Dold Safety Relays
Light Curtain Controller

LG5925-48-900-61

Designed to protect people and machinery in applications with light curtains.

- For light curtains with symmetric or asymmetric outputs, adjustment with switch S1
- Output: 3 NO and 1 NC contacts
- Line fault detection for ON-button
- LED indicators for power and state of operation
- Single and 2-channel operation

Safety Data – Values per EN ISO 13849-1	
Category	4
Performance level	PLe
$MTTF_d$	584.5 years
DC_{avg}	99%
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	$1.1E^{-10}$
PFH_D	$8.2E^{-5}$

Safety Relays Selection Chart

Part Number	Price	Marking Type	Voltage	Outputs	Connection	Drawing
LG5925-48-900-61	$165.00	Light curtain controller, 2-channel	24 VDC	3 NO 1 NC	Fixed screw terminals	PDF
LG5925-48PC-900-24	$175.00				Push-in cage clamp	PDF

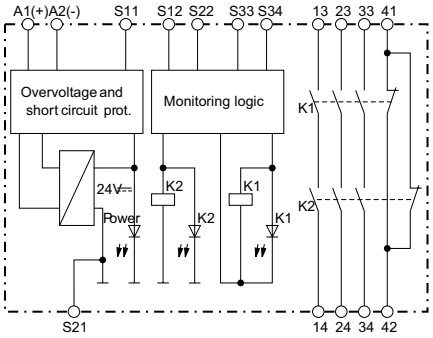
2-Channel Light Curtain Controller Specification Table

General Specifications	
Temperature	Storage: -40°C to 85°C [-40°F to 185°F]; Operating: -25°C to 60°C [-13°F to 140°F]
Altitude	< 2,000m [6562ft]
Vibration Resistance	Amplitude: 0.35 mm; 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 35mm x 7.5 mm
Weight	220g [7.76 oz.)]
Agency Approvals and Standards	cULus file E107778, CE, RoHS, TUV
Terminal Designation per EN 50 005 Wire Connections	1x4 mm^2 solid or 1 x 2.5 mm^2 stranded ferruled (isolated) or 2 x 1.5 mm^2 stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm^2 stranded ferrruled DIN 46 228-1/-2/-3
Wire Fixing	Terminal screws M3.5 box terminals with wire protection or cage clamp terminals.
Input Specifications	
Nominal Voltage	24VDC
Voltage Range	At 5% residual ripple: 0.9 to 1.1 UN
Maximum Consumption	DC approx. 1.7 W
Control Voltage - S11	U_N: 22.5 VDC
Control Current on S12, S22	35mA at U_N
Minimum Voltage on Terminals S12, S22(when relay activated)	21VDC
Short Circuit Protection	Internal with PTC (Positive Temperature Coefficient resistor)
Overvoltage Protection	Internal VDR (Voltage Dependent Resistor)
Output Specifications	
Electrical Contact Life	To 5A, AC 230V: >2.2 x 10^5 switching cycles IEC/EN 60 947-5-1
Mechanical Life	20 x 10^6 switching cycles
Contact Type	3 NO positively driven and 1 NC relay contacts, (NO contacts are safety contacts)
Operate Delay	Operate delay typ at U_N: manual start 20ms; automatic start: 350ms
Release Delay	Release delay typ. at U_N: Disconnecting the supply: 20ms.; Disconnecting S12, S22: 15ms
Nominal Output Voltage	AC: 250V; DC: See continuous current limit curve in installation manual.
Thermal Current (I_{th})	Max. 8A 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: B 6A
Switching Capacity	AC 15: NO contacts: 3A/230VAC; NC contacts: 2A/230VAC DC 13: NO contacts: 2A/24VDC, NC contacts: 2A/24VDC DC 13: NO contacts: 4A/24VDC @ 0.1 Hz, NC contacts: 4A/24VDC @ 0.1 Hz
Switching Frequency	Max. 1,200 switching cycles/hr

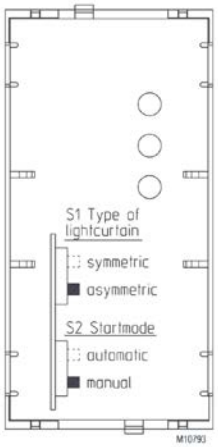
Dold Safety Relays
Light Curtain Controller

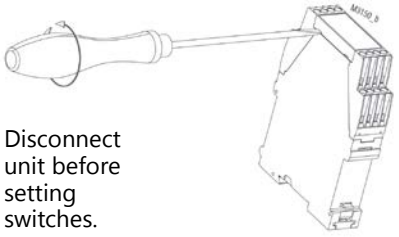
Wiring

LG5925-48-900-61
and LG5925-48PC-900-24
Block Diagram



S1 and S2 Switch Setting Instructions

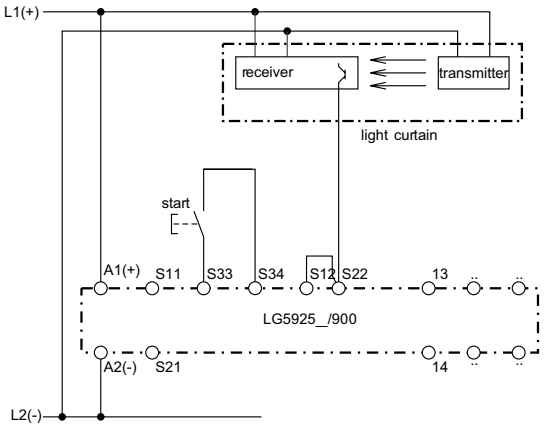




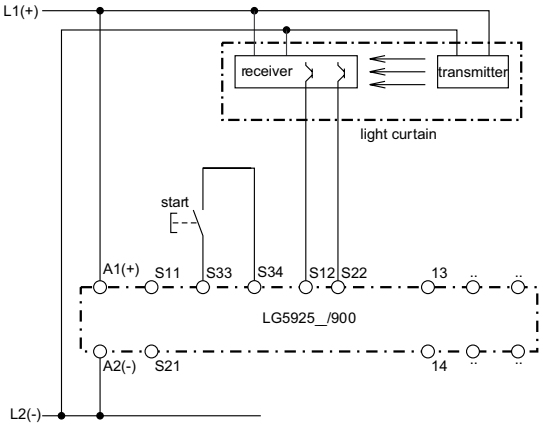
Disconnect unit before setting switches.

Drawing shows setting as delivered to the customer.

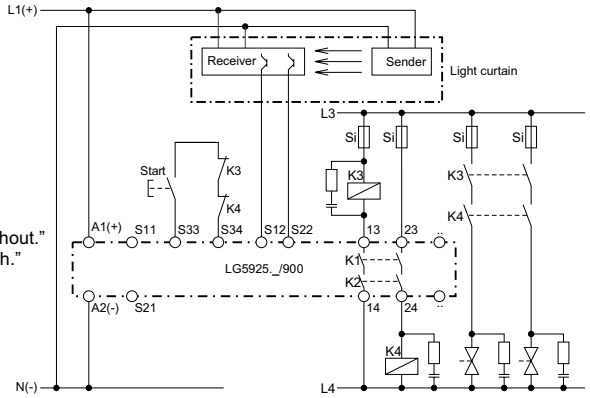
Applications



Single channel connection of light curtains with self-test according to EN 61 496-1.
Note: Refer to "Unit programming"
Set switch or dip switches in position:
S1 "without"
S2 "manual"
With autostart link S33 - S34 set to "automatic."



2 channel connection of light curtains with self-test according to EN 61 496-1.
Cross fault detection in the light curtain.
Note: Refer to "Unit programming"
Set switch or dip switches in position:
S1: With symmetric outputs on light curtain, switch S1 in position "without."
With asymmetric outputs on light curtains, switch S1 in position "with."
S2: "manual"



Contact reinforcement and contact extension by external contactors
Note: Refer to "Unit programming"
Set switches or dip switches in position:
S1: With symmetric outputs on light curtain, switch S1 in position "without."
With asymmetric outputs on light curtains, switch S1 in position "with."
S2: "manual"

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

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

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

Safety Data – Values per EN ISO 13849-1

Category	***4 according to EN 954-1***
Performance level	PLe according to EN 13849-1
$MTTF_d$	>100 years
DC_{avg}	99%

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}

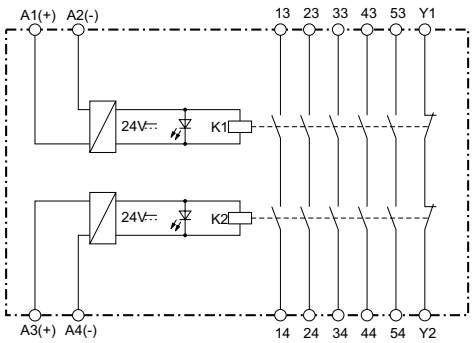
Safety Relay Extenson Module Specification Table

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 mm^2 solid or 1 x 2.5 mm^2 stranded ferruled (isolated) or 2 x 1.5 mm^2 stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2.5 mm^2 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 DC 13: N.O. contacts: 4A/24V; N.C. contacts: 4A/24VDC; N.O. contact: 8A/24V >$25x10^3$ ON: 0.4s, OFF: 9.6s
Switching Frequency	Max. 1,200 switching cycles/hr

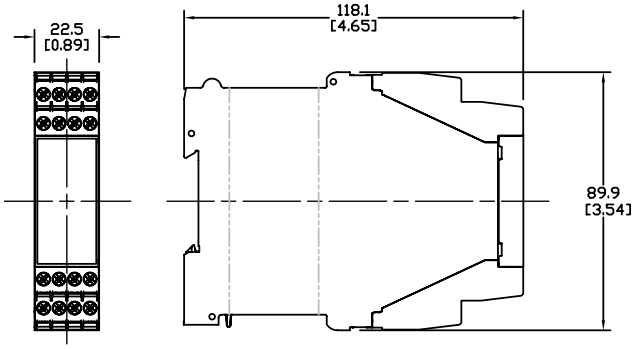
Dold LG5929 Extension Module

Wiring

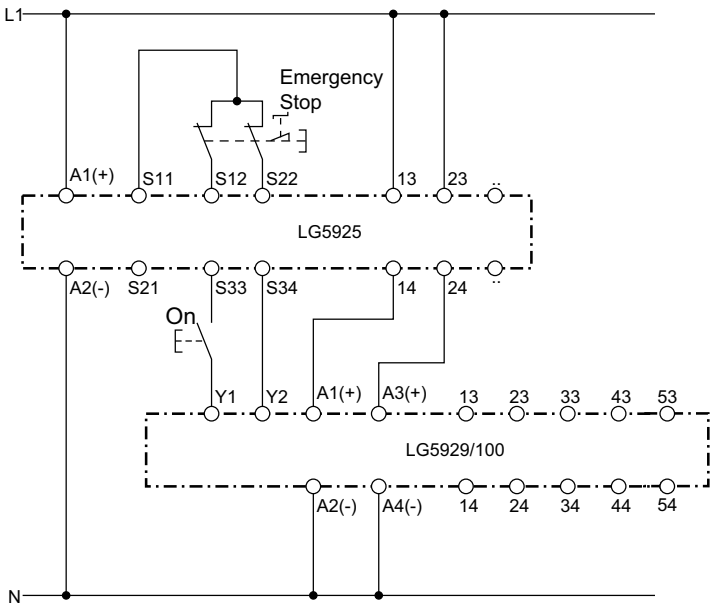
LG5929 Block Diagram



Dimensions mm [in]



Applications



Contact multiplication with LG 5929/100

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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