

COMBICONTROL



GB Instruction Manual

Profibus Interface Connection

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GB

1. Introduction.....	5
1.1 Preface.....	5
2. Hardware	6
2.1 Product description	6
2.2 Fieldbus interface PROFIBUS DP.....	6
3. Software	7
3.1 Reference values of the C5 PROFIBUS interface connection	7
3.2 User data of the KEB PROFIBUS-DP interface connection	7
3.2.1 Coding of the user data from DP master to KEB DP interface connection	8
3.2.2 Coding of user data from the KEB DP interface connection to the master	9
3.3 Parameters of the PROFIBUS interface connection.....	9

1. Introduction

1.1 Preface

We welcome you as a customer of the Karl E. Brinkmann GmbH and congratulate you to the acquisition of this product. You have chosen a product on highest technical standard.

The enclosed documents as well as the specified hard- and software are developments of KEB. The Karl E. Brinkmann GmbH have prepared the documentation, hardware and software to the best of their knowledge, however, no guarantee is given that the specifications will provide the efficiency aimed at by the user. Karl E. Brinkmann GmbH reserves itself the right to change/adapt specifications and technical data without previous notification. Errors and omissions excepted!

For a safe operation observe the safety and warning directions in this instruction manual as well as in further documentation. The safety and warning directions specified in this manual is not exhaustive.

The pictographs used in this manual have following meaning:



Danger
Warning
Caution



Attention
observe at all costs



Information
Aid
Tip

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 application. However, they are considered for information only without responsibility. This also applies to any violation of industrial property rights of a third-party.

Inspection of our units in view of their suitability for the intended use must be done generally by the user. Inspections are particularly necessary, if changes are executed, which serve for the further development or adaption of our products to the applications (hardware, software or download lists). Inspections must be repeated completely, even if only parts of hardware, software or download lists are modified.

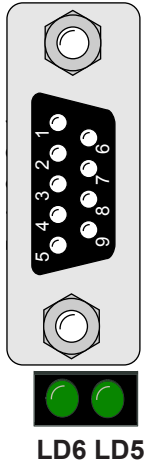
Application and use of our units in the target products is outside of our control and therefore lies exclusively in the area of responsibility of the user.

2. Hardware

2.1 Product description

Units of the series COMBICONTROL C5/C6 and COMBIVERT H6 and P6 can be equipped optionally with a Profibus interface connection.

2.2 Fieldbus interface PROFIBUS DP

	Pin	Signal	Description	
	1	----	reserved	
	2	----	reserved	
	3	RxD/TxD-P	Transmit-/receive signal P	
	4	----	reserved	
	5	DGND	Data reference potential	
	6	VP	Power supply for terminating resistor	
	7	----	reserved	
	8	RxD/TxD-N	Transmit-/ receive signal N	
	9	----	reserved	
	LED	Signal	Light sample	Meaning
	LD5	Ready	on	ready for operation
			off	not ready for operation
	LD6	Data	on	Data are transmitted by the PROFIBUS
			off	no data transmission

The connection is described in the installation guideline (8.021). Download of this guideline under www.profibus.com.

Node address	Adjustable via parameter SY.06
Ident number	0944h
GSD file	KEB40944.gsd
PBS transmission speed	9,6 / 19,2 / 45,45 / 93,75 / 187,5 / 500 Kbit/s und 1,5 / 3 / 6 / 12 Mbit/s recognized automatically.
PBS diagnostic	6 Byte assigned to standard
PBS parameterization	7 Byte assigned to standard
PBS configuration generally	Maximally three modules can be activated (see also GSD file): Parameterizing channel (8 Byte per 8 Bit user data) Process output data (1...16 words per 16 Bit user data) Process input data (1...16 words per 16 Bit user data)
Configuration of the modules	Parameterizing channel B7h (coding of the config-bytes) Process output data with n=number of words E0h + (n-1) (coding of the config-bytes) Process input data with n=number of words D0h + (n-1) (coding of the config-bytes)
Process data mapping	The process data are directly copied into the process image of the control: Input data of the slave start at QW72 Output data of the master start at IW72

3. Software

3.1 Reference values of the C5 PROFIBUS interface connection

The PROFIBUS interface of the C5 control corresponds to the PROFIBUS DP standard (DIN 19245 Part 3). Meanwhile the PROFIBUS DP standard is also specified in the international standard IEC 61158 as type 3. The present short instruction shall only describe the fundamental characteristics.

The control can be integrated via the PROFIBUS DP interface into a PROFIBUS net as slave. Thereby upto 32 bytes (16 words) process data (in und out) as well as parameterizing data can be exchanged. Dependent on the adjustment of the object 5FFFh (Fieldbus COMM Axis) the parameterizing data have access to the control (0) or to parameters of the required axis (1... n).

The PROFIBUS process data are shown in the image of the control:

%IW72	1.	Process data word from PROFIBUS master
%IW73	2.	
:	:	
%IW88	16.	
%QW72	1.	Process data word to PROFIBUS master
%QW73	2.	
:	:	
%QW88	16.	

This range can be adapted in the control configuration by CoDeSys depending on number and data type (Byte/Word/DWord).

3.2 User data of the KEB PROFIBUS-DP interface connection

The C5 PBS interface connection realizes maximally three modules. All modules change the user data in the cyclic telegrams between PROFIBUS master and slave:

- Parameterizing channel: This module assigns always 8 byte user data and serves for writing/reading of a parameter value with a data length of maximally 32 bit. Addressing of the parameter via 16 bit index and 8 bit subindex.
- Process output data: data, which are transmitted non-addressed from master to slave.
- Process input data: data, which are transmitted non-addressed from slave to master.

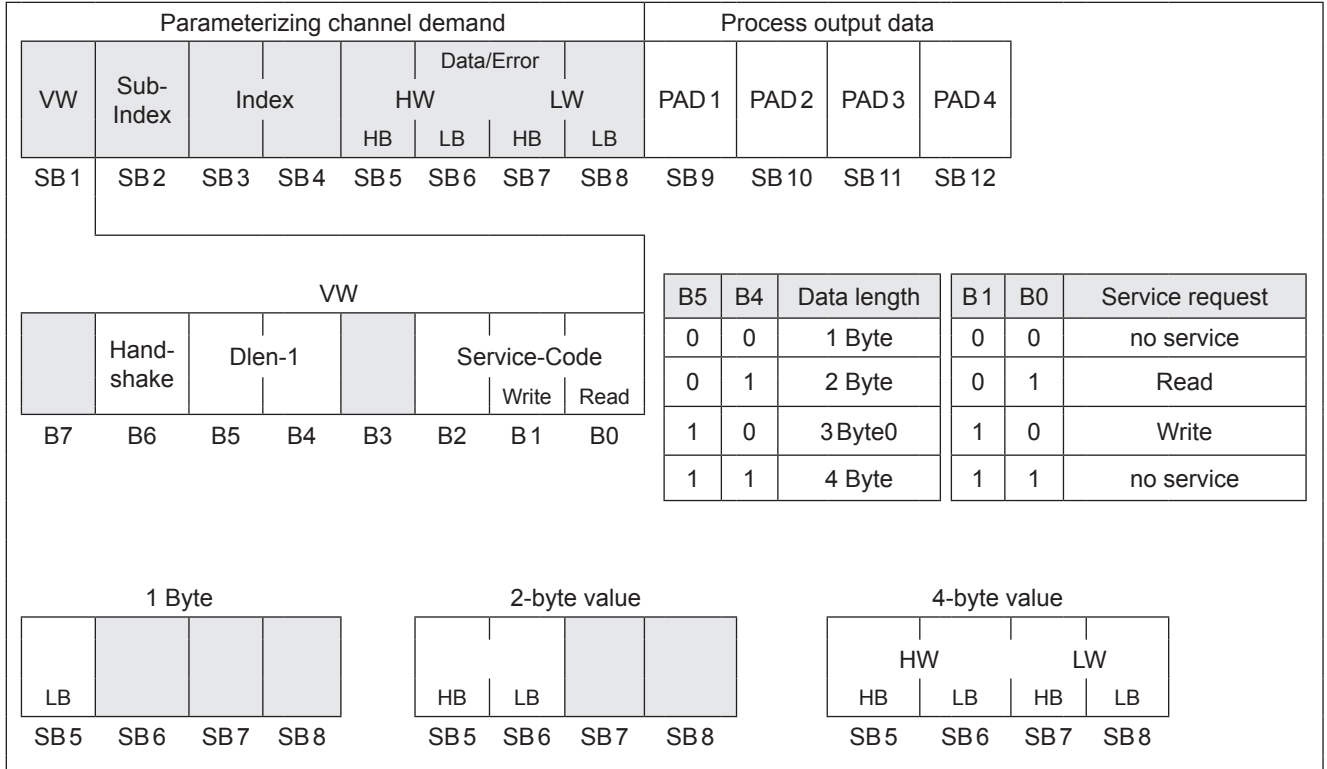
The C5 PROFIBUS interface connection adapts oneself to the preset configuration of the master. Thus it is possible:

- to operate exclusively with the parameterizing channel (8 byte user data). Therefor the master presets only one configuration byte with the value B7h.
- to work only with process data. For this the master presets two configuration bytes with values according to the process data length (see above).

If the parameterizing channel shall be activated in the slave, the first configuration byte must contain the value B7h. The further sequence of the configuration bytes for the process data is not preset.

3.2.1 Coding of the user data from DP master to KEB DP interface connection

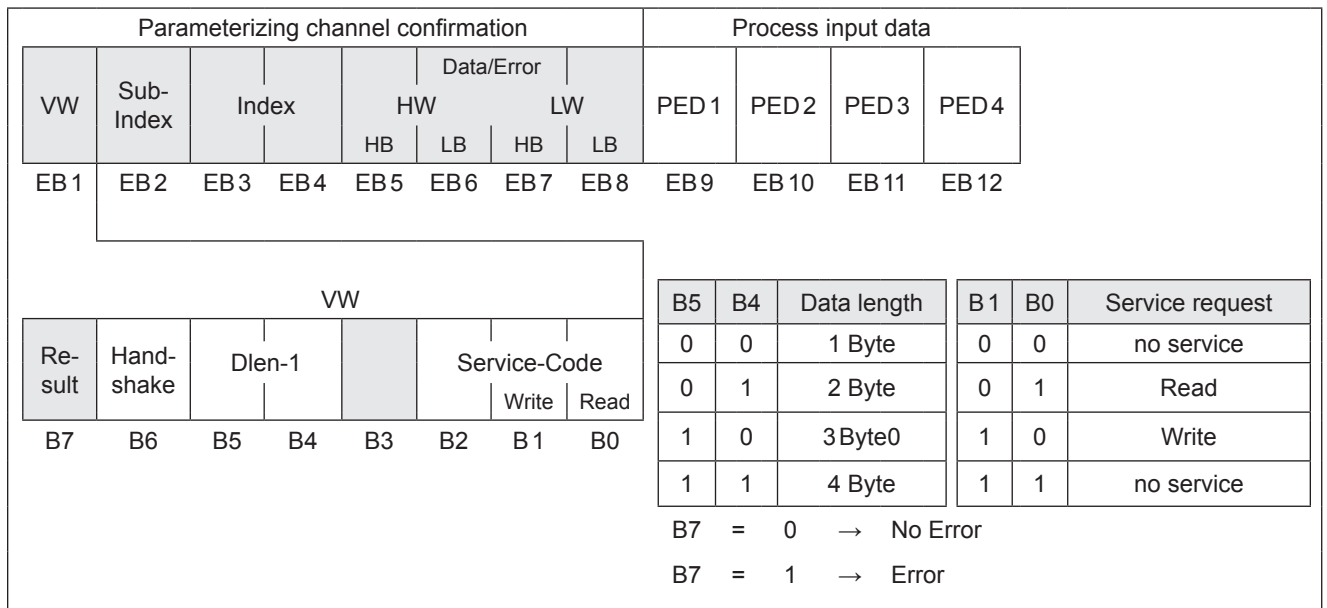
The following pictures display the user data assignment for the case when the parameterizing channel is active and 4 byte (= 2 words) are configured for process output data and process input data. Thus a user data length of 12 byte is following for the telegram from DP-master to slave and in the direction from slave to master.



This means

LB:	Low-Byte
HB:	High-Byte
LW:	Low-Word
HW:	High-Word

3.2.2 Coding of user data from the KEB DP interface connection to the master



3.3 Parameters of the PROFIBUS interface connection

The parameters serve for configuration of the PROFIBUS interface connection. The parameters are addressed via PROFIBUS with index (16bit) and subindex (8bit).

Name	Fieldbus Comm Axis	
Meaning	Serves for changing of the PROFIBUS communication between the different nodes, which are addressable via the control.	
Index	5FFFh	
Subindex	0	
Data length	1 byte	
Coding	0	The control is addressed.
	1...8	Axis 1...8 is addressed.
Standard	0	
Notice	A changed value becomes active immediately. After switching on the parameter has always the value = 0.	

Name	Parameter of the respective axis	
Meaning	Set-addressing	
Index	2000...5FFEh	
Subindex	0	
Data length	1 byte	
Coding	0	indirect set-addressing
	1...255	bit-coded set-addressing set 0...7



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