DATASHEET - SPX060A1-4A1B1

Variable frequency drive, 400 V AC, 3-phase, 45 kW, IP21, Radio interference suppression filter, Brake chopper, OLED display, FR7

Part no. SPX060A1-4A1B1
138607

General specifications

Product name	Eaton SPX variable frequency drive
Part no.	SPX060A1-4A1B1
EAN	4015081353873
Product Length/Depth	640 millimetre
Product height	257 millimetre
Product width	237 millimetre
Product weight	35 kilogram
Certifications	UL report applies to both US and Canada CUL RCM IEC/EN61800-5 Specification for general requirements: IEC/EN 61800-2 UL File No.: E134360 RoHS, ISO 9001 DNV UL UL Category Control No.: NMMS, NMMS2, NMMS7. NMMS8 IEC/EN61800-3 Safety: EN 61800-5-1: 2003 IEC/EN 61800-3 Certified by UL for use in Canada CSA-C22.2 No. 14 UL 508C CSA Class No.: 3211-06 CE
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:	DC link choke Internal DC link IGBT inverter OLED display Radio interference suppression filter Brake chopper
Frame size	FR7
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 Above 1000 m with 1 % performance reduction per 100 m Max. 3000 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 Sensorless vector control (SLV) 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	105 A
Rated operational current (Ie) at 150% overload	87 A
Rated operational power at 380/400 V, 50 Hz	45 kW
Rated operational power at 380/400 V, 50 Hz, 110% overload	55 kW
Rated operational voltage	400 V AC, 3-phase 500 V AC, 3-phase 480 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	99 A
Assigned motor current IM at 400 V, 50 Hz, 150% overload	81 A
Assigned motor current IM at 440 - 480 V, 60 Hz, 150% overload	77 A
Assigned motor current IM at 440/480 V, 60 Hz, 110% overload	96 A
Assigned motor power at 460/480 V, 60 Hz	60 HP
Assigned motor power at 460/480 V, 60 Hz, 110% overload	75 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	LonWorks, optional BACnet/IP, optional DeviceNet, optional Modbus-TCP, optional CANopen®, optional PROFIBUS-DP 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	1125 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	87 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.

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