SETEBOS

Control and measurement center

- Temperature and humidity monitoring with dew point calculation or multi-point external temperature monitoring
- Control of 4 (8) relay outputs
- Status monitoring of 4 (8) parametric inputs with optical isolation
- Two inputs for measuring voltage 0-60V, optionally a third optically isolated measuring input on an additional built-in module
- 1-wire interface for external sensors
- RS232/RS485 interface for transferring the RS contact for managing external devices or for communicating with sensors
- Management via 10Mbps Ethernet interface
- Remote update of full software
- Web Management, SNMPv1, SMTP, TELNET, SNTP, Syslog
- Operation in the temperature range 0 - +50°C

Description of the device

Functionality

SETEBOS device is a control and measurement center designed for monitoring and controlling facilities, recording environmental parameters such as temperature and humidity, and, through appropriate inputs, events of space violations, flooding, etc. In addition, it enables remote control of devices placed on the monitored facility through four built-in relay outputs. Two outputs by directly supplying a voltage of 12V in the on state allow you to control elements powered by 230/400V using a contactor. **SETEBOS** , depending on the version, is powered by a direct current in the range of 9-29V DC or 43-60V DC. In the case of alternating current, an external power supply can be connected to the device. The total power consumption of the device does not exceed 6 Watts.

Management

The built-in HTTP server, TELNET server and SNMP agent allow for free configuration of device parameters via a standard WWW browser and constant monitoring of the device status from any management platform equipped with the SNMP v1 protocol. Additionally, the built-in SMTP protocol support allows for notifying the operator via e-mail in the event of any defined event in the system. It is possible to freely configure the content of messages sent by device via SNMP (TRAP) and syslog protocol .

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One of the examples of use of the devices is monitoring server rooms:
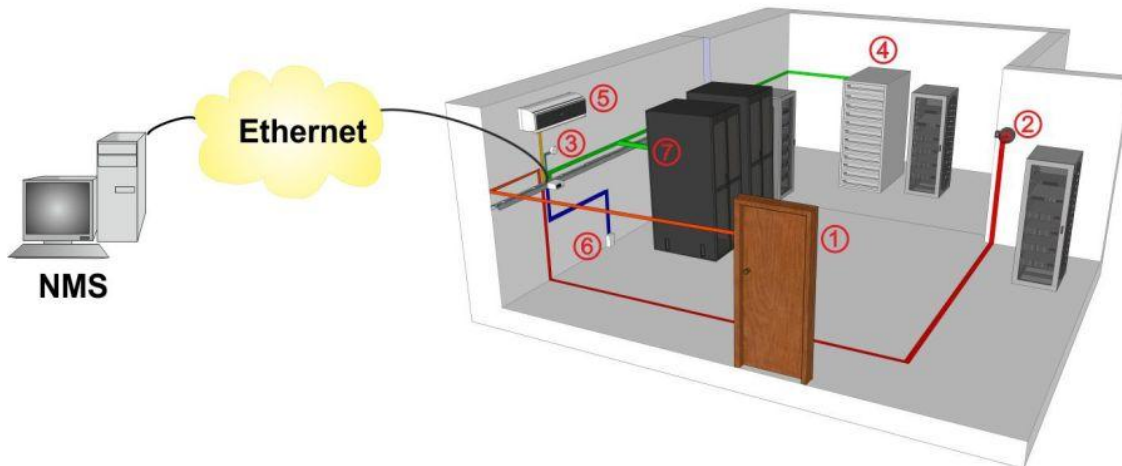
Rys. 1. Sample application.

1. Door opening sensor
2. Alarm siren
3. Gas sensor
4. Temperature sensor
5. Air conditioning switched on by means of a relay
6. Flood sensor
7. Telecom power plant controlled by a virtual RS232 console

A group of control units can be connected into one control and measurement system supervised from the level of the included, BTNET application or other management applications (e.g. via the SNMP protocol).
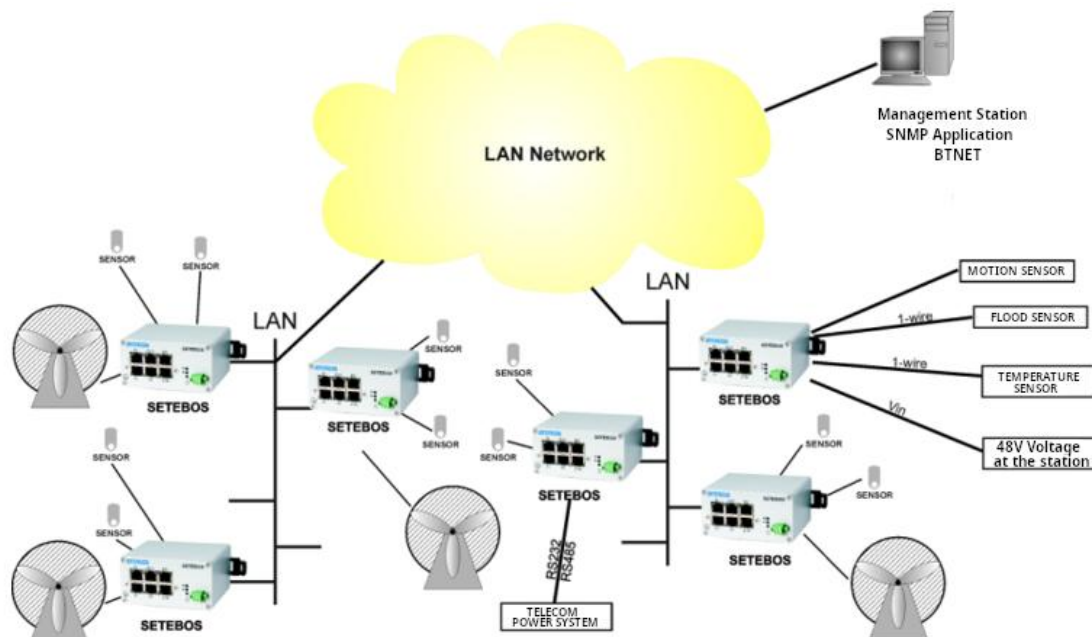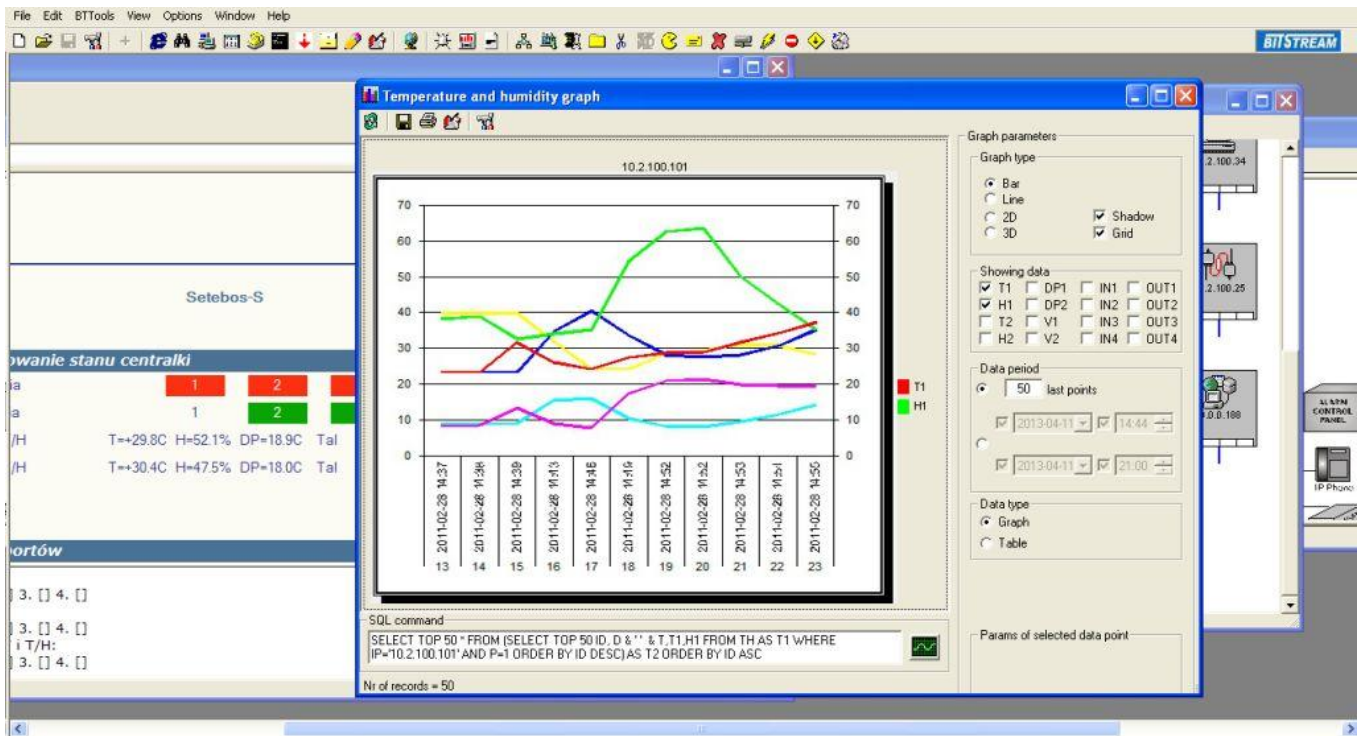

Figure 2. Example application illustrating the connection of peripheral systems for the measurement of detector state or environmental conditions in maintenance-free stations

BTNET software enables collecting alarms, monitoring the operation of a group of devices and visualizing measurements:

Technical specifications

Supported Transmission Standards

- IEEE 802.3 10Base-T Ethernet

Supported protocols

- ITU-T V.28
- HTTP, TELNET
- SNMP, SMTP

Supported EMC, safety standards, recommendations and directives*:

- EN 55022:2010/AC:2011 - Electromagnetic compatibility (EMC) - Information technology equipment - Radio disturbance characteristics - Methods of measurement and limit values
- PN-EN 55024:2011/A1:2015-08 – Electromagnetic compatibility (EMC) – Information technology equipment. Immunity characteristics – Limits and methods of measurement.
- PN-EN 60950-1:2007/A2:2014-05 - Information technology equipment – Safety – Part 1: Basic requirements,
- EMC 2004/108/EC – Electromagnetic Compatibility Directive.
- LVD 2006/95/EC – Low Voltage Directive.
- IEC 61000-4-2 Electromagnetic compatibility (EMC)- Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test
- IEC 61000-4-3 Electromagnetic compatibility (EMC)- Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test
- IEC 61000-4-4 Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test
- IEC 61000-4-5 Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques–Surge immunity test
- IEC 61000-4-6 Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conduct disturbances, induced by radio-frequency fields
- IEC 61000-4-8 Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

*- The scope and list of supported standards may change as the device evolves .

Ethernet interface :

- 1x RJ45 10Mb/s – management/monitoring

Temperature and humidity measurement interface

- Temperature measurement range: -40 to +125°C
- Temperature measurement accuracy: +/- 0.2°C for 25°C
- Humidity measurement range: 0-100% RH
- Humidity measurement accuracy: +/- 2% RH
- Maximum number of sensors T=4 and H=2
- Connector: RJ-45

RS485/ RS422 interface **

- Transmission speed 0-230 kbit /s
- Configuration interface type:
- RS422 – 4 wire
- RS485 – 2 wire
- Connector: RJ-45

Digital outputs

- Number of outputs – 4 standard (8 - option with additional module)
- Output type - relay contact
- Maximum operating voltage – 60V DC
- Maximum switching current – 0.5A DC
- Two outputs with the possibility of direct control of an external contactor

Measurement inputs *

- Number of measurement inputs
  - two for voltage measurement (does not apply to version S)
  - option of one input with galvanic isolation for current measurement as an additional module
  - option of one input with galvanic isolation for voltage measurement as an additional module

Additional modules cannot be combined

Current measurement :
- Current measurement range – 0 ÷10A DC in the version marked with the symbol 4
- Current measurement range – 0 ÷5A AC in the version marked with the symbol 4A
- Current measurement accuracy – 20mA

Voltage measurement:
- Voltage measurement range – 0 ÷60V DC
- Voltage measurement accuracy – ±0.25V

RS232 interface **

- Transmission speed 0-230 kbit /s
- Interface type: RS232C, ITU-T V.28, (Rx,Tx)
- Connector: RJ-45

Digital inputs

- Number of inputs – 4 standard (8 - option with additional module)
- Input type – parametric, detection of short circuit, open circuit and load with characteristic resistance.
- Galvanically isolated inputs

1-wire interfaces

- Transmission speed 0-16.3 kbit /s
- Range ≤ 100m
- Connector: RJ-45

Management:

- SNMPv1
- HTTP, TELNET
- SMTP, syslog

Power supply:

- Supply voltage range 9-29V DC or 43-60V DC
- Power consumption up to 6W

Physical characteristics:

- Possibility of mounting on a DIN rail
- Metal housing IP-30
- Dimensions 103x53x83mm
- Weight 0.40kg

Environmental work requirements:

- Standard operating temperature: 0 ° C to +50°C
- Standard ambient humidity during working: ≤ 80% % (no condensation),

* - interface available in SETEBOS-M and SETEBOS-L devices
** - interface available in the SETEBOS-L device

SETEBOS

NOTE!!! The external relay that will be used with SETEBOS must be selected in such a way that the rated voltage of its coil must be identical to the supply voltage of the device.

Code

SETEBOS–(X)–(Y)–(U)

Power Supply:

9^1 – Supply voltage range**:** 9 ÷ 29V DC
10 – Supply voltage range**:** 43 ÷ 60V

Moduły dodatkowe (opcja dla wersji S,M,L)

1^1 – additional module 4 inputs
2 – additional module 4 outputs
3^1 – voltage measurement module (galvanic isolation) and additional RS232 serial port
4 – current measurement module (galvanic isolation) and additional RS232 serial port
4A – AC current measurement module (galvanic isolation) and additional RS232 serial port

Versions:
S – version standard - T/H measurement, 4x input, 4x output,
M – version extended with measurement of two DC voltages within the range of 0–60 V
L – version extended with measurement of two DC voltages within the range of 0–60 V and isolated RS232/485/422 interface

Legend:
1 - option not available for version M

Examples of markings:

SETEBOS-S-1-10 – Setebos control unit in the following versions: T/H measurement, 4x inputs, 4x outputs, 4-input additional module, operating temperature 0 +50°C , power supply in the range of 43 ÷ 60V DC

Additional accessories:

- **T-2 sensor** - T sensor - temperature measurement, cable length 2 meters
- **T-5 sensor** T sensor – temperature measurement, cable length 5 meters
- **T-10 sensor** T sensor – temperature measurement, cable length 10 meters
- **T-50 sensor** T sensor – temperature measurement, cable length 50 meters
- **T/H-10 sensor -** T/H sensor - temperature and humidity measurement, cable length 10 meters (possibility connections to two sensors)
- **T/H-5 sensor -** T/H sensor - temperature and humidity measurement, cable length 5 meters (possibility of connections to two sensors)
- **T/H-2 sensor -** T/H sensor - temperature and humidity measurement, cable length 2 meters (possibility of connections to two sensors)
- **REL48** relay - external relay with DIN rail mounting bracket for control of 230V devices (48V coil)
- **REL230** relay - external relay for detecting 230V voltage with holder for DIN rail mounting
- **Sensor-Z** – flood sensor (additional 12V power supply required)
- **Sensor-O** – side reed switch - magnetic sensor

- **LT-19-TS-35-02 –** 19" DIN rail in a housing enabling mounting in a rack cabinet . Dimensions: 19" x 3U x 202-302mm (adjustable depth). Weight: 2.5kg
- **LT-19-01 -** The LT-19-01 strip is designed for mounting up to 4 devices with a front panel size of 108x53mm. These are devices from the CERES, CHIRON, RSMUX2-FO, SETEBOS families

List of recommended power supplies for BITSTREAM devices

Power supply designation	Output voltage range	Nominal output power	Operating temperature C-standard T-industrial
	DC	IN	
ZAS-12-25-WT	12V	25	-30°C ~ +70°C
ZAS-24-25-WC	24V	25	0°C ~ +50°C
ZAS-48-25-WC	48V	25	0°C ~ +50°C
ZAS-24-20-RT	24V	20	-20°C ~ +70°C
ZAS-48V56-40-RT	48 - 56V	40	-20°C ~ +70°C

Legend of markings: W – plug-in; S – standalone ; R – for DIN rail

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