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Auxiliary Control Components

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Digital I/O Module Datasheet



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. *For details on Vention's Digital IO Module V1, refer to the 'Documentation for Previous Product Versions' section at the bottom of this page.*

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

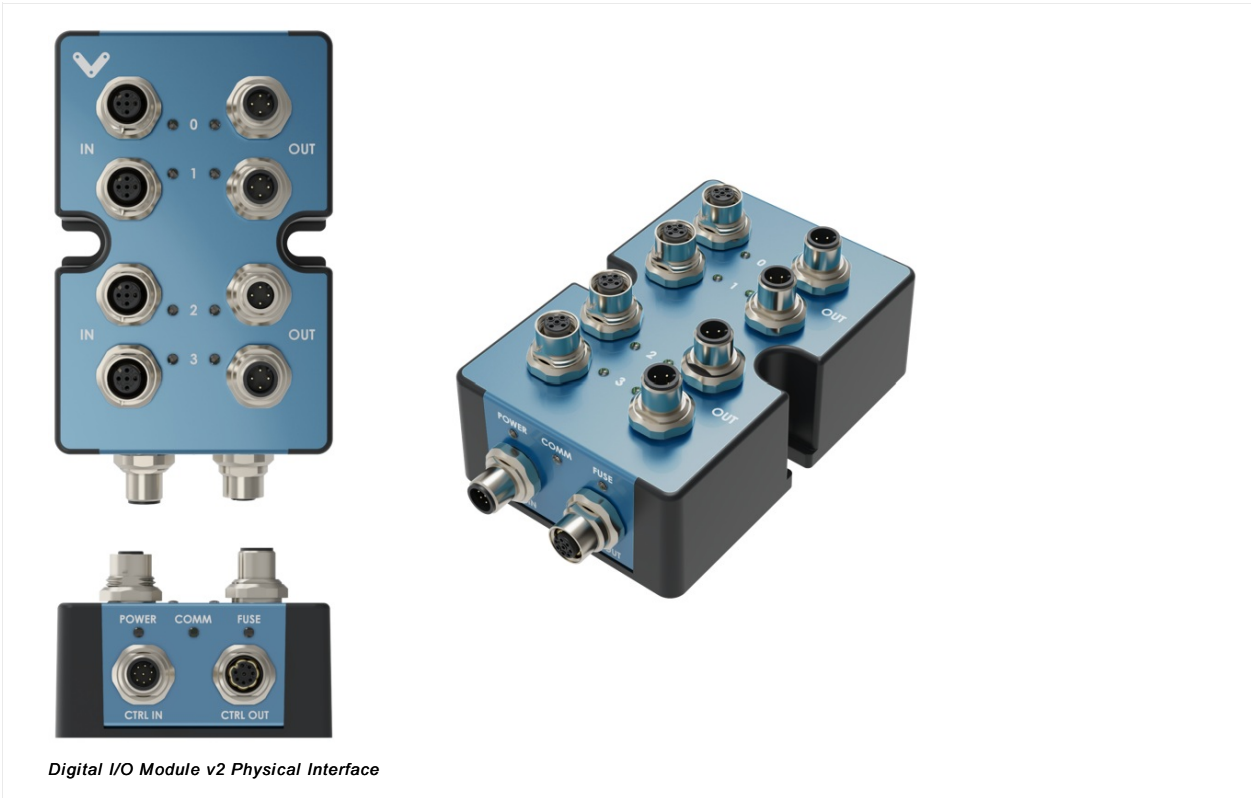
Part Number	CE-MD-001-0000__2
Certifications	• EN 61000-6-2 (EMC Directive) • EN 55011:2016 (EMC Directive) • EN 63000:2016 (RoHS Directive)
Weight	1.5 kg
Dimensions	60 x 88 x 150 mm
Material	• Bottom enclosure: ABS • Top enclosure: Aluminum
Operating Temperature	0 to 40°C
Included in the Box	• 1x Digital 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	5kΩ
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



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

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.

Documentation for Previous Product Versions

Digital IO Module v1.0	^
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