

Eaton 177367

Catalog Number: 177367

Eaton DE1 Variable speed starter, Rated operational voltage 400 V AC, 3-phase, Ie 3.6 A, 1.5 kW, 2 HP



General specifications

Product Name	Catalog Number
Eaton DE1 Variable speed starter	177367
EAN	Product Length/Depth
4015081718276	169 mm
Product Height	Product Width
230 mm	45 mm
Product Weight	Certifications
1 kg	IEC/EN61800-3 RoHS, ISO 9001 CE UL File No.: E172143 IEC/EN 61800-3 UL report applies to both US and Canada IEC/EN61800-5 UL Certified by UL for use in Canada CSA-C22.2 No. 14 RCM Safety requirements: IEC/EN 61800-5-1 Specification for general requirements: IEC/EN 61800-2 UL 508C UL Category Control No.: NMMS, NMMS7 CUL
Catalog Notes	Model Code
Overload cycle for 60 s every 600 s	DE1-343D6NN-N20N

Features

Parameterization: drivesConnect

Parameterization: drivesConnect mobile (App)

Parameterization: Fieldbus

Parameterization: Keypad

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.

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.

Брошури

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

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

Вказівки до застосування

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

[Set point setting](#)

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

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

[Update DX-COM-STICK3](#)

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

[Conformal Coating](#)

[Fire mode](#)

[Starting, Stopping and Operation](#)

[DX-COM-STICK3_Connection](#)

[I/O Configuration](#)

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

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

Інструкції щодо встановлення

[IL040005ZU](#)

Каталоги

[Drives - Product range catalog](#)

Креслення

[eaton-frequency-inverter-dimensions-009.eps](#)

[eaton-frequency-inverter-3d-drawing-017.eps](#)

Сертифікаційні звіти

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

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

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.

Fitted with:

PC connection

Climatic proofing

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

Connection to SmartWire-DT

In conjunction with DX-NET-SWD3 SmartWire DT module

Yes

Operating mode

Speed control with slip compensation

U/f control

Rated impulse withstand voltage (Uimp)

2000 V

Frame size

FS1

Altitude

Max. 2000 m

Above 1000 m with 1 % derating per 100 m

Application in domestic and commercial area permitted

Yes

Mains switch-on frequency

Maximum of one time every 30 seconds

Ambient operating temperature - max

60 °C

Ambient operating temperature - min

-10 °C

Mains voltage - max

480 V

Output voltage - max

500 V

Relative symmetric net frequency tolerance

10 %

Relative symmetric net voltage tolerance

10 %

Ambient operating temperature at 150% overload - max

50 °C

Ambient operating temperature at 150% overload - min

-10 °C

Ambient storage temperature - max

70 °C

Ambient storage temperature - min

-40 °C

Apparent power at 400 V

2.49 kVA

Apparent power at 480 V

2.99 kVA

Assigned motor current IM at 110/120 V, 60 Hz, 150% overload

3.4 A

Assigned motor current IM at 115 V, 50 Hz, 150% overload

3.6 A

Application in industrial area permitted

Yes

Ambient operating temperature details

Derating between 50 °C and

60 °C:

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

None if $I_e \leq 3.2$ A

None up to a max. of 57 °C

Heat dissipation details

Operation (with 150 % overload)

Product category

Variable speed starter

Protection

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

Resolution

0.025 Hz (Frequency resolution, setpoint value)

Static heat dissipation, non-current-dependent Pvs

0 W

Voltage rating - max

480 V

Mounting position

Vertical

Overvoltage category

III

Communication interface

Modbus RTU, built in

OP-Bus (RS485), built in

Converter type

U converter

Degree of protection

IP20

NEMA Other

Assigned motor power at 115/120 V, 60 Hz, 1-phase

2 HP

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

2 HP

Assigned motor power at 460/480 V, 60 Hz

2 HP

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

2 HP

Equipment heat dissipation, current-dependent Pvid

47 W

Heat dissipation capacity P_{diss}

0 W

Heat dissipation per pole, current-dependent P_{vid}

0 W

Input current I_{LN} at 150% overload

4.9 A

Mains current distortion

120 %

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

3.4 A

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

3.6 A

Protocol

MODBUS

Other bus systems

EtherNet/IP

Overload current I_L at 150% overload

5.4 A

Rated frequency - max

66 Hz

Rated frequency - min

45 Hz

Rated operational current for specified heat dissipation (I_n)

3.6 A

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

1.5 kW

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

3.6 A

Assigned motor current I_M at 440 - 480 V, 60 Hz, 150% overload

3.4 A

Braking current

≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake

Electromagnetic compatibility

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

Braking torque

Adjustable to 100 %, DC - Main circuit

Max. 30 % MN, Standard - Main circuit

Cable length

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

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

Output voltage (U2)

480 V AC, 3-phase

400 V AC, 3-phase

Delay time

< 10 ms, On-delay

< 10 ms, Off-delay

Number of inputs (analog)

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

Number of inputs (digital)

4 (parameterizable, 10 - 30 V DC)

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

Number of outputs (digital)

0

Starting current - max

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

Number of phases (input)

3

Number of relay outputs

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

Number of phases (output)

3

Power consumption

47 W

Rated control supply voltage

10 V DC (Us, max. 0.2 mA)

Supply frequency

50/60 Hz

Leakage current at ground IPE - max

< 3.5 mA (AC-operated)

< 10 mA (DC-operated)

Mains voltage - min

380 V

Nominal output current I2N

3.6 A

Number of HW-interfaces (industrial ethernet)

0

Number of HW-interfaces (other)

0

Number of HW-interfaces (parallel)

0

Number of HW-interfaces (RS-232)

0

Number of HW-interfaces (RS-422)

0

Number of HW-interfaces (RS-485)

1

Number of HW-interfaces (serial TTY)

0

Number of HW-interfaces (USB)

0

Number of interfaces (PROFINET)

0

Number of outputs (analog)

0

Output at linear load at rated output voltage - max

1.5 kW

Output at quadratic load at rated output voltage - max

1.5 kW

Output frequency - max

300 Hz

Output frequency - min

0 Hz

Short-circuit protection (external output circuits)

Type 1 coordination via the power bus' feeder unit, Main circuit

Shock resistance

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

Suitable for

Branch circuits, (UL/CSA)

Switching frequency

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

Rated operational current (I_e)

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

Rated operational voltage

400 V AC, 3-phase

480 V AC, 3-phase

Short-circuit protection rating

6 A, UL (Class CC or J), Safety device (fuse or miniature circuit-
breaker), Power Wiring

Vibration

Resistance: According to EN 61800-5-1

Heat dissipation at current/speed

22.3 W at 50% current and 0% speed

24.9 W at 25% current and 0% speed

26.6 W at 25% current and 50% speed

28.4 W at 50% current and 50% speed

30.4 W at 50% current and 90% speed

41.6 W at 100% current and 0% speed

44.7 W at 100% current and 50% speed

44.9 W at 100% current and 90% speed