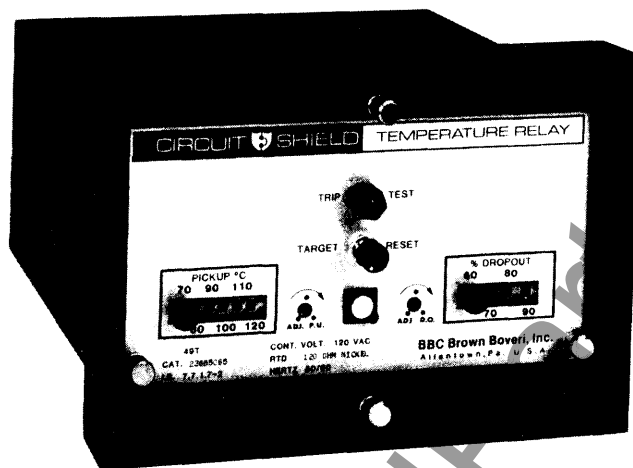


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Mailed to: E, D, C/41-500B

Device Number: 49

CIRCUIT SHIELD[®] Type 49T Temperature Relay



Application

The Type 49T is used in conjunction with a Resistance Temperature Detector (RTD) embedded in the stator of the motor to detect an overtemperature condition.

Motors and generators rated 1200 hp or more are generally equipped with one or more RTD when manufactured. Tests are performed to determine which detector indicates the hottest temperature. The relay is then connected to that detector.

The detectors are manufactured of various materials and resistivities, with the most common being 10 ohm copper. This designation means the resistance is 10 ohms at 25°C. A plot of this characteristic is shown in Figure 1.

The Type 49T relay has two settings: pickup and dropout. The dropout is calibrated in percent of pickup as outlined in the specifications. Internal connections are shown in Figure 2.

The relay requires a 120 VAC control power source. The output is two Form C contacts, which may be used to trip a circuit breaker, or to open the holding coil of a motor starter. A typical connection diagram is shown in Figure 3.

Features

- Adjustable Pickup and Drop-Out
- Built-in Test
- Seismic Capability to 6g ZPA
- Drawout Construction
- Transient Immunity
- 2 Year Warranty

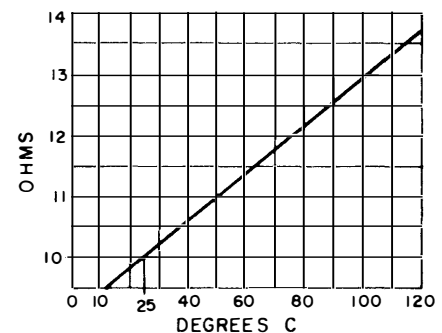


Figure 1. 10 OHM Copper Characteristic

Specifications

Temperature Range: Pickup

adjustable; models available for:
60 - 120°C
120 - 180°C
adjustable 60 to 90% of Pickup

Dropout

RTD Characteristic:

Models available for:
10 ohms at 25°C (copper)
120 ohms at 0°C (nickel)
100 ohms at 0°C (platinum)

Control Power: Burden

120 Vac, 50/60 Hz.
0.08 Amperes

Output Circuit:

Two Form C contacts

Output Circuit Rating:

Each contact:
At 125 Vdc:
30 amps, Tripping Duty
5 amps, Continuous
1 amp, Opening Resistive
0.3 amp, Opening Inductive

At 120 Vac:
30 amps, Tripping Duty
5 amps, Continuous
3 amps, Opening Resistive
1 amp, Opening Inductive

Operating Temperature:

Minus 20°C to Plus 70°C

Seismic Capability:

More than 6g ZPA either axis biaxial
broadband multifrequency vibration without
damage or malfunction (ANSI/IEEE
C37.98)

Transient Immunity:

More than 2500V, MHz bursts at 400 Hz
repetition rate, continuous, (ANSI C37.90a
SWC); fast transient test; EMI test.

Weight:

Unboxed - 3.7 lbs. (1.6 Kg)
Boxed - 4.4 lbs. (1.9 Kg)
Volume - 0.26 cubic feet

How To Specify

Relay shall be Asea Brown Boveri Type 49T or equal. Relay shall be capable of withstanding up to 6g ZPA seismic stress without malfunction. A magnetic operation indicator which retains position on loss of control power shall be provided. Built-in means shall be provided to allow operational tests without additional equipment.

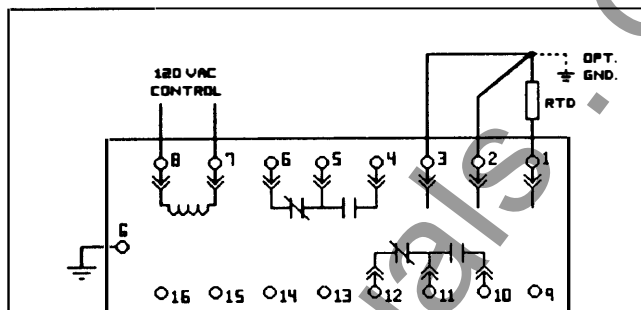


Figure 2. Type 49T Internal Connections

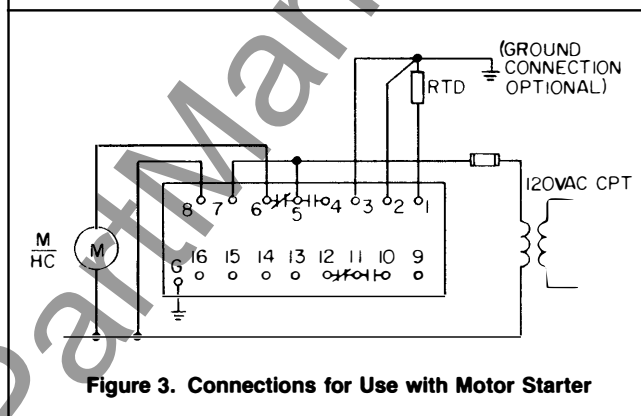


Figure 3. Connections for Use with Motor Starter

Further Information

List Prices: PL 41-020
Technical Data: TD 41-025
Instruction Book: IB 18.7.7-3①
Motor Protection Paper: TP 18.0-3①
Other Protective Relays:
Application Selector Guide, TD 41-016

① Available upon request, only from Allentown Plant.



ABB Power T&D Company Inc.
Relay Division
Coral Springs, FL
Allentown, PA

Descriptive Bulletin
41-526S

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For Use with Resistance Temperature Detector

CIRCUIT SHIELD ®
Type 49T
Temperature
Relay

Type	① Control Voltage	RTD Type	Pickup ② Temperature	Catalog Numbers Drawout Test Case
49T	120 Vac 50/60 Hz	10 ohm copper	60 – 120° C	436B2065
			120 – 180° C	436D2065
		120 ohm nickel	60 – 120° C	436B5065
			120 – 180° C	436D5065
		100 ohm platinum	60 – 120° C	436B6065
			120 – 180° C	436D6065

Internal Connections: 16D236A

- ① For other control voltages contact nearest District Office.
② Dropout adjustable 60 – 90% of Pickup.

To place an order, or for further information, contact the nearest District Office.

Internal Connection Diagram

Note: Refer to Instruction Book IB18.7.7-3③
for contact logic data.

- ③ Available upon request, only from Allentown
Plant.

