Dold LG5925 Series 2-Channel Emergency Stop and Safety Gates

Designed to protect people and machines in applications with E-stop buttons and safety gates.

- Outputs: 3 N.O. contacts and 1 N.C. contact
- Feedback circuit to monitor external contactors used for reinforcement of contacts
- Overvoltage and short-circuit protection
- Monitored manual restart
- Single and 2-channel operation
- LED indicators for power and state of operation

**Safety Relays Selection Chart**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Price</th>
<th>Marking Type</th>
<th>Voltage</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG5925-48-61-24</td>
<td>$165.00</td>
<td>2-channel E-STOP / GATE</td>
<td>24 VAC/DC</td>
<td>3 N.O. and 1 N.C.</td>
</tr>
<tr>
<td>LG5925-48-61-110</td>
<td>$180.00</td>
<td>2-channel E-STOP / GATE</td>
<td>110 VAC</td>
<td>3 N.O. and 1 N.C.</td>
</tr>
<tr>
<td>LG5925-48-61-230</td>
<td>$180.00</td>
<td>2-channel E-STOP / GATE</td>
<td>230 VAC</td>
<td>3 N.O. and 1 N.C.</td>
</tr>
</tbody>
</table>

**LG5925 Controllers Safety Relay Specification Table**

### General Specifications

- **Temperature**
  - Storage: -25°C to 85°C (-13°F to 185°F)
  - Operating: -15°C to 55°C (5°F to 131°F)
- **Altitude**
  - <2,000 meters
- **Vibration Resistance**
  - Amplitude: 0.35mm, Frequency: 10 to 55 Hz (IEC/EN 60-068-2-6)
- **Degree of Protection**
  - Per IEC/EN 60 529. Housing: IP40; Terminals IP20
- **Housing**
  - UL 94V-0 Thermoplastic; Din mount 35 mm x 7.5 mm
- **Weight**
  - LG5925 24V AC/DC: 210 g (7.40 oz.); LG5925 110V, 230V AC: 275 g (9.70 oz.)
- **Agency Approvals and Standards**
  - CSA, cULus file E107778, CE, RoHS, TUV
- **Terminal Designation per EN 50 005**
  - 1x4 mm² solid or 1 x 2.5 mm² stranded ferruled (isolated) or 2 x 1.5 mm² stranded ferruled (isolated)
  - DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm² solid DIN 46 228-1/-2/-3/-4
- **Wire Fixing**
  - Terminal screws M3.5 box terminals with wire protection or cage clamp terminals.

### Input Specifications

- **Nominal Voltage**
  - 110VAC, 230VAC, 24VAC/DC
- **Voltage Range**
  - At 10% residual ripple: AC/DC: 0.9 to 1.1 UN; AC: 0.85 to 1.1 UN
- **Maximum Consumption**
  - DC approx. 1.5W; AC approx. 3.7 VA
- **Nominal Frequency**
  - 50 to 60 Hz
- **Minimum Off-time**
  - 250 ms
- **Control Voltage on S11 At UN**
  - AC/DC units: 22VDC; AC units: 24VDC
- **Control Current Typ. Over S12, S22**
  - 30mA at UN
- **Min. Voltage on S12, S22 (relay activated)**
  - AC/DC units: 20VDC; AC units: 19VDC
- **Short Circuit Protection**
  - Internal with PTC (Positive Temperature Coefficient resistor)
- **Overvoltage Protection**
  - Internal VDR (Voltage Dependent Resistor)

### Output Specifications

- **Electrical Contact Life**
  - AC 15 at 5A, 230VAC: > 2.2x10⁵ switching cycles
- **Mechanical Life**
  - > 20x10⁵ switching cycles
- **Contact Type**
  - 3 positively driven N.O. and 1 N.C. relay contacts (N.O. contacts are safety contacts)
- **Operate Delay**
  - Manual start: 30ms; automatic start: 350ms
- **Release Delay**
  - Disconnecting the supply: AC units:150ms; DC units: 50ms
- **Nominal Output Voltage**
- **Thermal Current (Iₚₚ)**
  - Max. 8A. See continuous current limit curve in installation manual.
- **Short Circuit Strength**
  - Max. fuse rating: 10A gL (IEC/EN 60 947-5-1); Line circuit breaker: B 6A
- **Switching Capacity (IEC/EN 60 947-5-1)**
  - AC 15: N.O. contacts: 3A/230V; N.C. contacts: 2A/230V
  - DC 13: N.O. contacts: 4A/DC24V. 0.5A/110V; N.C. contacts: 4A/24V;
  - DC 13: N.O. contacts: 8A/24V >25x10³. ON: 0.4s, OFF: 9.6 s
- **Switching Frequency**
  - Max. 1200 switching cycles/hr

**Safety Data – Values per EN ISO 13849-1**

- **Category**
  - 4 according to EN 954-1
- **Performance level**
  - PLe according to EN 13849-1
- **MTTFₐₜ**
  - >100 years
- **Safety Data – Values per IEC/EN 62061 / IEC/EN 61508**
  - SIL CL
    - 3 per IEC/EN 62061
  - SIL
    - 3 per IEC/EN 61508
- **HFT (Hardware Failure Tolerance)**
  - 1
- **DCavg**
  - 99%
- **SFF**
  - 99.7%
- **PFHₐₜ**
  - 2.66E⁻¹⁰ h⁻¹

For the latest prices, please check AutomationDirect.com.
Dold LG5925 Series
2-Channel Emergency Stop and Safety Gates

**Wiring**

LG5925 Block Diagram

- Single channel emergency stop circuit. This circuit does not have any redundancy in the emergency-stop control circuit.
  - S1 no cross fault detection
  - S2 automatic start
  - Set switch or dip switch in pos.: S1 no cross fault detection
  - S2 automatic start

- 2-channel emergency stop circuit without cross fault monitoring.
  - Set switch or dip switch in pos.: S1 no cross fault detection
  - S2 manual start
  - Set switch or dip switch in pos.: S1 no cross fault detection
  - S2 manual start

- 2-channel emergency stop circuit with cross fault detection.
  - Set switch or dip switch in pos.: S1 no cross fault detection
  - S2 manual start
  - Set switch or dip switch in pos.: S1 no cross fault detection
  - S2 automatic start

- 2-channel emergency stop circuit with cross fault.
  - Contact reinforcement by external contactors, 2-channel controlled.
  - The output contacts can be reinforced by external contactors with positive guided contacts for switching currents > 8 A.
  - Functioning of the external contactors is monitored by looping the N.C. contacts into the closing circuit (terminals S33-S34).
  - Note: Refer to "Unit programming"

- 2-channel safety gate monitoring.
  - Set switch or dip switch in pos.: S1 no cross fault detection
  - S2 manual start
  - Activated N.O. contact
  - Contact reinforcement by external contactors controlled by one contact path.
  - Two coded non-contact sensors in series.
  - Note: Refer to "Unit programming"

**Dimensions**

<table>
<thead>
<tr>
<th>mm</th>
<th>in</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.5</td>
<td>0.89</td>
</tr>
<tr>
<td>1081</td>
<td>42.63</td>
</tr>
<tr>
<td>94.5</td>
<td>3.73</td>
</tr>
</tbody>
</table>

Applications

- Overvoltage and short circuit protection
- Monitoring logic
- 2-channel emergency stop circuit with S1 cross fault detection
- S2 manual start
- Set switch or dip switch in pos.: S1 cross fault detection
- S2 manual start
- Contact reinforcement by external contactors, 2-channel controlled.
- Two coded non-contact sensors in series.

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1-800-633-0405
Dold LG5929 Extension Module

Additional contacts for emergency-stop modules and safety gate monitors.
- 1-channel or 2-channel connection
- LED indication for operation
- Output: 5 N.O. and 1 N.C. contacts

Safety Relays Selection Chart

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<tr>
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<th>Price</th>
<th>Marking Type</th>
<th>Voltage</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG5929-60-100-61</td>
<td>$136.00</td>
<td>Safety relay extension module</td>
<td>24 VAC/VDC</td>
<td>5 N.O./1 N.C.</td>
</tr>
</tbody>
</table>

Safety Data – Values per EN ISO 13849-1

<table>
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<tr>
<th>Category</th>
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<tr>
<td>Performance level</td>
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</tr>
<tr>
<td>MTTF_d</td>
<td>&gt;100 years</td>
</tr>
<tr>
<td>DC_{avg}</td>
<td>99%</td>
</tr>
</tbody>
</table>

Safety Data – Values per IEC/EN 62061 /IEC/EN 61508

| SIL CL            | 3 per IEC/EN 62061       |
| SIL               | 3 per IEC/EN 61508       |
| HFT (Hardware Failure Tolerance) | 1 |
| DC_{avg}          | 99%                      |
| SFF               | 99.7%                    |
| PFH_D             | 4.68E-10 h~1             |

Safety Relay Extension Module Specification Table

General Specifications

- Temperature: Storage: -25°C to 85°C (-13°F to 185°F) Operating: -15°C to 55°C (5°F to 131°F)
- Altitude: < 2,000 meters
- Vibration Resistance: Amplitude: 0.35mm, Frequency: 10 to 55 Hz (IEC/EN 60-068-2-6)
- Degree of Protection: Per IEC/EN 60 529. Housing: IP40; Terminals IP20
- Housing: UL 94V-0 Thermoplastic; Din mount 35 mm x 7.5 mm
- Weight: 205g (7.23 oz.)
- Agency Approvals and Standards: CSA, cULus file E107778, CE, RoHS, TUV

Terminal Designation per EN 50 005 Wire Connections

- 1x4 mm² solid or 1 x 2.5 mm² stranded ferruled (isolated) or 2 x 1.5 mm² stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm² solid per DIN 46 228-1/2-3/-4
- Wire Fixing: Plus-minus terminal screws M3.5 box terminals with wire protection or cage clamp terminals.

Input Specifications

- Nominal Voltage: 24V AC/DC
- Voltage Range: AC: 0.85 to 1.1 U_N At 10% residual ripple: 0.9 to 1.1 U_N At 48% residual ripple: 0.85 to 1.1 U_N
- Maximum Consumption: 24VAC/DC: 1.8VA
- Nominal Frequency: 50 to 60 Hz
- Control Current: Control current typ. at 24V over 2 relays: 75 mA
- Overvoltage Protection: Internal VDR (Voltage Dependent Resistor)

Output Specifications

- Electrical Contact Life: To AC15 at 2 A,230V: 10^5 switching cycles IEC/EN 60 947-5-1
- Mechanical Life: 20 x 10^6 switching cycles
- Contact Type: 5 N.O. positively driven and 1 N.C. relay contacts (N.O. contacts are safety contacts)
- Operate/Release Time: Operate typ at U_N: 20 m; Release typ at U_N: 35 ms.
- Nominal Output Voltage: 250VAC
- Thermal Current (I_{TH}): Max. 5A per contact. See continuous current limit curve in installation manual.
- Short Circuit Strength: Max fuse rating:10A gl (IEC/EN 60 9470-5-1); Line circuit breaker: B6A
- Switching Capacity IEC/EN 60 947-5-1
  - AC 15: N.O. contacts: 3A/230V; N.C. contacts: 2A/230VAC
- Switching Frequency: Max. 1,200 switching cycles/hr
Dold LG5929 Extension Module

Wiring

**LG5929 Block Diagram**

Applications

Note: This is a representative drawing. Depending on the LG5925 safety relay you select, different voltage sources may be required.

*Note: When switching inductive loads, surge suppressors are recommended.*

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Safety Products

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