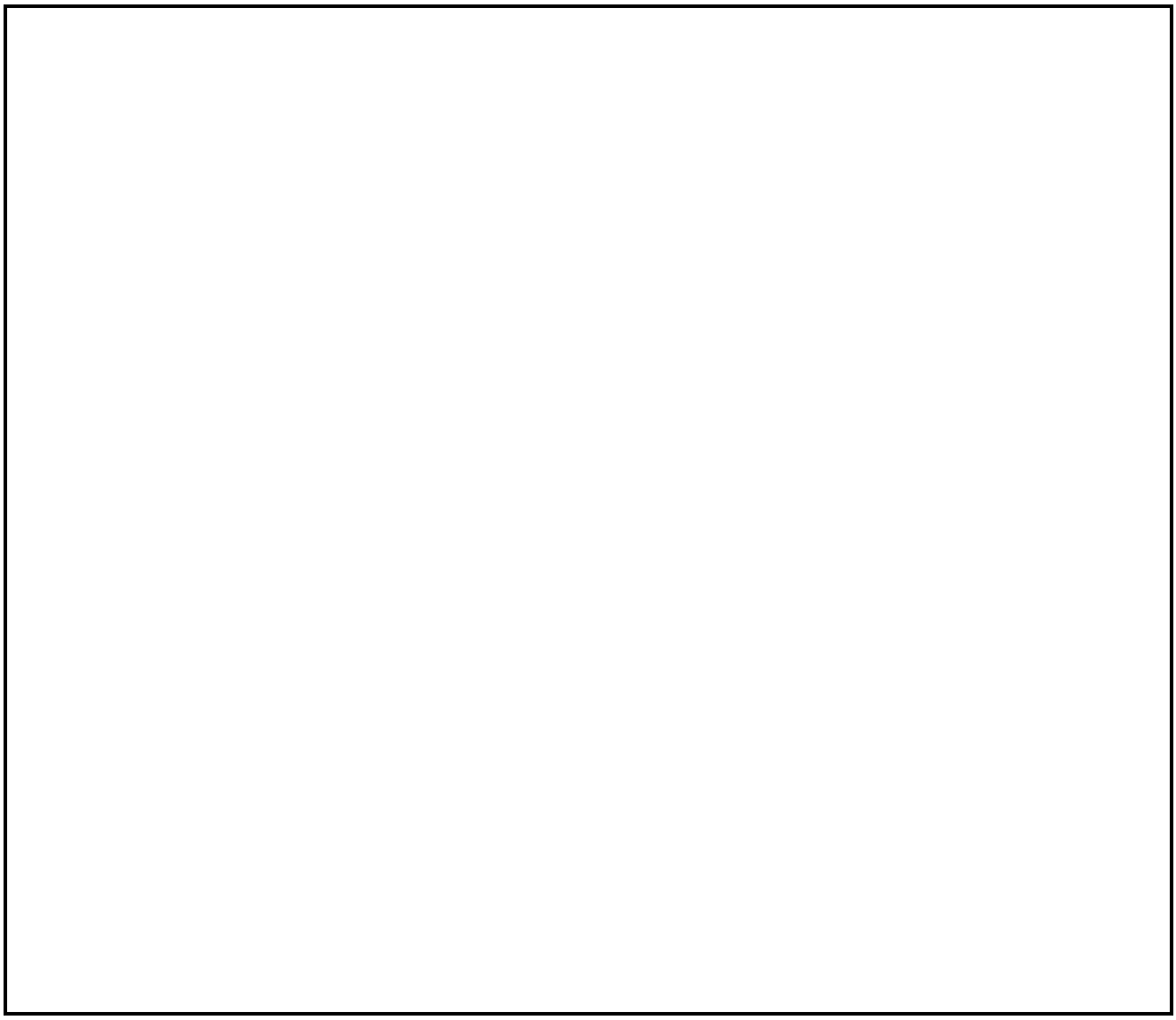
DCS Thyristor Power Converters

for DC Drive Systems
25 to 5150 A

Configuration Instructions

Branching Units
NDBU-85/95
for Drive*Window*



ABB

Chapter 1 - Settings on NDBU-85/95 boards

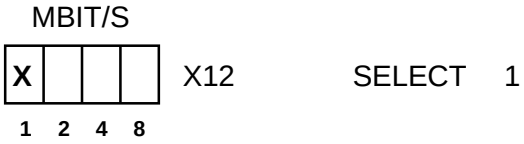
General notes

NOTE:

- **DC drives (e.g. DCS 600 products) use 10 MBd optical transmitters/receivers.**
- **ACS 600 products use 5 MBd as well as 10 MBd optical transmitters/receivers.**
- **Mechanically both types are identical i.e accept the same cable connectors.**
- **Mixing 5 MBd and 10 MBd is not possible.**
- **With 5 MBd optical components only plastic optical fibre cable (POF) can be used.**

Setting of communication speed

Drive*Window* default setting is 1 Mbit/s



Setting of optical power value

Table 1/1a: For 5 MBd optical components (NDBU 85 CH 1...CH 8), 1 Mbit/s [Can only be used for ACS 600 products!]

CABLE LENGTH			TRANSMITTER SETTING	
Description	**POF *) [m]**	**HCS **) [m]**	**Nominal [mA]**	**X2 - X11 MSTR; CH0 ... CH8**
Short	0.1 ... 5	—	10	SHORT
Medium	(2) 5 ... 10	—	20	MEDIUM
Long	(5) 10 ... 15	—	30	LONG
Channel not selected				**DIS**(ABLED)

***)** POF = Plactic Optical Fibre

(2), (5) = Possible minimum length of cable with this setting, however reduction of **Nominal** current is recommended.

NOTE: If the channel is not used, select DISABLED!

Setting of optical power value (continued)

Table 1/1b: For 5 MBd optical components (NDBU 85 CH 1...CH 8), 2 or 4 Mbit/s [Can only be used for ACS 600 products!]

CABLE LENGTH			TRANSMITTER SETTING	
Description	**POF *) [m]**	**HCS **) [m]**	**Nominal [mA]**	**X2 - X11 MSTR; CH0 ... CH8**
Short	0.1 ... 4	—	10	SHORT
Medium	(2) 4 ... 7	—	20	MEDIUM
Long	(5) 7 ... 10	—	30	LONG
Channel not selected				**DIS**(ABLED)

***)** POF = Plactic Optical Fibre

(2), (5) = Possible minimum length of cable with this setting, however reduction of **Nominal** current is recommended.

NOTE: If the channel is not used, select DISABLED!

Table 1/1c: For 10 MBd optical components (NDBU 95 + NDBU 85 MSTR and CH0), 50 mA max

CABLE LENGTH			TRANSMITTER SETTING	
Description	**POF *) [m]**	**HCS **) [m]**	**Nominal [mA]**	**X2 - X11 MSTR; CH0 ... CH8**
Short	0.1 ... 20	0.1 ... 50	30	SHORT
Medium	(0.1) 10 ... 25	(0.1) 50 ... 100	40	MEDIUM
Long	(0.1) 15 ... 30	(0.1) 100 ... 200	50	LONG
Channel not selected				**DIS**(ABLED)

***)** POF = Plactic Optical Fibre
****)** HCS = Hard Clad Silica

(0.1) **=** Possible minimum length of cable with this setting, however reduction of **Nominal** current is recommended.

NOTE: The SDCS-AMC-DC board (used in DCS 600) has a maximum current of 30 mA!
NOTE: If the channel is not used, select DISABLED!

Setting of optical power value (continued)

Table 1/1d: For 10 MBd optical components; Revision B (NDBU 95 + NDBU 85 MSTR and CH0), 50 mA max

CABLE LENGTH			TRANSMITTER SETTING	
Description	**POF *) [m]**	**HCS **) [m]**	**Nominal [mA]**	**X2 - X11 MSTR; CH0 ... CH8**
Short	0.1 ... 5	—	20	SHORT
Medium	(0.1) 5 ... 20	0.1 ... 50	30	MEDIUM
Long	(0.1) 15 ... 30	(0.1) 50 ... 200	50	LONG
Channel not selected				**DIS**(ABLED)

***)** POF = Plactic Optical Fibre
****)** HCS = Hard Clad Silica

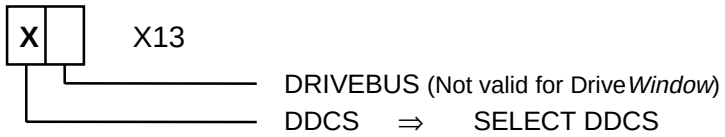
(0.1) **=** Possible minimum length of cable with this setting, however reduction of **Nominal** current is recommended.

NOTE: The SDCS-AMC-DC board (used in DCS 600) has a maximum current of 30 mA!
NOTE: If the channel is not used, select DISABLED!

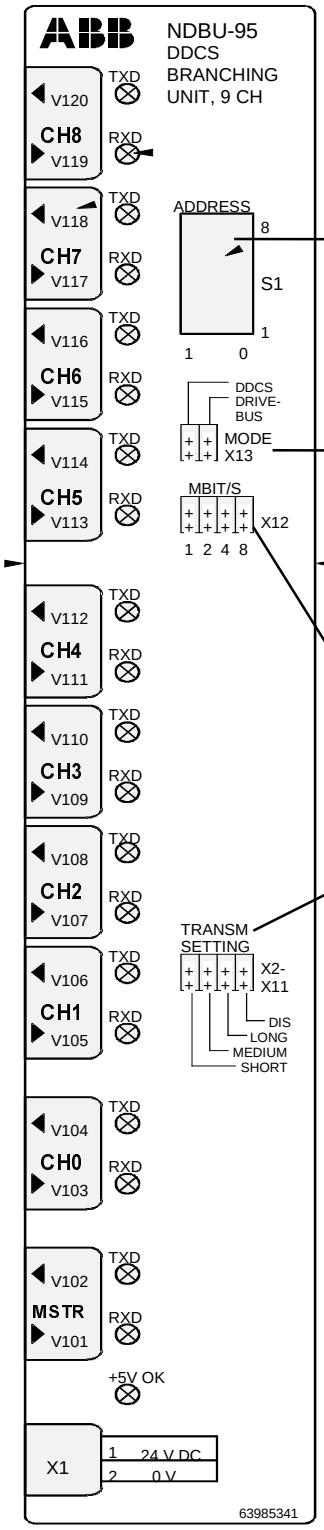
Operation mode selection

Drive*Window* uses DDCS-protocol

MODE



Layout of branching units type NDBU-95



Address settings:
See chapter 2.

Operation mode selection;
select DDCS:
See chapter 1, section “Operation mode selection”
[Only NDBU-95].

Setting of communication speed; select 1 i.e. 1 Mbit/s:
See chapter 1, section “Setting of communication speed“.

Setting of optical power value (for each channel):
See chapter 1, Table 1/1a, 1/1b and 1/1c.

Chapter 2 - Address Hierarchy of Branching Units Type NDBU-85/95

Address hierarchy

When a system is built up, the branching units addresses must be set according to a certain hierarchy. Principal is that the closest branching unit to PC must always have biggest address number. (The addresses are set by dip switch S1 located on the branching units type NDBU-85/95; see chapter 1, section “Layout of branching units type NDBU-95”).

Available addresses

Table 2/1: Available addresses

Address	Usage	Address Switch S1 ***)							
		8	**7**	**6**	**5**	**4**	**3**	**2**	**1**
255	RESERVED	1	1	1	1	1	1	1	1
254	RESERVED	1	1	1	1	1	1	1	0
. . .	. . . . . “								
126	RESERVED	0	1	1	1	1	1	1	0
124 (125) ******)**	NDBU 1	0	1	1	1	1	1	0	0
122 (123)	NDBU 2	0	1	1	1	1	0	1	0
120 (121)	NDBU 3	0	1	1	1	1	0	0	0
118 (119)	NDBU 4	0	1	1	1	0	1	1	0
116 (117)	NDBU 5	0	1	1	1	0	1	0	0
. . .	. . . . . “								
76 (77)	NDBU 25	0	1	0	0	1	1	0	0
75	RESERVED	0	1	0	0	1	0	1	1
. . .	. . . . . “								
2	RESERVED	0	0	0	0	0	0	1	0
1	RESERVED	0	0	0	0	0	0	0	1
0	RESERVED	0	0	0	0	0	0	0	0

NOTE: **Addresses 124...76 (shaded in grey) are allowed branching unit addresses!**

NOTE: **Do not use addresses (125) ... (77) for drive addresses!**

*****)** Switch positions: 0 = OFF and 1 = ON

******)** Default address

Example: Address 76 $\Rightarrow$ Make settings with Switch **S1/8 ... S1/1**

$\Rightarrow$ $\underline{0} \times 2^7 + \underline{1} \times 2^6 + \underline{0} \times 2^5 \ldots \underline{0} \times 2^0 = 76$

Type of optical components

Table 2/2: Type of optical components

UNIT	NAME	CHANNEL	5 MBd	10 MBd
NISA-03	DDCS/ISA Bus Interface	CH 0	**X**	
		CH 1		**X**
NDPC-02	DDCS/PC card cable, 5 MBd		**X**	
NDPC-12	DDCS/PC card cable, 10 MBd			**X**
NDBU-85	DDCS Branching Unit, 8+1 Ch	MSTR, CH 0		**X**
		CH 1...CH 8	**X**	
NDBU-95	DDCS Branching Unit, 9 Ch	MSTR, CH 0...CH 8		**X**