

# Smart Dupline® Wireless Base Unit Type SH2WBU230N

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- WiDup, a wireless communication protocol, generator for home automation application
- Wireless transmission based on IEEE 802.15.4, @ 2.4 GHz
- Maximum slave number: 250
- Up to 7 SH2WBU230N can be connected on the same network
- Connection to Sx2WEB24 via internal bus or terminals via the high speed bus.
- Dimension: 2-DIN module

## Product Description

The wireless base unit SH2WBU230N generates the wireless network performing the functions of a wireless access point and router. The generated protocol is called WiDup and it is based on the standard IEEE 802.15.4 at 2.4 GHz. It is part of the smart-house system and it has to be used together with the controller Sx2WEB24. Each Sx2WEB24 can be connected to up to 7 sub-

master generators (the sum of SH2MCG24, SH2DUG24 and SH2WBU230N is 7) in order to have up to 7 wired/wireless networks. All the devices are connected via an internal bus if they are in the same cabinet, or via terminals if they are mounted on different cabinets. Each SH2WBU230N must have an address that has to be programmed using the Sx tool.

## Ordering Key

**SH 2 WBU 230N**

smart-house \_\_\_\_\_  
2-DIN housing \_\_\_\_\_  
Wireless base unit \_\_\_\_\_  
Power supply \_\_\_\_\_

## Type Selection

Housing	Mounting	Supply: 24 VDC and 115-240VAC
2 DIN	DIN-rail	SH2WBU230N

## Supply Specifications

<b>Power supply</b>	Overvoltage cat. II (IEC 60664-1, par. 4.3.3.2)	<b>Rated operational power</b>	2.4W
Rated operational voltage	24 VDC +/-20% 115-240VAC 50/60 Hz +/-10%	<b>Connection</b>	6 x 6 mm <sup>2</sup>
<b>Rated impulse voltage</b>	2.5kV	<b>Power on delay</b>	Typ. 2 s

## General Specifications

<b>Installation category</b>	Cat. II	<b>Environment</b>	
<b>Dielectric strength</b> Power supply to HS bus®	500V AC for 1 minute (IEC 60664-1, Tab. A.1)	Degree of protection	IP 50 IP 20
<b>Fail-safe condition</b>	If the SH2WBU230N loses the communication with the Sx2WEB24, the WiDup Network will be switched off. In this situation all the modules connected to the network will go into the fail-safe output status individually programmed with the Sx tool.	Front	
		Screw terminal	
		Pollution degree	2 (IEC 60664-1, par. 4.6.2)
		Operating temperature	-20° to +50°C (-4° to 122°F)
		Storage temperature	-50° to +85°C (-58° to 185°F)
		Humidity (non-condensing)	20 to 80% RH
		<b>LED's indication</b>	
		BUS LED	1 yellow
		ON	1 green, Power LED
		WiDup LED	1 blue

## General Specifications (cont.)

<b>Connection</b>	
Terminal	8 Screw-type
Cable cross-section area	max. 1.5 mm <sup>2</sup>
Tightening torque	0.4 Nm / 0.8 Nm
<b>Housing</b>	
Dimensions	2-DIN module
Material	Noryl
<b>Weight</b>	150 g
Approvals	cRUus, according to UL60950 <b>UL notes:</b> Max ambient temperature: 40°C
<b>CE Marking</b>	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)

## HS Bus Specifications

<b>Bus type</b>	RS485 high speed bus
<b>Protocol</b>	Internal proprietary protocol
<b>Number of slaves</b>	Max 7
<b>Connection</b>	By local bus (left and right connectors) or terminals GND, A(-), B(+). T1, T2: terminalization inputs. They have to be short-circuited on the last module of the network. See wiring diagrams.
<b>Addressing method</b>	The address of the SH2WBU230N is defined in the Sx tool, and then assigned to it by the Sx2WEB24 according to the SIN.

## WiDup Specifications

<b>Bus</b>	Wireless dupline
<b>Frequency</b>	IEEE 802.15.4, @ 2.4 Ghz
<b>Diagnostics</b>	1. Field strength 2. Network activities 3. Devices' presence
<b>Network Topology</b>	Tree with max one wireless repeater
<b>Antenna</b>	External
<b>Transmission power</b>	According to IEEE 802.15.4
<b>Sensitivity</b>	According to IEEE 802.15.4
<b>Number of slave nodes</b>	Up to 250
<b>Transmission range</b>	< 700 m in the open air

## Transmission Range

The main factors that influence the transmission range of the SH2WBU230N 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. 700m
Plaster-board/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 read here "[http://www.productselection.net/MANUALS/UK/wireless\\_manual\\_rev01.pdf](http://www.productselection.net/MANUALS/UK/wireless_manual_rev01.pdf)".

## LEDs Indication

**Green LED: ON.**  
 ON: Supply ON  
 OFF: Supply OFF

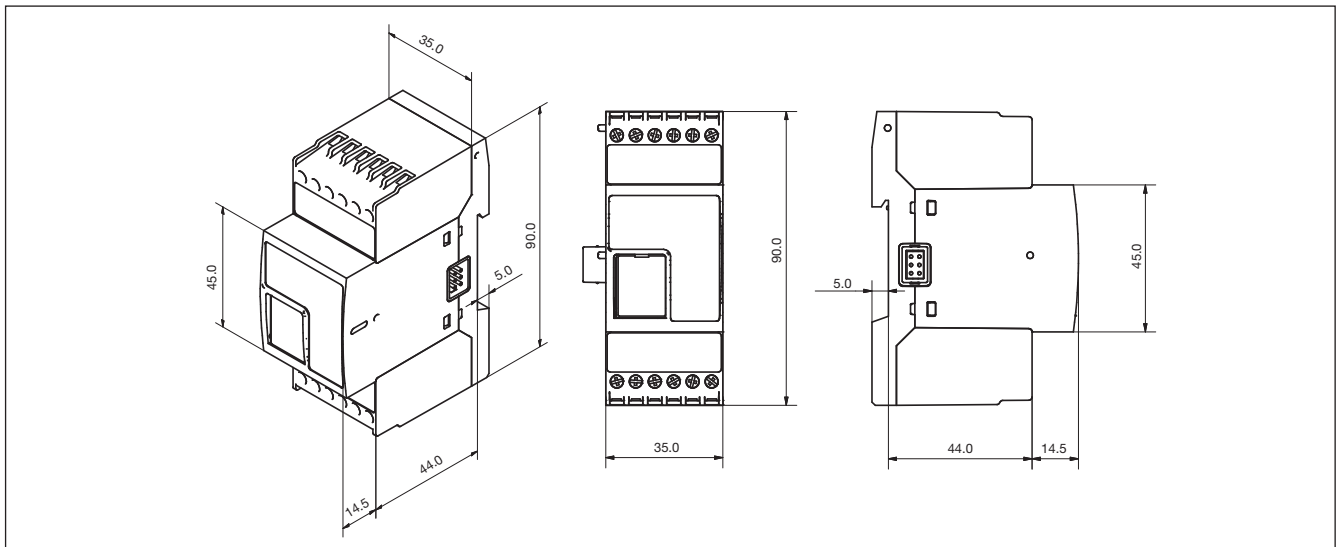
**Yellow LEDs: BUS**  
 OFF: no communication is present on the HS bus  
 ON: communication error on HS bus

Flashing: communication OK on HS bus

Flashing: When receiving data from the associates modules

**Blue LED**  
 ON: During network configuration

## Dimensions



## Wiring Diagrams

