# iE Convert CU8

4189370005-A

Control unit

## Installation instructions

DEIF Improve Tomorrow

# 1. Introduction and safety

## 1.1 Introduction to the installation instructions

This document contains the installation instructions for the iE Convert CU8 control unit.

This document does not describe the commissioning or operation of the converter and control unit. The important safety considerations for commissioning and operation will be described in other documents.

## 1.2 Read the instructions

**WARNING**

**Personnel are not aware of safety**

To work with the equipment safely, read this document carefully. Understand the risks, and use the information in this document to prevent injury and damage. Death, injury, and/or damage to the equipment can occur if you do not work with the equipment safely.

## 1.3 Symbols for hazard statements

**DANGER!**

**This shows dangerous situations.**

If the guidelines are not followed, these situations will result in death, serious personal injury, and equipment damage or destruction.

**WARNING**

**This shows potentially dangerous situations.**

If the guidelines are not followed, these situations could result in death, serious personal injury, and equipment damage or destruction.

**CAUTION**

**This shows low level risk situation.**

If the guidelines are not followed, these situations could result in minor or moderate injury.

**NOTICE**

**This shows an important notice**

Make sure to read this information.

## 1.4 Symbols for general notes

**NOTE** This shows general information.

**More information**
This shows where you can find more information.

**Example**

This shows an example.

**How to ...**
This shows a link to a video for help and guidance.

## 1.5 Qualified personnel

Installation may only be done by qualified personnel.

Qualified personnel must be trained in accordance with local laws and regulations. They must also carefully read and follow the product documentation.

## 1.6 Modifications and repairs

**WARNING**

**Unauthorised modification and/or repair of the equipment**

Do not modify or repair the equipment. If modifications and/or repair are required, contact DEIF.

## 1.7 Disclaimer and copyright

### Preliminary information

The product described in this document is still under development. All information is therefore preliminary.

### Copyright



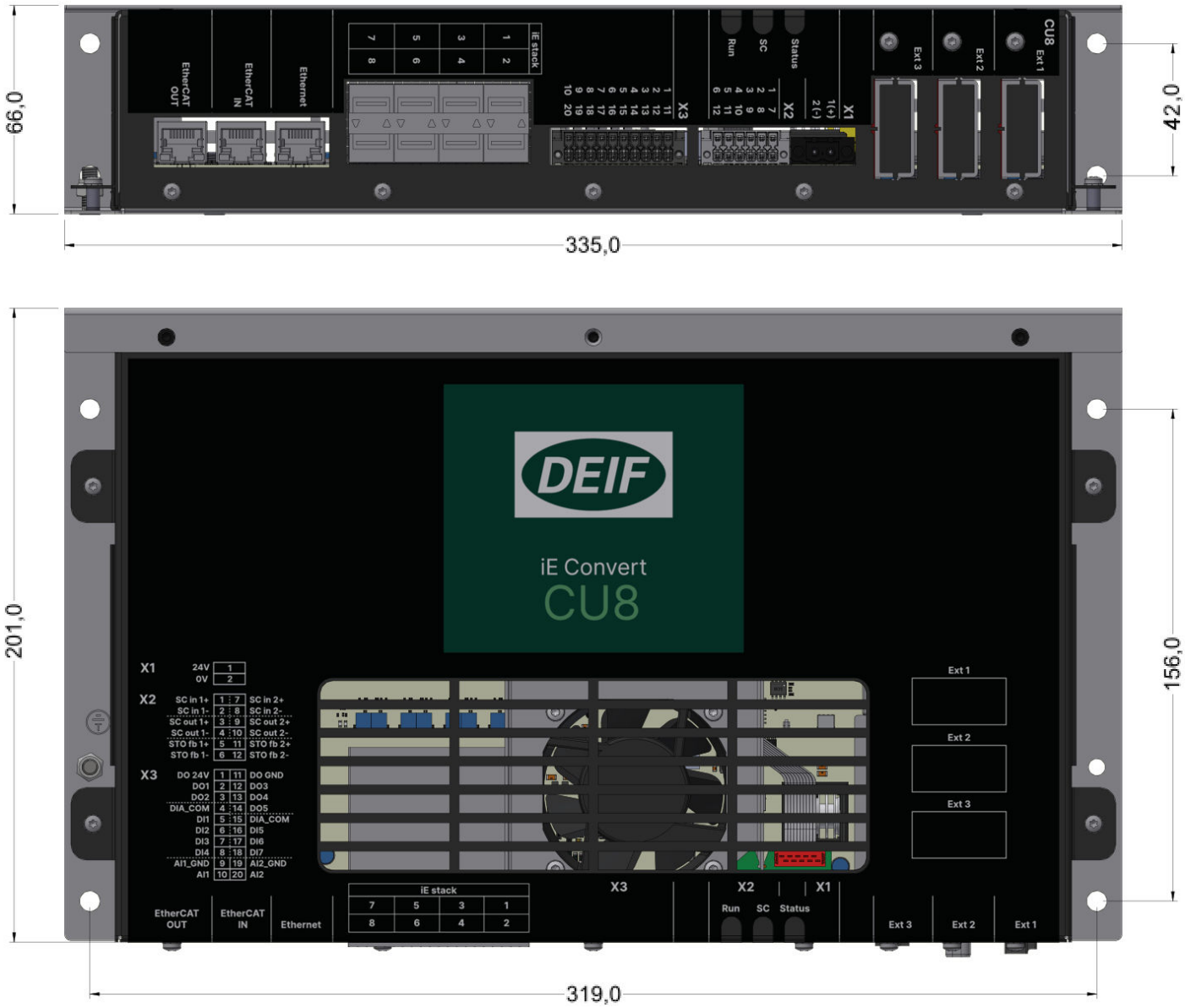
### Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.

The English version of this document always contains the most recent and up-to-date information about the product. DEIF does not take responsibility for the accuracy of translations, and translations might not be updated at the same time as the English document. If there is a discrepancy, the English version prevails.

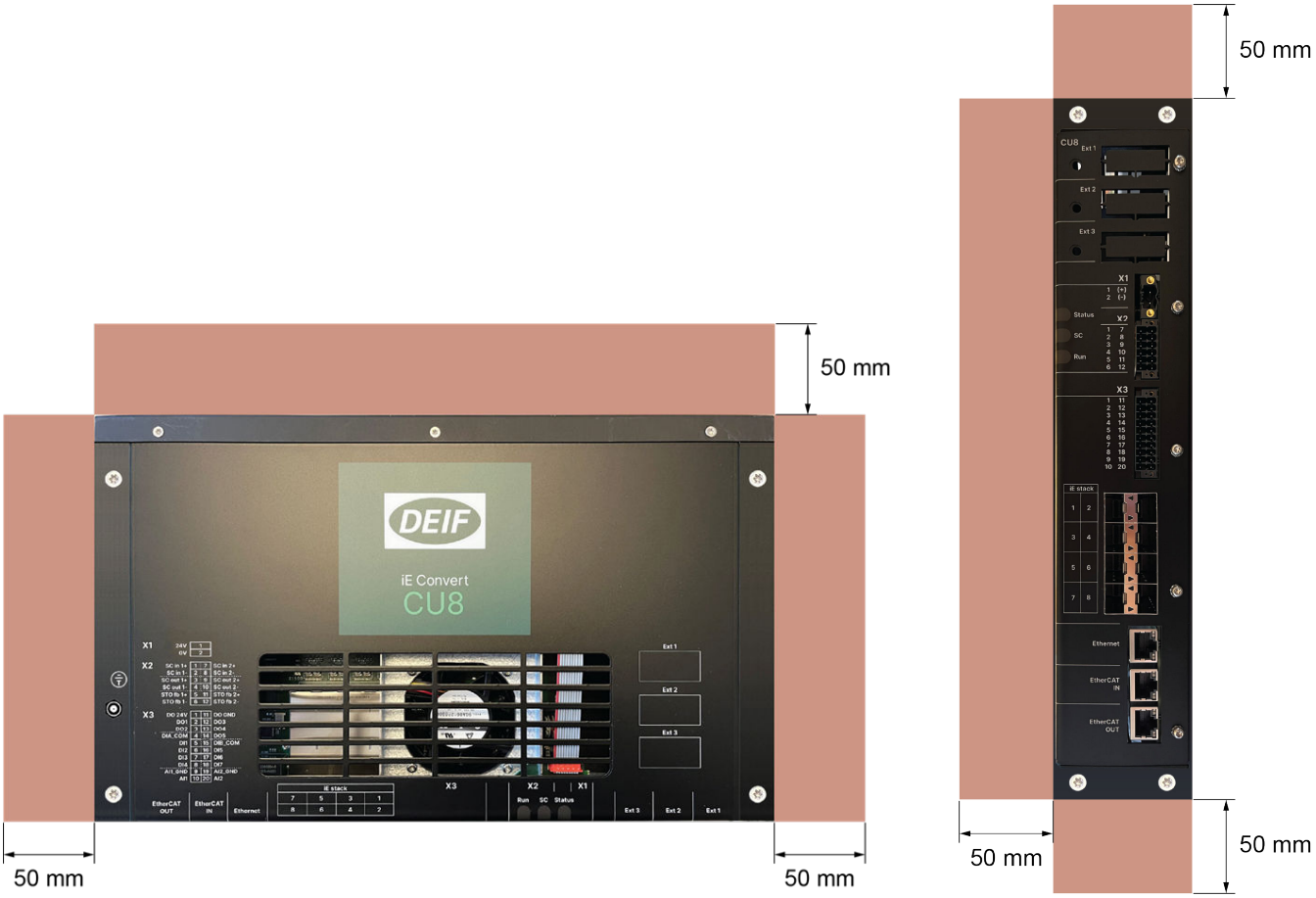
# 2. Mount the equipment

## 2.1 Dimensions and weight




| Dimensions and weight | |
|---|---|
| CU8 (W x H x D) | 335 mm x 66 mm x 201 mm |
| Weight | ~2 kg |
| Mounting holes | 4 x 6.5 mm ⌀ on the base (base mounting or DIN rail mounting)<br>4 x 6.5 mm ⌀ on the back plate (vertical mounting) |

## 2.2 Mounting




**Horizontal** **Vertical**

The space required for ventilation is shown in red.

- **Horizontal**
  - The connections are at the bottom.
  - Ventilation: There must also be at least 50 mm of free space in front of the CU8.
- **Vertical**
  - The connections are at the front.

## 2.3 Installation environment

The installation must meet these requirements:

- The environment is clean and climate-controlled.
- The control unit has enough ventilation.
- There is enough space for ventilation around the control unit.
- As a best practice, install the power converter and control unit in separate cabinets.
  - This protects the control unit from emissions from the converter.

# 3. Wiring the equipment

## 3.1 Connections

### 3.1.1 Protective earth

The connection for the protective earth is an M4 stud (15 mm long) on the left the control unit. An M4 lock-nut is provided to secure the connection.

To install the protective earth:

1. Use the PE connection to connect a protective earth that complies with all the local rules and regulations.

### 3.1.2 Power supply - X1


The connections for the power supply (X1) are on the front right of the control unit. The power supplies are connected to terminals 1 and 2.

To install:

1. Use the locking latches to connect the power supplies to the corresponding terminals (see below).
2. Use the screws to secure the X1 terminal block to the converter.

| Block | Terminal | Function | Notes |
|---|---|---|---|
| X1 | 1 | +24 V DC * | DC supply |
| X1 | 2 | 0 V DC * | DC supply |

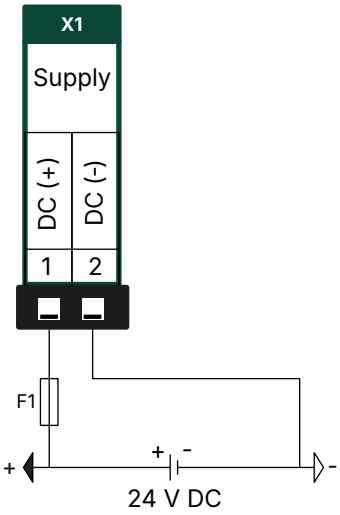
**NOTE** * The first set of CU8 controllers have an adhesive label next to these terminals, because the polarity is reversed. For these CU8 controllers, the correct polarity is shown on the adhesive label.

**NOTICE**

**Unsecured connection supply disrupts power supply**

Use the screws to secure the X1 terminal block to the control unit. If this is not done, the control unit could have a sudden loss of the DC supply.

**Wiring example**




**Fuse**

F1: 4 A DC max. time-delay fuse/MCB, c-curve

### 3.1.3 SC - X2 - for future use

For future use.

### 3.1.4 STO - X2 - for future use

For future use.

### 3.1.5 Digital outputs - X3 - for future use

The digital outputs (X3 terminals 1 to 3, and 11 to 14) are reserved for future use.

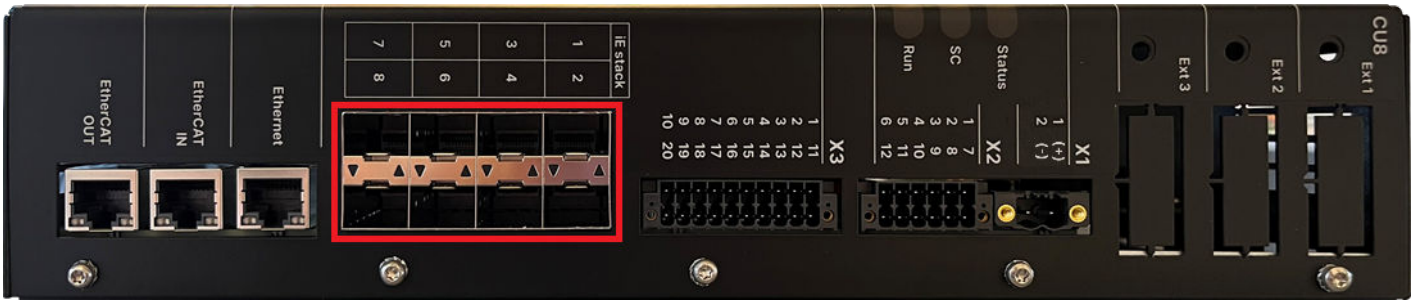
### 3.1.6 Digital inputs - X3 - for future use

The digital inputs (X3 terminals 4 to 8, and 15 to 18) are reserved for future use.

### 3.1.7 Analogue inputs - X3 - for future use

The analogue inputs (X3 terminals 9, 10, 19, 20) are reserved for future use.

### 3.1.8 Converter control connections




The connections for the control signals to the converter are on the front of the control unit.

For the communication cable, use an OM3 fibre-optic patch cord with LC/UPC connectors on both ends (50/125 µm).

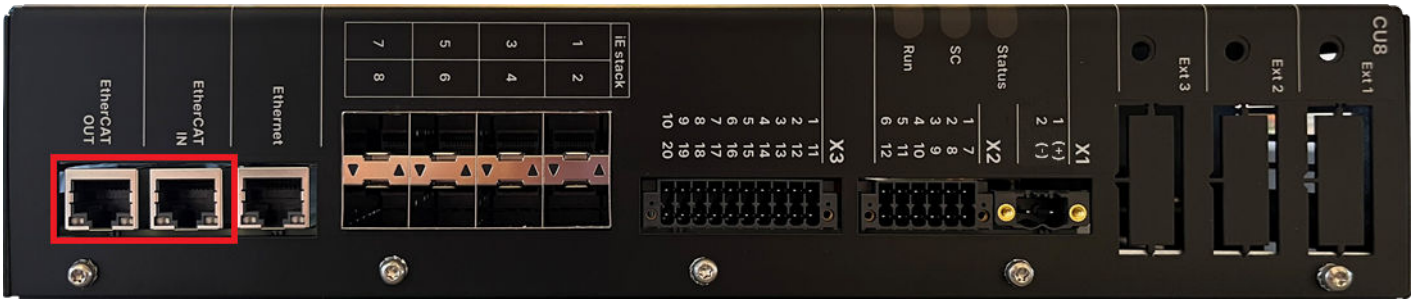
To install the connections, plug the cables into the transceivers.

**NOTE** The transceivers are included. Only use the transceivers that are provided by DEIF.

## 3.1.9 Ethernet communication - for future use


The Ethernet connection is reserved for future use.

## 3.1.10 EtherCAT connections




The EtherCAT connections are on the front of the control unit, on the left. These connections are used for communication to an external controller.

To install the EtherCAT connection(s):

1. **EtherCAT IN**: Use a suitable cable to connect the master controller (for example, iE 250 or iE 350) to EtherCAT IN.
2. **EtherCAT OUT** (optional): For iE 350, you can use EtherCAT OUT to connect to additional CU8 controllers.

### EtherCAT cable requirements

- The cables must not be longer than 100 metres from point-to-point.
- The cables must meet or exceed the SF/UTP CAT5e specification.
- The cable bend radius must not be tighter than the minimum bend radius specified by the cable manufacturers.
  - We recommend that you always follow the cable manufacturer's bend radius requirements.
  - It is recommended to use velcro strips (and not cable ties) for the cables.

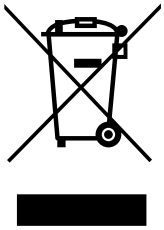
## 3.1.11 Extension modules - for future use

There are slots for extension modules on the right of the control unit. The extension module slots are reserved for future use.

# 4. End-of-life

## 4.1 Disposal of waste electrical and electronic equipment

WEEE symbol



All products that are marked with the crossed-out wheeled bin (the WEEE symbol) are electrical and electronic equipment (EEE). EEE contains materials, components and substances that can be dangerous and harmful to people's health and to the environment. Waste electrical and electronic equipment (WEEE) must therefore be disposed of properly. In the EU, the disposal of WEEE is governed by the WEEE directive issued by the European Parliament. DEIF complies with this directive.

You must not dispose of WEEE as unsorted municipal waste. Instead, WEEE must be collected separately, to minimise the load on the environment, and to improve the opportunities to recycle, reuse and/or recover the WEEE. In the EU, local governments are responsible for facilities to receive WEEE. If you need more information on how to dispose of DEIF WEEE, please contact DEIF.