

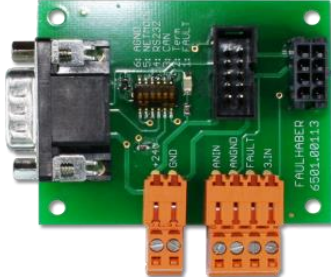

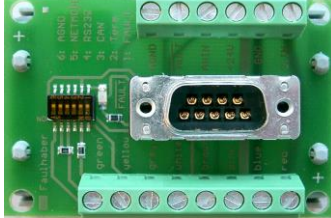

# Adapter settings for Motion Control Systems

## Summary

This application note describes the necessary steps to get a communication with a Motion Control System in the combination with according adapter board.

## Applies To

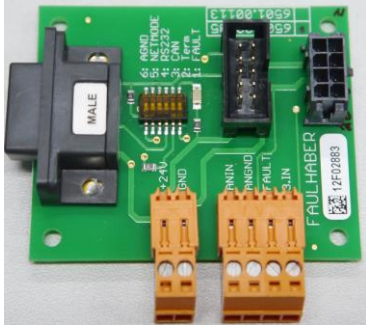

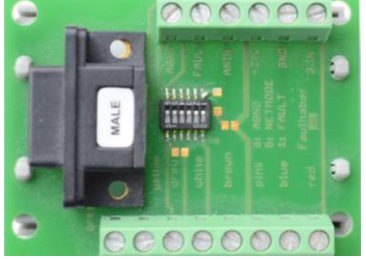
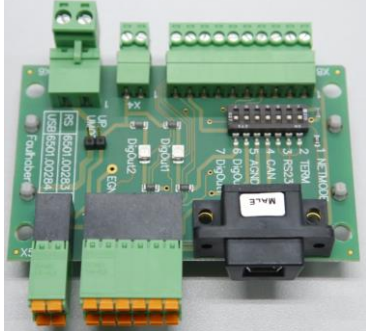
FAULHABER Motion Control Systems: Interfaces CANopen or the RS232

Motion Control Systems	Picture	Comment
22XX BX4 CSD/COD  Part Number : 2232S024BX4 CSD 3830	 Product number 6501.00113	necessary motor-connector(option number 3830)  Interfaces: CANopen or the RS232 <a href="#">6501.00113 LINK</a>
32XX BX4 CS/CO	 Product number 6501.00065	Interfaces: CANopen or the RS232 <a href="#">6501.00065 LINK</a>
MCS32XX..BX4 RS/CO	 Product number 6501.00283	Interfaces: CANopen or the RS232  Motor cable: 6501.00255 6501.00258  <a href="#">6501.00283 LINK</a>

FAULHABER Motion Control Systems: Interface USB

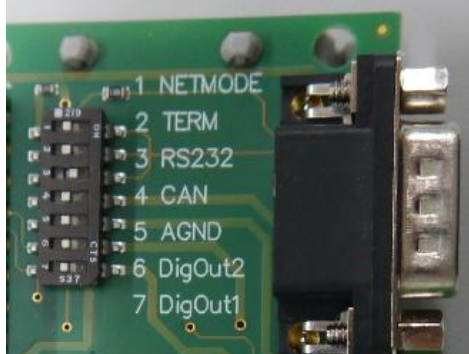
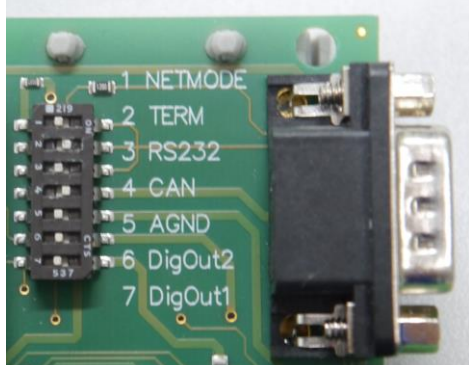
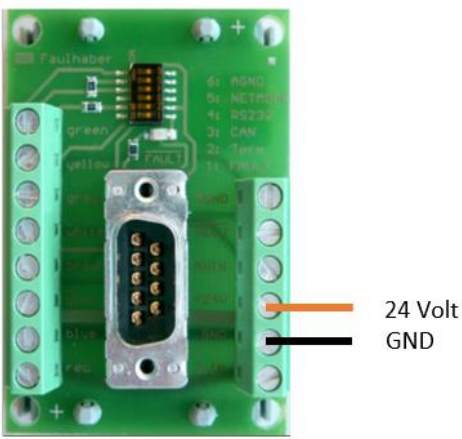
In this USB version no dip switches for the communication must be activated.

The USB is always routed. A communication via RS232 or CANopen is **not** possible.

Motion Control Systems	Picture	Comment
<p>22XX BX4 CSD/COD</p> <p>Part Number : 2232S024BX4 CSD <u>3830</u></p>	 <p>Product number 6501.00115</p>	<p>necessary motor-connector(option number 3830)</p>  <p>Interface: USB</p>
<p>32XX BX4 CS/CO</p>	 <p>Product number 6501.00159</p>	<p>Interface: USB <a href="#">6501.00159 LINK</a></p>
<p>MCS32XX..BX4 RS/CO</p>	 <p>Product number 6501.00284</p>	<p>Interface: USB</p> <p>Motor cable: 6501.00255 6501.00258</p> <p><a href="#">6501.00284 LINK</a></p>

## Description

All switches are in the “OFF” position in the as-delivered condition.  
 These switches must be set accordingly depending on the application.  
 Before it is possible to get a communication to a Motion Control System the following steps are necessary.

No.	Screenshot	Description																											
1a		<p>To communicate with <b>RS232</b> the DIP switch 3 must be activated (right side→ON). TXD and RXD are connected to the Sub-D connector.</p>																											
1b		<p>Operation with the <b>CAN</b> interface the DIP switch 4 and 2 must be activated (right side→ON). CAN_H and CAN_L are connected to the Sub-D connector. The DIP switch 2 connect a 120 ohm terminal resistor between CAN_L and CAN_H for the CAN network.</p>																											
2	<table border="1" data-bbox="223 1545 534 1859"> <thead> <tr> <th>Pin</th> <th>Connection X2</th> <th>Wires</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>RS-232 TxD</td> <td>green</td> </tr> <tr> <td>2</td> <td>RS-232 RxD</td> <td>yellow</td> </tr> <tr> <td>3</td> <td>AGND</td> <td>grey</td> </tr> <tr> <td>4</td> <td>Fault</td> <td>white</td> </tr> <tr> <td>5</td> <td>An In</td> <td>brown</td> </tr> <tr> <td>6</td> <td>+24V</td> <td>pink</td> </tr> <tr> <td>7</td> <td>GND</td> <td>blue</td> </tr> <tr> <td>8</td> <td>3. In</td> <td>red</td> </tr> </tbody> </table> 	Pin	Connection X2	Wires	1	RS-232 TxD	green	2	RS-232 RxD	yellow	3	AGND	grey	4	Fault	white	5	An In	brown	6	+24V	pink	7	GND	blue	8	3. In	red	<p><b>Motion Control System side</b>          The Motion Control System must be connected to the adapter board for establish the communication.</p> <p><b>Power supply side</b>          24 Volt and GND must be Connected to the adapter board. The MCS32XX..BX4 RS/CO version need 24 Volt for the PIN Umot and Up</p>
Pin	Connection X2	Wires																											
1	RS-232 TxD	green																											
2	RS-232 RxD	yellow																											
3	AGND	grey																											
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6	+24V	pink																											
7	GND	blue																											
8	3. In	red																											

## Additional functionality

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The different operating modes can be selected using the 7 DIP switches.  
A Motion Control System can be connected to each programming adapter.

### Description of DIP switch (S1) settings

1: NETMODE	ON	Pull-down resistor (10 k $\Omega$ ) for RS232 wiring connected. This may only be connected to a node in the RS232 network.
	OFF	Deactivated
2: TERM	ON	120 $\Omega$ terminating resistor for the final node in the CAN network connected to the programming adapter.
	OFF	Terminating resistor not connected
3: RS232 <sup>1)</sup>	ON	Operation with RS232 interface
	OFF	Deactivated
4: CAN <sup>1)</sup>	ON	Operation with CAN interface
	OFF	Deactivated
5: AGND	ON	AGND and GND interconnected.
	OFF	AGND and GND disconnected (with separate ground).
6: DigOut2	ON	Pull-up resistor with LED connected to programming adapter.
	OFF	Open collector
7: DigOut1	ON	Pull-up resistor with LED connected to programming adapter.
	OFF	Open collector

<sup>1)</sup> The pin assignments of X1 depend on the position of switches 3 and 4 of DIP switch S1.

## Trouble shooting: Checking the interface voltage

<b>MCS-RS232</b>	<b>RX Voltage (depends on PC)</b>	<b>TX Voltage (driven by MC)</b>
32xx BX4 CS 3564 BCS MCS32XX..BX4 RS	typically -5V... -9V	- 5,5V
22xx BX4 CSD	typically -5V... -9V	- 3,8V ... - 4V

<b>MCS-CAN</b>	<b>CAN_H Voltage</b>	<b>CAN_L Voltage</b>
32xx BX4 CO 3564 BC CO 22xx BX4 COD MCS32XX..BX4 CO	2,5 V (idle level)	2,5 V (idle level)

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