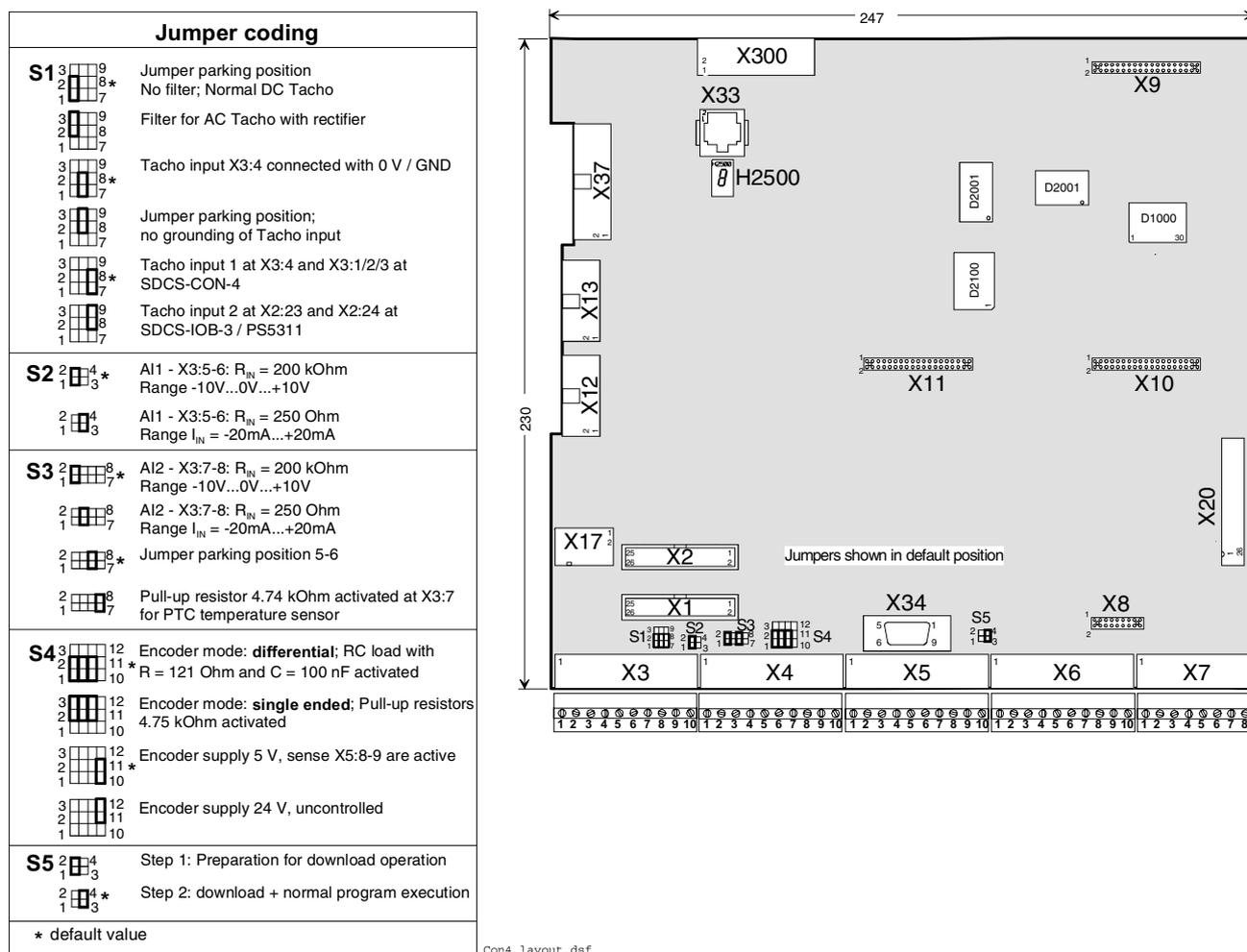


Control Board SDCS-CON-4

Layout of the control board SDCS-CON-4



Memory circuit

SDCS-CON-4 board is equipped with FlashPROM which contains the firmware plus the stored parameters. Parameters handled by DCS800 panel or DWL, PCtool or by Serial communication parameter service are stored immediately in the FlashPROM.

Parameters handled by cyclic serial communication (dataset table Group 90 - 92) are not stored in the Flash PROM. They must be stored by means of ParAppSave (16.6) service.

The faultlogger entries are stored in the FlashPROM during power down (auxiliary power supply OFF).

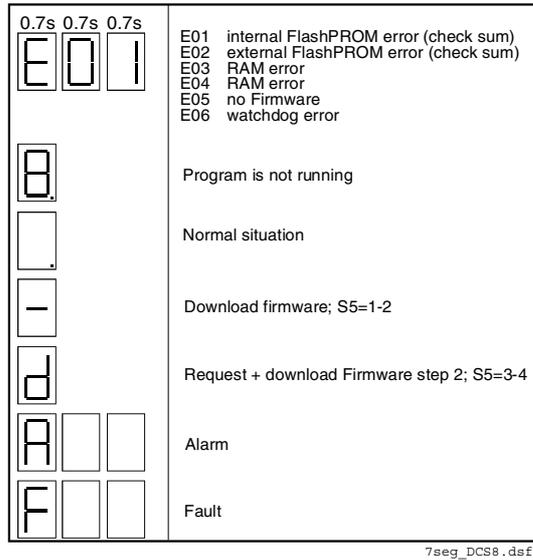
Watchdog function

The control board has an internal watchdog. The watchdog controls the running of the control board program. If the watchdog trips, it has the following effects:

- Writing to FEPROM is disabled.
- Thyristor firing control is reset and disabled.
- Digital outputs are forced low.
- Programmable analogue outputs are reset to zero, 0V.

Seven segment display

A seven segment display is located on the control board SDCS-CON-4 and it shows the state of drive.



Terminal description

X37: Connector is used for supply of SDCS-CON-4 from SDCS-POW-1, SDCS-POW-4, SDCS-PIN-4 supply voltage can be measured to ground.

X37:3= 48V

X37:5=24V

X37:7=15V

X37:11=-15V

X37:13=5V encoder

X37:23=5V CPU

Supply voltage monitoring

5V CPU is monitored by 4.75 V and forces CPU to reset. In parallel the CPU monitors Powerfail signal from power supply (SDCS-PIN-4 or SDCS-POW-1).

X12: and **X13:** connector are used for measurement voltage, current and temperature and firing thyristors of SDCS-PIN-51/PIN-41, SDCS-PIN-4.

see chapter *Technical data*

X17: and **X300:** are routine test connectors.

X1: and **X2:** are used to connect SDCS-IOB-2 and SDCS-IOB-3 board.

see chapter *Technical data*

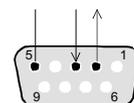
X33: is used to connect DCS800 Panel. It can be connected direct via 40 mm jack or via CAT 1:1 cable (RJ45).

X34: is used for download firmware and for DWL and IEC1131 programming connection.

The **RS232** interface is normally used for setting parameter in the drive via the PC Tool.
The default settings of this interface are as follows:

Signal level:	RS232 (+12V / -12V)
Data format:	UART
Message format:	Modbus-Protocol
Transmission method:	half-duplex
Baudrate:	DriveWindow Light: variable CodeSys download: 38.4 kBaud FDT firmware download: self-adapting
Number of Data bits:	8
Number of Stop bits:	1
Parity-Bit:	odd

X34:	Description
1	not connected
2	TxD
3	RxD
4	not connected
5	SGND Signal ground
6...9	not connected



X34:

X8: is need for SDCS-DSL-4 board which provides the serial communication interface to field exciters, 12-pulse converters, master-follower and mailbox to other converters.

X9:, **X10:** and **X11:** are used for extension IO modules and serial communication interface adapter.

For detailed description see manual *Hardware extension RAIO Analog I/O Extension*

Hardware extension RDIO Digital I/O Extension

DCS800 1131 Programming target

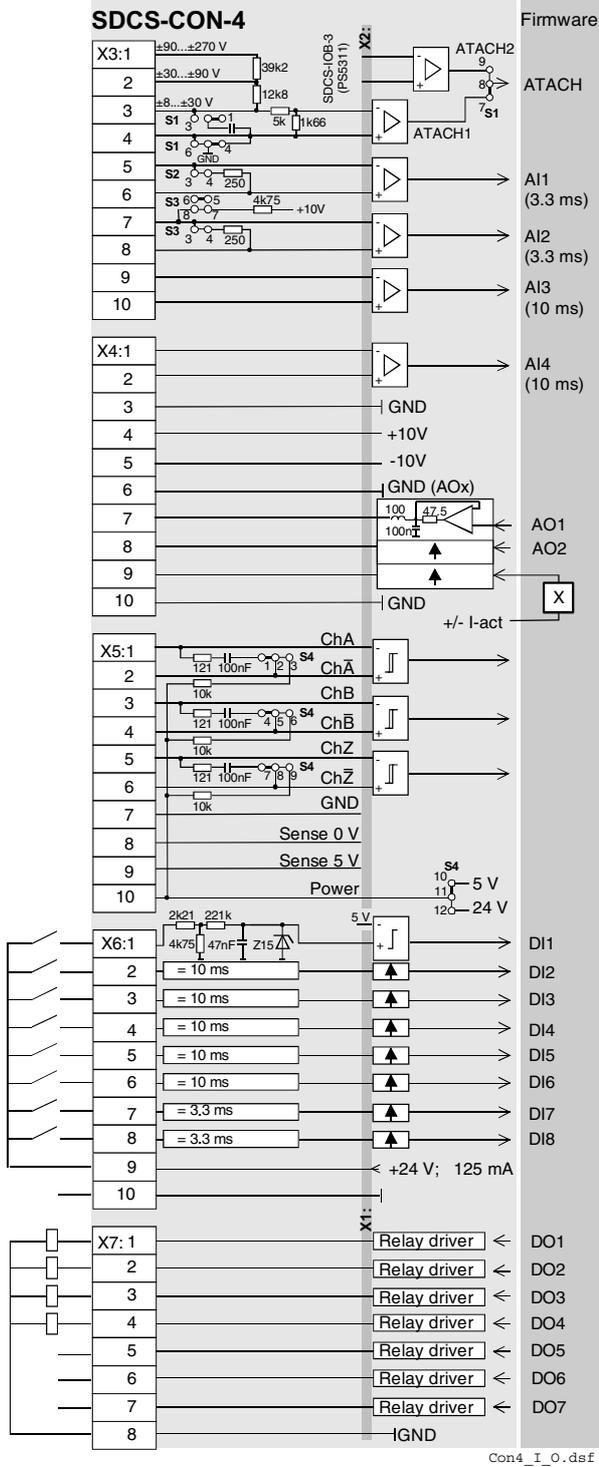
see chapter SDCS-COM-8 board

X20 (Slot 4) is used for Memory Card, see description IEC1131 Programming.

Prepared function of:

	Slot 1	Slot 2	Slot 3	Slot 4
	X9:	X10:	X11:	X20:
RDIO / RAIO	x	x	x	
R... Fieldbus adapter	x			
SDCS-COM-8			x	
Second fieldbus RMBA		x	x	
Memory Card				x

Digital and analogue I/O connection of the SDCS-CON-4



Resolution [bit]	Input/output values Hardware	Scaling by	Common mode range	Remarks
15 + sign	$\pm 90 \dots 270 \text{ V}$ $\pm 30 \dots 90 \text{ V}$ $\pm 8 \dots 30 \text{ V}$	Firmware	$\pm 15 \text{ V}$	
15 + sign	$-10 \dots 0 \dots +10 \text{ V}$	Firmware	$\pm 15 \text{ V}$	
15 + sign	$-10 \dots 0 \dots +10 \text{ V}$	Firmware	$\pm 15 \text{ V}$	
15 + sign	$-10 \dots 0 \dots +10 \text{ V}$	Firmware	$\pm 15 \text{ V}$	
15 + sign	$-10 \dots 0 \dots +10 \text{ V}$	Firmware	$\pm 15 \text{ V}$	

			Power	
	+10 V		$\leq 5 \text{ mA}$	for ext. use
	-10 V		$\leq 5 \text{ mA}$	e.g. refer. pot.
11 + sign	$-10 \dots 0 \dots +10 \text{ V}$	Firmware	$\leq 5 \text{ mA}$	
11 + sign	$-10 \dots 0 \dots +10 \text{ V}$	Firmware	$\leq 5 \text{ mA}$	
	$-10 \dots 0 \dots +10 \text{ V}$	Firmware + Hardw.	$\leq 5 \text{ mA}$	3 V -> nom.?? motor curr.

Encoder supply		Remarks
		Inputs not isolated Impedance = 120 Ω , if selected max. frequency $\leq 300 \text{ kHz}$
5 V	$\leq 250 \text{ mA}$	Sense lines for GND and supply to correct voltage drops on cable (only if 5 V encoder is in use).
24 V	$\leq 200 \text{ mA}$	

Input value	Signal definition by	Remarks
0...7.3 V	Firmware	-> "0" status
7.5...50 V		-> "1" status

Output value	Signal definition by	Remarks
50 * mA 22 V at no load	Firmware	Current limit for all 7 outputs = 160 mA Do not apply any reverse voltages!

* short circuit protected ① gain can be varied in 15 steps between 1 and 4 by software parameter