

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

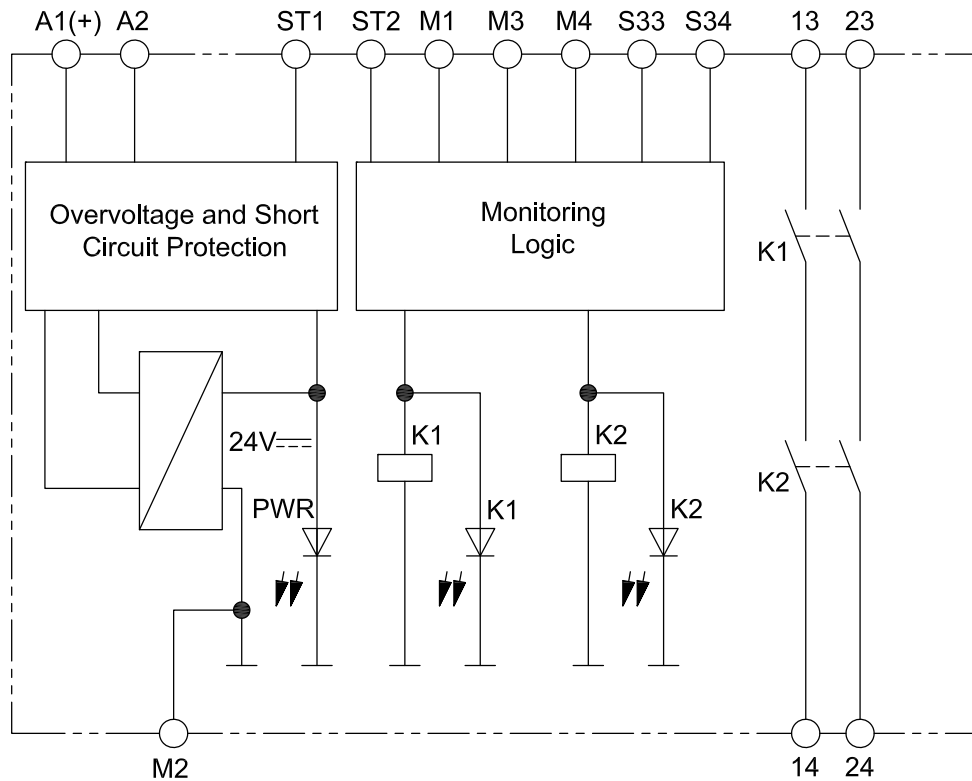
Part Number	Price	Marking Type	Number of Safety Mat Inputs	Voltage	Outputs
LG5944-02-010-24		Dold safety relay module, safety mat/edges, dual channel, manual or automatic restart	1 safety mat (2 or 4 wire configuration)	24VDC	2 N.O. positive guided safety contact(s)
LG5944-02-110-24			2 safety mats (2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

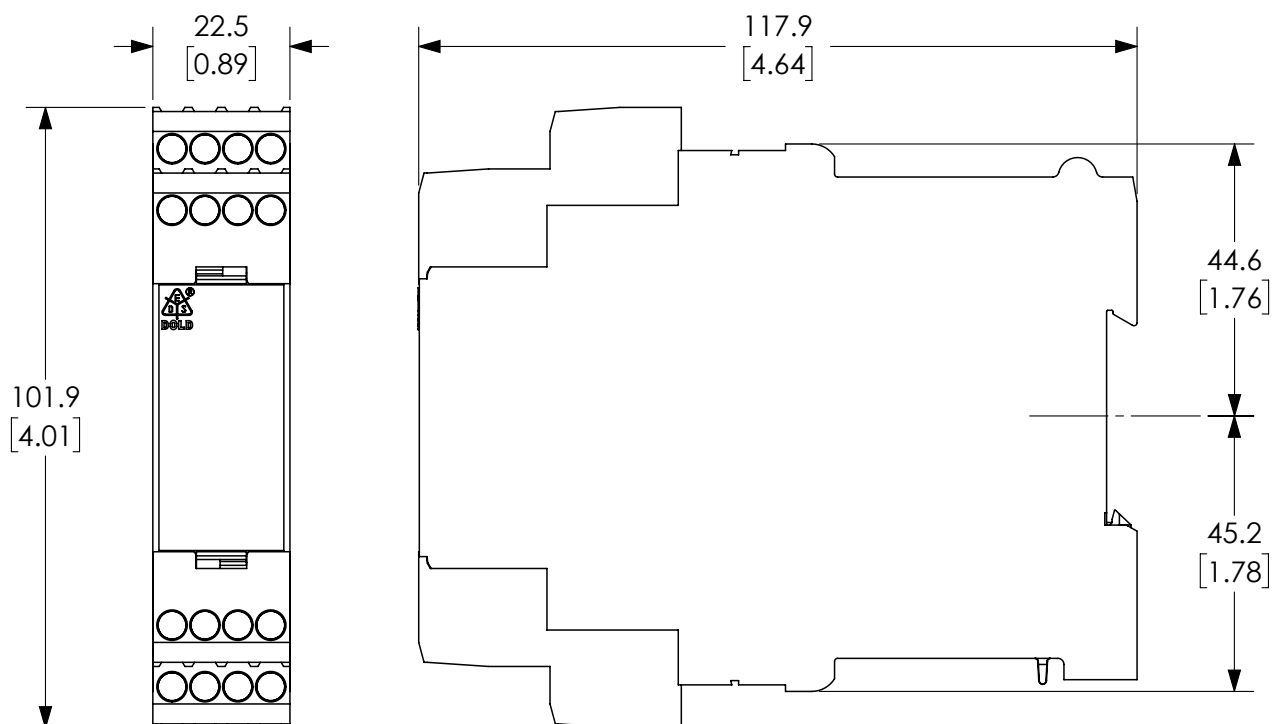
Dold LG5944 Safety Mat Relay

Block Diagram



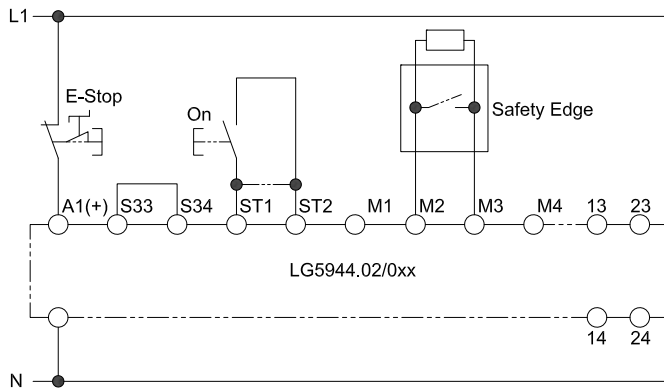
Dimensions

mm [in]



Dold Safety Relay Mat and Edge

Application Examples



Application example for /0xx

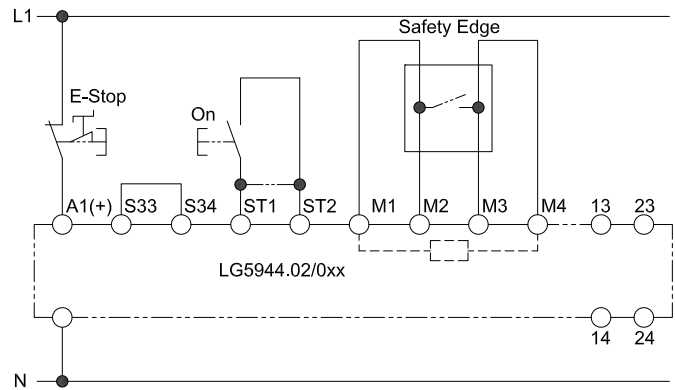
Safety device for safety edges

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

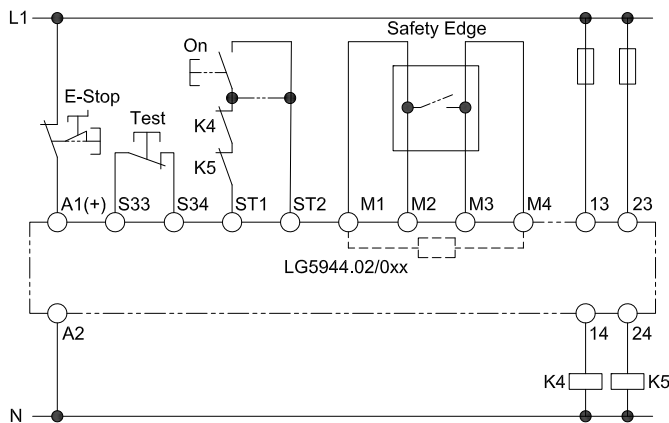
Safety device for safety edges

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.

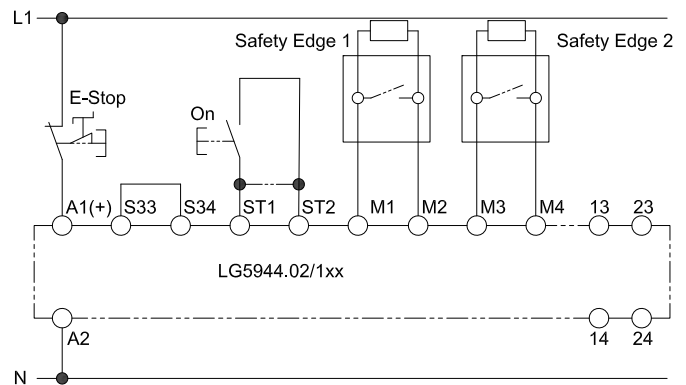


Application example for /0xx

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



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