Specifications

Eaton 125389



Catalog Number: 125389

Eaton SPX Variable frequency drive, 600 V AC, 3-phase, 160 kW, IP21, Radio interference suppression filter, OLED display, FR9

General specifications

Product Name
Eaton SPX variable frequency drive

Catalog Number
125389

EAN
4015081229956

Product Length/Depth
1150 mm

Product Height
362 mm

Product Width
480 mm

Product Weight
146 kg

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

Powering Business Worldwide

General

Degree of protection

IP21

NEMA Other

Electromagnetic compatibility

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

Fitted with:

DC link choke

Radio interference suppression filter

Internal DC link

OLED display

IGBT inverter

Frame size

FR9

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

Max. 3000 m

Above 1000 m with 1 % performance reduction per 100 m

Max. 1000 m

Ambient operating temperature - min

-10 °C

Ambient operating temperature - max

50 °C

Ambient operating temperature at 150% overload - min

-10 °C

Ambient operating temperature at 150% overload - max

50 °C

Ambient storage temperature - min

-40 °C

Climatic proofing

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

Main circuit

Mains voltage - min

525 V

Mains voltage - max

690 V

Operating mode

U/f control

Sensorless vector control (SLV)

Optional: Vector control with feedback (CLV)

Output frequency - min

0 Hz

Output frequency - max

320 Hz

Output voltage (U2)

690 V AC, 3-phase

600 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

208 A

Rated operational current (Ie) at 150% overload

170 A

Rated operational power at 690 V, 50 Hz

160 kW

Rated operational power at 690 V, 50 Hz, 110% overload

200 kW

Rated operational voltage

600 V AC, 3-phase

690 V AC, 3-phase

Resolution

0.01 Hz (Frequency resolution, setpoint value)

Supply frequency

50/60 Hz

Switching frequency

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

System configuration type

AC supply systems with earthed center point

Voltage rating - max

690 VAC

Motor rating

Assigned motor current IM at 690 V, 50 Hz, 110% overload

202 A

Assigned motor current IM at 690 V, 50 Hz, 150% overload

162 A

Assigned motor current IM at 690 V, 60 Hz, 110% overload

167 A

Assigned motor current IM at 690 V, 60 Hz, 150% overload

167 A

Assigned motor power at 690 V, 60 Hz

200 HP

Assigned motor power at 690 V, 60 Hz, 110% overload

200 HP

Control circuit

Number of inputs (analog)

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

Number of inputs (digital)

6 (parameterizable, max. 30 V DC)

Number of outputs (analog)

1

Number of outputs (digital)

1 (parameterizable, 48 V DC/50 mA)

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

BACnet/IP, optional

Modbus-TCP, optional

CANopen®, optional

PROFIBUS-DP

DeviceNet, optional

Design verification

Equipment heat dissipation, current-dependent Pvid

4000 W

Heat dissipation capacity Pdiss

0 W

Heat dissipation per pole, current-dependent Pvid

LonWorks, optional

BACnet MS/TP, optional

EtherCAT, optional

Ethernet IP, optional

Modbus-RTU, optional

PROFINET, optional

Connection to SmartWire-DT

No

0 W

Rated operational current for specified heat dissipation (In)

170 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

SPI - Variable frequency drives with a common DC bus

Connecting drives to generator supplies

Electromagnetic compatibility (EMC)

Catalogs

Product Range Catalog Drives Engineering

Declarations of conformity

DA-DC-00003956.pdf

DA-DC-00003693.pdf

Drawings

eaton-frequency-inverter-dimensions-008.eps

Installation instructions

IL04020008Z

Multimedia

How does a VFD work to save energy and money?

Eaton variable frequency drives - Demand more expertise

Eaton variable frequency drives - Demand more innovation

Eaton variable frequency drives - Demand more than good enough

Product notifications

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

Eaton Corporation plc
Eaton House
30 Pembroke Road
Dublin 4, Ireland
Eaton.com

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