



Ethernet/GSM/RS232/485/IO/TH control and measuring unit with automation control functionality

- 1x 10/100/Mbit/s Ethernet – management/ monitoring
- **1-wire** interface to external sensors of temperature, humidity, other measurable values, dew point calculation, or multi-point internal temperature monitoring
- Relay output control, **NO/NC ports**
- Digital inputs with "dry contact" optical isolation
- 3x **RS232/RS485/RS422** interfaces with galvanic separation, for the transfer of RS contact for external device management or communication with sensors, including one virtual-com
- Smart-building automation control in communication with an external mobile (phone, tablet) or PC application
- Possibility of adding extension modules: additional inputs, outputs, size measurements
- Remote, full software update
- **HTTP/HTTPS, SNMP v3, SMTP, TELNET/SSH, SNT, Syslog** management
- **USB CLI OTG**
- Operating temperatures from **-40 to +70°C**
- Durable metal casing **IP-30 DIN**
- **DC** power supply

Description of the device

Functionality

In its base functional application, **SETEBOS-2S** serves as control and measuring unit dedicated to object supervision and control, registering environmental parameters such as temperature and humidity. Additionally, the respective inputs allow building violation detection, flooding, etc. Furthermore, the device facilitates remote control of devices installed in the monitored facility via two relay contact outputs.

RS232/485/422 interfaces allow communication with external devices via Ethernet/IP networks, or connection of peripherals or extensions for the measuring and monitoring functions. The in-built serial interface allows the connection of additional external modules to further expand the device's functionality.

SETEBOS-2S may be fitted with a whole range of wireless communication interfaces allowing monitoring and control of elements installed in the building and not directly plugged into the device, as well as connectivity with user mobile devices (tablet,

mobile phone, etc.) with the provided control application installed.

Depending on the version, it can be powered directly from locally available, DC power sources.

Management

The inclusion of a **HTTP/HTTPS** server, a **TELNET/SSH** server and **SNMP/SNMPv3** agent facilitates free configuration of the devices parameters using a **WWW** browser or constant monitoring of the device's condition from any **SNMP** compatible management platform.

Moreover, the included **SMTP** support allows operator notification via email if any system-defined event is detected. The content of messages sent by the device via **SNMP (TRAP)** and **syslog** protocols is fully customisable.

Dedicated applications are provided with an application which, depending on the modules installed, can be used for object control and monitoring purposes as well as smart-building automation control based on the applicable algorithms.

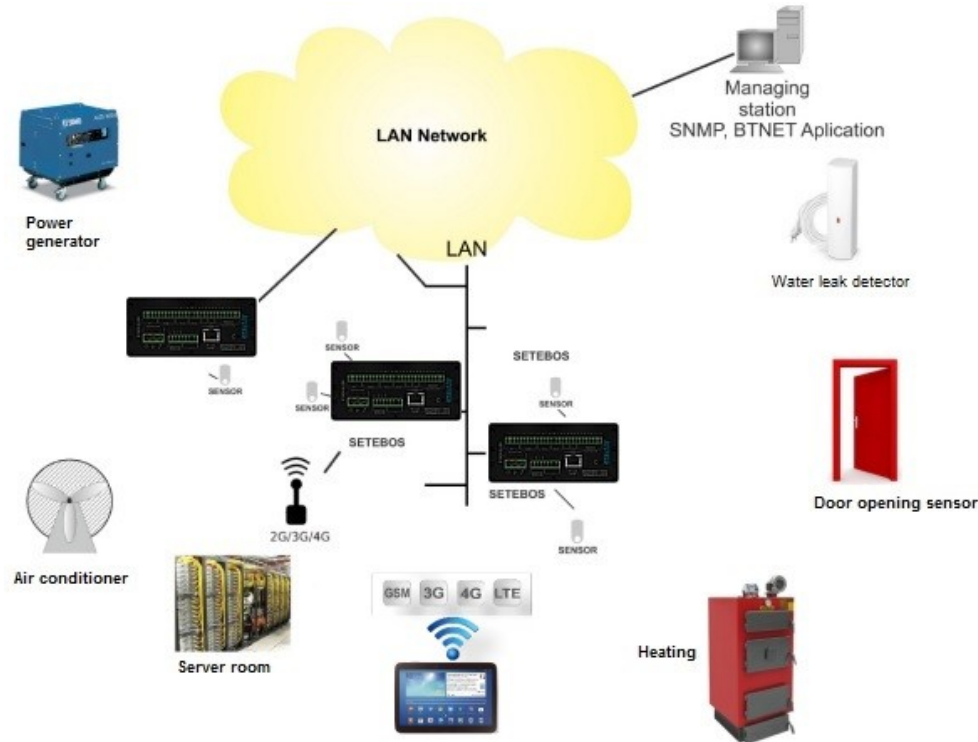


Fig. 1 Example application illustrating the connection of peripheral systems for the measurement of detector state or environmental conditions in maintenance-free stations.

One of the possible usages is control and environment monitoring in server room. Example of such application is presented on the drawing below.

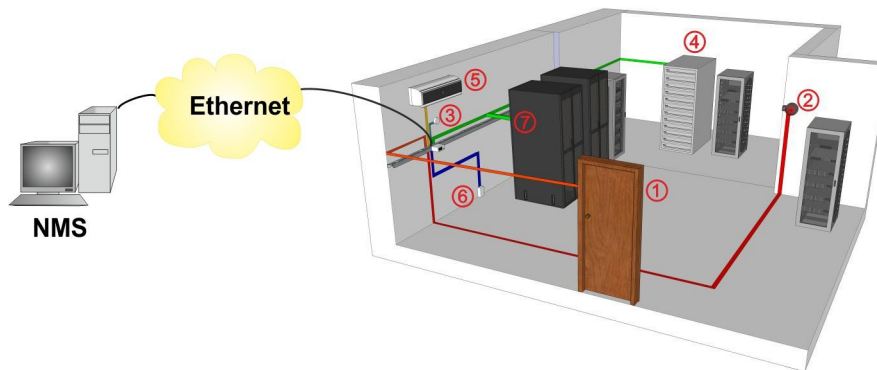


Fig. 2 One example of device use is server room monitoring:

Sensor Group:

1. Door opening detector connected to digital input, informs about violation of the facility's space
2. Alarm siren, can be switch on using digital output
3. Smoke detector, informs about fire presence
4. Temperature and humidity probe mounted in Rack
5. Air conditioner controlled by relay output, switched on automatically when the temperature rises above set point
6. Water leak detector
7. Telecom rectifier managed by RS232 virtual console

Units can be grouped to form a single control and management system supervised via the provided, free BTNET application or other management applications (e.g. via SNMP). BTNET software allows the user to gather alarm notifications, monitor the operation of a group of devices and generate measurement visualizations:

SETEBOS-2S, depending on the version, can be powered with direct voltage within the range of 11-60V DC. The total device power input does not exceed 6W.

Technical specifications

Ethernet interfaces:

- 1x RJ45 10/100Mbps – management/ monitoring

Temperature and humidity measurement interface

- Range of temperature measurement: -40 - +125 °C
- Accuracy of temperature measurements: +/- 0.2°C for 25 °C
- Range of humidity measurement: 0-100% RH
- Accuracy of humidity measurement: +/-2% RH
- Maximum number of sensors T = 4 and T/H=2
- Connector: screw terminals

RS232/485/422 interfaces

- Transmission speed:
 - 0-115.2 kbit/s for RS232
 - 0-230 kbit/s for RS 485 or RS 422
- Interface configuration:
 - RS422 – 4 wire
 - RS485 – 2 wire
 - RS232
- Connector: screw terminals

GSM modem

- 1(2)x independent GSM 2/3G/(4G LTE) modems
- GPRS/EDGE, UMTS, CDMA, LTE standards
- Radio frequencies: 800/900/1800/2100/2100 MHz
- 1(2)x SIM cards
- 2(3)x SMA aerials
- Operation status and signal quality signalling
- Automatic login and packet session established in APN after unsuccessful attempts to reboot the device

Management:

- SNMP v1/2c/3, TELNET, SNTP, Syslog, SMTP
- HTTP/HTTPS protocol and web browser as a management application
- SSH

Power supply

- Supply voltage range: 11 ÷ 36VDC
- Supply voltage range: 30 ÷ 60VDC
- Screw connection for wire
- Up to 6W power consumption

1-wire interface

- Transmission speed: 0-16.3 bit/s
- Range < 100m
- Connector: screw terminals

Output contacts

- Number of outputs – 4/8
- Type - „relay contact”
- Maximum switched DC current – 0.5A, 48VDC
- One output (option 2/3 for Gx) max. switching current – 8A, 250VAC; 8A 24VDC
- One output (option 2/3 for Gx) max. switching current – 8A 24VDC
- Connector: screw terminals

Input contacts

- Number of input – 2/4
- Galvanically insulated inputs
- Input Type - dry contact
- Connector: screw terminals

Physical characteristics:

- Can be mounted on a DIN bus
- Metal IP-30 casing
- Dimensions: [135x120x145] mm (with GSM module)
- Weight: 1,2 kg

Environmental requirements:

- Operating temperature: -40 to +70°C
- There are no active cooling and heating elements in the unit
- Operating humidity (non condensing): 5%-95%,
- Location type: class C as per PN-EN60870-2-2 - covered location
- IP-30 protection rating

USB Host

- 1x USB CLI OTG

Code

SETEBOS-2S-(X)-(IO)-U

GSM/RF module:

No symbol** - basic version
GSM* - router equipped with a GSM modem
RF* - router equipped with a radio module
GSM + GSM* - router equipped with GSM modems with redundancy
GSM + RF* - router equipped with GSM module and radio module

* - When completing the set, provide the module reference.
 Available modules in the table below.
 ** - The device in the basic version doesn't have the possibility of expansion in the future.

Power Supply:

4 - Power supply 30 - 60VDC
5 - Power supply 11 - 36VDC

Additional Interfaces I/O:
IO - See the module list

List of available modules: SETEBOS-2S:

Symbol (Ga)/(Gb)	Module designation	Description	Suggestions
G1	MOD-GSM-UB-2/3G	Modem GSM 2/3G - built - built	
G2	MOD-GSM-UB-3/4G	Modem GSM 2/3G/4G LTE - built	Unavailable in version with 2x GSM LTE module or 1x GSM LTE with GPS
G3G	MOD-GSM-GPS-TE-2/3G	Modem GSM 2/3G z GPS - built	Unavailable in version with 2x GSM LTE module or 1x GSM LTE with GPS
G4G	MOD-GSM-GPS-TE-3/4G	Modem GSM 3/4G LTE z GPS - built	Unavailable in version with 2x GSM LTE module or 1x GSM LTE with GPS
G5	MOD-RF-WIFI	Radio module WIFI – 802.11* - built	Offer and availability after consultation with R&D
G6	MOD-RF-BLUETOOTH	Radio module BLUETOOTH - built	Offer and availability after consultation with R&D
G7	MOD-RF-ZIGBEE	Radio module Zigbee* - built	Offer and availability after consultation with R&D

Additional accessories:

- ZAS-ANYMUX-03 230VAC PSU, 220VDC / 48VDC, 30W, -20+70°C, 1x PoE, mounted on a DIN bus

Examples of code:

SETEBOS-2S-GSM-5

MOD-GSM-UB-3/4G Setebos-2S; Control and measuring unit with built-in GSM module, Ethernet/RS232/485/IO/TH, Interfaces: 1x RJ45 (10M/100M/1G), 3x RS232/RS485/RS422; connectors NO/NC, 1-wire, 2x digital inputs, 4x relay outputs, USB CLI port, Management: HTTP/HTTPS, SSH, SNMPv3, SMTP, TELNET, SNTP, Syslog
Operating temperature: -40°C to +70°C, Solid IP-30 DIN mounted metal enclosure, Power supply: 11-36V DC

Additional accessories:

- T/H-2 sensor T/H sensor - cable length 2m (possibility of connecting to two sensors)
- REL48 External relay with a holder for mounting on a DIN rail to control 230V devices (48V coil)
- REL230 External voltage detection relay 230V with a holder for mounting on a DIN rail
- Z-sensor Flood sensor
- Sensor-O Side reed switch - magnetic contact

List of proposed power supplies for BITSTREAM devices

Model	Output voltage range	Rated power	Working temperature C-Standard T-Industrial
	DC	W	
ZAS-24-25-W-C	24 V	25	0°C ~ +50°C
ZAS-48-25-W-C	48 V	25	0°C ~ +50°C
ZAS-24-25-S-C	24 V	25	0°C ~ +50°C
ZAS-48-25-S-C	48 V	25	0°C ~ +50°C
ZAS-24-20-R-T	24 V	20	-20°C ~ +70°C
ZAS-24-40-R-T	24 V	40	-20°C ~ +70°C

Legend of symbols: W - plug-in; S - standalone; R - DIN rail mounting