Specifications

Eaton 199389

Catalog Number: 199389

Eaton DC1 Variable frequency drive, 230 V AC, 1-phase, 7 A, 0.75 kW, IP66/NEMA 4X, Radio interference suppression filter, 7-digital display assembly, Additional PCB protection, UV resistant, FS1



General specifications

Product Name	**Catalog Number**
Eaton DC1 Variable frequency drive	199389
EAN	**Product Length/Depth**
4015081977789	162 mm
Product Height	**Product Width**
232 mm	161 mm
Product Weight	**Certifications**
2.5 kg	UL Category Control No.: NMMS, NMMS7 IEC/EN 61800-3 CE UkrSEPRO IEC/EN 61800-5-1 Certified by UL for use in Canada EAC UL 508C UL File No.: E172143 RCM UL report applies to both US and Canada CUL IEC/EN 61800-2 UL CE marking UL Listed CSA-C22.2 No. 14 IEC/EN61800-5 RoHS, ISO 9001

Powering Business Worldwide

Features & Functions

Features

Parameterization: Keypad

Parameterization: drivesConnect mobile (App)

Parameterization: drivesConnect

Parameterization: Fieldbus

Fitted with:

Control unit

7-digital display assembly

Radio interference suppression filter

Additional PCB protection

UV resistance

Internal DC link

IGBT inverter

PC connection

General

Cable length

C3 ≤ 25 m, maximum motor cable length

C2 ≤ 5 m, maximum motor cable length

75 m, unscreened, maximum permissible, Motor feeder

150 m, unscreened, with motor choke, maximum permissible, Motor feeder

50 m, screened, maximum permissible, Motor feeder

C1 ≤ 1 m, maximum motor cable length

100 m, screened, with motor choke, maximum permissible, Motor feeder

Communication interface

OP-Bus (RS485), built in

Modbus RTU, built in

CANopen®, built in

SmartWire-DT, optional

Connection to SmartWire-DT

No

Degree of protection

IP66

NEMA 4X

Electromagnetic compatibility

1st and 2nd environments (according to EN 61800-3)

Frame size

FS1

Mounting position

Vertical

Product category

Variable frequency drives

Protection

Finger and back-of-hand proof, Protection against direct contact (BGV A3, VBG4)

Protocol

CAN

MODBUS

Other bus systems

EtherNet/IP

Radio interference class

C2, C3: depending on the motor cable length, the connected load, and ambient conditions. External radio interference

suppression filters (optional) may be necessary.
Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments
C1: for conducted emissions only

Suitable for

Branch circuits, (UL/CSA)

Climatic environmental conditions

Altitude

Max. 4000 m
Above 1000 m with 1 % derating per 100 m

Ambient operating temperature - min

-20 °C

Ambient operating temperature - max

40 °C

Ambient storage temperature - min

-40 °C

Ambient storage temperature - max

60 °C

Climatic proofing

< 95 average relative humidity (RH), no condensation, no corrosion

Main circuit

Efficiency

97 % (η)

Input current ILN at 150% overload

9.3 A

Leakage current at ground IPE - max

2.49 mA

Mains switch-on frequency

Maximum of one time every 30 seconds

Mains voltage - min

200 V

Mains voltage - max

240 V

Operating mode

Speed control with slip compensation
BLDC motors
PM motors
U/f control
Sensorless vector control (SLV)
Synchronous reluctance motors

Output frequency - min

Motor rating

Assigned motor current IM at 220 - 240 V, 60 Hz, 150% overload

6.8 A

Assigned motor power at 230/240 V, 60 Hz, 1-phase

1 HP

Apparent power

Apparent power at 230 V

1.61 kVA

Apparent power at 240 V

1.68 kVA

Braking function

Braking torque

Max. 100 % of rated operational current Ie, variable, DC - Main circuit

Control circuit

0 Hz

Output frequency - max

500 Hz

Output voltage (U2)

230 V AC, single-phase

240 V AC, single-phase

Overload current IL at 150% overload

10.5 A

Rated control supply voltage

10 V DC (Us, max. 10 mA)

Rated frequency - min

48 Hz

Rated frequency - max

62 Hz

Rated operational current (Ie)

7 A at 150% overload (at an operating frequency of 6 kHz and an ambient air temperature of +40 °C)

Rated operational voltage

230 V AC, 1-phase

240 V AC, 1-phase

Resolution

0.1 Hz (Frequency resolution, setpoint value)

Short-circuit protection rating

15 A, UL (Class CC or J), Safety device (fuse or miniature circuit-breaker), Power Wiring

Starting current - max

175 % IH

Supply frequency

50/60 Hz

Switching frequency

8 kHz, 4 - 32 kHz adjustable (audible), fPWM, Power section, Main circuit

System configuration type

AC supply systems with earthed center point

Voltage rating - max

240 V

Number of inputs (analog)

2

Number of inputs (digital)

4

Number of outputs (analog)

1

Number of outputs (digital)

1

Number of relay outputs

1 (parameterizable, N/O, 6 A (250 V, AC-1) / 5 A (30 V, DC-1))

Resources

Application notes

Connecting drives to generator supplies

Set Point Setting

Update DX-COM-STICK3

Fire Mode

Starting, Stopping and Operation

Electromagnetic compatibility (EMC)

Access to Parameter Levels 2 + 3 Parameter Lock - Load Default

How does the internal motor protection work?

Operating Single Phase Motors

I/O Configuration

Low Temperature Applications

PI controller

Operating Permanent Magnet and Brushless DC Motors

Motor data - Motor Protection - V/f curves Slip Compensation

Dependency of the output current on switching frequency and ambient temperature

DX-COM-STICK3_Connection

Conformal Coating

The OP System Bus - Parameterizing - Control

Brochures

eaton-powerxl-variable-frequency-drives-dc1-da1-brochure-br040001en-en-us.pdf

DA-SW-drivesConnect

Catalogs

Product Range Catalog Drives Engineering

Declarations of conformity

DA-DC-00004552.pdf

DA-DC-00004184.pdf

DA-DC-00003964.pdf

DA-DC-00004555.pdf

Drawings

eaton-frequency-inverter-dc1-dimensions-002.eps

Installation instructions

eaton-powerxl-dc1-ip66-single-phase-motors-instruction-leaflet-il040058zu.pdf

Installation videos

PowerXL Variable Frequency Drives DC1 and DA1 - EN

Video PowerXL DA1

Manuals and user guides

MN040022_EN

MN040018_EN

MN040003_EN

MN040058_EN

eaton-canopen-communication-manual-for-variable-frequency-drives-variable-speed-starters-da1-db1-dc1-de11-mn040019-en-us.pdf

mCAD model

e3_s1_ip66_ohne_bedienelementen.dwg

e3_s1_ip66_ohne_bedienelementen.stp

Multimedia

Looking for variable frequency drives DC1 and DA1 which can be used in harsh environments?

Product notifications

eaton-drives-ecodesign-directive-mz040046en-en.pdf

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