

Dold LG5944 Safety Mat Relay



- Safety mat relay with manual or automatic restart
- Can also be used for safety edges
- Output: 2 N.O. contacts
- Line fault detection at the ON pushbutton
- LED indicator for state of operation



| Safety Data – Values per EN ISO 13849-1 | |
|-----------------------------------------------------|---------|
| Category | 3 |
| Performance level | e |
| MTTF _d | 703.0 |
| DC _{avg} | 99.0% |
| Safety Data – Values per IEC/EN 62061 /IEC/EN 61508 | |
| SIL CL | 3 |
| SIL | 3 |
| HFT (Hardware Failure Tolerance) | 1 |
| DC _{avg} | 99.0% |
| PFH _D | 6.7e-11 |

Safety Relays Selection Chart

| Part Number | Price | Marking Type | Number of Safety Mat Inputs | Voltage | Outputs |
|----------------------------------|----------|---------------------------------------------------------------------------------------|-------------------------------------------|---------|------------------------------------------|
| LG5944-02-010-24 | \$160.00 | Dold safety relay module, safety mat/edges, dual channel, manual or automatic restart | 1 safety mat (2 or 4 wire configuration) | 24VDC | 2 N.O. positive guided safety contact(s) |
| LG5944-02-110-24 | \$176.00 | | 2 safety mats (2 wire configuration only) | | |

Relay Mat and Edge Specification Table

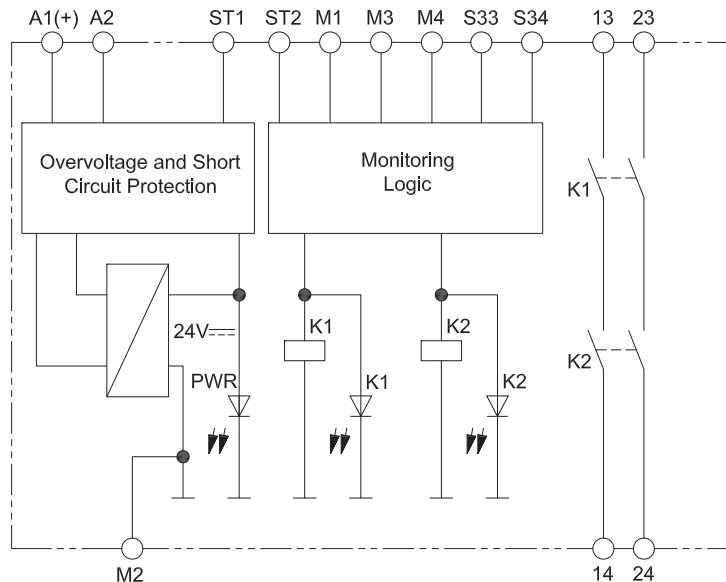
| General Specifications | |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Temperature | Storage: -25°C to 85°C (-13°F to 185°F) Operating: -15°C to 55°C (5°F to 131°F) |
| Altitude | < 2,000m (6562ft) |
| Vibration Resistance | IEC/EN 60-068-2-6 |
| Degree of Protection | Housing: IP40; Terminals IP20 |
| Housing | UL 94V-0 Thermoplastic; DIN mount 35mm (1.38 in) x 7.5 mm (0.30 in) |
| Weight | Approx 200g (7.05 oz) |
| Terminal Designation | EN 50005 |
| Wire Fixing | Box terminal with wire protection |
| Wire Connection | Min. 60°C (140°F) copper conductors, 0.8 N•m (0.59 ft•lb) torque |
| Input Specifications | |
| Nominal Voltage | 24VDC |
| Voltage Range | 0.9 to 1.2 VDC |
| Maximum Consumption | DC approx. 1.6 W |
| Control Voltage - S11 | UN: 23VDC |
| Control Current on S12, S22 | 40mA at UN |
| Minimum Voltage on Terminals S12, S22 (when relay activated) | 21VDC |
| Short Circuit Protection | Internal |
| Overvoltage Protection | Internal VDR (Voltage Dependent Resistor) |
| Output Specifications | |
| Electrical Contact Life | To 2A, AC 230V: 105 switching cycles IEC/EN 60 947-5-1 |
| Mechanical Life | 10 x 10 ⁶ switching cycles |
| Contact Type | Forcibly guided |
| Operate Delay | Operate delay typ at UN: manual start 20ms; automatic start: 20ms |
| Release Delay | Release delay typ at UN: Disconnecting the supply: 80ms.; Disconnecting S12, S22: 15ms |
| Nominal Output Voltage | AC: 250V; DC: See continuous current limit curve in installation manual. |
| 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 60 947-5-1); Line circuit breaker: B 6A |
| Switching Capacity | AC15: N.O. contacts: 3A/230V DC13: N.O. contacts: 2A/24V DC, 0.5A/110V AC; N.O. contacts: 2A/24V DC |
| Switching Frequency | Max. 1,200 switching cycles/hr |
| Agency Approvals | cULus file E107778, CE, RoHS, TUV |

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com

Dold LG5944 Safety Mat Relay

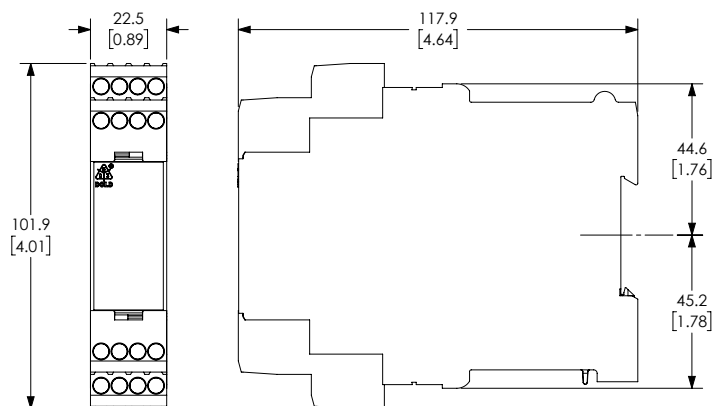


Block Diagram

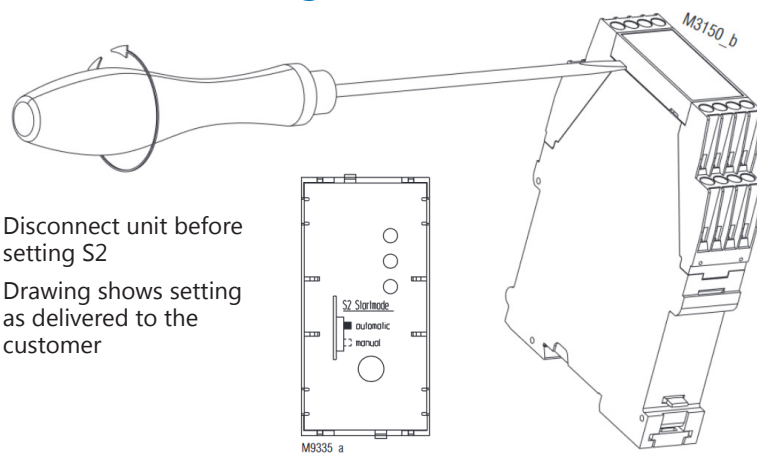


Dimensions

mm [in]



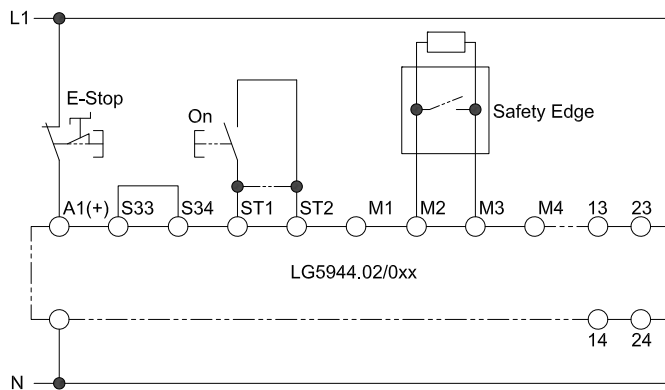
S2 Switch Setting Instructions



Dold Safety Relay Mat and Edge



Application Examples



Application example for /0xx

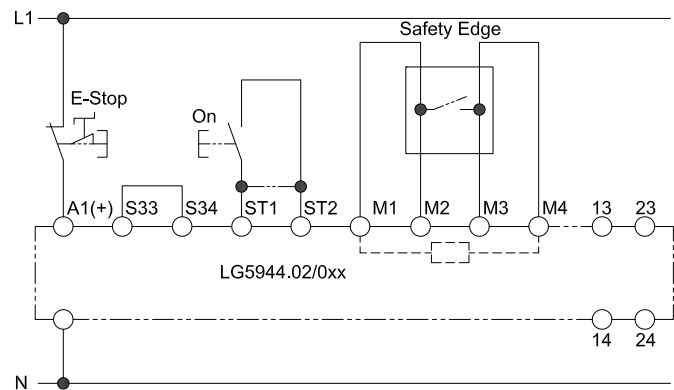
Safety device for safety edges

Switches in pos.: S2: manual start

(for automatic restart S2 on autostart and ST1-ST2 bridged).

Connection: 2-wire circuit

Suited up to SIL3, Performance level e, Cat.3.



Application example for /0xx

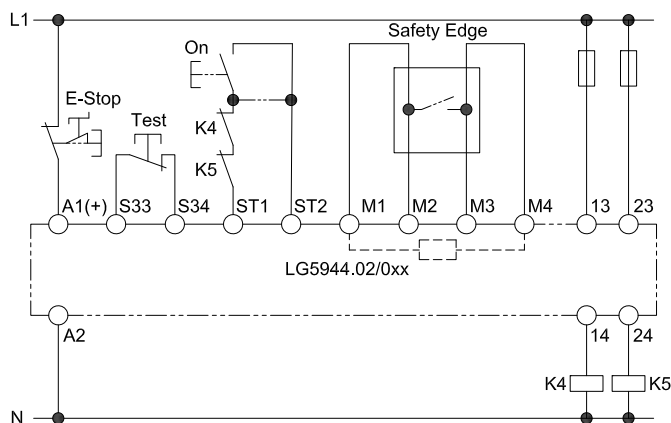
Safety device for safety edges

Switches in pos.: S2: manual start

(for automatic restart S2 on autostart and ST1-ST2 bridged).

Connection: 4-wire circuit

Suited up to SIL3, Performance level e, Cat.3.

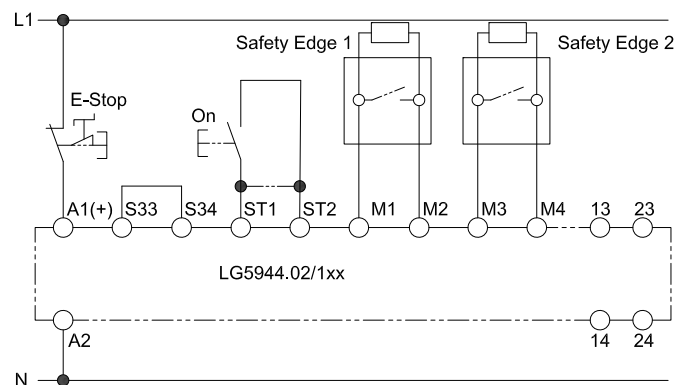


Application example for /0xx

Contact multiplication by external contactors.

The function of the external contactors is monitored by connecting the N.C. contacts into the feedback circuit.

ST1-ST2 (for automatic restart S2 on autostart and instead of the ON button, ST1-ST2 has to be bridged).



Application example for /1xx

Safety device for safety edges.

Switches in pos.: S2: manual start

(for automatic restart S2 on autostart and ST1-ST2 bridged)

If only 1 sensor is connected to the M1/M2 sensor input, the M3/M4 sensor input has to be bridged with a resistor

(/10x: 1.2k ohm±1%; /11x: 8.2k ohm±1%).

Suited up to SIL3, Performance level e, Cat.3.

Safety Products



Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.