

PTC-Temperature-Sensors

PTC Thermistors, Motor-PTC

Single- and Triplet- Version

Type

YAM

EF1



#### Applications

- Heavy-duty motors
- electric drives
- mechanical engineering

#### Benefits

- minimum size
- fast response characteristic
- single-, twin- and triplet- version

## Description

PTC-temperature sensors are used for thermal protection of electric machinery and control cabinets, especially electric motors. The structure ensures a fast response time and a simple installation.

The function is obtained by a strong nonlinear PTC effect of the resistor. The usable range is  $\pm 5$  K around the nominal temperature. The evaluation is carried out by means of an electronics which detects the sudden increase in resistance and initiates a corresponding action (throttling, shutdown, etc.).

The thermistors are designated according to their nominal response temperature  $T_{NAT}$  (°C). Whereas the range below  $T_{NAT}-20$  is not defined. Standards for single / triplet PTC thermistors are DIN 44081 / 44082.




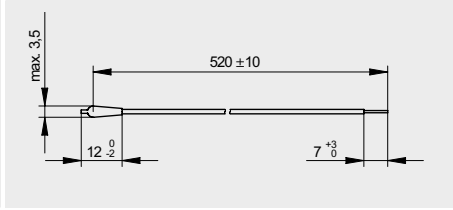
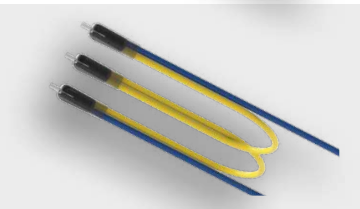
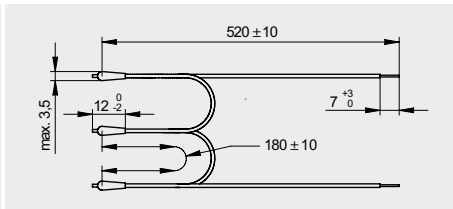
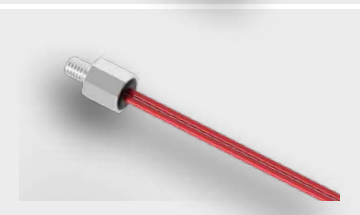
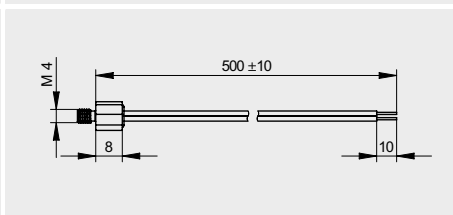
## Technical data

Description	Dimensions	
	Single thermistor: YAM1, EF1	Triplet thermistor: YAM3
Nominal response temperature	90 °C ... 160 °C ( add. 145 °C and 155 °C )	
Maximum allowable operating temp.	170 °C	
Maximum allowable operating voltage	30V	
Resistance $R_{25}$	$\leq 100 \Omega$	$\leq 300 \Omega$
Resistance at $T_{NAT} - 5$ K	$\leq 550 \Omega$	$\leq 1.650 \Omega$
Resistance at $T_{NAT} + 5$ K	$\geq 1.330 \Omega$	$\geq 3.990 \Omega$
Resistance at $T_{NAT} + 15$ K	$\geq 4.000 \Omega$	$\geq 12.000 \Omega$
Tolerance of $T_{NAT}$	$\pm 5K$	$\pm 5K$
Dielectric strength	2,5 KV AC	
Connection line	FEP-insulated leads AWG26	
Length of connecting leads	520 mm $\pm$ 10mm	520-180-180-520 mm $\pm$ 10mm

YAM: PTC-pill with shrink tube and epoxy resin

EF1: PTC-pill with screw housing with M4-thread

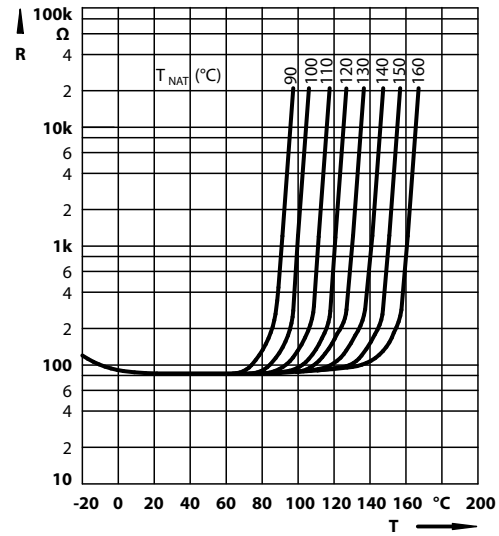
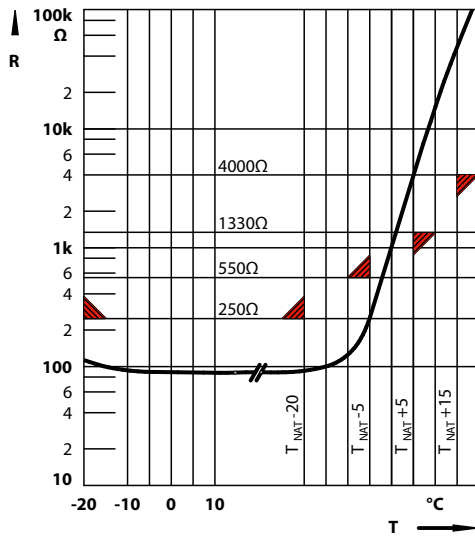
## Versions

type	illustration	drawing dimensions ( mm )	technical specification
YAM1			shrink tube and epoxy resin
YAM3			shrink tube and epoxy resin
EF1			screw housing with M4-thread

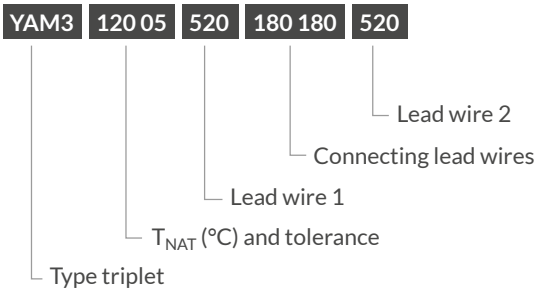
## Identification color (leads)

type	T <sub>NAT</sub> °C	YAM1, EF1: single-PTC standard ID-color	YAM3: triple-PTC standard ID-color
YAM EF1	90	green-green	green-yellow-yellow-green
	100	red-red	red-yellow-yellow-red
	110	brown-brown	brown-yellow-yellow-brown
	120	gray-gray	gray-yellow-yellow-gray
	130	blue-blue	blue-yellow-yellow-blue
	140	white-blue	white-yellow-yellow-blue
	145	white-black	white-yellow-yellow-black
	150	black-black	black-yellow-yellow-black
	155	blue-black	blue-yellow-yellow-black
	160	blue-red	blue-yellow-yellow-red

## Temperature-resistance curve



## Ordering example



\* Twins or multiple versions (4-fold, 5-fold, 6-fold etc.) possible.  
Deviations from the standard generally on request.

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