DATASHEET - SPX020A1-5A4B1

Variable frequency drive, 600 V AC, 3-phase, 18.5 kW, IP21, Radio interference suppression filter, Brake chopper, OLED display, FR6

Part no. SPX020A1-5A4B1
138645

General specifications

Product name	Eaton SPX variable frequency drive
Part no.	SPX020A1-5A4B1
EAN	4015081354252
Product Length/Depth	558 millimetre
Product height	237 millimetre
Product width	195 millimetre
Product weight	18.5 kilogram
Certifications	UL Category Control No.: NMMS, NMMS2, NMMS7. NMMS8 RoHS, ISO 9001 CUL RCM IEC/EN 61800-3 CSA-C22.2 No. 14 Specification for general requirements: IEC/EN 61800-2 CE IEC/EN61800-5 CSA Class No.: 3211-06 UL 508C UL report applies to both US and Canada UL File No.: E134360 Certified by UL for use in Canada DNV IEC/EN61800-3 UL Safety: EN 61800-5-1: 2003
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:	IGBT inverter OLED display Brake chopper Radio interference suppression filter DC link choke Internal DC link
Frame size	FR6
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	27 A
Rated operational current (Ie) at 150% overload	22 A
Rated operational power at 690 V, 50 Hz	18.5 kW
Rated operational power at 690 V, 50 Hz, 110% overload	22 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	23.8 A
Assigned motor current IM at 690 V, 50 Hz, 150% overload	20.9 A
Assigned motor current IM at 690 V, 60 Hz, 110% overload	23 A
Assigned motor current IM at 690 V, 60 Hz, 150% overload	19 A
Assigned motor power at 690 V, 60 Hz	20 HP
Assigned motor power at 690 V, 60 Hz, 110% overload	25 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	PROFIBUS-DP LonWorks, optional CANopen®, optional DeviceNet, optional BACnet/IP, optional Modbus-TCP, 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	463 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	0 W
Rated operational current for specified heat dissipation (In)	22 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.

© 04/2023 by Eaton Industries GmbH