



Variable frequency drive SVX 3-/3-phase 30 kW 480 V; degree of protection IP21; integrated EMC filter; coated printed circuit boards

**Part no.** SVX040A1-4A1N2  
**Catalog No.** 138444  
**Alternate Catalog No.** SVX040A1-4A1N2

## Delivery program

Product range			Variable frequency drives
Part group reference (e.g. DIL)			SVX
Rated operational voltage	U <sub>e</sub>		400 V AC, 3-phase 480 V AC, 3-phase 500 V AC, 3-phase
Output voltage with V <sub>e</sub>	U <sub>2</sub>		400 V AC, 3-phase 480 V AC, 3-phase 500 V AC, 3-phase
Mains voltage (50/60Hz)	U <sub>LN</sub>	V	380 (-15%) - 500 (+10%)
<b>Rated operational current</b>			
At 150% overload	I <sub>e</sub>	A	61
At 110% overload	I <sub>e</sub>	A	72
<b>Assigned motor rating</b>			
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	30
110 % Overload	P	kW	37
150 % Overload	I <sub>M</sub>	A	55
110 % Overload	I <sub>M</sub>	A	68
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	40
110 % Overload	P	HP	50
150 % Overload	I <sub>M</sub>	A	52
110 % Overload	I <sub>M</sub>	A	65
Degree of Protection			IP21
Fieldbus connection (optional)			PROFIBUS-DP PROFINET EtherCAT EtherNet/IP LonWorks CANopen® DeviceNet Modbus-TCP Modbus-RTU BACnet MS/TP
Fitted with			Radio interference suppression filter OLED display Additional PCB protection
Frame size			FR7
Connection to SmartWire-DT			no

## Technical data

<b>General</b>			
Standards			General requirements: IEC/EN 61800-2 EMV requirements: IEC/EN 61800-3 Safety requirements: IEC/EN 61800-5-1
Certifications			CE, UL, cUL, RCM

Approvals			DNV
Production quality			RoHS, ISO 9001
Climatic proofing	$\rho_w$	%	< 95% relative humidity, no condensation, no corrosion, no dripping water
Air quality			3C2, 3S2
Ambient temperature			
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	+ 50
operation (110 % overload)	$\theta$	°C	-10 - +40
Storage	$\theta$	°C	-40 - +70
Radio interference level			
Radio interference class (EMC)			C2, C3, depending on the motor cable length, the connected load, and ambient conditions. External radio interference suppression filters (optional) may be necessary.
Environment (EMC)			1st and 2nd environments as per EN 61800-3
Mounting position			Vertical
Altitude		m	0 - 1000 m above sea level above 1000 m with 1 % performance reduction per 100 m max. 3000 m
Degree of Protection			IP21
Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)

### Main circuit

Supply			
Rated operational voltage	$U_e$		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%)
System configuration			AC supply systems with earthed center point
Supply frequency	$f_{LN}$	Hz	50/60
Frequency range	$f_{LN}$	Hz	45–66 ( $\pm 0\%$ )
Power section			
Function			Variable frequency drive with internal DC link and IGBT inverter
Output voltage with $V_e$	$U_2$		400 V AC, 3-phase 480 V AC, 3-phase 500 V AC, 3-phase
Output Frequency	$f_2$	Hz	0 - 50/60 (max. 320)
Switching frequency	$f_{PWM}$	kHz	3.6 adjustable 1 - 10
Operation Mode			U/f control sensorless vector control (SLV)
Frequency resolution (setpoint value)	$\Delta f$	Hz	0.01
Rated operational current			
At 150% overload	$I_e$	A	61
At 110% overload	$I_e$	A	72
Fitted with			Radio interference suppression filter OLED display Additional PCB protection
Frame size			FR7
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	30
110 % Overload	P	kW	37
Note			at 440 - 480 V, 60 Hz
150 % Overload	P	HP	40
110 % Overload	P	HP	50

### 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

Analog outputs			1, parameterizable, 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)

### Assigned switching and protective elements

Power Wiring			
Main choke			
150 % overload (CT/I <sub>H</sub> , at 50 °C)			DX-LN3-080
Motor feeder			
motor choke			
150 % overload (CT/I <sub>H</sub> , at 50 °C)			DX-LM3-063
110 % overload (VT/I <sub>L</sub> , at 40 °C)			DX-LM3-080
Sine filter			
150 % overload (CT/I <sub>H</sub> , at 50 °C)			DX-SIN3-061
110 % overload (VT/I <sub>L</sub> , at 40 °C)			DX-SIN3-072

### Design verification as per IEC/EN 61439

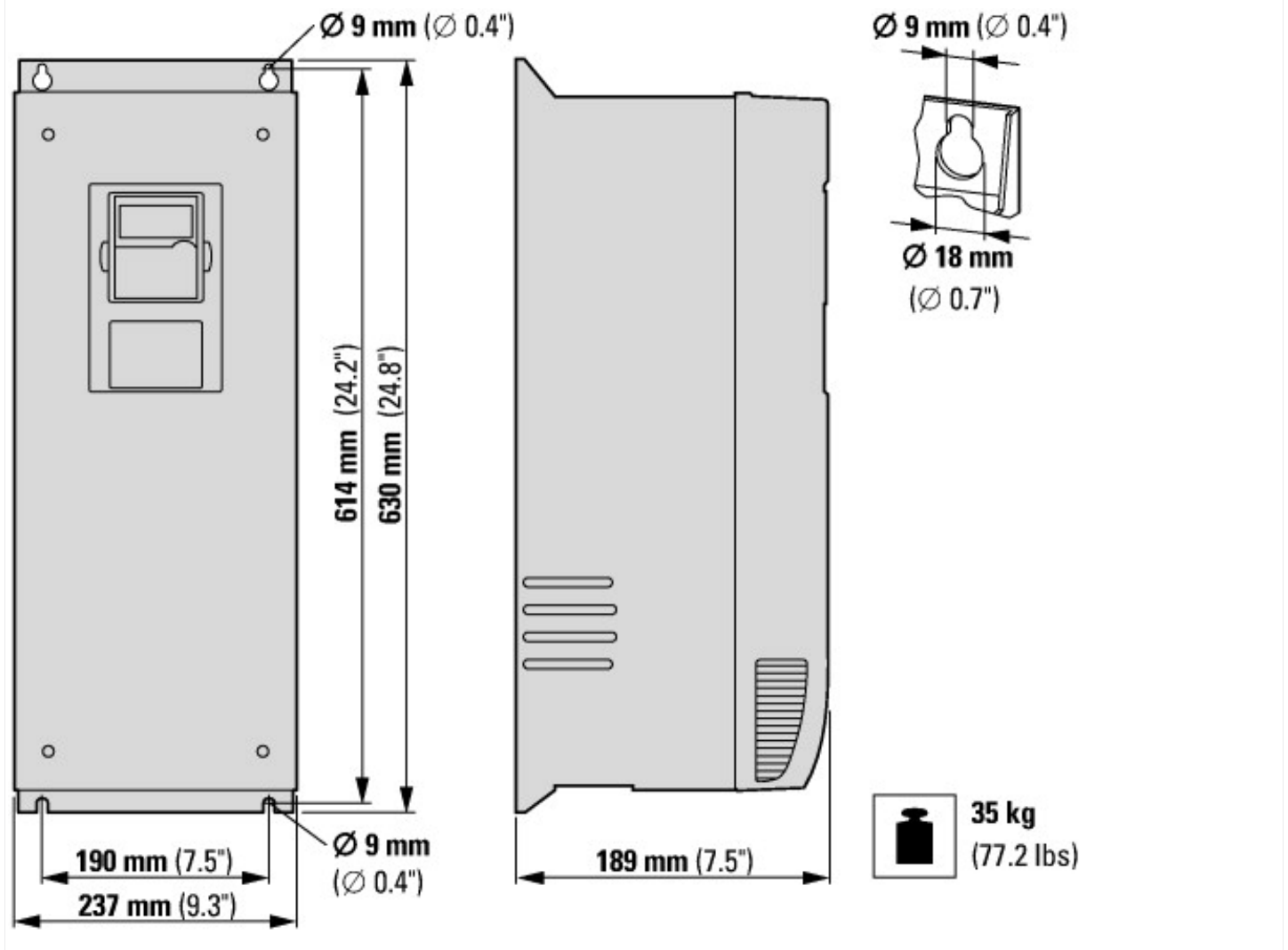
Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	A	61
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0
Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	750
Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	50
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

Product Standards			UL 508C; CSA-C22.2 No. 14; IEC/EN61800-3; IEC/EN61800-5; CE marking
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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



## Assets (links)

### Declaration of CE Conformity

00002807

## Additional product information (links)

### IL04020008Z Frequency inverter 9000X

IL04020008Z Frequency inverter 9000X

[ftp://ftp.moeller.net/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL04020008Z2018\\_05.pdf](ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020008Z2018_05.pdf)

Documentation

<http://www.eaton.eu/Europe/Electrical/ProductsServices/AutomationControl/SwitchingProtectingDrivingMotors/9000X/SVX9000/index.htm#tabs-4>