Specifications

Eaton 129687

Catalog Number: 129687

Eaton SPX Variable frequency drive, 400 V AC, 3-phase, 400 kW, IP00, Brake chopper, OLED display, FR12





General specifications

Product Name
Eaton SPX variable frequency drive

Catalog Number
129687

EAN
4015081270149

Product Length/Depth
115 mm

Product Height
36.2 mm

Product Width
96 mm

Product Weight
550 kg

Certifications
Specification for general requirements: IEC/EN 61800-2
Certified by UL for use in Canada
DNV
UL
CE
IEC/EN 61800-3
Safety: EN 61800-5-1: 2003
CUL
CSA-C22.2 No. 14
RCM
CSA Class No.: 3211-06
IEC/EN61800-5
UL Category Control No.: NMMS, NMMS2, NMMS7. NMMS8
UL report applies to both US and Canada
RoHS, ISO 9001
UL File No.: E134360
UL 508C
IEC/EN61800-3

Powering Business Worldwide

General

Degree of protection

IP00

NEMA Other

Electromagnetic compatibility

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

Fitted with:

Control unit

OLED display

PC connection

Brake chopper

Breaking resistance

Internal DC link

IGBT inverter

Frame size

FR12

Functions

4-quadrant operation possible

Mounting position

Vertical

Product Category

Variable frequency drives

Protection

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

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.

Suitable for

Branch circuits, (UL/CSA)

Climatic environmental conditions

Altitude

Above 1000 m with 1 % performance reduction per 100 m

Max. 1000 m

Max. 3000 m

Ambient operating temperature - min

-10 °C

Ambient operating temperature - max

40 °C

Ambient operating temperature at 150% overload - min

-10 °C

Ambient operating temperature at 150% overload - max

40 °C

Ambient storage temperature - min

-40 °C

Climatic proofing

< 95 % relative humidity, no condensation, no corrosion, no dripping water

Main circuit

Mains voltage - min

380 V

Mains voltage - max

500 V

Operating mode

Optional: Vector control with feedback (CLV)

Sensorless vector control (SLV)

U/f control

Output frequency - min

0 Hz

Output frequency - max

320 Hz

Output voltage (U2)

400 V AC, 3-phase

500 V AC, 3-phase

480 V AC, 3-phase

Rated control supply voltage

10 V DC (Us, max. 10 mA)

Rated frequency - min

45 Hz

Rated frequency - max

66 Hz

Rated operational current (Ie) at 110% overload

820 A

Rated operational current (Ie) at 150% overload

730 A

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

400 kW

Rated operational power at 380/400 V, 50 Hz, 3-phase, 110% overload

450 kW

Rated operational voltage

500 V AC, 3-phase
480 V AC, 3-phase
400 V AC, 3-phase

Resolution

0.01 Hz (Frequency resolution, setpoint value)

Supply frequency

50/60 Hz

Switching frequency

3.6 kHz, 1 - 6 kHz adjustable, fPWM, Power section, Main circuit

System configuration type

AC supply systems with earthed center point

Voltage rating - max

480 VAC

Motor rating

Assigned motor current IM at 400 V, 50 Hz, 110% overload

769 A

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

683 A

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

600 HP

Assigned motor power at 460/480 V, 60 Hz, 3-phase, 110 % overload

650 HP

Control circuit

Number of inputs (analog)

2

Number of inputs (digital)

6

Number of outputs (analog)

1

Number of outputs (digital)

1

Number of relay outputs

2 (parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC))

Rated control voltage (Uc)

24 V DC (external, max. 250 mA)

Communication

Communication interface

PROFIBUS-DP
CANopen®, optional
DeviceNet, optional
LonWorks, optional
BACnet/IP, optional
Modbus-TCP, optional
BACnet MS/TP, optional
EtherCAT, optional
Ethernet IP, optional
Modbus-RTU, optional

PROFINET, optional

Connection to SmartWire-DT

No

Protocol

TCP/IP

Other bus systems

Data-Highway

LON

CAN

DeviceNet

PROFIBUS

Design verification

Equipment heat dissipation, current-dependent Pvid

10000 W

Heat dissipation capacity Pdiss

0 W

Heat dissipation per pole, current-dependent Pvid

0 W

Rated operational current for specified heat dissipation (In)

730 A

Static heat dissipation, non-current-dependent Pvs

0 W

Heat dissipation details

Operation (with 150 % overload)

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.

10.6 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

Electromagnetic compatibility (EMC)

SPI - Variable frequency drives with a common DC bus

Connecting drives to generator supplies

Catalogs

Product Range Catalog Drives Engineering

Declarations of conformity

DA-DC-00004869.pdf

DA-DC-00004868.pdf

Drawings

eaton-frequency-inverter-spx-dimensions-003.eps

eaton-frequency-inverter-spx-dimensions-009.eps

Installation instructions

IL04020008Z

Multimedia

Eaton variable frequency drives - Demand more innovation

Eaton variable frequency drives - Demand more expertise

How does a VFD work to save energy and money?

Eaton variable frequency drives - Demand more than good enough

Product notifications

eaton-drives-ecodesign-directive-mz040046en-en.pdf

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