SIL 3 Digital Output Driver, NE Loads

D5049

Technical Data:

Supply: 24 Vdc nom (20 to 30 Vdc) reverse polarity protected. Ripple within voltage limits ≤ 5 Vpp. 2 A time lag fuse internally protected.

Current consumption @ 24 V: 65 mA with 45 mA output typical in normal operation.

Power dissipation: 1 W with 24 V supply, output energized at 45 mA nominal load.

Isolation (Test Voltage): I.S. Out/In 2.5 KV; I.S. Out/Supply 2.5 KV; I.S. Out/Fault-Overide 2.5 KV; In/Supply 500 V; In/Fault-Overide 500 V; Supply/Fault-Override 500V.

Control Input: switch contact, logic level reverse polarity protected.

Trip voltage levels: ON status ≤ 0.5 V, DN status ≥ 20.0 V (maximum 30 V).

Current consumption @ 24 V: 15 mA max.

Override input: override control signal de-energizes output when enabled by dip-switch.

Override range: 24 Vdc nom (20 to 30 Vdc) disable (field device controlled by input), 0 to 5 Vdc to de-energize field device, reverse polarity protected.

Current consumption @ 24 V: 15 mA max.

Output:

45 mA at 13.0 V (21.0 V no load) at terminals 7-10 Out A; 45 mA at 10.2 V (21.0 V no load) at terminals 8-10 Out B; 45 mA at 8.5 V (21.0 V no load) at terminals 9-10 Out C.

Short circuit current: ≤ 50 mA (50 mA typical).

Response time: ≤ 30 ms (for direct input-output transfer); ≤75ms (for inverted input-output transfer).

Frequency response: 50 Hz.

Fault detection: field device and wiring open circuit or short circuit detection dip-switch selectable. When fault is detected output is de-energized until normal condition is restored.

Short output detection: load resistance ≤ 50 Ω (2 mA forcing to detect fault).

Open output detection: load resistance > 10 KΩ.

Fault signaling: voltage free NE SPST optocoupled open-collector transistor (output de-energized in fault condition).

Open-collector rating: 100 mA at 35 Vdc (≤ 1.5 V voltage drop).

Leakage current: ≤ 50 μA at 35 Vdc.

Response time: ≤ 75 ms.

Compliance:

CE: mark compliant, conforms to Directive:

EN 50014/34/UEATEX, 2013/6/UE EMC, 2013/35/UE LVD, 2011/65/UE RoHS.

Environmental conditions:

Operating: temperature limits – 40 to + 70 °C, relative humidity 95 %, up to 55 °C.

Storage: temperature limits – 45 to + 80 °C.

Safety Description:


EN 61326-1, EN 61326-3-1 for safety system.

EMC Compatibility to EN 61000-6-2, EN 61000-6-4, EN 61000-6-3 for Safety System.

Protection class: IP 20.

Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.
### Parameters Table:

<table>
<thead>
<tr>
<th>Safety Description</th>
<th>Maximum External Parameters</th>
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<tbody>
<tr>
<td></td>
<td>Group</td>
</tr>
<tr>
<td>Out A</td>
<td>IIC</td>
</tr>
<tr>
<td>Terminals 7-10</td>
<td>IIB</td>
</tr>
<tr>
<td>Uo/Voc = 24.8 V</td>
<td>IIA</td>
</tr>
<tr>
<td>Io/Isc = 147 mA</td>
<td>I</td>
</tr>
<tr>
<td>Po/Po = 907 mW</td>
<td>IIIc</td>
</tr>
<tr>
<td>Out B</td>
<td>IIC</td>
</tr>
<tr>
<td>Terminals 8-10</td>
<td>IIB</td>
</tr>
<tr>
<td>Uo/Voc = 24.8 V</td>
<td>IIA</td>
</tr>
<tr>
<td>Io/Isc = 108 mA</td>
<td>I</td>
</tr>
<tr>
<td>Po/Po = 667 mW</td>
<td>IIIc</td>
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<tr>
<td>Out C</td>
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<tr>
<td>Terminals 9-10</td>
<td>IIB</td>
</tr>
<tr>
<td>Uo/Voc = 24.8 V</td>
<td>IIA</td>
</tr>
<tr>
<td>Io/Isc = 93 mA</td>
<td>I</td>
</tr>
<tr>
<td>Po/Po = 571 mW</td>
<td>IIIc</td>
</tr>
</tbody>
</table>

### Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC, HAZARDOUS LOCATIONS CLASS I, DIVISION 1, GROUPS A, B, C, D, CLASS II, DIVISION 1, GROUPS E, F, G, CLASS III, DIVISION 1, CLASS I, ZONE 0, GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4, NON HAZARDOUS LOCATIONS, CLASS I, DIVISION 2, GROUPS A, B, C, D T-Code T4, CLASS I, ZONE 2, GROUP IIC T4

NOTE: Use only one output at a time (Out A or Out B or Out C).