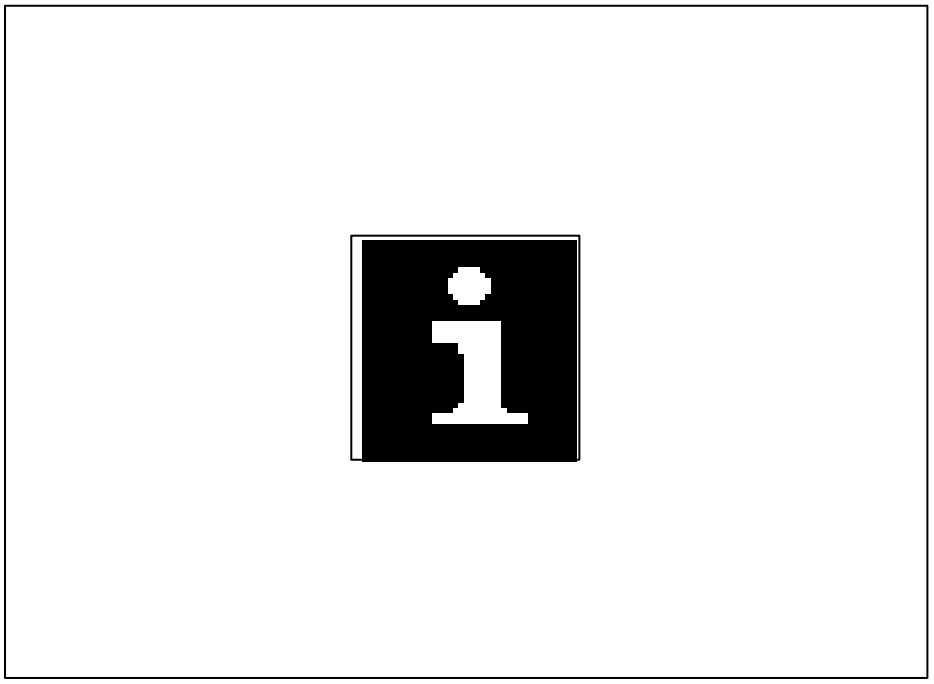
Development Information



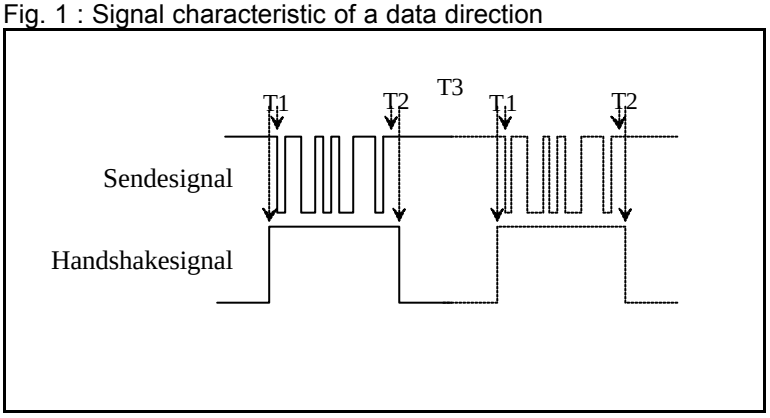
KEB Info **Specifications of the HSP5-Interface**

07/2003

The HSP5-interface is used for the connection of an F5-operator, PC or other equipment to an inverter/servo of the unit series COMBIVERT F5. The following properties are defined:

Plug-in connector on the control board	D-Sub-9 Female, pin assignment see table 2
Plug-in connector at the operator	D-Sub-9 Male, pin assignment see table 3
Level voltage supply	18..30 VDC
Level signal lines	0 and 5 VDC (TTL)
Telegram access	Inverter : full duplex, max. 4 outstanding acknowledgements Operator : half duplex, 1 outstanding acknowledgement
Data format	serial asynchronous, 8 data bits, 1 Start-, 1 Stop bit, even parity
Possible baud rates	see table 4, unit-dependent
Handshake time T1	min: 0 us before the start bit, max: unspecified
Handshake time T2	min: 0 us after the stop bit, max: unspecified
Minimum time between two telegrams T3	default 200 us, required value can be readout, if necessary, over inverter parameters
Telegram structure	see protocol description HSP5 as well as service description KEB protocols.

Fig. 1 : Signal characteristic of a data direction



The interfaces are connected by direct plug-on 1:1. Because of the sensitive TTL-level and the high baud rates extension cables without line driver are not permissible.
The voltage supply for external units (operator/converter cable etc.) can be provided by the control board.

The baud rate of the control board amounts to 38.4 Kbaud after switch on and can be adjusted with the parameter SY.11 (address 000Bh) depending on the used control board. (Values see table 4)

Minimum time between two telegrams T3 in microseconds can be readout at newer control boards. For that purpose parameter SY.04 (address 0004h) must be adjusted first by writing onto the value 12. Now the time can be readout over the parameter SY.05 (address 0005h).

Table 2 : Pin assignment control board

1	GND	voltage supply -, connected with 5
2	TxD	transmit signal, 0-active
3	RxD	receive signal, 0-active
4	VCC	voltage supply +, connected with 9
5	GND	reference for signals, connected with 1
6	PGM	programming input, for operation connected with GND
7	E_RxD	receive Handshake signal, 1-active
8	E_TxD	transmit Handshake signal, 1-active
9	VCC	voltage supply +, connected with 4

Table 3 : Pin assignment operator

1	GND	voltage supply -
2	RxD	receive signal, 0-active
3	TxD	transmit signal, 0-active
4	VCC	voltage supply +, connected with 9
5	GND	reference for signals
6	GND	connected with 1
7	E_TxD	transmit Handshake signal, 1-active
8	E_RxD	receive Handshake signal, 1-active
9	VCC	voltage supply +, connected with 4

Table 4 : Value for the baud rates in parameter SY.11

Value	Baud rate	Mandatory
3	9,6 KBd	
4	19,2 KBd	
5	38,4 KBd	X
6	55,5 KBd	
7	57,6 KBd	
8	100 KBd	
9	115,2 KBd	
10	125 KBd	X
11	250 KBd	