

# Eaton 129610

Catalog Number: 129610

Eaton SPX Variable frequency drive, 600 V AC, 3-phase, 500 kW, IP00, OLED display, FR11

### General specifications



<b>Product Name</b>	<b>Catalog Number</b>
Eaton SPX variable frequency drive	129610
<b>EAN</b>	<b>Product Length/Depth</b>
4015081269372	1155 mm
<b>Product Height</b>	<b>Product Width</b>
503 mm	709 mm
<b>Product Weight</b>	<b>Certifications</b>
350 kg	CSA-C22.2 No. 14
	Certified by UL for use in Canada
	CSA Class No.: 3211-06
	IEC/EN61800-3
	UL
	DNV
	UL report applies to both US and
	Canada
	UL 508C
	Specification for general requirements:
	IEC/EN 61800-2
	CUL
	CE
	Safety: EN 61800-5-1: 2003
	IEC/EN 61800-3
	UL Category Control No.: NMMS,
	NMMS2, NMMS7. NMMS8
	UL File No.: E134360
	RCM
	IEC/EN61800-5
	RoHS, ISO 9001

## General

### Degree of protection

IP00

NEMA Other

### Electromagnetic compatibility

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

### Fitted with:

Internal DC link

IGBT inverter

Control unit

OLED display

PC connection

### Frame size

FR11

### 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. 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

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

525 V

### Mains voltage - max

690 V

### Operating mode

Sensorless vector control (SLV)

Optional: Vector control with feedback (CLV)

U/f control

### Output frequency - min

0 Hz

### Output frequency - max

320 Hz

### Output voltage (U<sub>2</sub>)

600 V AC, 3-phase

690 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 (I<sub>e</sub>) at 110% overload

590 A

#### Rated operational current (I<sub>e</sub>) at 150% overload

502 A

#### Rated operational power at 690 V, 50 Hz, 3-phase

500 kW

#### Rated operational power at 690 V, 50 Hz, 3-phase, 110% overload

560 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

### Communication

#### Communication interface

BACnet/IP, optional

Modbus-TCP, optional

PROFIBUS-DP

DeviceNet, optional

LonWorks, optional

### Motor rating

#### Assigned motor current I<sub>M</sub> at 690 V, 50 Hz, 110% overload

550 A

#### Assigned motor current I<sub>M</sub> at 690 V, 50 Hz, 150% overload

491 A

#### Assigned motor current I<sub>M</sub> at 690 V, 60 Hz, 110% overload

478 A

#### Assigned motor current I<sub>M</sub> at 690 V, 60 Hz, 150% overload

411 A

#### Assigned motor power at 690 V, 60 Hz, 3-phase

500 HP

#### Assigned motor power at 690 V, 60 Hz, 3-phase, 110 % overload

600 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 (U<sub>c</sub>)

24 V DC (external, max. 250 mA)

### Design verification

#### Equipment heat dissipation, current-dependent P<sub>vid</sub>

12500 W

#### Heat dissipation capacity P<sub>diss</sub>

0 W

#### Heat dissipation per pole, current-dependent P<sub>vid</sub>

CANopen®, optional  
BACnet MS/TP, optional  
EtherCAT, optional  
Ethernet IP, optional  
Modbus-RTU, optional  
PROFINET, optional

#### Connection to SmartWire-DT

No

#### Protocol

CAN  
Data-Highway  
LON  
TCP/IP  
PROFIBUS  
Other bus systems  
DeviceNet

0 W

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

502 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-002.eps](#)

[eaton-frequency-inverter-spx-dimensions-010.eps](#)

### Installation instructions

[IL04020008Z](#)

### Multimedia

[How does a VFD work to save energy and money?](#)

[Eaton variable frequency drives - Demand more innovation](#)

[Eaton variable frequency drives - Demand more expertise](#)

[Eaton variable frequency drives - Demand more than good enough](#)

### Product notifications

[eaton-drives-ecodesign-directive-mz040046en-en.pdf](#)