

 **Operating instructions**  
→ (user level 1)

**Manual Control Unit**  
**Type: MMI**



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### 1. Safety instructions

#### DANGER

##### **Mortal danger due to rotating parts!**

The motor can rotate during programming. Depending on the system a dangerous situation for people and system can occur.

Make sure that nobody is in the danger areas.

#### DANGER

##### **Mortal danger from electric shock!**

Dangerous voltages are present on the motor and the converter. This may cause serious injury or death.

Disconnect the device from the voltage supply and protect it against re-activation when working on the device.

#### IMPORTANT INFORMATION

This manual must be kept easily accessible near the device and made available to all users.

#### IMPORTANT INFORMATION

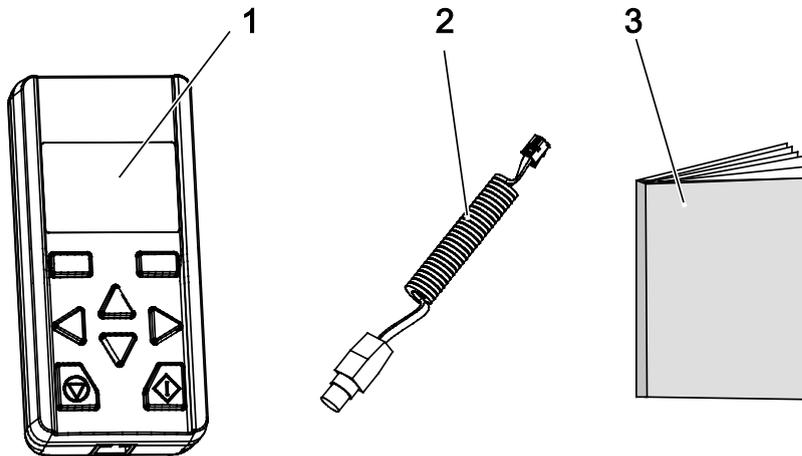
The device contains electrical components that may not be disposed with normal household waste. They must be collected separately with electrical and electronic equipment in accordance with applicable legislation.

## 2. Overview of manual control unit

This chapter contains information on the scope of delivery of the MMI manual control unit, and a description of its function.

### 2.1 Scope of delivery

Compare your product with the scope of delivery given below.



*Fig. 1: Scope of delivery*

Legend	
1 MMI manual control unit	2 Communication cable with RJ11/M12 plug connection
3 Operating instructions	

## 2.2 Description manual control unit



### IMPORTANT INFORMATION

The MMI manual control unit is an exclusively industrial product (accessory part) that can only be used in combination with a VAU series converter which supports these functions!

The MMI is connected to the integrated M12 interface of the VAU converter. With this control unit, the user is able to write (program) and/or visualise parameters of the VAU. You can communicate with a converter of the VAU series using the MMI manual control unit.

Possible actions are:

- ▶ Display of current errors
- ▶ Display of error history
- ▶ Display of several operating data

## 3. Start-up

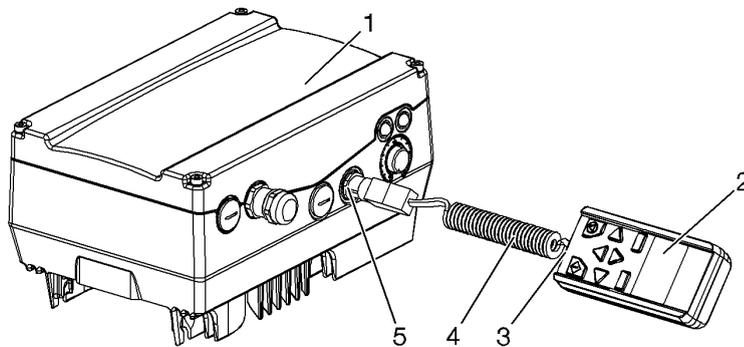


Fig. 2: MMI with VAU

1. Connect the MMI manual control unit (2) to the M12 interface (5) of the VAU (1) using the included connection cable (4).
2. As soon as the VAU is supplied with power (mains voltage or external +24 V on the controller terminal), a blue illuminated start screen (→Fig. 3) with "BECKER" logo appears on the MMI.
3. The start screen changes automatically to the main menu.
4. Communication with the VAU is now possible.

## 4. Operation and functions

### 4.1 Navigation and data entry

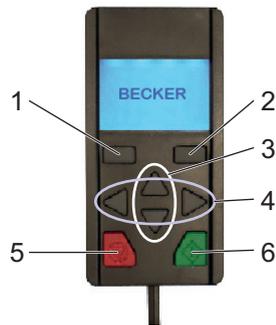


Fig. 3: Function of keys

Keys	Function
Arrow keys 	Select parameter, change values
Arrow keys 	Navigate cursor
Confirmation keys 	With these keys, the display command above the key will be activated.
„STOP“/ „START“-key (5+6) 	These keys have no function in the standard menu.

Commands	Approach
Next	Select parameter and submenu
Back	One menu level higher
Cancel	Stop entering without saving
Change	Change mode (cursor flashes) select
Save	Save selection, entry and modification
Confirm	Confirm the selected parameter set

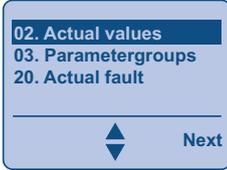
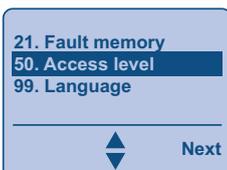
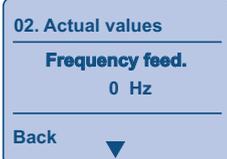
Commands	Approach
Activate positions before decimal point	Press arrow key "LEFT" as often until the desired position appears.
Activate positions after decimal point	Press arrow key "RIGHT" as often until the desired decimal position is displayed.
Enter negative values	Move cursor to the plus sign, then select and store minus sign with the arrow key "UP".

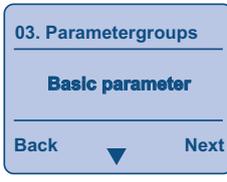
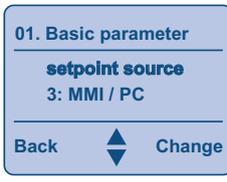
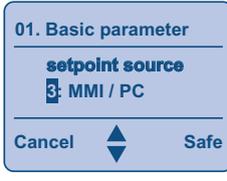
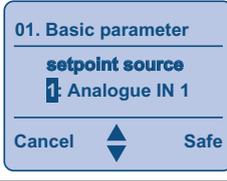
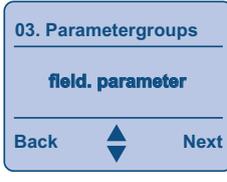
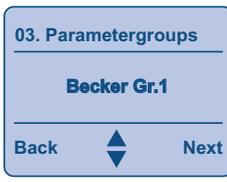
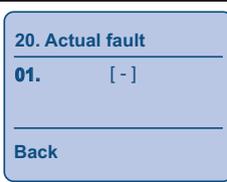
## 4.2 Menu structure

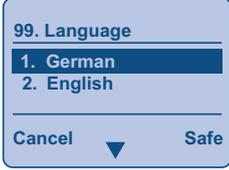
The STANDARD-Menu:

- ▶ After switching on the converter or after connecting the MMI during operation the standard menu is active.

## 4.3 The standard menu

Step	Key sequence	Display	Action
 For more information about the parameters, see the user manual of the frequency converter.			
1	<b>Main menu</b> Connect MMI to the M12 interface		Main menu appears after the start screen. The choices are: <ul style="list-style-type: none"> <li>▶ 02. Actual values</li> <li>▶ 03. Parametergroups</li> <li>▶ 20. Actual fault</li> <li>▶ 21. Fault memory</li> <li>▶ 50. Access level</li> <li>▶ 99. Language</li> </ul>
2	Navigate through the menu ▲▼ - (select) 2 - (Next)		Scroll with the arrow keys up or down. The "Next" button leads to the menu item previously selected.
3	<b>02. Actual values</b> 1 - (Back) ▲▼ - (select)		Select 02. actual values in the main menu. The following values can be displayed: <ul style="list-style-type: none"> <li>▶ Frequency feed.</li> <li>▶ Frequency ref.</li> <li>▶ Motor voltage</li> <li>▶ Motor current</li> <li>▶ Speed</li> <li>▶ Torque</li> <li>▶ shaft power</li> <li>▶ PID actual value</li> <li>▶ PID reference</li> <li>▶ Analogue input 1</li> <li>▶ Analogue input 2</li> <li>▶ IGBT Temperature</li> <li>▶ Internal Tempera</li> <li>▶ DC Link Power</li> <li>▶ Operating hours</li> </ul> which can be accessed individually using the arrow keys.

Step		Key sequence	Display	Action
4	<b>03. Parameter-groups</b>	2  - (Next) 1  - (Back) 3  - (select)		Select <i>03. Parametergroups</i> in the main menu.  The following values can be displayed: ▶ <i>Basic parameter</i> ▶ <i>field. parameter</i> ▶ <i>Becker Gr.1</i>
4.1	<b>03. Parameter-groups</b> ▷ basic parameter	2  - (Change) 1  - (Back) 3  - (select)		Setting the basic parameter Selection: ▶ <i>setpoint source</i> ▶ <i>startstop source</i>  <b>Example:</b> Changing the control source 1 With "Change" you can enter the change mode.
4.1.1	<b>03. Parameter-groups</b> ▷ basic parameter (Example - Change setpoint source)	3  - (select)		Select the new setpoint source via the arrow keys up or down.
		2  - ( Save) 1  - (Cancel)		Afterwards, confirm the selection with "Save".
4.2	<b>03. Parameter-groups</b> ▷ field. parameter	2  - (Next) 1  - (Back) 3  - (select)		Setting the fieldbus parameters Selection: ▶ <i>USS/SAS adress</i> ▶ <i>USS/SAS baudrate</i> ▶ <i>fieldbus adress</i> ▶ <i>fieldb. baudrate</i> ▶ <i>bus timeout</i>
4.3	<b>03. Parameter-groups</b> ▷ Becker Gr. 1	2  - (Next) 1  - (Back) 3  - (select)		Setting the Becker parameters Selection: ▶ <i>ID parameter set</i>
5	<b>20. Actual fault</b>	1  - (Back)		Select <i>20. Actual fault</i> in the main menu.  Possible errors are displayed here.

Step		Key sequence	Display	Action
6	<b>21. Fault memory</b>	1  - (Back) 3 - (select)		Select <i>21. Fault memory</i> in the main menu. The last 20 errors (error number and error description) can be displayed.
7	<b>50. Access level</b>	2  - ( Save) 1  - (Cancel) 3 - (select)		Select <i>50. Access level</i> in the main menu. Setting the access level Selection: ▶ 1 = <i>Standard</i> ▶ 2 ▶ 3 Access to Level 2+3 is exclusively for employees of Gebr. Becker GmbH.
8	<b>99. Language</b>	2  - ( Save) 1  - (Cancel) 3 - (select)		Select <i>99. Language</i> in the main menu. A language can be selected here. You can choose between German and English.

## 5 Technical data

Item number	79630100115
Connection cable	3m RJ11 on plug M12
Dimensions (L / W / H)	105 / 50 / 25 mm
Weight	83 g
Protection class	IP21

## 6 Directives and guidelines

Especially apply:

- the Directive on Electromagnetic Compatibility  
(Directive 2004/108/EC of the council EN 61800-3:2004)
- the Low Voltage Directive  
(Directive 2006/95/EC of the council EN 61800-5-1:2003)