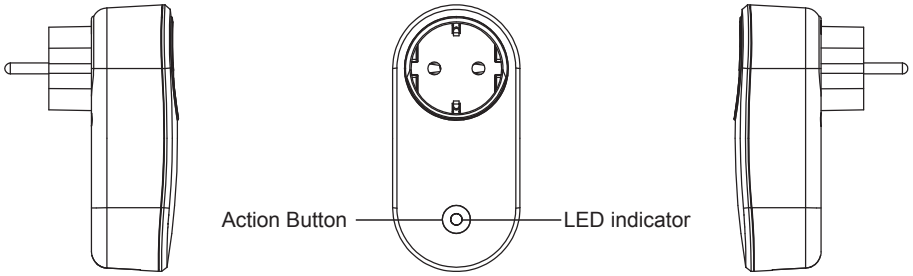
NAMRON Z-Wave Plugg Med Termostat

09.ZV9021A.04766

Important: Read All Instructions Prior to Installation

Function introduction



Note: this figure is a sample of EU version. For other versions, the product appearance would be different.

Product Data

Radio Frequency	868.42 MHz
Input Voltage	200-240VAC
Max. Load	16A/3680W
Over Current Protection	16A
Operating temperature	0 to 40°C
Relative humidity	8% to 80%
Dimensions	114.8×54.8×74.7(mm)

Safety & Warnings
- DO NOT install with power applied to device.
- DO NOT expose the device to moisture.

Quick Start
How to install:
- Step 1: plug the Z-Wave smart plug into a wall socket and power on it.

- Step 2: activate inclusion mode on your Z-Wave controller.

- Step 3: activate inclusion mode of the smart plug by triple press the action button on the plug and LED indicator will flash a white LED fast for 6 seconds then stay solid white for 3 seconds to indicate successful inclusion.

Product Description
The Z-Wave Smart Plug is a Z-Wave device that is used to power connected lighting using Z-Wave Plus and can be controlled by other Z-Wave devices. The device supports metering function (voltage, current, energy consumption and power), it also supports thermostat's Heat Mode, Energy Heat Mode, OFF Mode. The device cannot act as Z-Wave network controller (primary or secondary) and will always need a Z-Wave network controller to be included into a Z-Wave network.

The encryption modes that the smart plug supports are S0, S2 Unauthenticated. When the smart plug is being included into a Z-Wave network, you can use your primary controller/gateway to enable one encryption mode or disable encryption. (The primary controller/gateway shall support encryption mode configuration).

Installation Guide
Please read carefully the enclosed user manual before installation of the smart plug, in order to ensure an error-free functioning

Smart Start

If the user's gateway also supports smartstart, add the device by scanning the QR code, Smartstart allows users to quickly add devices to the gateway by scanning the device's QR code.

Inclusion (adding to a Z-Wave network)
1. Set primary controller/gateway into inclusion mode (Please refer to your primary controllers manual on how to turn your controller into inclusion).

2. Power on the smart plug, make sure it does not belong to any Z-Wave network. Press and hold down action button for over 10 seconds, if the LED indicator flashes yellow slowly, it means it does not belong to any network, if the smart plug has already been included into a network, it will be removed from the network and reset to factory defaults. There are two methods to set the smart plug into inclusion mode:
1)Repower on the smart plug, it will be set into inclusion mode automatically, and waiting to be included.
2)Triple press the action button on the smart plug, it will set the plug into inclusion mode.
The LED indicator will flash a white LED fast then stay solid white for 3 seconds to indicate successful inclusion. If there is no Z-Wave network available, the LED indicator will flash white fast for 30 seconds and the plug will quit inclusion mode automatically.

Exclusion (removing from a Z-Wave network)
There are two exclusion methods:
Method 1: Exclusion from the primary controller/gateway as follows:
1. Set the primary controller/gateway into exclusion mode (Please refer to your primary controllers manual on how to set your controller into exclusion).

2. Triple press the action button, the smart plug will be set to exclusion mode, the LED indicator will flash a white LED fast and then flash white slowly for 3 times to indicate successful exclusion. If exclusion fails, the LED indicator will flash fast for 30 seconds and the plug will quit exclusion mode automatically.

There are 3 methods for the smart plug to quit "exclusion mode". Once it quits "exclusion mode", the LED light will stop the fast fade-in and fade-out status.
1. Automatically quits after successful exclusion.

2. Quits after 6 seconds timeout.

3. Repower on the smart plug.

(Note: When the smart plug already included to a network, triple press action button, the smart plug will be set into exclusion mode and quit exclusion mode alternatively.)

Method 2: Factory reset the smart plug will force the it to be excluded from a network. (please refer to the part "Factory Reset" of this manual)

Note: Factory reset is not recommended for exclusion, please use this procedure only if the primary controller/gateway is missing or otherwise inoperable.
Note 2: When adopts S2 encryption mode to include the device, an encrypted key will need to be generated, LED indicator may not flash, please wait and do not unplug the device.

Factory Reset
Press and hold down action button for over 10 seconds, LED indicator stays solid white for 3s to indicate successful factory reset, release action button, the smart plug will restart automatically.

Association
Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed). In case the event happens all devices stored in the respective association group will receive a common wireless command.

Association Groups:

Association Groups	Group Name	Max Nodes	Description
Group 1	Lifeline	5	1. Smart plug Factory Reset, send Command Class "Device Reset Locally Notification CC" to associated devices of this group to report factory reset information when factory reset the smart plug. 2. Smart plug over current, over temperature, send Command Class "NOTIFICATION_REPORT CC" to associated devices of this group to report overload information. 3. When smart plug state changes, send Command Class "SWITCH_BINARY_REPORT CC" to associated devices of this group to report state information. 4. METER_REPORT 5. Send SENSOR_MULTILEVEL_REPORT to report temperature 6. Report when thermostat setpoint or mode changes

Set and unset associations:
(Note: All association information will be cleared automatically once the smart plug is excluded from a network.)
Set association by operating primary controller/gateway to send packets to the smart plug:
The primary controller/gateway sends packets to the smart plug using “Command Class ASSOCIATION”

LED Indicator State When the Load is Switched on/off
The state of LED indicator will change according to the output load power level when the load is switched on/off.

LED Indicator State	Definition
Flashes red slowly	Over current (16A Over Current) or over temperature alarm
Stays solid orange	Load power > 2200W
Stays solid yellow	Load power 2001-2200W
Stays solid green	Load power 1501-2000W
Stays solid cyan	Load power 1001-1500W
Stays solid blue	Load power <= 1000W
Flashes purple slowly	Firmware updating via OTA
Stays solid white at a low brightness	Load switched off

Node Information Frame
The Node Information Frame is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame.

How to send out Node Information Frame:
When the smart plug is set to inclusion/exclusion mode again, it will send out Node Information Frame, there are 2 kinds of operation as follows:
1. Triple press the action button, the smart plug will be set to inclusion/exclusion mode, then send out Node Information Frame.

2. When the smart plug is under inclusion mode, there are two kinds of operation:
1) Triple press action button, the smart plug will be set to inclusion mode again, and send out Node Information Frame.
2) If the plug does not belong to any Z-Wave network, repower on the smart plug, it will be set to inclusion mode automatically, and send out Node Information Frame.

Device Operating Mode
Device operating mode can be configured through configuration parameter 7.

1. Switch Mode
1.1. This mode enables to control relay output directly using basic set or binary set.
1.2. Thermostat related command class will be invalid.
1.3. Short press the action button to switch on/off load.

2. Thermostat (automatic heating) Mode
2.1. The device will turn on or off relay output automatically according to the temperature value set through command class Thermostat Set Point.
2.2. Binary set command class will be invalid.
2.3. The action button can not control relay output directly.
2.4. Basic Set (Value = 0x00) = Set Economy Mode (Thermostat Heating Mode)
Basic Set (Value = 0xFF) = Set Comfort Mode(Thermostat Energy Save Heating Mode)

Comfort Mode: this is a normally used mode, the user can set a temperature value of comfort mode using command class THERMOSTAT_SETPOINT_SET, the device will control the relay automatically according to the temperature value to keep the room temperature within the set value range. Default hysterersis -0.8 degree and 0.2 degree are adopted, when current sensor temperature is <= the set temperature minuses 0.8 degree, the controller will heat, when current sensor temperature is >= the set temperature pluses 0.2 degree, the controller will not heat.

Economy Mode Mode: if the user is out of home, and would like to keep room temperature at desired level without turning off the device, the user can set a temperature value of economy mode using command class THERMOSTAT_SETPOINT_SET, the device will control the relay automatically according to the temperature value to keep the room temperature within the set value range. But the controlled Temperature hysteresis will become bigger in order to save energy.
Default hysterersis -2 degree and 0.5 degree are adopted, when current sensor temperature is <= the set temperature minuses 2 degrees, the controller will heat, when current sensor temperature is >= the set temperature minuses 0.5 degree, the controller will not heat.

Note:The Economy Mode Mode setpoint is usually lower than the Comfort Mode setpoint in order to save energy.

Notification report event

notification Type	Triggering Event
NOTIFICATION_TYPE_POWER_MANAGEMENT(08)	POWER_MANAGEMENT_OVERCURRENT_DETECTED（0x06)
NOTIFICATION_TYPE_HEAT_ALARM	NOTIFICATION_EVENT_HEAT_ALARM_OverheatUnknownLocation

Note:
1. over current protection enabled (configuration parameter 20 is not configured as 0), when over current is detected, the relay will be forced to off status, unless reset power of the device, otherwise the device will keep alarm status, and report alarm every 60 seconds;

2. over temperature protection enabled (configuration parameter 10 is not configured as 0), when over temperature is detected, the relay will be forced to off status, Thermostat Mode will also be set as OFF, the alarm will be report every 30 seconds, once temperature is lower than alarm temperature, the alarm will be cancelled in 30 seconds automatically;

Technical Data

Wireless Range	Up to 100 m outside, on average up to 40 m inside buildings
SDK	6.82.00
Explorer Frame Support	Yes
Device Type	On/Off Power Switch
Generic Device Class	GENERIC_TYPE_SWITCH_BINARY
Specific Device Class	SPECIFIC_TYPE_POWER_SWITCH_BINARY
Routing	Yes
FLiRS	No
Role Type	Always On Slave (AOS)

Thermostat Related Data

Command	Support
Thermostat Mode	1.OFF 2.HEAT 3.ENERGY HEAT
Thermostat Setpoint Type	1.Heating 2.Energy Save Heating

SUPPORTED COMMAND CLASS

Node Info		Support S2
COMMAND_CLASS_ZWAVEPLUS_INFO	V2	
COMMAND_CLASS_SECURITY	V1	
COMMAND_CLASS_SECURITY_2	V1	
COMMAND_CLASS_TRANSPORT_SERVICE	V2	
COMMAND_CLASS_SUPERVISION	V1	
COMMAND_CLASS_SWITCH_BINARY	V1	YES
COMMAND_CLASS_MANUFACTURER_SPECIFIC	V2	YES
COMMAND_CLASS_VERSION	V3	YES
COMMAND_CLASS_CONFIGURATION	V1	YES
COMMAND_CLASS_ASSOCIATION_GRP_INFO	V1	YES
COMMAND_CLASS_ASSOCIATION	V2	YES
COMMAND_CLASS_POWERLEVEL	V1	YES
COMMAND_CLASS_DEVICE_RESET_LOCALLY	V1	YES
COMMAND_CLASS_NOTIFICATION	V8	YES
COMMAND_CLASS_METER	V3	YES
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2	V4	YES
COMMAND_CLASS_SCENE_ACTIVATION	V1	YES
COMMAND_CLASS_SCENE_ACTUATOR_CONF	V1	YES
COMMAND_CLASS_SENSOR_MULTILEVEL	V5	YES
COMMAND_CLASS_THERMOSTAT_MODE	V3	YES
COMMAND_CLASS_THERMOSTAT_SETPOINT	V2	YES

Configuration Command Class

Parameter HEX (DEC)	Size	Description	Default Value
0x07(7)	1	Device operating mode: Switch mode enables to control relay output directly using basic set or binary set. Thermostat mode will control relay output automatically according to the temperature value set. 0 - Switch mode 1 - Thermostat mode	1
0x08(8)	1	When configured as Thermostat mode: if Thermostat setpoint or mode changes, whether to report actively 0 - not report 1 - report actively	0
0x09(9)	1	Temperature compensation value 0: no compensation -50~50: set a threshold,unit is 0.1 Celsius degree	0
0x0A(10)	1	Whether to enable over temperature protection. When temperature achieves the set value, the relay output will be forced to off. 0: disable over temperature protection 30~60: set a threshold,unit is 1 Celsius degree	36
0x0b(11)	1	Temperature change report threshold, report to gateway when change value is lower or higher than the threshold 0: disable to report 2~50: set a threshold,unit is 0.1 Celsius degree	5
0x0C(12)	1	Time interval for periodical temperature report, unit is S 0: disable report 10~65535: time interval for periodical temperature report	300 (5 Minutes)
0x0D(13)	1	Power change absolute threshold, unit is W, report when power change value lower or higher than the threshold. Value 0 - disable report 1~255: absolute threshold	2
0x0E(14)	1	Voltage change absolute threshold, unit is V, report when voltage change value lower or higher than the threshold. Value 0 - disable report 1~255: absolute threshold	2
0x0F(15)	1	Current change absolute threshold, unit is 0.1A, report when current change value lower or higher than the threshold. Value 0 - disable report 1~255: absolute threshold	1
0x11(17)	4	Time interval for periodically active report of voltage value, current value, power value, energy consumption, unit is S. 60-2678400 (31 days),unit is S, it stands for time interval of 60S to 2678400S	600 (10 minutes)
0x12(18)	1	Device state after a power reset Switch Mode: 00: turn off relay 01: turn on relay 02: save relay state before power reset Thermostat Mode: 00: HVAC OFF 01: HVAC ON 02: save HVAC state before power reset	2
0x13(19)	1	Enable/disable to send SWITCH_BINARY_REPORT to the Lifeline when the plug (under switch mode) state changes, reset power of the plug and factory reset the plug 0, disable to send 1, enable to send	1
0x14(20)	1	Enable/disable current protection threshold function 0, disable 10~16, set a threshold, unit is A	16

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