# Smart Dupline®
# Smoke Detector
# Type BSG-SMOx-U

**CARLO GAVAZZI**

- Smoke detector using Tyndall effect
- Detection of smouldering fires and flaming fires with smoke development
- Without radioactive sources
- Detection of areas up to 60 m$^2$
- Transmission of alarms and Alive signals via Dupline®
- Operating voltage supplied by Dupline® bus
- Optional use of the smoke detector as alarm device for other detections such as gas, water and burglary via Dupline®
- Battery backup if the Dupline® connection is interrupted
- Acoustic alarm > 85 dB
- Constant monitoring of sensor sensitivity via Dupline®
- For ceiling mounting

## Product Description

BSG-SMOx-U is a detector for home/building applications which transmits the alarm event to the smart-house controller. It is part of the smart-house concept and it can be used in all the functions where alarm signals are needed.

## Ordering Key

**BS G S M O A U**

Decentral ────────────
Smoke Detector ────────
No battery back-up ─────
Smart Dupline® ─────────

## Type Selection

| Battery back-up | Supply by Dupline® |
|---|---|
| YES | **BSG-SMO-U** |
| NO | **BSG-SMOA-U** |

## Input Specifications

| Detector | Optical (Tyndall effect) |
|---|---|

## Dupline® Output Specifications

| Voltage | 8.2 V |
|---|---|
| **Maximum Dupline® voltage** | 10 V |
| **Minimum Dupline® voltage** | 5.5 V |
| **Maximum Dupline® current** When the alarm is active | 10 mA |

## Supply Specifications

| Power supply | Supplied by Dupline® |
|---|---|
| **Current consumption typ.** | 2.5 mA |
| **Battery current consumption** | 20 µA, BSG-SMO-U only |
| **Supply voltage** | 9 VDC, BSG-SMO-U only |

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# General Specifications

| | |
|---|---|
| **Address assignments / channel programming** | If it is used with the SH2WEB24 the address assignment is automatic: the controller recognises the module through the SIN (Specific Identification Number) that has to be inserted in the SH tool. If it is used with the BH8-CTRLX-230, the channels have to be programmed by the BGP-COD-BAT |
| **Channel assignment** | |
| I/O number 1 | Alarm signal. The status of the signal can be programmed (see below). |
| I/O number 2 | Monitoring of sensor (tamper/presence). The signal is always active if OK, otherwise inactive. |
| I/O number 3 | Monitoring of battery voltage. The signal is active if the voltage is low. **Only BSG-SMO-U** |
| I/O number 4 | Monitoring of sensor sensitivity. The signal is active if the sensor becomes dirty. |
| I/O number 5 | Forced alarm. The smoke sensor can be used as an alarm device for e.g. water, gas and burglar alarms. |
| **Fail-Safe mode** | |
| **BSG-SMO-U** | If the Dupline® connection is interrupted, the smoke sensor will still work, but as a normal individual smoke detector. |
| **BSG-SMOA-U** | If the Dupline® connection is interrupted, the smoke sensor will also be interrupted. |

| | |
|---|---|
| **Indication** | Red LED. Short flash once every 42 sec. (alive signal): the smoke detector is OK. Short flash every 0.5 sec.: Alarm. |
| **BSG-SMO-U only** | Red flash (42 sec.) and asynchronous beep = Dirty Red flash (42 sec.) and simultaneous beep = Low battery voltage. |
| **Environment** | |
| Degree of protection | IP 43 |
| Operating temperature | -0° to +50°C |
| Storage temperature | -5° to +85°C |
| **Connection** | |
| Screwless detachable | 0.2 to 1.5 mm$^2$ |
| D+ | Signal |
| D- | GND |
| **Housing** | For installation on ceilings |
| Dimensions | Ø 100 x 51 mm |
| Material | ABS |
| Colour | White |
| **Weight** | 160 g |
| **Sound level** | > 85 dB(A) / 3 m (10 ft) |
| **Battery** | IEC 6LR 61 |
| **Average life, battery** | 2 years |
| **Alarm signalling** | Acoustic and optical |
| **CE Marking** | Yes |
| **EMC** | |
| Immunity | EN 61000-6-2 |
| - Electrostatic discharge | EN 61000-4-2 |
| - Radiated radiofrequency | EN 61000-4-3 |
| - Burst immunity | EN 61000-4-4 |
| - Surge | EN 61000-4-5 |
| - Conducted radio frequency | EN 61000-4-6 |
| - Power frequency magnetic fields | EN 61000-4-8 |
| - Voltage dips, variations, interruptions | EN 61000-4-11 |
| Emission | EN 61000-6-3 |
| - Conducted and radiated emissions | CISPR 22 (EN55022), cl. B |
| - Conducted emissions | CISPR 16-2-1 (EN55016-2-1) |
| - Radiated emissions | CISPR 16-2-3 (EN55016-2-3) |

# Mode of Operation

**BSG-SMOx-U connected to the SH2WEB24**
**Coding/Addressing**
If the device module is connected to the SH2WEB24 controller, no addressing is needed since the module is provided with a specific identification number (SIN): the user has only to insert the SIN in the SH tool when creating the system configuration.
Used channels: 1 input channel, 4 output channels.

**BSG-SMOx-U connected to BH8-CTRLX-230**
**Coding/Addressing**
If the input module is connected to the BH8-CTRLX-230 controller, the user has to program the channels using the BGP-COD-BAT: this module has:
- 4 output channels (I/O 1-4)
- 1 input channel (I/O 5)
CH1 is pre-programmed on N1, CH5 on N2.
The alarm signal on CH1 can be programmed to be active when the alarm is ON or when the alarm is OFF.

Fail/safe bit = 0
Signal active when the alarm is ON.

Fail/safe bit = 1
Signal active when the alarm is not active.

Specifications are subject to change without notice (04.07.19)

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# Mode of Operation

**Mounting**
To achieve minimum protection, one BSG-SMOx-U should be installed in front of each sleeping area or each floor. Higher protection will be achieved if one smoke detector is present in every room (except for the kitchen and the bath - here, false alarms may occur due to steam development).
When using the BSG-SMOX-u, the following issues must be observed:
•Rooms may have a floor area of up to 60 m² and a height of up to 6 m
•Hallways and narrow corridors may have a width of up to 3 m (10 ft) and a length of up to 15 m (50 ft)
•The mounting location must be as close as possible to the centre of the room
•A minimum distance of 0.5 m (1.5 ft) must be maintained from walls and furniture
The BSG-SMO-U must NOT be mounted in the following locations:
•Near ventilation ducts or strong draughts
•Directly in the apex of pitched roofs (a minimum distance of 30 cm (1 ft) from the apex must be maintained)
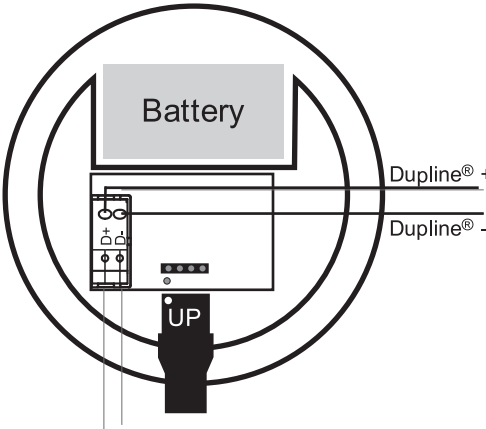•In rooms which are usually very steam-, dust- or smoke-filled (for example in workshops, bathrooms and laundry rooms)

**Connection of multiple smoke alarms**
It is possible to interconnect several smoke alarms so that the alarm signalfrom one alarm is transmitted to all other connected alarms.

The smoke alarms are connected in parallel using a 2-wire cable.

**Note: Make sure that the total power consumption does not exceed the Dupline® controller's output when interconnecting the smoke alarms. Use a back-up battery to avoid voltage drop in the Dupline® bus when using interconnection.**
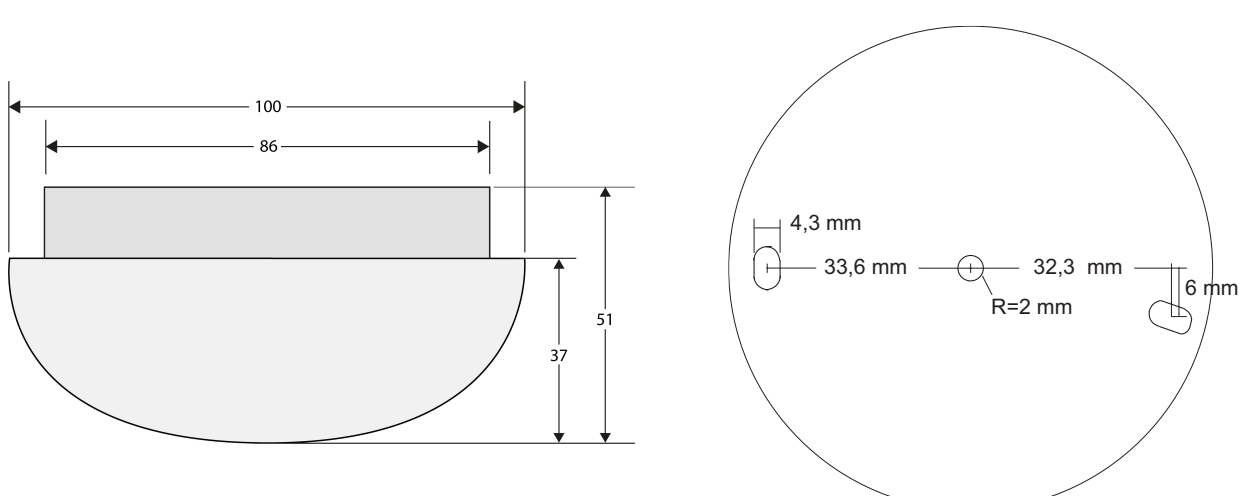
# Wiring Layout and Description



Battery

Dupline® +

Dupline® -

UP

**BSG-SMOx-U**

**Info:** Please, when installing the smoke alarm (changing the battery), pay attention to the following:
- Make sure that the PCB is connected correctly to the multiple plug and that the two pole connector is connected to the PCB.
- Test the smoke alarm (by pushing the test button) when it has been placed in its retaining ring on the ceiling.

# Dimensions



100

86

51

37

4,3 mm

33,6 mm

32,3 mm

R=2 mm

6 mm