# Input & Output Switch (DIO-52)

Introduction

DIO-52 is an Input and Output Switch. The switch has built-in Digital Input and Digital Output terminals which can be connected to sensor, switch, or devices to form Normal Open (N.O.) or Normal Close (N.C.) loop. When the Input terminal is triggered, the Switch will transmit signal to the Control Panel; the Switch can also receive command signal from the Control Panel to turn on/off the Output terminal to control connected device.

The switch can either be connected to a single device for remotely controlling it from the Control Panel, or connected to separate devices with the input terminal as the trigger of events and the output terminal as the responder of events.

Top Cover   **Base**
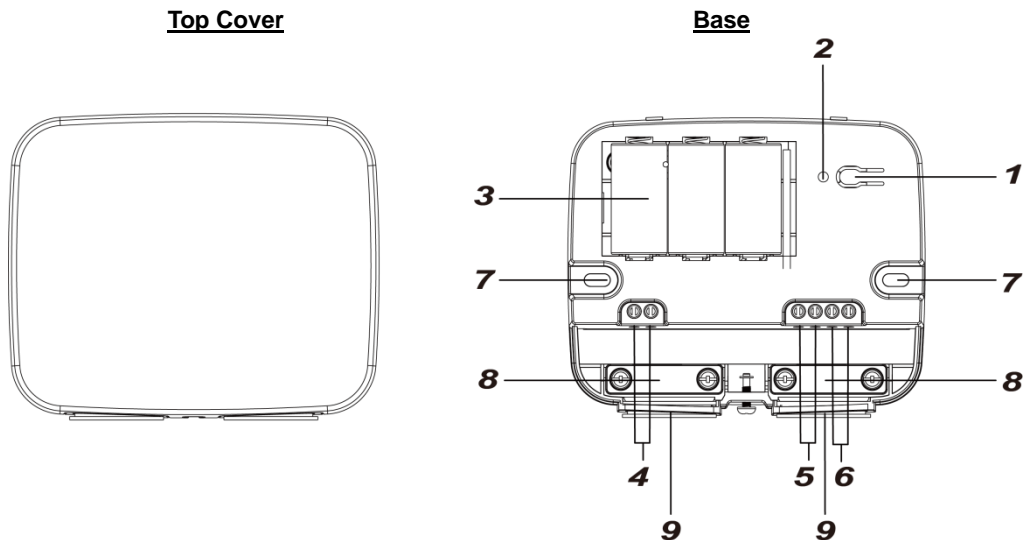
Parts Identification

1. Test Button

Press once to send a learn code to the Control Panel.

2. LED indicator

The LED indicator lights up in the following conditions:
- Flashes 6 times:
  When Input terminal is triggered or when the Switch is transmitting a signal.
- Flashes 3 times:
  When Output Terminal is triggered.

3. Battery Compartment

4. Power Terminal

5. Input Terminal

Set Normal Open (N.O.) or Normal Close (N.C.) for the device connected to the input terminal from the Control Panel webpage.

6. Output Terminal

Set Normal Open (N.O.) or Normal Close (N.C.) for the device connected to the output terminal from the Control Panel webpage.

7. Mounting Holes

8. Strain Relief Clamps

The clamps are used for securing the wires, and providing strain relief to protect the wires from metal cutout.

9. Wiring Holes

Features

- ## *Output and Input Terminal*

    - **Output Terminal (DO):**

        The output terminal is controlled by the Control Panel; when the Switch receives on/off signal, it will turn on or off the output terminal accordingly.

        When set to N.O., the output terminal will close upon receiving <u>ON</u> signal, and open upon receiving OFF signal.

        When set to N.C. the output terminal will close upon receiving <u>OFF</u> signal, and open upon receiving ON signal.

    - **Input Terminal (DI):**

        When set to N.O. the input terminal will send a trigger signal to the Control Panel when the loop closes, and send a restore signal when the loop opens.

        When set to N.C. the input terminal will send a trigger signal to the Control Panel when the loop opens, and send a restore signal when the loop closes.

    <u>*<NOTE>*</u>

    - ☞ The Input Terminal and Output terminal can be set to either Normal Close (N.C.) or Normal Open (N.O.) from the DO configuration page of the Control Panel webpage.

        Select Invert Input as **Yes** or **No** to set the input terminal to **N.C. / N.O.**

        Select Invert Output as **Yes** or **No** to set the output terminal to **N.C. / N.O.**

    - ☞ The status descriptions for the Input Terminal (DI) and Output terminal (DO) are editable from the DI and DO configuration pages.

- ## *Operation Mode*

    The Input and Output Switch can operate according to different mode selected in the Control Panel.

    - **Appliance Control:**

        When DIO-52 is used for appliance control, the input and output terminals are connected to the same device, e.g. a valve.

        The output terminal is used to receive on/off signal from the Control Panel to turn/on off the connected device, while the input terminal is used to transmit the current status of the connected device to the Panel.

    - **Separate Devices:**

        In this mode, the input and output terminals of DIO-52 are connected to separate devices. The input terminal is used to monitor the activation of the connected device, and transmit the trigger signal to the Control Panel. The output terminal is used to receive on/off signal from the Control Panel to turn/on off the connected device.

        When working under this mode, the connected devices of DIO-52 can integrate with other devices included in the Control Panel, and operate according to the Home Automation rules programmed in the Control Panel.

- **Input Follower:**

  In this mode, the input and output terminals of DIO-52 are connected to separate devices, and the output terminal device will act following the trigger of input terminal device.

  When input terminal device is triggered and sends a signal to the Control Panel, the output terminal device will be activated according to the Output Follow Input settings in the Control Panel.

- ## *Power Terminal*

  The Switch uses two-wired 5-12V DC adapter to power on when connected to the Power Terminal. When Power Terminal and batteries are both in use, the Switch will only power through the adaptor.

- ## *Battery and Low Battery Detection*

  The Switch uses three CR123 Lithium batteries as its power source. The Switch features Low Battery Detection function. When the battery voltage is low, the Switch will transmit Low Battery signal to notify the user. When changing batteries, after removing the old batteries, press the Test Button twice to fully discharge before inserting new batteries.

- ## *Supervision*

  The Switch will transmit a supervision signal every 30 to 50 minutes regularly to report its condition.

- ## *Getting Started*

  1. Insert batteries or connect the two-wired 5-12V DC adapter to power on the Switch.
  2. Put the Control Panel into Learning Mode, refer to Control Panel manual for details.
  3. Press the Test button once, the LED will flash 6 times.
  4. If the Control Panel receives the signal, it will display the information accordingly, refer to Control Panel manual to complete the learning process.

  <u><NOTE></u>

  - ☞ When learnt into the Control Panel, the DIO-52 will be recognized as 2 separate devices (DI & DO) and will occupy 2 zones in the Panel.

- ## *Walk Test*

  - After the Switch is learnt-in, put the Control Panel into (**Walk Test**) mode, hold the Switch in the desired location, and press the Test Button to transmit test signal to Control Panel. If the Control Panel is within the Switch signal range, the panel will display Switch information accordingly.
  - Proceed with mounting and installation once you are satisfied that the Switch functions properly in the desired location.

Installation

The Switch can be deployed on a flat surface or mounted on the wall. After you have finished the walk test, and you are satisfied that the device is able to communicate with the control panel in the chosen location, proceed with installation.

1. Disconnect the main power supply.
2. Loosen the bottom fixing screw and remove the top cover of the Switch.
3. Use the holes on the base to mark mounting location on the wall.
4. Drill holes into marked location and insert wall plugs if required, screw the base onto the mounting location.
5. Replace the top cover and tighten the bottom fixing screw.