

## STY6 Series thermal protectors



### Features

Direct star point switching	Can be operated without a relay or contactor
High sensitivity	due to brass housing and low switch mass
Excellent long-term stability	silver contacts. Reproducible switching temperature values thanks to thermally tempered, mechanically and electrically unloaded bimetal disc
Very short bounce times	< 1 ms
Momentary switching	with always the same contact pressure up to the nominal switching time; therefore less contact wear
Temperature resistance	by use of high temperature resistant materials and components

### Main parts

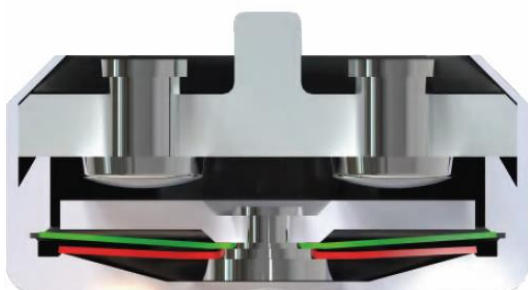
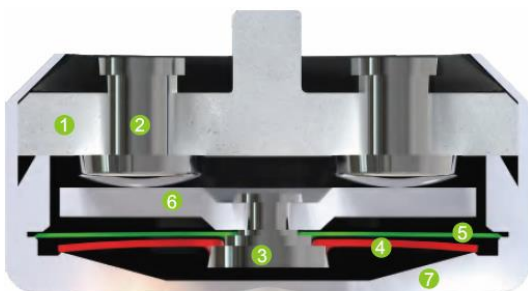
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|------------------------------|---------------------|
| 1) Iron cover plate          | 5) spring disc      |
| 2) stationary silver contact | 6) moveable contact |
| 3) shaft pin                 | 7) housing          |
| 4) bimetal disc              |                     |

### Construction

Stationary silver contact and ceramic covers are riveted together; The movable contact, bimetal disc and spring disc are riveted together by shaft pins. The movable contact is in close contact with the stationary silver contact under the pre-pressure of the spring disc; The current passes through the stationary silver contact and the movable contact to form a loop.

### Function

When the circuit works normally, the movable contact and the stationary silver contact are in a closed state. When the rated operating temperature is reached, the bimetal disc is deformed by heat, and the spring disc is pushed downward through the riveting shaft pin, so that the movable and stationary silver contact are abruptly opened. After the circuit is disconnected, the ambient temperature begins to fall. When it reaches the defined reset temperature, the bimetal disc and the spring disc snaps back into its start position, the contacts will close again, and the circuit returns to the normal working state. By adding an external connection to the switch housing, the temperature limiter can be used for three-phase applications. In this case, the current flow is interrupted for each phase during operation.



## STY6-U1

Normally closed; reset automatically; with three lead wires; with epoxy; insulation: Mylar-Nomex

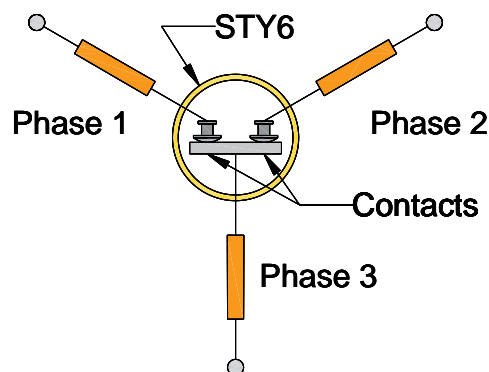


Nominal switching temperature (NST) in 5K	NC
Tolerance (standard)	±5K
	≥35°C (≤ 95°C NST)
Reverse switch temperature (RST) tolerance	-50K±15K (≥ 100°C ≤ 180°C NST)
	-65K±15K (≥ 185°C ≤ 200°C NST)
Thickness	6.6mm
Diameter	9.5mm
Length of the insulation cap	16mm
Resistance to impregnation	Suitable
Suitable for installation in protection class	I + II
Pressure resistance to the switch housing	600N
Standard connection	0.52 mm <sup>2</sup> / AWG20
Insulation voltage	2.0kV
Recognized standards	UL
Operating voltage range AC	up until 440 V AC
Rated voltage AC	3x 400V 50/60Hz
Rated current AC cos φ = 1.0 /cycles	2.5A / 10,000
Max. current AC cos φ = 1.0 /cycles	6.3 A / 3,000
Total bounce time	< 1 ms
Contact resistance	≤ 50 mΩ
Vibration resistance at 10 ... 60 Hz	100 m/s <sup>2</sup>

### Order Code

Type	STY6	-	A	-	U1	.	155	.	05	.	300-5/300-5/300-5
Function											
Design											
Nominal switching temp. (°C)											
Tolerance (K)											
Wire length (mm)	L1 / L2 / L3										

### Schematic



### Standard connection wires

Isolation material	Max. Temp.	Max. operating voltage	Size	UL-Style
FEP	200°C	300V	AWG 20	1332

Yellow FEP wires in AWG 20 used as standard. (UL1332)

### Available switching & reset temperatures

Switching °C	Reset °C	Switching °C	Reset °C	Switching °C	Reset °C
60 ± 5K	≥35	110 ± 5K	60 ± 15K	160 ± 5K	110 ± 15K
65 ± 5K	≥35	115 ± 5K	65 ± 15K	165 ± 5K	115 ± 15K
70 ± 5K	≥35	120 ± 5K	70 ± 15K	170 ± 5K	120 ± 15K
75 ± 5K	≥35	125 ± 5K	75 ± 15K	175 ± 5K	125 ± 15K
80 ± 5K	≥35	130 ± 5K	80 ± 15K	180 ± 5K	130 ± 15K
85 ± 5K	≥35	135 ± 5K	85 ± 15K	185 ± 5K	120 ± 15K
90 ± 5K	≥35	140 ± 5K	90 ± 15K	190 ± 5K	125 ± 15K
95 ± 5K	≥35	145 ± 5K	95 ± 15K	195 ± 5K	130 ± 15K
100 ± 5K	50 ± 15K	150 ± 5K	100 ± 15K	200 ± 5K	135 ± 15K
105 ± 5K	55 ± 15K	155 ± 5K	105 ± 15K		