



Energy Management



Modular, programmable, future-proof Energy Automation

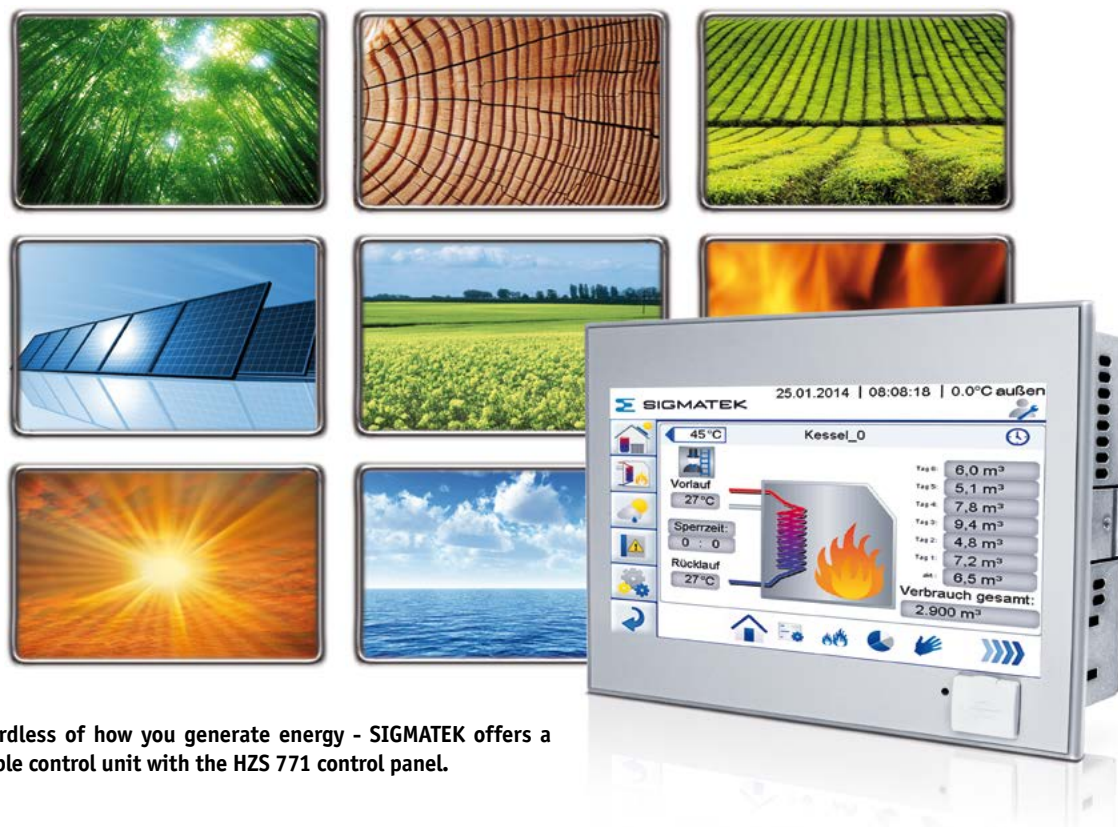
Modular Solution for Complex Tasks in Energy Technology

In addition to industrial automation, SIGMATEK has already been involved in energy automation of more than 25 years. Manufacturers of boilers, heat pumps or small power plants profit from our extensive know-how and can choose from a broad palette of user-specific hardware. This is derived from the most modern industrial control technology and modularly designed.

The increased need of sensors and the often restricted installation space directly on the unit to control are included in hardware and housing concepts with individual solutions. The highly modern components come from a system toolkit.

Customer-specific system constellations can be implemented flexibly and efficiently. The modular construction allows the simple expansion of the system or the connection of additional modules for solar installations, floor heating as well as effective boiler and buffer management for example.

With the smart software tool LASAL, the customer application can be easily and quickly implemented; user-friendly visualization concepts are already included. Innovative features such as remote maintenance via Internet and Smartphones increase operating comfort and provide convincing selling points.



Regardless of how you generate energy - SIGMATEK offers a flexible control unit with the HZS 771 control panel.

Complete Systems for Economic Heating

Whether pellets, woodchips or firewood: The HZS 771 and HZS 772 control panels have the entire system in hand. Via M-BUS, the HZS 772 can also measure heating usage and because of the exact heat volume measurement, it is used in multiple party households. Complex heating systems with boilers, buffer tanks, solar energy connections and multiple heating circuits can also be controlled and regulated with both intelligent panels. It can be built directly onto the boiler and convinces with a modern graphic interface. The intuitive 7" WVGA TFT color touch screen provides the highest operating comfort.

A micro SD card is used to store the operating system, application and application data. Several

interface connections such as USB, RS232, CAN bus and Ethernet serve the exchange of process data and the simple configuration.

The actuators are controlled and the sensors read via the boiler function module. The integration of Lambda sensors ensure optimal and clean burning. With various expansion modules, the system can be individually configured. In addition, the installation is flexibly expandable or scalable for any system size and complexity. System communication is performed via CAN bus. External modules can be controlled over BACnet for example. Modern technologies such as Ethernet and wireless LAN are being increasingly used.

Decentralized Control

For additional comfort, SIGMATEK offers a decentralized control solution outside of the boiler with specially designed modules. External extensions for the heating circuit, solar, buffer, boiler and floor heating are well protected in plastic housings and can be easily expanded through Plug & Play.



A plastic housing provides the external extensions, e.g. the HZS 541, with good protection.

Room Control

The HZS 351 touch panel provides comfortable room control. With the 3.5" TFT color display, process data and parameters are easily entered. To save energy, the display is deactivated in sleep mode. When contact is made with the screen, the panel is immediately active. Wall mounting in a flush-mounted box is also possible.

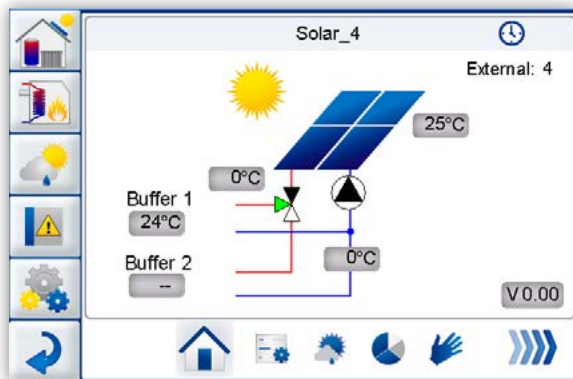


Room control made easy: HZS 351 with touch screen and internal temperature sensor.

Efficient and Comfortable Heat Distribution

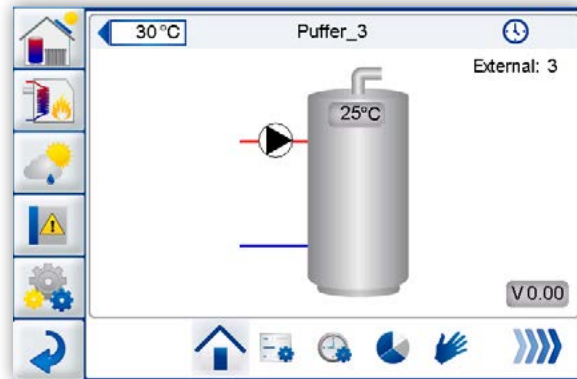
To ensure optimal heat distribution from a pellet boiler or heat pump to the emission units for example, SIGMATEK provides additional requirement-specific modules. This includes components for connecting heating circuits, buffer & boiler tanks and solar installations. The connection to the CPU in the operating panel is

made over the bus system. To configure the heat management even more efficiently and economically, the intuitively designed operating surface provides numerous predefined functions such as system configuration, user administration, alarm system, manual mode, data logging and more.



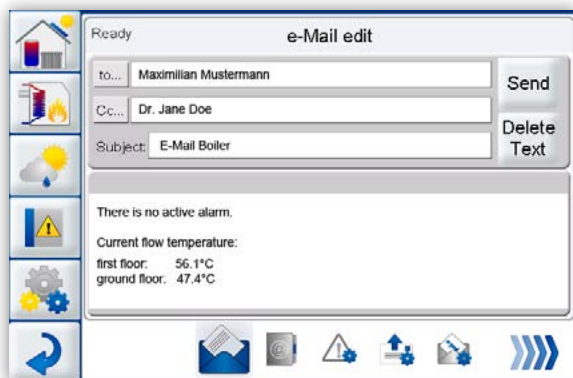
Weather-guided heat distribution

The user has the option to regulate heating guided by the weather, for example, through the solar installation. The control retrieves the required weather data from the Internet automatically.



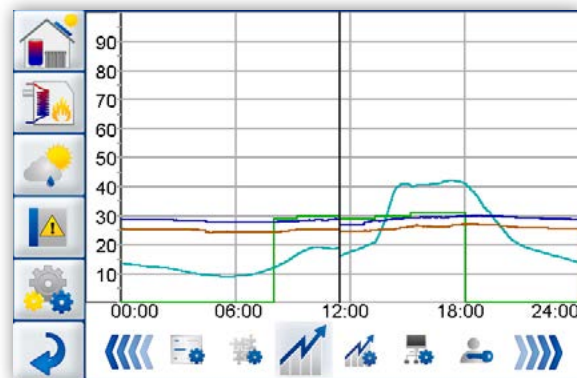
Save energy automatically

The energy gained from the solar installation can also influence the buffer storage directly. The control regulates the boiler temperature according to the weather data and thereby minimizes energy consumption automatically.



Notification by e-mail or SMS

The actual heating status can be retrieved comfortably by e-mail or SMS. Error messages are shown directly on the display, including cause and location. This message can also be sent automatically to a selected recipient.



Integrated trend recording

All relevant data can be recorded with integrated trend recording in detail and over a defined time period. This increases the understanding of the correlations to energy use and simplifies optimization of the heating system.

Tailor-made Components from a Toolkit

The modern components come from a system toolkit: central unit, function modules and expansions for furnace, heating circuit, buffer, boiler and solar. For operation, different variants are available: from simple room control units to intelligent

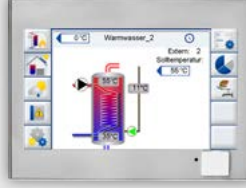
control panels with energy efficient EDGE technology CPUs and color touch displays from 3.5 to 19 inches. Customer-specific system constellations can also be easily and flexibly implemented.

Programming and Visualization



Room control unit HZS 351/352

- 3.5" TFT color display
- Internal temperature sensor
- HZS 351: 230 V AC
- HZS 352: 24 V AC



Heating control HZS 771/772

- 7" WVGA TFT color display
- Resistive touch
- HZS 772: additional M-BUS interface



Heating control HZS 732

- 7" WVGA TFT color display
- Capacitive touch

Furnace and Decentralized Modules



**Furnace function modules
execute sent commands**

- Burners
- Motors
- Pumps
- Lambda sensor
- Mixers
- Relays, etc.



**Universal expansion
e.g. woodchip heating system**

- Burners
- Temperature sensors
- Relays
- Emergency stop
- Triac
- STB-cutoff, etc.



Heating circuit, buffer & boiler, solar

- Relays
- Temperature sensors
- Triac, etc.



Auxiliary board MP-bus

- 2 x CAN-Bus
- 8 x MP-Bus



Expansion controller

- Relays
- Temperature sensor
- Triac, etc.



Lambda sensor interface circuit

- Lambda sensor interface LSM11
- Lambda sensor interface LSU4.9



**Expansion module
100 kW**

- Relay
- Thermo element input
- Thermo resistor input, etc.



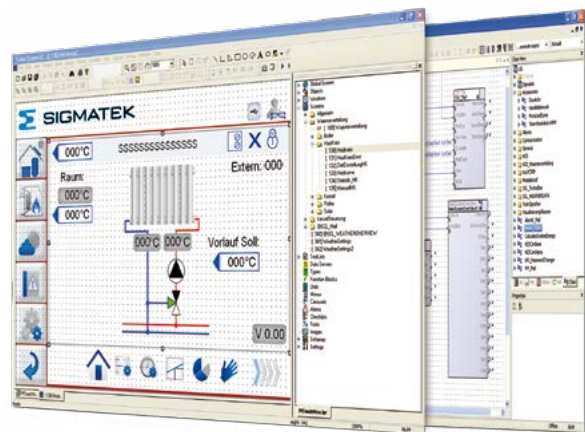
**External expansion module
for decentralized control**

- Relays
- Temperature sensors
- CAN, etc.

The Right Software Saves Time and Money

The software is increasingly becoming an essential competitive factor. A simple to operate engineering tool helps to reduce design costs and implement applications quicker. The library provided contains predefined components for energy control such as ignition, burning, dosing, ash removal or heating circuit regulation. Our heating experts gladly and with extensive know-how, support you in creating your applications.

The visualization is platform-independent and is perfectly displayed; whether on the control, operating panel, PC or Smartphone. The intuitive menu helps the end user to understand energy-related technology and to actively influence the use of resources. Using graphic configuration, the installation can be easily prepared and tested.



An essential competitive advantage: the simple to operate LASAL engineering tool.

The specific configuration data can be comfortably loaded into the system from a USB stick. This can also be used to perform updates and for long-term data recordings.

Energy Management from Anywhere

The particular flexibility of the SIGMATEK solution can be especially seen after installation with the complete visualization over the network. Thanks to modern network technology, extensive remote maintenance and operation is possible. Over an Internet browser only, and without special programs, authorized personnel have (with password protection) access to all functions of the heating system. The system can thereby be accessed from any PC, error messages responded to and diagnostic reports viewed. The modern remote maintenance and operation can also be performed using a Smartphone and tablet PC. The solar installation can therefore be reliably controlled with help from weather data and time settings; even during vacation. For tablets and smartphones, free VNC client apps are available. The VNC server has a repeater extension that is used

to create the connection to VNC servers, which may for example, be located behind a firewall and therefore not accessible. SIGMATEK controls with the VNC server and VNC clients make the connection to a repeater in which the data exchange is performed.



Regardless of where you are at the moment, you have your heating under control thanks to tablet PCs and Smartphones.

Energy Management Highlights Compact

■ Modularity and Flexibility

Individual control solution based on proven industrial technology ■ Modular, decentral configuration of the heating circuits possible, expandable for any system size ■ Programming with standardized software in accordance with the IEC 61131-3 Norm ■ Simple reusability of the software modules

■ State of the Art

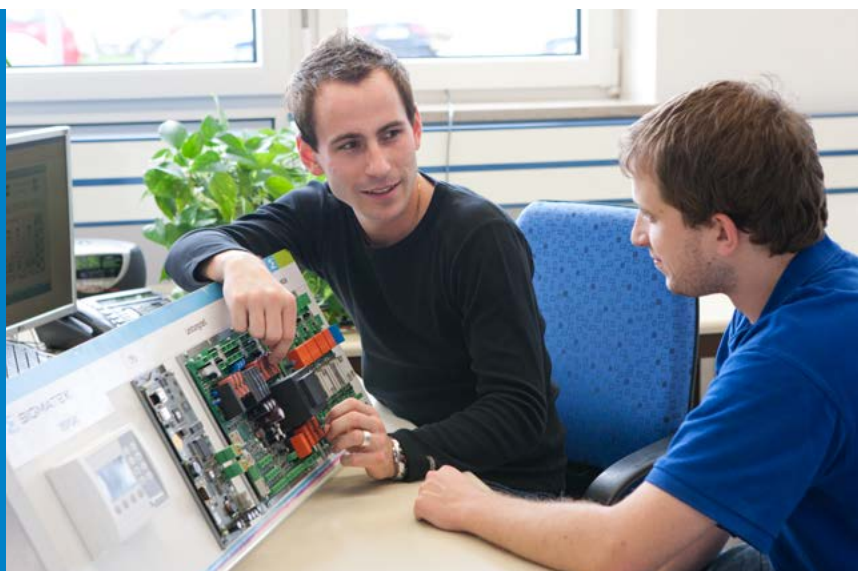
Operating comfort with graphic touch display ■ Integrated trend recording of all relevant data over a defined time period ■ Alarm messages through e-mail and SMS ■ Weather-guided buffer charging possible

■ Network Connection, Remote Maintenance, Remote Operation

Integration into higher-level networks over standard interfaces (e.g. Ethernet) ■ Remote maintenance and operation comfortably over an Internet browser, Smartphone and tablet PC

■ Close to the Customer

Comprehensive support from our experienced branch experts: from the conception through development and programming to the initial start-up and service ■ Our support team is quickly available to answer your questions and solve problems





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