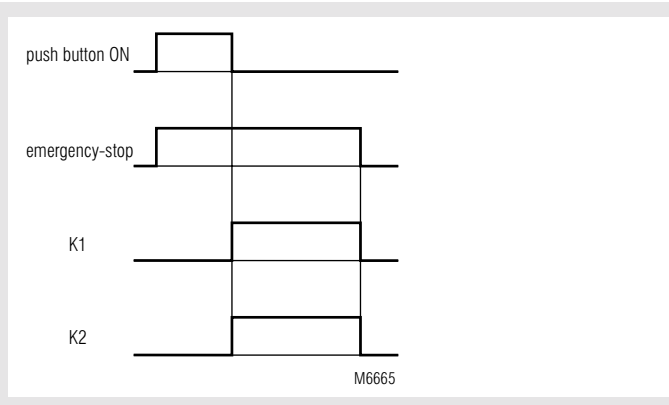




- According to EU directive for machines 98/37/EG
- According to IEC/EN 60 204-1, VDE 0113 part 1 (1998-11)
- Safety category 4 according to EN 954-1
- Output: max. 3 NO contacts, see contacts
- Single and 2-channel operation
- Line fault detection on On-button
- Manual restart or automatic restart when connecting the supply voltage, switch S2
- With or without cross fault monitoring in the E-stop loop, switch S1
- LED indicator for state of operation
- LED indicator for channel 1 and 2
- Removable terminal strips
- Wire connection: also 2 x 1,5 mm² stranded ferruled (isolated), DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm² stranded ferruled DIN 46 228-1/-2/-3/-4
- Width 22,5 mm

Function diagram



Approvals and marking



* see variants

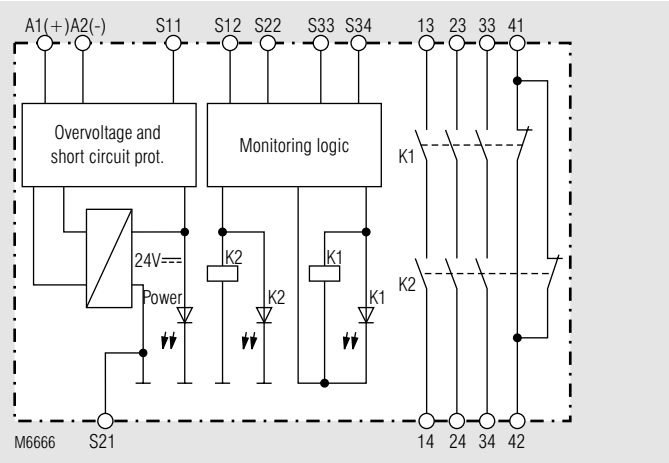
Applications

- Protection of people and machines
- Emergency stop circuits on machines
- Monitoring of safety gates
- Control unit for lightbars

Indicators

- upper LED: on when supply connected
- lower LEDs: on when relay K1 and K2 energized

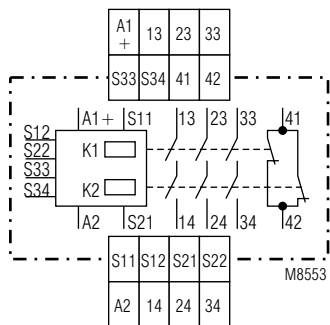
Block diagram



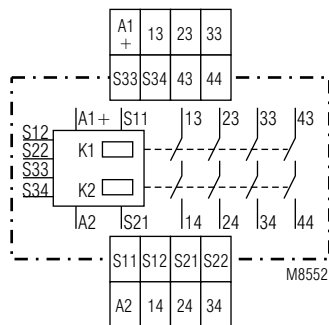
Notes

Line fault detection on On-button:
The line fault detection is only active when S12 and S22 are switched simultaneously. If the On-button is closed before S12, S22 is connected to voltage (also when line fault across On-Button), the output contacts will not close.
A line fault across the On-button which occurred after activation of the relay, will be detected with the next activation and the output contacts will not close. If a line fault occurs after the voltage has been connected to S12, S22, the unit will be activated because this line fault is similar to the normal On-function. The gold plated contacts of the BG 5925 mean that this module is also suitable for switching small loads of 1 mA - 7 VA, 1 mW - 7 W in the range 0,1 - 60 V, 1 - 300 mA. The contacts also permit the maximum switching current. However since the gold plating will be burnt off at this current level, the device is no longer suitable for switching small loads after this.
The terminal S21 permits the operation of the device in IT-systems with insulation monitoring, serves as a reference point for testing the control voltage and is used to connect the E-stop loop when cross fault monitoring is selected.

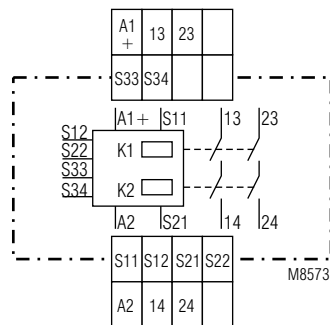
Circuit diagrams



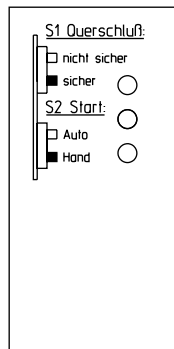
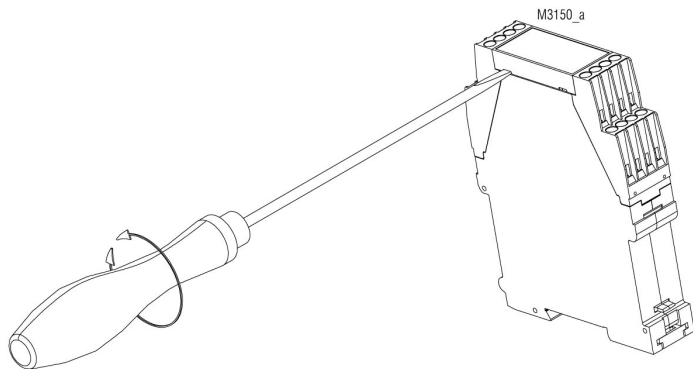
LG5925.48



LG5925.04



LG5925.02



M8576

Disconnect unit before setting of S1
Drawing shows setting at the state of delivery

Notes

Connecting the terminal S21 to the protective ground bridges the internal short-circuit protection of Line A2 (-). The short-circuit protection of line A1 (+) remains active.

To alter the functions automatic start - manual start and with or without cross fault monitoring, the switches S1 and S2 are used. These are located behind the front cover (see unit programming).

The setting with or without cross fault monitoring on E-stop buttons is made with S1. S2 is used to change between automatic an manual restart. On automatic start also the terminals S33 - S34 have to be linked. For connection please see application examples.

ATTENTION - AUTOMATIC START!



According to IEC/EN 60 204-1 part 9.2.5.4.2 and 10.8.3 it is not allowed to restart automatically after emergency stop. Therefore the machine control has to disable the automatic start after emergency stop.

Technical data

Input circuit

Nominal Voltage U_N : DC 24 V, AC 230 V
other voltages on request

Voltage range

DC
at 10% residual ripple: 0,9 ... 1,1 U_N
AC: 0,85 ... 1,1 U_N

Nominal consumption: DC approx. 1,3 W

Min. Off-time: 250 ms

Control voltage on S11: DC 22 V at U_N

Control current over

S12, S22: 25 mA at U_N

Min. voltage on S12, S22: DC 20 V when relay activated

Short-circuit protection: Internal PTC

Overvoltage protection: Internal VDR

Output

Contacts

LG 5925.02: 2 NO contacts
LG 5925.04: 4 NO contact
LG 5925.48: 3 NO, 1 NC contact
The NO contacts are safety contacts.
ATTENTION! The NC contacts 41-42 can only be used for monitoring.

Operate delay typ. at U_N :

Manual start: 40 ms
automatic start: 300 ms

Release delay typ. at U_N :

Disconnecting the supply: 25 ms
Disconnecting S12, S22: 20 ms

Contact type: Relay positive guided

Nominal output voltage: AC 250 V
DC: see limit curve for arc-free operation
Switching of low loads: ≥ 100 mA
(contact 5 μ Au) ≥ 1 mA

Technical data

Thermal current I_{th} : max. 5 A per contact
see current limit curve

Switching capacity

to AC 15: 3 A / AC 230 V IEC/EN 60 947-5-1
for NO contacts
2 A / AC 230 V IEC/EN 60 947-5-1
for NC contact

Electrical contact life

to 5 A, AC 230 V $\cos \varphi = 1$: $> 1,5 \times 10^5$ switching cycles IEC/EN 60 947-5-1

Permissible operating frequency:

max. 1 200 operating cycles / h

Short circuit strength

max. fuse rating: 6 A gL IEC/EN 60 947-5-1
line circuit breaker: C 8 A

Mechanical life:

$> 20 \times 10^6$ switching cycles

General data

Operating mode: Continuous operation

Temperature range: - 15 ... + 55 °C

Clearance and creepage distances

Overvoltage category / contamination level: 4 kV / 2 IEC 60 664-1

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2

HF irradiation: 10 V / m IEC/EN 61 000-4-3

Fast transients: 2 kV IEC/EN 61 000-4-4

Surge voltages

between

wires for power supply: 1 kV IEC/EN 61 000-4-5

between wire and ground: 2 kV IEC/EN 61 000-4-5

Interference suppression: Limit value class B EN 55 011

Degree of protection: Housing: IP 40 IEC/EN 60 529

Terminals: IP 20 IEC/EN 60 529

Housing: Thermoplastic with V0 behaviour according to UL subject 94

Vibration resistance: Amplitude 0,35 mm IEC/EN 60 068-2-6 frequency 10 ... 55 Hz

Climate resistance: 15 / 055 / 04 IEC/EN 60 068-1

Terminal designation: EN 50 005

Wire connection: 1 x 4 mm² solid or 1 x 2,5 mm² stranded ferruled (isolated) or 2 x 1,5 mm² stranded ferruled (isolated) DIN 46 228-1/-2/-3/-4 or 2 x 2,5 mm² solid DIN 46 228-1/-2/-3/-4

Wire fixing: Plus-minus terminal screws M 3,5 box terminals with self-lifting clamping piece

Mounting: DIN rail IEC/EN 60 715

Weight: 220 g (DC unit)

Dimensions

Width x height x depth: 22,5 x 90 x 121 mm

Standard type

LG 5925.03 DC 24 V

Article number:

0056025

• Output: 3 NO contacts, 1 NC contact

• Nominal voltage U_N : DC 24 V

• Width: 22,5 mm

Ordering example

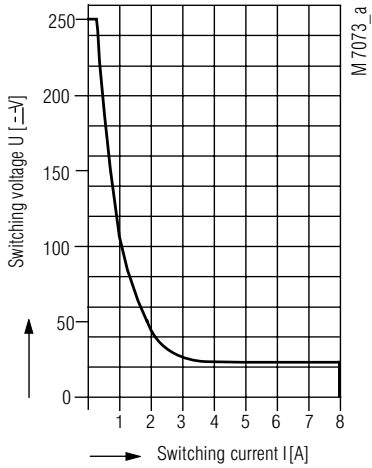
LG 5925 . . . DC 24 V

Nominal voltage

Contacts

Type

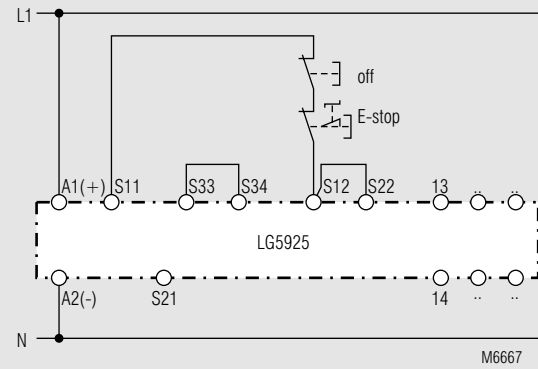
Characteristics



safe breaking, no continuous arcing under the curve, max. 1 switching cycle/s

Arc limit curve under resistive load

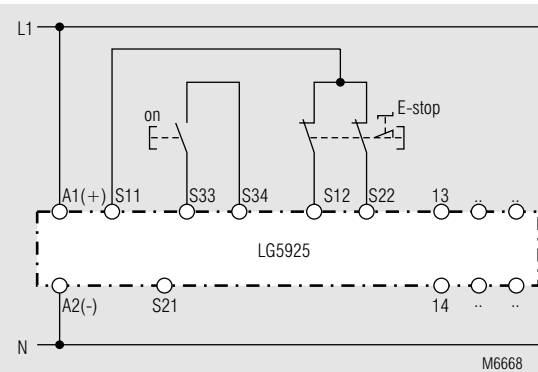
Application examples



Single channel emergency stop circuit. This circuit does not have any redundancy in the emergency-stop control circuit.

Note: Refer to "Unit programming"!

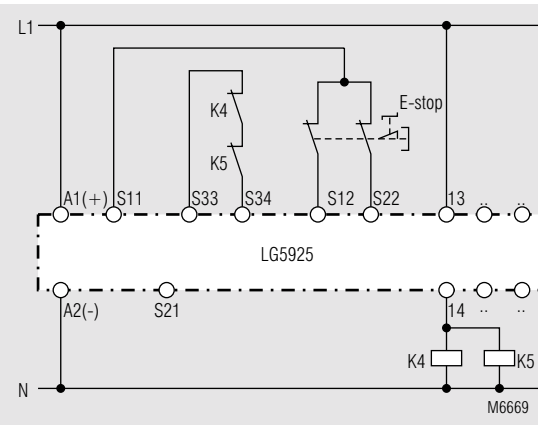
Switches in pos.: S1 no cross fault detection
S2 manual start



2-channel emergency stop circuit without cross fault monitoring.

Note: Refer to "Unit programming"!

Switches in pos.: S1 no cross fault detection
S2 manual start

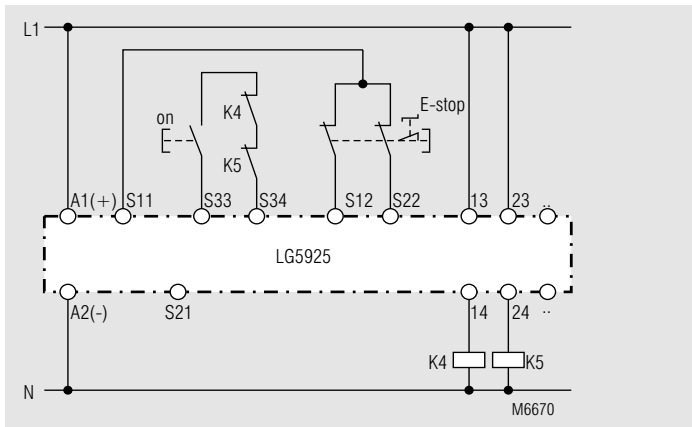


Contact reinforcement by external contactors controlled by one contact path.

Note: Refer to "Unit programming"!

Switches in pos.: S1 no cross fault detection
S2 manual start

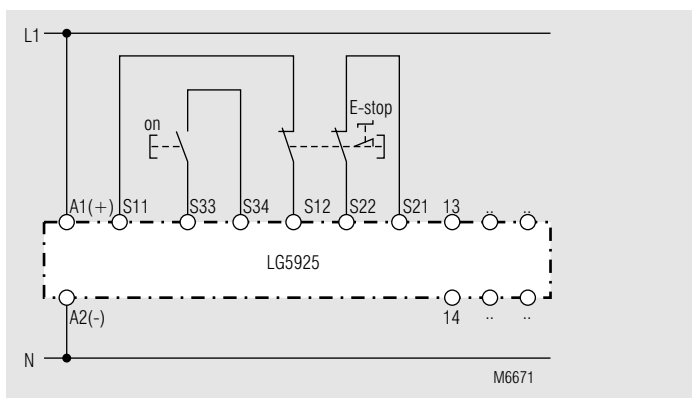
Application examples



Contact reinforcement by external contactors, 2-channel controlled. The output contacts can be reinforced by external contactors with positive guided contacts for switching currents > 8 A. Functioning of the external contactors is monitored by looping the NC contacts into the closing circuit (terminals S33-S34).

Note: Refer to "Unit programming"!

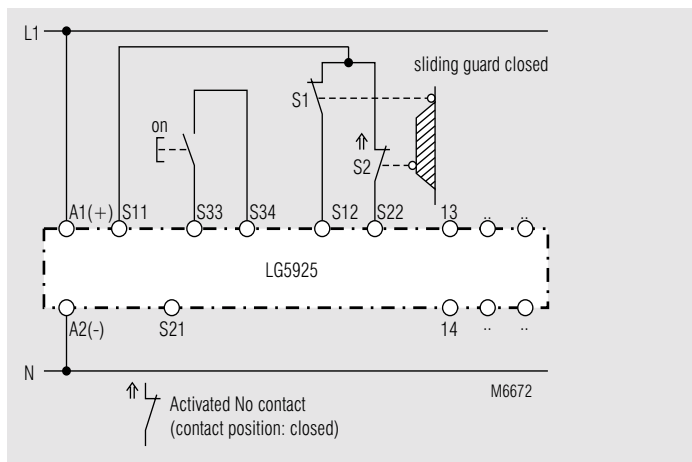
Switches in pos.: S1 no cross fault detection
S2 manual start



2-channel emergency stop circuit with cross fault detection

Note: Refer to "Unit programming"!

Switches in pos.: S1 cross fault detection
S2 manual start



2-channel safety gate monitoring.

Note: Refer to "Unit programming"!

Switches in pos.: S1 no cross fault detection
S2 manual start