



## External expansion module for automation control for SETEBOS devices, HYPERION-105-X-IO1W and HYPERION-30x-3

- Extension of the number of IO interfaces to SETEBOS, HYPERION-105-X-IO1W and HYPERION-30x-3 devices
- Interface ***nx digital inputs*** to carry short or open circuit states
- Interface ***nx low voltage controlled relay outputs, NO/NC connectors***
- Voltage measurement ***0-60V DC***
- Interface ***1x RS485*** or ***1-Wire*** or ***BTS-INT*** for communication with the management device
- Operating temperature from ***-40 to +70°C***
- Possibility of mounting on ***DIN rail TH35***
- Power supply from the device or external in the range of ***9-60V DC*** or ***24-60VDC*** for ***MOD-EXT-6I2O3V-H105*** version

### Description of the device

#### Functionality

The **MOD-EXT-IO** expansion module is a module designed to increase the functionality of SETEBOS-2 and HYPERION products by expanding the number of input interfaces designed to carry short-circuit or open-circuit states for connecting, for example, reed switches for monitoring facility space violation, flooding, as well as other measured quantities, and low-voltage output interfaces. In addition, it allows remote control of devices located on the monitored object through two reed contacts outputs. The two outputs allow control of low-voltage contactors up to 60V.

The **MOD-EXT-IO** expansion module has a bracket for mounting on a standard DIN TH35 rail.

The use of the **MOD-EXT-IO** external module increases the number of input/output interfaces and voltage measurements in HYPERION-105-X-IO1W, HYPERION-30x-3 and SETEBOS-2 devices, thus expanding the

functionality of these devices in control and measurement systems supervised from the available BTNET application.

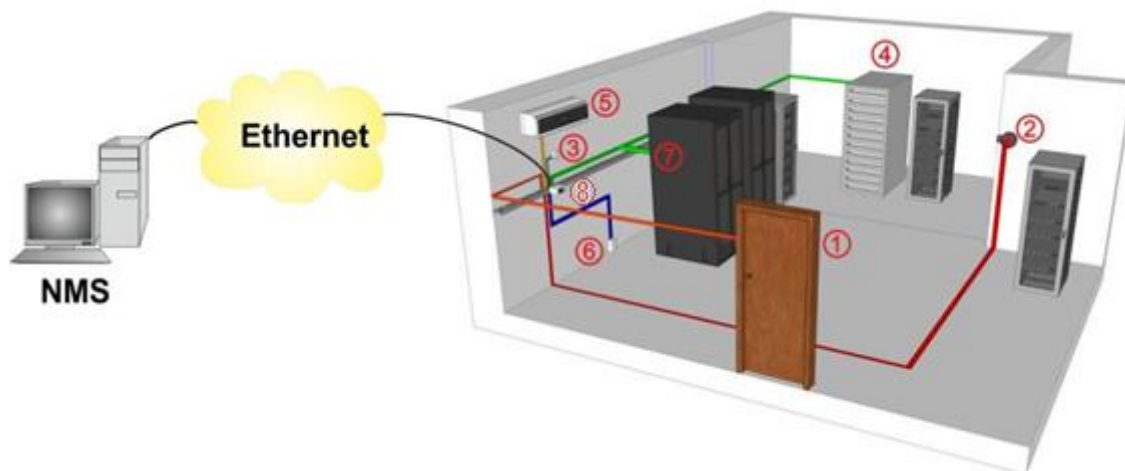
#### Communications

The module has one RS485, 1-Wire or BTS-INT connector for communication with the management device SETEBOS-2, HYPERION-105-X-IO1W, HYPERION-30x-3.

#### Power supply

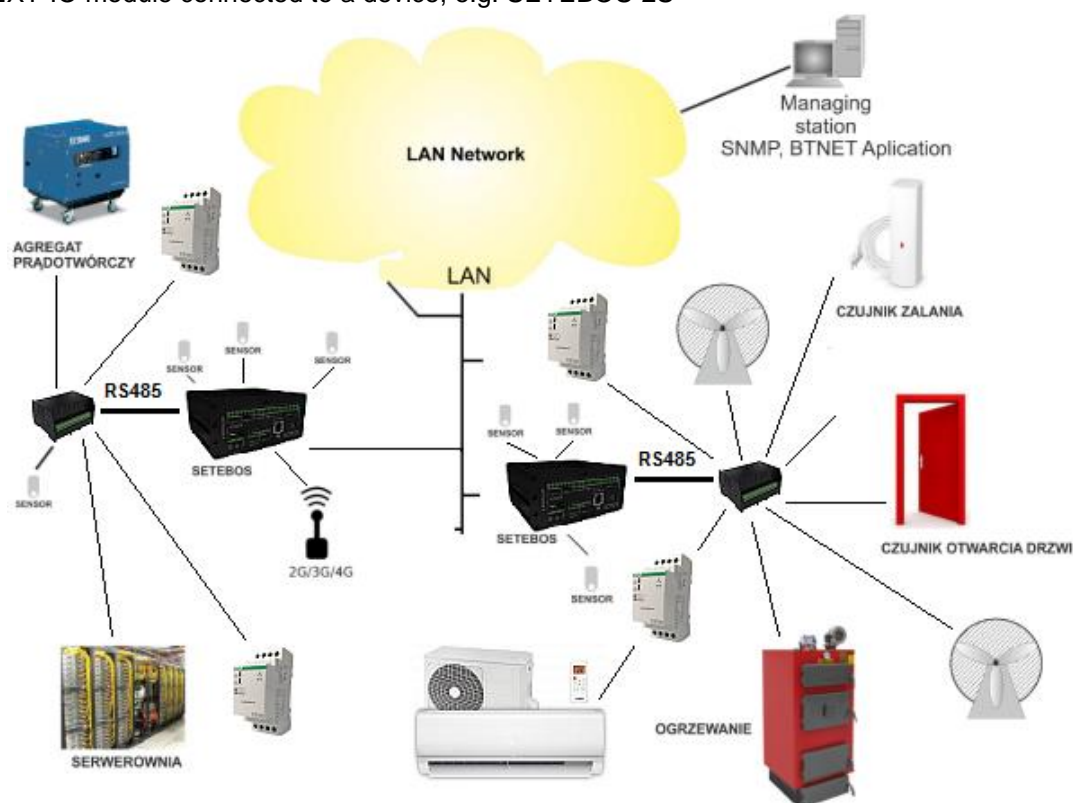
The power supply of the **MOD-EXT-IO** expansion module dedicated to SETEBOS-2S devices is provided directly from the management device with a voltage in the range of 9-60VDC. The MOD-EXT-6I2O3V-H105 version of the module should be supplied with voltage in the range of 24-60VDC and for MOD-EXT-6I2O3V-H105 version with voltage in the range of 9-60VDC.

One example application of the module is to increase elements for monitoring, for example, a server room



Rys. 1. An example application using an external module.

1. Door opening detector
2. Alarm siren
3. Gas sensor
4. Temperature sensor
5. Air conditioning switched by relay
6. Flood sensor
7. Telecommunications powerhouse controlled by a virtual RS232 console
8. MOD-EXT-IO module connected to a device, e.g. SETEBOS-2S



Rys. 2. An application illustrating the possibilities of extending IO interfaces in SETEBOS by an external module.

## Technical specifications

### 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 permissible levels
- 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 conducted 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 develops.

### Digital outputs

- Number of outputs - depending on the version
- Type of outputs - "reed contacts", NO connectors
- Maximum switching voltage of 60VDC
- Maximum switching current - 0.5A, 48VDC
- Connector: crimped screw terminal

### Digital inputs

- Number of inputs - depending on the version
- Galvanically isolated inputs
- Input type - dry contact
- Connector: crimped screw terminal

### RS485 communication interface

- Transmission speed: 0-230 kbps
- RS485 interface configuration
  - 2 wire
  - 4 wire
- Connector: crimped screw terminal

### Voltage measurement:

- Voltage measurement range - 0÷ 60V DC
- Voltage measurement accuracy - $\pm 0.25V$

## 1-wire interface:

- Transmission speed 0 - 16.3 kbit/sec.
- Range  $\leq 100\text{m}$
- Connector: crimped screw terminal

## BTS-INT interface:

- Transmission speed 0 - 16.3 kbit/sec.
- Range  $\leq 100\text{m}$
- Connector: crimped screw terminal

## Power supply:

- Voltage range:  $9 \div 60\text{VDC}$
- Voltage range 24-60V DC in the MOD-EXT-6I2O3V-H105 module version
- Connector: crimped screw 2-pin

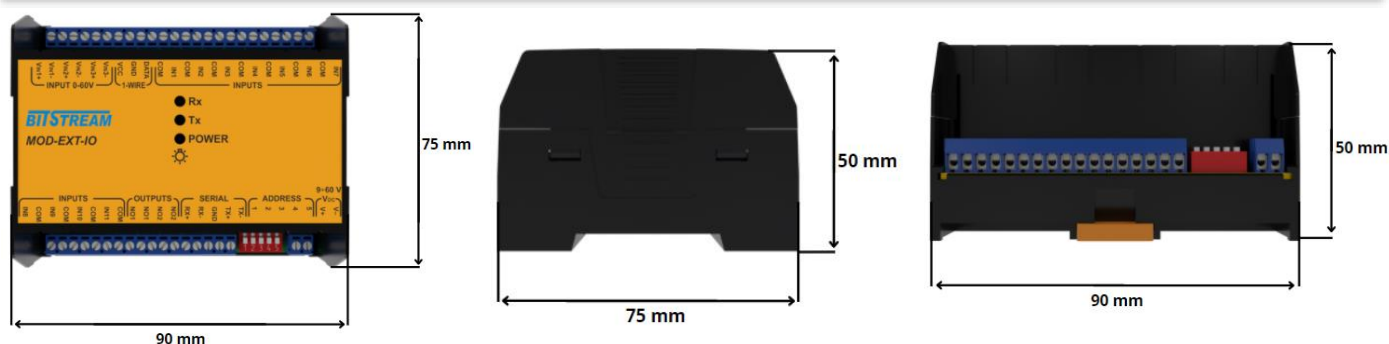
## Physical Features:

- Can be mounted on a DIN TH35 rail
- Dimensions 90x75x50 mm

## Work environment requirements:

- Standard operating temperature:  $-40 \div +70^\circ\text{C}$
- Standard ambient humidity:  $\leq 95\%$  (non-condensing)

## Mechanical drawing



View - top

View - rear

View - side

Code

## MOD-EXT-IO

### Available interfaces:

**16I2O<sup>1</sup>** - module equipped with 16 inputs and 2 outputs

**16O<sup>1</sup>** - module equipped with 16 outputs

**6I2O3V-H105<sup>2</sup>** - module equipped with 6 inputs and 2 outputs and 3 inputs for voltage measurements (for HYPERION-105)

**6I2O3V-H300<sup>3</sup>** – module equipped with 6 inputs and 2 outputs and 3 inputs for voltage measurements (for HYPERION-300)

- 1 – communication over RS485  
2 – communication over BTS-INT  
3 – communication over 1WIRE

### Example designations:

- MOD-EXT-16I2O** External Interface Expansion Module for 16x digital inputs and 2x digital outputs, operating temperature: -40÷ +70°C, communication over RS485, power supply 9-60V DC
- MOD-EXT-6I2O3V-H300** External interface extension module in the version of 6x digital inputs and 2x digital outputs and 3 inputs for voltage measurement, operating temperature: -40÷ +70°C, communication over 1WIRE, power supply 24-60V DC – dedicated to work with the HYPERION-300 device

### Additional accessories:

- LT-19-TS-35-02** - 19" DIN rail in an enclosure that allows rack mounting.  
Dimensions: 19" x 3U x 202-302mm (adjustable depth). Weight: 2.5kg

### List of proposed power supplies for BITSTREAM devices

Designation of the power supply	Output voltage range	nominal output power	Operating temperature
	DC	W	
ZAS-24-25-W-T	24 V	25	-30°C ~ +70°C
ZAS-48-25-W-T	48 V	25	-30°C ~ +70°C
ZAS-24-25-S-T	24 V	25	-30°C ~ +70°C
ZAS-48-25-S-T	48 V	25	-30°C ~ +70°C
ZAS-24-20-R-T	24 V	20	-20°C ~ +70°C
ZAS-48V56-40-R-T	48 - 56 V	40	-20°C ~ +70°C

Legend of designations: W - plug-in; S - standalone; R - for DIN rail.

**BITSTREAM Sp. z o.o.**  
ul. Mełgiewska Street 7/9  
20-209 Lublin, Poland

Tel. +48 81 743 86 43,  
Fax +48 81 442 02 98  
info@bitstream.com.pl

Copyright © BitStream sp z.o.o. All rights reserved.