Safety Modules
Light curtains
Type NLG13D



- **Safety Category 4, Performance Level e, according to EN ISO 13849-1**
- **3 x 6 A NO safety outputs and 1 x 6 A NC auxiliary output**
- **Automatic or manual reset**
- **Single / double channel operations**
- **LED indication for outputs status and power supply ON**
- **Connection by fixed terminals**
- **For mounting on DIN-rail in accordance with DIN/EN 50 022**
- **22.5 mm Euronorm housing**

Product Description

The NLG13D safety module is designed to monitor safety light curtains with PNP or relay outputs according to the 2006/42/EC Machinery Directive.

This safety module in Safety Category 4, Performance level e, includes automatic and manual restart versions.

Ordering Key

N LG 1 3 D 724 S A

- **Housing**
- **Function**
- **Auxiliary outputs**
- **Safety outputs**
- **Safety category**
- **Power supply**
- **Terminals**
- **Start/Reset type**

Type Selection

Auxiliary outputs	Safety outputs	Terminals	Start/Reset type	Supply: 24 VDC
1 NC	3 NO	Screw, fixed	Automatic / Manual	**N LG 1 3 D 724 S A**

Time Specifications

Delay ON energisation	< 150 ms
Delay ON de-energisation	< 30 ms
Channel simultaneity during outputs closing	Infinite

Input specifications

Function	2 NO
Input current/voltage	
NLG13D Terminals S11-S22	min 10 mA / 17 V max 30 mA / 38 V

Output Specifications

Safety outputs		Category 4, Performance Level e (EN ISO 13849-1)
NLG13D		3 NO (13-14, 23-24, 33-34)
Auxilary output		
NLG13D		1 NC (41-42)
Rated insulation voltage		250 VAC (rms)
Contact ratings ($AgSnO_2$)		2 µm Au
Resistive loads	AC1	6 A @ 230 VAC
	DC12	6 A @ 24 VDC
Small inductive loads	AC15	3 A @ 230 VAC
	DC13	2.5 A @ 24 VDC
External contact fuse protection		5 A fast, 4 A slow
Mechanical life		> 10^7 operations
Electrical life		> 10^5 operations
Dielectric strength		
Dielectric voltage		4 kVAC (rms)

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Supply Specifications

Power supply	Overvoltage cat. III (EN IEC 60664)	
Rated operational voltage through terminals: A1, A2	24 VDC -15% / +10%	
Short circuit protection	Internal PTC	
Dielectric voltage	**DC supply**	**AC supply**
Supply to input	none	none
Supply to output	4 kV	4 kV
Input to output	4 kV	4 kV
Rated operational power	max 4 W	

General Specifications

Indication for	
Power supply ON	LED, green
Output relays ON	LED, green (CH 1, 2)
Environment	(EN IEC 60529)
Degree of protection	IP 30
Pollution degree	2
Operating temperature	-25 to 65°C, R.H. < 95%
Storage temperature	-30 to 65°C, R.H. < 95%
Mimimum protection degree of the installation location	IP 54
Housing dimensions	22.5 x 99 x 114 mm
Weight	Approx. 200 g
Screw terminals	
Tightening torque	
Upper terminals	Max. 0.5 Nm
Lower terminals	Max. 0.8 Nm
Approvals	cULus, TUV
CE Marking	Yes
EMC	Electromagnetic Compatibillity
Immunity	According to EN IEC 61000-6-2
Emission	According to EN IEC 61000-6-3

Mode of Operation

The safety module NLG13D monitors Electro-Sensitive Equipments (ESPE) with PNP or relay outputs according to 2006/42/EC Machinery Directive.
If the safety system (NLG+E-SPE) is correctly supplied, the input terminals of the module are activated (light beams not interrupted) and there are no fault conditions, the module is enabled to close the safety outputs and the external contactors can be energized.
When the input terminals are not activated (light beams interrupted) the module is not enabled to close the safety outputs and the external contactors can not be energized.

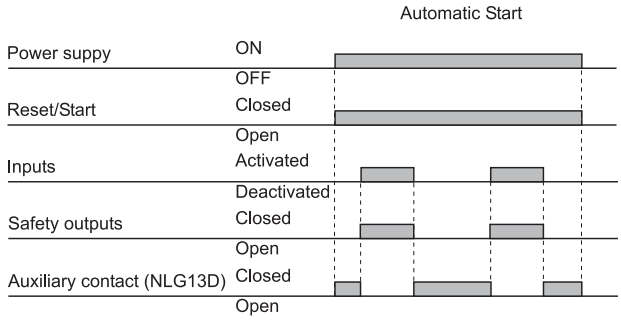
Automatic START
Provided that the terminals S33 and S34 are connected, the safety outputs close and the auxiliary output opens as soon as both the module inputs are activated.
The relevant CH1 and CH2 LED turn on.
Deactivating even one module input immediately forces the safety outputs to open and the auxiliary output to close.
A new operating cycle is possible only after deactivating both input contacts and the operating them again.

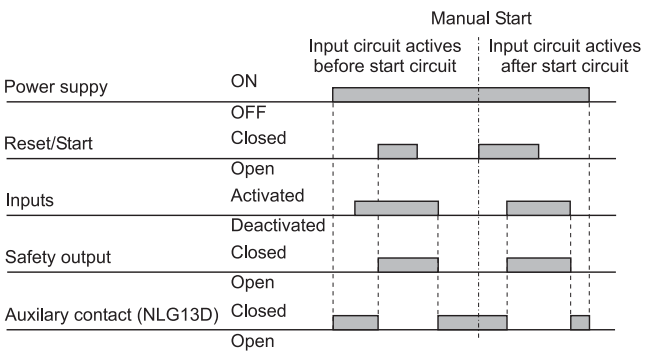
Manual START
Provided that both the module inputs are activated, the safety outputs close and the auxiliary output opens as soon as the NO START push botton is pushed, connecting S33 and S34.
A new operating cycle is possible only after deactivating both the module inputs, activating them again and pushing the START button.

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Operation Diagrams

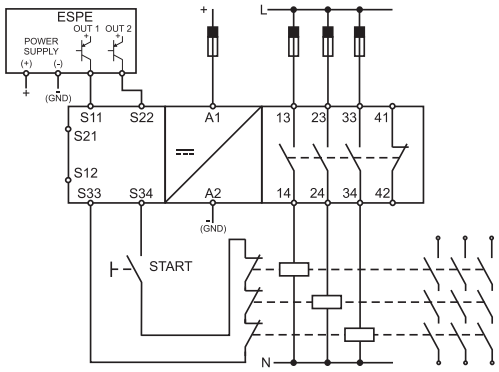
NLG13





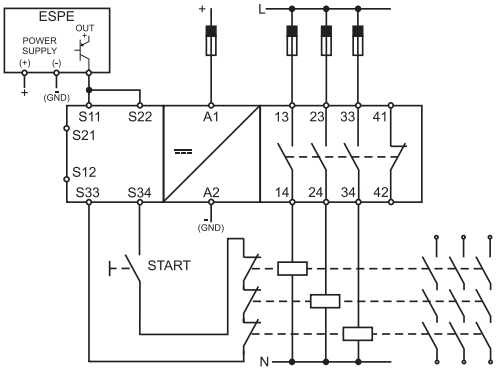
Wiring Diagrams

NLG13D - Two 1-wire PNP outputs - Safety cat. 4



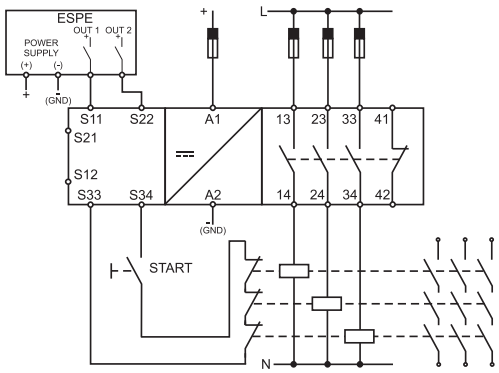
*Note

NLG13D - One 1-wire PNP output - Safety cat. 2



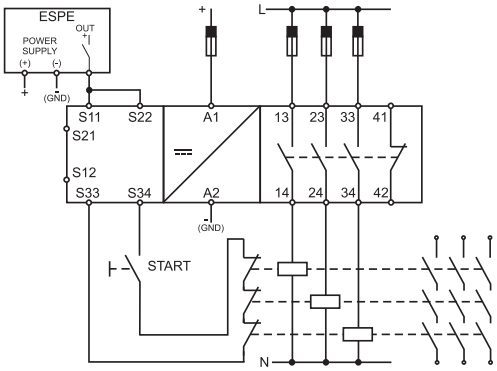
*Note

NLG13D - Two 1-wire relay outputs - Safety cat. 4



*Note

NLG13D - One 1-wire relay output - Safety cat. 2

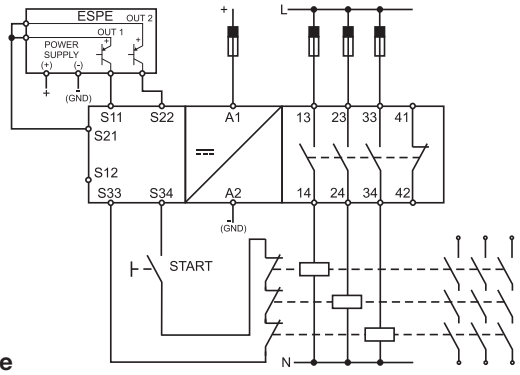


*Note

*** Note:** The same power supply has to be used both for the module and for the light curtain.

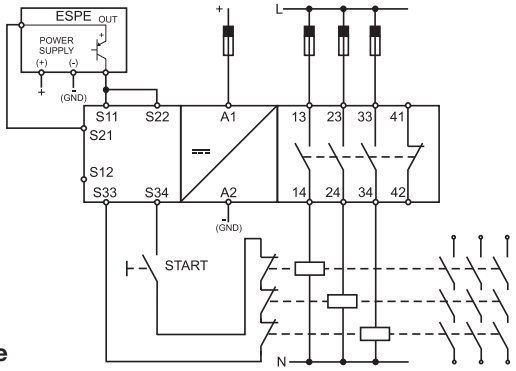
Wiring Diagrams (cont.)

NLG13D - Two 2-wire PNP outputs - Safety cat. 4



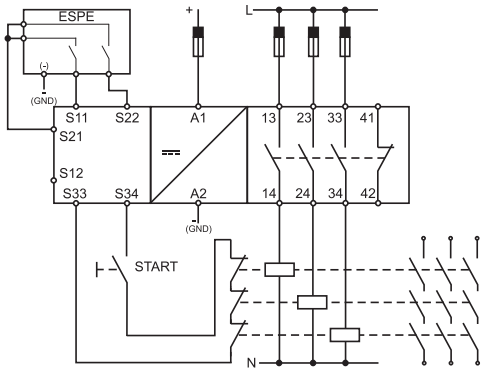
*Note

NLG13D - One 2-wire PNP output - Safety cat. 2



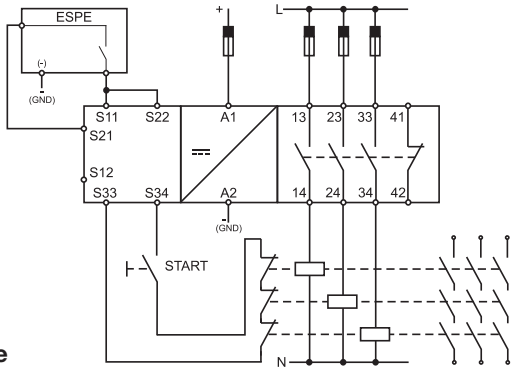
*Note

NLG13D - Two 2-wire relay outputs - Safety cat. 4



*Note

NLG13D - One 2-wire relay output - Safety cat. 2



*Note

*** Note:** The same power supply has to be used both for the module and for the light curtain.

Dimensions

