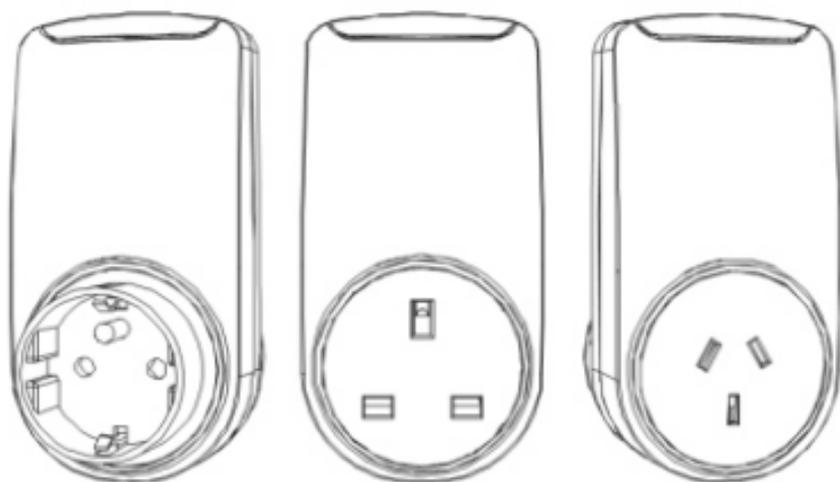


SECURE

SSP 302

Socket Energy Monitor



User and Installation Instructions

BGX501-921-R04

Secure SSP 302

Socket Energy Monitor

The Secure SSP 302 forms part of a Z Wave Plus™ home automation network.

SSP 302 is a mains-powered, plug-in device that supports energy monitoring. It is suitable for switching loads up to 3.6KW(EU), 3KW(UK) or 2.3KW(ANZ) at 230V AC. It can measure voltage, current, power, energy etc. The SSP 302 acts as a repeater in a Z-Wave network by helping messages from other devices reach their destinations. SSP 302 is a fully compliant Z-Wave Plus™ device that will work with other manufacturer's Z-Wave devices.



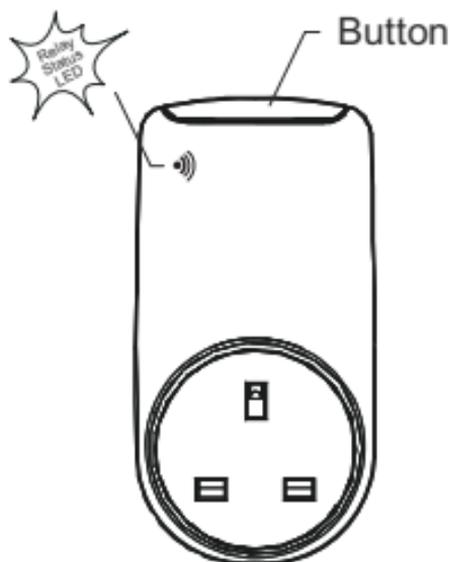
Installation

Step 1: Unpack and insert the SSP 302 into the wall socket. Ensure that the red-coloured network status LED is flashing (once per second).

Note:

If the network status LED is not flashing check the following.

- Ensure that the wall socket switch is on.
- Press the top button, the relay status LED should switch ON and glow green.
- If the relay status LED does not glow then the device is not functioning.



- It is possible that the SSP 302 was part (joined) of another network previously; If so , exclude it first before attempting to include onto a new network. Refer to step-2 for the exclusion process.

Avoid locations alongside or behind large metal surfaces that could interfere with the low power radio signals between the unit and the controller.

Step-2: Including and Excluding a Device

To include the SSP 302 onto a network, put the controller into inclusion mode. Now, press and hold the button on SSP 302 for 4 to 7 seconds then release. The network status LED will start flashing (twice per second) on successful start of inclusion process.

Note: Refer to the controller's manual for controller relevant actions.

On successful inclusion the LED will turn off.

Note: Inclusion means add and exclusion means delete.

The total process can take up to 20 seconds (Refer to the “Technical specifications – Radio” section for details).

If the device fails to join the network it will go back to factory default state and the Network status LED will start flashing once per second.

If there is an issue with RF Communication, then re-locate the device and repeat the inclusion process again.

To exclude the SSP 302 from a network, put the controller into exclusion mode (refer to controller instructions) and follow the same sequence as per the inclusion process for include node. After successful exclusion the network status LED will start flashing once per second, and the device will reset to factory default.

If exclusion fails, SSP 302 network status LED will turn off after about 5 seconds.

Note: Exclusion only works when the device is in direct range of the controller (no repeater allowed).

Associating SSP 302 in a Z-Wave Network (follow steps 3 to 5)

Note: Association process only works after the device has been included onto network.

Step 3: Put the controller into Association Mode.

Note: Some controllers can automatically associate. Always check with the manufacturer's manual.

Step 4: Identify the device to the controller by sending the node information, to do this press and hold the SSP 302 button for more than 1 second, but less than 4 seconds, and then release.

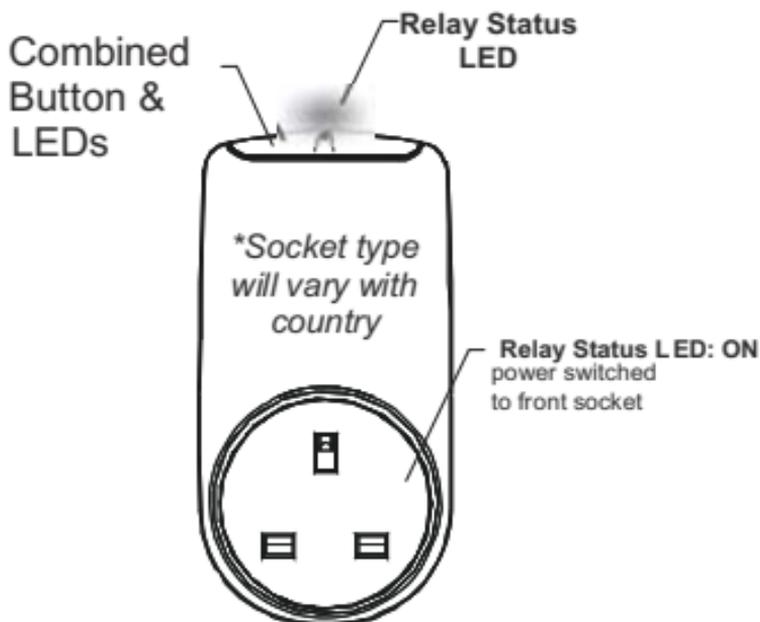
Step 5: The controller should confirm association when the process is successfully completed this depends on your controller see the manufacturers documentation supplied with your controller for this information.

Appliance Socket

Press the SSP 302 button (less than one second) to supply power to its socket. By default, the green LED will be lit when the supply is On.

The socket type will vary with country. The figure shows the UK variant.

Ensure that the appliance plug is firmly plugged into the appliance socket.



Over Current Protection

If the current exceeds the limit for more than 30 seconds the load will be disconnected. To reconnect, the user needs to press the button or send an ON command over the Z-Wave link. The limit for each country plug type is shown below:

- UK – 13.5A
- EU – 16.5A
- ANZ – 10.5A

Metering

The SSP 302 is a metering device that provides the following electrical parameters with an accuracy of $\pm 2\%$, or better, from 23W to full load, and less than 0.5W from 1W to 23W:

1. Voltage
2. Current
3. Active power
4. Apparent Power
5. Active Energy
6. Apparent Energy
7. Power Factor

Energy Save Mode

If the current is less than the sleep current for 30 seconds, the load will be disconnected to save energy (refer to the configuration parameter 16 of Configuration parameters table for how to configure sleep current).

Button Actions

Press time	Operation	LED status
Less than 1 second	Toggles supply to socket outlet	Toggles green LED
1-4 seconds	Send NIF (used for Association)	NA
4-7 seconds	Inclusion/exclusion	Red LED flashes twice per second
7-11 Seconds	Resets device metering data, association and configuration. (Operation only available for upto 60 second from device power up)	NA
11-15 seconds	SSP 302 resets to factory default (Refer device reset locally command class)	Red LED flashes once per second

Z-Wave Plus command classes

Z-Wave Plus Device Classes	Implemented Device Class
Generic	Binary switch
Specific	On/OFF Power Switch
Basic	Routing Slave

Command Class	Commands Supported
Basic CC (V1)	Get
	Set
	Report
Basic CC is mapped to binary switch CC	
Binary switch (V1)	Get
	Set
	Report

Manufacturer Specific (V2)	Get
	Report
	Manufacturer ID = 0x0059 Product Type ID = 0x0011 Product ID = 0x0001 (UK & EU) Product ID = 0x0002 (ANZ)
Version (V2)	Get
	Report
	Version Command Class Get
	Version Command Class Report
Association (V2)	Get
	Set
	Report
	Supported Groupings
	Supported Groupings Report
	Specific Group Get Command
	Specific Group Report
	Command
<p>Product supports five association groups and group 1 to 4 are having maximum of 4 nodes and group 5 is having one association node.</p>	

Configuration (V1)	Set
	Get
	Report
See Configuration Parameters for details	
Device Reset Locally (V1)	Report
<p>Please use this procedure only when the primary controller is missing or otherwise inoperable. Power cycle the device and press and hold the button for more than 11 seconds and less than 15 seconds within the 60 seconds of power cycle to put the device in factory default, that include setting all the configuration, Association to factory default and removing the device from Z-Wave network.</p>	
Association Group Info (V1)	Group Name Get
	Group Name Report
	Group Info get
	Group Info Report
	Group Command List Get
	Group Command List Report
<p>Association group Name: Group1: Lifeline Group2: Power</p>	

Group3: Electrical Parameter
Group4: Relay Status
Group5: Time

Profile MSB:
ASSOCIATION_GROUP_INFO_REPORT_PROFILE
_GENERAL
Profile LSB:
Group1: 0x01 Group2: 0x02
Group3: 0x03 Group4: 0x04
Group5: 0x05

Supported Command class and command:
Group 1:
 CC: COMMAND_CLASS_METER_V3
Command: METER_REPORT
 CC: COMMAND_CLASS_SWITCH_BINARY
Command : SWITCH_BINARY_REPORT
Group 2 and Group3:
CC: COMMAND_CLASS_METER_V3
 Command: METER_REPORT
Group4:
 CC: COMMAND_CLASS_SWITCH_BINARY
 Command : SWITCH_BINARY_REPORT
Group5:
 CC: COMMAND_CLASS_TIME
 Command: TIME_GET, DATE_GET

Z-Wave Plus Info
(V2)

Get
Report

Role Type:

ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_ON

Node Type:

ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE

Installer Icon:

ICON_TYPE_GENERIC_ON_OFF_POWER_SWITCH

User Icon:

ICON_TYPE_GENERIC_ON_OFF_POWER_SWITCH

Power Level (V1)	Power Level Set
	Power Level Get
	Power Level Report
	Power Level Test Node Set
	Power Level Test Node Get
	Power Level Test Node Report
Meter (V3)	Get
	Report
	Supported Get
	Supported Report
	Meter Reset
Meter table Monitor (V1)	ID Get
	ID Report
	Capability Get
	Capability Report
	Current Data Get
	Current Data Report

Meter Table Configuration (V1)	Meter Table Point Adm Number Set Command
CRC-16 Encapsulation(V1)	CRC-16 Encapsulated Command

Controlled Command class

Time (V1)	Time Get
	Time Report
	Data Get
	Date Report

Although the SSP 302 is a metering device, it does not have its own real time clock and needs to get time from another device in the network.

Therefore, there should be one device in the network that has real time clock and supports time command class. Once the SSP 302 has received the time, it will start logging the historical data. The SSP 302 will continue metering even without time synchronisation.

Note: The daylight time switching is the responsibility of controller.

For more information about Z-Wave command classes and their use refer to “SDS12652 Z-Wave Command Class Specification” version 3 or above and “SDS12657 Z-Wave Command Class Specification” version 2 or above.

Configuration parameters

No	Parameter Report	Unit	Size Byte (s)	Resolution	Max Value	Default Value
Parameters 1 to 7 delta based configuration						
1	Switch Status	NA	1	NA	1	1
2	Voltage	V	2	0.1	60	0
3	Current	A	2	0.01	15	0
4	Power Factor	%	2	0.1	100	0
5	Active Power	W	2	1	4000	0
6	Active Energy	Wh	2	1	32K	0
7	Apparent Energy	VAh	2	1	32K	0

When delta need to set then first it should be converted from engineering value to configuration value using this formula for calculating configuration values = Engineering Value/Resolution,

e.g. Voltage Delta 10V = 10/0.1 = 100

e.g. Current Delta 5A = 5/0.01 = 500

e.g. Power Factor 10% = 10/0.1 = 100

e.g. Power/Energy 100W = 100/1 = 100

Parameters 8 to 14- time interval based configuration

8	Switch Status	Sec	2	1	65520	0
9	Voltage	Sec	2	1	65520	0
10	Current	Sec	2	1	65520	0
11	Power Factor	Sec	2	1	65520	0
12	Active Power	Sec	2	1	65520	0
13	Active Energy	Sec	2	1	65520	0
14	Apparent Energy	Sec	2	1	65520	0

Controllers may only allow configuring signed values. In order to set values in the range 32768... 65520, the value sent in the application shall be equal to desired value minus 65536. For example, to set time interval to 36000 seconds it may be needed to set a value 36000-65536=-29536.

e.g. Power/Energy 100W = 100/1= 100

Parameters 15 to 16- general configuration

15	Relay and LED config	NA	1	NA	3	0
	Refer Table "Relay and LED configuration" for details.					
16	Sleep Current Config	A	2	0.001	1	0

example of sleep current
 $0.5A = 0.5/.001 = 500$

Common attributes:

-Min Value = 0

-Zero configurations means that the corresponding functionality is disabled.

Value set more than maximum allowable limit will be rejected silently, and SSP 302 will retain it last configuration value.

IMPORTANT: When any configuration is set, then it is recommended that user should read back and verify that the configuration has been set correctly.

Relay and LED configuration

Config	Relay Status After Power Cycle	LED Status
0	Open	ON for Relay Close
		OFF for Relay Open
1	Retain last status over the power cycle	ON for Relay Close
		OFF for Relay Open
2	Open	ON for Relay Open
		OFF for Relay Close
3	Retain last status over the power cycle	ON for Relay Open
		OFF for Relay Close

SSP 302 is shipped with zero default relay LED configuration

Visual Indication of a Communication Failure

The SSP 302 can indicate a communication failure state to the end user in the following situation: if the SSP 302 is configured with TIME-INTERVAL based data reporting (Configuration parameters #8 to #14) and at least one node is associated to it.

In that situation, if there is no Communication Acknowledge with any associated device in the network for more than one hour the device will indicate a communication fail status. The communication fail status will be represented on the device by the continuous glowing of the network status LED. When the device establishes communication with any associated node in the network it will come out of the communication fail state.

Technical specifications

Electrical

Purpose of Control:	Electrical control
Supply:	230V±10% AC, 50Hz
Current rating:	Resistive Inductive
UK:	13 A 0.4 3A
EU:	16 A 0.4 3A
ANZ:	10 A 0.4 3A
Control type:	Micro-disconnection
Control action:	Type 1B
Software class:	Class A
Burden:	<1W in standby

Mechanical

Dimensions (WxDxH)	UK:60 x 61 x 119mm EU:60 x 95 x 119mm ANZ:60 x 69 x 119mm
Product weight with single unit packing	UK:250 ± 30 g EU:340 ± 30 g ANZ:240 ± 30 g

Case Material: Thermoplastic, flame retardant

After Care: Clean only with a clean damp cloth – do not use any aggressive cleaning agents. If cleaning agents are necessary, check compatibility before use.

Mounting: UK: Type G
EU“Schuko”
Type E & F
ANZ: Type I

Ball Pressure Test Temperature 75°C

Environmental

Impulse voltage rating: Cat II 2500V

Storage temperature: -20°C to 55°C

Operating temperature: 0°C to 40°C

Environmental humidity range: 0% to 95% Rh

Atmospheric range: 980 to 1035hPa

Pollution degree: Degree 2

Enclosure protection: IP30

Radio

RF frequency -

Europe & UK : 868.42MHz

ANZ: 921.42MHz

RF range: 100m Line of sight in open air

Class: 3

Inclusion: If the Z-Wave controller does not respond within 2-seconds then the SSP 302 will try with NWI (Network Wide Inclusion). The total process can take up to 20 seconds.

This is a Z-Wave certified product and can be used with Z-Wave controllers that support its functionality. Please refer to the documentation provided by the gateway or controller manufacturer. See the Z-Wave alliance website www.z-wavealliance.org for certified controllers.

Compliance



RoHS

EN 60730-1, R&TTE directive

EN 301 489 part 1 & 3

ETSI EN 300 220-2

BS 1363-3 (for UK)

IEC 60884-1 (for EU)

AS/NZS 3122 and RCM ACMA (for ANZ)



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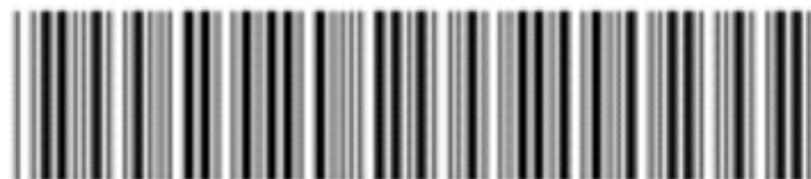
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