

# Mixing Valve Control Pack

Data Sheet

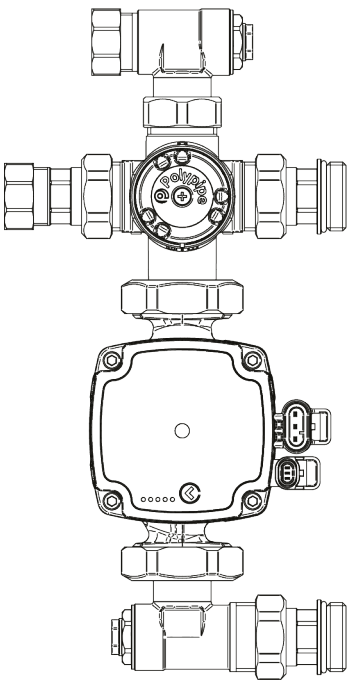
## PRODUCT INFORMATION

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Product Code: UFHPPP1 (Pack Qty. 1)

These installation and operating instructions are intended for the Polypipe UFH mixing valve control pack and must be read and understood prior to proceeding with installation and commissioning.

The Polypipe UFHPPP1 underfloor heating control pack is a purpose built thermostatic control valve designed to mix flow and return water within an underfloor heating system to a stable and adjustable temperature.



## Specification – ERP Compliant, High Efficiency

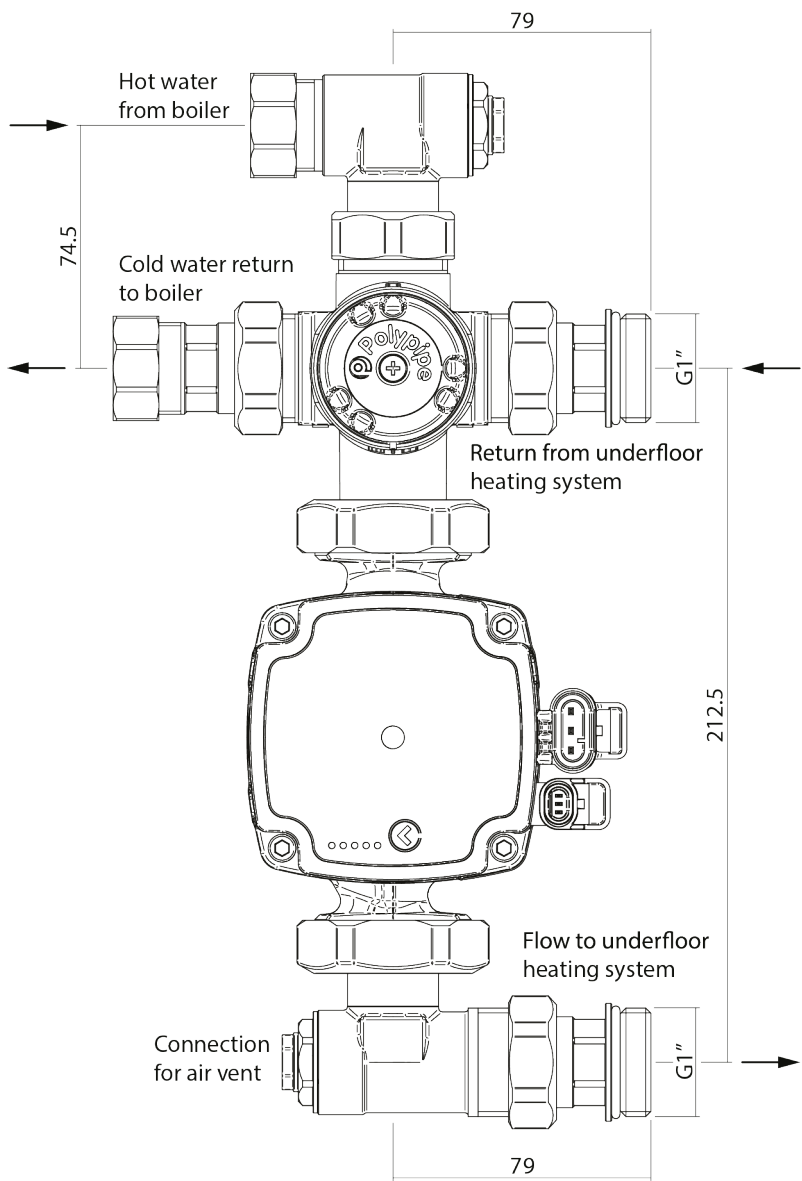
|                                       |                                        |
|---------------------------------------|----------------------------------------|
| Heating loads up to:                  | 15 kW                                  |
| Maximum working pressure:             | 10 bar                                 |
| Maximum working temperature:          | 90°C                                   |
| Adjustable control temperature range: | 30 to 64°C                             |
| Adjustable control temperature range: | 20 to 64°C                             |
| Factory set temperature:              | 45°C                                   |
| Kv value:                             | 3.2 m3/hr<br>(Dp = 1 bar: Tmix = 42°C) |

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Dimensions

*Please Note:* All dimensions are measured in millimetres (mm)



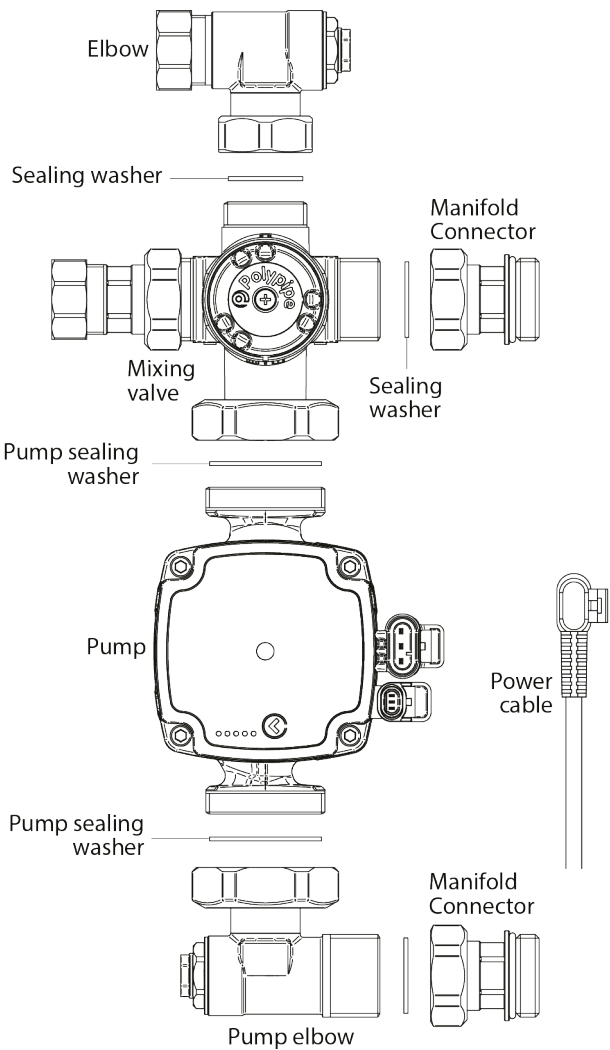
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Pack Contents

Before commencing the installation please check that all of the Polypipe underfloor heating control pack components are present.

The control pack comes pre-assembled with a UFH mixer valve, Polypipe 'A' rated pump and pump elbow, and the complete kit should include:



## Installation

First fix the distribution manifold to the wall leaving enough room beside the manifold to fit the control pack (see dimensions).

If the standard orientation of the Polypipe underfloor heating control pack, is not suitable for your application the pack can be reversed to allow the control to sit on the opposite side of the manifold, if this is more convenient for the installation.

To reverse the pack follow these steps:

1. Using a suitably sized spanner loosen the upper union nut and rotate the elbow 180° to face the opposite direction then re-tighten.
2. Using a suitably sized spanner loosen the lowest union nut and rotate the pump elbow 180° to face the opposite direction then re-tighten.
3. Using a suitably sized spanner remove the manifold connector and connector from the mixing valve and change over to put the manifold connector on the left and connector on the right and re-tighten the union nuts.

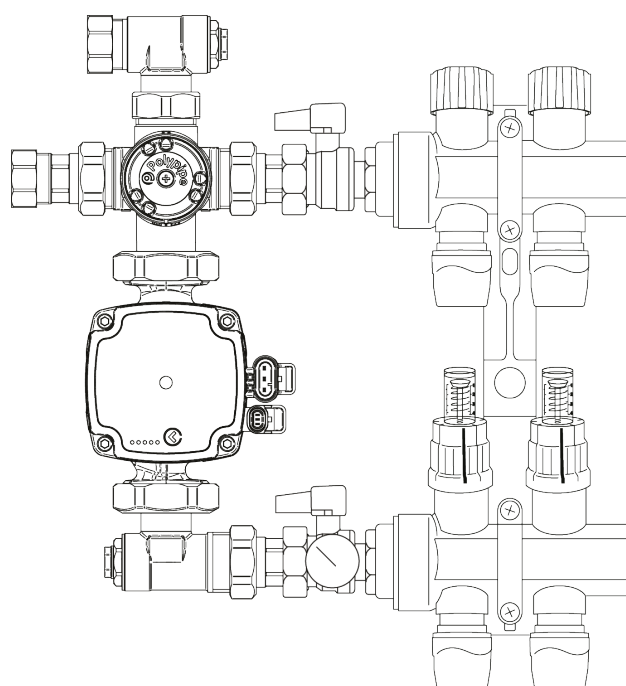
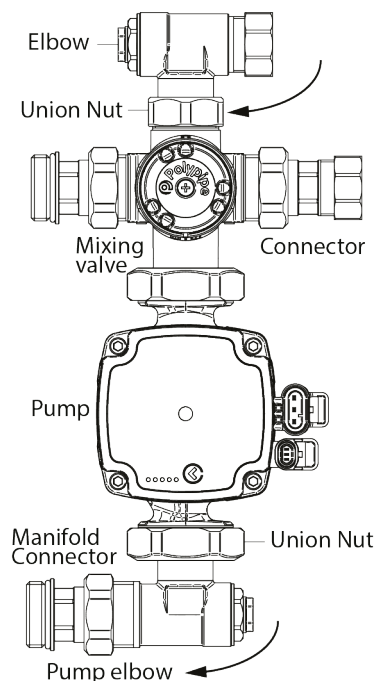
With the Polypipe underfloor heating control pack pre-assembled in the correct orientation for installation.

Offer up the control pack to the UFH manifold, ensuring that the flow and return bars on the manifold are the correct way around to match the control; the return bar should be at the top and the flow bar on the bottom.

Connect the elbow to the flow bar by means of the 1" union nut onto the flat faced union connection, remembering to fit the 1" fibre washer to form a water tight seal.

Connect the UFH mixer valve to the return manifold by means of the 1" union nut onto the flat faced union connection again remembering to fit the 1" fibre washer.

Polypipe underfloor heating control pack shown connected to a underfloor heating manifold in right hand installation orientations.



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### Commissioning

The UFH mixer valve supplied as part of the Polypipe underfloor heating control pack has a temperature setting range of 30 - 60°C. Min, Max and incremental indicators are shown on the adjustment cap. The temperature control is factory set to 45°C with the cap in the adjustable position.

To help protect and prevent damage to the mixing valve and other devices on the heating circuit it is recommended that the connecting pipework is thoroughly flushed to help remove any debris before filling and venting the system.

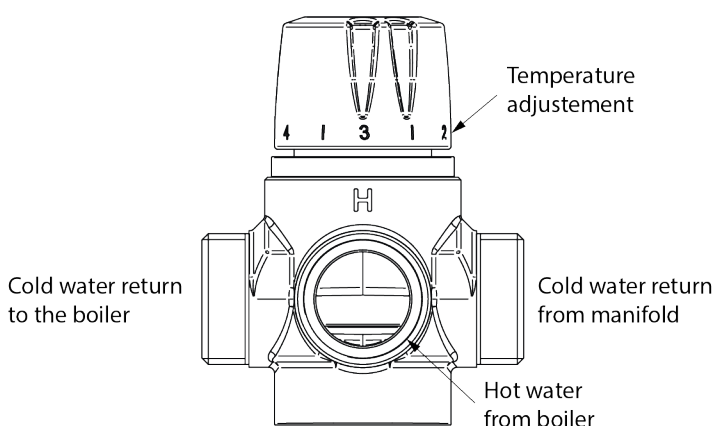
Once the manifold(s) is filled and at the required system operating pressure check for any signs of leakage on all joints.

### Mixing Valve Adjustment

The thermostatic blending valve is factory set to provide a mixed water outlet of 45°C to the heating manifold. The mixed water outlet temperature can be adjusted to suit the design flow temperature within the range of 30 to 60°C.

With the heat source operating and the system balanced, the mixed water flow temperature can be easily adjusted by rotating the control knob of the blending valve as indicated, clockwise to reduce the temperature and anti-clockwise to increase.

To measure the mixed water temperature, use a suitable thermometer preferably digital to measure the surface temperature on the pump outlet elbow, and adjust as required.



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#### UPM3 Pump Specification

| UPM3 Features                                                | UPM3 Specification                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CE Mark Conformity With the following relevant EC Directives | <p>Ecodesign Directive (2009/125/EC). Circulations with and without pump housing: Commission regulation No 641/2009 Standards used: EN 16297-1:2012, EN 16297-2:2012, EN 16297-3:2012</p> <p>rective (2004/108/EC) Standards used: EN 61000-6-2:2005, EN 61000-6-3:2007, EN 55014-1:2006 / A1:2009, EN 55014-2:1997/A1:2001/A2:2008</p> |
|                                                              | <p>Low voltage Directive (2006/125/EC) Standards used: EN 60335-1:2012/AC:2014, EN 60335-2-51:2003/A1:2008/A2:1012</p>                                                                                                                                                                                                                  |
|                                                              | <p>Ecodesign Directive (2009/125/EC). Circulations with and without pump housing: Commission regulation No 641/2009 Standards used: EN 16297-1:2012, EN 16297-2:2012, EN 16297-3:2012</p>                                                                                                                                               |
| Ecodesign ERP Ready 2015                                     | Fulfilling ecodesign requirements in 2015: EEI ≤ 0.20 EN16297/3 or EN16297/2                                                                                                                                                                                                                                                            |
| REACH Compliance                                             | REACH Directive 1907/2006                                                                                                                                                                                                                                                                                                               |
| WEEE Compliance                                              | WEEE Directive 2012/19/EU<br>Circulators are not seen as being in scope                                                                                                                                                                                                                                                                 |
| ROHS Compliance                                              | RoHS Directive 2011/65/EU                                                                                                                                                                                                                                                                                                               |
| VDE Approval                                                 | VDE certificate: No 40039416. It proves the conformity with the essential safety requirements of the EC Low Voltage Directive (2006/95/EC) including amendments                                                                                                                                                                         |
| VDE Code                                                     | GFNJB (hybrid variants) or GFNJC (UPM3)                                                                                                                                                                                                                                                                                                 |
| Enclosure Class                                              | IP 44 (standard without drain holes), Option: IP X4D (with drain holes)                                                                                                                                                                                                                                                                 |
| TF Class                                                     | TF 110 at 70°C ambient temperature                                                                                                                                                                                                                                                                                                      |
| High Voltage Protection                                      | 1000 VAC (EN 60355-1)                                                                                                                                                                                                                                                                                                                   |
| Drinking Water Approvals<br>WRAS, KTW, DVGW W270 etc.        | All pump head components will be compliant Specific compliant housings will be available                                                                                                                                                                                                                                                |
| Deblocking Software                                          | Continuously restarting after 1.33 sec with max torque                                                                                                                                                                                                                                                                                  |
| Deblocking Device                                            | Manual deblocking device, access from front side                                                                                                                                                                                                                                                                                        |
| Dry Run Ability - First Start                                | 1 min (3 x 20 sec), all pumps will be lubricated with glycerine                                                                                                                                                                                                                                                                         |
| Dry Run Ability - During Operation                           | Rotor can filled with water: fulfils EN 60335-2-51                                                                                                                                                                                                                                                                                      |
| Expected Lifetime:                                           | >100.000 h (with specified load profile)                                                                                                                                                                                                                                                                                                |
| Expected Lifetime:                                           | >500.000 on/off cycles                                                                                                                                                                                                                                                                                                                  |
| Min. Switching Time Power ON/OFF                             | With NTC: 1min, with Relay: no specific requirements                                                                                                                                                                                                                                                                                    |
| Flow Estimation                                              | Available depending on the housing, accuracy: see PWM specification                                                                                                                                                                                                                                                                     |
| NRUSH Current                                                | With relay: <4 A, with NTC: <10 A                                                                                                                                                                                                                                                                                                       |

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| UPM3 Features                            | UPM3 Specification                                                                                     |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Equipment Class                          | I (EN 60335-1)                                                                                         |
| Insulation Class                         | F (EN 60335-1)                                                                                         |
| Maximum Leakage Current                  | ≤ 3.5 mA (EN 60335-1)                                                                                  |
| Speed Range                              | 563 to 5991 min-1 (depending on the variant)                                                           |
| Maximum Ambient Temperature              | 70°C                                                                                                   |
| Maximum Media Temperature                | 95°C on composite housings, 110°C on cast iron housings                                                |
| Maximum System Pressure                  | 1 MPa (10 bar) (depending on the housing material)                                                     |
| Minimum Inlet Pressure                   | 0.05 MPa (0.5 bar) at 95°C liquid temperature                                                          |
| Minimum Media Temperature                | 0°C (for IP44: above dew point of ambient air)                                                         |
| Minimum Supply Voltage                   | 160 VAC (with reduced performance)                                                                     |
| Motor Protection                         | The motor is protected by the electronics in the control box and requires no external motor protection |
| Peak Temperature                         | Tm= 130°C (for peak ≤ 30 min)                                                                          |
| Nominal Supply Voltage                   | EU: 1 x 230V + 10%/ -15%, 50 Hz                                                                        |
| Reaction Time (Till Motor at 90% RPM)    | < 1.5 sec for cold start, warm start and speed change                                                  |
| Reaction Time (Till Return Signal Valid) | < 3.3 sec for cold start, warm start and speed change                                                  |
| Relative Air Humidity                    | Maximum 95%, non-condensing environment                                                                |
| Storage Temperature                      | - 40°C to + 75°C+A1                                                                                    |

UPM3 Performance Range

