

ZEB[®]+ZEB[®] for Space Heating Independent Heating Systems

Use Cases and Installation Consideration



v1.0

This advice is not appropriate for multiple ZEB installations on the same heating system. For advice on multiple ZEB installations on a single heating system please refer to the separate document on tepeo.pro, or contact tepeo technical support.

Why pair a ZEB + ZEB on independent systems?

If a house has an annual heat demand that exceeds the recommended demand for a single ZEB (more than 12,000 kWh), then additional ZEBs can be considered as a solution to meeting the extra heat demand - where the electrical supply to the property allows.

One approach is to divide the heating for the house into separate systems, each with dedicated, individual controls, pipework and emitters. In this way the overall installation can be tackled as multiple independent ZEB installations.

When should you pair a ZEB + ZEB on independent systems?

A ZEB + ZEB installation on independent heating systems can be considered when:

- Total heating demand of the house exceeds the capacity of a single ZEB
- Power supply to the house can support a multiple ZEB installation
- The heating system can be configured as independent systems, each with dedicated controls, pipework and emitters

For example in a larger two storey home the lower and upper floors may be considered as two heating systems, each with their own dedicated, individual pipework, emitters and ZEB. Whilst in general the upper floor contains bedrooms and would have a lower space heating demand than the lower floor, it is usual for the DHW cylinder to be located on the upper

floor, and the additional DHW heat demand may balance the overall heat demand between the two systems.

Other examples could be having the radiators on both floors on one system, and the underfloor heating and DHW cylinder in a second system. Or if a house has an annex, or had an extension added, the house may have its own heating system, and the annex/extension may have a second heating system.

What are the limitations of pairing a ZEB + ZEB on independent systems?

The ZEB has a peak electrical consumption of 9kW, so the mains supply must exceed the cumulative power consumption of all ZEBs.

The ZEB has a peak output power of 15kW, so each heating system should have a peak heat demand that does not exceed this.

Consideration / Requirements

The cumulative power consumption of all the ZEBs must be considered along with the other power demands in the house, as in general a single phase of a mains supply can support a single ZEB. Therefore a multiple ZEB installation typically requires either a 3-phase mains supply to the house, or multiple single phase supplies to the house.

The peak heat demand of each heating system should be less than 15kW, as this is the peak power output of a ZEB.

If a heating system also includes an indirect DHW cylinder, factor in the coil power rating when considering the peak heat demand.

Installation Schematic

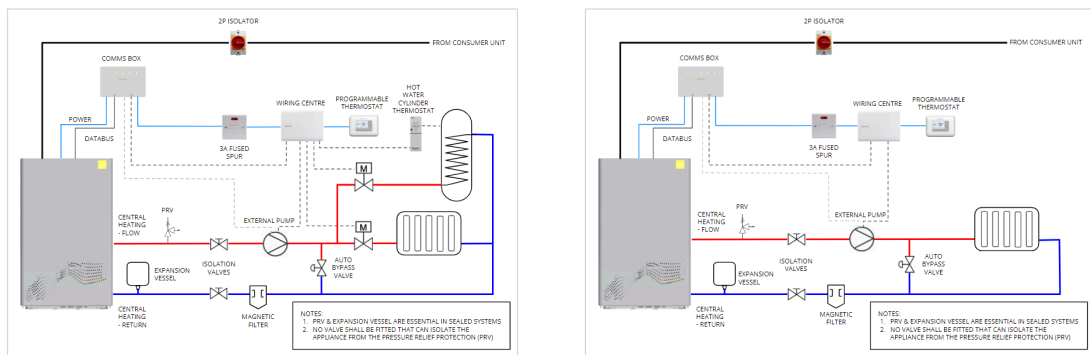


Figure 1: ZEB + ZEB installed on independent heating systems

Guidance for Plumbing / Electrical Wiring

Treat each system as a separate and independent ZEB installation, with their own individual mains supply, thermostat/controls and circulating pump.

Controls

To manage two ZEBs in a single household, a user would need to create two accounts with separate login details - one for each ZEB - and they can only control one at a time via the tepeo App.

A single email address cannot be used as Primary User for more than one ZEB.

Hot Water Implications

Where there is a single indirect hot water cylinder in the property, it will be served by a single ZEB. Ideally the heat demands between the two systems should be balanced as far as possible to share heat demand equally between the two ZEBs.

For other hot water systems, these should be considered as per standard ZEB installation guidelines.