

# **EUCHNER**

## **Application**

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## 1. About this document

### 1.1. Version

Version	Date	Change/addition	Chapter
01-05/19	16.05.2019	Prepared	All

### 1.2. Scope

This document is used to replace an MGB Ethernet/IP™ system.

### 1.3. Target group

Design engineers and installation planners for safety devices on machines, as well as setup and servicing staff possessing special expertise in handling safety components as well as expertise in the installation, setup, programming and diagnostics of programmable logic controllers (PLC) and bus systems.

## 2. Replacement of the MGB Ethernet/IP™

### 2.1. Modification of the system and DIP switch settings

1. Disconnect the supply of power from the plug connectors X1 and X2.
2. Disconnect the network cable/s. If labeling of the network cable/s is incorrect or missing, please mark the network cable/s related to plug connector X3 or X4.
3. Remove the MGB.
4. Transfer the setting of the DIP switches to the replacement system. For this purpose, open the side cover on the MGB-EI (figure 1) and set the DIP switches on the replacement system to the value set on the original system.

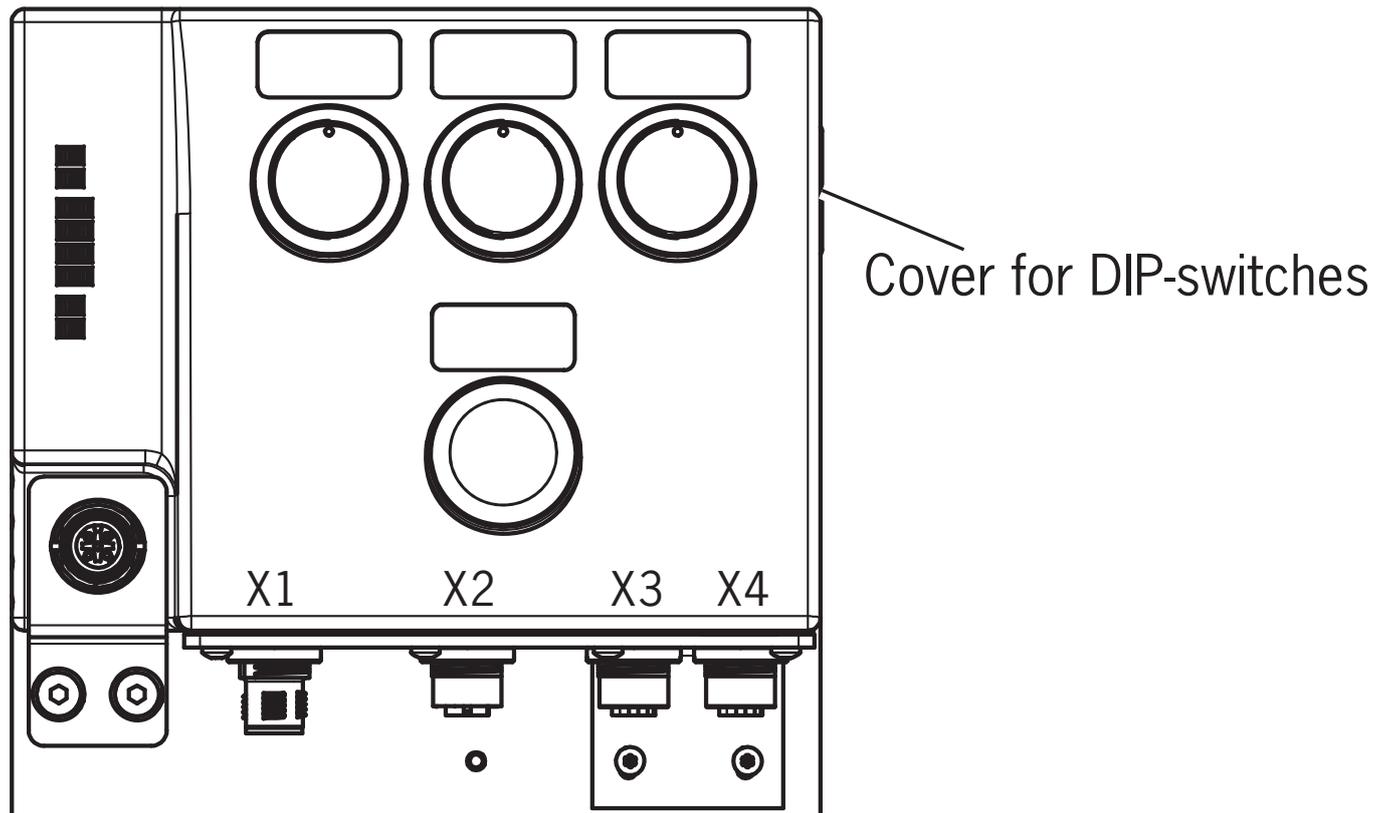


Figure 1: Position of DIP switches

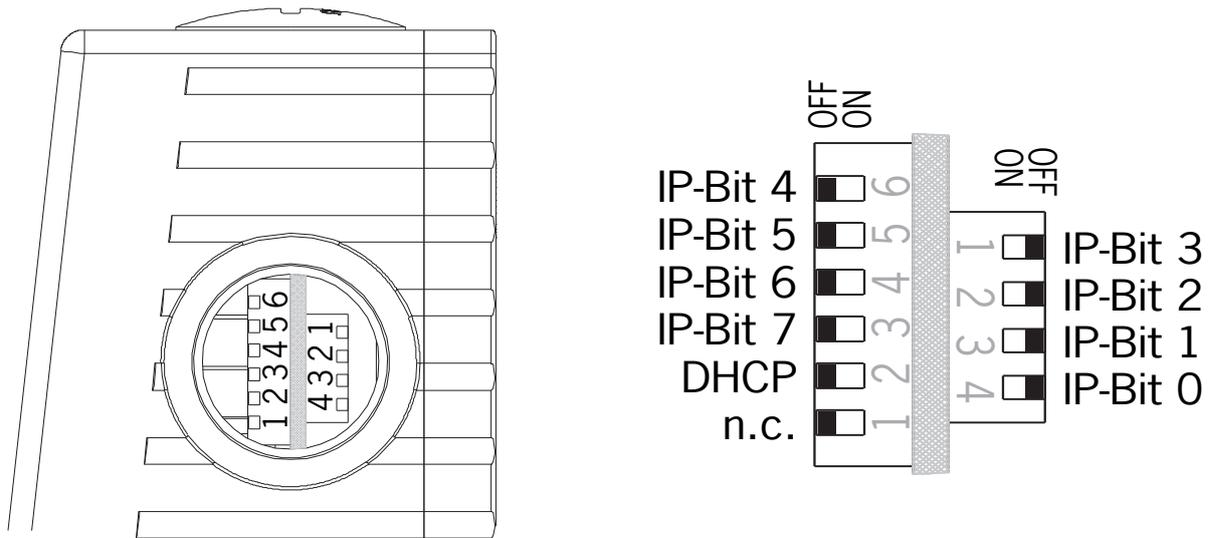


Figure 2: Detail view, DIP switches MGB-EI

DIP switch	Designation	Function	
Block 2	1	n.c.	Reserved
	2	DHCP	OFF position = IP address via DIP switch ON position = IP address via DHCP (Attention: all other DIP switches in position = OFF)  <b>Tip:</b> Set the DIP switch to ON to identify your MGB in the control system. This will ensure that the device is recognized by the DHCP server. This can be helpful if you do not know the IP address.
	3	IP BIT 7	Enter the last byte of the IP address bit by bit here.  <b>Example:</b> 192.168.1.[DIP switch code, binary]  -----  Fixed part
	4	IP BIT 6	
	5	IP BIT 5	
	6	IP BIT 4	
Block 1	4	IP BIT 0	The following applies: OFF position = 0 ON position = 1
	3	IP BIT 1	
	2	IP BIT 2	
	1	IP BIT 3	

Factory setting: all DIP switches in OFF position; DHCP active

Table 1: DIP switch settings

	<p><b>Important!</b></p> <p>Do not change the DIP switch settings on the original system until all steps of the MGB replacement have been undertaken.</p>
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5. Fit the replacement system and connect the network cable/s as per the labeling.
6. Restore the supply of power. The replacement system now starts to teach in the handle module.
  - Teach-in operation starts, green LED (State) flashes slowly (approx. 1 Hz). The teach-in standby state is active for 3 minutes after switch on. During the teach-in operation, the locking module checks whether the handle module is a disabled handle module. Provided this is not the case, the teach-in operation is completed after approx. 30 seconds, and the green LED (State) goes out. The new code has now been stored, and the old code is disabled.
7. After teaching in the handle module, the MGB must be restarted.

8. Assign IP address: you can use a fixed IP address or a DHCP server.

You can use, e.g., the utility BOOTP/DHCP-Server as the DHCP server. Set up your DHCP server such that the MGB receives a valid IP address. Please pay attention to the setting of the DIP switches on the device! See chapter 11 in the operating instructions "Controls and indicators". You will find the MAC address of the MGB on sticker on the side of the MGB.

Alternatively, assign a fixed IP address by setting the DIP switches in the subnet 192.168.1.xxx (if not otherwise specified on the data sheet).

9. Configuration in the PLC:

1. In the properties for the MGB, check the module parameters: Vendor, Product Type, Product Code and update them if necessary.
2. Go online and load the auxiliary project into the control system, if it was necessary to change the module parameters. If no changes to the module parameters were necessary, continue with 9.3.
3. Set the Safety Network Number (SNN)

## **2.2. Checking the MGB-EI functionality**

If the MGB system is functioning without errors, the NET, MOD and PWR LEDs illuminate continuously.

Check the electrical and mechanical function of the MGB system

### 3. Important note – please observe carefully!

This document is intended for a design engineer who possesses the requisite knowledge in safety engineering and knows the applicable standards, e.g. through training for qualification as a safety engineer. Only with the appropriate qualification is it possible to integrate the example provided into a complete safety chain.

The example represents only part of a complete safety chain and does not fulfill any safety function on its own. In order to fulfill a safety function, the energy switch-off function for the danger zone and the software within the safety evaluation must also be considered, for example.

The applications provided are only examples for solving certain safety tasks for protecting safety doors. The examples cannot be comprehensive due to the application-dependent and individual protection goals within a machine/installation.

**If questions concerning this example remain open, please contact us directly.**

According to the Machinery Directive 2006/42/EC, the design engineer of a machine or installation has the obligation to perform a risk assessment and take measures to reduce the risk. While doing this, the engineer must comply with the applicable national and international safety standards. Standards generally represent the current state-of-the-art. Therefore, the design engineer should continuously inform himself about changes in the standards and adapt his considerations to them. Relevant standards include EN ISO 13849 and EN 62061. This application must be regarded only as assistance for the considerations about safety measures.

The design engineer of a machine/installation has the obligation to assess the safety technology him/herself. The examples must not be used for an assessment, because only a small excerpt of a complete safety function was considered in terms of safety engineering here.

In order to be able to use the safety switch applications correctly on safety doors, it is indispensable to observe the standards EN ISO 13849-1, EN ISO 14119 and all relevant C-standards for the respective machine type. Under no circumstances does this document replace the engineer's own risk assessment, and it cannot serve as the basis for a fault assessment.

In particular in relation to a fault exclusion, it must be noted that a fault can only be excluded by the machine's or installation's design engineer and this action requires justification. A general fault exclusion is not possible. More information about fault exclusion can be found in EN ISO 13849-2.

Changes to products or within assemblies from third-party suppliers used in this example can lead to the function no longer being ensured or the safety assessment having to be adapted. In any event, the information in the operating instructions on the part of EUCHNER, as well as on the part of third-party suppliers, must be used as the basis before this application is integrated into an overall safety function. If contradictions should arise between the operating instructions and this document, please contact us directly.

#### **Use of brand names and company names**

All brand names and company names stated are the property of the related manufacturer. They are used only for the clear identification of compatible peripheral devices and operating environments in relation to our products.

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