


UTILITY INTERACTIVE INVERTER SPECIFICATIONS FOR NXA 0502 6 +GAUG

SAVE THESE INSTRUCTIONS – This manual contains important instructions for model NXA 0502 6 +GAUG that must be followed during installation and maintenance of the inverter.

1 USED SYMBOLS AND MARKINGS

Table 1. Symbols and Markings

B+	The terminal for the DC+ connection
B-	The terminal for the DC- connection
U/T1	The terminal for the L1 connection
V/T2	The terminal for the L2 connection
W/T3	The terminal for the L3 connection
	The grounding terminal

2 CONDITIONS OF ACCEPTABILITY

1. The power converter shall be installed in compliance with the enclosure, mounting, spacing, casualty, and segregation requirements of the ultimate application.
2. The equipment is intended to be installed within a suitable enclosure for the end product and operating environment.
3. The need for external equipment disconnect devices shall be evaluated in the end product.
4. The suitability of the module chassis in combination with the end product enclosure, including accessibility of live parts through openings in the enclosure, impact tests for reduced enclosure thicknesses, reliable retention of guards or barrier for prevention of shock hazards, etc., shall be considered in the end product evaluation.
5. The power supply bulk capacitors store hazardous energy for 5 minutes after disconnecting all sources of power.

This inverter is intended for operation in an environment having a maximum ambient temperature of 50°C (122°F).

3 REQUIRED TOOLS

No special tools apart from a torque wrench and screwdrivers are needed for the installation of the device. The bolt and screw sizes and tightening torques are stated in this manual.

4 MOUNTING

4.1 DIMENSIONS - DRIVE UNIT

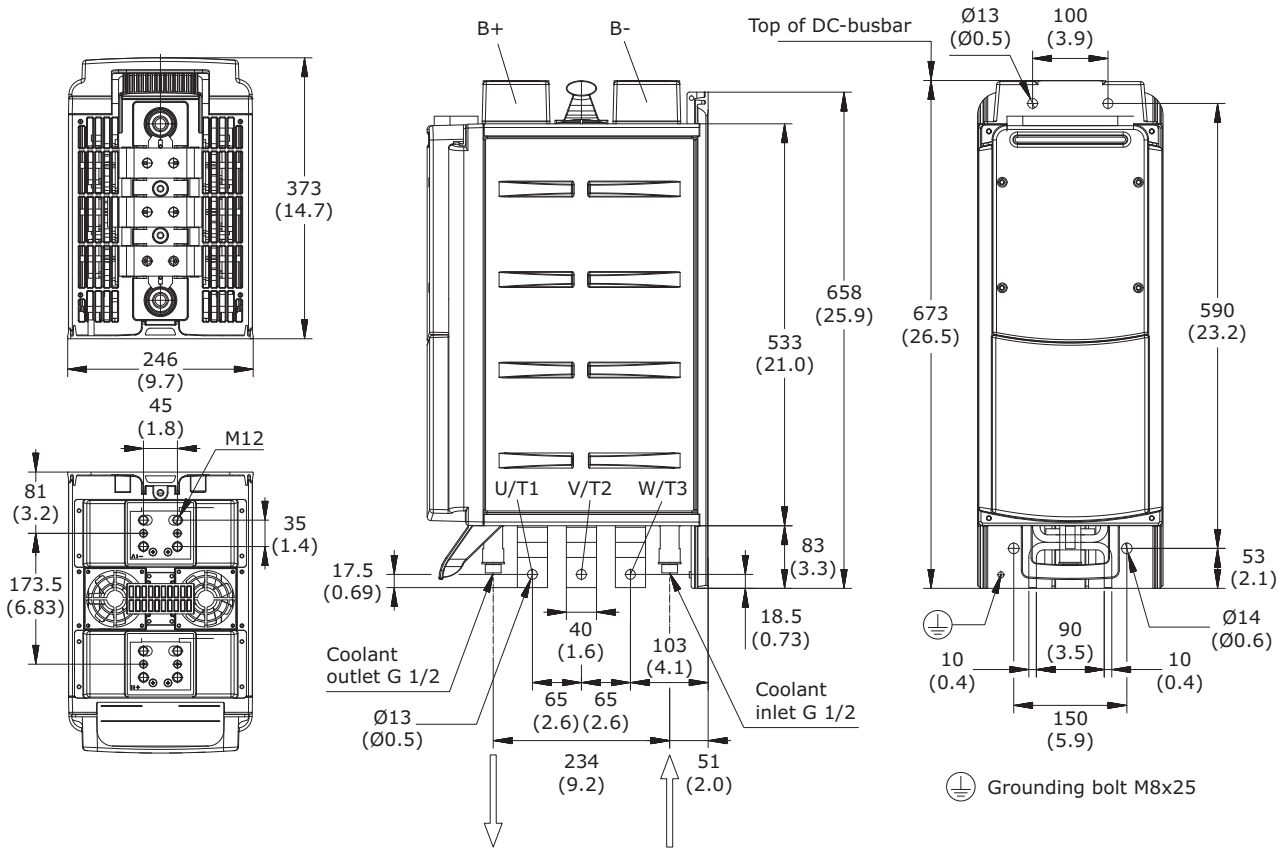


Figure 1. NXA 0502 6 (CH62) dimensions in mm (inch)

4.2 DIMENSIONS - RLC FILTER

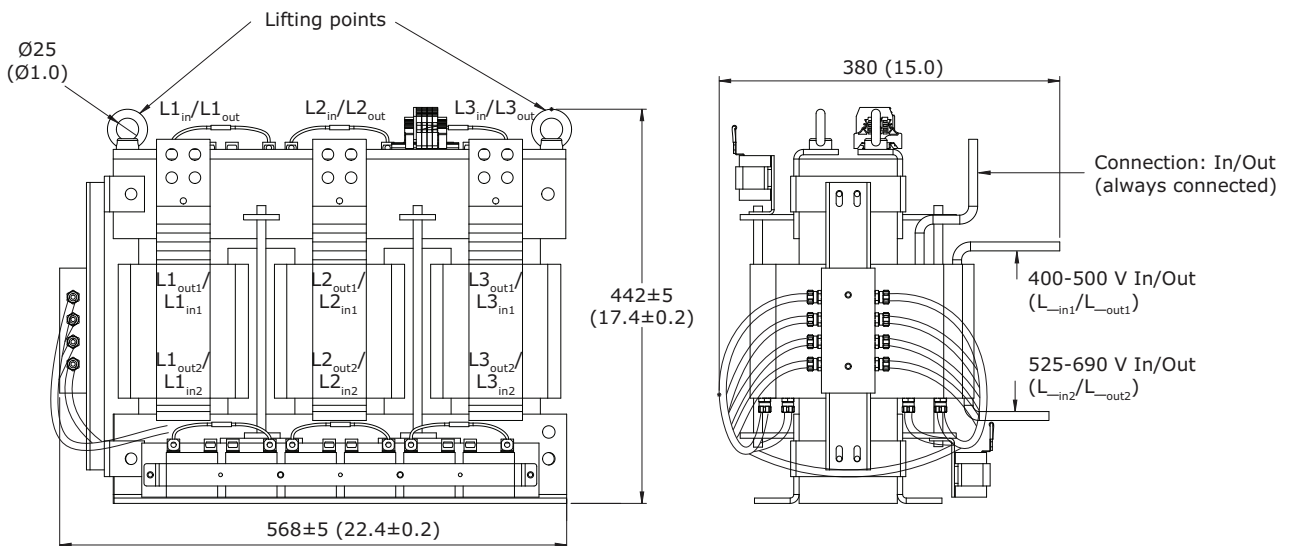


Figure 2. L_{net} inductor dimensions in mm (inch)

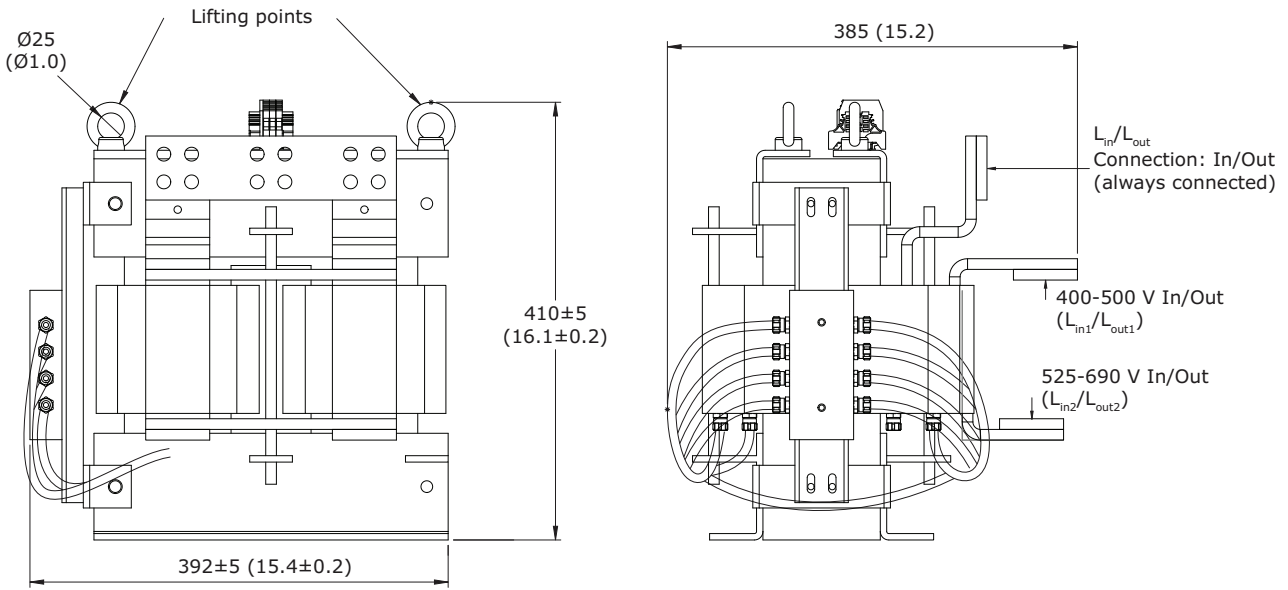


Figure 3. L_{drive} inductor dimensions in mm (inch)

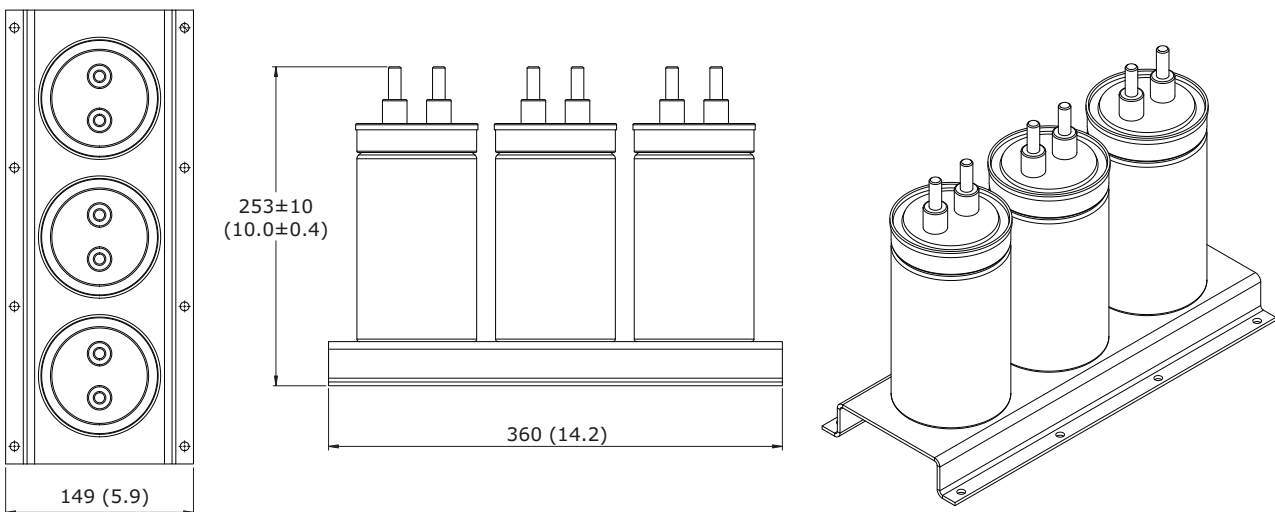


Figure 4. C_{bank} capacitor dimensions in mm (inch)

5 COOLING

The cooling medium (agent) of VACON[®] NXP Liquid Cooled drives is delivered through pipes that are connected to the drive heatsink channels. One of the following is used:

1. Tap (drinking) water.
2. Water-glycol mixture.
3. For model CH62, R134A refrigerant can also be used as the cooling medium.

The system nominal liquid pressure is as follows:

1. 6 bar for the water, or water-glycol mixture.
2. 12.7 bar for R134A refrigerant.

6 POWER CABLING

The AC input and AC output circuits are isolated from the enclosure. The system grounding, if required by Section 250 of the National Electrical Code, ANSI/NFPA 70, is the responsibility of the installer.

Use the wiring methods described in National Electrical Code, ANSI/NFPA 70.

CAUTION!

To reduce the risk of fire, connect only to a circuit provided with 600 A maximum branch-circuit overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70.

6.1 DC CONNECTIONS

2-core/4-core shielded cables shall be used.

4 cables/phase 2/0 AWG copper, or 4 cables/phase 4/0 AWG aluminum or copper-clad aluminum
OR

2 cables/phase 500 kcmil copper, or 2 cables/phase 700 kcmil aluminum or copper-clad aluminum
Use Class 1 Wiring methods. Wire type – rated 75/90°C (167/194°F).

Mounting: M12 bolts, 4 per phase with press nuts installed internally in the inverter module, tightening torque 70 Nm (620 lb-in).

6.2 AC CONNECTIONS

Shielded cables shall be used.

2 cables/phase 350 kcmil copper, or 2 cables/phase 400 kcmil aluminum or copper-clad aluminum
OR

4 cables/phase 1/0 AWG copper, or 4 cables/phase 3/0 AWG aluminum or copper-clad aluminum
Use Class 1 Wiring methods. Wire type – rated 75/90°C (167/194°F).

Mounting: M12 bolts, 2 per phase, tightening torque: 70 Nm (620 lb-in).

7 GROUNDING

Connect the cable shields of the mains cables to the grounding conductor of the switchgear enclosure.

For grounding of the drive itself, use the grounding terminal on the drive mounting plate (see Figure 1).

7.1 GROUNDING TERMINAL

Grounding conductor sizing shall follow NEC Article 250 and minimum conductor size requirements as per NEC Table 250.122.

Use copper, copper-clad aluminum, or aluminum conductors.

Wire type – rated 75/90°C (167/194°F).

Mounting: M8 bolt, tightening torque: 13.5 Nm (120 lb-in).

8 PROTECTIONS

Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.

8.1 OVERCURRENT PROTECTION

The overcurrent protection fuses must be installed by the end user.

8.1.1 AC Output Circuit

Overcurrent protection for the AC output circuit must be provided in the field. Install 1 fuse/phase (3 fuses in total).

The final installation shall have fuse type PC33UD69V700TF.

8.1.2 DC Source Circuit

Overcurrent protection for the DC source circuit must be provided in the field. Install 1 fuse/phase (2 fuses in total).

The final installation shall have fuse type PC73UD12C900TF.

8.2 SURGE PROTECTION

Surge protection equipment shall be installed in the end user installation.

8.3 VOLTAGE/FREQUENCY TRIP LIMITS

For field adjustable trip points for voltage and frequency, see the VACON® NXP Grid Converter Application Manual (ARFIF106).

9 CONTROL CABLING

The control cables must be at least 0.5 mm² (20 AWG) screened multicore cables. The maximum terminal wire size is 1.5 mm² (16 AWG).

Table 2. Tightening torques of the control terminals

Terminal screw	Tightening torque	
Relay and thermistor terminals (screw M3)	0.5 Nm	4.5 lb-in
Other terminals (screw M2.6)	0.2 Nm	1.8 lb-in

The field communication cables shall be routed through grounded metal conduits.

10 SPECIFICATIONS

Table 3. Technical data for NXA 0502 6 +GAUG

General	Operating mode	Utility interactive
	Model	NXA 0502 6 +GAUG
DC Ratings - Input	Maximum input voltage	1100 V DC
	Range of input voltage	600-1100 V DC
	DC input start range	640 V DC
	Maximum input (operating) current	547 A DC
	Circuit combiner on input	NO
	Maximum input overcurrent protection	700 A
AC Ratings - Output	Output - Grid configurations allowed for product connection	Delta 3 wire
	Nominal (line to line) output voltage	600 V AC
	Nominal output frequency	60 Hz
	Maximum continuous output current	460 A
	Maximum continuous output power	478046 W
	Maximum branch circuit overcurrent protection	600 A
	Limits of accuracy of voltage measurement	2.5%
	Limits of accuracy of frequency measurement	0.050 Hz
	Maximum full power operating ambient temperature	50°C (122°F)
	Maximum air ambient temperature	50°C (122°F)
	Enclosure ratings	UL 50 Type 1
	Shipping temperature range	-40°C to +70°C (-40°F to +158°F)
Operating temperature range	-10°C to +50°C (+14°F to +122°F)	

Table 4. Technical data for RLC Filter, IP00 (UL open type)

RLC filter type	RLC-0520-6-0
Thermal current I_{th}	520 A
Power loss to coolant/air/total	2.65/0.65/3.3 kW
Dimensions L_{net}, 1 pc, WxHxD	580 x 450 x 385 mm (22.8 x 17.7 x 15.2 in)
Dimensions L_{drive}, 1 pc (total 3 pcs), WxHxD	410 x 415 x 385 mm (16.1 x 16.3 x 15.2 in)
Dimensions C_{bank}, 1 pc, WxHxD	360 x 265 x 150 mm (14.2 x 10.4 x 5.9 in)
Total Weight	481 kg (1060 lb)



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