

Scope

This safety information is part of the operating instructions for the safety system MGB. It applies to the following MGB systems:

Series	System family	Product version
MGB	...PN...	from V3.30.0
MGBH...		from V2.0.0

Correct use

The following applies to MGB-L0:

The system comprises at least one interlocking module MGB-L0-... and one handle module MGB-H...

The safety system MGB is an interlocking device without guard locking (type 4). Devices with unicode evaluation possess a high coding level; devices with multicode evaluation feature a low coding level.

In combination with a movable safety guard and the machine control, this safety component prevents dangerous machine functions from occurring while the safety guard is open. A stop command is triggered if the safety guard is opened during the dangerous machine function.

This means:

- ▶ Starting commands that cause a dangerous machine function must become active only when the safety guard is closed.
- ▶ Opening the safety guard triggers a stop command.
- ▶ Closing a safety guard must not cause automatic starting of a dangerous machine function. A separate start command must be issued. For exceptions, refer to EN ISO 12100 or relevant C-standards.

The following applies to MGB-L1/MBG-L2:

The system comprises at least one locking module MGB-L1-.../MBG-L2-... and one handle module MGBH...

The safety system MGB is an interlocking device with guard locking (type 4). Devices with unicode evaluation possess a high coding level; devices with multicode evaluation feature a low coding level.

In combination with a movable safety guard and the machine control, this safety component prevents the safety guard from being opened while a dangerous machine function is being performed.

This means:

- ▶ Starting commands that cause a dangerous machine function must become active only when the safety guard is closed and locked.
- ▶ The guard locking device must not be unlocked until the dangerous machine function has ended.
- ▶ Closing and locking a safety guard must not cause automatic starting of a dangerous machine function. A separate start command must be issued. For exceptions, refer to EN ISO 12100 or relevant C-standards.

For MGB-L0 / MGB-L1 / MGB-L2

The interlocking module MGB-L0B-PN.-... and the locking module MGB-L1B-PN.-.../MGB-L2B-PN.-... are operated as IO devices in the PROFINET (PROFIsafe).

Before the device is used, a risk assessment must be performed on the machine, e.g. in accordance with the following standards:

- ▶ EN ISO 13849-1, Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
- ▶ EN ISO 12100, Safety of machinery – General principles for design – Risk assessment and risk reduction
- ▶ IEC 62061, Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems

Correct use includes observing the relevant requirements for installation and operation, particularly based on the following standards:

- ▶ EN ISO 13849-1, Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design
- ▶ EN ISO 14119 (supersedes EN 1088), Safety of machinery – Interlocking devices associated with guards – Principles for design and selection
- ▶ EN 60204-1, Safety of machinery – Electrical equipment of machines – Part 1: General requirements

The safety system MGB can only be combined with the intended modules in the MGB system family.

On the modification of system components, EUCHNER provides no warranty for function.

The customer is responsible for the safe overall function, especially for the safe integration into the PROFIsafe environment.

Exclusion of liability and warranty

In case of failure to comply with the conditions for correct use stated above, or if the safety instructions are not followed, or if any servicing is not performed as required, liability will be excluded and the warranty void.

General safety instructions

Safety switches fulfill personal protection functions. Incorrect installation or tampering can lead to fatal injuries to personnel.

Check the safe function of the safety guard particularly

- ▶ after any setup work
- ▶ after the replacement of an MGB component
- ▶ after an extended period without use
- ▶ after every fault
- ▶ after any change to the DIP switch setting

Independent of these checks, the safe function of the safety guard should be checked at suitable intervals as part of the maintenance schedule.

⚠ WARNING

Danger to life due to improper installation or due to bypassing (tampering). Safety components perform a personal protection function.

- ▶ Safety components must not be bypassed, turned away, removed or otherwise rendered ineffective. On this topic pay attention in particular to the measures for reducing the possibility of bypassing according to EN ISO 14119:2013, section 7.

- ▶ The switching operation is only allowed to be triggered by the intended handle module MGBH... that is positively fastened to the safety guard.

- ▶ Prevent bypassing by means of replacement actuators (only for multicode evaluation). For this purpose, restrict access to actuators and to keys for releases, for example.

- ▶ Mounting, electrical connection and setup only by authorized personnel possessing the following knowledge:

- specialist knowledge in handling safety components
- knowledge about the applicable EMC regulations
- knowledge about the applicable regulations on occupational safety and accident prevention.

Important!

Prior to use, read the operating instructions and keep these in a safe place. Ensure the operating instructions are always available during mounting, setup and servicing. EUCHNER cannot provide any warranty in relation to the readability of the CD for the storage period required. For this reason you should archive a printed copy of the operating instructions. You can download the operating instructions from www.euchner.de.

Operating instructions on CD/DVD

Each device is supplied with operating instructions on CD/DVD; these instructions contain detailed information on the overall system. The following system requirements must be met to be able to open or print the document:

- ▶ PC with PDF Reader installed
- ▶ CD/DVD drive

Opening and printing the documents

Important: the autoplay function for the drive must be enabled (see operating system help) and you will need a PDF Reader that can open PDF files from version 4.

1. Insert CD
 - ➔ Selection table is opened in the browser
2. Click the related document for your system
 - ➔ The document is opened and can be printed.

Mounting, setup and troubleshooting

For detailed instructions on mounting, setup and troubleshooting, please refer to the operating instructions on the CD/DVD.

Electrical connection

For detailed information on the electrical connection, please refer to the operating instructions on the CD/DVD.

⚠ WARNING

In case of an error, loss of the safety function through incorrect connection.

- ▶ Mounting must be performed only by authorized personnel.

Inspection and service

⚠ WARNING

Loss of the safety function because of damage to the system.

In case of damage, the affected module must be replaced completely. Only accessories or spare parts that can be ordered from EUCHNER may be replaced.

Regular inspection of the following is necessary to ensure trouble-free long-term operation:

- ▶ Check the switching function
- ▶ Check the secure fastening of the devices and the connections
- ▶ Check for soiling

No servicing is required. Repairs to the device are only allowed to be made by the manufacturer.

Technical data (extract)

Parameter	Value
Operating voltage U _B	24 V DC +10% / -15% (PELV)
Current consumption, max.	500 mA
External fuse	See related operating instructions on CD/DVD
Safety outputs	Profisafe nach IEC 61784-3-3
Reliability values acc. to EN ISO 13849-1	
Category	4
Performance Level	PL e
MTTF _d ¹⁾	91 years
DC	99 %
Mission time	20 years
PFH _d ¹⁾	
- Monitoring of guard locking	4.07 x 10 ⁸
- Control of guard locking	3.91 x 10 ⁸
- Evaluation of emergency stop, enabling switch, selector switch	4.10 x 10 ⁸
B _{10d} ²⁾	
- Emergency stop	1 x 10 ⁵
- Enabling switch	According to manufacturer's specifications

1) Fixed failure rate without consideration of faults in wearing parts.
2) Information regarding wearing parts without consideration of fixed failure rates in electronic components.