

## BIO MIX-BP G75 1F Load Unit

BIO MIX-BP G75 1F



Enclosed



### Main Features

#### Description

BIO MIX-BP G75 1F load unit containing a complete connecting piping for the installation of a heating system with a solid-fuel boiler and a thermal store(s).

#### The Load Unit involves:

- Two Grundfos UPM3 Flex AS 25-75 circulation pumps that can be controlled either by a PWM signal or by selecting a performance curve.
- TSV3BM load valve with automatic bypass balancing, protecting a boiler against low-temperature corrosion by keeping the min. temperature of return water to a boiler above the flue condensation temperature.
- Three-way mixing valve to maintain the required temperature in the heating circuit, the actuator of the mixing valve is not included in supply.
- Two ball valves and two drain valves for shutting off and draining the heating system.
- Check valve located downstream from the ball valve on the return line from the heating system.
- Two ball valves to connect a boiler.
- Automatic air vent valve on the bypass to the load valve.
- Control key for ball valves, located inside the insulation.
- Four thermometers.
- Two drain mini-valves to drain water from the Load Unit.
- Outlets to connect optional accessories (e.g. a pressure switch).

#### Accessories enclosed:

- Two DN 20 ball valves to connect a hot water storage tank.
- Pt1000 outdoor temperature sensor to be installed on a North facing wall.

Working fluid Water, antifreeze heat-transfer fluid for heating systems.

Installation Vertically on a wall using the installation kit.

Connections 2 x G 1" F for heating system  
2 x G 1" F for boiler  
2 x G 1" F for thermal store  
2 x G 1/2" F outlets to connect optional accessories (plugged in production)

Code **17553** – opening temperature 55 °C  
**21257** – opening temperature 65 °C  
**21261** – opening temperature 70 °C

### Technical Data

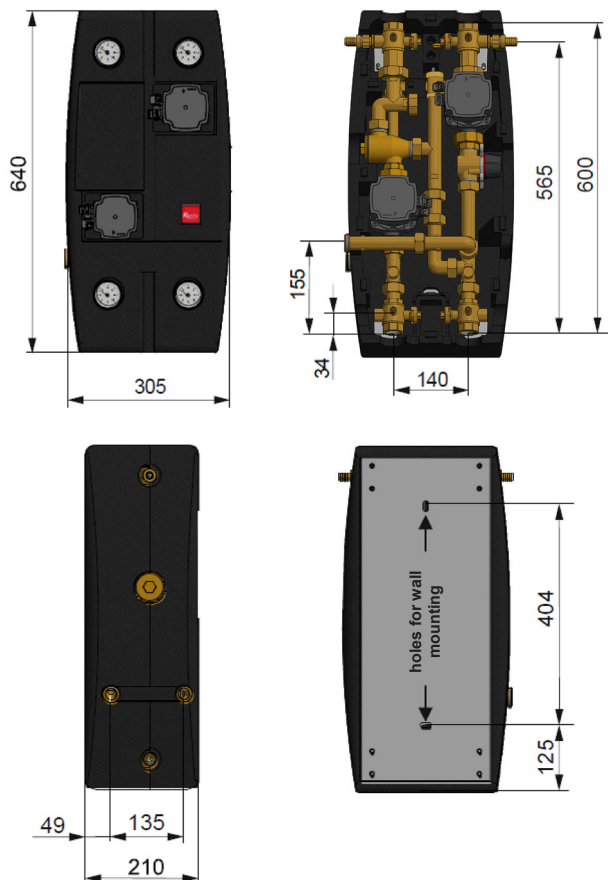
Fluid working temperature	5–95 °C
Max. working pressure	6 bar
Min. working pressure	0.5 bar
Ambient temperature	5–40 °C
Max. relative humidity	80%, non condensing
Min. return water temperature to boiler from load valve	55 °C – code 17553 65 °C – code 21257 70 °C – code 21261
Max. boiler output at flow of 1.7 m³/h	40 kW at Δt 20 °C / 20 kW at Δt 10 °C
Max. heating system output at flow of 1.7 m³/h	40 kW at Δt 20 °C / 20 kW at Δt 10 °C
Insulation material	EPP RG 60 g/l
Overall dimensions (H x W x D)	640 x 305 x 210 mm
Total empty weight	17.0 kg

### Electric Data

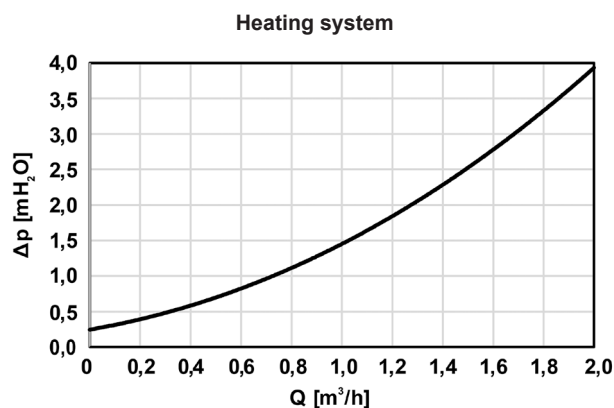
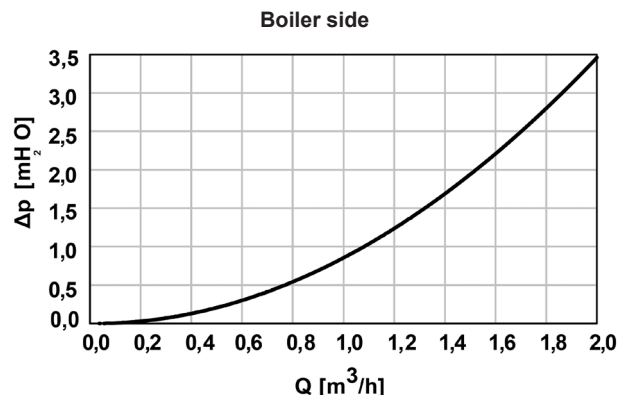
Pump power supply	230 V, 50 Hz
IP rating Load Unit	IP 20
Load Unit max. power input	120 W

## BIO MIX-BP G75 1F Load Unit

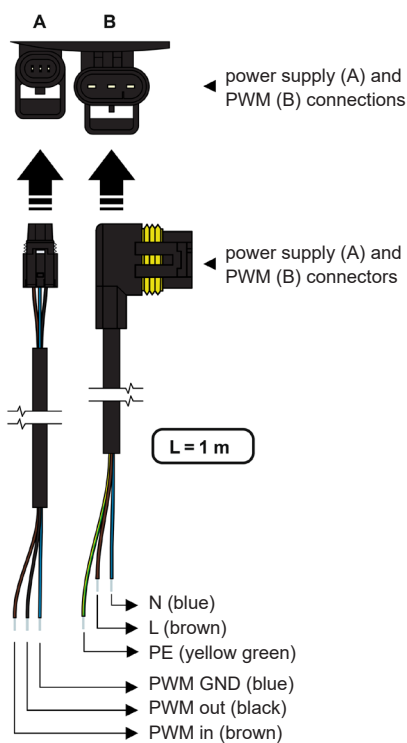
### Dimensions



### Diagram of Load Unit max. pressure drop



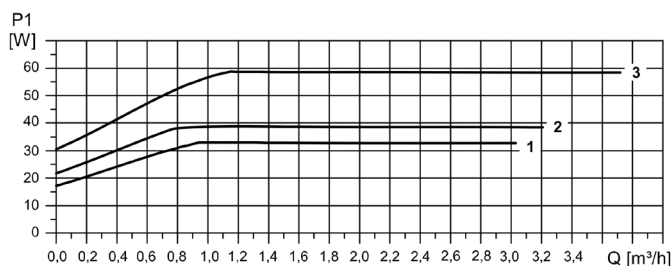
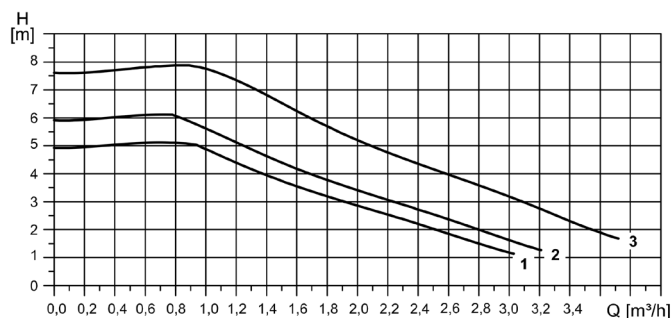
### Electrical Wiring



Power supply cables and PWM cables are included in supply.

### Pump performance curves

Curve	Max. H (upper graph)	Max. $P_1$ (lower graph)
1	5 m	33 W
2	6 m	39 W
3	7.5 m	60 W



## BIO MIX-BP G75 1F Load Unit

### Selected profile display during pump operation



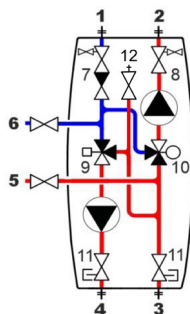
curve 1 (5 m)

curve 2 (6 m)

curve 3 (7.5 m)

- The circulation pump can be controlled by an external PWM signal (profile for use in heating systems) or without a PWM signal by selecting a pump performance curve (see the graph below).
- Without PWM signal the pump runs according to the selected curve.
- With PWM signal the pump speed changes with the signal value up to the maximum of the selected curve.

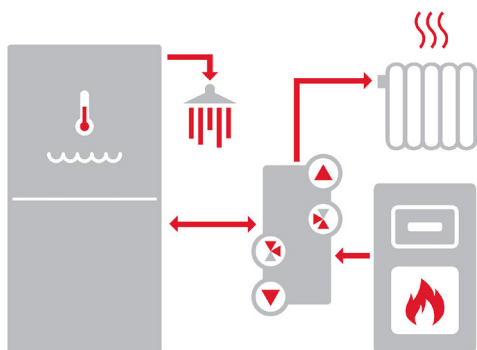
### Internal hydraulic connection



1 – return from heating system, 2 – flow to heating system, 3 – flow from boiler 4 – return to boiler, 5 – outlet to thermal store with ball valve (enclosed), 6 – return from thermal store w. ball valve (enclosed), 7 – ball valve w. integrated check and drain valves\*, 8 – ball valve w. drain valve\*, 9 – load valve, 10 – mixing valve, 11 – ball valve w. outlet to connect optional accessories\* 12 – automatic vent valve

\* Remains connected with heating system / boiler when the ball valve is closed.

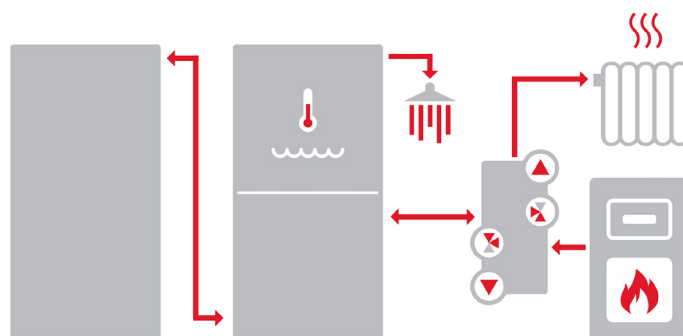
### Example of possible connection I



Combination thermal store

The diagram shows an example of a system connection with a solid fuel boiler with manual loading, one heating circuit and a combination thermal store. The BIO MIX load unit ensures heating of the building and accumulation of heat in the combination thermal store.

### Example of possible connection II



Thermal store

Combination thermal store

The diagram shows an example of a system connection with a solid fuel boiler with manual loading, one heating circuit, a thermal store and a combination thermal store. The BIO MIX load unit ensures heating of the building and accumulation of heat in the combination thermal store.