

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

ABB DRIVES

SDCS-COM-5 3BSE006567R1

DRIVE COMMUNICATION BOARD

Applicable product family: ABB DCS drive control systems

OFFICIAL SOURCE

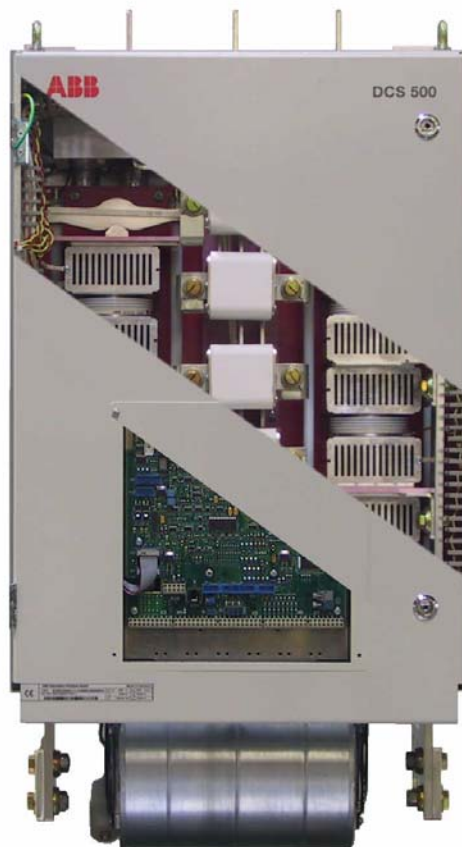
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The following pages are selected from the supplied manufacturer document and retain their original page content.

DCS Thyristor Power Converters

for DC drive systems
25 to 5200 A

Technical Data DCS 400
DCS 500B
DCS 600
DCF 500B
DCF 600



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We recommend to use both, **SYSTEM DESCRIPTION** plus **TECHNICAL DATA** at the same time in case you are planning and engineering your drive.

You will find all necessary technical information in there to solve your problem.

Connecting a pulse encoder to the DCS 500B / DCS 600 converter

The connection diagram for a pulse encoder to the electronics of a DCS converter is quite similar, if the SDCS-CON-2 or the SDCS-IOB-3 is used. The basic difference between these 2 boards is the galvanical isolated circuit on the SDCS-IOB-3 board.

Power supply for incremental encoder

There is a galvanically isolated power supply for the incremental encoder on SDCS-IOB-3. The jumper S4 on this board is used to select either +5 V, +12 V or +24 V as a supply voltage for the pulse encoder. When LED indicator (V17) is lit, the supply is OK. The pulses generated by the pulse encoder are transferred to the pulse receivers via opto couplers.

If the SDCS-CON-2 board is used the supply voltage for the pulse encoder is selected on the SDCS-POW-1 board (refer to SDCS-POW-1).

In both cases the voltage regulator has a feedback control with Sense power and Sense GND signals.

Feedback connection is recommended when power supply level for differential pulse encoder is 5V. If a 12 V pulse encoder type is in use the sense function is also available. The wiring is shown on figure 6.2/4.

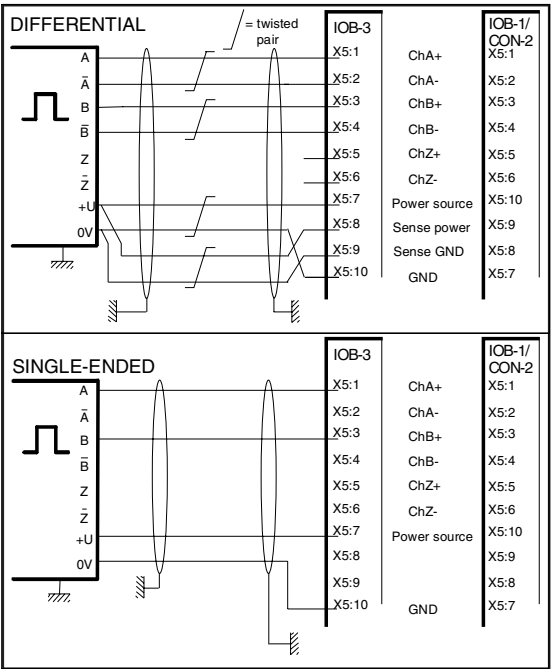


Fig. 6.2/4 Connections incremental encoder - electronics

Note:

If the drive's direction of rotation is correct (if necessary, correct by exchanging the field connections), the **Tacho error** message may appear during start-up.

If with a positive reference the TACHO_PULSES signal (with software 21.xxx: parameter 12104) does not look like the illustration below, then tracks A and A-bar must be mutually exchanged with encoders with inverted signals, and tracks A and B with encoders without inverted signals.

If the TACHO_PULSES signal is missing or non-linear, the encoder's pulses are not being read correctly. Possible reasons for this may be the encoder supply, the encoder itself, or the wiring.

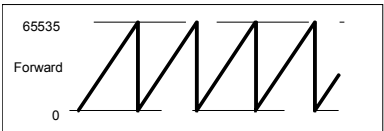


Fig. 6.2/5 TACHO_PULSES signal

7 Communication boards

7.1 Communication board SDCS-COM-5

This board is used for communications to DCS 500B converter modules equipped with software 21.xxx for commissioning and maintenance purposes. It consists of 3 different communication channels. All RxD channels (receiver) have blue color, all TxD channels (transmitter) have grey color. If any connections should be made always connect the same color with each other (plug and socket) .
Channel 1 is a HDLC channel of 1.5 Mbits/s and is used for the communication with a PC. Channel 2

cannot be used together with software version S21.xxx.
Channel 3 is a DDCS channel of up to 4 Mbits/s and is used if a serial link based on PROFIBUS hardware, CS31 hardware or MODBUS hardware should be realized. If one of these possibilities should be used an adaptation module is needed. This channel can only be used with software version S21.1xx (SDCS_CON-1). Please refer to the documentation which is available for the link system needed.

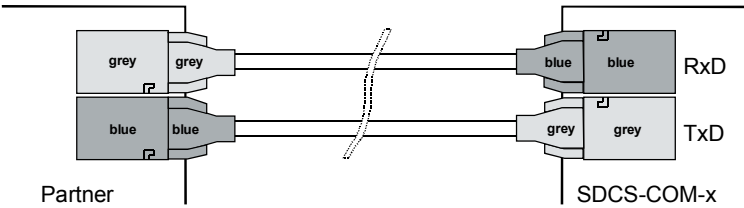
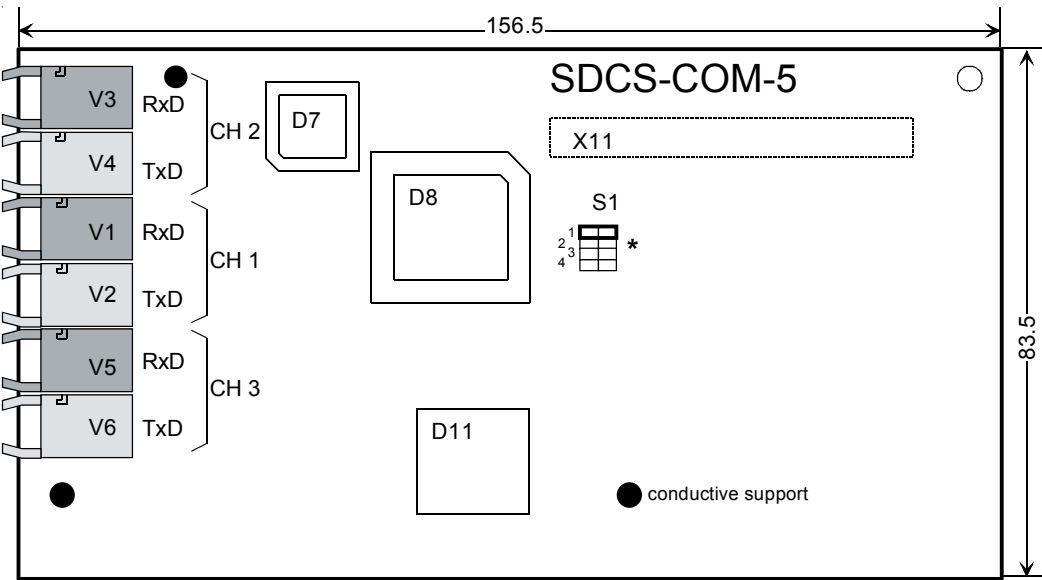


Fig. 7.1/1 Connection between SDCS-COM-x and a partner



Jumper coding	
Converter number	Coding for channel 2
1	S1 ¹ _{2 3 4} *
2	S1 ¹ _{2 3 4}
3	S1 ¹ _{2 3 4}
4	S1 ¹ _{2 3 4}
* default value	

Fig. 7.1/2 Layout and jumper settings of the SDCS-COM-5 board