

# Dold LG7927/ LG7928 Extension Module



Additional contacts for emergency-stop modules and safety gate monitors.

- Safe timing circuits
- 4 forcibly guided output contacts at only 22.5 mm width
- According to:
  - Performance Level (PL) d and category 3 to EN ISO 13849-1: 2008
  - SIL Claimed Level (SIL CL) 2 to IEC/EN 62061
  - Safety Integrity Level (SIL) 2 to IEC/EN 61508 and IEC/EN 61511 when connected to a suitable safety module
- Adjustable time delay
- On - Delayed / Released Delayed
- Long life stability due to digital time base

- Adjustable with or without cross fault detection
- Output: 3 N.O. contacts + 1 N.C. contact, 1 positive guided feedback contact
- LED indicator for channel 1, 2 and operation voltage



## Safety Relays Selection Chart

Part Number	Price	Marking Type	Voltage	Outputs
<b><u>LG7927-97-61-10</u></b>	\$-010i0:	On-Delayed Safety Relay Extension Model	24VAC/VDC	3 NO time delay (1 to 10 second) positive guided safety contact(s) 1 NC time delay (1 to 10 second) positive guided safety contact(s) 1 NC time delay monitoring contact
<b><u>LG7928-97-61-10</u></b>	\$-010i2:	Release-Delayed Safety Relay Extension Model	24VAC/VDC	3 NO time delay (1 to 10 second) positive guided safety contact(s) 1 NC time delay (1 to 10 second) positive guided safety contact(s) 1 NC time delay monitoring contact

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

Category	3
Performance level	PLd
MTTF <sub>d</sub>	172.3 years
DC <sub>avg</sub>	99%

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

SIL CL	2
SIL	2
HFT (Hardware Failure Tolerance)	1
DC <sub>avg</sub>	99%
SFF	99.7%
PFH <sub>D</sub>	2.95E-10 h-1

## S1 Switch Setting Instructions

To alter the operation mode, with or without cross fault monitoring, switch S1 is used. It is located behind the front cover.

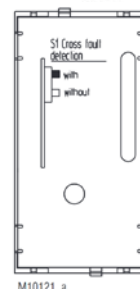
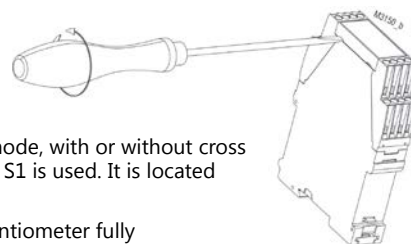
First, turn the time potentiometer fully counterclockwise.

Then remove the cover.

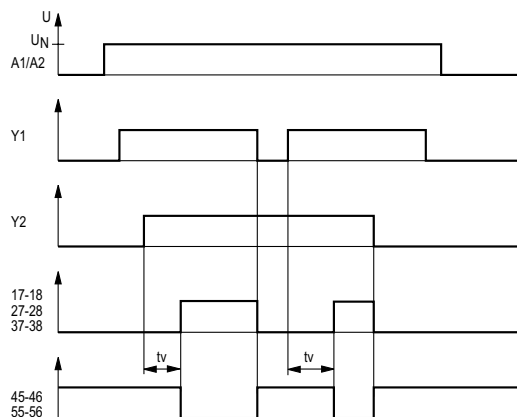
Then set the operating mode.

Then replace the cover, making sure that the setting knob is in the fully counterclockwise position.

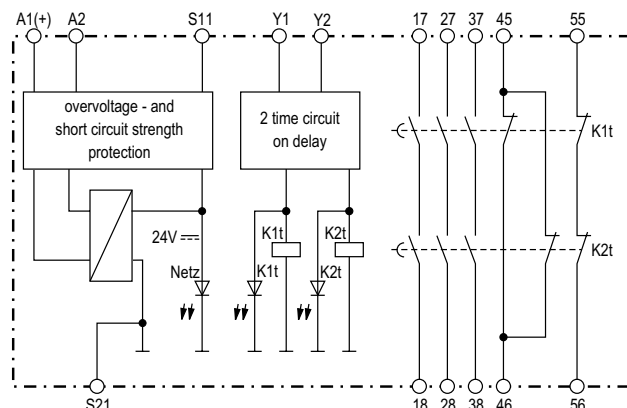
Finally, confirm that the setting control still can be adjusted through its full range.



## Function Diagram



## Block Diagram





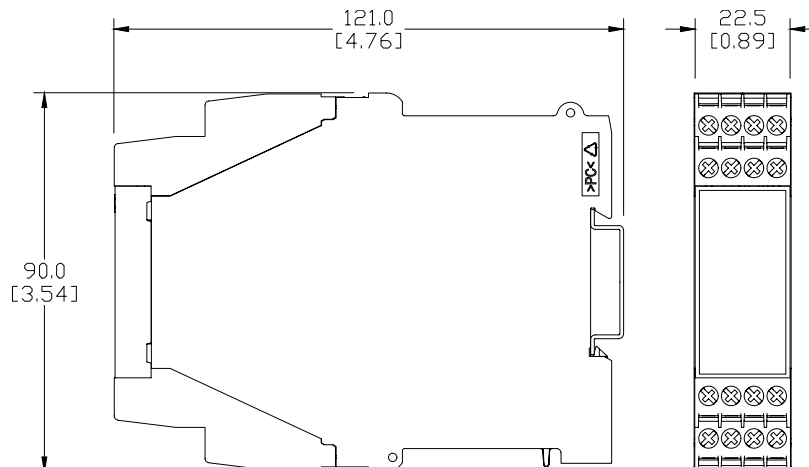
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## Safety Relay Extension Module Specification Table

<b>General Specifications</b>	
<b>Temperature</b>	Storage: -25°C to 85°C (-13°F to 185°F) Operating: -15°C to 55°C (5°F to 131°F)
<b>Altitude</b>	< 2.000 meters
<b>Vibration Resistance</b>	Amplitude: 0.35mm, Frequency: 10 to 55 Hz (IEC/EN 60-068-2-6)
<b>Degree of Protection</b>	Per IEC/EN 60 529. Housing: IP40; Terminals IP20
<b>Housing</b>	UL 94V-0 Thermoplastic; DIN mount 35 mm x 7.5 mm
<b>Weight</b>	approximately 190g (6.70 oz.)
<b>Agency Approvals and Standards</b>	CSA, cULus file E107778, CE, RoHS, TUV
<b>Terminal Designation per EN 50 005 Wire Connections</b>	2 x 2.5 mm <sup>2</sup> stranded ferruled (isolated) or 2 x 1.5 mm <sup>2</sup> stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm <sup>2</sup> solid per DIN 46 228-1/-2/-3 /-4
<b>Wire Fixing</b>	Plus-minus terminal screws M3.5 box terminals with wire protection.
<b>Wire Connection</b>	60degC/75degC Copper conductors only; AWG20-12 Sol/Str Torque 0.8NM
<b>Input Specifications</b>	
<b>Nominal Voltage</b>	24VAC/DC
<b>Voltage Range</b>	AC: 0.9 to 1.1 U <sub>N</sub> At 10% residual ripple: 0.9 to 1.1 U <sub>N</sub> ; At 48% residual ripple: 0.85 to 1.1 U <sub>N</sub>
<b>Maximum Consumption</b>	24VAC/DC: 3.5 VA/2.0 W
<b>Nominal Frequency</b>	50 to 60 Hz
<b>Control Current</b>	Control current typ. at 24V over 2 relays: 75 mA
<b>Overvoltage Protection</b>	Internal VDR (Voltage Dependent Resistor)
<b>Output Specifications</b>	
<b>Electrical Contact Life</b>	To AC15 at 5A, 230V: 2.2 x 10 <sup>5</sup> switching cycles IEC/EN 60 947-5-1
<b>Mechanical Life</b>	20 x 10 <sup>6</sup> switching cycles
<b>Contact Type</b>	3 N.O. contacts + 1 N.C. contact + 1 forcibly guided feedback contact
<b>Operate/Release Time</b>	Operate typ at U <sub>N</sub> : DC - 2.2 mA.; AC - 3.1mA. Release typ at U <sub>N</sub> : 35 ms.
<b>Nominal Output Voltage</b>	24VDC/24VAC
<b>Thermal Current (I<sub>th</sub>)</b>	Max. 5A per contact. See quadratic total current limit curve in installation manual.
<b>Short Circuit Strength</b>	Max fuse rating: 6A gl (IEC/EN 60 9470-5-1); Line circuit breaker: B6A
<b>Switching Capacity IEC/EN 60 947-5-1</b>	AC 15: N.O. contacts: 3A/230V; N.C. contacts: 2A/230VAC DC 13: N.O. contacts: 2A/24V; N.C. contacts: 2A/24VDC; N.O. contact: 4A/24V at 0.1Hz
<b>Switching Frequency</b>	Max. 1,200 switching cycles/hr
<b>Agency Approvals and Standards</b>	cULus file E107778, CE, RoHS

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](http://www.automationdirect.com)



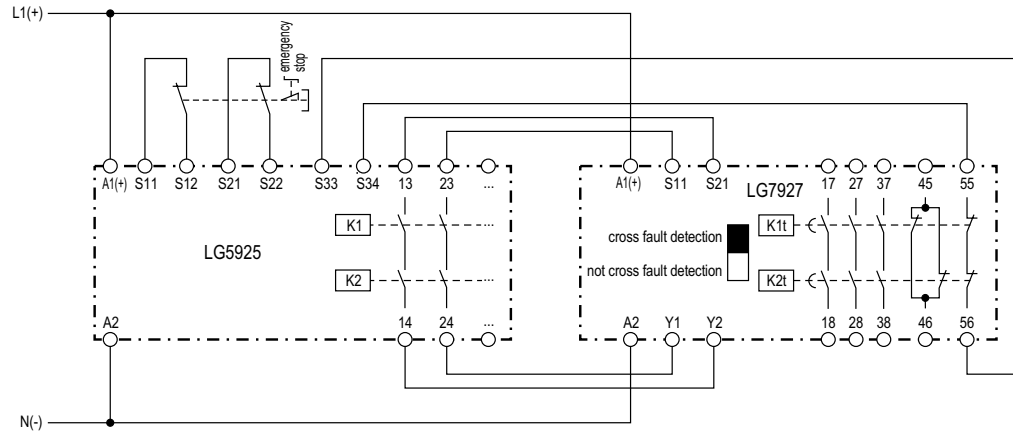
See our website: [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering Drawings.



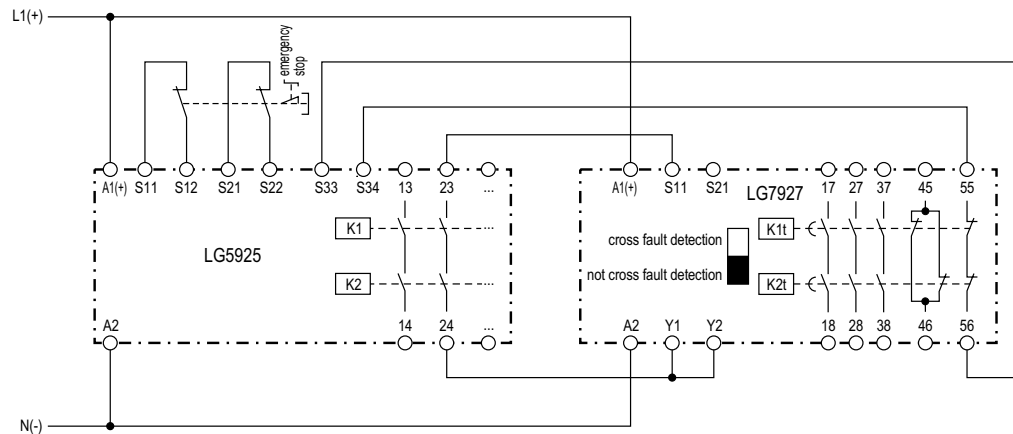
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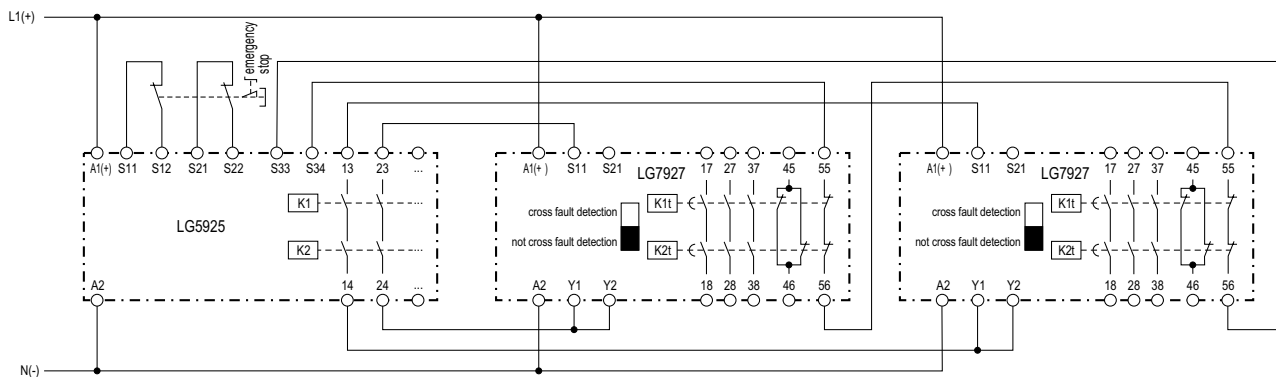
## LG7927 Application Examples



LG 5925 with LG 7927, cross fault detection, suitable up to SIL2, Performance Level d, Cat. 3



LG 5925 with LG 7927, non cross fault detection, suitable up to SIL2, Performance Level d, Cat. 3



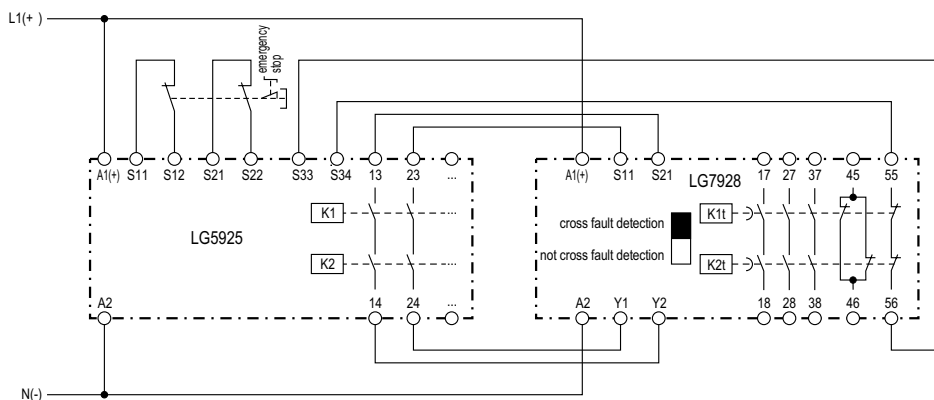
LG 5925 with two LG 7927, non cross fault detection, suitable up to SIL2, Performance Level d, Cat. 3



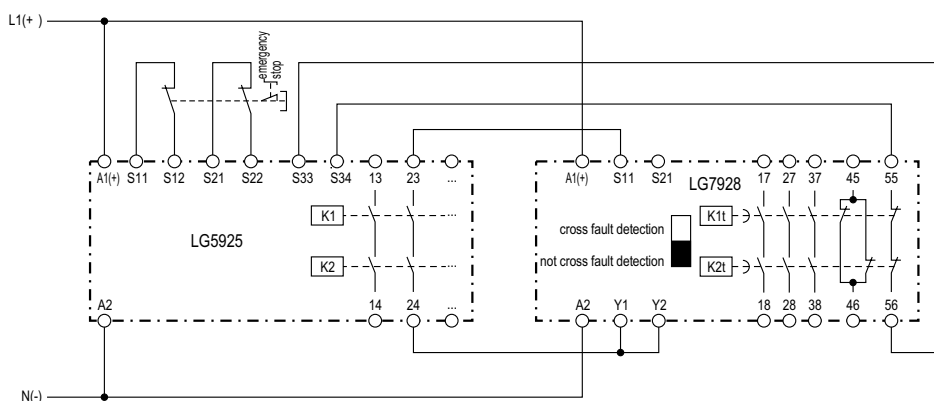
# Dold LG7927/LG7928 Extension Module



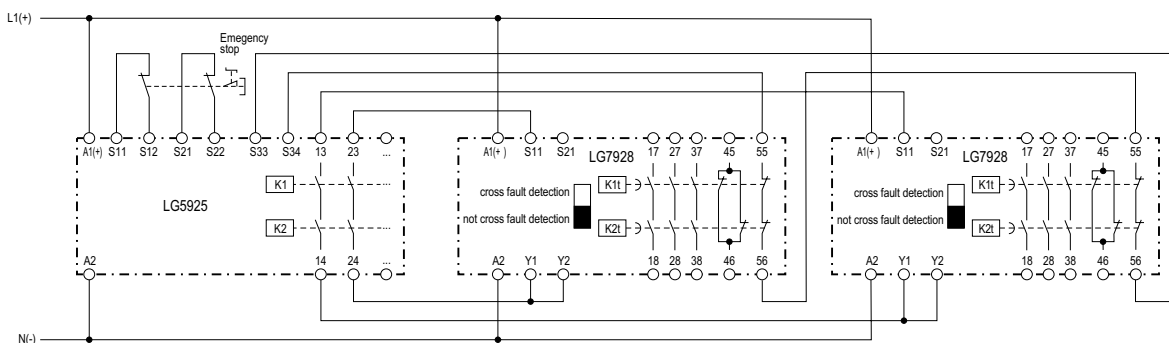
## LG7928 Application Examples



LG 5925 with LG 7928, cross fault detection, suitable up to SIL2, Performance Level d, Cat. 3



LG 5925 with LG 7928, non cross fault detection, suitable up to SIL2, Performance Level d, Cat. 3



LG 5925 with 2 LG 7928, non cross fault detection, suitable up to SIL2, Performance Level d, Cat. 3



# Safety Products



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