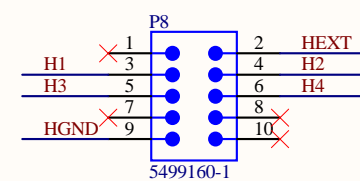
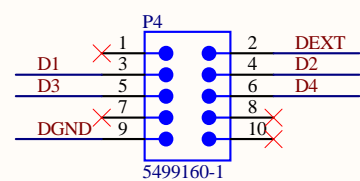
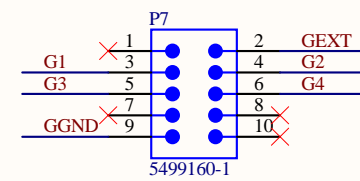
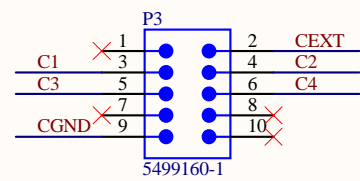
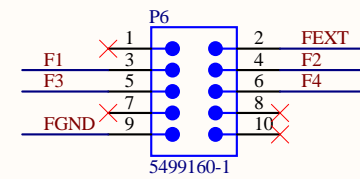
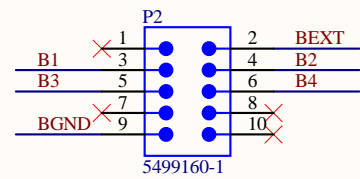
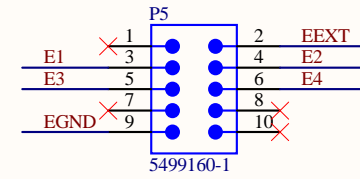
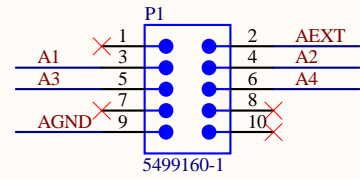
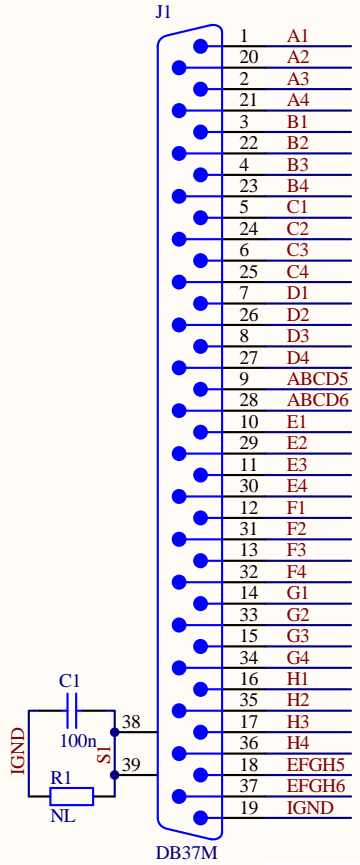


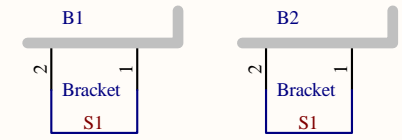
Use a 9-pin D-sub to 10-pin IDC header cable for connecting P1 through P8 to a Beckhoff EL6002 (2 channel RS232) or a EL6022 (2 channel RS422/RS485) terminal.

Digi-Key part numbers:

- H7PXH-0906G-ND - male 9-pin D-sub with flat-ribbon cable for EL6022,
- H7SXH-0906G-ND - female 9-pin D-sub with flat ribbon cable for EL6002,
- MKC10A-ND - 10-pin female socket header
- A32021-ND - D-sub screw retainer kit
- 5207953-3-ND - female screwlock



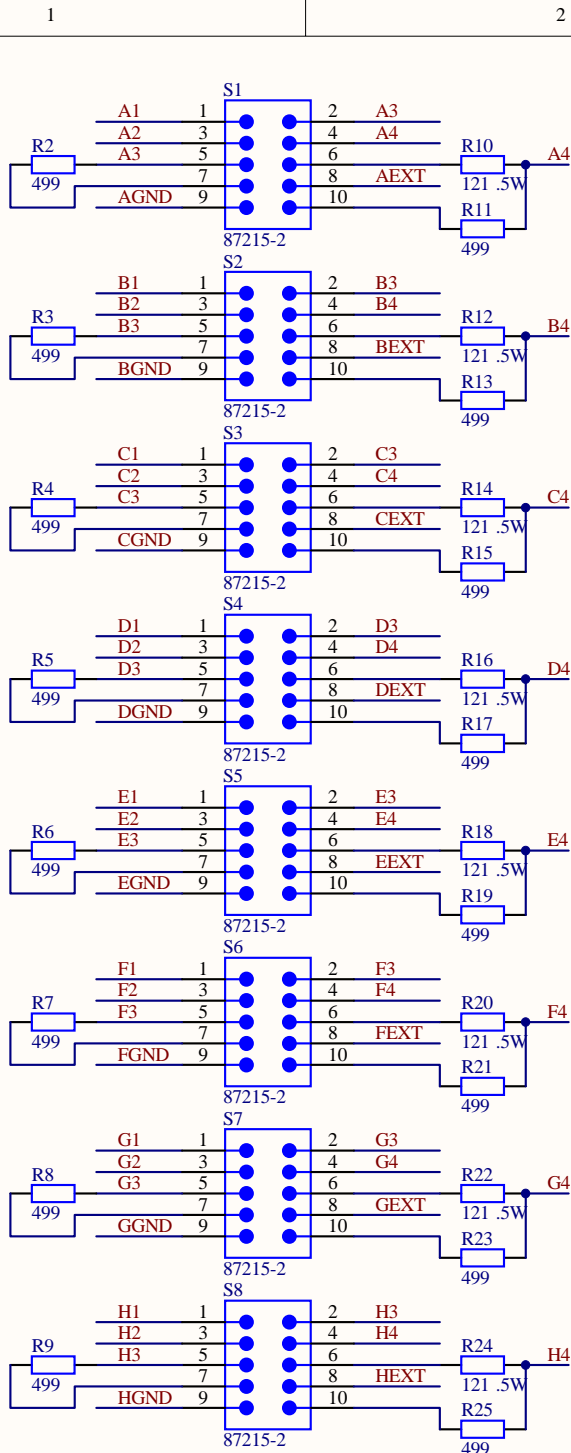
- H1 #4 screw, 3/8"
- H2 #4 screw, 3/8"
- H3 #4 screw, 3/8"
- H4 #4 screw, 3/8"
- McMaster-Carr 90272A108
- H5 #4 lock washer
- H6 #4 lock washer
- H7 #4 lock washer
- H8 #4 lock washer
- McMaster-Carr 91113A005
- H9 #4 nut
- H10 #4 nut
- H11 #4 nut
- H12 #4 nut
- McMaster-Carr 90480A005



RS232:
 A1 - Rx
 A2 - RTS
 A3 - Tx
 A4 - CTS
 AGND: GND
 AEXT: DSR/DTR

RS422/RS485:
 A1 - Tx+
 A2 - Tx-
 A3 - Rx+
 A4 - Rx-
 AGND: GND
 AEXT: 5V

Title Controls Concentrator Serial		
Size A	Number D1100638	Revision 1
Date: 5/5/2011	Sheet 1 of 2	
File: C:\Users\...\ConcentratorSerial5.SchDoc	Drawn By: Daniel Sigg	



Jumper headers

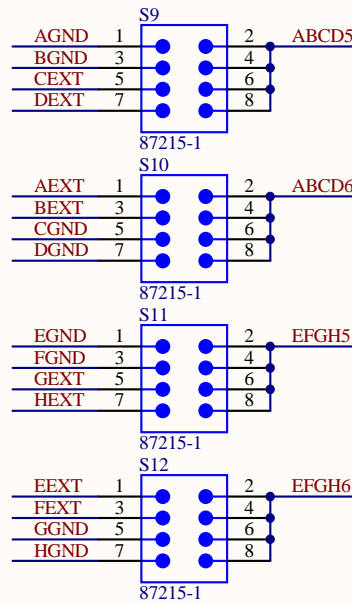
Use jumper headers S1 through S8 to select the RS422/RS485 termination, and RS485 readback and bias voltage. Only channel 1 of an EL6022 can provide a bias voltage. Use jumper headers S9 through S12 to select the signals on the common lines ABCD5, ABCD6, EFGH5 and EFGH6, respectively. For a 3-wire RS232 A4 can be used as ground by jumper A4 to AGND. Pins 4 and 9 on S1 thru S8 (e.g. Digi-Key S6105-ND). Or, replace R11 with 0 Ohm and add jumper 5.

Jumpers:

- 1 - between pin 1/2
- 2 - between pin 3/4
- 3 - between pin 5/6
- 4 - between pin 7/8
- 5 - between pin 9/10

RS485 jumper (S1 to S8):

- 1/2 - loopback Tx/Rx
- 3 - 120 Ohm termination
- 4/5 - RS485 Bias voltage
- Not installed by default



Jumper headers

Default jumper S9-S12:
 S9/1 - AGND to ABCD5
 S10/3 - CGND to ABCD6
 S11/1 - EGND to EFGH5
 S12/3 - GGND to EFGH6

Title			
Controls Concentrator Serial			
Size	Number	Revision	
A	D1100638	1	
Date:	5/5/2011	Sheet 2 of	2
File:	C:\Users\...\ConcentratorSerial6.SchDoc	Drawn By:	Daniel Sigg