Specifications

# Eaton 125424



## Catalog Number: 125424

Eaton SPX Variable frequency drive, 400 V AC, 3-phase, 250 kW, IP21, Radio interference suppression filter, OLED display, FR10

### General specifications

**Product Name**
Eaton SPX variable frequency drive

**Catalog Number**
125424

**EAN**
4015081230303

**Product Length/Depth**
602 mm

**Product Height**
2020 mm

**Product Width**
595 mm

**Product Weight**
275 kg

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

Powering Business Worldwide

## General

### Degree of protection

NEMA 1

IP21

### Electromagnetic compatibility

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

### Fitted with:

PC connection

IGBT inverter

OLED display

Radio interference suppression filter

Control unit

Internal DC link

DC link choke

### 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

Max. 1000 m

Max. 3000 m

Above 1000 m with 1 % performance reduction per 100 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

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)

480 V AC, 3-phase

500 V AC, 3-phase

400 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

520 A

Rated operational current (Ie) at 150% overload

460 A

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

250 kW

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

250 kW

Rated operational voltage

480 V AC, 3-phase

500 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

437 A

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

437 A

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

414 A

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

414 A

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

350 HP

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

350 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

CANopen®, optional

DeviceNet, optional

Modbus-TCP, optional

PROFIBUS-DP

LonWorks, optional

## Design verification

Equipment heat dissipation, current-dependent Pvid

6250 W

Heat dissipation capacity Pdiss

0 W

BACnet/IP, optional

BACnet MS/TP, optional

EtherCAT, optional

Ethernet IP, optional

Modbus-RTU, optional

PROFINET, optional

### Connection to SmartWire-DT

No

### Protocol

PROFIBUS

DeviceNet

CAN

Data-Highway

LON

TCP/IP

Other bus systems

### Heat dissipation per pole, current-dependent Pvid

0 W

### Rated operational current for specified heat dissipation (In)

460 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

Connecting drives to generator supplies

Electromagnetic compatibility (EMC)

SPI - Variable frequency drives with a common DC bus

### Catalogs

Product Range Catalog Drives Engineering

### Declarations of conformity

DA-DC-00004868.pdf

DA-DC-00004869.pdf

### Drawings

eaton-frequency-inverter-spx-dimensions-013.eps

### Installation instructions

IL04020008Z

### Multimedia

Eaton variable frequency drives - Demand more innovation

Eaton variable frequency drives - Demand more expertise

Eaton variable frequency drives - Demand more than good enough

How does a VFD work to save energy and money?

### Product notifications

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

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