Specifications

Eaton 199397

Catalog Number: 199397

Eaton DC1 Variable frequency drive, 115 V AC, single-phase, 5.8 A, 1.1 kW, IP66/NEMA 4X, Brake chopper, 7-digital display assembly, Additional PCB protection, UV resistant, FS2



General specifications

Product Name
Eaton DC1 Variable frequency drive

Catalog Number
199397

EAN
4015081977864

Product Length/Depth
182 mm

Product Height
257 mm

Product Width
188 mm

Product Weight
3.5 kg

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

Powering Business Worldwide

Features & Functions

Features

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

Fitted with:

Breaking resistance
Internal DC link
UV resistance
Control unit
IGBT inverter
7-digital display assembly
Brake chopper
Additional PCB protection
PC connection

Functions

4-quadrant operation possible

General

Cable length

150 m, unscreened, maximum permissible cable length
300 m, unscreened, with motor choke, maximum permissible, Motor feeder
200 m, screened, with motor choke, maximum permissible cable length
100 m, screened, maximum permissible cable length

Communication interface

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

Connection to SmartWire-DT

No

Degree of protection

IP66
NEMA 4X

Frame size

FS2

Mounting position

Vertical

Product category

Variable frequency drives

Protection

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

Protocol

MODBUS
CAN
EtherNet/IP
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

21.9 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

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

8.7 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)

5.8 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

35 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 230 V, 50 Hz, 150% overload

4.6 A

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

1.5 HP

Braking function

Braking resistance

100 Ω

Braking torque

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

Max. 30 % MN, Standard - Main circuit

Max. 100 % of rated operational current Ie with external braking resistor - Main circuit

Switch-on threshold for the braking transistor

390 VDC

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

DX-COM-STICK3_Connection

Fire Mode

Starting, Stopping and Operation

The OP System Bus - Parameterizing - Control

Set Point Setting

Connecting drives to generator supplies

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

Dependency of the output current on switching frequency and ambient temperature

Conformal Coating

Update DX-COM-STICK3

Operating Single Phase Motors

Operating Permanent Magnet and Brushless DC Motors

PI controller

I/O Configuration

Low Temperature Applications

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

Electromagnetic compatibility (EMC)

How does the internal motor protection work?

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-00003964.pdf

DA-DC-00004184.pdf

DA-DC-00004555.pdf

DA-DC-00004552.pdf

Drawings

eaton-frequency-inverter-dc1-dimensions-004.eps

Installation instructions

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

Installation videos

Video PowerXL DA1

PowerXL Variable Frequency Drives DC1 and DA1 - EN

Manuals and user guides

MN040003_EN

MN040018_EN

MN040022_EN

MN040059_EN

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

mCAD model

e3_s2_ip66_ohne_bedienelementen.dwg

e3_s2_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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