Trip Circuit Supervision Relay

XR351

Description

The Trip Circuit Supervision Relay was developed for specific applications, and is suitable for use with the type AR relay range. It is an electro-mechanical relay with a consistent positive action and a long service life that complies with IEC 60255 requirements. The XR351 has 3 attracted armature elements. It incorporates a time delay on de-energisation (to keep the relay in an operated condition during temporary reduction in the battery voltage).

Features

- Low burden
- Versatile design
- Preclose supervision
- Consistent positive action
- Epsilon drawout case

Applications

- Supervision and ensuring the integrity of the trip circuit of a breaker
- Continuous supervision, during both, open and closed position of circuit breaker
- Preclosing supervision to prevent circuit breaker from being closed where the trip relay has not been reset

Figure 1: Trip Circuit Supervision Relay XR351
**Wiring Diagram**

**RELAY FRONT**

![Wiring Diagram](image)

Figure 2: Typical wiring diagram

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**Schematic Diagram**

CONTACTS (2M2B) SHOWN UNDER DE-ENERGISED CONDITION

TRIP SUPPLY

ALARM SUPPLY

A

B

C

R depends upon Trip & Alarm Supply Voltage
Technical Information

<table>
<thead>
<tr>
<th>Rated Voltage, Vn</th>
<th>30V, 48V, 110V, 220V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>IEC60068-2-1&amp;2</td>
</tr>
<tr>
<td>Operating Range</td>
<td>80% to 120% of Vn</td>
</tr>
<tr>
<td>Reset Time</td>
<td>400 ms when supply is switched from Vn to OFF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rated Voltage</th>
<th>Trip Circuit Condition</th>
<th>Alarm Circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C.B. Open</td>
<td>C.B. Closed</td>
</tr>
<tr>
<td>30V DC</td>
<td>1W</td>
<td>1W</td>
</tr>
<tr>
<td>48V DC</td>
<td>1W</td>
<td>1W</td>
</tr>
<tr>
<td>110V DC</td>
<td>1W</td>
<td>2W</td>
</tr>
<tr>
<td>220V DC</td>
<td>2W</td>
<td>4W</td>
</tr>
</tbody>
</table>

Thermal Withstand 1.2Vn continuously

Indication
Hand reset flag

Contact Arrangement
Alarm output, 4 in any combination of normally open and normally closed. Preclose supervision, 1 normally open.

Contact Rating
Make and carry continuously
1250VA AC or 1250W DC with limits of 660V and 5A

Make and carry for 3 seconds
7500VA AC or 7500W DC with limits of 660V and 30A

Break
1250VA AC or 100W DC (resistive) or 50W (inductive) (L/R=0.04) DC with limits of 250V and 5A

Environment

<table>
<thead>
<tr>
<th>Temperature</th>
<th>IEC 60068 - 2 - 1 &amp; 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>- 25 C to + 70 C</td>
</tr>
<tr>
<td>Operating</td>
<td>- 10 C to + 55 C</td>
</tr>
</tbody>
</table>

Humidity
IEC 60068-2-3
56 days at 95% RH and 40 C

Vibration
IEC 60255-21-1
Relay meets the requirements vibration of class 1 at response and endurance.

Shock and Bump
IEC 60255-21-2
Relay meets the requirements with respect to shock & bump testing for class 1 severity.

Transient
IEC 60255-5
Over voltage
5KV 1.2/50µs 0.5 joules between all terminals and earth or between any two terminals without damage or flashover.

Insulation
IEC 60255-5
2KV rms for 1 minute between all terminals and earth.
1KV rms for 1 minute across normally open contacts.

Operational / Mechanical life
The relays will withstand in excess of 10,000 operations, within the maximum contact loading specified, at a rate of 600 operations per hour.
**Cutout Details**

![Cutout Diagram]

**Ordering Information**

- Rated voltage
- Contact arrangement

<table>
<thead>
<tr>
<th>Rating V DC</th>
<th>Coil Resistance [Ohm]</th>
<th>Resistors value [Ohm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>30</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>48</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>110</td>
<td>4800</td>
<td>4800</td>
</tr>
<tr>
<td>220</td>
<td>4800</td>
<td>4800</td>
</tr>
</tbody>
</table>

These resistors are supplied loose with the relays (for non-draw-out case). It is important to ensure that the resistors are correctly connected.

**Quality Certifications**

ISO 9001 – 2008

**Note:**

1. All dimensions are in mm
2. All dimensions are measured equidistant from centre line
3. Maximum depth of equipment inside panel : 225mm

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