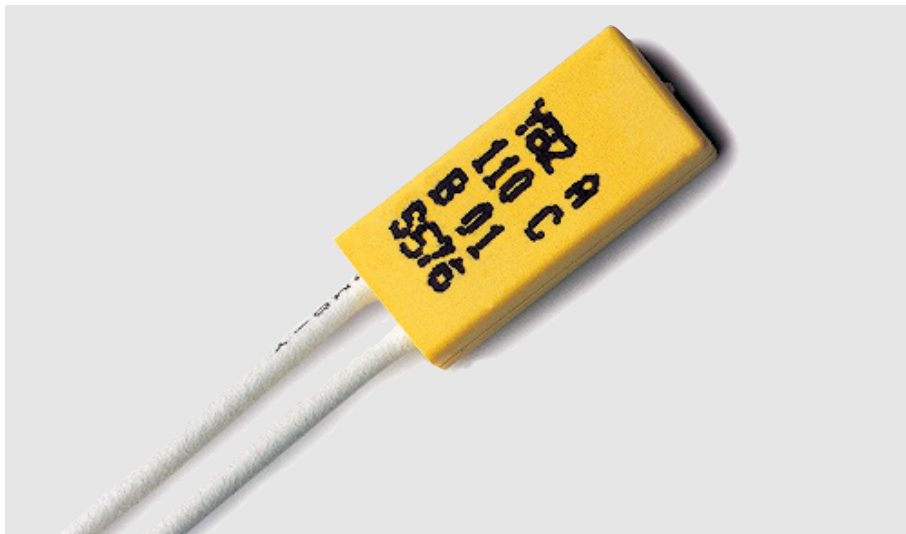


Current and Temperature Limitor Y

(Self-holding and current sensitivity)



- very compact constructional size
- mould-proof housing
- fast response time due to current sensitivity
- permanent cut-out due to self-holding function

Area of Application

The current and temperature limiter Y is used wherever, on one hand, protection against overtemperatures as well as against overcurrents is required, and, on the other hand, automatic reset function of the device to be protected - subsequent to a follow-on cooling down period - is undesirable or not permissible.

Function

The current and temperature limiter Y operates dependent on any current supply. Temperature detection is effected by means of a bimetal disk which was first dimensioned in accordance with the required cut-off temperature. When this fixed cut-off temperature T_A is reached, this bimetal disk will snap over, breaking a contact system and thereby interrupting the electric circuit of the device to be protected.

Current sensitivity

If - the current increase to the double or more (for example: blocking current or short-circuit current), an additional resistor inside the limiter heats the bimetal

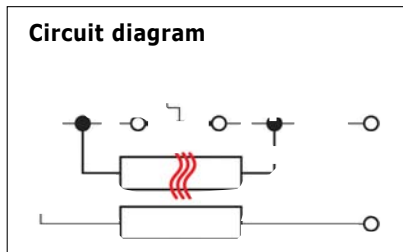
disk to its cut-off temperature T_A very quickly. The bimetal disk snaps suddenly and breaks the contacts of the switch. In order to achieve an optimum adaptation to the specific current value the resistor values are graded.

Self-holding

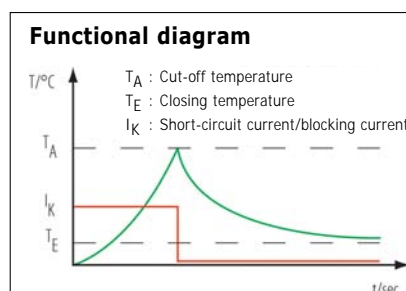
Caused of a high value resistor, connected in parallel to the contact system, the bimetal disk is heated after breaking the contact. This prevents any decrease in temperature below the value of the closing temperature T_E , preventing

any automatic reset function of the device to be protected. Only after the operating voltage has been switched off, followed by a relatively short cooling phase, the bimetal disk will return to its original position and close the contact.

Circuit diagram



Functional diagram

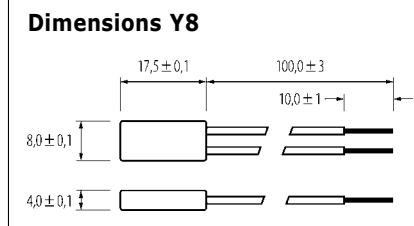


Configuration examples



Technical Specifications Current and Temperature Limiter Y

nom. breaking capacity:	250 V; 2,5 (1,0) A / 60 Hz
min. current:	5 V / 20 mA
max. breaking capacity:	2,5 A cos Φ 1,00 / 250 V, 150°C, 3000 cycles 3,0 A cos Φ 0,45 / 230 V, 135°C, 3000 cycles 4,0 A cos Φ 0,45 / 230 V, 135°C, 2000 cycles 6,5 A cos Φ 1,00 / 120 V, 120°C, 100 cycles max. current value in reference to tripping resistor value (table-sheet: trip current/resistor value)
switching temperature:	40°C – 120°C (150°C), ± 5 K
max. ambient temperature:	160°C
type of action:	1.C (3000 cycles) 2.C (max. drift ± 5 K)
holding resistor:	0,1 k Ω – 60 k Ω , take note of safety instruction*
trigger resistor:	0,05 Ω – 400 Ω
approvals:	VDE (EN 60730), UL, (2111) conform to RoHS



alternativ:

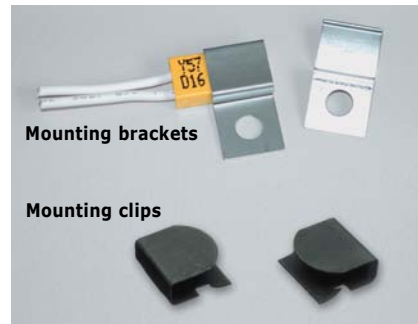
Y5 housing type:

L 4,0 x **W** 8,0 x **H** 16,0

Y1 housing type:

L 3,5 x **W** 7,0 x **H** 15,0

Accessories



Technical Data

The housing of this switch consists of a single part bag housing which is closed at its end by resin (Y8 housing type); this makes the switch mould-proof. This mould-proof switch may thus also be used in "tough" environments subject to the detrimental influences of humidity or dirt. Alternative housing types: unsealed version (Y5) or plate bar version (Y1). All housing types are voltage-free. Due to its constructional size the Y switch is one of the most compact thermostats available. This ensures a very fast response rate.

Its rectangular homogenous constructional size provides excellent thermal conduction characteristics. The housing is resistant against temperatures (permanent temperature: 160°C), with a temporary increase in temperature up to 200°C max. being permissible for a short period only. The standard version is equipped with 100 mm long (length of stripped isolation: 10 mm) insulated leads or wire connection (AWG 24).

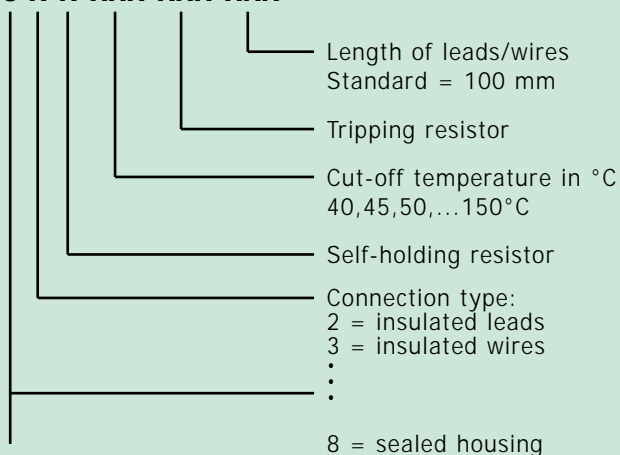
Special leads or wire (larger diameter to AWG 22) or different lengths available on request.

*Safety Instruction

Adjusting right hold resistor value on its final assembling position under real heat conduction, otherwise risk of overheating! (table-sheet selfhold resistor value)

Type reference Y switch (current and temperature limiter, self-holding and current sensitivity)

Y 8 X-X-XXX-XXX-XXX



Example for type reference:

Y 8 2 - Z - 100 - B20 - 100

current sensitive thermal switch with electrical self-holding function

insulated lead (standard AWG 24)

holding resistor 30 k Ω

100°C cut-off temperature
tolerance ± 5 K

100 mm lead length
(10 mm stripped length)

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