

DCS Thyristor Power Converter

for DC Drive Systems

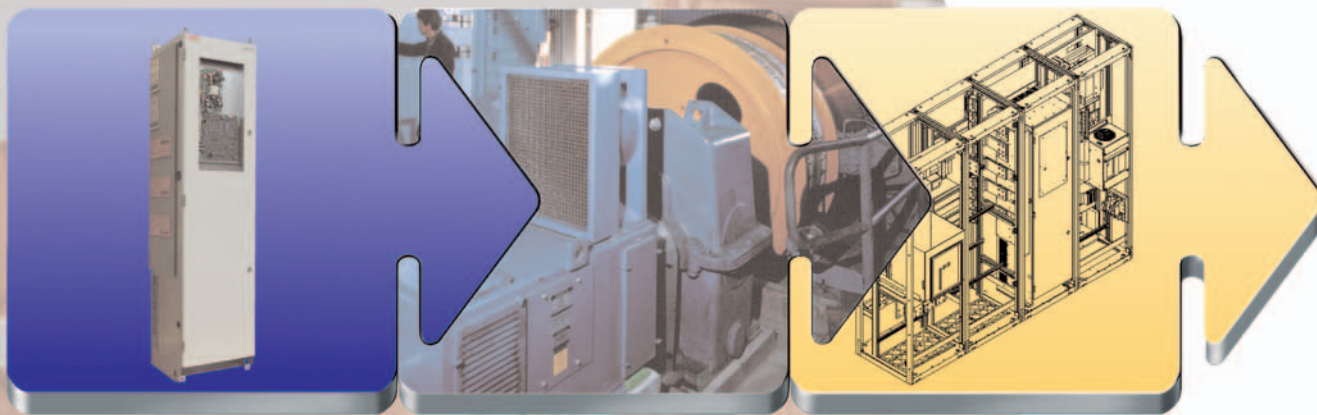
22 to 9800/19600 A

**DCA 500, DCA 600
Enclosed Converters**

MODERN DESIGN

DEMANDING APPLICATIONS

PROCESS FOCUSED



CE

DIN EN ISO 9001

DIN EN ISO 14001

Standard Features

- Flexible and modular hardware structure
- Line-ups and stand-alone cabinets
- Integrated automation system available
- 6- and 12-pulse configuration up to 18 MW / 23,000 HP
- Supply voltage from 230 V to 1000 (1190) V



ABB

DCA 500 Enclosed Converters

Latest Technology, High Performance and a User-Friendly Concept

DCA 500 are DCS 500 converter modules mounted in an enclosure.

The DCA 500 series is a complete range of enclosed converters with high performance and reliability intended for the supply and control of DC machines.

DCA 500 should be selected, if:

- maximum flexibility in the firmware is required
- the drive itself should be programmable
- it is used in a stand-alone application (no overriding control at all)
- a serial communication (e.g. Profibus) is used
- 12-pulse parallel operation is used (12-pulse serial is not available).

DCA 500 Concept

A wide selection of options is available to provide the user with a system meeting the most demanding technical requirements and performance expectations as well as many safety standards.

Common control electronics throughout the whole range reduce spare parts inventory and training.

The DCA 500 is a freely programmable drive to meet almost every application, templates like Master-Follower, Winder etc. can be obtained from ABB.

The drive system functionality can be integrated with various fieldbus control systems from simple to factory-wide control.

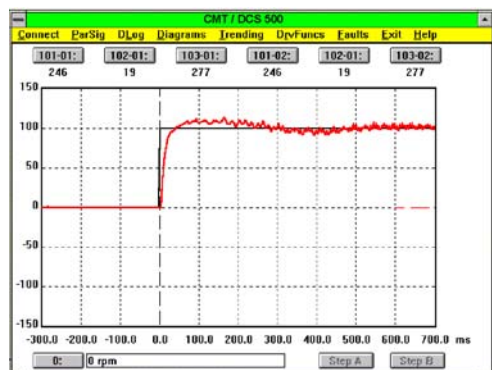
Wide Variety of Industrial Applications

The DCA 500 can handle most demanding applications like:

- Metals
- Pulp & Paper
- Material handling
- Test rigs
- Food & Beverage
- Printing
- Plastic & Rubber
- Oil rigs
- Vessels
- Ski lifts
- Magnets
- MG Sets
- Electrolysis
- Battery Chargers
- and more

Software Tools

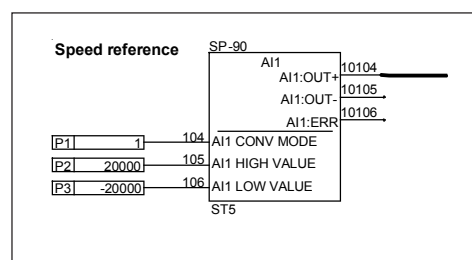
- Effort, time and cost will be saved with the user-friendly DDCTool (includes CMT-Tool; Commissioning and Maintenance tool) for drive programming, commissioning, monitoring and maintenance.



- Data Logger
- Trending
- Fault Logger
- Parameter/Signals
- Local operation

- GAD Tool (Graphical Application Designer) contains an extensive library of standard function blocks for the creation of customized software solutions creating conveniently the documentation during programming.

Both, CMT and GAD, represent a powerful tool for the design, commissioning and service engineer to achieve best results and high performance.



Drive Control Panel CDP 312

The optional drive control panel provides drive information in user-friendly plain text. Three separate actual signal values can be displayed simultaneously with up to twenty characters per line.

Using a single detachable control panel, parameters can be easily copied from converter to converter.



Drive Control Panel CDP 312 is connected to the converter.

DCA 600 Enclosed Converters

Latest Technology, High Performance and a User-Friendly Concept

DCA 600 are DCS 600 converter modules mounted in an enclosure.

The DCA 600 series is a complete range of enclosed converters intended for the supply and control of DC machines.

DCA 600 should be selected if: • an ABB overriding control system (e.g. AC 800M, AC 80) is available • group drive systems are needed (MultiDrive concept) • 12-pulse parallel or serial operation is used.

DCA 600 enclosed converters are fully digital. Optional equipment is available to meet different safety standards. The converter can be used for standard applications but has the flexibility to be customized for the most demanding applications.

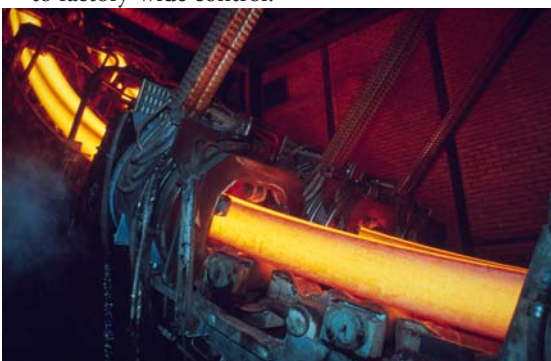
Comprehensive Product Range

DCA 600 enclosed converters are available as 6-/ 12-pulse and in 2- or 4-quadrant, with current ranges from 22 to 9800/19600 A and supply voltages of 230...1000 (1190) V AC. A selection of options is available to provide the user with a system meeting the most demanding technical requirements and performance expectations.

Common control electronics throughout the product range reduces spare parts inventory and training requirements.

DCA 600 Concept

- A single drive control technology is available for a wide power range to reduce training costs and meets the requirements of various applications.
- Common AC busbar designs for group drives are available for the most cost-efficient and functional system structure.
- Ready to use master follower function via high-speed optical link.
- Integrated application control solution at drive level is available to optimize the configuration of the drive system. Application and Motor Controllers are used for coordination via an optical communication link.
- Distributed application control solutions at drive level are available for large drive systems. Application Controllers are used for coordination through a fast dedicated fieldbus.
- The drive system functionality can be integrated with various fieldbus control systems, from simple to factory-wide control.



Wide Variety of Industrial Applications

The DCA 600 series can handle the most demanding applications in:

- rolling mills
- pulp and paper
- metals (casters, processing lines etc.)
- material handling (cranes, mine hoists etc.)
- kiln drive
- test rigs

Digital Control

To meet the most stringent control requirements, the DCA 600 features speed control, which reduces the effects from gear backlash and torsional vibration arising in mechanical systems.

High-performance speed and torque control will fulfill all requirements for rapid response and high control accuracy. Autotuning for armature and field current controller simplifies the commissioning.

Software Tools

- Effort, time and cost savings with the powerful, user-friendly **Drive Window Tool** for drive systems, commissioning, monitoring and maintenance.
- **Control^{IT} Control Builder** is used for programming. It contains an extensive library of standard function blocks for the creation of customer specific applications. The documentation is conveniently created during programming.

Advantage from ABB:

- Same user surface and software tools for DC and AC Drives.

Structure of line-ups

DCA 500 / 600 enclosed converters

DCA 500 / 600 enclosed converters are suitable for three-phase supply voltages from 230 V to 1000 (1190) V, 50 or 60 Hz. The rated DC current range is from 22 to 9800/19600 A.

DCA 500 / 600 enclosed converters with rated DC current from 22 A up to 1850 A are available in two different layouts:

- Single drive configuration without horizontal busbars therefore AC cable connection
- Group drive configuration with horizontal busbars (size-depending on rated amps)

Group drives from sizes A6 and A7 on request.

DCA 500 / 600 can be tailored to meet different needs by using combinations of the following options:

- Earth Fault Protection (current sensitive) • Insulation Monitor (voltage sensitive) • Motor Fan Starter • Galvanic Isolation of converter voltage measurement • Cabinet design according to EMC-regulations • EMC Filters • Protection Class IP 21- Standard • Protection Class IP 31 with filter (insect screen) in air inlet and outlet • Protection Class IP 42 with filter in air inlet; air outlet same as IP 21 • IP 54 on request • Gland plate and bottom plate • Special Colour (only outside) acc. to RAL standard • Heater • Lighting • Horizontal Busbars

CE mark requires the options

EMC procedure/part list check

EMC filter or dedicated transformer (performed by the customer)

Cable marking A2 plus

Incoming Supply Sections for Group Drives only

In the incoming supply section (DCA 63x) only busbars are used. The connection to the AC supply can be made by cables or busbars. The cable / busbar entry is at the bottom of the incoming supply section.

Cable or busbar connection for 1000 A AC and 2000 A AC is possible.

Cable connection for 3000 A AC and 4000 A AC is on request, busbar connection is standard.

The cabinets standard protection class is IP21.

Basic design

Rated voltage: 400, 500, 600, 690 V

Rated frequency: 50 or 60 Hz

Rated current: 1000, 2000, 3000, 4000 A AC

Short circuit ratings: 50 kA (1 sec.)

$i_{dyn} = 105 \text{ kA (peak)}$

Options

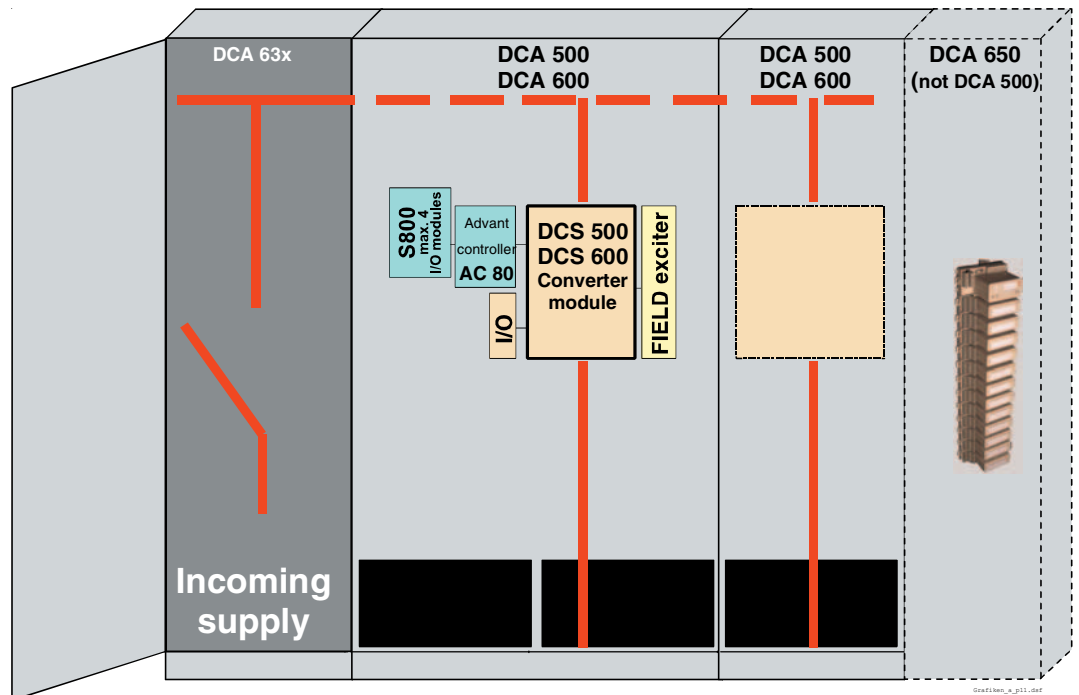
- Cabinet design according to EMC-regulations • Isolation Switch (DCA 631) • Breaker (DCA 632) • Earthing switch • Residual Current Detection • AC Current Measurement • AC Voltage Measurement • Arc Detecting Relay • Emergency stop relays, tripping circuits • Advant controller AC 80 (not DCA 500), AC 800M • Fieldbus interface FCI (AF100), Modbus, Profibus etc.

Important!

EN61800-3 (IEC 1800-3) standard requires the options

EMC procedure/part list check

EMC filter or dedicated transformer (performed by the customer)



Field Exciters

Several Solutions available

- Ratings from 6 to 450 A
- Integrated, separate or external
- 2-phase or 3-phase versions
- 1-; 2-; 4-Quadrant
- Digital control
- Auto/manual tuning

The field exciters are controlled via a serial link with a speed of 62.5 kBaud for fast and accurate control.

In the DCA 500 / 600 enclosed converter an autotransformer is optional to reduce voltage ripple in the field circuit by adapting the AC voltage to a suitable level.

Diode Field Exciter

SDCS-FEX-1: 6 A

2-phase, integrated in the converter module

Digital Controlled Field Exciters

SDCS-FEX-2A: 16 A

2-phase, 1-quadrant, integrated in the converter module

DCF 503A: 50 A

2-phase, 1-quadrant, outside the converter module

DCF 504A: 50 A

2-phase, 4-quadrant, outside the converter module

DCF 501 / 601: 22...400 A

3-phase, 2-quadrant, separate cabinet
(22...285 A inside A6/A7 cabinet is possible)

DCF 502 / 602: 22...450 A

3-phase, 4-quadrant, separate cabinet
(22...300 A inside A6/A7 cabinet is possible)

DCS 500B / DCS 600 Converter modules

Basic design

All units are provided with the same digital control board and software. The DCS 500B / DCS 600 flexibility allows the user to configure functions of the drive easily, suitable for different applications. Functions of the DCS 500B / DCS 600 are normally activated by parameters.

The basic software includes following options:

Processing the speed reference with a speed ramp generator (S-ramp capability, accel/decel ramp) • Processing the speed feedback • Speed controller • Torque reference processing • Current controller • Field weakening • Automatic/manual field reversal • Autotuning of current controller • Speed monitor • Drive control logic • Remote/local operation • Emergency stop • Electronic circuits are not sensitive to line phase sequence • Motor overload protection • Dual field • Programmable analogue outputs • Field supply • Master/follower via fibre optics • 12-Pulse link

Monitoring functions

- Self-test
- Fault logger
- Motor protection
- Power converter protection
- Incorrect supply protection

I/O's of the converter module

The I/O connections in the DCS 500B / DCS 600 converter modules are used for safety and other drive specific functions like emergency stop and motor temperature measurement: • 1 analogue tachometer input • 4 analogue inputs • 2 voltage reference outputs • 3 analogue outputs • 1 actual armature current output • 1 pulse encoder input (with IOB-3 isolated) • 8 digital inputs • 7 digital outputs

More detailed information about SDCS-IOB-2x/3 see *System description DCS 500B / DCS 600*.

DCA 650 AC 80 Cabinet (not DCA 500)

Advant controller AC 80 • Fieldbus interface FCI (AF100) • Location of full range of S800 I/O modules.

Advant controller and S800 I/O System

The S800 I/O system consists of the control module (AC 80 (not DCA 500), FCI, AC 800M), digital and analogue I/O modules. The control module has a connection to several different bus systems and optical channels to connect the drives. The modules are attached to mounting rails (DIN).

Advant controller AC 80 (not DCA 500)

This controller can be used for high-speed applications and coordinated drives. Up to 12 drives can be connected with the optical module bus or up to 12 drives can be connected with the drive bus.

AF 100 field bus interface FCI

Within this AF 100 interface up to 12 drives can be connected.

Advant controller AC 800M

Powerful controller with several fieldbus interfaces. Up to 12 drives can be connected with the optical module bus.

The above mentioned **control modules** can also handle up to 12/24 I/O modules.

Digital inputs and outputs

8 channels • input voltages from 24V...250V

Analogue inputs and outputs (12 bit resolution)
8 channels

Pulse encoder module for AC 80

4 digital inputs • 4 digital outputs • 2 encoder inputs

Engineering Tool for Individual Programming

The Advant controllers (AC 80, AC 800M) are programmable controllers using Control^{IT} Control Builder.

- Graphical editor for creating and modifying program diagrams
- Function-oriented engineering
- Windows-based application programming
- Online editing
- Constant and parameter value changes
- Connection changes
- Deleting/Inserting function blocks or tasks
- Program downloading to AC 80, AC 800M
- Temporary change of input terminal values
- Displaying actual values at terminals



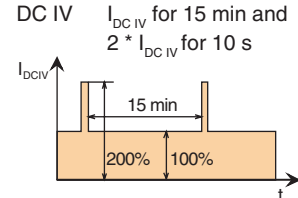
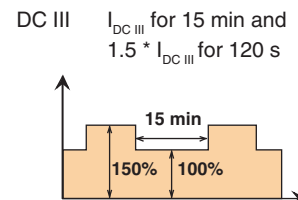
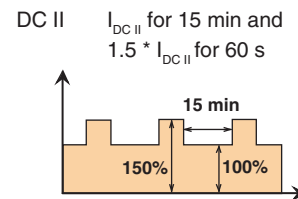
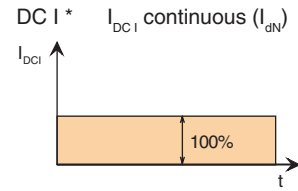
DCA 500 / 600 Enclosed Converter unit types

Unit type	DC I * [A]	DC II current		DC III current		DC IV current		Power loss [kW]	Size	
		100 % 15 min [A]	150 % 60 sec. [A]	100 % 15 min [A]	150 % 120 sec. [A]	100 % 15 min [A]	200 % 10 sec. [A]			
400 V / 500 V										
DCA n0x-0025-4/5y-D	22	21	32	20	31	18	35	<0.58	C1	
DCA n0x-0050-4/5y-D	45	40	59	37	56	36	72	<0.65		
DCA n0x-0075-4/5y-D	67	53	80	50	75	50	100	<0.72		
DCA n01-0140-4/5y-D	115	87	130	83	123	83	166	<1.00	C2	
DCA n02-0140-4/5y-D	125	95	142	91	136	91	186	<1.00		
DCA n01-0250-4/5y-D	210	150	225	141	212	124	248	<1.51		
DCA n02-0250-4/5y-D	225	159	239	150	225	132	264	<1.51	C2b	
DCA n01-0350-4/5y-D	285	219	329	211	316	192	384	<1.89		
DCA n02-0350-4/5y-D	300	228	342	222	333	200	400	<1.89		
DCA n01-0520-4/5y-D	400	308	462	290	435	275	550	<2.57	A5	
DCA n02-0520-4/5y-D	450	345	517	330	495	308	616	<2.57		
DCA n01-0680-4/5y-D	540	432	648	427	641	391	781	<3.01		
DCA n02-0680-4/5y-D	600	480	720	475	712	434	868	<3.01	A6	
DCA n01-0820-4/5y-D	680	551	826	537	806	488	977	<3.65		
DCA n02-0820-4/5y-D	750	607	911	593	889	539	1077	<3.65		
DCA n01-1000-4/5y-D	810	620	931	596	894	547	1094	<4.80	A7	
DCA n02-1000-4/5y-D	900	689	1034	662	994	608	1215	<4.80		
DCA n0x-1203-4/5y-D	1140	843	1265	820	1230	731	1461	<7.64		
DCA n0x-1203T-4/5y-D	1140	1095	1643	1055	1583	912	1824	<7.64	A7P	
DCA n0x-1503-4/5y-D	1425	1140	1709	1048	1573	1048	2097	<10.34		
DCA n0x-2003-4/5y-D	1850	1368	2052	1259	1889	1259	2518	<10.62		
DCA n0x-2053-5y-D ③	1950	1550	2325	1480	2220	1450	2900	<9.70	A6	
DCA n01-2503-4/5y-D ③	2450	1980	2970	1880	2820	1920	3840	<10.20		
DCA n02-2503-4/5y-D ③	2450	2000	3000	1930	2895	1790	3580	<11.20		
DCA n01-3003-4/5y-D	3000	2350	3525	2220	3330	2280	4560	<11.90	A7	
DCA n02-3003-4/5y-D	3000	2330	3495	2250	3375	2080	4160	<13.70		
DCA n0x-3303-4/5y-D ①	3300	2300	3450	2250	3375	2130	4260	<17.20		
DCA n0x-4003-4/5y-D ②	4000	2800	4200	2730	4095	2600	5200	<18.00	A7P	
DCA n0x-5203-4/5y-D ②	5100 ④	3850	5775	3750	5625	3650	7300	<23.50		
DCA n0x-6603-4/5yPD ②	6200	4370	6555	4275	6412	4047	8094	<34.40		
DCA n0x-8003-4/5yPD ②	7600	5320	7980	5187	7780	4940	9880	<36.00	A7P	
DCA n0x-10403-4/5yPD ②	9800	7315	10971	7125	10687	6935	13870	<47.00		
600 V / 690 V										
DCA n0x-0050-6y-D	45	43	65	42	62	36	72	<0.63	C1	
DCA n01-0110-6y-D	95	75	112	71	106	71	142	<0.98		
DCA n02-0110-6y-D	100	79	118	75	112	75	150	<0.98		
DCA n01-0270-6y-D	220	174	260	152	228	152	304	<1.81	C2	
DCA n02-0270-6y-D	240	190	285	166	249	166	332	<1.81		
DCA n01-0450-6y-D	370	290	435	258	387	258	516	<2.47		
DCA n02-0450-6y-D	400	313	469	279	418	279	558	<2.47	A5	
DCA n0x-0903-6/7y-D	855	650	974	565	847	565	1129	<7.20		
DCA n0x-1503-6/7y-D	1425	1140	1709	1048	1573	1048	2097	<10.34		
DCA n01-2003-6/7y-D	1850	1368	2052	1259	1889	1259	2518	<10.62	A6	
DCA n0x-2053-6/7y-D ③	1950	1520	2280	1450	2175	1430	2860	<10.70		
DCA n01-2503-6/7y-D ③	2450	1940	2910	1840	2760	1880	3760	<11.70		
DCA n02-2503-6/7y-D ③	2450	1940	2910	1870	2805	1740	3480	<12.80	A7	
DCA n01-3003-6/7y-D	3000	2530	3795	2410	3615	2430	4860	<13.10		
DCA n02-3003-6/7y-D	3000	2270	3405	2190	3285	2030	4060	<14.50		
DCA n0x-3303-6/7y-D ①	3300	2360	3540	2310	3465	2180	4360	<17.90	A7P	
DCA n0x-4003-6/7y-D ②	4000	3000	4500	2850	4275	2900	5800	<20.10		
DCA n0x-4803-6/7y-D ②	4700 ④	3600	5400	3500	5250	3600	7200	<23.70		
DCA n0x-6603-6/7yPD ②	6200	4484	6726	4389	6583	4142	8284	<35.70	A7P	
DCA n0x-8003-6/7yPD ②	7600	5700	8550	5415	8122	5510	11020	<40.20		
DCA n0x-9603-6/7yPD ②	9000	6840	10260	6650	9975	6840	13680	<47.30		
790 V										
DCA n0x-1903-8y-D ②	1900	1500	2250	1430	2145	1400	2800	<9.90	A6	
DCA n01-2503-8y-D ②	2500	1920	2880	1820	2730	1860	3720	<11.00		
DCA n02-2503-8y-D ②	2500	1910	2865	1850	2775	1710	3420	<11.50		
DCA n01-3003-8y-D ②	3000	2500	3750	2400	3600	2400	4800	<12.50	A7	
DCA n02-3003-8y-D ②	3000	2250	3375	2160	3240	2000	4000	<13.90		
DCA n0x-3303-8y-D ②	3300	2350	3525	2300	3450	2170	4340	<18.10		
DCA n0x-4003-8y-D ②	4000	2950	4425	2800	4200	2800	5600	<20.30	A7P	
DCA n0x-4803-8y-D ②	4700 ④	3600	5400	3500	5250	3500	7000	<23.90		
DCA n0x-6603-8yPD ②	6200	4465	6697	4370	6555	4123	8246	<36.00		
DCA n0x-8003-8yPD ②	7600	5605	8407	5320	7980	5320	10640	<40.50	A7P	
DCA n0x-9603-8yPD ②	9000	6840	10260	6650	9975	6650	13300	<46.50		
1000 V										
DCA n0x-2053-9y-D ②	2050	1500	2250	1450	2175	1350	2700	<15.10	A7	
DCA n0x-2603-9y-D ②	2600	1850	2275	1800	2700	1700	3400	<18.50		
DCA n0x-3303-9y-D ②	3300	2450	3675	2350	3525	2300	4600	<22.80		
DCA n0x-4003-9y-D ②	4000	2850	4275	2800	4200	2750	5500	<23.50	A7P	
DCA n0x-5203-9yPD ②	4900	3515	5272	3420	5130	3230	6460	<36.80		
DCA n0x-6603-9yPD ②	6200	4655	6982	4465	6697	4370	8740	<45.60		
DCA n0x-8003-9yPD ②	7600	5415	8122	5320	7980	5225	10450	<46.80	A7	
1190 V										
ON REQUEST										
DCA n0x-2603-1y-D ②	2600	1900	2850	1830	2745	1850	2775	<21.20	A7	
DCA n0x-3303-1y-D ②	3300	2390	3885	2310	3465	2310	4620	<22.80		
DCA n0x-4003-1y-D ②	3800 A at 7% u _n			4000 A at 14% u _n				<24.50		

DCA 500 / 600 enclosed converters are suitable for three-phase supply voltages from: **230...1000 (1190) V AC 50 or 60 Hz**

Select the DCA 500 / 600 type from Table 1, according to the nominal supply voltage and the rated DC current.

Load cycles



Enclosed 3-phase Field exciters

Unit type	DC I [A]	Power loss [kW]	Size
400 V / 500 V			
DCA n2x-0025-4/5y-D	22	<0.58	C1
DCA n2x-0050-4/5y-D	45	<0.65	
DCA n2x-0075-4/5y-D	67	<0.72	
DCA n2x-0100-4/5y-D	90	<0.90	C2
DCA n21-0200-4/5y-D	160	<1.50	
DCA n22-0200-4/5y-D	180	<1.50	
DCA n21-0350-4/5y-D	285	<1.89	C2
DCA n22-0350-4/5y-D	300	<1.89	
DCA n21-0520-4/5y-D	400	<2.57	
DCA n22-0520-4/5y-D	450	<2.57	

n=5 ⇒ DCA 500 x=1 ⇒ 2-Q converter y=1 ⇒ 50/60 Hz
 n=6 ⇒ DCA 600 x=2 ⇒ 4-Q converter y=5 ⇒ 50 Hz
 P ⇒ hard parallel (two conv. mod. in parallel) y=6 ⇒ 60 Hz
Voltage class: (example: DCA n0x-0025-4y-D)
 4 ⇒ 400V 5 ⇒ 500V 6 ⇒ 600V 7 ⇒ 690V
 8 ⇒ 790V 9 ⇒ 1000V 1 ⇒ 1190V

* Ratings are valid for IP 21; for IP 31 and IP 41 the current derating is calculated by DriveSize
 ① = Air circuit breaker on request ② = Air circuit breaker not available ③ = Reduced current due to standard air circuit breaker. Larger air circuit breakers are available on request.
 ④ with air exit IP20 ⇒ plus 100 A

Table 1: DCA 5xx/6xx types

Dimensions Converter cabinet

Fan data

	Single drive					Group drive						
	Height ①	Depth ② Frame size	Width ③	Width ④	Weight [kg]	Height ①	Depth ② Frame size	Width ③	Width ④	Weight ⑦		
DC-Converter, Size C1												
DCA n0x-0025-4/5y-D	2120	600	600	-	220	2120	600	600	-	190+z		
DCA n0x-0050-4/5y-D	2120	600	600	-	230	2120	600	600	-	200+z		
DCA n0x-0075-4/5y-D	2120	600	600	-	230	2120	600	600	-	200+z		
DCA n0x-0140-4/5y-D	2120	600	600	-	250	2120	600	600	-	220+z		
DC-Converter, Size C2												
DCA n0x-0250-4/5y-D	2120	600	600	-	250	2120	600	600	-	220+z		
DCA n0x-0350-4/5y-D	2120	600	600	-	300	2120	600	600	-	270+z		
DCA n0x-0520-4/5y-D	2120	600	800	-	310	2120	600	800	-	280+z		
DC-Converter, Size C2b												
DCA n0x-0680-4/5y-D	2120	600	800	-	360	2120	600	800	-	330+z		
DCA n0x-0820-4/5y-D	2120	600	800	-	360	2120	600	800	-	330+z		
DCA n0x-1000-4/5y-D	2120	600	800	-	360	2120	600	800	-	330+z		
DC-Converter, Size A5												
DCA n0x-0903-6/7y-D	2120	600	1400	-	620	2120	600	1400	-	590+z		
DCA n0x-1203-4/5y-D	2120	600	1400	-	640	2120	600	1400	-	610+z		
DCA n0x-1203T-4/5y-D	2120	600	1400	-	640	2120	600	1400	-	610+z		
DCA n0x-1503-4/5/6/7y-D	2120	600	1400	-	720	2120	600	1400	-	690+z		
DCA n0x-2003-4/5/6/7y-D ⑥	2120	600	1400	-	740	2120	600	1400	-	710+z		
DC-Converter, Size A6												
DCA n0x-1903-8y-D ④	2120	600	-	2000	850	<i>on request</i>						
DCA n0x-2053-5/6/7y-D ⑤	2120	600	2400	-	1100							
DCA n0x-2503-4/5/6/7y-D ⑤	2120	600	2400	-	1100							
DCA n0x-2503-8y-D ④	2120	600	-	2000	850							
DCA n0x-3003-4/5/6/7y-D ⑤	2120	600	2400	-	1250							
DCA n0x-3003-8y-D ④	2120	600	-	2000	950							
DC-Converter, Size A7												
DCA n0x-2053-9y-D ④	2120	600	-	2100	790		<i>not available</i>					
DCA n0x-2603-9/1y-D ④	2120	600	-	2100	850							
DCA n0x-3303-4/5/6/7/8/9/1y-D ④	2120	600	-	2100	950							
DCA n0x-4003-4/5/6/7/8/9/1y-D ④	2120	600	-	2700 ⑨	1170							
DCA n0x-4803-6/7/8y-D ④	2120	600	-	2700 ⑨	1200							
DCA n0x-5203-4/5y-D ④	2120	600	-	2700 ⑨	1200							
DC-Converter, Size A7P												
DCA n0x-5203-9yPD	2120	600	-	3600	1430							
DCA n0x-6603-4/5/6/7/8/9yPD	2120	600	-	3600	1630							
DCA n0x-8003-4/5/6/7/8/9yPD	2120	600	-	4800 ⑨	2070							
DCA n0x-9603-6/7/8yPD	2120	600	-	4800 ⑨	2140							
DCA n0x-10403-4/5yPD	2120	600	-	4800 ⑨	2140							
Incoming Supply Sections												
DCA 63u-1000-4/5/6/7y-D	<i>not available</i>					2120	600	600	600	300		
DCA 63u-2000-4/5/6/7y-D						2120	600	600	600	320		
DCA 63u-3000-4/5/6/7y-D						2120	600	800	800	340		
DCA 63u-4000-4/5/6/7y-D						2120	600	1000	1000	380		
Busbar joining cabinet ⑤						2120	600	200	-	30+z		

Fan type	Air volume, freely blowing [m³/h]		Module type
	50 Hz	60 Hz	
CN 52 B2	156	180	C1
W2E 143	375	440	C1
W2E 200	925	1030	C2 / C2b
W2E 250	1860	1975	C2b
D2E 160	800	750	A5
GR31G 380 ... 500V	1500	1600	A6 *
GR31M 525 ... 690V	1500	1600	A6 *
GR35C	4200	4250	A7 *
GR35C (2x)	8400	8500	A7P *

* air outlet as air duct interface available

Table 2: Dimensions of the DCA 500/600 series.

n=5 → DCA 500 x=1 → 2-Q converter y=1 → 50/60 Hz u=0 → incom. without switch
 n=6 → DCA 600 x=2 → 4-Q converter y=5 → 50 Hz u=1 → incom. w. insulation switch
 y=6 → 60 Hz u=2 → incom. w. circuit breaker
 u=5 → incom. without options

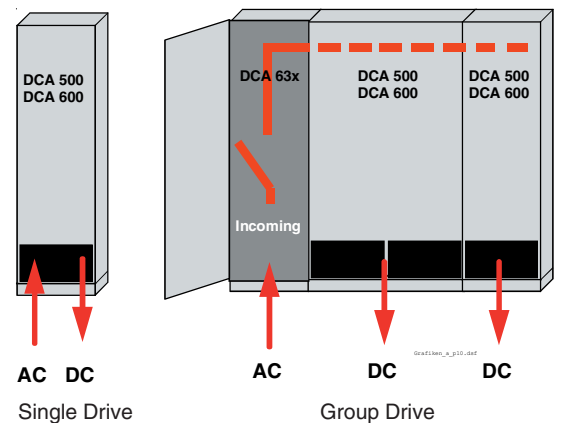
Voltage class: (example: DCA n0x-0025-4y-D)
 4 → 400V 5 → 500V 6 → 600V 7 → 690V
 8 → 790V 9 → 1000V 1 → 1190V

P ⇒ hard parallel (two conv. mod. in parallel)

Notes:

All dimensions are in mm
 Please add for each end panel 15 mm and for a door (without buttons) 20 mm

- ① Height is including detachable hood (120 mm)
- ② **with** circuit breaker or contactor
- ③ **without** circuit breaker or contactor
- ④ DCA 500 / 600 with AC supply voltage 3 x 790 V...1190 V or current ≥3300 A are generally without circuit breaker.
- ⑤ Max length of a shipping split is 3.40 m. If the line-up width is longer than 3.40 m busbar joining cabinets are required.
- ⑥ at 600 V (6) and 690 V (7) only available as 2-Q converter
- ⑦ z: Weight for busbars: 1000 A/2000 A=35kg/m; 3000 A=70kg/m
- ⑧ The air circuit breaker stands out of the line-up's front. Thus 78 mm have to be added to the total depth of the line-up.
- ⑨ Listed width for cable connection reduced width for busbar connection on request





DC Drives Product Portfolio

DCS 400

The drive module for standard applications

- Integrated field supply (max. 20 A)
- Accurate speed and torque control
- Extremely small and compact design
- Very easy installation and commissioning
- Express delivery
- **Power range: 10...500 kW (13...670 HP)**



DCS 500B / DCS 600

The drive module for demanding applications

- Free programming of software
- 6- and 12-pulse configuration up to 10 MW/13,000 HP and more
- Plain text display
- **Power range: 10...5000 kW (13...6700 HP)**



DCE 400 plus

Highly integrated panel

- Extremely small and compact design
- Contains:
 - DCS 400 module
 - AC fuses
 - Auxiliary transformer
 - Motor fan starter with protection
 - Main contactor
- **Power range: 20...130 kW (26...174 HP)**



DCS 400 / DCS 500 Easy Drive

The complete standard cabinet solution

- Pre-engineered
- Easy installation and commissioning
- Protection class: IP 21
- Plain text display
- Short delivery time
- **Power range: 50...1350 kW (65...1800 HP)**



DCA 500 / DCA 600

For complex, completely engineered Drive System in common cabinet design

- Flexible and modular hardware structure
- 6- and 12-pulse configuration up to 18 MW/23,000 HP and more
- Pre-programmed applications:
Metals, Cranes, P&P application, Mining
- **Power range: 10...18000 kW (13...23000 HP)**



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