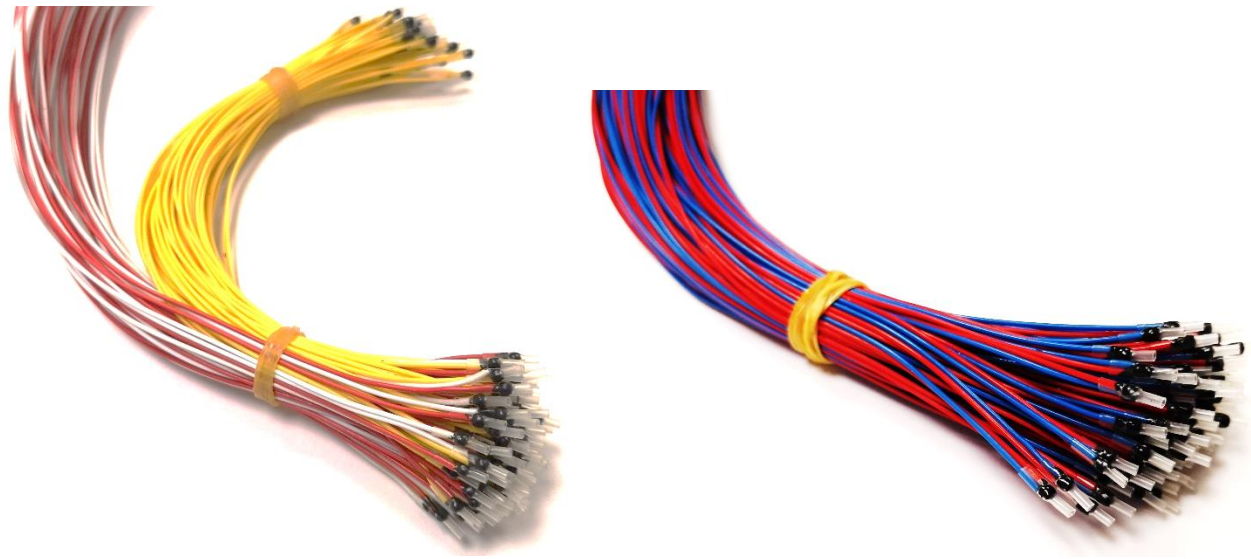
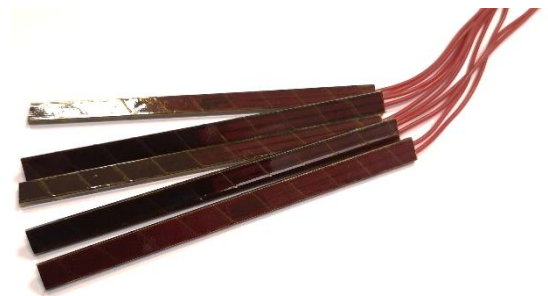


## PTC winding temperature sensor



### Features

- With and without UL approval
- Response temperature from 60°C to 180°C
- Robust PVDF insulating cap (Kynar)
- Thermal response time  $\leq 5$  s
- Miniaturized thermistor temperature sensors with a diameter 3mm
- FEP insulated connection cable in AWG 26

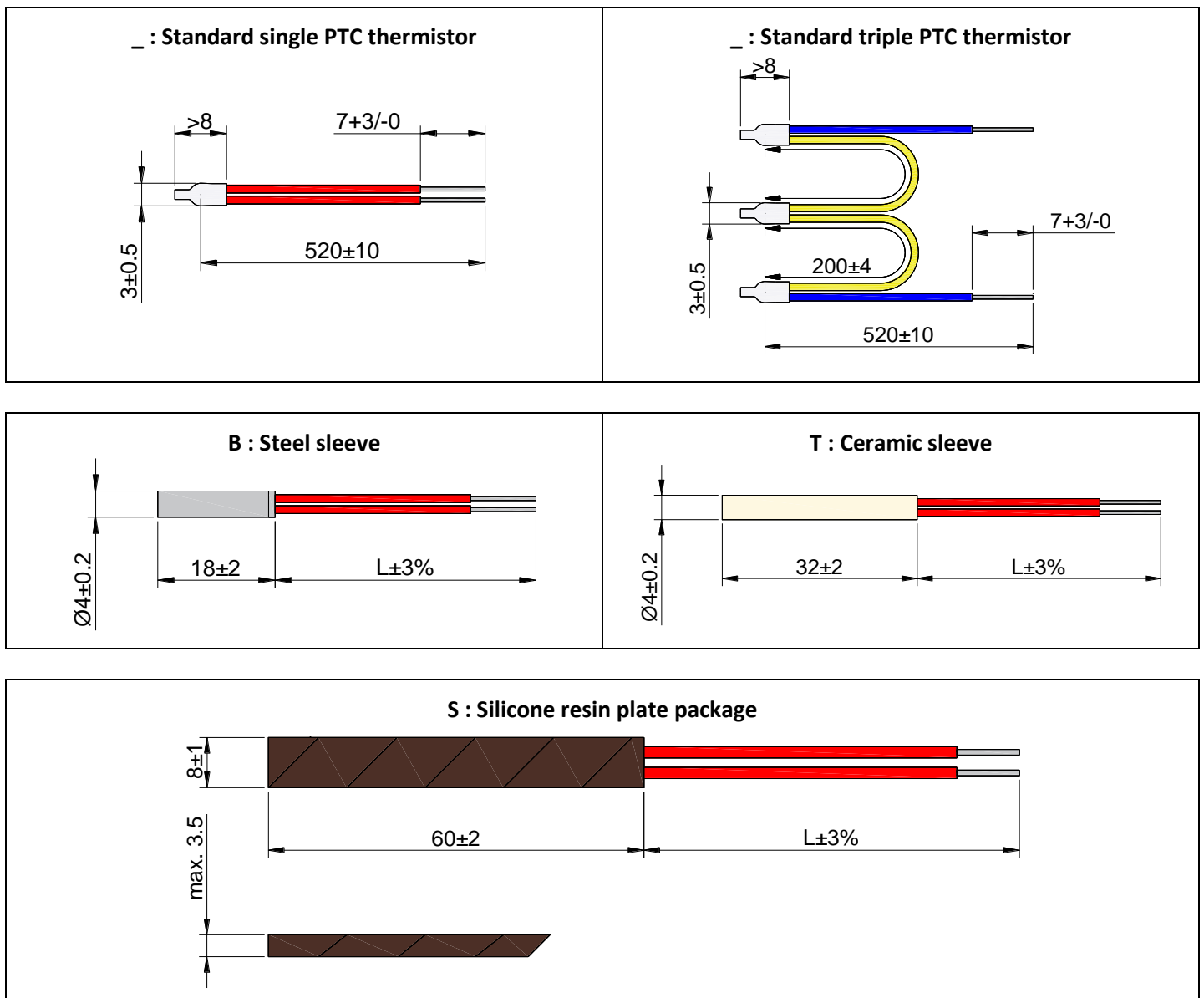


### Technical information:

	Single PTC	Triple PTC	R/T characteristic
Max. operating voltage	30 VDC	30 VDC	
Max. measuring voltage	$\leq 2.5$ VDC	$\leq 2.5$ VDC	
$T_S$ Nominal response temperature	60...180°C	60...180°C	
$T_S$ Tolerance range	$\pm 5$ K	$\pm 5$ K	
$T_S$ Repeatability	$\pm 0.5$ K	$\pm 0.5$ K	
Cold resistance $R_{25}$ ( $V \leq 2.5V$ )	$\leq 100 \Omega$	$\leq 300 \Omega$	
R at $T_S - 5$ K	$\leq 550 \Omega$	$\leq 1650 \Omega$	
R at $T_S + 5$ K	$\geq 1330 \Omega$	$\geq 3990 \Omega$	
R at $T_S + 15$ K	$\geq 4$ kΩ	$\geq 12$ kΩ	
$T_S$ Response time	$\leq 5$ s	$\leq 5$ s	
Dielectric strength	2.5 kV	2.5 kV	
Max. operating temperature	200°C	200°C	
Max. storage temperature	125°C	125°C	
Min. storage temperature	-25°C	-25°C	
Weight of the standard version	approx. 2 g	approx. 3.5 g	

Characteristic curve of a single PTC according to DIN 44081

## Designs:



## Equipment:

### GRB protection module for PTCs acc. DIN VDE V 0898-1-401 (alt DIN 44081 / DIN 44082)

Motor protection based on PTC thermistors is one of the most effective and reliable protective measures against thermal overloading of electrical machines.

The protective device consists of the triggering device GRB and the PTC sensors.

Due to its compact design, the GRB is suitable for installation in electrical devices or the terminal box of electrical machines.

[Link to the PDF data sheet](#)



## Specification:

MSF . 120 . D . K . _ ( 600 / 300 / 300 / 600 )	
<b>Type:</b> MSF	L1 L2 L3 L4
<b>T<sub>s</sub>:</b> 60°C...180°C	
<b>E:</b> Single	
<b>Z:</b> Double	
<b>D:</b> Triple	
<b>V:</b> Quadruple	
<b>S:</b> Six times	
<b>S:</b> Standard strand length (520mm)	
<b>K:</b> Custom strand length	
<b>Leer:</b> Standard PVDF	
<b>T:</b> Ceramic sleeve	
<b>B:</b> Steel sleeve	
<b>S:</b> Silicone resin plate package	
<b>L1:</b> 600mm	
<b>L2:</b> 300mm	
<b>L3:</b> 300mm	
<b>L4:</b> 600mm	

**Example:** MSF.120.D.K (600/300/300/600)

If UL approval is required, please state this in your request.  
The UL approved range moves from 100°C to 155°C in 5K steps.

## Color coding according to DIN VDE V 0898-1-401 (old DIN 44081 / DIN 44082):

60°C	70°C	80°C	90°C	100°C	105°C	110°C	115°C	120°C	125°C
white	white	white	green	red	blue	brown	blue	grey	red
grey	brown	white	green	red	grey	brown	green	grey	green

130°C	135°C	140°C	145°C	150°C	155°C	160°C	165°C	170°C	180°C
blue	red	white	white	black	blue	blue	blue	white	white
blue	black	blue	black	black	black	red	brown	green	red

Further customer-specific versions are possible on request.