EUROTECH
DIGITAL POWER ENGINEERING

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Jan 2025

Installation instructions

Connect a single to three-phase converter

Version -230 is for 230V single-phase supply and version -460 is for 460V split-phase. Both can be connected to run on 400V two-phase supply.

Measure the output voltages of a running converter:
Only voltage L3 to N or Ground is 230V. The other two phases are not.

Voltages between phases are about 400V; L2 to L3 may be higher when running idle. Understand control transformers in machines before you connect them (see below).

Supply cable:

The inrush current is about three times the rated maximum current. Use a d-curved or motor rated overload circuit breaker in the house distribution box. Use a heavier than normal supply cable. To reduce losses, install a converter close to the power source.

Install a switched single-phase wall outlet.
For two- or split-phase inputs use a dual circuit breaker and a dual wall switch.

Motor rated d-curved overload circuit breakers:

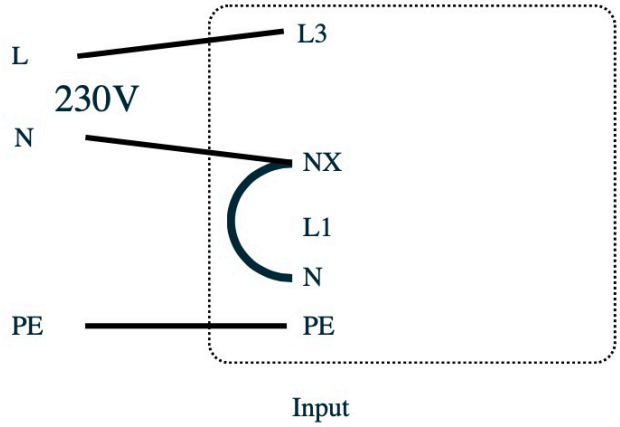
	230V supply	400V and 460V supply
3kW	20A	2x 10A
4kW	25A	2x 16A
6kW	32A	2x 20A
8kW	40A	2x 25A
12kW	63A	2x 32A
16kW	80A	2x 40A
24kW	100A	2x 50A
32kW		2x 80A
40kW		2x 100A

Multiple enclosures:

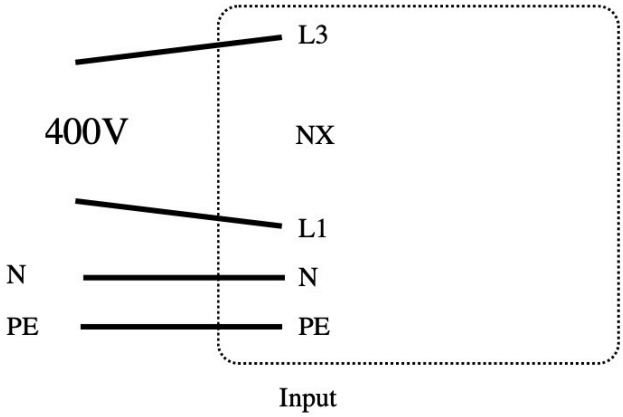
Converters up to 8kW are in a single enclosure. 12kW and 16kW are in two enclosures. Multiple enclosures are supplied with marked link cables for interconnection.

Connect the input:

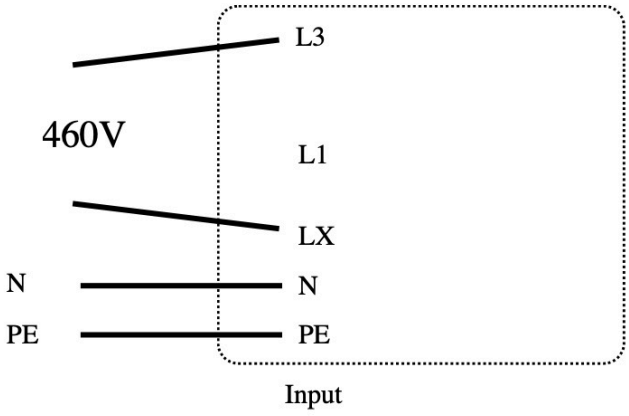
Converter for 230V single-phase supply: Add a wire bridge NX to N:



Converter for 400V two-phase supply:

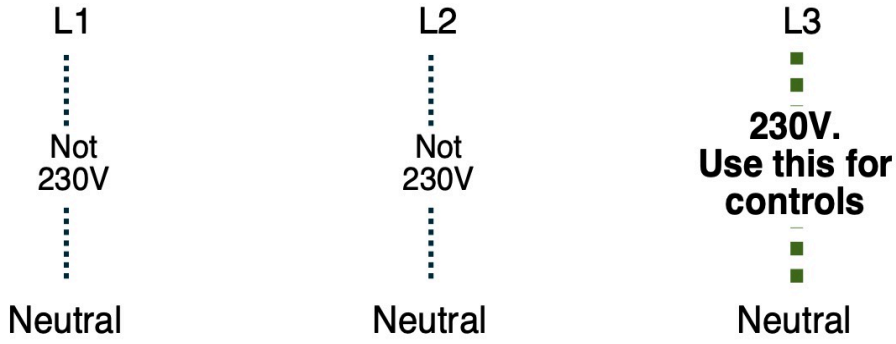


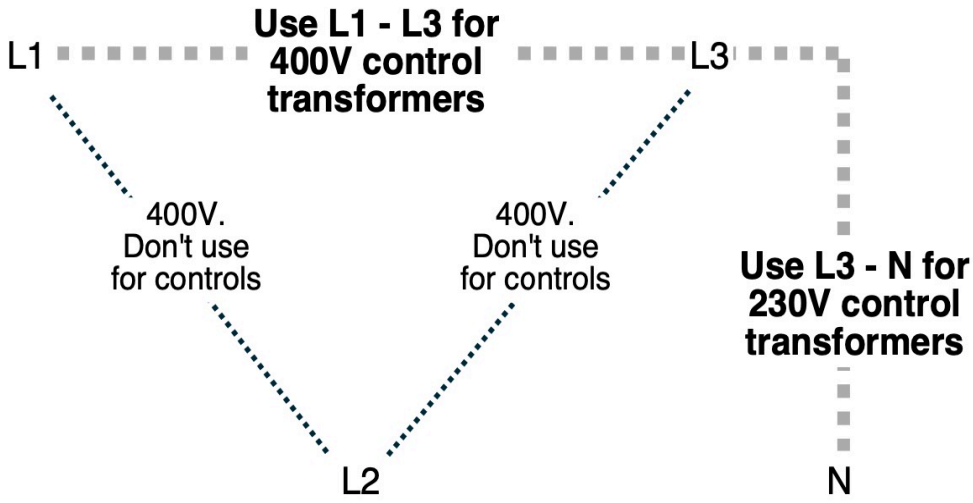
Converter for 460V split-phase supply:



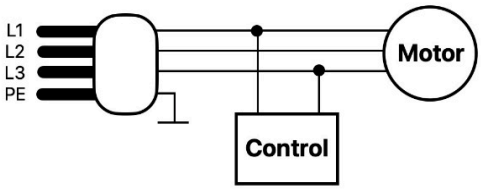
Find control transformers in machines and connect:

Connect the converter outputs to wall socket(s), to a distribution panel/box or to a machine.
Phase numbers in wall sockets should match the converter phases: L1 L2 L3 = L1 L2 L3.
Most machines have a control transformer for either 230V or 400V. See how to connect:



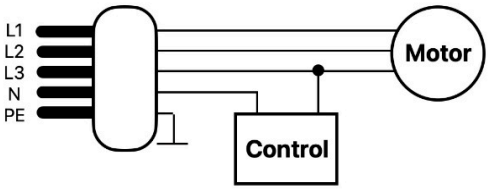


If machine has a four pin plug



The control transformer is connected to converter phases L1 and L3 = 400V

If machine has a five pin plug



The control transformer is connected to converter phases L3 and N = 230V

Rotate wires L1 L2 L3 in the plug of a machine until this is true

Danger

Wrong installation can damage the control circuit of a machine

Output voltages are 400V between phases for three-phase motors. 230V Phase to Neutral is only found between L3 and Neutral, other voltages may be too low or too high.

Find the control circuitry on a three-phase plug of a machine by measuring the resistance of the primary coil of a control transformer. This can be hundreds of Ohms or a few Ohm.

Machines with a five-pin plug have a control transformer with a 230V primary coil connected between one of the phases and Neutral. In the machine's plug, connect this control transformer wire to converter phase L3. Start a machine briefly. Should a motor rotate in the wrong direction, swap phases L1 and L2 in the plug.

Machines with a four-pin plug: Control transformer has a 400V primary coil connected between two of the three phases. In the machine's plug, connect this wires to converter phases L1 and L3. Start a machine briefly. Should a motor rotate in the wrong direction, swap phases L1 and L3 in the plug.

A few machines have multiple internal single phase loads connected to more than one phase. Change this inside a machine to have all single phase loads on L3.

Machines with internal heaters:
It is best to disconnect any heater and connect it to single phase supply directly.

Machines with Soft Starters: Soft starters can be used but are not required.

Converter cooling. Avoid a fire:
In order to avoid damage or fire, install a converter inside a well-ventilated room. Ensure that the converter's air intake and air outlet are always free of obstacles.

Avoid an electric shock:
Voltages inside a converter peak at 1600V. Before opening the unit, wait at least ten minutes after disconnecting from power.

Always measure the DC voltage on the capacitors prior to any work, a 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):

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Signature:

Date: 23. Aug 2017