

Automation in the laboratory is the means of choice for increasing quality and productivity and reducing costs.

The LabBox® system is the compact automation system especially designed for preparative and analytical workstations in laboratories or pilot plants.

- ✓ Highest precision
- ✓ Seamless documentation of the entire process sequence
- ✓ Quality improvement, cost and risk reduction

Centralize the data acquisition and control of your laboratory equipment:

- › Circulators
- › Stirrer drives
- › Scales
- › Pumps
- › pH electrodes
- › Pressure/temperature measurement
- › Valve switching

## Areas of application

- » Chemical experiments and process development
- » Biotechnology, Food and Environmental technology
- » Quality assurance
- » Education and training

With the associated software LabVision® you can measure, visualize and control your experimental set-up as easy as never before!



LabBox®: front view





LabBox®: rear view, power supply, service interfaces

## Characteristics of the LabBox®

The LabBox® is equipped for the special environmental conditions in the laboratory or pilot plant.

It essentially has the characteristics of the LabManager® device family, but due to the firmly integrated interfaces it offers an even more compact design at an extremely attractive price.

The compact LabBox®, which fits in every fume cupboard and on every laboratory bench, reduces the space requirement to a minimum. The ability to mount the device directly on the plant, significantly reduces project planning and cabling costs and allows easy retrofitting or expansion of the instrumentation.

Control functions remain active even after switching off or failure of the operating PC.

Design and electrical wiring of the connections are based on the recommendations and guidelines for laboratory equipment in the chemical industry (NAMUR recommendation NE28). In this way, mix-ups during connection are ruled out.

## Integrated interfaces

- » 4 x RS-232 serial interfaces, e.g. for bidirectional connection of thermostats, scales, stirrer drives, pH probes, MFC, ...
- » 2 x digital output, active 24 V, PWM, PFM and PFLM, with actuator supply and overload protection, e. g. for direct switching of solenoid valves or small trace heating systems, ...
- » 1 x analog input  $\pm 10\text{ V}$  ( $\pm 0.2\%$ ),  $0 \dots 20\text{ mA}$  ( $\pm 0.25\%$ ), 18 Bit resolution, with sensor supply, e. g. for connection of pressure sensor, flow meter, older laboratory equipment, ...
- » 1 x resistance temperature sensor input Pt100,  $-200 \dots +600\text{ }^\circ\text{C}$ , with conductor break detection, e. g. for measuring the internal temperature of a reactor, ...
- » 2 x Ethernet interfaces 100 MBit/s, e. g. for connecting devices via OPC-UA, Modbus-TCP, ...

## Features

- » Integrated mathematical operations: arbitrary rescaling of measuring signals, filter, integrator, differentiator, ...
- » Ramp functions, threshold and limit values, including hysteresis functions
- » PID controller: all inputs and outputs of the LabBox® can be integrated into control loops.
- » Special controllers for pH value control or temperature cascade control
- » Freely configurable graphical displays on the operating PC
- » Freely configurable sequence programs on the operating PC
- » Data export e. g. to Microsoft Excel® as .csv or live data exchange e. g. with Mathworks Matlab® (optional)
- » + Much more

The features can be configured via the required LabVision® software.

## Specifications

- » **Compact design**  
Dimensions (WxHxD): 222 x 58 x 124 mm
- » **Comfortable integration via 2 Ethernet interfaces**
- » **Low power consumption and heat generation**
- » **Safety in accordance with EN61010-1:2010 and EN61010-2-201:2013**
- » **Redundant shutdown of the outputs for increased operational safety**

HiTec Zang GmbH  
Ebertstraße 28-32  
52134 Herzogenrath  
Germany  
+49 (0)2407 / 910 100  
info@hitec-zang.de  
www.hitec-zang.com

