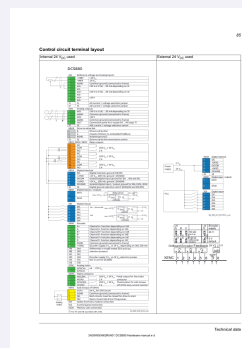


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

SDCS-CON-H01 3ADT320000R1501

DC Drive Control Board



PRODUCT	SDCS-CON-H01 3ADT320000R1501
FAMILY	DCS880
FUNCTION	DC Drive Control Board
SOURCE	ABB DCS880 Hardware manual 3ADW000462R0401; SDCS-CON-H01 pp.83 to 88

01 OFFICIAL MOUNTING AND WIRING

- Access the electronic tray as described for SDCS-CON-H01; retain the two-hinge arrangement.
- Follow the terminal diagram and select voltage or current input jumpers to match field signals.
- Use 0.5 to 2.5 mm² conductors and the specified 0.5 Nm terminal tightening torque.
- Terminate the drive-to-drive link only at its physical ends using the documented J3 setting.

AMIKON PRODUCT SUPPORT

+86-18020776786

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AMIKONG.COM

Control board SDCS-CON-H01 (H1 ... H8)

The control circuit terminals are common for all sizes H1 ... H8.

Location of the control circuit board SDCS-CON-H01

The SDCS-CON-H01 is mounted on an electronic tray. The electronic tray is attached in the housing by means of two hinges.

Watchdog function

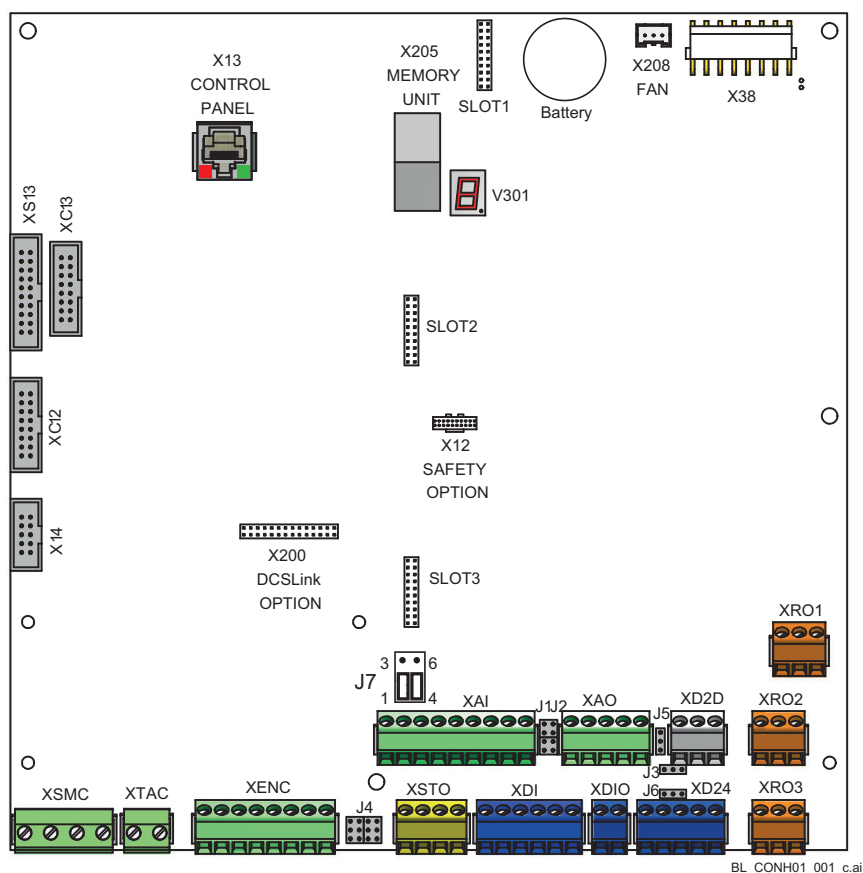
The SDCS-CON-H01 has an internal watchdog. The watchdog controls the proper function of the SDCS-CON-H01 and the firmware. If the watchdog trips, it has the following effects:

- The thyristor firing control is reset and disabled.
- All DI's will not be processed.
- All DO's are frozen in the actual state.
- All AI's will not be processed.
- All programmable AO's are frozen in the actual state.

Recommended wire size - Tightening torques

Control cables:

Wire sizes:	Tightening torques:
0.5 ... 2.5 mm ² (24 ... 12 AWG)	0.5 Nm (5 lbf·in) for both stranded and solid wiring



Control circuit terminal layout

Internal 24 V_{DC} used

External 24 V_{DC} used

DCS880																																										
	XAI Reference voltage and analog inputs																																									
	<table><tr><td>1</td><td>+VREF</td><td>+10 V_{DC}</td></tr><tr><td>2</td><td>-VREF</td><td>-10 V_{DC}</td></tr><tr><td>3</td><td>AGND</td><td>Common ground (connected to frame)</td></tr><tr><td>4</td><td>AI1+</td><td>±10 V or 0 (4) ... 20 mA depending on J1</td></tr><tr><td>5</td><td>AI1-</td><td></td></tr><tr><td>6</td><td>AI2+</td><td>±10 V or 0 (4) ... 20 mA depending on J2</td></tr><tr><td>7</td><td>AI2-</td><td></td></tr><tr><td>8</td><td>AI3+</td><td>±10 V</td></tr><tr><td>9</td><td>AI3-</td><td></td></tr><tr><td>J1</td><td>J1</td><td>AI1 current / voltage selection jumper</td></tr><tr><td>J2</td><td>J2</td><td>AI2 current / voltage selection jumper</td></tr></table>	1	+VREF	+10 V _{DC}	2	-VREF	-10 V _{DC}	3	AGND	Common ground (connected to frame)	4	AI1+	±10 V or 0 (4) ... 20 mA depending on J1	5	AI1-		6	AI2+	±10 V or 0 (4) ... 20 mA depending on J2	7	AI2-		8	AI3+	±10 V	9	AI3-		J1	J1	AI1 current / voltage selection jumper	J2	J2	AI2 current / voltage selection jumper								
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X12 Safety functions module connection																																										
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X205 Memory unit connection																																										
① For H7 and H8 see SDCS-OPL-H01.																																										

External 24 V _{DC} used																		
	Power supply																	
	0 V _{DC}																	
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SA_880_010_DCT-PLC_a.ai																		

OnBoard Encoder Feedback 24 V ↓ 5 V																
	J4 Encoder supply															
	<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>Encoder supply</td></tr><tr><td>1</td><td>4</td><td>7</td><td>10</td><td>24 V</td></tr><tr><td>3</td><td>6</td><td>9</td><td>12</td><td>5 V default</td></tr></table>	A	B	C	D	Encoder supply	1	4	7	10	24 V	3	6	9	12	5 V default
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1	2	3	4	5	6	7	8									
+A-	+B-	+Z-														
J4D																
EGND																

SA_880_005_DCS_d.ai

XAI: Reference voltages and analog inputs

+VREF	+10 V _{DC} , ±1 % R _L = 1 ... 10 kΩ Maximum wire size 2.5 mm ²
-VREF	-10 V _{DC} , ±1 % R _L = 1 ... 10 kΩ Maximum wire size 2.5 mm ²
AI1+	±10 V [R _{in} ≥ 200 kΩ], 0 (4) ... 20 mA or ±20 mA [R _{in} = 100 Ω] depending on J1
AI1-	Maximum wire size 2.5 mm ² Differential inputs, common mode range ±30 V Sampling interval per channel: 0.25 ms Hardware filter: 0.25 ms Resolution: 15 bit + sign Inaccuracy: 1 % of full scale range
AI2+	±10 V [R _{in} ≥ 200 kΩ], 0 (4) ... 20 mA or ±20 mA [R _{in} = 100 Ω] depending on J2
AI2-	Maximum wire size 2.5 mm ² Differential inputs, common mode range ±30 V Sampling interval per channel: 0.25 ms Hardware filter: 0.25 ms Resolution: 15 bit + sign Inaccuracy: 1 % of full scale range
AI3+	±10 V [R _{in} ≥ 200 kΩ]
AI3-	Maximum wire size 2.5 mm ² Differential inputs, common mode range ±30 V Sampling interval per channel: 0.25 ms Hardware filter: 0.25 ms Resolution: 15 bit + sign Inaccuracy: 1 % of full scale range
	Parameter settings see DCS880 Firmware manual Group 12 Standard AI

XAO: Analog outputs

AO1	±10 V [load current ≤ 10 mA] or 0 (4) ... 20 mA [R _L ≤ 500 Ω] depending on J5 Maximum wire size 2.5 mm ² Frequency range: 0 ... 300 Hz Resolution: 11 bit + sign Inaccuracy: 2 % of full scale range
AO2	±10 V [load current ≤ 10 mA] Maximum wire size 2.5 mm ² Frequency range: 0 ... 300 Hz Resolution: 11 bit + sign Inaccuracy: 2 % of full scale range
IAC	Connection point for a scope to measure the current directly over the burden resistor (H1 ... H6 only. For H7 and H8 see SDCS-OPL-H01). Scaling see 13.80 Scaling of fixed current output.
	Parameter settings see DCS880 Firmware manual Group 13 Standard AO

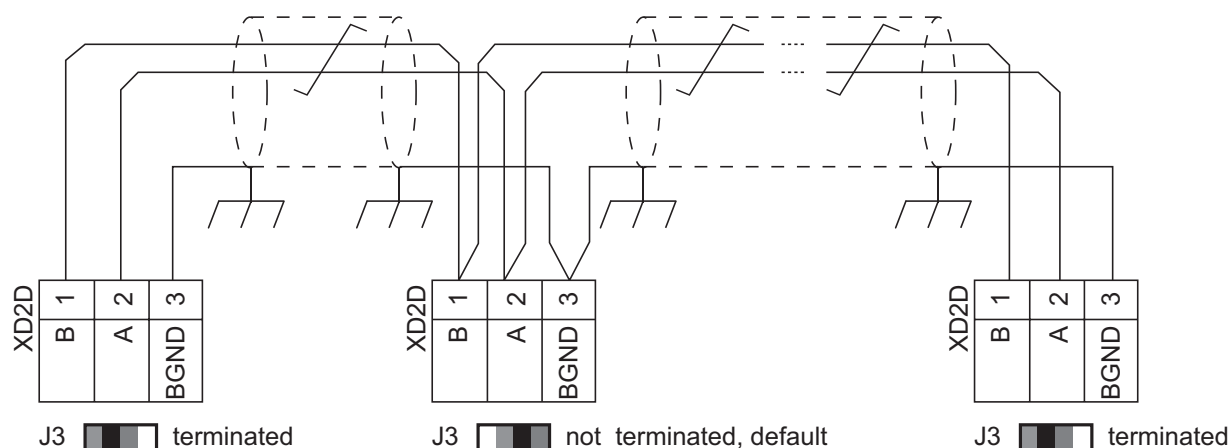
XD2D: Drive-to-drive link

B	Maximum wire size 2.5 mm ²
A	Physical layer: RS-485 Termination by switch J3
	Parameter settings see DCS880 Firmware manual Group 60 DDCS communication

The drive-to-drive link is a daisy-chained RS-485 transmission line that allows basic master-follower communication with one master and multiple followers. It is also used for the embedded fieldbus.

Set the termination switch J3 (see [Jumpers and switches](#)) next to terminal block XD2D to terminated (■ ■ ■) at the two physical ends of the drive-to-drive link. All intermediate switches have to be set to not terminated (■ ■ ■).

Use double shielded twisted-pair cable ($\sim 100\ \Omega$, for example, PROFIBUS compatible cable) for the wiring. For best immunity, high quality cable is recommended. Keep the cable as short as possible. The maximum complete length of the link is 50 meters. Avoid unnecessary loops and running the link near power cables. The following diagram shows the wiring of the drive-to-drive link.



SF_880_008_DCT_drive2drive_b.ai

RO1, RO2, RO3: Relay outputs

NC	250 V _{AC} / 30 V _{DC} , 2 A
COM	Maximum wire size 2.5 mm ²
NO	Varistor protected
	Parameter settings see DCS880 Firmware manual Group 10 Standard DI, RO

XD24: Digital interlock

DIL	The digital interlock works like a normal digital input and has no special function in the DCS880. It can be selected for example as the source for an emergency stop command or any other external event. See the DCS880 Firmware manual for more information. Maximum wire size 2.5 mm² +24 V_{DC} logic levels: low < 5 V_{DC}, high > 15 V_{DC} R_{in} = 2 kΩ Hardware filter: 0.04 ms Digital filter up to 8 ms Related ground is DICOM
+24VD	+24 V_{DC}, 200 mA Total load power of these outputs is 4.8 W (200 mA, 24 V_{DC}) minus the power taken by DIO1 and DIO2 Maximum wire size 2.5 mm² Related ground is DIOGND
	Parameter settings see DCS880 Firmware manual Group 10 Standard DI, RO