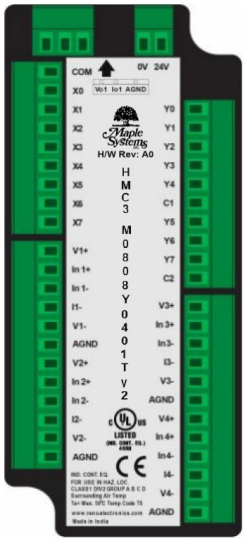
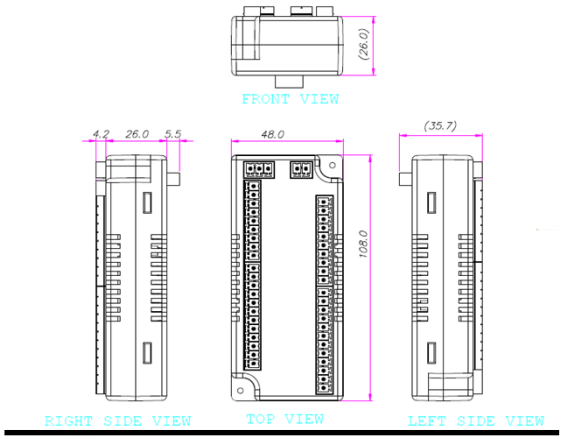
HMC3-M0808Y0401T-V2
Quick Start Guide



HMC3-M0808Y0401T-V2: 8 Bi-directional type inputs, 2 high speed. 8 Digital outputs - 2 PNP type transistor outputs, 2 PWM and 6 Relay type outputs. 4 Universal inputs (16-bit resolution) & 1 Analog output (12-bit resolution)

For more information, please refer to the MAPware-7000 Programming Manual, available in the software help section and/or you can download from the Maple Systems website.

Dimension Details:



For More Information, visit
https:\\www.maplesystems.com

SPECIFICATIONS

Power Supply	
Voltage Rating	24VDC (±15%)
Power Rating	Input/channel: 24 VDC, 5mA typical; Output/Channel: 250mA @ 24VDC for PNP, 2A @24VDC & 230VAC for Relay
Isolation	Optical Isolation for all I/O points. High isolation voltage (BV= Greater than 1.5kV)
Local I/O Specification	
Number of Inputs	8 Inputs Bi-directional Type
ON Voltage	Min.: 15VDC, Max.: 30VDC
OFF Voltage	Min.: -3VDC, Max.: 3VDC
Nominal Input Voltage	24VDC
Nominal Input Current	5mA typical
Input Response Time	ON: 10msec, OFF: 10msec
Input Impedance	Greater than 4.8kΩ
High Speed Inputs	2 pairs, X0-X1, X2-X3
Max. i/p frequency	200kHz
Max. Input count	42949672965
Number of Outputs	8 Digital outputs - 2 PNP type transistor outputs, 2 PWM and 6 Relay type outputs
Nominal Output Voltage	24VDC
Nominal Output Current	250mA @ 24VDC for PNP, 2A @24VDC & 230VAC for Relay
Output Response Time	ON: 10msec, OFF: 10msec (for Relay) ON/OFF: 20 to 30 µs (for transistor)
High Speed Outputs (PWM)	2, Y0 and Y1
Max. o/p frequency	200kHz
Frequency step	1Hz
PWM duty cycle	0 to 100%
Duty cycle step	1%
Analog I/O Specification	
Analog Input Total Channels	4 Universal Input channels (16 bit resolution)
Input Type	0-20mA, 4-20mA & 0-10VDC, 0-5VDC
mV Input	0-50mV, 0-100mV
RTD Input*	PT100 (α1, α2), PT1000
Thermocouple input*	J, K type
Analog Output Total Channels	1 Output channels (12 bit resolution)
Output type	0-20mA, 4-20mA and 0-10VDC, 0-5VDC
Accuracy	± 0.2% of full scale @ 25°C & ± 0.5% of full scale over temperature range

[Note: HMC3-V2 I/O Module Series are only compatible with HMC2000/ HMC4000 Series Base Model]

SPECIFICATIONS

Environment & Approvals	
Operating Temperature**	0 to 60°C
Storage Temperature	-20 to 85°C
Humidity	10 to 90% (Non-Condensing)
Short Circuit Protection	Yes
Product Dimensions	48mm x 108mm x 41mm (W x H x D)
Approvals	CE, UL

***Operating temperature: For UL 0 to 50°C*

PANEL MOUNTING

Mounting with base models:

With the expansions, while unpacking the unit, user will find two screws already attached with base bottom case. Fix the expansion with the HMI as shown below with these screws. Fix the Expansion connector with the expansion female connector given on base HMI. Apply torque 0.1Nm while fixing with base unit.

Mounting with 4.3" base model:



Mounting with 7" and 10.1" base model:

For 7" and 10.1" HMI models, the procedure of mounting expansions is same. Only instead of horizontal mounting, expansions will mount in vertical directions.

Hence, accordingly these bases are having facility to add 3 and 5 expansions at a time respectively.

Mounting with 7" base model:



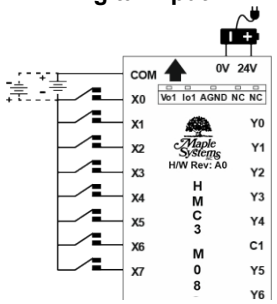
Mounting with 10.1" base model:



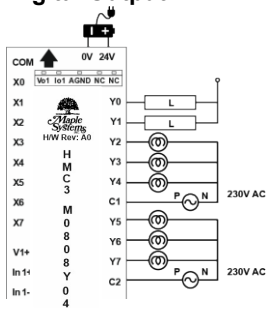
Note: All Pictures shown are for illustration purposes only. Actual product size may vary.

WIRING DIGRAM

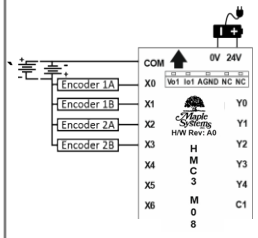
Digital Input



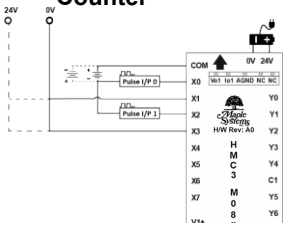
Digital Output



HSC Quadrature

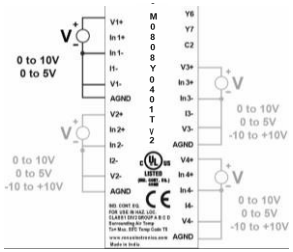


HSC Single Phase Counter*

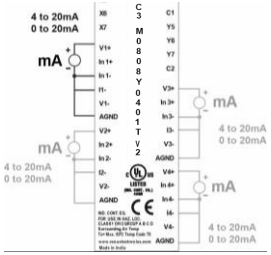


Note: *X1 & X3 are direction pins

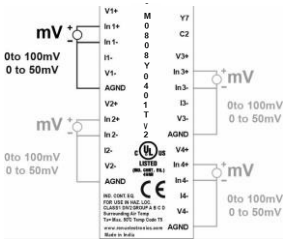
Analog Input Voltage



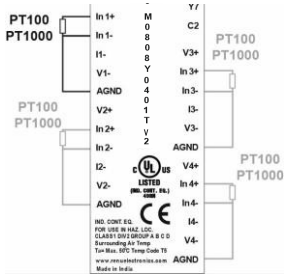
Analog Input Current



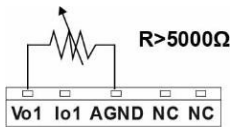
mV / Thermocouple



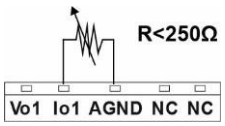
RTD



Analog Output Voltage



Analog Output Current



DATA FORMAT

Channel Type Selection Values Table

Use the following values in the Input and output channel type. Select register to configure the corresponding channel to particular type.

Input Channel Type	Value	Input Channel Type	Value
Voltage: 0 to 10V	1	PT100 Alpha1	7
Voltage: 0 to 5V	6	PT100 Alpha 2	8
Voltage: 0 to 50mV	5	PT1000	9
Voltage: 0 to 100mV	4	J Type	14
Current: 4 to 20mA	2	K Type	15
Current: 0 to 20mA	3		

Output Channel Type	Value
Voltage: 0 to 5V	1
Voltage: 0 to 10V	2
Current: 4 to 20mA	5
Current: 0 to 20mA	6

Configuration Registers for Analog Input

CH No.	Configuration Register	Input Register	Input Error Register	Temp / Linear
CH-0	MW0160	XW0111	MW0169	Universal
CH-1	MW0161	XW0113	MW0169	Universal
CH-2	MW0162	XW0115	MW0169	Universal
CH-3	MW0163	XW0117	MW0169	Universal

Configuration Registers for Analog Output

CH No.	Configuration Register	Current Register	Voltage Register
CH-0	MW0168	YW0102	YW0101

Data Output Format for Analog Input

For, Voltage Input (0 to 10V)

Voltage input	Count
0	0
2.5V	16383
5V	32767
7.5V	49150
10V	65535

Voltage Input (0 to 5V)

Voltage input	Count
0	0
1.5V	19660
2.5V	32767
3.75V	49150
5V	65535

For, Current Input (0 to 20mA)

Current input	Count
0	0
5mA	16383
10mA	32767
15mA	49150
20mA	65535

Current Input (4 to 20mA)

Current input	Count
4mA	0
8mA	16383
12mA	32767
16mA	49150
20mA	65535

RTD and TC Range Table

Input Type	Temp. Range	Input Type	Temp. Range
Alpha1	-200 to 850° C	J Type	-210 to 1200° C
Alpha2	-100 to 457° C	K Type	-200 to 1373° C
PT1000	-200 to 850° C		

Note:

- RTD PT100 Alpha1 constant= 0.00385, RTD PT100 Alpha2 constant= 0.003926.
- Accuracy for Voltage, Current, and RTD: 0.2% of full scale @25° C.
- Accuracy for T/C 0.5% of full scale @25° C

Data Output Format for Analog Output

I(4 to20mA)

Current input	Count
4mA	0
8mA	1024
12mA	2057
16mA	3072
20mA	4095

I(0 to 20mA)

Current input	Count
0	0
5mA	1024
10mA	2048
15mA	3072
20mA	4095

V(0 to 10V)

Voltage Output	Count
0	0
2.5V	1024
5V	2048
7.5V	3072
10V	4095

Technical Support:

- For Technical support, please contact Maple Systems along with the unit serial number and revision number
- Also provide information about the application used. If possible, e-mail the application to Maple Systems.

REVISION HISTORY

Rev.	Description	Date
0.0	Initial Release	12/14/2023
3.0	Updated Release	4/18/2024
3.1	Updated Channel Types	6/04/2025

Maple Systems reserves the right to change or discontinue specifications and features without prior notice. To view the latest and updated datasheets/manuals please visit ***www.maplesystems.com.***