



Variable frequency drive, 600 V AC, 3-phase, 1500 kW, IP00, OLED display, FR14



Part no. SPXH15A0-5A2N1  
Catalog No. 129622  
Alternate Catalog No. SPXH15A0-5A2N1

## Delivery program

Product range			Variable frequency drives
Part group reference (e.g. DIL)			SPX
Rated operational voltage	$U_e$		600 V AC, 3-phase 690 V AC, 3-phase
Output voltage with $V_e$	$U_2$		600 V AC, 3-phase 690 V AC, 3-phase
Mains voltage (50/60Hz)	$U_{LN}$	V	525 (-15%) - 690 (±10%)
<b>Rated operational current</b>			
At 150% overload	$I_e$	A	1500
At 110% overload	$I_e$	A	1900
<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 690 V, 50 Hz
150 % Overload	P	kW	1500
110 % Overload	P	kW	1800
Note			at 690 V, 60 Hz
150 % Overload	P	HP	1300
110 % Overload	P	HP	1300
150 % Overload	$I_M$	A	1078
110 % Overload	$I_M$	A	1078
Degree of Protection			IP00
Fieldbus connection (optional)			PROFIBUS-DP PROFINET EtherCAT EtherNet/IP LonWorks CANopen® DeviceNet Modbus-TCP Modbus-RTU BACnet MS/TP
Fitted with			OLED display
Frame size			FR14
Connection to SmartWire-DT			no

## Technical data

### General

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, RCM
Approvals			DNV
Production quality			RoHS, ISO 9001
Climatic proofing	$\rho_w$	%	< 95% relative humidity, no condensation, no corrosion, no dripping water
Ambient temperature			
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	+ 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			IP00
Protection against direct contact			BGV A3 (VBG4, finger- and back-of-hand proof)

## Main circuit

Supply			
Rated operational voltage	$U_e$		600 V AC, 3-phase 690 V AC, 3-phase
Mains voltage (50/60Hz)	$U_{LN}$	V	525 (-15%) - 690 (±10%)
System configuration			AC supply systems with earthed center point
Supply frequency	$f_{LN}$	Hz	50/60
Frequency range	$f_{LN}$	Hz	45–66 (± 0%)
Power section			
Function			Variable frequency drive with internal DC link and IGBT inverter
Output voltage with $V_e$	$U_2$		600 V AC, 3-phase 690 V AC, 3-phase
Output Frequency	$f_2$	Hz	0 - 50/60 (max. 320)
Switching frequency	$f_{PWM}$	kHz	1.5 adjustable 1 - 6
Operation Mode			U/f control sensorless vector control (SLV) optional: Vector control with feedback (CLV)
Frequency resolution (setpoint value)	$\Delta f$	Hz	0.01
Rated operational current			
At 150% overload	$I_e$	A	1500
At 110% overload	$I_e$	A	1900
Fitted with			OLED display
Frame size			FR14
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 690 V, 50 Hz
150 % Overload	P	kW	1500
110 % Overload	P	kW	1800
Note			at 690 V, 60 Hz
150 % Overload	P	HP	1300
110 % Overload	P	HP	1300

## 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)

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	1500
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	37500
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0

Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-10
Operating ambient temperature max.		°C	40
			Operation (with 150 % overload)
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.

## Technical data ETIM 7.0

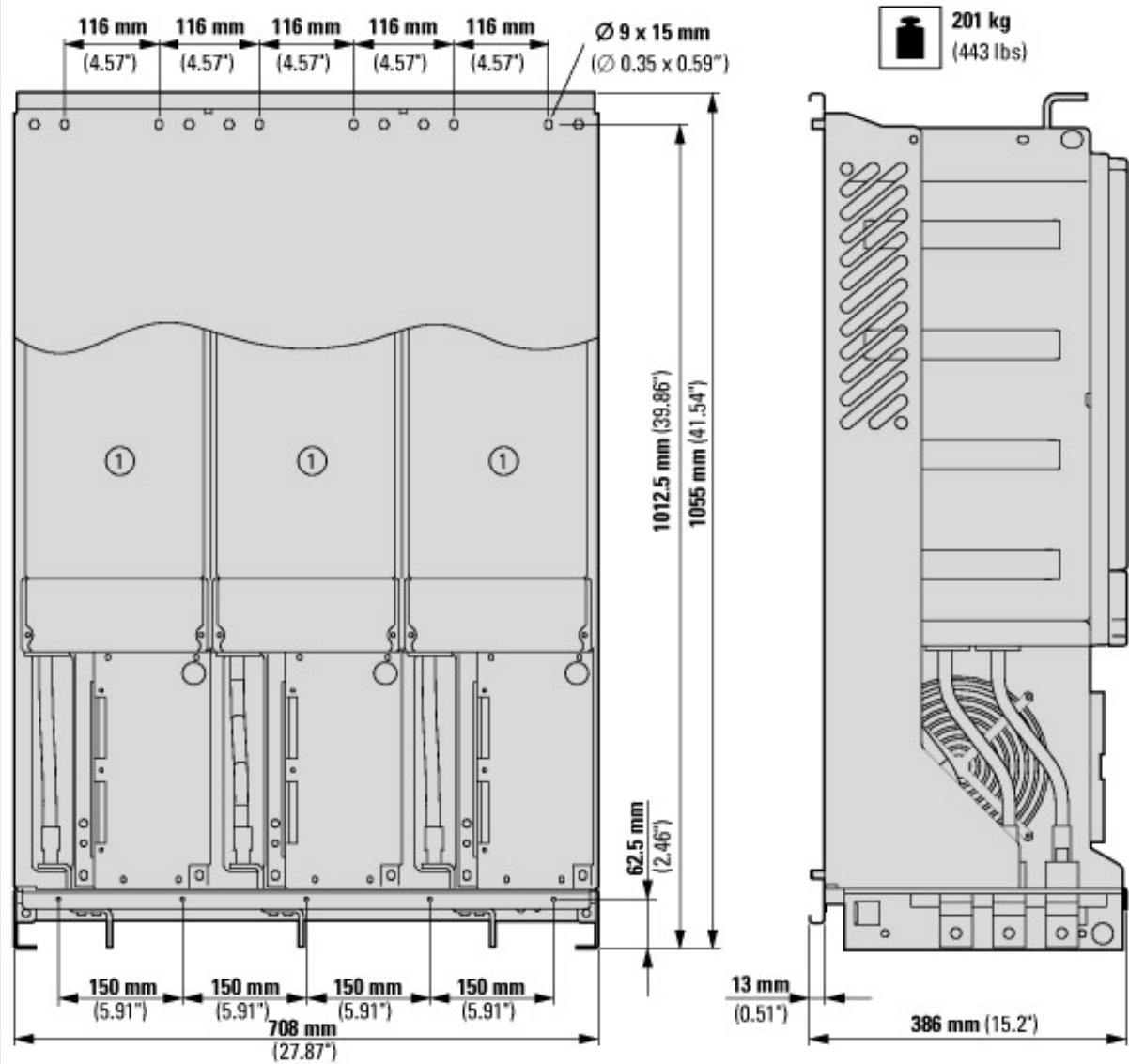
Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857)			
Electric engineering, automation, process control engineering / Electrical drive / Static frequency converter / Static frequency converter = < 1 kV (ecI@ss10.0.1-27-02-31-01 [AKE177014])			
Mains voltage	V		525 - 690
Mains frequency			50/60 Hz
Number of phases input			3
Number of phases output			3
Max. output frequency	Hz		320
Max. output voltage	V		690
Nominal output current I <sub>2N</sub>	A		1900
Max. output at quadratic load at rated output voltage	kW		1800
Max. output at linear load at rated output voltage	kW		1500
Relative symmetric net frequency tolerance	%		10
Relative symmetric net voltage tolerance	%		10
Number of analogue outputs			1
Number of analogue inputs			2
Number of digital outputs			1
Number of digital inputs			6
With control unit			Yes
Application in industrial area permitted			Yes
Application in domestic- and commercial area permitted			Yes
Supporting protocol for TCP/IP			Yes
Supporting protocol for PROFIBUS			Yes

Supporting protocol for CAN			Yes
Supporting protocol for INTERBUS			No
Supporting protocol for ASI			No
Supporting protocol for KNX			No
Supporting protocol for MODBUS			No
Supporting protocol for Data-Highway			Yes
Supporting protocol for DeviceNet			Yes
Supporting protocol for SUCONET			No
Supporting protocol for LON			Yes
Supporting protocol for PROFINET IO			No
Supporting protocol for PROFINET CBA			No
Supporting protocol for SERCOS			No
Supporting protocol for Foundation Fieldbus			No
Supporting protocol for EtherNet/IP			No
Supporting protocol for AS-Interface Safety at Work			No
Supporting protocol for DeviceNet Safety			No
Supporting protocol for INTERBUS-Safety			No
Supporting protocol for PROFIsafe			No
Supporting protocol for SafetyBUS p			No
Supporting protocol for BACnet			No
Supporting protocol for other bus systems			Yes
Number of HW-interfaces industrial Ethernet			0
Number of interfaces PROFINET			0
Number of HW-interfaces RS-232			0
Number of HW-interfaces RS-422			0
Number of HW-interfaces RS-485			1
Number of HW-interfaces serial TTY			0
Number of HW-interfaces USB			0
Number of HW-interfaces parallel			0
Number of HW-interfaces other			1
With optical interface			No
With PC connection			Yes
Integrated breaking resistance			No
4-quadrant operation possible			Yes
Type of converter			U converter
Degree of protection (IP)			IP00
Degree of protection (NEMA)			Other
Height		mm	762
Width		mm	1524
Depth		mm	2362

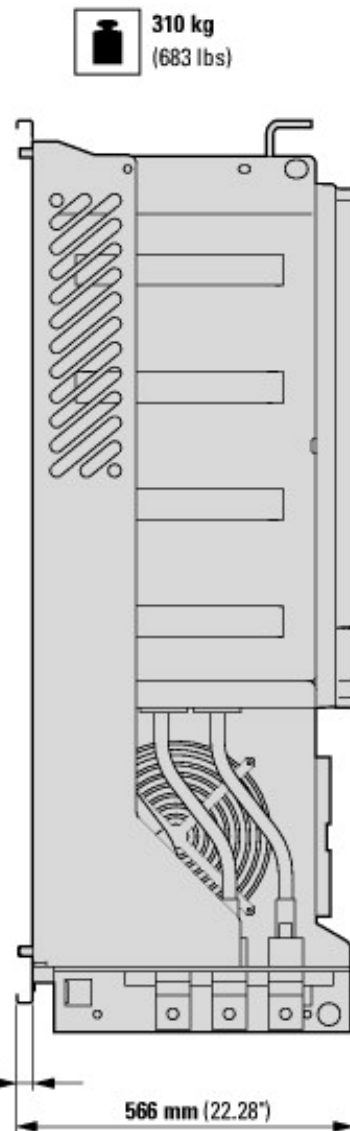
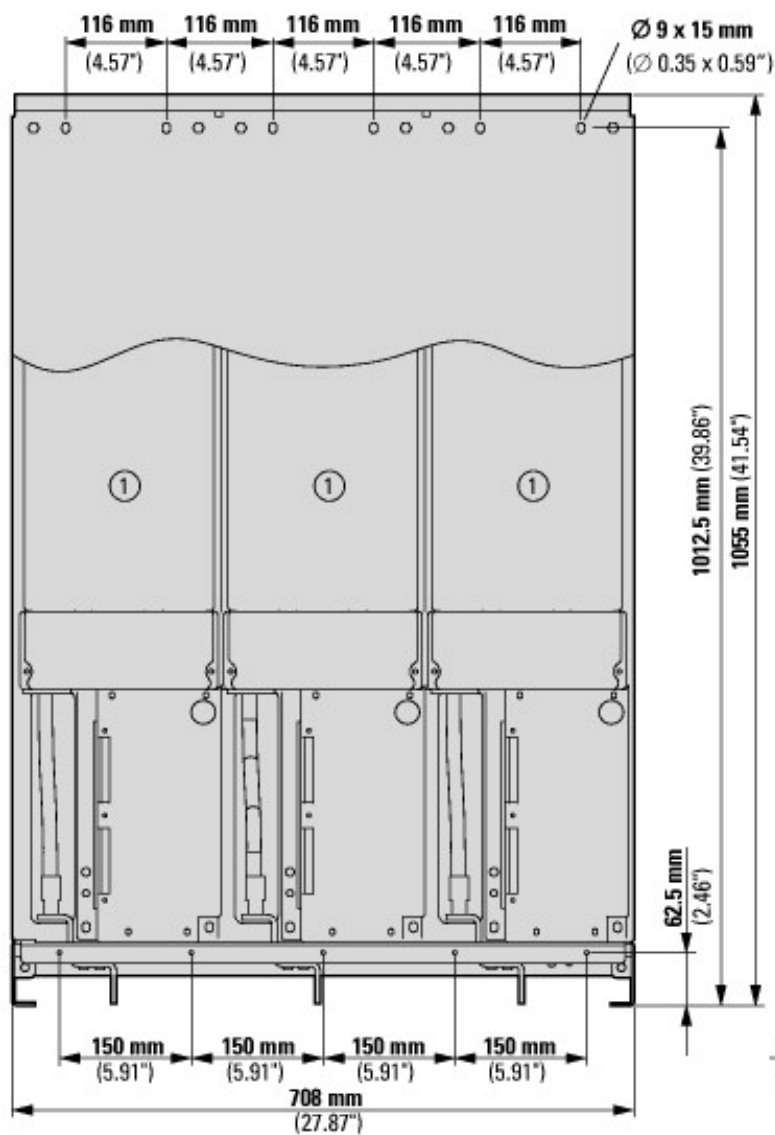
## Approvals

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~ 690 V AC IEC: TN-S UL/CSA: "Y" (Solidly Grounded Wey)
Degree of Protection			IEC: IP00

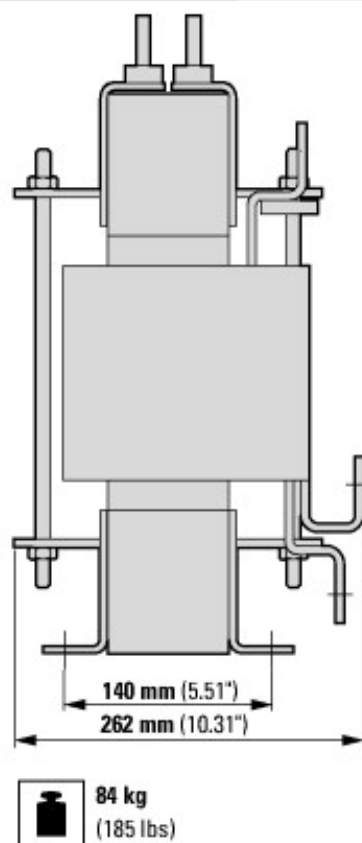
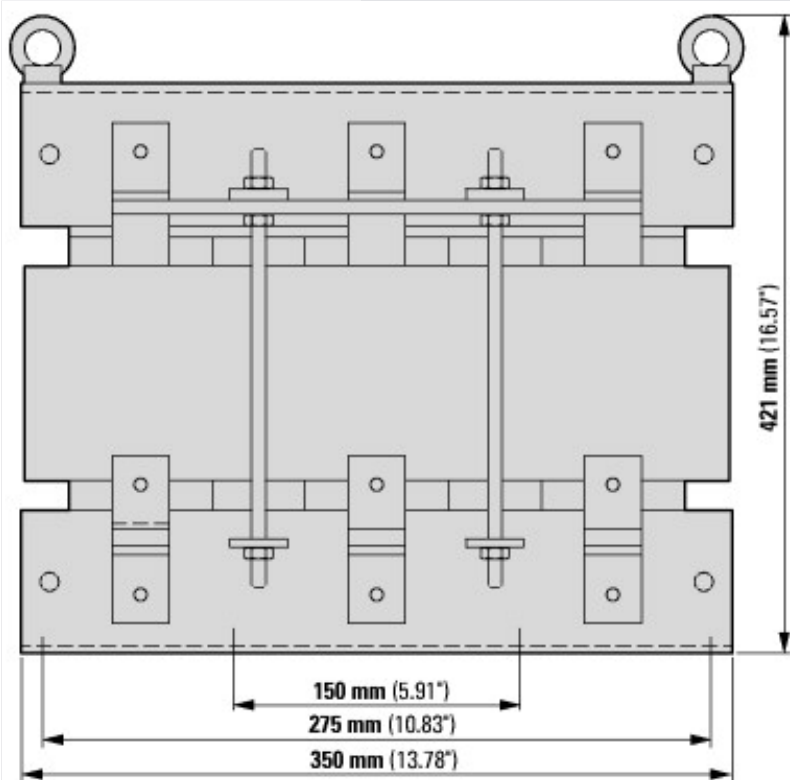
Dimensions



2 x Converter (3 Module)



2 x Inverter



Assets (links)

- Declaration of CE Conformity

00002807
- Instruction Leaflets

IL04020008Z2018\_05

Additional product information (links)

IL04020008Z Frequency inverter 9000X	
IL04020008Z Frequency inverter 9000X	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL04020008Z2018_05.pdf
Documentation	http://www.eaton.eu/Europe/Electrical/ProductsServices/AutomationControl/SwitchingProtectingDrivingMotors/9000X/SPX9000/index.htm#tabs-4