

Tender specification:

The Oventrop dwelling station “Regudis W-HTU Duo” supplies heating water as well as cold and hot potable water to individual dwellings without using auxiliary energy. The hot water for heating purposes is provided by a central heat supply. The potable water is heated locally via a heat exchanger according to the continuous flow principle and is adjustable within a control range of 40 - 70 °C. The additional heat exchanger on the heating side allows for the separation of the supply system (primary circuit) and the heating circuit of the dwelling (secondary circuit). The dwelling station is, for instance, used in dwellings with open vented surface heating systems or in existing systems with system related oxygen input

Advantages:

- time- and cost-saving installation as only three supply pipes are required in one riser for all dwellings
- hygienic hot potable water preparation according to the continuous flow principle
- no auxiliary energy required for heat distribution
- no potable water reserve required
- hydronic and thermal control of hot potable water preparation
- setting of the potable water temperature at the temperature controller
- thermostatic flow temperature control of the heating circuit and thus suitable for the connection of an underfloor heating distributor/collector
- piping of the station and heat exchanger made of high-quality stainless steel
- station completely pre-assembled on a base plate, leakage and function tested at works
- heat exchanger resistant to furring due to the thermal compensation which is achieved through the installation position, sufficient thermal length and the type of hydronic connection
- a cold water meter and a heat meter can be integrated into the station and allow for an exact calculation of the water and energy consumption of each dwelling

Function:

The hot potable water preparation is controlled by a proportional flow controller with hydronic control without auxiliary energy. When drawing off water, the heating water of the central heat supply passes across the plate heat exchanger which warms up the potable water. The heating circuit is interrupted during this time (potable water priority function).

Technical data:

Nominal size: DN 20
Max. operating pressure p_g :
Primary side: 16 bar
Secondary side: 10 bar
(diaphragm safety valve 3 bar)
Max. operating temperature t_g : 90 °C
(Heating water - supply)
Min. differential pressure supply: 300 mbar

Potable water circuit (secondary side):

Min. cold water pressure:
without flow limiter: 2.0 bar
with flow limiter: 2.5 bar
Draw off temperature $t_{\text{draw off}}$: 40-70 °C
Min. flow temperature: $t_{\text{draw off}} + 15 \text{ K}$
Connections: G ¾ collar nut, flat sealing

Performance range 3:
Nominal draw off capacity (PWH): 17 l/min.
Draw off capacity at $\Delta T 35 \text{ K}$: 42 KW
Fluid primary side: Heating water
Fluid secondary side: Potable water

“Regudis W-HTU Duo”

| Performance range | 1 | 2 | 3 |
|-------------------|---|---|---------|
| Heat exchanger Cu | | | 1341332 |



“Regudis W-HTU Duo”

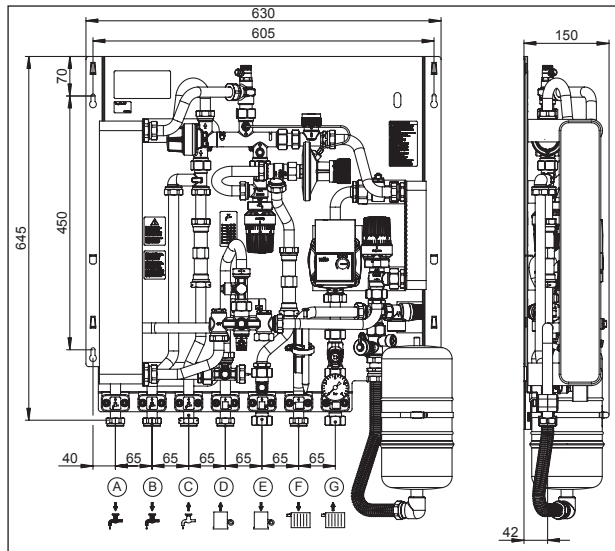
Heating circuit (secondary side):

Operating pressure p_g : max. 3 bar
(diaphragm safety valve 3 bar)
Flow temperature: max. 70 °C
Controller control range: 40°-70 °C
Volume diaphragm expansion tank: 3 l
Heat exchanger: 13 kW (14 plates)
The performance dates are determined by the fixed default values in the primary circuit (90/70 °C) and the secondary circuit (55/70 °C).
High-efficiency pump: Wilo-Yonos PARA RS 15/1-6 RKA
Fluid primary side: Heating water
Fluid secondary side: Heating water

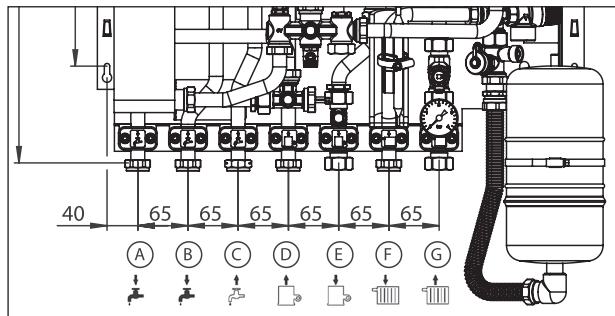
Materials:

Plate heat exchanger: Stainless steel 1.4401 / brazed copper
Pipes: Stainless steel 1.4404 / 1.4401
Valves and fittings: Brass / brass resistant to dezincification
Seals: EPDM / PTFE

“Regudis W-HTU Duo”
Dwelling station with heating circuit separation system



Dimensions



Connections

Potable water dwelling

A – Potable water hot
 B – Potable water cold

Heating circuit dwelling

F – Heating circuit supply
 G – Heating circuit return

Supply

C – Cold water supply
 D – Heating water supply
 E – Heating water return

System volume with connected heating circuit:

Max. system volume V_{max} related to the expansion tank (volume 3 l) depending on the flow temperature.

When cold, the water volume of the expansion tank amounts to 0.6 l (corresponds to 20% of the tank volume (3 l), according to DIN 12828 appendix D.2).

| Flow temperature | V_{max} | Flow temperature | V_{max} |
|------------------|-----------|------------------|-----------|
| 30 °C | 220 l | 65 °C | 50 l |
| 35 °C | 150 l | 70 °C | 40 l |
| 40 °C | 115 l | 75 °C | 35 l |
| 45 °C | 90 l | 80 °C | 30 l |
| 50 °C | 80 l | 85 °C | 28 l |
| 55 °C | 60 l | 90 °C | 25 l |
| 60 °C | 55 l | | |

The values indicated in the table are approximate values. In particular cases, significant deviations are possible.

The installation of a heated potable water system must be carried out in accordance with the valid standards, approved rules of technology and local regulations! The national standards and regulations must be observed!

Especially when operating a circulation system, the hygiene regulations according to the DVGW work sheet W551 must be observed!

- According to the DVGW work sheet W551, dwelling stations are small installations if the pipe content of each potable water pipe behind the station does not exceed 3 litres. As a result, the following pipe lengths for copper and stainless steel pipes must not be exceeded:

| | da [mm] | di [mm] | V/L [l/m] | lmax [m] |
|-------|---------|---------|-----------|----------|
| DN 10 | 12 | 10 | 0.08 | 37.9 |
| DN 12 | 15 | 13 | 0.13 | 22.6 |
| DN 15 | 18 | 16 | 0.20 | 14.9 |
| DN 20 | 22 | 20 | 0.31 | 9.5 |
| DN 25 | 28 | 25 | 0.49 | 6.1 |

Note:

- With a heat demand of approx. 13 kW in the heating circuit of the dwelling, the floor area should be limited to 100 m² (calculation based on a laying distance of 150 mm).
- A copper brazed stainless steel plate heat exchanger is part of the dwelling station “Regudis W-HTU Duo”. The specifying engineer and the user of the system are responsible to incorporate and evaluate substances and other factors in the water, which influence corrosion and the formation of calcium deposits. Please observe the document “Demands on potable water when using the Oventrop fresh water and dwelling stations”, see www.owntrop.com.
- When using a heat meter, it is recommended to only use heat meters with quick sampling rate at one second intervals and with integrated return sensor in the body.
- An electric sensor attached to the pipe with concealed temperature setting for the max. limitation of the flow temperature in surface heating systems is available as accessory. Further accessories can be found in the catalogue “Products” or on the Internet under www.owntrop.com.

Nominal draw off capacity

Since 01.04.2016, the Oventrop dwelling stations are no longer supplied with flow limiters for the limitation of the maximum potable water draw off capacity.

The use of different plate heat exchangers allows for the adaptation of the performance range to the individual requirements.

Performance range 1: Nominal draw off capacity 12 l/min.

Performance range 2: Nominal draw off capacity 15 l/min.

Performance range 3: Nominal draw off capacity 17 l/min.

Draw off temperature $t_{draw\ off}$

The draw off temperature is adjustable between 40 °C and 70 °C and remains constant within the performance range. If the nominal draw off capacity is exceeded, $t_{draw\ off}$ may drop below the set value.

The nominal draw off capacity depends on the selected performance range and the flow temperature of the heating water.

The indicated performance range (nominal draw off capacity 12/15/17 l/min.) is related to a heating water flow temperature lying 15 K above the set draw off temperature (temperature difference of 15 K). If the temperature difference exceeds 15 K, the effective draw off capacity increases.

Flow limiters for the limitation of the potable water draw off capacity are available as accessory.

Item no.:

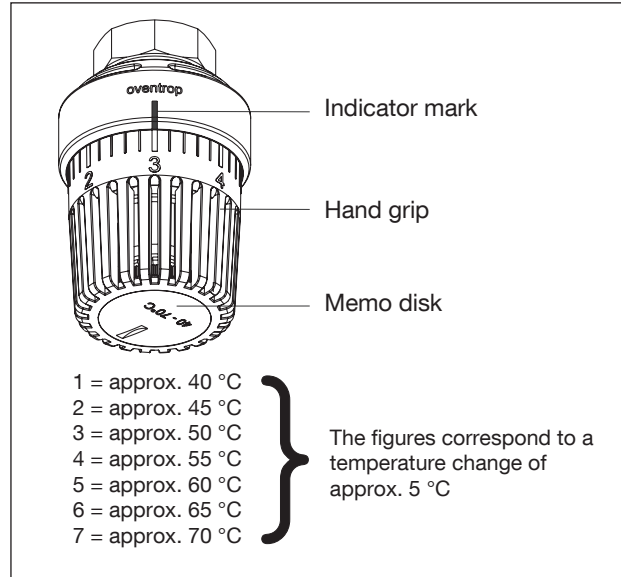
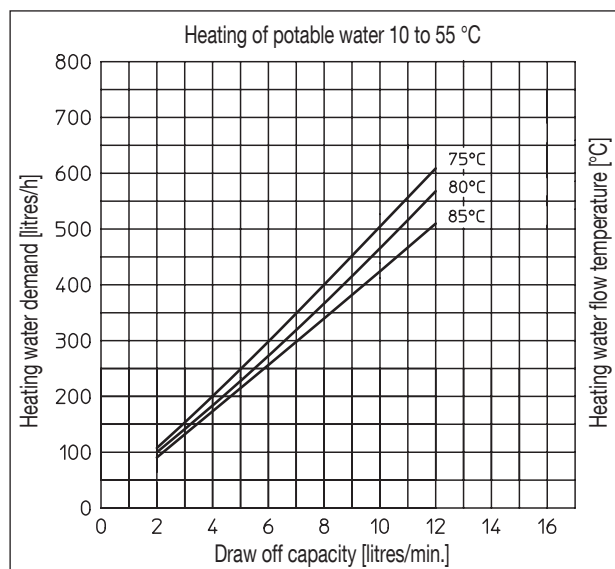
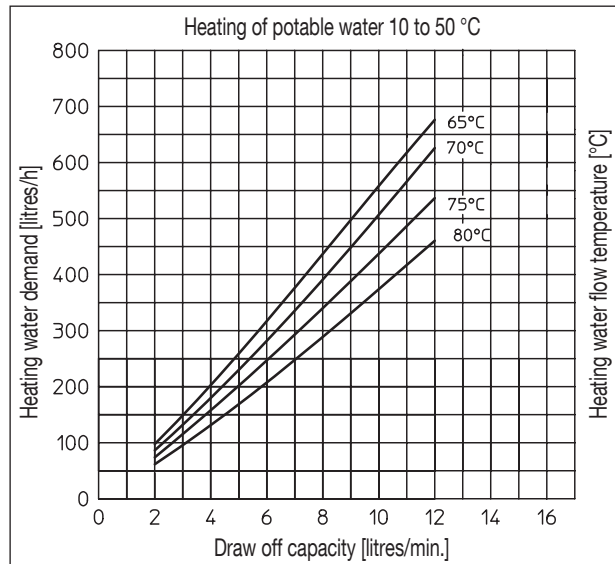
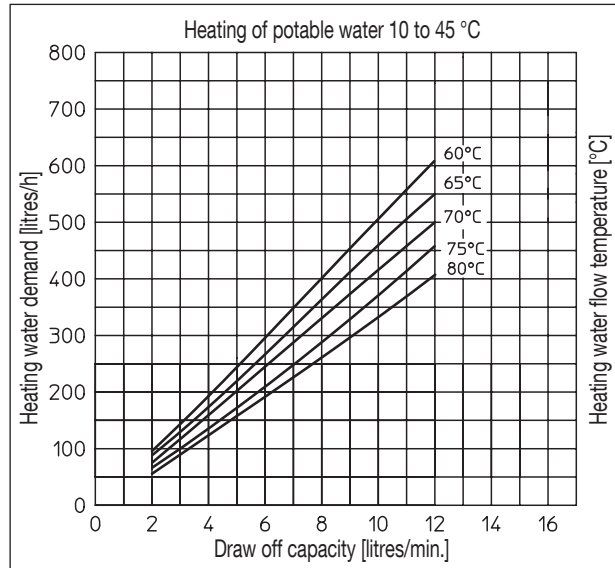
Draw off capacity limitation 12 l/min.: 1349980

Draw off capacity limitation 15 l/min.: 1349981

Draw off capacity limitation 17 l/min.: 1349982

When leaving the factory, the differential pressure regulator is set to 150 mbar. Higher settings provoke an increase of the draw off capacity but may lead to noises in the heating circuit (the delivery capacity of the supply pump must be observed!).

Heating water demand – Performance range 1



Temperature controller - Potable water

Setting of the potable water temperature controller:

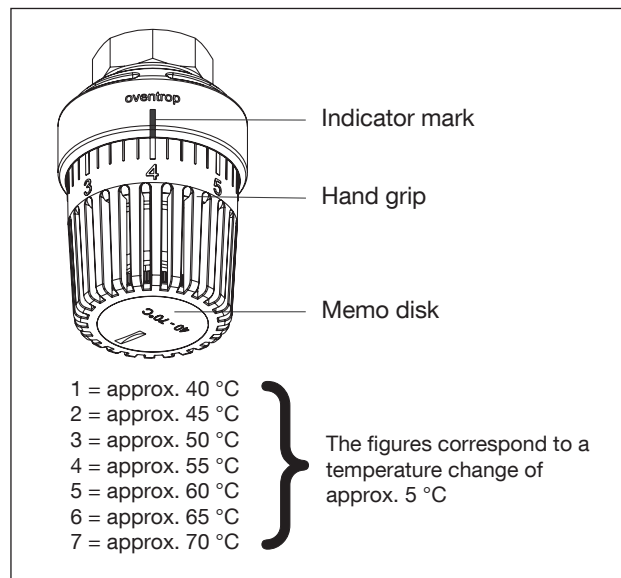
When leaving the factory, the temperature controller is set to position 3. This corresponds to a potable water temperature of approx. 50 °C. The setting can be adjusted to the required potable water temperature.

Control range: 40 - 70 °C

Note:

High system temperatures may enhance corrosion and the formation of calcium deposits. The specifying engineer and the user of the system are responsible to evaluate these factors and to take preventive measures if required (e.g. water treatment).

Risk of scalding! Outlet temperatures exceeding 43 °C can lead to scalding.



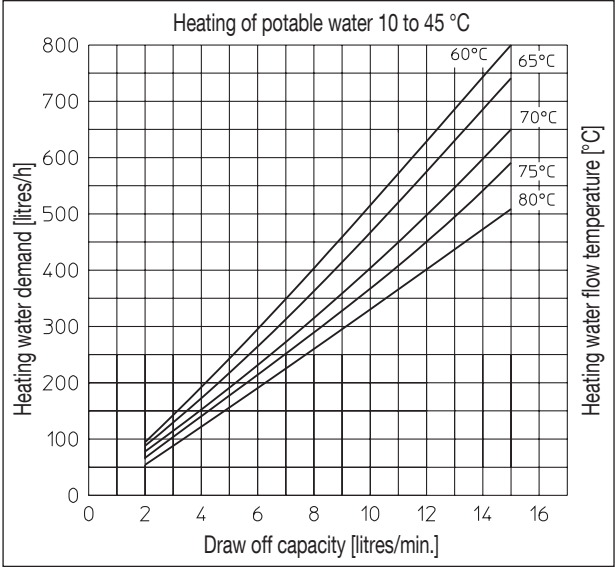
Temperature controller - Heating circuit

Setting of the flow temperature of the heating circuit

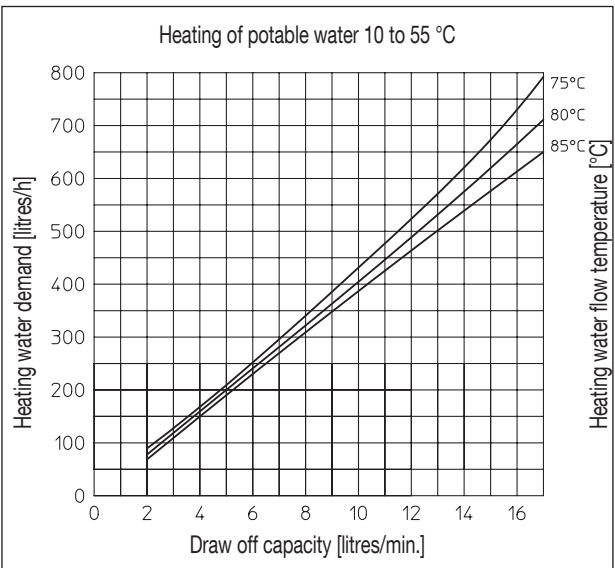
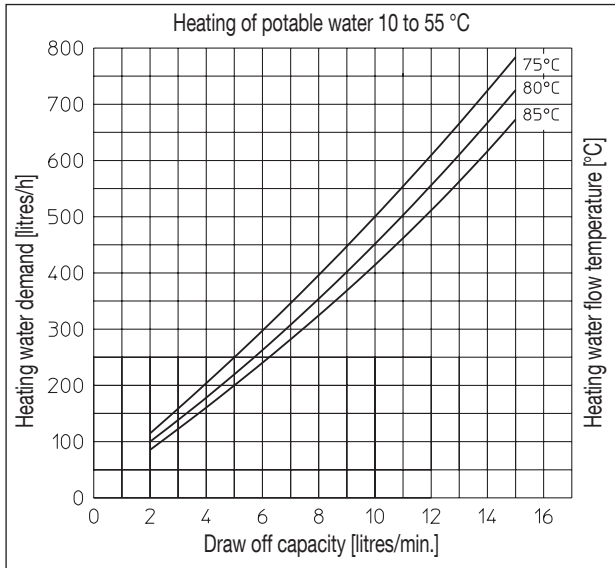
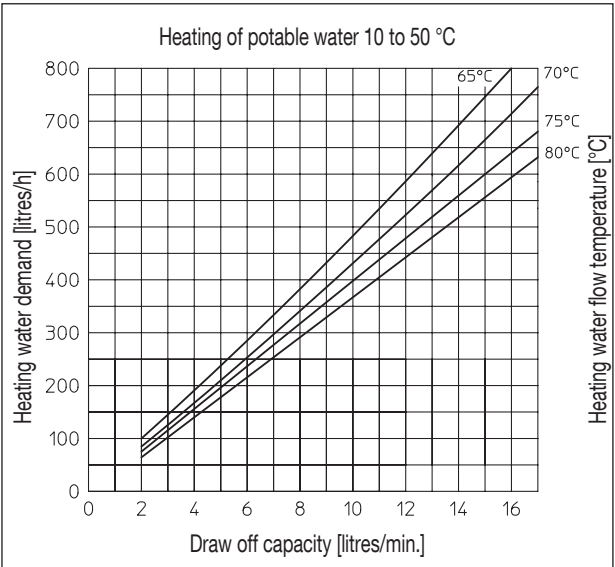
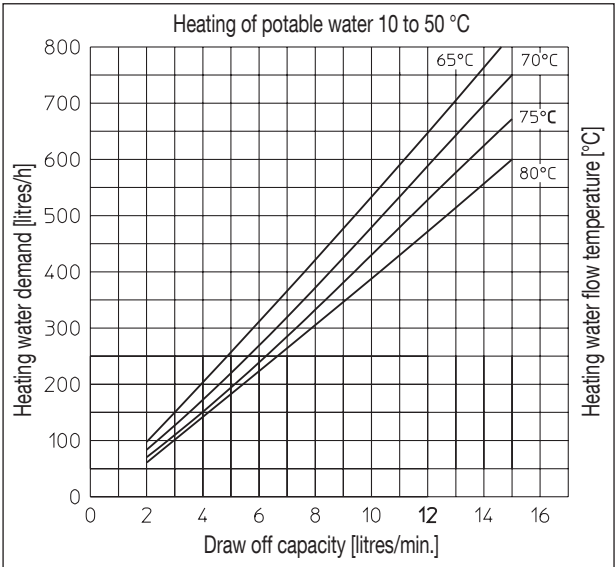
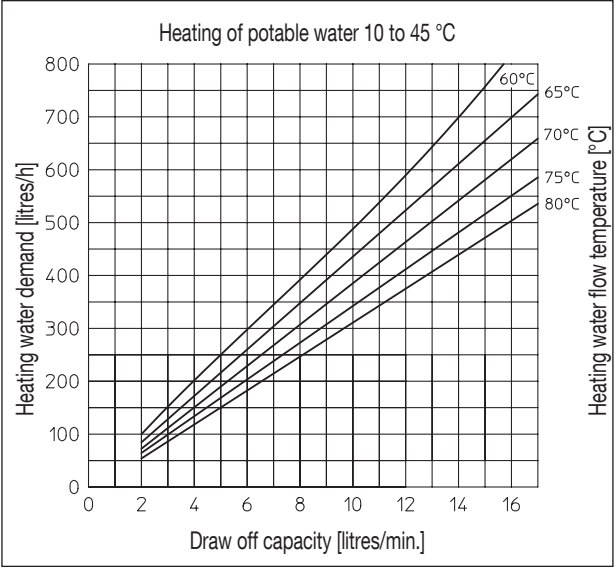
When leaving the factory, the temperature controller is set to position 4. This corresponds to a heating water temperature of approx. 55 °C. The setting can be adjusted to the required heating water temperature.

Control range: 40 - 70 °C

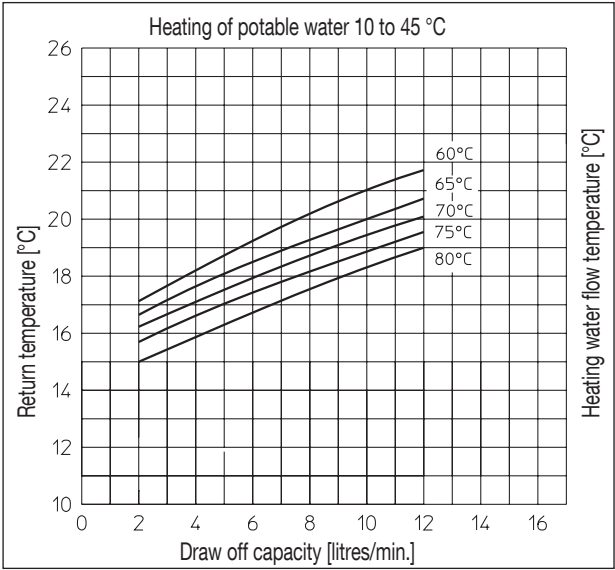
Heating water demand – Performance range 2



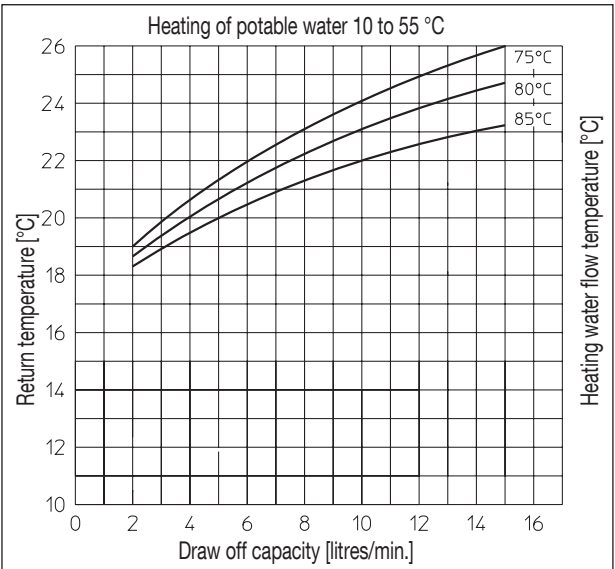
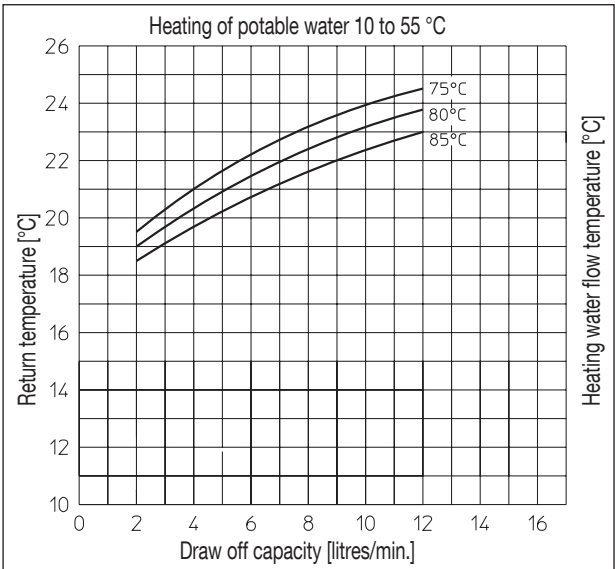
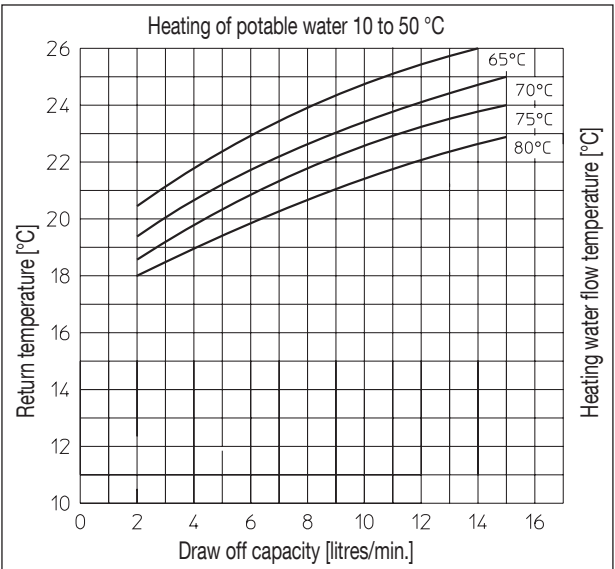
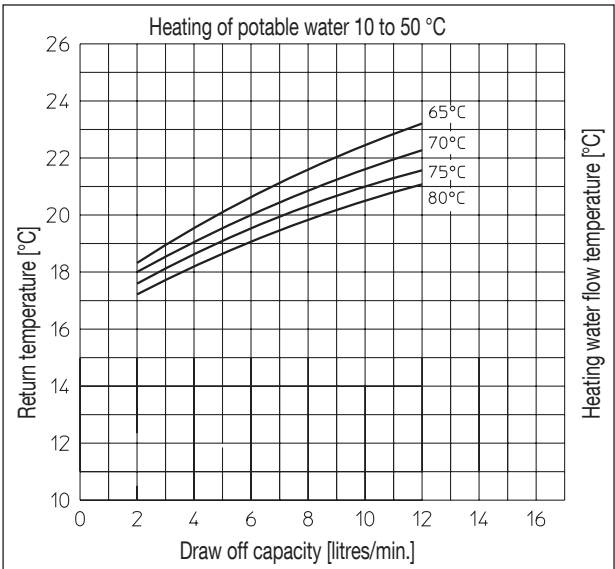
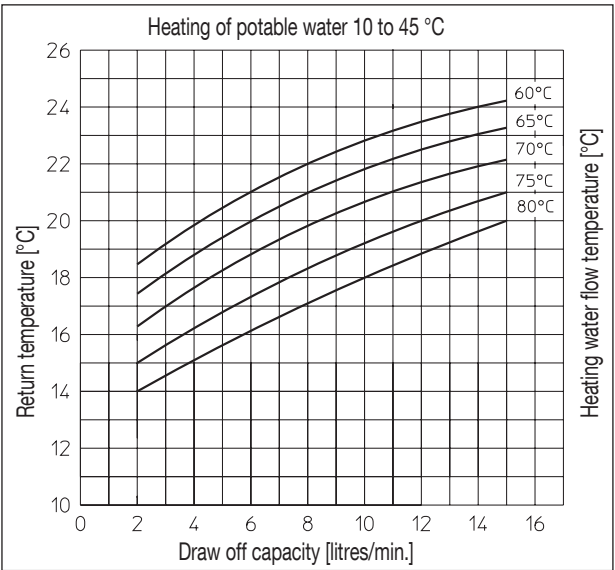
Heating water demand – Performance range 3



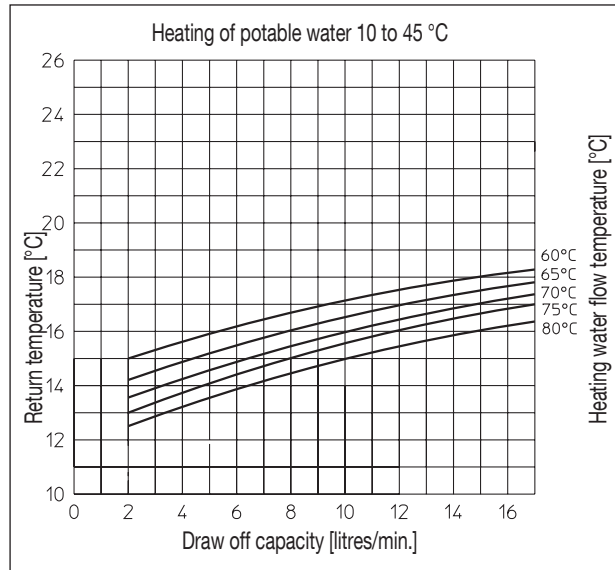
Return temperatures – Performance range 1



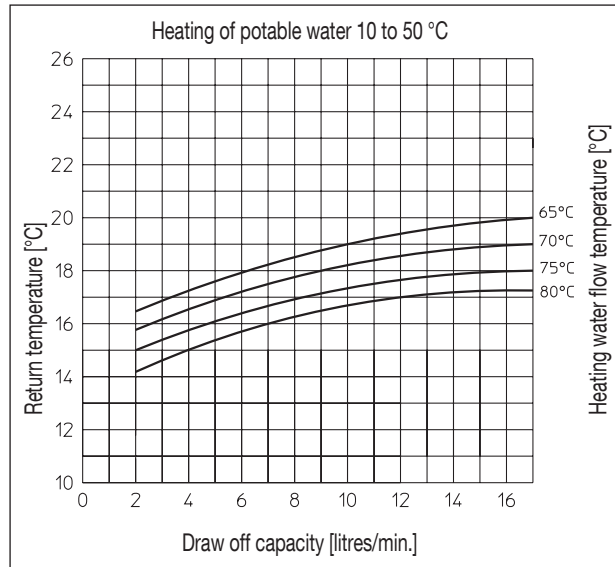
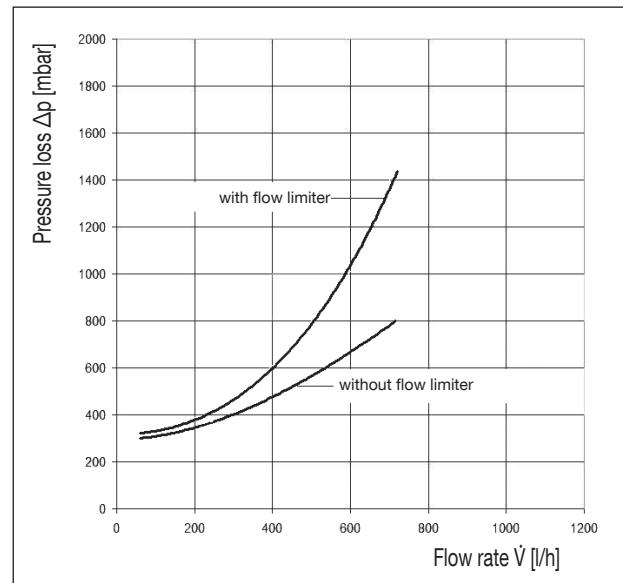
Return temperatures – Performance range 2



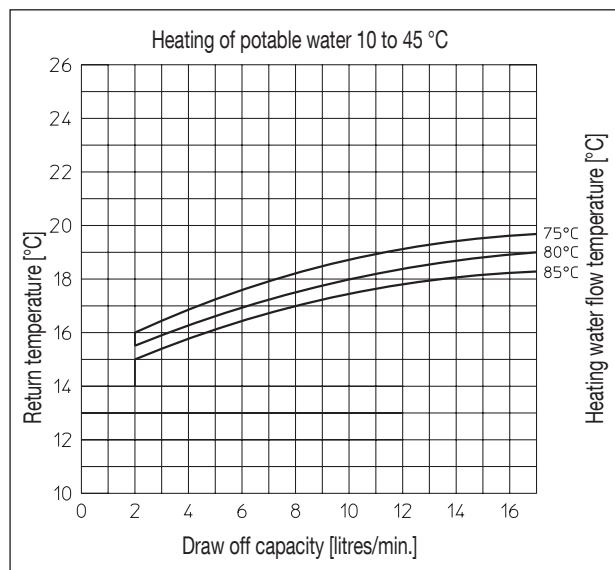
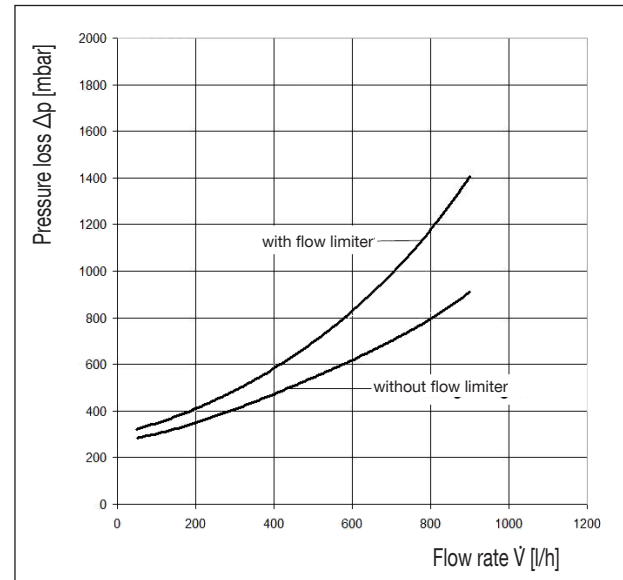
Return temperatures – Performance range 3



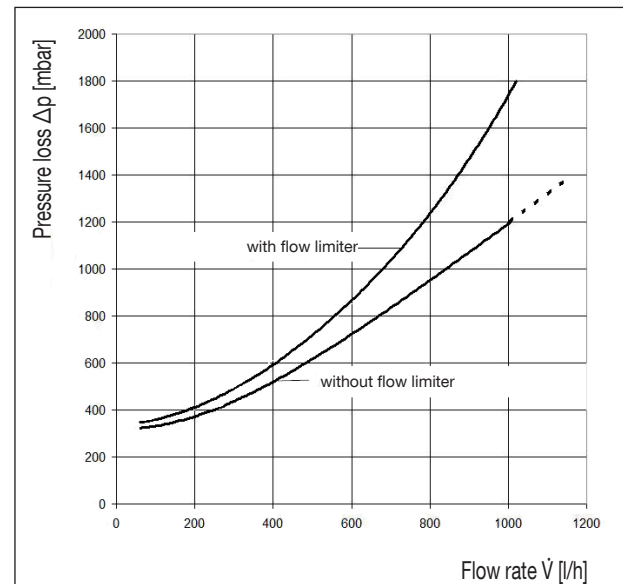
Pressure loss potable water circuit – Performance range 1



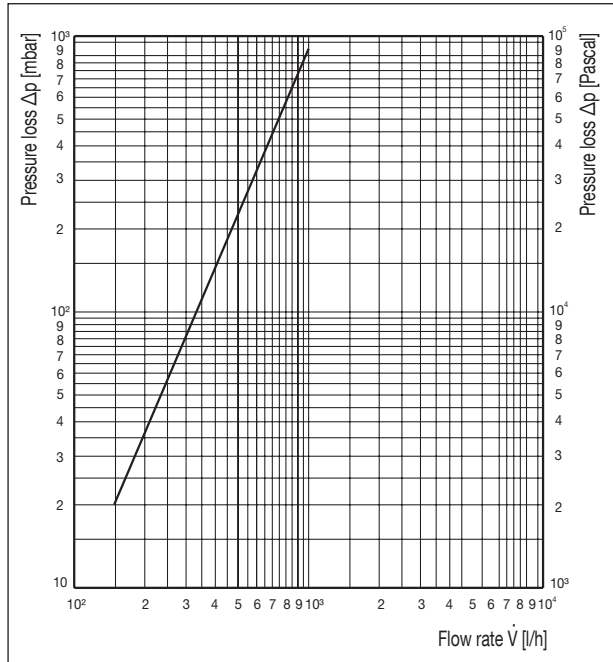
Pressure loss potable water circuit – Performance range 2



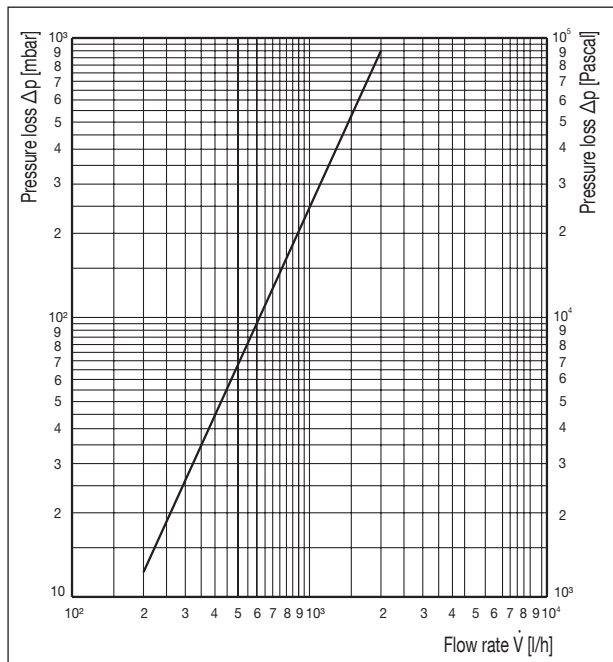
Pressure loss potable water circuit – Performance range 3



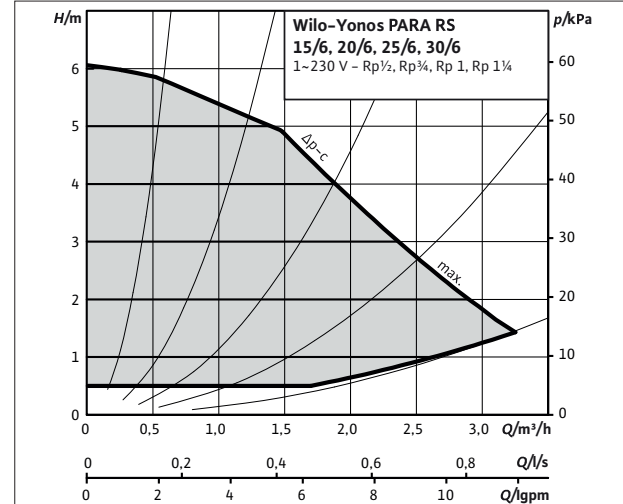
Pressure loss heating water circuit supply



Pressure loss heating circuit dwelling



Pump characteristic line Wilo-Yonos PARA RS 15/1-6 RKA



Accessories:

| | Item no: |
|---|----------|
| Flow limiter | |
| Draw off capacity limitation 12 l/min. | 1349980 |
| Draw off capacity limitation 15 l/min. | 1349981 |
| Draw off capacity limitation 17 l/min. | 1349982 |
| Ball valve connector block | 1341080 |
| Derivative temperature control set | 1341088 |
| Surface-mounted cabinet | 1341071 |
| Temperature controller 20-50 °C | 1142861 |
| Plug for temperature sensor (heat meter) | 1349051 |
| Electric sensor attached to the pipe (with concealed temperature setting- control range 20-90 °C) | 1143000 |

The complete range of accessories can be found in the catalogue “Product” or on the Internet under www.oventrop.de.

Subject to technical modifications without notice.

Product range 3.1
 ti 325-EN/10/MW
 Edition 2019

