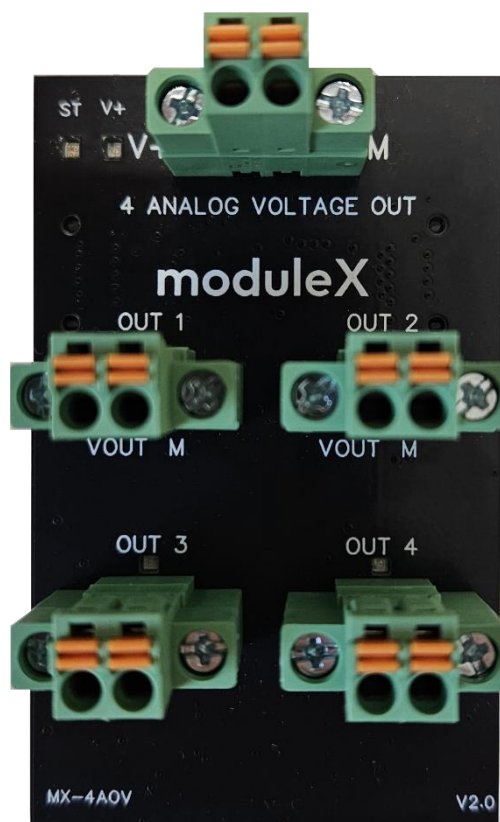




TECHNICAL DATASHEET

MX-4AI

4 analog voltage outputs for moduleX™ I/O cluster



Summary

<i>TECHNICAL FEATURES</i>	3
<i>MOUNTING</i>	3
<i>POWER SUPPLY</i>	3
<i>CONFIGURATION EXAMPLE</i>	4
<i>LED CODES</i>	5
Error codes.....	5
<i>REVISION</i>	5

TECHNICAL FEATURES

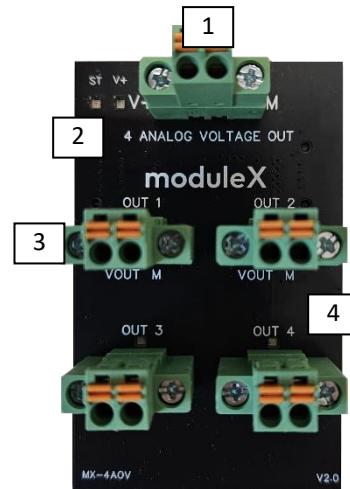
Dimensions	45 x 72 x 40 mm
Weight	30 g
IP protection grade	IP20
Operating temperature	0 to +50°
Operating humidity	Max 95%, no condensation
Logic power supply	5 VDC 0.03A max via xbus
Auxiliary power supply¹	24 VDC +/- 10% 0.5A max. Galvanically isolated.
Communication protocol	Xbus
Connection	Pluggable push-in terminal block with screw lock. AWG(mm2): 24-16(0.2-1.5)
Configuration	Automatic configuration through xbus
Boot up time	Logic: 100msec, Aux power: 50 msec
Channel type	Voltage
Output range	0..10V max. 25mA/channel
DAC resolution	12 bit
Measure values range	0..4096
Channel response time	20 msec
Channel protection	Short-circuit, current limitation.
Channel status led	When output is operative led turns on. VOUT > 0

Note:

1. Auxiliary power supply needed for analog power outputs.

Components overview

1. Power supply connector
2. Leds: status, auxiliary power supply
3. Channel terminal block (VOUT M)
4. Led channel status



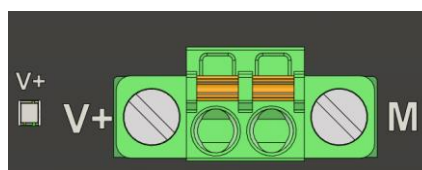
MOUNTING

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.

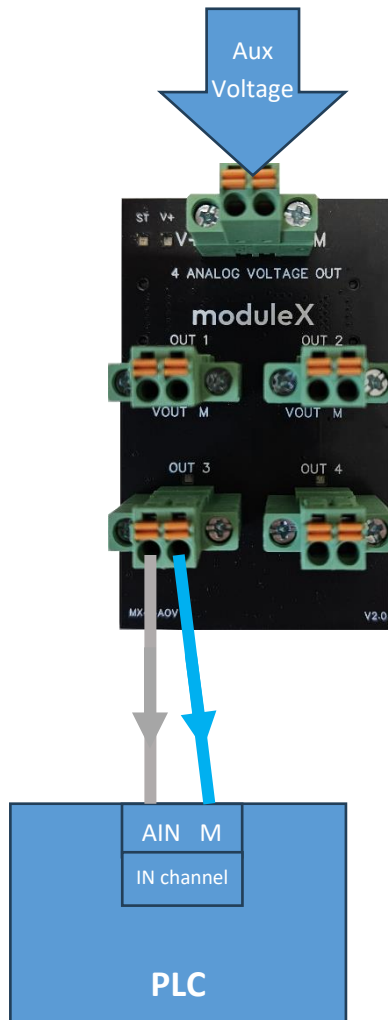
POWER SUPPLY

It is recommended to power the device at 24 VDC +/- 10%, the maximum consumption is 0.5 amps. The device is protected against reverse polarity, output channels are protected against short circuit and overcurrent. The V+ led indicates the presence of auxiliary power.

The secondary power supply is essential for the proper functioning of DAC modules that generates output voltage signals.



CONFIGURATION EXAMPLE



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.