

# Aurora line Wireless Light Switch Type SHA4XWLS4

CARLO GAVAZZI



- Wireless light switch for building automation application
- No additional wiring required
- Developed to fit into wall socket and frames from Niko, Fuga and Biticino
- Temperature range: -20 to +50°C
- 4 individually programmable pushbutton inputs
- Battery supplied with a lifetime up to 5 years
- Delivered with 2 white and 1 black pushbutton covers
- Standby mode to save battery
- Wireless transmission based on IEEE 802.15.4, at 2.4GHz
- LED indication for battery low and field strength
- Integrated antenna

## Product Description

The SHA4XWLS4 is a wireless light switch with 4 buttons and 4 LED outputs. It is developed to be mounted into a 44 x 44 wall socket from Niko, Fuga and Biticino. The light switch has two colours of LEDs; red and blue, indicating the battery and wireless signal level.

The light switch is part of the smart-house concept for building automation applications and can be used to control lights, roller blinds and all other functions supported by the smart-house controller. It is fully programmable via the SH tool and must always be coupled to a SH2WBU230 module.

## Ordering Key

**SH A 4X W LS4**

Smart-house \_\_\_\_\_  
Aurora \_\_\_\_\_  
Housing 44 x 44 mm \_\_\_\_\_  
Wireless \_\_\_\_\_  
Switch number \_\_\_\_\_

## Type Selection

Housing	Colour	LEDs	Battery supplied
44 x 44 mm	White/Black*	4 red / 4 blue	SHA4XWLS4

\*Delivered with white and black pushbutton covers

## Input Specifications

Key Pad	4 pushbuttons
---------	---------------

## Output Specifications

LED	4 red / 4 blue
-----	----------------

## Supply Specifications

Power supply	Supplied by battery, type Lithium button 2450 3V
Average battery lifetime	5 years



## General Specifications

<b>Address assignments / channel programming</b>	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.	<b>Weight</b>	50 g
		<b>CE Marking</b>	Yes
<b>Environment</b>		<b>EMC</b>	
Degree of protection	IP 20	Immunity	EN 61000-6-2
Pollution degree	3 (IEC 60664)	- Electrostatic discharge	EN 61000-4-2
Operating temperature	-20° to +50°C (-4° to 140°F)	- Radiated radiofrequency	EN 61000-4-3
Storage temperature	-30° to +60°C (-22° to 158°F)	- Burst immunity	EN 61000-4-4
Humidity (non-condensing)	20 to 80% RH	- 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
<b>Housing</b>		Emission	EN 61000-6-3
Back part dimensions	44 x 44 x 17.3 mm	- Conducted and radiated emissions	CISPR 22 (EN55022), cl. B
Back part + front dimensions	44 x 44 x 20.7 mm	- Conducted emissions	CISPR 16-2-1 (EN55016-2-1)
Back part material	Plastic, transparent	- Radiated emissions	CISPR 16-2-3 (EN55016-2-3)
Push button covers	Plastic white (RAL 9010) Plastic clear white (RAL 9016) Plastic black		
Accessories	Transparent plastic ring for Bticino frame		

## WiDup Specifications

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

## Mode of Operation

The SHA4XWLS4 is fully programmable via the SH tool. Each push-button can be individually associated to one or more of the functions supported by the smart-house 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.

### Wall Socket and frame compatible with the Aurora line

The Aurora 44 x 44 light switch can fit into the frame and wall socket listed below: for any other model not included here below, Carlo Gavazzi does not grant any

compatibility.

- Niko
- Fuga
- Bticino: Light, Living, Luna series (the transparent ring has to be used).

## Transmission range

The main factors that influence the transmission range of the SHA4XWLS4 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. 100m
Plaster-board/wood	Approx. 30 m Max. 5 walls
Tile and cellular concrete	Approx. 20 m Max. 3 walls
walls/ceilings	Approx. 10 m Max. 1 ceiling/wall

## Transmission range (cont.)

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 net-

work, please connect to the link given below.

[http://www.productselection.net/MANUALS/UK/wireless\\_manual\\_rev01.pdf](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 when the relevant button is pressed and to advise about the following happenings:  
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 when the relevant push-button is pressed and to advise about the following happenings:

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

## Dimensions (mm)

