

# Quick Start Guide

## HMC7-MIO-03



### Description:

HMC7-MIO-03 I/O expansion module with 2 analog inputs (0-10V, -10 to +10V, 0-20mA, or 4-20mA) and 2 analog outputs (0-10V, 0-20mA, or 4-20mA).

### Contents:

- 1 HMC7-MIO-03 (in plastic bag)
- Quick Start Guide

Programming software (MAPware-7000), cables, and power supply purchased separately.

### Specifications:

Power: 3.9VDC from HMC7000 base  
 Analog Inputs: 2 inputs (0-10V, -10 to +10V, 0-20mA, or 4-20mA)

Resolution: 12 bit

### Voltage Mode:

Input Range: -10V to +10V, 0-10V  
 Value of LSB: For 0-10V: 2.44mV  
 For ±10V: 4.88mV

### Input Impedance:

Accuracy: 200KΩ  
 At 25°C- 0.1% of full scale  
 Overall Accuracy for temp range -25°C to 55°C - 0.3% of full scale

### Frequency Limit:

3.5KHz  
 Behavior upon Sensor failure: Input goes to 0, as if no input is connected.

### Current Mode:

Input Range: 4mA-20mA, 0mA-20mA  
 Value of LSB: 3.906µA  
 Input Impedance: 120Ω  
 Accuracy: At 25°C- 0.2% of full scale  
 Overall Accuracy for temp range -25°C to 55°C - 0.8% of full scale

Analog Outputs: 2 outputs (0-10V, 0-20mA, or 4-20mA)

Resolution: 12 bit

### Voltage Mode:

Output Range: 0-10V  
 Value of LSB: 2.44mV  
 Output Load: 1000Ω minimum

Accuracy: At 25°C- 0.5% of full scale  
 Overall Accuracy for temp range -25°C to 55°C - ±10ppm/°C of full scale

### Current Mode:

Output Range: 4mA-20mA  
 Value of LSB: 3.906µA  
 Output Load: 500Ω maximum  
 Accuracy: At 25°C- 0.2% of full scale  
 Overall Accuracy for temp range -25°C to 55°C - 0.8% of full scale

### Current Mode:

Output Range: 0mA-20mA  
 Value of LSB: 4.8µA  
 Output Load: 500Ω maximum  
 Accuracy: At 25°C- 0.13% of full scale  
 Overall Accuracy for temp range -25°C to 55°C - ±10ppm/°C of full scale

### Input Power Supply

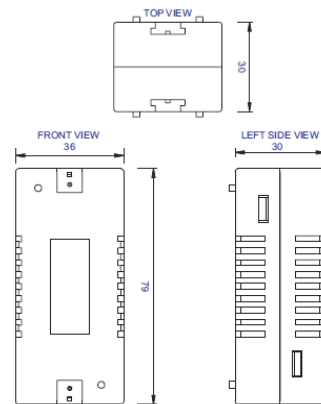
#### (Required):

Input Voltage: 24VDC  
 Input Current: 50mA

### Connection Method: Removable terminals (3.81 mm pitch)

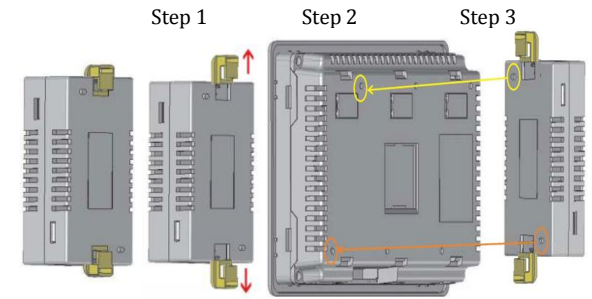
Operating Temp: 0 to 55°C  
 Humidity: 10% to 90% (non-condensing)  
 Dimensions: 3.11 x 1.18 x 1.42 inches  
 [79x30x36mm]

### Dimensional Details:



### Mounting Module to HMC7000:

The HMC7 I/O module must be mounted onto the back of a HMC7000 Series unit using one of the HMC expansion ports. When locating equipment behind the HMC7000 ensure that AC power wiring, PLC output modules, contactors, starters, relay and any other source of electrical interference are located away from the HMC7000. Make sure that variable speed drives and switching power supplies are located away from the unit.



Step 1: Pull the two white lock connectors out from the center of the module.

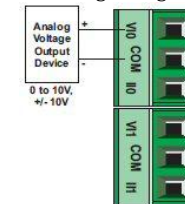
Step 2: Place the module onto the HMC7000 expansion port so that the I/O module interconnect plug can attach to the HMC7000 socket. *Note: remove the protective tab on the HMC7000 expansion port to expose the socket.*

Step 3: Push down the lock connectors to safely secure the I/O Expansion module.

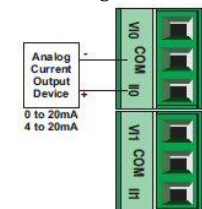
### Wiring I/O Expansion Modules:

The HMC7 I/O module has green block terminals that are used to wire the module to the digital input devices (i.e. switches, contacts, etc). The block terminals can be physically removed from the module to facilitate connection (18 gauge wire recommended). *Note: A 3/32" flat blade screwdriver should be used to tighten the screws of the terminal block.*

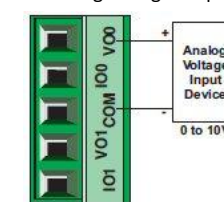
### Analog voltage inputs:



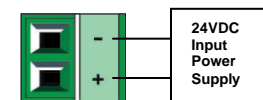
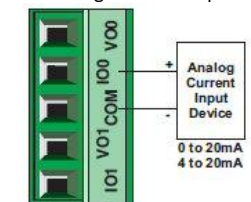
### Analog current inputs:



### Analog voltage outputs:



### Analog current outputs:



**Configuration:**

Use MAPware-7000 to assign input (XW), output (YW), and configuration (MW) memory addresses to the module. These addresses are created according to the slot location of the module, where **nn** refers to the slot number:

Register	Description	Access
XWnn00	Input Channel 1 Data	Read Only
XWnn01	Input Channel 2 Data	Read Only
YWnn00	Output Channel 1 Data	Read/Write
YWnn01	Output Channel 2 Data	Read/Write
MWnn00	Input Channel 1 Configuration Register	Read/Write
MWnn01	Input Channel 2 Configuration Register	Read/Write
MWnn02	Output Channel 1 Configuration Register	Read/Write
MWnn03	Output Channel 2 Configuration Register	Read/Write

Reference the table below when configuring each Input/Output Configuration Register (MWnn00-MWnn03):

Input Channel Signal Type	Value
mA (4-20mA)	0
Voltage (0-10V)	1
Voltage (-10 to +10V)	2
mA (0-20mA)	3

Output Channel Signal Type	Value
mA (4-20mA)	0
Voltage (0-10V)	1
N/A	2
mA (0-20mA)	3

**Additional Resources:**

Detailed instructions on the operation and installation of the HMC7000 Series are available in the HMC7000 Programming Manual that is included with the MAPware-7000 configuration software. MAPware-7000 also includes help files that provide detailed information on using the configuration software.

**⚠ WARNING: DO NOT REMOVE OR REPLACE WHILE CIRCUIT IS LIVE UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS OF FLAMMABLE SUBSTANCES.** This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous locations only.

**⚠ WARNING – EXPLOSION HAZARD –** Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.

**⚠ WARNING – EXPLOSION HAZARD -** Substitution of components may impair suitability for Class I, Division 2.

It is recommended that the user periodically inspect the sealed devices used, check for any degradation of properties, and replace as necessary.

**For Technical Support:**

Please contact Maple Systems if you have any questions regarding this product. We ask that you provide us with the unit serial number and firmware revision number written on the product label of the unit.

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