ABB DC Drives

DCS800
The next Generation
The practical requirements for modern DC drives are extremely diverse. On the one hand operation and handling should be easy while on the other hand almost perfect functionality and performance for all different applications is expected. The challenge is to find an innovative solution which copes with both of them - the solution is DCS800.

The combination of best-in-class user friendliness, high performance and almost unlimited scalability allows You to configure Your drives to get flexible, cost effective solutions. Thus the DCS800 helps You to save Your investment for the future.
ABB DC drive technology - Innovation driven by tradition

A DC drive from ABB is more than just a drive.
Due to…
- our advanced technical Know How,
- our experience over decades in every imaginable application,
- highest quality and reliability of our products, as well as,
- our worldwide presence
...we can help you to be more competitive within the global marketplace of the future. During the development of the DCS800 we focused on the user’s needs. By means of innovations, which save money. By means of functions, which make DC technology easier than ever before.

With the innovative DCS800 technology our customers are well armed for the challenges of the future. And with ABB they have the certainty of a reliable and fair partner- especially in the field of DC drives.

Decision makers ask themselves:
- Which DC drive manufacturer today invests millions of Euros in a new DC product series?
- Which DC drive manufacturer today still offers complete support for old DC installations as well as for new customer requirements?
- Which DC drive manufacturer delivers DC drives with the latest state of the art technology, even in the future?

ABB – The reliable partner

Saving money with DCS800
- Highest reliability and availability
- Fast installation and commissioning
- Less components, thus less spare parts needed
- PC Tool included in the standard scope of delivery
- PLC included in the drive without additional hardware
- Remote maintenance and diagnosis via internet
- Field supply, encoder and tacho interfaces always included
- Reduced installation work due to integrated field supply
Many users -like machine builders- have more important issues to do than wasting much time with drives in their applications. Therefore, the drives must work well and be simple to operate – just like the DCS800. The innovative DC drive from ABB sets all new standards in simple operation and smooth handling.

Extreme flexible
Adaptive programming allows simple adaptation of every drive without using additional hardware or other options. Preconfigured function blocks (e.g. free PI controller, filters, logic blocks) are included off-the-shelf in every drive. The DCS800 control panel or the commissioning tool DriveWindow Light serve as programming tools. Hence, unexpected changes on site are easy to handle.

DCS800 – Simplicity as a principle
Due to its large function range, the DCS800 is the first DC drive which increases its functionality according to the requirements of the user. Hardware extensions are quickly plugged on without using tools. Due to the standard integrated PLC and the Peer-to-Peer communication, even complex control tasks are realised directly in the drive.

**DCS800 – one drive fits all**

The DCS800 allows cost-efficient drive systems, which are accurately adjusted to the respective application. Thus it is the first choice in various applications – in metals, in pulp and paper as well as in cranes, in mine hoist or in non-motoric applications like battery chargers or magnets.
The DCS800 is „Internet enabled“. Remote service from every internet PC guarantees the reliable use of the DCS800 in an easy and cost effective way - if necessary from thousands of miles away. In addition, our intuitive PC tools provide easy access to all DCS800 functions. Thanks to guided commissioning, adaptive programming and intelligent diagnostics its operation will be like a mere child’s play.
DCS800 – Technical Data

Technical data DCS800
Mains supply voltage 230...520 V +/-10%, 3-...
Frequency 50...60 Hz +/-5 Hz
Electronics supply 115...230 V
+15%/-10%, 1-
DC output current 20...5,200 A
Overload capability 200%

Ambient conditions
Ambient temperature 0°...+40° C
+40...+55° C with reduction
Storage temperature -40°...+70° C
Transport temperature -40°...+5° C
Relative humidity 5...95%, not condensing
Pollution degree Class 2
Protection class IP 00

Field current
Up to 25A integrated (not D6 / D7)
Up to 66 A, external 1-
Up to 520 A, external 3-

I/O
Digital inputs 8 standard
8 up to 14 optional

Digital outputs 8 standard
8 up to 12 optional

Analog inputs +/-10 V; 0/2...10 V
+/-0.2 mV; 0/4...20 mA
4 standard
4 up to 8 optional

Analog outputs 3 standard
3 up to 5 optional

Cycle time speed controller
3.3 / 2.77 ms (50 / 60 Hz), synchronous with mains frequency

Accuracy
Speed resolution
with encoder 0.005%, of nominal Speed
with analog tacho 0.1% (16 Bit)
Cycle time speed controller 3.3 / 2.77 ms (50 / 60 Hz), synchronous with mains frequency
Step response curr. contr.: 5 ms
Cycle time curr. contr.: 3.3 / 2.77 ms (50 / 60 Hz), synchronous with mains frequency
Analog inputs 16 Bit

PC-Tools
DriveWindow Light free of charge with every converter
Standard RS232 PC-connection
DriveWindow Real-time optical connection
ControlBuilder IEC61131 programming tool
DriveSize Converter- and motor dimensioning

Maintenance / Diagnosis
Remote diagnosis with any Internet-PC worldwide
• with internet browser / internet explorer
• with DriveWindow full drive control via OPC

Approvals
Adaptive Programming
pre-defined drive-specific function blocks, e.g.
• Free process controller (PI-Controller)
• I/O- and digital Operations
With control panel or PC-Tool, no need for additional hardware

Speed Feedback
EMF
Analogue tacho
Encoder
2nd Encoder possible (RTAC)

Communication
Serial communication
• Ethernet
• Profibus
• CANopen
• DeviceNet
• ControlNet
• Modbus
Industrial IT
• Free selectable data

High Current Solutions
12-pulse up to 20,000 A, serial and parallel
Hard parallel and sequential
up to 1,500 V

Protection
Speed feedback monitoring
Temperature
Overload
Over speed
Motor stalled
Motor over current
Motor over voltage
Field over current
Field over voltage
Minimum field current
Zero speed
Mains over- and under voltage

Integrated IEC 61131-PLC
• Open standard programming tool ControlBuilder
• Support of all five IEC-languages
• Drive-specific function blocks
• Saving of program and source in Memory Card
• Online debugging and forcing

Unit size 2-Q rated Current DCS800-01 [IAC] 4-Q rated Current DCS800-02 [IAC] Supply voltage [VAC] max. field current internal [IAC] Dimensions

<table>
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<th>Unit</th>
<th>2-Q</th>
<th>4-Q</th>
<th>Supply voltage</th>
<th>max. field current internal</th>
<th>Dimensions</th>
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1 only available as 2-Q drive
2 on request
3 600V
4 2-Q -> 290 A / 590 A
4 4-Q -> 320 A / 655 A
DCS800 family

DCS800-S Modules
The versatile drive for any application
20 \( \ldots \) 5,200 A\(_{DC}\)
0 \( \ldots \) 1,160 V\(_{DC}\)
230 \( \ldots \) 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 \( \ldots \) 20,000 A\(_{DC}\)
0 \( \ldots \) 1,500 V\(_{DC}\)
230 \( \ldots \) 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 \( \ldots \) 2,000 A\(_{DC}\)
0 \( \ldots \) 700 V\(_{DC}\)
230 \( \ldots \) 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 \( \ldots \) 20,000 A\(_{DC}\)
0 \( \ldots \) 1,160 V\(_{DC}\)
230 \( \ldots \) 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

ABB Automation Products
Wallstadter Straße 59
68526 Ladenburg • Germany
Phone  +49(0)6203-71-0
Fax  +49(0)6203-71-7609
www.abb.com/motors&drives
dc-drives@de.abb.com

Subject to changes without prior notice