

DC1 Series 1 Hour Product Overview



Powering Business Worldwide

Drives assortment

PowerXL™ DC1 Compact Machinery Drive

Enclosure **IP66**



Enclosure **IP20**



1 to 10 HP / 480 V FS 1 - 3

1 to 30 HP / 480 V FS 1 - 4

DC1 – Main features

Power range

- 1~ 230 V / 3~ 230 V: ½ to 5 HP
- 3~ 230 V / 3~ 230 V: ½ to 15 HP
- 3~ 480 V / 3~ 480 V: 1 to 30 HP
- 1~ 230 V / 1~ 230 V: ½ to 1.5 HP
- 1~ 115 V / 1~ 115 V: ½ to ¾ HP
- 1~ 115 V / 3~ 230 V: ½ to 1 HP

Control mode

- V/f (voltage boost)
- 150 % overload for 60 sec.
- 175 % overload for 2 sec.

Features / Options

- IP20, IP66
- Int. EMC Filter & brake chopper (Option)

Onboard I/O interface (max. .. min.)

- 4 inputs (2 digital and 2 digital/analog)
 - 4-20mA or 0-10Vdc
- 1 output (digital/analog)
 - 0-10Vdc only
- 1 Relay output

Communication

- Modbus RTU and CANopen onboard
- SmartWire-DT as Option
- Ethernet/IP as Option



DC1-(...E1) Main features

NEW !

Power range

- 1~ 230 V / 3~ 230 V: ½ to 5 HP
- 3~ 230 V / 3~ 230 V: ½ to 15 HP
- 3~ 480 V / 3~ 480 V: 1 to 30 HP
- 1~ 230 V / 1~ 230 V: ½ to 1.5 HP
- 1~ 115 V / 1~ 115 V: ½ to ¾ HP
- 1~ 115 V / 3~ 230 V: ½ to 1 HP

Control mode

- V/f, **SLV, PM-, BLDC- and SyncRel motor**
- 150 % overload for 60 sec.
- 175 % overload for 2 sec.

Features / Options

- IP20, IP66
- Int. EMC Filter & brake chopper (Option)
- **Fire Mode**

Onboard I/O interface (max. .. min.)

- 4 inputs (2 digital and 2 digital/analog)
 - 4-20mA or 0-10Vdc
- 1 output (digital/analog)
 - 0-10Vdc only
- 1 Relay output

Communication

- Modbus RTU and CANopen onboard
- SmartWire-DT as Option
- Ethernet/IP as Option



Type Coding

NEW !

DC1 - 1 2 4D1 F N - A 20 C E1

Device series
 DC1 = variable frequency drive, compact, series 1
 (D = Drives, C = Compact, 1 = Series 1)

Connection in power section
 1 = single-phase mains connection/
 three-phase motor connection
 3 = three-phase mains connection/
 three-phase motor connection
 S = single-phase mains connection/
 single-phase motor connection

Mains voltage category
 1 = 110 V (110 - 115 V ± 10 %)
 2 = 230 V (200 - 240 V ± 10 %)
 4 = 400 V (380 - 480 V ± 10 %)
 D = 110 V input/230 V output
 (voltage doubler)

Rated operational current (examples)
 2D2 = 2,2 A
 4D1 = 4,1 A
 024 = 24 A

Enhancement
 E1 = Enhanced Version 1

Type
 N = Standard basic device
 C = coated printed circuit boards

Degree of protection
 20 = IP20/NEMA 0
 66 = IP66/NEMA 4X
 6S = IP66 with switch/NEMA 4X, switched

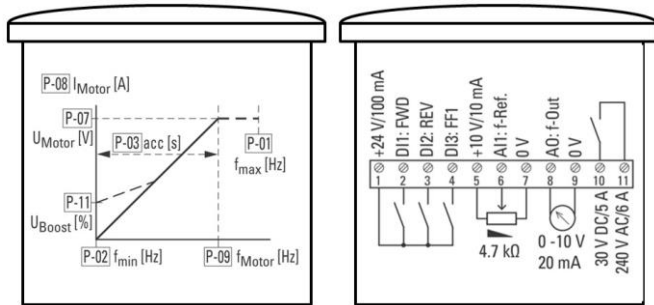
Display unit (display)
 A = LED display
 B = OLED display

B = Brake chopper
 N = no internal brake chopper
 B = Brake chopper

EMC (radio interference suppression filter)
 N = no internal RFI filter
 F = Internal RFI filter

DC1 – IP20 FS 1 - 4

Info card



Communication Interface RJ45

CANopen, Modbus RTU, OP-Bus as standard



Mains terminals

Keypad/display (LED)

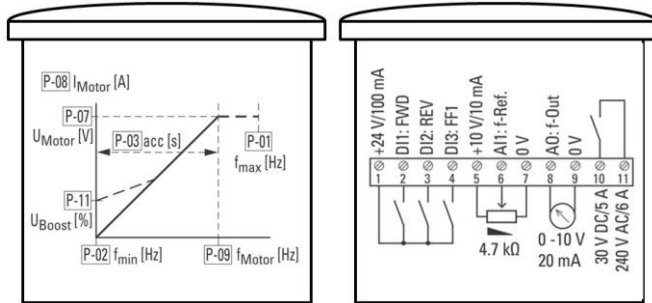
DIN rail mounting (FS1-2)

Detachable control terminals

Motor terminals

DC1 – IP20 FS 1 - 4

Info card



Communication Interface RJ45
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Mains terminals

Keypad/display (LED)

DIN rail mounting (FS1-2)



Detachable control terminals

Motor terminals

DC1 – IP66 FS 1 - 3

Keypad/display LED

Keypad/display LED + local control elements

- Speed potentiometer
- Run reverse / off / run forward switch
- Power isolator with lock off



DC1 - Accessories



- 1) DC1 - Compact Drive
- 2) Mains- / Motor-Chokes
- 3) Braking resistors
- 4) I/O Extension modules
- 5) SWD module
- 6) Communication-/Copy-Stick
- 7) Remote Keypads



Modbus®

CANopen

Accessories

NEW !



No change:

- Mains-/Motor-Chokes / **Sine Filters**
- Brake Resistors
- I/O Extension Modules
- SWD Module
- PC Communication Cable
- OLED (Firmware update necessary)

New version necessary:

- Communication-/Copy-Stick
DX-COM-STICK => **DX-COM-STICK2**
- Remote Keypad
DX-KEY-LED => **DX-KEY-LED2**

=> Both are fully backward compatible!

DC1-...E1 – Advantages

NEW !

Main Features

- Ease-of-use performance
 - Out-Of-Box commissioning!
 - Only 14 basic parameter!
 - Detachable control terminals
- Ambient temperature +50°C for IP20 (IP66 fractional with derating)
- Powerful V/f control
- Sensor-less Vector Control (SLV) provides high starting torque and excellent speed regulation
- Support for High Efficiency Motors, like PM, Brushless DC and Synchronous Reluctance Motors
- Fire Mode
- Full Short Circuit Protected
- Conformal Coated Boards
- CANopen and Modbus onboard
- SmartWire-DT as option
- Enclosure IP66 as option



DC1 – Applications

Standard Applications

- Fan, pumps and centrifugals
- Simple/ basic machines
 - Fill machines
 - Kneaders
 - Car wash
 - Mixers
 - Treadmills
 - Medical beds etc.
- Simple/ basic conveyors
 - Belt conveyors
 - Roller conveyors
 - Spiral conveyors etc.
- Machinery with single phase motors
 - Woodworking machines
 - Surface polishing- and cleaning machines
 - Swimmingpool- or irrigation pumps, hydro massage baths, household aids

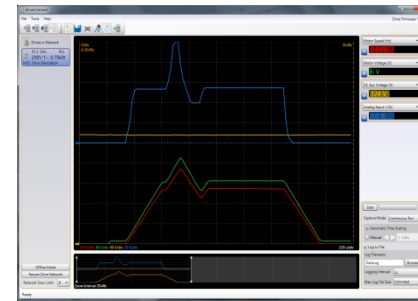
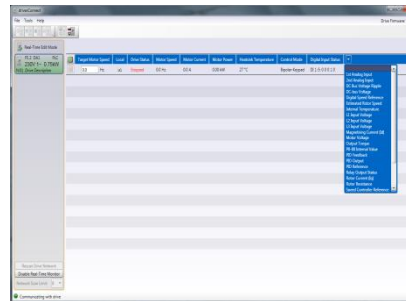
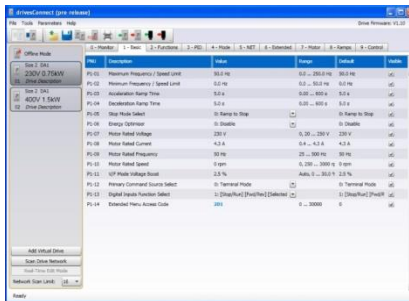


Software

drivesConnect

<http://www.drive-support-studio.com/OTS/Eaton/downloads/deploy/drivesConnect.htm>

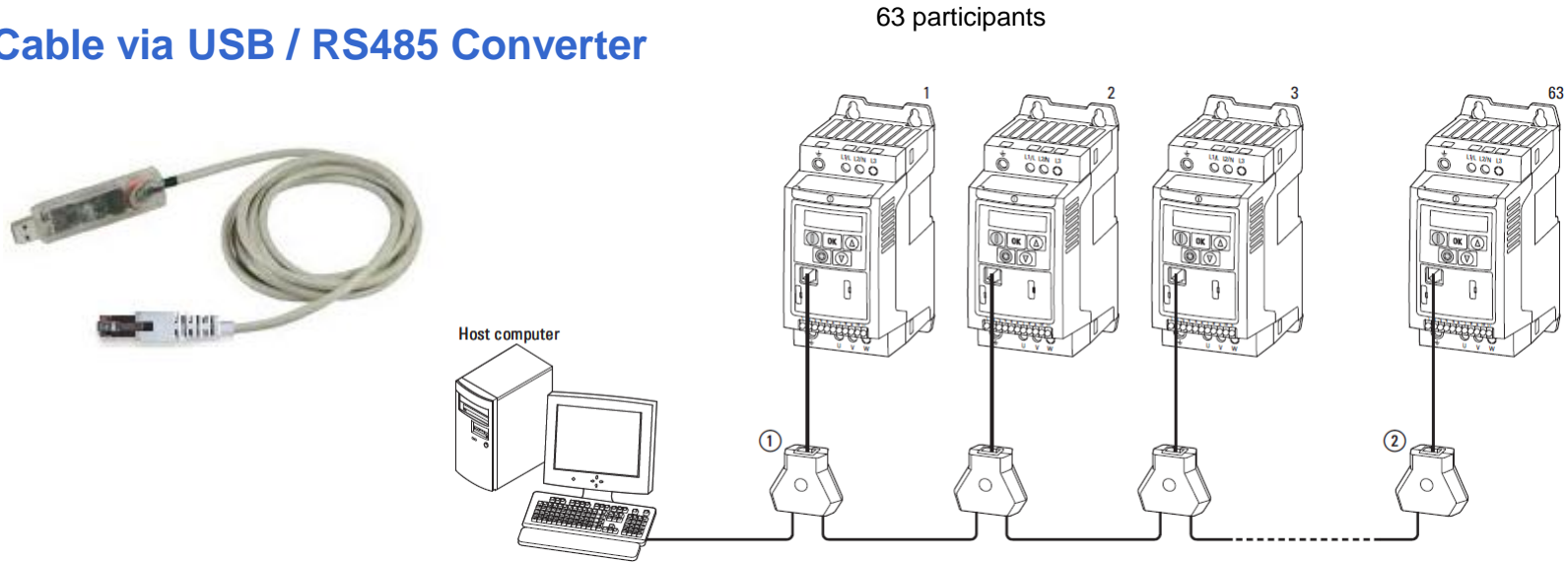
- Parameter Editor
- Drive Control/Monitor
- Function Block Editor
- Scope/Data Logger



PC communication

Software – Connection

Cable via USB / RS485 Converter



Wireless communication via Bluetooth/Copy Stick (DX-COM-STICK2)



Parameter copy function integrated

Copy parameter
to COM-Stick



Copy parameter
to drive