

T3 Control Set Installation Guide

1. General

1.1 This T3 control set has been designed for control of flow and water temperature in an underfloor heating system. It is pre-assembled and tested to ensure that it can be fitted with the minimum of on-site labour and commissioned immediately once fitted.

1.2 As supplied it is designed to connect to the left hand side of an Emmeti manifold with 210mm between the centres of the flow and return arms. It can also be used with any other manifold built on this dimension. The control set is not suitable for fitting to the right hand side of a manifold

1.3 There are other manifold sets to cater for applications with different control needs or higher flow rates for larger residential and commercial applications:

- U9700020 - Control set with thermostatic valve (concealed dial) and pump, kvs 3.4
- U9700060 - Control set with thermostatic valve and variable speed class A pump, kvs 3.4
- U9700030 - Control set with Thermostatic mixing valve, thermal actuator and pump, kvs 3.4
- U9700040* - Control set with motorised mixing valve and pump, kvs 6.3
- U9700050* - Control set with motorised mixing valve and pump, kvs 8.0

* available with 3-point actuator, temperature controller or weather compensator for mounting on control set.

For a full description of each control set, please consult our website www.emmeti.co.uk.

2. Connections & Dimensions

Fig. 1 Overall Connections and Dimensions

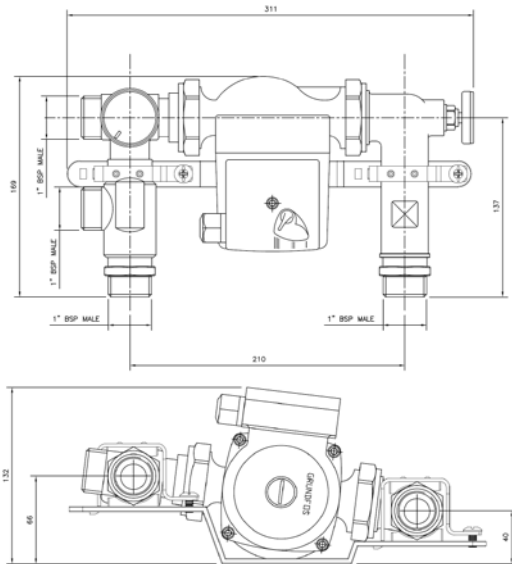
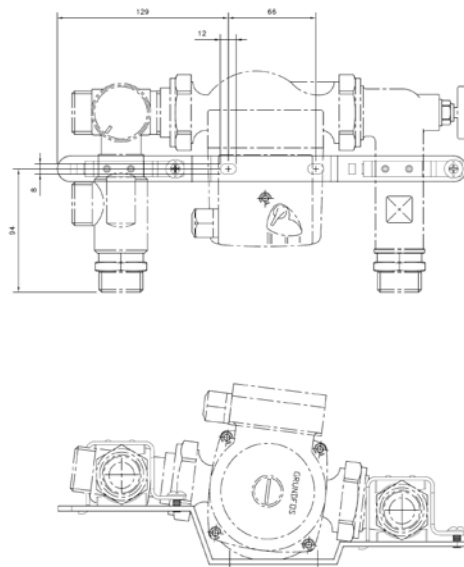


Fig. 2 Mounting Bracket Dimensions



Please note the overall dimensions of the control set and allow reasonable access at each side and the front for installation, fitting the selected controller / actuator and maintenance

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3. Technical Data

Maximum static pressure	10 bar
Maximum differential pressure	3 bar
Maximum temperature	95°C
Inlet connections	2 x 1" M (G1)
Outlet connections	2 x 1" M (G1) – swivel joint
Overall dimensions mm	311h x 189w x 132h
Kvs	U9700040 – 6.3 U9700050 – 8.0 (13 straight through)

4. Control Set Contents

Pre-assembled control set including:

- 'L' pattern motorised mixing valve – kvs 6.3 (U9700040) or 8.0 (U9700050)
- Grundfos UPS 25-60 circulating pump
- Inlet tee assembly with 1" M swivel connector to the underfloor return rail
- Outlet elbow assembly with built-in temperature gauge and 1" M swivel connector to the underfloor flow rail
- Mounting bracket with rubber supports

5. Installation

- 5.1 Remove the control set assembly carefully from the packaging and check to ensure that all components are in place and that there is no damage to them.
- 5.2 The control set is supplied for connection to the left hand side of the manifold. It is not suitable for connection to the right hand side of the manifold.
- 5.3 The control set can be attached to the manifold either before or after the manifold is secured to the wall. The control set should be secured to a flat vertical surface able to support the weight of the control set and manifold. Using the dimensions shown in Figs. 1 and 2, ensure that there is sufficient space for installation and maintenance at the intended position for the

- control set. The fixing hole positions of the mounting bracket can be marked through the mounting bracket itself.
- 5.4 A swivel joint is fitted to each side of the control set for connecting to the 1" F manifold tappings. The inlet tee swivel joint should be connected to the return rail and the outlet elbow swivel joint to the flow rail of the manifold. Carefully offer up and screw the swivel joint threads evenly into the manifold using a 37mm A/F spanner: the use of a 31mm A/F spanner will also ensure that the connection to the control set is kept tight – see Fig. 3. An optional 31mm-37mm spanner is available from Emmeti – code U9760010. The joints use o-ring seals and care should be taken not to over-tighten them.



Fig. 3 Tightening the swivel joints

- 5.5 Once the control set is connected, finish securing the manifold and control set to the wall if not already completed.
- 5.6 The primary flow and return pipework can now be connected to the 2 x 1" M connections facing downwards. The flow connection is at the left hand side and the return connection is at the right. It is recommended that ball valves are used to isolate this pipework where it is connected to the control set: Emmeti offer a pair of ball valves with a 1" union connection suitable for this application, code 6066R006.

6. Commissioning

- 6.1 The control set, manifold 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. For details of the recommended commissioning procedure please refer to the Emmeti literature for the manifold. While the underfloor system is being filled, the manual knob on the valve body should be rotated to close the return port of the valve to prevent circulation across the control set, see fig. 4 below:



Fig. 4 Closing the return port

- 6.2 Once the system has been filled and pressure tested, the individual underfloor circuits can be balanced using the system design parameters.
- 6.3 The motorised valve body has a choice of controls to mount on the valve body and regulate the mixed flow temperature to the underfloor system:
- A 230V 3-point actuator, code U9750010.
This allows the use of an external control system and can be used to give fixed or variable temperature solutions
 - A 230V temperature controller, code U9750021.
This is an integrated temperature control and actuator, complete with water temperature contact sensor. This is for fixed temperature solutions to give a temperature control range between 5°C and 95°C
 - A 230V weather compensating controller, code U9750030
This is an integrated weather compensating controller and actuator complete with water temperature sensor and external air temperature sensor. This will produce a variable water temperature to suit the outside air temperature.

Each control comes complete with its own instructions for mounting on the valve body and commissioning which should be used with these instructions

- 6.3 Please retain both documents and hand them to the user for future reference.

Installation and Commissioning Instructions T3 Control Set with Motorised Mixing Valve and Pump U9700040 and U9700050



- Boxed set pre-assembled for immediate installation, including:-
 - Motorised mixing valve for use with either built-in or external controllers
 - Choice of actuator, temperature controller or weather compensator (not included)
 - Temperature gauge measuring mixed water temperature
 - Grundfos UPS 25-60 circulating pump-1" M swivel joints for fast connection to 1" F manifold tapings
 - Supporting bracket with rubber supports for extra stability and noise reduction
- 1" M close coupled flow and return connections
- Suitable for Topway Type 2 manifolds or any manifold with connections on 210mm centres
- Optional ball valve set for fitting to 1" M connections
- Valve body kvs 6.3 (U9700040) and 8.0 (U9700050) to give higher flow rates for large domestic or light commercial applications

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