik products for these kinds of uses.

thermik ®
brings temperatures under control

Ordering example   S01 - 155. 05 0100 / 0100

Type and version
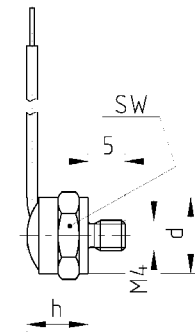Switching temperature [°C]
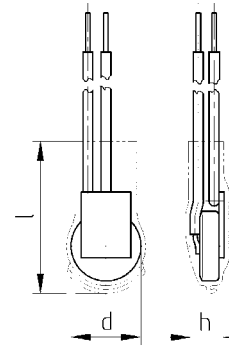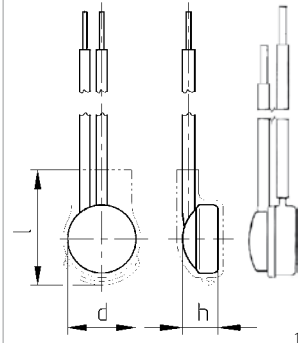Tolerance [K]
Lead length [mm]

1:1

1:1

1:1

1:1

Automatic resetting,
with threaded stud
and connection leads

1:1

Automatic resetting,
defined current sensitive by an
eligible integrated series resistor,
with connection leads

1:1

Electrical-self-hold-functionality
with connection leads ,
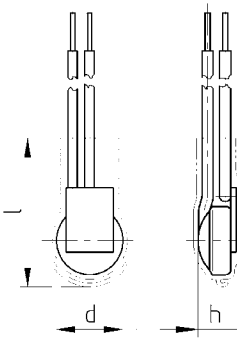pressure stable version (1)

significantly increased pressure stability

	Thermal-Protectors		L01 / LK1 / L02	CZ1 / SZ1	CP1 / SP1
	with insulation cap		-	SZ1	SP1
	without insulation cap		L01 / LK1 / L02	CZ1	CP1
1	Contact type, normally closed / normally open		NC / NO	NC	NC
2	Nominal switching temperature (NST) in steps of 5 °C		60 °C - 200 °C	70 °C - 160 °C	70 °C - 180 °C
3	Standard tolerance		± 5K	± 5K	± 5K
4	Reset temperature range below NST		-35 K ± 15 K	-35 K ± 15 K	depends on NST
5	Operating voltage . . . AC / DC - available, values on inquiry		up to 500 V ~	up to 250 V ~	100 V up to 250 V ~ (UL 277 V)
6	Rated voltage U$_{AC}$		250 V (VDE) 277 V (UL)	250 V	250 V (VDE) 277 V (UL)
7	Rated current AC cos φ = 1.0 (ohmic load) / switching cycles		2.5 A / 10,000	-	10.0 A / 1,000
			6.3 A / 3,000 (L01 / LK1)	4.0 A / 3,000	-
			7.5 A / 300 (L01 / LK1)	-	-
8	Rated current AC cos φ = 0.6 acc. to IEC 60730-2-9 / switching cycles		1.6 A / 10,000	1.6 A / 3.000	6.3 A / 1.000
9	Rated current AC cos φ = 0.4 - 0.5 acc. to IEC 60730-2-3 / switching cycles		1.8 A / 10,000 (L01 / LK1)	-	-
10	Max. switching current at 250V ~ / cos φ = 0.4 - 0.5 / switching cycles		7.2 A / 1,000 (L01 / LK1)	-	-
11	Contact bounce time		< 1 ms	< 1 ms	< 1 ms
12	Contact resistance (acc. to MIL-Std. R 5757)		< 50 mΩ	< 50 mΩ	< 50 mΩ
13	Impregnation resistance with- or without resin (acc. to requirements)*		suitable	suitable	-
14	Vibration proof at 10 . . . 60 Hz		100 m/s²	100 m/s²	100 m/s²
15	Pressure stability of housing *		450 N	-	- / 750 N (1)
16	High voltage insulation (not C - versions)		2 kV	2 kV	2 kV
17	Suitable for predection class I or II		suitable	suitable	suitable
18	Standard wiring connection		Lead wire 0.25 mm² / AWG22	Lead wire 0.25 mm² / AWG22	Lead wire 0.25 mm² / AWG22
19	Diameter (with / without insulation cap)	Ød [mm]	10.0 mm	9.4 mm / 9.0 mm	9.4 mm / 9.0 mm
20	Heigth (with / without insulation cap)	h [mm]	8.3 mm	5.0 mm / 4.6 mm	5.2 mm / 4.8 mm
21	Length of insulation cap	l [mm]	-	19.0 mm	17.0 mm
22	Length of housing	l / b [mm]	-	-	-
23	Length of Pin	lp [mm]	-	-	-
24	Screw / -length		M4 / 5.0 mm	-	-
25	Wrench size / max. turning moment		10.0 mm / 2 Nm	-	-
26	Approvals available (according to design) **		IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE	IEC ; VDE; UL; CSA

* acc. to Thermik test / ** please specify which approval is needed

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Types

- normally closed (automatic resetting)
  e1, C01, CK1, S01, SK1, CF1, SF1, N01, NK1, L01, LK1, UM1, PM1, CM1, SM1, VM1, CZ1, SZ1, F01, B01
- normally closed
  (with electrical-self-hold-functionality)
  CP1, SP1,
- normally open
  C02, S02, N02, L02

Examples of Typical Applications

Approvals / Licenses

VDE according
to EN 60730

CQC according
to GB 14536

UL according to
UL 2111 / UL 873

CSA according to
C22.2

CB-Report according to
IEC 60730

ENEC according to
EN 60730

CMJ according
to JET

Automatic functionality as per IEC/EN 60730 -1: 2BM/2CM

Existing norm appendices for IEC/EN 60730: -1; -2-3; -2-9

B = Micro cutoff

C = Micro interruption

2 = Defined manufacturing variation and drift

((Thermik products correspond to the respectively
applicable EU directives/guidelines.

1:1

1:1

Electrical-self-hold-functionality
defined current sensitive by an
eligible integrated series resistor,
with connection leads

CW1 / SW1
SW1
CW1
NC
70 °C - 160 °C
± 5K
depends on NST
100 V up to 250 V ~
250 V
9.0 A / 1,000
-
-
1.6 A / 1,000
-
-
< 1 ms
< 50 mΩ
-
100 m/s²
-
2 kV
suitable
Single wire Ø 0.5 mm / AWG 22
9.4 mm / 9.0 mm
5.6 mm / 5.1 mm
19.0 mm
-
-
-
-
IEC; VDE

thermik ®
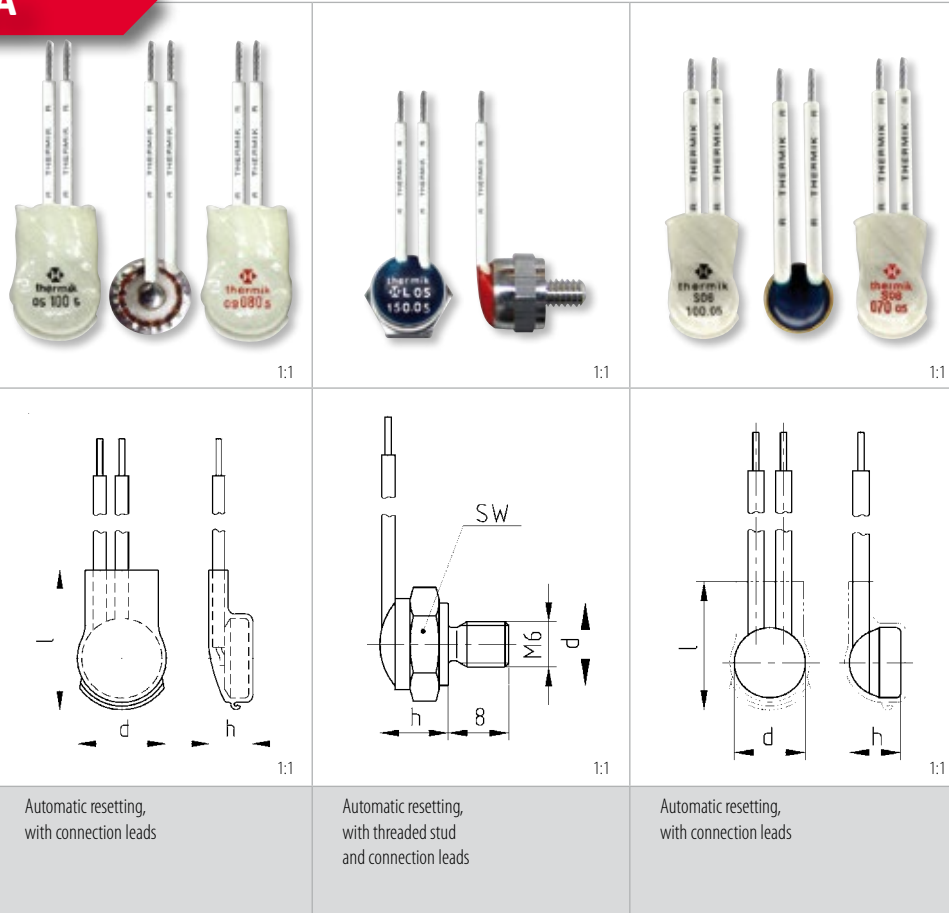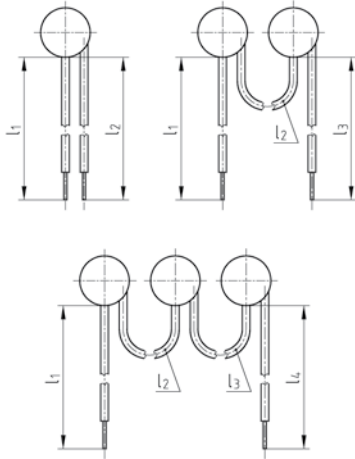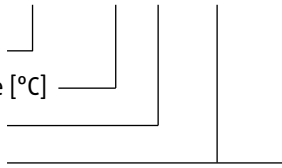**brings temperatures under control**

Ordering example   S01 - 155. 05 0100 / 0100

Type and version
Switching temperature [°C]
Tolerance [K]
Lead length [mm]

1:1   1:1   1:1

1:1   1:1   1:1

Automatic resetting, with connection leads | Automatic resetting, with threaded stud and connection leads | Automatic resetting, with connection leads

	Thermal-Protectors		C05 / S05 / C09 / S09	L05 / L09	C06 / S06 / C08 / S08
	with insulation cap		S05 / S09	-	S06 / S08
	without insulation cap		C05 / C09	L05 / L09	C06 / C08
1	Contact type, normally closed / normally open		NC / NO	NC / NO	NC / NO
2	Nominal switching temperature (NST) in steps of 5 °C		60 °C - 200 °C	60 °C - 160 °C	70 °C - 200 °C
3	Standard tolerance		± 5K	± 5K	± 5K
4	Reset temperature range below NST		-35 K ± 15 K	-35 K ± 15 K	depends on NST
5	Operating voltage . . . AC / DC – available, values on inquiry		up to 500 V ~	up to 500 V ~	up to 500 V ~
6	Rated voltage U_{AC}		250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)
7	Rated current AC cos φ = 1.0 (ohmic load) / switching cycles		6,3 A / 10.000	6,3 A / 10.000	10,0 A / 10.000
			10,0 A / 3.000 (C05/S05)	10,0 A / 3.000 (L05)	25,0 A / 2.000*
			20,0 A / 300 (C05/S05)	20,0 A / 300 (L05)	-
8	Rated current AC cos φ = 0.6 acc. to IEC 60730-2-9 / switching cycles		4,0 A / 10.000	4,0 A / 10.000	6,3 A / 10.000
9	Rated current AC cos φ = 0.4 - 0.5 acc. to IEC 60730-2-3 / switching cycles		4,6 A / 10.000 (C05/S05)	4,6 A / 10.000 (L05)	-
10	Max. switching current at 250V ~ / cos φ = 0.4 - 0.5 / switching cycles		18,4 A / 1.000 (C05/S05)	18,4 A / 1.000 (L05)	-
11	Contact bounce time		< 1 ms	< 1 ms	< 1 ms
12	Contact resistance (acc. to MIL-Std. R 5757)		< 50 mΩ	< 50 mΩ	< 50 mΩ
13	Impregnation resistance with- or without resin (acc. to requirements)*		suitable	suitable	suitable
14	Vibration proof at 10 . . . 60 Hz		100 m/s²	100 m/s²	100 m/s²
15	Pressure stability of housing *		300 N	300 N	600 N
16	High voltage insulation (not C - versions)		2 kV	2 kV	2 kV
17	Suitable for predection class I or II		suitable	suitable	suitable
18	Standard wiring connection		Lead wire 0,5 mm² / AWG20	Lead wire 0,5 mm² / AWG20	Lead wire 0,75 mm² / AWG18
19	Diameter (with / without insulation cap) Ød [mm]		11,4 mm / 11,0 mm	10,9 mm	9,8 / 9,3 mm
20	Heigth (with / without insulation cap) h [mm]		5,8 mm / 5,4 mm	9,0 mm	7,6 / 7,2 mm
21	Length of insulation cap l [mm]		19,0 mm	-	17,0 mm
22	Length of housing l / b [mm]		-	-	-
23	Length of Pin lp [mm]		-	-	-
24	Screw / -length		-	M6 x 8,0 mm	-
25	Wrench size / max. turning moment		-	13,0 mm / 8 Nm	-
26	Approvals available (according to design) **		IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; CSA; CQC

* acc. to Thermik test / ** please specify which approval is needed
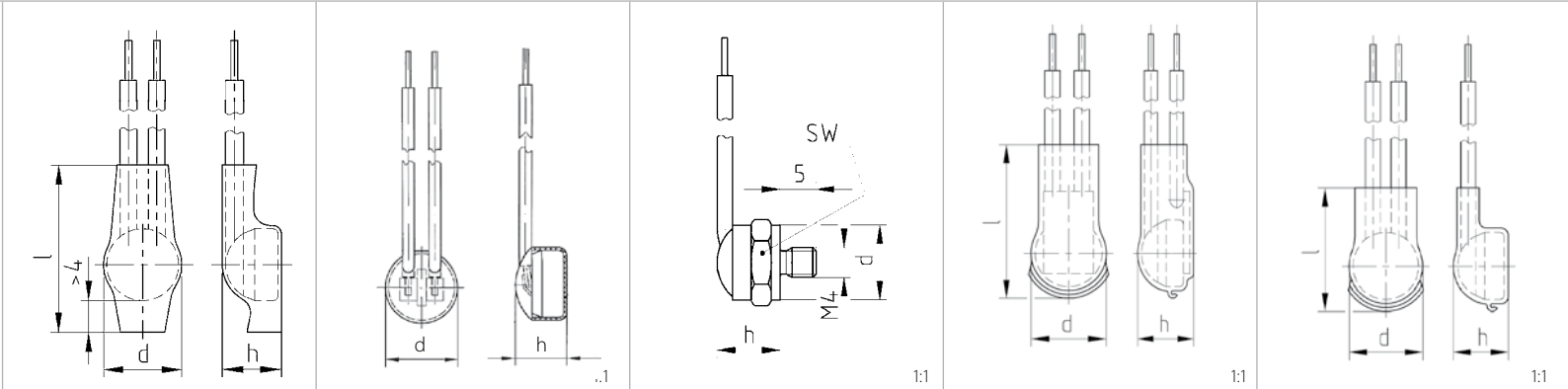
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1:1 | 1:1 | 1:1 | 1:1

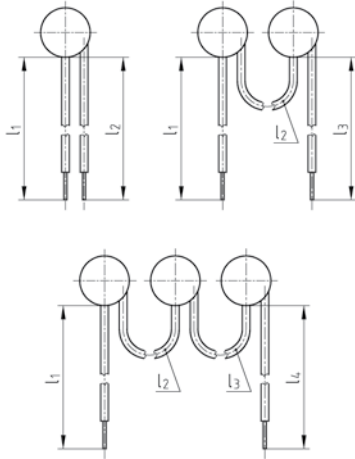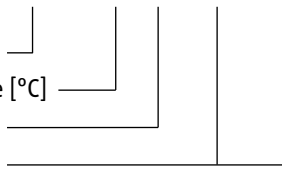| High Temperature Series Automatic resetting, with connection leads	Automatic resetting with connection leads and insulation cap	Automatic resetting, with threaded stud and connection leads	Automatic resetting, defined current sensitive by an eligible integrated series resistor, with connection leads	Self-hold thermal protector without base insulation with connection leads
C06 / S06	**F06**	**L06 / L08**	**CZ6 / SZ6**	**CR6 / SR6**
S06	F06	-	SZ6	SR6
C06		L06 / L08	CZ6	CR6
NC	NC	NC / NO	NC	NC
205 ℃ - 250 ℃	70 ℃ - 200 ℃	70 ℃ - 200 ℃	70 ℃ – 160 ℃	70 ℃ - 180 ℃
± 10K	± 5K	± 5K	± 5K	± 10K
125° C / ± 15K	depends on NST	depends on NST	-35 K ± 15 K	depends on NST
up to 500 V ~	up to 500 V ~	up to 500 V ~	up to 250 V ~	up to 250 V ~
250 V	250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V	115 V / 230 V (VDE) 250 V (UL)
10 A / 1.000	10,0 A / 10.000	10,0 A / 10.000	10,0 A / 3.000	25,0 A / 1.000-
-	25,0 A / 2.000*	25,0 A / 2.000*	-	-
-	-	-	25.0 A / 300	-
6,3 A / 1.000	6,3 A / 10.000	6,3 A / 10.000	6,3 A / 3.000	6,3 A / 1.000
-	-	-	-	-
-	-	-	-	-
< 1 ms	< 1 ms	< 1 ms	< 1 ms	< 1 ms
< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ	< 50 mΩ
suitable	suitable	suitable	suitable	suitable
100 m/s^2	100 m/s^2	100 m/s^2	100 m/s^2	100 m/s^2
600 N	600 N	600 N	-	600 N
2 kV	2 kV	2 kV	2 kV	2kV
suitable	suitable	suitable	suitable	suitable
AWG 18	AWG 18	Lead wire 0,75 mm^2 / AWG18	AWG 18	Lead wire 0,75 mm^2 / AWG 18
9,8 / 9,3 mm	9,7mm	10,0 mm	10,5 mm / 9,0 mm	9,8mm /9,3 mm
7,6 / 7,2 mm	7,3mm	8,0 mm	7,6 mm / 7,2 mm	7,6mm / 7,2 mm
24 mm		-	22 mm	17,0mm
-	-	-	-	-
-	-	-	-	-
-	-	M4 x 5,0 mm	-	-
-	-	10,0 mm / 2 Nm	-	-
IEC; ENEC; VDE	IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; CSA; CQC	Under preparation	IEC; ENEC; VDE; UL; CSA

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Ordering example S01 - 155. 05 0100 / 0100

Type and version
Switching temperature [°C]
Tolerance [K]
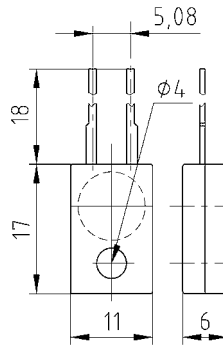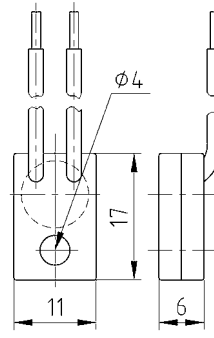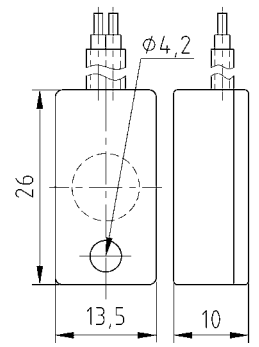Lead length [mm]

1:1

1:1

1:1

1:1

1:1

1:1

Automatic resetting,
with mountable housing
for direct mounting on PCBs
with PCB-terminals

Automatic resetting,
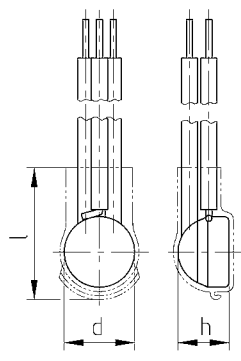with mountable housing
and connection leads

Automatic resetting,
with mountable housing
and double insulation
suitable for protection class II

	Thermal-Protectors		P06 / P08	H06 / H08	V06 / V08
	with insulation cap		-	-	-
	without insulation cap		-	-	-
1	Contact type, normally closed / normally open		NC / NO	NC / NO	NC / NO
2	Nominal switching temperature (NST) in steps of 5 °C		70 °C - 200 °C	70 °C - 200 °C	70 °C - 180 °C
3	Standard tolerance		± 5K	± 5K	± 5K
4	Reset temperature range below NST		depends on NST	depends on NST	depends on NST
5	Operating voltage . . . AC / DC - available, values on inquiry		up to 500 V ~	up to 500 V ~	up to 500 V ~
6	Rated voltage U_{AC}		250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	250 V
7	Rated current AC cos φ = 1.0 (ohmic load) / switching cycles		10,0 A / 10.000	10.0 A / 10y000	10.0 A / 10y000
			25,0 A / 2.000*	25.0 A / 2y000*	25.0 A / 2y000*
			-	-	-
8	Rated current AC cos φ = 0.6 acc. to IEC 60730-2-9 / switching cycles		6.3 A / 10y000	6.3 A / 10y000	6.3 A / 10y000
9	Rated current AC cos φ = 0.4 - 0.5 acc. to IEC 60730-2-3 / switching cycles		-	-	-
10	Max. switching current at 250V ~ / cos φ = 0.4 - 0.5 / switching cycles		-	-	-
11	Contact bounce time		< 1 ms	< 1 ms	< 1 ms
12	Contact resistance (acc. to MIL-Std. R 5757)		< 50 mΩ	< 50 mΩ	< 50 mΩ
13	Impregnation resistance with- or without resin (acc. to requirements)*		suitable	suitable	suitable
14	Vibration proof at 10 . . . 60 Hz		100 m/s²	100 m/s²	100 m/s²
15	Pressure stability of housing *		600 N	600 N	600 N
16	High voltage insulation (not C - versions)		2 kV	2 kV	3,75 kV
17	Suitable for predection class I or II		suitable	suitable	suitable
18	Standard wiring connection		Pin	Lead wire 0,75 mm² / AWG18	Lead wire 0,5 mm² / AWG20
19	Diameter (with / without insulation cap)	Ød [mm]	-	-	-
20	Heigth (with / without insulation cap)	h [mm]	6.0 mm	6.0 mm	10.0 mm
21	Length of insulation cap	l [mm]	-	-	-
22	Length of housing	l / b [mm]	17.0 mm / 11.0 mm	17.0 mm / 11.0 mm	26.0 mm / 13.5 mm
23	Length of Pin	lp [mm]	18.0 mm	-	-
24	Screw / -length		-	-	-
25	Wrench size / max. turning moment		3 Nm	3 Nm	2.5 Nm
26	Approvals available (according to design) **		IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE; UL; CSA; CQC	IEC; ENEC; VDE;CQC

* acc. to Thermik test / ** please specify which approval is needed

You will find a selection of the most common products in the following tables. The values given can vary in the event of certain designs. Special products are available upon request. Details regarding specific information, measure-ment methods, applications, licenses, et cetera can also be provided upon request. We reserve the right to technical changes in the course of further development.

Types

- normally closed (automatic resetting)
  C05, S05, L05, C06, S06, CZ6, SZ6, P06, H06,
  V06, CY6, SY6, F06, L06

- normally closed
  (with electrical-self-hold-functionality)
  CR6, SR6

- normally open
  C09, S09, L09, C08, S08, L08, P08, H08, V08

Approvals / Licenses

VDE according to
EN 60730

CQC according to
GB 14536

UL according to
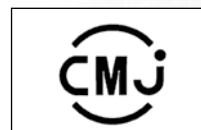UL 2111 / UL 873

CSA according to
C22.2

CB-Report according to
IEC 60730

ENEC according to
EN 60730

CMJ according
to JET

Automatic functionality as per IEC/EN 60730 -1: 2BM/2CM
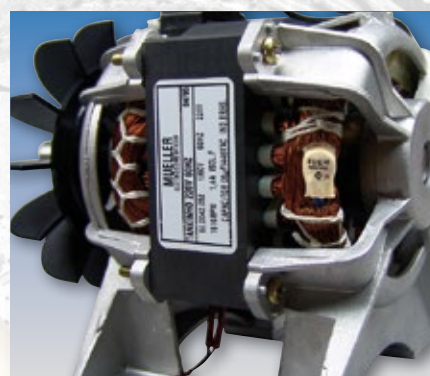Existing norm appendices for IEC/EN 60730: -1; -2-3; -2-9
B = Micro cutoff
C = Micro interruption
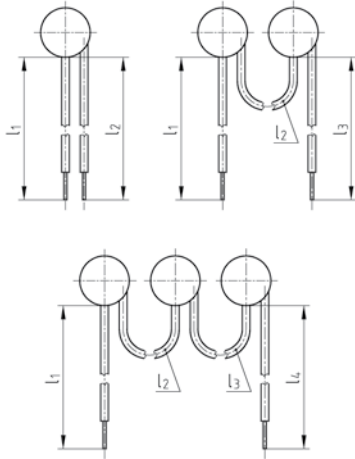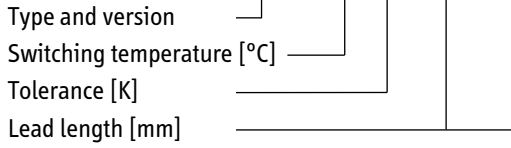2 = Defined manufacturing variation and drift

Thermik products correspond to the respectively
applicable EU directives/guidelines.

Examples of Typical Applications

1:1

1:1

Automatic resetting,
for star point connection
to protect a three phase motor

CY6 / SY6	
SY6	
CY6	
NC	
70 °C - 180 °C	
± 5K	
depends on NST	
up to 480 V ~	
3 x 440 V / 50/60 Hz	
2.5 A / 10y000	
6.3 A / 3y000*	
-	
1.6 A / 10y000	
-	
-	
< 1 ms	
< 50 mΩ	
suitable	
100 m/s²	
600 N	
2 kV	
suitable	
Lead wire 0,5 mm² / AWG20	
9.8 mm / 9.3 mm	
7.6 mm / 7.2 mm	
17.0 mm	
-	
-	
-	
-	
UL; CSA	

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17

Ordering example   S01 - 155. 05 0100 / 0100

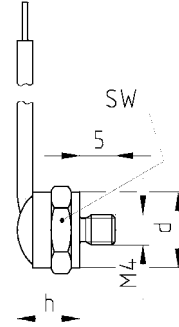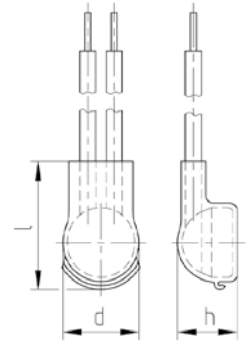Type and version
Switching temperature [°C]
Tolerance [K]
Lead length [mm]
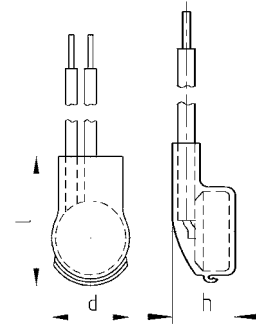
Automatic resetting,
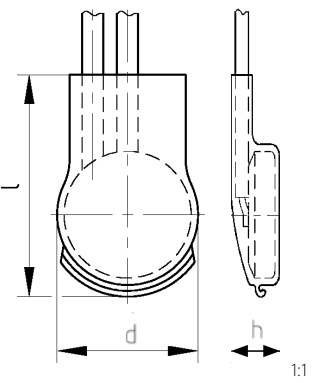for high performance
with connection leads

Automatic resetting
In screw-on housing
For higher output
With connection cables

Self-hold thermal protector
for high performance
with connection leads

	Thermal-Protectors		CH6 /SH6	LH6	CRH /SRH
	with insulation cap		SH6	-	SRH
	without insulation cap		CH6	LH6	CRH
1	Contact type, normally closed / normally open		NC	NC	NC
2	Nominal switching temperature (NST) in steps of 5 °C		70 °C - 180 °C	70 °C - 180 °C	70 °C - 180 °C
3	Standard tolerance		± 5K	± 5K	± 10K
4	Reset temperature range below NST		depends on NST	depends on NST	depends on NST
5	Operating voltage . . . AC / DC - available, values on inquiry		up to 500 V ~	up to 500 V ~	up to 250 V ~
6	Rated voltage U_{AC}		250 V (VDE) 277 V (UL)	250 V (VDE) 277 V (UL)	115 V / 230 V (VDE) 250 V (UL)
7	Rated current AC cos φ = 1.0 (ohmic load) / switching cycles		13,5 A / 10.000	13.5 A / 10,000	42.0 A / 1,000
			35,0 A / 2.000 *	35.0 A / 2,000 *	–
			42.0 A / 300	42.0 A / 300	–
8	Rated current AC cos φ = 0.6 acc. to IEC 60730-2-9 / switching cycles		9.0 A / 10,000	9.0 A / 10,000	9.0 A / 1,000
9	Rated current AC cos φ = 0.4 - 0.5 acc. to IEC 60730-2-3 / switching cycles		–	–	–
10	Max. switching current at 250V ~ / cos φ = 0.4 - 0.5 / switching cycles		–	–	–
11	Contact bounce time		< 1 ms	< 1 ms	< 1 ms
12	Contact resistance (acc. to MIL-Std. R 5757)		< 50 mΩ	< 50 mΩ	< 50 mΩ
13	Impregnation resistance with- or without resin (acc. to requirements)*		suitable	suitable	suitable
14	Vibration proof at 10 . . . 60 Hz		100 m/s²	100 m/s²	100 m/s²
15	Pressure stability of housing *		600 N	600 N	600 N
16	High voltage insulation (not C - versions)		2 kV	2 kV	2kV
17	Suitable for predection class I or II		suitable	suitable	suitable
18	Standard wiring connection		Lead wire 1.0 mm² / AWG 18	Lead wire 1.0 mm² / AWG 18	Lead wire 1.0 mm² / AWG 18
19	Diameter (with / without insulation cap) Ød [mm]		9.8mm /9.3 mm	10.0 mm	9.8mm /9.3 mm
20	Heigth (with / without insulation cap) h [mm]		7.6mm / 7.2 mm	8.0 mm	7.6mm / 7.2 mm
21	Length of insulation cap l [mm]		17.0 mm	–	17.0 mm
22	Length of housing l / b [mm]		–	–	–
23	Length of Pin lp [mm]		–	–	–
24	Screw / -length		–	M4 x 5.0 mm	–
25	Wrench size / max. turning moment		–	10.0 mm / 2 Nm	–
26	Approvals available (according to design) **		IEC; VDE; UL; cUL	IEC; VDE; UL; cUL	IEC; ENEC; VDE; UL; CSA

* acc. to Thermik test / ** please specify which approval is needed

You will find a selection of the most common products in the following tables. The values given can vary in the event of certain designs. Special products are available upon request. Details regarding specific information, measurement methods, applications, licenses, et cetera can also be provided upon request. We reserve the right to technical changes in the course of further development.

NEW

1:1

1:1

Automatic resetting for
highest power with connection lines

Power switch		
CXO / SXO		
SXO		
CXO		
NC		
70 °C – 180 °C		
± 5K / ± 10K		
depends on NST		
up to 500 V ~		
250 V	277 V	
25.0 A / 10,000		
50.0 A / 2,000		
75.0 A / 300		
20.0 A / 10,000		
-		
-		
< 1 ms		
< 50 mΩ		
suitable		
100 m/s²		
600 N		
2kV		
suitable		
Lead wire 2.0 mm² / AWG 14		
17.6mm / 17.1mm		
6.3mm / 5.9mm		
35.0 mm		
-		
-		
-		
-		
IEC; ENEC; VDE; UL; Under preparation		

Types

- normally closed (automatic resetting)
  CH6, SH6, LH6, CXO, SXO

- normally closed
  (with electrical-self-hold-functionality)
  CRH, SRH

Approvals / Licenses

VDE according to
EN 60730

CQC according to
GB 14536

UL according to
UL 2111 / UL 873

CSA according to
C22.2

CB-Report according to
IEC 60730

ENEC according to
EN 60730

according to

Automatic functionality as per IEC/EN 60730: 2B/2C/2BM/2CM
Existing norm appendices for IEC/EN 60730: -1; -2-2; -2-9

B = Micro cutoff

C = Micro interruption

2 = Defined manufacturing variation and drift

CE   Thermik products correspond to the respectively
     applicable EU directives/guidelines.

Examples of Typical Applications

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Ordering example   SNM - 150. ES   0520 / 0520

Type ——————————————————

Nominal response temperature [°C] ——————

Configuration / Version ——————————

Lead length [mm] ——————————————

| Duplex configuration | Triplex configuration | Configuration of 4 | Configuration of 6 |

For missing dimensions please refer to single unit draft; available in versions SNM, SKM STM

	PTC Thermistor Sensors
1	Insulation material
2	Nominal response temperature
3	Operating voltage
4	Max. operating voltage
5	Max. recomended sensor voltage
6	High voltage insulation
7	Length of insulation cap
8	Diameter
9	Height
10	Screw length
11	Wrench size / max. torque

General Characteristics

Temperature-Resistance-Diagram acc. to IEC 34-11-2, DIN 44081 (single), DIN 44082 (triplex)
preferred values for nominal response temperatures T_{REF} 60 °C to 190 °C* in steps of 10 K.

Temperature	Resistance	Measuring Voltage [V_{DC}]
-20 °C to T_{REF} -20 K	20 W to 250 W	≤ 2.5 V
Temperature Range 90 °C - 160 °C		
T_{REF} -5 K	≤ 550 W	≤ 2.5 V
T_{REF} +5 K	≥ 1.330 W	≤ 2.5 V
T_{REF} +15 K	≥ 4.000 W	≤ 7.5 V pulsed

* The data shown in the table refers to T_{REF} from 90 °C up to 160 °C. The resistance values for T_{REF} < 90 °C and > 160 °C are available on request.

You will find a selection of the most common products in the following tables. The values given can vary in the event of certain designs. Special products are available upon request. Details regarding specific information, measurement methods, applications, licenses, et cetera can also be provided upon request. We reserve the right to technical changes in the course of further development.

SNM	SKM	STM	LTM
Mylar-Nomex	Kynar	Teflon	
70 °C - 180 °C	70 °C - 180 °C	70 °C - 180 °C	70 °C - 180 °C
2.5 V_{DC} - 24 V_{DC}	2.5 V_{DC} - 24 V_{DC}	2.5 V_{DC} - 24 V_{DC}	2.5 V_{DC} - 24 V_{DC}
30 V_{DC}	30 V_{DC}	30 V_{DC}	30 V_{DC}
2.5 V_{DC} - 7.5 V_{DC}	2.5 V_{DC} - 7.5 V_{DC}	2.5 V_{DC} - 7.5 V_{DC}	2.5 V_{DC} - 7.5 V_{DC}
2.5 kV	2.5 kV	2.5 kV	-
12.0 mm	12.0 mm	12.0 mm	-
≤ 3.0 mm	≤ 3.0 mm	≤ 3.0 mm	10.0 mm
3 mm	3 mm	3 mm	ca. 12 mm
-	-	-	M 4 / 5.0 mm
-	-	-	10 / 2 Nm

Colour-Coding according to DIN 44081 / 44082

60	70	80	90	100	105	110	115	120	125	130
white	white	white	green	red	blue	brown	blue	grey	red	blue
grey	brown	white	green	red	grey	brown	green	grey	green	blue

135	140	145	150	155	160	165	170	180	190
red	white	white	black	blue	blue	blue	white	white	black
brown	blue	black	black	black	red	brown	green	red	brown

thermik®
brings temperatures under control

KTY temperature sensors

The KTY sensor serves the purpose of measuring temperatures and monitoring critical temperatures on surfaces and inside machines and systems. The sensor can be used anywhere in rough industrial applications where precise measurements with a cost-effective sensor are required.

Functional principle

The KTY sensor is a temperature-dependent construction element. The KTY sensor resistance increases with an increasing temperature. The characteristic curve is almost linear in the measuring range.

Our KTY temperature sensors can be used for a variety of applications. Some examples are motors, transformers and heating systems.

Silicon temperature sensors have a series of important features. Silicon keeps its shape and has a long service life making the KTY extremely reliable. The sensors are also encapsulated in a glass element and are therefore hermetically sealed.

Due to the excellent accuracy and the high failure protection, the KTY can be used in a number of application areas. They are particularly used in industrial areas and in the automobile sector. KTY sensors have an almost linear temperature coefficient over the whole temperature range. Different temperatures produce different resistances on the KTY and are analysed with additional electronics.
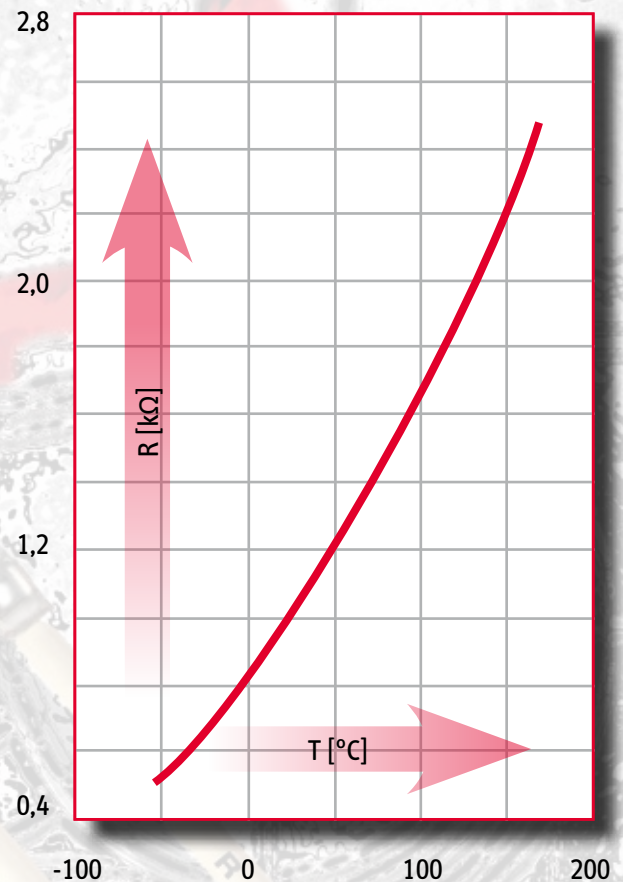

Source: Thermik product management

Ordering example: KTY-K - 200 . ES 0520 / 0520

Type
Nominal response temperature [° C]
Configuration / Version
Lead length [mm]

1:1

1:1

1:1
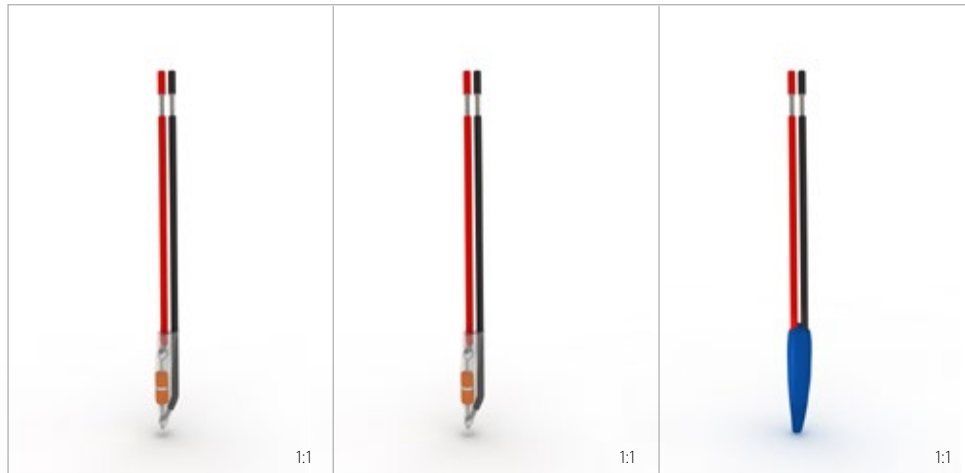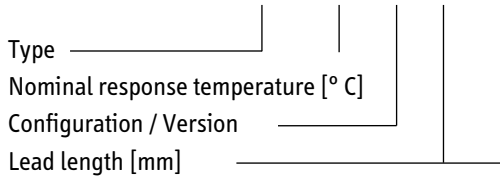
	KTY temperature sensors	KTY-K	KTY-T	KTY-E
1	insulation material	Kynar	Teflon	Epoxy
2	nominal response temperature	-40 – 180℃	-40 – 250℃	-40 – 160℃
3	continuous sensor current in free air	25° C / max. 10mA	25° C / max. 10mA	25° C / max. 10mA
4	High voltage insulation	2.5 kV	2.5 kV	1,450V
5	Length of insulation tube	18 mm	18 mm	18 mm
6	Diameter	≤ 3.0 mm	≤ 3.0 mm	≤ 3.0 mm
7	Height	3 mm	3 mm	3 mm

1:1

1:1

1:1
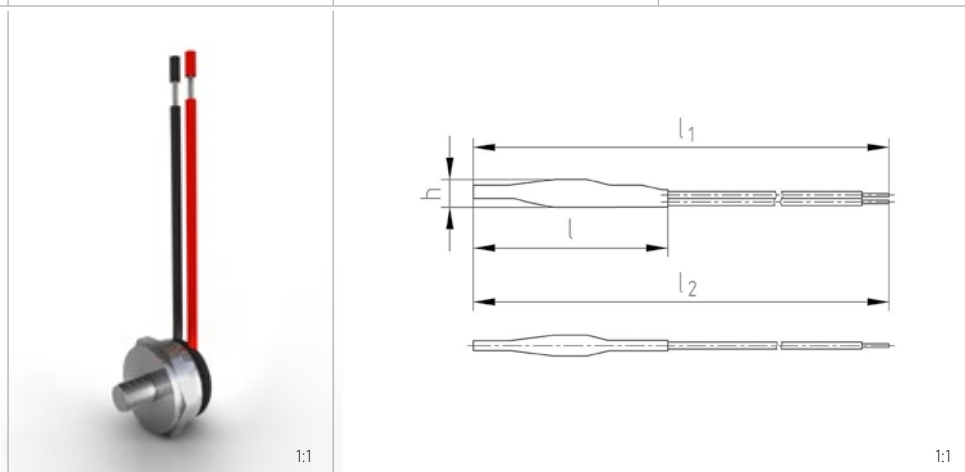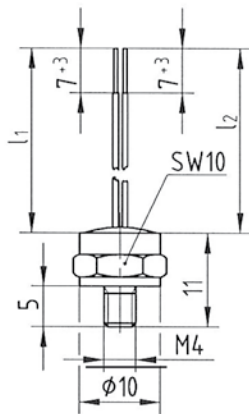
	KTY temperature sensors	KTY-L
1	nominal response temperature	-40 – 180℃
2	continuous sensor current in free air	25° C / max. 10mA
3	High voltage insulation	2.5 kV
4	Diameter	10 mm
5	Height	ca. 12 mm
6	Screw length	M 4 / 5.0 mm
7	Wrench size / max. torque	10 / 2 Nm

Fast response time

Small weight & height

Long term performance

Positive temperature coefficient

suited for temperature measurement and thermal system controls

thermik®
brings temperatures under control