

Variable frequency drive SPX 3-/3-phase 480 V 55 kW ; dynamic vector control; degree of protection IP21; integrated EMC filter

Powering Business Worldwide*

Part no. SPX075A1-4A1N1
Article no. 125354
Catalog No. SPX075A1-4A1N1

Delivery program

Delivery program			
Product range			Variable frequency drives
Part group reference (e.g. DIL)			SPX
Rated operational voltage	U _e		400 V AC, 3-phase 480 V AC, 3-phase 500 V AC, 3-phase
Output voltage with $V_{\rm e}$	U ₂		400 V AC, 3-phase 480 V AC, 3-phase 500 V AC, 3-phase
Mains voltage (50/60Hz)	U _{LN}	V	380 (-15%) - 500 (+10%)
Rated operational current			
At 150% overload	Ie	Α	105
At 110% overload	Ie	Α	140
Note			Overload cycle for 60 s every 600 s
Assigned motor rating			
Note			For AC motors with internal and external ventilation with 50 Hz / 60 Hz
Note			Overload cycle for 60 s every 600 s
Note			at 400 V, 50 Hz
150 % Overload	P	kW	55
110 % Overload	P	kW	75
150 % Overload	I _M	Α	99
110 % Overload	I _M	Α	134
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	75
110 % Overload	P	HP	100
150 % Overload	I _M	Α	96
110 % Overload	I _M	Α	124
Degree of Protection			IP21
Fieldbus connection (optional)			PROFIBUS-DP LonWorks CANopen® DeviceNet Modbus-TCP BACnet/IP
Fitted with			Radio interference suppression filter OLED display DC link choke
Frame size			FR8
Connection to SmartWire-DT			No

Technical data

General

delieral			
Standards			Specification for general requirements: IEC/EN 61800-2 EMC requirements: IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5-1
Certifications			CE, UL, cUL, c-Tick
Production quality			RoHS, ISO 9001
Climatic proofing	ρ_{W}	%	< 95% relative humidity, no condensation, no corrosion, no dripping water
Ambient temperature			

Security 10 % severtously 10 % 10 % 10 % 10 % 10 % 10 % 10 % 10	operation (150 % overload)	θ	°C	-10 - +50
Substance Subs				
Read to make fire rote leveral Action transference closed (EMC) Environment (EMC) Manuming position Manuming position Bayes of Protection Protection Bayes of Protection Protectio				
Report Care		U	U	-40 - +70
Manuface				
About 10 10 10 10 10 10 10 10	Environment (EMC)			1st and 2nd environments
Pages of Protection Pages of Protection Pages of Protection against direct central Pages of Protection Pages of Prote	Mounting position			Vertical
Protection against direct contact Main scriburi Supply	Altitude		m	above 1000 m with 1 % performance reduction per 100 m
Mains original (2008)	Degree of Protection			IP21
	Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)
Rated operational voltage Ue 40 V AC 3-phase solv A				
Mains voitings (SDRBHs)				
System configuration 10	Rated operational voltage	U _e		480 V AC, 3-phase
Supply frequency f ₁ N Hz 90/80 45 - 86 Power section Frequency range Frequency Frequency inverter with internal DC link and IgBT inverter Punction 10 dupt rivoltage with V _g 400 V AC. 3-phase 460 V AC. 3-phase Output Frequency ½ Hz 0 - 5006 (max. 320) Switching frequency ½ Hz 0 - 5006 (max. 320) Switching frequency ½ Hz adjustable 1 - 10 Operation Mode Uff control Uff control Frequency resolution (seppoint value) ∆f Hz 0 A 150% overlead ¼ A 10 At 110% overlead ¼ A 10 Frame size X X Radio interference suppression filter Note X X Radio interference suppression filter N	Mains voltage (50/60Hz)	U_{LN}	V	380 (-15%) - 500 (+10%)
Frequency range	System configuration			AC supply systems with earthed center point
Power section Function Gurput voltage with V _e Quaput Prequency Quaput Prequenc	Supply frequency	f_{LN}	Hz	50/60
Function Purpose with V ₀ Cutput voltage with V ₀ Cutput voltage with V ₀ Cutput Frequency V ₂ V ₃ Say 0.0 V.A.C. 3-phase \$00 V.A.C. 3-phase \$	Frequency range	f _{LN}	Hz	45 - 66
Output voltage with Ve U2 400 V AC, 3-phase 480 V AC, 3-phase 900 V AC, 3-phase	Power section			
Map	Function			Frequency inverter with internal DC link and IGBT inverter
Switching frequency Operation Mode Operation Operation Mode Operation Selection Operation Mode Operation Operation Mode Operation Mode Operation Mode Operation Operation Operation Mode Operation Mo	Output voltage with $V_{\rm e}$	U ₂		480 V AC, 3-phase
	Output Frequency	f ₂	Hz	0 - 50/60 (max. 320)
Operation Mode Url control sevector control (SLV) operation (Sut) operation (Sut	Switching frequency	f _{PWM}	kHz	
Rated operational current Ie A 105 At 110% overload Ie A 140 Fitted with Radio interference suppression filter OLED display DC link choke Redio interference suppression filter OLED display DC link choke Frame size FR8 Motor feeder FR8 Note Overload cycle for 60 s every 600 s Note Overload cycle for 60 s every 600 s 150 % Overload P kW 55 110 % Overload P kW 75 Note P HP 75 Note P	Operation Mode			U/f control sensorless vector control (SLV)
At 150% overload Ie A 105 At 110% overload Ie A 140 Fitted with Interpretation of the properties of the	Frequency resolution (setpoint value)	Δf	Hz	0.01
At 110% overload Ie	Rated operational current			
Fitted with Relation with Relation with Relation with Relation with Relation with Charles and Parameterizable, 0.1 of VDC, 0.4 of 20 mA Relation with Sol Mark R	At 150% overload	I _e	Α	105
Frame size Motor feeder Note Note Note Note Note 150 Overload cycle for 60 s every 600 s at 400 V, 50 Hz 110 W Overload 150	At 110% overload	l _e	Α	140
Motor feeder Note For AC motors with internal and external ventilation with 50 Hz / 60 Hz Note Overload cycle for 60 s every 600 s Note at 400 V, 50 Hz 150 % Overload P kW 55 110 % Overload P kW 75 Note at 440 - 480 V, 60 Hz 440 - 480 V, 60 Hz 150 % Overload P HP 75 10 % Overload P HP 100 Control section External control voltage Uc V 24 V DC (max. 250 mA) Reference voltage Ug V 10 V DC (max. 10 mA) Analog inputs 2, parameterizable, 0/4 - 20 mA 2, parameterizable, 0/4 - 20 mA Digital inputs 6, parameterizable, max. 30 V DC 1, parameterizable, M8 V DC/50 mA Relay outputs 1, parameterizable, N/O, 8 A (24 V DC/60 A A (25 V V AC)/0, 4 A (125 V DC) 2, parameterizable, N/O, 8 A (24 V DC/60 A A (25 V V AC)/0, 4 A (125 V DC)	Fitted with			OLED display
Note Note Note Overload cycle for 60 s every 600 s at 400 V, 50 Hz 150 % Overload 150 % Overloa	Frame size			FR8
Note Note 150 % Overload 150 % Overl	Motor feeder			
Note at 400 V, 50 Hz 150 % Overload P kW 55 110 % Overload P kW 75 Note at 440 - 480 V, 60 Hz 150 % Overload P HP 75 110 % Overload P HP 100 Control section External control voltage V 24 V DC (max. 250 mA) Reference voltage V 24 V DC (max. 10 mA) Analog inputs 2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA Digital inputs 6, parameterizable, max. 30 V DC Digital outputs 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	Note			For AC motors with internal and external ventilation with 50 Hz / 60 Hz
150 % Overload P kW 55 110 % Overload P kW 75 Note at 440 - 480 V, 60 Hz 150 % Overload P HP 75 110 % Overload P HP 100 Control section External control voltage U _s V 24 V DC (max. 250 mA) Analog inputs Analog outputs Digital inputs Digital outputs Relay outputs Relay outputs Relay outputs P kW 55 10 WW 75 10 WW 24 Analog Section S 24 V DC (max. 250 mA) 10 V DC (max. 10 mA) 10 V DC (max. 10 mA) 10 V DC (max. 250 mA) 11 V DC (max. 250 mA) 11 V DC (max. 250 mA) 11 V DC (max. 250 mA) 12 V parameterizable, 0 - 10 V DC, 0/4 - 20 mA 13 Parameterizable, 0/4 - 20 mA 14 Parameterizable, max. 30 V DC 15 Parameterizable, Max V DC/50 mA	Note			Overload cycle for 60 s every 600 s
Note at 440 - 480 V, 60 Hz 150 % Overload P HP 75 110 % Overload P HP 100 Control section External control voltage U _c V 24 V DC (max. 250 mA) Analog inputs U _s V 10 V DC, 0/4 - 20 mA Analog outputs Digital outputs Relay outputs Relay outputs Relay outputs P HP 100 2, parameterizable, 0, - 10 V DC, 0/4 - 20 mA 6, parameterizable, 48 V DC/50 mA 2, parameterizable, 48 V DC/50 mA 2, parameterizable, 48 V DC/50 mA 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	Note			at 400 V, 50 Hz
Note 150 % Overload P HP 75 110 % Overload P HP 100 Control section External control voltage Vu 24 V DC (max. 250 mA) Reference voltage Analog inputs Analog outputs Digital outputs Belay outputs Relay outputs at 440 - 480 V, 60 Hz at 440 - 40 Mz at 440 V, 60 Hz at	150 % Overload	P	kW	55
150 % Overload P HP 75 110 % Overload P HP 100 Control section External control voltage U _c V 24 V DC (max. 250 mA) Reference voltage U _s V 10 V DC (max. 10 mA) Analog inputs Analog outputs P 1, parameterizable, 0 - 10 V DC, 0/4 - 20 mA Digital inputs 6, parameterizable, max. 30 V DC Digital outputs 8, parameterizable, 48 V DC/50 mA Relay outputs 9, parameterizable, 48 V DC/50 mA Elay outputs 9, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	110 % Overload	P	kW	75
110 % Overload P HP 100 Control section External control voltage U _C V 24 V DC (max. 250 mA) Reference voltage U _S V 10 V DC (max. 10 mA) Analog inputs 2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA Digital inputs 1, parameterizable, 0/4 - 20 mA Digital outputs 6, parameterizable, max. 30 V DC Digital outputs 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	Note			at 440 - 480 V, 60 Hz
External control voltage External control voltage Uc V 24 V DC (max. 250 mA) 10 V DC (max. 10 mA) 2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA Analog outputs Digital inputs Digital outputs Relay outputs Relay outputs Lagrange (a) Section V 24 V DC (max. 250 mA) 10 V DC (max. 10 mA) 1, parameterizable, 0/4 - 20 mA 6, parameterizable, max. 30 V DC 1, parameterizable, 48 V DC/50 mA 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	150 % Overload	P	HP	75
External control voltage Reference voltage Us V 10 V DC (max. 250 mA) 10 V DC (max. 10 mA) Analog inputs Analog outputs Digital inputs Digital outputs Relay outputs Relay outputs Us V 10 V DC (max. 250 mA) 10 V DC, 0/4 - 20 mA 1, parameterizable, 0/4 - 20 mA 6, parameterizable, max. 30 V DC 11, parameterizable, 48 V DC/50 mA 22, parameterizable, N/0, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)		Р	HP	100
Reference voltage Analog inputs Analog outputs Digital inputs Digital outputs Reference voltage Us V 10 V DC (max. 10 mA) 2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA 1, parameterizable, 0/4 - 20 mA 6, parameterizable, max. 30 V DC 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)				
Analog inputs 2, parameterizable, 0 - 10 V DC, 0/4 - 20 mA 1, parameterizable, 0/4 - 20 mA 1, parameterizable, 0/4 - 20 mA 6, parameterizable, max. 30 V DC Digital outputs 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)				
Analog outputs 1, parameterizable, 0/4 - 20 mA 1, parameterizable, max. 30 V DC 1, parameterizable, max. 30 V DC 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	Reference voltage	Us	V	10 V DC (max. 10 mA)
Digital inputs 6, parameterizable, max. 30 V DC Digital outputs 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)	Analog inputs			
Digital outputs 1, parameterizable, 48 V DC/50 mA Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)				
Relay outputs 2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)				
ASSIGNEG SWITCHING AND Protective elements				2, parameterizable, N/O, 8 A (24 V DC) / 8 A (250 V AC) / 0,4 A (125 V DC)
Power Wiring Power Wiring	rowei willig			

150 % overload (CT/I _H , at 50 °C)	DX-LN3-160
Motor feeder	
150 % overload (CT/I _H , at 50 °C)	DX-LM3-150
110 % overload (VT/I _L , at 40 °C)	DX-LM3-150
150 % overload (CT/I _H , at 50 °C)	DX-SIN3-115
110 % overload (VT/I _L , at 40 °C)	DX-SIN3-150

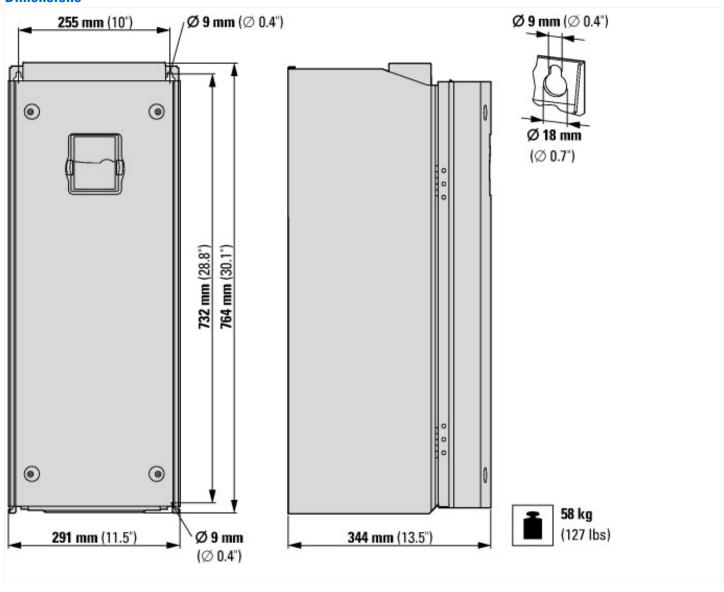
Design verification as per IEC/EN 61439

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Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	105
Equipment heat dissipation, current-dependent	P _{vid}	W	1375
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
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 Insulation properties			
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.

Approvals

- ipprovide	
Product Standards	UL 508C; CSA-C22.2 No. 14; IEC/EN61800-3; IEC/EN61800-5; CE marking
UL File No.	E134360
UL Category Control No.	NMMS, NMMS2, NMMS7. NMMS8
CSA File No.	UL report applies to both US and Canada
CSA Class No.	3211-06
North America Certification	UL listed, certified by UL for use in Canada
Specially designed for North America	No
Suitable for	Branch circuits
Max. Voltage Rating	3~ 480 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
Degree of Protection	IEC: IP21

Dimensions



Additional product information (links)				
IL04020008Z Instructions for 9000X frequency inverter: SVX, SPX				
IL04020008Z Instructions for 9000X frequency inverter: SVX, SPX	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020008Z2012_08.pdf			
MN04001004 Operating Manual for 9000X Variable Frequency Drives				
MN04001004 Bedienhandbuch Frequenzumrichter 9000X - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04001004Z_DE.pdf			
MN04004001 Application manual 9000X variable frequency drives				
MN04004001 Applikationshandbuch Frequenzumrichter 9000X - Deutsch	ftp://ftp.moeller.net/DOCUMENTATION/AWB_MANUALS/MN04004001Z_DE.pdf			
CA04020001Z-DE Sortimentskatalog: Antriebstechnik effizient gestalten, Motoren starten und steuern	http://www.eaton.eu/DE/ecm/groups/public/@pub/@europe/@electrical/documents/content/pct_1095238_de.pdf			