



USER MANUAL



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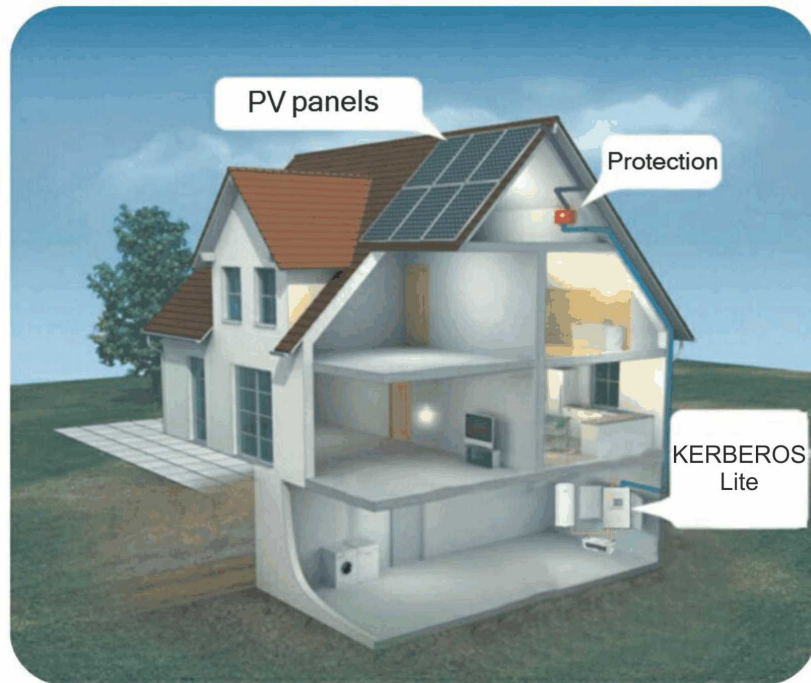
EN

KERBEROS Lite 110.B

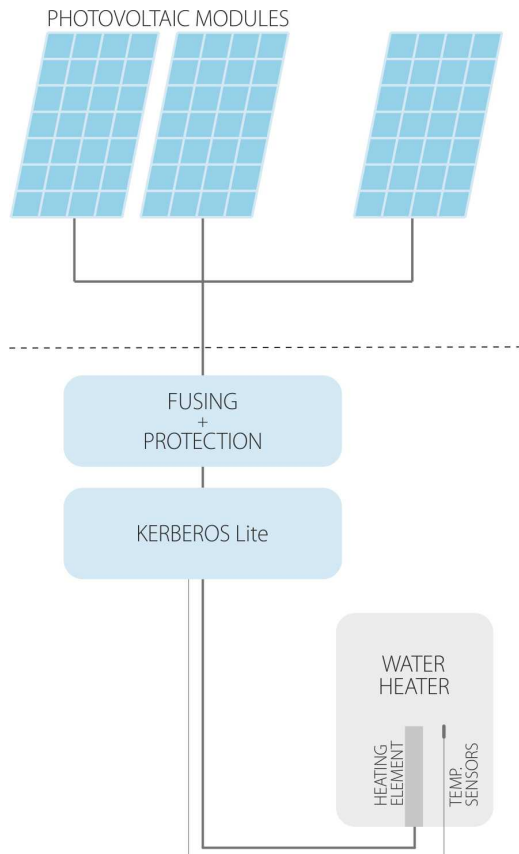
The current version of the manual can be found at : <http://www.solar-kerberos.com>

1. SYSTEM DESCRIPTION

System KERBEROS Lite enables effective utilization of energy from photovoltaic (PV) panels for domestic hot water heating .



1.1 FUNCTION



After energy from PV panels passes modules of circuit breaker and protection, it enters KERBEROS Lite, where it is regulated by DC thermostat. This energy is used for heating the boiler to defined temperature. After required temperature is reached, energy is switched off. Safety of boiler is achieved thanks to an independent electronic temperature fuse.

1.2 PHOTOVOLTAIC MODULES



System is made for 4 to 8 photovoltaic modules (260Wp).*

*It's possible to use different number of panels, with different power, but their output voltage must not exceed the maximum voltage given by Technical parameters.

1.3 BOILER



System KERBEROS Lite can be connected to boiler with heating elements power between 1,5 and 2.5 kW, for 230 V. Boiler requires a shaft with diameter of min. 8mm for placement of temperature sensors.

CAUTION Do not install in rooms with condensing humidity (see chapter Technical parameters)!



KERBEROS Lite allows to use almost any boiler.

1.4 THERMAL FUSE



System features independent thermal fuse, which disconnects from PV panels in both poles. Fuse is activated after temperature 92 ° C is reached and this status is signalized by LED with exclamation mark. If the fuse is activated, it happens due to some serious reason. Don't try to activate it yourself, ask service for help.

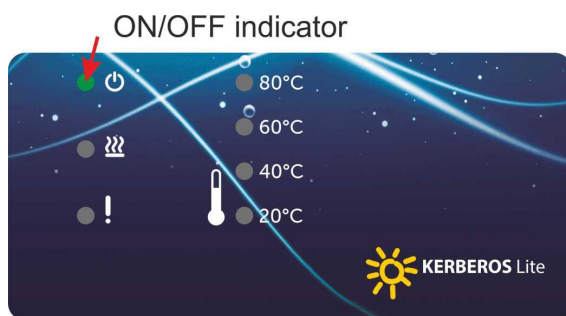


Thermal fuse protects your health and life. The device can be installed only by an expert. If the fuse is activated, it has happened for some serious reason. Do not attempt to enable it and ask for a professional service.

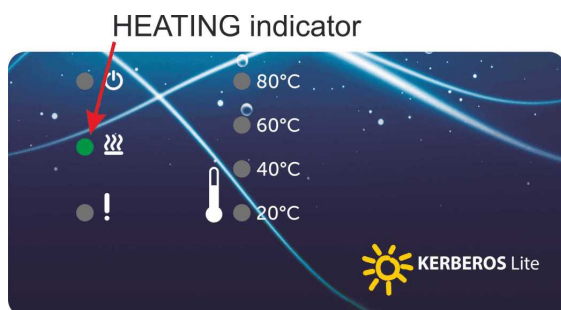
2. CONTROLS



KERBEROS Lite doesn't contain any external controller. It is equipped with the following indicators - SYSTEM ON, HEATING, ERROR and four indicators of TEMPERATURE

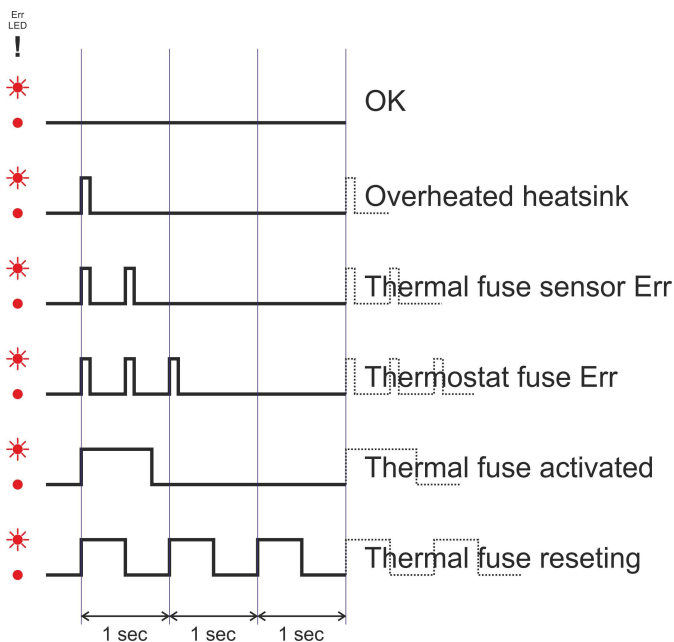
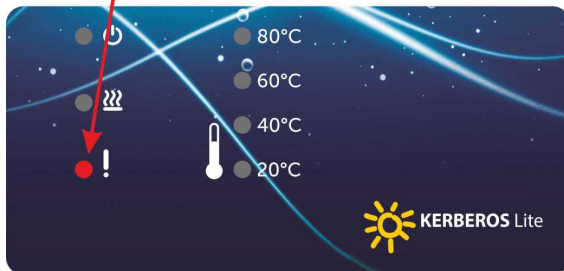


Indicator SYSTEM ON is flashing during operation with frequency corresponding to actual power. When high power is generated, LED lights continuously.



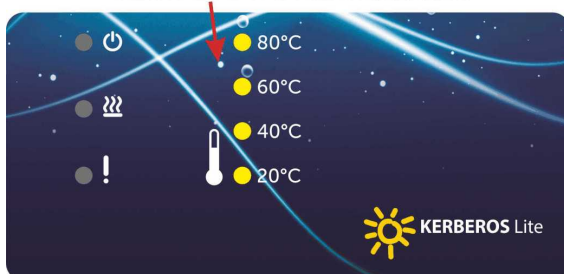
Indicator HEATING lights when heating element of boiler is heating.

ERROR indicator












Indicator ERROR lights when teperature fuse is activated or if some of temperature sensor (thermostat or temperature fuse) is defected.

TEMPERATURE indicators



TEMPERATURE indicators show actual temperature level inside boiler.

	40°C
	45°C
	50°C
	55°C
	60°C
	65°C
	70°C
	75°C
	80°C

Temperature setting is possible by using blue DIP switch accessible after removing bottom cover.



Temperature can be set in 5°C steps from 40°C to 80°C.

Beware of scalding when temperature over 65°C is set!

3. MAINTENANCE AND SAFETY

It's recommended to check the system by service technician once a year.

ATTENTION! set only a safe temperature, to avoid scalding! We recommend to

equip the boiler with a thermostatic valve that maintain always a safe temperature.

ATTENTION, boiler must have the overpressure valve, which must be periodically tested. The usual testing period is one week. Malfunctioning overpressure valve must be replaced immediately.

CAUTION, installation and any other modifications must be performed only by qualified personnel (a specialized company) in compliance with all safety regulations.

ATTENTION, modifications of the product are not allowed!

4. TECHNICAL PARAMETERS

Technical data SOLAR KERBEROS	
Electric parameters - photovoltaic	
Open circuit input voltage (limits)	140 - 340 VDC
Input current	10 A
Recommended wiring*	4 - 8 modules a 260Wp
*Different number of PV modules and different module power than recommended are feasible but maximum input voltage limit must be strictly kept at any solar irradiation and temperature.	
Electric parameters - mains electricity	
Grid input	NO
Output to heating element	

Nominal voltage	230VAC
Power	Recommended power of heating element is 1,5 - 2,5 kW
Thermal regulators	
Setting range	40 - 80 °C
Step of temperature setting	5 °C
Thermal fuse	YES - electronic
Hot water tank	
Capacity	100 - 300 litres
Working conditions	
Operating temperature	+5 to +40 °C
Store temperature	-10 to +50 °C
Operating relative humidity	Max 75 % non condensing
Store relative humidity	Max 90 % non condensing
Environment dustiness	Dust particles volume max 0,75 mg/m ³
Chemical effects	Non aggressive
Construction parameters	
Size	270 x 240 x 60 mm
Weight	2 600 g
Ingress protection	IP 20