250 Series DIN-rail and Wall Mounted Relays

Hot Spot 6 Temperature Relay

The Hot Spot 6 protector is a temperature trip relay accepting up to six inputs from resistance temperature detector (RTD) elements and provides one user adjustable trip point which can be used to initiate alarms, cooling or shutdown when the monitored temperature exceeds the set limit. The relay is ideally suited for the protection of electric motor windings, transformers, generator windings and bearing temperature.

Operation

RTD temperature sensors are often fitted inside electric motors to detect hot spots in the windings or bearings. RTD sensors are popular because they offer a good accuracy for a reasonable price. The same sensors can be used inside transformers, generator sets, gas turbines or as part of a process control system. Hot spots can be caused by many conditions such as overloads, over-voltage, unbalanced supply, worn bearings, ineffective cooling, poor ventilation, shorted turns, insulation breakdown, single phasing etc.

The Hot Spot 6 protector continuously monitors the six RTD temperature sensors and offers a user adjustable set point and relay contacts. This can be used to raise alarms, switch on cooling systems or shut down the affected equipment. The temperature is compared with the user adjustable set point. There is a red alarm indicator associated with each temperature sensor. When the measured temperature exceeds the set point on one or more inputs the red alarm indicators associated with temperature sensor (s) exceeding the set point temperature will illuminate to indicate which sensors are above the set point. When any input is above the set point, the relay will de-energize, the overall red "Alarm" will illuminate and the green "Safe" will extinguish.

When the temperature on all inputs drops below the set point the relay will reset to the energized condition, the overall red "Alarm" will extinguish and the green "Safe" will illuminate.

Features

Up to 6 RTD inputs
Adjustable set point
Internal differential
LED trip indication
Automatic reset
Single-pole relay contacts

Benefits

Unbalanced supply protection
Sustained overload protection
Single-phasing protection
Blocked ventilation protection
Protection against ineffective cooling
Protection of bearing temperature

Applications

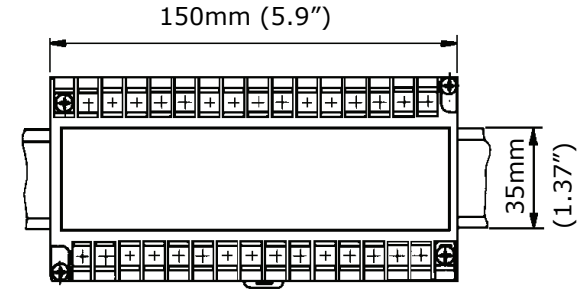
Switchgear
Distribution systems
Generator sets
Control panels
Process control
Motor monitoring
Transformers
Overload protection

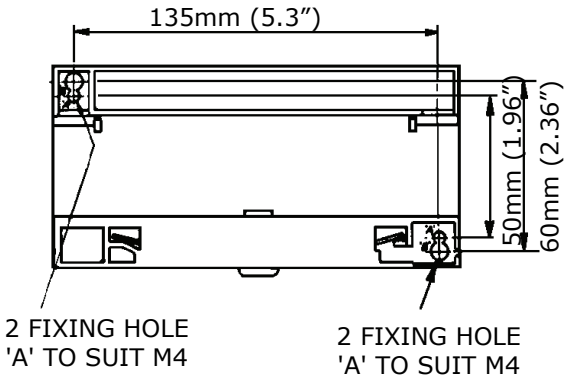
Protection	Relay	Volts		Hertz	ANSI no.	Model	Ordering #
1 Set Points	6 RTD inputs	120	10 Ohm Copper	60	49	256-PCCU-R1BX	1C4953
1 Set Points	6 RTD inputs	120	100 Ohm Platinum	60	49	256-PCCU-R2BX	1C4954
1 Set Points	6 RTD inputs	120	120 Ohm Nickel	60	49	256-PCCU-R3BX	1C4955

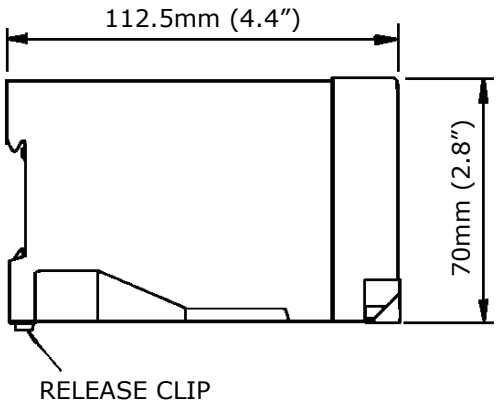
** Additional options available, please call Byram Laboratories for further assistance.*

Specification – Hot Spot 6 Temperature Relay

Input	Up to 6 resistance temperature detectors (RTD). Either 10Ω copper or 100Ω platinum minimum span 100°C
Nominal voltage	AC: 110V, 120V, 220V, 230V, or 240V ±20% DC: Consult factory
System frequency	50/60Hz
Voltage burden	6VA maximum
Overload	1.2 x rating continuously
Set point repeatability	Within 1°C
Differential (hysteresis)	4°C of nominal
Trip level adjustment	100°C (e.g.: 50 to 150°C, 100 to 200°C etc)
Time delay	Typically 250ms
AC auxiliary supply voltage	100V, 110V, 120V, 208V, 220V, 240V, 480V, ±20%
DC auxiliary supply voltage	12V, 24V, 48V, 110V or 125V, ±20%. Including ripple
Auxiliary voltage burden	4VA (max)
Output relay	1-pole change over
Relay contact rating	AC: 240V 5A non inductive DC: 24V 5A resistive
Relay mechanical life	0.2 million operations at rated loads
Relay reset	Automatic
Operating temperature	0°C to +60°C (0°C to +40°C for UL models)
Storage temperature	–20°C to +70°C
Temperature co-efficient	0.05% per °C
Interference immunity	Electrical stress surge withstand and non-function to ANSI/IEEE C37 90a
Enclosure style	DIN-rail with wall mounting facility
Material	Flame retardant polycarbonate/ABS
Enclosure integrity	IP50
Dimensions	150mm (5.9") wide x 70mm (2.8") high x 112mm (4.4") deep
Weight	1.0Kg approx.







256-PCC

When used for less than 6 RTD inputs the unused terminals 1, 2 and 3 must be linked together.