DATASHEET - SPX250A0-4A2B1

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

Powering Business Worldwide

Part no. SPX250A0-4A2B1
133130

General specifications

Product name	Eaton SPX variable frequency drive
Part no.	SPX250A0-4A2B1
EAN	4015081299881
Product Length/Depth	1165 millimetre
Product height	506 millimetre
Product width	500 millimetre
Product weight	275 kilogram
Certifications	UL Category Control No.: NMMS, NMMS2, NMMS7. NMMS8 Specification for general requirements: IEC/EN 61800-2 Certified by UL for use in Canada DNV Safety: EN 61800-5-1: 2003 RoHS, ISO 9001 RCM CSA Class No.: 3211-06 IEC/EN61800-3 CE CUL UL report applies to both US and Canada UL File No.: E134360 CSA-C22.2 No. 14 IEC/EN61800-5 UL 508C UL IEC/EN 61800-3
Product Tradename	SPX
Product Type	Variable frequency drive
Product Sub Type	None
Catalog Notes	Assigned motor rating: For AC motors with internal and external ventilation with 50 Hz / 60 Hz Assigned motor rating: Overload cycle for 60 s every 600 s

General information

Degree of protection	IP00 NEMA Other
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Fitted with:	Breaking resistance PC connection Internal DC link Control unit IGBT inverter OLED display Brake chopper
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. 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
Ambient storage temperature - max	70 °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	Sensorless vector control (SLV) U/f control Optional: Vector control with feedback (CLV)
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	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	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 V AC

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	LonWorks, optional CANopen®, optional BACnet/IP, optional PROFIBUS-DP Modbus-TCP, optional DeviceNet, optional BACnet MS/TP, optional EtherCAT, optional Ethernet IP, optional Modbus-RTU, optional PROFINET, optional
Connection to SmartWire-DT	No
Protocol	PROFIBUS Other bus systems Data-Highway LON DeviceNet TCP/IP CAN

Design verification

Equipment heat dissipation, current-dependent Pvid	4000 W
Heat dissipation capacity Pdiss	0 W
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
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.