

Technical Note 161

## DCS880- DSL-H0x option board overview

### Types of DSL boards and when to use

The SDCS-DSL-Hxx DCSLink communication options are add-on modules connecting to the DCS880 industrial drives control unit. The option includes connectors for DCSLink communication as well as up to 4 fiber optics channels for optical power link communication. DCSLink may be used to control external field exciters, 12 and higher pulse operation, and Master-follower applications. The optical power link communications enable remote control of a power unit as well as parallel operation of up to four power units.

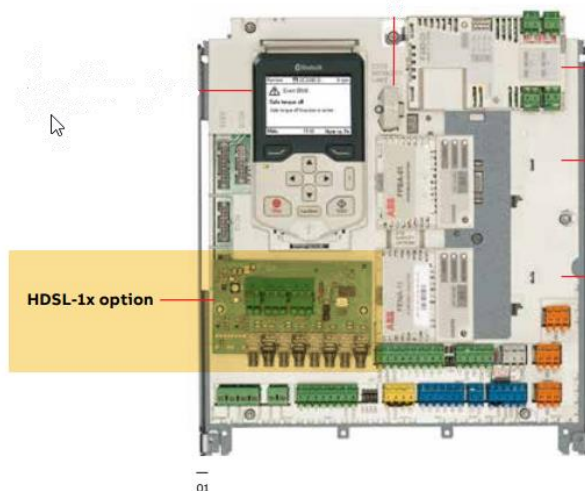
Available DCSLink communication option modules:

Table 1:

DCSLink communication option modules		
Option	Option code	Connections
SDCS-DSL-H10	+S521	1 DCSLink channel, 0 channels optical power link
SDCS-DSL-H12	+S522	1 DCSLink channel, 2 channels optical power link
SDCS-DSL-H14	+S523	1 DCSLink channel, 4 channels optical power link

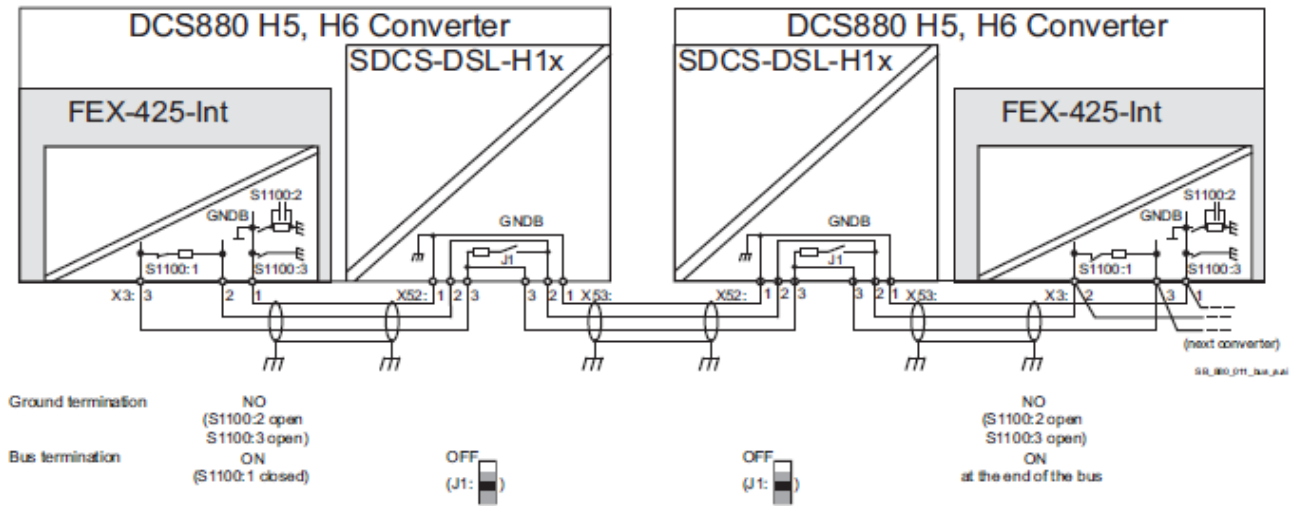
The option is applied to the connection point X200 located on the control board as seen in figure 1.

Figure 1:

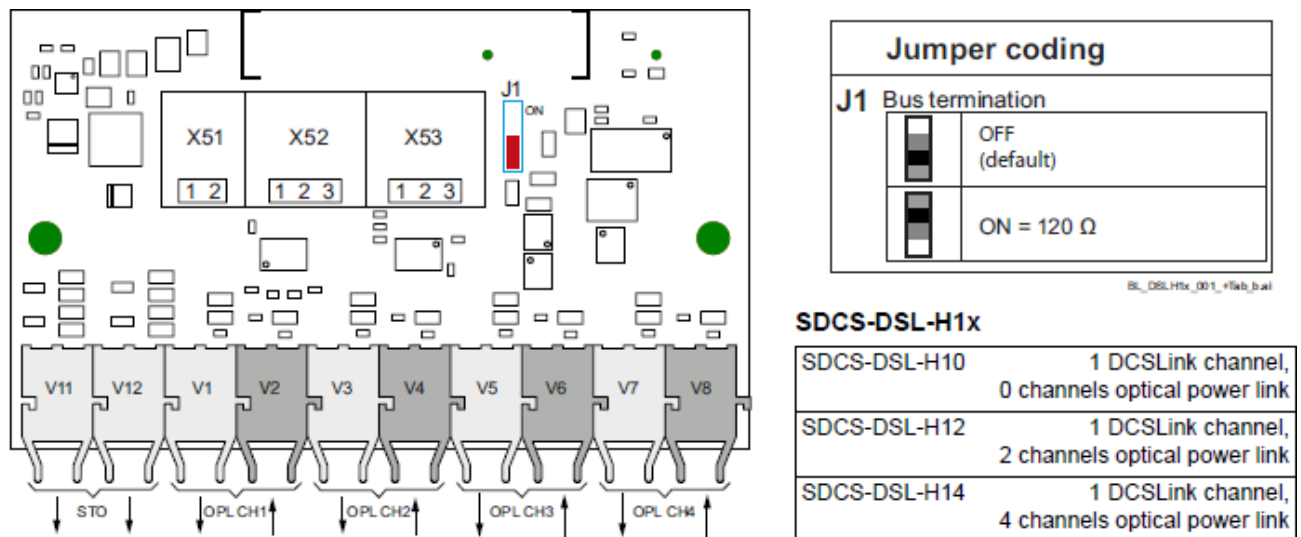


The first communication type incorporated in this board is utilizing the X52 and X53 connectors intended to be used as the DCSSLink. Connection X51 supplies 24VDC, X52 and X53 are connected in parallel and provide two connectors for the link and used for drive-to-drive, 12-pulse, and field exciter communication. J1 is the bus termination and should be switched on at the beginning and end of the bus. The maximum total DCSSLink cable length is 100m at 500kBd (default and recommended).

**Figure 2:** Example of two DCS880 H5, H6 converters with FEX-425-Int internal field supply

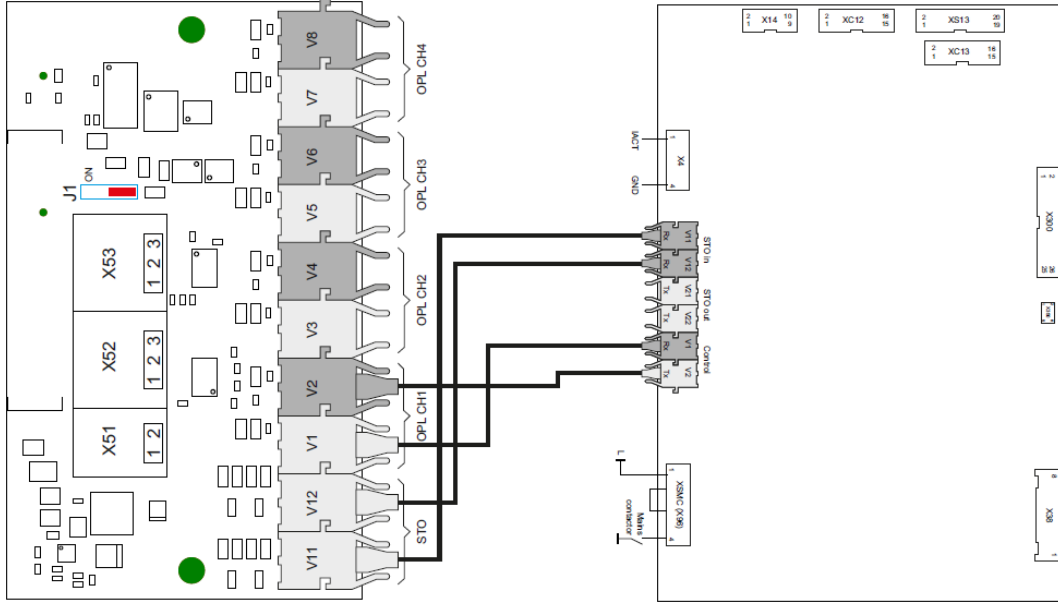


**Figure 3:** Hardware Layout

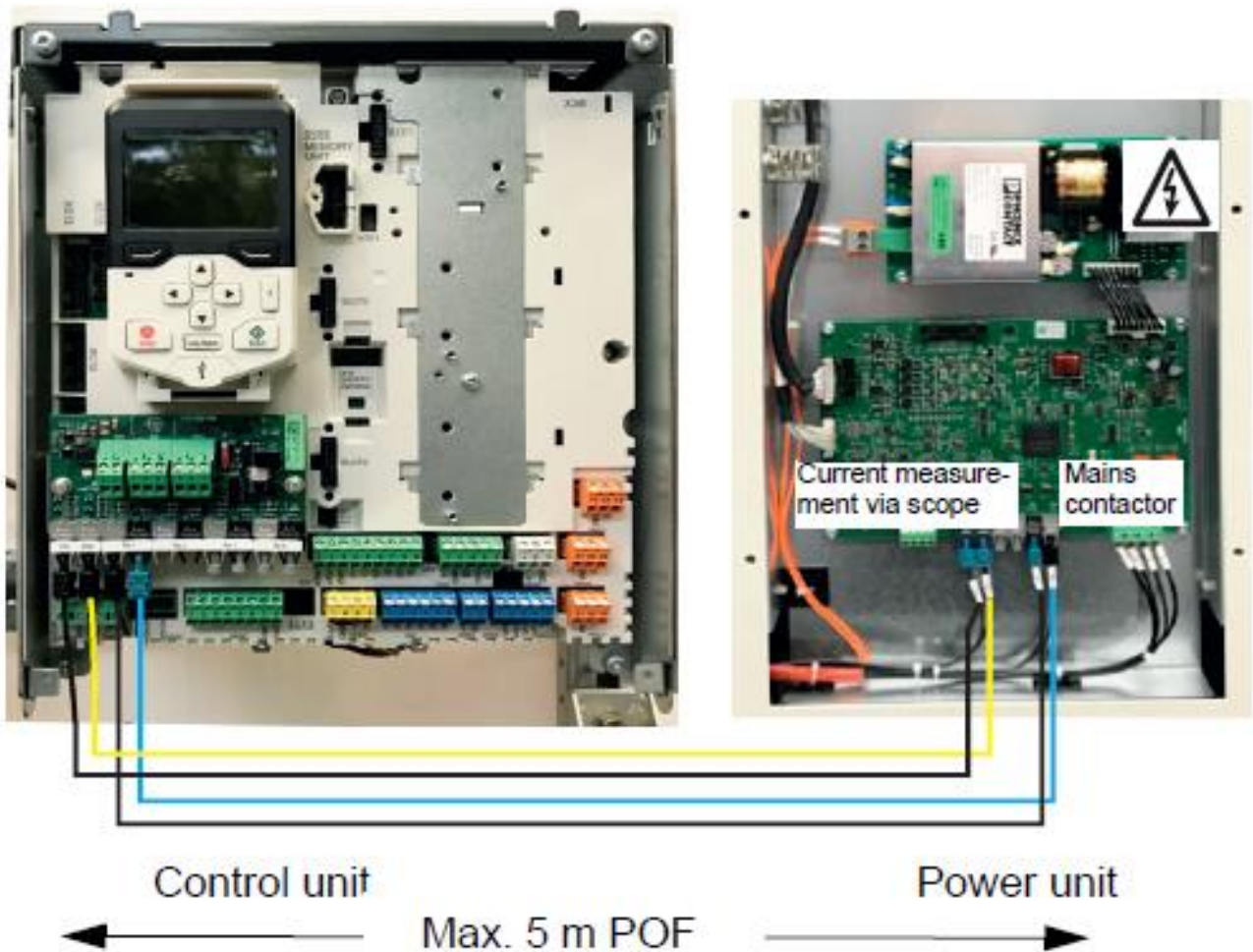


The second method of utilizing the connection of DSL option board is done by fiber optic connection ports. The fiber optical power link is used to connect the drive control unit to an external power unit. This is commonly found on multidrive or large converters. Each external power module requires two channels of connection, one channel is used for control and the other channel is used for the STO function. Each channel of fiber optic is composed of two individual fiber ends one for transmit and one for receive. The opposing side located on the power unit has a mating PCB board installed called the SDCS-OPL which is where the connections will be made on the power unit. The differences in the three variants of SDCS\_DSL board is that for H10,H12,H14 there are different quantities of optical channels available. The last digit to the right indicates how many fiber optic ports are included on the module. The ports come with H10 = 0 channels optical power link, H12 = 2 channels optical power link, and H14 = 4 channels of optical power link. The selection will depend on the application for example please view figure 4 to see connection with 2 channels and figure 6 to view connections with 4 channels.

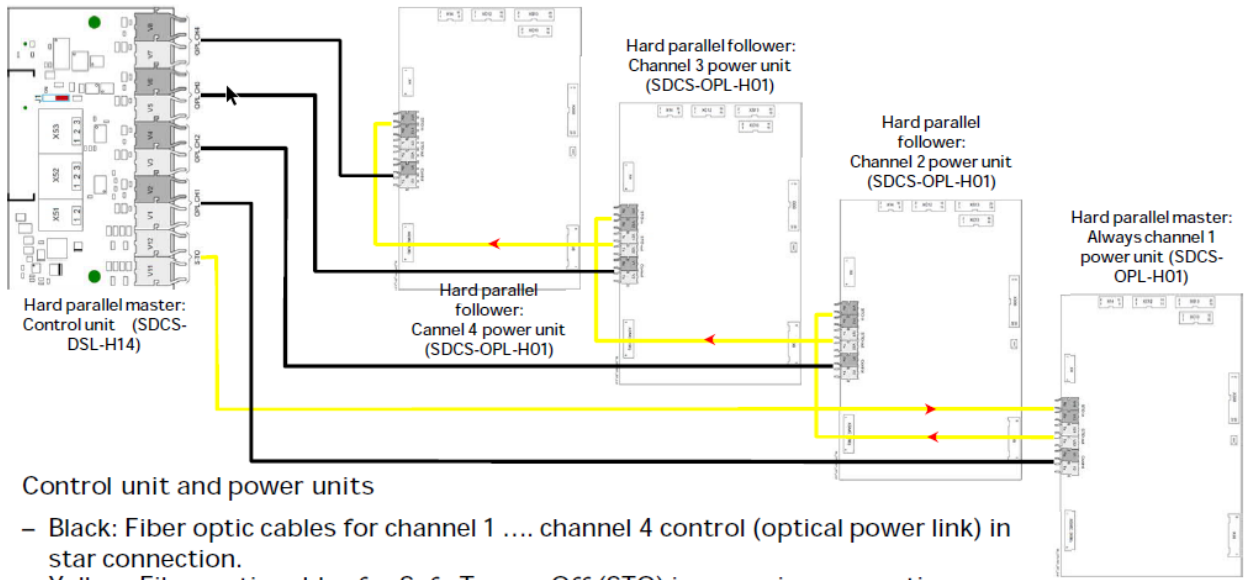
**Figure 4: Example of SDCS-DSL-H1x to SDCS-OPL-H01 (H7-H8)**



**Figure 5: Example of control unit connection to power unit using fiber optic link**



**Figure 6:** Example of 4 channel SDCS-DSL-H14 connected to 4x power units



Control unit and power units

- Black: Fiber optic cables for channel 1 .... channel 4 control (optical power link) in star connection.
- Yellow: Fiber optic cables for Safe Torque Off (STO) in open ring connection.

**Summary:**

The intention of this document is to include information regarding the DCslink communication option module as an overview of this option module. Covering connection details and application usage for the different variations are outlined to help resolve any usage concerns when dealing with these systems.