

# INDUSTRIAL I2C ANALOG INPUT



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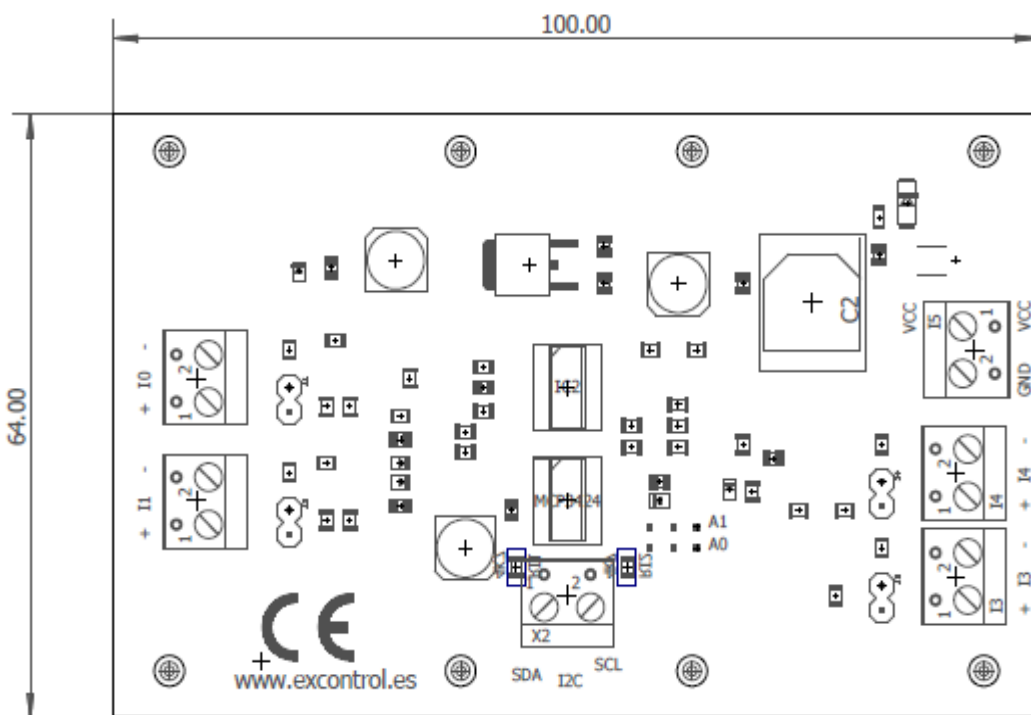
## 1 GENERAL DESCRIPTION

ExControl I2C Analog Input is an industrial extension board, The device can be connected voltage and current sources. It has 4 channels. Each channel accepts 0-10v, 0-20mA, 4-20mA.

It is compatible with with i2c bus devices.

DESCRIPTION	QUANTITY	
Maximum Current	300mA max	Fuse protection and Polarity protection
Size	65x100mm	
Analog Inputs	4	<ul style="list-style-type: none"><li>• 0-10v</li><li>• 4-20mA</li></ul>
I2C bus voltage	5v	Board designed for 5v, for five volts use the correct reference

## 2 MECHANICAL DIMENSIONS.



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## 3 PRECAUTIONS .

### 3.1 COMPATIBLE DEVICES.

This board works with standard 5v I2C Bus, arduino boards and other microcontroller are compatible.

### 3.2 INTENDED AUDIENCE.

This manual is intended for technicians, which must have knowledge on electrical systems..

### 3.3 GENERAL PRECAUTIONS..

The user must operate this board according to the performance specifications described in this manual.

ExControl products are not authorized for use in safety-critical applications where a failure of the product would reasonably be expected to cause severe personal injury or death.

Safety-critical applications include, without limitation, life support devices and systems, equipment or systems for the operation of nuclear facilities and weapons systems.

ExControl products are neither designed nor intended for use in military or aerospace applications or environments, nor for automotive applications or the automotive environment.

The Customer acknowledges and agrees that any such use of ExControl products is solely at the Customer's risk, and that the Customer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

#### **Warnings:**

Ignoring the directive may damage the controller.

Improper use of this product may severely damage the controller.

Refer to the controller's User Guide regarding wiring considerations.

Before using this product, it is the responsibility of the user to read the product's User Guide and all accompanying documentation.

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## 4 TECHNICAL SPECIFICATIONS.

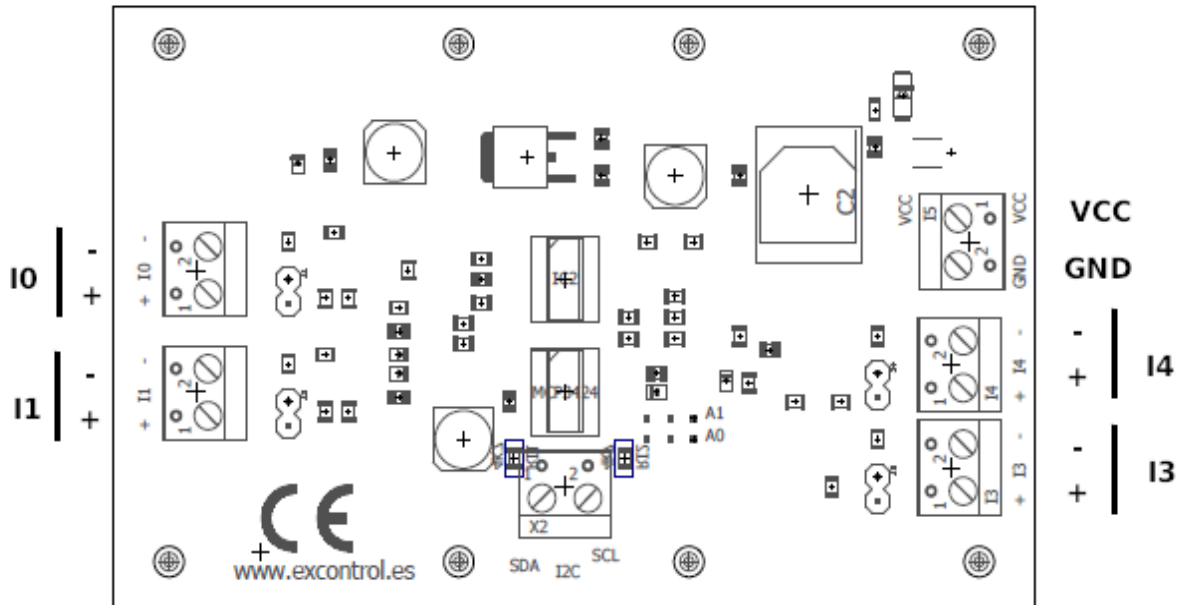
### 4.1 GENERAL SPECIFICATIONS.

DESCRIPTION	
Power supply	12V VCC
Operating voltage range	9 to 15 VCC
Power consumption	300mA max.
Shock resistance	75m/s <sup>2</sup> in the X, Y and Z direction 2 times
Ambient temperature (operating)	0° to 48°C
Ambient humidity (operating)	10% to 75% (no condensation)
Ambient environment (operating)	With no corrosive gas.
Ambient temperature (storage)	- 20° to 60°C
Power supply holding time	2ms min.
Weight	40g max.

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## 5 WIRING.

### 5.1 DEVICE PINOUT.



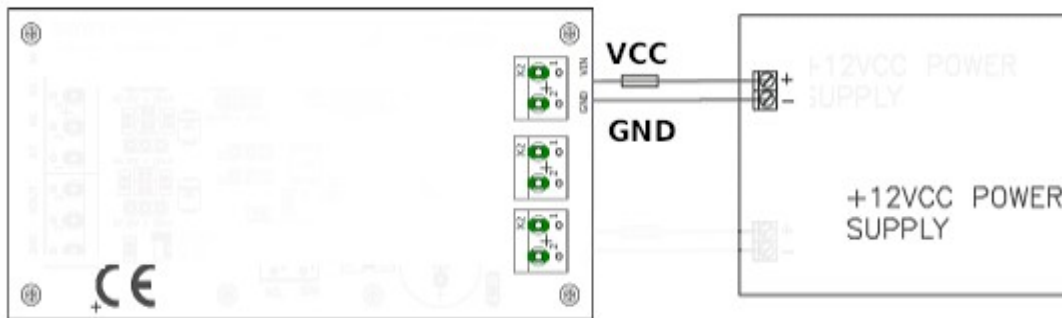
DESCRIPTION	FUNCTION
I0	Analog input 0
I1	Analog input 1
I2	Analog input 2
I3	Analog input 3
I4	Analog input 4
VCC	Power supply Positive
GND	Power supply GND.

## 5.2 HOW TO CONNECT TO POWER SUPPLY..

The ExControl i2c extension card is powered by 12Vdc power supply ..

IMPORTANT, make sure that the power does not exceed 15 VDC.

Connect the power supply according to the following image.

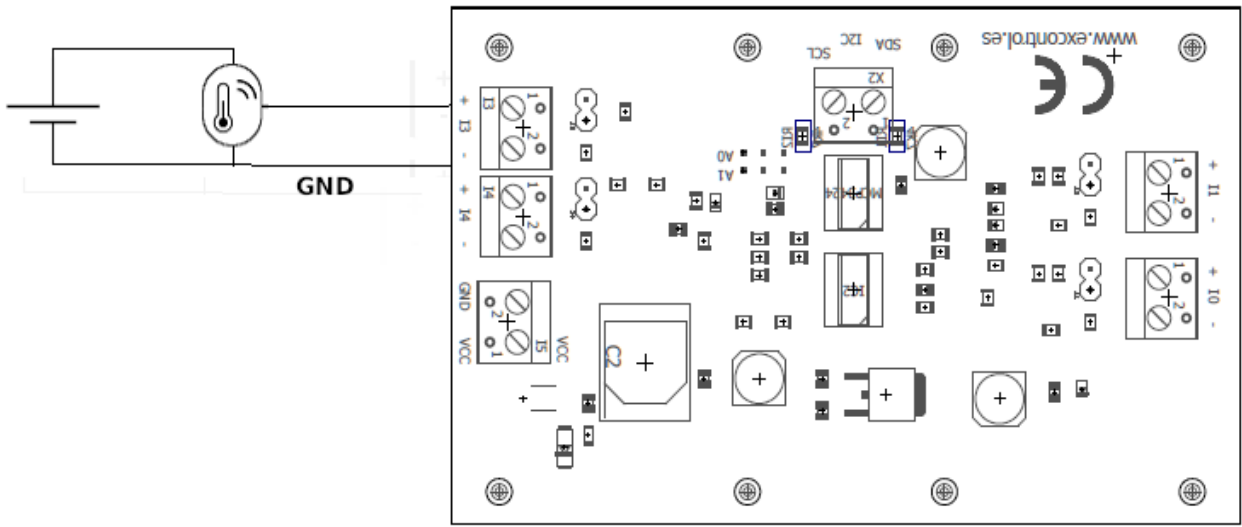




### 5.3 HOW TO CONNECT THE ANALOG INPUTS.

The card has independent operating modes for each input, which you can see in the following list. .

- 0-10v
- 0-20mA



## 6 I2C BUS:

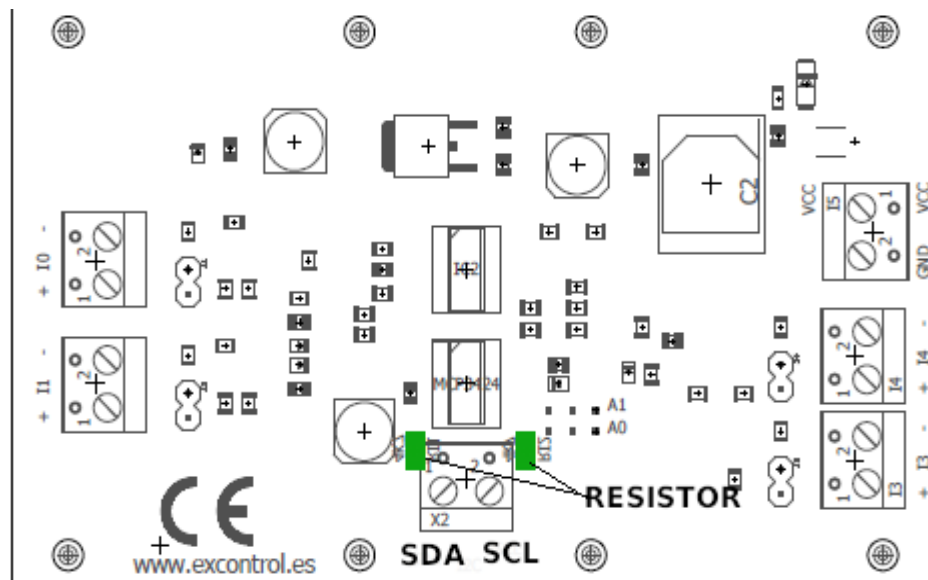
### 6.1 I2C BUS GENERAL SPECIFICATIONS.

This allows communication with the device, the SDA (data line) and SCL (clock line) are screw terminals.

The **i2c voltage level is 5v.**

The board has not pullup resistor, but can be installed on the bottom of the device.

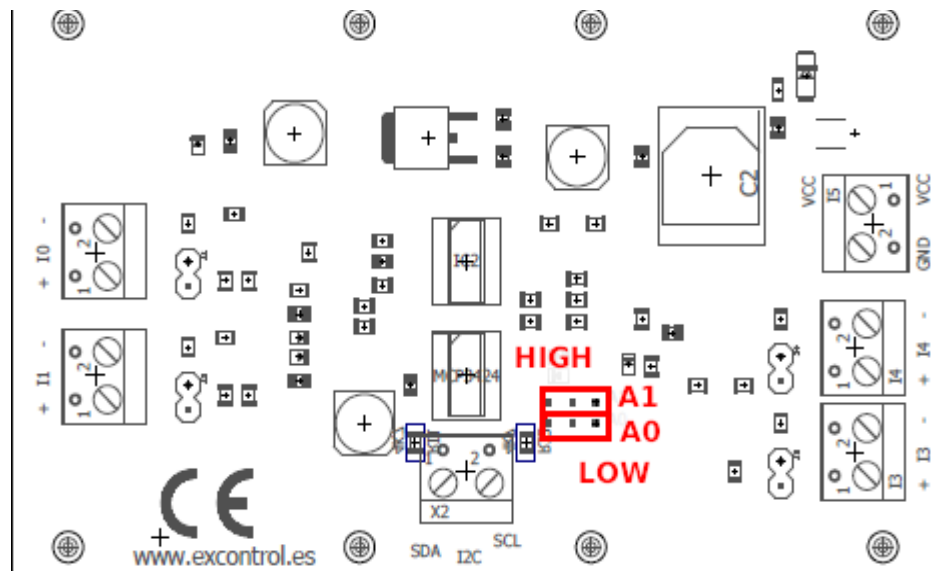
The following image shows where you can install the pull up resistors, the resistors are included in the package.



## 6.2 I2C ADDRESSING:

To device address use the addressing jumpers (A0 - A1).

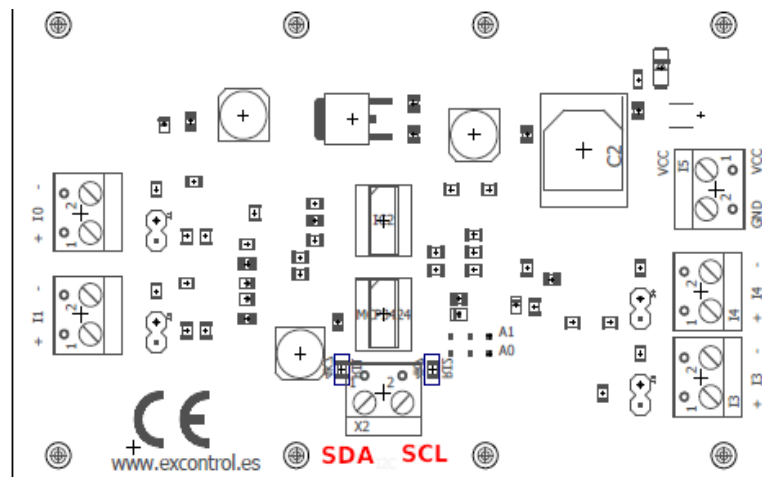
Use the following image as a reference



A0	A1	I2C ADDRESS
LOW	LOW	0x68
LOW	HIGH	0x6A
HIGH	LOW	0x6C
HIGH	HIGH	0x6E

### 6.3 BUS WIRING:

To easily connect the device has screw connection terminals, you can identify them in the following image ..



## 7 SELECTING THE MOST APPROPRIATE OPERATING MODE:

Each analog input has 2 modes of operation, these are the modes.

- 0-20mA.
- 0-10v

Next to the connection terminal of each input there is a configuration jumper, if the jumper is installed the input works in 0-20mA mode, if it is removed it works in 0-10v mode.

In the following image you can see the connection jumper.

