DATASHEET - SPX040A1-5A4B1

Variable frequency drive, 600 V AC, 3-phase, 37 kW, IP21, Radio interference suppression filter, Brake chopper, OLED display, FR7

Part no. SPX040A1-5A4B1
138648

General specifications

Product name	Eaton SPX variable frequency drive
Part no.	SPX040A1-5A4B1
EAN	4015081354283
Product Length/Depth	640 millimetre
Product height	257 millimetre
Product width	237 millimetre
Product weight	35 kilogram
Certifications	Certified by UL for use in Canada CUL CSA Class No.: 3211-06 CSA-C22.2 No. 14 CE IEC/EN 61800-3 IEC/EN61800-5 Specification for general requirements: IEC/EN 61800-2 UL Category Control No.: NMMS, NMMS2, NMMS7. NMMS8 UL File No.: E134360 UL RoHS, ISO 9001 IEC/EN61800-3 RCM Safety: EN 61800-5-1: 2003 UL 508C DNV UL report applies to both US and Canada
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	IP21 NEMA Other
Electromagnetic compatibility	1st and 2nd environments (according to EN 61800-3)
Fitted with:	Radio interference suppression filter Brake chopper DC link choke Internal DC link IGBT inverter OLED display
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. 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	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	525 V
Mains voltage - max	690 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)	690 V AC, 3-phase 600 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	52 A
Rated operational current (Ie) at 150% overload	41 A
Rated operational power at 690 V, 50 Hz	37 kW
Rated operational power at 690 V, 50 Hz, 110% overload	45 kW
Rated operational voltage	690 V AC, 3-phase 600 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 V AC
Motor rating	
Assigned motor current IM at 690 V, 50 Hz, 110% overload	47 A
Assigned motor current IM at 690 V, 50 Hz, 150% overload	39 A
Assigned motor current IM at 690 V, 60 Hz, 110% overload	45 A
Assigned motor current IM at 690 V, 60 Hz, 150% overload	36 A
Assigned motor power at 690 V, 60 Hz	40 HP
Assigned motor power at 690 V, 60 Hz, 110% overload	50 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	CANopen®, optional PROFIBUS-DP LonWorks, optional Modbus-TCP, optional BACnet/IP, optional DeviceNet, 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	925 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	41 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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