RED SMART
research for embedded devices

The Electronic Brand of

TECHNICAL DATASHEET

MX-8DI

8 digital inputs for moduleX™ I/O cluster
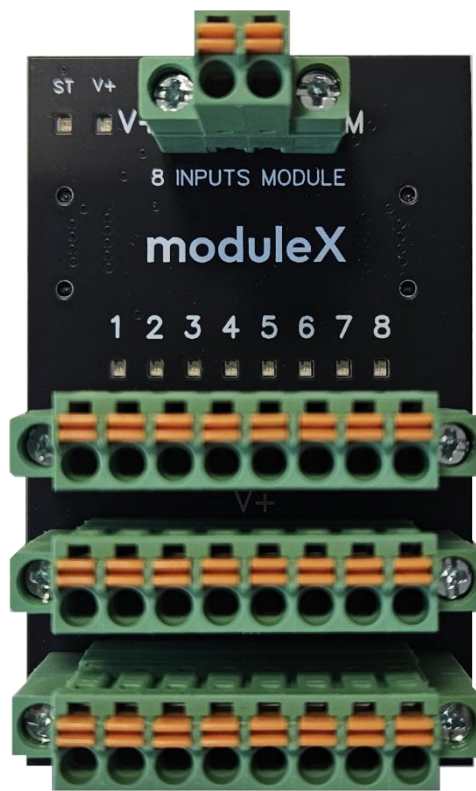
Summary

TECHNICAL FEATURES

Dimensions	45 x 72 x 40 mm
Weight	40 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 supply[1]	24 VDC +/- 10% 2A 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: 10msec
Input signal filter	3 msec
"0" signal voltage	0..5V
"1" signal voltage	11..30V
Input current	3 mA

Note:

1. Auxiliary power supply needed for digital input reading.

Components overview

1. Power supply connector
2. Leds: status, auxiliary power supply
3. Leds digital inputs feedback
4. Digital input terminal block
5. Voltage distribution aux. power - positive
6. Voltage distribution aux. power - negative
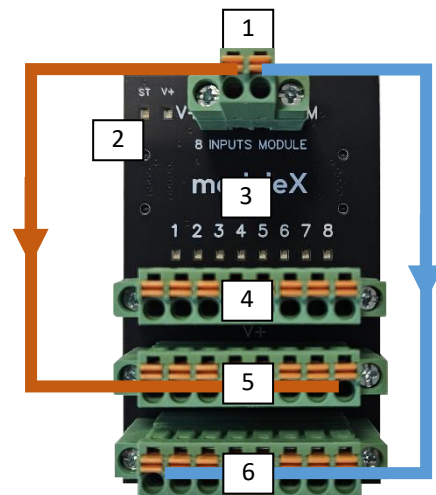
MOUNTING

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 connected devices on voltage distribution terminal blocks. The device is protected against reverse polarity, distribution terminal blocks are **not protected**. The V+ led indicates the presence of auxiliary power.

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

CONFIGURATION EXAMPLE

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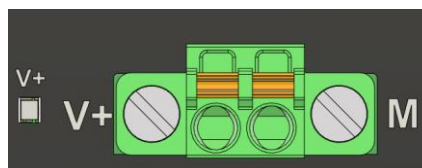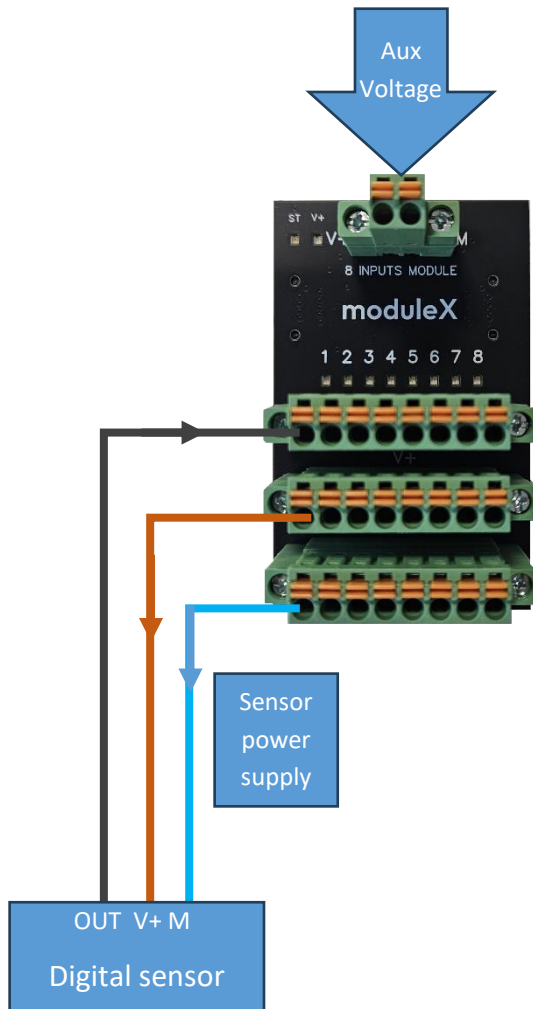
LED CODES

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.