Calorifier continuous flow system

Consisting of:
- fresh water module TransTherm® aqua F
- buffer storage tank (option)

Fresh water module TransTherm® aqua F

- Fully installed station with plate heat exchanger for the provision of domestic hot water using the continuous flow principle
- Mounted on stand frame.
  Stand frame consisting of:
  - frame with corrosion protection coating RAL 9005
  - height-adjustable and vibration-damped feet
- The primary side (heating side) contains the three-way valve, high-efficiency pump, ventilation, filling/drain valves and balancing valve. These components ensure a constant flow temperature at the plate heat exchanger. Pipes made from steel
- The secondary side (DHW side) contains the safety valve (10 bar), non-return valve and a filling/drain valve. A flow sensor ensures the correct hot water temperature. Pipes made from stainless steel
- Stainless steel plate heat exchanger 1.4404, copper-soldered
- Flow rate sensor
- T-piece with dummy plug for on-site connection of the circulation group. Connect the pump to the controller on site.
- TopTronic® E control with integrated thermal disinfection of the DHW storage tank (anti-legionella circuit)

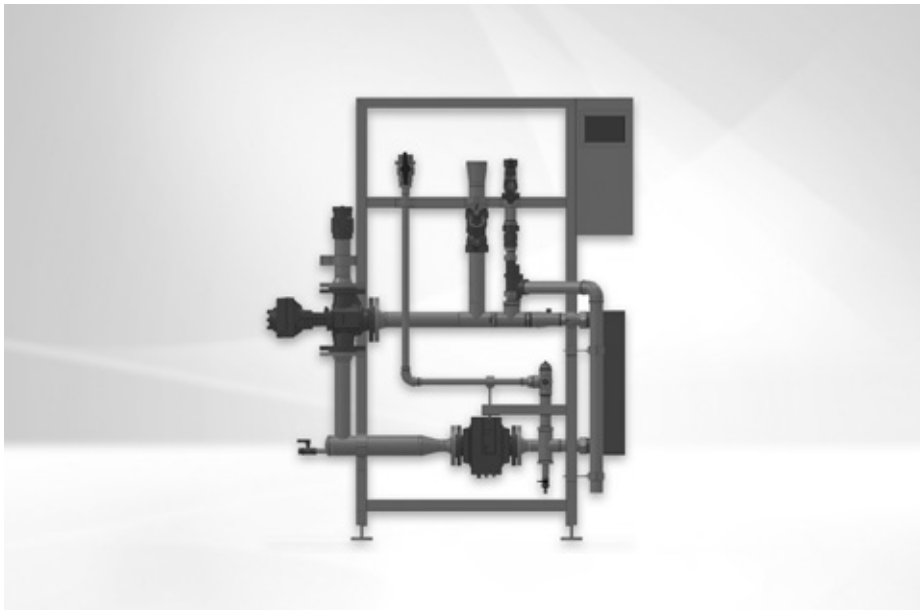
Thermal insulation consisting of:
- thermal insulation of the heat exchanger with 30-mm EPP mouldings
- thermal insulation of the pipes with EPP mouldings. Insulation thickness of 50 % according to EnEV
- deep black, similar to RAL 9005
- suitable for damp rooms
- CFC-free
- normal flammability according to DIN 4102-1 and EN 13501-1 (fuel class: B2)
- no bleaching and disintegration of the insulation under the influence of UV light

Delivery
- The buffer storage tank required is not included in the scope of delivery

On site
- Installation of a circulation unit;
  the necessary connection is provided.
- Electrical connection of the controller

TopTronic® E controller

TopTronic® E basic module district heating/fresh water
- Control unit for controlling district heating systems in non-communicative networks and the corresponding consumers with integrated control functions for
  - primary valve control
  - cascade management
  - 1 heating/cooling circuit with mixer
  - 1 heating/cooling circuit without mixer
  - 1 hot water charging circuit
  - various additional functions



Range
Fresh water module

TransTherm® aqua F type	Output kW
(6-60)	350
(6-70)	450
(6-80)	580
(6-90)	700

- Various functions for hot water:
  - selection of different basic programs (week programs, economy mode, holiday until, etc.)
  - various operating modes (e.g. accumulator priority or parallel mode)
  - buffer storage circuit on the primary or secondary side
  - adjustable loading criteria (e.g.: adjustable loading times, undershooting the minimum nominal value, etc.)
  - adjustable switch-off criteria (e.g. achieving the setpoint valve, achieving the lower sensor setpoint value, etc.)
  - adjustable loading block (if the loading flow temperature is too low, the setpoint temperature is not reached, differential temperature-dependent solar circuit control)
- Definable switching times for recirculation pump control
- Outdoor sensor
- Immersion sensor (calorifier sensor)
- Contact sensor (flow temperature sensor)
- Complete plug set for DH module
- RPM-regulated pumps

No further module expansions or controller modules can be installed in the control panel!

Option

TopTronic® E control module
- Simple, intuitive operating concept
- Display of the most important operating states
- Configurable start screen
- Operating mode selection
- Configurable day and week programs
- Operation of all connected Hoval CAN bus modules
- Commissioning wizard
- Service and maintenance function
- Fault message management
- Analysis function
- Weather display (with HovalConnect option)
- Adaptation of the heating strategy based on the weather forecast (with HovalConnect option)

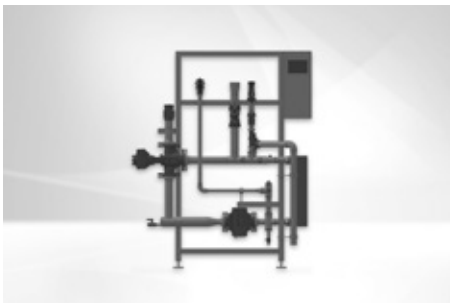
Notice
The TopTronic® E control module for operating the basic module district heating/fresh water must be ordered separately!

Further information about the TopTronic® E
see “Controls”

Delivery
- All armatures required for operation, such as strainers, flow balancing and shut-off valves, backflow preventer, air-bleeding and drain valve are fitted.

Caution
As a result of thermal disinfection of the domestic hot water for legionella protection, increased water temperatures (at least 65-70 °C) occur. Depending on the water quality, this may result in increased calcification at the installed armatures and heat exchangers and also brings the risk of scalding at the tapping points. Corresponding protective measures must be implemented on site.

Fresh water module



TransTherm® aqua F

Fully assembled station with plate heat exchanger for the provision of domestic hot water using the continuous flow principle and built-in Hoval TopTronic® E control.
The required buffer storage tank is not supplied.

TransTherm® aqua F	Output kW	Part No.
(6-60)	350	8006 393
(6-70)	450	8006 394
(6-80)	580	8006 395
(6-90)	700	8006 396

Accessories

TopTronic® E control module black with 4.3″ colour touchscreen
For operation of all controller modules connected to the bus system (basic, solar, buffer modules etc.)
Connection to the Hoval bus system via RJ45 plug connection or via plug terminals (max. 0.75 mm²), flat design with flexible installation option
Installation:
- in control panel of the heat generator
- in the Hoval wall casing
- in the control panel front,

black high-gloss cover, customer-specific configurable start screen,
Display of current weather or weather forecast (only possible in combination with HovalConnect)

Consisting of:
- TopTronic® E control module black
- Clamping device set control module
- RJ45-RAST 5 CAN cable, L = 500

Part No.
6043 844

Return changeover valve set
Consisting of:
- Temperature sensor
- Changeover valve
- Drive (8 sec.)
- Seals
- Screw connections

Nominal diameter	Output kW	kvs m³/h	Part No.
DN 20	50-90	6.3	7010 832
DN 25	115-175	10	7010 836
DN 32	230-275	16	7011 009
DN 40	350	25	7011 025
DN 50	450	40	7016 331
DN 65	580	63	7016 332
DN 80	700	100	7016 333

Notice
When using a circulation set (also on-site recirculation pump), it is imperative to install a return switching valve set.

Circulation set
for TransTherm® aqua L, F
Piping of parts in contact with domestic water in stainless steel and gunmetal
Consisting of:
- Temperature sensor PT1000
- Recirculation pump Wilo Yonos PARA
- Recirculation pump Wilo Para MAXO
- Regulating valve
- Non-return valve

Connection	Flow rate m³/h	Recirculation pump	Part No.
DN 20 ¾″ Rp	1.9	Z15/7.0 RKC	8005 279
DN 25 1″ Rp	3.4	Z25/180/08/F02	8005 280
DN 32 1¼″ Rp	5.8	Z25/180/08/F02	8005 281

		Part No.
	**Test valve DN 8 G ¼″** for TransTherm® aqua L, F, FS Test valve suitable for flame treatment for hygienic-microbiologic tests.	2049 861
	**Sludge separator with magnet MB3/L DN 25...DN 50** Fast and continuous removal of ferromagnetic and non-magnetic dirt and sludge particles. Sludge separation up to a particle size of 5 µm. Brass housing Max. operating pressure: 6 bar Max. flow temperature: 110 °C	

Type	Connection	Flow rate m³/h at 1 m/s flow speed	
MB3 DN 25	Rp 1″	2.0	2062 165
MBL DN 32	Rp 1¼″	3.6	2062 166
MBL DN 40	Rp 1½″	5.0	2062 167
MBL DN 50	Rp 2″	7.5	2062 168

Additional sludge separators
see “Various system components”

	**Temperature monitor 0…120 °C** for TransTherm® aqua L, F, FS	2048 299
	**Safety temperature monitor 70…130 °C** for TransTherm® aqua L, F, FS	2048 300
	**Safety temperature limiter 70…130 °C** for TransTherm® aqua L, F, FS	2049 619
	**Immersion sleeve G ½″ stainless steel for thermostat** for TransTherm® aqua L, F, FS Installation length = 100 mm Outer Ø: 8 mm, inner Ø: 6.5 mm	2048 285
	**Immersion sleeve G ½″ stainless steel for 2 thermostats** for TransTherm® aqua L, F, FS Installation length = 100 mm Outer Ø: 15 mm, inner Ø: 13.5 mm	2048 288

Part No.

Services

Commissioning
Commissioning by works service or Hoval trained authorised serviceman/company is condition for warranty.

For commissioning and other services please contact your Hoval sales office.

Performance data

TransTherm® aqua F (6-60 to 6-90)

Domestic water secondary	TransTherm® aqua F		Heating water temperature flow 52 °C (60)	52 °C (70)	52 °C (80)	52 °C (90)	55 °C (60)	55 °C (70)	55 °C (80)	55 °C (90)	60 °C (60)	60 °C (70)	60 °C (80)	60 °C (90)
60/5 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
60/10 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
60/15 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
60/20 °C	T return primary	°C	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
	Q max.	kW	-	-	-	-	-	-	-	-	-	-	-	-
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	-	-	-	-
55/5 °C	T return primary	°C	-	-	-	-	-	-	-	-	28	28	28	27
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	**7.27**	**10.06**	**12.62**	**15.81**
	Q max.	kW	-	-	-	-	-	-	-	-	270	370	470	600
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	**4.68**	**6.42**	**8.15**	**10.4**
55/10 °C	T return primary	°C	-	-	-	-	-	-	-	-	30	29	29	29
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	**7.30**	**9.04**	**11.82**	**14.63**
	Q max.	kW	-	-	-	-	-	-	-	-	255	320	420	530
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	**4.91**	**6.17**	**8.09**	**10.21**
55/15 °C	T return primary	°C	-	-	-	-	-	-	-	-	30	30	30	30
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	**5.20**	**7.23**	**9.25**	**13.01**
	Q max.	kW	-	-	-	-	-	-	-	-	180	250	320	450
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	**3.90**	**5.42**	**6.94**	**9.75**
55/20 °C	T return primary	°C	-	-	-	-	-	-	-	-	30	30	30	30
	V̇ primary	**m³/h**	-	-	-	-	-	-	-	-	**3.18**	**4.34**	**5.78**	**7.51**
	Q max.	kW	-	-	-	-	-	-	-	-	110	150	200	260
	V̇ secondary	**m³/h**	-	-	-	-	-	-	-	-	**2.73**	**3.72**	**4.95**	**6.44**
50/5 °C	T return primary	°C	-	-	-	-	25	25	25	24	22	22	21	21
	V̇ primary	**m³/h**	-	-	-	-	**7.32**	**8.93**	**11.59**	**14.69**	**7.17**	**9.14**	**11.65**	**13.93**
	Q max.	kW	-	-	-	-	250	310	405	520	315	405	520	630
	V̇ secondary	**m³/h**	-	-	-	-	**4.82**	**5.97**	**7.80**	**10.02**	**6.07**	**7.80**	**10.02**	**12.14**
50/10 °C	T return primary	°C	-	-	-	-	27	27	27	26	24	24	24	23
	V̇ primary	**m³/h**	-	-	-	-	**7.17**	**8.95**	**11.64**	**14.45**	**6.78**	**8.62**	**11.52**	**13.16**
	Q max.	kW	-	-	-	-	230	290	380	480	280	360	485	560
	V̇ secondary	**m³/h**	-	-	-	-	**4.99**	**6.29**	**8.24**	**10.4**	**6.07**	**7.80**	**10.51**	**12.14**
50/15 °C	T return primary	°C	-	-	-	-	29	29	29	28	26	26	26	26
	V̇ primary	**m³/h**	-	-	-	-	**7.25**	**9.24**	**11.63**	**14.5**	**6.31**	**8.10**	**10.97**	**12.35**
	Q max.	kW	-	-	-	-	215	275	350	445	245	315	430	490
	V̇ secondary	**m³/h**	-	-	-	-	**5.33**	**6.81**	**8.67**	**11.02**	**6.07**	**7.80**	**10.65**	**12.14**
50/20 °C	T return primary	°C	-	-	-	-	30	30	30	30	30	29	29	29
	V̇ primary	**m³/h**	-	-	-	-	**5.03**	**6.59**	**9.02**	**11.96**	**6.00**	**7.6**	**10.35**	**11.6**
	Q max.	kW	-	-	-	-	145	190	260	345	210	270	370	420
	V̇ secondary	**m³/h**	-	-	-	-	**4.20**	**5.49**	**7.51**	**9.97**	**6.07**	**7.80**	**10.69**	**12.14**
45/5 °C	T return primary	°C	21	21	21	20	20	19	19	19	18	18	18	17
	V̇ primary	**m³/h**	**7.20**	**8.95**	**11.53**	**14.54**	**6.90**	**8.77**	**11.62**	**13.4**	**5.77**	**7.36**	**10.00**	**11.26**
	Q max.	kW	255	320	415	530	280	360	480	560	280	360	490	560
	V̇ secondary	**m³/h**	**5.53**	**6.94**	**9.00**	**11.50**	**6.07**	**7.80**	**10.4**	**12.14**	**6.07**	**7.80**	**10.62**	**12.14**
45/10 °C	T return primary	°C	23	23	23	23	22	22	22	21	20	20	20	19
	V̇ primary	**m³/h**	**7.12**	**9.21**	**11.51**	**14.45**	**6.44**	**8.23**	**11.13**	**12.57**	**5.36**	**6.86**	**9.27**	**7.24**
	Q max.	kW	235	305	385	490	245	315	430	490	245	315	430	490
	V̇ secondary	**m³/h**	**5.82**	**7.56**	**9.54**	**12.14**	**6.07**	**7.80**	**10.65**	**12.14**	**6.07**	**7.80**	**10.65**	**12.14**
45/15 °C	T return primary	°C	25	25	25	25	25	24	24	24	23	22	22	22
	V̇ primary	**m³/h**	**6.10**	**8.03**	**10.67**	**13.49**	**6.01**	**7.63**	**10.38**	**11.63**	**4.88**	**6.23**	**8.51**	**9.53**
	Q max.	kW	190	250	335	420	210	270	370	420	210	270	370	420
	V̇ secondary	**m³/h**	**5.49**	**7.23**	**9.68**	**12.14**	**6.07**	**7.80**	**10.69**	**12.14**	**6.07**	**7.80**	**10.69**	**12.14**
45/20 °C	T return primary	°C	25	25	25	25	27	27	27	27	25	25	25	25
	V̇ primary	**m³/h**	**2.73**	**3.53**	**4.66**	**6.42**	**5.46**	**6.97**	**9.57**	**10.65**	**4.37**	**5.59**	**7.68**	**8.57**
	Q max.	kW	85	110	145	200	175	225	310	350	175	225	310	350
	V̇ secondary	**m³/h**	**2.95**	**3.82**	**5.03**	**6.94**	**6.07**	**7.80**	**10.75**	**12.14**	**6.07**	**7.80**	**10.75**	**12.14**

T return primary	°C	Temperature primary return
V̇ primary	**m³/h**	Flow rate primary
Q max.	kW	Output
V̇ secondary	**m³/h**	Flow rate secondary

The specified technical data relate to the full load of the module in each case.

Performance data

TransTherm® aqua F (6-60 to 6-90)

Domestic water secondary	TransTherm® aqua F		Heating water temperature flow 65 °C (60)	65 °C (70)	65 °C (80)	65 °C (90)	70 °C (60)	70 °C (70)	70 °C (80)	70 °C (90)
60/5 °C	T return primary	°C	30	30	30	29	26	26	25	25
	V̇ primary	**m³/h**	**7.15**	**9.17**	**11.72**	**14.69**	**7.42**	**9.40**	**11.66**	**14.64**
	Q max.	kW	290	370	480	610	375	480	60	760
	V̇ secondary	**m³/h**	**4.57**	**5.83**	**7.57**	**9.62**	**5.91**	**7.57**	**9.46**	**11.98**
60/10 °C	T return primary	°C	30	30	30	30	28	28	28	27
	V̇ primary	**m³/h**	**5.45**	**6.94**	**9.41**	**12.88**	**7.23**	**9.29**	**11.92**	**14.15**
	Q max.	kW	220	280	380	520	350	450	580	700
	V̇ secondary	**m³/h**	**3.82**	**4.86**	**6.59**	**9.02**	**6.07**	**7.80**	**10.06**	**12.14**
60/15 °C	T return primary	°C	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**3.72**	**4.83**	**6.44**	**8.67**	**6.72**	**8.78**	**11.73**	**13.49**
	Q max.	kW	150	195	260	350	310	405	540	630
	V̇ secondary	**m³/h**	**2.89**	**3.76**	**5.01**	**6.74**	**5.97**	**7.80**	**10.4**	**12.14**
60/20 °C	T return primary	°C	30	30	30	30	30	30	30	30
	V̇ primary	**m³/h**	**2.11**	**2.85**	**3.72**	**4.95**	**4.34**	**5.64**	**7.37**	**9.97**
	Q max.	kW	85	115	150	200	200	260	340	460
	V̇ secondary	**m³/h**	**1.84**	**2.49**	**3.25**	**4.34**	**4.34**	**5.64**	**7.37**	**9.97**
55/5 °C	T return primary	°C	24	24	23	23	22	21	21	21
	V̇ primary	**m³/h**	**7.42**	**9.24**	**11.64**	**14.38**	**6.30**	**8.03**	**10.99**	**12.26**
	Q max.	kW	350	440	560	700	350	450	620	700
	V̇ secondary	**m³/h**	**6.07**	**7.63**	**9.71**	**12.14**	**6.07**	**7.80**	**10.75**	**12.14**
55/10 °C	T return primary	°C	26	26	26	25	24	24	24	23
	V̇ primary	**m³/h**	**7.06**	**8.96**	**11.66**	**13.66**	**5.96**	**7.6**	**10.25**	**11.6**
	Q max.	kW	315	405	530	630	315	405	550	630
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.21**	**12.14**	**6.07**	**7.80**	**10.6**	**12.14**
55/15 °C	T return primary	°C	29	28	28	27	27	26	26	26
	V̇ primary	**m³/h**	**6.67**	**8.48**	**11.48**	**12.91**	**5.62**	**7.16**	**9.70**	**10.96**
	Q max.	kW	280	360	490	560	280	360	490	560
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.62**	**12.14**	**6.07**	**7.80**	**10.62**	**12.14**
55/20 °C	T return primary	°C	30	30	30	30	29	29	29	28
	V̇ primary	**m³/h**	**5.95**	**7.80**	**10.4**	**12.14**	**5.13**	**6.64**	**9.01**	**10.16**
	Q max.	kW	240	315	420	490	245	315	430	490
	V̇ secondary	**m³/h**	**5.95**	**7.80**	**10.4**	**12.14**	**6.07**	**7.80**	**10.65**	**12.14**
50/5 °C	T return primary	°C	20	20	19	19	18	18	17	17
	V̇ primary	**m³/h**	**6.06**	**7.72**	**10.43**	**11.77**	**5.30**	**6.74**	**9.05**	**10.27**
	Q max.	kW	315	405	550	630	315	405	550	630
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.6**	**12.14**	**6.07**	**7.80**	**10.6**	**12.14**
50/10 °C	T return primary	°C	22	22	22	21	21	20	20	19
	V̇ primary	**m³/h**	**5.69**	**7.28**	**9.81**	**11.08**	**4.90**	**6.24**	**8.46**	**9.57**
	Q max.	kW	280	360	490	560	280	360	490	560
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.62**	**12.14**	**6.07**	**7.80**	**10.62**	**12.14**
50/15 °C	T return primary	°C	25	25	24	24	23	23	22	22
	V̇ primary	**m³/h**	**5.30**	**6.74**	**9.14**	**10.29**	**4.52**	**5.76**	**7.82**	**8.83**
	Q max.	kW	245	315	430	490	245	315	430	490
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.65**	**12.14**	**6.07**	**7.80**	**10.65**	**12.14**
50/20 °C	T return primary	°C	27	26	27	26	26	26	25	25
	V̇ primary	**m³/h**	**4.84**	**6.00**	**8.38**	**9.43**	**4.12**	**5.26**	**7.16**	**8.07**
	Q max.	kW	210	270	370	420	210	270	370	420
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.69**	**12.14**	**6.07**	**7.80**	**10.69**	**12.14**
45/5 °C	T return primary	°C	16	16	16	15	15	14	14	13
	V̇ primary	**m³/h**	**4.99**	**6.34**	**8.58**	**9.69**	**4.39**	**5.59**	**7.59**	**8.58**
	Q max.	kW	280	360	490	560	280	360	490	560
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.62**	**12.14**	**6.07**	**7.80**	**10.62**	**12.14**
45/10 °C	T return primary	°C	19	18	18	18	17	17	17	16
	V̇ primary	**m³/h**	**4.57**	**5.85**	**7.92**	**8.94**	**4.02**	**5.13**	**6.98**	**7.90**
	Q max.	kW	245	315	430	490	245	315	430	490
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.65**	**12.14**	**6.07**	**7.80**	**10.65**	**12.14**
45/15 °C	T return primary	°C	21	21	21	20	20	20	20	19
	V̇ primary	**m³/h**	**4.15**	**5.30**	**7.24**	**8.15**	**3.64**	**4.66**	**6.37**	**7.18**
	Q max.	kW	210	270	370	420	210	270	370	420
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.69**	**12.14**	**6.07**	**7.80**	**10.69**	**12.14**
45/20 °C	T return primary	°C	24	24	24	24	23	23	23	23
	V̇ primary	**m³/h**	**3.71**	**4.75**	**6.51**	**7.31**	**3.24**	**4.15**	**5.71**	**6.42**
	Q max.	kW	175	225	310	350	175	225	310	350
	V̇ secondary	**m³/h**	**6.07**	**7.80**	**10.75**	**12.14**	**6.07**	**7.80**	**10.75**	**12.14**

T return primary	°C	Temperature primary return
V̇ primary	**m³/h**	Flow rate primary
Q max.	kW	Output
V̇ secondary	**m³/h**	Flow rate secondary

The specified technical data relate to the full load of the module in each case.

Performance data

TransTherm® aqua F

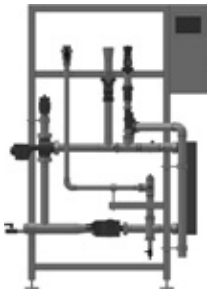
Residential units standard apartment according to DIN 4708	Peak heat demand standard apartment according to DIN 4708 with preparation 10 min	Sum flow rate domestic hot water calculation flow rate according to DIN 4708	Simultaneity factor according to DIN 4708	Peak flow rate (DHW)	Peak flow rate (DHW)	Peak flow rate (DHW)	Peak output (DHW)	Peak flow rate TransTherm® aqua F (DHW)	Peak flow rate TransTherm® aqua F (DHW)	Peak flow rate TransTherm® aqua F (DHW)	DHW calorifier output TransTherm® aqua F	TransTherm® aqua F	Required hot water volume at 70/30 °C (40 K)	Required hot water buffer storage tank volume at 70/30 °C (40 K)	Hot water buffer storage tank 1 EnerVal	Required recharging capacity	Required recharging capacity	Required recharging capacity
N	Preparation	∑ VR at DHW 60 °C	g	V̇s at DHW 60 °C	V̇s at DHW 60 °C	V̇s at DHW 60 °C		V̇s at DHW 60 °C	V̇s at DHW 60 °C	V̇s at DHW 60 °C	Q at HT 70/30 °C DHW 10/60 °C	Type			Type	Time: 20 min 70/30 °C (40 K)	Time: 30 min 70/30 °C (40 K)	Time: 60 min 70/30 °C (40 K)
	[Wh]	[l/s]		[l/s]	[l/min]	[m³/h]	[kW]	[l/s]	[l/min]	[m³/h]	[kW]		[m³]	[m³]		[kW]	[kW]	[kW]
1	5820	0.17	1.00	0.17	10.01	0.60	35	0.24	14.3	0.86	50	(6-10)	0.13	0.16	(200)	23	15	8
2	11640	0.33	0.680	0.23	13.61	0.82	47	0.24	14.3	0.86	50	(6-10)	0.17	0.22	(200)	31	21	10
3	17460	0.50	0.544	0.27	16.33	0.98	57	0.43	25.8	1.55	90	(6-16)	0.20	0.27	(300)	37	25	12
4	23280	0.67	0.466	0.31	18.66	1.12	65	0.43	25.8	1.55	90	(6-16)	0.23	0.30	(300)	42	28	14
5	29100	0.83	0.415	0.35	20.77	1.25	72	0.43	25.8	1.55	90	(6-16)	0.26	0.34	(500)	47	31	16
6	34920	1.00	0.377	0.38	22.64	1.36	79	0.43	25.8	1.55	90	(6-16)	0.28	0.37	(500)	51	34	17
7	40740	1.17	0.349	0.41	24.45	1.47	85	0.43	25.8	1.55	90	(6-16)	0.31	0.40	(500)	55	37	18
8	46560	1.33	0.349	0.47	27.94	1.68	97	0.55	33.0	1.98	115	(6-20)	0.35	0.45	(500)	63	42	21
9	52380	1.50	0.308	0.46	27.74	1.66	97	0.55	33.0	1.98	115	(6-20)	0.35	0.45	(500)	63	42	21
10	58200	1.67	0.292	0.49	29.23	1.75	102	0.55	33.0	1.98	115	(6-20)	0.37	0.47	(500)	66	44	22
11	64020	1.83	0.279	0.51	30.72	1.84	107	0.55	33.0	1.98	115	(6-20)	0.38	0.50	(500)	70	46	23
12	69840	2.00	0.268	0.54	32.19	1.93	112	0.55	33.0	1.98	115	(6-20)	0.40	0.52	(500)	73	49	24
13	75660	2.17	0.258	0.56	33.57	2.01	117	0.55	33.0	1.98	115	(6-20)	0.42	0.55	(500)	76	51	25
14	81480	2.34	0.249	0.58	34.89	2.09	122	0.84	50.2	3.01	175	(6-30)	0.44	0.57	(500)	79	53	26
15	87300	2.50	0.242	0.61	36.33	2.18	127	0.84	50.2	3.01	175	(6-30)	0.45	0.59	(800)	82	55	27
16	93120	2.67	0.235	0.63	37.63	2.26	131	0.84	50.2	3.01	175	(6-30)	0.47	0.61	(800)	85	57	28
17	98940	2.84	0.228	0.65	38.79	2.33	135	0.84	50.2	3.01	175	(6-30)	0.49	0.63	(800)	88	59	29
18	104760	3.00	0.223	0.67	40.17	2.41	140	0.84	50.2	3.01	175	(6-30)	0.50	0.65	(800)	91	61	30
19	110580	3.17	0.217	0.69	41.27	2.48	144	0.84	50.2	3.01	175	(6-30)	0.52	0.67	(800)	94	62	31
20	116400	3.34	0.212	0.71	42.44	2.55	148	0.84	50.2	3.01	175	(6-30)	0.53	0.69	(800)	96	64	32
21	122220	3.50	0.208	0.73	43.72	2.62	153	0.84	50.2	3.01	175	(6-30)	0.55	0.71	(800)	99	66	33
22	128040	3.67	0.204	0.75	44.92	2.70	157	0.84	50.2	3.01	175	(6-30)	0.56	0.73	(800)	102	68	34
23	133860	3.84	0.200	0.77	46.04	2.76	161	0.84	50.2	3.01	175	(6-30)	0.58	0.75	(800)	104	70	35
24	139680	4.00	0.196	0.78	47.08	2.82	164	0.84	50.2	3.01	175	(6-30)	0.59	0.77	(800)	107	71	36
25	145500	4.17	0.193	0.80	48.29	2.90	168	0.84	50.2	3.01	175	(6-30)	0.60	0.78	(800)	110	73	37
26	151320	4.34	0.190	0.82	49.44	2.97	173	0.84	50.2	3.01	175	(6-30)	0.62	0.80	(800)	112	75	37
27	157140	4.50	0.187	0.84	50.53	3.03	176	0.84	50.2	3.01	175	(6-30)	0.63	0.82	(800)	115	76	38
28	162960	4.67	0.184	0.86	51.56	3.09	180	0.84	50.2	3.01	175	(6-30)	0.64	0.84	(800)	117	78	39
29	168780	4.84	0.181	0.88	52.54	3.15	183	1.10	65.8	3.95	230	(6-40)	0.66	0.85	(800)	119	79	40
30	174600	5.00	0.179	0.90	53.75	3.22	188	1.10	65.8	3.95	230	(6-40)	0.67	0.87	(1000)	122	81	41
31	180420	5.17	0.176	0.91	54.61	3.28	191	1.10	65.8	3.95	230	(6-40)	0.68	0.89	(1000)	124	83	41
32	186240	5.34	0.174	0.93	55.73	3.34	194	1.10	65.8	3.95	230	(6-40)	0.70	0.91	(1000)	126	84	42
33	192060	5.50	0.172	0.95	56.81	3.41	198	1.10	65.8	3.95	230	(6-40)	0.71	0.92	(1000)	129	86	43
34	197880	5.67	0.170	0.96	57.85	3.47	202	1.10	65.8	3.95	230	(6-40)	0.72	0.94	(1000)	131	87	44
35	203700	5.84	0.168	0.98	58.85	3.53	205	1.10	65.8	3.95	230	(6-40)	0.74	0.96	(1000)	133	89	44
36	209520	6.01	0.166	1.00	59.81	3.59	209	1.10	65.8	3.95	230	(6-40)	0.75	0.97	(1000)	136	90	45
37	215340	6.17	0.164	1.01	60.73	3.64	212	1.10	65.8	3.95	230	(6-40)	0.76	0.99	(1000)	138	92	46
38	221160	6.34	0.163	1.03	61.99	3.72	216	1.10	65.8	3.95	230	(6-40)	0.78	1.01	(1000)	141	94	47
39	226980	6.51	0.161	1.05	62.84	3.77	219	1.10	65.8	3.95	230	(6-40)	0.79	1.02	(1000)	143	95	48
40	232800	6.67	0.159	1.06	63.65	3.82	222	1.10	65.8	3.95	230	(6-40)	0.80	1.03	(1000)	144	96	48
41	238620	6.84	0.158	1.08	64.84	3.89	226	1.10	65.8	3.95	230	(6-40)	0.81	1.05	(1000)	147	98	49
42	244440	7.01	0.156	1.09	65.58	3.93	229	1.10	65.8	3.95	230	(6-40)	0.82	1.07	(1000)	149	99	50
43	250260	7.17	0.155	1.11	66.71	4.00	233	1.10	65.8	3.95	230	(6-40)	0.83	1.08	(1000)	151	101	50
44	256080	7.34	0.154	1.13	67.82	4.07	237	1.31	78.8	4.73	275	(6-50)	0.85	1.10	(1500)	154	103	51
45	261900	7.51	0.152	1.14	68.46	4.11	239	1.31	78.8	4.73	275	(6-50)	0.86	1.11	(1500)	155	104	52
46	267720	7.67	0.151	1.16	69.52	4.17	243	1.31	78.8	4.73	275	(6-50)	0.87	1.13	(1500)	158	105	53
47	273540	7.84	0.150	1.18	70.56	4.23	246	1.31	78.8	4.73	275	(6-50)	0.88	1.15	(1500)	160	107	53
48	279360	8.01	0.149	1.19	71.58	4.29	250	1.31	78.8	4.73	275	(6-50)	0.89	1.16	(1500)	162	108	54
49	285180	8.17	0.148	1.21	72.58	4.35	253	1.31	78.8	4.73	275	(6-50)	0.91	1.18	(1500)	165	110	55
50	291000	8.34	0.146	1.22	73.06	4.38	255	1.31	78.8	4.73	275	(6-50)	0.91	1.19	(1500)	166	110	55
51	296820	8.51	0.145	1.23	74.01	4.44	258	1.31	78.8	4.73	275	(6-50)	0.93	1.20	(1500)	168	112	56
52	302640	8.67	0.144	1.25	74.94	4.50	261	1.31	78.8	4.73	275	(6-50)	0.94	1.22	(1500)	170	113	57
53	308460	8.84	0.143	1.26	75.86	4.55	265	1.31	78.8	4.73	275	(6-50)	0.95	1.23	(1500)	172	115	57
54	314280	9.01	0.142	1.28	76.75	4.60	268	1.31	78.8	4.73	275	(6-50)	0.96	1.25	(1500)	174	116	58

Residential units standard apartment according to DIN 4708	Peak heat demand standard apartment according to DIN 4708 with preparation 10 min	Sum flow rate domestic hot water calculation flow rate according to DIN 4708	Simultaneity factor according to DIN 4708	Peak flow rate (DHW)	Peak flow rate (DHW)	Peak flow rate (DHW)	Peak output (DHW)	Peak flow rate TransTherm® aqua F (DHW)	Peak flow rate TransTherm® aqua F (DHW)	Peak flow rate TransTherm® aqua F (DHW)	DHW calorifier output TransTherm® aqua F	TransTherm® aqua F	Required hot water volume at 70/30 °C (40 K)	Required hot water buffer storage tank volume at 70/30 °C (40 K)	Hot water buffer storage tank 1 EnerVal	Required recharging capacity	Required recharging capacity	Required recharging capacity
N	Preparation	∑ VR at DHW 60 °C	g	$\dot{V}s$ at DHW 60 °C	$\dot{V}s$ at DHW 60 °C	$\dot{V}s$ at DHW 60 °C		$\dot{V}s$ at DHW 60 °C	$\dot{V}s$ at DHW 60 °C	$\dot{V}s$ at DHW 60 °C	Q at HT 70/30 °C DHW 10/60 °C	Type			Type	Time: 20 min 70/30 °C (40 K)	Time: 30 min 70/30 °C (40 K)	Time: 60 min 70/30 °C (40 K)
	[Wh]	[l/s]		[l/s]	[l/min]	[m³/h]	[kW]	[l/s]	[l/min]	[m³/h]	[kW]		[m³]	[m³]		[kW]	[kW]	[kW]
55	320100	9.17	0.141	1.29	77.62	4.66	271	1.31	78.8	4.73	275	(6-50)	0.97	1.26	(1500)	176	117	59
56	325920	9.34	0.140	1.31	78.47	4.71	274	1.31	78.8	4.73	275	(6-50)	0.98	1.28	(1500)	178	119	59
57	331740	9.51	0.140	1.33	79.87	4.79	279	1.31	78.8	4.73	275	(6-50)	1.00	1.30	(1500)	181	121	60
58	337560	9.67	0.139	1.34	80.69	4.84	282	1.69	101.2	6.07	350	(6-60)	1.01	1.31	(1500)	183	122	61
59	343380	9.84	0.138	1.36	81.49	4.89	284	1.69	101.2	6.07	350	(6-60)	1.02	1.32	(1500)	185	123	62
60	349200	10.01	0.137	1.37	82.27	4.94	287	1.69	101.2	6.07	350	(6-60)	1.03	1.34	(1500)	187	124	62
61	355020	10.18	0.136	1.38	83.03	4.98	290	1.69	101.2	6.07	350	(6-60)	1.04	1.35	(1500)	188	126	63
62	360840	10.34	0.135	1.40	83.77	5.03	292	1.69	101.2	6.07	350	(6-60)	1.05	1.36	(1500)	190	127	63
63	366660	10.51	0.135	1.42	85.12	5.11	297	1.69	101.2	6.07	350	(6-60)	1.06	1.38	(1500)	193	129	64
64	372480	10.68	0.134	1.43	85.83	5.15	299	1.69	101.2	6.07	350	(6-60)	1.07	1.40	(1500)	195	130	65
65	378300	10.84	0.133	1.44	86.52	5.19	302	1.69	101.2	6.07	350	(6-60)	1.08	1.41	(1500)	196	131	65
66	384120	11.01	0.132	1.45	87.19	5.23	304	1.69	101.2	6.07	350	(6-60)	1.09	1.42	(1500)	198	132	66
67	389940	11.18	0.132	1.48	88.52	5.31	309	1.69	101.2	6.07	350	(6-60)	1.11	1.44	(1500)	201	134	67
68	395760	11.34	0.131	1.49	89.16	5.35	311	1.69	101.2	6.07	350	(6-60)	1.11	1.45	(1500)	202	135	67
69	401580	11.51	0.130	1.50	89.78	5.39	313	1.69	101.2	6.07	350	(6-60)	1.12	1.46	(1500)	204	136	68
70	407400	11.68	0.130	1.52	91.08	5.46	318	1.69	101.2	6.07	350	(6-60)	1.14	1.48	(1500)	207	138	69
71	413220	11.84	0.129	1.53	91.67	5.50	320	1.69	101.2	6.07	350	(6-60)	1.15	1.49	(1500)	208	139	69
72	419040	12.01	0.128	1.54	92.24	5.53	322	1.69	101.2	6.07	350	(6-60)	1.15	1.50	(1500)	209	139	70
73	424860	12.18	0.128	1.56	93.52	5.61	326	1.69	101.2	6.07	350	(6-60)	1.17	1.52	(1500)	212	141	71
74	430680	12.34	0.127	1.57	94.06	5.64	328	1.69	101.2	6.07	350	(6-60)	1.18	1.53	(1500)	213	142	71
75	436500	12.51	0.127	1.59	95.33	5.72	333	1.69	101.2	6.07	350	(6-60)	1.19	1.55	(1500)	216	144	72
76	442320	12.68	0.126	1.60	95.84	5.75	334	1.69	101.2	6.07	350	(6-60)	1.20	1.56	(1500)	217	145	72
77	448140	12.84	0.126	1.62	97.10	5.83	339	1.69	101.2	6.07	350	(6-60)	1.21	1.58	(1500)	220	147	73
78	453960	13.01	0.125	1.63	97.58	5.86	340	1.69	101.2	6.07	350	(6-60)	1.22	1.59	(1500)	221	148	74
79	459780	13.18	0.124	1.63	98.04	5.88	342	1.69	101.2	6.07	350	(6-60)	1.23	1.59	(1500)	222	148	74
80	465600	13.34	0.124	1.65	99.29	5.96	346	1.69	101.2	6.07	350	(6-60)	1.24	1.61	(2000)	225	150	75
81	471420	13.51	0.123	1.66	99.72	5.98	348	1.69	101.2	6.07	350	(6-60)	1.25	1.62	(2000)	226	151	75
82	477240	13.68	0.123	1.68	100.95	6.06	352	1.69	101.2	6.07	350	(6-60)	1.26	1.64	(2000)	229	153	76
83	483060	13.85	0.122	1.69	101.35	6.08	354	1.69	101.2	6.07	350	(6-60)	1.27	1.65	(2000)	230	153	77
84	488880	14.01	0.122	1.71	102.57	6.15	358	2.17	130.0	7.80	450	(6-70)	1.28	1.67	(2000)	233	155	78
85	494700	14.18	0.121	1.72	102.94	6.18	359	2.17	130.0	7.80	450	(6-70)	1.29	1.67	(2000)	233	156	78
86	500520	14.35	0.121	1.74	104.15	6.25	363	2.17	130.0	7.80	450	(6-70)	1.30	1.69	(2000)	236	157	79
87	506340	14.51	0.120	1.74	104.49	6.27	365	2.17	130.0	7.80	450	(6-70)	1.31	1.70	(2000)	237	158	79
88	512160	14.68	0.120	1.76	105.69	6.34	369	2.17	130.0	7.80	450	(6-70)	1.32	1.72	(2000)	240	160	80
89	517980	14.85	0.120	1.78	106.89	6.41	373	2.17	130.0	7.80	450	(6-70)	1.34	1.74	(2000)	242	162	81
90	523800	15.01	0.119	1.79	107.19	6.43	374	2.17	130.0	7.80	450	(6-70)	1.34	1.74	(2000)	243	162	81
91	529620	15.18	0.119	1.81	108.38	6.50	378	2.17	130.0	7.80	450	(6-70)	1.36	1.76	(2000)	246	164	82
92	535440	15.35	0.118	1.81	108.65	6.52	379	2.17	130.0	7.80	450	(6-70)	1.36	1.77	(2000)	246	164	82
93	541260	15.51	0.118	1.83	109.83	6.59	383	2.17	130.0	7.80	450	(6-70)	1.37	1.79	(2000)	249	166	83
94	547080	15.68	0.117	1.83	110.07	6.60	384	2.17	130.0	7.80	450	(6-70)	1.38	1.79	(2000)	250	166	83
95	552900	15.85	0.117	1.85	111.25	6.67	388	2.17	130.0	7.80	450	(6-70)	1.39	1.81	(2000)	252	168	84
96	558720	16.01	0.117	1.87	112.42	6.74	392	2.17	130.0	7.80	450	(6-70)	1.41	1.83	(2000)	255	170	85
97	564540	16.18	0.116	1.88	112.62	6.76	393	2.17	130.0	7.80	450	(6-70)	1.41	1.83	(2000)	255	170	85
98	570360	16.35	0.116	1.90	113.78	6.83	397	2.17	130.0	7.80	450	(6-70)	1.42	1.85	(2000)	258	172	86
99	576180	16.51	0.116	1.92	114.94	6.90	401	2.17	130.0	7.80	450	(6-70)	1.44	1.87	(2000)	261	174	87
100	582000	16.68	0.115	1.92	115.10	6.91	402	2.17	130.0	7.80	450	(6-70)	1.44	1.87	(2000)	261	174	87

Performance data

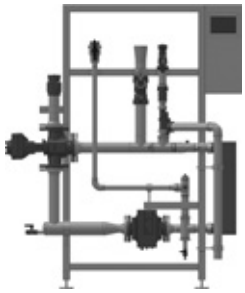
TransTherm® aqua F (6-60)

Performance data		Q	VS	VS	VS	Energy storage tank
primary	secondary	kW	l/s	l/min	m³/h	min. content in l [1]
70 °C/30 °C	10 °C/60 °C	350	1.67	100.33	6.02	1405
65 °C/30 °C	10 °C/60 °C	220	1.05	63.07	3.78	883
65 °C/30 °C	10 °C/55 °C	315	1.67	100.33	6.02	1405
65 °C/30 °C	10 °C/50 °C	280	1.67	100.33	6.02	1405
60 °C/30 °C	10 °C/55 °C	255	1.35	81.22	4.87	1137
60 °C/30 °C	10 °C/50 °C	280	1.67	100.33	6.02	1405
55 °C/30 °C	10 °C/50 °C	230	1.37	82.42	4.95	1154
55 °C/30 °C	10 °C/45 °C	245	1.67	100.33	6.02	1405



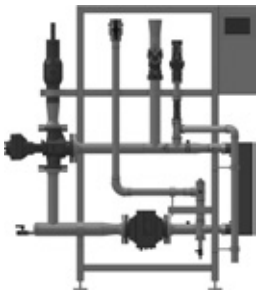
TransTherm® aqua F (6-70)

Performance data		Q	VS	VS	VS	Energy storage tank
primary	secondary	kW	l/s	l/min	m³/h	min. content in l [1]
70 °C/30 °C	10 °C/60 °C	450	2.15	129.00	7.74	1806
65 °C/30 °C	10 °C/60 °C	280	1.34	80.27	4.82	1124
65 °C/30 °C	10 °C/55 °C	405	2.15	129.00	7.74	1806
65 °C/30 °C	10 °C/50 °C	360	2.15	129.00	7.74	1806
60 °C/30 °C	10 °C/55 °C	320	1.70	101.93	6.12	1427
60 °C/30 °C	10 °C/50 °C	360	2.15	129.00	7.74	1806
55 °C/30 °C	10 °C/50 °C	290	1.73	103.92	6.24	1455
55 °C/30 °C	10 °C/45 °C	315	2.15	129.00	7.74	1806



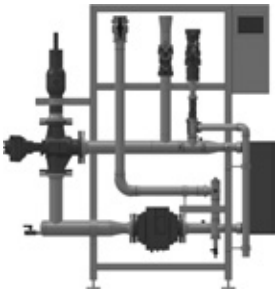
TransTherm® aqua F (6-80)

Performance data		Q	VS	VS	VS	Energy storage tank
primary	secondary	kW	l/s	l/min	m³/h	min. content in l [1]
70 °C/30 °C	10 °C/60 °C	580	2.77	166.27	9.98	2328
65 °C/30 °C	10 °C/60 °C	380	1.82	108.93	6.54	1525
65 °C/30 °C	10 °C/55 °C	530	2.81	168.81	10.13	2363
65 °C/30 °C	10 °C/50 °C	490	2.93	175.58	10.54	2458
60 °C/30 °C	10 °C/55 °C	420	2.23	133.78	8.03	1873
60 °C/30 °C	10 °C/50 °C	485	2.90	173.79	10.43	2433
55 °C/30 °C	10 °C/50 °C	380	2.27	136.17	8.17	1906
55 °C/30 °C	10 °C/45 °C	430	2.93	176.10	10.57	2465



TransTherm® aqua F (6-90)

Performance data		Q	VS	VS	VS	Energy storage tank
primary	secondary	kW	l/s	l/min	m³/h	min. content in l [1]
70 °C/30 °C	10 °C/60 °C	700	3.34	200.67	12.04	2809
65 °C/30 °C	10 °C/60 °C	520	2.48	149.07	8.94	2087
65 °C/30 °C	10 °C/55 °C	630	3.34	200.67	12.04	2809
65 °C/30 °C	10 °C/50 °C	560	3.34	200.67	12.04	2809
60 °C/30 °C	10 °C/55 °C	530	2.81	168.81	10.13	2363
60 °C/30 °C	10 °C/50 °C	560	3.34	200.67	12.04	2809
55 °C/30 °C	10 °C/50 °C	480	2.87	172.00	10.32	2408
55 °C/30 °C	10 °C/45 °C	490	3.34	200.67	12.04	2809



[1] The calculation for the content of the energy storage tank depends on the temperature spread.
Here, 0.7 has been set for the temperature spread and 2 for short non-draw-off times. See calculation of the required buffer volume

Performance data

Calculation of the required buffer volume

In order to provide the required energy for domestic water heating, a fresh water station is generally connected to a heating water puffer tank. The volume of the heating water buffer tank is determined by the domestic hot water requirement of the installation, the storage temperature in the heating water buffer tank and the user behaviour.

VP = V x t x (Tp/Tww) x Sn

VP	Required minimum volume of the heating water buffer tank
V	Calculated peak flow of the fresh water module
t	Time for which the peak flow is required. The value can be gear towards, for example the duration of the tub filling, user information or the standard value from DIN 4708 (10 min.)
(Tp/Tww)	For the temperature spread between the heating water buffer tank and domestic water
	0.5 for a high temperature spread (e.g. 90/45 °C)
	0.7 for a medium temperature spread (e.g. 70/45 °C)
	1 for a low temperature spread (e.g. 55/45 °C)
Sn	Safety factor for observing user behaviour
	1 normal non-draw-off times
	2 short non-draw-off times
	3…4 very short non-draw-off times

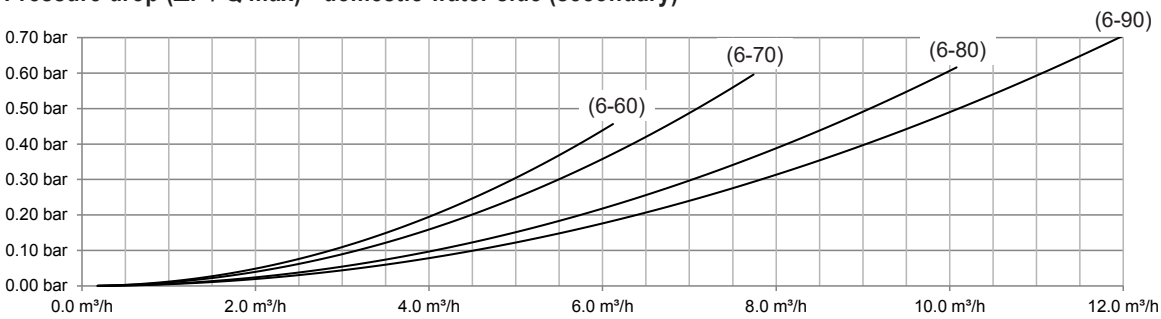
Example calculation

VP	V	t	(Tp/Tww)	Sn
(l)	(l/min)	(min)		
1576	78.8	10.0	1.0	2.0

Result

Input

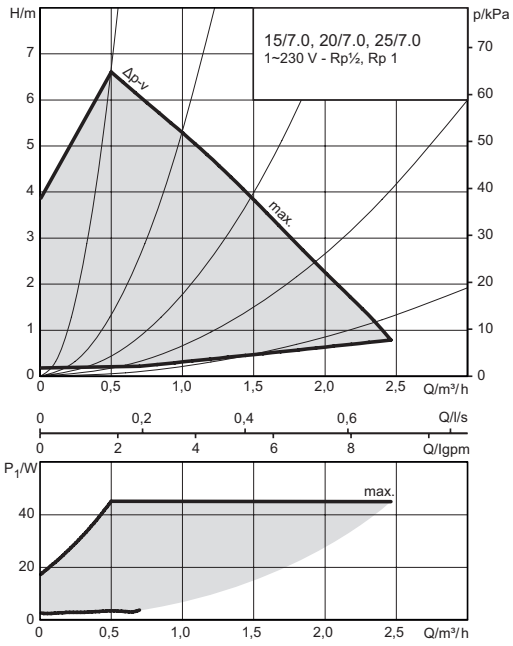
Pressure drop (ΔP / Q max) - domestic water side (secondary)



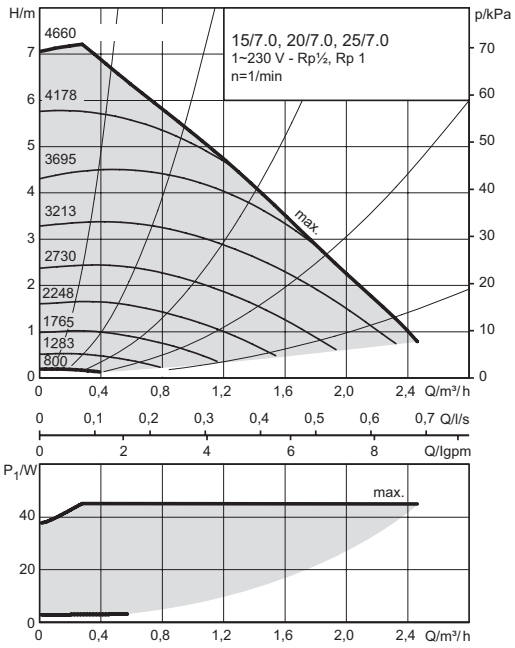
Circulating pump characteristic curves

for circulation set ¾"

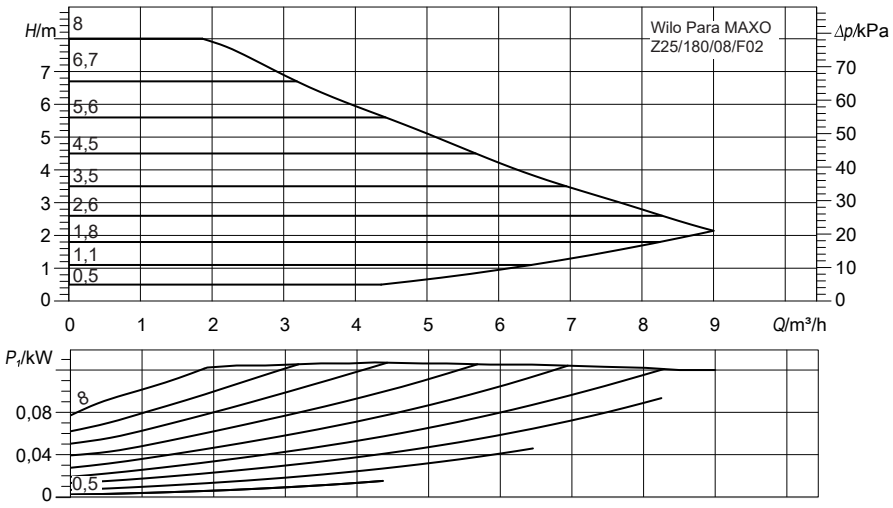
Δp-v (variable)



Constant speed

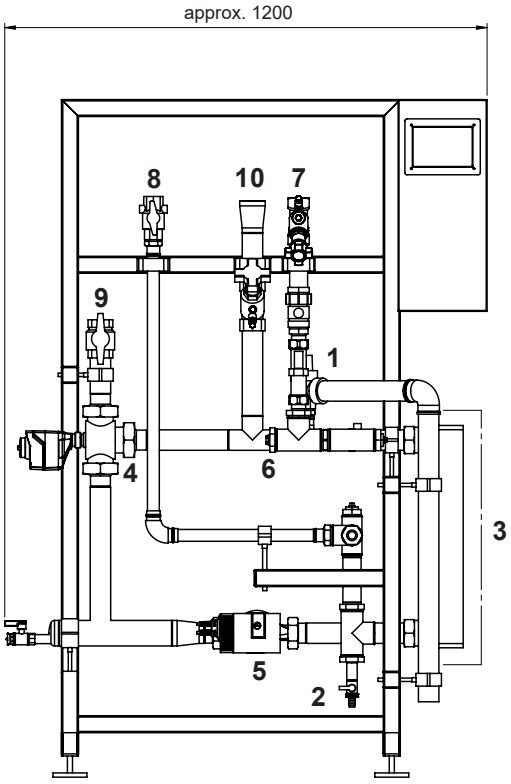


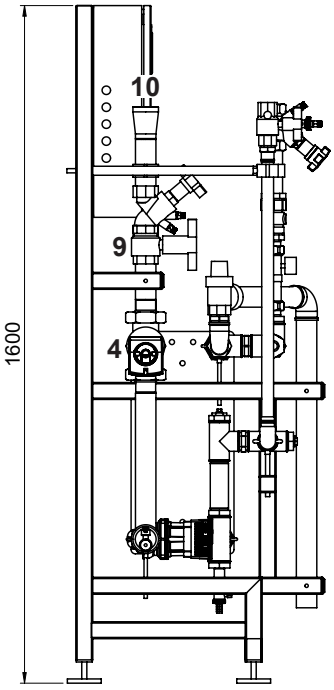
for circulation set 1" and 1 ¼"

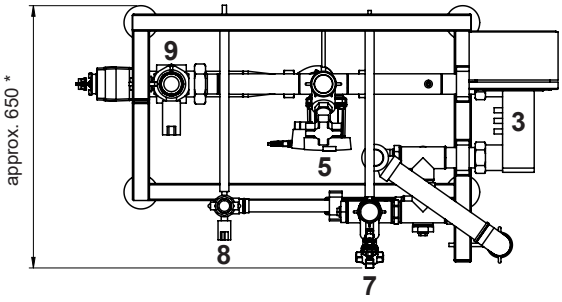


Charging module TransTherm® aqua F (6-60)

(Dimensions in mm)

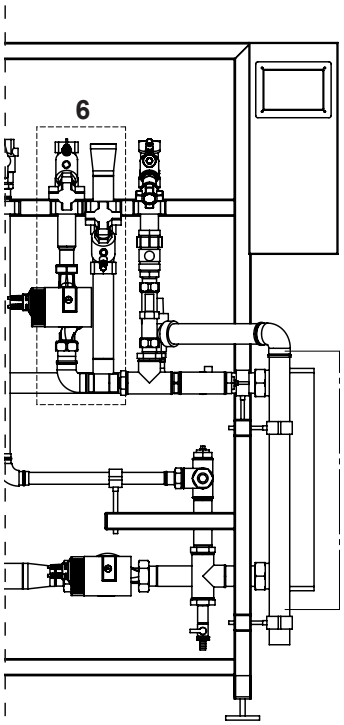






* with circulation 680

Version incl. circulation set

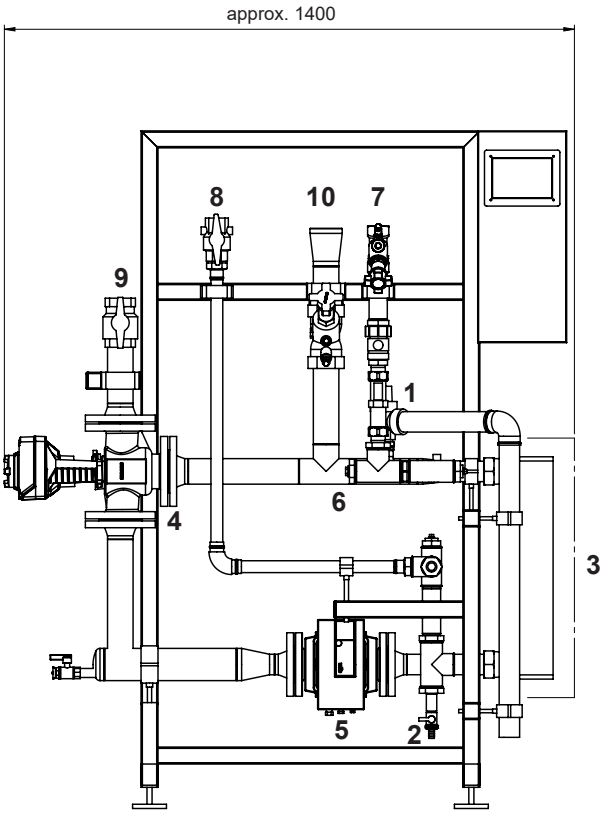


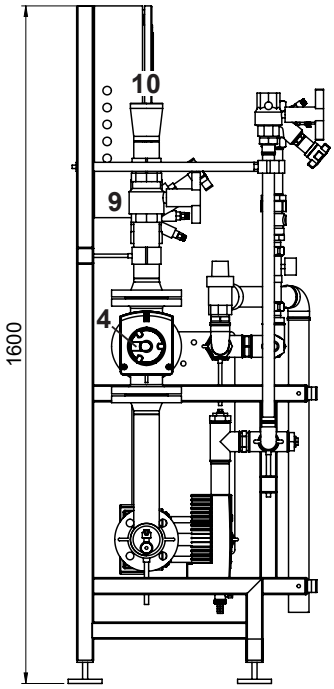
1	Safety valve Hot water 10 bar	
2	Filling/drain valve	
3	Heat exchanger	
4	Three-way valve	
5	Circulating pump	
6	Circulation	DN 32, Rp 1 ¼″ (DN 25, Rp 1″) (IT)
7	Cold water	DN 32, Rp 1 ¼″ (IT)
8	Hot water	DN 32, Rp 1 ¼″ (IT)
9	Flow heating water	DN 40, Rp 1 ½″ (IT)
10	Return heating water	DN 40, Rp 1 ½″ (IT)

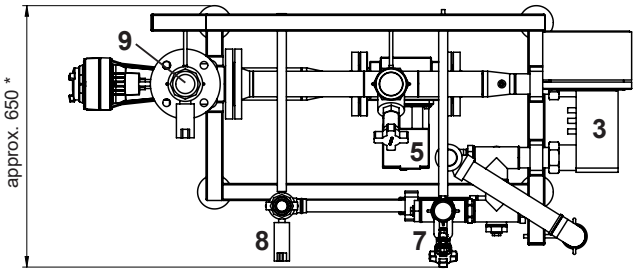
TransTherm® aqua F	Weight in kg
(6-60)	123

Charging module TransTherm® aqua F (6-70)

(Dimensions in mm)

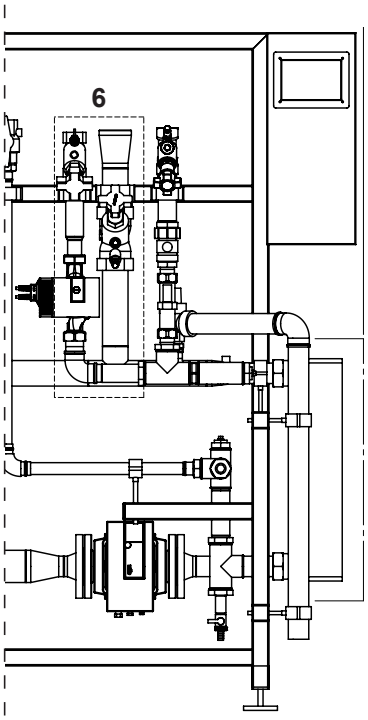






* with circulation 680

Version incl. circulation set

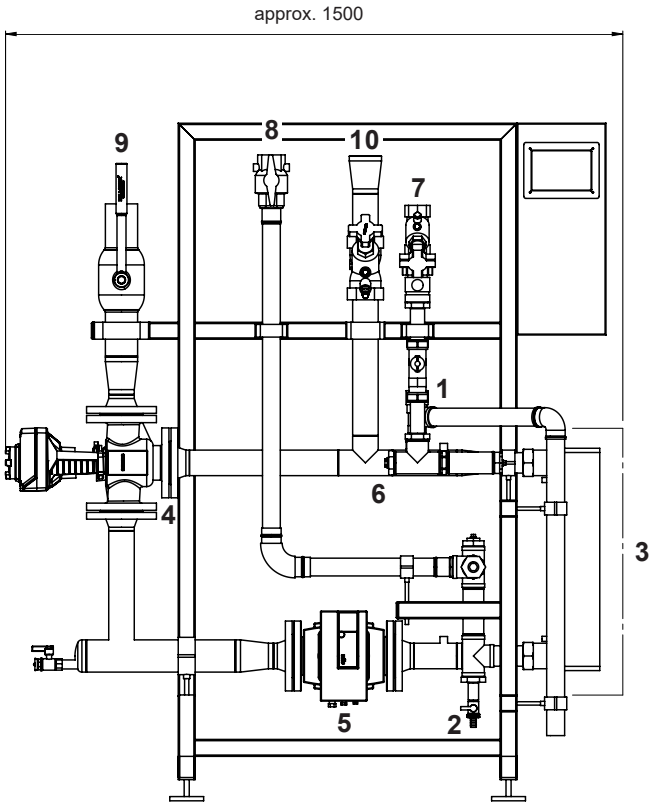


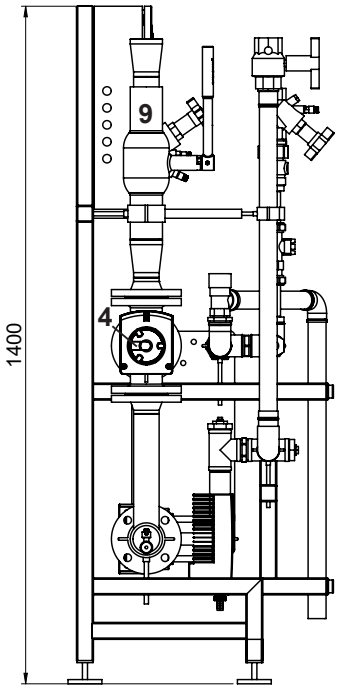
1	Safety valve Hot water 10 bar	
2	Filling/drain valve	
3	Heat exchanger	
4	Three-way valve	
5	Circulating pump	
6	Circulation	DN 32, Rp 1 ¼″ (DN 25, Rp 1″) (IT)
7	Cold water	DN 32, Rp 1 ¼″ (IT)
8	Hot water	DN 32, Rp 1 ¼″ (IT)
9	Flow heating water	DN 50, Rp 2″ (IT)
10	Return heating water	DN 50, Rp 2″ (IT)

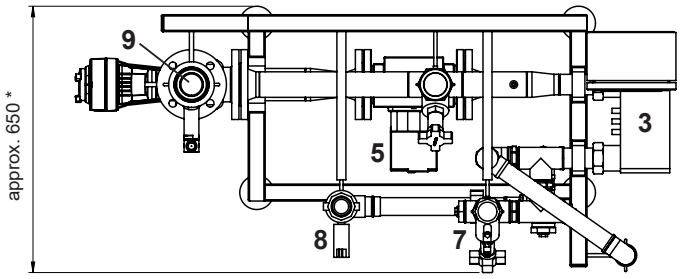
TransTherm® aqua F	Weight in kg
(6-70)	172

Charging module TransTherm® aqua F (6-80)

(Dimensions in mm)

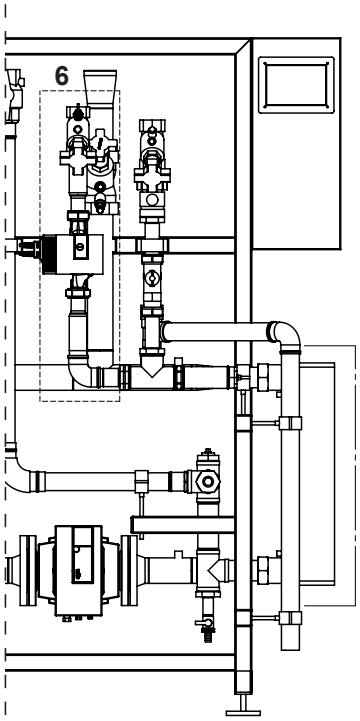






* with circulation 680

Version incl. circulation set

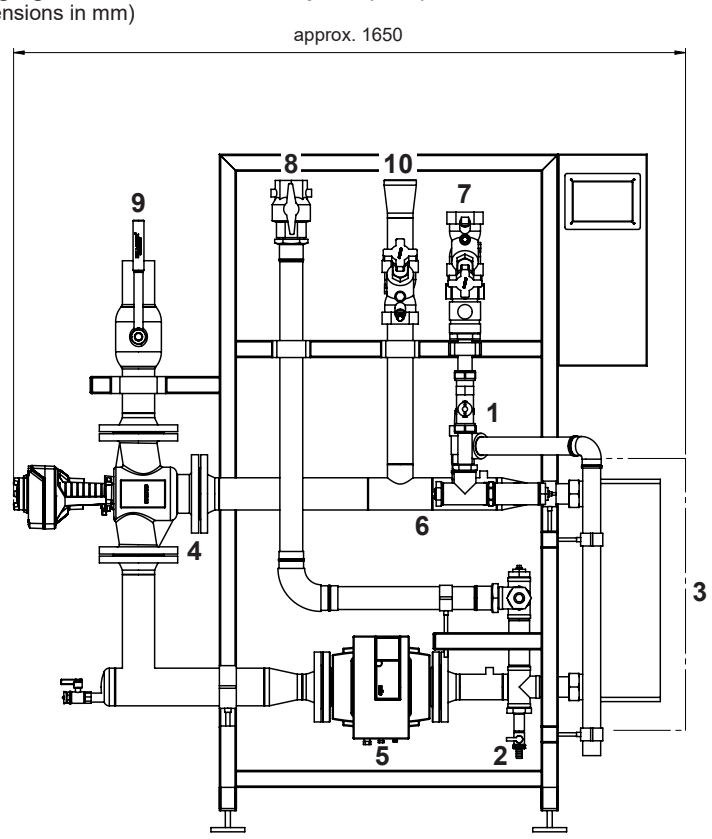


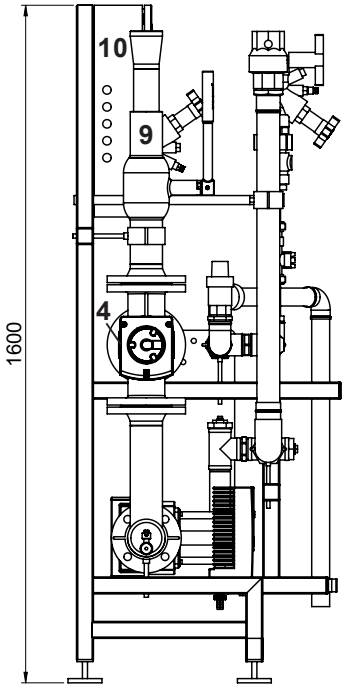
1	Safety valve Hot water 10 bar	
2	Filling/drain valve	
3	Heat exchanger	
4	Three-way valve	
5	Circulating pump	
6	Circulation	DN 32, Rp 1 ¼″ (DN 25, Rp 1″) (IT)
7	Cold water	DN 40, Rp 1 ½″ (IT)
8	Hot water	DN 40, Rp 1 ½″ (IT)
9	Flow heating water	DN 65 AE (weld-on end)
10	Return heating water	DN 65 AE (weld-on end)

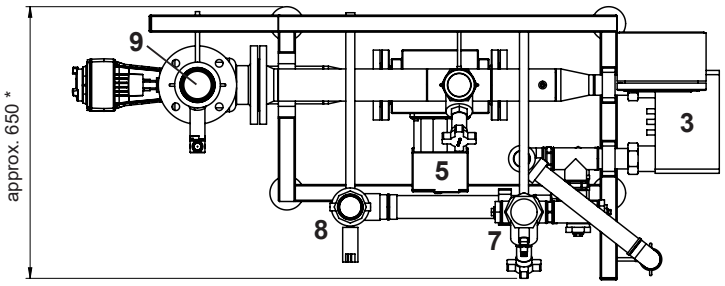
TransTherm® aqua F	Weight in kg
(6-80)	202

Charging module TransTherm® aqua F (6-90)

(Dimensions in mm)

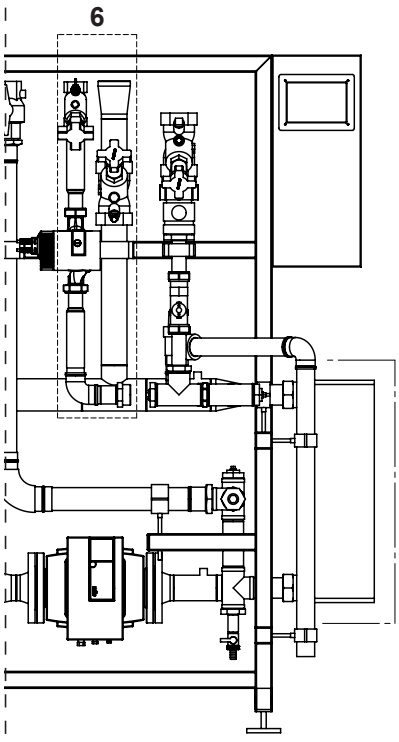






* with circulation 700

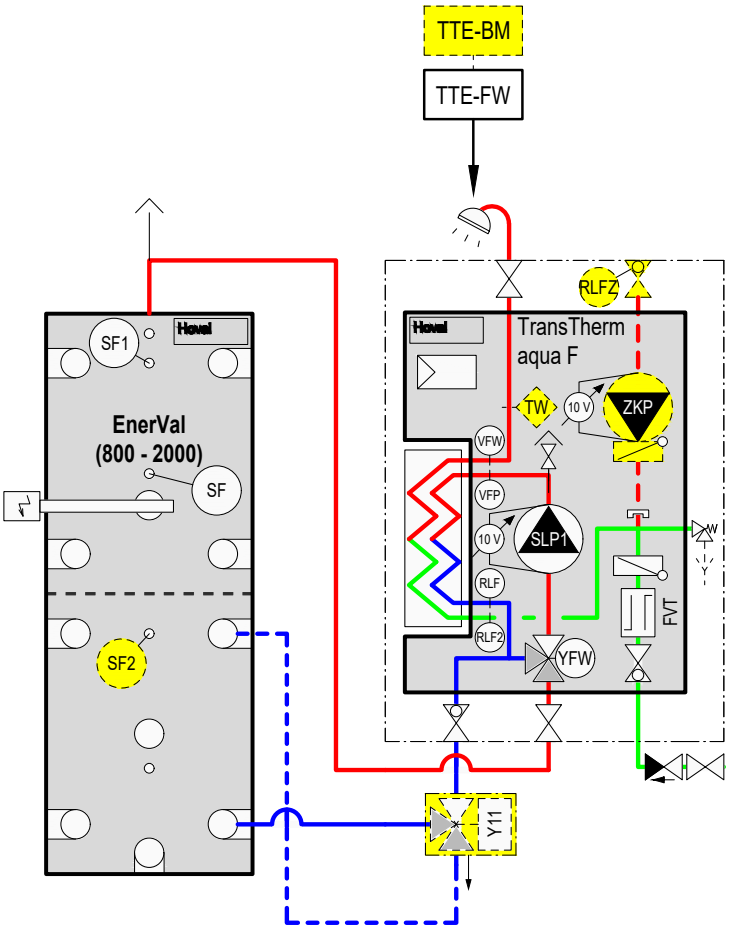
Version incl. circulation set



1	Safety valve Hot water 10 bar	
2	Filling/drain valve	
3	Heat exchanger	
4	Three-way valve	
5	Circulating pump	
6	Circulation	DN 32, Rp 1 ¼″ (DN 25, Rp 1″) (IT)
7	Cold water	DN 50, Rp 2″ (IT)
8	Hot water	DN 50, Rp 2″ (IT)
9	Flow heating water	DN 65 AE (weld-on end)
10	Return heating water	DN 65 AE (weld-on end)

TransTherm® aqua F	Weight in kg
(6-90)	214

Water heating
TransTherm® aqua F



TTE-FW	Basic module district heating/fresh water
TW	Flow temperature monitor (if required)
VFP	Flow sensor primary
VFW	Flow sensor DHW
RLF	Return sensor primary
RLF2	Return sensor cold water
SF	Calorifier sensor
SF1	Calorifier sensor 1
RLFZ	Circulation sensor
SLP1	Calorifier charging pump primary
FVT	Flow rate sensor
YFW	Three-way valve with actuator
ZKP	Recirculation pump
Y11	Return switching with actuator

Option

BM	TopTronic® E control module
SF2	Calorifier sensor 2