DC-16SL-ZBS Door Contact

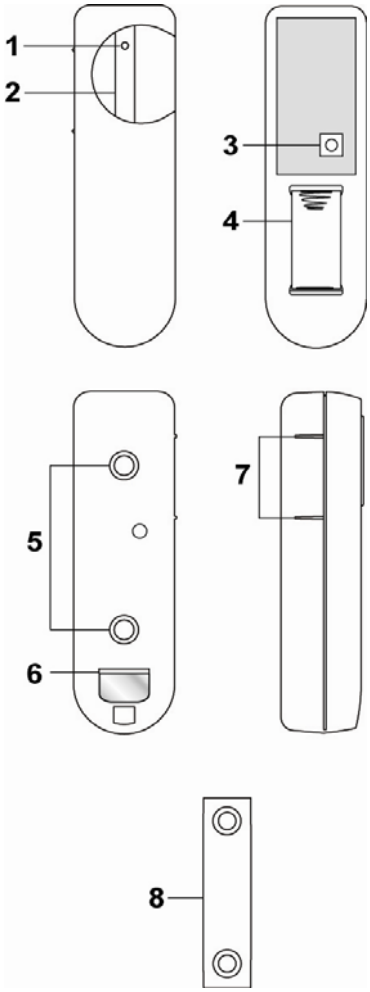
Introduction

DC-16SL-ZBS is a ZigBee Door Contact. It is capable of sending wireless signals to the coordinator in the ZigBee network upon detection of door/window opening.

The Door Contact utilizes ZigBee technology for wireless signal transmission. ZigBee is a wireless communication protocol that is reliable and has low power consumption and high transmission efficiency. Based on IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission

The Door Contact serves as an end device in the ZigBee network. It can be included in the ZigBee network to transmit signal upon activation, but cannot permit any other ZigBee device to join the network through the Door Contact.

Parts Identification



1. LED indicator

The LED indicator lights up in the following conditions:

- Flashes twice quickly:
  The Door Contact has successfully joined a ZigBee network.
- Flashes once every 20 minutes:
  The Door Contact has lost connection to its current ZigBee network.
- Flashes under normal operation
  The tamper switch is triggered

2. Function Button

- Press the button once to send a supervision signal.
- Press and hold the button for 10 seconds then release to reset the Door Contact.

3. Tamper Switch

The Tamper switch will be activated when the Door Contact is removed from mounted surface, or it cover opened.

4. Battery Compartment

The Door Contact is powered by one CR-2 3V Lithium battery.

5. Mounting Knockouts

6. Battery Insulator

7. Rib-Mark

8. Magnet

Features

- ***Battery and Low Battery Detection***

  The Door Contact uses one CR2 3V Lithium battery as its power source. The battery is installed in the battery compartment with a battery insulator inserted. To activate the battery, simply pull out the battery insulator.

  The Door Contact feature Low Battery Detection function. When the battery voltage is low, the Door Contact will transmit Low Battery signal to notify the user.

  When changing battery, after removing the old battery, press the Tamper Switch twice to fully discharge before inserting new battery

- ***Tamper Protection***

  The Door Contact is protected by a tamper switch which is compressed against the mounting surface when mounted. Whenever the Door Contact is removed from mounted location, or its cover opened, the tamper switch will be activated and the Door Contact will send a tamper open signal to remind the user of the condition.

- ***Supervision***

  The Door Contact will transmit a supervision signal to report its condition regularly according to user setting.

The factory default interval is 30 minutes. The user can also press the Function Button once to transmit a supervision signal manually.

ZigBee Network Setup

● *ZigBee Device Guideline*

ZigBee is a wireless communication protocol that is reliable and has low power consumption and high transmission efficiency. Based on IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission.

Due to the fundamental structure of ZigBee network, ZigBee device will actively seek and join network after powering on. Since performing a task in connecting network may consume some power, it is required to follow the instructions to avoid draining battery of a ZigBee device

- Ensure your ZigBee network router or coordinator is powered on before inserting battery into the ZigBee device.
- Ensure the ZigBee network router or coordinator is powered on and within range while a ZigBee device is in use.
- Do not remove a ZigBee device from the ZigBee network router or coordinator without removing the battery from a ZigBee device.

● *Joining the ZigBee Network*

As a ZigBee device, the Door Contact needs to join a ZigBee network to transmit signal when it is triggered. Please follow the steps bellow to join the Door Contact into the ZigBee network.

1. Pull out the battery insulator; this will connect the battery to power on the Door Contact.
2. After powering up, press and hold the Function button for 10 seconds, then release it to join the network. Please make sure the permit-join feature on the router or coordinator of your ZigBee network is enabled.
3. If the Door Contact successfully joins a ZigBee network, the LED Indicator will flash twice to confirm.
4. After joining the ZigBee network, the Door Contact will be registered in the network automatically. Please check the ZigBee coordinator, system control panel or CIE (Control and Indicating Equipment) to confirm if joining and registration is successful.
5. After joining the ZigBee network, if the Door Contact loses connection to current ZigBee network, the LED will flash every 20 minutes to indicate. Please check your ZigBee network condition and Door Contact signal range to correct the situation.

● *Removing Device from ZigBee Network (Factory Reset)*

To remove the Door Contact from current ZigBee network, the Door Contact must be put to Factory Reset to complete device removal. Factory Reset function will clear the Door Contact of its stored setting and information and prompt the Door Contact to search for new ZigBee network.

Before removing device, make sure the Door Contact is within current ZigBee network signal range

1. Press and hold the function button for 10 seconds, then release the button to reset Door Contact.
2. Upon reset, the Door Contact will clear current ZigBee network setting and transmit signal to ZigBee coordinator to remove itself from current ZigBee network. It will then actively search for available ZigBee network again and join the network automatically.

Installation

● *Installation Guideline*

- The Door Contact should be installed on the door/window frame, and the magnet on the door/window
- The distance between the Door Contact and the magnet should be no more than 15mm when the door is closed.
- Avoid mounting the Door Contact on metallic surface. If mounting on metallic surface, make sure the Door Contact can be triggered when the door is opened and the signal can be received successfully by Control Panel.
- Mount the Door Contact as high as possible.

● *Using Door Contact with ZigBee Router*

IMPORTANT NOTE

If the Door Contact installation location is away from your system control panel and requires ZigBee routers to improve signal strength. **DO NOT** use a ZigBee Router without backup battery. A ZigBee router without battery will be powered down during AC power failure and the Door Contact connected to the router will lose connection with ZigBee network. You should plan your Door Contact installation location using only ZigBee router with backup battery.

● *Mounting the Door Contact*

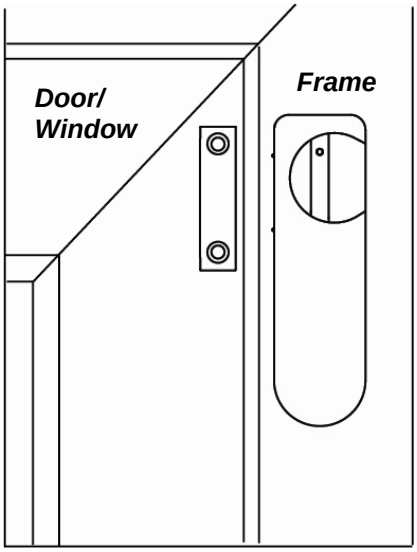
1. Find a suitable location close to your door/window to install the Door Contact.
2. The Door Contact has 2 rib-marks on one side (refer to figure), marking the internal magnet switch

location. The door contact should be installed either upright or inverted to ensure that the rib-marked side faces the magnet.

3. To mount the Door Contact:
   a) Locate the 2 Door Contact mounting knockouts, break through the knockouts and use the holes as template for appropriate hole positioning. Mark mounting location on the door/window frame.
   b) Insert the provided wall plugs for plaster/brick installation if required.
   c) Screw the Door Contact into the wall plugs.

   Alternatively, you can also choose use double side adhesive tape to mount the Door Contact

4. Fit the magnet on the door using the small piece of double sided adhesive tape or with provided screws. The magnet must align with the rib-mark side of the Door Contact as shown in figure. The distance between the Door Contact and the magnet should be no more than **15**mm.



Appendix(For developers only)

- ***Door Contact Cluster ID***

Device ID: IAS Zone 0x402 **Endpoint: 0x01**	
Server Side	**Client Side**
Mandatory	
Basic (0x0000)	*None*
Identify(0x0003)	
IAS Zone(0x0500)	
Optional	
None	*None*

- ***Attribute of Basic Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0x01	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 –0xff	Read only	0x00	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0	O
0x0004	*ManufacturerName*	Character String	0 – 32 bytes	Read only	Climax Technology	O
0x0005	*ModelIdentifier*	Character String	0 – 32 bytes	Read only	(Model Version)	O
0x0006	*DateCode*	Character String	0 – 16 bytes	Read only		O
0x0007	*PowerSource*	8-bit	0x00 –0xff	Read		M

				only		
0x0010	*LocationDescription*	Character String	0 – 32 bytes	Read / Write		O
0x0011	*PhysicalEnvironment*	8-bit	0x00 –0xff	Read / Write	0x00	O
0x0012	*DeviceEnabled*	Boolean	0x00 –0x01	Read / Write	0x01	M

- ***Attribute of Identify Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*IdentifyTime*	Unsigned 16-bit integer	0x00 –0xffff	Read / Write	0x0000	M

- ***Attribute of IAS Zone Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0001	*ZoneState*	8-bit Enumeration	All	Read only	0x00	M
0x0002	*ZoneType*	8-bit Enumeration	All	Read only		M
0x0003	*ZoneStatus*	16-bit bitmap	All	Read only	0x00	M
0x0010	*IAS_CIE_ADDRESS*	IEEE ADDRESS	Valid 64bit IEEE address	Read / Write		M
0x0011	*ZONE_ID*	Unsigned 8-bit integer	All	Read only	0xFF	M

Federal Communication Commission Interference Statement

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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

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.