DATASHEET - SPX100A1-4A1N1

Variable frequency drive, 400 V AC, 3-phase, 75 kW, IP21, Radio interference suppression filter, OLED display, FR8

Powering Business Worldwide

Part no. SPX100A1-4A1N1
125365

General specifications

Product name	Eaton SPX variable frequency drive
Part no.	SPX100A1-4A1N1
EAN	4015081229710
Product Length/Depth	758 millimetre
Product height	344 millimetre
Product width	291 millimetre
Product weight	58 kilogram
Certifications	CSA Class No.: 3211-06 Certified by UL for use in Canada RCM UL 508C Specification for general requirements: IEC/EN 61800-2 Safety: EN 61800-5-1: 2003 RoHS, ISO 9001 CSA-C22.2 No. 14 DNV IEC/EN 61800-3 IEC/EN61800-3 CE UL File No.: E134360 IEC/EN61800-5 UL CUL UL report applies to both US and Canada UL Category Control No.: NMMS, NMMS2, NMMS7. NMMS8
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 Mains choke recommended only if the power quality is poor. Current harmonics (THD) are attenuated by internal DC link chokes.

General information

Degree of protection	IP21 NEMA Other
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Fitted with:	OLED display Radio interference suppression filter IGBT inverter Internal DC link DC link choke
Frame size	FR8
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

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	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)	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	170 A
Rated operational current (Ie) at 150% overload	140 A
Rated operational power at 380/400 V, 50 Hz	75 kW
Rated operational power at 380/400 V, 50 Hz, 110% overload	90 kW
Rated operational voltage	500 V AC, 3-phase 480 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 - 10 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	161 A
Assigned motor current IM at 400 V, 50 Hz, 150% overload	134 A
Assigned motor current IM at 440 - 480 V, 60 Hz, 150% overload	124 A
Assigned motor current IM at 440/480 V, 60 Hz, 110% overload	156 A
Assigned motor power at 460/480 V, 60 Hz	100 HP
Assigned motor power at 460/480 V, 60 Hz, 110% overload	125 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	Modbus-TCP, optional BACnet/IP, optional PROFIBUS-DP LonWorks, optional DeviceNet, optional CANopen®, optional BACnet MS/TP, optional EtherCAT, optional Ethernet IP, optional Modbus-RTU, optional PROFINET, optional
Connection to SmartWire-DT	No
Design verification	
Equipment heat dissipation, current-dependent Pvid	1875 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	140 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.