

# DCS Thyristor Power Converters for DC Drive Systems 25 to 5150 A

## Update Operating Instructions **DCS 600 MultiDrive**

CANopen	<b>NCAN-02</b>
ControlNet	<b>NCNA-01</b>
DeviceNet	<b>NDNA-02</b>
Modbus	<b>NMBA-01</b>
PROFIBUS	<b>NPBA-12</b>



# DCS 600 and CANopen with NCAN-02

## Hardware

DCS 600	SDCS-AMC-DC Classic	board
NCAN-02	CANopen fieldbus adapter	adapter
Cable	length 2 m	plastic fibre optic
Transmission speed	ControlNet fieldbus	max. 500 kbps

## Associated publications

DCS 600	Technical Data	3ADW000165 ABB Lampertheim
	Software Description	3ADW000076 ABB Lampertheim
NCAN-02	Fieldbus Adapter with DC-Drives	3ADW 000 149 Z0201
	Installation and Start-up Guide	3BFE 64254154 R0125
	LN data base	GLOBAL\DEIND\DEIND052.NSF

## Software settings

DCS 600	parameter	98.02 =	Fieldbus	
		70.01 =	1	
		70.02 =	15 (default)	
		70.04 =	4 MBAUD (default)	
		70.20 =	1	
		set parameters in group 90 to group 93 as needed		
DCS 600	fieldbus group	51.01 =	NCAN-02 Vx.y	Module name (rd. only)
		51.02 =	(0) Fault (1) AUTO RESET	WD Mode
		51.03 =	1 ... 127	Node ID
		51.04 =	(0) Mbit/s (1) 500 kbit/s (2) 250 kbit/s (3) 125 kbit/s (4) 100 kbit/s (5) 50 kbit/s (6) 20 kbit/s (7) 10 kbit/s	Baud Rate
		51.05 =	(0) CSA 2.8/3.0 (1) ABB DRIVES (2) TRANSPARENT	Comm. Profile
		51.06 =	0 ... 255	Cut-Off Timeout
		51.07 =	(0) SELF TEST (1) RX Q OVERRUN (2) CAN OVERRUN (3) BUS OFF (4) ERROR SET (5) ERROR RESET (6) TX Q OVERRUN (7) DISCONNECTED (8) STARTED (9) STOPPED; (10) G FAILS (11) PRE-OPERAT (12) RESET COMM. (13) RESET NODE	Status (read only)
		51.08 =	(0) FBA D SET 1 (1) FBA D SET 10	Dataset Index
		51.09 =	1 ... 2	No. of Datasets
		<b>Note:</b> After change of Parameters Group 51 switch OFF and ON the DCS 600 and the Fieldbus adapter!		

## Example for a switch on sequence

send to MCW (7.01)	0476H	OFF=0; drive has to be in state RDY_ON
	0477H	ON=1; start fan, excitation and close main contactor; drive changes to state RDY_RUN
	047FH	RUN=1; release controllers; drive changes to state RDY_REF

# DCS 600 and ControlNet with NCNA-01

## Hardware

DCS 600	SDCS-AMC-DC Classic	board
NCNA-01	ControlNet fieldbus adapter	adapter
Cable	length 2 m	plastic fibre optic
Transmission speed	ControlNet fieldbus	5 Mbps

## Associated publications

DCS 600	Technical Data	3ADW000165 ABB Lampertheim
	Software Description	3ADW000076 ABB Lampertheim
NCNA-01	Fieldbus Adapter with DC-Drives	3ADW 000 xxx Z0101
	Installation and Start-up Guide	3AFY 64498908 (Rev. B or later)
EDS	EDS file for PLC configuration	NCNA-01.eds
	LN data base	GLOBAL\DEIND\DEIND052.NSF

## Software settings

DCS 600	parameter	98.02 =	Fieldbus	
		70.01 =	1	
		70.02 =	15 (default)	
		70.04 =	4 MBAUD (default)	
		70.20 =	1	
		set parameters in group 90 to group 93 as needed		
DCS 600	fieldbus group	51.01 =	NCNA-01 Vx.y	Module name (read only)
		51.02 =	1 ... 99	MAC ID (read only)
		51.03 =	(0) WRONG STATE (1) SELFTESTS (2) CHK FOR NET (3) WAIT F ROUGE (4) CHECK MODER. (5) SEND IM ALIVE (6) ONLINE (7) LISTEN ONLY (8) MAC ERROR	Net Mode (read only)
		51.04 =	(0) MODULE FREE (1) MODULE OWNED	Connection State (read only)
		51.05 =	(0) FBA DSET 1 (1) FBA DSET 10	Dataset Index
		51.06 =	1 ... 20	No. of Datasets
		51.07 =	(0) STOP (1) FREEZE	Scnr Idle Mode
		<b>Note:</b> After change of Parameters Group 51 switch OFF and ON the DCS 600 and the Fieldbus adapter!		

## Example for a switch on sequence

send to MCW (7.01)	0476H	OFF=0; drive has to be in state RDY_ON
	0477H	ON=1; start fan, excitation and close main contactor; drive changes to state RDY_RUN
	047FH	RUN=1; release controllers; drive changes to state RDY_REF

# DCS 600 and DeviceNet with NDNA-02

## Hardware

DCS 600	SDCS-AMC-DC Classic	board
NDNA-02	fieldbus adapter	adapter
Cable	length 2 m	plastic fibre optic
Transmission speed	DeviceNet fieldbus	max. 500kBit/s

## Associated publications

DCS 600	Technical Data	3ADW000165 ABB Lampertheim
	Software Description	3ADW000076 ABB Lampertheim
NDNA-02	Fieldbus Adapter with DC-Drives	3ADW 000 150 Z0201
	Installation and Start-up Guide	3AFY 58919829 R0325
EDS	EDS file for PLC configuration	e.g. DDCS6620a.eds
	LN data base	GLOBAL\DEIND\DEIND052.NSF

## Software settings

DCS 600	parameter	98.02 =	Fieldbus	
		70.01 =	1	
		70.02 =	15 (default)	
		70.04 =	4 MBAUD (default)	
		70.20 =	1	
		set parameters in group 90 to group 93 as needed		
DCS 600	fieldbus group	51.01 =	NDNA-02 Vx.y	read only
		51.02 =	0 ... 63	MAC ID
		51.03 =	125, 250, 500 kBit/s	Baud Rate
		51.04 =		Status (read only)
		51.05 =	ABB Drives	Profile Selection
		51.06 =	TRANSPARENT (for 1 dataset) MUL. DATASET (for <1 dataset)	Poll Output selection
		51.07 =	(see 51,06)	Poll/Cos Input Sel
		51.08 =	(see 51,06)	Cos Data Output
		51.09 =	TRANSPARENT PARAMETERS	Bit Strobe Output
		51.10 =	FBA DSET 1	Dataset Index
		51.11 =	<i>not relevant</i>	Speed Ref. Scale
		51.12 =	<i>not relevant</i>	Speed Act. Scale
		51.13 =	<i>not relevant</i>	ABB Drive Stop
		51.14 =	<i>not relevant</i>	Ramp Stop Level
		51.15 =	1 (for only 1 dataset) x (for x datasets)	No. of Dataset
<b>Note:</b> After change of Parameters Group 51 switch OFF and ON the DCS 600 and the Fieldbus adapter!				

## Example for a switch on sequence

send to MCW (7.01)	0476H	OFF=0; drive has to be in state RDY_ON
	0477H	ON=1; start fan, excitation and close main contactor; drive changes to state RDY_RUN
	047FH	RUN=1; release controllers; drive changes to state RDY_REF

# DCS 600 and Modbus with NMBA-01

## Hardware

DCS 600	SDCS-AMC-DC Classic	board
NMBA-01 V1.7 (or higher)	MODBUS fieldbus adapter	adapter
Cable	length 2 m	plastic fibre optic
Transmission speed	MODBUS fieldbus	19,6 kbps

## Associated publications

DCS 600	Technical Data	3ADW000165 ABB Lampertheim
	Software Description	3ADW000076 ABB Lampertheim
NMBA-01	Fieldbus Adapter with DC-Drives	3ADW 000 051 Z0101
	Installation and Start-up Guide	3AFY 58919772 R0225
	LN data base	GLOBAL\DEIND\DEIND052.NSF

## Software settings

DCS 600	parameter	98.02 =	Fieldbus	
		70.01 =	1	
		70.02 =	15 (default)	
		70.04 =	4 MBAUD (default)	
		70.20 =	1	
		set parameters in group 90 to group 93 as needed		
DCS 600	fieldbus group	51.01 =	NMBA-01 Vx.y	Module Type (read only)
		51.02 =	(0) RTU wdg.flr (def.) (1) RTU wdg.rst	MODBUS Mode
		51.03 =	1 ... 247	Station Number
		51.04 =	(0) 1200 (1) 2400 (2) 4800 (3) 9600 (default) (4) 19200	Baud Rate
		51.05 =	(0) Even (1) Odd (2) None 2 S.Bit (def.) (3) None 1 S.Bit	Parity
		51.06 =	0 ... 32767	Good Messages (read only)
		51.07 =	0 ... 32767	Bad Messages (read only)
		51.08 =	(0) CH0 (default) (1) CH3	DACS Channel
		<b>Note:</b> After change of Parameters Group 51 switch OFF and ON the Fieldbus adapter!		

## Example for a switch on sequence

send to MCW (7.01)	0476H	OFF=0; drive has to be in state RDY_ON
	0477H	ON=1; start fan, excitation and close main contactor; drive changes to state RDY_RUN
	047FH	RUN=1; release controllers; drive changes to state RDY_REF

# DCS 600 and PROFIBUS with NPBA-12

## Hardware

DCS 600	SDCS-AMC-DC Classic	board
NPBA-12	PROFIBUS fieldbus adapter	adapter
Cable	length 2 m	plastic fibre optic
Transmission speed	PROFIBUS fieldbus	max. 12 Mbps

## Associated publications

DCS 600	Technical Data	3ADW000165 ABB Lampertheim
	Software Description	3ADW000076 ABB Lampertheim
NPBA-12	Fieldbus Adapter with DC-Drives	3ADW 000 156 Z0201
	Installation and Start-up Guide	3BFE 64341588 R0125
	LN data base	GLOBAL\DEIND\DEIND052.NSF

## Software settings

DCS 600	Parameter	98.02 =	Fieldbus	
		70.01 =	1	
		70.02 =	15 (default)	
		70.04 =	4 MBAUD (default)	
		70.20 =	1	
		set parameters in group 90 to group 93 as needed		
DCS 600	fieldbus group	51.01 =	NPBA-12 Vx.y	Module name (rd. only)
		51.02 =	(0) DP *	Protocol
			(1) DPV1	
		51.03 =	(0) PPO 1 *	PPO Type
			(1) PPO 2	
			(2) PPO 3	
			(3) PPO 4	
			(4) PPO 5	
		51.04 =	2 to 126 (* 2)	Node Number
		51.05 =	1 to 4 (* 1)	No. of Data Sets
51.06 =	(0) FBA D SET 1 *	Data Set Index		
	(1) FBA D SET 10			
51.07 =	0 to 255 (* 30)	Cut-Off Timeout		
51.08 =	(0) ABB DRIVES *	Comm. Profile		
	(1) CSA 2.8/3.0			
51.09 =	(0) STOP *	Control Zero Mode		
	(1) FREEZE			
<b>Note:</b>		After change of Parameters Group 51 switch OFF and ON the DCS 600 and the Fieldbus adapter! (* = default)		

## Example for a switch on sequence

send to MCW (7.01)	0476H	OFF=0; drive has to be in state RDY_ON
	0477H	ON=1; start fan, excitation and close main contactor; drive changes to state RDY_RUN
	047FH	RUN=1; release controllers; drive changes to state RDY_REF





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