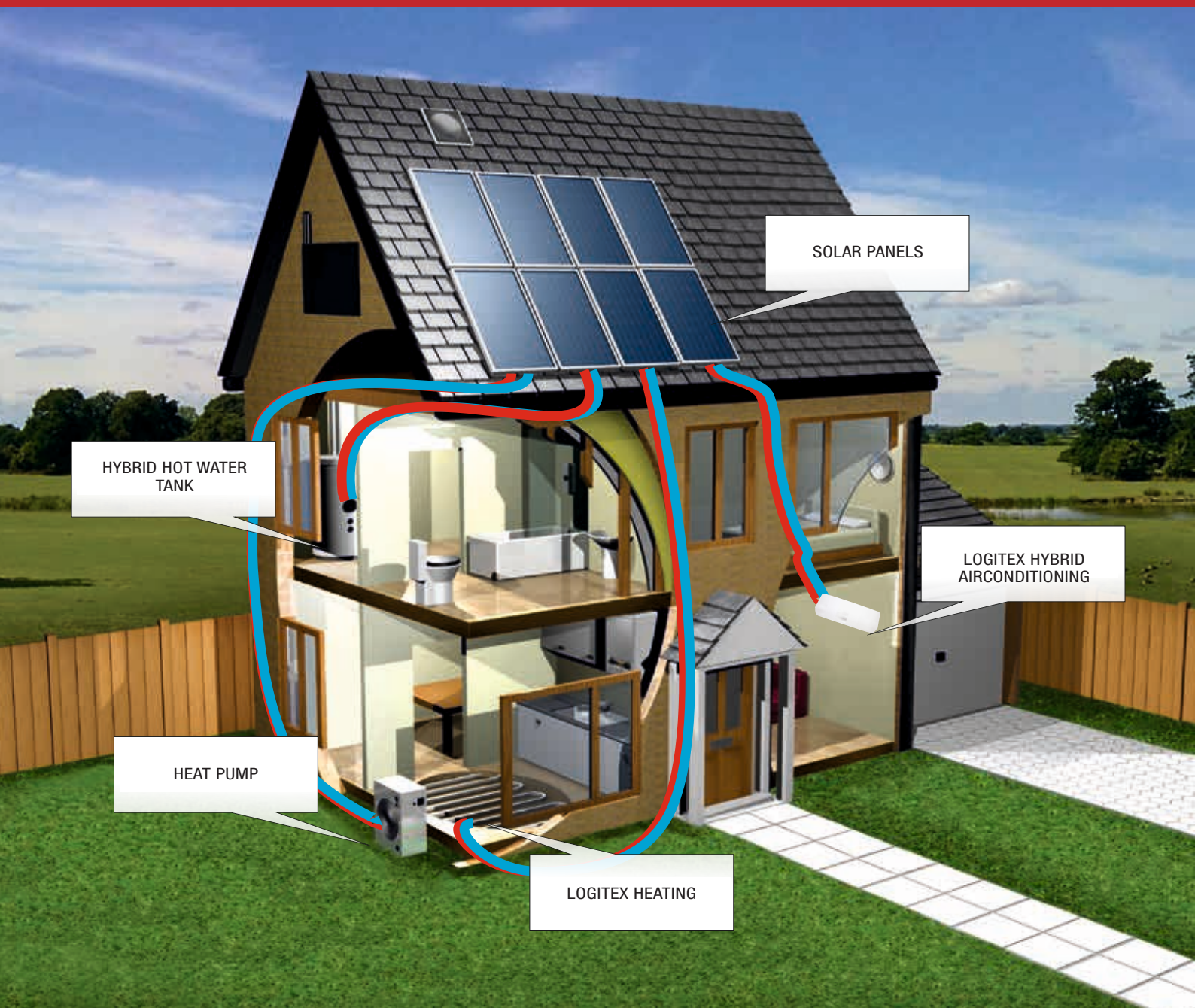


Patented technology

# Direct energy use from solar panels



LOGITEX<sup>®</sup>



Harnessing the energy of the sun and generating electricity from solar panels has many undeniable positives. However, unregulated construction of photovoltaic plants may cause grid instability and can ultimately make electricity more expensive. The global problem of PV systems is the storage of the electricity produced. We have developed and produced something new in this field in order to tackle the issue.

**Where can the electricity be stored without large investments?**

**In water, of course.**

More precisely, in water tanks. We explored this concept and reached our goal. In cooperation with DZ Dražice, we produce water tanks that use electricity also from solar panels for heating. Our patented solution includes the regulation of thermal protection elements, two heating elements and now also the use of surplus energy or automatic switching to an air conditioning unit that heats and cools in the periods when more energy is generated than what is needed to heat water. Direct connection of green electricity for water heating, room heating and cooling allows 100% use of the electricity generated from solar panels. LOGITEX systems never connect the generated electricity to the public grid, so no consent from the distribution company and no source reporting are required. Maximizing the use of energy produced in the house itself makes the most efficient investment in photovoltaics.

**LX CZT solar heat generation facility**



LX CZT is designed for large-scale production of hot water in central heat supply systems, sports halls, ice hockey stadiums and swimming pools, hotels, apartment buildings, hospitals, industrial enterprises, etc. With special storage tanks, it is possible to connect an electricity source from solar panels with a capacity of up to 200 kWp.

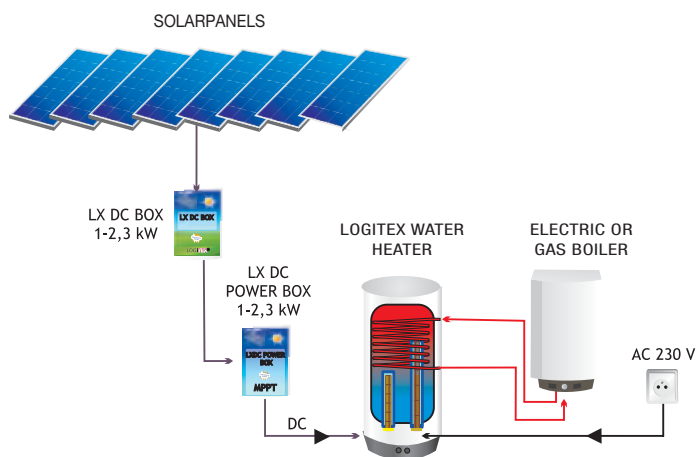


# Wall-mounted water heater

## The LX ACDC/M (M+K and M+KW) ABC water tanks

represent a technical solution for water heating using clean energy sources. The energy of the sun produces a direct electric current through photovoltaic cells, and this current heats the water in the tank. The uniqueness of this solution consists in the direct connection to the solar panels, which does not cause any loss of electricity. Therefore, the device works very efficiently, while ensuring thermal protection and safe regulation of the entire installation using our patented control system.

The wall-mounted storage tanks are connected to solar panels with output from 0.9kWp (min. 96V) to 1.15kWp, or to 1.7kWp, or to 2.34kWp. Any panels connected in series with a maximum output of 2.34kWp can be used.



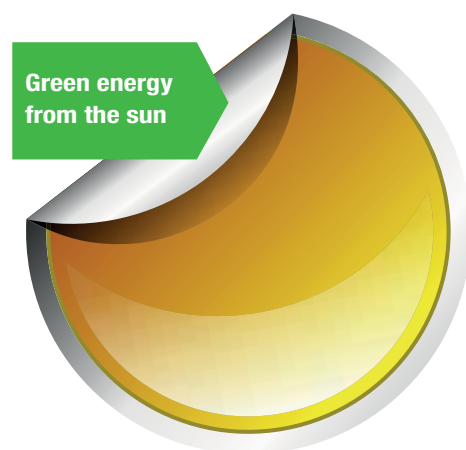
Each wall-mounted tank has two spirals. One is for connecting DC power from the solar panels and the other one is used for the connection from the electrical grid.

Heater model	Electric current for heating	Volume [l]	Weight [kg]	Height x diameter [mm]	AC spiral input power [kW]	Heat exchanger heat transfer surface area [m²]	Nominal heat exchanger capacity at a heating water temperature of 80°C and flow rate of 720 l/h [kW]*
LX ACDC/M 125	AC + DC	125	45	1046 x 524	2	-	-
LX ACDC/M 160	AC + DC	150	63	1235 x 524	2	-	-
LX ACDC/M 200	AC + DC	200	67	1290 x 584	2	-	-
LX ACDC/M + K 125	AC + DC	120	64	1046 x 524	2	1	24
LX ACDC/M + K 160	AC + DC	142	72	1235 x 524	2	1	24
LX ACDC/M + K 200	AC + DC	195	88	1290 x 584	2	1	24
LX ACDC/M + KW 200	AC + DC	195	88	1290 x 584	2	1	24

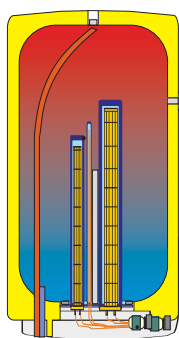
\* This value indicates the maximum power that the heat exchanger is able to transfer into the water in the heater – when the heat exchanger is connected to an external heat source.

Heater	Heating profile	1 kWp*	1,5 kWp*	2 kWp*
LX ACDC/M+K 125	M	A+++	A+++	-
LX ACDC/M+K 160	L	A+	A++	A+++
LX ACDC/M+K 200	XL	A+	A++	A+++

\* Installed capacity of the solar panels

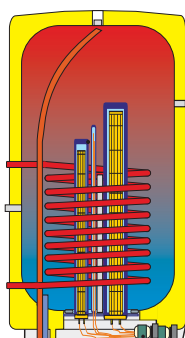


LXACDC/M



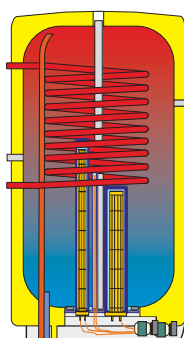
Electric storage tank

LXACDC/M+K



Storage tank for fireplaces, furnaces and boilers

LX ACDC/M+KW



Special storage tank for gas and electric boilers

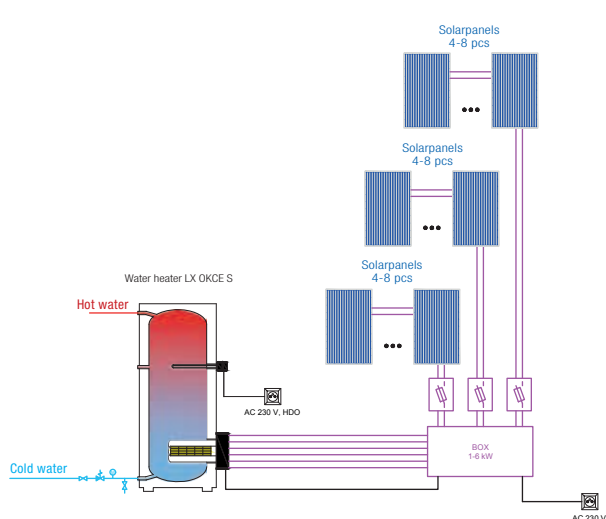
## Stationary water tanks

If drinking hot water is needed in a larger quantity than can be supplied by our wall-mounted storage tanks, choose one of the combinations of stationary heaters, or hot water tanks with the LXDC SET (Fig. 3).

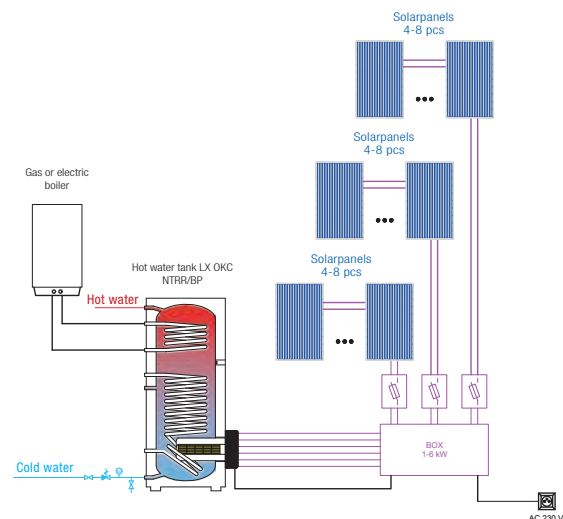
Figures below show examples of a pure electric system (Fig. 4) and a variant with a gas boiler (Fig. 5). Like the wall-mounted water heaters, these can also be supplemented with an air conditioning unit according to the actual installed capacity.



**Fig. 3**  
Hot water tank **OKC 300 NTR/BP** with LXDC SET 1-6 kW

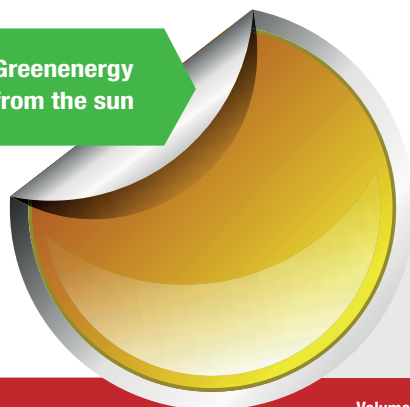


**Fig. 4**  
Schematic of the purely electrical solution with **OKCE 200 S**




**Fig. 5**  
**OKC 300 NTRR/BP** with gas reheating

Greenenergy  
from the sun



**Stationary storage tanks LX OKC and LX OKCE  
are designed for heating of drinking water.  
For full details on stationary storage tanks, please visit the  
manufacturer's website: [www.dzd.cz](http://www.dzd.cz)**

Order No.	Description	Volume [l]	Weight [kg]	Dimensions [h x w]	Heat exchanger heat transfer surface area [m²]	Heat exchanger capacity at 80°C and a flow rate of 720 l/h [kW]*
<b>2168002</b>	<b>LXDC SET 1-2,3 kW - can be used in the following tanks:</b>					
110670101	OKC 160 NTR/BP	148	76	1047 x 705	1,45	32
110770101	OKC 200 NTR/BP	208	92	1357 x 705	1,45	32
110970101	OKC 250 NTR/BP	242	94	1537 x 705	1,45	32
110790101	OKC 200 NTRR/BP	200	103	1357 x 705	1,0/1,0	24/24
110990101	OKC 250 NTRR/BP	234	107	1537 x 705	1,0/1,45	24/32
<b>2168009</b>	<b>LXDC SET 1-2,3 kW - can be used in the following tanks:</b>					
121091401	OKC 300 NTR/HP	286	133	1558x670	3,2	-
121491401	OKC 400 NTR/HP	352	190	1644x700	5,2	-
121391401	OKC 500 NTR/HP	469	223	1914x700	6,4	-
<b>2168004</b>	<b>LXDC SET 1-2,3 kW</b>	 <b>can be used in the following tanks:</b>				
<b>2168000</b>	<b>LXDC SET 1-4,6 kW</b>					
<b>2168001</b>	<b>LXDC SET 1-6,9 kW</b>					
110711501	OKCE 200 S	220	72	1357 x 720	-	-
110911501	OKCE 250 S	259	76	1537 x 720	-	-
121011501	OKCE 300 S	314	80	1558 x 810	-	-
121411110	OKCE 400 S	395	97	1920 x 810	-	-
121311110	OKCE 500 S	455	106	1924 x 860	-	-
121070101	OKC 300 NTR/BP	296	108	1558 x 810	1,5	35
121470101	OKC 400 NTR/BP	373	139	1920 x 810	2,0	58
121370101	OKC 500 NTR/BP	447	137	1924 x 860	2,0	58
121090101	OKC 300 NTRR/BP	285	126	1558 x 810	1,0/1,5	24/35
121490101	OKC 400 NTRR/BP	363	153	1920 x 810	1,0/2,0	26/58
121390101	OKC 500 NTRR/BP	433	158	1924 x 860	1,4/2,0	37/58

\* This value indicates the maximum power that the heat exchanger is able to transfer to the water in the heater -when the heat exchanger is connected to an external heat source. In the case of the LX ACDC/M+KW 200 model, the heat exchanger draws heat from the heater when the exchanger is connected to the underfloor heating system. The output therefore depends on the actual amount of heat accumulated in the heater.

## LX air conditioning

**Hybrid air conditioning** primarily processes the electrical energy produced by the installed solarpanels (DC). The air conditioner will only start to draw energy from the grid when the energy output from the panels is lower than the power required by the air conditioner and there is still a need for cooling or heating. Even then, it only draws the energy difference, i.e. the missing energy.

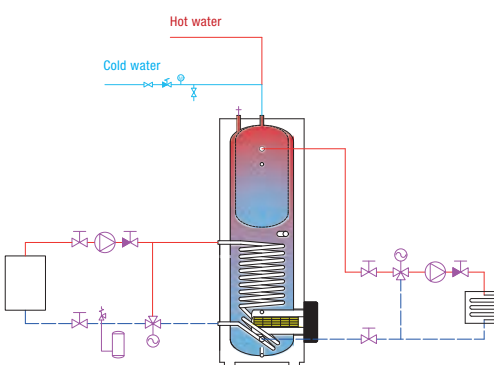
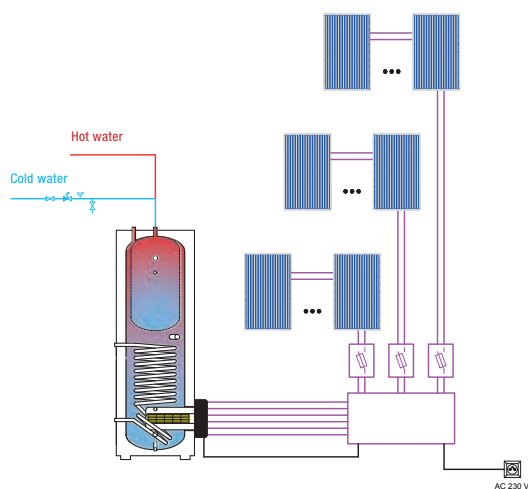
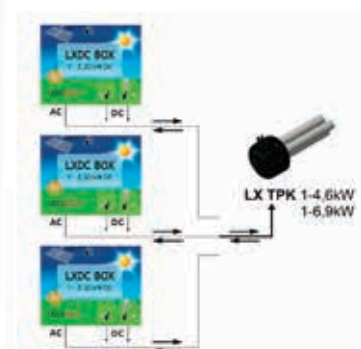


Order No.	Name	Cooling output [W]	Cooling input [W]	Heating output [W]	Heating input [W]	Dimensions [mm]	Weight [kg]
106020025	LX 35	1000 - 3700	100 - 1580	1000 - 4500	130 - 1510	Outdoor unit	850 X 310 x 550
						Indoor unit	805 X 194 x 285
106020026	LX 50	1800 - 6000	140 - 2360	1300 - 6700	200 - 2410	Outdoor unit	850 X 310 x 551
						Indoor unit	957 X 213 x 302

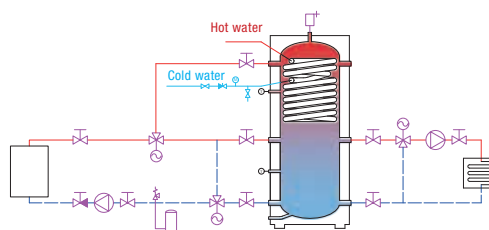
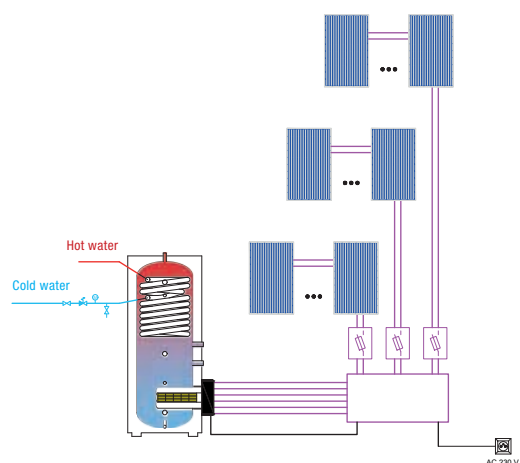
## Accumulation tanks and storage tanks with hot drinking water preparation

If you are interested in using solar energy in the heating circuit, or you intend to combine supported heating with hot water preparation, you should consider our LX NAD and LX NADO storage tanks.

The existing heating system of a family house with a solid fuel fired boiler can be supplemented with these tanks to virtually eliminate the summer operation of the solid fuel boiler which would be used for the preparation of hot water only (Fig. 6). It can save the working hours of the heat pump compressor (Fig. 7), but it is also possible to implement large installations for energy supply, from apartment buildings to heating plants (Fig. 8). In addition to these examples, there are many other possible combinations and we can also provide a storage tank according to the customer's specific wishes.

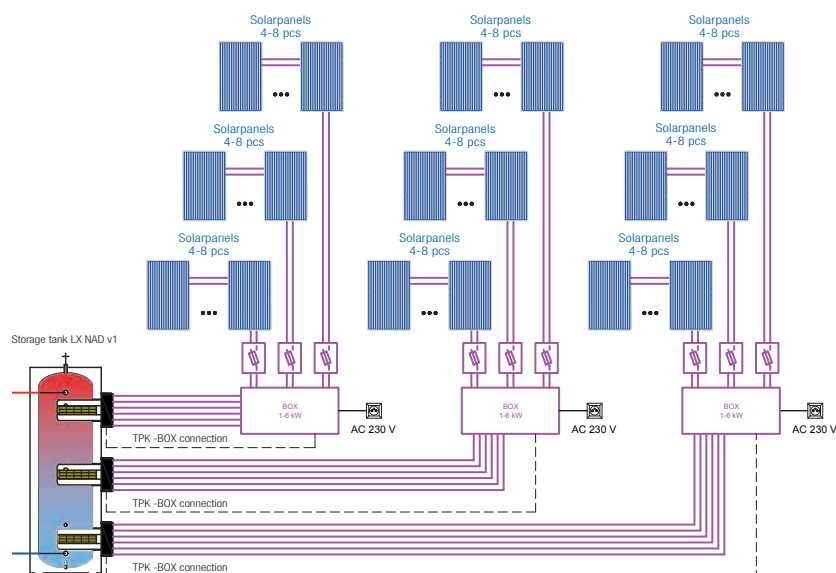


**Fig. 6**  
Electrical and hydraulic schematic of the storage tank **NADO v2** with a solid fuel boiler



**Fig. 7**  
Electrical and hydraulic schematic of the storage tank **NADO v11** with a heat pump

# Schematic of the 20kWp LOGITEX water heating system



**Fig. 8**  
Demonstration of the system for apartment buildings

Order No.	Description	Total volume / internal tank volume [l]	Weight [kg]	Dimensions [h x w]	Heat exchanger heat transfer surface [m] <sup>2</sup>	Heat exchanger output at a flow rate of 720 l and 80°C heating water* [kW]
2168004	LXDC SET 1-2,3 kW	Can be used in tanks:				
2168000	LXDC SET 1-4,6 kW					
2168001	LXDC SET 1-6,9 kW					
121380393	NAD 500 v1	475/-	85	1970 x 600	-	-
121680393	NAD 750 v1	772/-	109	2028 x 750	-	-
121580393	NAD 1000 v1	999/-	126	2040 x 850	-	-
121380387	NAD 500 v3	475/-	87	1971 x 600	-	-
121680387	NAD 750 v3	772/-	110	2029 x 750	-	-
121580387	NAD 1000 v3	999/-	126	2041 x 850	-	-
121380395	NAD 500 v4	475/-	110	1972 x 600	1,5	32
121680395	NAD 750 v4	772/-	135	2030 x 750	1,5	32
121580395	NAD 1000 v4	999/-	149	2042 x 850	1,5	32
121380386	NAD 500 v5	475/-	138	1973 x 600	1,5/1,5	32/32
121680386	NAD 750 v5	772/-	156	2031 x 750	1,5/1,5	32/32
121580386	NAD 1000 v5	999/-	173	2043 x 850	1,5/1,5	32/32
1210803160	NADO 300/20 v11 with insulation	358/-	106	1705 x 670	4,5**	-
1214803160	NADO 400/20 v11 with insulation	405/-	110	1906 x 670	4,5**	-
121380315	NADO 500/140 v1	475/140	113	1970 x 600	-	-
121680315	NADO 750/140 v1	772/140	137	2028 x 750	-	-
121580315	NADO 1000/140 v1	999/140	152	2040 x 850	-	-
121380391	NADO 500 /140 v2	475/140	143	1970 x 600	1,43	28
121680391	NADO 750 /140 v2	772/140	168	2028 x 750	1,43	28
121580391	NADO 1000 /140 v2	999/140	180	2040 x 850	1,43	28

\* This value indicates the maximum power that the heat exchanger is able to transfer to the water in the heater -when the heat exchanger is connected to an external heat source. In the case of the LX ACDC/M+KW 200 model, the heat exchanger draws heat from the heater when the exchanger is connected to the underfloor heating system. The output therefore depends on the actual amount of heat accumulated in the heater.

\*\* For hot water

Wall-mounted and stationary water tanks connected to the LOGITEX heating system do not require any unscheduled maintenance. Energy excess does not pose any problem to the LOGITEX system. It works simply and safely, providing year-round heating or cooling.



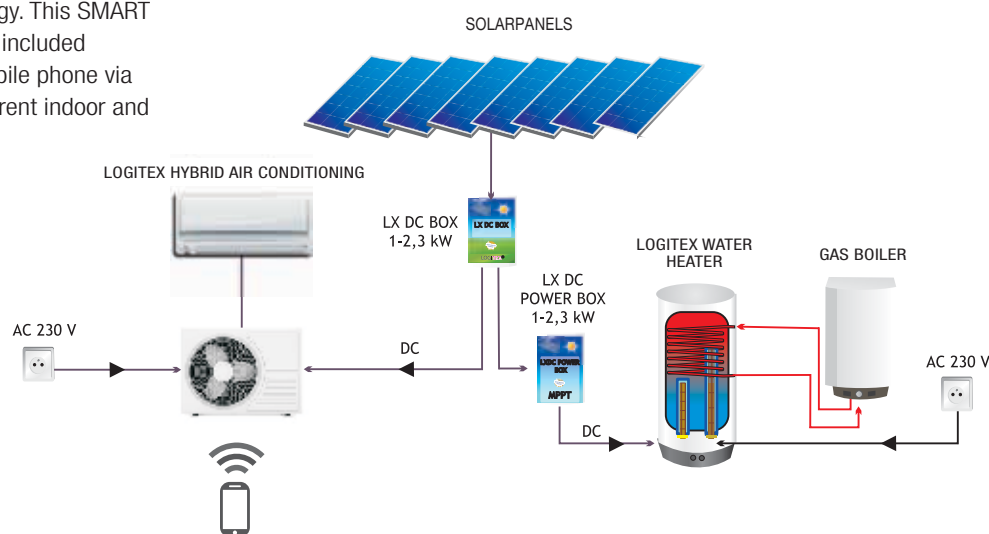
## The first air conditioner that cools and heats almost for free

Our Logitex hybrid air conditioners are suitable for your house, apartment, office, production hall, greenhouse, etc.

**Hybrid air conditioning** primarily processes the electrical energy produced by the installed solar panels (DC). The air conditioner will only start to draw energy from the grid when the energy output from the panels is lower than the power required by the air conditioner and there is still a need for cooling or heating. Even then, it only draws the energy difference, i.e. the missing energy. This SMART A/C unit can be switched on and off by the included remote control or by using an app on a mobile phone via Wi-Fi. The mobile app also displays the current indoor and outdoor temperature.

### The main advantages of air conditioning

- Automatic **direct use of photovoltaic energy** for the most efficient cooling or heating
- On a sunny day, it **cools and heats almost for free**
- When the air conditioning is not running, the energy from the panels is stored in the water storage tank.
- Integrated **wi-fi adapter** allows you to control the air conditioner from anywhere using your smartphone



**LOGITEX®**

LOGITEX  
Športovcov884/4  
020 01 Púchov, Slovakia

Tel.: + 421-42-471 02 00  
e-mail: [logitex@logitex.sk](mailto:logitex@logitex.sk)  
[www.logitex.sk](http://www.logitex.sk)

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