

Thermal motor protector

Temperature limiter

Thermal cut-out

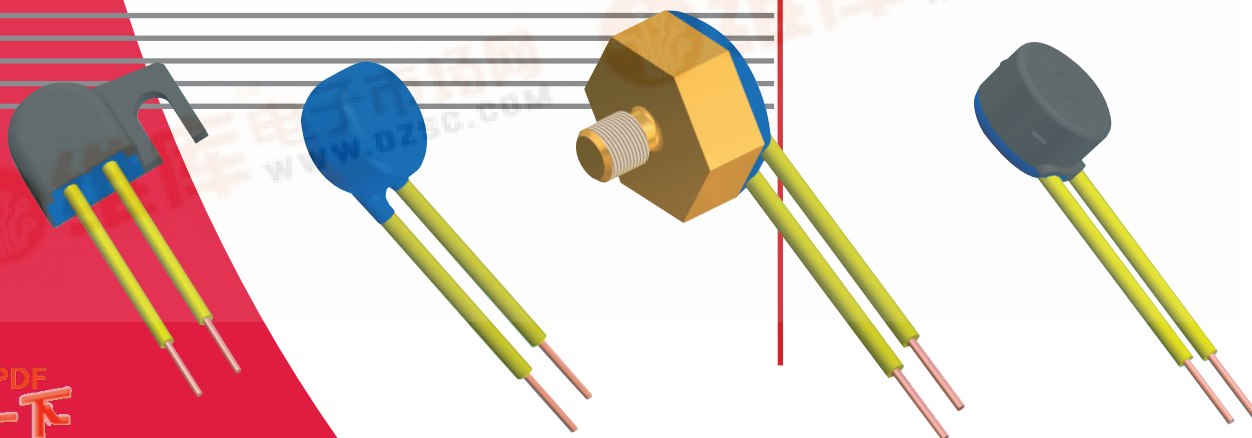
12

Applications

- Motors
- Transformers
- Coils
- Electronics, sensors

Benefits

- Non-sensitive to current
- High current rating up to 30A
- Manifold executions



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Technical data

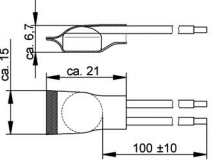
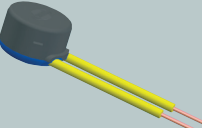
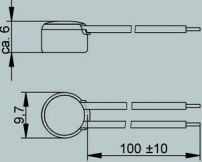
ratings		control type		B12A / E			B12B / G	
version					normally closed			normally open
rated current at 250 V 50/60 Hz (power factor 0.95 / 0.6)		6.3 A / 4.0 A		10.0 A / 6.0 A		13.0 A / 2.1 A		5.0 A / 1.6 A
switching cycles		10,000		5,000		1,000		5,000
max. current at 250 V 50/60 Hz (power factor 0.95)		30.0 A						
switching cycles under max. current		100						
temperature rating Ta (steps in 5 K)		70 °C ... 160 °C						
tolerances		Standard: ± 5 K						
feature of automatic action		1.B.M, 2.B, 1.C, 3.C					1.B, 3.C	
contact resistance (incl. wire of 100 mm)		< 50 mΩ						
hysteresis		30 K ± 15 K						
dielectric strength (standard insulation)		2 kV						
shock- / vibration testing (similar to EN 50155)		400 m/s² sine half wave / 100 m/s² 5 Hz ... 2.000 Hz sine						
resistances to impregnation		tight against ordinary resins and lacquers						
degrees of protection provided by enclosures (EN 60529)		IP00						
suitable for use in protection category		I, II						
approvals	VDE / ENEC			EN 60730-1 / -2-2 / -2-3 ¹⁾ /-2-9				
	UL			UL 2111 / UL 873 ²⁾				
	CSA			C22.2 No. 77 / C22.2 No. 24 ²⁾				

¹⁾ different power rating
²⁾ on demand

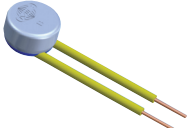
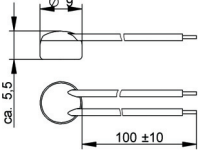
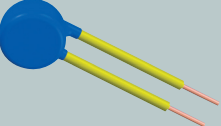
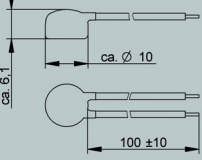
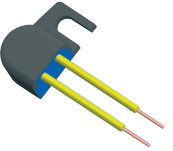
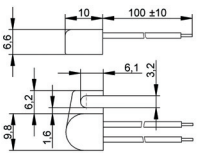
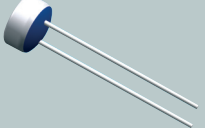
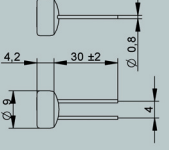
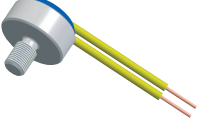
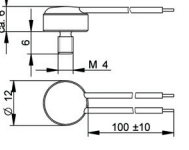
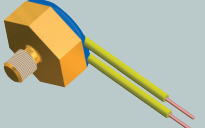
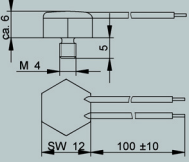
Standard wire (length 100 ± 10 mm, stripped 6 ± 1 mm)

lead	code	temperature max.	operating voltage max.	diameter insulation	cross section diameter	UL style
stranded white	L310	150 °C	300 V	1.80 mm	AWG20 / 0.48 mm²	3398
	L320			2.15 mm	AWG18 / 0.96 mm²	
	L340	200 °C	600 V	1.26 mm	AWG20 / 0.62 mm²	3557
	L350			1.50 mm	AWG18 / 0.96 mm²	
solid yellow	L410	150 °C	300 V	1.65 mm	AWG20 / 0.81 mm	3398
	L440	200 °C	300 V	1.71 mm	AWG20 / 0.81 mm	1332

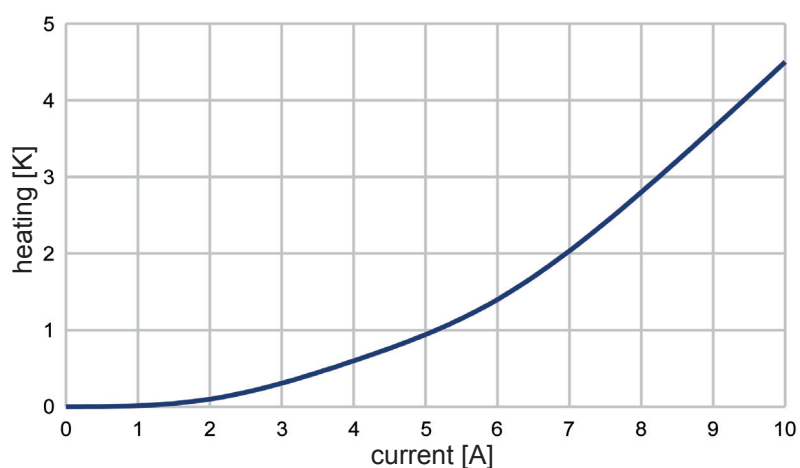
Standard insulation

control type	nc	no	code	illustration	drawing dimensions (mm)	technical specification	approvals
B12	A	B	U253			shrink cap potted Attention: Ta max. 155 °C	VDE, UL
B12	A	B	U186			cap of PPS potted	VDE, UL

Specific variations

control type	nc	no	code	illustration	drawing dimensions (mm)	technical specification	approvals
B12	A	B				not insulated potted	VDE, UL, CSA
B12	A	B	U112			coated	VDE, UL
B12	A	B	U294			housing of PPS potted	VDE, UL
B12	A	B	A800			not insulated potted	VDE, UL
B12	E	G	G402			aluminium housing thread M4x6 potted Attention: Ta max. 150 °C	VDE, UL
B12	E	G	G714			brass housing thread M4x5 potted Attention: Ta max. 150 °C	VDE, UL

Heating by current



The diagram is measured with a thermal control without any insulation in an oil bath.

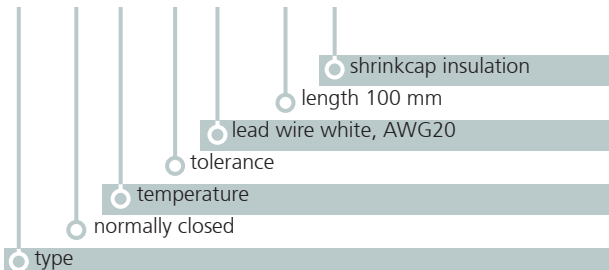
Attention:

The heating depends on the thermal conduction of the control to the equipment or part which should be protected.

Ordering and marking example

Ordering example

B12 A 120 05 L310 100 U253



Deviations from standard controls on request.

Marking

B12A type (B12 nc)

12005 response temperature (120°C), tolerance ($\pm 5K$)

026D date of manufacture (Feb.2006), country (D=Germany)

Representation office:

CANTHERM

8415 Mountain Sights Avenue • Montreal (Quebec), H4P 2B8, Canada

Tel: (514) 739-3274 • 1-800-561-7207 • Fax: (514) 739-290

E-mail : sales@cantherm.com • Website: www.cantherm.com