

AC Cloud Control

Binary Input - User Manual

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Important User Information

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1 Description

1.1 Introduction

AC Cloud Control is the perfect IoT solution for professional AC management. It has been developed along with the mayor AC manufacturers and offers the possibility to control almost any domestic, commercial or VRF AC unit in the market from a generic dashboard available for Android, iOS or in any web browser.

The AC Cloud Control system offers many functionalities covering different needs like energy saving and air conditioner maintenance just to name some of them. All these functionalities make the product the best professional solution for offices, stores, schools or any other commercial building.



Figure 1.1 AC Cloud Control integration.

1.2 About this document

This document describes how to built-in binary input in the Universal controller. The binary input allows Universal controllers owners to add a standard presence sensor or window contact to it. It offers the possibility to make automatic actions depending on if there is presence or not in the room or if the window is opened or closed.

1.3 What is needed

In order to use AC Cloud Control system is needed, at least, the following:

- **AC Control device.**

Before start using the binary input, AC Cloud Control is needed to (if the user hasn't done yet) an AC Cloud Control Universal device¹. In addition, is necessary be close to it (See [Figure 1.2](#))

¹ AC Cloud Control Universal devices can be purchased in your usual air conditioner or heat pump reseller center.

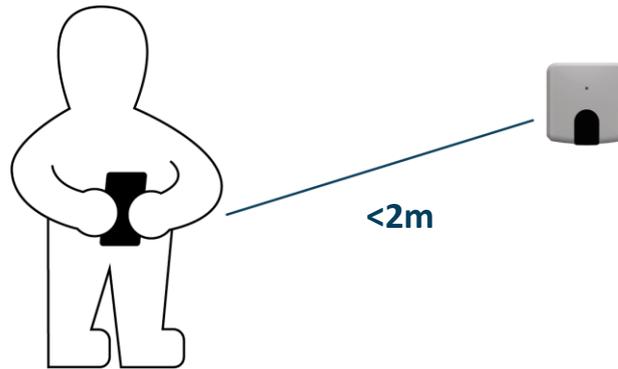


Figure 1.2 Get close to the device.

- **Make sure to choose the right entrance of the sensor.**
In order to use the built-in binary input in all the Universal Controllers (See [Figure 1.3](#)), the entrance of the sensor selected must use a standard 3,5 mm stereo jack connector (See [Figure 1.4](#))

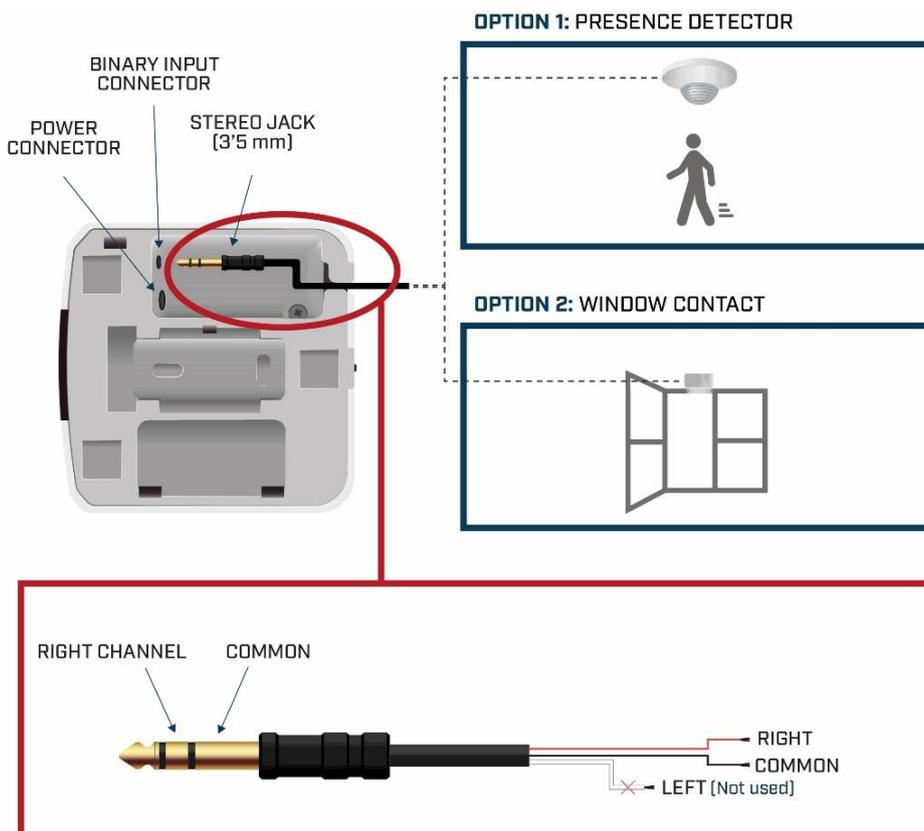


Figure 1.3 Binary Input entrance

Potencial free binary input

Signal cable length: 5m unshielded, may be extended up to 20m with twisted.

Compliant with the following standards:
 IEC61000-4-2: level 4 - 15kV (air discharge) - 8kV (contact discharge)
 MIL STD 883E-Method 3015-7: class3B

Figure 1.4 Technical Specifications.

• **Internet access².**

The AC Cloud Control Universal devices must be connected to internet using Wi-Fi, so make sure the Wi-Fi signal reaches the device location (See [Figure 1.5](#)).



Figure 1.5 Check Wi-Fi Signal.

• **Device with Internet access:**

A device with internet access is needed (Desktop/laptop computer).

Make sure the desktop/laptop computer supports at least one of the following web browsers (See [Figure 1.6](#)).



Figure 1.6 Browsers.

² Costs related with Internet access are not included in the AC Cloud Control price. Ask your Internet Service Provider about the associated costs of your Internet connection.

2 Installation

2.1 Presence sensor Window contact

Once the installation is done properly with the specifications, double check how the sensor is going to be used. The sensor only needs to be equipped with a potential free external contact. No matter if the contact is NO (Normally Open) or NC (Normally Closed) as the user will be able to configure the contact type (NO or NC) of the sensor.



Note: Only one sensor can be connected (presence sensor or a window contact one), both sensors cannot work together at same time.

Recommendation: In some presence sensors or window contacts it is possible to setup a delay time to the external contact. As it can be seen in this manual, AC Cloud Control Settings allow the users to setup a timer before starting with the configured actions. Anyway, is recommend to setup a certain delay time in the presence sensor or window contact in order to prevent continuous contact changes in a very short period.



Note: Universal controller will only react if the contact of the sensor is opened or closed. In the case of the presence sensor, the installer needs to decide the specific settings of the presence sensor to be applied. AC Cloud Control will be not responsible of the incorrect settings or incorrect installations.

2.2 Sleep mode

The sleep mode function modifies the standard behavior of the binary input. Therefore.



Note: sleep mode will be only available when the binary input is activated.

When the sleep mode is active, the binary input will be able to turn the AC unit on when presence is detected for the first time. It will remain in this status even if no presence is detected afterwards. If the unit is turned off manually either from the AC Cloud Control system (App, Web, calendar or scenes) or from the AC unit remote controller, the presence function will not be able to turn it on while sleep mode is active.

Example A: User is sleeping

The sleep mode function is enabled at 20:00, when the user is supposed to be sleeping, through a Calendar action or a Scene. Once enabled, a single trigger of the presence sensor will cause the AC unit to turn on and remain in this status although the presence sensor reports “no presence” afterwards.

Example B: User is cold/hot

The sleep mode function is enabled at 20:00, when the user is supposed to be sleeping, through a Calendar action or a Scene. Maybe the room is already at a proper temperature and even getting too cold or hot. If the user decides to manually turn the AC unit off, it will remain in this status until the user or any calendar action or scene is turning the AC unit on again.

3 Binary input configuration

 **Note:** The Binary input functionality will only apply if the AC unit is ON. Otherwise, the Presence or Window Contact functionalities will not make any change on the AC unit status.

The configuration of the Binary input must be done through the web interface.

1. Go to <https://accloud.intesis.com>,
2. Login. (See [Figure 3.1](#)).

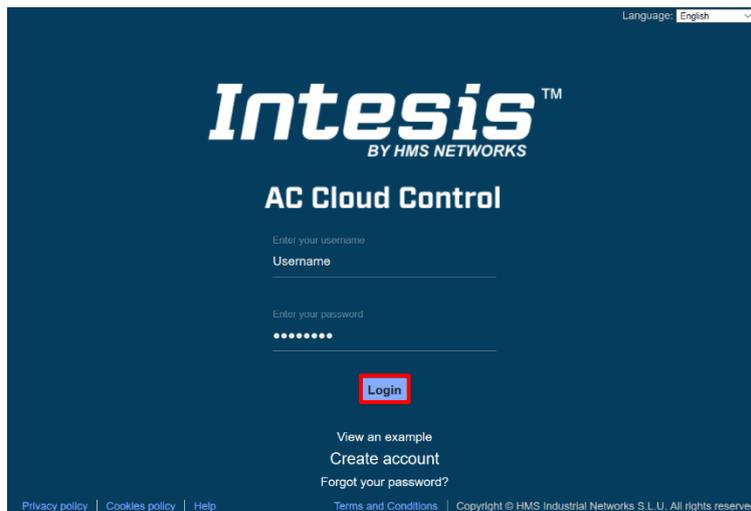


Figure 3.2 AC Cloud Control login site.

3. Go to Settings, either clicking on settings button or on the settings icon of the quick access menu placed in the top in the right side (See [Figure 3.2](#)).

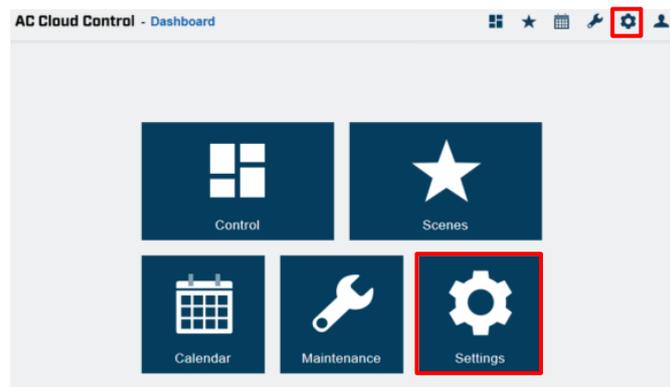


Figure 3.3 Access to Settings from the AC Cloud Control home.

4. Click on devices and select the Universal AC Cloud Control device from the left menu (See [Figure 3.3](#)).

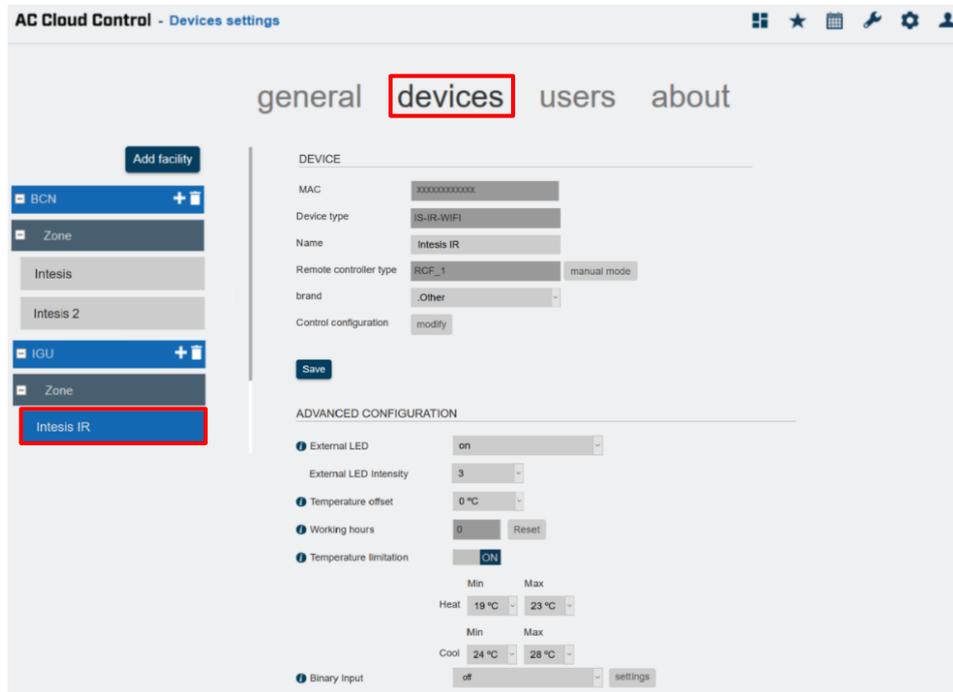


Figure 3.3 Access to universal menu form devices site.

- In advanced configuration the Binary input in the dropdown menu the options “**off**”, “**presence detection**” or “**window contact**” can be selected (See [Figure 3.4](#)).

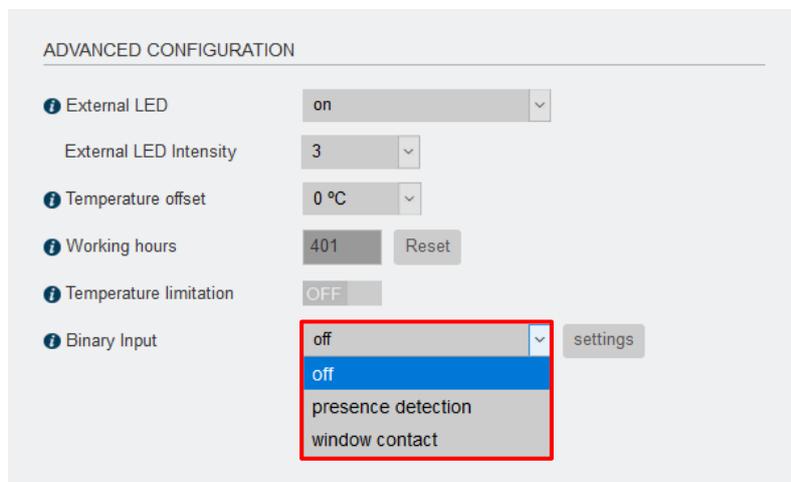


Figure 3.4 Access to Binary input options from advanced configuration.

- **Off:** Binary input is disabled
- **Presence detection:** Binary input is enabled, and the setup actions can be performed when the room is occupied or not occupied.
- **Window contact:** Binary input is enabled, and the setup actions can be performed when the window is closed or opened (it could also be a door).

3.1 Presence sensor

There are some configurations to be done after select presence detection (See [Figure 3.5](#))

Parameter	Value
Type of contact	N.O.
First action time out	15
First action	Apply Delta
First action delta heat	-2 °C
First action delta cool	2 °C
Second action Active	On
Second action time out	30
Second action	Apply Delta
Second action delta heat	-3 °C
Second action delta cool	3 °C
Reload last value	On
Lock when unoccupied	On

Figure 3.5 Presence detection configuration

“Type of contact”: Select what type of contact the sensor has: Normally Open (NO) or Normally Closed (NC).

“First action time out”: (minutes) When no presence is detected, this is the time the Universal controller will wait to execute First action.

“First action”: Select what type of action will be executed as First action between “Apply delta” or “Switch Off” the Unit. Note that if “Switch off” is selected, then a second action is not available. If “Apply delta” is selected, the user can setup different delta temperatures for Heat and Cool. The user could also setup a second action.

“First action delta heat”: Setup the delta temperature to be applied when unit is working in Heat mode (Only if First action is “Apply delta”).

“First action delta cool”: Setup the delta temperature to be applied when unit is working in Cool mode (Only if First action is “Apply delta”).

“Second action active”: Setup and execute a second action. Only available if first action was “Apply delta”.

“Second action timeout”: (minutes) After executing the First action, this is the time the IR WIFI controller will wait to execute the Second action.

“Second action”: Select what type of action will be executed as second action between “Apply delta” or “Switch Off” the Unit.

“Second action delta heat”: Setup the delta temperature to be applied when unit is working in Heat mode (Only if Second action is “Apply delta”).

“Second action delta cool”: Setup the delta temperature to be applied when unit is working in cool mode (Only if Second action is “Apply delta”).

“Reload last value”: After “Apply delta” action is executed, if presence is detected in the room, the unit will start working as at the beginning. That means in the same way as the unit was working when Presence was detected, in other words the delta temperatures applied will be back. On the other hand, if the last executed action was Switch off, then the unit will remain off if this setting is in “Off” or will recover the last operation commands if this setting is in “On”.

“Lock when unoccupied”: This setting overwrites any change made from the Wireless remote controller. Only changes from AC Cloud Control App or Web are allowed.

3.2 Window contact

There are some configurations to be done after select Window contact (See [Figure 3.6](#)).

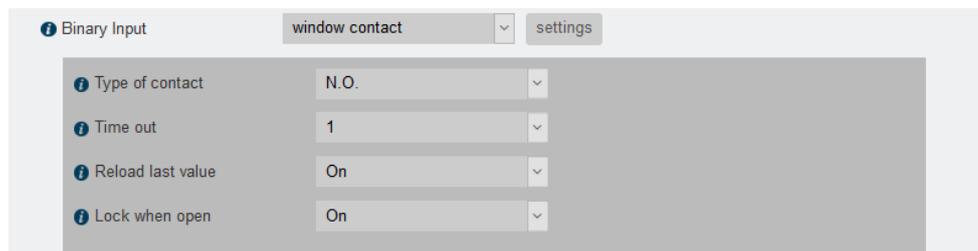


Figure 3.6 Window contact configuration

“Type of contact”: Select what type of contact the sensor has. Normally Open (NO) or Normally Closed (NC).

“Time out”: (minutes)When the window or door is opened, this is the time the IR WIFI controller will wait to execute the Action “Switch Off the AC”.

“Reload last value”: After the window or door is closed again, the AC unit will remain off if this setting is in “Off” or will recover the last operation commands if this setting is in “On”.

“Lock when open”: This setting overwrites any change made from the Wireless remote controller. Only changes from AC Cloud Control App or Web are allowed.

4 Control Panel

4.1 Presence sensor

When the function Presence detection is activated, in the control screen it will appear a new widget called “Binary Input”

This widget can show 4 different states:

- **State 1:** Presence (See [Figure 4.1](#))

This state indicates to the user that the room is occupied, and any Presence Detection action is in progress.

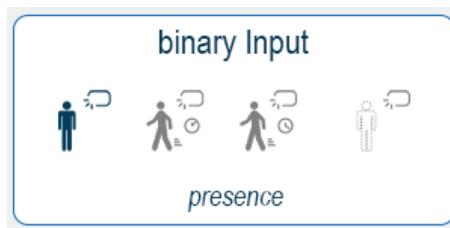


Figure 4.1 State 1 presence.

- **State 2:** Transition 1 (See [Figure 4.2](#))

This state indicates that the room is currently unoccupied and the “First action time out” is in progress.

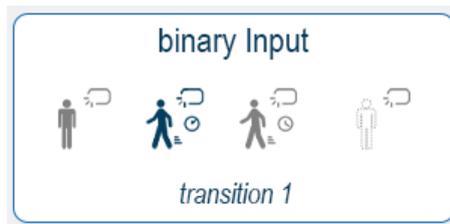


Figure 4.2 State 2 transition 1.



Note: If the AC Unit is Off or is turned Off during transition 1, the time out progress will be stopped.

- **State 3:** Transition 2 (See [Figure 4.3](#)).

This state indicates that the room is currently unoccupied and:

- First action was executed.
- The “Second action time out” is in progress.

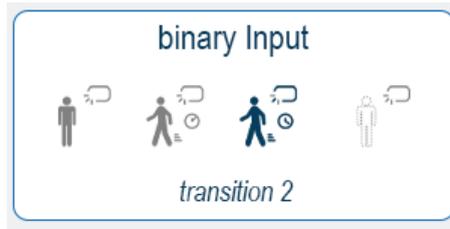


Figure 4.3 State 3 transition 2.



Note: If the AC Unit is turned Off during transition 2, the system will go back to Transition 1 state.

- **State 4:** No presence (See [Figure 4.4](#))

This state indicates that the room is currently unoccupied and:

- Second action was executed.
- No more actions will be executed until presence will be detected.

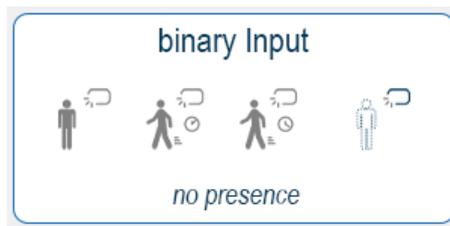


Figure 4.4 State 4 no presence.

4.2 Window contact

When the function Window contact is activated, in the control screen it will appear a new widget called “Binary Input”

This widget can show 3 different states:

- **State 1:** Window closed (See [Figure 4.5](#))

This state indicates that window or door is closed, and any Window Contact action is in progress.

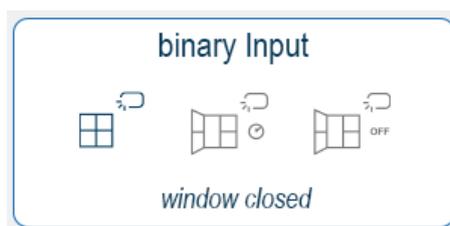


Figure 4.5 State 1 window closed.

- **State 2:** Waiting for action (See [Figure 4.6](#))

This state indicates that the window or door is currently open and the “Time out” is in progress.

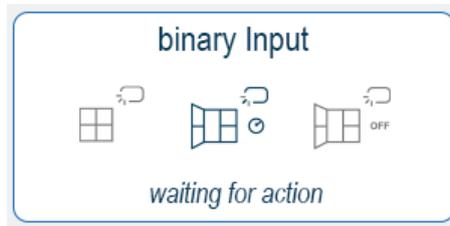


Figure 4.6 State 2 waiting for action.



Note: If the AC Unit is Off or is turned Off during Waiting for action state, the time out progress will be stopped.

- **State 3:** Window opened (See [Figure 4.7](#))

This state indicates that the window or door is currently open and:

- Unit was Switch OFF.
- No more actions will be executed until window or door is closed.

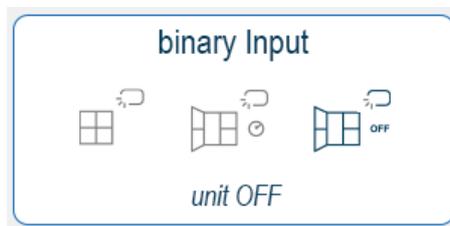


Figure 4.7 State 3 unit off.

4.3 Sleep mode

Sleep mode can only be activated when the user is creating calendar pattern or a scene.

Click on the widget for the binary input and later the sleep icon.

There are three different positions that the widget shall have:

- **Binary input for presence and sleep mode active:** When presence and sleep mode are active. The binary input will be only used to turn the AC unit on, if presence is detected and ON status will remain like this at least since the sleep mode is active or any user, calendar or scene turns the AC unit off (See [Figure 4.8](#)).

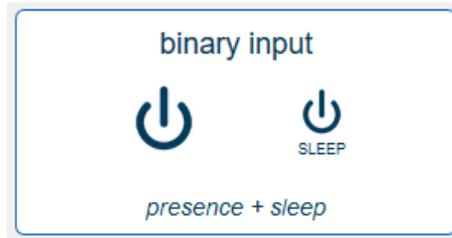


Figure 4.8 presence + sleep.

- **Binary input for presence active, but sleep mode inactive:** When presence is active, but sleep mode is not active. The binary input will work as usual with a presence sensor connected to it (See [Figure 4.9](#)). More information about the presence function can be found in [Section 3.1](#) and [Section 4.1](#).

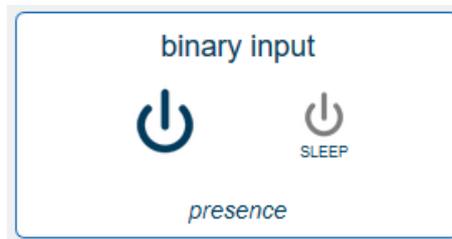


Figure 4.9 Presence.

- **Binary input for presence and sleep mode inactive:** When nor presence or sleep mode are active. In this case, the reported status of the presence sensor will take no effect on the AC unit status or current working mode (See [Figure 4.10](#)).

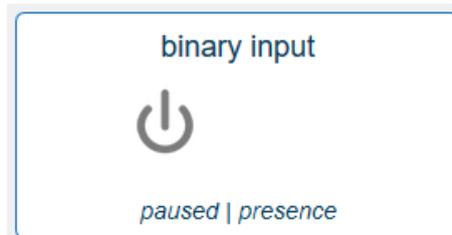


Figure 4.10 Inactive mode.