

DCE 500, DCE 600

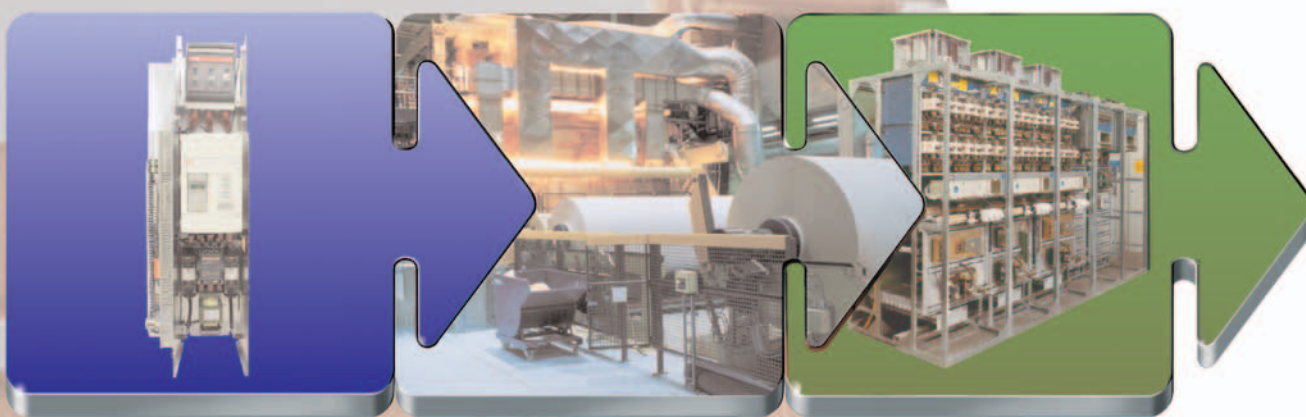
DC Drive Panel Solution

25...450 A DC

PRE-MOUNTED

PRE-ENGINEERED

FAST INSTALLATION

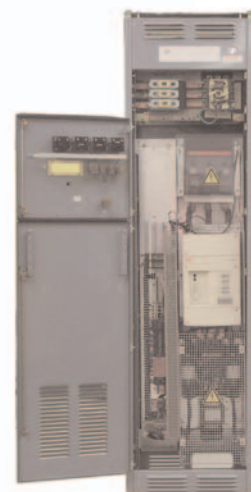


DIN EN ISO 9001

DIN EN ISO 14001

Standard Features

- All necessary components installed
- Easy installation: 'Ready for use'
- Very short installation time
- Reduces power-down-time in rebuilding projects to a minimum



ABB



DCE mounted in old cabinet



DCE bottom view



DCE top view



DCE side view

- Main contactor
- DC fuses *
- Aux. transformer
- DC output terminals *
- * as option

The DCE 500/600 Panel Solution

The DCE 500/600 is a compact user-friendly Panel-Solution. It offers all needed components pre-mounted, fully wired and factory-tested. While mounting it into an empty cabinet the mechanical installation will be completed. This ready-to-use concept allows to squeeze the power-down-time in rebuilding projects to a minimum.

The DCE 500/600 aims for revamping projects to replace old DC-Drives up to 450 A, where the most economic solution is to replace the whole drive including thyristor stack and field exciter.

When re-using the power part in bigger-sized DC-Drives please take our special Rebuild Kits in consideration, that are tailor made for special ancient converters (e.g. Tyrak8 Rebuild Kit for old ASEA Tyrak Series) and offer modern digital control and auxiliary electronics, while the thyristor stack and other power-parts can be re-used.

Features

- Output currents from 25 to 450 A DC.
- AC input voltage from 400 to 600 V AC.
- AC-Connection from top. Bottom-Connection can also be realized.
- DC-connection from bottom of DCS-Module or from DC-fuses if ordered.
- Pre-wired DC-Terminals at very bottom of DCE-Panel as option for re-using existing motor cables.
- DCE is fully tested with DC-motor acc. DCA 500/600 Enclosed Converters Test Specification.
- Special solutions for Pulp&Paper (incl. Safety relay) and Crane Applications (incl. Shared motion) available.
- The DCE 500/600 is available in different types:
 - DCE 500 Standard - for standard applications with DCS 500.
 - DCE 600 Standard - for standard applications with DCS 600.
 - DCE 600 Pulp and Paper - with safety relay for P&P-Applications.
 - DCE 600 Crane Drive - with Crane software and prepared for shared motion.

For every type a wide range of options is offered.

User Benefits

- Cost-Saving by reusing long-life components, like cabinet, power cables or busbars, incoming disconnect and line fuses and other power parts.
- Digital technology with up-to-date communication interfaces and control performance offers increased process availability, quality and productivity.
- Pre-engineered standard solution requires only a minimum of engineering time.
- Pre-mounted components on a ready-to-connect panel offer reduced installation time.
- System shut down time can be squeezed to a minimum.
- Additional tools for simple assembly on site.

Layout

DCE 500/600 consists of 3 separate units:

- **Power unit**
 - Includes all power devices.
- **Aux unit**
 - Includes all auxiliary devices
 - Can be mounted either on the left or on the right side of the power unit.
- **I/O unit**
 - For IOB-2/3, IOE1, PS5311 and terminals.
- All three units are fixed together to be mounted as one single unit.
- They may also be mounted separately in different places for space saving and small cabinets.

Mounting

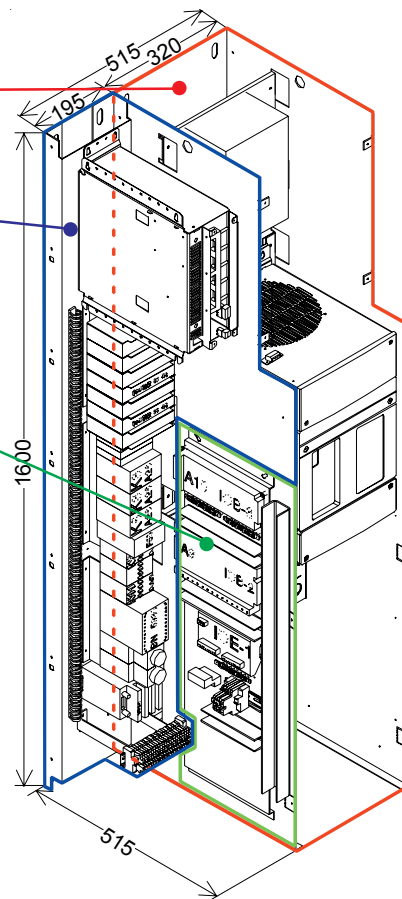
A mounting kit is available for Standard Tyrak 8/L cabinets (Types YxMK, YxML, YxMp). It consists of an upper and lower mounting support, that are screwed to the cabinet for easy fixing of the panel, and two sliding rails for easily sliding the whole DCE-Panel into the cabinet. The Sliding Rails may be removed and re-used after the installation. Mounting kits for other types of cabinets on request.



DCE mounting supports



Sliding rails in cabinet bottom



With total dimensions of WxDxH=515x515x1600 mm the DCE Panel can be used for most cabinets with a footprint of 600x600 mm.

DCE 500 / 600 Panel Solution unit types

Unit type	DC I ① [A]	DC II current		DC III current		DC IV current		Power loss ② [kW]
		100 % 15 min	150 % 60 sec.	100 % 15 min	150 % 120 sec.	100 % 15 min	200 % 10 sec.	
400 V / 500 V								
DCE n0x-0025-4/51-960t	22	21	32	20	31	18	35	<0.58
DCE n0x-0050-4/51-960t	45	40	59	37	56	36	72	<0.65
DCE n0x-0075-4/51-960t	67	53	80	50	75	50	100	<0.72
DCE n0x-0100-4/51-960t	90	64	96	62	93	61	122	<1.00
DCE n01-0140-4/51-960t	115	87	130	83	123	83	166	<1.00
DCE n02-0140-4/51-960t	125	95	142	91	136	91	186	<1.00
DCE n01-0200-4/51-960t	160	119	180	118	178	99	198	<1.51
DCE n02-0200-4/51-960t	180	134	201	131	197	111	223	<1.51
DCE n01-0250-4/51-960t	210	150	225	141	212	124	248	<1.51
DCE n02-0250-4/51-960t	225	159	239	150	225	132	264	<1.51
DCE n01-0350-4/51-960t	285	219	329	211	316	192	384	<1.89
DCE n02-0350-4/51-960t	300	228	342	222	333	200	400	<1.89
DCE n01-0450-4/51-960t	365	285	428	275	413	254	509	<2.47
DCE n02-0450-4/51-960t	405	316	475	306	459	283	567	<2.47
DCE n01-0520-4/51-960t	400	308	462	290	435	275	550	<2.57
DCE n02-0520-4/51-960t	450	345	517	330	495	308	616	<2.57
600 V								
DCE n0x-0050-61-960t	45	43	65	42	62	36	72	<0.63
DCE n01-0110-61-960t	95	75	112	71	106	71	142	<0.98
DCE n02-0110-61-960t	100	79	118	75	112	75	150	<0.98
DCE n01-0270-61-960t	220	174	260	152	228	152	304	<1.81
DCE n02-0270-61-960t	240	190	285	166	249	166	332	<1.81
DCE n01-0450-61-960t	370	290	435	258	387	258	516	<2.47
DCE n02-0450-61-960t	400	313	469	279	418	279	558	<2.47

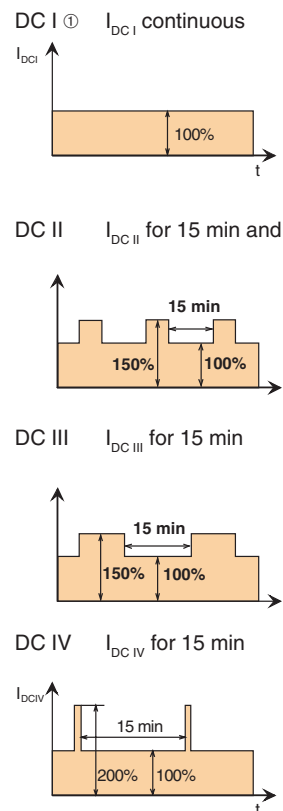
Table 1: DCE 500/600 types

n=5 ⇒ DCE 500 x=1 ⇒ 2-Q converter t=1 ⇒ Standard type
n=6 ⇒ DCE 600 x=2 ⇒ 4-Q converter t=2 ⇒ P&P type

Voltage class: (example: DCE n0x-0025-41-960t)
4 ⇒ 400V 5 ⇒ 500V 6 ⇒ 600V

① = Given Ratings are typical values for mounting in IP 21 cabinets; actual values may differ and are strongly depending on the cabinet and its cooling, especially with higher protection classes
② = Values are valid for Standard Scope of delivery without options

Load cycles



Scope of delivery and options

Standard Scope of Delivery	Remarks			
		DCE 50x (Std)	DCE 60x (Std)	DCE 60x (P&P)
DCS 500 module	DCS50xB-0025 to ...-0520 (Designcurrent 22-450A DC)	X		
DCS 600 module	DCS60x-0025 to ...-0520 (Designcurrent 22-450A DC)		X	X
Main Contactor K1		X	X	X
Standard Fuseholder incl. Semiconductor Fuses F1	Fuseholder incl. Disconnecting device as option	X	X	X
Power unit has Protection Class IPaUC	as standard	X	X	X
AC-connection at top of F1, DC-connection at DCS-Module bottom (if DC-Fuses are selected, DC-connection is at bottom of DC-fuses)	for 1.5m long pre-mounted AC- and DC-cables check options	X	X	X
Auxiliary Devices				
Digital I/O-board IOB-2x		.	.	.
Converter Fan contactor K8		X	X	X
EStop Time Relay K15		X	X	X
Safety Relais A04 acc. to P&P Standard	not possible, when 2nd Fex is installed (shared Motion)			X
Aux. Transformer T2 incl. F2 and MCB F5 on secondary side	T2 primary side not connected to incoming AC-Supply, but to terminals. Connection to be done by user.	X	X	X
Fusing of Auxiliary Circuits with MCBs	as standard	X	X	X
Single Wires are tinned	as standard	X	X	X
Complete set of drawings in a binder	as standard	X	X	X

Options (price see pricelist)

Power Devices				
Line Chokes L1 Type NDxx uk=1%	For light Industrial Environment	.	.	.
Field Exciter Circuit 16A incl. Fex-2 K3 + L3 + F3	Fex-2 and L3 K3 and F3	.	.	.
Field Transformer T3	depending on line and field voltage	.	.	.
Fuseholder incl. Disconnecting Function (F1)	replaces Standard Fuseholder	.	.	.
Motor Fan Supply for Motor Currents/A (please specify when ordering): 0.4-0.63; 0.63-1; 1-1.5; 1.5-1.7; 1.7-2.3; 2.3-3; 3-3.8; 3.8-4.8; 4.8-6.3; 6.3-8	incl. K6, F6, F60 not possible, when 2nd Fex is installed (shared Motion)	.	.	.
DC-Fuse-Holder and DC-Fuses for Armature Circuit		.	.	.
I/O Options				
Analogue I/O-Board IOB-3	also necessary for Residual Current Detection	.	.	.
I/O Extension Board IOE-1	6xDI, 2xAI	.	.	.
24V Supply 2A		.	.	.
Local I/O Control with latching function	incl. K11+K12	.	.	.
Electrical Disconnect K16		.	.	.
Aux Control Voltage 115V (IOB-22)		.	.	.
Fieldbusadapter		.	.	.
AMC-DC Classic Board (for use with fieldbus adapters)		.	.	.
Crane Options				
Crane Software DC18	replaces Standard DCS600 Multidrive Software DC15	.	.	.
IOB2x I/O Selection for shared Motion 3ASC10K134		.	.	.
Field Exciter circuit 30A DCF503/504	incl. Contactor (K3.1) incl. Line choke (inside DCF-Module) also possible as 2nd Fex for Shared Motion NOT possible when Motor Fan Startup OR Safety Relay is selected	.	.	.
Encoder Change-over Switch for shared Motion		.	.	.
Other Options				
Coated Boards		.	.	.
Cable Marking A2 plus		.	.	.
Prepared for UL certification (Cabling and Aux-Fuses)		.	.	.
Control Panel CDP312		.	.	.
Door Mounting Kit for Panel CDP312		.	.	.
Tacho Adaption Kit PS5311 incl. Tacho Cable	max. 300V	.	.	.
2 pc cable W0205 + W0206, each 7x1mm ² , 4m	loose delivery, free of use	.	.	.
Spare cable 4*2*0.5, 4m long	can be used for encoder, IOB-2x, IOB-3 and IOE	.	.	.
AC and DC Connection cables	3 pc. AC-cables connected to the AC-fuseholder plus 2 pc DC output terminals at the very bottom of the power unit	.	.	.
Mounting Kit	2 Mounting Supports to be screwed into the old cabinet plus 2 rails for sliding the Kit easily into the cabinet, to be removed after mounting. Details see mounting instruction.	.	.	.

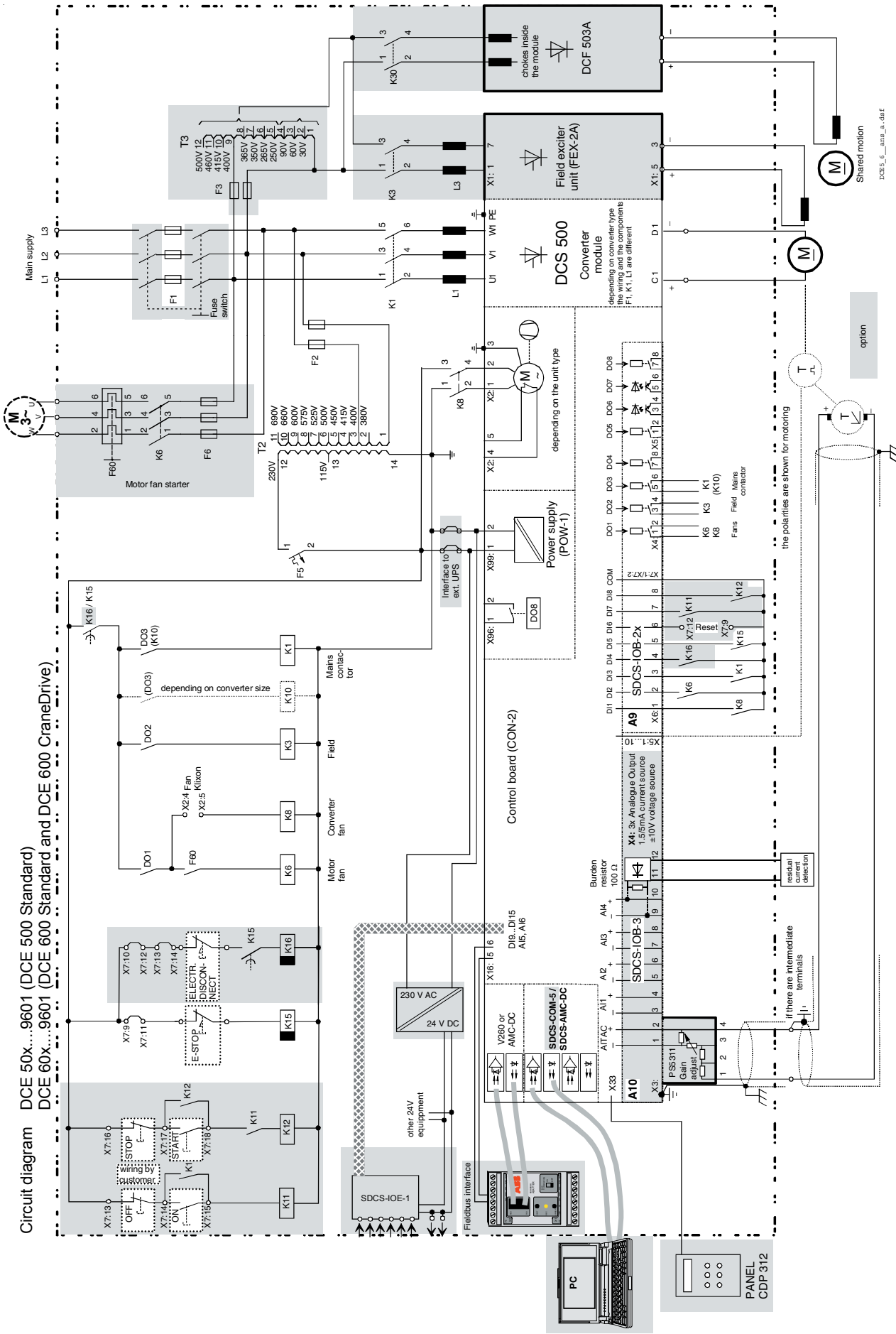


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**Circuit diagram DCE 50x...9601 (DCE 500 Standard)
DCE 60x...9601 (DCE 600 Standard and DCE 600 CraneDrive)**



Circuit diagram DCE 60x...9602 (DCE 600 P&P)

