

Smart Dupline® Wireless window sensor Type SHDWWISEN

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- 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 White	1 red / 1 blue 1 red / 1 blue	SHDWWISENIN1 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
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Supply Specifications

Power supply	Supplied by battery, type Lithium button 2450 3V
Average 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	Housing Sensor Magnet	60 x 30 x 15.5 mm 32 x 10.2 x 11.5 mm
Environment	IP 20 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	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	- Voltage dips, variations, interruptions Emission
	- Radiated radiofrequency	EN 61000-4-2	
	- Burst immunity	EN 61000-4-3	
	- Surge	EN 61000-4-4	
	- Conducted radio frequency	EN 61000-4-5	
- Power frequency magnetic fields		EN 61000-4-6	- Conducted and radiated emissions - Conducted emissions - Radiated emissions
		EN 61000-4-8	
			EN 61000-4-11 EN 61000-6-3
			CISPR 22 (EN55022), cl. B CISPR 16-2-1 (EN55016-2-1) CISPR 16-2-3 (EN55016-2-3)

WiDup Specifications

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

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 smarhouse 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 con-

ductive 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.

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 SH2WBU230

Long blink: Sending data when not associated to any SH2WBU230

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:

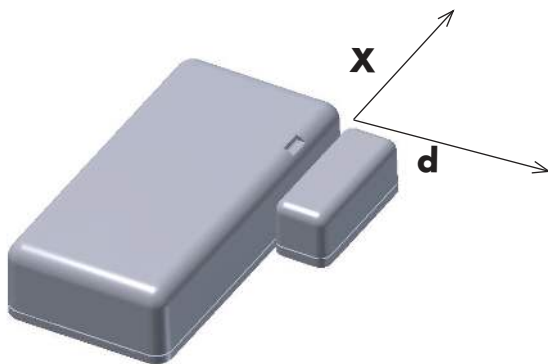
Short blink: Sending data when associated to a SH2WBU230

Long blink: Sending data when not associated to any SH2WBU230

Fast blinking: When receiving a network configuration.

Switching Distance

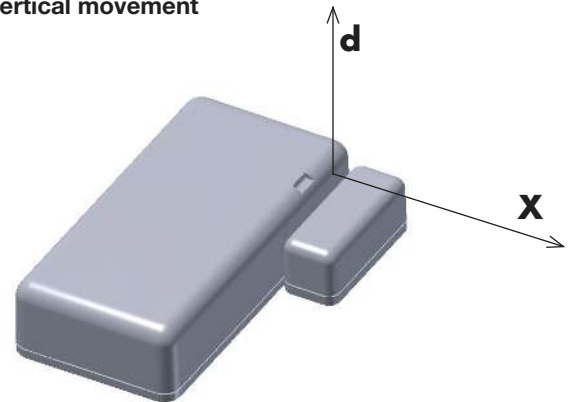
Horizontal movement



$X = \pm 5 \text{ mm}$, switching distance $20 \text{ mm} < d < 30 \text{ mm}$

$X = 30 \pm 5 \text{ mm}$, switching distance $7.5 \text{ mm} < d < 15 \text{ mm}$

Vertical movement



$X = 0 \text{ mm}$, switching distance $30 < d < 40 \text{ mm}$

$X = 10 \text{ mm}$, switching distance $25 < d < 35 \text{ mm}$

$X = 20 \text{ mm}$, switching distance $15 < d < 25 \text{ mm}$

Dimensions (mm)

