

Digital I/O Module v2 Datasheet

Contents

[Overview](#)

[Features](#)

[Programming Options](#)

[Technical Specifications](#)

[General Specifications](#)

[Performance and Other Specifications](#)

[Physical Interface](#)

[CTRL IN Male M12 connector pinout](#)

[CTRL OUT Female M12 connector pinout](#)

[IN Female M12 connector pinout](#)

[OUT Male M12 connector pinout](#)

[Digital I/O module v2 address configurations](#)

[Valid address configurations](#)



Overview

The Digital I/O Module v2, CE-MD-001-0000__2, extends MachineMotion 2's functionality with 4 (NPN or PNP) inputs and 4 PNP outputs. This plug-and-play module only requires a single connection to the MachineMotion 2 controller. Compatible modules, such as the Power Switch (CE-MD-005-0000) & additional Digital I/O Module v2 modules can also be daisy chained to each other, making it possible to connect up to eight modules per MachineMotion 2 controller.

Features

- 4 Inputs compatible with NPN and PNP sensors
- 4 PNP Outputs
- Connects (daisy chain) with compatible modules
- Configurable address
- Plug-and-play access from the Control Center, MachineLogic, and Python API

Programming Options

Program the Digital I/O Module v2 using [MachineLogic] or the [Python API]. It can also be accessed from the Control Center.

Technical Specifications

General Specifications

Part Number	CE-MD-001-0000__2
Certifications	<ul style="list-style-type: none">• EN 61000-6-2 (EMC Directive)• EN 55011:2016 (EMC Directive)• EN 63000:2016 (RoHS Directive)
Weight	1.5 kg
Dimensions	60 x 88 x 150 mm
Material	<ul style="list-style-type: none">• Bottom enclosure: ABS• Top enclosure: Aluminum
Operating Temperature	0 to 40°C
Included in the Box	<ul style="list-style-type: none">• 1x Digital I/O Module v2 (CE-MD-001-0001__2)• 1x Control Device Extension Cable, 5m (CE-CA-022-5000)• 1x Module Termination Jumper (CE-JP-001-0001)• 2x M8 Drop-in Spring Loaded T-Nut (HW-FN-002-0001)• 2x M8 x 18mm Screw (HW-FN-003-0018)

Performance and Other Specifications

Specification	Value
Digital input impedance	5k Ω
Digital input active NPN voltage range	< 6V
Digital input active PNP voltage range	> 18V
Digital output maximum current	0.1A
Maximum Power consumption	12W
Latency (with 2 modules connected to the MM2 controller)	125ms max.

Latency has been obtained by connecting a digital output port to a digital input port, and by measuring the delay between requesting the change of output state and reading the change of input state.

Physical Interface



Digital I/O Module v2 Physical Interface

CTRL IN Male M12 connector pinout

Pin	Description
Pin 1	24 VDC (input)
Pin 2	Ground (input)
Pin 3	RS-485 A (input)
Pin 4	RS-485 B (input)
Pin 5	Reserved
Pin 6	Reserved
Pin 7	N/A
Pin 8	Reserved

Pin	Description
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CTRL OUT Female M12 connector pinout

Pin	Description
Pin 1	24 VDC (output)
Pin 2	Ground (output)
Pin 3	RS-485 A (output)
Pin 4	RS-485 B (output)
Pin 5	Reserved
Pin 6	Reserved
Pin 7	N/A
Pin 8	Reserved

IN Female M12 connector pinout

Pin	Description
Pin 1	24 VDC
Pin 2	Input
Pin 3	Ground
Pin 4	NC

OUT Male M12 connector pinout

Pin	Description
Pin 1	24 VDC
Pin 2	Output (100mA max.)
Pin 3	Ground
Pin 4	NC

Digital I/O module v2 address configurations

Below are the valid address configurations that can be used for the Digital I/O module v2

Valid address configurations

Switches								Module Address
Device ID				Device Type				
1	2	3	4	5	6	7	8	
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 1
ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 2
OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 3
ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 4
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 5
ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 6
OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 7
ON	ON	ON	OFF	OFF	OFF	OFF	OFF	Digital I/O Module 8

Table 1: Address configurations.