COMBIVERT **G6**

PROGRAMMING MANUAL | **CONTROL G6 ANALOG / DIGITAL**

Translation of original manual
Document 20087588 EN 04

Preface

The hardware and software described in this document are products of KEB. The information contained in this document is valid at the time of publishing. KEB reserves the right to update this document in response to misprints, mistakes or technical changes.

Signal words and symbols

Certain procedures within this document can cause safety hazards during the installation or operation of the device. Refer to the safety warnings in this document when performing these procedures. Safety signs are also located on the device where applicable. A safety warning is marked by one of the following warning signs:

⚠ DANGER	Dangerous situation, which will cause death or serious injury iif this safety warning is ignored.
⚠ WARNING	Dangerous situation, which may cause death or serious injury if this safety warning is ignored.
⚠ CAUTION	Dangerous situation, which may cause minor injury if this safety warning is ignored.
NOTICE	Situation, which can cause damage to property if this safety warning is ignored.

RESTRICTION

Used when the following statements depend on certain conditions or are only valid for certain ranges of values.

Used for informational messages or recommended procedures.

More symbols

►	This arrow starts an action step.
• / -	Enumerations are marked with dots or indents.
=>	Cross reference to another chapter or another page.

Note to further documentation.
https://www.keb-automation.com/search

Laws and guidelines

KEB Automation KG confirms with the EC declaration of conformity and the CE mark on the device nameplate that it complies with the essential safety requirements.

The EC declaration of conformity can be downloaded on demand via our website.

Warranty and liability

The warranty and liability on design, material or workmanship for the acquired device is given in the general sales conditions.

Here you will find our general sales conditions.
https://www.keb-automation.com/terms-conditions

Further agreements or specifications require a written confirmation.

Support

Although multiple applications are referenced, not every case has been taking into account. If you require further information or if problems occur which are not referenced in the documentation, you can request the necessary information via the local KEB agency.

The use of our units in the target products is outside of our control and therefore lies exclusively in the area of responsibility of the customer.

The information contained in the technical documentation, as well as any user-specific advice in spoken and written and through tests, are made to best of our knowledge and information about the intended use. However, they are regarded as being only informal and changes are expressly reserved, in particular due to technical changes. This also applies to any violation of industrial property rights of a third-party. Selection of our units in view of their suitability for the intended use must be done generally by the user.

Tests can only be done within the intended end use of the product (application) by the customer. They must be repeated, even if only parts of hardware, software or the unit adjustment are modified.

Copyright

The customer may use the instructions for use as well as further documents or parts from it for internal purposes. Copyrights are with KEB and remain valid in its entirety.

This KEB product or parts thereof may contain third-party software, including free and/or open source software. If applicable, the license terms of this software are contained in the instructions for use. The instructions for use are already available to you, can be downloaded free of charge from the KEB website or can be requested from the respective KEB contact person.

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1 Basic Safety Instructions

The products are designed and constructed in accordance with state-of-the-art technology and the recognized safety rules and regulations. However, the use of such devices may cause functional hazards for life and limb of the user or third parties, or damages to the system and other material property.

The following safety instructions have been created by the manufacturer for the area of electric drive technology. They can be supplemented by local, country- or application-specific safety instructions. This list is not exhaustive. Violation of the safety instructions by the customer, user or other third party leads to the loss of all resulting claims against the manufacturer.

NOTICE

Hazards and risks through ignorance!

► Read the instructions for use!

► Observe the safety and warning instructions!

► If anything is unclear, please contact KEB Automation KG!

1.1 Target group

This instruction manual is determined exclusively for electrical personnel. Electrical personnel for the purpose of this instruction manual must have the following qualifications:

- Knowledge and understanding of the safety instructions.
- Skills for installation and assembly.
- Start-up and operation of the product.
- Understanding of the function in the used machine.
- Detection of hazards and risks of the electrical drive technology.
- Knowledge of *DIN IEC 60364-5-54*.
- Knowledge of national safety regulations.

1.1 Validity of this manual

This manual describes the control part analog / digital of the COMBIVERT G6.
The manual

- contains only supplementary safety instructions.
- is only valid in connection with the power unit manual of COMBIVERT G6.

1.2 Electrical connection

⚠ DANGER

Voltage at the terminals and in the device!

Danger to life due to electric shock !

- ► For any work on the unit switch off the supply voltage and secure it against switching on.
- ► Wait until the drive has stopped in order, that perhaps regenerative energy can be generated.
- ► Wait untill the DC-Link capacitors are discharged (5 minutes). Verify by measuring the DC voltage at the terminals.
- ► Never bridge upstream protective devices (also not for test purposes).

For a trouble-free and safe operation, please pay attention to the following instructions:

- The electrical installation shall be carried out in accordance with the relevant requirements.
- Cable cross-sections and fuses must be dimensioned by the user accordly to the specified minimum / maximum values for the operation.
- Within systems or machines the person installing electrical wiring must ensure that on existing or new wired safe ELV circuits the EN requirement for safe insulation is still met!
- For drive converters that are not isolated from the supply circuit (in accordance with *EN 61800-5-1*) all control lines must be included in other protective measures (e.g. double insulation or shielded, earthed and insulated).
- When using components without isolated inputs/outputs, it is necessary that equipotential bonding exists between the components to be connected (e.g. by the equipotential line). Disregard can cause destruction of the components by equalizing currents.

1.3 Start-up and operation

The start-up (i.e. for the specified application) is forbidden until it is determined that the installation complies with the machine directive; account is to be taken of *EN 60204-1*.

⚠ WARNING

Software protection and programming!

Hazards caused by unintentional behavior of the drive!

- ► Check especially during initial start-up or replacement of the drive controller if parameterization is compatible to application.
- ► Securing a unit solely with software-supported functions is not sufficient. It is imperative to install external protective measures (e.g. limit switch) that are independent of the drive controller.
- ► Secure motors against automatic restart.

2 Product Description

2.1 Product features

These instructions for use describe the parameterization of the following devices:

Device series:	COMBIVERT G6
Hardware:	Analog / Digital

2.2 Functional overview

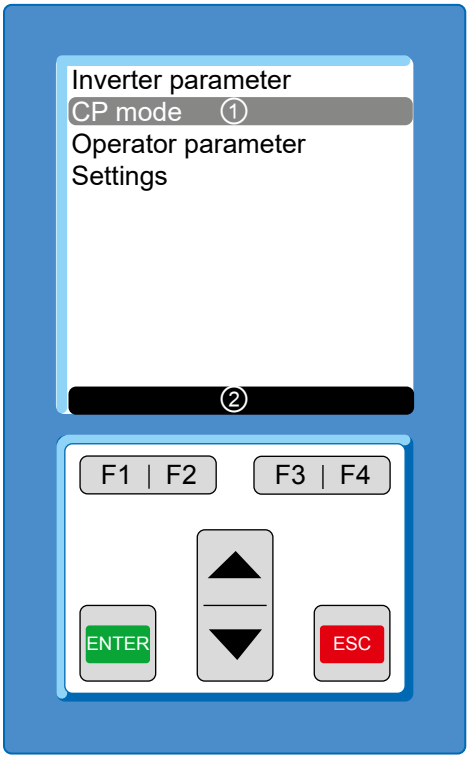
The control board provides the following functions:

- Hardware-installed supply of digital and analog inputs and outputs
- Diagnostic interface
- Ethernet based fieldbus interface (EtherCAT / VARAN)
- CAN fieldbus interface
- KTY interface
- Brake control
- STO functionality
- Status LED`s

3 LC Display Operation

For optional assembly of the LC display.

3.1 Control elements



Name	Function
①	Menu bar
②	Function bar
F1	Function key 1
F2	Function key 2
F3	Function key 3
F4	Function key 4
▲	Menu bar up or increase parameter value
▼	Menu bar down or decrease parameter value
ENTER	select / confirm
ESC	return to the previous menu

Figure 1: Control elements

3.1.1 Description of controls

3.1.1.1 Menu bar

The menu bar shows the current selection in the menu. It can be moved with the ▲ and ▼ keys. Press Enter to change to the subordinate operating level, ESC to return to the next higher operating level.

3.1.1.2 Function keys and toolbar

The function keys F1...F4 are variable assigned depending on the menu item. The toolbar displays current assignment of the function keys F1 ... F4.

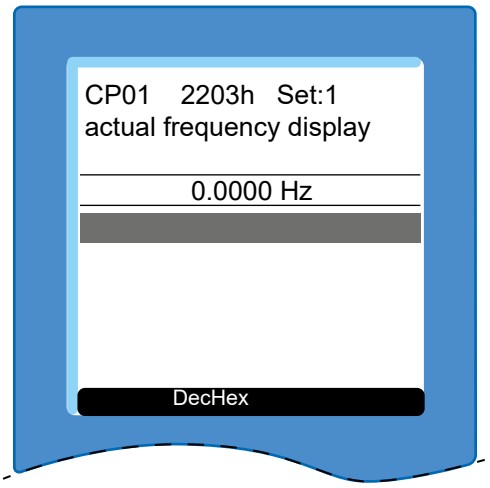
The following assignment may take the keys:

Display	Function
DecHex	Representation changes between decimal and hexadecimal display
Menu	jumps to the main menu
Up	jumps to the top of the current page, repeatedly pressing scrolls back a page
Down	jumps to the top of the current page, repeatedly pressing scrolls back a page

Table 1: assignment of the function keys

3.2 Initial start-up

3.2.1 Switch on



At first switch on with factory setting the operator indicates the actual frequency in customer parameters menu (CP-mode). To make the basic settings change to the main menu as follows:

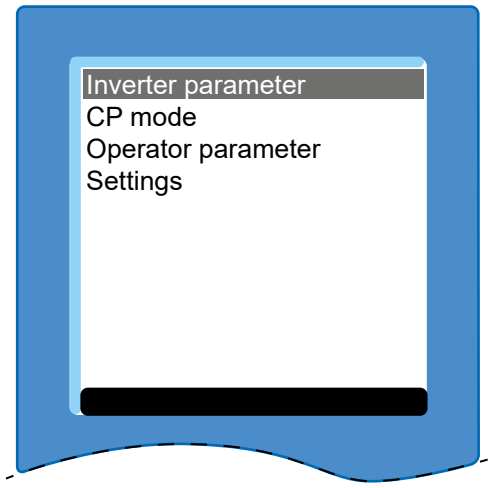
<ESC> → changes to the parameter selection

<F1> → jumps to the main menu

Figure 2: Power indicator

The menu with the inverter starts can be set in the settings menu under “Start mode”.

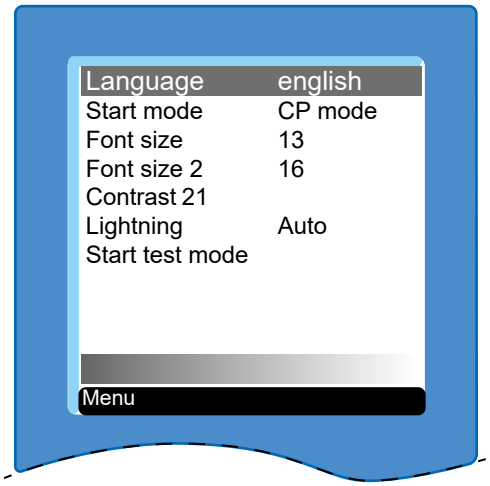
3.2.2 Main menu



The main menu is the top-level menu. With the keys <▲> and <▼> select the desired submenu. Press <ENTER> to jump to the selected submenu.

Figure 3: Main menu

4 Basic settings



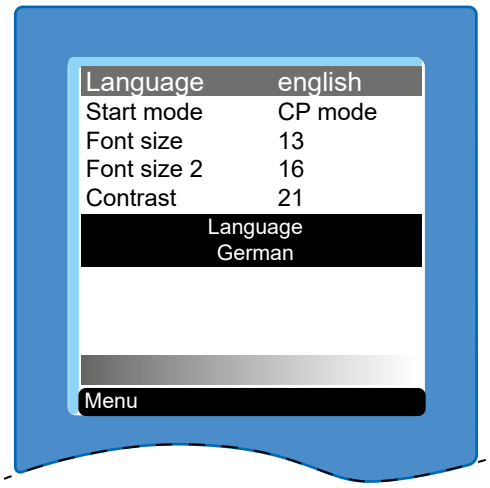
To adjust the display to the individual needs select "Settings" in the main menu and confirm with <ENTER>.

With the keys <▲> and <▼> select the desired function.

Press <ENTER> to switch into the input mode to change the parameter value.

Figure 4: Basic settings

4.1 Change language



Press <ENTER> to switch into the input mode to change the parameter value. With the keys <▲> and <▼> select one of the following languages:

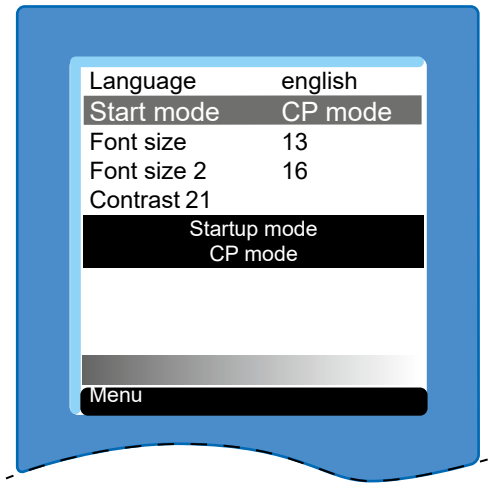
- German
- English
- Espanõl
- Russian
- Italiano
- Francais
- American

<ENTER> selects the desired language and jumps back into the "Settings" sub-menu.

Figure 5: Change language

If the selected language is not available the parameters are displayed in English.

4.2 Startup mode



The startup mode determines which display appears at switch on.

Press <ENTER> to switch into the input mode to change the parameter value.

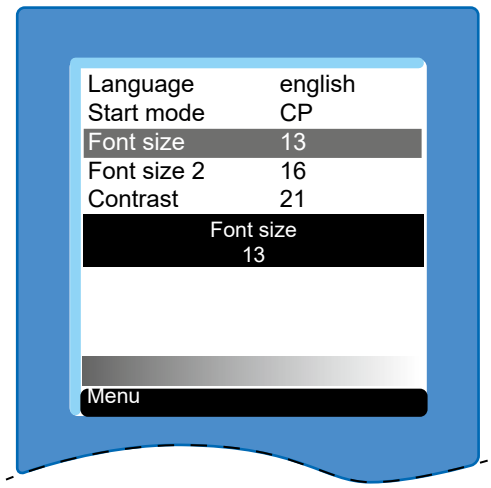
With the keys <▲> and <▼> select one of the following home screens:

- Inverter parameter
- CP Mode (customer parameter)
- Operator parameter
- Settings

<ENTER> selects the desired startup screen and jumps back into the "Settings" submenu.

Figure 6: Set start mode

4.3 Set font size and font size 2



The font size determines the complete menu view in the display except for the font size 2 (see below).

Press <ENTER> to switch into the input mode to change the parameter value.

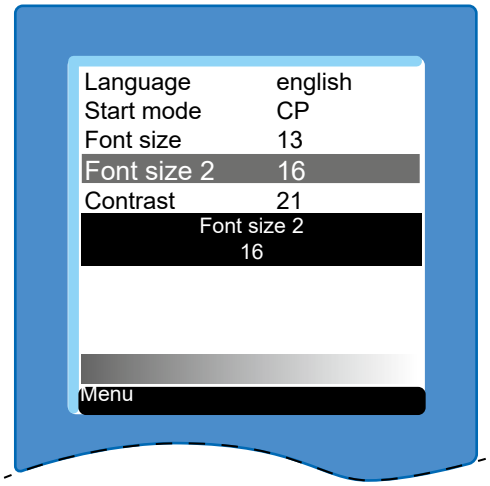
With the keys <▲> and <▼> select one of the following font sizes:

- 8, 10, 13, 16, 24

<ENTER> selects the desired font size and jumps back into the "Settings" submenu.

The display will only be updated after a change of the menu.

Figure 7: Set font size



The font size 2 determines the display size of the parameter values in CP mode.

Press <ENTER> to switch into the input mode to change the parameter value.

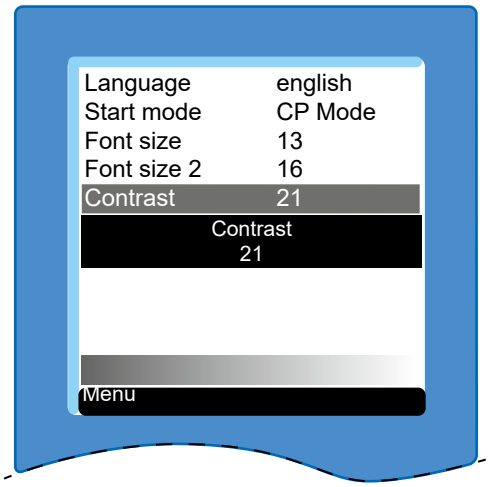
With the keys <▲> and <▼> select one of the following font sizes:

- 8, 10, 13, 16, 24

<ENTER> selects the desired font size and jumps back into the "Settings" sub-menu.

Figure 8: Set font size 2

4.4 Contrast settings



Sets the contrast level of the LC display.

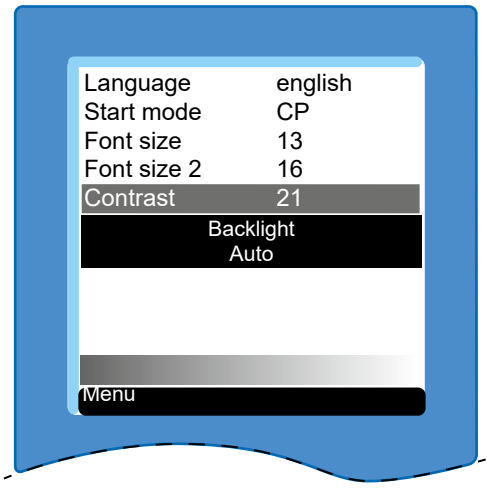
Press <ENTER> to switch into the input mode to change the parameter value.

With the keys <▲> and <▼> set the contrast level from 0...50. Use the contrast bar on the bottom of the toolbar to control the settings.

<ENTER> stores the specified contrast setting and returns to the "Settings" sub-menu.

Figure 9: Contrast settings

4.5 Setting the backlight of the display



The menu item "Lighting" defines the behavior of the backlight of the LC Display.

Press <ENTER> to switch into the input mode to change the parameter value.

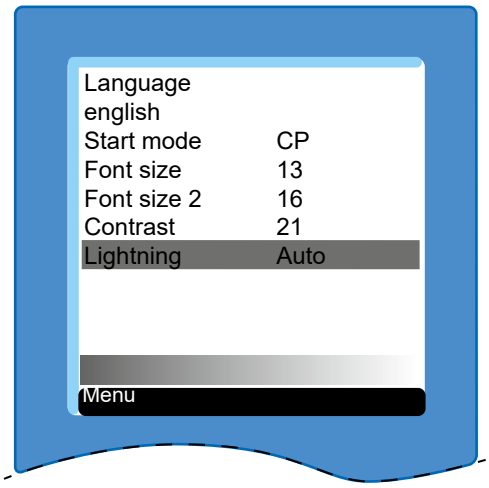
With the keys <▲> and <▼> select one of the following settings:

- on → generally on
- off → generally off
- auto → on when pressing a button; off after 10 seconds of non-operation

<ENTER> selects the desired backlight and jumps back into the "Settings" submenu.

Figure 10: Backlight settings

4.6 Functional test of keyboard and display



<ENTER> starts a test mode, which allows you to test the function of each button and the LCD display.

Follow the instruction on-screen during the test run.

Figure 11: Functional test of keyboard and display

4.7 Parameters for LC display setting

The settings of the LC parameters are completely accepted from the LC display only after restarting the device.

Id-Text	Name	Parameter index
dp00	Language	0x2780
Meaning	A language is selected for the menu and the parameters. If the selected language is not available the parameters are displayed in English.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0: English 1: German 2: American 3: French 4: Italian 5: Russian 6: Spanish Standard value: 0	
Notice	–	

Id-Text	Name	Parameter index
dp01	start-up mode	0x2781
Meaning	The start-up mode determines the menu item which shall start the control after initialization.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0: Inverter parameter 1: CP mode 2: Operator parameter 3: Menu Standard value: 1	
Notice	–	

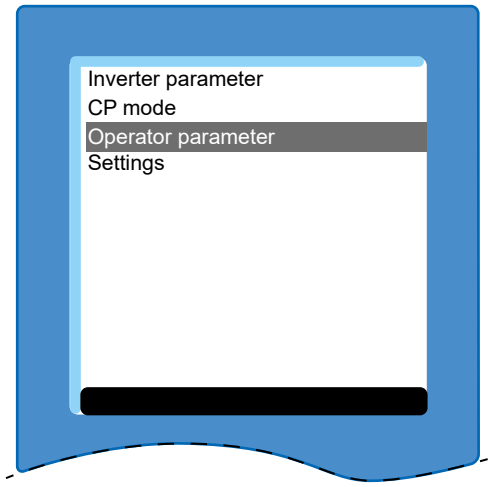
Id-Text	Name	Parameter index
dp02	Font size	0x2782
Meaning	It can be selected between the font sizes 8,10,13,16 and 24 in the display. Exception: see parameter „font size 2“	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	8: 8dpi 10: 10dpi 13: 13dpi 16: 16dpi 24: 24dpi Standard value: 13	
Notice	–	

Id-Text	Name	Parameter index
dp03	Font size 2	0x2783
Meaning	The font size for the display of parameter values is specified in the CP mode.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	8: 8dpi 10: 10dpi 13: 13dpi 16: 16dpi 24: 24dpi Standard value: 16	
Notice	–	

Id-Text	Name	Parameter index
dp04	Contrast	0x2784
Meaning	The contrast settings of the LC display can be changed to optimize readability.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0...50 Standard value: 21	
Notice	–	

Id-Text	Name	Parameter index
dp05	backlight	0x2785
Meaning	The contrast settings of the LC display can be changed to optimize readability.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0 off Lighting of the LC display generally off. 1 on Lighting of the LC display generally on. 2 auto If the backlight is adjusted to "auto", it is switched on during pressing a key and switched off again after 10 seconds if no key is pressed. Standard value: 2	
Notice	–	

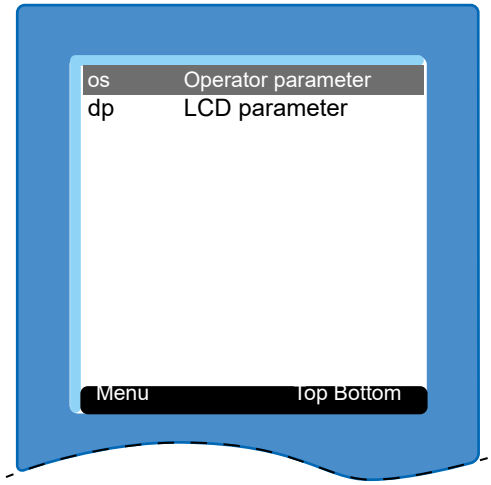
5 Operator Parameters



Use the operator parameters to configure the control card, the fieldbus (if available) and the display.

With the keys <▲> and <▼> select "Operator parameter" and confirm with <ENTER>.

Figure 12: Operator Parameters



The control card parameters are divided into two groups:

- os - operator system parameters; Display and setting of the control board
- dp - LC display parameter; Configuration of the LC display via bus

With the keys <▲> and <▼> select the corresponding parameter group.

<ENTER> switches to the selected sub-menu.

Figure 13: Select control board parameter group

In the following, only the meanings of the parameter values are described. Value ranges, data length and type; Access mode and the default values can be taken from COMBIVIS.

Id-Text	Name	Parameter index
os00	operator identifier	0x2080
Meaning	Displays the control card type, as well as the software version.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	e.g.: 150508 15xxxx: G6 xx05xx: EtherCAT xxxx08: Version of the parameter configuration Standard value: Device-dependent	
Notice	–	

Id-Text	Name	Parameter index
os01	password OS	0x2081
Meaning	Displays the current password level of the operator. This parameter is a mapping of the parameter Ud01. This parameter is only visible via bus if "invisible parameter" is set in COMBIVIS.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	-1…-9	
Notice	–	

Id-Text	Name	Parameter index
os02	software date OS	0x2082
Meaning	Software date of the control board	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0.0000…9999, 3112: The year is displayed before the comma, month and day are after that. 2012,0813 means 13.08.2012. Standard value: 0.0000	
Notice	–	

Id-Text	Name	Parameter index
os03	software version	0x2083
Meaning	Software version of the control board	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0.0.0.0…255.255.255.255 e.g.: 1.3.0.1 Standard value: 0.0.0.0	
Notice	–	

Id-Text	Name	Parameter index
os04	diag error count	0x2084
Meaning	Specifies the number of errors occurred on the diagnostic interface.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0...255 Standard value: 0	
Notice	––	

Id-Text	Name	Parameter index
os05	diag response delay time	0x2085
Meaning	Sets the minimum response delay time for requests on the diagnostic interface.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0...126 ms Standard value: 0 ms	
Notice	–	

Id-Text	Name	Parameter index
os06	baud rate diag	0x2086
Meaning	Default transfer speed on the diagnostic interface.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0: 1.2 kbit/s 1: 2.4 kbit/s 2: 4.8 kbit/s 3: 9.6 kbit/s 4: 19.2 kbit/s 5: 38.4 kbit/s 6: 55.5 kbit/s 7: 57.6 kbit/s 8: 100 kbit/s Standard value: 5	
Notice	–	

Id-Text	Name	Parameter index
os07	node ID	0x2087
Meaning	This parameter specifies the inverter address for the diagnostic interface (DIN 66019). The parameter is an image of the system parameter Sy06.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0...239 Standard value: 1	
Notice	–	

<table>
<tr><th>Id-Text</th><th>Name</th><th>Parameter index</th></tr>
<tr><td>os08</td><td>operator type</td><td>0x2088</td></tr>
<tr><td>Meaning</td><td colspan="2">Displaying the implemented control board functions.</td></tr>
<tr><td>Type</td><td colspan="2">Variable</td></tr>
<tr><td>Data length</td><td colspan="2">16 bit</td></tr>
<tr><td>Access</td><td colspan="2">read</td></tr>
<tr><td>Coding</td><td colspan="2">
<table>
<tr><td>Bit 0</td><td>Initiator</td><td>0: without
1: with initiator</td></tr>
<tr><td>Bit 1</td><td>Keyboard/dis-play</td><td>0: without
1: with keyboard/LCD display</td></tr>
<tr><td>Bit 8</td><td>PU image</td><td>0: with power unit image
1: without power unit image</td></tr>
<tr><td>Bit 10</td><td>f = 0Hz</td><td>0: without
1: with f=0Hz functionality</td></tr>
<tr><td>Bit 11</td><td>STO</td><td>0: without safety function
1: with safety function STO</td></tr>
<tr><td>Bit 12...13</td><td>Bus connection</td><td>0: without (standard)
1: CANopen
2: IO-Link
3: EtherCAT
4: VARAN</td></tr>
</table>
Standard value: 0
</td></tr>
<tr><td>Notice</td><td colspan="2">–</td></tr>
</table>

Id-Text	Name	Parameter index
os09	PU max inv.busy retries	0x2089
Meaning	Number of repetitions that are sent on the internal bus from the power module to the controller if it rejects "inverter busy" error.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0...255 Standard value: 200	
Notice	–	

Id-Text	Name	Parameter index
os10	PU tout count	0x208A
Meaning	Counts the timeout on the internal bus between control and power unit.	
Type	Variable	
Data length	16 bit	
Access	read / write	
Coding	0...65535 Standard value: 0	
Notice	–	

Id-Text	Name	Parameter index
os11	diag baud rate store	0x208B
Meaning	This parameter is used to store the diagnosis baud rate os06.	
Type	Variable	
Data length	16 bit	
Access	read / write	
Coding	0: off, baud rate is not be stored 1: on, baudrate is stored non-volatile	
Notice	–	

Id-Text	Name	Parameter index
os12	operator command	0x208C
Meaning	Default of instructions according to coding (see below)	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0: no 1: Load default values in all operator parameters 2: reinitialize PU parameter image Standard value: 0	
Notice	–	

<table>
<tr><th>Id-Text</th><th>Name</th><th>Parameter index</th></tr>
<tr><td>os13</td><td>operator state</td><td>0x208D</td></tr>
<tr><td>Meaning</td><td colspan="2">Shows the state of the power unit and the image of the power unit parameter image of the control board.</td></tr>
<tr><td>Type</td><td colspan="2">Variable</td></tr>
<tr><td>Data length</td><td colspan="2">8 bit</td></tr>
<tr><td>Access</td><td colspan="2">read</td></tr>
<tr><td>Coding</td><td colspan="2">
<table>
<tr><td>Bit 0</td><td>reserved</td><td></td></tr>
<tr><td>Bit 1...2</td><td>PU-conf.-ID state</td><td>0: Power unit-ID unknown
2: Power unit-ID OK
4: Power unit-ID incorrect</td></tr>
<tr><td>Bit 3...5</td><td>PU-image state</td><td>0: PU-image not initialized
1: write PU-image
3: PU-image changed
4: PU-image initialized
5: PU-image check
6: PU-image not available</td></tr>
<tr><td>Bit 6...15</td><td>reserved</td><td></td></tr>
</table>
Standard value: 0
</td></tr>
<tr><td>Notice</td><td colspan="2">–</td></tr>
</table>

<table>
<tr><th>Id-Text</th><th>Name</th><th>Parameter index</th></tr>
<tr><td>os14</td><td>memory state</td><td>0x208E</td></tr>
<tr><td>Meaning</td><td colspan="2">By writing of value "0" non-volatile parameters are saved immediately.After completion of the storage the value jumps to status "1".If at the end of the download lists in COMBIVIS the value "0" comes before value "1", COMBIVIS will send the value as long as the inverter finishes storing.</td></tr>
<tr><td>Type</td><td colspan="2">Variable</td></tr>
<tr><td>Data length</td><td colspan="2">8 bit</td></tr>
<tr><td>Access</td><td colspan="2">read / write</td></tr>
<tr><td>Coding</td><td colspan="2">0: busy
1: ready
2: off

Standard value: 1</td></tr>
<tr><td>Notice</td><td colspan="2">–</td></tr>
</table>

Id-Text	Name	Parameter index
os15	store mode	0x208F
Meaning	The memory type of non-volatile parameters must be adjusted with this parameter. The parameters will not be stored if the value is "0", the device automatically changes to value "1" after the next "power-down". This value is the default value, the non-volatile parameters are always stored. Value „2“ deactivates the storing, also over the next start of the module.	
Type	Variable	
Data length	8 bit	
Access	read / write	
Coding	0: off, curr. off / on at startup 1: on, always store 2: off, never store Standard value: 1	
Notice	–	

Id-Text	Name	Parameter index
os17	safety type	0x2091
Meaning	Type of safety module	
Type	Variable	
Data length	16 bit	
Access	read	
Coding	0: no safety module available 1: Type 1 (STO) Standard value: 0	
Notice	–	

Id-Text	Name	Parameter index
os18	safety software date	0x2092
Meaning	Display of the software date of the safety module.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0.0000...9999, 3112: The year is displayed before the comma, month and day are after that. 2012,0813 means 13.08.2012.If no safety module is installed, the value "0: no safety functionality“ is displayed. Standard value: 0	
Notice	–	

Id-Text	Name	Parameter index
os19	safety software version	0x2093
Meaning	Display of the safety module software version.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0.0.0.0...255.255.255.255 If no safety module is installed, the value "0: no safety functionality“ is displayed. Standard value: 0	
Notice	–	

Id-Text	Name	Parameter index
os20	safety signals state	0x2094
Meaning	Display of the current state of the safety module. Is only visible via bus if "invisible parameter" is set in COMBIVIS.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	Bit 0…1 | Error STO | 0: no safety functionality 1: Error STO 2: STO OK Bit 2…3 | Modulation Feedback | 8: Modulation feedback set 4: Modulation feedback not set Bit 4...5 | safe control release | 16: ST is set 32: ST is not set Bit 6...7 | Power unit in operation | 64: Power unit in operation 128: PU alive not set	
Notice	–	

Id-Text	Name	Parameter index
os21	safety information	0x2095
Meaning	Is only visible via bus if "invisible parameter" is set in COMBIVIS.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0 ...65535	
Notice	–	

Id-Text	Name	Parameter index
os23	current PU ID	0x2097
Meaning	Displays the ID of the detected power unit. Is only visible via bus if "invisible parameter" is set in COMBIVIS.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0 ...65535	
Notice	–	

Id-Text	Name	Parameter index
os28	QS number OS	0x209C
Meaning	Displays the QS number of the detected power unit. Is only visible via bus if "invisible parameter" is set in COMBIVIS.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0 ...65535	
Notice	–	

Id-Text	Name	Parameter index
os29	serial number OS	0x209D
Meaning	Serial number of the control hardware.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0…4294967295 Standard value: 0	
Notice	–	

Id-Text	Name	Parameter index
os30	serial number OS 2	0x209E
Meaning	Serial number part 2 of the control hardware.	
Type	Variable	
Data length	32 bit	
Access	read	
Coding	0…4294967295 Standard value: 0	
Notice	–	

6 Revision History

Version	Date	Description
00	2015-07	Completion series
01	2017-17	Revision to new CI optics, type code adapted, references adapted
02	2019-05	Update the default pages, insert new parameters
03	2020-04	Editorial changes
04	2023-08	Update the default pages, editorial changes

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