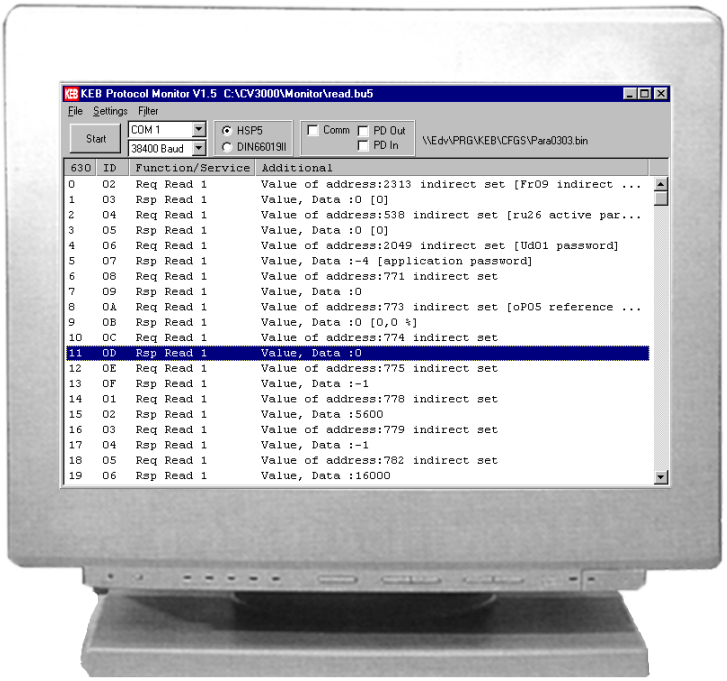
COMBICOM



KEB Protokollmonitor V. 1.5
KEB Protocol Monitor V. 1.5

KEB
ANTRIEBSTECHNIK

10/2000

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1. General

The KEB Protocol Monitor is a PC-software for the representation and analysis of serial telegrams of the KEB-protocol family. The software runs under WIN95/98/NT and uses a serial standard interface of the PC for the receipt of the telegrams. The detailed characters are evaluated depending on the adjusted protocol and represented line by line. Since telegran inquiry and response are on one physical receive path, they must be present in temporal succession without overlapping (full duplex operation is not possible).

This is ensured with the DIN66019II-Protocol. In HSP5 operator mode the turned on field bus operator provides for the adherence to temporal sequence. The recognized telegrams can be stored and loaded again as well as copied into the Windows-temporary storage for the use in other programs.

A layer-7-decoding for the representation of parameter values in standardized display and a filtering/triggering on special telegram contents is also possible.

Example of recorded HSP5-telegrams with activated layer-7-decoding

KEB Protocol Monitor V1.5 C:\CV3000\Monitor\read.bu5

File Settings Filter

Start | COM 1 | 38400 Baud | HSP5 | DIN66019II | Comm | PD Out | PD In | \\Edv\PRG\KEB\CFGS\Para0303.bin

630	ID	Function/Service	Additional
0	02	Req Read 1	Value of address:2313 indirect set [Fr09 indirect ...
1	03	Rsp Read 1	Value, Data :0 [0]
2	04	Req Read 1	Value of address:538 indirect set [ru26 active par...
3	05	Rsp Read 1	Value, Data :0 [0]
4	06	Req Read 1	Value of address:2049 indirect set [Ud01 password]
5	07	Rsp Read 1	Value, Data :-4 [application password]
6	08	Req Read 1	Value of address:771 indirect set
7	09	Rsp Read 1	Value, Data :0
8	0A	Req Read 1	Value of address:773 indirect set [oP05 reference ...
9	0B	Rsp Read 1	Value, Data :0 [0,0 %]
10	0C	Req Read 1	Value of address:774 indirect set
11	0D	Rsp Read 1	Value, Data :0
12	0E	Req Read 1	Value of address:775 indirect set
13	0F	Rsp Read 1	Value, Data :-1
14	01	Req Read 1	Value of address:778 indirect set
15	02	Rsp Read 1	Value, Data :5600
16	03	Req Read 1	Value of address:779 indirect set
17	04	Rsp Read 1	Value, Data :-1
18	05	Req Read 1	Value of address:782 indirect set
19	06	Rsp Read 1	Value, Data :16000

2. Operating Modes

The KEB-Protocol Monitor can be used for different operating modes and applications:

2.1 Operation as DIN66019II-Monitor

In this operating mode incoming DIN66019II-telegrams are for example recorded by the field bus monitor. Besides the extended services the DIN66019II-protocol also contains the well-known telegrams of the DIN66019-protocol. Click on the DIN66019II-protocol icon and select the desired interface and baud rate. The character format (7 data bits, 1 stop bit, even parity) is taken over automatically. Start the recording by pressing the start-icon on the top left or the key F9. The number of received telegrams is indicated in the list on the top left, the recognized telegrams are entered into the list. To stop press the icon on the top left or key F9 again.

2.2 Operation as HSP5-Monitor for field bus operators

In this operating mode the interface of a PC is connected over a HSP5-adaptor cable with RJ-45 connector to the diagnostic interface of a F5-field bus operator.

ATTENTION:
Never connect the PC-interface without a special adaptor cable to a HSP5-interface! The destruction of the PC-interface would be the result.

Click on the HSP5-protocol icon and select the desired interface and a baud rate of 38400 baud. The character format (8 data bits, 1 stop bit, even parity) is taken over automatically.

In addition to that select the functions to be recorded from the top right.

- Comm: Records telegrams of the parameterizing channel (PCP-communication/SDO-comunication)
- PD Out: Records the OUT-process data telegrams (from the control to the inverter)
- PD In: Records the IN-process data telegrams (from the inverter to the control)

Also possible is any combination of the functions. Start the recording by pressing the start-icon on the top left or the key F9. To stop press the icon or key F9 again. The number of received telegrams is indicated in the list on the top left, the recognized telegrams are entered into the list.

The column 'ID' contains a consecutive sequence of the telegram ID numbers in the range 01h to 0Fh. Blanks in this series mean that the operator could not output the missing IDs because of missing buffers. This often occurs with activated PD in functions and rapid changes of IN-process data, that are read from the inverter in millisecond steps but which cannot be output fast enough to the PC over the relative slow 38400 baud connection.

2.3 Operation as general HSP5-Monitor

In this operating mode any HSP5-telegrams can be received and represented via the serial interface of the PC. For that activate the HSP5-mode with the desired baud rate, but without choosing a special monitor function.

Following restrictions must be observed:

1. The HSP5-interface between F5-inverter and operator has no PC-compatible voltage levels. A special hardware with the appropriate level converter and a junction of the transmitting and receiving channel are necessary.

ATTENTION:
Some contacts of the HSP5-unit interface carry voltages up to 30 V. A direct connection to the PC leads to the destruction of the PC-interface.

2. Between F5-inverter and most operators no PC-compatible baud rates are driven. The display of these formats is therefore not possible.

3. The HSP5-protocol is a full duplex protocol. Inquiry and response of the telegrams can overlap thereby making a sensible representation useless.

3. Program Operation

3.1 Representation of telegrams

The telegrams are represented in tabular form one under the other. With the aid of the scroll bar on the right or above the cursor keys, the keys Up/Down and Beginning/End, the list can be scrolled. The left column contains the telegram number, next to it the ID of the telegram is displayed. The ID-numbers are sequential indications for the allocation of response to inquiry. Telegrams of the old DIN66019-protocol as well as special indications have no ID-number. The column 'Function/Service' indicates the type as well as the used service:

Req Read : Request reading, a value shall be read

Rsp Read : Response reading, the read value or an error code

Req Write : Request writing, a value shall be written

Rsp Write : Response writing, the acknowledgement to a write order

Select: Inverter addressing at DIN66019II-protocol.

The different services can be taken from the service description KEB-Protocols and indicate the type of the service like e.g. writing the parameter value or reading the parameter name etc.

In the column 'Additional' further service-specific details like e.g. inverter address, parameter value or name and, in the case of activated layer-7-decoding, also the standardized parameter value are indicated.

With the key F12 or the menu 'Settings->Hex Display' the representation of the parameter values can be changed from decimal to hexadecimal.

By means of the menu option 'File->Clear' all telegrams can be deleted after query.

3.2 Plaintext representation

For the representation of standardized parameter values and plaintext for the services 0 and 1 (layer-7-decoder) a parameter file compatible to COMBIBIS5 is necessary (PARAxxxx.bin, xxxx=inverter-software number). By selecting the menu option 'Settings->L7 decoder' this function can be activated and deactivated. If COMBIVIS5 is installed on the PC, the protocol monitor finds the directory automatically. Select the appropriate file to activate the layer-7-decoder.

3.3 Export into other applications

Entries into the telegram table can be copied as text into the window temporary storage. Thus it is easily possible to use these in other applications. The columns are separated by TABs, the lines through line folding characters. Select the menu option 'File->Copy' or the keys CTRL+C and enter the range of the telegrams. Maximal 1000 telegrams can be copied at the same time. In case of activated display filtering all filtered telegrams (max. 1000) can be copied too.

3.4 Filtering

To display only certain telegrams from the quantity of recorded telegrams you can activate the setting dialog for the filtering conditions by means of menu option 'Filter->Set filter' or the key F2:

With the setting 'All' one filtering condition fits for all telegrams. Furthermore ALL filtering conditions must fit to an individual telegram in order to select this telegram. This can result in the fact that NO telegram can pass the filter. In case of doubt only one filter setting should be tried out and the result checked. The filter setting for 'Address' is only possible for requests with address specification, 'ParameterData' is intended for the services 0 and 1 (parameter value). Likewise process data and scope telegram values are only possible for the corresponding services, as the filtering condition will never be met for other services!. The key OK closes the window and activates the settings.

With key F3 the display can be filtered, i.e. only telegrams are displayed that correspond to the filtering criteria. However, sometimes also neighbouring telegrams are displayed to see for example the preceding request when filtering on a negative acknowledgement.

3.5 Search

To search for certain telegrams set the filter accordingly and place the selection bar on the telegram entry, where the search shall begin.

Press STRG+F to start the search in the direction of ascending telegram numbers. If a suitable telegram is found the selection bar is set on it.

3.6 Triggering on certain telegrams

If you want to stop the recording upon the occurrence of a certain event, proceed as follows:

To prevent the storing of too many telegrams after the triggering you can specify the maximal number of the recorded telegrams by means of menu option ‘Settings->Max buffer’. On exceeding this number the oldest telegrams are overwritten. Set the filter now according to the event. By means of menu option ‘Filter->Trigger’ or key F4 the triggering is activated and the number of the following telegrams still to be recorded is determined. Start with F9 or the start icon. Upon recognition of the desired telegram the recording, if necessary after the telegrams that still follow, is stopped and a reference is output.

3.7 Storing / Reading

For a later evaluation the stored telegrams can be written into a file by means of menu option ‘File->Save’. Stored telegrams are loaded again over the menu option ‘File->Read’. In that case the telegrams displayed so far are lost.

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