ModuSat® XR Combined Heating, Domestic Hot Water and Cooling Interface

The ModuSat® combined heating and cooling unit provides heating, cooling and the instantaneous production of hot water. Designed to simplify apartment installations where cooling and heating is required; the CHHC unit features a small footprint that minimises required cupboard space, with easy access for service and maintenance.

The heating, domestic hot water and cooling plate heat exchangers are housed within a single cased unit with high quality fully insulated separation between the hot and chilled zones. The unit can be provided in either floor standing or wall mounted orientations making them suitable for a wide range of installation configurations.

**Heating**

The heating circuit consists of a plate heat exchanger (PHE), safety relief valve, manometer, flow and return temperature sensors, Wilo PWM circulation pump and expansion vessel. The heating circuit flow temperature is controlled by the modulation of the primary flow rate with the integrated PICV actuator. Weather compensation is applied to the set heating temperature using SmartTalk® 2-way communication. Suitable for radiators, underfloor heating or fan coil units.

**Domestic Hot Water**

Domestic hot water is heated via a separate plate heat exchanger and the temperature is regulated by the modulation of primary flow rate with the integrated PICV actuator.

**Cooling**

The Cooling circuit consists of a plate heat exchanger (PHE), safety relief valve, manometer, flow and return temperature sensors, Wilo PWM circulation pump and expansion vessel. The cooling circuit flow temperature is controlled by the modulation of the primary flow rate with the integrated PICV actuator.

The ModuSat® CHHC is available with a number of plate size options to meet a range of cooling, heating and DHW requirements and is supplied complete with a ViewSmart room controller.

**Features & Benefits**

- Units suitable for single and multi-family homes
- Compact design, with minimum space required for installation
- Unit insulation – EPDM 75-0 thickness: 5mm 15mm insulation between heating and cooling parts of unit
- Integrated PaySmart® technology ready for pre-payment billing upgrade.
- Option of floor standing or wall mounted unit
- External filling loop (Optional)
- SmartTalk two-way communication
- Remote monitoring, alarms, and diagnostics
- Wilo PWM Pump – Provides compliance with EU ErP Directive 2015
- Includes inbuilt TCP/IP technology to operate on an Ethernet network if required
- Capable of reading an electricity meter (Option for ENE3)
- Flushing bypass kit enables the primary side of the system to be flushed and cleaned without damage to the unit
Typical Floor Standing or Wall Mounted CHHC Unit with Top Connections

Components

Primary Circuit Side
1 Insulated plate heat exchanger (Heating)
2 Heating Pressure Independent Control Valve with actuator
3 Insulated plate heat exchanger (Domestic Hot Water)
4 DHW Pressure Independent Control Valve with actuator
5 Heat meter

DHW Secondary Side Circuit
6 Flow sensor
7 Blending valve

Heating Secondary Side Circuit
8 Heating expansion vessel
9 Low pressure switch
10 Safety relief valve
11 Pressure gauge
12 Heating circulation pump
13 Safety thermostat (Optional)

Cooling Unit
A1 Primary flow
B1 Primary return
D1 Secondary return
E1 Secondary flow

Primary Cooling Circuit
C1 Cooling PHE
C2 Cooling Pressure Independent Control Valve with actuator
C5 Cooling meter

Secondary Cooling Circuit
C8 Cooling expansion vessel
C9 Pressure sensor
C10 Safety relief valve
C11 Pressure gauge
C12 Cooling circulation pump

Controls
CS1 Primary flow temperature
CS2 Primary return temperature
CS3 Secondary / Apartment return
CS4 Secondary / Apartment flow

Controls & Other Items
14 Electronic control board
15 ViewSmart Controller
16 Flushing by-pass
17 Filling loop (External)
ModuSat® XR CHHC
Combined Heating, Domestic Hot Water and Cooling

Dimensions

**Dimension Details**

| Model                        | "A"  | "B"  | "C"  | "D"  | "E"  | "F"  | "G"  | "H"  | "I"  | "J"  | "K"  | "L"  | "M"  | "N"  | "O"  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| XR-ECO CHHC 55-10R-R40      | 91.5 | 60   | 193  | 110  | 91.5 | 56.5 | 60   | 60   | 60   | 120  | 60   | 546  | 1240 | 532  | 230  |
| XR-ECO CHHC 70-10A-R70      | 91.5 | 90   | 163  | 110  | 91.5 | 56.5 | 60   | 60   | 60   | 120  | 60   | 546  | 1240 | 532  | 230  |
| XR CHHC 100-30R-B70         | 75.5 | 160  | 160  | 160  | 90.5 | 76.5 | 90   | 90   | 90   | 90   | 90   | 646  | 1420 | 532  | 255  |

**Connection Details (inch)**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>A1</th>
<th>B1</th>
<th>C1</th>
<th>D1</th>
<th>G</th>
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<tr>
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## Technical Details

**ModuSat® XR CHHC**

Combined Heating, Domestic Hot Water and Cooling

<table>
<thead>
<tr>
<th>ModuSat Selection</th>
<th>ModuSat® XR-ECO CHHC 55-10R-R40</th>
<th>ModuSat® XR-ECO CHHC 70-10A-R70</th>
<th>ModuSat® XR CHHC 100-30R-B70</th>
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<tr>
<td><strong>Domestic Hot Water Performance (kW)</strong></td>
<td>50</td>
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<td>85</td>
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<tr>
<td>Domestic hot water flow rate (kg/s)</td>
<td>0.27</td>
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<td>Domestic hot water flow/cold inlet temp (°C)</td>
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<td>Primary flow/return temp (°C)</td>
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<td>Primary flow (kg/s)</td>
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<td>Primary pressure drop (kPa)</td>
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<td><strong>Heating Performance (kW)</strong></td>
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<td>Primary flow (kg/s)</td>
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<td>Residual pump head (kPa)</td>
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</table>

Other unit sizes are available to suit project parameters. Please contact our Technical team on 01372 722277 for details.

### Technical features
- Nominal pressure: 16 bar
- Power supply voltage: 220/240 Volt (AC) 50 Hz
- Max supply temperature (Primary): 95 °C
- Min DCW static pressure: 1 bar
- Brazing material: Copper
- Heating expansion vessel: 8L
- Cooling expansion vessel: 5L to 8L
- Max allowable primary pressure drop: 4 bar