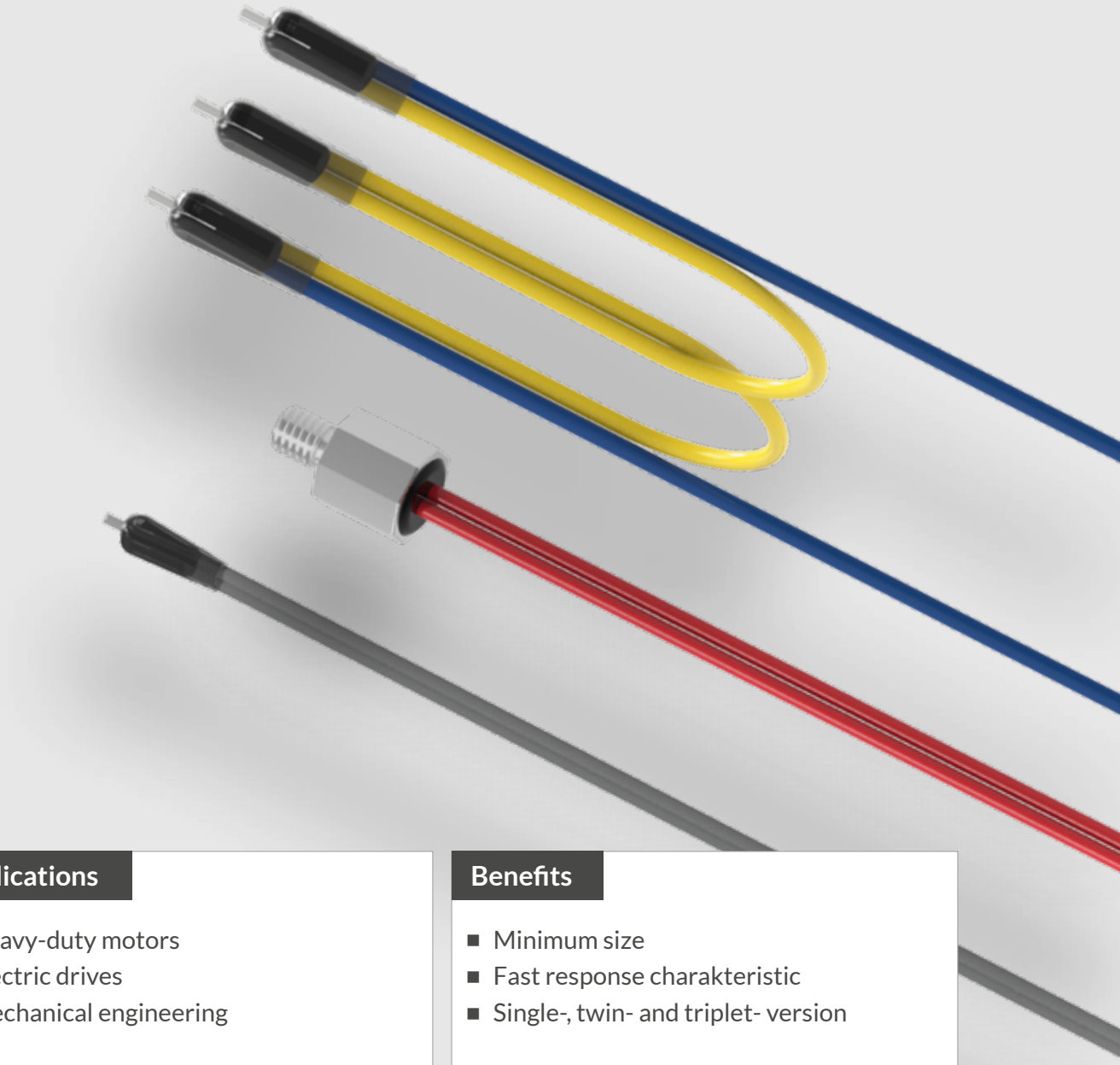
MICROTHERM
sentronic

PTC-Temperature-Sensors

PTC Thermistors, Motor-PTC

Single- and Triplet- Version



Applications

- Heavy-duty motors
- Electric drives
- Mechanical engineering

Benefits

- Minimum size
- Fast response charakteristic
- 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 ± 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.

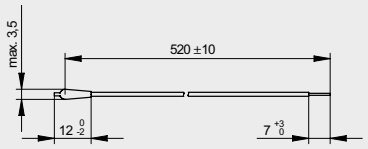
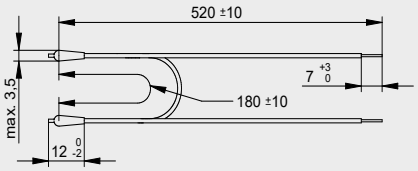
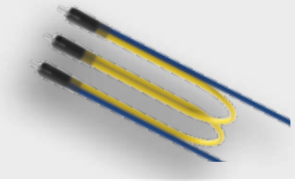
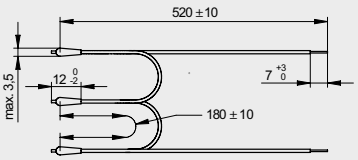
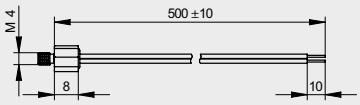



Technical data

description		characteristics
reference temperature T_{Ref} (in steps of 10 K)		60 °C to 180 °C
special reference temperature T_{Ref}		145 °C and 155 °C
maximum operating temperature		200 °C
nominal operating voltage range		2.5 V_{DC} to 24 V_{DC}
maximum operating voltage		30 V_{DC}
cold resistance R_{25} : from -20 °C to T_{Ref} -20 K		20 - 100 Ω (for YAM1)
dialectic strength		2.5 kV_{AC}
insulation sleeve materials	≤ T_{Ref} 160 °C	Kynar® Polyvinylidenfluorid
	> T_{Ref} 160 °C	PTFE
cable (in standard)		FEP / AWG26 / 7 x 0.16 mm / silver plated
length of connecting leads (standard)		520 mm ± 10 mm (YAM1) / 520-180-520 mm ± 10 mm (YAM3) [1]
UL-listed cable on request		FEP / AWG26 / UL-1332

1) other cable lengths on request

Versions

type	illlustration	drawing dimensions (mm)	technical specification
YAM1			shrink tube and epoxy resin
YAM2			shrink tube and epoxy resin
YAM3			shrink tube and epoxy resin
EF1			srew housing with M4-thread

Resistance characteristics for single PTC-thermistors

T_{Ref} °C	T_{Ref} -5 K [Ω]	T_{Ref} +5 K [Ω]	T_{Ref} +15 K [Ω]	T_{Ref} +23 K [Ω]	* lead-wire colour code	
60	≤ 570	≥ 570		≥ 10.000	White	Grey
70	≤ 570	≥ 570		≥ 10.000	White	Brown
80	≤ 570	≥ 570		≥ 10.000	White	White
90	≤550	≥ 1330	≥ 4000		Green	Green
100	≤550	≥ 1330	≥ 4000		Red	Red
110	≤550	≥ 1330	≥ 4000		Brown	Brown
120	≤550	≥ 1330	≥ 4000		Grey	Grey
130	≤550	≥ 1330	≥ 4000		Blue	Blue
140	≤550	≥ 1330	≥ 4000		Blue	White
145	≤550	≥ 1330	≥ 4000		White	Black
150	≤550	≥ 1330	≥ 4000		Black	Black
155	≤550	≥ 1330	≥ 4000		Black	Blue
160	≤550	≥ 1330	≥ 4000		Red	Blue
170	≤ 570	≥ 570		≥ 10.000	White	Green
180	≤ 570	≥ 570		≥ 10.000	White	Red

* Colour code according DIN VDE V0898-1-401:2016 and to IEC60034-11:2004
The colour of the connecting cables of twins or triplets are always yellow.
The resistance-value [Ω] for twins is twice as high and for triplets three times as high as shown by the table.

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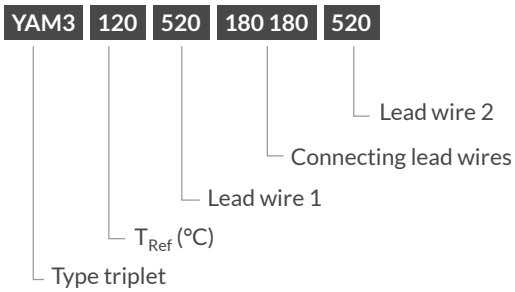
Ordering example



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

Standard: The stripped wire ends are 8 mm extra tin coated.

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