

MOTION SENSOR 360 - VOLT FREE

M360-W-VOLF (WHITE) ----- M360-B-VOLF (BLACK)

FARADITE

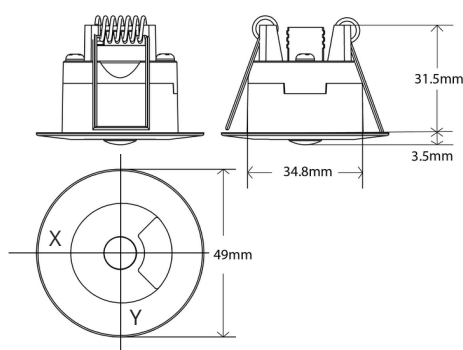
OVERVIEW



The Faradite Motion Sensor 360 - Volt Free is a low profile passive infrared ceiling mounted motion sensor. It's designed for use with home/building/lighting control systems that have volt free / dry contact inputs.

TECHNICAL DATA

Power supply (consumption)	5V-35V DC 3mA
Solid state relay - max load current	80ma
Solid state relay - on resistance	16 OHMS
Solid state relay - off-state leakage current	1uA
Default state	Normally open
Ambient temperature	0-50 °C (indoor only)
IP rating	IP20
Range (Note 1)	5M
Max mounting height	3m (for optimal performance)
Motion output timeout (see motion output diagram)	1 second
Mounting hole	35mm (40mm Fire rated)
Push-fit connector	AWG 20- 24 CAT5 / CAT6 / CAT7
Standards	EN 61000-6-1 EN 61000-6-3



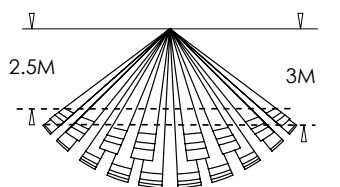
OBSERVATION AREA

At 2.5M it gives a 5.6M * 6.6M observation area.

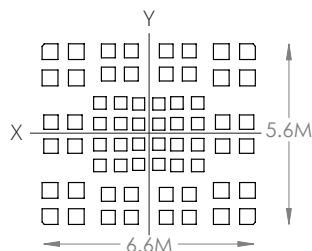
At 3M it gives a ~8M diameter, as shown below.

The following conditions have to be met to detect motion:

1. Movement speed: 1.0m/s
2. Target concept is a human body (Min object size: ~700×250mm)
3. The temperature difference between the target and the surroundings must be greater than 4 °C when mounted at 5M



2.5M Height - Observation area

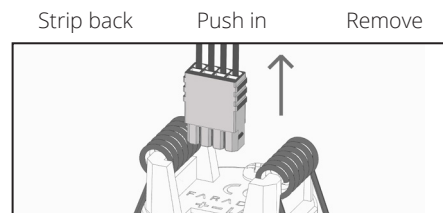
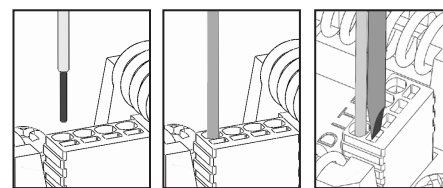


3M Height - Observation area

ELECTRICAL CONNECTIONS

It is recommended to use CAT cable to connect the motion sensor to the control system. Stranded cable can be used (20-24 AWG) but please insert the supplied tool to open the spring before inserting the wire.

- 1: Strip the cable back 6mm
- 2: Push into circular hole
- 3: To remove the wire insert the supplied tool or a small screwdriver in the slot behind the wire



Pull to remove connector from motion sensor

FIRE RATING

The stand-alone Motion Sensor 360 - Volt Free is not fire rated. To achieve a 60 minute fire rating to BS 476: Part 21 1987, the optional Fire IDR must be fitted to the Motion Sensor 360 - Volt Free. The Fire IDR is an optional extra.

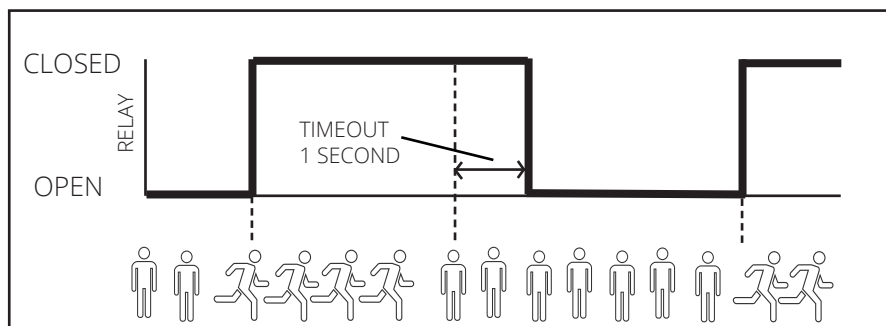
EQUIVALENT CIRCUIT

VOLT FREE RELAY
VOLT FREE RELAY
- 0V/GND
+ 5V-35V DC

CLOSED DURING
MOTION
(NORMALLY OPEN)

MOTION OUTPUT

NOTE: After applying power, the sensor will calibrate for roughly 8 seconds; during this period no motion will be reported.



Note 1: Please note that the specified range is 5m but under optimal conditions the sensor might detect movement at a much longer range

INSTALLATION



**USE A 35mm
HOLE SAW FOR
INSTALLATION**

To install the Faradite Motion Sensor 360 - Volt Free, cut a 35mm hole using a suitable hole saw. Fold the spring clips upwards and push through the hole. If you are using the optional Fire IDR to achieve a 60 minute fire rating to BS 476: Part 21 1987, then a 40mm hole will be required.

MOUNTING & SAFETY PRECAUTIONS

1) Do not under any circumstance use these sensors outside the range of their ratings shown in the technical data.

2) Faradite is committed to making products of the highest quality and reliability. Nevertheless, all electrical components are subject to natural deterioration, and the product durability will depend on the operating environment and conditions of use.

3) Please note that the sensor can detect heat sources other than the human body, such as:

- a) Small animals
- b) Direct sun light, incandescent lamps, car headlights (even if the heat source is outside the detection area)
- c) Sudden temperature change inside or around the detection area i.e. hot or cold winds/drafts or vapour from a humidifier can affect the performance of the sensor

4) Please note that the sensor will have difficulty sensing the heat source if it is behind glass, acrylic or similar materials, as these materials may not allow a correct transmission of infrared rays

SENSITIVITY ADJUSTMENT

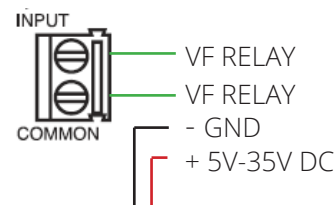
The sensor has been designed for optimal sensitivity. It is not recommended to change the sensitivity setting unless it is found to be necessary. To adjust the sensitivity, remove the two screws and turn over the circuit board. The small potentiometer can be used to adjust the sensitivity.



INSTALLATION GUIDE FOR VARIOUS CONTROLLERS

CONNECTION TO LUTRON

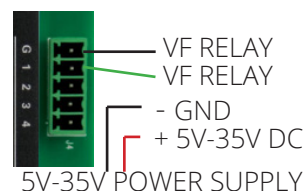
Connection to Lutron is simple: One side of the relay should be connected to the "INPUT" of a contact closure input (CCI) and the other side should be connected to the "COMMON" of the CCI. Any 5-35V power supply can be used to power the sensor.



5V-35V POWER SUPPLY

CONNECTION TO CRESTRON

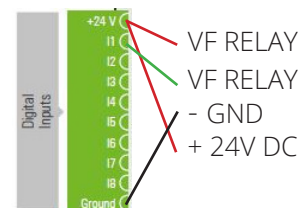
Connection to Crestron is simple: connect one side of the relay to a digital input and the other side to GND (G) and configure the input as a dry contact. The sensor can be powered using any available 5-35V supply.



5V-35V POWER SUPPLY

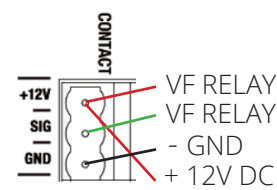
CONNECTION TO LOXONE

Connection to Loxone is simple: connect one side of the relay to a digital input on the MiniServer / Extension / Nano DI Tree / Nano IO Air and the other side to 24V. Simply provide the 24V supply from the power supply in the cabinet or the 24V output of a Nano IO Air if retrofitting.



CONNECTION TO CONTROL4

Connection to Control4 is simple: connect one side of the relay to the "SIGNAL" input on a contact closure and the other side of the relay to the 12V power supply. Simply provide the sensor power using the +12V and GND outputs of the contact closure or any other 5V-35V supply. When using a contact closure the Control4 generic motion sensor driver can be used. You will need to tick the invert tick box on the driver as the sensor is "normally open".



Janus Technology have written a driver that integrates the Faradite Motion Sensor 360 - Volt Free with Control4, via a Brainboxes' I/O device as an alternative to a contact input. Search for "Faradite Janus Technology driver" for more info.

THE SENSOR CAN ALSO BE USED WITH MANY OTHER SYSTEMS THAT HAVE A VOLT FREE / DRY CONTACT INTERFACE

Directive 2014/30/EU (Electromagnetic Compatibility (EMC))

Directive 2012/19/EU (WEEE)

Directive 2011/65/EU (RoHS)

Harmonised standards: EN 61000-6-1 Immunity for residential, commercial and light-industrial environments

& EN 61000-6-3 Emission standard for residential, commercial and light-industrial environments



RoHS CE

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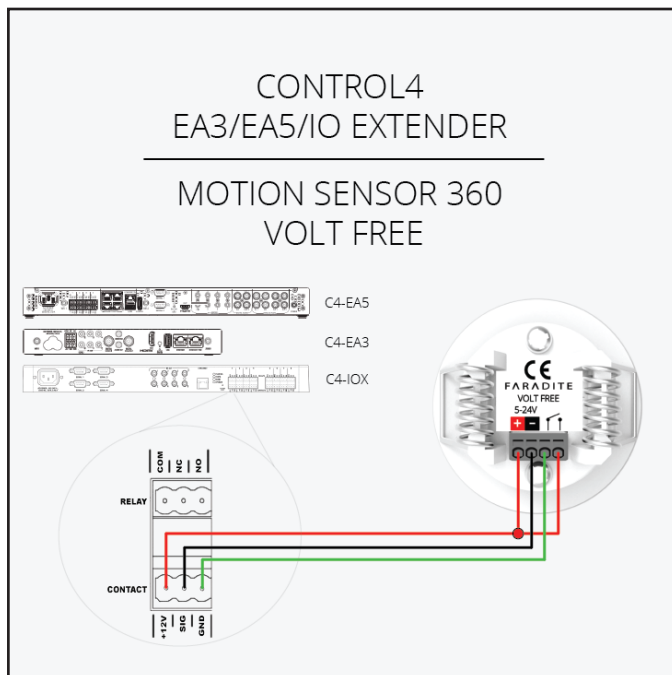
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CONTROL4 OVERVIEW

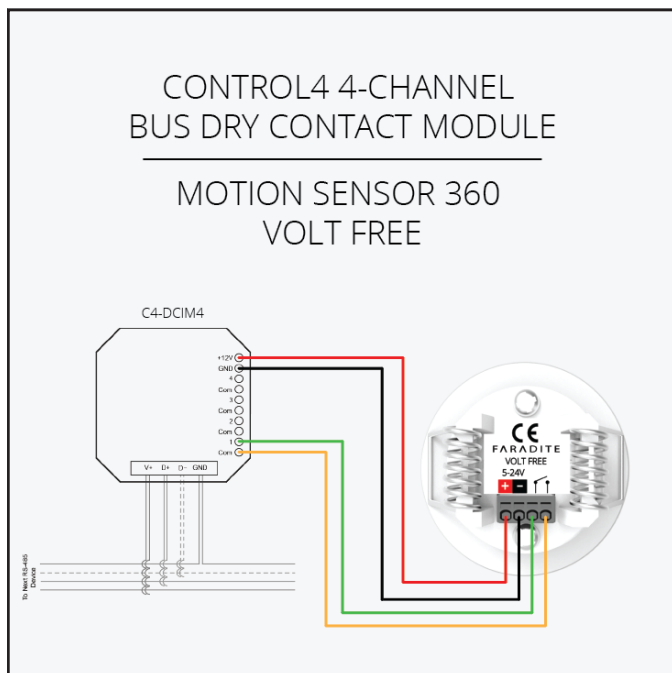
The Motion Sensor 360 Volt Free provides a normally open contact which should be connected to a contact closure on the Control4 system. There are a number of contact closures available on a Control4 system, below we list the Control4 devices to which the Motion Sensor 360 Volt Free can be connected:

EA-3 Entertainment and Automation Controller – C4-EA3
EA-5 Entertainment and Automation Controller – C4-EA5
IO Extender – CF-IOXV2
Dry Contact Input Module – C4-DCIM4
ZigBee IO - C4-Z2IO, C4-Z2IO-5PK



CONTROL4 EA-3 / EA-5 / IOXV2

Power the motion sensor by connecting the '+' and '-' terminals on the sensor to the '+12v' and 'GND' terminals respectively on the C4-IOXV2 / EA-3 / EA-5. We connect each side of the motion sensor volt free output to the '+12v' and 'SIG' terminals on the Control4 IO Extender / Entertainment and Automation Controller.



CONTROL4 DRY CONTACT MODULE (C4-DCIM4)

In Composer you will need to check the '12V power output' box in the advanced settings of the DCIM4 module. Up to 4 Motion Sensor 360 Volt Free devices can be connected to each C4-DCIM4 using inputs 1, 2, 3 and 4. The 12V power supply in the C4-DCIM4 module can supply enough current to power all 4 sensors.

Please note: the C4-DCIM4 is larger than the 35mm hole required for the Motion Sensor 360 Volt Free.

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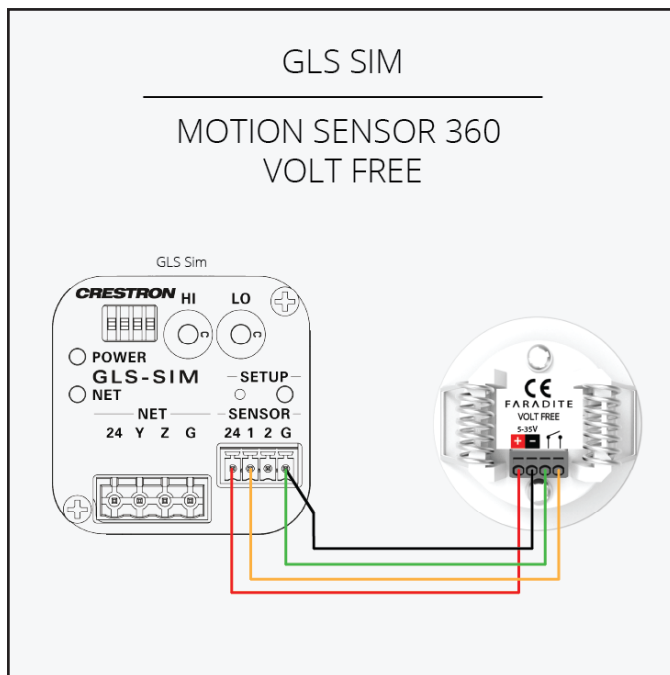
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CRESTRON GLS-SIM

Another great Crestron device for motion sensor connection is the Crestron GLS-SIM Sensor integration module. This tiny module allows the connection of up to 2 sensors to the Cresnet bus.

The module needs to be configured for 2 digital inputs in a normally open mode. To achieve this configuration, we need to set all the DIP switches to OFF.

Please note: this module is bigger than the 35mm hole required for our sensors.

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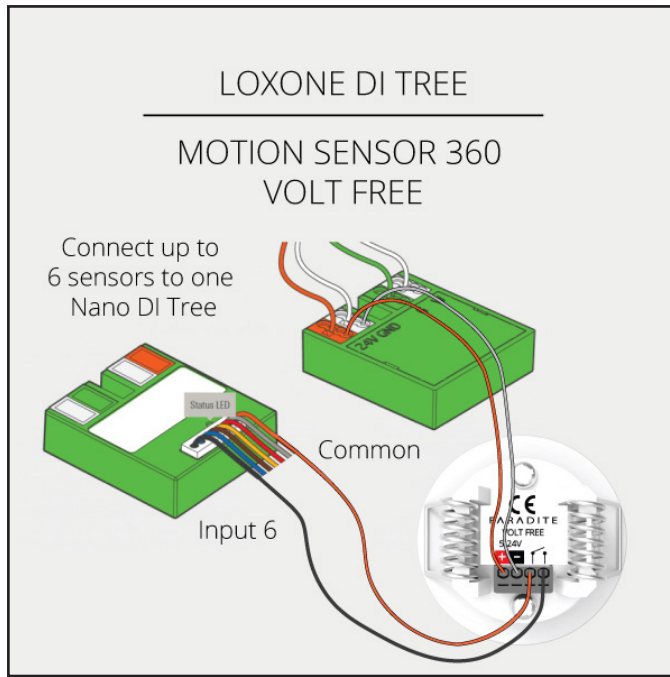
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LOXONE OVERVIEW

The Motion Sensor 360 Volt Free provides a normally open contact which should be connected to a digital input on the Loxone system. There are a number of digital inputs available on a Loxone system on DIN rail devices in the panel, Tree devices and Air devices. So, whether the Loxone system is star wired, Tree wired or Air we have options on where the Faradite Motion Sensor 360 Volt Free will be connected.

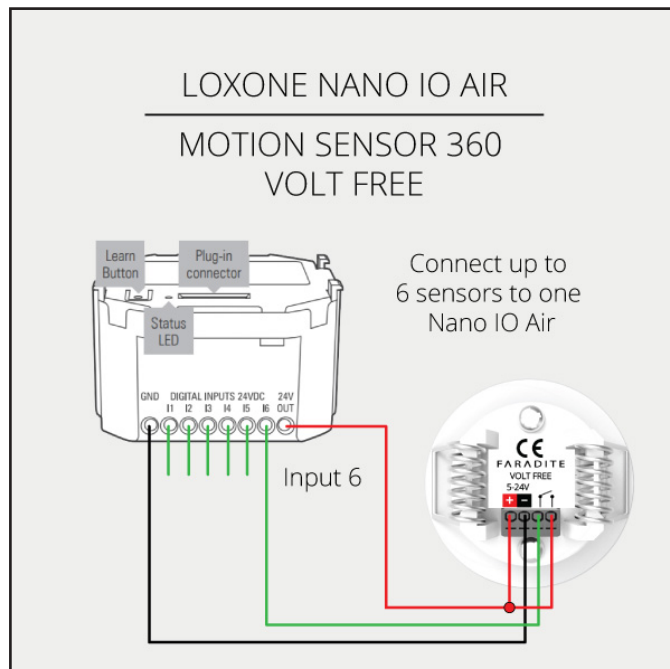


LOXONE DI TREE

With the 6 digital inputs available on the Nano DI Tree devices, it is possible to connect up to 6 Motion Sensor 360s to a single module. Connect the relay output of the motion sensor across the desired input and the 'Common' cable of the Nano DI tree.

Provide power to the Motion Sensor 360 by connecting to the orange and orange/white terminals of the wago block that powers the Nano DI tree.

Once connected, the motion sensor input can now be commissioned in the Loxone Config software.



LOXONE NANO IO AIR

For wireless Loxone installations, the Nano IO Air devices allows up to 6 digital input connections, such as 6 Motion Sensor 360s. Take the 24V DC GND terminal to the '-' terminal of the sensor, and take the 24V DC OUT terminal to the '+' terminal of the motion sensor and loop this 24V DC supply across to one side of the motion sensor output. Wire the other side of the relay back to the inputs available.

The sensor can now be commissioned in Loxone config.

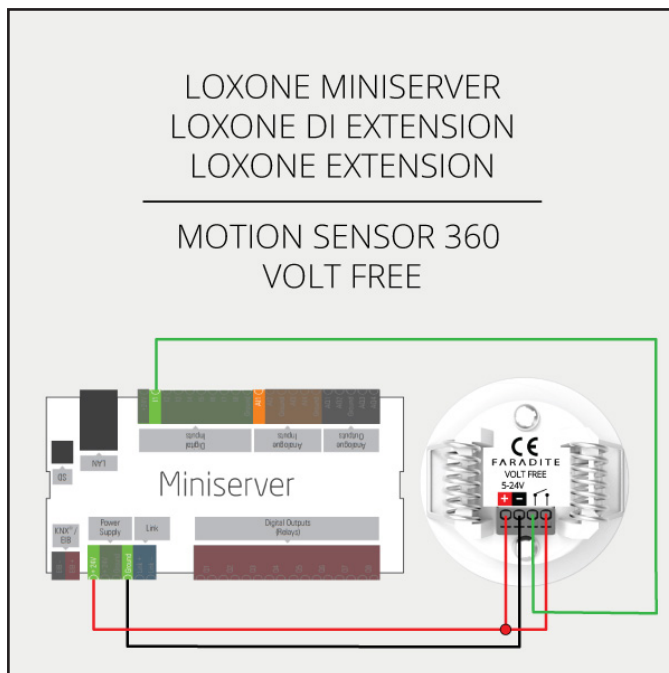
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LOXONE MINISERVER, DI EXTENSION, LOXONE EXTENSION

The Miniserver Gen1 has digital inputs which can be used to connect the Motion Sensor 360 - Volt Free to.

Power the sensor from the 24V DC terminals on the miniserver and loop the 24V DC to one side of the motion sensor output. connect the other side of the output to any of the digital inputs available on the Miniserver.

The sensor can now be commissioned in Loxone config.

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LUTRON OVERVIEW

The Motion Sensor 360 Volt Free provides a normally open contact, which should be connected to a contact closure input on the Lutron system.

There are two ways in which a Motion Sensor 360 Volt Free can connect to a Lutron system.

A popular method of connecting a Faradite Motion Sensor 360 – Volt Free is to connect the sensor's volt free output directly into the back of a keypad. The keypad has two contact closure inputs so two sensors can be connected to a single seeTouch keypad. If you are using a 24V power supply to power the keypads, then you can power the sensor directly from the keypad power supply.

The Alisse Keypad can also be used to connect a Motion

Sensor 360 Volt Free (Dry Contact) to. There are 2 inputs on the back of the keypad which can be used.

Another approach would be to star wire the sensors back to a central panel location where the sensors can be terminated into a QSE-IO which has 5 contact closure inputs.

Please note: The Palladium keypads do not have contact closures.

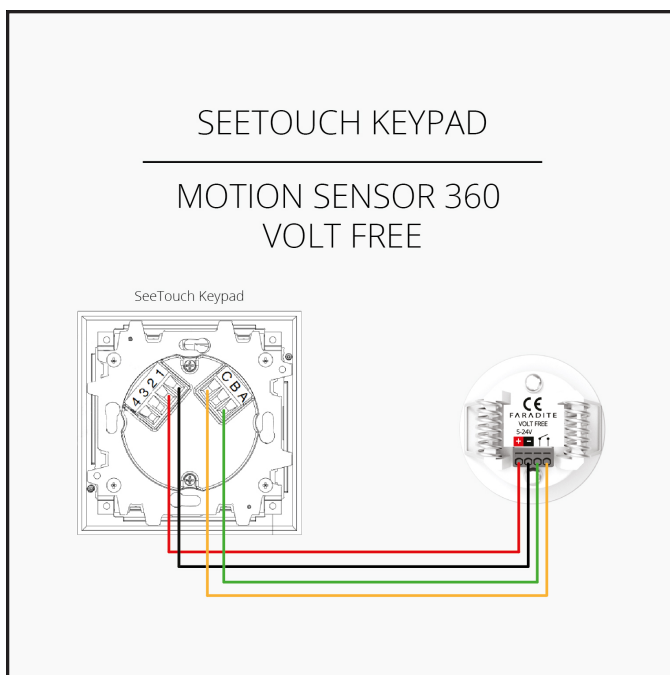
DEVICE	NUMBER OF CONTACT CLOSURES
SeeTouch Keypad	2
Alisse Kaypad	2
QSE-IO	5

SEETOUCH KEYPAD

Take the power for the Motion Sensor 360 from the '1' and '2' terminals on the back of the keypad. Connect the '1' terminal to the '-' terminal on the sensor and the '2' sensor to the '+' terminal.

There are 2 inputs on the back of the SeeTouch keypad - terminals 'B' and 'A'. Connect the output of the motion sensor across the common terminal 'C' and the required input - in the diagram here we are using terminal 'A'.

The sensor can now be commissioned.



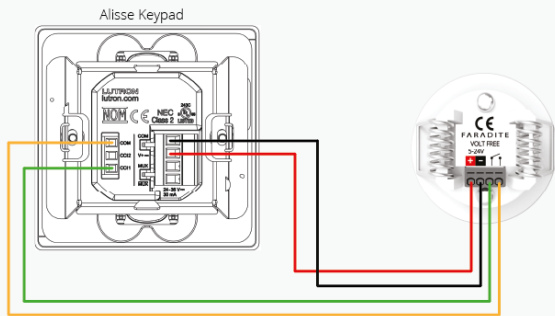
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ALISSE KEYPAD

MOTION SENSOR 360 VOLT FREE



ALISSE KEYPAD

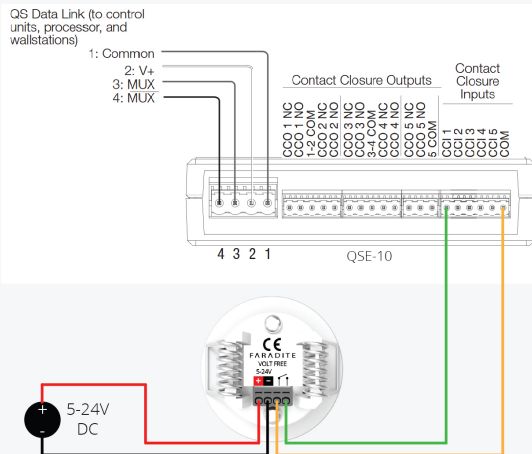
The Alisse keypad offers 2 inputs which are great for use with the Motion Sensor 360 - Volt Free.

Firstly power the keypad using the 'COM' and 'V+' terminals on the back of the keypad. Next connect to the relay outout terminals across the 'COM' and desired input on the left hand side of the back of the keypad unit.

The motion sensor is now ready to be commisioned.

QSE-10

MOTION SENSOR 360 VOLT FREE



QSE-10

The QSE-IO does not have a built-in power supply, we therefore recommend using a separate 5-24V power supply to power the sensors. You can use the QSPS-DH-1-60 Lutron power supply to power the sensors if desired or any other 5-24V supply. We recommend allowing for 10ma per sensor when specifying the power supply.

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