

SAFEMASTER
Safety Module for
Elevator Controls
LG 5925.03/034

Translation
of the original instructions



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Before installing, operating or maintaining this device, these instructions must be carefully read and understood.



Keep instructions for future reference



The installation must only be done by a qualified electrician!



Do not dispose of household garbage!
The device must be disposed of in compliance with nationally applicable rules and requirements.

To help you understand and find specific text passages and notes in the operating instructions, we have important information and information marked with symbols.

Symbol and Notes Statement



DANGER:
Indicates that death or severe personal injury will result if proper precautions are not taken.



WARNING:
Indicates that death or severe personal injury can result if proper precautions are not taken.



CAUTION:
Indicates that a minor personal injury can result if proper precautions are not taken.



INFO:
Referred information to help you make best use of the product.



ATTENTION:
Warns against actions that can cause damage or malfunction of the device, the device environment or the hardware / software result.

General Notes

The product hereby described was developed to perform safety functions as a part of a whole installation or machine. A complete safety system normally includes sensors, evaluation units, signals and logical modules for safe disconnections. The manufacturer of the installation or machine is responsible for ensuring proper functioning of the whole system. DOLD cannot guarantee all the specifications of an installation or machine that was not designed by DOLD. The total concept of the control system into which the device is integrated must be validated by the user. DOLD also takes over no liability for recommendations which are given or implied in the following description. The following description implies no modification of the general DOLD terms of delivery, warranty or liability claims.

Designated Use

The LG 5925.03/034 is used for bridging of the door and locking switches while moving the elevator in the unlocking zone with open doors according to EN81-20/-50 for elevators for people and loads. When used in accordance with its intended purpose and following these operating instructions, this device presents no known residual risks. Nonobservance may lead to personal injuries and damages to property.

Safety Notes



Risk of electrocution!
Danger to life or risk of serious injuries.

- Disconnect the system and device from the power supply and ensure they remain disconnected during electrical installation.
- The device may only be used for the applications described in the mutually applicable operating instructions / data sheet. The notes in the respective documentation must be heeded. The permissible ambient conditions must be observed.
- The contact protection of the elements connected and the insulation of the supply cables must be designed in accordance with the requirements in the operating instructions / data sheet.
- Note the VDE and local regulations, particularly those related to protective measures.



Risk of fire or other thermal hazards!
Danger to life, risk of serious injuries or property damage.

- The device may only be used for the applications described in the mutually applicable operating instructions / data sheet. The notes in the respective documentation must be heeded. The permissible ambient conditions must be observed. In particular, the current limit curve must be heeded.
- The device may only be installed and put into operation by experts who are familiar with this technical documentation and the applicable health and safety and accident prevention regulations.



Functional error!
Danger to life, risk of serious injuries or property damage.

- The device may only be used for the applications described in the mutually applicable operating instructions / data sheet. The notes in the respective documentation must be heeded. The permissible ambient conditions must be observed.
- The device may only be installed and put into operation by experts who are familiar with this technical documentation and the applicable health and safety and accident prevention regulations.



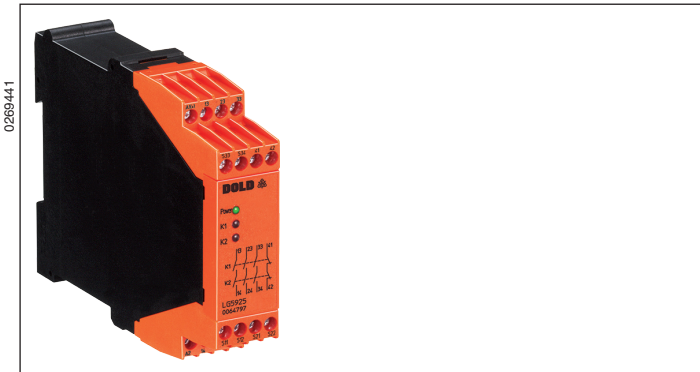
Installation fault!
Danger to life, risk of serious injuries or property damage.

- Make sure of sufficient protection circuitry at all output contacts for capacitive and inductive loads.



Attention!

- The safety function must be triggered during commissioning.
- 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.
- Switch S1 must not be set while device is under supply voltage.
- Opening the device or implementing unauthorized changes voids any warranty



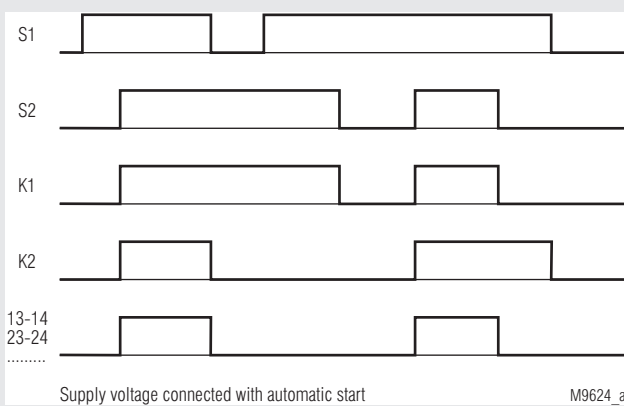
Your Advantages

- For elevators according to EN 81-20/-50

Features

- According to
 - Performance Level (PL) e and category 4 to EN ISO 13849-1
 - SIL Claimed Level (SIL CL) 3 to IEC/EN 62061
 - Safety Integrity Level (SIL) 3 to IEC/EN 61508
 - Directive 2014/33/EU for elevators
- Output: 3 NO contacts, 1 NC contact
- Single or 2-channel operation
- Line fault detection on On-button
- Manual restart or automatic restart, switch S2
- With or without cross fault monitoring in the loop, switch S1
- LED indicator for channel 1, 2 and supply voltage
- Degree of protection IP40; can be mounted in cabinets and installations with lower degree of protection without additional measures (depending on ambient conditions)
- Wire connection: Also 2 x 1.5 mm² stranded ferruled (isolated), DIN 46228-1/-2/-3/-4 or 2 x 2.5 mm² stranded ferruled DIN 46228-1/-2/-3
- As option with pluggable terminal blocks for easy exchange of devices
 - With screw terminals
 - Or with cage clamp terminals
- Width 22.5 mm

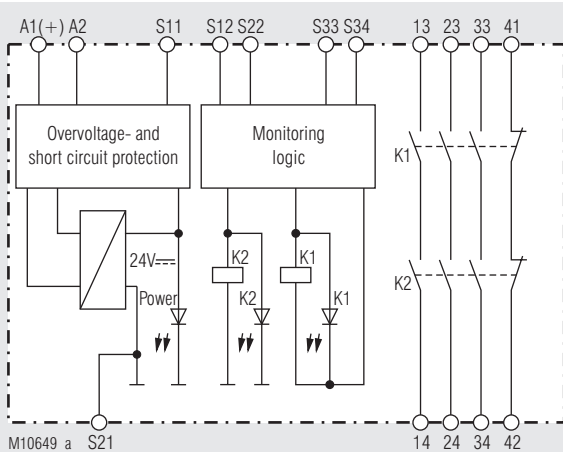
Function Diagram



Approvals and Markings



Block Diagram



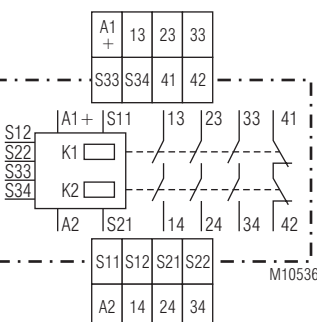
Applications

Bridging of the door and locking switches while moving the elevator in the unlocking zone with open doors according to EN81-20/-50 for elevators for people and loads.

Indicators

- LED Power: On when supply connected
- LED K1/K2: On when relay K1 and K2 energized

Circuit Diagram



Connection Terminals

Terminal designation	Signal description
A1+	+ / L
A2	- / N
S12, S22, S33, S34	Inputs
S11, S21	Outputs
13, 14, 23, 24, 33, 34	Positive driven NO contacts for release circuit
41, 42	Positive guided indicator output

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.

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 loop when cross fault monitoring is selected.

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 is made with S1.

Switch S2 is used to select automatic or manual restart. Additionally, for the function "automatic restart", terminals S33 and S34 have to be bridged. Connect the device according to application examples.

Technical Data

Input circuit

Nominal Voltage U_N :

LG 5925: AC/DC 24 V

Voltage range: 0.9 ... 1.1 U_N

Nominal consumption at U_N : DC ca. 1.5 W

Min. Off-time: 250 ms

Control voltage on S11 at U_N : DC 22 V

Control current typ. over

S12, S22: 30 mA at U_N

Min. voltage on S12, S22

when relay activated: DC 20 V

Short-circuit protection: Internal PTC

Overvoltage protection: Internal VDR

Output

Contacts: 3 NO, 1 NC contact

The NO contacts are safety contacts.

The NC contacts 41-42 can only be used for monitoring.

Operate delay typ. at U_N :

Manual start: 30 ms

Automatic start: 350 ms

Release delay typ. at U_N :

Disconnecting the supply: Typ. 20 ms

Disconnecting S12, S22: Typ. 15 ms

Contact type: Forcibly guided

Nominal output voltage: AC 250 V

DC see arc limit curve

Thermal current I_{th} : Max. 5 A per contact

(see quadratic total current limit curve)

Switching capacity

to AC 15:

NO contacts: 3 A / AC 230 V IEC/EN 60947-5-1

NC contacts: 2 A / AC 230 V IEC/EN 60947-5-1

to DC 13:

NO contacts: 2 A / DC 24 V IEC/EN 60947-5-1

NC contacts: 2 A / DC 24 V IEC/EN 60947-5-1

Electrical contact life

to 5 A, AC 230 V $\cos \varphi = 1$: $> 2.2 \times 10^5$ switching cycles

Permissible operating

frequency: Max. 1 200 operating cycles / h

Short circuit strength

max. fuse rating: 10 A gG / gL IEC/EN 60947-5-1

line circuit breaker: B 6 A

Mechanical life: $> 20 \times 10^6$ switching cycles

Technical Data

General Data

Operating mode: Continuous operation

Temperature range

Operation: - 15 ... + 55 °C

Storage: - 40 ... + 85 °C

Altitude: ≤ 2000 m

Clearance and creepage distances

Rated impuls voltage /

pollution degree: 4 kV / 3 (basis insulation) IEC 60664-1

IEC/EN 61326-3-1, EN 12016

EMC Limit value class B EN 55011

Interference suppression:

Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

Housing: Thermoplastic with V0 behaviour

according to UL subject 94

Vibration resistance: Amplitude 0.35 mm IEC/EN 60068-2-6

frequency 10 ... 55 Hz

Climate resistance: 15 / 055 / 04 IEC/EN 60068-1

Terminal designation:

Wire fixing: Plus-minus terminal screws M 3.5

box terminals with wire protection or

cage clamp terminals

Mounting: DIN rail IEC/EN 60715

Weight: 210 g

Dimensions

Width x height x depth:

LG 5925: 22.5 x 90 x 121 mm

LG 5925 PC: 22.5 x 111 x 121 mm

LG 5925 PS: 22.5 x 104 x 121 mm

Standard Type

LG 5925.03/034 AC / DC 24 V

Article number: 0064797

• Output: 3 NO contacts, 1 NC contacts

• Nominal voltage U_N : AC/DC 24 V

• Width: 22.5 mm

Ordering Example

LG 5925.03 /034 AC / DC 24 V

Nominal voltage
 Type of terminals
 without indication:
 Terminal blocks fixed
 with screw terminals
 PC (plug in cage clamp):
 Pluggable terminal blocks
 with cage clamp terminals
 PS (plug in screw):
 Pluggable terminal blocks
 with screw terminals
 Contacts
 Type

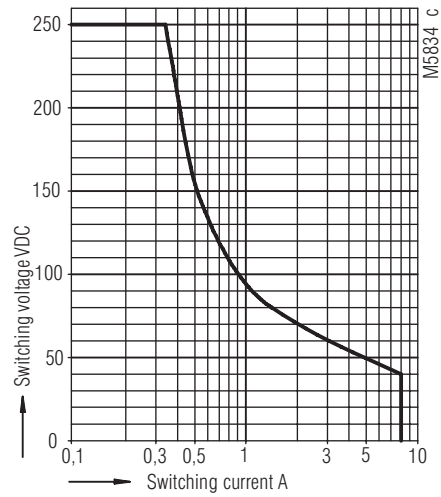
Troubleshooting

Failure	Potential cause
LED "Power" does not light up	- Power supply not connected - Cross fault between S11 and S21
LED "K1" lights up, but "K2" remains off	- Safety relay K1 is welded (replace device) - A 1-channel switch-off occurred on S12 (switch channel off on S22)
LED "K2" lights up, but "K1" remains off	- Safety relay K2 is welded (replace device) - A 1-channel switch-off occurred on S22 (switch channel off on S12)
Device cannot be activated	Manual start mode: - Line fault on start-button (disconnect power supply and remove fault) Automatic start mode: - S33-S34 not bridged - A safety relay is welded (replace device) - Incorrect setting of switch S1

Maintenance and Repairs

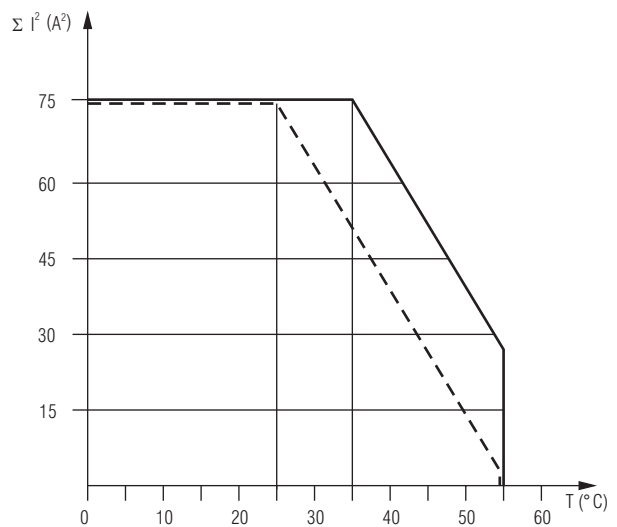
- The device contains no parts that require maintenance.
- In case of failure, do not open the device but send it to manufacturer for repair.

Characteristics



Safe breaking, no continuous arcing,
 max. 1 switching cycle / s

Arc limit curve under resistive load



M11703

Device mounted away from
 heat generation components.
 Max. current at 55°C over
 3 contact path = $3A \triangleq 3 \times 3^2 A^2 = 27A^2$

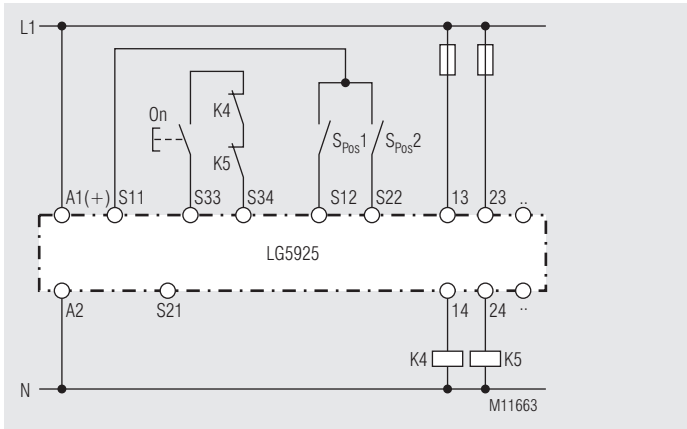
Device mounted without distance heated by
 devices with same load.
 Max. current at 55°C over
 3 contact path = $1A \triangleq 3 \times 1^2 A^2 = 3A^2$

$$\Sigma I^2 = I_1^2 + I_2^2 + I_3^2$$

I_1, I_2, I_3 - Current in contact paths

Quadratic total current limit curve

Application Examples

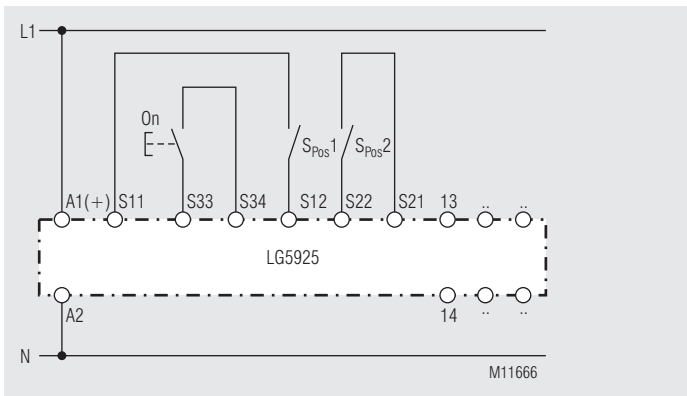


Contact reinforcement by external contactors, 2-channel controlled.
 Functioning of the external contactors is monitored by looping the NC contacts into the closing circuit (terminals S33-S34).

Note: Refer to "Unit programming"!

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

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



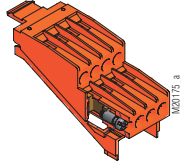
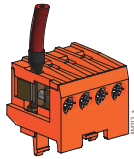
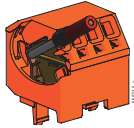
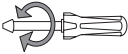
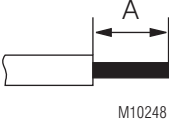
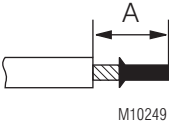
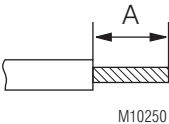
2-channel circuit with cross fault detection

Note: Refer to "Unit programming"!

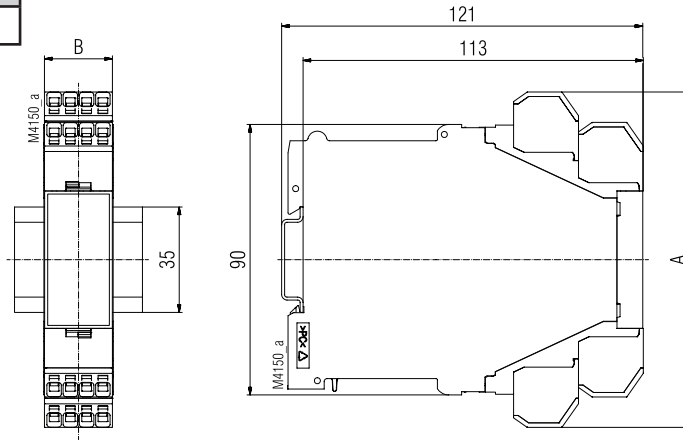
Switches in pos.: S1 cross fault detection
 S2 manual start

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

DE	Anschlussstechnik
EN	Connection Technology
FR	Technologie de connexion

	Schraubklemmen, nicht abnehmbar Screw terminals, fixed Bornes à vis, fixes	Schraubklemmen, abnehmbar Screw terminals, pluggable Bornes à vis, amovibles	Federkraftklemmen, abnehmbar Cage clamp terminals, pluggable Bornes ressorts, amovibles	
		 PS	 PC	
	∅ 4 mm / PZ 1 0,8 Nm 7 LB. IN	∅ 4 mm / PZ 1 0,8 Nm 7 LB. IN	DIN 5264-A; 0,5 x 3	
 M10248	A = 8 mm 1 x 0,5 ... 4 mm ² 1 x AWG 20 to 12 2 x 0,5 ... 2,5 mm ² 2 x AWG 20 to 14	A = 8 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14 2 x 0,5 ... 1,5 mm ² 2 x AWG 20 to 16	A = 10 ... 12 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14	A = 12 mm 1 x 0,5 ... 4 mm ² 1 x AWG 20 to 12
 M10249	A = 8 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14 2 x 0,5 ... 1,5 mm ² 2 x AWG 20 to 16	A = 8 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14 2 x 0,5 ... 1 mm ² 2 x AWG 20 to 18	A = 10 ... 12 mm 1 x 0,5 ... 1,5 mm ² 1 x AWG 20 to 16	A = 12 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14
 M10250	A = 8 mm 1 x 0,5 ... 4 mm ² 1 x AWG 20 to 12 2 x 0,5 ... 2,5 mm ² 2 x AWG 20 to 14	A = 8 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14 2 x 0,5 ... 1,5 mm ² 2 x AWG 20 to 16	A = 10 ... 12 mm 1 x 0,5 ... 2,5 mm ² 1 x AWG 20 to 14	A = 12 mm 1 x 0,5 ... 4 mm ² 1 x AWG 20 to 12

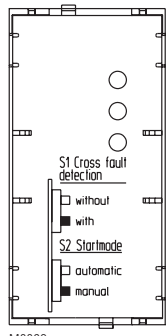
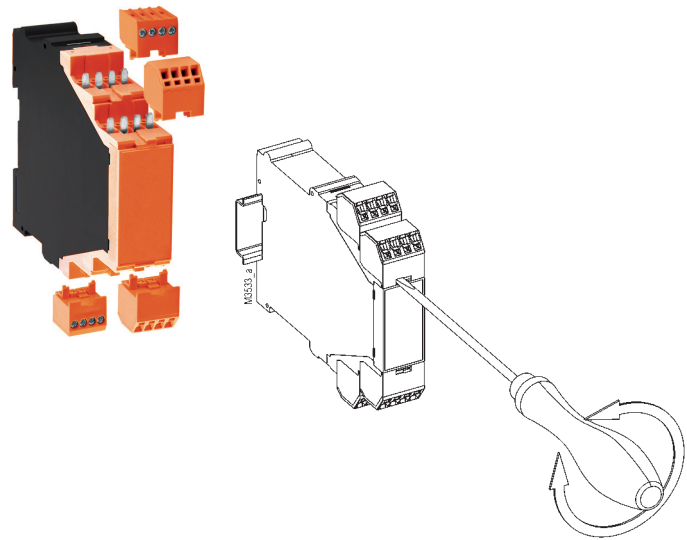
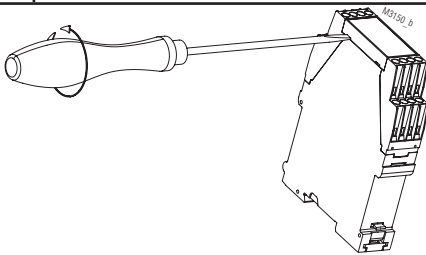
DE	Maßbild (Maße in mm)
EN	Dimensions (dimensions in mm)
FR	Dimensions (dimensions en mm)



	A	B
LG 5925	90	22,5
LG 5925 PS	104	22,5
LG 5925 PC	111	22,5

DE	Geräteprogrammierung
EN	Setting
FR	Programmation de l'appareil

DE	Montage / Demontage der PS / PC-Klemmenblöcke
EN	Mounting / disassembly of the PS / PC-terminal blocks
FR	Montage / Démontage des borniers PS / PC



DE	S1 Querschlusserkennung <input type="checkbox"/> nicht sicher <input checked="" type="checkbox"/> sicher
FR	S1 Transversal <input type="checkbox"/> sans <input checked="" type="checkbox"/> avec
DE	S2 Start <input type="checkbox"/> Auto <input checked="" type="checkbox"/> Hand
FR	S2 Reset <input type="checkbox"/> Auto <input checked="" type="checkbox"/> Manu

DE	S1 darf nur bei unbestromtem Gerät betätigt werden! Die Schalterstellung zeigt den Lieferzustand.
EN	Disconnect unit before setting of S1 Drawing shows setting at the state of delivery
FR	Commutation de S1 uniquement hors tension. Appareil livré tel que sur le schéma.

DE	Demontage der steckbaren Klemmenblöcke (Stecker) 1. Gerät spannungsfrei schalten. 2. Schraubendreher in die frontseitige Aussparung zwischen Stecker und Frontplatte hineinschieben. 3. Schraubendreher um seine Längsachse drehen. 4. Beachten Sie bitte, dass die Klemmenblöcke nur auf dem zugehörigen Steckplatz montiert werden.
EN	Removing the terminal blocks with cage clamp terminals 1. The unit has to be disconnected. 2. Insert a screwdriver in the side recess of the front plate. 3. Turn the screwdriver to the right and left. 4. Please note that the terminal blocks have to be mounted on the belonging plug in terminations.
FR	Démontage des borniers amovibles 1. Mise hors tension de l'appareil 2. Enfoncer un tourne-vis dans la fente entre la face avant et le bornier 3. Tourner le tourne-vis pour libérer le bornier 4. Tenir compte du fait que les borniers ne doivent être montés qu'à leur place appropriée

DE	Sicherheitstechnische Kenndaten
EN	Safety Related Data
FR	Données techniques sécuritaires

EN ISO 13849-1:		
Kategorie / Category:	4	
PL:	e	
MTTF _d :	176,2	a (year)
DC _{avg} :	99,0	%
d _{op} :	365	d/a (days/year)
h _{op} :	24	h/d (hours/day)
t _{cycle} :	3600	s/cycle
	≥ 1	/h (hour)

IEC/EN 62061 IEC/EN 61508:		
SIL CL:	3	IEC/EN 62061
SIL:	3	IEC/EN 61508
HFT ^{*)} :	1	
DC:	99,0	%
PFH _D :	2,66E-10	h ⁻¹
T ₁ :	20	a (year)
*) HFT = Hardware-Fehlertoleranz Hardware failure tolerance Tolérance défauts Hardware		

Anforderung seitens der Sicherheitsfunktion an das Gerät		Intervall für zyklische Überprüfung der Sicherheitsfunktion
Demand to our device based on the evaluated necessary safety level of the application.		Intervall for cyclic test of the safety function
Consigne résultant de la fonction sécuritaire de l'appareil		Interval du contrôle cyclique de la fonction sécuritaire
nach, acc. to, selon EN ISO 13849-1	PL e with Cat. 3 or Cat. 4	einmal pro Monat once per month mensuel
	PL d with Cat. 3	einmal pro Jahr once per year annuel
nach, acc. to, selon IEC/EN 62061, IEC/EN 61508	SIL CL 3, SIL 3 with HFT = 1	einmal pro Monat once per month mensuel
	SIL CL 2, SIL 2 with HFT = 1	einmal pro Jahr once per year annuel



DE	Die angeführten Kenndaten gelten für die Standardtype. Sicherheitstechnische Kenndaten für andere Geräteausführungen erhalten Sie auf Anfrage. Die sicherheitstechnischen Kenndaten der kompletten Anlage müssen vom Anwender bestimmt werden.
EN	The values stated above are valid for the standard type. Safety data for other variants are available on request. The safety relevant data of the complete system has to be determined by the manufacturer of the system.
FR	Les valeurs données sont valables pour les produits standards. Les valeurs techniques sécuritaires pour d'autres produits spéciaux sont disponibles sur simple demande. Les données techniques sécuritaires de l'installation complète doivent être définies par l'utilisateur.

DE	EG-Konformitätserklärung
EN	CE-Declaration of Conformity
FR	Déclaration de conformité européenne

EG - Konformitätserklärung
Declaration of Conformity
Déclaration de conformité européenne



Hersteller: E. Dold & Söhne GmbH & Co. KG
Manufacturer: / Fabricant:
Anschrift: Bregstraße 18
Address: / Adresse: 78120 Furtwangen
Germany

Produktbezeichnung: Sicherheitsmodul für Aufzugs-
steuerungen **LG5925.03/034** mit: tt = PS, PC
Product description: Safety Module for Elevator Controls **LG5925.03tt/034** with:
Désignation du produit: Module de sécurité pour commande d'ascenseur avec:

Das bezeichnete Produkt stimmt mit den Vorschriften folgender europäischer Richtlinien überein:
The indicated product is in conformance with the regulations of the following european directives:
Le produit désigné est conforme aux instructions des directives européennes:

Aufzugs-Richtlinie: <i>Lift directive: / Directives pour ascenseurs:</i>	2014/33/EU	EU-Abl. L96/251, 29.03.2014
EMV - Richtlinie: <i>EMC - Directive: / Directives- CEM::</i>	2014/30/EU	EU-Abl. L96/79, 29.03.2014
RoHS - Richtlinie <i>RoHS -Directive: / Directives - RoHS:</i>	2011/65/EU	EU-Abl. L174/88, 01.07.2011

Prüfgrundsätze: EN 81-20:2020 EN 81-50:2020
Basis of Testing: EN 12015:2014 EN 12016:2013
Lignes de contrôle:

Die Übereinstimmung eines Baumusters des bezeichneten Produktes mit der oben genannten Aufzugs-Richtlinie wurde bescheinigt durch:

Consistency of a production sample with the marked product in accordance to the above lift directive has been certified by:
La conformité d'un échantillon du produit désigné aux directives pour ascenseur susmentionnées a été certifiée par:

Benannte Stelle: TÜV Rheinland Industrie Service GmbH
Certification office: / l'organisme notifié: Am Grauen Stein, 51105 Köln
Nummer der benannten Stelle: 0035
Number of certification office: / Numéro de l'organisme notifié:
Nummer der Bescheinigung: 01/208/4A/6114.01/21
Certification number: / Numéro de certificat:
Ausstelldatum : 14.12.2021
Date of issue: / Date de délivrance:

Für die Zusammenstellung der technischen Unterlagen ist bevollmächtigt:

For the compilation of technical documents is authorized:
Pour la composition des documents techniques est autorisé:

Gamal Hagar, Entwicklungsleiter / R&D Manger

Rechtsverbindliche Unterschrift:

Signature of authorized person:
Signature autorisée :

Christian Dold, Produktmanagment / Productmanagment

Ort, Datum : Furtwangen, 17.12.2021
Place, Date: / Lieu, date:

Diese Original - Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der Produktdokumentation sind zu beachten.

This original declaration confirms the conformity of the mentioned directives but does not comprise any guarantee of the product characteristics. The safety directives of the product documentation are to be considered.

Cette déclaration originale certifie la conformité des directives nommées mais ne comprend aucune garantie des caractéristiques du produit. Les directives de sécurité de la documentation du produit sont à considérer.