

# Eaton 174340

Catalog Number: 174340

Eaton DE1 Variable speed starter, Rated operational voltage 400 V AC, 3-phase, Ie 16 A, 7.5 kW, 10 HP, Radio interference suppression filter



Photo is representative

## General specifications

### Product Name

Eaton DE1 Variable speed starter

### EAN

4015081708024

### Product Height

230 mm

### Product Weight

1.6 kg

### Catalog Number

174340

### Product Length/Depth

169 mm

### Product Width

90 mm

### Certifications

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

### Catalog Notes

Overload cycle for 60 s every 600 s

### Model Code

DE1 34016EN N20N

## Global

### Features

Parameterization: drivesConnect

Parameterization: drivesConnect mobile (App)

Parameterization: Fieldbus

Parameterization: Keypad

### Fitted with:

PC connection

Radio interference suppression filter

## Features & Functions

### Cable length

C2 ≤ 10 m, Radio interference level, maximum motor cable length

C3 ≤ 25 m, Radio interference level, maximum motor cable length

### Communication interface

Modbus RTU, built in

OP-Bus (RS485), built in

### Connection to SmartWire-DT

In conjunction with DX-NET-SWD3 SmartWire DT module

Yes

### Degree of protection

IP20

NEMA Other

### Electromagnetic compatibility

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

### Frame size

FS2

### Product category

Variable speed starter

### Protection

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

### Protocol

MODBUS

EtherNet/IP

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

### Shock resistance

15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms

### Suitable for

Branch circuits, (UL/CSA)

### Vibration

Resistance: According to EN 61800-5-1

## General

### Altitude

Above 1000 m with 1 % derating per 100 m

Max. 2000 m

### Ambient operating temperature - min

-10 °C

### Ambient operating temperature - max

60 °C

### Ambient operating temperature at 150% overload - min

-10 °C

### Ambient operating temperature at 150% overload - max

50 °C

### Ambient operating temperature details

Derating between 50 °C and

60 °C:

None if  $f_{PWM} \leq 14 \text{ kHz}$

up to a max. of 50 °C

None if  $f_{PWM} \leq 16 \text{ kHz}$

up to a max. of 46 °C

None if  $I_e \leq 10.6 \text{ A}$  and

$f_{PWM} \leq 20 \text{ kHz}$

None if  $I_e \leq 14.9 \text{ A}$  and

$f_{PWM} \leq 10 \text{ kHz}$

### Ambient storage temperature - min

-40 °C

### Ambient storage temperature - max

70 °C

### Climatic proofing

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

## Climatic environmental conditions

### Input current $I_{LN}$ at 150% overload

16.5 A

### Leakage current at ground $I_{PE}$ - max

< 3.5 mA (AC-operated)

< 10 mA (DC-operated)

## Main circuit

### Assigned motor current $I_M$ at 220 - 240 V, 60 Hz, 150% overload

14 A

### Assigned motor current $I_M$ at 230 V, 50 Hz, 150% overload

15.2 A

### Assigned motor current $I_M$ at 400 V, 50 Hz, 150% overload

#### Mains switch-on frequency

Maximum of one time every 30 seconds

#### Mains voltage - min

380 V

#### Mains voltage - max

480 V

#### Operating mode

U/f control

Speed control with slip compensation

#### Output frequency - min

0 Hz

#### Output frequency - max

300 Hz

#### Output voltage (U<sub>2</sub>)

400 V AC, 3-phase

480 V AC, 3-phase

#### Overload current I<sub>L</sub> at 150% overload

24 A

#### Rated control supply voltage

10 V DC (U<sub>s</sub>, max. 0.2 mA)

#### Rated frequency - min

45 Hz

#### Rated frequency - max

66 Hz

#### Rated operational current (I<sub>e</sub>)

16 A at 150% overload (at an operating frequency of 16 kHz and an ambient air temperature of +50 °C)

#### Rated operational power at 380/400 V, 50 Hz, 3-phase

7.5 kW

#### Rated operational voltage

400 V AC, 3-phase

480 V AC, 3-phase

#### Resolution

0.025 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

15.2 A

#### Assigned motor current I<sub>M</sub> at 440 - 480 V, 60 Hz, 150% overload

14 A

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

10 HP

#### Assigned motor power at 460/480 V, 60 Hz, 3-phase

10 HP

### Motor rating

#### Apparent power at 400 V

11.09 kVA

#### Apparent power at 480 V

13.3 kVA

### Apparent power

#### Braking torque

Max. 30 % MN, Standard - Main circuit

Adjustable to 100 %, DC - Main circuit

### Braking function

#### Number of inputs (analog)

1 (parameterizable, 0 - 10 V DC, 0/4 - 20 mA)

#### Number of inputs (digital)

4 (parameterizable, 10 - 30 V DC)

#### Number of outputs (analog)

0

#### Number of outputs (digital)

0

#### Number of relay outputs

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

### Control circuit

#### Equipment heat dissipation, current-dependent P<sub>vid</sub>

240 W

#### Heat dissipation capacity P<sub>diss</sub>

200 %, IH, max. starting current (High Overload), For 1.875 seconds every 600 seconds, Power section

#### Supply frequency

50/60 Hz

#### Switching frequency

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

#### Voltage rating - max

480 V

0 W

Heat dissipation per pole, current-dependent P<sub>vid</sub>

0 W

Rated operational current for specified heat dissipation (I<sub>n</sub>)

16 A

Static heat dissipation, non-current-dependent P<sub>vs</sub>

0 W

#### 10.2.2 Corrosion resistance

Meets the product standard's requirements.

#### 10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

#### 10.2.3.2 Verification of resistance of insulating materials to normal heat

Meets the product standard's requirements.

#### 10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects

Meets the product standard's requirements.

#### 10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

#### 10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.2.7 Inscriptions

Meets the product standard's requirements.

#### 10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.4 Clearances and creepage distances

Meets the product standard's requirements.

#### 10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

#### 10.7 Internal electrical circuits and connections

Is the panel builder's responsibility.

#### [10.8 Connections for external conductors](#)

Is the panel builder's responsibility.

#### [10.9.2 Power-frequency electric strength](#)

Is the panel builder's responsibility.

#### [10.9.3 Impulse withstand voltage](#)

Is the panel builder's responsibility.

#### [10.9.4 Testing of enclosures made of insulating material](#)

Is the panel builder's responsibility.

#### [10.10 Temperature rise](#)

The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.

#### [10.11 Short-circuit rating](#)

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

#### [10.12 Electromagnetic compatibility](#)

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

#### [10.13 Mechanical function](#)

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## Resources

### Application notes

[Connecting drives to generator supplies](#)

[Update DX-COM-STICK3](#)

[Starting, Stopping and Operation](#)

[Electromagnetic compatibility \(EMC\)](#)

[How does the internal motor protection work?](#)

[Motor data Motor Protection V/f curves Slip Compensation](#)

[Access to Parameter Level 2 Parameter Lock Load Default](#)

[Set point setting](#)

[Start, Stopp und Betrieb](#)

[Quick-Start-Guide DE11 \(english\)](#)

[I/O Configuration](#)

[Quick-Start-Guide DE1 \(english\)](#)

[Conformal Coating](#)

[Fire mode](#)

[The OP System Bus - Parameterizing - Control](#)

[DX-COM-STICK3\\_Connection](#)

### Brochures

[eaton-powerxl-variable-frequency-drives-hvac-brochure-br040012en-us.pdf](#)

[eaton-powerxl-de1-variable-speed-starter-brochure-br040003en-us.pdf](#)

### Catalogues

[Drives - Product range catalog](#)

[Product Range Catalog Drives Engineering](#)

### Declarations of conformity

[DA-DC-00004556.pdf](#)

[DA-DC-00004551.pdf](#)

### Drawings

[eaton-frequency-inverter-dimensions-010.eps](#)

[8230DIM-133](#)

### Drawings

[8230DRW-509](#)

[eaton-frequency-inverter-3d-drawing-018.eps](#)

### eCAD model

[ETN.DE1-34016FN-N20N.edz](#)

## Installation instructions

[IL040005ZU](#)

## Installation videos

[PowerXL DE1 variable speed starter](#)

## Manuals and user guides

[MN040018\\_EN](#)

[eaton-de1-variable-speed-starter-manual-mn040011-en-us.pdf](#)

[MN040003\\_EN](#)

## mCAD model

[DA-CS-de1\\_fs2\\_ip20](#)

[eaton-cadenas-path-frequenzumrichter-de1\\_fs2\\_ip20.3db](#)

[DA-CD-de1\\_fs2\\_ip20](#)

[eaton-cadenas-side\\_view-de1\\_fs2\\_ip20\\_side.pra](#)

[eaton-cadenas-front\\_view-de1\\_fs2\\_ip20\\_front.pra](#)

## Product notifications

[eaton-drives-ecodesign-directive-mz040046en-en.pdf](#)

## Software, firmware, and applications

[eaton-powerxl-dx-cbl-pc-3m0-usb-driver.zip](#)

[eaton-powerxl-dx-cbl-pc-1m5-usb-driver.zip](#)

[eaton-powerxl-de1-firmware-release-note-mz040043en-us.pdf](#)

[eaton-powerxl-de1-dc1-profinet-gsdml-v240.zip](#)

[eaton-powerxl-de1-dc1-ethernetip-eds-v120.zip](#)

[eaton-powerxl-dx-comstick3-ble-drivers.zip](#)

[eaton-powerxl-dc1-de1-swd-codesys-v3-library.zip](#)

[eaton-powerxl-pcsoftware-drivesconnect-v1501.zip](#)



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