BSR-8020/WP/MAR   Waterproof addressable input-output unit

Technical characteristics

OPERATION VOLTAGE	21-28V
QUIESCENT CONSUMPTION	0.7mA
ALARM CONSUMPTION	1.3mA (with activated LED)
QUIESCENT CONSUMPTION WHEN USED AS A CONVENTIONAL DEVICE DRIVER	5.6mA
ALARM CONSUMPTION WHEN USED AS A CONVENTIONAL DEVICE DRIVER	30mA
EXTERNAL POWER SUPPLY	21-28V
INSTALLATION	For internal use only
DEGREES OF COVER PROTECTION	IP65
PRODUCED IN ACCORDANCE WITH	EN 54-18, IEC 60092-504, IEC 60533
OPERATION TEMPERATURE RANGE	-10 to 60 °C
RELATIVE HUMIDITY	Up to 95%
CONSTRUCTIONAL MATERIAL	Bayblend FR3010
DIMENSIONS	155x80x43mm
WEIGHT	170gr.
GUARANTEE	2 years

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## Olympia Electronics - European manufacturer

GENERAL

The input-output unit is used in ships. It is recognized and programmed by the BSR-2100 panel. This device is used to connect to the loop non-addressable devices that have a free relay contact (such as fire alarm panels, flow switches and conventional detectors). The input unit is fully monitored and can send to the panel, with a suitable connection, three states: quiescent, fault, alarm. The output unit contains a fully programmable by the panel relay with a rating of (30V/1A).

The red LED that blinks periodically in the quiescent state is an indication of power and good operation. The LED lights and remains lit when the specific input unit issues an alarm to the panel. The LED also remains lit if the sirens are deactivated from the panel in order to show the precise point where the alarm originated from. The Led is turned OFF after a panel reset. Each device must have an address, that is recognized by the panel. It is not allowed for two devices on the same loop to have the same address. Page 4 contain the full table that shows the addresses and how they can be set with the micro switches. Up to 127 units can connected to each panel.

INSTALLATION   (*Notice!!! The mounting accessories are included*)

1. Unfasten the front cover screws and remove the cover.
2. Locate the mounting holes and use the supplied accessories to mount the unit on the required position.
3. Pass the cables through the cable glands and make the required connections.
4. Notice!! If an additional entry hole is required then remove the break-out plastic and install the supplied cable gland.
5. Set the address on the dip-switch (page 4 and 5).
6. Reinstall the front cover and fasten the screws that were removed in step 1.

Indicator LED

ON
OFF
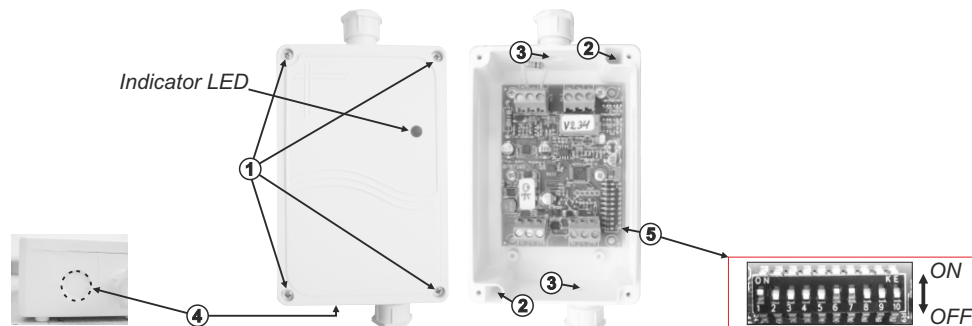
OPERATION
The device has 4 different operation modes:

1) Input/Output Unit
In this function input and output units are independent.
The input unit is used in order to connect non addressable devices, that have a free relay contact (such as conventional alarm panels, or flow switches), to the loop of the panel. The input unit is fully monitored and has the capability to send to the panel, with a suitable connection, three states: quiescent, fault, alarm. The output unit contains a relay that is fully programmable from the panel with a rating of (30V/1A). The red LED which blinks periodically in the quiescent state is a power and good operation indication. On the panel, the input unit is shown as "INPUT/OUTPUT UNIT XXX" (where XXX is the set address of the device). In this function, the terminal resistor is 56kΩ and the alarm resistor is 10kΩ.

2) Input unit
The input unit with auxiliary relay is used so as to provide an additional input to the loop. Gas sensor types BS-685 and BS-686 can also be connected. It contains an input that is fully monitored for open and short circuit conditions and a relay (1A/30V), which is activated for 5 seconds after a panel reset (when the dip-switch number 8 is in the OFF position). On the panel, the input units are shown as "INPUT UNIT XXX" (where XXX is the set address of the device). In this function, the terminal resistor is 56kΩ and the alarm resistor is 10kΩ.

3) Conventional detector driving unit
The driving unit for conventional detectors is used in order to connect conventional detectors to the addressable panel. The device can be connected to the BSR-2104 and BSR-2114 panels. It can power up to 10 detectors and has protection against the detection of an open circuit or the disconnection of a detector. A 56kΩ resistor is installed by default on the terminals +IN, -IN. We replace the 56kΩ resistor with a 10kΩ resistor. We install the 10kΩ resistor to the last detector of the line. On the panel, the input unit is shown as ``ADAPTOR UNIT  XXX`` (where XXX is the set address of the device). The LED lights and remains lit when the specific input unit issues an alarm to the panel. The LED also remains lit if the sirens are deactivated from the panel. The LED of the detector that issued the alarm also remains lit in order to show the precise alarm origin. LED is turned OFF after a panel reset. In this operation we have increased consumption and cannot connect more than 7 BSR-8020/WP/MAR on each loop. In this function the terminal resistor is 10kΩ and the alarm resistor is 1kΩ .

4) Conventional detector driving unit with external power supply.
This function is the same as the previous one. The only difference between the two, is that an external power supply is used. The external power source must have an output rating of 21-28V and must not be interrupted during a power failure.In this function the terminal resistor is 4.7kΩ and the alarm resistor is 1kΩ .

The above functions are set using the dip-switches 9 and 10. The dip-switch 8 determines a sub function depending on the case.

dip-switches 9 & 10	Operating mode
ON 9 10	Input/Output unit
ON 9 10	Input unit
ON 9 10	Conventional detector driving unit
ON 9 10	Conventional detector driving unit with external power supply

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Input connection terminals.
The input is fully monitored and has by default a (56kΩ) resistor. On the 24V IN terminal you can connect an external power supply if the function conventional detector driving unit with external power supply is selected.
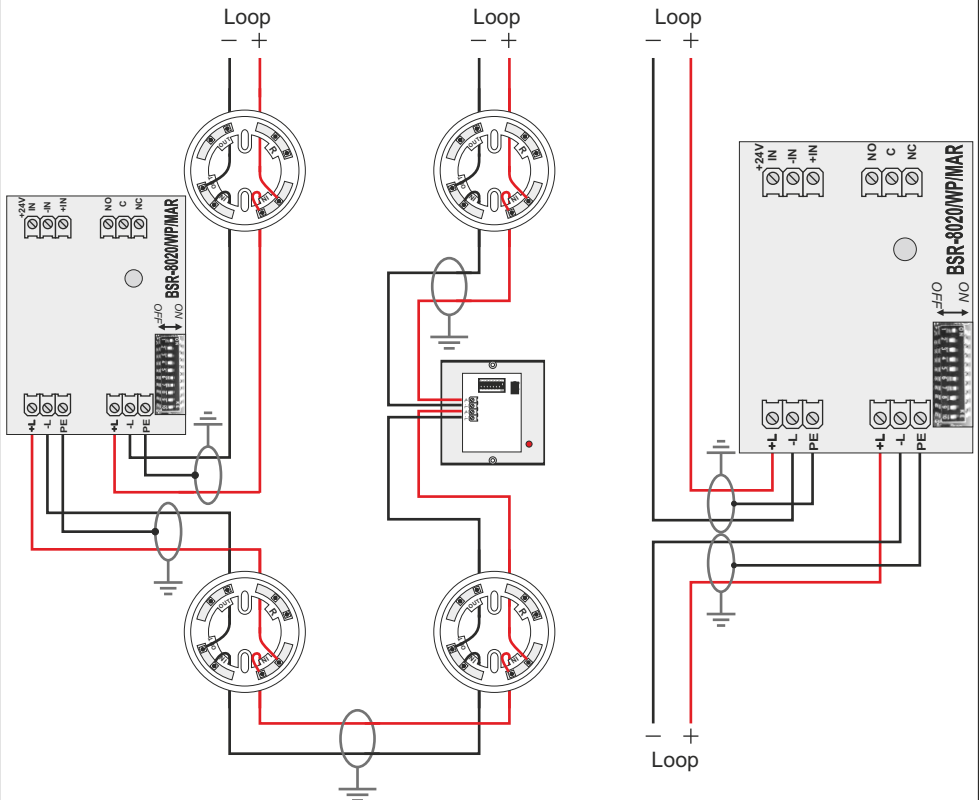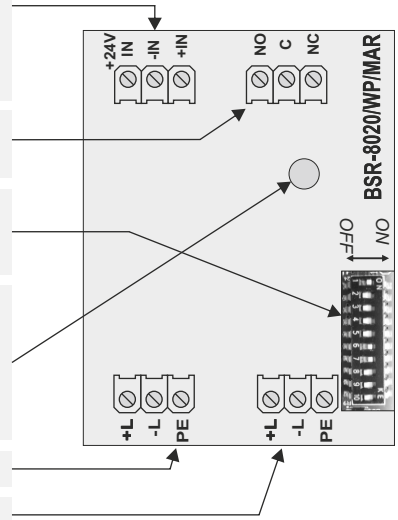
Relay connection terminals (NO, C, NC)

Address select dip-switch (1-7)
Subfunction select dip-switch (8)
Function select dip-switch (9-10)

Indication LED
Blinks periodically in quiescent state
Is ON when a specific device issues an alarm
Goes OFF after a panel reset

Connection terminal with ground
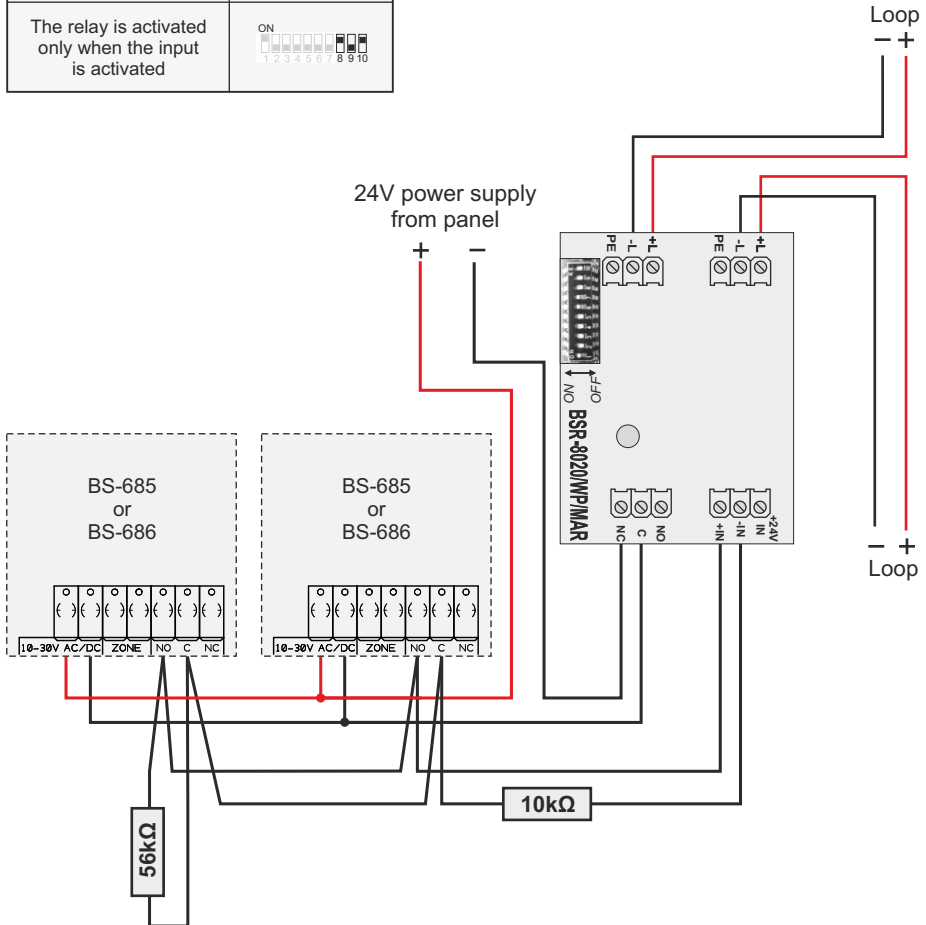
Loop connection terminal

Address	Microswitch setting	Address	Microswitch setting	Address	Microswitch setting	Address	Microswitch setting
1	ON 1 2 3 4 5 6 7 8	31	ON 1 2 3 4 5 6 7 8	61	ON 1 2 3 4 5 6 7 8	91	ON 1 2 3 4 5 6 7 8
2	ON 1 2 3 4 5 6 7 8	32	ON 1 2 3 4 5 6 7 8	62	ON 1 2 3 4 5 6 7 8	92	ON 1 2 3 4 5 6 7 8
3	ON 1 2 3 4 5 6 7 8	33	ON 1 2 3 4 5 6 7 8	63	ON 1 2 3 4 5 6 7 8	93	ON 1 2 3 4 5 6 7 8
4	ON 1 2 3 4 5 6 7 8	34	ON 1 2 3 4 5 6 7 8	64	ON 1 2 3 4 5 6 7 8	94	ON 1 2 3 4 5 6 7 8
5	ON 1 2 3 4 5 6 7 8	35	ON 1 2 3 4 5 6 7 8	65	ON 1 2 3 4 5 6 7 8	95	ON 1 2 3 4 5 6 7 8
6	ON 1 2 3 4 5 6 7 8	36	ON 1 2 3 4 5 6 7 8	66	ON 1 2 3 4 5 6 7 8	96	ON 1 2 3 4 5 6 7 8
7	ON 1 2 3 4 5 6 7 8	37	ON 1 2 3 4 5 6 7 8	67	ON 1 2 3 4 5 6 7 8	97	ON 1 2 3 4 5 6 7 8
8	ON 1 2 3 4 5 6 7 8	38	ON 1 2 3 4 5 6 7 8	68	ON 1 2 3 4 5 6 7 8	98	ON 1 2 3 4 5 6 7 8
9	ON 1 2 3 4 5 6 7 8	39	ON 1 2 3 4 5 6 7 8	69	ON 1 2 3 4 5 6 7 8	99	ON 1 2 3 4 5 6 7 8
10	ON 1 2 3 4 5 6 7 8	40	ON 1 2 3 4 5 6 7 8	70	ON 1 2 3 4 5 6 7 8	100	ON 1 2 3 4 5 6 7 8
11	ON 1 2 3 4 5 6 7 8	41	ON 1 2 3 4 5 6 7 8	71	ON 1 2 3 4 5 6 7 8	101	ON 1 2 3 4 5 6 7 8
12	ON 1 2 3 4 5 6 7 8	42	ON 1 2 3 4 5 6 7 8	72	ON 1 2 3 4 5 6 7 8	102	ON 1 2 3 4 5 6 7 8
13	ON 1 2 3 4 5 6 7 8	43	ON 1 2 3 4 5 6 7 8	73	ON 1 2 3 4 5 6 7 8	103	ON 1 2 3 4 5 6 7 8
14	ON 1 2 3 4 5 6 7 8	44	ON 1 2 3 4 5 6 7 8	74	ON 1 2 3 4 5 6 7 8	104	ON 1 2 3 4 5 6 7 8
15	ON 1 2 3 4 5 6 7 8	45	ON 1 2 3 4 5 6 7 8	75	ON 1 2 3 4 5 6 7 8	105	ON 1 2 3 4 5 6 7 8
16	ON 1 2 3 4 5 6 7 8	46	ON 1 2 3 4 5 6 7 8	76	ON 1 2 3 4 5 6 7 8	106	ON 1 2 3 4 5 6 7 8
17	ON 1 2 3 4 5 6 7 8	47	ON 1 2 3 4 5 6 7 8	77	ON 1 2 3 4 5 6 7 8	107	ON 1 2 3 4 5 6 7 8
18	ON 1 2 3 4 5 6 7 8	48	ON 1 2 3 4 5 6 7 8	78	ON 1 2 3 4 5 6 7 8	108	ON 1 2 3 4 5 6 7 8
19	ON 1 2 3 4 5 6 7 8	49	ON 1 2 3 4 5 6 7 8	79	ON 1 2 3 4 5 6 7 8	109	ON 1 2 3 4 5 6 7 8
20	ON 1 2 3 4 5 6 7 8	50	ON 1 2 3 4 5 6 7 8	80	ON 1 2 3 4 5 6 7 8	110	ON 1 2 3 4 5 6 7 8
21	ON 1 2 3 4 5 6 7 8	51	ON 1 2 3 4 5 6 7 8	81	ON 1 2 3 4 5 6 7 8	111	ON 1 2 3 4 5 6 7 8
22	ON 1 2 3 4 5 6 7 8	52	ON 1 2 3 4 5 6 7 8	82	ON 1 2 3 4 5 6 7 8	112	ON 1 2 3 4 5 6 7 8
23	ON 1 2 3 4 5 6 7 8	53	ON 1 2 3 4 5 6 7 8	83	ON 1 2 3 4 5 6 7 8	113	ON 1 2 3 4 5 6 7 8
24	ON 1 2 3 4 5 6 7 8	54	ON 1 2 3 4 5 6 7 8	84	ON 1 2 3 4 5 6 7 8	114	ON 1 2 3 4 5 6 7 8
25	ON 1 2 3 4 5 6 7 8	55	ON 1 2 3 4 5 6 7 8	85	ON 1 2 3 4 5 6 7 8	115	ON 1 2 3 4 5 6 7 8
26	ON 1 2 3 4 5 6 7 8	56	ON 1 2 3 4 5 6 7 8	86	ON 1 2 3 4 5 6 7 8	116	ON 1 2 3 4 5 6 7 8
27	ON 1 2 3 4 5 6 7 8	57	ON 1 2 3 4 5 6 7 8	87	ON 1 2 3 4 5 6 7 8	117	ON 1 2 3 4 5 6 7 8
28	ON 1 2 3 4 5 6 7 8	58	ON 1 2 3 4 5 6 7 8	88	ON 1 2 3 4 5 6 7 8	118	ON 1 2 3 4 5 6 7 8
29	ON 1 2 3 4 5 6 7 8	59	ON 1 2 3 4 5 6 7 8	89	ON 1 2 3 4 5 6 7 8	119	ON 1 2 3 4 5 6 7 8
30	ON 1 2 3 4 5 6 7 8	60	ON 1 2 3 4 5 6 7 8	90	ON 1 2 3 4 5 6 7 8	120	ON 1 2 3 4 5 6 7 8

Address	Microswitch setting	Address	Microswitch setting
121	ON 1 2 3 4 5 6 7 8	*125*	ON 1 2 3 4 5 6 7 8
122	ON 1 2 3 4 5 6 7 8	*126*	ON 1 2 3 4 5 6 7 8
123	ON 1 2 3 4 5 6 7 8	*127*	ON 1 2 3 4 5 6 7 8
124	ON 1 2 3 4 5 6 7 8		

Operation as an Input/Output unit

Connection with a conventional panel

BS-1636 terminals

Connecting a BSR-8020/WP/MAR to a BS-1636 panel. ALARM and FAULT RELAYS are used. According to this connection, when the panel detects a fault, the BSR-8020/WP/MAR will send a fault signal to the central panel and when the BS-1636 detects alarm on a zone, the BSR-8020/WP/MAR will send an alarm signal.

Operation as an Input/Output unit

Connecting with a flow switch

Operation	Dip-switch setting
Operate with independent programmable input ans output	ON 1 2 3 4 5 6 7 8 9 10
Operate with a controller output by the input (Extinguishing function)	ON 1 2 3 4 5 6 7 8 9 10

Connecting a BSR-8020/WP/MAR with an isolation lock. When the lock is activated (short circuit), the output of the device does not operate and the message " DISABLEMENT " is shown on the panel. The dip-switch 8 of the BSR-8020/WP/MAR must be in the ON position. It can be used in a fire extinguishing system.

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Operate as a Input unit

Operation	Dip-switch setting
Relay is activated for 5 seconds after a reset	ON ⬜⬜⬜⬜⬜⬜⬜⬛⬜⬛ 1 2 3 4 5 6 7 8 9 10
The relay is activated only when the input is activated	ON ⬜⬜⬜⬜⬜⬜⬜⬛⬛⬛ 1 2 3 4 5 6 7 8 9 10

Loop
− +

24V power supply
from panel
+ −

PE −L +L   PE −L +L

BSR-8020/WP/MAR

NC C NO   +IN −IN IN +24V

− +
Loop

BS-685
or
BS-686

10-30V AC/DC ZONE NO C NC

BS-685
or
BS-686

10-30V AC/DC ZONE NO C NC

56kΩ

10kΩ

Connecting gas detectors

Connecting a BSR-8020/WP/MAR with detectors BS-685 or BS-686. The auxiliary relay is used to interrupt the power to the detectors after a reset.
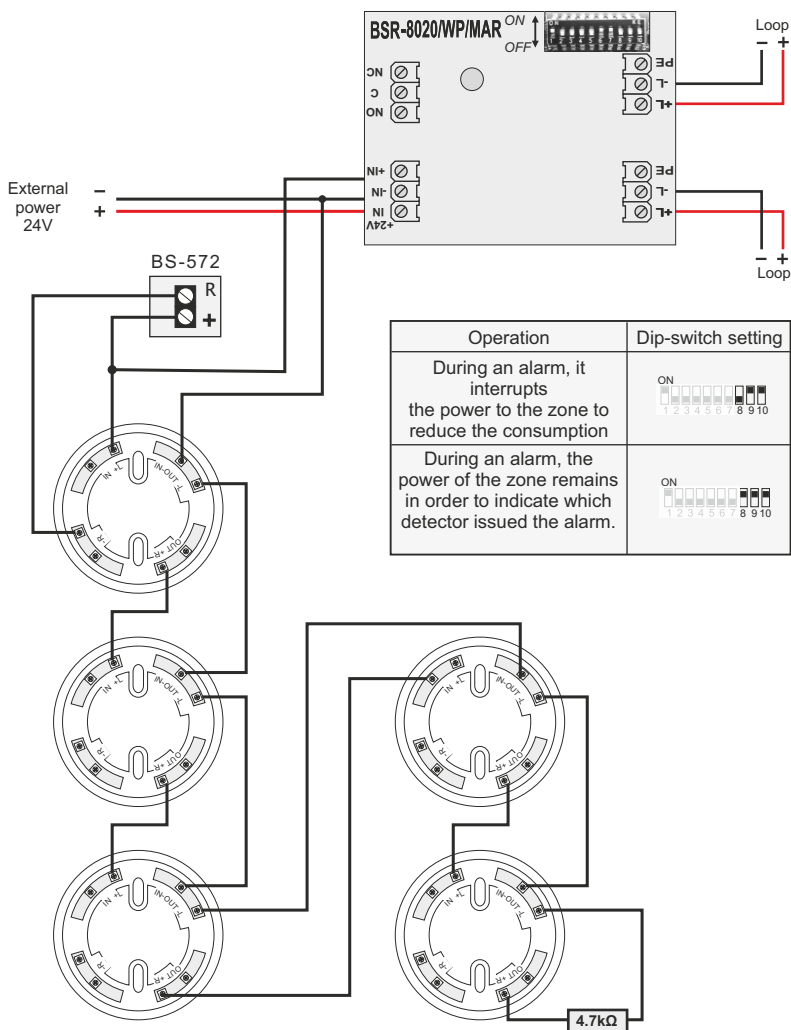
Convetional detector driving unit

Operation	Dip-switch setting
During an alarm, it interrupts the power to the zone to reduce the consumption	ON ▯▯▯▯▯▯▯■■▯ 1 2 3 4 5 6 7 8 9 10
During an alarm, the power of the zone remains in order to indicate which detector issued the alarm.	ON ▯▯▯▯▯▯▯▯■■▯ 1 2 3 4 5 6 7 8 9 10

BSR-8020/WP/MAR

Loop − +

NC
C
NO

PE
L−
L+

NI+
NI−
NI
+24V

PE
L−
L+

− +
Loop

BS-572
R
+

10kΩ
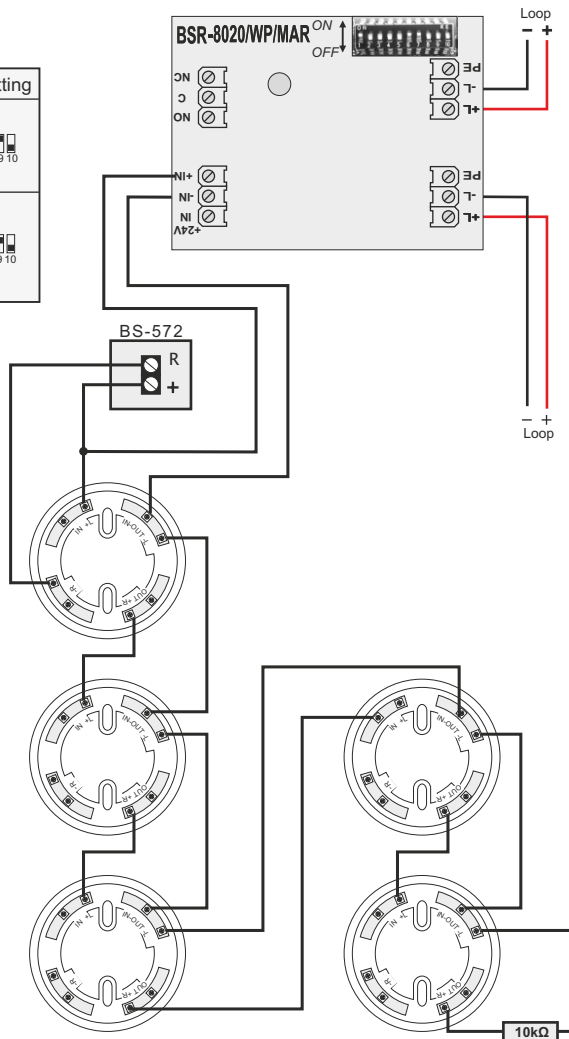
Connecting a BSR-8020/WP/MAR with conventional detectors. A 10kΩ terminal resistor must be connected on the last detector. The maximum number of detectors per unit is 10. An external LED BS-572 can be connected on one of the detectors. With the dip-switch 8 we can set if during an alarm the zones power will be interrupted or not. (according to the table above). If the dip-switch 8 is in the ON position, the maximum number of devices is 7, whereas if the dip-switch 8 is in the OFF position, the maximum number of devices is 30. The total consumption must also include the consumption of the other devices

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Conventional detector driving unit with external power supply

Operation	Dip-switch setting
During an alarm, it interrupts the power to the zone to reduce the consumption	ON 1 2 3 4 5 6 7 8 9 10
During an alarm, the power of the zone remains in order to indicate which detector issued the alarm.	ON 1 2 3 4 5 6 7 8 9 10

Connecting a BSR-8020/WP/MAR to conventional detectors. A 4.7kΩ resistor must be installed on the last detector. The maximum number of detectors per device is **40 conventional detectors of olympia electronics. According to EN 54 the maximum number of detectors per zone is 32 devices. The maximum consumption of the detectors in idle state, must not exceed the 2.5mA.**
The power is supplied by an external power supply and thus does burden the loop. The power consumption is that of an input/output unit. The external power supply must have an output range 21-28V and must not be interrupted during a power failure.
Additionally, the external power supply must be isolated from the main power grid and its power must be calculated depending on the maximum load. If for example we have 10 such devices and each device consumes 30mA during an alarm then the power supply must be capable of providing at least 300mA.

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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 defection. Olympia Electronics reserves the right to charge or not the buyer the transportation cost.

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