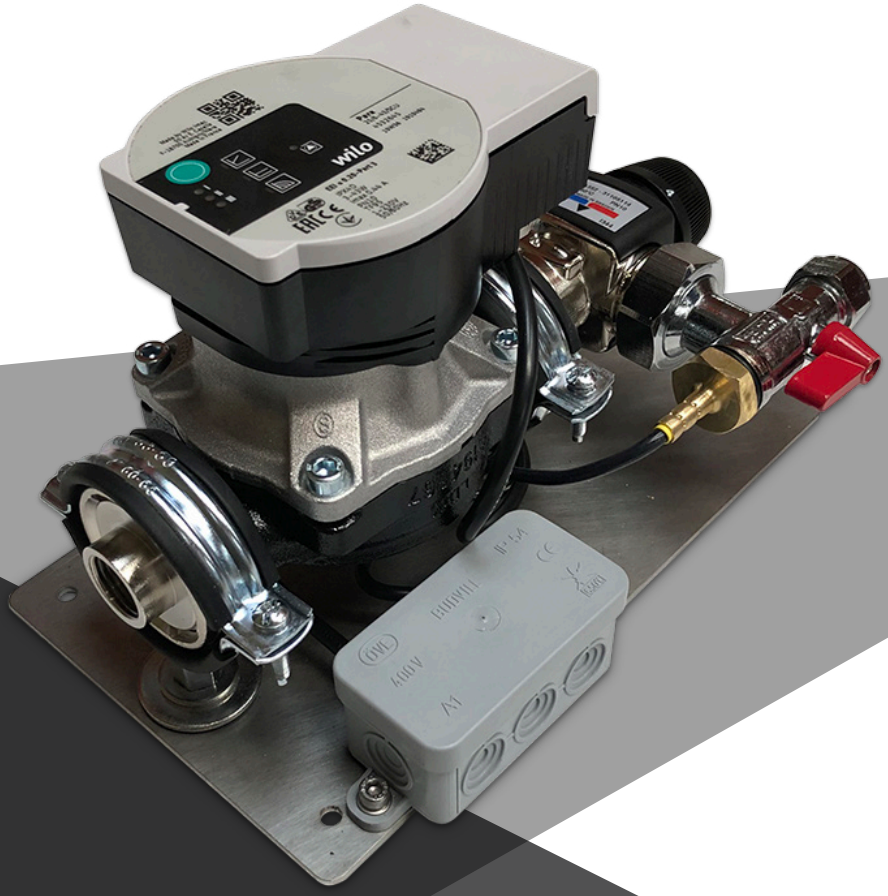


ESBE SL Pump Control Set Installation and Commissioning Manual

Single-loop underfloor heating with thermostatic mixing valve.

Boxed and pre-assembled ready for installation, including:

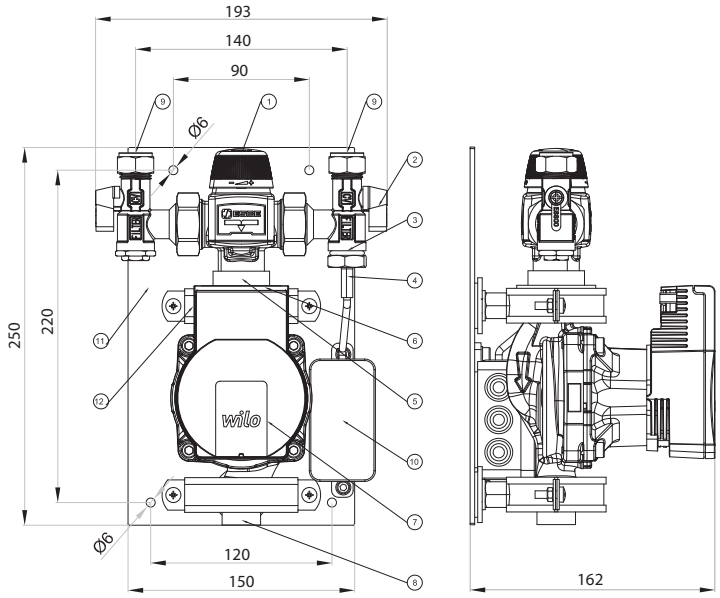
- ESBE Thermostatic mixing valve adjustable from 35°C to 60°C
- Temperature switch for pump control on inlet water temperature - 40°C
- 'A' rated Wilo Para 25/6 SCU
- ½" BSP female connection to underfloor flow and return
- Nickel plated for improved appearance
- In-built isolation valve in flow/return elbow
- 15mm compression connection flow and return
- TMV body kvs 1.3
- Mounted pump control terminal box

1. General

1.1 Provides control of flow and return water temperature in an underfloor heating system. Pre-assembled and tested to ensure that it can be fitted with minimum on-site labour required and commissioned immediately once fitted.

1.2 Designed to connect to new and existing heating systems with 15mm compression connections for the flow and return. The temperature switch supplies power to the pump and will remain open until the water temperature exceeds 40°c. Following this, the switch closes and activates the pump, which will allow the TMV to mix the flow and return to the required UFH temperature.

2. Connections & Dimensions



Specification		
1	ESBE 35-60 Thermostatic Mixing Valve	1
2	Isolation Ball Valve	2
3	½" BSP Female Adaptor	1
4	Temperature Switch 40°C	1
5	1" BSP X 1 ½" Flange Adaptor	1
6	1 ½" Pump Flange Nut	1
7	Wilo Yonos Para Pump	1
8	½" BSP Female Adaptor	1
9	½" Compression Connections	1
10	Junction Box	1
11	Wall Back Plate	1
12	Pump Bracket	1

3. Technical Data

Maximum static pressure	10 Bar
Maximum differential pressure	3 Bar
Maximum temperature	95°C
Operating temperature range	Adjustable between 35°C and 60°C
Inlet connections	15mm compression
Outlet connections	1 ½" BSP FEMALE
Temperature switch	40°C
Kvs	1.6
Material	Nickel plated brass
Voltage	230V

4. Installation

4.1 Carefully remove from the packaging and check that all components are in place and that nothing has been damaged during delivery.

4.2 Supplied for connection with return to the left-hand side but can be altered easily for connection to the right-hand side.

4.3 To change orientation:

a) Using an appropriate spanner, loosen the rotating flange nut securing the mixed outlet of the TMV to the pump inlet.

b) The upper assembly can then be rotated through 180°, reversing the connections. Care should be taken not to over stretch the cable connection to the temperature switch.

c) Re-tighten pump flange nut.

4.4 The pump mixer can be attached to the heating system. Using the dimensions shown in Fig. 1, ensure that there is enough available space for installation and maintenance at the intended position.

5. Commissioning

5.1 Filling the UFH system: The TMV is set to allow the return flow port to be partly open at all times. Therefore, care should be taken to ensure the UFH is fully filled and does not bypass through the TMV.

5.2 The pump mixer and underfloor circuits can now be filled and commissioned in accordance with the manifold instructions. Prior to filling, a final check of all joints should be made to ensure no connections have loosened during transit.

5.3 Ensure that the pump is filled and vented. Operate the control system to call for heat and select the desired pump setting.

5.4 Wiring should be carried out by a competent electrician using the wiring diagram in Fig. 2 on the following page.

5.5 Flow temperature can be adjusted using the dial on the ESBE TMV (35-60°C).

Setting Number	1	2	3	4	5	6
Temperature (°C)	35	40	45	50	55	60

Warning – Thread sealed joints should not be rotated as this will break the seal and invalidate the warranty.

6. Wiring

A 3 Amp mains-fused spur is required for the electrical wiring. The pump pack automatically detects radiator or mains heating circuit activity using an in-built temperature control switch.

6.1 Use the junction box included to wire your thermostat and fused spur.

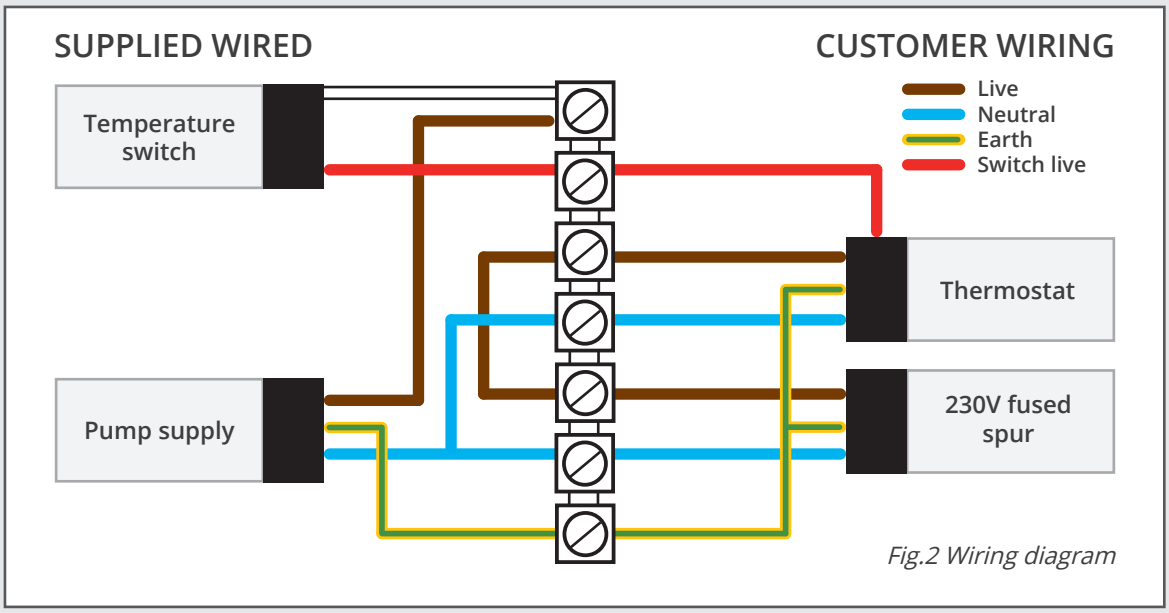
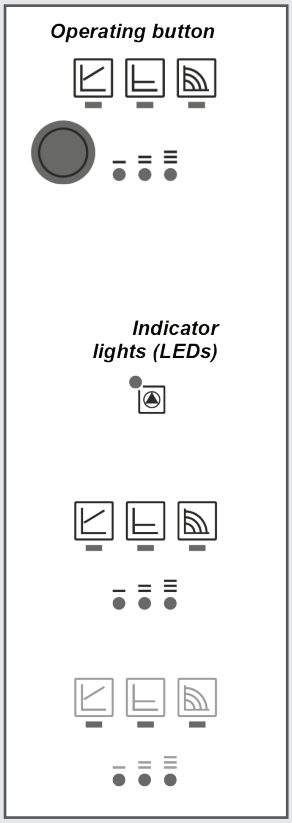


Fig.2 Wiring diagram

7. Pump control modes and functions



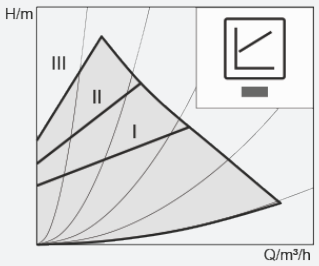
- Signal display
- LED is lit up green in normal operation
- LED lights up/flashes in case of a fault
- Display of selected pump mode
- Display of selected pump curve (I, II, III) witin the control mode.
- LED indicator combinations during the pump venting function, manual restart and key lock.

7. Pump control modes and functions - continued

Variable differential pressure
Recommended for two-pipe heating systems with radiators to reduce the flow noise at thermostatic valves. The pump reduces the delivery head to half in the case of decreasing volume flow in the pipe network. Electrical energy saving is achieved by adjusting the delivery head to the volume flow requirement and lower flow rates. There are three pre-defined pump curves (I, II, III) to choose from.

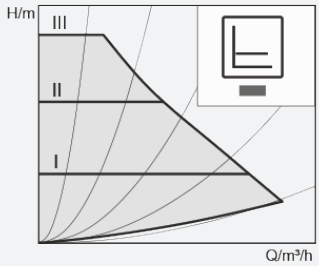
Recommended for underfloor heating for large-sized pipes or all applications without a variable pipe network curve (e.g. storage charge pumps), as well as single-pipe heating systems with radiators. The control keeps the set delivery head constant irrespective of the pumped volume flow. There are three pre-defined pump curves (I, II, III) to choose from.

Variable differential pressure Δp-v (I, II, III)



Constant differential pressure
Recommended for underfloor heating for large-sized pipes or all applications without a variable pipe network curve (e.g. storage charge pumps), as well as single-pipe heating systems with radiators. The control keeps the set delivery head constant irrespective of the pumped volume flow.

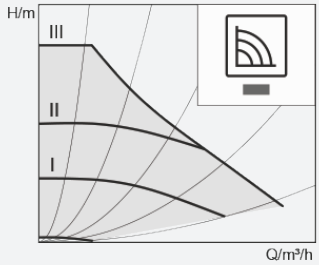
Constant differential pressure Δp-c (I, II, III)



Constant speed
There are three pre-defined pump curves (I, II, III) to choose from. Recommended for systems with fixed system resistance requiring a constant volume flow. The pump runs in three prescribed fixed speed stages (I, II, III).

Note: Factory setting: Constant speed, pump curve III

Constant speed (I, II, III)



Our other UFH products:

Thermostatic Pump Pack

The ESBE T4 pump pack is designed to control the UFH flow temperature between 20°C-55°C (BS1264 forced screed drying). Complete with ESBE 3.4kv 4-port thermostatic mixing valve, 'A' rated pump, built-in check valve and temperature gauge. Offering pipe centres of 210mm, 200mm and 225mm, fully reversible with side or bottom entry primary connections. This unit is suitable for use with floor areas up to 220sqm or a max output of 18kW.

Heat Pump Pack

The heat pump model is a pre-assembled unit that is designed to be connected (via ball valves) to the manifold. The unit is for use in applications where water temperature controls are not required. This is typically seen where heat pumps or low temperature systems are utilised.

The unit includes an ‘A’ rated energy efficient pump and is suitable for use with floor areas up to 250sqm or a maximum output of 20kW. Primary flow and return connections can be made from the side or the bottom of the unit. This can also be mounted on either the left- or right-hand side of the manifold.