



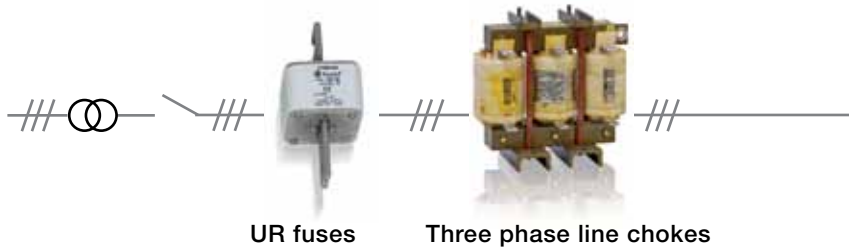
Catalog

ABB DC Drives DCS550, 20 A to 1000 A

Flexibly geared to all the requirements of modern-day machinery manufacturers

Startup and maintenance software

Used from drive startup and configuration to daily use and process tuning



Assistant control panel

The assistant control panel features a multilingual alpha-numeric display for easy drive programming. The control panel has various assistants and a built-in help function to guide the user.



Adaptive Programming

Adaptive Programming is easy and fast because there is a graphical support.





Fieldbus adapter modules

The pluggable fieldbus options allow connection to most automation systems. A single cable replaces complex conventional cabling.

With its compact dimensions and robust technology, the DCS550 is an ideal drive solution for machinery manufacturers – both in new installations or as a replacement for older analog devices.

Integrated “winder”, high-performance field supply and various interfaces provide machinery manufacturers with a maximum of flexibility in terms of machine integration.



DC motor



Interface extension modules

The pluggable I/O modules extend the basic I/Os.



On-board field exciter

Integrated on-board field exciter reduces hardware and installation work.

Integrated macros

Most frequent parameter settings covered by macros for easy commissioning.

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Designed to meet the essential requirements of machinery manufacturers

DCS550 – The highlights

- Compact dimensions
For installations with limited space
- Integrated high performance three phase field exciter up to 35 A
Fits all available motors without additional installations
- “Winder” with commissioning assistant
For easy and fast adaptation to different applications
- Different fieldbus interfaces (incl. EtherCAT, Profinet...)
For easy integration into automation
- Additional PID-controller
For overriding control functions (e. g. pressure or level control)
- Adaptive programming with Drive AP, ABB’s graphical PC-tool
For easy implementation of additional functions
- Various start-up assistants and auto-tune functions
For fast commissioning
- Large control panel
For straight forward and self-explanatory operation
- Rugged design
For rough environments, high reliability
- Worldwide service
Local service in more than 60 countries

Easy to use

The basic version of the DCS550 is already equipped with a large number of standard hardware interfaces like an encoder, an analog tachogenerator and four analog input devices. Since the basic unit includes all important functions almost all applications are covered – options are not necessary. The single-volume documentation provides comprehensive information on the unit, firmware and hardware. The guided start-up and complementary support functions reduce start-up times to a minimum. The grouped structure of the parameters provides easy and clearly arranged navigation within the various features and functions. Error messages and help texts are displayed in plaintext in the user’s native language. The reduced need for training is an additional advantage created by the synergies and similarities with ABB’s DCS800 converter and ABB AC-drives.



DCS550 converter module

Flexibility for different applications

DCS550 – Extensive applications

- Extruders
- Sugar centrifuges
- Wire drawing machines
- Coating lines
- Printing machines
- Presses
- Tools machines main drives
- Food processing machines
- Woodworking (wooden products and MDF industry)
- Retrofit of analog DC-technology

Modern DC-drives – More up-to-date than ever

Today, DC-drive technology is more up-to-date than ever. Their attractive cost-performance ratio and functional advantages such as high torque at low speed, light weight and low power loss, turn DC-drives into the preferred solution for many applications. As far as innovation is concerned ABB's DC-drives match the same high standards as ABB's AC-drives.

Easy upgrade of installed older converters

The machines are frequently still in very good condition, but spare parts and know-how for the installed power electronics are no longer available.

With the DCS550, existing machines can be kept in operation by replacing the old drive.

Short downtimes and low costs for the retrofit are additional advantages of an upgrade of existing machinery.



Smart human-drive interface

General

All units are equipped with the DCS550 Control Panel. It can be snapped into place on the power converter module or installed in the switchgear cubicle door by means of a mounting kit.

Control panel: high level of convenience included

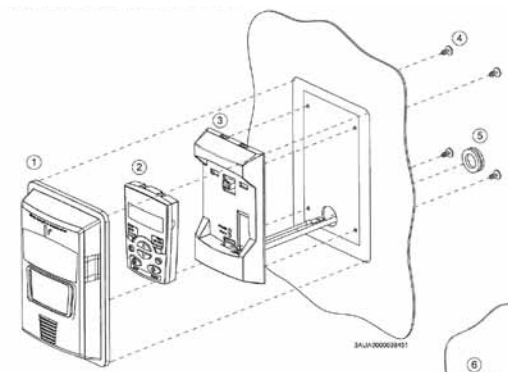
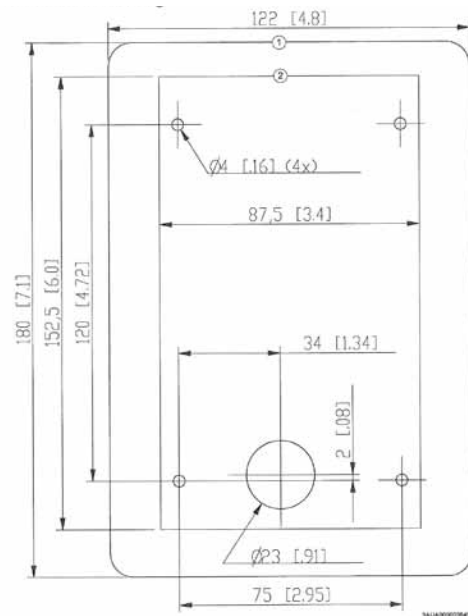
The assistant control panel is part of the basic unit. It offers a multi-language alphanumeric display (EN, DE, ES, FR, IT) with a multilingual help function. The large graphic display allows the user to freely select actual and set values. Another additional advantage: the user can call up a list of all changed parameters. The control panel can also store parameters as a security backup or copy them for use in other converters.



- Startup Assistant
- Fault logger function
- Plain text for fault logger, faults and alarms
- Shows actual values in physical units
- Backup and Copy function for parameter
- Compare function for parameters
- Real time clock
 - Help function
 - Multilingual

Panel mounting kits

To attach the control panel to the outside of a larger enclosure, two panel mounting kits are available. A simple and cost-efficient installation is possible with the ACS/H-CP-EXT kit, while the JPMP-01 kit provides a more user-friendly solution, including a panel platform that enables the panel to be removed in the same way as a drive-mounted panel. The panel mounting kits include all hardware required, including 3 m extension cables and installation instructions.



Standard Firmware for scalable control and functionality

Basic firmware

DCS550 firmware includes the basic functions of speed control, armature current, field current and motor voltage. The design of the drive logic enables a drive reaction defined by Profibus standard, but can also be configured to adapt classic command structures.

Macros

The DCS550 is equipped with seven different macros to cover the most frequent parameter settings.

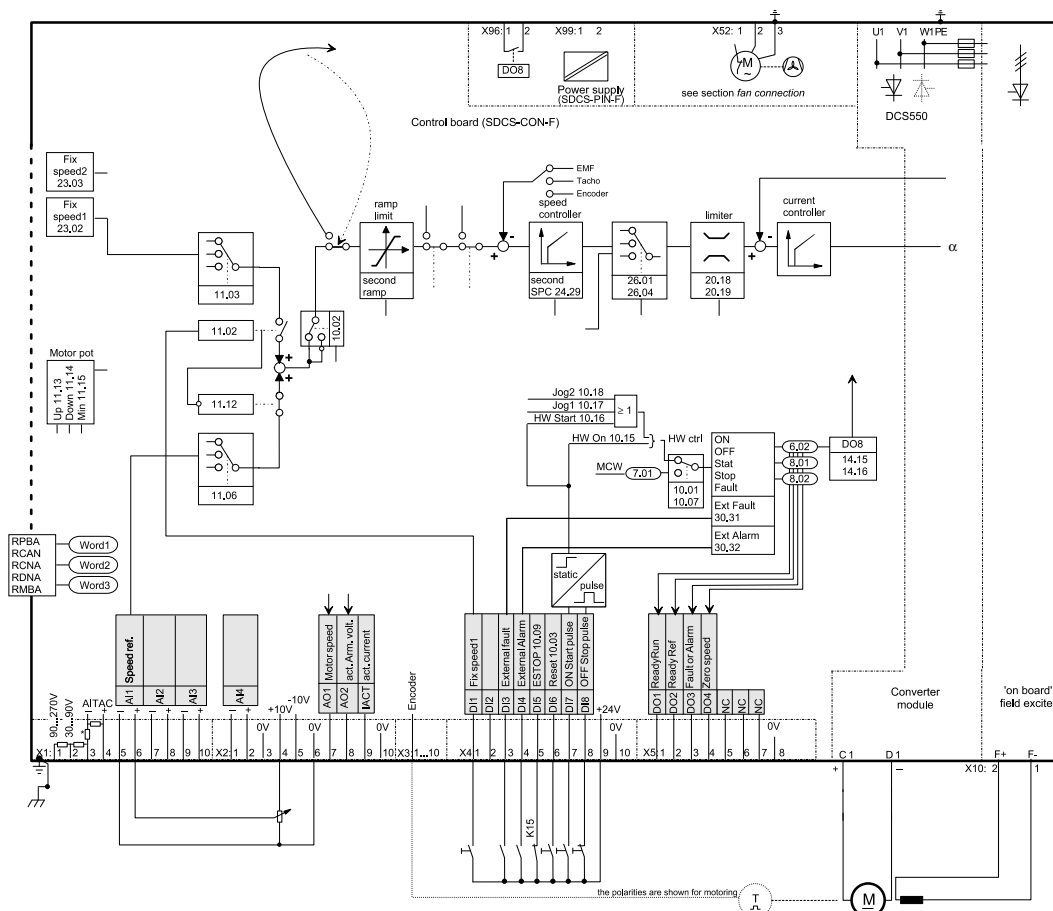
Macros are pre-programmed parameter sub-sets. During start-up, the drive can be configured easily without changing individual parameters. The functions of all inputs and several outputs and of allocations in the control structure are influenced by the selection of a macro. The means whether the drive is speed-controlled or torque-controlled, whether supplementary references are processed, which actual values are available at the analog outputs, which reference value sources are used etc. is already defined in the macro.

Functions of basic firmware

- Different speed ramp function
- Speed control
- Torque control
- Armature current control
- Field current control
- Automatic field weakening
- E-stop function according to Profibus standard
- Interface for fieldbus
- Programmable digital and analogue outputs
- 16 blocks Adaptive Program
- Converter protection (temperature, voltage,...)

Motor protection features

- Stall protections
- Thermal motor model
- Klixon supervision
- Speed feedback error
- Over speed
- Armature current ripple
- Armature over current
- Minimum field current



Example: STANDARD macro

PC tool for easy start-up and maintenance

Useful features

DriveWindow Light

The user-friendly start-up and maintenance tool for the world of ABB-drives supports both ABB's DC-drives and AC-drives. DriveWindow Light is a PC software package for easy and fast start-up and maintenance of DCS550 converters and is part of the basic package. In offline-mode, all parameters can be set from the user's office desk. The parameter browser can both display and save parameters on the computer. A comparison feature can compare and align current values with a stored set of parameters. With the "Local"-feature, the drive can be controlled as well. At the same time, up to four display values can be visualized graphically. DriveWindow Light also includes an assistant for guided start-up, winder functions as well as the AP-tool for block programming.

Start-up assistant

The DriveWindow Light start-up assistant for the DCS550 provides valuable support during commissioning via an interactive dialog. The individual steps of the start-up process are pre-defined in the right order and all required parameters are displayed. The "Basic"-feature captures motor and connection data and adjusts the controller automatically. The

"Advanced"-feature supports the start-up of serial communication (fieldbus) and winder functions. The context-sensitive help function is always available.

Adaptive Programming (AP):

Adaptive Programming is included in the basic package. With the help of 16 functional blocks users can develop, test and document their own programs easily in graphical mode. The „Adaptive Programming“ (AP) function allows the implementation of additional features. Modifications can be configured with either the control panel or with the help of the graphical interface of DriveWindow Light AP.

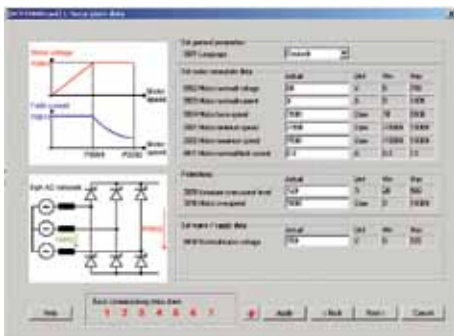
The main features of DriveWindow Light AP are:

- 16 programmable function blocks
- Available functions:
 - Logical: AND, OR and XOR
 - Mathematical: ADD, MUL, DIV, ABS, MAX and MIN
 - Other: timer, switch, comparator, filter, SR, PI and user-defined warnings or faults
- Freely definable execution order
- Easy documentation

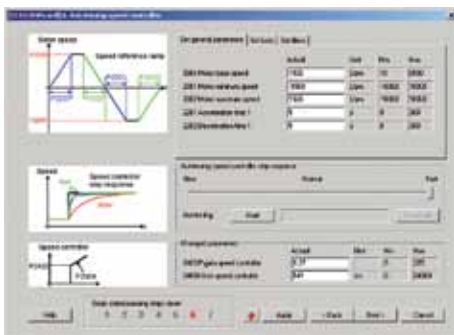
Content CD:

The CD ROM provides information about DCS550 and contains PC tools:

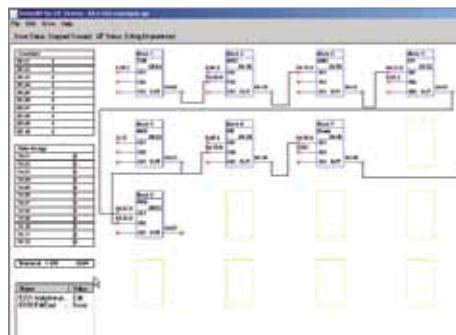
- DriveWindow Light for DC drives + Commissioning Wizard + DWL AP
- FDT Firmware download kit + workspace
- Firmware



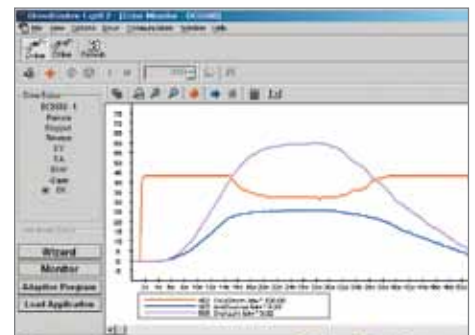
Start-up Assistant



Speed Controller Autotuning



Adaptive Programming



Trending

Winder function required?

Integrated winder functions

The DCS550 is equipped with a winder function featuring pre-defined macros for the four most commonly used winder types:

Velocity control

Calculates the diameter and rotation speed setpoint value. The diameter is used to adjust the speed controller to all winding sizes. There is no tension control. All other macros are included in this basic structure.

Indirect tension control

Controls the tension with the help of preset charts for friction and moment of inertia (open loop).

This structure provides a very robust control behavior because no physical tension measurement is required.

Direct tension control

Closed loop for physical value of tension

The tension is measured with a load cell and transferred to the drive as an analog actual value. The DCS550 is equipped with a free PID-controller that can be integrated into the control loop with the "Tension Control" macro.

Dancer control

Controls the tension with the weight of the dancer roll (closed loop).

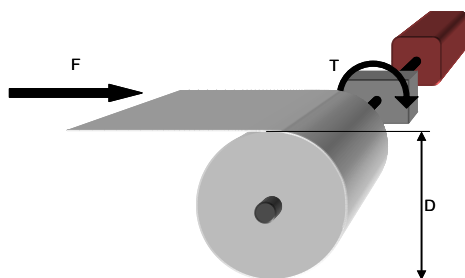
The dancer has to be kept in the right position with additional speed set values. The PID-controller of the DCS550 can also control the positioning of the dancer roll. The position of the dancer roll is transmitted to the controller as an analog actual value.

Commissioning assistant

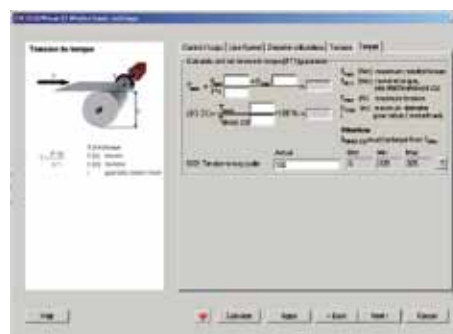
For an easy winder set-up, all different winder types can be configured and commissioned using a graphical assistant.

The assistant is part of DriveWindows Light PC-tool.

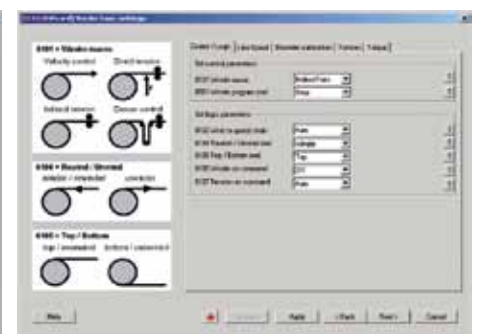
The rating for friction and inertia can be determined by auto tuning.



Example: direct tension control (closed loop)



Winder Assistant



Winder Macros

How to select a drive

Many of the features for DCS550 drives are built-in as standard providing easy selection.

Every drive is equipped with

- Assistant Control panel
- CD ROM with PC commissioning assistant and DWL/ AP programming PC tool (PC requires COM port)
- Quickguide manual in 5 language En,DE,IT,FR,ES
- Marking CE and cULus
- ON board field exciter, rating see table

The control board and power interface board are coated.
Cable marking C and tin plated Cu bars inside, Protection class IP00.

Available as options

- R-fieldbus modules
- additional R I/O modules
- semiconductor fuses
- line reactors
- EMC Filters

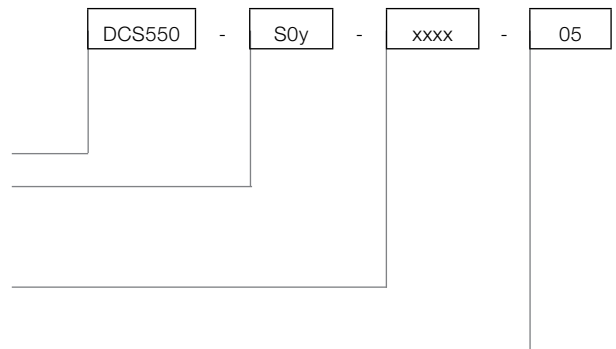
To choose the right drive for your application, please refer to the ratings table on page 12. The selected drive has a unique type designation, which identifies the drive by construction, power and voltage range.

Type designation:

DCS550-S0y-xxxx-05

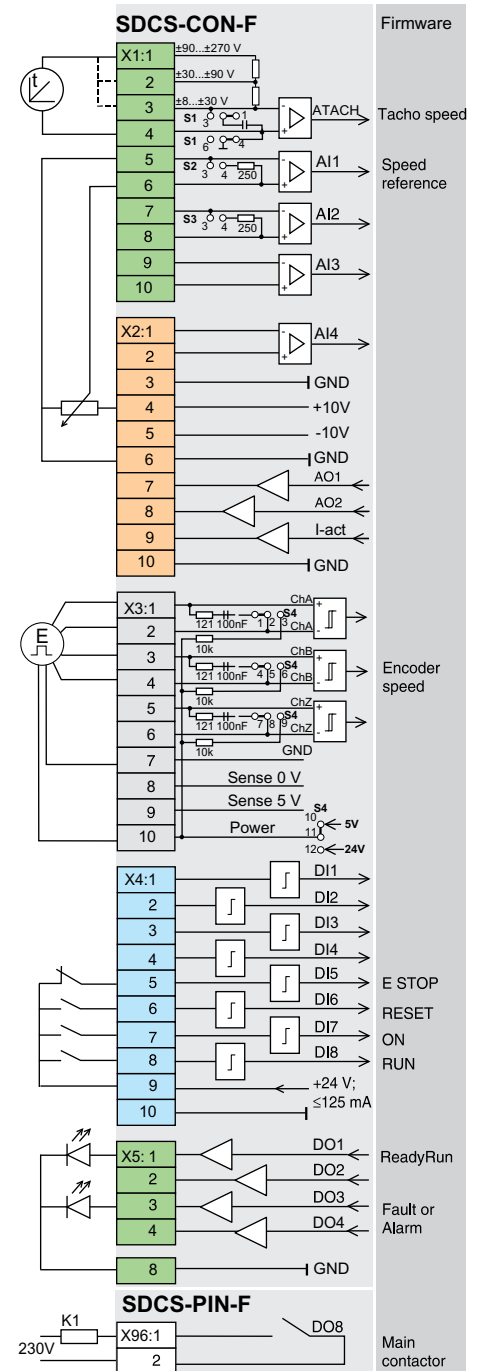
- DCS550 = Product series
- S0 = DC drive converter module
- y = 1 = single bridge/ motor operation
= 2 = double bridge motor + regen operation
- xxxx = rated current (main bridge armature circuit) double check
suitable duty cycles rated field current, see table
- 05 = 230 V_{AC} ... 525 V_{AC} supply

Options are ordered via Id code of the price list.



Standard interface and extensions for comprehensive connectivity

| Mains connection | |
|-----------------------------------|---|
| Mains | 3-phase 230 V _{AC} - 525 V _{AC} ; -15 % / +10 % |
| Rated frequency | 50 Hz or 60 Hz |
| Field exciter | |
| Supply voltage | Internally connected to the mains |
| Hardware | Completely integrated 3-phase OnBoard field exciter |
| Operating conditions | |
| Degree of protection | IP 00 |
| EMC | Fulfilling EN 61800-3 in accordance with 3ADW 000 032 |
| Compliance | CE, cULus |
| Control interfaces | |
| Auxiliary voltages | 115 V _{AC} ; 230 V _{AC} ; 230 V _{DC} |
| PC-tools | DriveWindow Light, DWL AP, start-up assistant, winder assistant, help function |
| DCS550 Control Panel | As standard, several languages, start-up assistant, help function |
| Status display | Seven-segment display as standard |
| Analog I/O | 4 AI (15 bit + sign); 3 AO (11 bit + sign; two are freely programmable, one is fixed for armature current) |
| Digital I/O | 8 DI, 5 DO (one for mains breaker) |
| Motor temperature | 1 PTC |
| Analog tachometer input | As standard |
| Encoder input | As standard for 5 V and 24 V encoders |
| Option slots | two slots for analog and digital I/O plug-in options |
| Special firmware functions | |
| Adaptive Program | 16 freely programmable function blocks |
| PID controller | Freely usable PID controller |
| Macros | 10 pre-defined macros for fast commissioning |
| winder macros | 4 pre-defined winder macros |
| Control and communication options | |
| Analog & digital plug-in options | |
| 1 * RAIO | 2 AI, 2 AO |
| 2 * RDIO | 3 DI, 2 DO each |
| Classic fieldbusses | |
| RCAN-01 | CANopen |
| RCNA-01 | ControlNet |
| RDNA-01 | DeviceNet |
| RMBA-01 | Modbus (RTU) |
| RPBA-01 | Profibus |
| Ethernet fieldbusses | |
| RECA-01 | EtherCat |
| RETA-01 | Ethernet/IP and Modbus/TCP |
| RETA-02 | Profinet |



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How to select the motor voltage

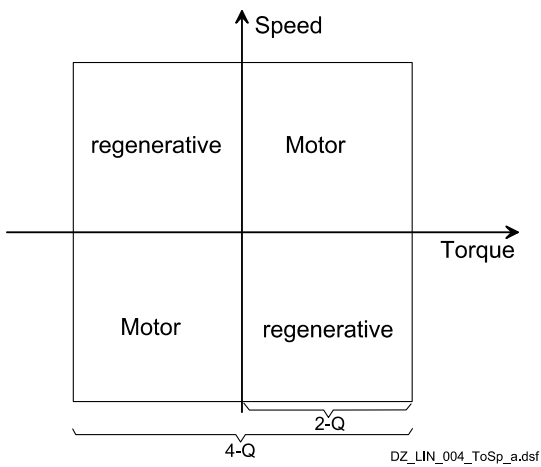
Reference variables

The voltage characteristics are shown in the table beside. The DC voltage characteristics have been calculated using the following assumptions:

- U_{VN} = rated input terminal voltage, 3-phase
- Voltage tolerance $\pm 10\%$
- 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 reduced in accordance with the table on the right.

The bridge type 2-Q or 4-Q has an influence on the maximum motor voltage. See table below.

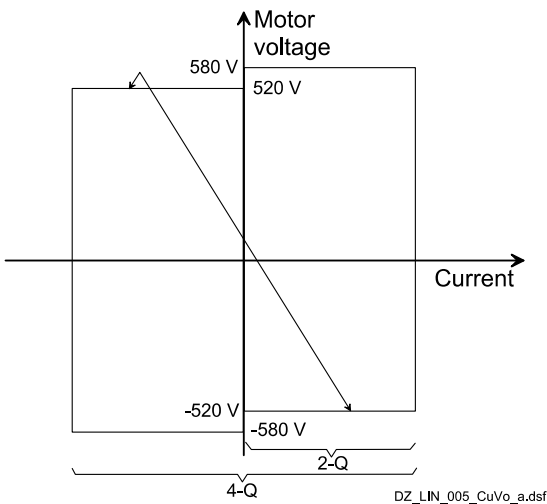
| System connection voltage | DC voltage (recommended) | Ideal DC voltage with-out load | Recommended DCS800 voltage class | |
|---------------------------|--------------------------|--------------------------------|----------------------------------|----|
| U_{VN} [V] | $U_{dmax\ 2-Q}$ [V] | $U_{dmax\ 4-Q}$ [V] | U_{di0} [V] | |
| 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 |



motor and regenerative operation

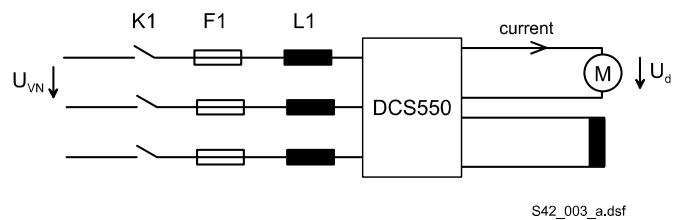
If armature voltages higher than recommended are requested, please check carefully whether your system is still working under safe conditions.

The maximum output voltage of a 4-Q drive can be increased up to the level of $U_{dmax\ 2-Q}$. Thus the torque reversal from motoring mode to generating mode increases up to 300 ms. This lowers the dynamics of the drive and is only recommended for non-dynamic applications (e.g. E-Stop function).



Example: maximum motor voltage U_{dmax} for 500 V_{AC} supply voltage U_{VN}

The power section of the converters is available as a single (2-Q) bridge or double (4-Q) bridge. 4-Q drives are required for regenerative braking.



Technical data, dimensions and weights

Single bridge (2-Q Drive), 230 - 525 V -15 / +10 %

| I_A [A] | I_F [A] | Fan supply | Dimensions h x w x d [mm] | Weight [kg] | Power 400 V [kW] | Power 525 V [kW] | Losses [kW] | Type code | Size |
|-----------|-----------|-------------|------------------------------|----------------|---------------------|---------------------|----------------|--------------------|------|
| 20 | 1 - 12 | no fan | 370 x 270 x 220 | 11 | 9 | 12 | 0,18 | DCS550-S01-0020-05 | F1 |
| 45 | | internal | | | 21 | 26 | 0,28 | DCS550-S01-0045-05 | |
| 65 | | internal | | | 30 | 38 | 0,32 | DCS550-S01-0065-05 | |
| 90 | | internal | | | 42 | 52 | 0,39 | DCS550-S01-0090-05 | |
| 135 | 1 - 18 | 115 / 230 V | 370 x 270 x 270 | 16 | 63 | 78 | 0,58 | DCS550-S01-0135-05 | F2 |
| 180 | | 115 / 230 V | | | 84 | 104 | 0,76 | DCS550-S01-0180-05 | |
| 225 | | 115 / 230 V | | | 105 | 131 | 0,90 | DCS550-S01-0225-05 | |
| 270 | | 115 / 230 V | | | 126 | 157 | 1,00 | DCS550-S01-0270-05 | |
| 315 | 2 - 25 | 115 / 230 V | 459 x 270 x 310 | 25 | 146 | 183 | 1,12 | DCS550-S01-0315-05 | F3 |
| 405 | | 115 / 230 V | | | 188 | 235 | 1,38 | DCS550-S01-0405-05 | |
| 470 | | 115 / 230 V | | | 219 | 273 | 1,66 | DCS550-S01-0470-05 | |
| 610 | 2 - 35 | 230 V | 644 x 270 x 345 | 38 | 284 | 354 | 1,94 | DCS550-S01-0610-05 | F4 |
| 740 | | 230 V | | | 344 | 429 | 2,38 | DCS550-S01-0740-05 | |
| 900 | | 230 V | | | 419 | 522 | 2,95 | DCS550-S01-0900-05 | |

Double bridge (4-Q Drive), 230 - 525 V -15 / +10 %

| I_A [A] | I_F [A] | Fan supply | Dimensions h x w x d [mm] | Weight [kg] | Power 400 V [kW] | Power 525 V [kW] | Losses [kW] | Type code | Size |
|-----------|-----------|-------------|------------------------------|----------------|---------------------|---------------------|----------------|--------------------|------|
| 25 | 1 - 12 | no fan | 370 x 270 x 220 | 11 | 10 | 13 | 0,20 | DCS550-S02-0025-05 | F1 |
| 50 | | internal | | | 21 | 26 | 0,31 | DCS550-S02-0050-05 | |
| 75 | | internal | | | 31 | 39 | 0,36 | DCS550-S02-0075-05 | |
| 100 | | internal | | | 42 | 52 | 0,42 | DCS550-S02-0100-05 | |
| 150 | 1 - 18 | 115 / 230 V | 370 x 270 x 270 | 16 | 62 | 78 | 0,64 | DCS550-S02-0150-05 | F2 |
| 200 | | 115 / 230 V | | | 83 | 104 | 0,84 | DCS550-S02-0200-05 | |
| 250 | | 115 / 230 V | | | 104 | 130 | 1,00 | DCS550-S02-0250-05 | |
| 300 | | 115 / 230 V | | | 125 | 156 | 1,10 | DCS550-S02-0300-05 | |
| 350 | 2 - 25 | 115 / 230 V | 459 x 270 x 310 | 25 | 145 | 182 | 1,22 | DCS550-S02-0350-05 | F3 |
| 450 | | 115 / 230 V | | | 187 | 234 | 1,54 | DCS550-S02-0450-05 | |
| 520 | | 115 / 230 V | | | 216 | 270 | 1,85 | DCS550-S02-0520-05 | |
| 680 | 2 - 35 | 230 V | 644 x 270 x 345 | 38 | 282 | 354 | 2,15 | DCS550-S02-0680-05 | F4 |
| 820 | | 230 V | | | 340 | 426 | 2,64 | DCS550-S02-0820-05 | |
| 1000 | | 230 V | | | 415 | 520 | 3,31 | DCS550-S02-1000-05 | |

$$I_{AC} = I_A * 0.82 + I_F * 0.82$$



Size: F1



F2



F3



F4

Line reactors L1

| Size | Converter type (2-Q) | Converter type (4-Q) | Line choke 1 % relative voltage drop | Design fig. | Line choke 4 % relative voltage drop | Design fig. |
|------|----------------------|----------------------|---|----------------|---|----------------|
| F1 | DCS550-S01-0020 | DCS550-S02-0025 | ND01 | 1 | ND401 | 4 |
| | DCS550-S01-0045 | DCS550-S02-0050 | ND02 | 1 | ND402 | 4 |
| | DCS550-S01-0065 | DCS550-S02-0075 | ND04 | 1 | ND403 | 5 |
| | DCS550-S01-0090 | DCS550-S02-0100 | ND06 | 1 | ND404 | 5 |
| F2 | DCS550-S01-0135 | DCS550-S02-0150 | ND06 | 1 | ND405 | 5 |
| | DCS550-S01-0180 | DCS550-S02-0200 | ND07 | 2 | ND406 | 5 |
| | DCS550-S01-0225 | DCS550-S02-0250 | ND07 | 2 | ND407 | 5 |
| | DCS550-S01-0270 | DCS550-S02-0300 | ND09 | 2 | ND408 | 5 |
| F3 | DCS550-S01-0315 | DCS550-S02-0350 | ND09 | 2 | ND408 | 5 |
| | DCS550-S01-0405 | DCS550-S02-0450 | ND10 | 2 | ND409 | 5 |
| | DCS550-S01-0470 | DCS550-S02-0520 | ND10 | 2 | ND410 | 5 |
| F4 | DCS550-S01-0610 | DCS550-S02-0680 | ND12 | 2 | ND411 | 5 |
| | DCS550-S01-0740 | DCS550-S02-0820 | ND13 | 3 | ND412 | 5 |
| | DCS550-S01-0900 | DCS550-S02-1000 | ND13 | 3 | ND413 | 5 |



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

Fuse connections

Semiconductor fuses and fuse holders for AC and DC power lines

The DCS550 converter sizes F1, F2, F3 and F4 with rated currents up to 1000 A require external line fuses for armature bridge.

The table assigns the AC fuse types to the converter types involved. In case the converter needs to be equipped with DC

fuses according to the instructions use the same type of fuse used on the AC side now in the plus and minus line (only for sizes F1...F4). Blade type fuses are used for all the converters of construction type F1...F4 except the converters (610 A, 680 A, 740 A, 820 A, 900 A, 1000 A).

Recommended fuse connections

| Size | Converter type (2-Q) | Converter type (4-Q) | Fuse Type | Fuse holder | Design fig. |
|------|----------------------|----------------------|--------------|---------------|---------------|
| F1 | DCS550-S01-0020 | DCS550-S02-0025 | 50A 660V UR | OFAX 00 S3L | 1 |
| | DCS550-S01-0045 | DCS550-S02-0050 | 63A 660V UR | | 1 |
| | DCS550-S01-0065 | DCS550-S02-0075 | 125A 660V UR | | 1 |
| | DCS550-S01-0090 | DCS550-S02-0100 | | | 1 |
| F2 | DCS550-S01-0135 | DCS550-S02-0150 | 200A 660V UR | OFAX 1 S3 | 2 |
| | DCS550-S01-0180 | DCS550-S02-0200 | 250A 600V UR | | 2 |
| | DCS550-S01-0225 | DCS550-S02-0250 | 315A 660V UR | | 2 |
| | DCS550-S01-0270 | DCS550-S02-0300 | 500A 660V UR | | 3 |
| F3 | DCS550-S01-0315 | DCS550-S02-0350 | | OFAX 3 S3 | 3 |
| | DCS550-S01-0405 | DCS550-S02-0450 | 700A 660V UR | | 4 |
| | DCS550-S01-0470 | DCS550-S02-0520 | | | 4 |
| F4 | DCS550-S01-0610 | DCS550-S02-0680 | 900A 660V UR | 3 x 170H 3006 | 5 |
| | DCS550-S01-0740 | DCS550-S02-0820 | | | 5 |
| | DCS550-S01-0900 | DCS550-S02-1000 | | | 1250A 660V UR |



Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Environmental conditions

| System connection | |
|-----------------------------|-------------------------------------|
| Voltage, 3-phase: | 230 to 525 V acc. to IEC 60038 |
| Voltage deviation: | ±10% continuous; ±15 % short-time * |
| 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 |
| df/dt: | 17 % / s |

* = 0.5 to 30 cycles.
Please note: Special consideration must be given to voltage deviation in regenerative mode.

| Degree of protection | |
|---|-------|
| Converter module and options (line chokes, fuse holder, field supply unit, etc.): | IP 00 |

| Paint finish | |
|-------------------|----------|
| Converter module: | RAL 9002 |

Sound pressure level

| Size | Sound pressure level LP (1 m distance) | | Vibration |
|------|--|----------------|------------------|
| | as module | enclosed conv. | as module |
| F1 | 55 dBA | 68 dBA | |
| F2 | 55 dBA | 72 dBA | |
| F3 | 60 dBA | 78 dBA | 0.5 g, 5...55 Hz |
| F4 | 66...70 dBA, depending on fan | 77 dBA | |

Product compliance

- CE
- Low Voltage Directive 2006/95/EC — conformity EN61800-5-1 EN60146-1-1
- Machinery Directive 2006/42/EC — in cooperation EN60204-1
- EMC Directive 2004/108/EC — conformity EN61800-3
- Quality assurance system ISO 9001 and Environmental system ISO 14001
- RoHS
- C-Tick
- Pending: UL, cUL 508A or 508C and CSA C22.2 NO. 14-95, GOST R

EMC according to EN 61800-3 (2004)

- Categories C2, C3 or C4 with external EMC filtering or dedicated transformer

| Environmental limit values | |
|--|---------------------------------|
| Permissible cooling air temperat. | |
| - at converter module air inlet: | 0 to +55°C |
| with rated DC current: | 0 to +40°C |
| w. different DC current | +30 to +55°C |
| - Options: | 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 |
| Change of the ambient temp.: | < 0.5°C / minute |
| Storage temperature: | -40 to +55°C |
| Transport temperature: | -40 to +70°C |
| Pollution degree (IEC 60664-1, IEC 60439-1): | 2 |
| Site elevation | |
| <1000 m above M.S.L.: | 100%, without current reduction |
| >1000 m above M.S.L.: | with current reduction |

Service

The ABB DriveHelp service is ABB's globally operating process for handling LV drives warranty claims. It has been exclusively tailored for international OEM customers, who have purchased LV drives manufactured by ABB for their production machinery and equipment. The service covers all LV drives manufactured by ABB, that are delivered to International machine manufacturers builder.

Efficient service

As indicated by its name, the new ABB DriveHelp service targets at supporting International machine manufacturer builder customers at all times by offering them an efficiently operating warranty service that enables them to run their business operations at an optimum maximum level. The ABB DriveHelp service defines clear procedures, which advise the machine builder customers whom to contact in case any of their ABB LV drives fails during the warranty period in order to get assistance as soon as possible from the nearest local ABB service provider.

The ABB DriveHelp team can be reached 24 hours a day and is committed to ensuring that the machine builder customers have a competent, local person available to assist them within the shortest possible time whenever help is needed.

A well defined operations model

The target of the ABB DriveHelp service is to quickly locate the official ABB service provider, which is closest to the customer. In the event a case of an LV drive failure, the end-user informs the OEM agent in his country, who forwards the message with product and customer information to the seller of the drive. After having checked the warranty, he will send a warranty claim with all necessary information to the ABB DriveHelp team.

The ABB DriveHelp team will process the warranty claim, choose the best suitable service provider, follow up the response time to the end user and finalize the case. The service

provider allocated to the case will contact the end customer within 24 hours of receiving information from the ABB DriveHelp team. The ABB service provider takes care of the warranty service request and sends a service and warranty report to the ABB DriveHelp team as well as the original ABB drives sales company.

Training

Throughout the value chain, from pre-purchase to replacement and recycling of a drive, ABB offers product, application and general technical training both in classrooms and over the internet.

Classroom training typically comprises theoretical presentations and hands-on exercises.

To meet its customers' growing interest in self-learning, ABB offers several e-learning modules for DCS550 available in the Internet. The training content includes product features, applications, installation and start-up procedures, programming, PC tools, maintenance and trouble-shooting fault finding. The majority of training is delivered by ABB training centre's. Versatile training services are also offered by local ABB sales and service companies and their channel partners. Some courses are organized at the customer's location. Benefits of professional training include enhanced personnel and plant safety, reduced downtime, improved productivity and increased employee motivation. More information about ABB's training centre's and the courses can be found from the ABB University at www.abb.com/abbuniversity.

ABB drive life cycle management model

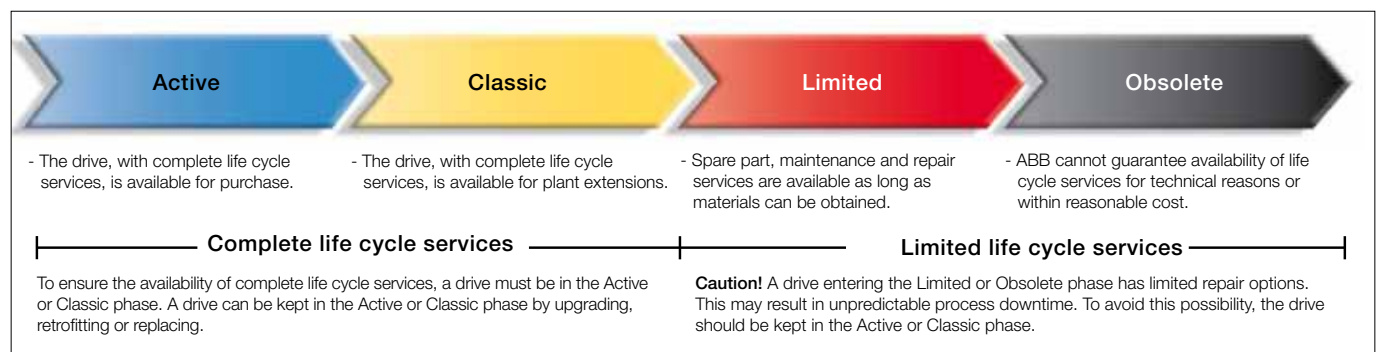


ABB follows a four-phase model for managing drive life cycles, which brings enhanced customer support and improved efficiency.

Examples of life cycle services are: selection and dimensioning, installation and commissioning, preventive and corrective maintenance, remote services, spare part services, training and learning, technical support, upgrade and retrofit, replacement and recycling.

DCS family - the range for all demands



DCS550-S modules The compact drive for machinery application

20 ... 1,000 A_{DC}
0 ... 610 V_{DC}
230 ... 525 V_{AC}
IP00

- Compact
- Robust design
- Adaptive and winder program
- High field exciter current



DCS800-S modules The versatile drive for process industry

20 ... 5,200 A_{DC}
0 ... 1,160 V_{DC}
230 ... 1,000 V_{AC}
IP00

- Compact
- Highest power ability
- Simple operation
- Comfortable assistants, e.g. for commissioning or fault tracing
- Scalable to all applications
- Free programmable by means of integrated IEC61131-PLC



DCS800-A enclosed converters Complete drive solutions

20 ... 20,000 A_{DC}
0 ... 1,500 V_{DC}
230 ... 1,200 V_{AC}
IP21 – IP54

- Individually adaptable to customer requirements
- User-defined accessories like external PLC or automation systems can be included
- High power solutions in 6- and 12-pulse up to 20,000 A, 1,500 V
- In accordance to usual standards
- Individually factory load tested
- Detailed documentation



DCS800-E series Pre-assembled drive-kits

20 ... 2,000 A_{DC}
0 ... 700 V_{DC}
230 ... 600 V_{AC}
IP00

- DCS800 module with all necessary accessories mounted and fully cabled on a panel
- Very fast installation and commissioning
- Squeezes shut-down-times in revamp projects to a minimum
- Fits into Rittal cabinets
- Compact version up to 450 A and Vario version up to 2,000 A



DCS800-R Rebuild Kit Digital control-kit for existing powerstacks

20 ... 20,000 A_{DC}
0 ... 1,160 V_{DC}
230 ... 1,200 V_{AC}
IP00

- Proven long life components are re-used, such as power stacks, (main) contactors, cabinets and cabling / busbars, cooling systems
- Use of up-to-date communication facilities
- Increase of production and quality
- Very cost-effective solution
- Open Rebuild Kits for nearly all existing DC drives
- tailor-made solutions for...
 - BBC PxD
 - BBC SZxD
 - ASEA TYRAK
 - other manufacturers

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