

Layered tank
Solar layered tank
Hygienic layered tank
Modular layered tank
Hot water tank



NEW:

NEOPOR AND FLEECE
INSULATION SENSOR
TERMINAL STRIP
ADJUSTABLE FEET

Energy management perfected

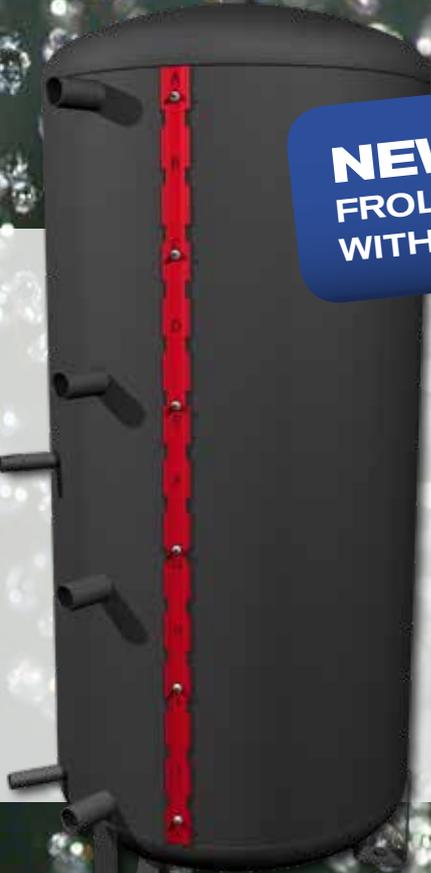
Froling has been working on the efficient use of wood as a source of energy for over fifty years. Today the name Froling stands for modern biomass heating technology. Froling firewood, wood chip and pellet boilers can be found successfully in operation all over Europe. All of our products are manufactured in our factories in Austria and Germany, and our extensive service network ensures that we can handle all inquires quickly.



Flexible applications

Froling tank systems are best used in combination with a pellet or wood chip boiler, but they can also be used with other heat sources such as an oil or gas boiler. An efficient solar panel system can also be integrated into solar layered tanks, the H3 hygienic solar layered tank and the FW modular solar layered tank. The solar power always takes priority thanks to the Froling Lambdatronic intelligent boiler controller management.





NEW: FROLING TANK SYSTEMS WITH SENSOR STRIP

Froling layered tanks have a terminal strip for optimal positioning of the sensors. This allows multiple sensors to be positioned at any height and moved without having to empty the tank. The labelling of the sensor strip and corresponding Froling connection diagrams makes the sensors extremely easy to position and offer lots of different options. The tank systems are also ideal for combining with other energy systems.

Correct positioning of the sensors on the terminal strip is crucial for optimal operation of the system!



NEW: ADJUSTABLE FEET



NEW: LAYER SEPARATING MODULE



NEW: SOLAR STATION

For more detailed information about the layer separating module and the solar station see page 27.

Size and function

Generous size for maximum convenience

The use of a storage tank, particularly in combination with a firewood boiler, is advantageous as it results in longer refilling intervals, a longer life, reduced fuel consumption and lower emissions. The required size of the storage tank depends on many factors, so we recommend that an expert carry out the calculations for you.

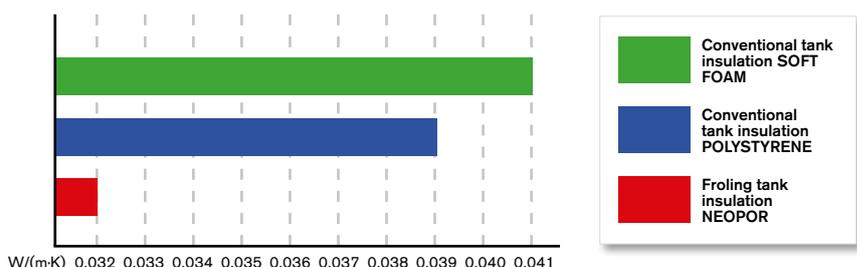
The use of a storage tank in combination with a pellet or wood chip system is not essential, but it is recommendable as it also offers many advantages such as a reduction in burner starts, a longer life of the system and lower emissions.



NEW: Neopor and fleece insulation

The new Froling tank insulation consists of 80 mm Neopor and 20 mm fleece, resulting in a layer of 100 mm. Neopor® is the latest version of the insulating material Styropor®. The foam polystyrene contains graphite particles which disperse the thermal radiation and thus reduce heat loss. Its thermoconductivity of approx. 0.032 W/(m·K) performs up to 20 percent more effectively than conventional insulation, resulting in around 20% less heat loss (improved energy yield).

Overview of insulation thermoconductivities [W/(m·K)]



The following rule of thumb can be used to make a rough estimate of the storage tank volume:

Firewood boiler

Recommended storage tank capacity: **approx. 55 - 100 l / kW***

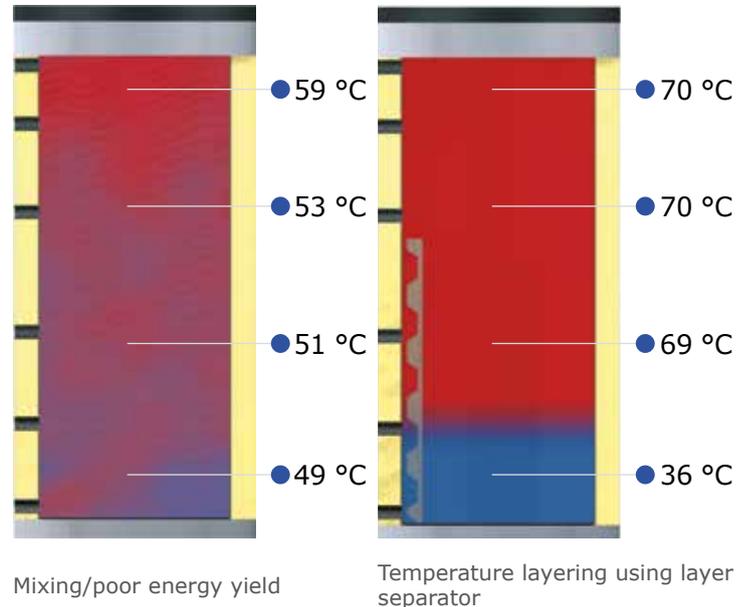
Pellet / wood chip systems

Recommended storage tank capacity: **approx. 25 - 35 l / kW***

*) Local laws, standards and regulations must also be taken into account when calculating storage tank capacities. Find out more about current legislation in your region at www.froeling.com.

Exact temperature layering in the tank

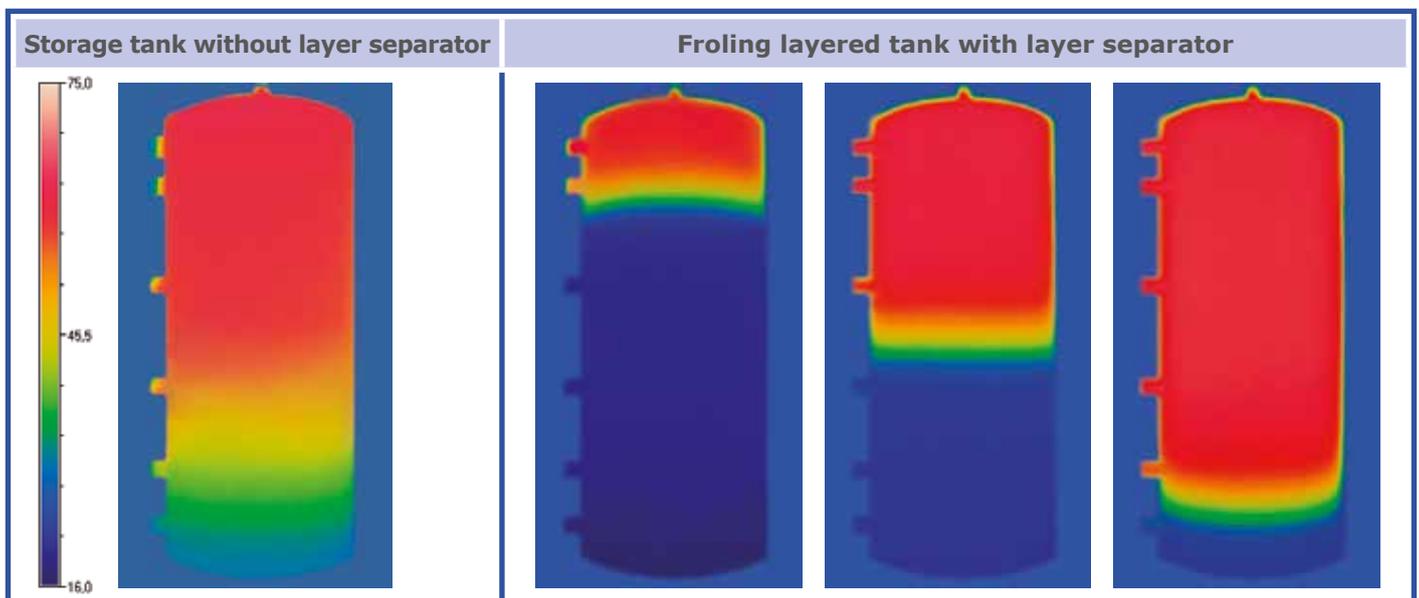
Precise temperature layering in the tank is crucial for optimal functioning, as it ensures that as much energy as possible can be reused. All Froling layered tanks feature a special layer separator developed for this purpose.



Incoming water (e.g. return) moves up through the layer separator and is then stored in there area where the water has a similar temperature. This ensures that there is an area with constant hot water.

Furthermore, the specially developed layer separator allows exact temperature layering and guarantees maximum energy yield and low running costs.

Comparison of hot water storage systems

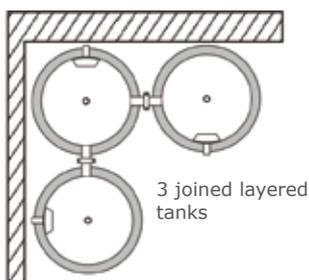


Simple integration

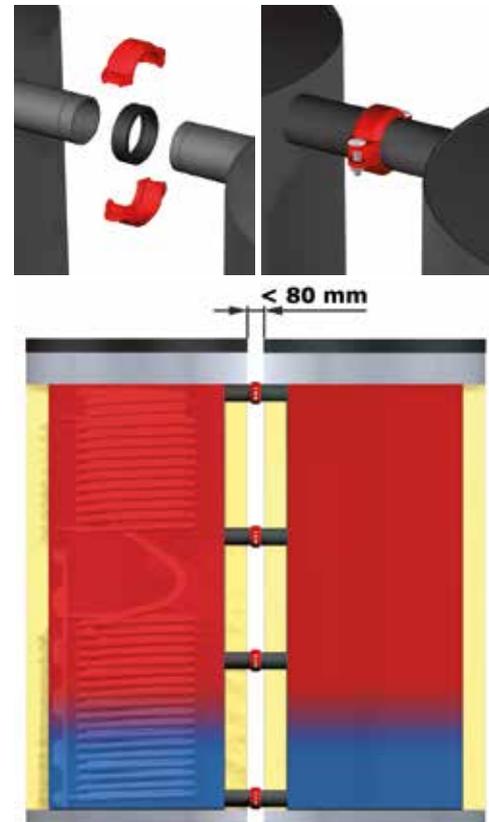
Joined layered tanks

Thanks to their intelligent measurements, Froling layered tanks can be easily installed in the boiler room. And in rooms with low ceilings, Froling offers even more.

Up to four short slim tanks can be joined together with exact temperature layering in all tanks. Another advantage is the fast and easy assembly with the tanks just 80 mm apart.

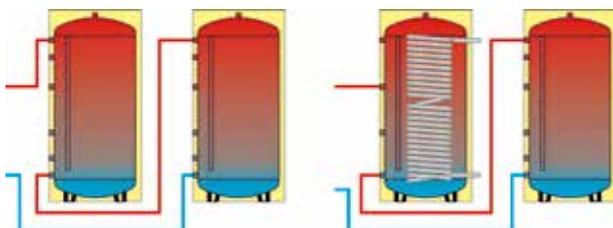


The layered tanks can either be set up in a row or at an angle: In this case the connection couplings are fitted to the layered tank in the middle at an angle of 90°.



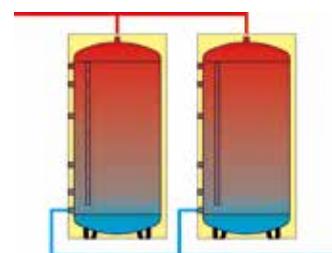
Serial connection of layered tanks

Serial connection



Layered tanks are expanded by connecting layered tanks in series, partly because it is possible to connect layered tanks of different sizes and partly because large distances or obstacles can be overcome. It is also possible to connect a solar system at any time with this option.

Tichelmann connection



Several layered tanks can also be linked in according to the Tichelmann principle. With this type of connection, an optimally regulated system is required to guarantee uniform loading and emptying of all layered tanks.

Efficient systems for all requirements

With its range of storage tank systems, Froeling offers the ideal solution for almost any situation. Froeling layered tanks make intelligent heating management and optimum heating support possible. If a solar system is to be built in, the Froeling solar layered tank, H3 hygienic solar layered tank and FW modular solar layered tank are ideal.

The Unicell NT-S ensures efficient domestic hot water heating, using solar energy if desired. Furthermore, Froeling offers compact comprehensive solutions for the boiler room thanks to its hygienic layered tank with integrated domestic hot water element and modular layered tank with fresh water module.



Types of tank

Overview of Froling tank systems

	Layered tank	Solar layered tank	H2 Hygienic layered tank	H3 Hygienic Solar Layered Tank	FW Modular Layered Tank	FW Modular Solar Layered Tank	Unicell NT-S water heater
							
Storage of surplus heat	✓	✓	✓	✓	✓	✓	
Precise temperature layering for high energy yield and affordable operating costs	✓	✓	✓	✓	✓	✓	
Optimal thermal insulation due to all-round CFC-free insulation	✓	✓	✓	✓	✓	✓	
Joined tank expansion in confined spaces	✓	✓	✓	✓	✓	✓	
Combination with other heat generators	✓	✓	✓	✓	✓	✓	✓
Integrated solar power		✓		✓		✓	✓
Domestic water heating			✓	✓	✓	✓	✓
Hot water tank and layered tank in one			✓	✓	✓	✓	
Hot water tank, layered tank and solar tank in one				✓		✓	
More information on...	page 9	page 9	page 13	page 13	page 17	page 17	page 21

Layered tanks / solar layered tanks



Layered tanks and solar layered tanks

The ingenuity is in the detail! Froling's layered tanks and solar layered tanks feature an impressive heat management concept, with optimal energy intake and withdrawal.

Integration of solar power for heating support

Froling's solar layered tank also makes it easy to integrate solar power. The tried and tested layer separator system ensures optimum use of solar energy and heating support.



Technical specifications

1 Feature: **high-quality insulation (100 mm) Neopor and fleece**

- Advantages:
- optimal thermal insulation
 - low radiant heat losses
 - **compliant with fire protection class B2**

The high-performance insulation with an outer jacket ensures optimum thermal insulation and low radiant heat loss, resulting in maximum efficiency.

2 Feature: **tried and tested layer separator system**

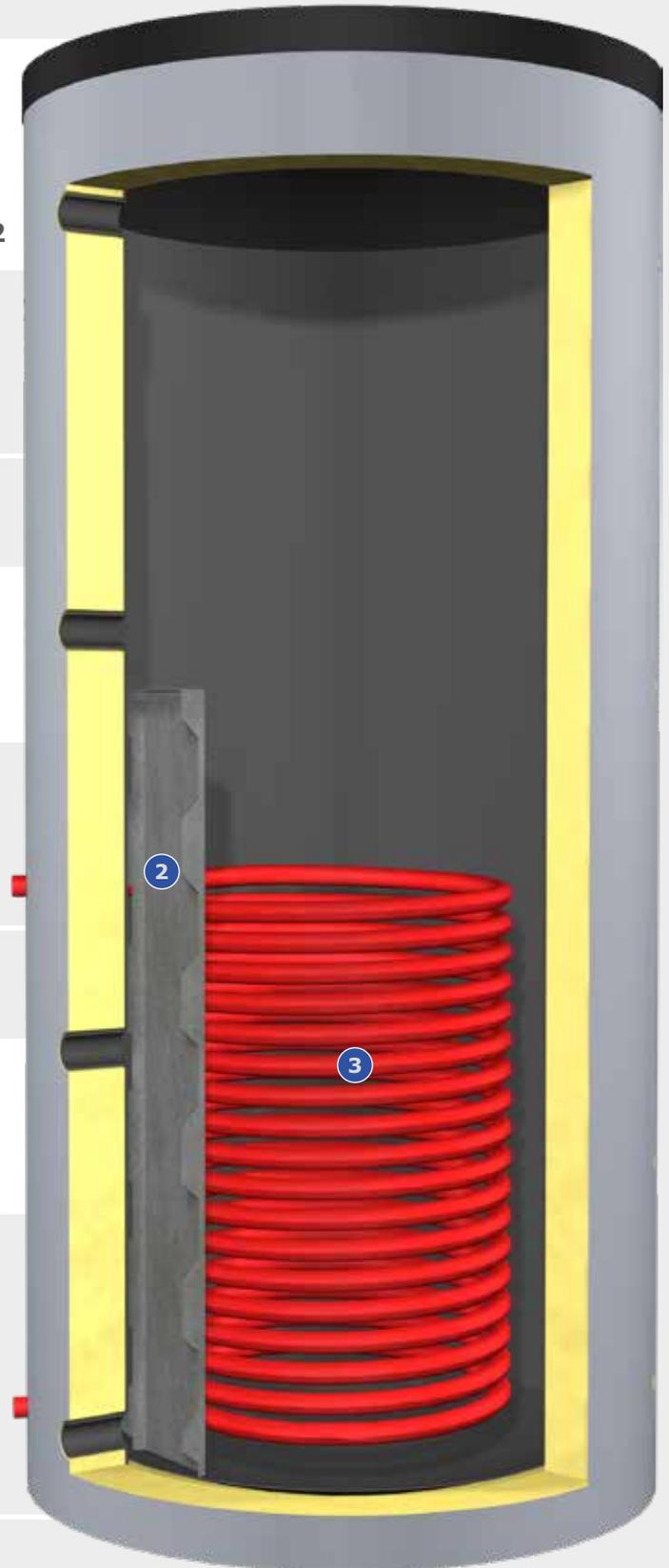
- Advantages:
- maximum energy yield
 - high flow rate

The tried and tested layer separator system ensures exact temperature layering in the tank, guaranteeing you an ideal energy yield and increased flow rate.

3 Feature: **high-performance solar element (only solar layered tanks)**

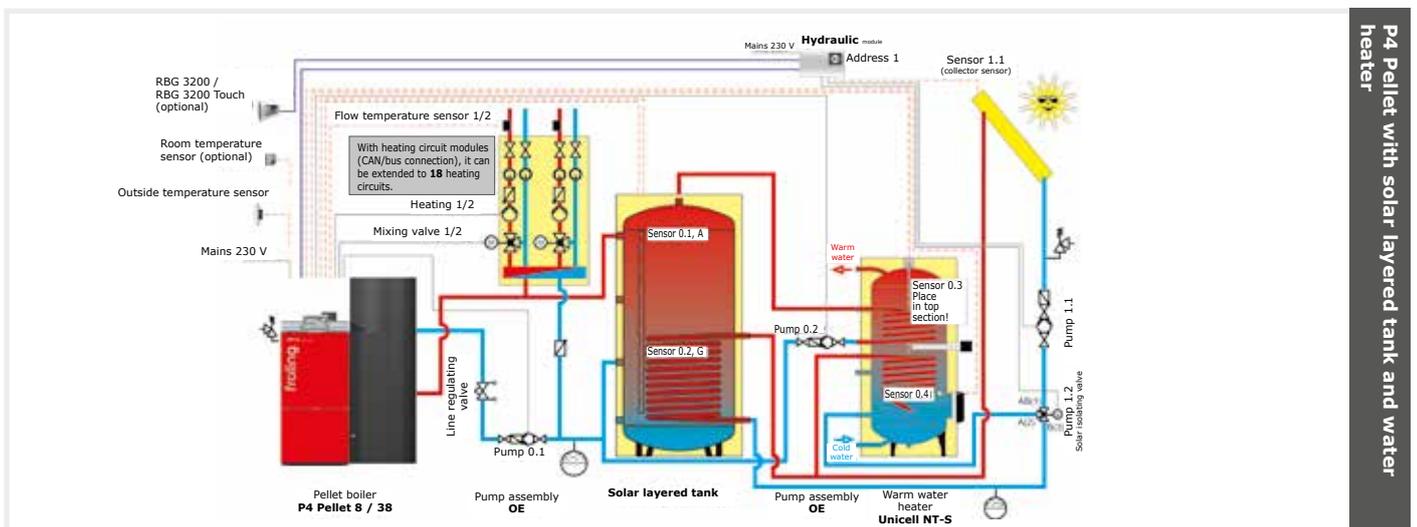
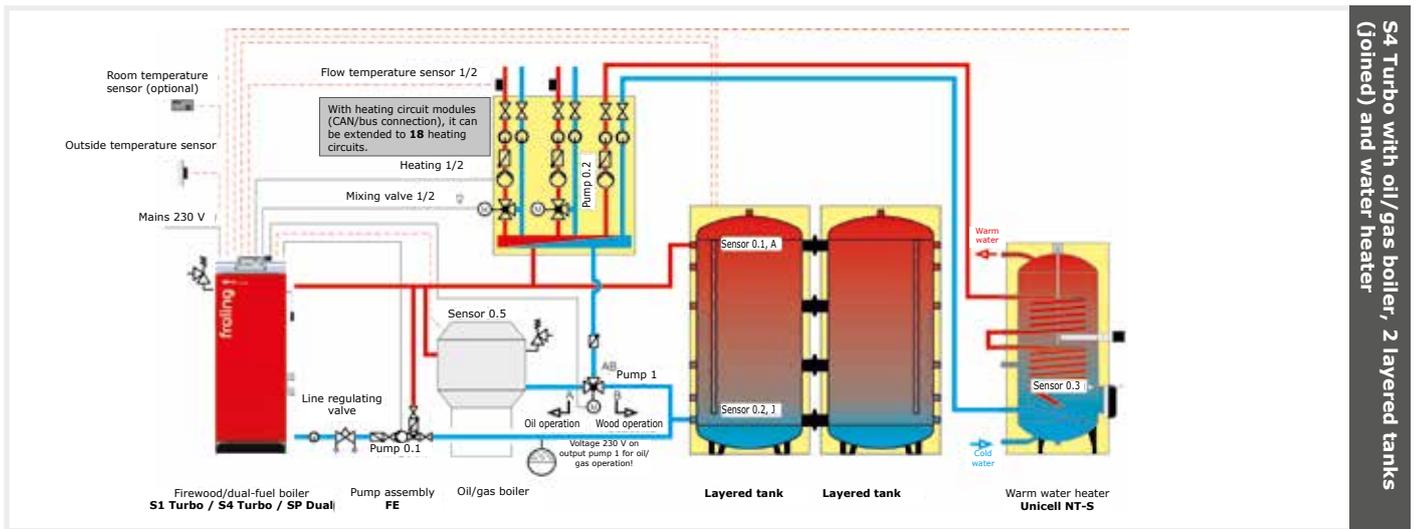
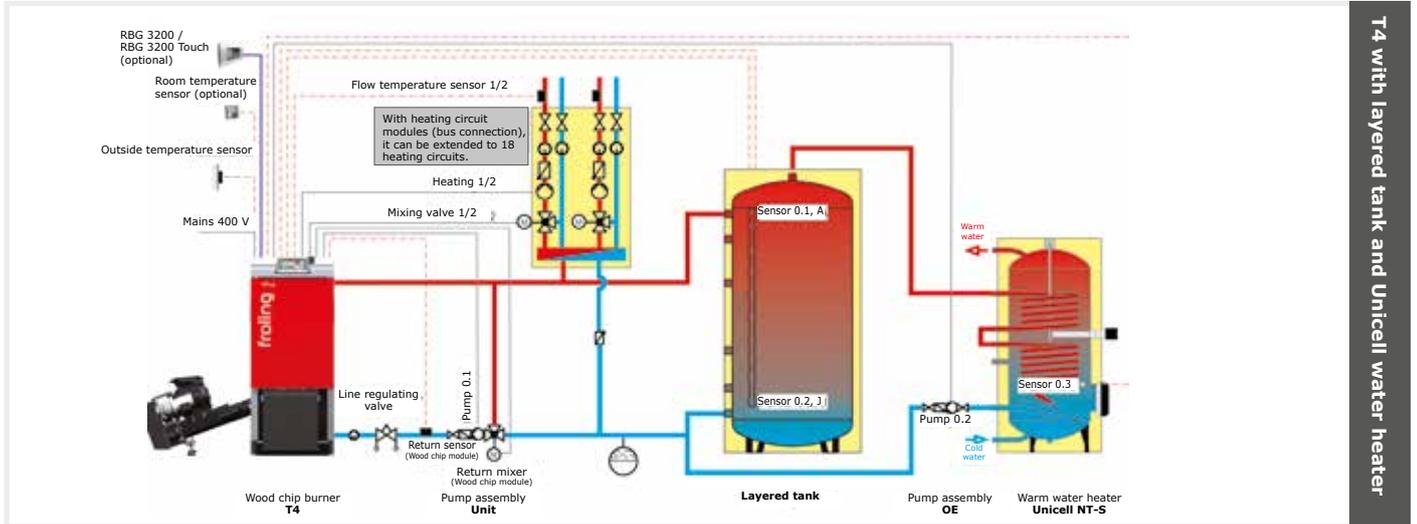
- Advantages:
- Perfect integration of solar power

The high-performance solar element ensures that the tank is loaded to full capacity when energy is available from the solar panel system. In case of lack of sun and low temperatures in the solar panel system, these low temperatures are layered at the bottom of the tank resulting in pre-heating of the cold area.

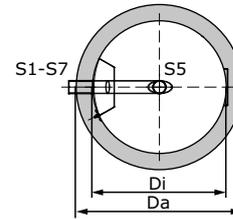
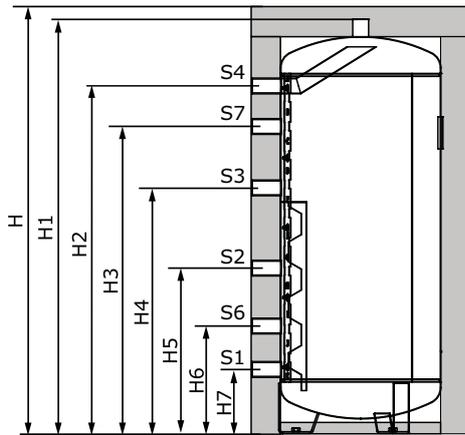


Layered tanks / solar layered tanks

Connection examples



Technical specifications - layered tanks



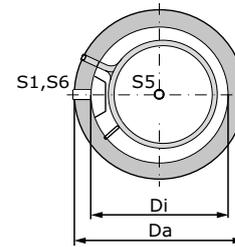
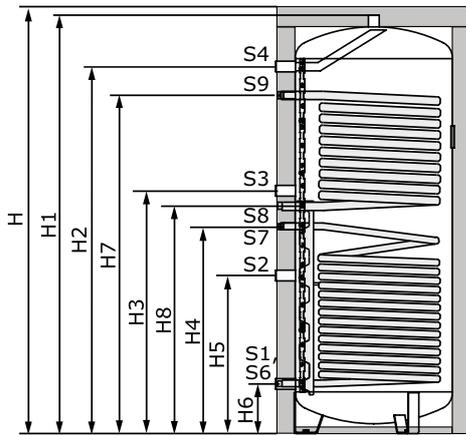
S1 - S7:	Heating connections	1 1/2" IT
F:	Sensor terminal strip items A - K	
SV:	Connections: combination tanks (only for combination tanks) Ø 76.1 mm 3 x SV with combination tanks 700, 850 4 x SV with combination tanks 1000 - 2000	
K:	2x flexible connection couplings Victaulic (only included with combination tank)	Type 75

Dimensions			300	500	700	850	1000	1250	1500	1700	2200
Do	Tank ø including insulation	mm	750	850	990	990	990	1150	1150	1300	1300
Di	Tank ø excluding insulation	mm	550	650	790	790	790	950	950	1100	1100
H	Height incl. insulation ¹	mm	1470	1690	1640	1950	2163	2000	2257	2120	2609
H1	Height excl. insulation ¹	mm	1430	1650	1600	1910	2123	1960	2217	2080	2569
H2	Height, flow connection ¹	mm	1200	1398	1336	1648	1862	1639	1897	1743	2228
H3	Height, flow connection ¹	mm	1060	1248	1186	1398	1612	1439	1697	1543	1978
H4	Height, flow connection ¹	mm	848	1000	929	1122	1332	1142	1347	1293	1596
H5	Height, return connection ¹	mm	571	643	611	712	801	767	810	834	934
H6	Height, return connection ¹	mm	371	393	405	452	452	510	510	534	534
H7	Height, return connection ¹	mm	221	243	255	252	252	310	310	334	334
Minimum width required		mm	560	660	800	800	800	960	960	1110	1110
Minimum store height (=tilting height)		mm	1450	1670	1620	1930	2140	2014	2245	2110	2595

Technical specifications			300	500	700	850	1000	1250	1500	1700	2200
Permitted operating pressure	bar										3
Permitted operating temperature	°C										95
Weight (empty)	kg		50	73	87	99	109	158	178	217	258
Energy efficiency class ²			B	B	-	-	-	-	-	-	-
Standing loss S ²	W		67	68.3	79.6	109.2	132.5	137.9	154.6	176.3	-
Standing losses Q _{st} as per EN 12897 ²	kWh/24 h		1.59	1.64	1.91	2.62	3.18	3.31	3.71	4.23	-
Storage volume ²	litres		296	474	675	826	931	1241	1403	1697	2168

1) If adjustable feet are fitted add 10 - 30 mm to the heights stated below depending on the setting
 2) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froling tank insulation

Technical specifications - solar layered tank



S1 - S5:	Heating connections	1 1/2" IT
S6 - S7:	Solar panel system connections	1" ET
S8 - S9:	Connections: solar panel system, 2nd element (alternatively with tanks 1000, 1250, 1500)	

Dimensions			700	850	1000	1250	1500	1700	2200
Do	Tank ø including insulation	mm	990	990	990	1150	1150	1300	1300
Di	Tank ø excluding insulation	mm	790	790	790	950	950	1100	1100
H	Height incl. insulation ¹	mm	1640	1950	2163	2200	2257	2120	2609
H1	Height excl. insulation ¹	mm	1600	1910	2123	1960	2217	2080	2569
H2	Height, flow connection ¹	mm	1336	1648	1862	1639	1897	1743	2228
H3	Height, flow connection ¹	mm	930	1122	1332	1142	1347	1293	1586
H4	Height, solar flow connection ¹	mm	795	940	940	998	1228	1252	1252
H5	Height, return connection ¹	mm	612	712	802	767	810	884	934
H6	Height, return/solar return connection ¹	mm	255	252	252	310	310	334	334
H7	Height, solar flow connection 2nd element ¹	mm	-	-	1232	1104	1357	-	-
H8	Height, solar return connection 2nd element ¹	mm	-	-	1727	1639	1897	-	-
Minimum width required		mm	800	800	800	960	960	1110	1110
Minimum store height (=tilting height)		mm	1620	1930	2140	2014	2245	2110	2595

Technical specifications			700	850	1000	1250	1500	1700	2200	
Permitted operating pressure	hot water side	bar	3							
Permitted operating pressure	solar element	bar	16							
Permitted operating temperature	hot water side	°C	95							
Permitted operating temperature	solar element	°C	110							
Heating surface	lower solar element	m ²	2.0	2.5	2.5	3	4	4	4	
Heating surface	upper solar element	m ²			1.8	2.4	2.4			
Solar collector area	optimum / maximum	m ²	6 / 8	8 / 12	8 / 12	8 / 12	12 / 16	12 / 16	12 / 16	
Weight (empty)	with 1 solar element	kg	114	138	148	205	240	278	320	
Weight (empty)	with 2 solar elements	kg	-	-	177	242	283	-	-	
Water capacity	lower solar element	litres	13	16	16	18	24	24	24	
Water capacity	upper solar element	litres	-	-	12	16	16	-	-	
Standing loss S ²		W	83.8	113.3	136.7	142.1	158.8	178.3	-	
Standing losses Q _{st}	as per EN 12897 ²	kWh/24 h	2.01	2.72	3.28	3.41	3.81	4.28	-	
Storage volume ²		litres	675	826	931	1241	1403	1697	2168	

- 1) If adjustable feet are fitted add 10 – 30 mm to the heights stated below depending on the setting
 2) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froling tank insulation

H2 / H3 hygienic tank



H2 hygienic layered tank and H3 hygienic solar layered tank

Froling's hygienic tanks combine a layered tank and hot water tank all in one. The volume of the storage tank is large, yet the capacity of the high-performance stainless steel corrugated pipe element is relatively low. Thanks to the highly efficient heat exchanger surface area, the tank provides consistently sufficient fresh hot water of exceptional quality using the flow principle. Guaranteed to be free from legionella bacteria.

The perfect combination

Two additional high-performance solar elements permit efficient integration of solar energy in combination with the H3 hygienic solar layered tank. The corrugated stainless steel hot water pipe element, which runs through the tank, optimally cools the bottom part of the tank by preheating the domestic hot water. The low temperatures at the bottom of the tank enable a low return feed temperature to the collector and thus extremely efficient utilisation of the solar energy irradiation (up to 70% more energy yield depending on the collector type).



1 Feature: **high-quality insulation** (100 mm)

- Advantages:
- optimal thermal insulation
 - low radiant heat losses
 - **compliant with fire protection class B2**

The high-performance insulation with an outer jacket ensures optimum thermal insulation and low radiant heat loss, resulting in maximum efficiency.

2 Feature: **tried and tested temperature control system**

- Advantages:
- maximum energy yield
 - high flow rate

The tried and tested temperature control system ensures exact temperature layering in the tank, guaranteeing you an ideal energy yield and increased flow rate.

3 Feature: **stainless steel corrugated pipe element**

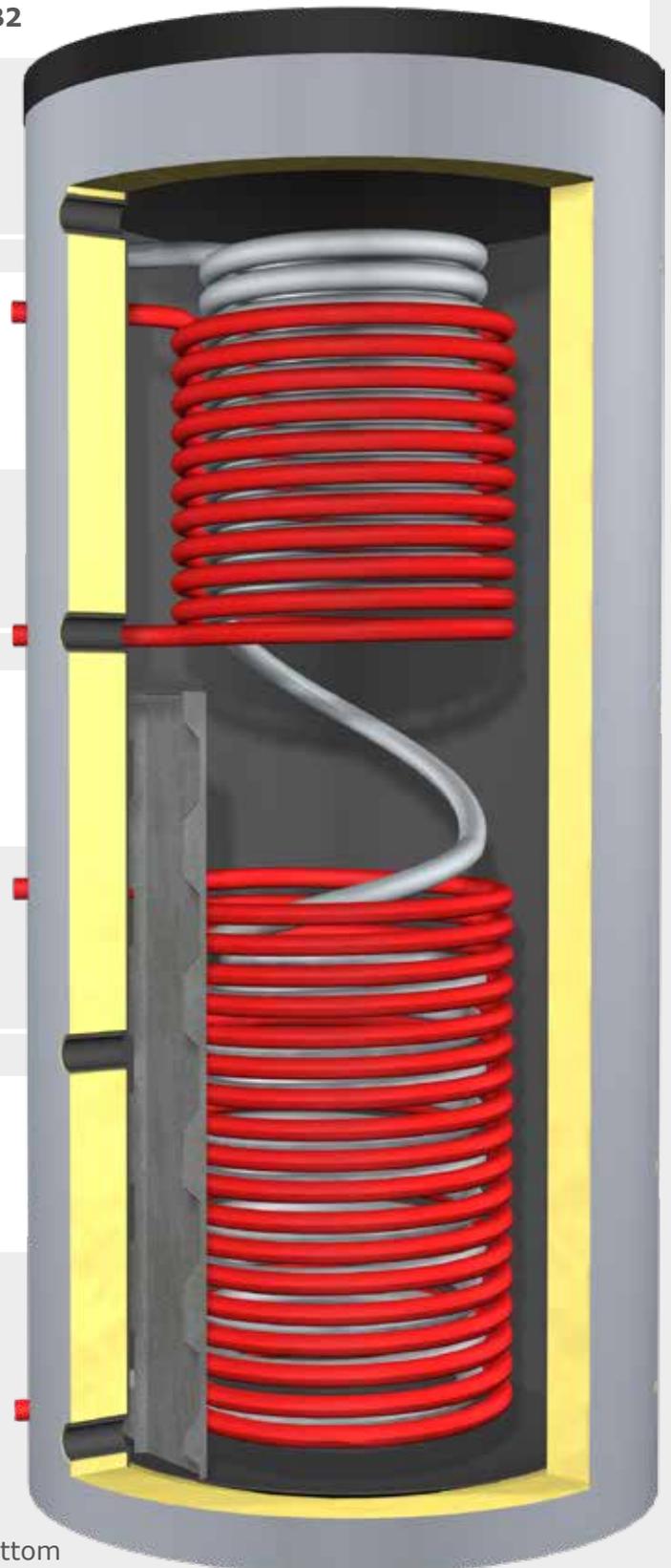
- Advantages:
- fresh water guaranteed free from legionella

The stainless steel corrugated pipe element provides fresh hot water free from legionella using the flow principle. The internal movement means that there is hardly any depositing, even in very hard water areas.

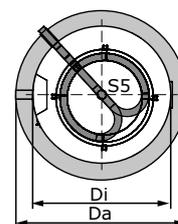
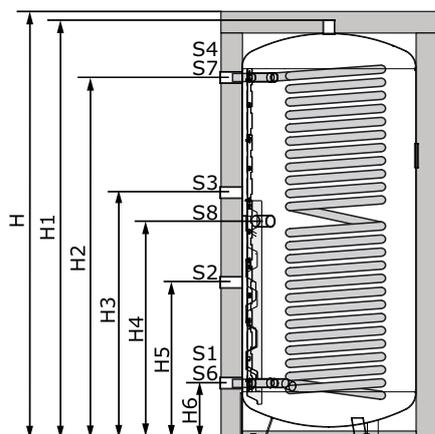
4 Feature: **two high-performance solar elements** (only H3 hygienic solar layered tank)

- Advantages:
- perfect integration of solar power
 - optimal energy yield

The upper solar element ensures rapid heating of the tank in the hot water area and provides solar energy for heating the domestic hot water. The lower element ensures that the tank is loaded to full capacity when energy is available from the solar panel system. In case of lack of sun and low temperatures in the solar panel system, these low temperatures are layered at the bottom of the tank resulting in pre-heating of the cold area.



Technical data - H2



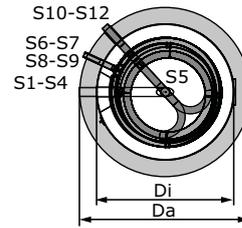
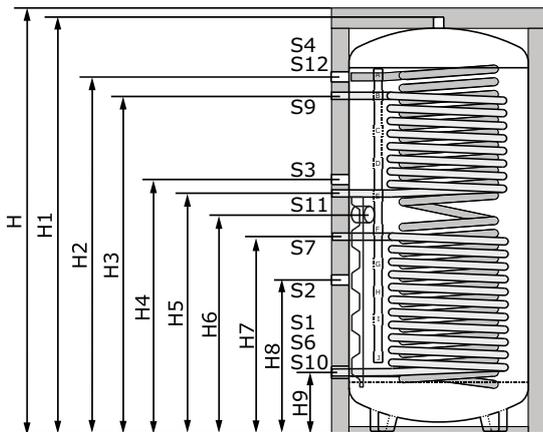
S1 - S5:	Heating connections	1 1/2" IT
S6:	Cold drinking water connection	1 1/4" ET
S7:	Warm drinking water connection	1 1/4" ET
S8:	Electric heating element connection	1 1/2" ET

Dimensions			500	700	850	1000	1250	1500	1700	
Do	Tank ø including insulation	mm	850	990	990	990	1150	1150	1300	
Di	Tank ø excluding insulation	mm	650	790	790	790	950	950	1100	
H	Height incl. insulation ¹	mm	1690	1640	1950	2163	2000	2257	2120	
H1	Height excl. insulation ¹	mm	1650	1600	1910	2123	1960	2217	2080	
H2	Height, flow / warm drinking water connection ¹	mm	1398	1336	1648	1862	1639	1897	1743	
H3	Height, flow connection ¹	mm	1000	862	1122	1332	1142	1347	1293	
H4	Height, electric heating element connection ¹	mm	921	847	902	1164	1067	1311	1156	
H5	Height, return connection ¹	mm	643	611	712	802	767	810	834	
H6	Height, cold drinking water return connection ¹	mm	243	255	252	252	310	310	334	
Minimum width required			mm	660	800	800	800	960	960	1110
Minimum store height (=tilting height)			mm	1670	1620	1930	2140	2014	2264	2110

Dimensions			500	700	850	1000	1250	1500	1700	
Permitted operating pressure	hot water side	bar	3							
Permitted operating pressure	drinking water side	bar	6							
Permitted operating temperature	hot water side	°C	95							
Permitted operating temperature	drinking water side	°C	95							
Heating surface	drinking water element	m ²	5.6	5.6	6.0	6.6	6.6	6.6	6.6	
Performance indicator	drinking water element	NL	1.2	1.4	1.9	2.5	3.0	3.8	4.0	
Output of element	drinking water element	kW	55	55	60	75	75	75	75	
Heating water flow	drinking water element dT = 20K	m ³ /h	3.5	3.5	4.0	5.95	5.95	6.64	6.64	
Flow capacity	drinking water element	l/h	850	1180	1290	1520	1520	1615	1615	
Weight (empty)		kg	109	118	138	157	201	224	263	
Water capacity	drinking water side	litres	35	35	40	43	43	43	43	
Energy efficiency class			B	-	-	-	-	-	-	
Standing loss S ²		W	70.4	83.8	112.9	136.7	142.1	158.8	178.3	
Standing losses Q _{st}	as per EN 12897 ²	kWh/24 h	1.69	2.01	2.71	3.28	3.41	3.81	4.28	
Storage volume ²		litres	474	675	826	931	1241	1403	1697	

1) If adjustable feet are fitted add 10 – 30 mm to the heights stated below depending on the setting
 2) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froling tank insulation

Technical data - H3



S1 - S5:	Heating connections	1 1/2" IT
S6, S7:	Lower solar element connection	1" ET
S8, S9:	Upper solar element connection	1" ET
S10:	Cold drinking water connection	1 1/4" ET
S12:	Warm drinking water connection	1 1/4" ET
S11:	Electric heating element connection	1 1/2" ET

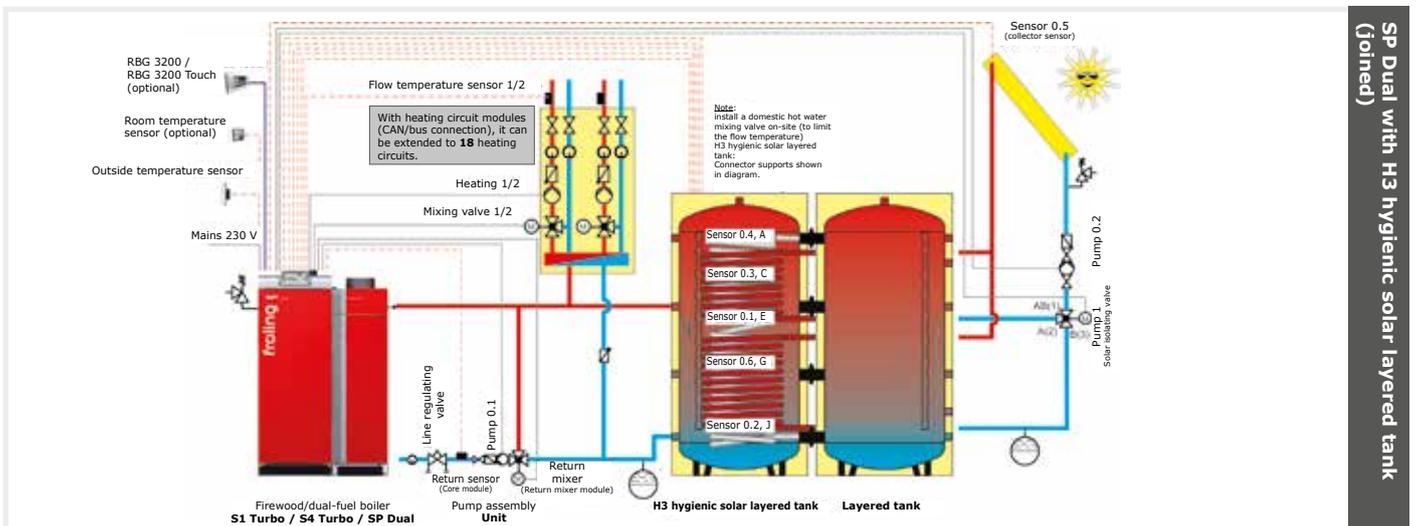
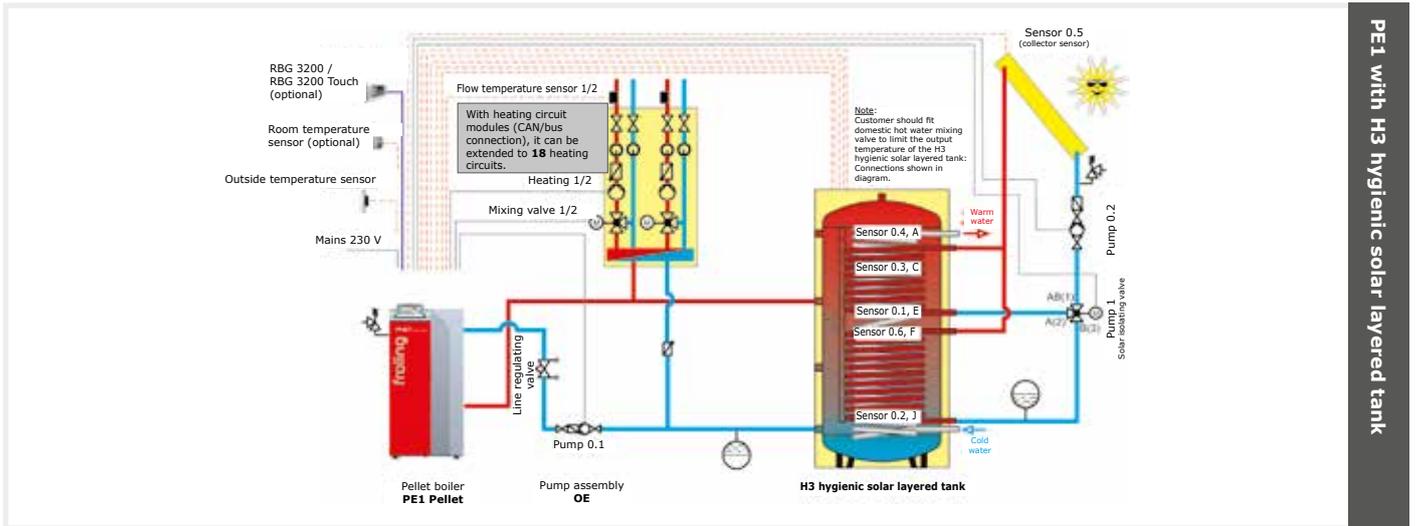
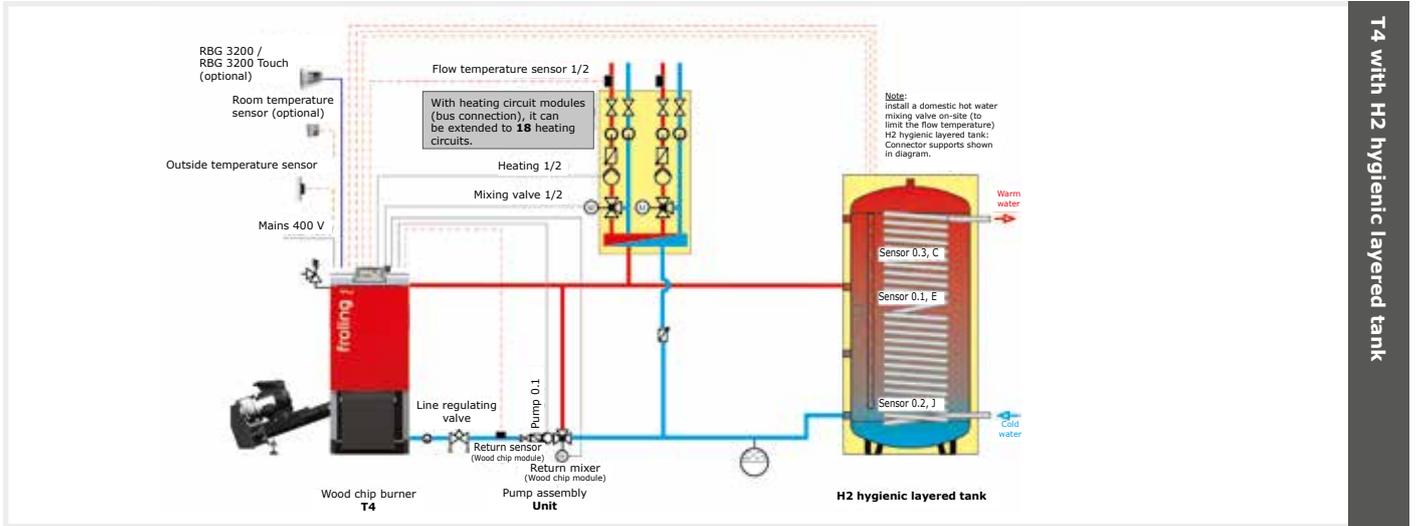
Dimension		700	850	1000	1250	1500	
Do	Tank ø including insulation	mm	990	990	990	1150	1150
Di	Tank ø excluding insulation	mm	790	790	790	950	950
H	Height incl. insulation ¹	mm	1640	1950	2163	2000	2257
H1	Height excl. insulation ¹	mm	1600	1910	2123	1960	2217
H2	Height, flow / warm drinking water connection ¹	mm	1336	1648	1862	1639	1897
H3	Height, solar flow connection, top element ¹	mm	1291	1616	1727	1639	1897
H4	Height, flow connection ¹	mm	930	1122	1332	1142	1357
H5	Height, solar return connection, top element ¹	mm	930	1122	1232	1104	1347
H6	Height, electric heating element connection ¹	mm	862	1002	1164	1067	1311
H7	Height, solar flow connection, bottom element ¹	mm	795	940	940	998	1228
H8	Height, return connection ¹	mm	612	712	802	767	810
H9	Height, return, solar return connection, bottom element, cold drinking water ¹	mm	255	252	252	310	310
Minimum width required		mm	800	800	800	960	960
Minimum store height (=tilting height)		mm	1620	1930	2140	2014	2264

Dimension		700	850	1000	1250	1500	
Permitted operating pressure	heating/drinking water side	bar	3/6				
	solar element	bar	16				
Permitted operating temperature	heating/drinking water side	°C	95/95				
	solar element	°C	110				
Heating surface	drinking water element	m ²	5.6	6.0	6.6	6.6	6.6
	upper/lower solar element	m ²	1.6/2.4	2.2/3.0	2.2/3.0	2.4/3.0	2.4/4.0
Performance indicator	drinking water element	NL	1.4	1.9	2.5	3.0	3.8
Output of element	drinking water element	kW	55	60	75	75	75
Heating water flow	drinking water element dT = 20K	m ³ /h	3.5	4.0	5.95	5.95	6.64
Flow capacity	drinking water element		1180	1290	1520	1520	1615
Solar collector area		m ²	6 / 8	8 / 12	8 / 12	8 / 12	12 / 16
Weight (empty)		kg	178	223	238	278	325
Water capacity	drinking water side	litres	35	40	43	43	43
	upper/lower solar element	litres	11/16	15/18	15/18	16/18	16/24
Standing loss S ²		W	90	119.6	142.9	148.3	165.0
Standing losses Q _{st} as per EN 12897 ²		kWh/24 h	2.16	2.87	3.43	3.56	3.96
Storage volume ²		litres	675	826	931	1241	1403

1) If adjustable feet are fitted add 10 – 30 mm to the heights stated below depending on the setting
 2) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froeling tank insulation

H2 / H3 hygienic tank

Connection examples



FW modular layered tank



Froling modular layered tank and FW modular solar layered tank

Froling's FW layered tank and new FWM fresh water module are a complete compact solution for the boiler room. The layered tank is available with or without a solar element. They can be used in combination with the full range of Froling tanks to offer optimal solutions for almost any area of use.



The comprehensive solution for the boiler room

The high-performance solar element ensures that the tank is loaded to full capacity when energy is available from the solar panel system. Thanks to the specially-developed temperature control system TCS, the tank enjoys optimum layering thereby resulting in increased flow rate as a result of the constant hot water areas.

Details and examples

1 Feature: **high-quality insulation** (100 mm)

- Advantages:
- optimal thermal insulation
 - low radiant heat losses
 - **compliant with fire protection class B2**

The high-performance insulation with an outer jacket ensures optimum thermal insulation and low radiant heat loss, resulting in maximum efficiency.

2 Feature: **temperature control system TCS**

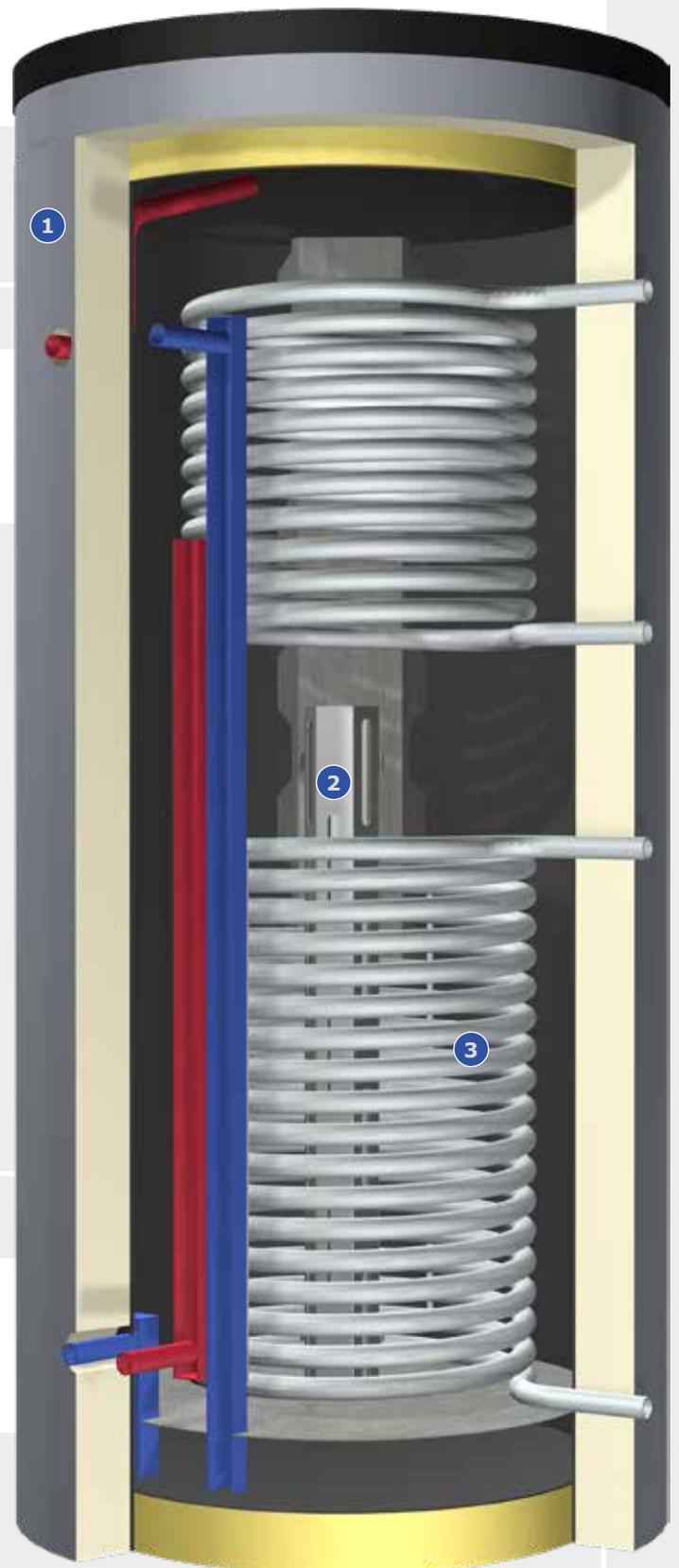
- Advantages:
- maximum energy yield
 - high flow rate

The specially-developed temperature control system TCS ensures optimal temperature layering in the tank. The layered hot water areas ensure high flow rates. The incoming flow of water is decelerated by the temperature control system TCS which results in exact layering. This then leads to constant layering in the hot water areas, resulting in less (primary) energy being used to warm the tank. It also means that lower storage volumes and fewer solar collector areas (in the case of the modular solar layered tank) are required for the hot water supply. The temperature control system TCS ensures optimum energy yield.

3 Feature: **high-performance solar element** (only modular solar layered tanks)

- Advantages:
- perfect integration of solar power
 - optimal energy yield

The solar element ensures rapid heating of the tank in the hot water area and provides solar energy for heating the domestic hot water. The solar element ensures that the tank is loaded to full capacity or for pre-heating the cold area when energy is available from the solar panel system.



Fresh Water Module FWM

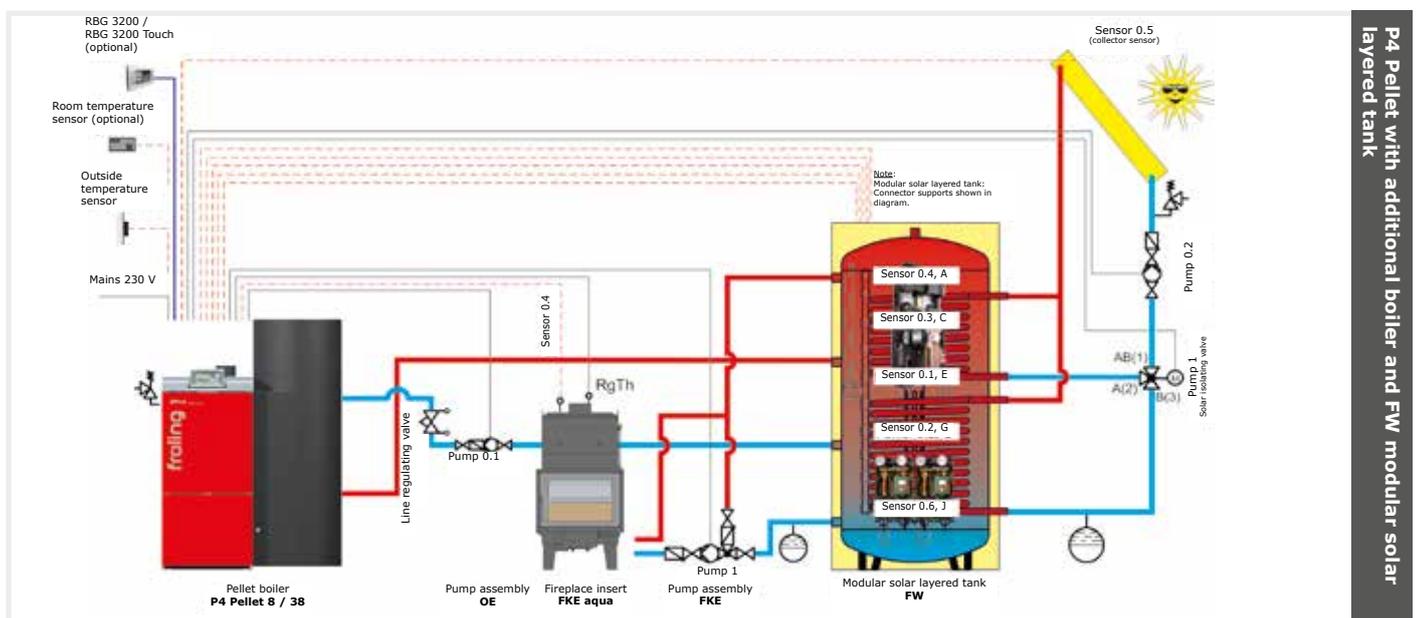
The Froling fresh water module FWM provides constant fresh, hygienic hot water and shows very little loss. Thanks to the flow principle, water coming out of the layered tank is passed through the plate heat exchanger and heated until it reached the predefined hot water temperature. The thermostat ensures the flow temperature in the heat exchanger is set which results in reduced levels of scale formation caused by heat.

Circulation module (optional)

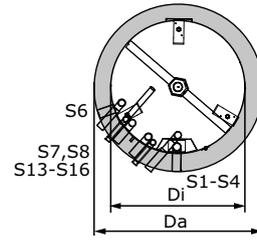
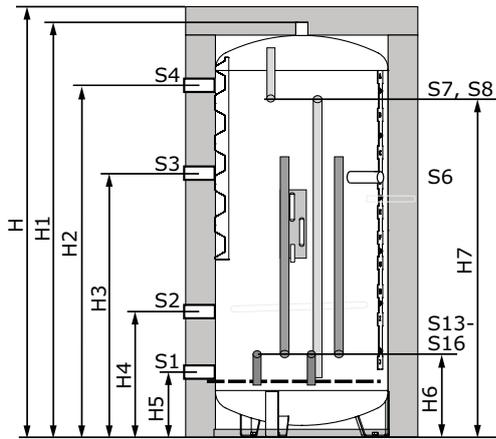
The circulation model, which is an optional extra, permits fast preparation of hot water at the tap connections. The circulation pump can either be started using the individually-adjustable timer or when required at the tap itself (e.g. by opening the tap).



Connection example



Technical specifications - FW modular layered tank



S1 - S5:	Heating connections	1 1/2" IT
S6:	Electric heating element connection	1 1/2" ET
S7, S8:	Connections: fresh water module	1" ET
S13, S14:	Connections: heating circuit pump assembly	1 1/4" IT
S15, S16:	Connections: heating circuit pump assembly	2 1/4" IT

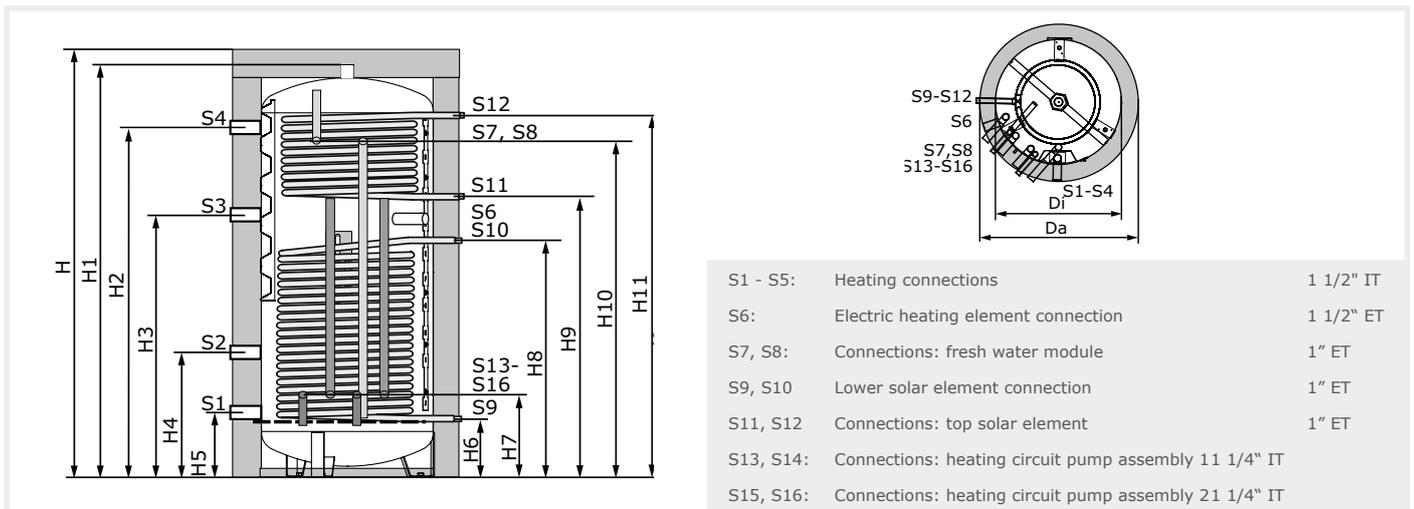
Dimension		850	1000	1250	1500	
Do	Tank ø including insulation	mm	990	990	1150	1150
Di	Tank ø excluding insulation	mm	790	790	950	950
H	Height incl. insulation ¹	mm	1950	2163	2000	2257
H1	Height excl. insulation ¹	mm	1910	2123	1960	2217
H2	Height, flow connection ¹	mm	1648	1862	1639	1897
H3	Height, flow connection ¹	mm	1122	1332	1142	1347
H4	Height, return connection ¹	mm	712	802	767	810
H5	Height, return connection ¹	mm	252	252	310	310
H6	Height, heating circuit pump assembly flow and return connections ¹	mm	312	312	367	367
H7	Height, fresh water module connection ¹	mm	1462	1562	1540	1540
Minimum width required		mm	800	800	960	960
Minimum store height (=tilting height)		mm	1930	2140	2014	2264

Technical specifications		850	1000	1250	1500	
Permitted operating pressure	hot water side	bar	3			
Permitted operating temperature	hot water side	°C	95			
Weight (empty)		kg	122	132	184	206
Standing loss S ²		W	113.3	136.7	142.1	158.8
Standing losses Q _{st}	as per EN 12897 ²	kWh/24 h	2.72	3.28	3.41	3.81
Storage volume ²		litres	826	931	1241	1403

1) If adjustable feet are fitted add 10 – 30 mm to the heights stated below depending on the setting

2) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froling tank insulation

Technical specifications - FW modular solar tank



Dimension			850	1000	1250	1500
Do	Tank ø including insulation	mm	990	990	1150	1150
Di	Tank ø excluding insulation	mm	790	790	950	950
H	Height incl. insulation ¹	mm	1950	2163	2000	2257
H1	Height excl. insulation ¹	mm	1910	2123	1960	2217
H2	Height, flow connection ¹	mm	1648	1862	1639	1897
H3	Height, flow connection ¹	mm	1122	1332	1142	1347
H4	Height, return connection ¹	mm	712	802	767	810
H5	Height, return connection ¹	mm	252	252	310	310
H6	Height, solar return connection, bottom element ¹	mm	252	251	310	310
H7	Height, flow and return connections ¹	mm	312	312	367	367
H8	Height, solar flow connection, bottom element ¹	mm	940	940	998	1228
H9	Height, solar return connection, top element ¹	mm	1122	1232	1104	1357
H10	Height, fresh water module connection ¹	mm	1462	1562	1540	1540
H11	Height, solar flow connection, top element ¹	mm	1617	1726	1639	1897
Minimum width required		mm	800	800	960	960
Minimum store height (=tilting height)		mm	1930	2140	2014	2264

Technical specifications			850	1000	1250	1500
Permitted operating pressure	hot water side	bar	3			
	solar element	bar	16			
Permitted operating temperature	hot water side	°C	95			
	solar element	°C	110			
Heating surface	top/bottom solar element	m ²	1.8/2.5	2.2/2.5	2.4/3.0	2.4/4.0
Solar collector area		m ²	8 / 12	8 / 12	8 / 12	12 / 16
Weight (empty)		kg	166	200	266	303
Water capacity	Top/bottom solar element	litres	12/16	15/16	16/18	16/24
Standing loss S ²		W	119.6	142.9	148.3	165.0
Standing losses Q _{st}	as per EN 12897 ²	kWh/24 h	2.87	3.43	3.56	3.96
Storage volume ²		litres	826	931	1241	1403

1) If adjustable feet are fitted add 10 – 30 mm to the heights stated below depending on the setting

2) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froling tank insulation

Hot water tank



Unicell NT-S hot water tank

Much energy can be saved not only during heating but also during hot water preparation. In this respect Froling and the Unicell are forging new paths. The vacuum enamelling and magnesium protection anode protect against corrosion and ensure resistance to high temperatures and a long life cycle. Whether it's an optimal hot water preparation system for every heat boiler or an efficient solar tank, the Froling Unicell is fully versatile and guarantees efficient, hygienic hot water preparation.



Using solar energy for domestic water heating

The Froling Unicell NT-S permits efficient use of solar energy to heat domestic water. The lower element is connected directly to the solar panel system. The upper heating surface provides extra heat, meaning that the solar energy can be used all year round. It is also possible to provide extra heating using an electric heating cartridge, available separately.

1 Feature: **high-quality insulation** (50 mm)

- Advantages:
- optimal thermal insulation
 - low radiant heat losses

The high-performance insulation with an outer jacket ensures optimum thermal insulation and low radiant heat loss, resulting in maximum efficiency.

2 Feature: **large heat exchanger surface area**

- Advantages:
- maximum energy yield
 - optimum use of solar energy

When in use as a solar tank, the large lower heating surface is connected to the solar panel system. The upper heating surface provides extra heat, meaning that the solar energy can be used optimally all year round.

When using with a boiler alone, both coils are connected directly to the boiler. The resulting heat exchanger surface area ensures a short loading time and high operating comfort.

3 Feature: **connection for electric heating cartridge**

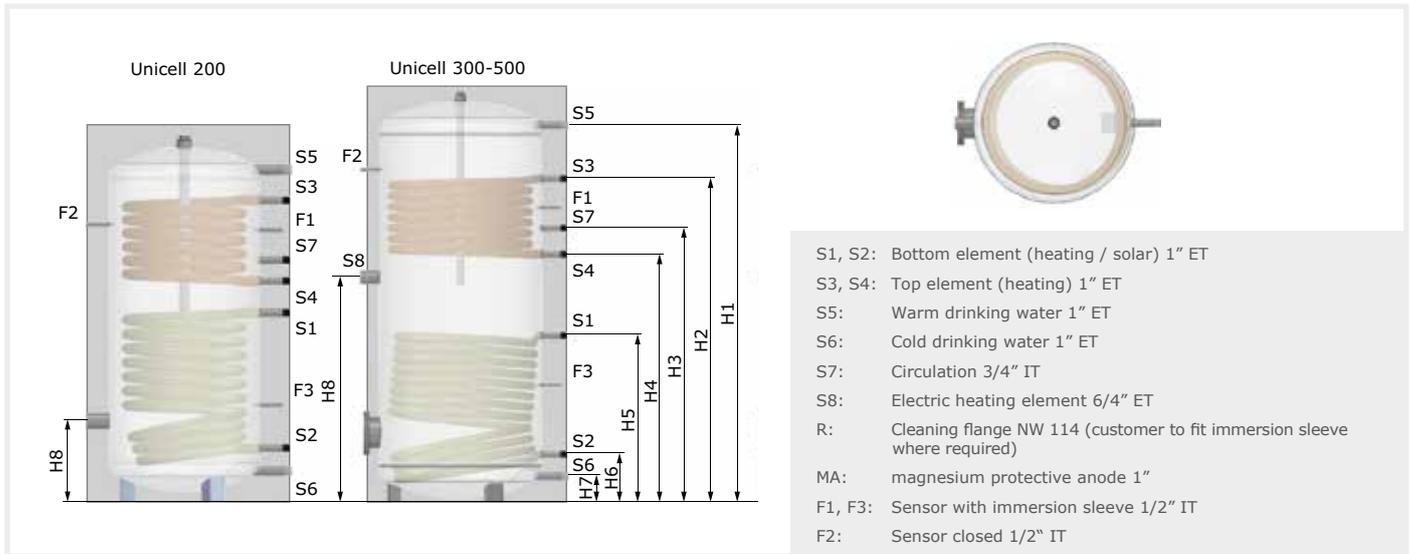
When being used as a solar tank, you can provide additional heating with an electric heating cartridge, available separately.

4 Feature: **large cleaning access**

- Advantages:
- complete emptying of water
 - simple cleaning



Technical specifications - Unicell NT-S



Dimensions			200	300	500
Do	Tank ø including insulation	mm	610	610	760
Di	Tank ø excluding insulation	mm	50	50	50
H	Height of tank including insulation	mm	1227	1703	1675
H1	Height, warm drinking water connection	mm	1107	1586	1529
H2	Height, flow connection, top element	mm	1005	1351	1325
H3	Height, return connection, top element	mm	805	1051	1127
H4	Height, flow connection, bottom element	mm	735	951	1022
H5	Height, circulation connection	mm	630	646	685
H6	Height, return connection, bottom element	mm	180	196	205
H7	Height, cold drinking water connection	mm	105	110	110
H8	Height, electronic heating cartridge connection	mm	267 / 420	785 / 512	920 / 663
Minimum width required		mm	1370	1800	1835

Technical specifications			200	300	500
Permitted operating pressure	hot water side / drinking water side	bar	16 / 10	16 / 10	16 / 10
Permitted operating temperature	hot water side / drinking water side	°C	130 / 95	130 / 95	130 / 95
Heating surface	top / bottom element	m ²	0,8 / 1,2	1,1 / 1,8	1,3 / 1,9
Magnesium corrosion protection anode Ø / length		mm	1 1/4"	1 1/4"	1 1/4"
Weight (empty)		kg	580 / 710	605 / 970	830 / 1400
Maximum continuous output of element (tv = 45°C)	top / bottom element	KW	1,4 / 1,9	1,9 / 8,4	2,5 / 18,9
Heating water flow	top / bottom element	m ³ /h	4,38 / 6,02	6,02 / 8,21	7,11 / 10,4
Flow capacity (90°C, tap temperature 45°C)	top / bottom element	l/h	B	C	C
Performance indicator N _L as per DIN DIN 4708		NL	58	76	92
Water capacity	top / bottom element	litres	1,39	1,82	2,20
Energy efficiency class ¹			199	291	493
Standing loss S ¹		W	80,4	85,9	109,2
Standing losses Q _{ST} as per EN 12897 ¹		kWh/24 h	1,87	2,06	2,62
Storage volume ¹		litres	202,4	302,9	518,9

1) As per Commission Delegated Regulation (EU) 814/2013 applies to tanks with Froling tank insulation

Layer separating module and solar station



Layer separating module



The layer separating module (optionally with electronic controller) can help you achieve maximum efficiency with your solar panel system. Depending on the solar water temperature, the module automatically switches between the top and bottom half of the storage tank. At a high temperature layering takes place in the top half of the storage tank, and at a low temperature layering takes place in the bottom.

The fitting assembly consists of two high efficiency pumps, one heat exchanger and one three-way switch valve. The solar panel circuit is protected against overpressure by an integrated safety group. The fittings of the heat exchanger system are fully assembled on a base plate and tested for leak-tightness. The assembly is fully insulated.

Solar station

The ideal addition to Froling tank systems with solar integration for optimal use of solar energy. The high efficiency pump comes together with bleeder and safety group as a complete, preassembled unit for the solar panel circuit.



Innovative heating systems



Froling has been the mark of quality for heating with wood and biomass for over 50 years. Today, Froling is recognised in Europe and beyond for highly efficient heating technology used for everything from single family homes to industrial facilities with highly technical demands. We offer a unique product range with up-to-the minute technology and pioneering innovations incorporating experience from over 150,000 operating systems with a capacity range from 7 to 1,000 kW.



Your Froling partner:



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