



**Tank heat transfer module**  
Domestic hot water technology



## **Tank heat transfer module DN 20 / DN 25**

Technical data and product information





**Midi DN 20**



**Maxi DN 25**

## Tank heat transfer systems

### Description:

Tank heat transfer systems are used to transfer large amounts of energy in small domestic hot water tanks. Thus, small and hygienically unproblematic domestic hot water tanks can be used for large amounts of tapped water or for large tap fluctuations. Furthermore, domestic hot water tanks should be of a small size to assure short "dwell periods" of the potable water and to rapidly heat the "fresh" potable water.

As a result of the heat exchanger integrated in the installation and not in the storage tank, a nearly arbitrary assignment of heat exchanger performances (or boiler outputs) to the storage tank size is possible. The heat exchanger performance is fully available during the withdrawal of domestic hot water as well as immediately after a tapping process.

The generously dimensioned heat exchangers result in a large temperature difference. Tank heat transfer systems are therefore optimally suited for the use in combination with district heating and heating value operation.

Using a tank heat transfer module enables a complete and hygienic heating of the storage tank content. Tank heat transfer systems are designed in such a way that the indicated quantity of potable water (see the output capacity tables on page 12 + 14) is heated up to the nominal temperature chosen in one passage through the station - without temperature fluctuations or overheating. This is also the case if the storage tank content cools down as a result of a longer service life or of the operation of circulation systems above the nominal temperature. In this case, only a reheating (with a considerably smaller temperature difference) must be assured.

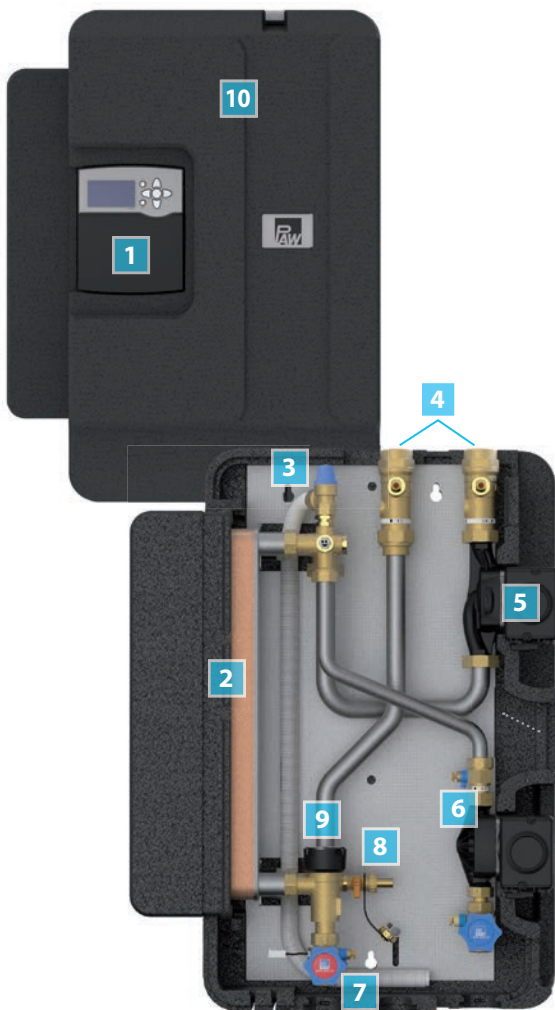
The PAW tank heat transfer module is equipped with a controller which has been developed specifically for this case of operation. The desired nominal temperature is set at the controller. The output of the secondary pump can also be set to reduce the transfer capacity or to adapt f. ex. to smaller boilers. Furthermore, a circulation pump (unregulated as well as controlled by PWM signal) can be connected with the controller. An additional relay can be installed for a targeted stratification. Furthermore, a potential-free relay (f. ex. as boiler demand) and a relay which switches on in parallel with the charging function of the tank heat transfer module are available.



### Functioning:

If the temperature in the domestic hot water tank (secondary tank) falls below the nominal temperature set, the charging cycle is started. If the temperature of the heat source is not sufficient, the potential-free relay is switched on (depending on the system) for the reheating demand. If the temperature available on the primary side is not sufficient, the output of the secondary pump is possibly reduced. Depending on the temperatures and the flow rate of the secondary (potable water) side, the primary pump is controlled in such a way that the adjustable nominal temperature is reached. A relay switching on simultaneously with the primary or secondary pump enables the use of a non-return valve or the switching of a 3-way valve (heating operation / domestic hot water operation).

When using a switch valve it is possible, depending on the primary return temperature of the station, to stratify the return flow rate in the primary storage tank in two different levels. An additional relay with a corresponding PWM outlet allows the connection of a controlled circulation pump. The circulation pump can be activated depending on the temperature and the time. Furthermore, the controller contains a time-dependent disinfection control.



#### 1 **Integrated controller FC4.13 with additional functions:**

- fast potable water heating with precise temperatures
- adjustable and limitable transfer capacity
- parallel relay for demand approval
- stratification return on the primary side
- circulation pump operation with weekly timer and / or depending on the temperature
- circulation pump operation for thermal disinfection
- potential-free relay, f. ex. for boiler demand

#### 2 **Generously dimensioned high-efficiency plate heat exchanger:**

- with long thermal length for a low return temperature
- made of AISI 316
- Midi: 40 plates
- Maxi: 60 plates

#### 3 **Integrated pressure relief valve** 10 bar

#### 4 **Ball valves** with integrated non-return valve

#### 5 **High-efficiency pumps Midi / Maxi:**

- with serial number
- ErP and EuP READY
- up to 50% energy saving
- better controllability
- works silently

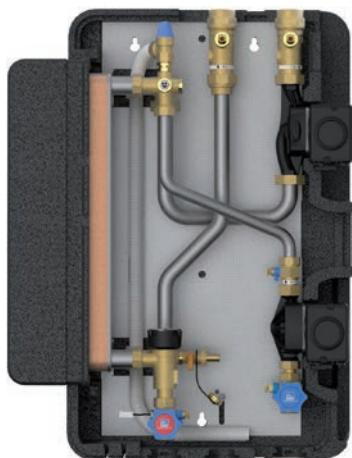
#### 6 **Integrated non-return valve in the circulation line** • with drain valve

#### 7 **Maintenance-free piston valves** for a quick and save shutoff of the module in case of servicing

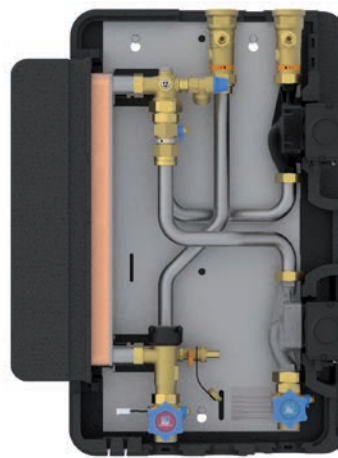
#### 8 **Fast temperature sensor** for optimum control results

#### 9 **FlowSonic** with minimised pressure loss and large measuring range: 1–130 l/min

#### 10 **EnEV compliant design insulation**



**Tank heat transfer module  
Midi – DN 20**



**Tank heat transfer module  
Maxi – DN 25**

Technical data	Tank heat transfer module Midi up to 33 l/min (according to SPF LK 1*)	Tank heat transfer module Maxi up to 63 l/min (according to SPF LK 1*)
<b>Materials</b>		
Valves and fittings	Brass	
Gaskets	Flat sealings: AFM34 / EPDM; o-rings: Klingersil / EPDM	
Insulation	EPP	
Check valves	Brass	
Heat exchanger	Plates + connecting pieces: 1.4401 (AISI 316) Solder 99.99 % copper	
<b>Technical data</b>		
Maximum pressure	primary: 3 bars / secondary: 10 bars	
Max. operating temp.	primary / secondary: 2 - 95 °C	
Withdrawal capacity	up to 33 l/min *	up to 63 l/min*
<b>Dimensions</b>		
Connections	primär: 1½" AG / sekundär: 1" AG, flachdichtend	primär: 2" AG / sekundär: 1¼" AG, flachdichtend
Width	602 mm	
Height	795 mm	
Depth	298 mm	
Centre distance top	120 mm	
Centre distance bottom	220 mm	
<b>Equipment</b>		
Heat exchanger	40 plates	60 plates
Check valves	primary: 2 x 200 mm wc secondary: 1 x 150 mm wc	
Primary / secondary pump	HE pump with PWM control, 3-70 W	HE pump with PWM control, 3-140 W
Flow rate sensor	FlowSonic, measuring range: 1-130 l/min	
Temperature sensor	3 x Pt1000 (integrated), 3 x Pt1000 (enclosed)	

\* Indication of performance as per SPF test procedure,

LK 1 = performance indicator 1, at a set domestic hot water temperature of 45 °C, at a primary flow temperature of 60 °C

LK 2 = performance indicator 2, at a set domestic hot water temperature of 60 °C, at a primary flow temperature of 70 °C



**Mounting example tank heat transfer module Maxi as storage tank module with buffer tank**

Performance data tank heat transfer module Midi DN 20					
Dom. hot water temp. set at the controller	Cold water inlet temperature	Flow temperature heat source	Maximum transmissible power		Return temperature heat source
50 °C	10 °C	55 °C	66,4 kW <sup>*1)</sup>	24,0 l/min	22,8 °C
		60 °C	83,7 kW <sup>*1)</sup>	30,2 l/min	19,2 °C
		70 °C	91,5 kW <sup>*2)</sup>	33,0 l/min	15,4 °C
55 °C	10 °C	60 °C	72,7 kW <sup>*1)</sup>	23,3 l/min	24,6 °C
		70 °C	102,9 kW <sup>*2)</sup>	33,0 l/min	18,3 °C
60 °C	10 °C	70 °C	97,7 kW <sup>*1)</sup>	28,2 l/min	22,2 °C
Recharging mode					
50 °C	45 °C	55 °C	11,4 kW <sup>*2)</sup>	33,0 l/min	45,2 °C
55 °C	50 °C	60 °C	11,4 kW <sup>*2)</sup>	33,0 l/min	50,2 °C
60 °C	55 °C	70 °C	11,3 kW <sup>*2)</sup>	33,0 l/min	55 °C

\*1) Maximum flow rate primary = 30 l/min, corresponds to 2.0 m of residual head of the primary pump

\*2) Maximum flow rate secondary = 33 l/min, corresponds to 2.0 m of residual head of the secondary pump

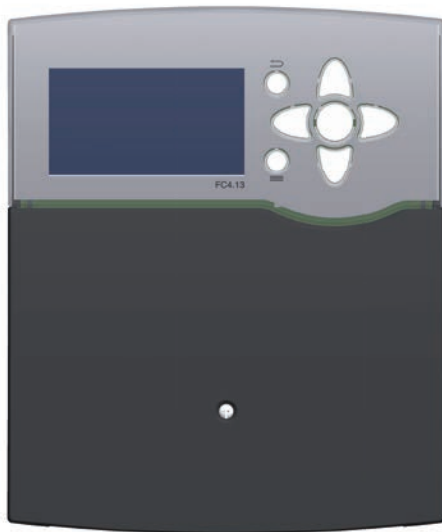
Performance data tank heat transfer module Maxi DN 25					
Dom. hot water temp. set at the controller	Cold water inlet temperature	Flow temperature heat source	Maximum transmissible power		Return temperature heat source
50 °C	10 °C	55 °C	127,8 kW <sup>*1)</sup>	46,0 l/min	23,9 °C
		60 °C	162,9 kW <sup>*1)</sup>	58,7 l/min	20,4 °C
		70 °C	174,7 kW <sup>*2)</sup>	63,0 l/min	15,8 °C
55 °C	10 °C	60 °C	140,1 kW <sup>*1)</sup>	44,9 l/min	26,0 °C
		70 °C	196,6 kW <sup>*2)</sup>	63,0 l/min	19,4 °C
60 °C	10 °C	70 °C	190,1 kW <sup>*1)</sup>	54,9 l/min	23,6 °C
Recharging mode					
50 °C	45 °C	55 °C	21,6 kW <sup>*2)</sup>	63,0 l/min	45,2 °C
55 °C	50 °C	60 °C	21,6 kW <sup>*2)</sup>	63,0 l/min	50,2 °C
60 °C	55 °C	70 °C	21,6 kW <sup>*2)</sup>	63,0 l/min	55,1 °C

\*1) Max. flow rate primary = 60 l/min, corresponds to 2.0 m of residual head of the primary pump

\*2) Max. flow rate secondary = 63 l/min, corresponds to 2.0 m of residual head of the secondary pump



## Controller FC4.13 for tank heat transfer module



The controller FC4.13 regulates the domestic hot water temperature of the tank heat transfer module via revolution speed control of the primary pump. As an additional function, the controller can carry out the switching of the return diverting valve. Different operation modes are available, they can be adapted individually to the requirements of the system. The tank heat transfer module can be used as preheating station or as storage tank system with and without buffer tank. The pumps are actuated via a PWM signal. A switch output for switching the return diverting valve is available.

### Additional functions:

**Circulation:** Control via an adjustable time slot or minimum temperature at the sensor S8, switches a pump R3 if necessary (with PWM 3)

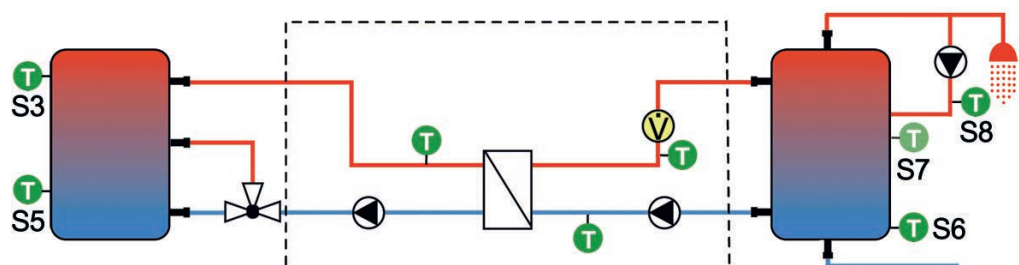
**Thermal disinfection:** Control via an adjustable time slot during which an increased temperature must be reached in the circulation line (sensor S8). The nominal temperature of the boiler is increased during the disinfection period according to the nominal temperature set for the disinfection.

**Parallel relay:** In parallel with the operation of the tank heat transfer module (in parallel with the charging cycle), the relay R1 is switched so that additional consumers can be switched free from tension in standby operation if necessary.

### Function overview controller FC4.13

Display	multiline LC text display, illuminated, with menu navigation (multilingual)
Operation	7 push buttons
Relay outputs	3 x semiconductor relays, 230 V 1 x potential-free relay 4 x PWM signal (0-10 V) for revolution speed control
Inputs	9 (10) x Pt1000 1 x impulse input V40
Flow rate sensors	yes
Heat quantity balancing	yes
Return distribution	yes

### Sketch of the system:



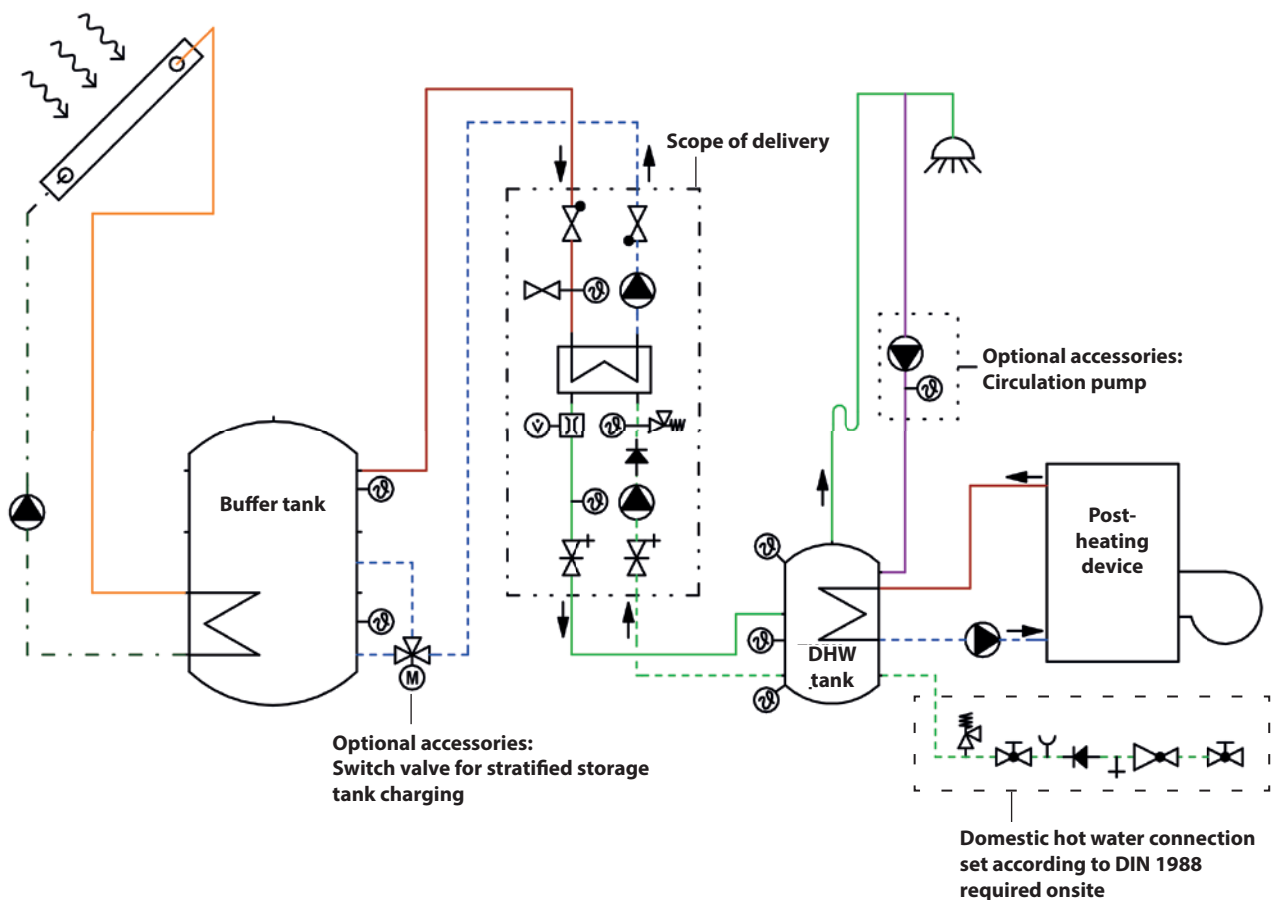
Tank heat transfer module - Basic system with return distribution and circulation



In general, **tank heat transfer modules** have been developed to rapidly prepare large quantities of domestic hot water without the need to store them. For this purpose, tank heat transfer modules are equipped with a large and high-performance heat exchanger which immediately transfers the output available on the primary side to the potable water on the secondary side without wasting energy or time and with precise temperatures.

### Example 1: As preheating station

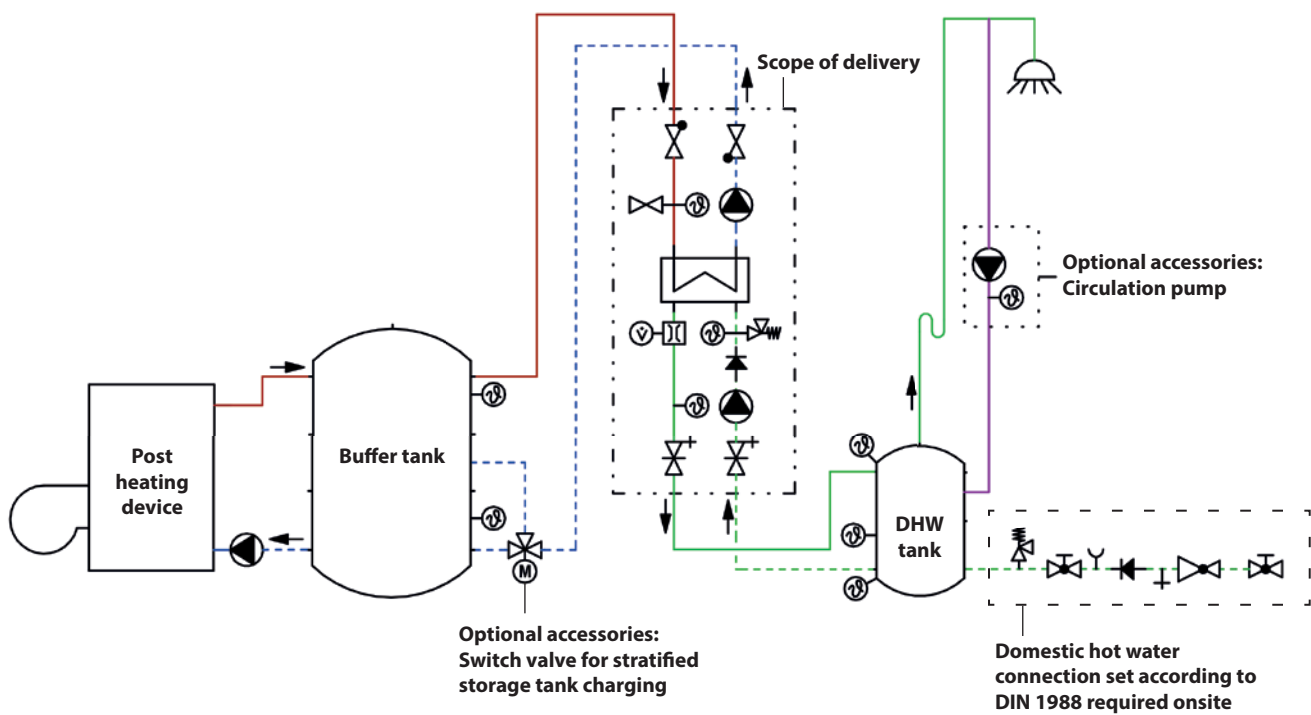
- All the energy available in the buffer tank is transferred to the domestic hot water storage tank on request (even if the nominal / target temperature is not reached).
- The potential-free relay is controlled by an additional temperature sensor in the domestic hot water storage tank to actuate the post-heating.





### Example 2: As storage tank module with buffer tank

- If the required buffer tank temperature is not reached, the post-heating device is activated. The potential-free relay is switched.
- The post-heating demand can occur continuously or on request.

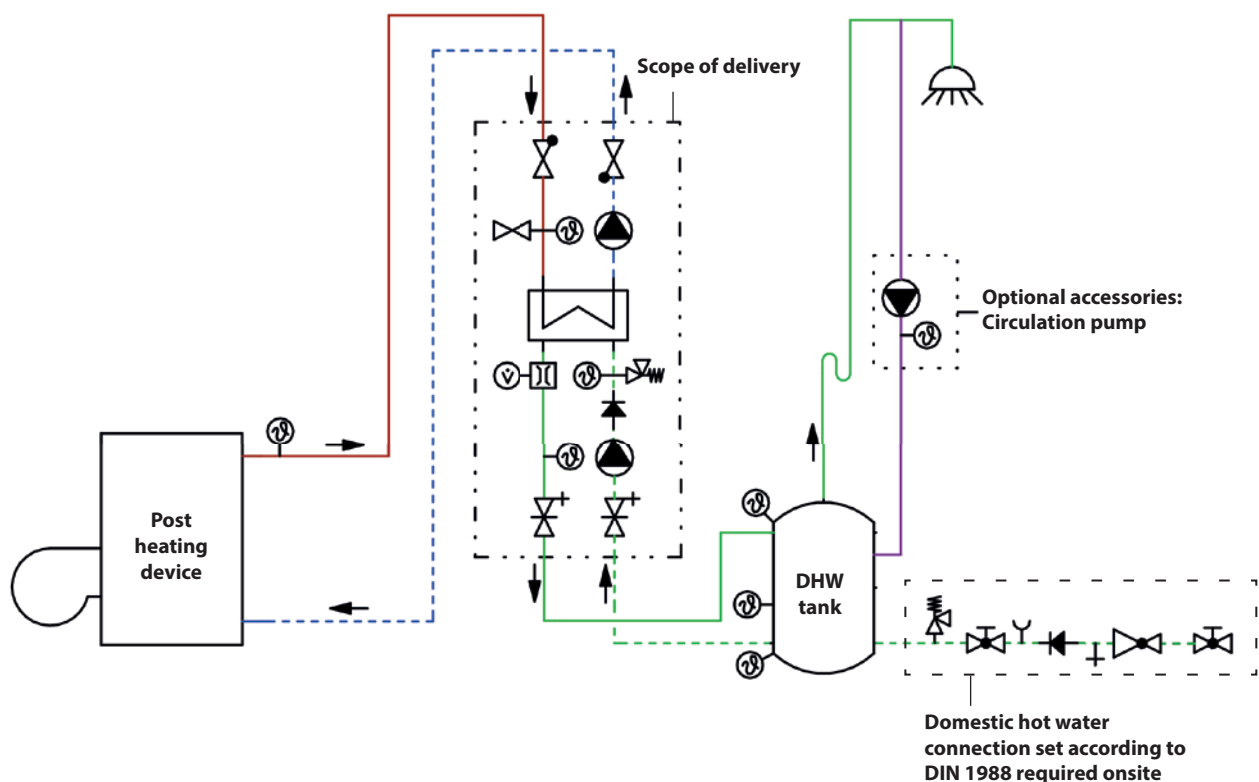






### Example 3: As storage tank module without buffer tank

- If the nominal temperature set for the potable water is not reached, the post-heating device is activated. The potential-free relay is switched.
- The transfer capacity of the station can be adapted very well to the performance of the post-heating device by limiting the output of the secondary pump. A switching of the post-heating device as well as an insufficient flow temperature are thus avoided.
- An optimum cooling down of the primary return is achieved by using large heat exchangers, the return temperatures are generally of 12–15 °C. Thus, heating value devices achieve their optimum efficiency.





Primary flow temperature	Domestic hot water temperature set at the controller	Post-heating capacity required ** for x % secondary pump PWM2 and corresponding flow rate *							Return temperature to the buffer tank***
		30 °C	35 °C	40 °C	45 °C	50 °C	60 °C	90 °C	
		10 l/min	15 l/min	20 l/min	24 l/min	29 l/min	37 l/min	44 l/min	
45 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	20 °C
	50 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	17 °C
50 °C	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>22 °C</b>
	50 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	15 °C
55 °C	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>18 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>23 °C</b>
	55 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	14 °C
60 °C	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>17 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>20 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>25 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	27 °C
65 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	13 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>15 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>18 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>21 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	27 °C
70 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	13 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>15 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>16 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>19 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	23 °C
75 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	12 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>14 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>15 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>18 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	20 °C
80 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	12 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>13 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>15 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>16 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	19 °C
85 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	11 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>12 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>14 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>15 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	17 °C
90 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	11 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>12 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>13 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>15 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	16 °C
95 °C	40 °C	21 kW	31 kW	42 kW	50 kW	60 kW	77 kW	92 kW	11 °C
	45 °C	<b>24 kW</b>	<b>36 kW</b>	<b>49 kW</b>	<b>58 kW</b>	<b>70 kW</b>	<b>90 kW</b>	<b>107 kW</b>	<b>12 °C</b>
	50 °C	<b>28 kW</b>	<b>42 kW</b>	<b>55 kW</b>	<b>67 kW</b>	<b>80 kW</b>	<b>103 kW</b>	<b>122 kW</b>	<b>13 °C</b>
	55 °C	<b>31 kW</b>	<b>47 kW</b>	<b>62 kW</b>	<b>75 kW</b>	<b>90 kW</b>	<b>115 kW</b>	<b>137 kW</b>	<b>14 °C</b>
	60 °C	35 kW	52 kW	69 kW	83 kW	100 kW	128 kW	152 kW	16 °C

\* The maximum flow rate of the domestic hot water charging pump depends on the length and the type of the components integrated in the piping.

A PWM signal of 90% corresponds to the maximum flow rate of the pump. The PWM signal is not increased to more than 90%.

\*\* The outputs indicated in the following table serve only as approximate reference value for the dimensioning of the post-heating. Because of pressure losses and different insulations of the buffer charging circuit, the required outputs can be higher as indicated in order to assure a continuous domestic hot water supply.

\*\*\* The return temperature is reached at a cold water temperature of 10 °C.

**Example:** 65 °C in the boiler flow (primary) and 50 °C domestic hot water temperature set at the controller (secondary):

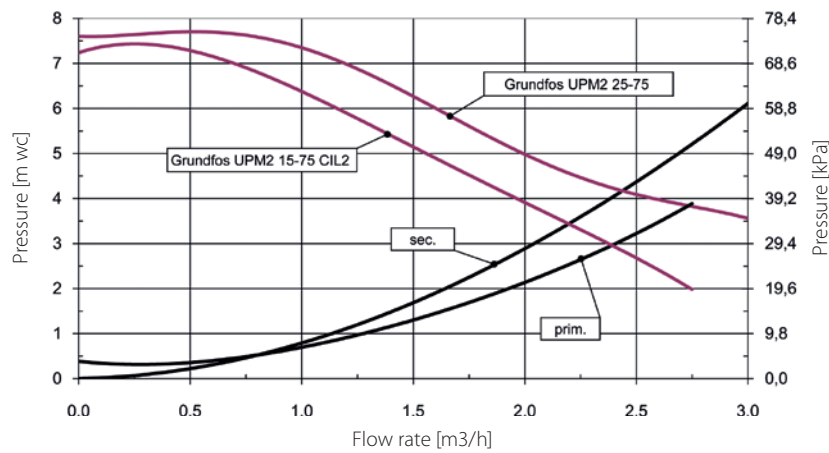
- At 65 °C in the boiler flow, at most 44 litres of potable water/minute can be heated up to 50 °C


- This withdrawal corresponds to an output of 122 kW





- The primary return temperature is of 18 °C



**Tank heat transfer module Midi up to 33 l/min**



Tank heat transfer module Midi – DN 20	Item no.
 <p><b>Speicher-Umladestation Midi – bis 33 l/min</b>                      prim.: Grundfos UPM2 25-75, sek.: Grundfos UPM2 15-75 CIL</p>	<b>6435445</b>

Accessories	Item no.
 <p><b>Return distribution set 1¼" internal thread for tank heat transfer module Midi</b>                      3-way valve with actuator, setting time for 90°: 18 sec., Kvs value: 11</p>	<b>640423</b>
 <p><b>2-way valve UV2 with actuator</b>                      for connecting and disconnecting single storage tanks, DN 25, 1" internal thread, setting time for 90°: 30 sec.</p>	<b>563542</b>
 <p><b>Withdrawal valve</b>                      flame-treated valves for sterile withdrawal of water. For the subsequent installation inside the tank heat transfer module, on each piston valve of the domestic hot water circuit.</p>	<b>640422</b>
 <p><b>Circulation set</b>                      with piston valves, non-return valve and drain valve</p>	<b>6404136GH7</b>



Primary flow temperature	Domestic hot water temperature set at the controller	Post-heating capacity required ** for x % secondary pump PWM2 and corresponding flow rate *							Return temperature to the buffer tank***
		30 °C	40 °C	50 °C	60 °C	70 °C	80 °C	90 °C	
		8 l/min	18 l/min	30 l/min	40 l/min	50 l/min	60 l/min	64 l/min	
45 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	20 °C
	50 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	17 °C
50 °C	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>22 °C</b>
	50 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	15 °C
55 °C	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>18 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>23 °C</b>
	55 °C	22 kW	50 kW	83 kW	111 kW	139 kW	166 kW	178 kW	23 °C
60 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	14 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>17 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>20 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>25 °C</b>
65 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	13 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>15 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>18 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>21 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	27 °C
70 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	13 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>15 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>16 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>19 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	23 °C
75 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	12 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>14 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>15 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>18 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	20 °C
80 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	12 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>13 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>15 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>16 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	19 °C
85 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	11 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>12 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>14 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>15 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	17 °C
90 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	11 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>12 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>13 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>15 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	16 °C
95 °C	40 °C	17 kW	38 kW	63 kW	83 kW	104 kW	125 kW	133 kW	11 °C
	45 °C	<b>19 kW</b>	<b>44 kW</b>	<b>73 kW</b>	<b>97 kW</b>	<b>121 kW</b>	<b>146 kW</b>	<b>155 kW</b>	<b>12 °C</b>
	50 °C	<b>22 kW</b>	<b>50 kW</b>	<b>83 kW</b>	<b>111 kW</b>	<b>139 kW</b>	<b>166 kW</b>	<b>178 kW</b>	<b>13 °C</b>
	55 °C	<b>25 kW</b>	<b>56 kW</b>	<b>94 kW</b>	<b>125 kW</b>	<b>156 kW</b>	<b>187 kW</b>	<b>200 kW</b>	<b>14 °C</b>
	60 °C	28 kW	62 kW	104 kW	138 kW	173 kW	208 kW	222 kW	16 °C

\* The maximum flow rate of the domestic hot water charging pump depends on the length and the type of the components integrated in the piping.

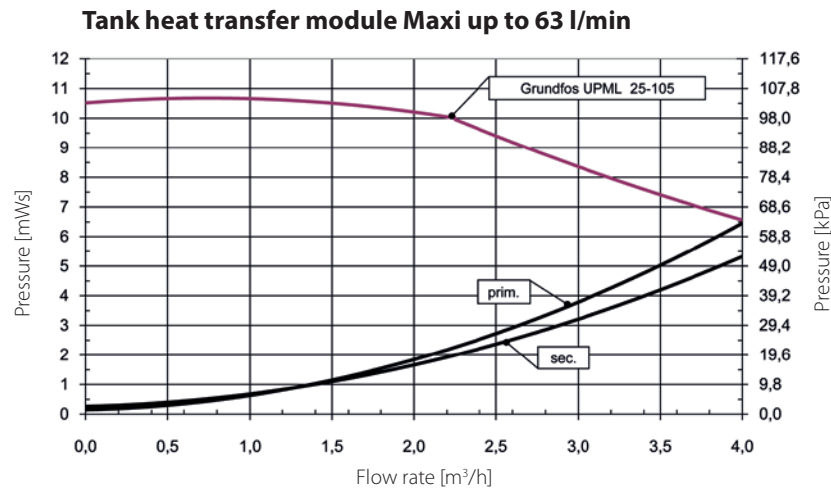
A PWM signal of 90% corresponds to the maximum flow rate of the pump. The PWM signal is not increased to more than 90%


\*\* The outputs indicated in the following table serve only as approximate reference value for the dimensioning of the post-heating. Because of pressure losses and different insulations of the buffer charging circuit, the required outputs can be higher as indicated in order to assure a continuous domestic hot water supply.






\*\*\* The return temperature is reached at a cold water temperature of 10 °C.

**Example:** 65 °C in the boiler flow (primary) and 50 °C domestic hot water temperature set at the controller (secondary):

- At 65 °C in the boiler flow, at most 64 litres of potable water/minute can be heated up to 50 °C
- This withdrawal corresponds to an output of 178 kW
- The primary return temperature is of 18 °C



Tank heat transfer module Maxi – DN 25	Item no.
 <p><b>Tank heat transfer module Maxi - up to 63 l/min</b>            prim.: Grundfos UPML 25-105, sec.: Grundfos UPML 25-105 N</p>	<b>6436465</b>

Accessories	Item no.
 <p><b>Return distribution set 1½" internal thread for tank heat transfer module Maxi</b>            3-way valve with actuator, setting time for 90°: 35 sec., Kvs value: 25</p>	<b>6404242</b>
 <p><b>Zone valve UV2 with actuator</b>            for connecting and disconnecting single storage tanks, DN 25, 1" internal thread, setting time for 90°: 30 sec.</p>	<b>563552</b>
 <p><b>Withdrawal valve</b>            flame-treated valves for sterile withdrawal of water. For the subsequent installation inside the tank heat transfer module on each piston valve of the domestic hot water circuit.</p>	<b>640422</b>
 <p><b>Circulation set</b>            - with piston valves, non-return valve and drain valve            - with high-efficiency pump Grundfos UPM2 15-75 CIL2, connection 1"</p>	<b>6404136GH7</b>
 <p><b>Zirkulationsset</b>            - with piston valves, non-return valve and drain valve            - with high-efficiency pump Grundfos UPML 25-105 N, connection 1½"</p>	<b>6404136GH10</b>





---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---



**PAW GmbH & Co. KG**

Böcklerstraße 11

31789 Hameln

Germany

☎ +49-5151-9856-0

☎ +49-5151-9856-98

@ info@paw.eu

🌐 www.paw.eu



99643x4x5-fly-en • Version: V03 • Issued: 2023/01  
Printed in Germany • We reserve the right to make  
technical changes without notice!