Datasheet INFIBITY MOTION SENSOR INF-202-Z-01

Infibity Motion Sensor is a wireless (Z-Wave) sensor that allows motion detection using a passive infrared (PIR) sensor and is compatible with the Grenton Smart Home system. The module can be powered by batteries or via a USB port. Additionally, the device is equipped with a temperature, humidity and light sensor.

1. Parameters - ZWAVE BINARY SENSOR

Features:	
Value	Returns input value (0 - no motion, 1 - motion detected)
Events:	
OnValueChange	Occurs when a change in the input state takes place (regardless of the value)
OnSwitchOn	Occurs when the high state is set at input
OnSwitchOff	Occurs when the low state is set at input

2. Parameters - ZWAVE TAMPER ALARM

Features:	
AlarmDetected	State after detecting an alarm (0 - alarm inactive, 1 - alarm active)
Methods:	
ClearAlarm	Cancels active alarm
Events:	
OnAlarmDetectedChange	Occurs after changing the alarm state in AlarmDetected
OnAlarmDetected	Occurs after changing AlarmDetected from 0 to 1
OnAlarmCleared	Occurs after changing AlarmDetected from 1 to 0

3. Parameters - ZWAVE ANALOG SENSOR (temperature sensor)

Features:	
Value	Current temperature value
MinValue	Value below which OnOutOfRange event is occurred
MaxValue	Value above which OnOutOfRange event is occurred
Methods:	
SetMinValue	Sets the lower threshold value for the OnOutOfRange event
SetMaxValue	Sets the upper threshold value for the OnOutOfRange event
Events:	
OnValueChange	Event occurring when temperature value changes
OnValueRise	Event occurring when the set value is higher than the current value
OnValueLower	Event occurring when the set value is lower than the current value
OnOutOfRange	Event occurring when setting a value which is higher than the maximum value or lower than the minimum value
OnInRange	Event occurring when setting a value which is lower than the maximum value or higher than the minimum value

4. Parameters - ZWAVE ANALOG SENSOR (humidity sensor)

Features:	
Value	Current humidity value
MinValue	Value below which OnOutOfRange event is occurred
MaxValue	Value above which OnOutOfRange event is occurred
Methods:	
SetMinValue	Sets the lower threshold value for the OnOutOfRange event
SetMaxValue	Sets the upper threshold value for the OnOutOfRange event
Events:	
OnValueChange	Event occurring when humidity value changes
OnValueRise	Event occurring when the set value is higher than the current value
OnValueLower	Event occurring when the set value is lower than the current value
OnOutOfRange	Event occurring when setting a value which is higher than the maximum value or lower than the minimum value
OnInRange	Event occurring when setting a value which is lower than the maximum value or higher than the minimum value

5. Parameters - ZWAVE ANALOG SENSOR (light sensor)

Features:	
Value	Current light value
MinValue	Value below which OnOutOfRange event is occurred
MaxValue	Value above which OnOutOfRange event is occurred
Methods:	
SetMinValue	Sets the lower threshold value for the OnOutOfRange event
SetMaxValue	Sets the upper threshold value for the OnOutOfRange event
Events:	
OnValueChange	Event occurring when light value changes
OnValueRise	Event occurring when the light value is higher than the current value
OnValueLower	Event occurring when the light value is lower than the current value
OnOutOfRange	Event occurring when setting a value which is higher than the maximum value or lower than the minimum value
OnInRange	Event occurring when setting a value which is lower than the maximum value or higher than the minimum value

6. Parameters - ZWAVE BATTERY

Features:	
BatteryLevel	Z-Wave module battery level (in %)
WarningLevel	Z-Wave module battery level below which the warning event is occurring
Methods:	
SetWarningLevel	Sets Z-Wave battery level below which the warning event is occurring
Events:	
OnBatteryLevelChange	Event occurring after Z-Wave module battery level change
OnLowBattery	Event occurring after Z-Wave module battery level drop below the WarningLevel
OnBatteryGood	Event occurring when the Z-Wave module battery level increase above the WarningLevel
OnBatteryDischarge	Event occurring when the Z-Wave module reports battery discharge

7. Parameters - ZWAVE WAKEUP

Features:	
Interval	Z-Wave module awakening period from sleep mode
LastWakeUp	Time from the last Z-Wave module awakening
Methods:	
SetInterval	Sets Z-Wave module awakening time from sleep mode
Events:	
OnWakeUp	Event occurring after detecting Z-Wave module waking up from sleep mode

8. Parameters - ZWAVE CONFIG

Features:	
Register	Register (parameter) number
Value	Register (parameter) value
NodeID	Module's number (node) in the Z-Wave network
Banned	Returns information about communication with module: 0 - communication with the module is not blocked, 1 - blocked communication with the module (module banned)
FailCount	The number of failed communication attempts with the Z-Wave module
Methods:	
Set	Sets the value of the register (parameter)
Get	Gets the value of a given register (parameter)
SetDefault	Sets the default value for register (parameter)
RemoveBan	Removes the blockade of communication with the Z-Wave module
ClearFailCount	Cleans the number of failed communication attempts
Events:	
OnBanned	Occurs when Z-Wave device is banned

9. Technical data

Power	CR123A 3V x2
Standby current	38µA
Operating current	15mA
Operational temperature	0-40°C
Detection range	10m
Field of View	120°
Radio frequency	868.4MHz EU
Range	Up to 30m indoors (depending on the building structure), up to 50m outdoors
Size (L x W x H)	68 x 56 x 56mm

10. Installation Steps

Motion Sensor Installation (Option 1):

1. Remove the sensor casing and disassemble the bracket.
2. Attach the bracket in the appropriate position to the surface using screws.
3. Reassemble the entire unit.

Motion Sensor Installation (Option 2):

1. Put the sticker on the bottom of the motion sensor.
2. Fix it to the appropriate surface.

Battery Installation:

Disassemble the motion sensor main body

Install a batteries

Assemble the motion sensor main body

11. The Status of LED

Red	Light On 1s when Power On - Not added to the Z-Wave network
	Fast Blinks - Cover is Removed
Green	Light On 1s when Power On - Added to the Z-Wave network
Cyan	Blink One Time - Cover is Closed
White	Light On 2s - Waiting time
Blue	Blink with 1s Interval - Add to Z-Wave network
	Blink with 500ms Interval - Remove from Z-Wave network
Pink	Light On 2s - Waiting time
	Blink One Time - Motion is Detected

12. Module Inclusion

To add the device to the Z-Wave network:

1. Disassemble the main body of the sensor and install the battery.
2. Set your Z-Wave controller into inclusion mode.
3. Press and hold the button on the sensor for 5s until the white LED lights up. The module will enter inclusion mode - the blue LED will start blinking every 1s.
4. The green LED will light up for 1 second at the end of the Inclusion process.

If you are connecting this unit to a Z-Wave Controller that utilizes the S2 security protocol, you may be asked to enter the first 5 digits of Device Specific Key (DSK). You can find it on the label with QR code on the back of the unit.

The device supports SmartStart function. SmartStart enabled products can be added into a Z-Wave network by scanning the Z-Wave QR Code present on the product with a controller providing SmartStart inclusion. No further action is required and the SmartStart product will be added automatically within 10 minutes of being switched on in the network vicinity. The device provides DSK representation on the product, so you can add it manually to the controller.

13. Module Exclusion

To remove the device from the Z-Wave network:

1. Make sure the motion sensor is powered on.
2. Set your Z-Wave controller into exclusion mode.
3. Press and hold the button on the sensor for 5s until the white LED lights up. The module will enter exclusion mode - the blue LED will start blinking every 500ms.
4. The red LED will light up for 1 second at the end of the Exclusion process.

14. Factory Reset

To restore factory configuration:

1. Disassemble the main body of the sensor.
2. Make sure the motion sensor is powered on.
3. Press and hold the button on the sensor for 10s until the pink LED lights up.
4. The red LED will light up for 1 second at the end of the Factory Reset process.

15. Parameter Configuration

NOTE: The parameter setting change must be preceded by waking up the module (pressing the button on the module), just before sending the new setting.

1. Led Indicator Enable

Setting '0' disables the LED indication when the device detects a motion event.

Parameter	Size	Settings	Default
1	1 Byte	0, 1	1

2. Motion Enable

Setting '0' disables the Motion Detected event.

Parameter	Size	Settings	Default
2	1 Byte	0, 1	1

3. Motion Alarm Once Enable

Setting '0' enables reporting of motion event alarm when motion event is detected every time. Setting '1' enables reporting of motion event alarm only once before motion event cleared.

Parameter	Size	Settings	Default
3	1 Byte	0, 1	1

4. Luminance Associated Enable

Setting '1' enables associating the motion event with the current light intensity. If the light intensity is less than the threshold (Parameter 14), a BASIC_SET command will be sent to nodes associated in Group 2.

Parameter	Size	Settings	Default
4	1 Byte	0, 1	0

5. Binary Sensor Report Enable

Setting '1' enables SENSOR_BINARY_REPORT when the device detects a motion event.

Parameter	Size	Settings	Default
5	1 Byte	0, 1	0

6. Temperature Offset Value

Setting the temperature sensor correction. Offset = [Value] x 0.1 degree.

Parameter	Size	Settings	Default
6	1 Byte	-120..120	0

7. Humidity Offset Value

Setting the humidity sensor correction. Offset = [Value] x 0.1 RH%.

Parameter	Size	Settings	Default
7	1 Byte	-120..120	0

8. Temperature D-Value Setting

Setting the temperature difference value for the value change report. D-Value = [Value] x 0.1 degree.

Parameter	Size	Settings	Default
8	1 Byte	0..100	10

9. Humidity D-Value Setting

Setting the humidity difference value for the value change report. D-Value = [Value] x 0.1 RH%.

Parameter	Size	Settings	Default
9	1 Byte	0..100	20

10. Luminance D-Value Setting

Setting the luminance difference value for the value change report, expressed in lux.

Parameter	Size	Settings	Default
10	1 Byte	0..120	50

11. Basic Set Level

Setting the level for device sending BASIC_SET to nodes that associated in group 2. [0] - Off, BASIC_SET = 0x00, all nodes associated in group 2 will be off. [1..99] - On, BASIC_SET = [Value]. [100] - On, BASIC_SET = 0xFF.

Parameter	Size	Settings	Default
11	1 Byte	0..100	100

12. Basic Set Off Delay Time

Setting the time delay for sending BASIC_SET = 0x00 to nodes that associated in group 2 when the device detects a motion event. [0] - No time delay. [1..30000] - Time delay expressed in seconds.

Parameter	Size	Settings	Default
12	2 Bytes	0..30000	30

13. Motion Clear Time

Setting the time to clear motion event after motion event detected, expressed in seconds.

Parameter	Size	Settings	Default
13	2 Bytes	1..30000	30

14. Luminance Threshold for Associated

Setting the light intensity threshold. When ambient light intensity is less than the threshold, a BASIC_SET command will be sent to nodes associated in group 2.

Parameter	Size	Settings	Default
14	2 Bytes	1..1000	50

15. Sensor Measuring Interval

Setting the time interval for sensor measurements, expressed in seconds. The larger the interval, the slower the refresh of values. '0' - Sensor Measuring Disable.

Parameter	Size	Settings	Default
15	2 Bytes	0..30000	180 (battery), 10 (USB)

16. Tips

- PIR is recommended to be fixed at a height of 2-4 meters off the ground.
- When installing the PIR, please keep it far away from places where air temperature changes sensitively, e.g., around air conditioners or refrigerators.
- It is important to ensure that the sensor is within the range of the Z-Wave network.

17. Command Classes

This device supports 2 role type: AOS (Always On Slave) and LPM (Low Power Mode). Which role type is valid decided by which power (Battery or DC Power) is supplied when include. The role type is AOS if both battery and DC power supply. The role type is LPM only if battery supply. When device is included with AOS, it also can make a repeater role.

Command Classes:

- COMMAND_CLASS_ZWAVEPLUS_INFO (V2)
- COMMAND_CLASS_SECURITY (V1)
- COMMAND_CLASS_SECURITY_2 (V1)
- COMMAND_CLASS_TRANSPORT_SERVICE (V2)
- COMMAND_CLASS_VERSION (V3)
- COMMAND_CLASS_POWERLEVEL (V1)
- COMMAND_CLASS_ASSOCIATION (V2)
- COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION (V3)
- COMMAND_CLASS_ASSOCIATION_GRP_INFO (V1)
- COMMAND_CLASS_MANUFACTURER_SPECIFIC (V2)
- COMMAND_CLASS_DEVICE_RESET_LOCALLY (V1)
- COMMAND_CLASS_NOTIFICATION (V8)
- COMMAND_CLASS_SENSOR_MULTILEVEL (V11)
- COMMAND_CLASS_SENSOR_BINARY (V2)
- COMMAND_CLASS_INDICATOR (V3)
- COMMAND_CLASS_CONFIGURATION (V4)
- COMMAND_CLASS_SUPERVISION (V1)
- COMMAND_CLASS_FIRMWARE_UPDATE_MD (V5)
- COMMAND_CLASS_BATTERY (V1) - only LPM
- COMMAND_CLASS_WAKEUP (V2) - only LPM

18. Device Application

The device is not intended for use in any security systems. Data from the device is for informational purposes only and may contain inaccuracies.

Under no circumstances shall Grenton Sp. z o.o. be liable for damages arising from the use of the device and/or information provided by Grenton Sp. z o.o. contrary to its intended purpose.

19. CE Marking

The manufacturer declares that the device is in full compliance with the requirements of EU legislation that includes the directives of a new approach appropriate for this equipment. In particular, Grenton Sp. z o. o. declares that the device fulfills the requirements on safety, specified by law, and that it conforms to the national regulations that implement the appropriate directives: The Directive on the electromagnetic compatibility (EMC - 2014/30/UE) and the Directive on the limitation of the use of specific substances in electrical and electronic equipment (RoHS II - 2011/65/UE).

20. Warranty

The warranty is available at: www.infibity.com/warranty

21. Manufacturer Contact Details

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