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# Installation instructions

The -230 version is designed for a 230 V single-phase supply, while the -460 version is designed for a 460 V split-phase supply. Both can be connected to operate on a 400 V three-phase supply.

Measure the output voltages of a running converter. Voltages between phases are approximately 400V. The voltage between L2 and L3 is slightly higher when no load is connected. **Only L3 to N is 230 V**. The other two phases are not 230V to neutral. See below for an explanation of how control transformers in machines are connected.

When a machine starts, the inrush current of the supply cable is 3-4 times the maximum input current rating. Install a D-curved or motor-rated overload circuit breaker in the house distribution box.

Install the converter close to the power source and use a single-phase switched wall outlet. For two- or split-phase inputs, use a dual circuit breaker and dual wall switch. Use a heavy supply cable to minimise voltage drop.

| | 230V supply | 400V and 460V supply |
|---|---|---|
| 3kW | 20A | 2x 10A |
| 4kW | 25A | 2x 16A |
| 6kW | 32A | 2x 20A |
| 8kW | 40A | 2x 25A |
| 12kW | 63A | 2x 32A |
| 16kW | 80A | 2x 40A |
| 24kW | 100A | 2x 50A |
| 32kW | | 2x 80A |
| 40kW | | 2x 100A |

Converters with a capacity of up to 8kW are housed in a single enclosure. Those with a power output of 12–24kW are housed in two or three enclosures and are supplied with marked link cables for interconnection.

Single units:

# Connect the input side of a converter

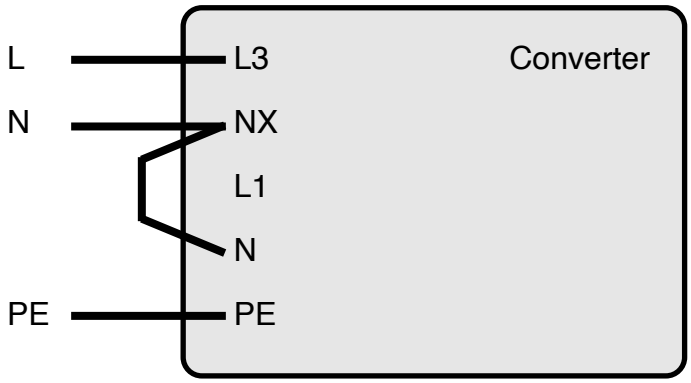
Supply is 230V single phase:

L to L3

N to NX

Wire bridge NX to N

PE to PE



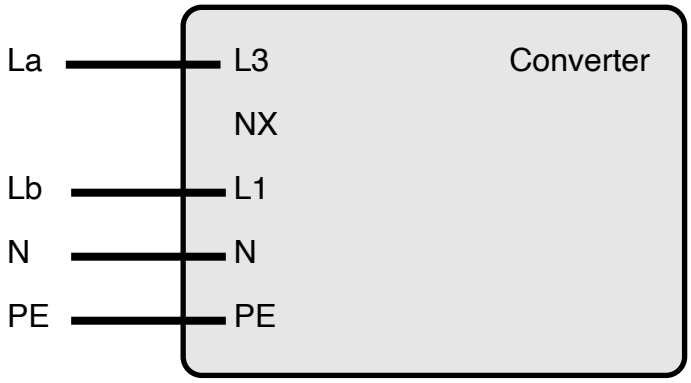

Supply is 400V two phase:

La to L3

Lb to L1

N to N

PE to PE



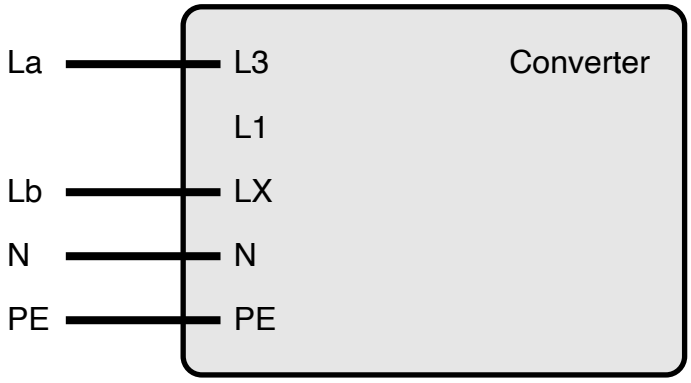

Supply is 460V split phase:

La to L3

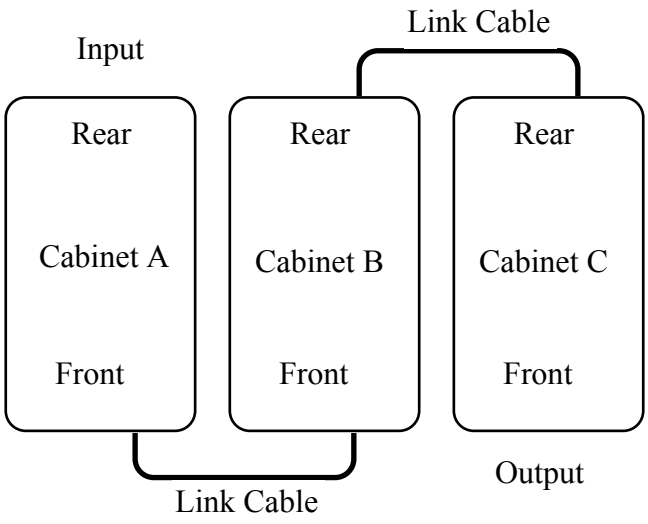
Lb to LX

N to N

PE to PE



# Multi cabinet set-up for converters above 8kW




# Connect a machine to a converter

The converter output phases must always be connected to the corresponding phases in a three-phase wall outlet.

Control transformer:

Most machines have a single-phase control transformer. Care must be taken, as the output voltages of a converter are 400V between phases, but only phase L3 is 230V to neutral.

A machine with a five-pin plug has a control transformer with a 230V primary coil. This is connected between neutral and one of the three phases. Connect this phase to converter output L3.

A machine with a four-pin plug has a control transformer with a 400V primary coil. This coil is connected between two of the three phases. Connect this coil to converter outputs L1 and L3.

To find the phases that a control transformer is connected to, measure the coil resistance on a machine's plug. Remember to set the main switch on the machine to the 'on' position.

The motor rotates in the wrong direction:

In a five-pin plug, swap the two wires connected to L1 and L2.

In a four-pin plug, swap the two wires connected to L1 and L3.

# Prevent damage to machinery

An incorrect installation can damage the control circuit inside a machine.

Very few machines have multiple internal single-phase loads connected to more than one phase. Modify the configuration of a machine so that all single-phase loads are connected to phase L3.

For machines with internal heaters: It is best to disconnect the heater and connect it directly to a single-phase supply.

To avoid damage or fire, install the converter in a well-ventilated room and ensure that its air intake and outlet are always free of obstacles.

The voltage inside a converter can peak at 1200V. Wait at least ten minutes after disconnecting from power before opening the unit. Always measure the DC voltage on the capacitors prior to any work; a live-saving discharge resistor could be faulty.

# SUPPLIER DECLARATION OF CONFORMITY (SDoC)

In accordance with ISO/IEC 17050- 1:2004

**SDoC Identification Number[1]:** Booster E 2-8kW, Booster T 4-48kW

**Issuer details**

Name[2] (of New Zealand manufacturer or importer): EuroTech Machinery Ltd

Telephone: 07-823 7234

New Zealand Company No. (if applicable):

Email Address: contact@eurotech.co.nz

Contact Address: 140 Victoria Street, Cambridge 3434

**Medium Risk Article – Details[3] (Product name, type, rating, brand, model, batch numbers, and serial numbers, as applicable):**

Booster E2, E3, E4, E8. Booster T4, T8, T12, T16, T24, T36, T48

**The Medium Risk Article listed above, fully complies:**

**With cited standard(s), as listed[4]:**

| | | | |
|---|---|---|---|
| Standard number and issue year: | AS/NZS3100:2009 | Standard number and issue year: | AS/NZS2064:1997 |
| Edition / Amendment status: | Amendment 1,2,3 and 4 | Edition / Amendment status: | Amendment 1, Group1 |
| Standard title: | Approval and test specification - General requirements for electrical equipment | Standard title: | |
| AS/NZS ZZ modified | Yes ☐ No ☐ N/A ☑ | AS/NZS ZZ modified | Yes ☐ No ☐ N/A ☑ |

**OR Complies with the Conformity Cooperation Agreement[5]** Yes ☐ No ☐

**Names and addresses of any testing organisation or body**

| | | | |
|---|---|---|---|
| Name(s): | EMC Technologies (NZ) Ltd | Address(es): | 47 MacKelvie Street, Grey Lynn, Auckland |
| Name(s): | | Address(es): | |

**Reference to relevant test reports/certification and the issue date that show how compliance is achieved**

| Standard(s) or document(s) used, to show how compliance with cited standard is achieved: | Report Certification or Document reference N°(s): | Issue dates(s): |
|---|---|---|
| AS/NZS2064:1997 | Test Report No 10204.1 | 15 Februar 2001 |

Reference to any management quality system involved:

Additional information[6]:

**Declaration (signed for and on behalf of)**

**Name and position as authorized by the issuer[7]:** Helmut Holighaus, Director

**Issuer identification (as affixed to the article):**

EUROTECH
DIGITAL POWER ENGINEERING

**Signature:**

**Date:** 23. Aug 2017