ПРИВОДЫ ПОСТОЯННОГО ТОКА

Техническое описание на приводы постоянного тока тиристорные

DCS550, DCS601, DCS602

Environmental Conditions

The technical data contain the technical specifications of the drive, e.g. the ratings, sizes and technical requirements, provisions for fulfilling the requirements for CE and other markings and warranty policy.

System connection

Voltage, 3-phase: Voltage deviation:	230 to 525 V acc. to IEC 60038 ±10 % continuous; ±15 % short-time (0.5 to 30 cycles)
Rated frequency:	50 Hz or 60 Hz
Static frequency deviation:	50 Hz ±2 %; 60 Hz ±2 %
Dynamic: frequency range:	50 Hz: ±5 Hz; 60 Hz: ± 5 Hz 17
df/dt:	% / s

Note:

Special consideration must be taken for voltage deviation in regenerative mode.

Degree of protection

Converter modules and options (line chokes, fuses, field exciters, etc.):	IP 00 / NEMA TYPE OPEN

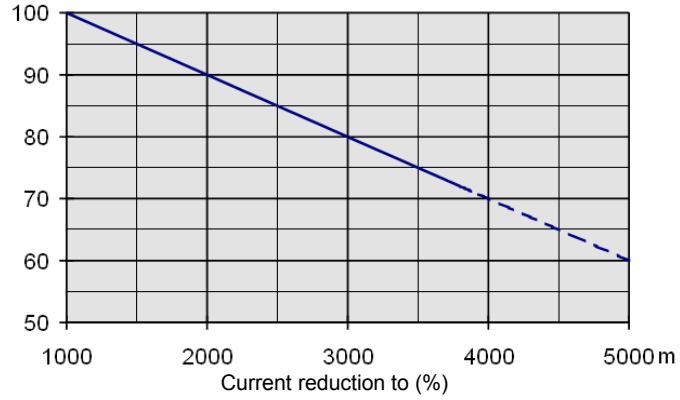
Paint finish

Converter modules:	Dark grey RAL 7012

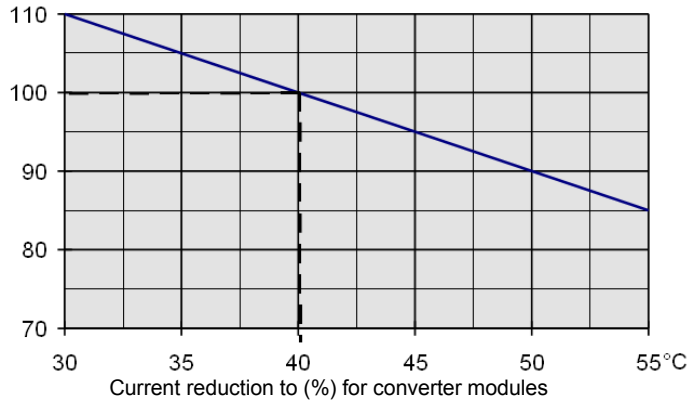
Environmental limit values

Permissible cooling air temperature – with rated DC current (forced ventilation):	0 to +40°C
– with different DC current see figure below:	
– for options:	+30 to +55°C 0 to +40°C
Relative humidity (at 5...+40°C):	5 to 95 %, no condensation
Relative humidity (at 0...+5°C):	5 to 50 %, no condensation < 0.5°C / minute
Change of the ambient temp.	-40 to +55°C
Storage temperature: Transport temperature:	-40 to +70°C 2
Pollution degree (IEC 60664-1, IEC 60439-1):	
Vibration class:	3M3
Site elevation	
>1000 m above mean sea level:	with current reduction, see figure below
<1000 m above mean sea level:	100%, without current reduction

Effect of the site elevation above sea level on the converter's load capacity:



Effect of the ambient temperature on the converter module load capacity:



Size	Sound pressure level LP (1 m distance)	Vibration	Shock	Transport in original Package	Short circuit withstand rating The DCS550 is suitable for use in a circuit capable of delivering not more than:
F1	55 dBA	1.5 mm, 2 - 9 Hz 0.5 g, 9 - 200 Hz	7 g / 22 ms	1.2 m	65 kA rms symmetrical ampere at a maximum of 600 V_{AC}
F2	55 dBA				
F3	60 dBA			1.0 m	
F4	66 - 70 dBA, depending on fan				

Regulatory Compliance

The converter modules are designed for use in industrial environments. In EEA countries, the components fulfill the requirements of the EU directives, see table below.

European Union Directive	Manufacturer's Assurance	Harmonized Standards
Machinery Directive		
98/37/EEC 93/68/EEC	Declaration of Incorporation	EN 60204-1 [IEC 60204-1]
Low Voltage Directive		
73/23/EEC 93/68/EEC	Declaration of Conformity	EN 61800-1 [IEC 61800-1] EN 60204-1 [IEC 60204-1]
EMC Directive		
89/336/EEC 93/68/EEC	Declaration of Conformity (If all installation instructions concerning cable selection, cabling and EMC filters or dedicated transformer are followed.)	EN 61800-3 [IEC 61800-3]
		in accordance with 3ADW000032

North American Standards

In North America, the system components fulfill the requirements of the table below.

Rated supply voltage	Standards
up to 525 V_{AC}	– Approval: cULus The spacings in the modules were evaluated to table 36.1 of UL 508 C. Spacings also comply with table 6 and table 40 of C22.2 No. 14-05. – or on request

Type code

The type code contains information on the specifications and configuration of the drive.
Description see below:

The drive's basic type code: DCS550-AAX-YYYY-ZZ-BB			
Product family:	DCS550		
Type:	AA	= S0	Standard converter modules IP00
Bridge type:	X	= 1	Single bridge (2-Q)
		= 2	2 anti parallel bridges (4-Q)
Module type:	YYYY	=	Rated DC current
Rated AC voltage:	ZZ	= 05	230 V_{AC} - 525 V_{AC}
Fan voltage:	BB	= 00	Standard F1: no fan 20 A / 25 A 24 V_{DC} internal 45 A - 100 A 115 V_{AC} / 230 V_{AC}; single phase 230 V_{AC}; single phase F2, F3: F4:
Additional information:	CC		

Voltage and current ratings

The maximum available armature voltages have been calculated using the following assumptions:

- U_{VN} = rated mains voltage, 3-phase,
- Voltage tolerance ±10 %,
- Internal voltage drop approximately 1 %

If a deviation or a voltage drop has to be taken into account in compliance with IEC and VDE standards, the output voltage and / or the output current must be reduced.

Mains voltage	Maximum DC voltage		Ideal DC voltage	DC voltage class
U_{VN} [V_{AC}]	$U_{d\ max\ 2\text{-}Q}$ [V_{DC}]	$U_{d\ max\ 4\text{-}Q}$ [V_{DC}]	U_{d0} [V_{DC}]	
230	265	240	310	05
380	440	395	510	05
400	465	415	540	05
415	480	430	560	05
440	510	455	590	05
460	530	480	620	05
480	555	500	640	05
500	580	520	670	05
525	610	545	700	05

The maximum available field voltage can be calculated using following formula:

$$U_F \leq 1.35 * U_{VN} * \left(\frac{100\ \% + TOL}{100\ \%} \right)$$, with:

U_F = field voltage,
U_{VN} = mains voltage and
TOL = tolerance of the mains voltage in %.

Size	**I_A, 2-Q [A]**	**P_{out} [kW] ①**	**I_A, 4-Q [A]**	**P_{out} [kW] ①**	**Mains [V_{AC}]**	**I_F [A]**	**P_{loss} [kW]**	**Air flow [m^3/h]**	**Auxiliary voltage**
F1	20	12	25	13	230 - 525	1 - 12	0.11	no fan	115 V_{AC},
	45	26	50	26	-15 % / +10 %		0.17	150	230 V_{AC},
	65	38	75	39			0.22	150	230 V_{DC}
	90	52	100	52			0.28	150	-15 % / +10 %
F2	135	79	150	78		1 - 18	0.38	300	
	180	104	200	104			0.56	300	
	225	131	250	131			0.73	300	
	270	157	300	157			0.88	300	
F3	315	183	350	182		2 - 25	0.91	300	
	405	235	450	234			1.12	300	
	470	280	520	276			1.32	500	
F4	610	354	680	354		2 - 35	1.76	950	
	740	429	820	426			2.14	950	
	900 ②	522	1000 ③	520			2.68	1900	

① Ratings for 500 V_{AC} -10 %
② 900 A_{DC} for 35°C and 850 A_{DC} for 40°C ambient temperature
③ 1000 A_{DC} for 35°C and 950 A_{DC} for 40°C ambient temperature

Current ratings - IEC non regenerative

See the current ratings including several standard duty cycles for the DCS550 with 50 Hz and 60 Hz supplies below. The current ratings are based on an ambient temperature of maximum 40°C and an elevation of maximum 1000 m above mean sea level:

Converter type (2-Q)	$I_{DC\ I}$	$I_{DC\ II}$		$I_{DC\ III}$		$I_{DC\ IV}$		Size	Internal field current
	continuous	100 % 15 min	150 % 60 s	100 % 15 min	150 % 120 s	100 % 15 min	200 % 10 s		
525 V	[A]	[A]		[A]		[A]			
DCS550-S01-0020-05	20	16	24	16	24	15	30	F1	1 - 12 A
DCS550-S01-0045-05	45	36	54	35	52	31	62		
DCS550-S01-0065-05	65	54	81	52	78	49	98		
DCS550-S01-0090-05	90	76	114	74	111	73	146		
DCS550-S01-0135-05	135	105	157	100	150	93	186	F2	1 - 18 A
DCS550-S01-0180-05	180	130	195	125	187	110	220		
DCS550-S01-0225-05	225	170	255	165	247	148	296		
DCS550-S01-0270-05	270	200	300	195	292	180	360		
DCS550-S01-0315-05	315	240	360	235	352	215	430	F3	2 - 25 A
DCS550-S01-0405-05	405	310	465	300	450	270	540		
DCS550-S01-0470-05	470	350	525	340	510	310	620		
DCS550-S01-0610-05	610	455	682	435	652	425	850	F4	2 - 35 A
DCS550-S01-0740-05	740	570	855	540	810	525	1050		
DCS550-S01-0900-05	900	680	1020	650	975	615	1230		

Note:

AC current $I_{AC} = 0.82 * I_{DC}$

Current ratings - IEC regenerative

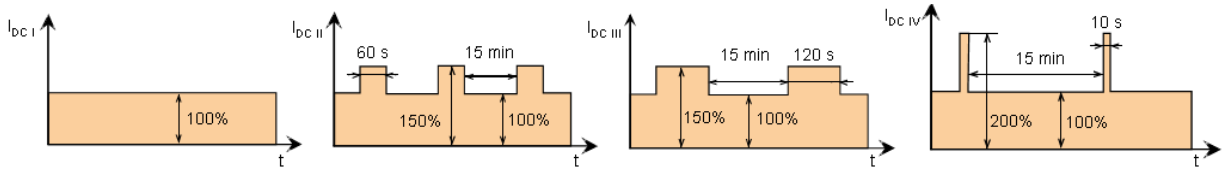
Converter type (4-Q)	$I_{DC\ I}$	$I_{DC\ II}$		$I_{DC\ III}$		$I_{DC\ IV}$		Size	Internal field current
	continuous	100 % 15 min	150 % 60 s	100 % 15 min	150 % 120 s	100 % 15 min	200 % 10 s		
525 V	[A]	[A]		[A]		[A]			
DCS550-S02-0025-05	25	22	33	21	31	20	40	F1	1 -12 A
DCS550-S02-0050-05	50	38	57	37	55	33	66		
DCS550-S02-0075-05	75	60	90	59	88	54	108		
DCS550-S02-0100-05	100	85	127	83	124	80	160		
DCS550-S02-0150-05	150	114	171	110	165	100	200	F2	1 - 18 A
DCS550-S02-0200-05	200	145	217	140	210	115	230		
DCS550-S02-0250-05	250	185	277	180	270	165	330		
DCS550-S02-0300-05	300	225	337	220	330	200	400		
DCS550-S02-0350-05	350	275	412	265	397	245	490	F3	2 - 25 A
DCS550-S02-0450-05	450	350	525	340	510	310	620		
DCS550-S02-0520-05	520	400	600	380	570	350	700		
DCS550-S02-0680-05	680	525	787	510	765	475	950	F4	2 - 35 A
DCS550-S02-0820-05	820	630	945	610	915	565	1130		
DCS550-S02-1000-05	1000	750	1125	725	1087	660	1320		

Note:

AC current $I_{AC} = 0.82 * I_{DC}$

Sizing and standard duty cycles:

The ratings apply at ambient temperature of 40 °C (104 °F).



Dimensions and weights

Size	h * w * d [mm]	h * w * d [inch]	weight [kg]	weight [lbs]
F1	370*270*208	14.57*10.63*8.19	11	24
F2	370*270*264	14.57*10.63*10.39	16	35
F3	459*270*310	18.07*10.63*12.21	25	55
F4	644*270*345	25.35*10.63*13.58	38	84

See the dimensional drawings of the DCS550 below. The dimensions are in millimeters.

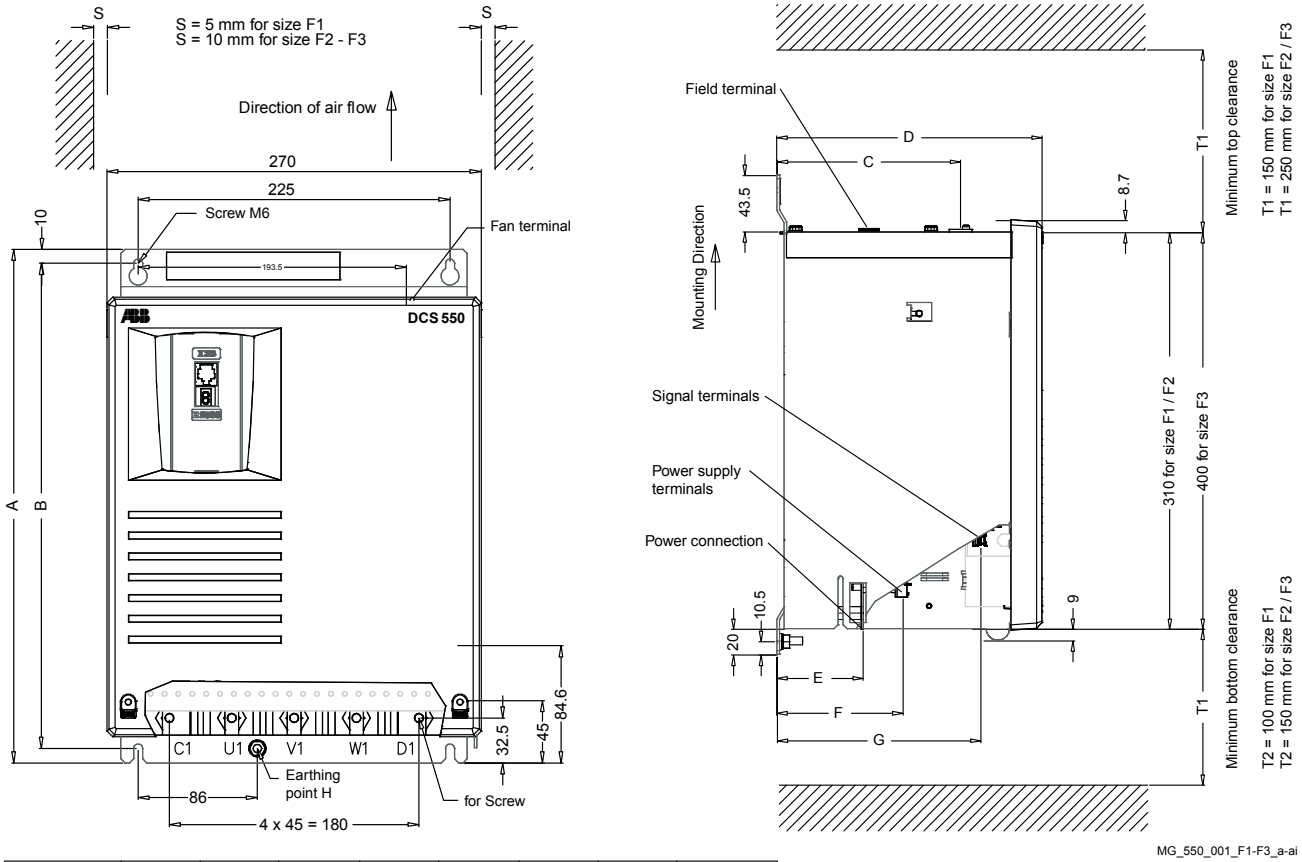
Size F1:
DCS550-S01-0020
DCS550-S01-0045
DCS550-S01-0065
DCS550-S01-0090
DCS550-S02-0025
DCS550-S02-0050
DCS550-S02-0075
DCS550-S02-0100

Size F2:
DCS550-S01-0135
DCS550-S01-0180
DCS550-S01-0225
DCS550-S01-0270
DCS550-S02-0150
DCS550-S02-0200
DCS550-S02-0250
DCS550-S02-0300

Size F3:
DCS550-S01-0315
DCS550-S01-0405
DCS550-S01-0470
DCS550-S02-0350
DCS550-S02-0450
DCS550-S02-0520

Size F4:
DCS550-S01-0610
DCS550-S01-0740
DCS550-S01-0900
DCS550-S02-0680
DCS550-S02-0820
DCS550-S02-1000

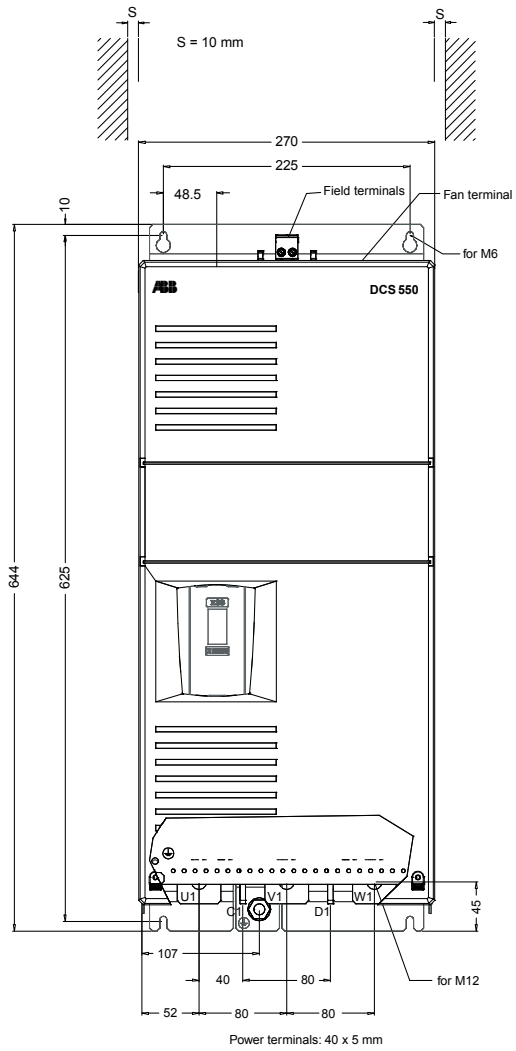
Size F1-F3:

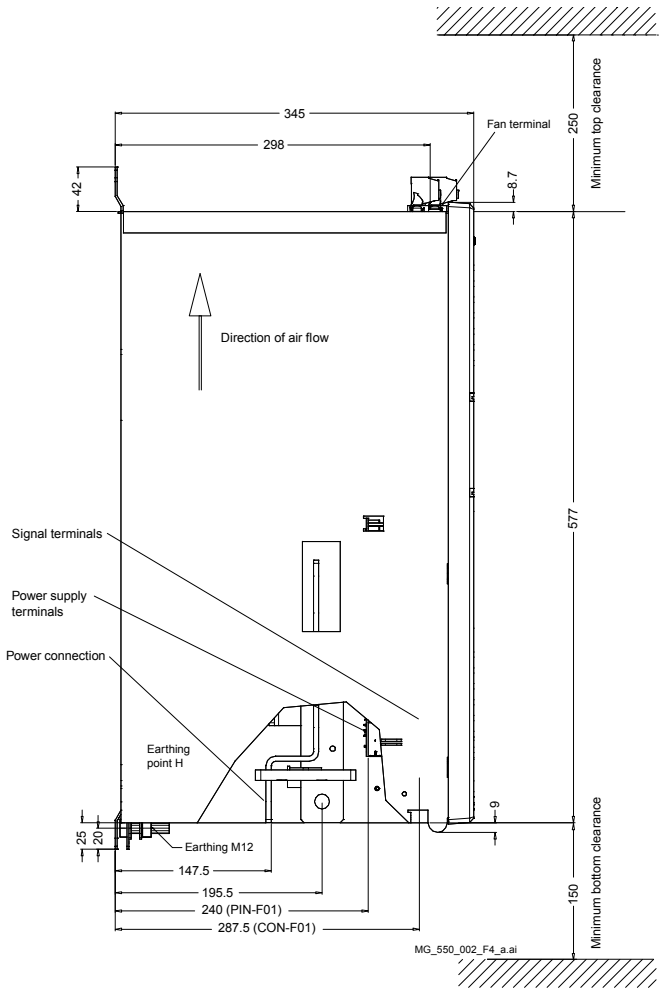


MG_550_001_F1-F3_a-ai

Size	A	B	C	D	E	F	G	H
F1	370	350	-	208	79	110	157	M6
F2	370	350	165	264	121.5	163.5	212	M10
F3	459	437.5	242	310	147.5	205	255	M10

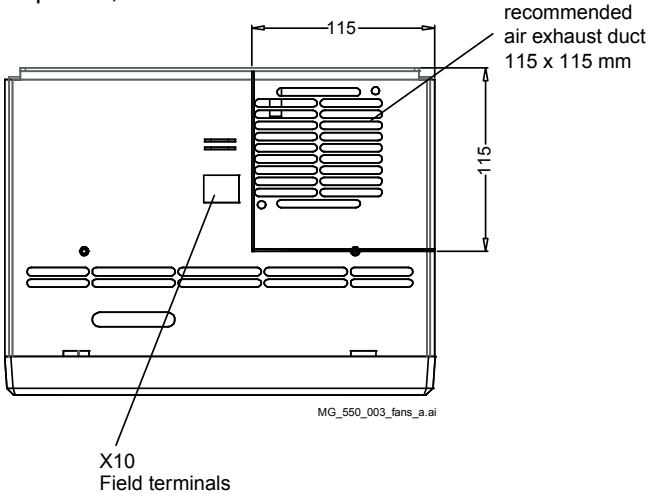
Size F4:



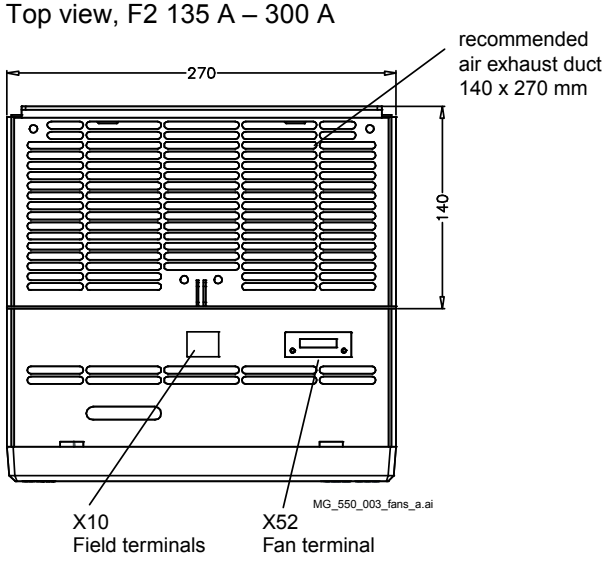


Field-, fan terminals and cooling air duct sizes

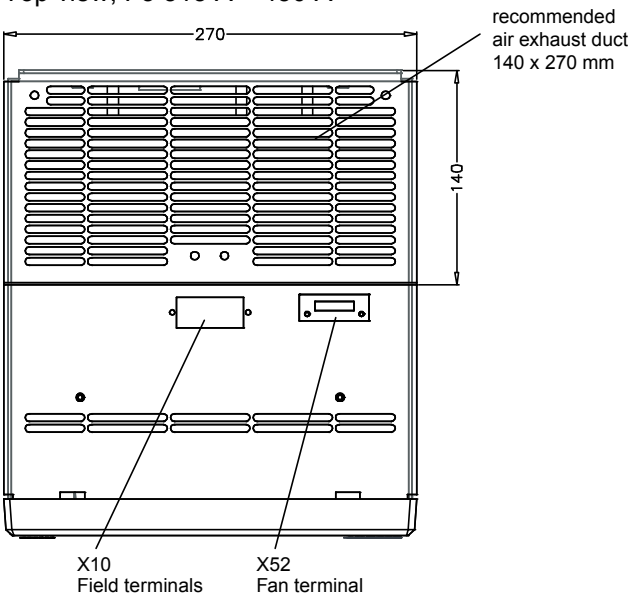
Top view, F1 45 A – 100 A



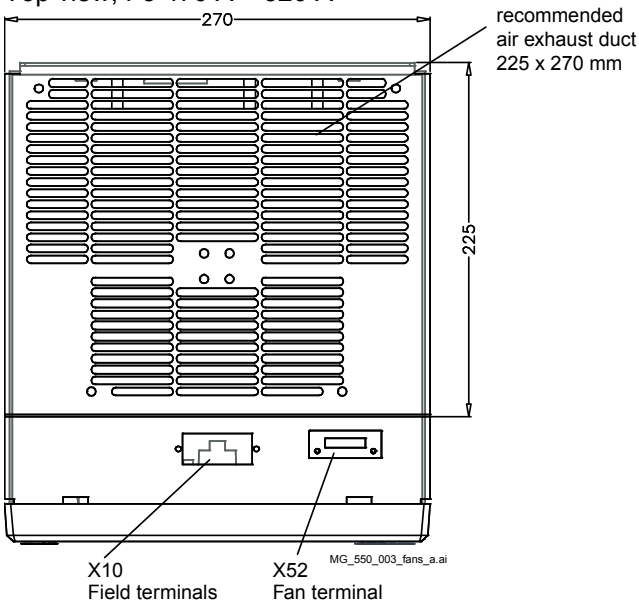
Top view, F2 135 A – 300 A



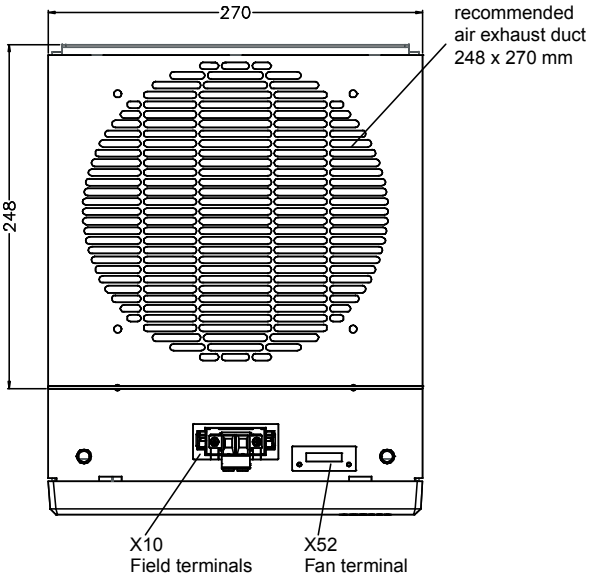
Top view, F3 315 A – 450 A



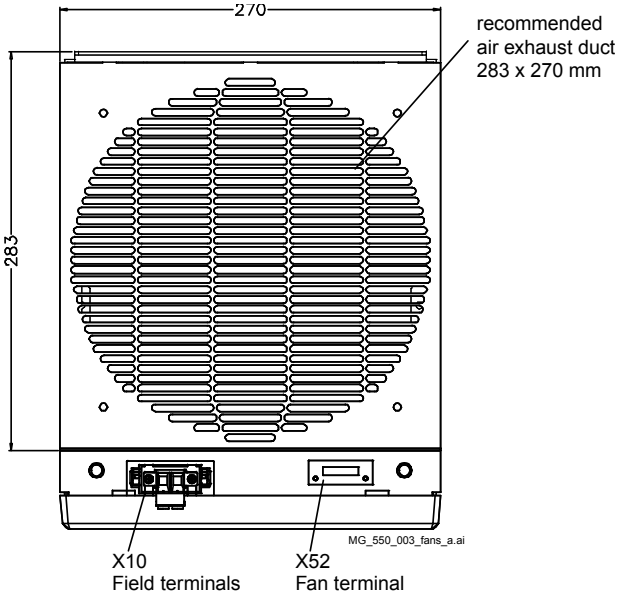
Top view, F3 470 A – 520 A



Top view, F4 610 A – 820 A



Top view, F4 900 A – 1000 A



DCS 600 MultiDrive Components Overview

DCS 600 Armature converter

The DCS 600 MultiDrive power converter range is a system of components and complete standard cabinets to control DC motors. It consists of individual components, based on the DCS 600 power converter modules. This chapter provides a brief description of the DCS 600 MultiDrive components available for matching the drive with the conditions on site.

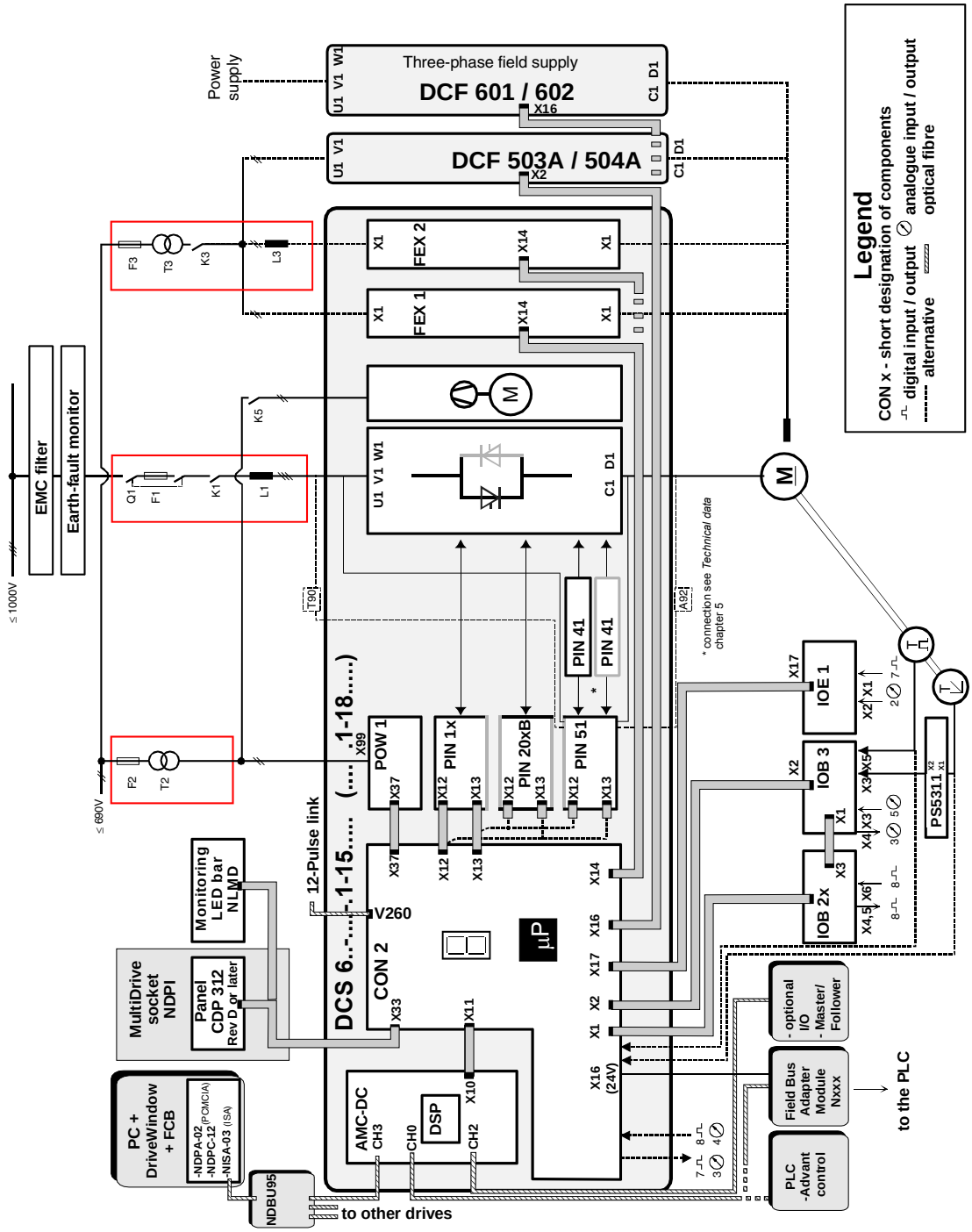


Fig. 2/1: DCS 600 MultiDrive Components overview for **armature converters**

This overview has been designed to help you to familiarize yourself with the system; its main components are shown in the diagram above. The system's heart is the DCS 600 converter module.

The power converter modules are modular in construc-tion. They are based on the housing, which contains the power section with the RC snubber circuit. There are 4 different sizes, depending on current and voltage. All units are forced cooled.

The power section is controlled by the unit's electronic system, which is identical for the entire product range. Parts of the unit's electronic system can be installed in the unit, depending on the particular application involved, e.g. a field supply for the motor, or an interface board to connect the converter to an overriding control system. A control/display panel is available for the operator. It can be mounted to the power converter module or installed in the cabinet's door by means of a mounting kit.

Accessories such as external fuses, line reactors and the like are available, for putting together a complete drive system.

Reference variables

The voltage characteristics are shown in Table 2.2/1. The DC voltage char-acteristics have been calculated using the following assumptions:

- U_{VN} = rated mains voltage, 3-phase
- Voltage tolerance ±10 %
- Internal voltage drop approx. 1%
- If a deviation or a voltage drop has to be taken into consideration in compliance with IEC and VDE standards, the output voltage or the output current must be re-duced by the actual factor according to table 2.2/1.

Mains voltage U_v	DC voltage (max. Motor voltage) U_d		Ideal DC voltage without load	Recommended DCS 600 Voltage class
	2-Q ①	4-Q	U_{di0}	y=
230	265	240	310	4
380	440	395	510	4
400	465	415	540	4
415	480	430	560	4
440	510	455	590	5
460	530	480	620	5
480	555	500	640	5
500	580	520	670	5
525	610	545	700	6
575	670	600	770	6
600	700	625	810	6
660	765	685	890	7
690	800	720	930	7
790	915	820	1060	8
1000	1160	1040	1350	9
1190	1380	1235	1590	1

① in case of a 2-Q converter, which is used in regenerative mode, 4-Q voltage values have to be used.

Table 2.2/1: DCS 600 max. DC voltages achievable with a given mains voltage.

Converter type ➔			y →		y=4 (400 V)		y=5 (500 V)		y=6 (600 V)		y=7 (690 V)	
↓ x=1 → 2-Q	I_{DC} [A]		I_{AC} [A]		P [kW]		P [kW]		P [kW]		P [kW]	
x=2 → 4-Q	4Q	2Q	4Q	2Q	4Q	2Q	4Q	2Q	4Q	2Q	4Q	2Q
DCS60x-0025-y1	25	25	20	20	10	12	13	15				
DCS60x-0050-y1	50	50	41	41	21	23	26	29				
DCS60x-0050-61	50	50	41	41					31	35		
DCS60x-0075-y1	75	75	61	61	31	35	39	44				
DCS60x-0100-y1	100	100	82	82	42	47	52	58				
DCS60x-0110-61	110	100	90	82					69	70		
DCS60x-0140-y1	140	125	114	102	58	58	73	73				
DCS60x-0200-y1	200	180	163	147	83	84	104	104				
DCS60x-0250-y1	250	225	204	184	104	105	130	131				
DCS60x-0270-61	270	245	220	200					169	172		
DCS60x-0350-y1	350	315	286	257	145	146	182	183				
DCS60x-0450-y1	450	405	367	330	187	188	234	235	281	284		
DCS60x-0520-y1	520	470	424	384	216	219	270	273				
DCS60x-0680-y1	680	610	555	500	282	284	354	354				
DCS60x-0820-y1	820	740	670	605	340	344	426	429				
DCS60x-1000-y1	1000	900	820	738	415	418	520	522				
DCS60x-0903-y1	900	900	734	734					563	630	648	720
DCS60x-1203-y1	1200	1200	979	979	498	558	624	696				
DCS60x-1503-y1	1500	1500	1224	1224	623	698	780	870	938	1050	1080	1200
DCS60x-2003-y1	2000	2000	1632	1632	830	930	1040	1160		1400		1600
DCF60x-0025-y1	25	25	20	20	10	12	13	15				
DCF60x-0050-y1	50	50	41	41	21	23	26	29				
DCF60x-0075-y1	75	75	61	61	31	35	39	44				
DCF60x-0100-y1	100	100	82	82	42	47	52	58				
DCF60x-0200-y1	200	180	163	147	83	84	104	104				
DCF60x-0350-y1	350	315	286	257	145	146	182	183				
DCF60x-0450-y1	450	405	367	330	187	188	234	235				
DCF60x-0520-y1	520	470	424	384	216	219	270	273				

Table 2.2/2: Table of DCS 600 / DCF 600 units - construction types C1, C2, A5

Converter type ➔		y →	y=4 (400 V)	y=5 (500 V)	y=6 (600 V)	y=7 (690 V)	y=8 (790 V)	y=9 (1000V)	y=1 (1190V)
	I_{DC} [A]	I_{AC} [A]	P [kW]	P [kW]	P [kW]	P [kW]	P [kW]	P [kW]	① P [kW]
2-Q converters									
DCS601-2050-y1	2050	1673			1435	1640	1876	2378	
DCS601-2500-y1	2500	2040	1163	1450	1750	2000			
DCS601-2650-y1	2650	2162						3074	3658
DCS601-3200-y1	3200	2611					2928	3712	4417
DCS601-3300-y1	3300	2693	1535	1914	2310	2640			
DCS601-4000-y1	4000	3264	1860	2320	2800	3200	3660	4640	5520
DCS601-4750-y1	4750	3876			3325	3800	4346		
DCS601-5150-y1	5150	4202	2395	2987					
4-Q converters									
DCS602-2050-y1	2050	1673			1281	1476	1681	2132	
DCS602-2500-y1	2500	2040	1038	1300	1563	1800			
DCS602-2650-y1	2650	2162						2756	3280
DCS602-3200-y1	3200	2611					2624	3328	3960
DCS602-3300-y1	3300	2693	1370	1716	2063	2376			
DCS602-4000-y1	4000	3264	1660	2080	2500	2880	3280	4160	4950
DCS602-4750-y1	4750	3876			2969	3420	3895		
DCS602-5150-y1	5150	4202	2137	2678					

① These converters are equipped with additional components. More information on request

Table 2.2/3: Table of DCS 600 units - construction type C4

Higher currents up to 15,000 A are achieved by paralleling converters. More information on request.

Construction type C1

Construction type C2

Construction type A5

Construction type C4
Left busbar connection ①

Converter type ③	Dimensions H x W x D [mm]	Weight [kg]	Clearances top/bottom/side [mm]	Construct. type	Power loss at 500V P_V [kW]	Fan connection	Semiconductor Fuses
DCS60x-0025-y1	420x273x195	7.1	150x100x5	C1	< 0.2	230 V/1 ph	external
DCS60x-0050-y1	420x273x195	7.2	150x100x5	C1	< 0.2	230 V/1 ph	external
DCS60x-0050-61	420x273x195	7.6	150x100x5	C1	-	230 V/1 ph	external
DCS60x-0075-y1	420x273x195	7.6	150x100x5	C1	< 0.3	230 V/1 ph	external
DCS60x-0100-y1	469x273x228	11.5	250x150x5	C1	< 0.5	230 V/1 ph	external
DCS60x-0110-61	469x273x228	11.5	250x150x5	C1	-	230 V/1 ph	external
DCS60x-0140-y1	469x273x228	11.5	250x150x5	C1	< 0.6	230 V/1 ph	external
DCS60x-0200-y1	505x273x361	22.3	250x150x5	C2	< 0.8	230 V/1 ph	external
DCS60x-0250-y1	505x273x361	22.3	250x150x5	C2	< 1.0	230 V/1 ph	external
DCS60x-0270-61	505x273x361	22.8	250x150x5	C2	-	230 V/1 ph	external
DCS60x-0350-y1	505x273x361	22.8	250x150x5	C2	< 1.3	230 V/1 ph	external
DCS60x-0450-y1	505x273x361	28.9	250x150x10	C2	< 1.5	230 V/1 ph	external
DCS60x-0520-y1	505x273x361	28.9	250x150x10	C2	< 1.8	230 V/1 ph	external
DCS60x-0680-y1	652x273x384	42	250x150x10	C2b	< 1.6	230 V/1 ph	external
DCS60x-0820-y1	652x273x384	42	250x150x10	C2b	< 2.0	230 V/1 ph	external
DCS60x-1000-y1	652x273x384	42	250x150x10	C2b	< 2.5	230 V/1 ph	external
DCS60x-0903-y1	1050x510x410	110	300x100x20	A5	-	230 V/1-ph	internal
DCS60x-1203-y1	1050x510x410	110	300x100x20	A5	< 5.2	230 V/1-ph	internal
DCS60x-1503-y1	1050x510x410	110	300x100x20	A5	< 5.5	230 V/1-ph	internal
DCS60x-2003-y1	1050x510x410	110	300x100x20	A5	< 6.6	230 V/1-ph	internal
DCS60x-2050-y1	2330x820x624 ①	350	to be installed in cabinet	C4	-	400/690 V/3-ph④	internal
DCS60x-2500-y1	2330x820x624 ①	350		C4	< 12	400/690 V/3-ph④	internal
DCS60x-2650-y1	2330x820x624 ①	350		C4	-	400/690 V/3-ph④	internal
DCS60x-3200-y1	2330x820x624 ①	350		C4	-	400/690 V/3-ph④	internal
DCS60x-3300-y1	2330x820x624 ①	350		C4	< 15	400/690 V/3-ph④	internal
DCS60x-4000-y1	2330x820x624 ①	350		C4	< 16	400/690 V/3-ph④	internal
DCS60x-4750-y1	2330x820x624 ①	350		C4	-	400/690 V/3-ph④	internal
DCS60x-5150-y1	2330x820x624 ①	350		C4	< 20	400/690 V/3-ph④	internal

To match a drive system as efficiently as possible with the driven machine's load profile, the armature power converters DCS 600 can be dimensioned by means of the load cycle. Load cycles for driven machines have been defined in the IEC 146 or IEEE specifications.

The currents for the DC I to DC IV types of load (see table 2.3/2) for the power converter modules are listed in the table below.

Unit type	$I_{DC\,I}$	$I_{DC\,II}$		$I_{DC\,III}$		$I_{DC\,IV}$	
	contin-uous	100 % 15 min	150 % 60 s	100 % 15 min	150 % 120 s	100 % 15 min	200 % 10 s
400 V / 500 V	[A]	[A]		[A]		[A]	
DCS60x-0025-41/51	25	24	36	23	35	24	48
DCS60x-0050-41/51	50	44	66	42	63	40	80
DCS60x-0075-41/51	75	60	90	56	84	56	112
DCS60x-0100-41/51	100	71	107	69	104	68	136
DCS601-0140-41/51	125	94	141	91	137	90	180
DCS602-0140-41/51	140	106	159	101	152	101	202
DCS601-0200-41/51	180	133	200	111	198	110	220
DCS602-0200-41/51	200	149	224	124	219	124	248
DCS601-0250-41/51	225	158	237	132	233	130	260
DCS602-0250-41/51	250	177	266	147	260	147	294
DCS601-0350-41/51	315	240	360	233	350	210	420
DCS602-0350-41/51	350	267	401	258	387	233	466
DCS601-0450-41/51	405	317	476	306	459	283	566
DCS602-0450-41/51	450	352	528	340	510	315	630
DCS601-0520-41/51	470	359	539	347	521	321	642
DCS602-0520-41/51	520	398	597	385	578	356	712
DCS601-0680-41/51	610	490	735	482	732	454	908
DCS602-0680-41/51	680	544	816	538	807	492	984
DCS601-0820-41/51	740	596	894	578	867	538	1076
DCS602-0820-41/51	820	664	996	648	972	598	1196
DCS601-1000-41/51	900	700	1050	670	1005	620	1240
DCS602-1000-41/51	1000	766	1149	736	1104	675	1350
DCS60x-1203-41/51	1200	888	1332	872	1308	764	1528
DCS60x-1503-41/51	1500	1200	1800	1156	1734	1104	2208
DCS60x-2003-41/51	2000	1479	2219	1421	2132	1361	2722
DCS60x-2500-41/51	2500	1830	2745	1740	2610	1725	3450
DCS60x-3300-41/51	3300	2416	3624	2300	3450	2277	4554
DCS60x-4000-41/51	4000	2977	4466	2855	4283	2795	5590
DCS60x-5150-41/51	5150	3800	5700	3669	5504	3733	7466
600 V / 690 V							
DCS60x-0050-61	50	44	66	43	65	40	80
DCS601-0110-61	100	79	119	76	114	75	150
DCS602-0110-61	110	87	130	83	125	82	165
DCS601-0270-61	245	193	290	187	281	169	338
DCS602-0270-61	270	213	320	207	311	187	374
DCS601-0450-61	405	316	474	306	459	282	564
DCS602-0450-61	450	352	528	340	510	313	626
DCS60x-0903-61/71	900	684	1026	670	1005	594	1188
DCS60x-1503-61/71	1500	1200	1800	1104	1656	1104	2208
DCS601-2003-61/71	2000	1479	2219	1421	2132	1361	2722
DCS60x-2050-61/71	2050	1502	2253	1426	2139	1484	2968
DCS60x-2500-61/71	2500	1830	2745	1740	2610	1725	3450
DCS60x-3300-61/71	3300	2416	3624	2300	3450	2277	4554
DCS60x-4000-61/71	4000	3036	4554	2900	4350	2950	5900
DCV60x-4750-61/71	4750	3734	5601	3608	5412	3700	7400
790 V							
DCS60x-2050-81	2050	1502	2253	1426	2139	1484	2968
DCS60x-3200-81	3200	2655	3983	2540	3810	2485	4970
DCS60x-4000-81	4000	3036	4554	2889	4334	2933	5866
DCS60x-4750-81	4750	3734	5601	3608	5412	3673	7346
1000 V							
DCS60x-2050-91	2050	1577	2366	1500	2250	1471	2942
DCS60x-2650-91	2650	2000	3000	1900	2850	1922	3844
DCS60x-3200-91	3200	2551	3827	2428	3642	2458	4916
DCS60x-4000-91	4000	2975	4463	2878	4317	2918	5836
1190 V							
Data on request							

x=1 → 2-Q; **x=2** → 4-Q

Table 2.3/1: Power converter module currents during corresponding load cycles.
The characteristics are based on an ambient temperature of max. 40°C and an elevation of max. 1000 m.

Line reactors L1

DCS Type 400V-690V 50/60 Hz	Line choke type for **configur. A**	Fig.	Line choke type for **configur. B**	Design Fig.
DCS60x-0025-41/51	ND01	1	ND401	4
DCS60x-0050-41/51	ND02	1	ND402	4
DCS60x-0050-61	ND03	1	on request	-
DCS60x-0075-41/51	ND04	1	ND403	5
DCS60x-0100-41/51	ND06	1	ND404	5
DCS60x-0110-61	ND05	1	on request	-
DCS60x-0140-41/51	ND06	1	ND405	5
DCS60x-0200-41/51	ND07	2	ND406	5
DCS60x-0250-41/51	ND07	2	ND407	5
DCS60x-0270-61	ND08	2	on request	-
DCS60x-0350-41/51	ND09	2	ND408	5
DCS60x-0450-41/51	ND10	2	ND409	5
DCS60x-0450-61	ND11	2	on request	-
DCS60x-0520-41/51	ND10	2	ND410	5
DCS60x-0680-41/51	ND12	2	ND411	5
DCS601-0820-41/51	ND12	2	ND412	5
DCS602-0820-41/51	ND13	3	ND412	5
DCS60x-1000-41/51	ND13	3	ND413	5
DCS60x-0903-61/71	ND13	3	ND413	5
DCS60x-1203-41/51	ND14	3	on request	-
DCS60x-1503-41/51/61/71	ND15	3	on request	-
DCS60x-2003-41/51	ND16	3	on request	-
DCS601-2003-61/71	ND16 *	3	on request	-

* with forced coolin

Table 2.6/1: Line reactors (for more information see publication *Technical Data)*

Fig. 1

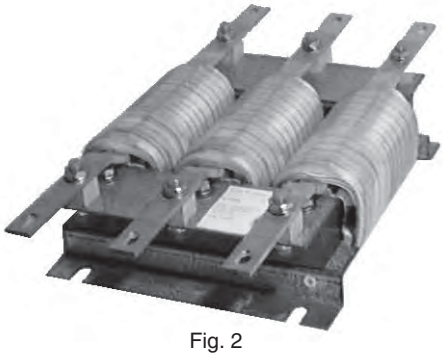


Fig. 2

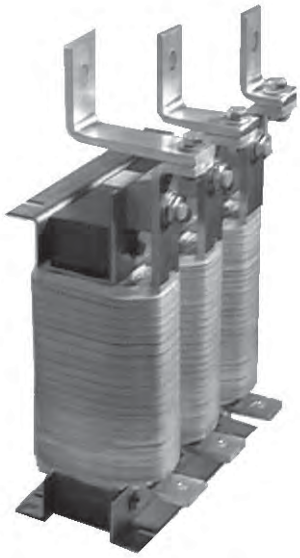


Fig. 3

Fig. 5

По вопросам продаж и поддержки обращайтесь:

. **лматы** (7273)495-231
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Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
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Ноябрьск(3496)41-32-12
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саранск (8342)22-96-24
Саратов (845)249-38-78
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Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
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Улан-Удэ (3012)59-97-51
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
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Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
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