

MICROMODULE MOTOR CONTROLLER

QUICK INSTALLATION GUIDE
v1.3

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ELECTROMAGNETIC COMPATIBILITY

In proper state and when operated properly, the product complies with all the requirements in respect of interference radiation according to EN 301 489-17, EN 301 489-1 and EN 300 328. The connections conducting HF signals must neither be manipulated nor damaged.

TAKE CARE OF YOUR SAFETY

Display extreme caution when using ladders or steps, please follow manufacturer's instructions. Be careful when using hand and power tools and follow the manufacturer's guidelines when using them. Take care that the correct tools are used. Wear goggles or protective clothing where required.

DANGER

RISK OF ELECTROCUTION

All work on the device should only be carried out by trained and skilled electricians. Observe the country-specific regulations.

CAUTION

The connected devices and the flush-mounted receiver can become damaged if devices are operated that do not correspond to the technical specifications [see technical data].

DANGER

RISK OF FATAL INJURY FROM ELECTRIC CURRENT.

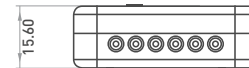
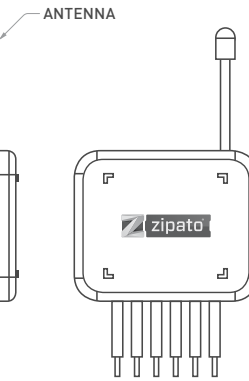
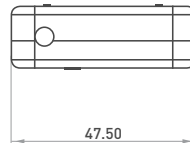
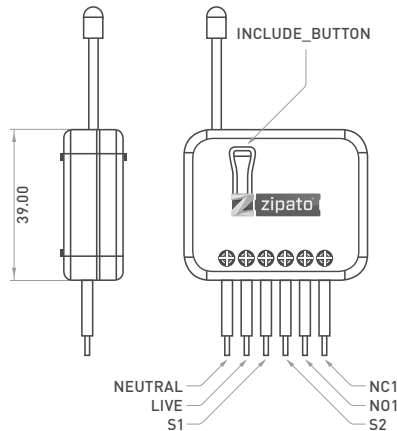
The device has no basic insulation and must therefore be installed in a way that protects against accidental contact.

DANGER

RISK OF FATAL INJURY FROM ELECTRIC CURRENT.

When installing a wall plate, the distance between the cover's fixing brackets or screws and the connections of the flush-mounted MicroModule Motor Controller must be at least 4 mm once installed. If the distance is less than 4 mm, a deeper installation box must be used. The fixing brackets or screws of the cover must not press against the housing. Only insulated tools may be used for operation on the device, e.g. an insulated phase tester.

FIGURE 1
Dimensions (unit: mm)



INTRODUCTION

The in-wall MicroModule Motor Controller is designed to switch rise/lower roller shutter connected to its terminals using radio waves, controllers and a push button directly connected to this Roller Controller.

This in-wall MicroModule Motor Controller is a transceiver which is a Z-Wave™ enabled device and is fully compatible with any Z-Wave™ enabled network. Slim design let the Controller can easily hide itself into the wall box and that will be good for the house decoration.

The new smart relay calibration technology can reduce the inrush current caused by the load and let the module work perfectly with many kind of Roller Shutter.

This in-wall MicroModule Motor Controller is able to detect position of the Shutter by using the patterned power measuring method, so it can be remote controlled not only fully up or down, but also can be adjusted to ex. 30% or 50%.

And when manual controlled by push button, the controller also can memorize the position and send the new shutter position to its controller (ex. IP-Gateway).

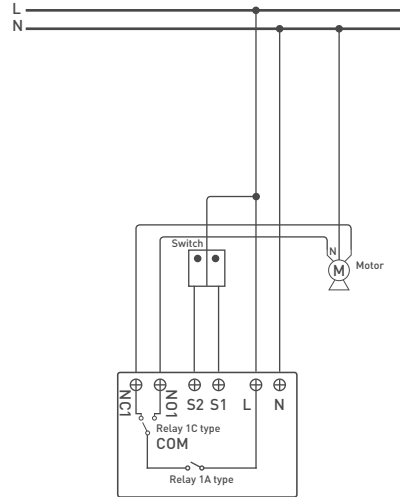


FEATURES

- Adopt newest Z-wave 400series chip, support multichannel operation and higher data rate (9.6/40/100kbps)
- Adopt Z-Wave protocol to secure the success of wireless two way communication
- Higher RF output power (+2.5dBm output power as compared to -2.5dBm 300 series Z-wave module) to enhance the communication range
- With zero crossing technology to extend the number of switching Sim design, easy install
- Max load up to 1100W
- After calibration, the controller can feedback the roller shutter position
- Overload protection
- Z-Wave V6.02
- Very low Electricity consumption, meet Europe year 2012 energy-related products requirement directive 2009/125/EC no. 1275/2008
- Z-Wave Certified No ZC08-13070030
ZC08-13080002
- LVD: EN 60669-2-1:2004+A1:2009+A12:2010,
EN 60669-2-2:2006
EN 60669-1:1999+A1:2002+A2:2008+IS1:2009
- R&TTE: EN 301489, EN 300220,

APPLICATION

☞ IN WALL SWITCH 2 RELAY; 1A AND 1C TYPE



SPECIFICATION

POWER

NO LOAD STANDBY POWER

0.48W (230V) 0.35W (120V)

INPUT VOLTAGE

110 ~230VAC

RF

REGULATION

FCC part15.249 / EN300 220-1/

DISTANCE

min. 40m indoor min. 100m outdoor

MECHANICAL

WEIGHT

30g

DIMENSION (W x H x D)

47.5x39x15.6 mm

ENVIRONMENT

OPERATION TEMPERATURE

0~40°C

HUMIDITY

85%RH max

LOAD

RESISTIVE LOAD

1100W (230V) 600W (120V)

OVERLOAD

1200W (230V) 700W(120V)

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ADDING TO Z-WAVE NETWORK

In the front casing, there is an include button with LED indicator below which is used to carry out inclusion, exclusion, reset or association. When first power is applied, its LED flashes on and off alternately and repeatedly at 2-second intervals. It implies that it has not been assigned a node ID and cannot work with Z-Wave enabled devices.

➔ AUTO INCLUSION

The function of auto inclusion will be executed as long as the MM Motor Controller does not have Node ID and just connect the MM Motor Controller to main power.

Note: Auto inclusion timeout is 4 minute during which the node information of explorer frame will be emitted once every 5 seconds. Unlike "inclusion" function as shown in the table below, the execution of auto inclusion is free from pressing the Include button on the MM Motor Controller.

The table below lists an operation summary of basic Z-Wave functions. Please refer to the instructions for your Z-Wave Certificated Primary Controller to access the Setup function, and to include/exclude/associate devices.

Function	Description	LED Indication
No node ID	The Z-Wave Controller does not allocate a node ID to the MM Motor Controller.	2-second on, 2-second off
Inclusion	Have Z-Wave Controller entered inclusion mode.	One press one flash
	Pressing Include button three times within 1.5 seconds will enter inclusion mode.	
Exclusion	Have Z-Wave Controller entered exclusion mode.	One press one flash
	Pressing Include button three times within 1.5 seconds will enter exclusion mode.	
	Node ID has been excluded.	2-second on, 2-second off
Reset	Pressing Include button three times within 1.5 seconds will enter inclusion mode.	One press one flash
	Within 1 second, press Include button again for 5 seconds until LED is off.	
Association	IDs are excluded.	2-second on, 2-second off
	Have Z-Wave Controller entered association mode. OR Pressing Include button three times within 1.5 seconds will enter association mode	One press one flash

State Type	LED Indication
Motor activate	No matter up or down, close or open, Led will flash every second while Motor activate. When S1 or S2 close to L, the LED will flash even when the motor stop by itself, this is to let user know the S1 or S2 still close and not been release yet.
No node ID	Under normal operation, when the MM Motor Controller has not been allocated a node ID, the LED flashes on and off alternately at 2-second intervals. By pressing S1 S2 or Include button, it will stop flashing temporarily. However, after disconnect and reconnect the power of MM Motor Controller, the LED will flash on and off alternately at 2-second intervals.
Overload	When overload state occurs, the MM Motor Controller is disabled and LED flashes on and off alternately at 0.5 second intervals. MM Motor Controller will send alarm_type=8 alarm_Level=0xFF to Group1, Overload state can be cleared by disconnect and reconnect the MM Motor Controller to the main power.

LED INDICATION

State Type	LED Indication
Motor activate	No matter up or down, close or open, Led will flash every second while Motor activate. When S1 or S2 close to L, the LED will flash even when the motor stop by itself, this is to let user know the S1 or S2 still close and not been release yet.
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CHOOSING A SUITABLE LOCATION

- Do not locate the MM Motor Controller facing direct sunlight, humid or dusty place.
- The suitable ambient temperature for the MM Motor Controller is 0°C-40°C.
- Do not locate the MM Motor Controller where exists combustible substances or any source of heat, e.g. fires, radiators, boiler etc.
- After putting it into use, the body of MM Motor Controller will become a little bit hot of which phenomenon is normal.

INSTALLATION AND OPERATION

- Put the in wall MM Motor Controller into a wall box and connect the AC power wire L,N to MM Motor Controller connector L, N.
- Connect the wall switch to the MM Motor Controller as shown in picture above.
- It is important to carry out a shutter calibration process before you control the shutter to move. Press inclusion button over 3 seconds and release before the 6th second, the roller shutter controller will start the shutter calibration process. The process is composed of three continue stages. The shutter move to the TOP in first stage, and move to the BOTTOM in second stage, and move to the TOP again in third stage. Then MM Motor Controller will know the total range of UP and DOWN.
- During the shutter calibration process, any emergencies happen you can press and release the include button to stop the process.
- If user found the direction is reverse, this may cause by the wrong connection of NC and NO to the motor, please change NC and NO connection and execute calibration process again.
- For safe issue, please select the motor which can stop by itself when go to bottom end or top end.
- To manually switch up and down of the shutter, simply press the external switch S1 or S2. The detail is described in Z-Wave configuration section (External switch type) of this manual.
- MM Motor Controller built in meter function and can read the Watt, KWh, V(Voltage), I(Current), P(Power Factor) of the load by

using Z-Wave command class, user can set a threshold watt to get the warning caused by abnormal operation.

- MM Motor Controller have overload protection function, and can help to prevent short circuit caused by load.

PROGRAMMING

➔ BASIC COMMAND CLASS

The MM Motor Controller will respond to BASIC and BINARY commands that are part of the Z-Wave system.

■ BASIC_GET

When MM Motor Controller receive Basic Get Command it will send Basic Report Command to report the position of the shutter. When the report value is 0x00, that mean the shutter is at the Bottom, if the report value is 0x63 or 0xFF that mean the shutter is at the Top, any other value between 0x01-0x62 imply Shutter at the position between top and bottom.

Basic Get Command: [Command Class Basic, Basic Get]

Basic Report Command:
[Command Class Basic, Basic Report, Value = 0x00 [BOTTOM]]
[Command Class Basic, Basic Report, Value = 0x01-0x62 [Between BOTTOM and TOP]]
[Command Class Basic, Basic Report, Value = 0x63/0xFF [TOP]]

■ BASIC_SET

MM Motor Controller can accept Basic Set Command which value is either [0x00]Bottom or Top [0x63/0xFF] or [0x01-0x62] the position between Top and Bottom. Other value [0x64-0xFE] is not acceptable.

[Command Class Basic, Basic Set, Value = 0x63 or 0xFF] control the shutter to the top [0xFF]

[Command Class Basic, Basic Set, Value = 0x00[0]] control the shutter to the bottom[0x00]

[Command Class Basic, Basic Set, Value = 0x01-0x62] control the shutter to the position between bottom and top

➔ BINARY SWITCH COMMAND CLASS

■ BINARY_SWITCH_GET

When MM Motor Controller receive Binary Switch Get Command, it will send Binary Switch Report Command to report the position of the shutter. When the report value is 0x00, that mean the Shutter is bottom down, if the report value is 0xFF that mean the Shutter is at the top. But if report value is 0xFE means the position is unknown.

Binary Switch Get Command:
[Command Class Binary Switch, Binary Switch Get]

Binary Switch Report Command:
[Command Class Binary Switch, Binary Switch Report, Value = 0x00[BOTTOM]]
[Command Class Binary Switch, Binary Switch Report, Value = 0xFE[UNKNOWN]]
[Command Class Binary Switch, Binary Switch Report, Value = 0xFF[TOP]]

■ BINARY_SWITCH_SET

MM Motor Controller can only accept Binary Switch Set Command which value is either [0x00] Bottom or Top [0xFF], other value is not acceptable.

[Command Class Binary Switch, Binary Switch Set, Value = 0xFF[255]] control the shutter to the top [0xFF]. But if the shutter is on the way down, this command will stop the shutter.
[Command Class Binary Switch, Binary Switch Set, Value = 0x00[0]] control the shutter to the bottom[0x00]. But if the shutter is on the way up, this command will stop the shutter.

➔ MULTILEVEL SWITCH COMMAND CLASS (VERSION 3)

■ MULTILEVEL_SWITCH_SET

MM Motor Controller can accept Multilevel Switch Set

Command which value is either [0x00] Bottom or Top [0x63 or 0xFF] or [0x01-0x62] the position between TOP and Bottom. Other value [0x64-0xFE] is not acceptable.

[Command Class Multilevel Switch, Multilevel Switch Set, Value = 0x63 or 0xFF[255]] control the shutter to the top [0xFF]

[Command Class Multilevel Switch, Multilevel Switch Set, Value = 0x00[0]] control the shutter to the bottom[0x00]

[Command Class Multilevel Switch, Multilevel Switch Set, Value = 0x01-0x62] control the shutter to the position between Bottom and Top.

■ MULTILEVEL_SWITCH_GET

When MM Motor Controller receive Multilevel Switch Get Command, it will send Multilevel Switch Report Command to report the position of the shutter. When the report value is 0x00, that mean the shutter is at the Bottom, if the report value is 0x63 or 0xFF that mean the shutter is at the top, any other value between 0x01-0x62 imply shutter at the position between top and bottom.

Switch Multilevel Get Command:
[Command Class Multilevel Switch, Multilevel Switch Get]

Multilevel Switch Report Command
[Command Class Multilevel Switch, Multilevel Switch Report, Value = 0x00[BOTTOM]]
[Command Class Multilevel Switch, Multilevel Switch Report, Value = 0x01-0x62[Between BOTTOM and TOP]]
[Command Class Multilevel Switch, Multilevel Switch Report, Value = 0x63/0xFF[TOP]]

■ MULTILEVEL_SWITCH_START_LEVEL_CHANGE

This is the command which user can move the shutter up to the top or down to the bottom.

[Command Class Multilevel Switch, Multilevel Switch Start Level Change, Up/Down Value]

■ Up/Down Bit:

- If Up/Down Bit=0x00 Shutter move up
- If Up/Down Bit=0x01 Shutter move down
- If Up/Down Bit=0x03 no move

[Command Class Multilevel Switch, Multilevel Switch Start Level Change, Up/Down=0x00] control the shutter to the top [0xFF]

[Command Class Multilevel Switch, Multilevel Switch Start Level Change, Up/Down=0x01] control the shutter to the bottom [0x00]

[Command Class Multilevel Switch, Multilevel Switch Start Level Change, Up/Down=0x03] Don't move the shutter or stop the moving shutter

- ATT.
- Ignore_Start_Level, Start_Level, Dimming_Duration, Inc/Dec, Step_size can not be used.
 - MM Motor Controller can not control the speed of motor.
 - It may have some distance error caused by motor start up time.
 - If user found the error become significant, you may using S1 or S2 move shutter to the end or remote move shutter to 0% and 100%, and that will automatically calibrate this error.

■ Multilevel switch stop level change

When receive Multilevel Switch Stop Level change Command MM Motor Controller will stop the motor.

➔ SCENE ACTIVATION SET COMMAND CLASS

■ Scene Activation Set Command

When MM Motor Controller receive Scene Activation Set command, it will read the level of the pre-configured Scene ID from EEPROM. And it will be controlled as a Multilevel Switch Set command. The Dimming Duration of the command will be ignored because MM Motor Controller can not control the speed of motor.

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SCENE ACTUATOR CONFIGURATION COMMAND CLASS

[Command Class Scene Actuator Configuration, Scene Actuator Configuration Set, Scene ID=1-255, Override bit=0, Level=0-99 or 255] The current setting of MM Motor Controller will not be override.

[Command Class Scene Actuator Configuration, Scene Actuator Configuration Set, Scene ID=1-255, Override bit=1, Level=0-99 or 255] The Level value in this Command is associated to the Scene ID.

Scene Actuator Configuration Set Command

[Command Class Scene Actuator Configuration, Scene Actuator Configuration Get, Scene ID=1-255]

[Command Class Scene Actuator Configuration, Scene Actuator Configuration Report, Scene ID=1-255, Level=0-99 or 255, Dimming Duration=0-0xFF] Report the Pre-configured Scene ID of MM Motor Controller.

Z-WAVE'S GROUPS INTRODUCTION (ASSOCIATION COMMAND CLASS VERSION 1)

There is only one group called Group1, there is only one node for Group1 which support MULTILEVEL_SWITCH_REPORT, METER_REPORT_CMDAND_V3, ALARM_REPORT

Report the shutter position

Every time when user press S1 or S2 and let shutter to move, MM Motor Controller will report the position status to controller, and at the moving process when change over 10% MM Motor Controller will send Multilevel Switch Report to Group 1 also.

Multilevel Switch Report: Ex. Report position at 30% [Command Class Multilevel Switch, Multilevel Switch Report, Value = 30(%)]

Meter Command Class

The Switch will report its [1] instant Power Consumption (Watt) or [2] accumulated power consumption(KWh) or [3] AC load Voltage [V] or [4] AC load current [I] [5] load power factor (PF) to Z-Wave Controller after receive the Meter Get Command from Z-Wave Controller. When the power consumption of load vary over 5%, it will send Meter report to the nodes of Group as well.

Instant Power Consumption (Watt) of Switch When receiving Meter Get Command, it will report Meter Report Command to the node asked.

Meter Get Command: [Command Class Meter, Meter Get, Scale = 0x02[W]]

Meter Report Command: [Command Class Meter, Meter Report, scale(bit 2) +Rate Type +Meter Type, Precision + Scale(bit 1,0)+ Size, Meter Value 1, Meter Value 2, Meter Value 3, Meter Value 4]

Rate Type = 0x01
Meter Type = 0x01

Example:
Meter Value 1 = 0x00 [W]

Precision = 1
Scale = 0x02[W]
Size = 4 Bytes (Meter Value)
Meter Value 1 = [W] MSB
Meter Value 2 = [W]
Meter Value 3 = [W]
Meter Value 4 = [W]LSB

Meter Value 2 = 0x00 [W]
Meter Value 3 = 0x03 [W]
Meter Value 4 = 0xEA [W]
Meter[W] = Meter Value 3 *256
+ Meter Value 4 = 100.2W

Accumulated Power Consumption [KWh]

When receiving Meter Get Command, it will report Meter Report Command to the node asked.

Meter Get Command: [Command Class Meter, Meter Get, Scale = 0x00]

Meter Report Command: [Command Class Meter, Meter Report, scale(bit 2) +Rate Type +Meter Type, Precision + Scale(bit 1,0)+ Size, Meter Value 1, Meter Value 2, Meter Value 3, Meter Value 4]

Rate Type = 0x01
Meter Type = 0x01
Precision = 2
Scale = 0x00 [KWh]
Size = 4 bytes (Meter Value)
Meter Value 1 = [KWh] MSB
Meter Value 2 = [KWh]
Meter Value 3 = [KWh]
Meter Value 4 = [KWh] LSB

Example:
Scale = 0x00 [KWh]
Precision = 2
Size = 4 Bytes [KWh/h]
Meter Value 1 = 0x00[KWh]
Meter Value 2 = 0x01[KWh]
Meter Value 3 = 0x38[KWh]
Meter Value 4 = 0xA3[KWh].

Accumulated power consumption [KWh] = (Meter Value 2*65536) + (Meter Value 3*256) + (Meter Value 4) = 800.35 [KWh]

AC load Voltage [V] When receiving Meter Get Command, it will report Meter Report Command to the node asked.

Meter Get Command: [Command Class Meter, Meter Get, Scale = 0x04[V]]

Meter Report Command: [Command Class Meter, Meter Report, scale(bit 2) +Rate Type +Meter Type, Precision + Scale(bit 1,0)+ Size, Meter Value 1, Meter Value 2]

Rate Type = 0x01
Meter Type = 0x01
Precision = 1
Scale = 0x04[V]
Size = 2 Bytes (Meter Value)
Meter Value 1 = High Byte [V]
Meter Value 2 = Low Byte [V]

Example:
Scale = 0x04 [V]
Precision = 1
Size = 2 [2 Bytes of V]
Meter Value 1 = 0x09[V]
Meter Value 2 = 0x01[V]
AC load Voltage = (Meter Value 1*256) +(Meter Value 2)= 230.5 [V]

AC load current [I] When receiving Meter Get Command, it will report Meter Report Command to the node asked.

Meter Get Command: [Command Class Meter, Meter Get, Scale = 0x05[I]]

Meter Report Command: [Command Class Meter, Meter Report, scale(bit 2) +Rate Type +Meter Type, Precision + Scale(bit 1,0)+ Size, Meter Value 1, Meter Value 2]

Rate Type = 0x01
Meter Type = 0x01
Precision = 2
Scale = 0x05[I]
Size = 2 Bytes (Meter Value)
Meter Value 1 = High Byte [I]
Meter Value 2 = Low Byte [I]

Example:
Scale = 0x05 [I]
Precision = 2
Size = 2 [2 Bytes of I]
Meter Value 1 = 0x01[I]
Meter Value 2 = 0x21[I]
AC load current = (Meter Value 1*256) +(Meter Value 2)= 2.89 [A]

Load power factor (PF) When receiving Meter Get Command, it will report Meter Report Command to the node asked.

Meter Get Command: [Command Class Meter, Meter Get, Scale = 0x06[PF]]

Meter Report Command: [Command Class Meter, Meter Report, scale(bit 2) +Rate Type +Meter Type, Precision + Scale(bit 1,0)+ Size, Meter Value 1]

Rate Type = 0x01
Meter Type = 0x01
Precision = 2
Scale = 0x06[PF]
Size = 1 Bytes
Meter Value 1

Example:
Scale = 0x06 (PF)
Precision = 2
Size = 1 [1 Byte of PF]
Meter Value 1 = 0x63[PF]
Load power factor (PF) = Meter Value 1 = 0.99

Reset Accumulated Power Consumption [KWh] This command is to reset the Accumulated Power Consumption [KWh] to 0 Meter Reset Command.

[Command Class Meter, Meter Reset]

Alarm Report Command

When MM Motor Controller detect Overload, it will send Alarm_Report to Group1, Alarm Type = 0x08, Alarm Level=0xFF. When receive Alarm_Get command and the MM Motor Controller not in overload status , it will send Alarm_Report, Alarm Type = 0x08, Alarm Level=0x00.

Alarm Report

When in Two Push Button switch type, S1 or S2 close to L and not been release, and MM Motor Controller receive some control moving command from Z-Wave RF (Ex. BASIC_SET, BINARY_SWITCH_SET, MULTILEVEL_SWITCH_SET, MULTILEVEL_SWITCH_START_LEVEL_CHANGE or MULTILEVEL_SWITCH_STOP_LEVEL_CHANGE), MM Motor Controller won't do any movement change but report alarm to Group1 this indicate that the S1 or S2 not been released. When MM Motor Controller detect a overload power, it will report alarm to Group1.

[Command_Class_Alarm, Alarm_Report, Alarm Type = 0x08, Alarm Level = 0xFF [Overload]]

[Command_Class_Alarm, Alarm_Report, Alarm Type = 0x08, Alarm Level = 0x00 [Normal]]

When in Two Push Button switch type, S1 or S2 are closed and not released to open, and MM Motor Controller receive any control moving command from Z-Wave RF, it will report alarm to Group1.

[Command_Class_Alarm, Alarm_Report, Alarm Type = 0x01, Alarm Level = 0xFF [S1 or S2 close to L]]

[Command_Class_Alarm, Alarm_Report, Alarm Type = 0x08, Alarm Level = 0x00 [Normal]]

COMMAND CLASSES

COMMAND_CLASS_SWITCH_BINARY
COMMAND_CLASS_BASIC
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
COMMAND_CLASS_VERSION
COMMAND_CLASS_ASSOCIATION
COMMAND_CLASS_METER_V3
COMMAND_CLASS_CONFIGURATION
COMMAND_CLASS_SWITCH_MULTILEVEL_V3
COMMAND_CLASS_ALARM
COMMAND_CLASS_SCENE_ACTIVATION
COMMAND_CLASS_SCENE_ACTUATOR_CONF

Z-WAVE'S CONFIGURATION

Watt Meter Report Period

If the setting is configured for 1hour [set value =720], the MM Motor Controller will report its instant power consumption every 1 hour to the node of correspond Group. The maximum interval to report its instant power consumption is 45 hours [5s*32767/3600=45hr]. Default value is 1 hour.

KWh Meter Report Period

If the setting is configured for 1hour [set value =6], the MM Motor Controller will report its Accumulated Power Consumption [KWh/h] every 1 hour to the node of correspond Group. The maximum interval to report its Accumulated Power Consumption [KWh/h] is 227.55 days [10min*32767/1440=227.55 Days]. Default value=1 hour.

Threshold of Watt for Load Caution

This is a warning when the wattage of load over the preset threshold value, If the setting value is 1100, when the load wattage over this value, MM Motor Controller will send Watt Meter Report command to the node of correspond Group. Default value=1100W.

Threshold of KWh for Load Caution

This is a warning when the KWh of load over the preset threshold value, If the setting value is 10000, when the Accumulated Power Consumption of Relay1 or Relay2 over this value, MM Motor Controller will send KWh Meter Report command to the node of correspond Group, minimum value is 1KWh and default value is 10000 KWh.

Level Report mode

Mode 1: In 5 seconds period after controlled by a moving command, it will report the destination level when received request command. Out of the 5 seconds period, it will report the actual level of the shutter when received Mode 2: Whenever the shutter move pass a 10 percent level, it will auto report the level to Group 1 node.

Configuration Parameter	Function	Size [Bytes]	Value	Unit	Default	Description
1	Watt Meter Report Period	2	0x01-0x7FFF	5s	720	5*720s=3600s=1 hour
2	KWH Meter Report Period	2	0x01-0x7FFF	10min	6	6*10min= 1 hour
3	Threshold of Watt for Load Caution	2	10-1100	1watt	1100	
4	Threshold of KWH for Load Caution	2	1-10000	1KWh	10000	
5	External switch type	1	1-2		1	1: One Push button 2:Two Push button
6	Level report mode	1	1-2		1	1:Report destination level in 5s 2:Report 10 percent level while running

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TECHNICAL SUPPORT

Having trouble installing your new product?

Zipato's website contains the latest user documentation and software updates for Zipato products and services.

www.zipato.com

CONTACT SUPPORT

E-MAIL: support@zipato.com
(Mon-Fri) 9.00am-05.00pm (CET)

MODELS AND FREQUENCIES

MODELS

EUROPEAN UNION - EU version	ph-pan08.eu
UNITED STATES - US version	ph-pan08.us
RUSSIA - RU version	ph-pan08.ru
ISRAEL - IS version	ph-pan08.is
AUSTRALIA - AU version	ph-pan08.au
INDIA - IN version	ph-pan08.in

FREQUENCIES

EUROPEAN UNION - EU	868.42 MHz
UNITED STATES - US	908.42MHz
RUSSIA - RU	869.02MHz
ISRAEL - IS	916.02MHz
AUSTRALIA - AU	921.42MHz
INDIA - IN	865.20MHz

LIMITED PRODUCT WARRANTY

GENERAL TERMS

Nothing in this Limited Product Warranty affects your statutory rights as a consumer.

The Limited Product Warranty set forth below is given by Tri plus grupa d.o.o. (Europe) [herein referred to as "ZIPATO"]. This Limited Product Warranty is only effective upon presentation of the proof of purchase. Upon further request by ZIPATO, this warranty card has to be presented, too.

EXCEPT AS EXPRESSLY SET FORTH IN THIS LIMITED WARRANTY, ZIPATO MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. ZIPATO EXPRESSLY DISCLAIMS ALL WARRANTIES NOT STATED IN THIS LIMITED WARRANTY. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. TO THE EXTENT ALLOWED BY LOCAL LAW, THE REMEDIES IN THIS WARRANTY STATEMENT ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES AGAINST ZIPATO. THEY DO NOT, HOWEVER, AFFECT OR RESTRICT THE RIGHTS YOU HAVE AGAINST THE BUSINESS YOU BOUGHT A ZIPATO PRODUCT FROM. IN NO EVENT WILL ZIPATO BE LIABLE FOR LOSS OF DATA OR FOR

INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFIT OR DATA), OR OTHER DAMAGE, WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE. HOWEVER, NOTHING IN THIS AGREEMENT LIMITS ZIPATO'S LIABILITY TO YOU (I) IN THE EVENT OF DEATH OR PERSONAL INJURY TO THE EXTENT RESULTING FROM ZIPATO'S NEGLIGENCE, OR (II) TO THE EXTENT RESULTING FROM ANY FRAUDULENT MISREPRESENTATION ON THE PART OF ZIPATO, OR (III) TO THE EXTENT ARISING UNDER PART 1 OF THE CONSUMER PROTECTION ACT 1987 OF THE UNITED KINGDOM. SOME STATES OR COUNTRIES DO NOT ALLOW: (1) A DISCLAIMER OF IMPLIED WARRANTIES; (2) A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION; OR (3) LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. IN SUCH STATES OR COUNTRIES, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY TO YOU. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS THAT MAY VARY FROM STATE TO STATE OR FROM COUNTRY TO COUNTRY. YOU ARE ADVISED TO CONSULT APPLICABLE STATE OR COUNTRY LAWS FOR A FULL DETERMINATION OF YOUR RIGHTS. This Limited Product Warranty applies to ZIPATO branded hardware products (collectively referred to as "ZIPATO Hardware Products") sold by ZIPATO (Europe), its European subsidiaries, affiliates, authorized resellers, or country distributors (collectively referred to as "ZIPATO Resellers") with this Limited Product Warranty.

The term "ZIPATO Hardware Product" is limited to the hardware components and all its internal components including firmware. The term "ZIPATO Hardware Product" DOES NOT include any software applications or programs.

GEOGRAPHICAL SCOPE OF THE LIMITED PRODUCT WARRANTY

This Limited Product Warranty is applicable to Hardware Products sold by Zipato Resellers in all countries listed at the beginning of this document under the heading "Countries in which this ZIPATO Limited Product Warranty applies".

The Limited Product Warranty will be honored in any country where ZIPATO or its authorized service providers offer warranty service subject to the terms and conditions set forth in this Limited Product Warranty. However, warranty service availability and response times may vary from country to country and may also be subject to registration requirements.

LIMITATION OF PRODUCT WARRANTY

ZIPATO warrants that the products described below under normal use are free from material defects in materials and workmanship during the Limited Product Warranty Period set forth below ("Limited Product Warranty Period"), if the product is used and serviced in accordance with the user manual and other documentation provided to the purchaser at the time of purchase (or as amended from time to time).

ZIPATO does not warrant that the products will operate uninterrupted or error-free or that all deficiencies, errors, defects or non-conformities will be corrected.

This warranty shall not apply to problems resulting from: (a) unauthorized alterations or attachments; (b) negligence, abuse or misuse, including failure to operate the product in accordance with specifications or interface requirements; (c) improper handling; (d) failure of goods or services not obtained from ZIPATO or not subject to a then-effective ZIPATO warranty or maintenance agreement; (e) improper use or storage; or (f) fire, water, acts of God or other catastrophic events. This warranty shall also not apply to any particular product if any ZIPATO serial number has been removed or defaced in any way.

ZIPATO IS NOT RESPONSIBLE FOR DAMAGE THAT OCCURS AS A RESULT OF YOUR FAILURE TO FOLLOW THE INSTRUCTIONS FOR THE ZIPATO HARDWARE PRODUCT.

LIMITED PRODUCT WARRANTY PERIOD

The Limited Product Warranty Period starts on the date of purchase from ZIPATO. Your dated sales or delivery receipt,

showing the date of purchase of the product, is your proof of the purchase date. You may be required to provide proof of purchase as a condition of receiving warranty service. You are entitled to warranty service according to the terms and conditions of this document if a repair to your ZIPATO branded hardware is required within the Limited Product Warranty Period.

[Other than in respect of products for domestic use (in particular those listed in the first and last boxes in the table below), this Limited Product Warranty extends only to the original end user purchaser of this ZIPATO Hardware Product and is not transferable to anyone who obtains ownership of the ZIPATO Hardware Product from the original end-user purchaser.

PRODUCT WARRANTY PERIOD TABLE

PRODUCT TYPE	Micromodule Motor Controller
PRODUCT WARRANTY PERIOD	One (1) year

IMPORTANT

The content of "Product Type" listed above is subject to change; please refer to the www.zipato.com for latest update.

PERFORMANCE OF THE LIMITED PRODUCT WARRANTY

If a product defect occurs, ZIPATO's sole obligation shall be to repair or replace any defective Zipato Hardware Product free of charge provided it is returned to an Authorized ZIPATO Service Centre during the Limited Warranty Period. Such repair or replacement will be rendered by ZIPATO at an Authorized ZIPATO Service Centre.

All component parts or hardware products that are replaced under this Limited Product Warranty become the property of ZIPATO. The replacement part or product takes on the remaining Limited Warranty Period of the replaced part or product. The replacement product need not be new or of an identical make, model or part; ZIPATO may in its discretion replace the defective product (or any part thereof) with any reconditioned equivalent (or superior) product in all material respects to the defective product.

WARRANTOR

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10 000 Zagreb
CROATIA

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FAX +385 (0)1 4004 405

DECLARATION OF CONFORMITY

The Manufacturer Tri plus grupa d.o.o. hereby declares that the product:

Zipabox Smart home controller 1



In accordance with the following Directive(s): 2006/95/EC The Low Voltage Directive, 89/336/EEC The Electromagnetic Compatibility Directive and 1999/5/EC R&T TE Directive is in conformity with the applicable requirements of the following documents:

EN 61326 EN 61000-3-3 EN 61000-4-4 EN 61000-4-11
IEC/EN 55011 EN 61000-6-2 EN 61000-4-5 EN 301 489-1-3
EN 300 220-2 EN 61000-4-2 EN 61000-4-6 AS/NZS/IEC 60335-2-97
EN 61000-3-2 EN 61000-4-3 EN 61000-4-8 EN 60335-1

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all applicable Essential Requirements of the Directives.

Person responsible for this declaration:
Dean Janacek, Certification Manager
01.09.2012

Changes or modifications not expressly approved Tri plus grupa d.o.o. for compliance could void the user's authority to operate the equipment.



THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.

Operation is subject to the following two conditions:
1 | This device may not cause harmful interference, and
2 | This device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1 | l'appareil ne doit pas produire de brouillage, et
2 | l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

NOTE: Changes or modifications not expressly approved by Zipato for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

DISPOSING AND RECYCLING YOUR PRODUCT



This symbol on the product or packaging means that according to local laws and regulations needs to be disposed of separately from household waste and sent to recycling because it contains electronic components and a battery. Once this product has reached the end of its life, please take it to a collection point (recycle facilities) designated by your local authorities, some will accept your product for free or simply drop it off at your Zipato re-seller store. By recycling the product and its packaging in this manner you help to conserve the environment and protect human health. At Zipato, we understand and are committed to reducing any impact our operations and products may have on the environment. To minimize this impact Zipato designs and builds its products to be as environmentally friendly as possible, by using recyclable, low toxic materials in both products and packaging.

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