Specifications

Eaton 199387

Catalog Number: 199387

Eaton DC1 Variable frequency drive, 230 V AC, 1-phase, 4.3 A, 0.37 kW, IP66/NEMA 4X, Radio interference suppression filter, 7-digital display assembly, Additional PCB protection, UV resistant, FS1



General specifications

Product Name
Eaton DC1 Variable frequency drive

Catalog Number
199387

EAN
4015081977765

Product Length/Depth
162 mm

Product Height
232 mm

Product Width
161 mm

Product Weight
2.5 kg

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

Powering Business Worldwide

EAC
CSA-C22.2 No. 14
IE
UkrSEPRO

Features & Functions

Features

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

Fitted with:

Internal DC link
IGBT inverter
Radio interference suppression filter
UV resistance
7-digital display assembly
Additional PCB protection
PC connection
Control unit

General

Cable length

150 m, unscreened, with motor choke, maximum permissible, Motor feeder
100 m, screened, with motor choke, maximum permissible, Motor feeder
C3 ≤ 25 m, maximum motor cable length
C1 ≤ 1 m, maximum motor cable length
C2 ≤ 5 m, maximum motor cable length
50 m, screened, maximum permissible, Motor feeder
75 m, unscreened, maximum permissible, Motor feeder

Communication interface

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

Connection to SmartWire-DT

No

Degree of protection

NEMA 4X
IP66

Electromagnetic compatibility

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

Frame size

Climatic environmental conditions

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

Main circuit

Efficiency

97 % (η)

Input current ILN at 150% overload

6 A

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
Other bus systems
CAN
MODBUS

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)

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

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

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

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

230 V AC, 1-phase
240 V AC, 1-phase

Resolution

0.1 Hz (Frequency resolution, setpoint value)

Short-circuit protection rating

10 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

Motor rating

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

4.3 A

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

4.3 A

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

0.5 HP

Apparent power

Apparent power at 230 V

0.99 kVA

Apparent power at 240 V

1.03 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

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

DX-COM-STICK3_Connection

Conformal Coating

Dependency of the output current on switching frequency and ambient temperature

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

The OP System Bus - Parameterizing - Control

Low Temperature Applications

Operating Single Phase Motors

I/O Configuration

Operating Permanent Magnet and Brushless DC Motors

Starting, Stopping and Operation

Fire Mode

Electromagnetic compatibility (EMC)

How does the internal motor protection work?

Connecting drives to generator supplies

Update DX-COM-STICK3

Set Point Setting

PI controller

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-00004552.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

Video PowerXL DA1

PowerXL Variable Frequency Drives DC1 and DA1 - EN

Manuals and user guides

MN040022_EN

MN040018_EN

MN040058_EN

MN040003_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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