Instructions

TSG

CANopen LIFT

Module

Documentation history

No.	Ver.	Version	Editor
1	1.2	26.09.17	FH
2	1.3	23.11.17	FH
3	1.4	19.12.17	CSA
4	1.5	11.07.18	FH
5	1.6	27.09.18	AL
6	1.7	27.12.18	CSA
7	1.8	15.01.20	FH

Get the operating instruction in **English** by scanning the QR code.

Demandez les instructions d´instruction de montage en **français**, en scannant le code QR.

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Contents

1 Basic information

1.1 Copyright

We reserve all rights to this document. Without our prior consent is not permitted to copy it, make it available to third parties or otherwise use it without authorization. Changes require our express prior written consent.

1.2 Notes in the manual

All notes in the instructions must be observed.

1.3 Informal measures by the installer

The installer of the system must ensure that he himself attends a training course. He must immediately inform the manufacturer/supplier of missing or defective parts.

1.4 Requirements for the installation personnel

Persons responsible for installation and maintenance should be informed about the generally applicable safety and occupational hygiene regulations. They should be familiar with Langer&Laumann products. The installation tools should be functional and the measuring instruments should be checked continuously.

1.5 Explanation of symbols

WARNING:
You are advised of a possible impending danger that can lead to serious physical injuries or death.

CAUTION:
You are warned of a possible impending danger that can lead to minor physical injuries. You will also find this signal for warnings of property damage.

NOTE:
You will be informed about applications and other useful information.

2 General

By using the TSG CANopen Lift module, the *Langer & Laumann Ing. Büro GmbH TSG Door operator* can be connected to a CAN bus with a maximum of 127 participants. A maximum of 3 doors can be operated per cabin.

3 Interface

The TSG CANopen Lift module is implemented according to CiA 301 with the CANopen Lift CiA-417 application profile (Specification version 2.1).

The TSG CANopen Lift module has status LEDs, is galvanically isolated and can be terminated using a slide switch.

With the TSG CANopen Lift module, you can choose between the baud rates 125kbaud and 250kbaud.
The door number can be selected using a parameter from 1-3. The node ID for the desired door number can be adjusted using a parameter between 2-124.

4 Hardware

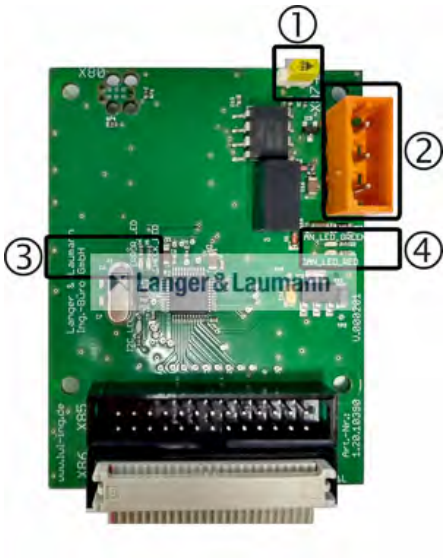

Fig. 1: TSG CANopen Lift module

No.	Name	Description	
①	JP2	Slide switch	(see chap. 5.1 Bus termination setting / page - 7 -)
②	X87	Connection to CAN bus	(see chap. 4.1 CAN connector / page- 6 -)
③	LED81	Check (yellow)	(see chap. 6.1 Check / page- 9 -)
	LED82	Error (red)	(see chap. 6.2 Error / page- 9 -)
④	LED83	CAN Run (green)	(see chap.6.3 CAN_Run / page - 10 -)
	LED84	CAN Error (red)	(see chap. 6.4 CAN_Error / page- 10 -)

4.1 CAN connector

Fig. 2: CAN connector

Pin	Signal	Description
X87 – 1	CAN_GND	CAN ground
X87 – 2	CAN_L	CAN bus signal (dominant low)
X87 – 3	CAN_H	CAN bus signal (dominant high)

5 Configuration

In order for the TSG CANopen Lift module to be recognised by TSG Elektronik, the parameter must be set depending on the application. The parameters of the TSG CANopen Lift module required for communication with the lift control must be set appropriately.

Parameter settings	Function
hA=10	TSG control via CANopen.
hA=16	Locking or blade drive (e.g. QKS9, can be used with additional board additional drive) and the TSG control via CANopen.
hA=17	Locking with NSG (e.g. Koch, can be used with additional board for additional drive) and TSG control via CANopen.
hA=18	Locking drive for shaft swing door (can be used with additional board additional drive) and TSG control via CANopen.

NOTE:
Only the door signals that are sent via the CAN bus are evaluated. The discrete signals via input connector X1 are no longer taken into account.

5.1 Bus termination setting

A CAN bus must be terminated so that no reflections appear in the network. For this, both ends of the network must be terminated with a resistor (120Ω). For a termination to take place at the TSG CANopen Lift module, the slide switch JP2 on the board must be set to **ON**.

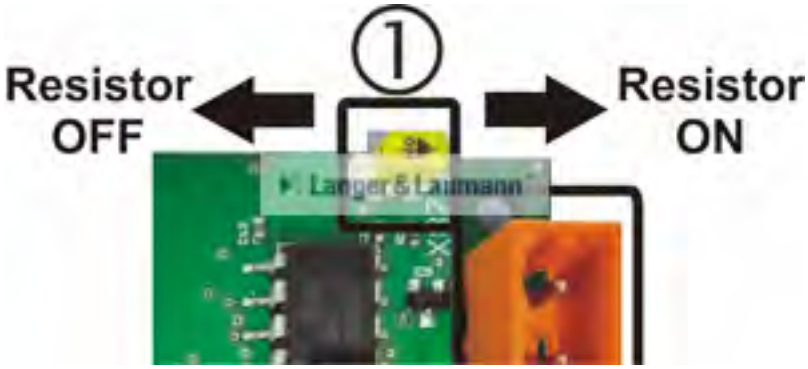

Fig. 3: TSG CANopen Lift module - bus termination

NOTE:
Care must be taken to ensure that the termination only takes place at the beginning and end of the entire network.

CAUTION:
If the termination does not take place at the end or at the beginning, but in between in the network, or if additional resistors (120Ω) are added in addition to the end termination, there will be faults in the CAN bus.

5.2 Setting TSG parameters

Parame-ter	Meaning	Value
h0	Baud rate setting	Standard: 02 (= 250kBaud) alternative: 01 (= 125kBaud)
h1	Door number	Standard: 01 = door 1 alternative: 02 = door 2 03 = door 3
h4	Node ID	Standard (depending on h1): 07 (= door 1) 08 (= door 2) 09 (= door 3) alternative: 02-124
hA	CANopen lift operation CANopen lift operation and TSG sinus drive CANopen lift operation, TSG sinus drive and NSG CANopen lift operation and shaft swing door lock	10 16 17 18

NOTE:
If the elevator control uses a non-standard ID for the required door, this must be set manually via parameter h4. This can be between 2-124.

NOTE:
As soon as the door number is changed in parameter h1, the standard IDs are assigned to the doors again (parameter h4).

NOTE:
As soon as parameter hA is set to 10, 16, 17 or 18, the following parameter values are set:
- h0, h1 and h4 to standard values (see chap. 5.2 Setting TSG parameter / page - 8 -)
- b4 to on (see manual TSGV4)
- cC, and cd on 0A (see manual TSGV4)

NOTE:
If parameter hA has already been set to 10 and is then set to not equal to 10, parameter b4 remains on.

6 LED statuses and meanings

There are four LEDs on the TSG CANopen Lift module (see chap. 4 Hardware / page- 6 - and Fig. 4: Display status with flashing sequence / page - 11 -).

6.1 Check LED

Status LED	Description of condition	Possible causes
Off	There is no voltage.	- Check the mains voltage supply on TSG electronics. - Check the flat cable connection to the TSG electronics.
blinking	TSG CANopen Lift module is ready for operation.	

6.2 Error LED

Status LED	Description of condition	Possible causes
Off	Communication between TSG electronics and TSG CANopen Lift module successful.	
On	No communication between TSG electronics and TSG CANopen Lift module	- Check the flat cable connection to the TSG electronics. - Check parameter hA setting (see chap. 5 Configuration / page- 7 -).

6.3 CAN_Run

The status of the TSG CANopen Lift module in the CANopen network is shown.

Status LED	Description of condition	
Off	RESET	A RESET is carried out
blinking	PRE- OPERATIONAL	Module is in the PRE-OPERATIONAL state
single flash	STOPPED	Module is in the STOPPED state
On	OPERATIONAL	Module is in the OPERATIONAL state

6.4 CAN_Error

The status and any errors in the TSG CANopen Lift module are pointed out.

Status LED	Description of condition	
Off	No error	The TSG CANopen Lift module is ready for operation.
blinking	Invalid configuration	Configuration error
single flash	Warning, limit reached	At least one of the error counters of the TSG CANopen Lift module has reached or exceeded the warning level.
double flash	error rate monitoring	CAN errors have occurred (no CAN connection).
On	Bus Off	TSG CANopen Lift module may no longer transmit.

6.5 Flashing behaviour

CAN_Run	CAN_Error	Error LED	Meaning
ON	OFF	OFF	Module is OPERATIONAL and can be used.
Blinking	OFF	OFF	Module is PRE-OPERATIONAL (lift control must put this in OPERATIONAL mode)
blinking	Blinking (changing)	ON	No communication with TSG. Required parameters set incorrectly: The parameter hA not equal to 10, 16, 17 or 18 (see: chapter 5.2 Setting TSG parameter, page - 8 -).
blinking	Blinking (equal)	OFF	No communication via CAN bus. Required parameters set incorrectly: h0=1, 125kBaud h0=2, 250kBaud (➔since the device is being reinitialised, the flashing behaviour of the CAN_ERROR LED changes briefly➔ single flash)
blinking	Single flash	OFF	CANopen network not available - CANopen module not connected (guard event) - Master not connected (heartbeat event) - Wiring incorrect - Bus is not terminated correctly (see chap. 5.1 Bus termination setting, page- 7 -)
ON	ON	OFF	No communication possible on the CAN bus: - CAN_High and CAN_Low signals are interchanged - cross-circuit between: - CAN_GND and CAN_H - CAN_H and CAN_L - Hardware defective

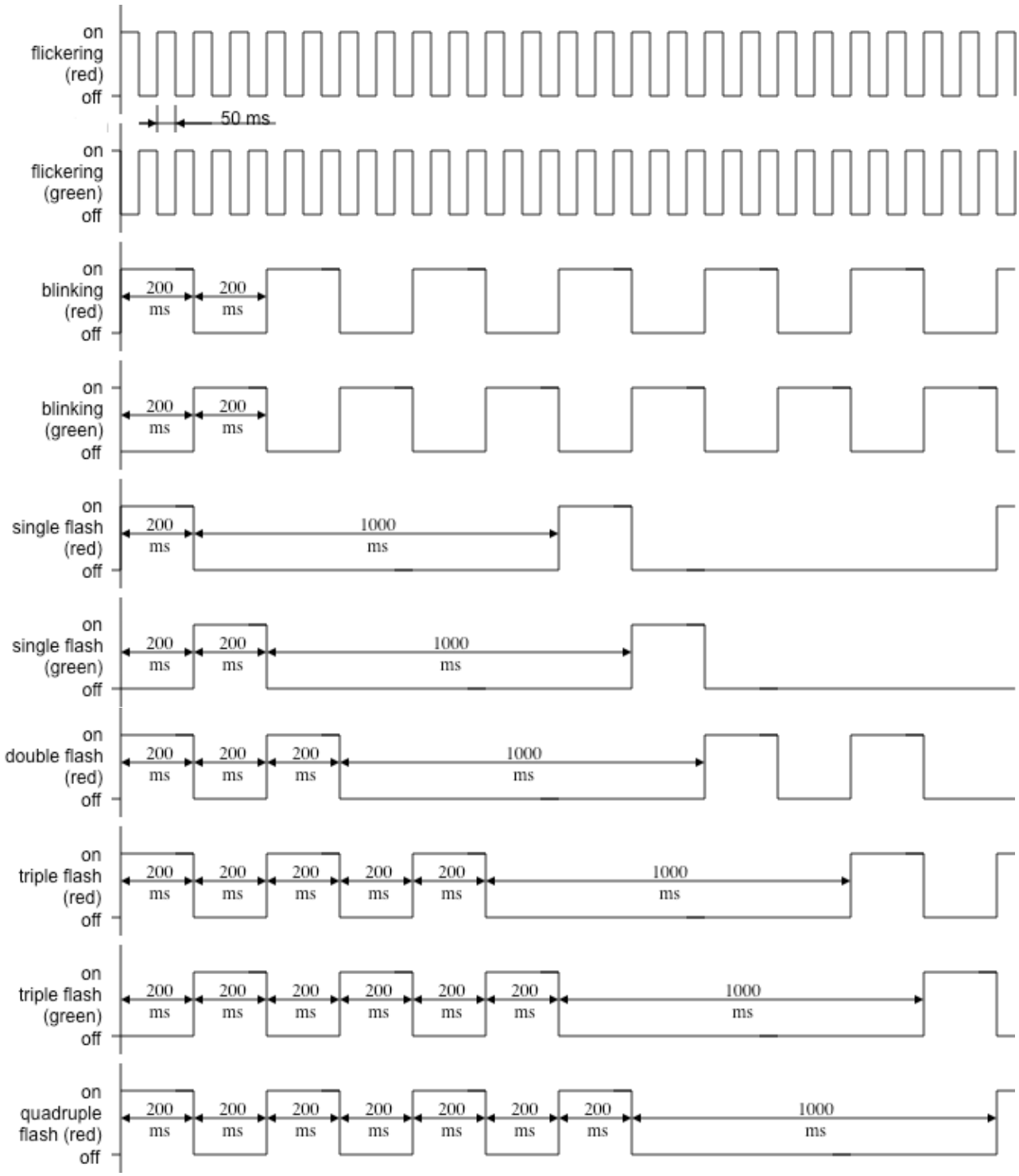

Fig. 4: Display status with flashing sequence

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