

# COMBICOM



Ethernet-Operator

Version 1.1

<b>1</b>	<b>General</b> .....	<b>2</b>
1.1	Product Description.....	2
1.2	Technical Data.....	2
<b>2</b>	<b>Ethernet Interface</b> .....	<b>3</b>
2.1	Supported Protocols.....	3
2.2	Ip Address.....	3
2.3	Supported Ports .....	3
2.3.1	Http.....	3
2.3.2	Data.....	3
<b>3</b>	<b>Diagnostic Interface</b> .....	<b>3</b>
<b>4</b>	<b>Operator parameters</b> .....	<b>4</b>
4.1	Group : Operator system.....	4
4.2	Group : Fieldbus .....	4
4.3	Group : Debugging.....	4
<b>5</b>	<b>Operation</b> .....	<b>5</b>
5.1	Keyboard parameters .....	5
5.2	Diagnostic Elements.....	5
5.3	Connector Pin Assignment.....	5

## 1 General

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This instruction manual describes the software release from 02/2005.

### 1.1 Product Description

The described module is a plug-on operator with Ethernet interface for the frequency inverter KEB COMBIVERT F5. The voltage supply takes place via the frequency inverter and for independent supply it can also be fed externally over the terminal strip of the inverter. Parallel to the network access the operation via the integrated display/keyboard as well as a further serial interface for diagnosis/parameterizing (KEB COMBIVIS) is possible.

### 1.2 Technical Data

Ethernet Connector	RJ45
Ethernet Interface	IEEE 802.3 10Base-T (10Mbaud)
Voltage supply	via the inverter
Housing	Standard F5 Operator, pluggable
Operating temperature	-10° to 45° Celsius
Part number	00.F5.060-8000

## 2 Ethernet Interface

### 2.1 Supported Protocols

ARP	Address Resolution Protocol Response
ICMP	Echo Response (Ping)
TCP/IP	HTTP-Port, Data-Port
TCP/UDP	Data-Port

### 2.2 Ip Address

The IP address can be adjusted by the operator parameters. If the lowest byte is 255 (xxx-xxx-xxx-255), then the operator uses the address which is selected in inverter parameter sy.06 instead for the low byte. The real actual IP address can also be seen in the operator parameter. In case of doubt the network administrator gives the address to be adjusted because in the whole connected Ethernet no address may be used twice. When using a direct connection of operator and PC with a cross cable, this IP address should be adjusted in such a way that the difference is only in the lowest byte to the address of the PC's (same network but different node).

### 2.3 Supported Ports

Multiple clients can access the ethernet operator the same time. The following ports are defined at this time:

#### 2.3.1 Http

This port is set fixed to 80, the standard http-Port. Here the Hypertext-Transfer-Protocol can be used to view the inverter parameters online by a standard internet browser. Only TCP/IP is possible.

#### 2.3.2 Data

The data port is used to transfer inverter parameter data by using encapsulated DIN66019II-Frames. This port is initially set to 8000, but can be changed by the operator parameter settings. Possible protocol types are TCP/IP or TCP/UDP here. By this port the access with the COMBIVIS5 IP driver is possible. To protect this port from unauthorized write access, by means of an operator parameter a write-protection password can be defined. Read access is possible everytime. The definition of the password can only be done by the diagnostic interface, a value of 0 disables the write protection. On access by the ethernet interface this password has to be entered once on the same operator parameter to allow any write operations. If the password is not or erroneous entered, the error message *'operation not possible'* appears. If the TCP connection is aborted or there is no data communication on that IP connection for 30 seconds, the operator shuts down the connection himself and the password has to be entered again.

#### ATTENTION:

The reading out of the cfg-file of an inverter using the ethernet interface is not possible with activated data port password, because here pointer parameters have to be written also.

## 3 Diagnostic Interface

#### ATTENTION :

To prevent a destruction of the PC-interface, the diagnostic interface may only be connected to the PC over a special HSP5 cable with voltage adaption. On disregard the PC-interface may be damaged.

Over an adapter a HSP5 cable is connected to the diagnostic interface. By way of the PC-software KEB COMBIVIS 5 one has now normal access to all inverter parameters. The operator-internal parameters can also be read and adjusted or parameterized by means of download.

#### Separately available accessory

HSP5-cable between PC and adaptor: Part.-No.: 00.F5.0C0-0001  
 Adaptor D-Sub9/Western: Part.-No.: 00.F5.0C0-0002

## 4 Operator parameters

The operator parameters are displayed in password level 5. For this the value ,555' (if not changed) has to be entered in parameter UD.01. The values of the configuration parameters are stored nonvolatile in the operator. Following parameters and groups are available (some parameters are not visible on the display and can only be accessed by COMBIVIS):

### 4.1 Group : Operator system

ID	Name	Bedeutung
OS.00	Operator type	Display of the operator type. Writable for verification only with the same value.
OS.01	Password	Input/display of the password. Serves also for switching between operator- and inverter parameters on the display.
OS.02	Software date	Date of operator firmware.
OS.03	Diag Error count	Error counter of diagnostic interface. Can be reset by writing.
OS.04	Diag Response delay time	Adjustable time delay for the diagnostic interface.
OS.06	HSP5 Max InvBusy retries	Adjustment of the number of repetitions at error code 'Inverter Busy'.
OS.07	HSP5 Tout count	Error counter of HSP5-interface to the inverter. Can be reset by writing.
OS.09	Memory low count	Error counter of internal memory manager. Can be reset by writing a value of 0.

### 4.2 Group : Fieldbus

ID	Name	Bedeutung
Fb.00	MAC Address	Display of physically ethernet address. High bytes are always 00-08-FA-xx-xx-xx.
Fb.01	IP Address	Settable IP address for the operator, see part [IP Address].
Fb.02	Active IP Address	Currently effective IP address, Read only.
Fb.03	Data Port Number	Port number for the data port, see part [supported ports].
Fb.04	Watchdog Inhibit	Activates the watchdog-reset function. In conjunction with the inverter bus watchdog here the shutdown of the drive in case of errors can be projected. Bit 0 = 1 present ethernet-link resets watchdog time Bit 1 = 1 communication on the data port resets watchdog time
Fb.05	IP Errorcount	Error counter of IP protocol stack.Can be reset by writing
Fb.06	TCP Connections	Number of currently active TCP-connections. Read-only.
Fb.07	UDP Connections	Number of currently active UDP-connections. Read-only.
Fb.08	Sockets	Number of currently active IP tasks. Read-only.
Fb.09	Data Port Password	Defines or enters the data port write protection password. See part [supported ports].

### 4.3 Group : Debugging

The parameters in this group only serve for diagnostic while the vendor device tests.

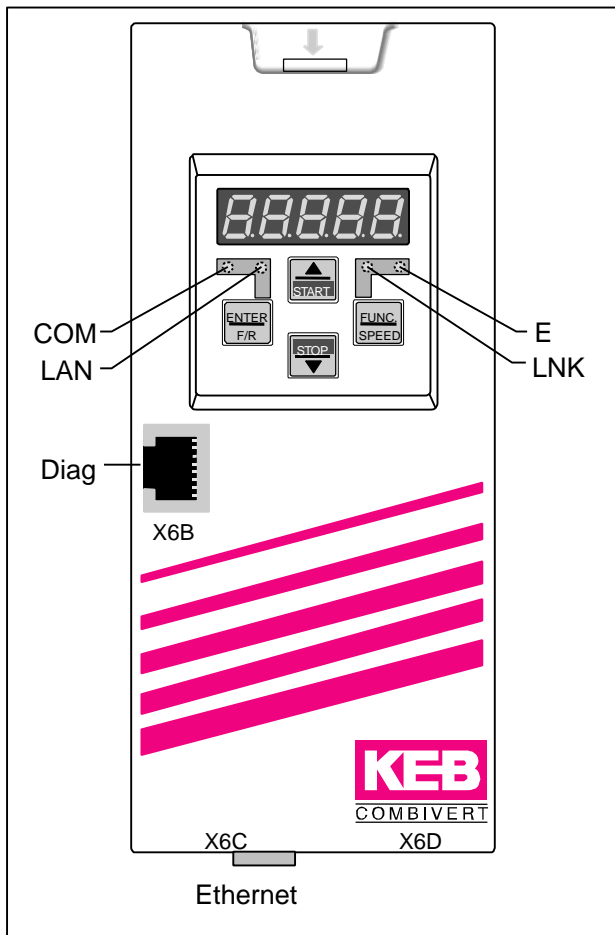
## 5 Operation

### 5.1 Keyboard parameters

The setting of the IP-Address and the dataport number can be processed via the keyboard also. For that the keys ENTER and FUNC are to be pressed simultaneously and been hold until the display shows five dots. With the FUNC-key the desired parameter is selected, UP or DOWN shows and changes the value. With the ENTER-key the value is stored (FUNC without previous ENTER does not change the value !). All values are displayed decimal. For leaving the setup mode the keys FUNC and ENTER are hold simultaneously again until the display shows five dots. Following parameters are available:

- IP\_1 High byte of the IP-address
- IP\_2 2.nd byte of IP-address
- IP\_3 3.rd byte of IP-address
- IP\_4 Lowest byte of IP-address. 255 uses the value of the inverter parameter Sy.06.
- dPort Data port number

### 5.2 Diagnostic Elements



COM (green)  
Lights up at communication over the data port.

LAN (green)  
Lights up when there is traffic on the ethernet interface.

LNK (green)  
On: Valid ethernet link pulses detected  
Off: No ethernet connection

E (red)  
On: Inverter ready for operation  
Blinking: Inverter failure  
Off: no supply voltage

X6B Diag  
Diagnostic interface to the PC

X6C Ethernet  
LAN-interface RJ45

### 5.3 Connector Pin Assignment

#### Connector Ethernet (RJ45 female)

1	TxD+	5	n.c.
2	TxD-	6	RxD-
3	RxD+	7	n.c.
4	n.c.	8	n.c.



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