

Newbridge Fire Station



Energy upgrade using Immergas Magis Pro heat pumps



Newbridge fire station in County Kildare recently installed a cascade of Immergas air to water heat pumps during an energy upgrade.

Project Background

An upgrade of the heating system at Newbridge fire station was planned for 2021. An alternative to fossil fuel was required to reduce the fire station's carbon footprint.

New, greener and more cost-effective technology was needed and four no. Immergas Magis PRO 16 heat pumps were chosen for the project.



Installation at Newbridge Fire Station

The Primary Objectives of the installation were to:

- Achieve a better Building Energy Rating
- Reduce carbon emissions
- Minimise running cost



Four Immergas Magis PRO V2 split type air/water heat pumps were installed in November 2021. Each heat pump has a nominal capacity of 16kW.

The Magis PRO is available in capacities from 4kW to 16kW (single phase) and 12kW to 16kW (three phase.) The heat pumps can produce flow temperatures of up to 55°C and operate in temperatures as low as -25°C.



The Magis PRO V2 is a good retrofit option when replacing an existing gas boiler as it shares common dimensions, connections, and pipe centres with Immergas domestic boilers. A circulating pump, expansion vessel and safety valve are built-in.

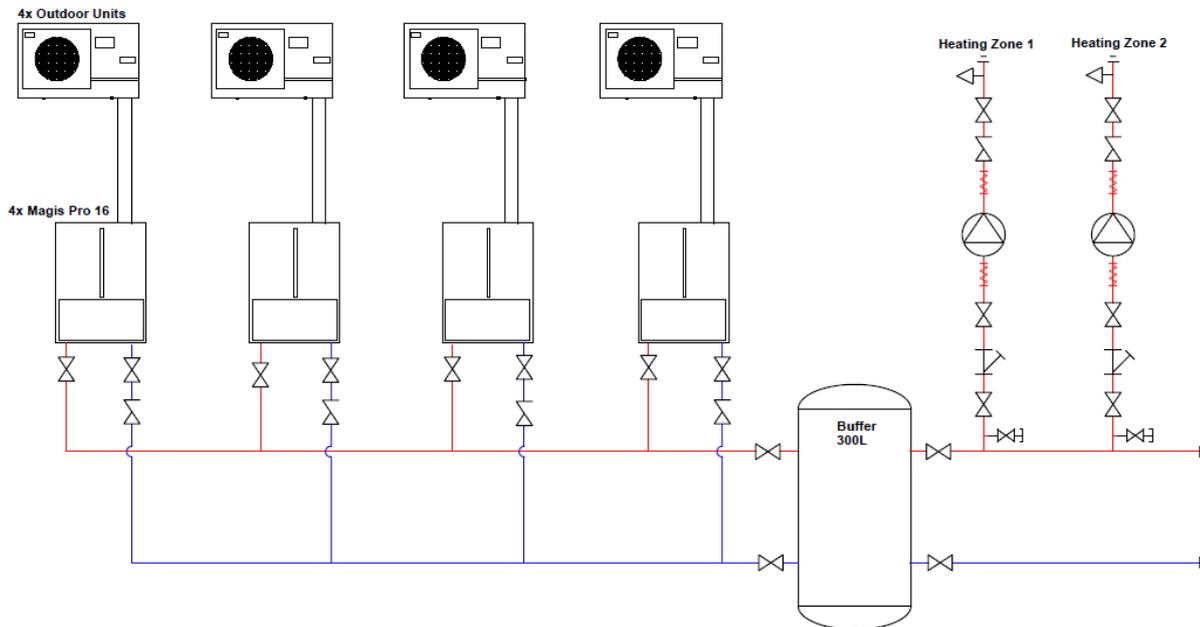
The heat pump's easy to use LCD controls can also manage and activate up to three heating zones.

The Magis PRO V2 may be installed in a stand-alone configuration or combined with a boiler and other renewable energy sources in integrated or hybrid systems.

The Magis PRO V2 may be used for central heating, cooling and DHW production.

Hydraulic schematic

The general layout of the system is shown in the schematic below.



Refrigerant piping and a control cable were connected between each outdoor unit and indoor condensing/hydronic unit. RVR Energy Technology (which is F-Gas registered) carried out the installation, connection and charging of the refrigerant pipework.



The compact indoor units are mounted in a cascade type arrangement connected to a mild steel buffer vessel. This buffer serves the heating zones. This works well in the limited space available.

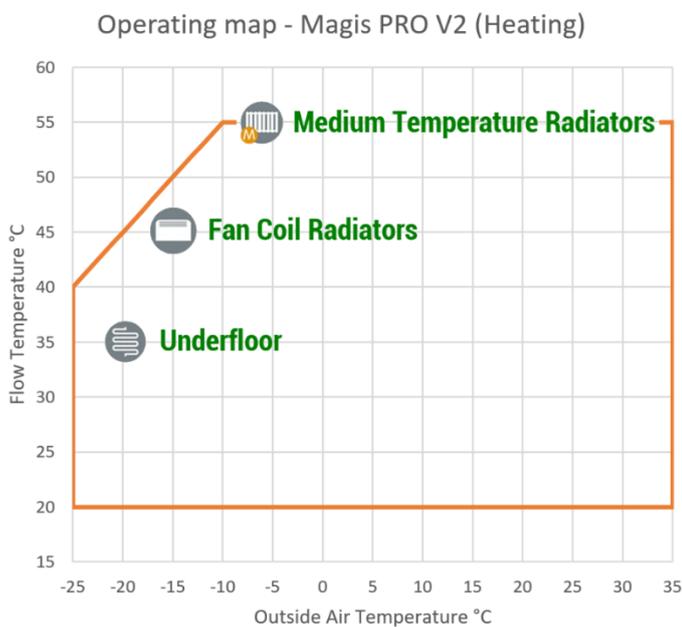
Control

An Immergas system controller manages the heat pumps and can also regulate up to four heating circuits. Weather compensation is also activated - which optimises the efficiency of the heat pumps and reduces running costs.

The heat pumps may be controlled using the Dominus interface kit via an app.



Applications



The Magis PRO V2 has been tested to EN 14511, EN 14825 and EN 16147.

According to Ecodesign, it is classified as a "**Heat pump combination heater.**"



35°C, 55°C and water heating
Ecodesign efficiency data is available.

This makes the Magis PRO V2 suitable for all low and medium-temperature domestic (*DEAP*) and commercial (*NEAP*) applications.

Benefits

- Ideal for both domestic and light commercial applications - single and three-phase.
- Suitable for most applications- low and medium temperature Ecodesign data available.
- Ideal for water heating applications – tested to EN 16147
- Easy to cascade for additional capacity

Applications include: Houses, Nursing Homes, Hotels, Schools, Farms, and many more.

Parties Involved

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