



for a safer world

# BSR-8120

## Addressable twin input/output unit with integrated isolator



### TECHNICAL CHARACTERISTICS

COMMUNICATION PROTOCOL	Olympia A Protocol
MAIN VOLTAGE	12-30V DC
STANDBY CONSUMPTION	200µA
ALARM CONSUMPTION	2.5mA (with activated LED)
INPUT	2, adjustable operation
OUTPUT	2, relay 30V/2A, adjustable operating modes
INDICATORS	Alarm LED
EXTERNAL VOLTAGE	21.5-28V DC
MAXIMUM LOOP CURRENT (Ic max, -L in/out)	1A
MAXIMUM SWITCH CURRENT (Is max, -L in/out)	5A
MAXIMUM SERIES RESISTANCE (Zc max, -L in-out)	300mΩ
MAXIMUM LEAKAGE CURRENT IN ISOLATION MODE (Il max, -L in/out)	25mA pulses (6ms duration every 2sec)
ISOLATION VOLTAGE (Vso min-max)	8.8 - 11
RECONNECT VOLTAGE (Vsc min-max)	10.2 - 13
DEGREES OF COVER PROTECTION	IP20
PRODUCED IN ACCORDANCE WITH	EN 54-18, EN 54-17
OPERATING TEMPERATURE RANGE	-20 to 70 °C
RELATIVE HUMIDITY	Up to 95%
CONSTRUCTION MATERIALS	ABS/PC
EXTERNAL DIMENSIONS	90(l)x71(w)x59(h) mm.
TYPICAL WEIGHT	136 gr.
GUARANTEE	2 years

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#### GENERAL

The BSR-8120 device has 2 independent inputs and outputs and it can work with any panel supports Olympia A Protocol. It is used for connection in the addressable loop multiple conventional fire detectors of Olympia Electronics, as well as other devices having free contact such as gas detectors, conventional fire detection panels, flow switches etc. They are installed on a DIN rail.

The BSR-8120 device is recognised in the panel as 2 logical devices with separate addresses each with an input and an output with adjustable operating modes. The input can be adjusted either for a connection to multiple conventional fire detectors, in which case an external 24V voltage is required, either multiple devices with free contacts. Each logical device sends an analog value to the panel depending on the status of the input, that is quiescent, pre alarm, alarm, open circuit, short circuit and external power failure according to Table 2 (page 7). The output can be configured for remote control through the main panel as well as for permanent or short term activation in the event of alarm.

The device has a red LED which blinks every 10 sec in quiescent state indicating the connection status with the main panel. The LED lits in case that the input sound an alarm to the panel. Also, the LED remains lit even if the sirens are silenced from the panel, to indicate the device from which the alarm sounded. It turns off only when a reset command is given from the panel.

The BSR-8120 integrates a short circuit isolation circuit which is automatically activated and disconnects the defective node from the remaining loop, allowing it to be located by the panel.

In each loop they can be connected up to 75 BSR-8120 devices.

## SETTING THE ADDRESS

Each BSR-8120 device must have two consecutive addresses with which it is recognised from the panel as two separate logical input/output devices. It is forbidden for two devices in the same loop to share the same addresses. To set it up you can use the function of changing address point as described in the user manual of the panel. The addresses are continuous e.g. 5 and 6, 20 and 21 etc.

## MOUNTING

The unit is designed to be mounted in an electrical panel on a DIN rail.

## OPERATION

Each logical device can operate in 6 different modes as shown in the Table 1 (page 7) and defined by DIP switches 1 to 6. Each logic device can work independently and in different or in the same mode as the other.

### Input connection with free contacts

In this mode the input is used to connect non addressable devices having free contacts (like conventional fire detection panels, flow switches, gas detectors, BS-536 or any other device that acts as a free contact etc.). The device sends to the panel, a value depending on the status of the input, according to Table 2. The terminating resistance which is required in this mode is 56k $\Omega$  and the resistance of the alarm 10k $\Omega$ .

### Input as a driving unit of conventional detectors

In this mode the input is used to connect conventional detectors in an addressable BSR-100x panel. **The input can drive up 3mA detector's load in quiescent state** and has detection and protection for short circuit and open circuit. The device sends to the panel, a value depending on the status of the input, according to Table 2. The terminal resistance is 4.7k $\Omega$  and is installed on the last detector in row. **This mode requires a connection with an external supply of 24V DC which must be uninterrupted in the event of mains power failure. If multiple BSR-8120 units are connected on the same panel, they must be supplied by a common power supply.**

### Output controlled from the panel

In this mode the output works independent from the status of the input and is controlled from the main panel.

### Output controlled from the input with activation for 30 sec

In this mode the status of the output depends on the status of the input and is activated for 30 seconds during the transition of the input from any other state to an alarm state.

### Output controlled from the input with permanent activation

In this mode the status of the output depends on the status of the input and remains activated as long as the input is in alarm state.

## Autoaddressing

In order to start autoaddressing procedure, first disconnect all external power supply cables from the device. After autoaddressing procedure is finished, connect the external power supply cables.

## UID:

**In every device there is a double sticker with the UID (Unique Identifier) number. This number is unique for each device.**

## Connections for each mode

Connect +V and 0 terminals to an external 24V DC supply in case that an input is used to drive conventional detectors.

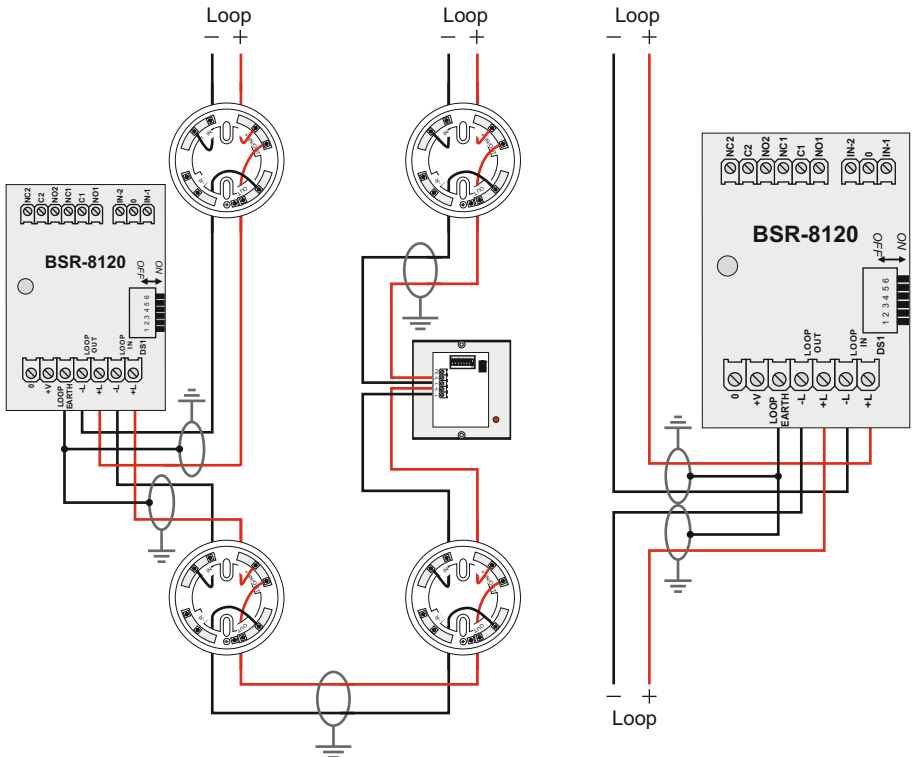
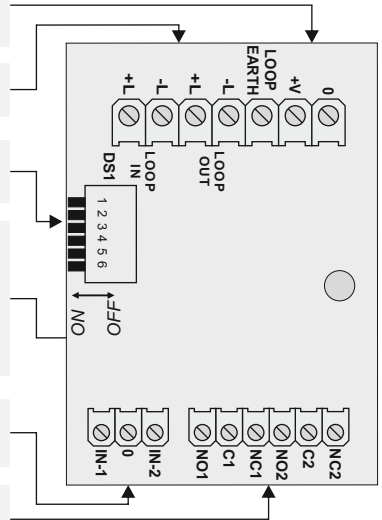
Terminals for loop and earth connections of the cable.

DIP switches **for operating mode selection (1-6).**

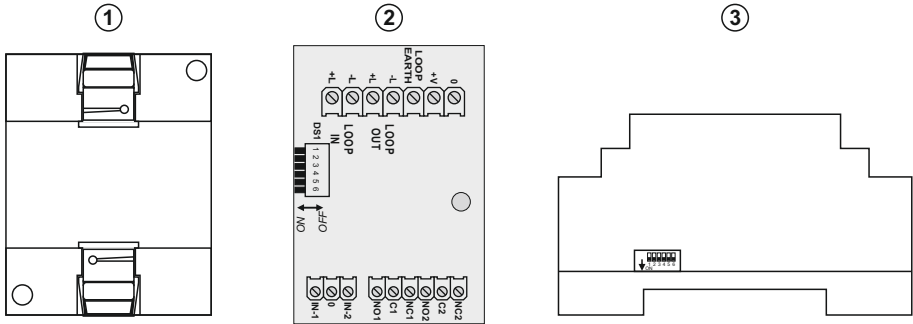
Indication LED.  
**Blinks** in quiescent state.  
**Lit** in alarm state.  
**Turns off** only after a **reset**.

Input connection terminals.

Output (relay) connection terminals (NO, C, NC).



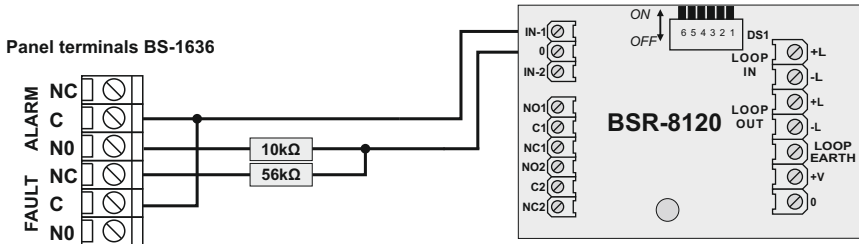
# Installation process



1. Pull the mounting clips to open and mount the device on the DIN rail.
2. Install the cables and perform the electrical connections.
3. Adjust the operating mode with the DIP switches according to Table 1.

# Input connection with free contacts

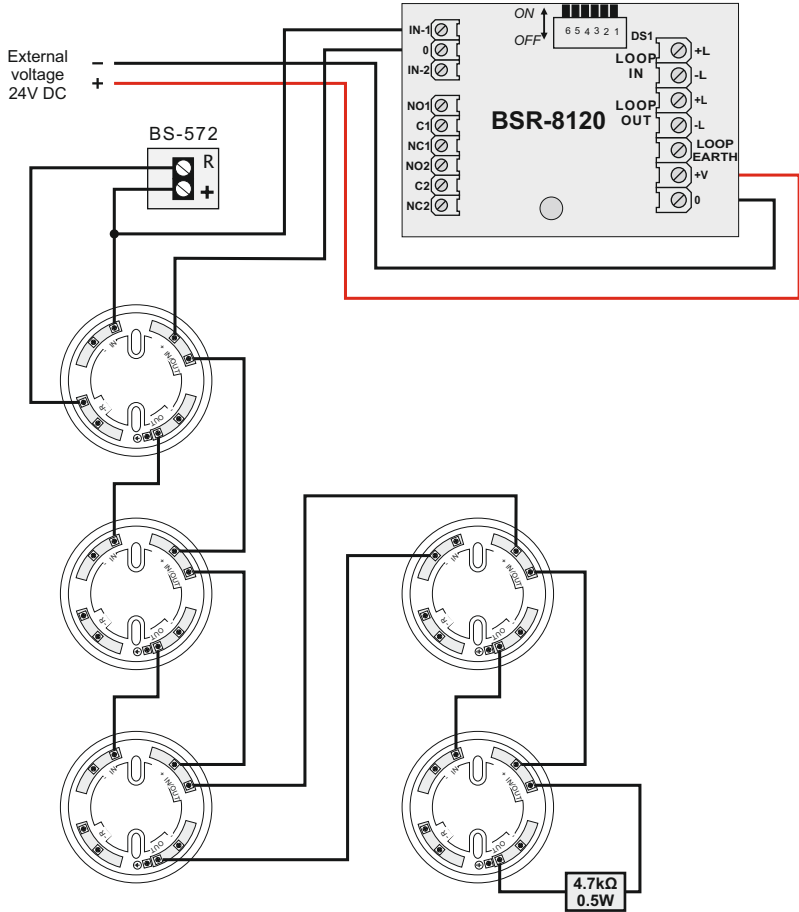
## Connection to conventional panel



Connection of BSR-8120 with the panel BS-1636. The ALARM and FAULT relays are used. Using this connection, when the BS-1636 detects a fault the BSR-8120 will send a fault signal to the main panel and when the BS-1636 detects an alarm in a zone, the BSR-8120 will send an alarm signal.



## Input as driving unit of conventional detectors using external supply



Connection of BSR-8120 with conventional detectors. On the final detector must be connected the resistance which is at the terminals of the device. **The input can drive up 3mA detector's load in quiescent state.** In one of the detectors an external LED BS-572 can be connected.

The consumption is provided from an external voltage so there is no cargo to the loop.

The external voltage must be on the area between 21.5-28V and must operate without interruptions even in the mains power supply failure. The voltage must be isolated from the main power grid and will be able to provide current up to 200mA in case of an alarm.

**Table 1**

DIP SWITCHES (1-2-3-4-5-6)	INPUT OPERATION	OUTPUT OPERATION
	Conventional detectors driver	Output controlled from the input with permanent activation
	Conventional detectors driver	Output controlled from the input with activation for 30 sec
	Conventional detectors driver	Controlled from the panel
	Connection to free contacts	Output controlled from the input with permanent activation
	Connection to free contacts	Output controlled from the input with activation for 30 sec
<p align="center">or</p>	Connection to free contacts	Controlled from the panel

**Table 2**

Status	Value	Free contact mode	Conventional detectors mode
Quiescent	10	56K	>=3.4mA (4.7K)
Prealarm	64	56K//56K	
Alarm	127	10K	>=9.5mA
Short circuit	32	<1K	>=40mA
Open circuit	33		<3.4mA
External voltage fault (only for conventional detectors driver modes)	36		

## WARRANTY

Olympia Electronics guarantees the quality, condition and operation of the goods. The period of warranty is specified in the official catalogue of Olympia Electronics and also in the technical leaflet, which accompanies each product. This warranty ceases to exist if the buyer does not follow the technical instructions included in official documents given by Olympia Electronics or if the buyer modifies the goods provided or has any repairs or re-setting done by a third party, unless Olympia Electronics has fully agreed to them in writing. Products that have been damaged can be returned to the premises of our company for repair or replacement, as long as the warranty period is valid.

Olympia Electronics reserves the right to repair or to replace the returned goods and to or not charge the buyer depending on the reason of deflection. Olympia Electronics reserves the right to charge or not the buyer the transportation cost.

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