Switching Amplifier
MK1-17-R
1 channel

- Single channel switching amplifier
- Latching of output state after tripping
- Switching status is retained during power failure
- Galvanic isolation of input circuit from output circuit and from supply voltage
- 2 complementary relay outputs with one NO contact each
- Removable terminal blocks

The single channel switching amplifier MK1-17-R/... serves to monitor the switching status of mechanical NC contacts. The output is equipped with two complementary relays with one NO contact each. These NO contacts signal opening of the monitored mechanical contact which must be closed during normal operation. In this case, relay 1 is energised (NO contact closed) and relay 2 is de-energised (NO contact open). If the monitored mechanical contact opens, both relays change state and retain this switching state until the front panel reset button (or an externally connected reset button) is activated. The relays always have to be reset to return to their initial position (relay 1 energised, relay 2 de-energised).

If a power supply failure occurs, both relays de-energise. After re-applying power, the same switching status as before the power failure is restored. This enables retaining an error state during a power supply failure. The input circuit and external reset buttons are galvanically isolated from the output and the power supply.

The switching status of both relays is indicated via the yellow LEDs; the green LED signals that power is applied to the device.
Switching Amplifiers

Use of bimetal switches for motor temperature monitoring

A bimetal switch, which is integrated in a motor for temperature control purposes, can be monitored by the MK1-17-R/...
The bimetal contact must open if the operating temperature is exceeded; consequently the relays will change their switching state. The relays retain this state (even if the motor cools off) until the internal or an optional external reset button is activated. If a power failure occurs both relays de-energise. If power is re-applied the relays return to the same switching status as before the power failure. This function prevents a defect motor from re-starting after a power failure.

Galvanic isolation

between input circuit and output circuit and supply voltage for 250 V_{rms}, test voltage 2.5 kV_{rms}

Input Circuits

<table>
<thead>
<tr>
<th>Operating characteristics</th>
<th>Voltage</th>
<th>Current</th>
<th>Switching threshold</th>
<th>Hysteresis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 V</td>
<td>8 mA</td>
<td>1.55 mA</td>
<td>typ. 0.2 mA</td>
</tr>
</tbody>
</table>

Output Circuits

| 2 relay outputs: 2 x SPDT |

Switching voltage ≤ 250 VAC/120 VDC
Switching current per output ≤ 2 A
Switching capacity per output ≤ 500 VA/60 W
Switching frequency ≤ 10 Hz
Contact material silver-alloy + 3 µm Au

LED Indications

- Status indication 2 x yellow
- Power ‘ON’ green

Terminal Housing

12-pole, 18 mm wide, Polycarbonate/ABS flammability class V-0 per UL 94
Mounting snap-on clamps for top-hat rail (DIN 50022) or screw terminals for panel mounting
Connection removeable terminal blocks, reverse-polarity protected, screw connection
Connection profile ≤ 1 x 2.5 mm² or 2 x 1.5 mm² with wire sleeves
Degree of protection (IEC 60529/EN 60529) IP20
Operating temperature -25... +60 °C

<table>
<thead>
<tr>
<th>Type</th>
<th>Ident-No.</th>
<th>Supply Voltage U_B</th>
<th>Line frequency</th>
<th>Ripple W_{pp}</th>
<th>Power-/Current consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK1-17-R/230VAC</td>
<td>75 400 17</td>
<td>195...253 VAC</td>
<td>48...62 Hz</td>
<td>-</td>
<td>≤ 30 mA_{rms}</td>
</tr>
<tr>
<td>MK1-17-R/24VDC</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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