

Overheating Protector

self resetting current sensitive

Series C1

General

- **High pressure resistance** when being mounted into the winding due to a curved steel case. Damage to the contact system is thus avoided.
- **Welded leads** guarantee reliable mechanical and stable thermal connections.
- **Magnetic and electric shielding.** The case is made of a ferromagnetic material (steel) and withstands any influence of magnetic fields. Therefore deflection of the spark will be avoided. No vibration noise is caused by magnetic alternating fields.
- **Constant contact resistance** is guaranteed by the selection of optimal contact material, high contact pressure and sliding contacts.
- **Instantaneous shut-down and short contact bounces** due to a reliable operating bimetal snap-action disc.
- **Excellent thermal response** is combined with a current sensitive bimetal snap action disc to give optimum protection in any specific situation. As both sides are equally sensitive, installation in any position is possible.
- **Constant dimensions.** The overall size of the switch is independent from the lead diameter. The connections for the leads are placed at the face side. A damage of the lead insulation at the edges of the case is excluded.
- **Patented design**
- **Fully automated production.** TMC thermal protectors are manufactured fully automatically from the first to the last step with integrated 100% inspection thus ensuring a permanent high quality level.
- **Custom-designed method of connection** can be realized at low cost.



Description

TMC - thermal protectors Series C1 are most efficient **miniature bimetal switches** and have been designed to protect electrical equipment such as electric motors, transformers etc. against overheating.

The C1 series offers optimum performance characteristics achieved by selecting the best combination of terminal material and bimetal type to provide the ideal operating temperature, current sensitivity and response time to suit any specific application, particularly for motors and transformers. The snap action bimetal disc is sensitive to overload current in critical situations and reacts in a short response time.

Technical Data

Contact function	normally closed (<i>snap action</i>)
Contact rating	10 000 cycles
AC p. f. = 1,0	2,5 A / 250 V
AC p. f. = 0,6	1,6 A / 250 V
AC p. f. = 0,6	0,5 A / 500 V ³⁾
DC ohmic load	1,6 A / 24 V
DC ohmic load	1,25 A / 48 V
max. current *	6,3 A / 250 V _{AC} 3.000 Zyk.
Voltage range	12 V - 500 V ⁴⁾
Nominal temperature (NST)	50° C...200° C ¹⁾ (<i>within 5 K - steps</i>)
Standard tolerance of NST	± 5 K ²⁾ (<i>letter B</i>)
Reset temperature (RST)	40 ± 15 K (<i>below NST</i>)
Ambient temperature	T 180
Contact resistance	< 90 mΩ
Contact bounce	< 1 ms
Dielectric strength	2 kV
Resistance to tracking	PTI 175 (<i>only phy.config. W and L</i>)
Protection class	I
Enclosure rating	IP00
Pressure solidity	> 600 N

¹⁾ approved values: 50...180 °C (VDE)

²⁾ further tolerances ± 2,5 K (= A), ± 7,5 K (= C), ± 10 K (= D)

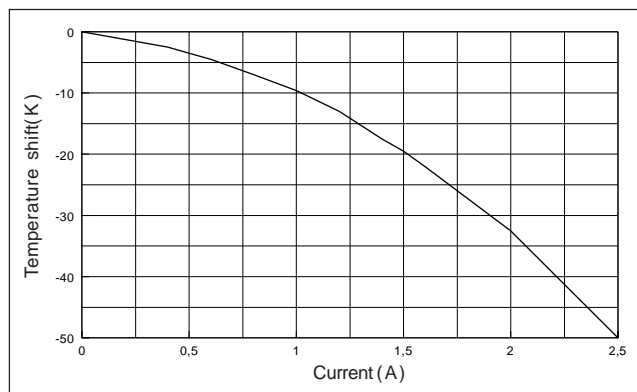
³⁾ measure on TMC test-facility

⁴⁾ alternatives values on request

Approvals

Valid for	Certification Institute	DIN	Approval Number
Europe	VDE	EN 60730	40024298
USA	UL	UL 60730	E326354
Canada	UL	CS22.2	E173 279
China	CQC		09002028341

Performance - Curve



At Current > 0,5 A please note current sensitivity.

Coding

	Manufacturer
	Series, Type (W)
	Nominal temperature (150°C)
	Tolerance (B = ± 5 K)

All rights reserved. Because TMC has no access to the details of the application, respectively, TMC is not able to take any liability for perhaps improper use of the protector or for the violation of the claims of others, patent violation for example.

Type (Dimensions in mm)

C1W switch not insulated Leads: stranded or solid	C1B switch insulated Leads: stranded or solid
C1L switch not insulated Connectors: Pin	C1L switch insulated Connectors: Pin

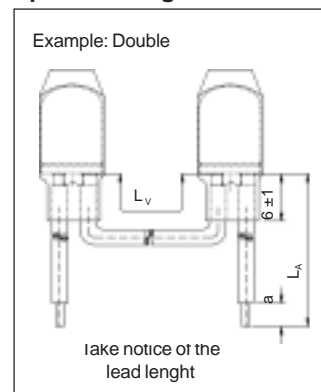
standard leads : Stranded wires 0,25 mm², 100 or 300 mm length,
Isolation Class B: colour yellow
Isolation Class F and H: Colour white
Stripped 5 mm

Other leads, stripping, colours and multiple wiring (double, triple or others) on request.

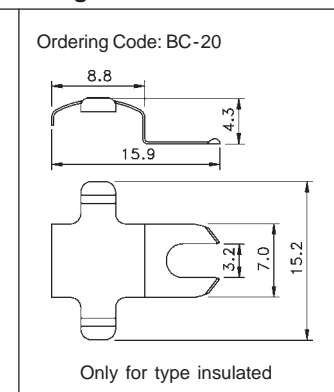
Basic insulation: The insulation has to be ensured in connection with the corresponding use of the types C1W and C1L.

Impregnation: The protector can be installed before impregnation and baking of the winding at ambient atmosphere. For vacuum impregnation on request.

Special wiring



Fixing



Ordering example for standard version

C1W-150B-100/100	Lead length (100 mm / 100 mm)
	Tolerance (B = ± 5 K)
	Nominal temperature (150 °C)
	Type (not insulated)
	Series

We reserve the right to modify specification and dimensions. Regarding the information of this brochure there can't lay claim of liability or to acceptance guarantee.

This new data sheet obsoletes all previous issues.

Stand 06/10