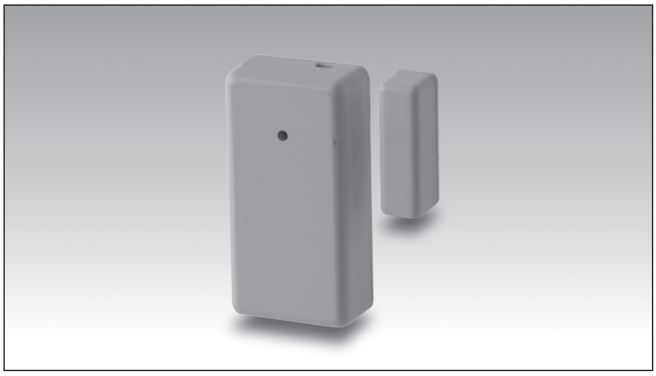
Smart Dupline®
Wireless window sensor
Type SHDWWISEN



- **Wireless window sensor for building automation application**
- **Temperature range: -20 to +50°C**
- **Battery supplied with a lifetime up to 5 years**
- **Standby mode to save battery**
- **Wireless transmission based on IEEE 802.15.4, at 2.4 GHz**
- **Door/window opening detected through sensor's body and a magnet separation**

Product Description

The SHDWWISENxxx window sensor is a wireless, battery powered reed sensor. Each time its two parts, i.e. the sensor's body and a magnet, are separated, a radio signal is sent. In addition the part number SHDWWISENIN1 supports one potential free input. This window sensor is designed for use with scenes in home/building automation, alarms and everywhere else where information related to opening / closing of doors, windows, garage gates, etc is needed. It is fully programmable via the SH tool and must always be coupled to a SH2WBU230N module.

Ordering Key

SH DW WISEN IN1

- **Smart house**
- **Wireless**
- **Window sensor**
- **Digital input**

Type Selection

Additional input	Colour	LEDs	Battery supplied
1 voltage free	White	1 red / 1 blue	**SHDWWISENIN1**
	White	1 red / 1 blue	**SHDWWISEN**

Input Specifications

Contact	Reed contact
Max distance between sensors and magnet	25 mm (can be lower if the magnet is not aligned with the led)
Additional input	SHDWWISENIN1 voltage free

Output Specifications

LED	1 red / 1 blue

Supply Specifications

Power supply	Supplied by battery, type Lithium button 2450 3V
Battery lifetime	See table 1

General Specifications

Address assignment	Automatic: the controller recognises the module through the SIN (Specific Identification Number) that is fitted in the SH tool
Environment	
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	-20° to +50°C (-4° to 122°F)
Storage temperature	-30° to +60°C (-22° to 140°F)
Humidity (non-condensing)	20 to 80% RH
Housing	
Sensor	60 x 30 x 15.5 mm
Magnet	32 x 10.2 x 11.5 mm
Mounting	With double-side tape and screws. Screws are not included in the scope of the delivery.
Weight	50 g
CE Marking	Yes

General Specifications

EMC	
Immunity	
- Electrostatic discharge	EN 61000-6-2 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)

WiDup Specifications

Bus	Wireless dupline
Frequency	IEEE 802.15.4, @ 2.4 Ghz
Diagnostics	1. Field strength 2. Network activites 3. Devices' presence
Network Topology	Tree with max one wireless repeater
Antenna	Internal
Transmission power	According to IEEE 802.15.4
Sensitivity	According to IEEE 802.15.4
Number of slave nodes	Up to 250
Transmission range	<100 m in the open air

Mode of Operation

The SHDWWISENxxx is fully programmable via the SH tool. The two inputs (reed contact and voltage free) can be individually associated to one or more of the functions supported by the smarthouse system.

Coding/Addressing
No addressing or association 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.

Battery lifetime calculation

Input sleeping time (s)	Battery life time (days)
0.05	15
0.1	30
0.25	60
0.5	120
1	220
2	360
5	630

Table 1

Input sleeping time is a parameter to be set by means of the software Sx tool.
This calculation has been done considering 12 activations in a day.

Transmission range

The main factors that influence the transmission range of the SHDWWISENxxx are the antenna location of the receivers and transmitters, the building structure and the number of obstacles in the connection path.
Other factors are noise sources (wi-fi routers, micro oven, blue tooth devices,…) that affect the receiver and dead spots caused by signal reflection from nearby conductive objects.
Since the anticipated transmission range depends on these system conditions, range tests should be performed before a specific range is determined for an application.
The following transmission ranges are to be viewed as general guidelines:

Device position	Operating distance
In the open air	Approx. 100 m
Plasterboard/ wood	Approx. 30 m Max. 5 walls
Tile and cellular concrete	Approx. 20 m Max. 3 walls
Reinforced concrete walls/ceilings	Approx. 10 m Max. 1 ceiling/ wall

Transmission range is limited by:
- insulation material with metal foil - intermediate ceilings with metal or carbon fibre panels
- lead glass or metal-coated glass
- mounting wall transmitters on metal walls

For more information about how to install a wireless network, please connect to the link given below.

http://www.productselection.net/MANUALS/UK/wireless_manual_rev01.pdf

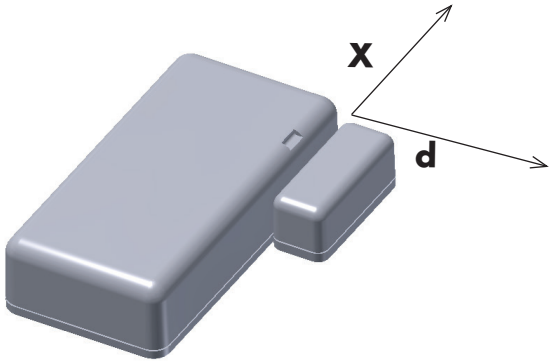
LEDs Indication

Red LED:
If the battery level is good, the red LED is OFF.
It flashes while the magnet is separating from the sensor and to advise about the following events:
Short blink: Sending data when associated to a SH2WBU230N
Long blink: Sending data when not associated to any SH2WBU230N
Fast blinking: When receiving a network configuration.

Blue LED:
If the battery level is low, the blue LED is off.
It flashes if the battery level is good while the magnet is separating from the sensor and to advise about the following events:
Short blink: Sending data when associated to a SH2WBU230N
Long blink: Sending data when not associated to any SH2WBU230N
Fast blinking: When receiving a network configuration.

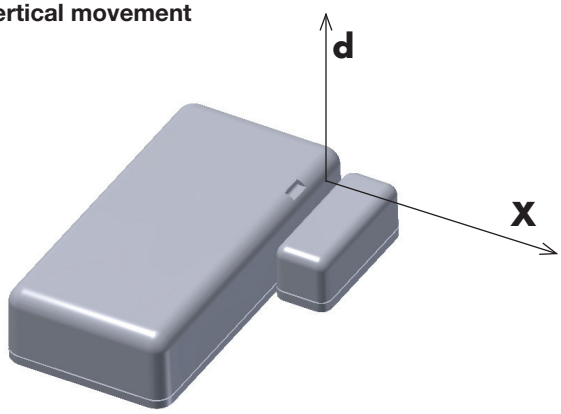
Switching Distance

Horizontal movement



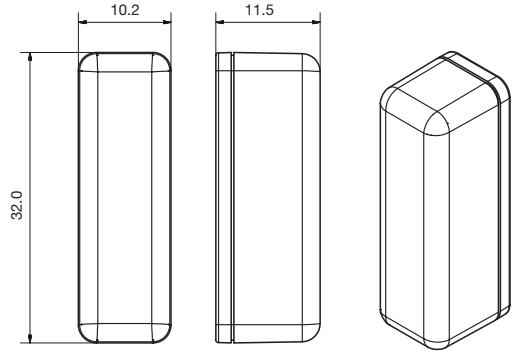
X = +/-5 mm, switching distance 20 mm < d < 30 mm
X = 30 +/- 5 mm, switching distance 7.5 mm < d < 15 mm

Vertical movement

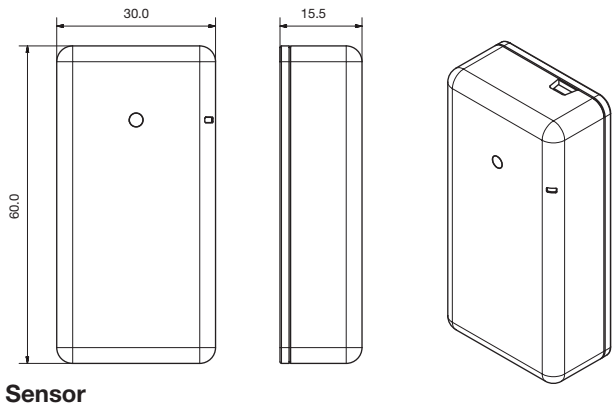


X = 0 mm, switching distance 30 < d < 40 mm
X = 10 mm, switching distance 25 < d < 35 mm
X = 20 mm, switching distance 15 < d < 25 mm

Dimensions (mm)



Magnet



Sensor