Specifications

Eaton 125402

Catalog Number: 125402

Eaton SPX Variable frequency drive, 400 V AC, 3-phase, 160 kW, IP00, OLED display, FR10





General specifications

Product Name
Eaton SPX variable frequency drive

Catalog Number
125402

EAN
4015081230082

Product Length/Depth
1165 mm

Product Height
506 mm

Product Width
500 mm

Product Weight
275 kg

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

Powering Business Worldwide

General

Degree of protection

IP00

NEMA Other

Electromagnetic compatibility

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

Fitted with:

PC connection

Control unit

Internal DC link

IGBT inverter

OLED display

Frame size

FR10

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. 3000 m

Max. 1000 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

U/f control

Optional: Vector control with feedback (CLV)

Sensorless vector control (SLV)

Output frequency - min

0 Hz

Output frequency - max

320 Hz

Output voltage (U2)

400 V AC, 3-phase

480 V AC, 3-phase

500 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

385 A

Rated operational current (Ie) at 150% overload

300 A

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

160 kW

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

200 kW

Rated operational voltage

400 V AC, 3-phase

480 V AC, 3-phase

500 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

349 A

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

279 A

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

302 A

Assigned motor current IM at 440/480 V, 60 Hz, 110% overload

361 A

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

250 HP

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

300 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

BACnet/IP, optional

LonWorks, optional

DeviceNet, optional

Modbus-TCP, optional

Design verification

Equipment heat dissipation, current-dependent Pvid

4000 W

Heat dissipation capacity Pdiss

0 W

CANopen®, optional

BACnet MS/TP, optional

EtherCAT, optional

Ethernet IP, optional

Modbus-RTU, optional

PROFINET, optional

Connection to SmartWire-DT

No

Protocol

PROFIBUS

LON

TCP/IP

Data-Highway

Other bus systems

CAN

DeviceNet

Heat dissipation per pole, current-dependent Pvid

0 W

Rated operational current for specified heat dissipation (In)

300 A

Static heat dissipation, non-current-dependent Pvs

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.

10.6 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

SPI - Variable frequency drives with a common DC bus

Electromagnetic compatibility (EMC)

Catalogs

Product Range Catalog Drives Engineering

Declarations of conformity

DA-DC-00004868.pdf

DA-DC-00004869.pdf

Drawings

eaton-frequency-inverter-spx-dimensions.eps

eaton-frequency-inverter-spx-dimensions-010.eps

Installation instructions

IL04020008Z

Multimedia

Eaton variable frequency drives - Demand more than good enough

How does a VFD work to save energy and money?

Eaton variable frequency drives - Demand more innovation

Eaton variable frequency drives - Demand more expertise

Product notifications

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

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