

Thermal motor protector
Temperature limiter
Thermal cut-out

B

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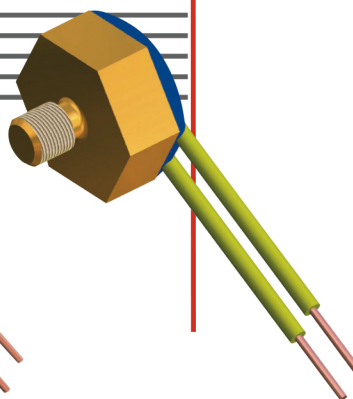
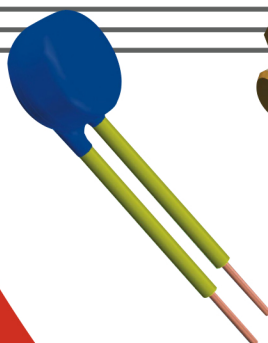
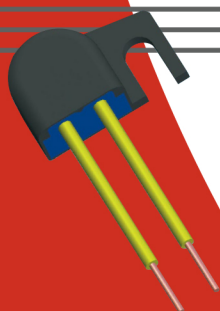
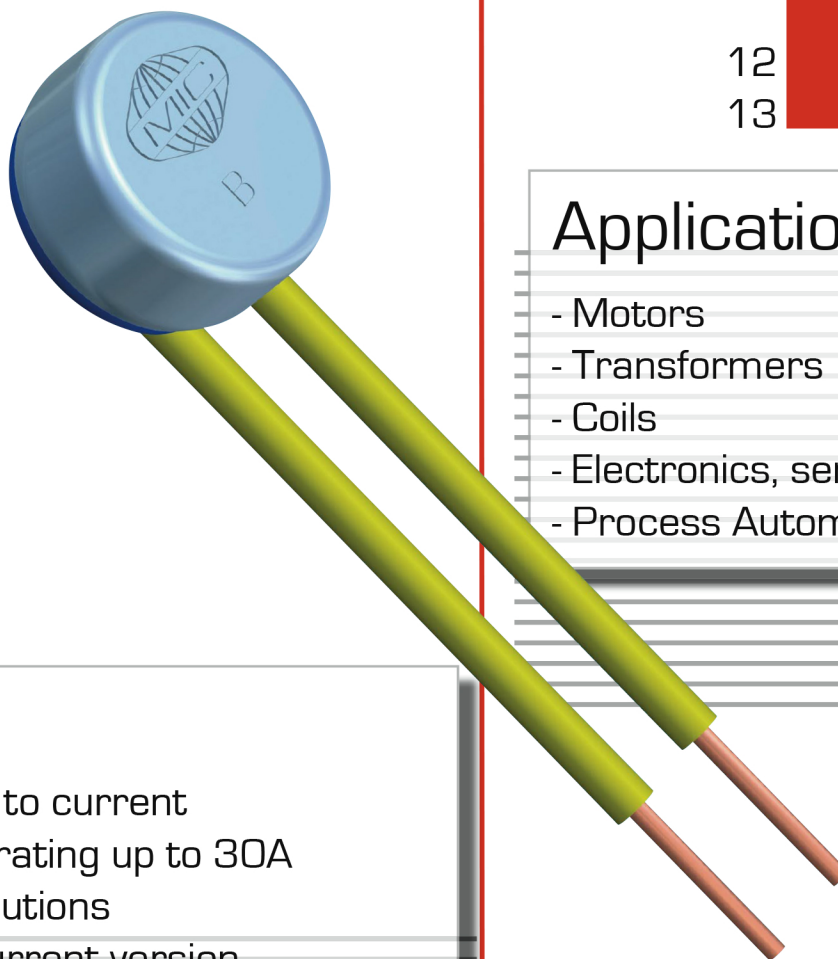
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Applications

- 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					no approval required to voltage ratings lower than 42 V	
	UL	UL 2111 / UL 873 ³⁾						
	CSA / cUL	C22.2 No. 77 / C22.2 No. 24 ³⁾						
	CQC	GB14536.1-1998 / GB14536.10-1996 ³⁾						

¹⁾ at the T_a (upper and lower) limits the hysteresis could deviate ²⁾ different power rating ³⁾ 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 ²⁾	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 ³⁾	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

²⁾ AWG20 is recommended ³⁾ Solid Wire

NOTE: Additional wires available upon request.

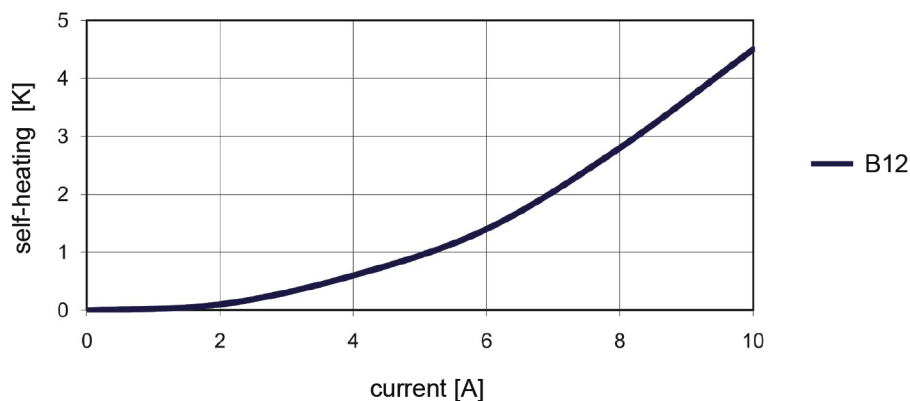
control type	nc	no	Cantherm code	illustration	drawing dimensions (mm)	technical specification	approvals ¹⁾
B12 B13	A N	B T	Class B U103 C Class F U107 G			shrink cap potted	VDE, UL, cUL
B12 B13	A N	B T	U155 X U186 3			cap of PPS potted	VDE, UL, cUL

Specific variations

control type	nc	no	Cantherm code	illustration	drawing dimensions (mm)	technical specification	approvals ¹⁾
B12 B13	A N	B T	none 0			not insulated potted	VDE, UL, cUL, CSA
B12 B13	A N	B T	U112 L			coated	VDE, UL, cUL
B12 B13	A N	B T	U294 7			housing of PPS potted	VDE, UL, cUL
B12 B13	A N	B T	Wire A800 IZA			not insulated potted	VDE, UL, cUL
B12 B13	E N	G T	G702 C			aluminium housing thread M4x6 potted T _a max. 150 °C	VDE, UL, cUL
B12 B13	E N	G T	G714 F			brass housing thread M4x5 potted T _a max. 150 °C	VDE, UL, cUL

¹⁾ B12 only

■ Heating by current



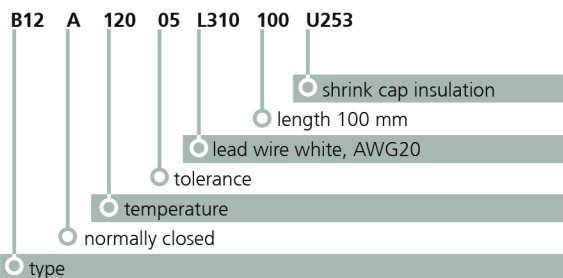
The diagram is measured with a thermal control without any insulation in an oil bath.

Attention:

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

■ Ordering and marking example

Ordering example (Microtherm)



Deviations from standard controls on request.

Marking (Microtherm)

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

Cantherm Ordering Example B12A12005AEDCCOE

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

Marking (Cantherm)

B12A type (B12 nc)

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

112C date of manufacture (Nov. 2012), country (C = Canada)



CANTHERMTM

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