



LK 160 SmartBio®

Hydronic Solutions



LK 160 SmartBio®

“With SmartBio you can optimize the energy efficiency, and have a more environmentally friendly biomass fuel solution.”

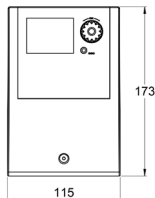


LK 160 SmartBio® is an electronic differential temperature controller with several preset hydraulic systems for energy efficiency in heating systems with storage tanks.

The chosen hydraulic system and operation status is shown on the backlit colour display. Controls and settings are easily carried out using the rotating knob and the esc-button.

LK 160 SmartBio® can also activate an immersion heater or burner if the temperature in the primary tank falls below the selected value. The additional heat has a sophisticated delay function that further adds to the efficiency of the system.

LK 160 SMARTBIO®



FUNCTIONS:

- Several hydraulic systems
- Two outputs for circulating pumps
- Pump exercise
- Floating relay output
- Sensor balancing
- Adjustable delay function for additional heat
- Graphic, multilingual colour display with time and date
- User-friendly menu system
- USB port for PC connection
- SD card slot for data logging (micro SD)
- Speed control possible for circulation pump via PWM signal

ARTICLE NO.	ARTICLE	WEIGHT KG
181234	LK 160 SmartBio® standard kit	0,7
181233	LK 160 SmartBio® for hydraulic system 1	6,2

TECHNICAL DATA

Voltage	230 VAC ± 10%, 50 Hz
Power Consumption	3,5 VA
Relay output	Max. 240 VAC, 4 A
Triac outputs	230 VAC ± 10%, 1 A, 200 VA
High efficiency pump	Analog output 0 - 10 V, max. 10 mA PWM output 100 Hz - 2 kHz
Sensor	PT 1000
Display	TFT backlit colour display 47 x 35
Protection type	IP 20
Protection class	II

STANDARD KIT

- Differential temperature controller LK 160 SmartBio®
- Three sensors PT 1000 - 4 m cable



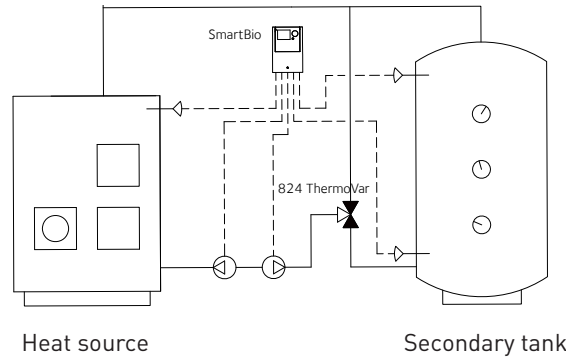
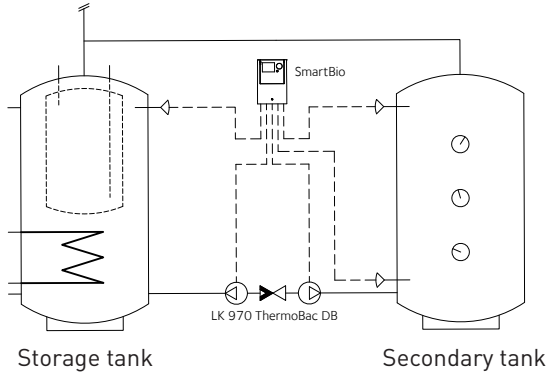
KIT FOR HYDRAULIC SYSTEM 1

- Differential temperature controller LK 160 SmartBio®
 - Three sensors PT 1000 - 4 m cable
 - Two circulating pumps Grundfos Alpha 2 L 25-60
 - Two ball valves 1"
 - Check valve with double acting flow, LK 970 ThermBac DB
- Four gaskets, EPDM



HYDRAULIC SYSTEM 1.1 & 1.2 - FOR SYSTEMS WITH A STORAGE TANK/HEAT SOURCE AND SECONDARY TANK.

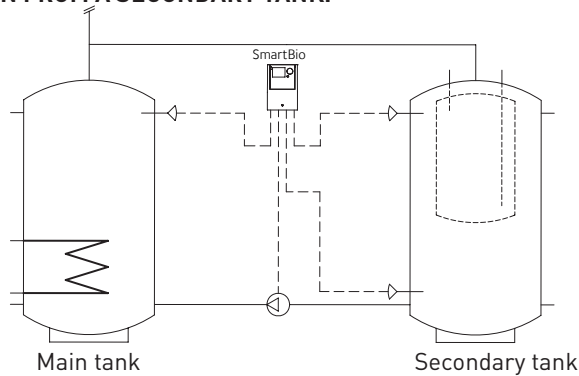
Hydraulic system 1 is intended for systems with a primary and secondary tank or a heat source and a secondary tank. LK 160 SmartBio® controls the two circulating pumps between the storage tank/heat source and secondary tank. When the storage tank/heat source is fully charged the charge pump starts at the chosen temperature to fill the secondary tank. When the temperature in the storage tank falls, the recharging pump starts and transfers energy back to the storage tank/heat source.



Hydraulic System 1.1: In order to prevent self-circulation in both directions, LK 970 ThermoBac DB double acting check valve should be mounted between the circulating pumps.

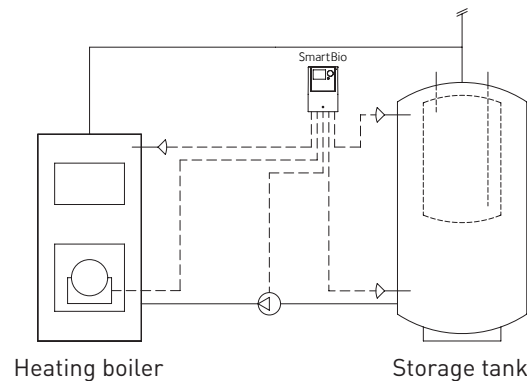
Hydraulic System 1.2: The LK 824 ThermoVar® is a thermic valve with double acting check valve function which ensures a high return temperature to the solid fuel boiler, thus increasing the efficiency of the system.

HYDRAULIC SYSTEM 2 - FOR STORAGE TANK SYSTEMS IN WHICH HEATING WATER AND DOMESTIC HOT WATER ARE TAKEN FROM A SECONDARY TANK.



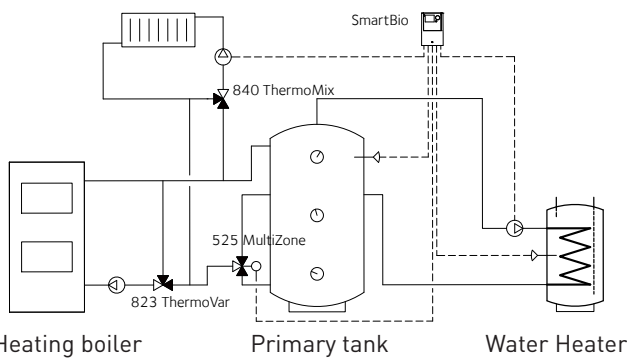
Heat is to be transferred from the main tank to the secondary tank. By measuring the temperature difference between the tanks LK 160 SmartBio® controls the charge pump.

HYDRAULIC SYSTEM 3 - FOR THE CHARGING OF A STORAGE TANK WITH A PELLET, OIL OR GAS FIRED BURNER.

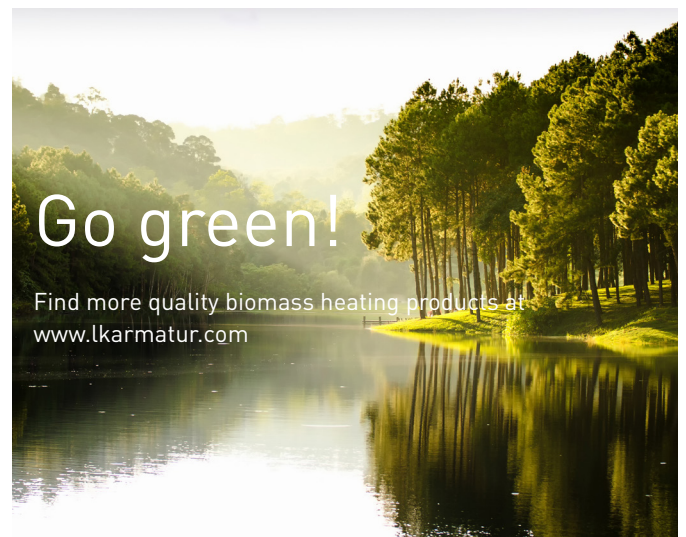


By measuring the temperatures in the tank and boiler LK 160 SmartBio® controls the burner and charge pump.

HYDRAULIC SYSTEM 4 - FOR STORAGE TANK SYSTEMS WITH DOMESTIC HOT WATER TANKS.



Hydraulic system 4 gives priority to the heat in the upper part of the main tank. This enables a fast transfer of heat to the domestic hot water tank. LK 160 SmartBio® controls the charge pump to the domestic hot water tank, the zone valve of the main tank and the circulator in the heating loop.



LK ARMATUR AB

Garnisonsgatan 49
SE-254 66 Helsingborg
Sweden

Phone: +46 (0)42-16 92 00

Fax: +46 (0)42-16 92 20

info@lkarmatur.se

order@lkarmatur.se

FOR THE SIMPLER, SMARTER EVERYDAY

Simpler. Smarter. More sustainable. At LK, we believe there's a better way to do everything. It's a belief all of us at LK apply to every product and solution we create – from water, heating and hydronic solutions to pipe extrusion and marine flow control.

Our **Hydronic Solutions** business area is a leader in Europe, producing millions of valves per year for the global HVAC market. Beyond individual products, we understand how all parts interact in your complete application. From standard to sophisticated customizations of valves, controllers, components and prefabricated units, our full-spectrum expertise makes it easy to get the results you need today, while anticipating your needs tomorrow.



www.lkarmatur.com