THERMAL CUTOUT

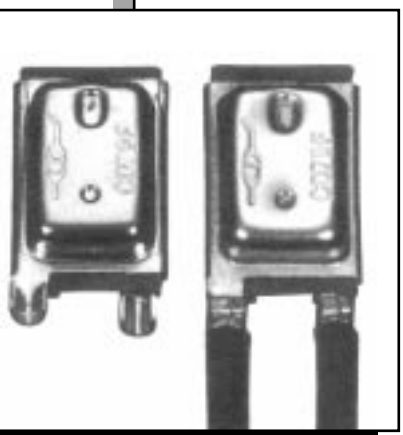
Current-sensitive plus thermal protection for coils and windings

FEATURES
- broad product range for all types of application
- small size
- high switching capacity
- minimal contact resistance
- temperature and current sensitive
- highly responsive

CD 79 F

DESCRIPTION
This device is a **thermal cutout,** providing over-temperature protection. A thermally sensitive bimetal snap-element switches when it reaches a pre-set response temperature or a fixed current level, opening the circuit. Current flows through the bimetal element, giving a combination of temperature- and current- protection.

Heat transfer occurs from all sides through convection, radiation or conduction in gaseous or solid media. The rhomboid shape conducts heat directly onto the bimetal snap-element, thus allowing its use as a surface temperature cutout.



APPLICATIONS
Over-temperature protection and, under certain conditions, temperature control of electrical machinery and equipment.

INSTALLATION NOTES
When installing the cutout, good heat transfer must be ensured. The heat sensitive side of the switch (the base) should be positioned on the heat source. Heat-conducting paste or lacquer improves heat transfer.

Please note that in the standard version the cutout has an electrically live housing, and that when electrically insulated, the cutout's effective switching temperature can be affected by reduced heat transfer through the insulation. This should be borne in mind when selecting the appropriate temperature setting.

With single phase motors, the cutout should switch the mains supply. It will then switch off the motor directly in the case of undesirable heating. A short circuit in the motor will also be broken safely if the resulting current is higher than the cutout rating.

In 3-phase motors, the current should not be switched directly via the mains supply. The cutouts are installed in the windings and connected in series with the magnetic coil of the contactor. The cutouts are connected either singly or collectively via the motor's terminal block to allow connection into the control circuit.

MICROTHERM

Microtherm International Cooperation

TECHNICAL DATA

Voltage	Current rating (cos φ = 1,0, resistive loads)	Life expectancy (switching cycles)
120 V AC	5 A	100.000
16 V DC	20 A	10.000
120 V AC	22 A	10.000
277 V AC	8 A	10.000
contact arrangement normally closed	—o—o—	
Standard contact resistance	< 40 mΩ	
Standard response temperature range	+50 °C to +160 °C	
Standard tolerance	±5 K ±10 K	
Continuous temp. rating of contacts Max. temperature rating	T 180 250 °C	
Standard temperature rating as per leads or wire according to insuation class	A, B, T, H as per response temperature	
Housing material	Stainless steel	
Housing insulation options	U 101 SHB shrunk polyester transparent insulation class B U 105 SSB radiation cross-linked shrink sleeve black, insulation class B U 107 SSH radiation cross-linked shrink sleeve, transparent, insulation class F	
Dielectric strength insulation	P302 2750 V 50–60 Hz P303 3750 V 50–60 Hz P304 4000 V 50–60 Hz	
Approvals received / applied for	UL, VDE, CSA	

TEMPERATURE SET-POINTS / TOLERANCE

Temperatures graduated in ºC and K
Tolerance, see 'Technical Data'
Plain text numbering of response temperature ºC
Tolerance in K

Switching hysteresis
Reset interval between 5K and 50K below the response temperature

Rate of temperature change from 0.1K/min to max. 1.0K/min

Insulation retards the cutout's response

Special response and reset temperatures available on request

SEALING

Standard version sealed against lacquer (varnish) and epoxy resin etc

CURRENT SENSITIVITY

This additional feature of the normally closed cutout means that the response temperature decreases at high current loads.
see graph page 4

LEADS

The temperature rating of the connecting leads covers the nominal response temperature of the cutout as a minimum. It also corresponds to the appropriate insulation class and dielectric strength. Leads or solid wires are available in various lengths, cross-sections and qualities; see special data sheet.

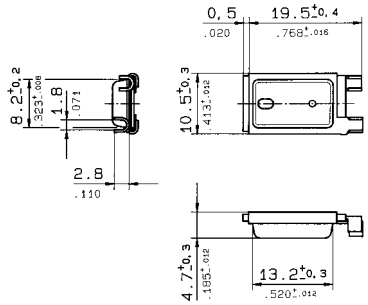
CONNECTIONS

Type	Lead length	Code	Temperature-class VDE	Cross-Section	Coating/ insulation	Conductor	Colour
AWG 20	100^{-20} mm	L523 L531 L528	B F H	0,5 mm² 0,5 mm² 0,5 mm²	textile/varnish polyolefine FEP	tinned copper tinned copper tinned copper	black blue white
AWG 18	100^{-20} mm	L560 L569 L575 L567	B F H C	0,75 mm² 0,75 mm² 0,75 mm² 0,75 mm²	textile/varnish polyolefine silicon PTFE	tinned copper tinned copper tinned copper silvered copper	yellow blue white white

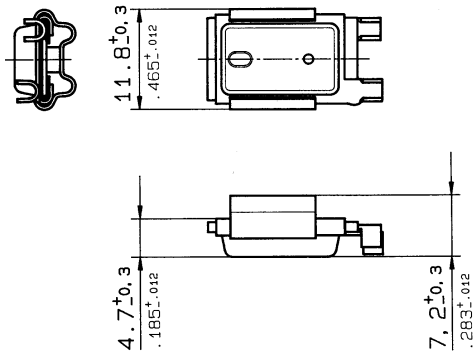
Lead stripping: standard 6mm +/-1mm
a = ends stripped, b = half insulated, c = ends stripped and tinned

VERSIONS

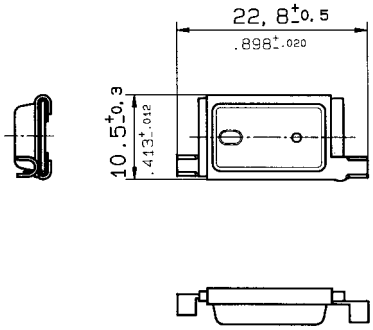
CD79 FA



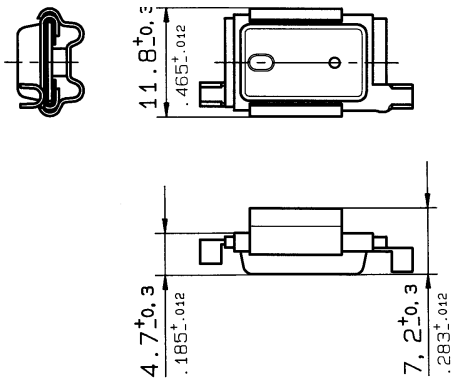
CD70 SA



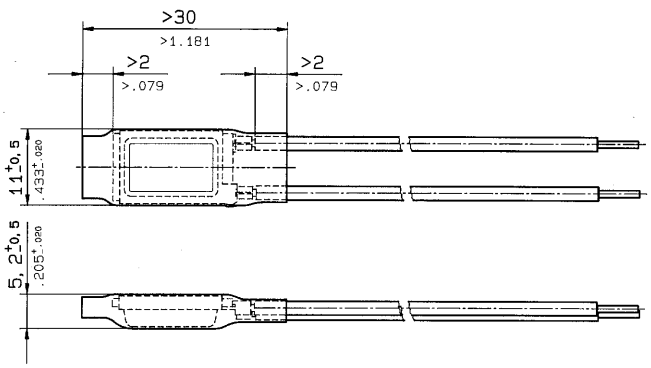
CD79 FB



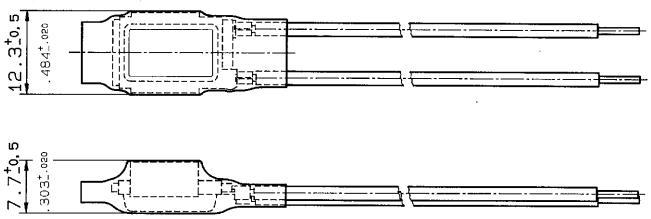
CD70 SB



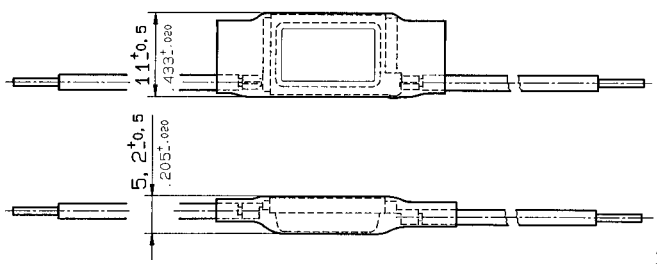
CD79 FG



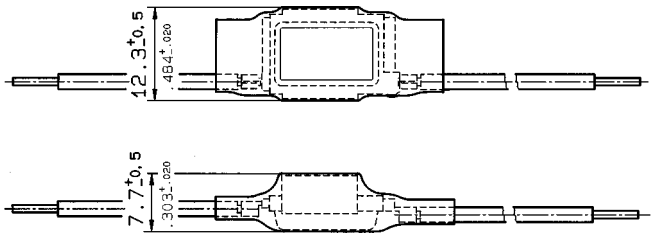
CD70 SG



CD79 FH

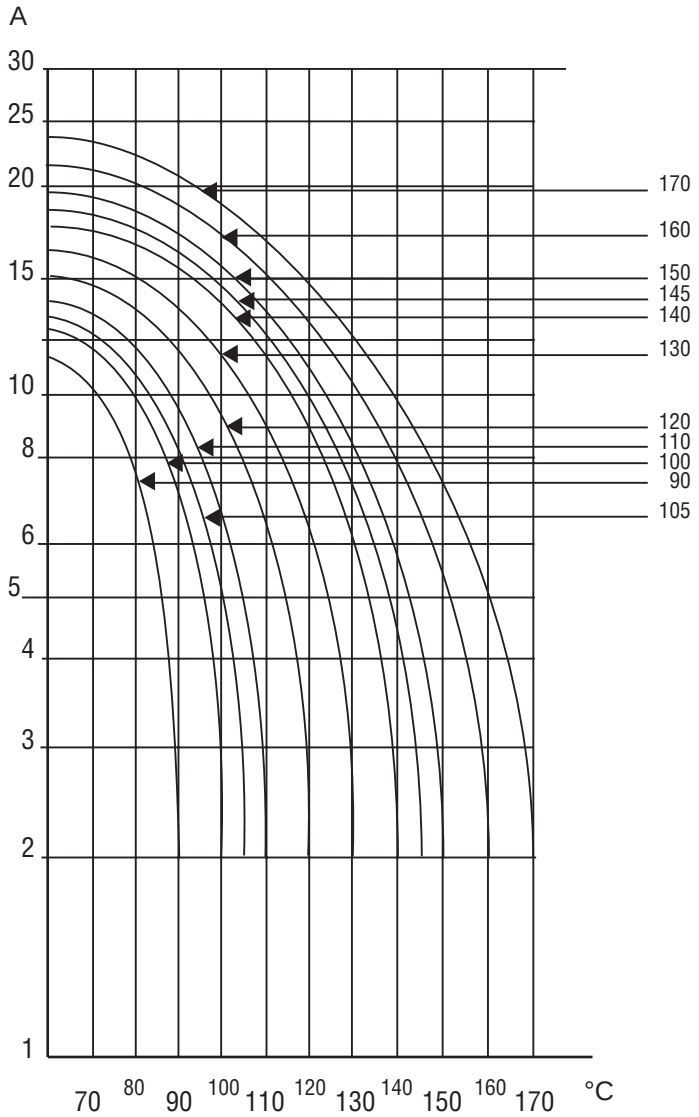


CD70 SH



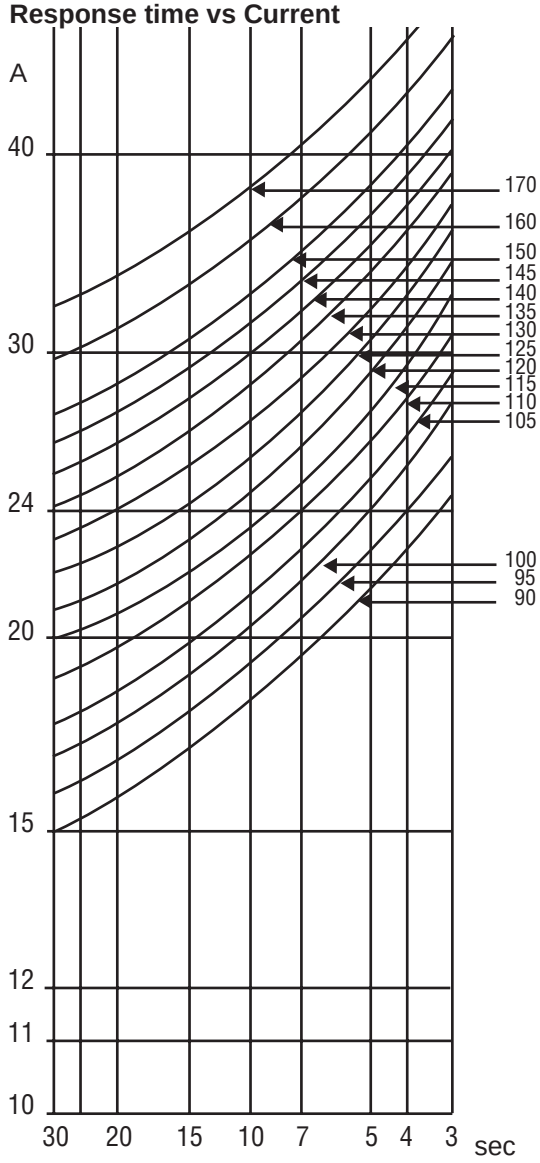
Thermal Cutout CD 79 F
01-11-99
1000-Y187

Current vs Temperature



Bimetal resistance 40 ohm
This graph shows mean values

Response time vs Current



Mean initial cycle response time T 25 C

PRODUCT MARKING

Example CD 79 F XXX A B
1 2 3 4 5 6

1 CD = Type
2 79 = Basic geometric shape
3 F = 30 Ohm/cir MIL FT of the bimetal´s specific resistance
4 XXX = Temperature value, 3 figures between 000 and 160 C
5 A = Construction

Code	Connections	Insulation	Leads
A	both one end	no	no
B	opposite ends	no	no
G	both one end	yes	yes
H	opposite ends	yes	yes

6 B = For special identification, additional letters upto Z or numerals 1-9 can be used

QUALITY STANDARD
Production item testing
Voltage test, switch function
Nominal switch-off temperature

ORDERING INFORMATION

Quantity	Type	Version	Temperature
5000	CD 79 F	A	100 °C ±10 K

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