



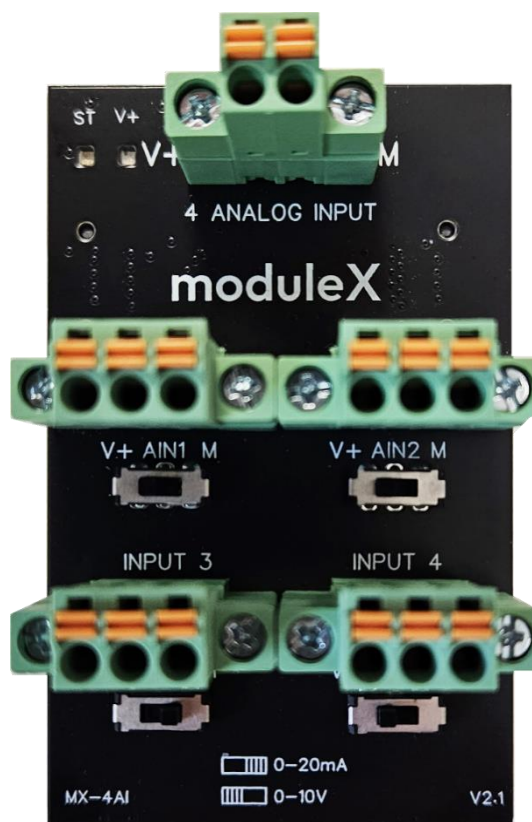
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## TECHNICAL DATASHEET

### MX-4AI

4 analog inputs for moduleX™ I/O cluster

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## Summary

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## TECHNICAL FEATURES

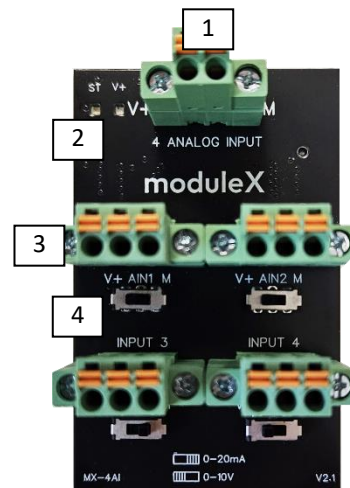
<b>Dimensions</b>	45 x 72 x 40 mm
<b>Weight</b>	33 g
<b>IP protection grade</b>	IP20
<b>Operating temperature</b>	0 to +50°
<b>Operating humidity</b>	Max 95%, no condensation
<b>Logic power supply</b>	5 VDC 0.03A max via xbus
<b>Auxiliary power supply<sup>1</sup></b>	24 VDC +/- 10% 2A max. Galvanically isolated.
<b>Communication protocol</b>	Xbus
<b>Connection</b>	Pluggable push-in terminal block with screw lock. AWG(mm2): 24-16(0.2-1.5)
<b>Configuration</b>	Automatic configuration through xbus
<b>Boot up time</b>	Logic: 100msec, Aux power: 50 msec
<b>Input signal filter</b>	10 msec
<b>Channel type</b>	Voltage/current selectable via dip switch
<b>Measuring range</b>	0..10V / 0..20mA
<b>ADC resolution</b>	15 bit
<b>Measure values range</b>	0..32768
<b>Channel protection</b>	Overvoltage max. 25V

### Note:

1. Auxiliary power supply needed for analog input read.

### Components overview

1. Power supply connector
2. Leds: status, auxiliary power supply
3. Channel terminal block (V+ AIN M)
4. Dip switch channel type selection (voltage/current)



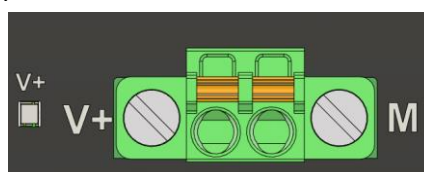
## MOUNTING

The device is designed for mounting in a DIN rail enclosure with a height of 72mm. Different installations are not allowed. The module is typically delivered as part of an I/O cluster, already housed in a DIN enclosure.

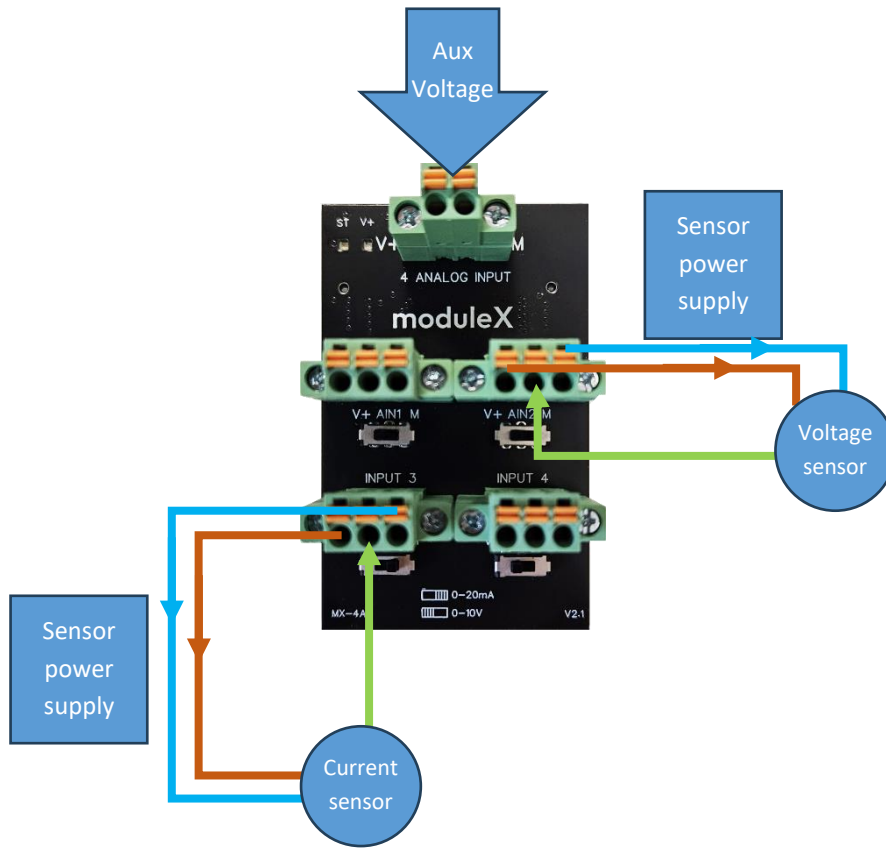
## POWER SUPPLY

It is recommended to power the device at 24 VDC +/- 10%, the maximum consumption is 2 amps that depends on power consumption of connected devices. The device is protected against reverse polarity except of distribution terminal blocks that are **not protected**. The V+ led indicates the presence of auxiliary power.

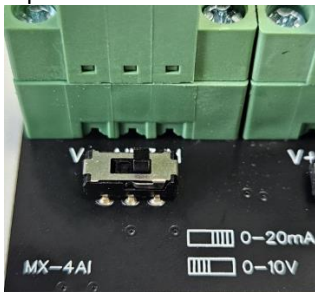
The secondary power supply is essential for the proper functioning of signal reading, as it constitutes the voltage domain to which the input signals refer.



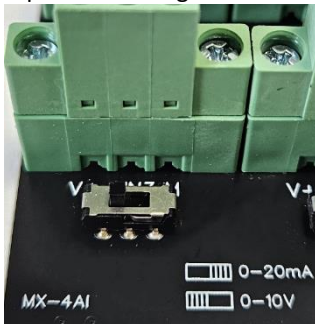
**CONFIGURATION EXAMPLE**



Dip switch current mode



Dip switch voltage mode



## LED CODES

The 'ST' status LED serves to indicate the board's status, with the capability to illuminate in three distinct colors:

- **Green:** The module is in operating mode, 3Hz blink indicate the data exchange on xbus
- **Yellow:** The module is in 'init' mode, awaiting initialization from the main module.
- **Red:** The board reports the error code by flashing the led at a frequency of 5 Hz, the number of flashes corresponds to an error.

### Error codes

In case of malfunction, the board reports the error code by flashing the "RUN" LED in red. The LED flashes at a frequency of 5 Hz, and the number of flashes corresponds to an error. The signaling sequence is repeated twice to allow the user for proper detection. Below is the error table.

Error ID	Description	Module type	
1	Devices scan bad CRC	Scan request has invalid CRC	
2	No space in I/O cluster	There is no more space into process buffer. There are more than 16 modules into I/O cluster	Remove extra modules
3	Bad setup frame	Invalid setup frame data	
4	Run data bad CRC	Operating frame has invalid CRC	Check connection between modules

## REVISION

REVISION		
N.	Description	Date
0	First release	08/02/2024

This document serves as a technical datasheet; please refer to the comprehensive moduleX™ solution manual for additional details and information.