

Thermal motor protector
Temperature limiter
Thermal cut-out

B

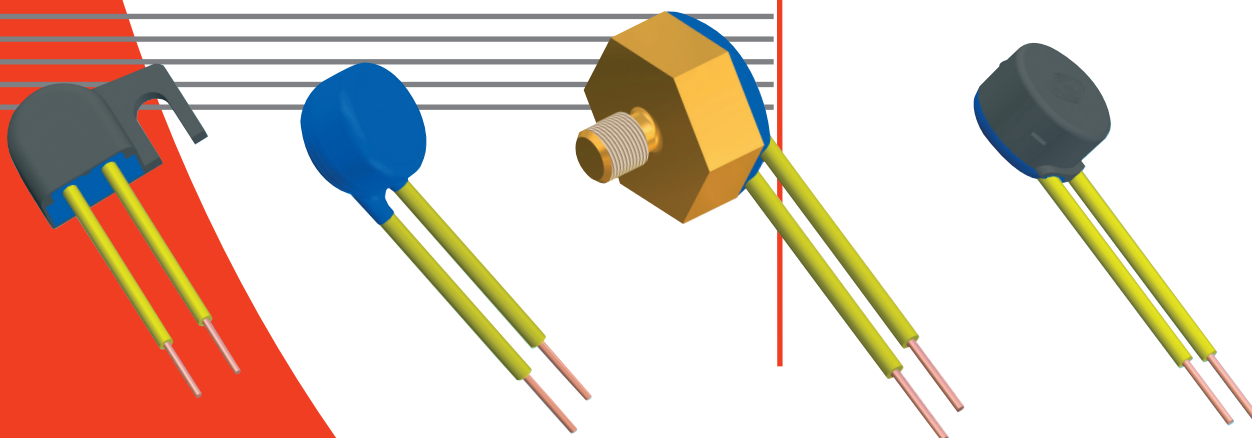
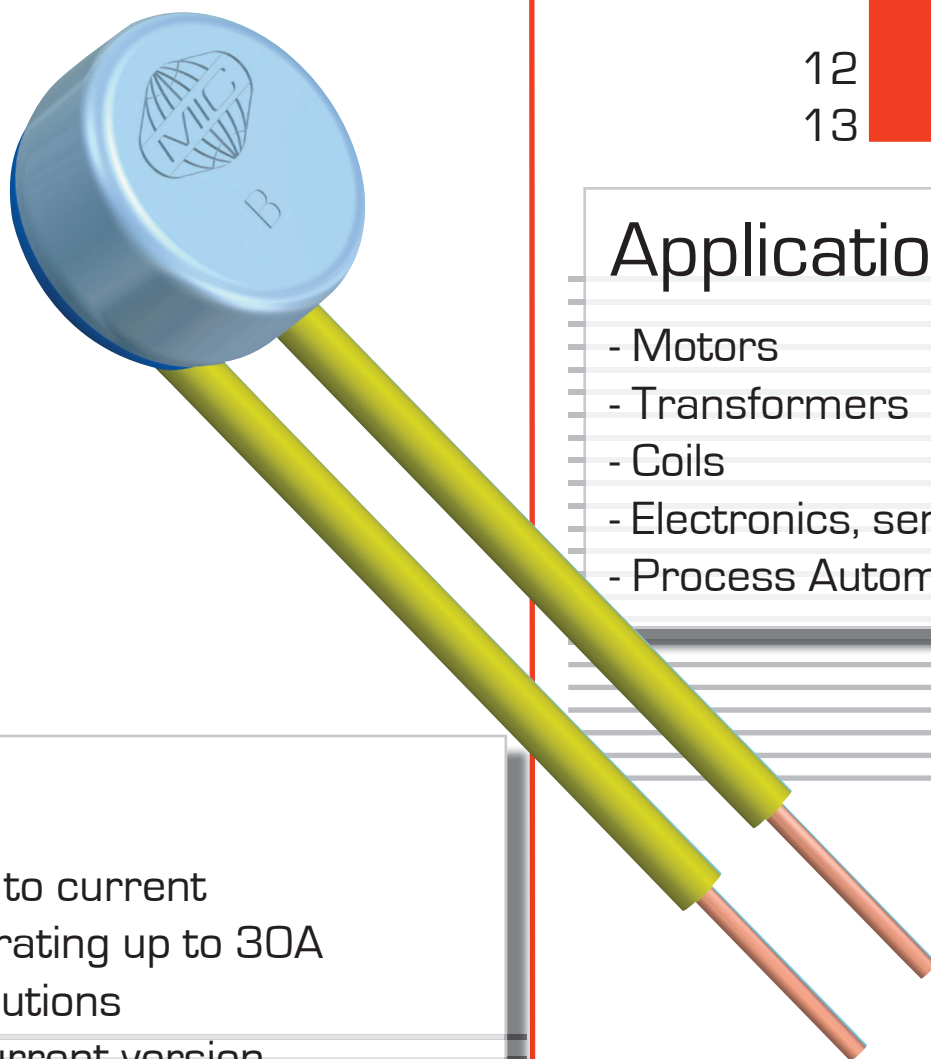
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13

Applications

- Motors
- Transformers
- Coils
- Electronics, sensors
- Process Automation

Benefits

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



CANTHERM

Technical data

type ratings		control	B12A / E			B12B / G	B13N / T
version			normally closed			normally open	normally closed/ open
rated current at 250 V 50/60 Hz (cos φ 0.95 / 0.6)			6.3 A / 6.0 A	10.0 A / 6.0 A	13.0 A / 6.0 A	5.0 A / 1.6 A	1...100 mA (24 Vdc)
switching cycles under rated current			10,000	5,000	1,000	5,000	10,000
max. current at 250 V 50/60 Hz (cos φ 0.95)			30.0 A				-
switching cycles under max. current			100				-
temperature rating T _a (steps in 5 K)			70 °C ... 190 °C	70 °C ... 160 °C		70 °C ... 155 °C	70 °C ... 160 / 155 °C
tolerances			standard: ± 5 K				
feature of automatic action			1.B.M, 2.B, 1.C			1.B	-
contact resistance (incl. wire of 100 mm)			< 50 mΩ				
hysteresis			30 K ± 15 K ¹⁾				
dielectric strength (standard insulation)			2 kV				-
shock / vibration testing (similar to EN 50155)			400 m/s ² sine half wave / 100 m/s ² 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 / -2-3 ²⁾ /-2-9				
	UL		UL File Number E46827				
	CSA / cUL		C22.2 No. 77 / C22.2 No. 24 ²⁾				
	CQC		GB14536.1-1998 / GB14536.10-1996 ²⁾				

¹⁾ at the T_a (upper and lower) limits the hysteresis could deviate, for T_a > 130°C the hysteresis is 30K -15K/+30K ²⁾ details on request

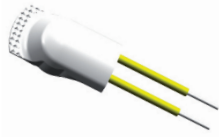
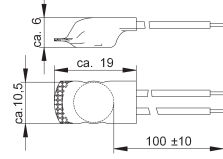
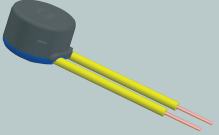
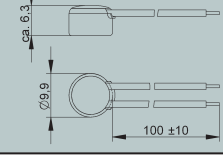
Standard wire (length 100 ± 10 mm, stripped 6 ± 1 mm)

Cantherm lead	Cantherm code	temperature max.	operating voltage max.	diameter insulation	cross section diameter 1)	UL style
black	ACDA	150 °C	300 V	1.57 mm	AWG24 / 0.24 mm ²	3266/3398
yellow	AEDC			1.80 mm	AWG20 / 0.48 mm ²	
black	AFDA			2.15 mm	AWG18 / 0.96 mm ²	
white	LCDB	200 °C	600 V	0.90 mm	AWG24 / 0.24 mm ²	3557
white	LEDB			1.26 mm	AWG20 / 0.61 mm ²	
white	LFDB			1.50 mm	AWG18 / 0.96 mm ²	
black	ASDA ²⁾	150 °C	300 V	1.65 mm	AWG20 / 0.81 mm	3266/3398
white	DEDB	200 °C	300 V	1.51 mm	AWG20 / 0.81 mm	1180

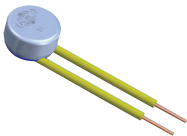
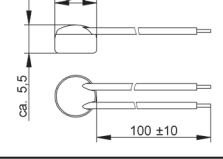
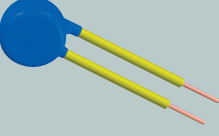
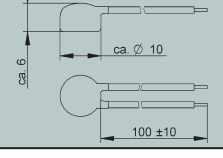
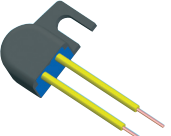
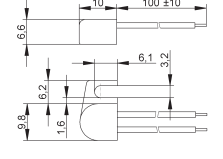
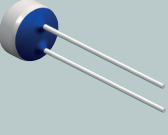
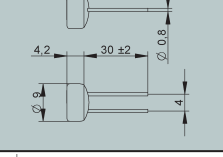
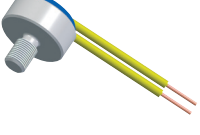
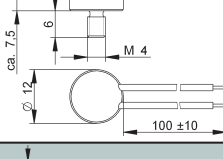
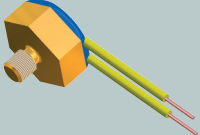
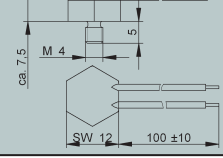
¹⁾ AWG20 is recommended

²⁾ Solid Wire

Additional wires available upon request.

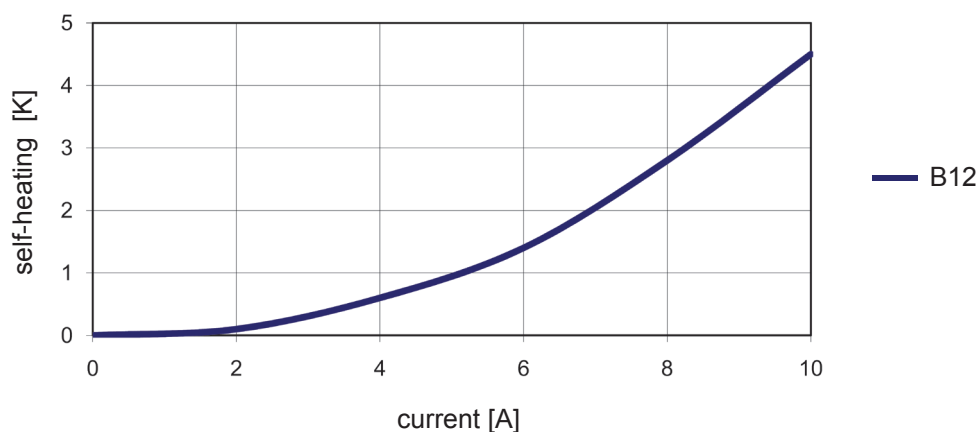
control type	nc	no	Cantherm code	illustration	drawing dimensions (mm)	technical specification	approvals ¹⁾
B12	A	B	Class B U103 C			shrink cap potted	VDE, UL, cUL
B13	N	T	Class F U107 G				
B12	A	B	U155 X			cap of PPS potted	VDE, UL, cUL
B13	N	T	U186 3				

Specific variations

control type	nc	no	Cantherm code	illustration	drawing dimensions (mm)	technical specification	approvals ¹⁾
B12	A	B	none 0			not insulated potted	VDE, UL, cUL, CSA
B13	N	T					
B12	A	B	U112 L			coated	VDE, UL, cUL
B13	N	T					
B12	A	B	U294 G			housing of PPS potted	VDE, UL, cUL
B13	N	T					
B12	A	B	Wire A800 IZA			not insulated potted	VDE, UL, cUL
B13	N	T					
B12	E	G	G702 C			aluminium housing thread M4x6 potted T _a max. 150 °C	VDE, UL, cUL
B13	N	T					
B12	E	G	G714 F			brass housing thread M4x5 potted T _a max. 150 °C	VDE, UL, cUL
B13	N	T					

¹⁾ B12 only

Heating by current



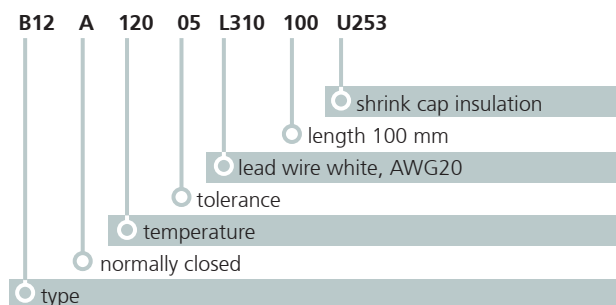
The diagram is measured with a thermal control without any insulation in an oil bath.

Attention:

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

Ordering and marking example

Microtherm Ordering Example



Deviations from standard controls on request.

Microtherm Marking

- B12A** type (B12 nc)
12005 response temperature (120°C), tolerance ($\pm 5K$)
049D date of manufacture (April 2009), country (D=Germany)

Cantherm Ordering Example B12A12005AEDCC0E

B12	A	120	05	AE	D	C	C	0	E
type	normally closed	temp.	tolerance +/-5°C	wire leads UL3398 20 AWG	length D=4"	color yellow	insulation U103	housing - none	strip .25"

Cantherm Marking

- B12A** type (B12 nc)
12005 response temperature (120°C), tolerance ($\pm 5K$)
124C date of manufacture (Dec. 2014), country (C = Canada)



CANTHERMTM

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