Specifications

Eaton 199390

Catalog Number: 199390

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, Local controls, Additional PCB protection, UV resistant, FS1



General specifications

Product Name
Eaton DC1 Variable frequency drive

Catalog Number
199390

EAN
4015081977796

Product Length/Depth
162 mm

Product Height
232 mm

Product Width
161 mm

Product Weight
2.5 kg

Certifications
CE
CUL
RCM
RoHS, ISO 9001
UL 508C
UL File No.: E172143
CE marking
CSA-C22.2 No. 14
IEC/EN 61800-3
IEC/EN 61800-5-1
UL Category Control No.: NMMS, NMMS7
Certified by UL for use in Canada
UL report applies to both US and Canada
EAC
IEC/EN61800-5

Powering Business Worldwide

UL

UkrSEPRO

IE

UL Listed

Features & Functions

Features

Parameterization: Fieldbus

Parameterization: drivesConnect mobile (App)

Parameterization: drivesConnect

Parameterization: Keypad

Fitted with:

Control unit

Local controls

UV resistance

7-digital display assembly

PC connection

IGBT inverter

Internal DC link

Radio interference suppression filter

Additional PCB protection

General

Cable length

50 m, screened, maximum permissible, Motor feeder

75 m, unscreened, maximum permissible, Motor feeder

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

C1 ≤ 1 m, maximum motor cable length

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

C3 ≤ 25 m, maximum motor cable length

C2 ≤ 5 m, maximum motor cable length

Communication interface

CANopen®, built in

Modbus RTU, built in

OP-Bus (RS485), built in

SmartWire-DT, optional

Connection to SmartWire-DT

No

Degree of protection

NEMA 4X

IP66

Electromagnetic compatibility

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

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

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

EtherNet/IP
CAN
MODBUS
Other bus systems

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)

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
Sensorless vector control (SLV)
Synchronous reluctance motors
PM motors
U/f control
BLDC motors

Output frequency - min

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

240 V AC, 1-phase
230 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, max. starting current (High Overload), For 2.5 seconds every 600 seconds, Power section

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

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

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

Operating Single Phase Motors

I/O Configuration

PI controller

Operating Permanent Magnet and Brushless DC Motors

Low Temperature Applications

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

Dependency of the output current on switching frequency and ambient temperature

DX-COM-STICK3_Connection

The OP System Bus - Parameterizing - Control

Conformal Coating

Set Point Setting

Update DX-COM-STICK3

Connecting drives to generator supplies

Fire Mode

Starting, Stopping and Operation

How does the internal motor protection work?

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

Electromagnetic compatibility (EMC)

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-00004184.pdf

DA-DC-00003964.pdf

DA-DC-00004555.pdf

DA-DC-00004552.pdf

Drawings

eaton-frequency-inverter-dc1-dimensions.eps

Installation instructions

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

Installation videos

Video PowerXL DA1

PowerXL Variable Frequency Drives DC1 and DA1 - EN

Manuals and user guides

MN040003_EN

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

MN040058_EN

MN040022_EN

MN040018_EN

mCAD model

e3_s1_ip66_mit_bedienelementen.stp

e3_s1_ip66_mit_bedienelementen.dwg

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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