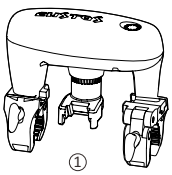
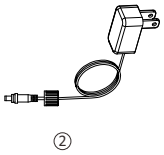
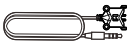
BALL VALVE SERVO INSTALLATION GUIDE

PACKAGE CONTENTS

① Ball Valve Servo (BVS)
② Power Adapter
③ Water Detection Probe 55.1 inch
④ Spacer

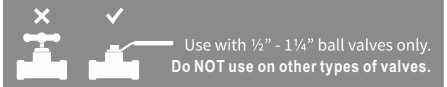






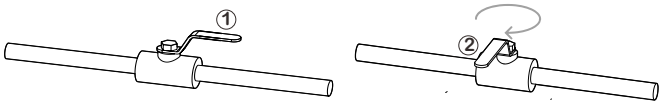
BEFORE YOU INSTALL

Install this actuator on ball valves only.
At least 1.25" space between valve handle and pipe required.
ALWAYS CLOSE THE VALVE FIRST!



BALL VALVE SERVO INSTALLATION

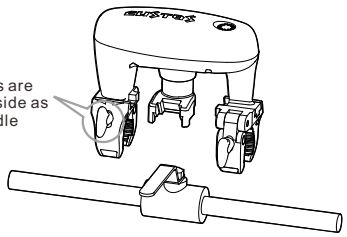
1. CLOSE VALVE



Rotate the handle from position ① to position ② to turn off your valve

2. PREPARE YOUR BVS

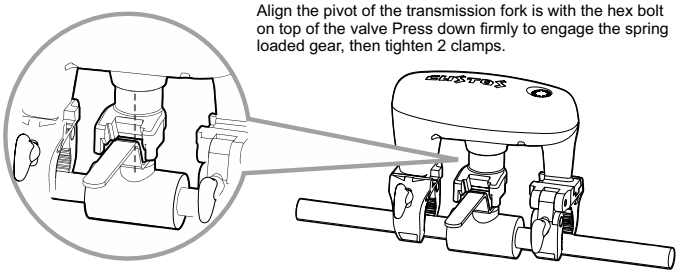
Position the BVS over the top of the handle of ball valve



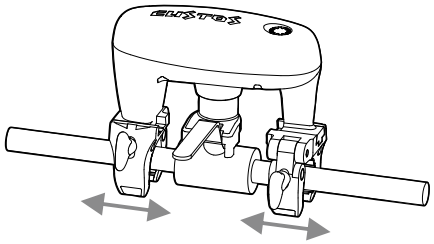
Make sure the knobs are facing on the same side as the water valve handle

3. INSTALL BVS ON YOUR VALVE

Align the pivot of the transmission fork is with the hex bolt on top of the valve Press down firmly to engage the spring loaded gear, then tighten 2 clamps.



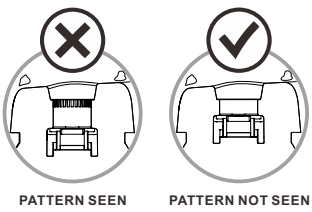
if you have oversized valve or your valve has adjacent pipe elbow, you may slide any or both clamps in or out to fit the space.



Check the transmission fork mechanic engagement by visual
You SHOULD NOT see the PATTERN on the top of transmission fork, if you do, you may not install it securely, please double check, make sure you have pushed the BVS down enough for a secured installation.

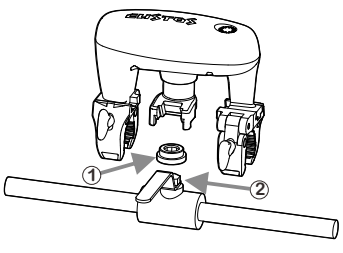
Otherwise you have a rare ultra low profile valve, the handle is too low for spring loaded mechanic to engage, in this case, please put the Spacer ① between the hex bolt head of the valve ② and the transmission fork.

If you don't see the pattern without Spacer, DO NOT use the Spacer.



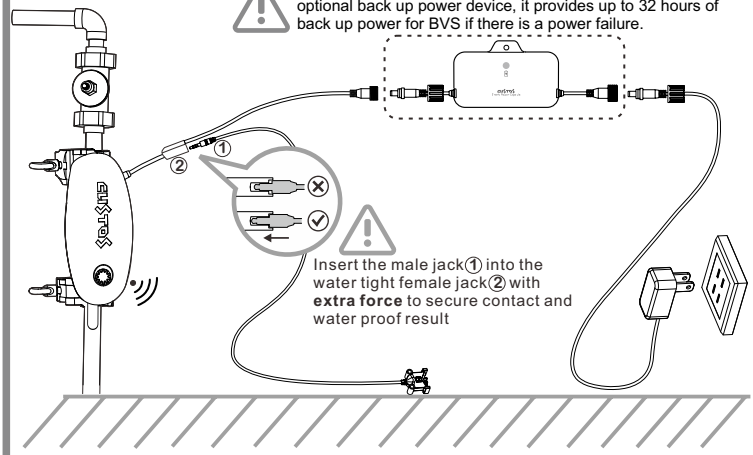
PATTERN SEEN

PATTERN NOT SEEN



4. CONNECT SPC AND POWER ADAPTER

if you have purchased Smart Power Capsule, connect it between Ball Valve Servo and power adapter. SPC is the optional back up power device, it provides up to 32 hours of back up power for BVS if there is a power failure.

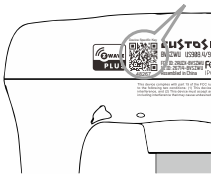


Insert the male jack ① into the water tight female jack ② with **extra force** to secure contact and water proof result

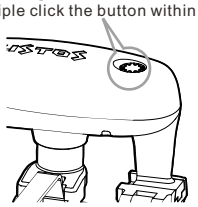
You may install local water detection probe (included) for close area leak detection, plug the male jack ① to the female jack ② from the power supply cable branch, It will trigger the valve to close whenever water is detected. (remove the protection cap from female jack first)

5. Z-WAVE INCLUSION

Option ① Smart Start
Scan the DSK code for Smart Start



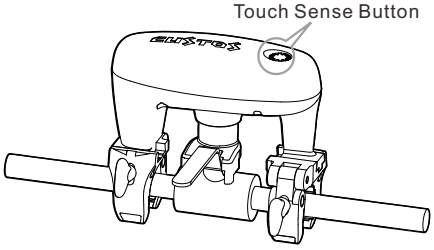
Option ② Classic Z-Wave Inclusion
Triple click the button within 2 seconds



If you are installing the Ball Valve Servo outdoor, you may consider to disable the touch sensing button to prevent it activated from rain drops or pets.

To Disable the button:
Tap and hold the touch sense button for 3 beeps, then quickly tap 3 times in a row. If successful, the Yellow LED will flash once, then the Red LED with 1 beep. The LED will slowly flashing Yellow indicating the touch sense button has been locked.

To Re-Enable the button:
Tap and hold the touch sense button for 3 beeps, then quickly tap 3 times in a row. If successful, the Yellow LED will flash once, then the Red LED with 3 beeps. LED will then slowly flashing Green (if enrolled) indicating the touch sense button has been unlocked.



more information

Contents

1 REVISION HISTORY

more information

https://ubitech.com/revision_history/

2 INTRODUCTION

2.1 What's Z-Wave?

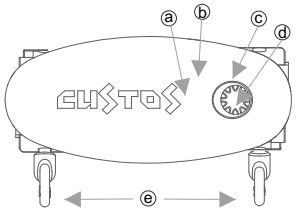
Z-Wave is international wireless protocol used for Smart Home. It's a mesh network technology to ensure reliable two-way communication with each other. Z-Wave provides interoperability and security from multi-vendors to make sure Certified Products work within any Z-Wave network.

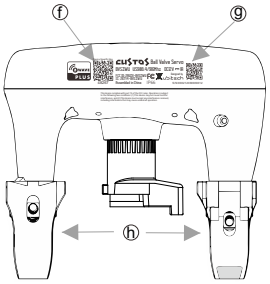
2.2 Custos BVS

Custos Ball Valve Servo "Custos BVS" is capable for outdoor deployment for controlling quarter turn water valve OPEN / CLOSE. It also supports auto CLOSE valve when water leak is detected by Local Leak Sensor Probe. Custos BVS can be operated in any Z-Wave network with other Z-Wave certified gateways or devices from other manufacturers. All mains operated nodes within the network will act as signal repeater regardless of vendor to increase reliability of the network.

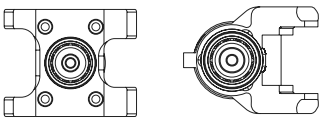
2.3 Connectors & Interfaces

Terminology	Description
ⓐ Sound indicator	Buzzer
ⓑ Temperature sensor	Built-in temperature sensor
ⓒ Visual indicators	3 Colors LED with green, yellow & red
ⓓ Touch sense button	Network, water valve and alarm operations
ⓔ Knob	Use to adjust Clamp widths
ⓕ DSK label	Z-Wave "SmartStart" and product label
ⓖ Serial number	Serial number label
ⓗ Clamp	Clamp on water pipe. Max 1-1/4 inch
ⓘ Driving fork	Couple with valve handle
ⓙ Power connector	DC 12V / 1A in
ⓚ Dust cover	Prevent Dust and Water
ⓛ Leak sensor connector	Local leak sensor probe



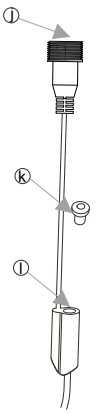


ⓘ Driving fork



Type A Type B

Depend on region and valve types there are 2 types of driving forks



3 FEATURES & SPECIFICATIONS

3.1 Physical Specifications

Parameter	Value
Model No.	BVSZWU (US)/ BVSZWE (EU)
Dimensions	14.8x9.6x13.3mm
Weight	BVS Unit: 603g
Body Color	White
Knob Color	Blue
Waterproof & Dustproof	IP66 level / outdoor deployment
Usage	For Indoor and Outdoor Water Valve On/Off
Operation Temperature	(14~122 ℉) (-10~+50℃)
Relative Humidity	8%~80%

3.2 Hardware Specifications

Parameter	Value
Z-Wave Module	ZGM130S037HGN2R
Z-Wave RF Distance	40m/131inch (Indoor) /140m/459inch(Outdoor)
Region Frequency	US: 908.4 & 916MHz FCC CFR47 Part 15.249 EU: 868.42 & 869.85MHz
Motor Torque Power	Adaptive torque output max: 8n.m
Water Leak Sensor	Local Water Leak Sensor Probe
Temperature Sensor	Built-in temperature sensor, Range from -40°C to +125°C / (-40°F to +257°F)
Action Button	Touch Sense Button x 1
LED & Sound Indicator	3 colors LED. (Green, Yellow & Red); Buzzer (Max. 85dB)
Power Supply	AC-DC: AC (110V 60Hz / 220V 50Hz); DC (12V / 1A)
Power Consumption	Standby: ~10mA@12VDC=0.12W Full Operation: Max~700mA@12VDC=8.4W

4 WORKING MODE & FEATURES

4.1 Standalone

- Support Water Valve Operation, Water Leak detection & Alarm, Inclusion, Exclusion and Factory Default Reset.
- By default, Custos BVS is in Standalone Mode with Factory Default Setting and it's not belonged to any Z-Wave Mesh Network.
- End user can enjoy all regular functions without Z-Wave benefit. Such as Water Valve, Leak detection by Local Leak Sensor Probe.

4.2 Mesh Network

- Support SmartStart, Classic Inclusion, Exclusion & Factory Default Reset.
- After Adding Custos BVS to a Z-Wave Mesh Network, end-customer can fully enjoy all functions, such as remote control, associate with other Z-Wave end devices…

4.3 Ball Valve Actuator

- Support OPEN, CLOSE, PAUSE
- RESUME during OPEN/CLOSE operation.
- Manual Calibration position of valve handle. (Only support operate by Touch Sense Button)
- Water Valve will be closed automatically once Local Water Leak Sensor Probe is triggered.
- Water Valve can be triggered with associated other Z-Wave end-devices. (Only in Mesh Network Mode)

4.4 Water Leak Sensor & Alarm

- Water Leak Alarm will be activated and to CLOSE Water Valve automatically once Local Water Leak is detected.
- Once Local Water Leak is detected then BVS will also send out Water Leak Alarm with no location support to Z-Wave Gateway. (Only in Mesh Network Mode)

4.5 Ambient Temperature Sensor

- By default, BVS sends temperature report automatically to gateway when every 1°C or 1.8°F degree changed. (Only in Mesh Network Mode).

5 KEY & INDICATORS BEHAVIOR

5.1 Touch Sense Button

- Short Press: One click comes with one short beep sound.
- Long Hold: Press and holding the key. “Come with 1 x short beep sound per second”

5.2 Visual Indicator

- 3 Colors LED: GREEN, YELLOW & RED
- ON Event: ON, quick blinking and slow blinking

5.3 Sound Indicator

Buzzer: Long & short beep sound.

6 TOUCH SENSE BUTTON KEYLOCK

Custos BVS is capable for outdoor deployment. To prevent mis-operation by rain drop, end-user can enable Touch Sense Button Keylock function.

6.1 Keylock Enable

After enabled Touch Sense Button Keylock function, Custos BVS will not accept any key event excepting Touch Sense Button Keylock Disable function. (Refer to 7.2)
i. Start: Long hold Touch Sense Button with 3 beep sounds then short click 3 times.
ii. Process: Yellow LED on 1 second then Red LED on 1 second with 1 beep sound.

6.2 Keylock Disable

i. Start: Long hold Touch Sense Button with 3 beep sounds then short click 3 times.
ii. Process: Yellow LED on 1 second then Red LED on 1 second with 3 beep sounds.
iii. Success: LED indicator resume previous status. (Yellow LED blinking or Green LED slow blinking)

7 SETUP Z-WAVE NETWORK

7.1 Check BVS Status

i. Before Adding into Z-Wave Network, you have to make sure Custos BVS is in Standalone mode.
ii. By default, Custos BVS does not belong to any Z-Wave Network and color indicator is keeping in Yellow Blinking. *If not, please perform “Factory Default Reset- refer to 8.4” or “Remove from Z-Wave Network – refer to 8.3”

7.2 Add BVS into Z-Wave Network

Custos BVS supports Security 2 Command Class while a Security S2 enabled controller is needed. It supports SmartStart and Classic Inclusion.
i. SmartStart:
By using SmartStart, end-user by scanning the Z-Wave QR code or entering PIN Code or DSK String into S2 Enabled Gateway.
Please refer to 12.11 SmartStart Labeling. To enable Security S2 in Gateway, please refer to Gateway’s user manual.
ii. Classic Inclusion:
To be used if your controller does not support SmartStart
a. Set your Z-Wave Gateway into Inclusion mode / Add device.
b. On your Custos BVS
- Start: Short press Touch Sense Button 3 times.
- Processing: Yellow LED and short beep sound keeping continue. For security inclusion support, you may need to entering first 5 digit that show on QR Code label, please refer to the instructions of central controller.
- Success: Green LED on 1 second with 2 short beep sounds.
- The LED indication changes to Green LED slow blinking from Yellow LED blinking.

7.3 Remove BVS from Z-Wave Network

Set your Z-Wave Gateway into Exclusion mode / Remove device.
i. Start: Short press Touch Sense Button with 3 beep sounds.
ii. Processing: Yellow LED and short beep sound keeping continue.
iii. Success: Green LED on 1 second with 2 short beep sounds.
iv. The LED indication Changes to Yellow LED blinking.

7.4 Factory Default Reset

To remove Custos BVS without involve gateway in Exclusion / Remove device operation and BVS will reset all setting to Factory Default Setting. “Please use this procedure only when the network primary controller is missing or otherwise inoperable”
i. Start: Long hold Touch Sense Button with 10 beep sounds then short click 5 times.
ii. Processing: Yellow LED ON 1 second then wait 2-5 seconds.
iii. Success: Green LED on 2 second with long beep sounds for 2 seconds.
*Factory Default Reset will:
a. Remote the BVS from Z-Wave Network;
b. Delete the association setting;
c. Restore the configuration settings to the default.

8 WATER VALVE OPERATION

8.1 Force Calibration for Valve

Calibration function will identify the correct OPEN/CLOSE position and torque force, it will avoid excess stress applied to your valve.
By default, BVS will perform Auto-calibration when power on.
i. Start: Long Hold Touch Sense Button with 5 beep sounds, then short click 5 times.
ii. Processing: Water Valve run OPEN and CLOSE 1-2 cycles, Yellow LED blinking and quick short beep sound keep continue.
iii. Success: The LED indicator changes to Yellow LED blinking.

8.2 Turn Valve to OPEN

Turn Valve to OPEN position and let water run through the pipe.
i. Start: Short click Touch Sense Button 1 time.
ii. Processing: Water Valve turning to OPEN position, Green Heartbeat LED blinking “Fade-in & Fade-out” and short beep sound keep continue.
iii. Success: The LED indicator changes to Yellow LED blinking

8.3 Turn Valve to CLOSE

Turn Valve to CLOSE position and doesn’t let water run through the pipe.
i. Start: Short click Touch Sense Button 1 time.
ii. Processing: Water Valve turning to CLOSE position, Yellow Heartbeat LED blinking “Fade-in & Fade-out” and short beep sound keep continue.
iii. Finished: The LED indicator changes to Yellow LED blinking

8.4 Pause OPEN/CLOSE Operation

Pause only take effect during OPEN or CLOSE operation.
i. Start: Short click Touch Sense Button 1 time.
ii. Processing: Yellow LED blinking and Valve stop operation.

8.5 Resume OPEN/CLOSE Operation

Resume only take effect during Pause operation.
i. Start: Short click Touch Sense Button 1 time.
ii. Finished: Valve resume to operation (Continue to Opening / Closing) and LED indicator changes to LED blinking.

9 WATER LEAK ALARM

9.1 Water Leak Detection & Alarm

Custos BVS comes with Local Leak Sensor Probe and support following functions, in short, once Water Leak is detected, Water Leak Alarm will be activated, hence the water valve will be closed spontaneously, at this moment all other operations will not be accepted except Water Leak Alarm Cancellation.
i. Activated Water Leak Alarm
- RED LED fast blinking.
- Fast beep sound.
ii. CLOSE Water Valve automatically
iii. Send out Water Alarm Notification to Z-Wave Gateway. (Only support in Mesh Network Mode)
iv. Water Valve keeps in CLOSE position
v. The operation is forbidden temporally until perform Water Alarm Cancellation operation. (Refer 10.2)

9.2 Water Leak Alarm Cancellation

Water Leak Alarm Cancellation operation only accepted when Local Water Leak Sensor Probe is no longer detected water.
i. Start: Long hold Touch Sensor Button with 2 beep sounds
ii. Success: The LED indicator changes to previous status. (Yellow LED blinking or Green LED slow blinking and buzzer goes silence.)

10 TEMPERATURE SENSOR

i. By default, Custos BVS will send report to Gateway automatically in 1 °C or 4°F change of ambient temperature.
ii. Custos will send out °F in US version and °C for other versions.

11 Z-WAVE SOFTWARE DEFINITION

11.1 Software Specifications

Parameter	Value
Wireless Technology	Z-Wave
Z-Wave Certification Type	Z-Wave Plus v2Certification
Z-Wave SDK Version	V7.13.2
Z-Wave Library	Enhanced 232 Slave
Z-Wave Role Type	Always On Slave
Device Type	Binary Switch
Generic Device Type	Switch Binary
Specific Device Type	Specific Type Not Used
Security Class	Non-Security, S0, S2 Unauthenticated and S2 Authenticated
SmartStart	Support: SmartStart is auto activated if it's out of Z-Wave network when power on
Firmware Update	Support: Firmware upgrade support via RF, "Over The Air (OTA)"
Association	Support 5 Groups. Lifeline, Water Valve, Water Leak, Overheat & Underheat
Factory Default Reset	Support: Device Locally Reset
Power Down Memory	Support: Valve ON/OFF status, Leak Alarm supportsuddenly power cut and restoreprevious status

11.2 Z-Wave Plus Info

Z-Wave Plus Version	2
Role Type	5 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_ON)
Node Type	0 (ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x1500 (ICON_TYPE_GENERIC_VALVE_OPEN_CLOSE)
User Icon Type	0x1500 (ICON_TYPE_GENERIC_VALVE_OPEN_CLOSE)

11.3 Version CC

Parameter	Value
Z-Wave Protocol Library Type	0x03
Z-Wave Protocol Version	0x07
Z-Wave Protocol Sub Version	0x0D
Firmware 0 Version	0x03 – Z-Wave Chip Major Firmware Version
Firmware 0 Sub Version	0x02 – Z-Wave Chip Minor Firmware Version
Hardware Version	0x03
Number of firmware targets	0x00

11.4 Manufacturer Specific

Parameter	Value
Manufacturer ID 1	0x02
Manufacturer ID 2	0x70
Product Type ID 1	0x01
Product Type ID 2	0x01
Product ID1	0x00
Product ID 2	0x0A

11.5 Notification CC

Notification Type		Notification Events / State		Description
Heat Alarm	0x04	State idle	0x00	Notification value for the state variable going to idle (V5)
		Overheat detected	0x02	No Location Support Event
		Underheat detected	0x06	No Location Support Event
Water Alarm	0x05	State idle	0x00	Notification value for the state variable going to idle (V5)
		Water leak detected	0x02	No Location Support Event
Water Valve	0x0F	Valve operation status	0x01	Event Parameter 1 byte=
				-0x00 =Valve does not let the water run through
				-0x01 =Valve lets the water run through

11.6 Indicator CC

Parameter	Value
Indicator ID	0x50 = (Node Identify)
Property ID	0x03 = (On/Off Periods)
	0x04 = (On/Off Cycles)
	0x05 = (On time within an On/Off period)

11.7 Basic CC Mapping of Water Valve

Basic CC	Map to CC	Value
Basic Set	Binary Switch Set	0x00 = ON / Water Valve OPEN (Valve lets water run through)
		0xFF = OFF / Water Valve CLOSE (Valve doesn't let water run through)
Basic Report	Binary Switch Report	0x00 = ON / Water Valve OPEN (Valve lets water run through)
		0xFF = OFF / Water Valve CLOSE (Valve doesn't let water run through)

11.8 Association Group Info (AGI)

Association Group	Name	Node	Function
1	Lifeline	5	-Device Reset Locally Notification -Basic Report -Binary Switch Report -Indicator Report -Sensor Multilevel Report–Temperature "Auto report based on Configuration Parameter 0x22 Setting." -Heat Alarm Notification Report (0x04) -0x00 = State idle -0x02 = Overheat – no location support -0x06 = Underheat – no location support -Water Alarm Notification Report (0x05) -0x00 = State idle -0x02 = Water leak detected – no location support -Water Valve Notification Report (0x0F) -0x01 = Valve operation 0x00 = VALVE CLOSED/OFF (Valve does not let the water run through.) 0x01 = VALVE OPEN/ON (Valve lets the water run through)
2	Water Valve	5	-Basic Set(By default the Configuration CC parameter 0x11 (17) "Inverse Water Valve report" is enabled to send out following report.) -0x00 = Let the water run through (Based on Configuration Parameter 0x13) -0xFF = Doesn't let the water run through. (Based on Configuration Parameter 0x12)
3	Leak Sensor	5	-Basic Set -0x00 = IDLE / CANCEL (Based on Configuration Parameter 0x32 Setting) -0xFF = TRIGGERED (Based on Configuration Parameter 0x31 Setting)
4	Overheat	5	-Basic Set Alarm -0x00 = IDLE / CANCEL (Based on Configuration Parameter 0x27 Setting) -0xFF = TRIGGERED (Based on Configuration Parameter 0x26 Setting)
5	Freeze Alarm	5	- Basic Set -0x00 = IDLE / CANCEL (Based on Configuration Parameter 0x2C Setting)

11.9 Supported Command Classes IN NIF

Command Class	Version	Not Added	Non-secure Added	Security 0 Added		Security 2 Added	
				Non-secure	Secure	Non-Secure	Secure
ZWAVEPLUS_INFO	2	Support	Support	Support	---	Support	----
SWITCH_BINARY	2	Support	Support	---	Support	---	Support
ASSOCIATION	3	Support	Support	---	Support	---	Support
MULTI_CHANNEL_ASSOCIATION	4	Support	Support	---	Support	---	Support
ASSOCIATION_GRP_INFO	3	Support	Support	---	Support	---	Support
NOTIFICATION	8	Support	Support	---	Support	---	Support
TRANSPORT_SERVICE	2	Support	Support	Support	---	Support	---
VERSION	3	Support	Support	---	Support	---	Support
MANUFACTURER_SPECIFIC	2	Support	Support	---	Support	---	Support
DEVICE_RESET_LOCALLY	1	Support	Support	---	Support	---	Support
INDICATOR	3	Support	Support	---	Support	---	Support
POWERLEVEL	1	Support	Support	---	Support	---	Support
SECURITY	1	Support	Support	Support	---	Support	---
SECURITY_2	1	Support	Support	Support	---	Support	---
SUPERVISION	1	Support	Support	Support	---	Support	---
FIRMWARE_UPDATE_MD	5	Support	Support	---	Support	---	Support
SENSOR_MULTILEVEL-Temperature	11	Support	Support	---	Support	---	Support
CONFIGURATION	4	Support	Support	---	Support	---	Support
APPLICATION STATUS	1	Support	Support	Support	---	Support	---
BASIC COMMAND	2	Support	Support	Support	Support	Support	Support
BATTERY	1	Support	Support	---	Support	---	Support

11.10 Configuration CC

Note: No Bulk Support equals to True. It will return an Application Rejected Request Command when receiving Configuration Bulk Set or Get (if received without Supervision encapsulation). It will reset all its configuration parameters if either manually reset to factory default or receives a Configuration Default Reset Command. It will NOT modify or reset any configuration parameter when being included or excluded of a Z-Wave network.

User Interface				
Parameter No.	0x41 (65)			
Name	Buzzer			
Info	Enable / Disable Buzzer			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x01 (1)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Enable / Disable Built-in Buzzer Sound			
	Value	Function		
	0x00 (0)	Disable Buzzer		
	0x01 (1) * Default Value	Enable Buzzer		
Parameter No.	0x42 (66)			
Name	LED Brightness Level			
Info	Configure LED Brightness Level			
Properties	Size	1 Byte	Min Value	0x00 (0%)
	Format	Unsigned Integer	Max Value	0x63 (99%)
	Read only	False	Default Value	0x50 (80%)
	Altering capabilities	False	Advanced	False
Description	Configure Built-in LED Brightness Level			
	Value	Function		
	0x00 ~ 0x63	0% ~ 99%		
Parameter No.	0x43 (67)			
Name	Touch Keylock Protection			
Info	Disable / Enable Touch Keylock Protection			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x01 (1)
	Read only	False	Default Value	0x01(0)
	Altering capabilities	False	Advanced	False
Description	Disable / Enable Touch Keylock Protection			
	Value	Function		
	0x00 (0) * Default Value	Disable Keylock Protection		
	0x01 (1)	Enable Keylock Protection		

Notification Report				
Parameter No.	0x51 (81)			
Name	Notification Report Lifeline			
Info	Configure Notification Report (Bitmask)			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Bit Field	Max Value	0x0F (15)
	Read only	False	Default Value	0x0D (13)
	Altering capabilities	False	Advanced	False
Description	Configure Notification Report in Association Group 1 Lifeline "Set Bit to 0 = Disable, Set Bit to 1 = Enable"			
	Value	Function		
	Bit 0	Water Valve Open / Close – 0 = Disable / *1 = Enabled		
	Bit 1	Overheat Detection – *0=Disable / 1=Enable		
	Bit 2	Freeze Detection – 0=Disable / *1 = Enable		
	Bit 3	Local Water Leak Sensor Probe Detection – 0=Disable / *1=Enable		

Water Valve				
Parameter No.	0x11 (17)			
Name	Inverse Water Valve Report			
Info	Inverse Switch Binary Report value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x01 (1)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Inverses Switch Binary Report when Water Valve = 0x00 "Valve doesn't let the water run through in Notification and real physical status."			
	Value	Function		
	0x00 (0)	Disable: 0x00 = does not let water run through, 0xFF = let water run through. Based on Configuration CC setting 0x12 & 0x13		
	0x01 (1) * Default Value	Enable: 0x00 = let water run through, 0xFF = does not let water run through Based on Configuration CC setting 0x12 & 0x13		
Parameter No.	0x12 (18)			
Name	Association Group 2 SET Value			
Info	Valve SET Value when receives 0xFF			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Configure Association Group 2 Basic Set value when Binary Switch Report = 0xFF *(Related to Configuration setting 0x11)			
	Value	Function		
	0x00 (0)	Disable Basic Set (Send nothing)		
	0x01 (1) * Default Value	Basic ON (0xFF)		
	0x02 (2)	Basic OFF (0x00)		
Parameter No.	0x13 (19)			
Name	Association Group 2 SET Value			
Info	Valve SET Value when receives 0x00			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x02 (2)
	Altering capabilities	False	Advanced	False
Description	Configure Association Group 2 Basic Set value when Binary Switch Report = 0x00 *(Related to Configuration setting 0x11)			
	Value	Function		
	0x00 (0)	Disable Basic Set (Send nothing)		
	0x01 (1)	Basic ON (0xFF)		
	0x02 (2) * Default Value	Basic OFF (0x00)		

Temperature Sensor - 1				
Parameter No.	0x21 (33)			
Name	Temperature Report Unit			
Info	Configure reporting temperature unit			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x02 (2)
	Altering capabilities	False	Advanced	False
Description	Configure Temperature Unit report. The default Unit is depended on Regional Frequency Setting. (By default, US=°F and EU=°C)			
	Value	Function		
	0x00 (0)	Disable Auto Temperature Report		
	0x01 (1)	Report Celsius °C unit		
	0x02 (2) * Default Value	Report Fahrenheit °F unit		
Parameter No.	0x22 (34)			
Name	Temperature Threshold Change			
Info	Temperature threshold to auto report			
Properties	Size	2 Bytes	Min Value	0x0000 for °C / 0x0100 for °F
	Format	Unsigned Integer	Max Value	0x00FF for °C / 0x01FF for °F
	Read only	False	Default Value	0x0001 = 1°C / 0x0104 = 4 °F
	Altering capabilities	False	Advanced	False
Description	Configure Temperature threshold changed and send auto report			
	Value	Function		
	0x0000 ~ 0x00FF	Higher Byte set to x0 represents Celsius °C unit		
	0x0100 ~ 0x01FF	Higher Byte set to x1 represents Fahrenheit °F unit		
Parameter No.	0x23 (35)			
Name	Temperature Report Offset			
Info	Configure reporting temperature offset			
Properties	Size	2 Bytes	Min Value	0x0000 for °C / 0x0100 for °F
	Format	Unsigned Integer	Max Value	0x10FF for °C / 0x11FF for °F
	Read only	False	Default Value	0x0000 = 0°C / 0x0100 = 0 °F
	Altering capabilities	False	Advanced	False
Description	Configure Temperature Offset degree; Higher byte 0x = Positive degree and 1x= Negative degree			
	Value	Function		
	0x0000 ~ 0x10FF	0x0000~0x00FF, (0~+255); Higher Byte 00 = Positive Celsius "+°C" e.g. 0x0002 = +2°C		
		0x1000~0x10FF, (-0~-255); Higher Byte 10 = Negative Celsius "-°C" e.g. 0x1002 = -2°C		
	0x0100 ~ 0x11FF	0x0100~0x01FF, (0~+255); Higher Byte 01=Positive Fahrenheit "+°F" e.g. 0x010A = +10°F		
		0x1100~0x11FF, (-0~-255); Higher Byte 10=Negative Fahrenheit "-°F" e.g. 0x110A = -10°F		
Parameter No.	0x24 (36)			
Name	Overheat Trigger Value			
Info	Configure overheat report trigger value			
Properties	Size	2 Bytes	Min Value	0x0000 for °C / 0x0100 for °F
	Format	Unsigned Integer	Max Value	0x00FF for °C / 0x01FF for °F
	Read only	False	Default Value	0x0028=40°C / 0x0168=104 °F
	Altering capabilities	False	Advanced	False
Description	Configure Overheat report trigger value. "Higher byte 0x00 represents Celsius °C unit, 0x01 represents Fahrenheit °F unit			
	Value	Function		
	0x0000 ~ 0x00FF	From 0°C to 255°C		
	0x0100 ~ 0x01FF	From 0°F to 255°F		
Parameter No.	0x25 (37)			
Name	Overheat Recover value			
Info	Configure overheat recover report value			
Properties	Size	2 Bytes	Min Value	0x0000 for °C / 0x0100 for °F
	Format	Unsigned Integer	Max Value	0x00FF for °C / 0x01FF for °F
	Read only	False	Default Value	0x001E = 30°C / 0x0156 = 86°F
	Altering capabilities	False	Advanced	False
Description	Configure Overheat Recover Value			
	Value	Function		
	0x0000 ~ 0x00FF	From 0°C to 255°C		
	0x0100 ~ 0x01FF	From 0°F to 255°F		
Parameter No.	0x2C (44)			
Name	Association Group 5 Freeze Cancel			
Info	Freeze Cancellation SET value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x00 (0)
	Altering capabilities	False	Advanced	False
Description	Configure Association Group 5 Freeze Detection Cancellation Basic Set value			
	Value	Function		
	0x00 (0) * Default Value	Disable Basic Set (Send nothing)		
	0x01 (1)	Basic Set ON (0xFF)		
	0x02 (2)	Basic Set OFF (0x00)		

Temperature Sensor - 2				
Parameter No.	0x26 (38)			
Name	Association Group 4 Overheat Trigger			
Info	Overheat Trigger SET value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x00 (0)
	Altering capabilities	False	Advanced	False
Description	Configure Overheat Trigger Value in Association Group 4			
	Value	Function		
	0x00 (0) * Default Value	Disable Basic Set (Send nothing)		
	0x01 (1)	Send Basic ON (0xFF)		
	0x02 (2)	Send Basic OFF (0x00)		
Parameter No.	0x27 (39)			
Name	Association Group 4 Overheat Cancel			
Info	Overheat Cancellation SET value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x00 (0)
	Altering capabilities	False	Advanced	False
Description	Configure Overheat Cancellation SET value			
	Value	Function		
	0x00 (0) * Default Value	Disable Basic Set (Send Nothing)		
	0x01 (1)	Send Basic ON (0x0FF)		
	0x02 (2)	Send Basic OFF (0x00)		
Parameter No.	0x28 (40)			
Name	Freeze Trigger Value			
Info	Configure Freeze Trigger Report value			
Properties	Size	2 Bytes	Min Value	0x0000 for °C / 0x0100 for °F
	Format	Unsigned Integer	Max Value	0x00FF for °C / 0x01FF for °F
	Read only	False	Default Value	0x0000=0°C / 0x0120=32 °F
	Altering capabilities	False	Advanced	False
Description	Configure Freeze Trigger Report Value			
	Value	Function		
	0x0000 ~ 0x00FF	From 0°C to 255°C		
	0x0100 ~ 0x01FF	From 0°F to 255°F		
Parameter No.	0x29 (41)			
Name	Freeze Recover Value			
Info	Configure Freeze Recover Report Value			
Properties	Size	2 Bytes	Min Value	0x0000 for °C / 0x0100 for °F
	Format	Unsigned Integer	Max Value	0x00FF for °C / 0x01FF for °F
	Read only	False	Default Value	0x0002=2°C / 0x0124=36 °F
	Altering capabilities	False	Advanced	False
Description	Configure Freeze Recover Report Value			
	Value	Function		
	0x0000 ~ 0x00FF	From 0°C to 255°C		
	0x0100 ~ 0x01FF	From 0°F to 255°F		
Parameter No.	0x2A (42)			
Name	Freeze Detection Valve Control			
Info	Configure Valve Control during freeze			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x01 (1)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Enable / Disable Valve Control during Freeze when Water Leak is detected "Detected by built-in temperature sensor. Refer to Configuration CC parameter 0x28 (41) & 0x29 (42)			
	Value	Function		
	0x00 (0)	Ignore / Allowed to control Water Valve during Freeze detection		
	0x01 (1) * Default Value	Forbidden to control Water Valve during Freeze detection		
Parameter No.	0x2B (43)			
Name	Association Group 5 Freeze Trigger			
Info	Configure Freeze Trigger SET value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x00(0)
	Altering capabilities	False	Advanced	False
Description	Configure Association Group 5 Freeze Detection Trigger Basic Set value			
	Value	Function		
	0x00 * Default Value	Disable Basic Set (Send nothing)		
	0x01	Basic Set ON (0xFF)		
	0x02	Basic Set OFF (0x00)		

Water Leak				
Parameter No.	0x31 (49)			
Name	Association Group 3 Water Leak Trigger			
Info	Water Leak Trigger SET value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Configure Association Group 3 Water Leak Trigger Basic Set value			
	Value	Function		
	0x00 (0)	Disable Basic Set (Send nothing)		
	0x01 (1)	Basic Set ON (0xFF)		
	0x02 (2) * Default Value	Basic Set OFF (0x00)		
Parameter No.	0x32 (50)			
Name	Association Group 3 Water Leak Cancel			
Info	Water Leak Cancellation SET value			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x02 (2)
	Read only	False	Default Value	0x00 (0)
	Altering capabilities	False	Advanced	False
Description	Configure Association Group Water Leak Cancellation Basic Set value			
	Value	Function		
	0x00 (0)	Disable Basic Set (Send nothing)		
	0x01 (1)	Basic Set ON (0xFF)		
	0x02 (2) * Default Value	Basic Set OFF (0x00)		
Parameter No.	0x33 (51)			
Name	Water Leak Detection Valve Control			
Info	Disable / Enable Water Leak Valve Control			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x01 (1)
	Read only	False	Default Value	0x01(1)
	Altering capabilities	False	Advanced	False
Description	Disable / Enable Valve Control when Water Leak detected			
	Value	Function		
	0x00 (0)	Disable to control Water Valve when Water Leak is detected		
	0x01 * Default Value	Enable to control Water Valve when Water Leak is detected		
	0x02	Basic Set OFF (0x00)		
Parameter No.	0x34 (52)			
Name	Water Leak Detection Cancellation Time			
Info	Cancellation report if no water leakage is detected after N seconds			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0xFF
	Read only	False	Default Value	0x00
	Altering capabilities	False	Advanced	False
Description	Cancellation report if no water leakage is detected after N second			
	Value	Function		
	0x00	Disable auto cancellation		
	0x01~0xFF	From 1s~255s		

Valve Auto-Calibration				
Parameter No.	0x61 (97) – General			
Name	1/8 Turn Autorun Mode Set			
Info	Set 1/8 Turn Autorun for Inclusion/Exclusion			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Bit Field	Max Value	0x03 (3)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Enable/Disable 1/8 Turn Autorun at Standalone or Network Modes. (Excluded/ Included to Z-Wave Network)			
	Value	Function		
	0x00 (0)	Disabled 1/8 turn Autorun Function in Both Mode.		
	0x01 (1) *Default Value	Enable 1/8 turn autorun in Standalone Mode “Excluded from Z-Wave Network”		
	0x02 (2)	Enable 1/8 turn autorun in Network Mode “Included to Z-Wave Network”		
	0x03 (3)	Enable 1/8 turn autorun in both modes. (Standalone & Network Mode)		
Parameter No.	0x62 (98)			
Name	1/8 Turn Autorun Time Interval			
Info	Set 1/8 Turn Autorun Time Interval in day			
Properties	Size	1 Byte	Min Value	0x01 (1)
	Format	Unsigned	Max Value	0x1E (3)
	Read only	False	Default Value	0x0E (14)
	Altering capabilities	False	Advanced	False
Description	Set 1/8 Turn Autorun Time Interval in 1 – 30 days. (Also refer to CC parameter 0x61 (97)			
	Value	Function		
	0x01 ~ 0x1E (1 ~ 30)	From 1 day to 30 days		
	*0x0A(10)-Default Value			

Battery-SPC Support				
Parameter No.	0x71 (113)			
Name	Battery Threshold Change Report			
Info	Set Battery Threshold Level Change			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Unsigned	Max Value	0x63 (99)
	Read only	False	Default Value	0x0A (10)
	Altering capabilities	False	Advanced	False
Description	Set Battery Threshold Level Change Report			
	Value	Function		
	0x00 ~ 0x63 (0 ~ 99%)	From 0 ~ 99%		
	*0x0A(10)-Default Value			
Parameter No.	0x72 (114)			
Name	Low Battery Level Set			
Info	Low Battery Level Set			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Unsigned	Max Value	0x63 (99)
	Read only	False	Default Value	0x1E (30)
	Altering capabilities	False	Advanced	False
Description	Set Low Battery Level Report			
	Value	Function		
	0x00 ~ 0x63 (0 ~ 99%)	From 0% ~ 99%		
	*0x1E(30)-Default Value			
Parameter No.	0x73 (115)			
Name	Low Battery To Trigger BVS Close Action			
Info	Set Low Battery Trigger to Close BVS			
Properties	Size	1 Byte	Min Value	0x00 (0)
	Format	Enumerated	Max Value	0x01 (1)
	Read only	False	Default Value	0x01 (1)
	Altering capabilities	False	Advanced	False
Description	Set Trigger Action To Close Water Valve When Received Low Battery Report			
	Value	Function		
	0x00 (0)	Disable		
	0x01(1)*Default Value	Enable		

11.11 SmartStart Labeling

BVS comes with PIN Code, DSK string and QR Code for SmartStart and as shown in the examples below. The real QR Code can be found on product and package.
- PIN Code with QR Code on BVS’s housing.

SmartStart

Pin Code: 12345

DSK:12345-xxxxx-xxxxx-xxxxx-xxxxx-xxxxx-xxxxx-xxxxx

DSK String with QR Code on Packing, the first 5 digits is PIN code for SmartStart.

12 APPENDIX

12.1 Z-Wave Terminology

Z-Wave Functionality	Documentation Terminology	Description
Inclusion	Add	The process of adding a node to Z-Wave Network
Exclusion	Remove	The process of removing a node from Z-Wave Network

12.2 System Event Status

Event	Detail	LED	Buzzer
System Ready	BVS is Ready to operate after power on or reset.	Green LED ON 2 seconds	2 beep sounds
Standalone mode heartbeat	Standalone Heartbeat without network connection	Yellow LED blinking	---
Network mode heartbeat	Mesh Network Mode Heartbeat	Green LED slow blinking	---
Event Success	Finished operation and success	Green LED ON 2 seconds	Short beep x 2
Event Error	Operation fail or not available	RED LED blinking 3 times	Long beep x 3
Event Timeout	Operation timeout	RED LED ON	1” Pulse sound

12.3 Touch Sense Button Keylock

Event	Action/Status	Key Action	LED Status	Buzzer Status
Keylock Enable	Enable Lock Key Function	Long hold with 3 beep sounds& click 3 times	Yellow LED ON 1 second Red LED ON 1 second	Long beep x 1
	Success–“In Mesh Network Mode”	—	Yellow LED slow blinking	—
	Success– “In Standalone Mode”	---	Yellow LED blinking	---
Keylock Disable	Disable Lock Key Function	Long hold with 3 beep sounds& click 3 times	Yellow LED blinking	Long beep x 3
	Success–“In Mesh Network Mode”	---	Green LED slow blinking	—
	Success – “In Standalone Mode”	---	Yellow LED blinking	—

12.4 Operation Mode

Operation Mode	Function	Description	Key Action		Operation Support	
			Long	Short	Standalone	Network
Z-Wave Network	SmartStart	Re-power up the BVS unit	---	---	Support	Not Support
	Classic Inclusion	Add into Z-Wave Mesh Network	---	3	Support	Not Support
	Exclusion	Remove from Z-Wave Network	—	3	Support	Support
	OTA	Firmware upgrade Over The Air	---	---	Not Support	Support
	Factory Reset	Perform Device Reset Locally	10	5	Support	Support
Water Valve Manual Operation	Open	Control water valve to full open	---	1	Support	Support
	Close	Control water valve to full close	---	1	Support	Support
	Pause	Pause only works during open/close operation	---	1	Support	Support
	Resume	Resume to previous during Pause operation	---	1	Support	Support
Water Leak Alarm	Auto-calibration	Perform calibrate position and torque force	5	5	Support	Support
	Trigger to close valve	Auto close water valve	---	1	Support	Support
	Alarm Cancellation	Resume to normal operation mode if no alarm triggered	2	---	Support	Support

12.5 Network Operation & Status

Event	Action / Status	Key Action	LED Status	Buzzer Status
SmartStart	To be ready after Power Okay Event	---	Green LED ON 2 seconds	2 beep sounds
	Enter SmartStart and Processing	---	Yellow LED keep blinking	Keep short beep
	Success	---	Green LED ON 1 second	Short beep x 2
	Next status	---	Green LED slow blinking	---
Manual Inclusion	Start Manual INCLUSION	Click 3 times	Green LED ON 1 second	1" Pulse sound
	Processing	---	Yellow LED keep blinking	Keep short beep
	Success	---	Green LED ON 1 second	Short beep x 2
	Next status	---	Green LED slow blinking	—
Exclusion	Start EXCLUSION	Click 3 times	Green LED ON 1 second	1" Pulse sound
	Processing	---	Yellow LED keep blinking	Keep short beep
	Success	---	Green LED ON 1 second	Short beep x 2
	Next status	---	Green LED slow blinking	---
Firmware Upgrade(OTA)	Start → Triggered by Gateway	---	Green LED ON 1 second	1" Pulse sound
	Processing	---	Green & RED LED blinking	Keep short beep
	Success → Waiting SOFT REBOOT	---	LED OFF 10 seconds	Silence 10 seconds
	Next status (Power Okay→FINISHED)	---	Green LED ON 2 seconds	2" Pulse sound
Factory Reset "Device Reset Locally"	Start Factory Reset	Long hold with 10 beep sounds& click 5 times	Yellow LED ON 1 second	---
	Success	---	Green LED ON 2 seconds	2" Pulse sound
	Next status → Standalone Mode	---	Yellow LED keep blinking	---

12.6 Water Valve Operation & Status

Event	Action / Status	Key Action	LED Status	Buzzer Status
OPEN Valve	Start OPEN (Valve in closed position)	Short Click 1 time	Yellow LED keep blinking	—
	Processing	---	Yellow LED keep blinking	Keep short beep
	Success	---	Green LED ON 1 second	Short beep x 2
	Next status (In Network Mode)	---	Green LED slow blinking	—
	Next status (In Standard Mode)	---	Yellow LED slow blinking	—
CLOSE Valve	Start CLOSE (Valve in open position)	Click 1 time	Green LED ON 1 second	1" Pulse sound
	Processing	---	Yellow LED keep blinking	Keep short beep
	Success	---	Green LED ON 1 second	Short beep x 2
	Next status(In Network Mode)	---	Green LED slow blinking	---
	Next status (In Standard Mode)	---	Yellow LED slow blinking	---
PAUSE Operation	Start PAUSE "Only available during Open/Close operation	Click 1 time	Yellow LED ON 1 second Red LED ON 1 second	1" Pulse sound
	Processing-"In Network Mode"	---	Yellow LED slow blinking	---
	Next status – "In Network Mode"	---	Green LED keep blinking	---
	Processing – "In Standalone Mode"	---	Yellow LED keep blinking	---
	Next status – "In Standalone Mode"	---	Yellow LED keep blinking	---
RESUME Operation	Start RESUME "Only available during Open/Close operation	Click 1 time	Green LED ON 1 second	Short beep x 3
	Next Status – Return Open/Close	---	Yellow/Green LED blinking	Keep short beep
Manual Calibration	Start Manual Calibration)	Long hold with 5 beep sounds & click 5 times	---	---
	Processing–Open&Close 1-2 cycles	---	Yellow LED keep blinking	Keep short beep
	Next status – "In Network Mode"	---	Green LED slow blinking	---
	Next status – "In Standalone Mode"	---	Yellow LED keep blinking	---

12.7 Water Leak Alarm Operation & Status

Event	Action/Status	Key Action	LED Status	Buzzer Status
Leak Sensor Probe Triggered	Start Water Leak Alarm	---	RED LED fast blinking	Fast beep sound
	Processing – Close Water Valve automatically	—	RED LED fast blinking	Fast beep sound
	Alarm Cancellation	Long hold with 2 beep sounds	Green LED blinking 2 times	Short beep x 2
Leak Alarm Cancellation	Success cancellation	---	Green LED blinking 3 times	Short beep x 3
	Next Status–"In Mesh Network Mode"	---	Green LED slow blinking	—
	Nest Status – "In Standalone Mode"	---	Yellow LED blinking	—

12.8 Patents

Patent 1: US 11,233,501 B1
Patent 2: US 10,995,876 B2

12.9 Cautions

MOVING PARTS WARNING: Keep hands, hair and all loose articles of clothing away from moving parts. Moving parts can cause serious Injury. Maintain a safe distance from the product during its operation to eliminate risk of injury.

POWER SUPPLY WARNING: The power supply is for indoor use only. Only use power supply included with your product. Do not attempt to repair or use a damaged power supply. Do not immerse the power supply in water or subject it to physical abuse. Inspect the power supply regularly for cable, plug damage.

CORRECT DISPOSAL OF BATTERIES IN THIS PRODUCT: This marking on the product, accessories or literature indicates that the product and its electronic accessories should not be disposed of with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their government office, for details of where and how they can take these items for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other wastes for disposal.

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66.If batteries are not properly disposed of, these substances can cause harm to human health or the environment.

SAFE USAGE GUIDELINES: Do not modify or open the product except for battery removal and replacement. Do not disassemble or attempt to service this product. This product is safe under normal and reasonably foreseeable misuse operating conditions. Always use both hands while operating the product. This is not a children's product and is not intended for use by children. Product must be returned to the manufacturer for any service or repair. Long periods of repetitive motion using the product may be associated with nerve, tendon or muscle injury in your hands, wrists, arms, shoulders, neck or back. See a qualified health professional for pain, numbness, swelling, burning, cramping or stiffness.

12.10 Warranty

STATEMENT OF WARRANTY: 1 Year Limited Warranty

Ubitech Limted ("Ubitech") warrants to the original retail purchaser ("Purchaser") that the Ubitech (the "Product") will be free of defects in materials or workmanship under use for one (1) year from the date of purchase (the "Warranty period").

For the Purchaser only, if the Product fails to perform as specified during the Warranty Period due to defective parts or faulty workmanship, Ubitech will repair or replace the defective or damaged parts of the Product. Normal wear and tear is not covered nor is abnormal use, misuse, mishandling, faulty installation, improper shipping, damage caused by disasters such as fire, flood or earthquake, neglect, accident or tampering. This warranty covers only normal use in the United States or Canada.

To obtain warranty service during the Warranty Period, call Ubitech Customer Service +852-81008500 or email: help@ubitech.hk for instructions on sending damaged parts and documentation for a Return Merchandise Authorization (RMA). Products returned to Ubitech for repair or replacement without authorization will be returned at the sender's expense. All warranty claims must be accompanied by a legible copy of the original receipt showing date and details of purchase.

THIS WARRANTY IS NOT TRANSFERABLE, AND, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW IS IN LIEU OF ALL OTHER WARRANTIES, REPRESENTATIONS AND CONDITIONS, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO OTHER PERSON OR REPRESENTATIVE IS AUTHORIZED TO MAKE ANY OTHER WARRANTY ON BEHALF OF UBITECH OR ASSUME FOR UBITECH ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS PRODUCT. IN NO EVENT WILL CUSTOS BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, INCLUDING DAMAGES DUE TO UBITECH'S NEGLIGENCE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

DO NOT RETURN THIS PRODUCT TO THE STORE OR WEBSITE FROM WHICH IT WAS PURCHASED If you believe the product is defective, has a missing or broken part or are having difficulty with it please contact Ubitech as listed above for a quick and efficient solution to the problem.

FCC STATEMENT: 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. 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 the 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.

Warning: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment. Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

IC STATEMENT: This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

12.11 Disclaimer

DISCLAIMER
We hereby disclaim that the product is not a substitute for homeowner insurance, customers still need to purchase relevant insurance, due to installation conditions, environment and other reasons beyond our control, we cannot guarantee that the product/solution can 100% prevent water leakage damage in all situations, users losses will be beyond of our liability. Ubitech assumes no responsibility for any errors that may appear in this manual. Information contained herein and in the set-up guide is subject to change without notice.

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CUSTOMER SERVICE
If you have any questions, our trained Customer Service Department is happy to assist you 24 hours a day, 7 days a week. Contact Ubitech Customer Service as follows:
Address: Flat 12, 7/F Block A, Hi-Tech Industrial Centre,
5-21 Pak Tin Par Street, Tsuen Wan, N.T. Hong Kong
Email: help@ubitech.hk
Call: +852-81008500

Contact us if you have any questions

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