Specifications

Eaton 199396

Catalog Number: 199396

Eaton DC1 Variable frequency drive, 115 V AC, single-phase, 4.3 A, 0.75 kW, IP66/NEMA 4X, 7-digital display assembly, Local controls, Additional PCB protection, UV resistant, FS1



General specifications

Product Name
Eaton DC1 Variable frequency drive

Catalog Number
199396

EAN
4015081977857

Product Length/Depth
162 mm

Product Height
232 mm

Product Width
161 mm

Product Weight
2.5 kg

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

Powering Business Worldwide

Features & Functions

Features

Parameterization: drivesConnect mobile (App)
Parameterization: drivesConnect
Parameterization: Fieldbus
Parameterization: Keypad

Fitted with:

Additional PCB protection
UV resistance
PC connection
7-digital display assembly
IGBT inverter
Control unit
Local controls
Internal DC link

General

Cable length

150 m, unscreened, with motor choke, maximum permissible, Motor feeder
50 m, screened, maximum permissible, Motor feeder
75 m, unscreened, maximum permissible, Motor feeder
100 m, screened, with motor choke, maximum permissible, Motor feeder

Communication interface

Modbus RTU, built in
OP-Bus (RS485), built in
CANopen®, built in
SmartWire-DT, optional

Connection to SmartWire-DT

No

Degree of protection

IP66
NEMA 4X

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

MODBUS
EtherNet/IP
CAN
Other bus systems

Radio interference class

Optional external radio interference suppression filter for longer motor cable lengths and for use in different EMC environments

Suitable for

Branch circuits, (UL/CSA)

Climatic environmental conditions

Main circuit

Altitude

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

Efficiency

97 % (η)

Input current ILN at 150% overload

15.8 A

Leakage current at ground IPE - max

4.8 mA

Mains switch-on frequency

Maximum of one time every 30 seconds

Mains voltage - min

110 V

Mains voltage - max

115 V

Operating mode

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

Output frequency - min

0 Hz

Output frequency - max

500 Hz

Output voltage (U2)

230 V AC, 3-phase

Overload current IL at 150% overload

6.45 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)

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

Rated operational voltage

115 V AC, 1-phase

Resolution

0.1 Hz (Frequency resolution, setpoint value)

Short-circuit protection rating

25 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

120 V

Motor rating

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

4.2 A

Assigned motor current IM at 230 V, 50 Hz, 150% overload

3.2 A

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

1 HP

Braking function

Braking torque

Max. 30 % MN, Standard - Main circuit

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

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

The OP System Bus - Parameterizing - Control

DX-COM-STICK3_Connection

PI controller

Low Temperature Applications

Operating Permanent Magnet and Brushless DC Motors

I/O Configuration

Conformal Coating

Dependency of the output current on switching frequency and ambient temperature

Operating Single Phase Motors

Starting, Stopping and Operation

Update DX-COM-STICK3

How does the internal motor protection work?

Electromagnetic compatibility (EMC)

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

Fire Mode

Set Point Setting

Connecting drives to generator supplies

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.eps

Installation instructions

eaton-powerxl-dc1-ip66-instruction-leaflet-il040059zu.pdf

Installation videos

PowerXL Variable Frequency Drives DC1 and DA1 - EN

Video PowerXL DA1

Manuals and user guides

MN040018_EN

MN040022_EN

MN040003_EN

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

MN040059_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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