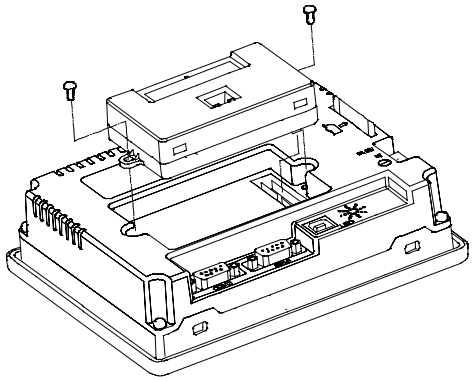
Accessories



HMIECENT Ethernet Expansion Module

Ethernet Expansion Module

The HMIECENT expansion module adds 10/100 MB Modbus TCP ability when plugged into the expansion slot of a 6", 8" or 10" **HM*i*** unit. Up load and download programs and communicate to other Modbus TCP devices. No need for patch or crossover cables as this module auto-detects and adjusts for proper operation.

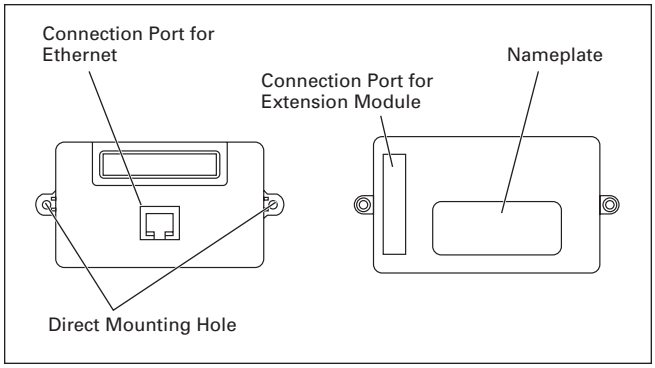


Figure 48-6. Ethernet Expansion Module — Product Outline

Table 48-10. HMICENT Function Specifications

Item	Specifications
Power Supply Voltage	DC 5V ±10%, 1A (provided by **HM*i***)
Interfaced Supported	RJ-45 with Auto MDI/MDIX
Number of Ports	1 Port
Transmission Method (Standard Conformance)	IEEE 802.3, IEEE 802.3u
Transmission Cable	Category 5e (TIA/EIA-568-A, TIA/EIA-568-B)
Transmission Speed	10/100 Mbps Auto Detection
Ethernet Protocol	ICMP, IP, TCP, UDP, DHCP, Modbus TCP
Noise Immunity	ESD (IEC 61131-2, IEC 61000-4-2): 8 kV Air Discharge EFT (IEC 61131-2, IEC 61000-4-4): Power Line: 2 kV, Communication I/O: 1 kV Damped-Oscillatory Wave: Power Line: 1 kV, Digital I/O: 1 kV RS (IEC 61131-2, IEC 61000-4-3): 26MHz ~ 1GHz, 10V/m

I/O Expansion Modules

The HMIEC0806 and HMIEC1612 are 14 and 28 discrete I/0 expansion modules providing 8 DC inputs and 6 relay outputs or 16 DC inputs and 12 relay outputs. Plug this module into the available expansion slot on the back of the **HM*i*** unit (not available on the 4" model) and it's ready to use. No need for a separate PLC controller as it is built into the unit. Combine operator interface and logic into a single platform — use HMISOFT to build both the ladder logic and OI program.

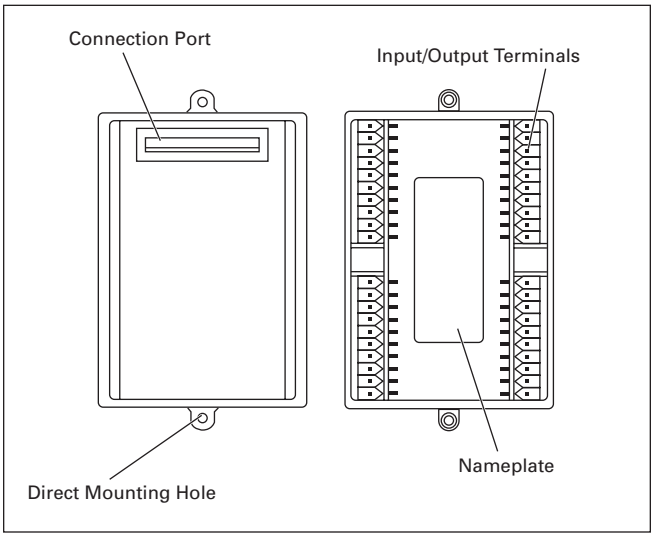


Figure 48-7. I/O Expansion Modules — Product Outline

Table 48-11. I/O Expansion Modules

Catalog Number	Input/Output				
	Power	Input Unit		Output Unit	
		Point	Type	Point	Type
HMIEC0806	5V DC supplied by **HM*i***	8	DC Type Sink or Source	6	Relay
HMIEC1612		16		12	Relay

Table 48-12. HMIEC0806/HMIEC1612 Function Specifications

Item		Specifications	Remark
Control Method		Stored program, cyclic scan system	—
I/O Processing Method		Batch I/O (refresh)	Immediate refresh command available only with I/O of the MPU
Execution Speed		Basic command (30 us)	Application command (30 ~ hundreds us)
Program Language		Commands + Ladder Diagram + SFC	Step commands included
Program Capacity		999 Steps	Built-in EEPROM
Commands		Basic commands: 32 (including the STL commands)	Application commands: 59
Step Relay (Latched)	General Step Point	128 Points	S0 ~ S127
Auxiliary Relay	General	1024 Points	M0 ~ M511, M768 ~ M999, 744 points; M1000 ~ M1279, 280 points ①
	Latched	256 Points	M512 ~ M767
Timer	Digital	64 Points	T0 ~ T63 (100 ms time base)
		63 Points	T64 ~ T126 (10 ms time base)
		1 Points	T127 (1 ms time base)
Counter	General	112 Points	C0 ~ C111
	Latched	16 Points	C112 ~ C127
	32 bit	13 Points	C235,C236,C237,C238,C241,C242, C244,C246,C247,C249,C251,C252, C254 (all of them are latched type)
Data Register	General	408 Points	D0 ~ D407
	Latched	192 Points	D408 ~ D599
Pointer	P	64 Points	P0 ~ P63
Index Register	E / F	2	E, F
Constant	Decimal K	16 bit: -32768 ~ +32767	32 bit: -2147483648 ~ +2147483647
	Hexadecimal H	16 bit: 0000 ~ FFFF	32 bit: 00000000 ~ FFFFFFFF
Self Diagnosis / Protection		I/O check, system execution timeout check, invalid command check, program check and password settings	
Monitor / Debug		Program execution time display, bit / word, device settings	

① M1000, M1001, M1002, M1003, M1020, M1021, M1022, M1067, M10068, and M1161 are the special auxiliary relays (special M).

Table 48-13. HMIEC0806/HMIEC1612 Electrical Specifications

Item / Model Name	HMIEC0806	HMIEC1612
Power Supply Voltage	5V DC, 1A (supplied by **HM*i***)	
Power Consumption	0.25W	0.5W
Noise Immunity RS CS ESD EFT Surge	 Frequency: 80MHz ~ 1GHz, 1.4GHz ~ 2.0GHz, Test level 10V/m Frequency: 0.15MHz ~ 80MHz, Test level 10V (**HM*i*** power port & I/O line) Air discharge ±8 kV ±1.5 kV (HMI power port), ± 1 kV (I/O line) ±2 kV (HMI power port)	
Ambient Temperature/Humidity	Operation: 0°C ~ 50°C (Temperature), 10 ~ 90% (Humidity), Storage: -40°C ~ 85°C (Temperature), 10 ~ 90% (Humidity)	
Vibration / Shock	IEC 61131-2 Compliant 5 Hz ≤ f < 9 Hz = Continuous: 1.75mm / Occasional: 3.5mm 9 Hz ≤ f ≤ 150 Hz = Continuous: 0.5g / Occasional: 1.0g X, Y, Z directions for 10 times	
Weight	Approx. 95.5g	Approx. 116g

Input Point Electric Specifications

Input Type	DC (SINK or SOURCE)
Input Voltage	24V DC (5mA)
Active Level	Off → On, above 16V DC On → Off, below 14.4V DC
Response Time	Approx. 10 mS

Output Point Electric Specifications

Output Type	Relay-R
Current Specifications	1.5A / 1 Point (5A/COM)
Voltage Specifications	250V AC, below 30V DC
Maximum Loading	75 VA (Inductive), 90W (Resistive)
Response Time	Approx. 10 mS
Mechanical Life	2 – 107 times (without load)
Electrical Life	100,000 times (3A 250V AC/30V DC) 6,000 times (5A 250V AC/30V DC)

Product Selection

Table 48-14. Product Selection — Software and Accessories

Description	Catalog Number	Price U.S. $
Programming Software	**HMISOFT**	
Ethernet Modbus TCP Expansion Module	**HMIECENT**	
I/O Expansion Module, 8 In/6 Out	**HMIEC0806**	
I/O Expansion Module, 16 In/12 Out	**HMIEC1216**	
6" Adapter Plate for PM1000	**APPM1HMI6**	