

# Dold LG5924 Series 1-Channel Emergency Stop

**LG5924-48-61-24**

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

- Single channel operation
- Output options: 2 NO contacts or 3 NO contacts and 1 NC contact
- LED indicators for power and state of operation
- Short circuit detection between terminal Y1 and common

## LG5924 Series Single Channel Safety Relays Selection Chart

Part Number	Price	Marking Type	Voltage	Outputs	Connection	Drawing
<a href="#">LG5924-02-61-24</a>	\$126.00	1-channel E-STOP	24VDC	2 NO	Fixed screw terminals	<a href="#">PDF</a>
<a href="#">LG5924-02PC-61-24</a>	\$136.00	1-channel E-STOP	24VDC	2 NO	Push-in cage clamp	<a href="#">PDF</a>
<a href="#">LG5924-48-61-24</a>	\$140.00	1-channel E-STOP	24VDC	3 NO, 1 NC	Fixed screw terminals	<a href="#">PDF</a>
<a href="#">LG5924-48PC-61-24</a>	\$150.00	1-channel E-STOP	24VDC	3 NO, 1 NC	Push-in cage clamp	<a href="#">PDF</a>
<a href="#">LG5924-48-61-110</a>	\$160.00	1-channel E-STOP	110VAC	3 NO, 1 NC	Fixed screw terminals	<a href="#">PDF</a>
<a href="#">LG5924-48PC-61-110</a>	\$170.00	1-channel E-STOP	110VAC	3 NO, 1 NC	Push-in cage clamp	<a href="#">PDF</a>
<a href="#">LG5924-48-61-230</a>	\$160.00	1-channel E-STOP	230VAC	3 NO, 1 NC	Fixed screw terminals	<a href="#">PDF</a>

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

<b>Category</b>	Up to 4
<b>Performance level</b>	PLe
<b>MTTF<sub>d</sub></b>	220.9 years
<b>DC<sub>avg</sub></b>	99%

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

<b>SIL</b>	Up to 3
<b>HFT (Hardware Failure Tolerance)</b>	1
<b>DC<sub>avg</sub></b>	99%
<b>SFF</b>	1.08E <sup>-10</sup>
<b>PFH<sub>D</sub></b>	5.81E <sup>-5</sup>

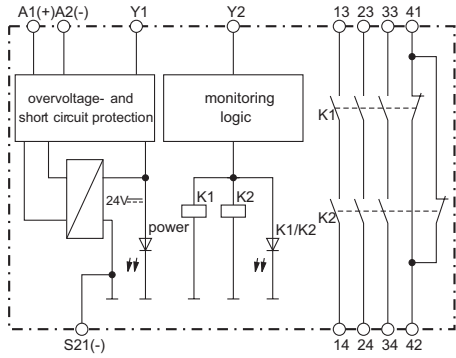
## LG5924 Controllers Safety Relay Specification Table

General Specifications	
<b>Temperature</b>	Storage: -25°C to 85°C [-13°F to 185°F] Operating: -25°C to 55°C [-13°F to 131°F]
<b>Altitude</b>	< 2,000m [6562ft]
<b>Vibration Resistance</b>	Amplitude: 0.35 mm, 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>	LG5924 24VDC 200g [7.05 oz]; LG5924 110, 230VAC 270g [9.52 oz]
<b>Agency Approvals and Standards</b>	cULus file E107778, CE, RoHS, TUV
<b>Terminal Designation per EN 50 005 Wire Connections</b>	1x4 mm <sup>2</sup> solid or 1 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 DIN 46 228-1/-2/-3
<b>Wire Fixing</b>	Plus-minus terminal screws M3.5 box terminals with self-lifting wire protection or cage clamp terminals.
Input Specifications	
<b>Nominal Voltage</b>	110, 230VAC, 24VDC
<b>Voltage Range</b>	AC: 0.85 to 1.1 UN. At 10% residual ripple: DC: 0.9 to 1.1 UN. At 48% residual ripple: DC: 0.85 to 1.1 UN
<b>Maximum Consumption</b>	230VAC approx. 3.5 A; 24V DC approx. 1.5W
<b>Nominal Frequency</b>	50 to 60 Hz
<b>Control Voltage on Y1</b>	24VDC: typ. 22VDC. 110V, 230VAC: typ. 45VDC
<b>Control Current</b>	24VDC: typ. DC 65mA. 110V, 230VAC: typ. AC 16mA
<b>Short Circuit Protection</b>	Internal with PTC (Positive Temperature Coefficient resistor)
<b>Overvoltage Protection</b>	Internal VDR (Voltage Dependent Resistor)
Output Specifications	
<b>Electrical Contact Life</b>	At 5A, 230VAC: cos $\phi$ = 1: > 2.2 x 10 <sup>5</sup> switching cycles
<b>Mechanical Life</b>	>10x10 <sup>6</sup> switching cycles
<b>Contact Type</b>	LG5924.02: 2 NO relay contacts, positively driven. LG5924.48: 3 NO positively driven and 1 NC relay contacts. (NO contacts are safety contacts.)
<b>Operate Delay</b>	Operate delay: 24VDC: typ. 40ms; 110VAC, 230VAC typ. 200ms
<b>Release Delay</b>	Release delay: 24VAC/DC typ. 70ms; 230VAC typ. 35ms
<b>Nominal Output Voltage</b>	250VAC
<b>Thermal Current (I<sub>th</sub>)</b>	Max. 5A. See continuous current limit curve in installation manual.
<b>Short Circuit Strength</b>	Max. fuse rating: 10A gL (IEC/EN 60 947-5-1); Line circuit breaker: B 6A
<b>Switching Capacity (IEC/EN 60947-5-1)</b>	To AC 15: N.O. contacts: 3A/230VAC; NC contacts: 2A/230VAC To DC 13: N.C. contacts: 4A/24VDC; NO contacts: 4A/24VDC
<b>Switching Frequency</b>	Max. 600 switching cycles/hr

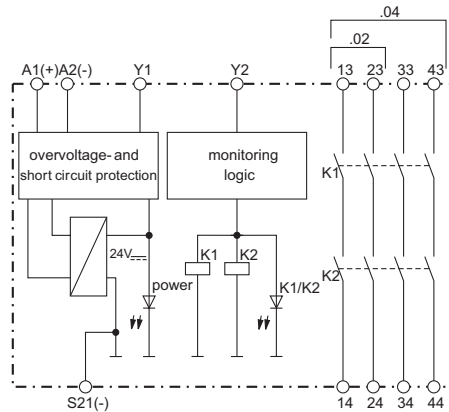
# Dold LG5924 Series 1-Channel Emergency Stop



## LG5924 Block Diagrams

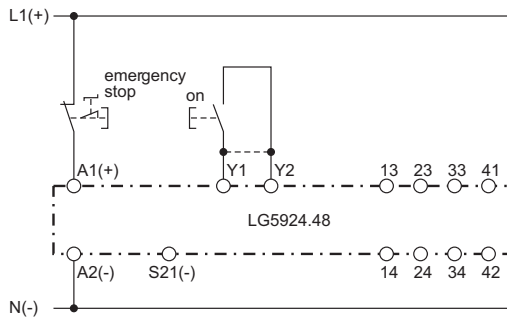


**LG5924.48**



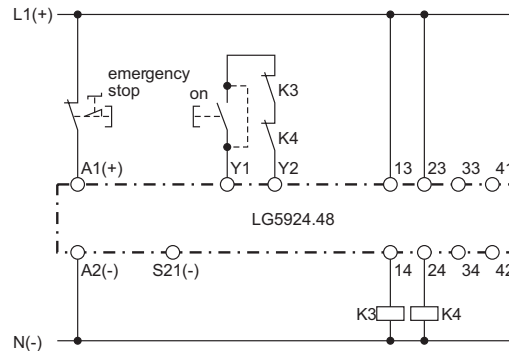
**LG5924.02**

## Applications



Single-channel, emergency-stop circuit without feedback loop, with or without automatic restart. For automatic restart, terminals Y1 - Y2 must be jumpered. No ON pushbutton necessary.

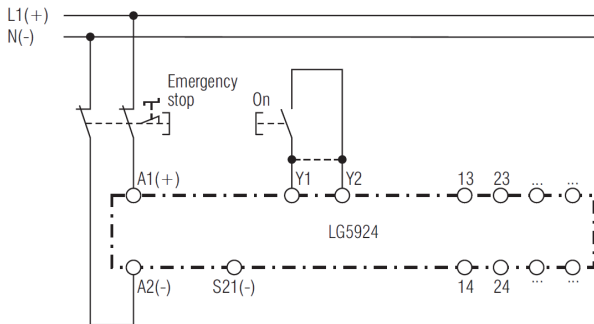
Suited up to SIL2, Performance Level d, Cat. 3\*.



Contact reinforcement by external contactors, 2-channel controlled. For currents >5A, the output contacts can be reinforced by external contactors. Functioning of the external contactors is monitored by looping the N.C. contacts into the start circuit (Y1 - Y2).

Suited up to SIL2, Performance Level d, Cat. 3\*.

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



M11552

Two-channel emergency-stop circuit without feedback loop, with or without automatic restart. For automatic restart, terminals Y1-Y2 must be linked. No ON pushbutton necessary.

Suited up to SIL3, Performance Level e, Cat. 4\*.

\* Suited up to stated SIL, Performance Level, and Category for E-stop systems according to IEC 60947-5-5, under the following conditions:

- A maximum number of operations for the E-stop button is observed
- The E-stop button and the E-stop module are installed in the same cabinet

# 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 Data – Values per EN ISO 13849-1

<b>Category</b>	<b>4 according to EN 954-1</b>
<b>Performance level</b>	PLe according to EN 13849-1
<b>MTTF<sub>d</sub></b>	>100 years
<b>DC<sub>avg</sub></b>	99%

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

<b>SIL CL</b>	3 per IEC/EN 62061
<b>SIL</b>	3 per IEC/EN 61508
<b>HFT (Hardware Failure Tolerance)</b>	1
<b>DC<sub>avg</sub></b>	99%
<b>SFF</b>	99.7%
<b>PFH<sub>D</sub></b>	4.68E <sup>-10</sup> h <sup>-1</sup>

## Safety Relays Selection Chart

Part Number	Price	Marking Type	Voltage	Outputs
<b>LG5929-60-100-61</b>	\$136.00	Safety relay extension module	24 VAC/VDC	5 N.O./1 N.C.

## Safety Relay Extension Module Specification Table

General Specifications	
<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>	205g (7.23 oz.)
<b>Agency Approvals and Standards</b>	CSA, cULus file E107778, CE, RoHS, TUV
<b>Terminal Designation per EN 50 005 Wire Connections</b>	1x4 mm <sup>2</sup> solid or 1 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 or cage clamp terminals.
Input Specifications	
<b>Nominal Voltage</b>	24V AC/DC
<b>Voltage Range</b>	AC: 0.85 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: 1.8VA
<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)
Output Specifications	
<b>Electrical Contact Life</b>	To AC15 at 2 A,230V: 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>	5 N.O. positively driven and 1 N.C. relay contacts (N.O. contacts are safety contacts)
<b>Operate/Release Time</b>	Operate typ at U <sub>N</sub> : 20 ms.; Release typ at U <sub>N</sub> : 35 ms.
<b>Nominal Output Voltage</b>	250VAC
<b>Thermal Current (I<sub>th</sub>)</b>	Max. 5A per contact. See continuous current limit curve in installation manual.
<b>Short Circuit Strength</b>	Max fuse rating:10A 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: 4A/24V; N.C. contacts: 4A/24VDC; N.O. contact: 8A/24V >25x10 <sup>3</sup> ON: 0.4s, OFF: 9.6s
<b>Switching Frequency</b>	Max. 1,200 switching cycles/hr

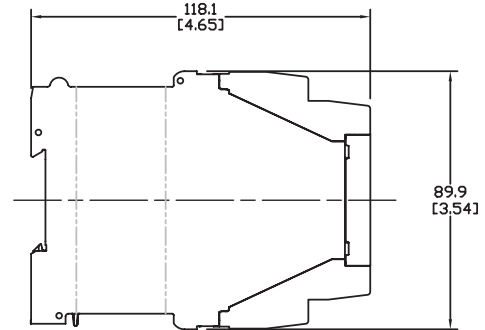
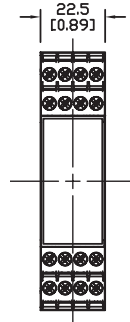
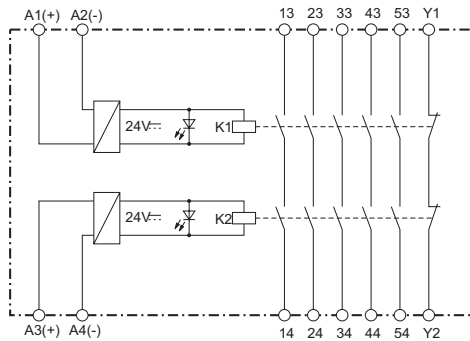
# Dold LG5929 Extension Module



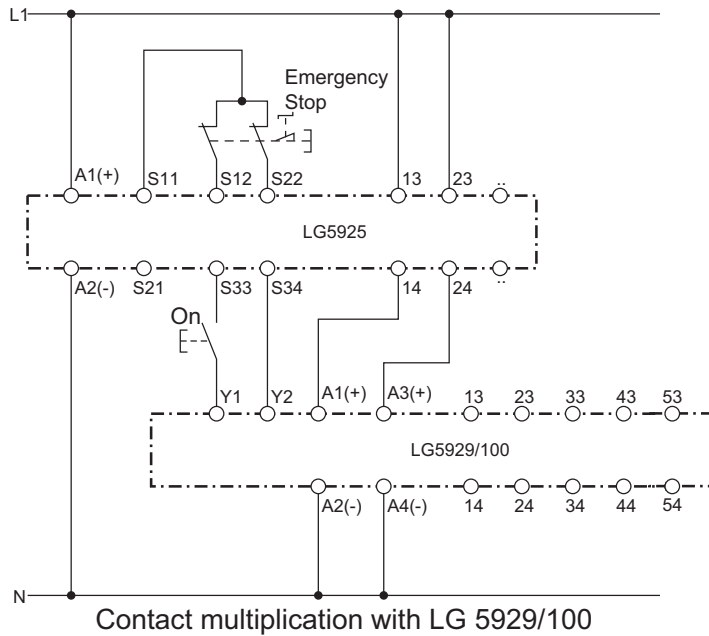
## Wiring

## Dimensions mm [in]

**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.*

# 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.*

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