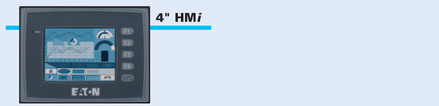
5011647602

HM02

Quick Start Guide

For **HMi** Operator Interface



HMi Operator Interfaces

Safety Information

Carefully note and observe the following safety precautions when receiving, inspecting, installing, operating, maintaining and troubleshooting. The following words, WARNING AND CAUTION, are used to mark safety precautions when using the Eaton product. Failure to observe these precautions may void the warranty!

Installation

⚠ WARNING

- Comply with instructions for installation. Otherwise it may cause equipment damage.
- Do not install the product in a location that is outside the stated specification for the device. Failure to observe this caution may result in electric shock, fire or personal injury.

Wiring

⚠ WARNING

- Connect the ground terminals to a class-3 ground (ground resistance should not exceed 100Ω). Improper grounding may result in electric shock or fire.

Operation

⚠ CAUTION

- **HMi** users should use **HMi**soft to perform editing. Using **HMi** without **HMi**soft may result in abnormal operation.

⚠ CAUTION

- Do not modify wiring during operation. Otherwise it may result in electric shock or personal injury.
- Never use a hard or pointed object to hit or strike the screen as doing this may damage the screen, causing **HMi** to work abnormally.

Maintenance and Inspection

⚠ CAUTION

- Do not touch any internal or exposed parts of the device as electrical shock may result.
- Do not remove operation panel while power is on. Otherwise electrical shock may result.
- Wait at least 10 seconds after power has been removed before touching any terminals or performing any wiring and/or inspection as an electrical charge with hazardous voltages may still remain in the unit even after power has been removed.
- Turn the power off before changing backup battery and check system settings after finishing the change (all data will be cleared after changing the battery).
- Be sure the ventilation holes are not obstructed during operation, or malfunction may result.

Wiring Method

⚠ CAUTION

- Remove the terminal block from the **HMi** before wiring.
- Insert only one wire into one terminal on the terminal block.
- If the wiring is in error, perform the wiring again with proper tools. Never use force to remove the terminals or wires, or malfunction or damage may result.

Communication Wiring

⚠ CAUTION

- Comply with communication wiring specification for wiring.
- Wiring length should comply with the stated specification for **HMi**.
- Ensure proper grounding to avoid bad communication quality.

General Description

Positioned between the ELC graphics panels and the ePro series of operator interfaces, **HMi** is the work horse of the industry. All units feature a touchscreen and function keys to suit all environments and applications. They range in screen size and color to fit available space and application needs. All units offer RS-232, RS-485 and RS-422 communications.

- True analog touchscreen
- Real time trending
- Alarming and alarm storage
- Event storage (History)
- USB for data storage
- Add I/O
- Multi-language
- Auto-scale application from 10 – 4"
- Off-line simulation
- Retentive internal data storage
- Trend stored data
- USB for screen data transfer
- USB printer
- Macro programming
- Recipe storage
- On-line simulation
- 8 level password protection

Accessories (sold Separately)

The following accessories could help improve your **HMi** experience.

- ELC-CBPCELCE — 3 meter cable to connect between the **HMi** and Eaton Logic Controller (ELC)
- ELC-CBPCELC1 — 1 meter cable to connect between the **HMi** and Eaton Logic Controller (ELC)
- HMIEC0806 — 8 In DC, 6 Relay Outputs expansion module
- HMIEC1612 — 16 In DC, 12 Relay Outputs expansion module
- HMIECENT Ethernet expansion card. Modbus TCP, upload and download
- ELC-PS01 — 1 amp 24V DC power supply
- ELC-PS02 — 2 amp 24V DC power supply

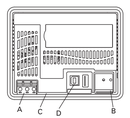
1 Unpack and Inspect

Included with the **HMi** are:

- Panel Mounting clips (number of clips varies depending on the size of the unit).
- DB9 gender changer for easy connection to the Eaton Logic Controller (ELC).
- 3-pin power 24V DC connector.

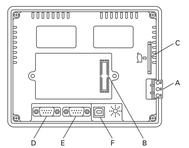
2 Available Communication Ports

4" HMi



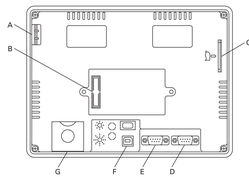
A	Power input terminal
B	COM 2
C	COM 1
D	USB

6" HMi



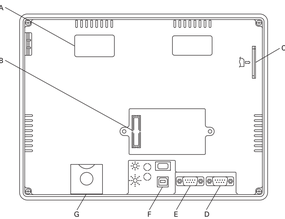
A	Power input terminal
B	Expansion slot
C	Memory card
D	COM 2
E	COM 1
F	USB

8" HMi



A	Power input terminal
B	Expansion slot
C	Memory card
D	COM 2
E	COM 1
F	USB
G	Battery cover

10" HMi



A	Power input terminal
B	Expansion slot
C	Memory card
D	COM 2
E	COM 1
F	USB
G	Battery cover

For 4" HMi Only

COM1 and COM3 are RS-232 Only

DB 9 Pinout for COM1 and COM3 RS-232					
	COM3 Not Used			COM3 Used	
PIN	COM1	COM3		COM1	COM3
1					
2	RX			RX	
3	TX			TX	
4					
5	GND			GND	GND
6					
7	RTS				TX
8	CTS				RX
9					

Note: Blank = No connection.

COM2

COM2 Pinout for RS-422 & RS-485		
PIN	RS-422	RS-485
G	GND	GND
T+	TX+	TX+
T-	TX-	TX-
R+	RX+	RX+
R-	RX-	RX-

Note: Blank = No connection.
Note: For RS-485 Connect TX+ to RX+ and TX- to RX-.

For 6", 8" and 10" HMi Only

COM1 is RS-232 Only

DB 9 Pinout for COM1 RS-232	
PIN	COM1
1	
2	RX
3	TX
4	
5	GND
6	
7	RTS
8	CTS
9	

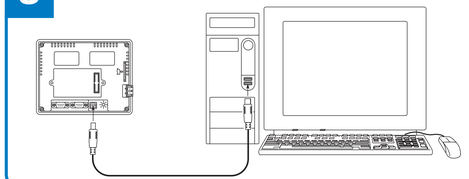
Note: Blank = No connection.

COM2 and COM3

DB 9 Pinout for COM2 and COM3												
	RS-232				RS-485				RS-422			
PIN	COM3 Not Used		COM3 Used		COM3 Not Used		COM3 Used		COM3 Not Used		COM3 Used	
	COM2	COM3	COM2	COM3	COM2	COM3	COM2	COM3	COM2	COM3	COM2	COM3
1		Not Used			RX-	Not Used	RX-		RX-	Not Used	RX-	
2	RX		RX		RX+		RX+		RX+		RX+	
3	TX		TX		TX+		TX+		TX+		TX+	
4					TX-		TX-		TX-		TX-	
5	GND		GND	GND	GND		GND	GND	GND		GND	GND
6								TX-				TX-
7	RTS			TX				TX+	RTS+			TX+
8	CTS			RX				RX+	CTS+			RX+
9								RX-	CTS-			RX-

Note: Blank = No connection.
Note: For RS-485 Connect TX+ to RX+ and TX- to RX-.

3 Connect Touch Panel to Computer



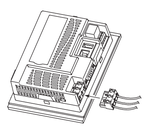
4 Provide Power to the Touch Panel

Recommended wiring is in the table below:

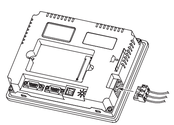
Type	Wire Gauge	Stripped Length	Torque
Solid	28-12 AWG	7-8 mm	4.5 lb-in
Stranded	28-12 AWG	7-8 mm	4.5 lb-in

Be sure to plug power line into **HMI** according to following arrow direction.

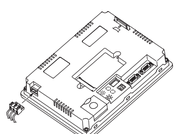
1.



2.



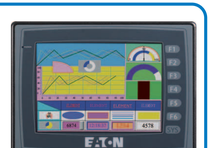
3.



5 Accessing the Touch Panel Setup Screens

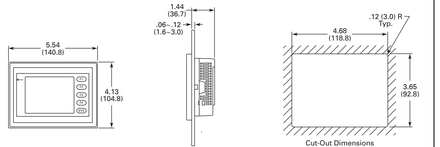
Press and hold the SYS key for approximately 5 seconds to bring up the System menu. The following can be changed from this menu.

- Date & Time
- Calibrate the touchscreen
- Adjust backlight settings
- Select the download method
- Memory storage management

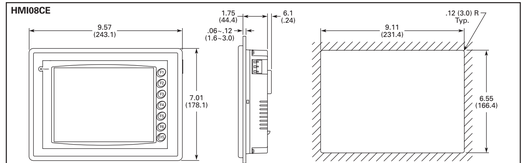


Dimensions and Cut-Outs

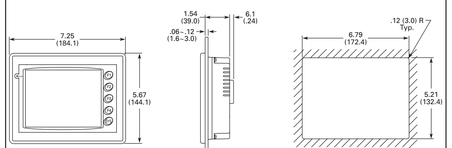
HMI04__



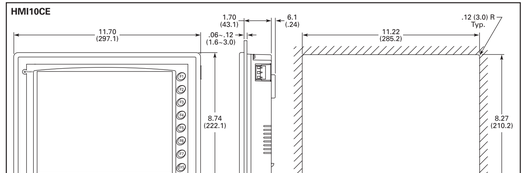
HMI08CE



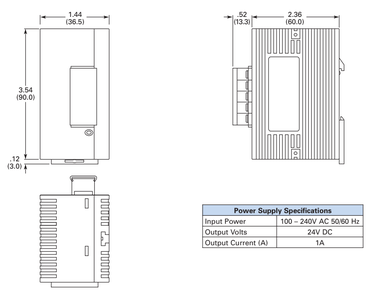
HMI06__



HMI10CE

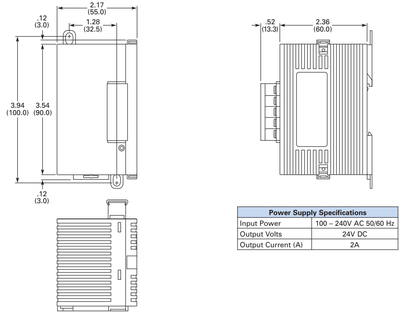


ELC-PS01 Power Supply — 24 Watt, 1 Amp Power Supply



Power Supply Specifications	
Input Power	100 – 240V AC 50/60 Hz
Output Volts	24V DC
Output Current (A)	1A

ELC-PS02 Power Supply — 48 Watt, 2 Amp Power Supply



Power Supply Specifications	
Input Power	100 – 240V AC 50/60 Hz
Output Volts	24V DC
Output Current (A)	2A

NOTE: Approximate Dimensions in Inches (mm)

Specifications

Model		HMI04BU	HMI06BE	HMI06GE	HMI06CE	HMI08CE	HMI10CE
Display Type		STN	STN	FSTN	STN	TFT-LCD	
Display Color		8 Blues	8 Blues	16 Grays	256 Colors	65536 Colors	
Screen Pixels		320 x 240 pixels		320 x 240 pixels		640 x 480 pixels	
Back-light Life		About 10,000 hours at 25°C		About 50,000 hours at 25°C		About 50,000 hours at 25°C	About 30,000 hours at 25°C
Display Size		3.8" (78.8 x 59.6 mm)		5.7" (118.2 x 89.4 mm)		8.0" (162.2 x 121.7 mm)	10.4" (215.2 x 162.4 mm)
Operation System		Real Time OS					
MCU		32-bit RISC Micro-controller / 206.4 MHz					
Memory							
Program		1M	3M	3M	3M	7M	7M
History		120K	360K	360K	360K	360K	360K
Recipe		64K ②	128K	128K	128K	128K	128K
Alarm		4K	16K	16K	16K	16K	16K
Data Registers							
Volatile		64K	64K	64K	64K	64K	64K
Non-volatile		1K	1K	1K	1K	1K	1K
Backup Memory (Bytes)		128K		512K		512K	512K
Ext. Memory	SM Card		✔	✔	✔	✔	✔
	USB Disk	✔				✔	✔
Extension Interface			✔	✔	✔	✔	✔
USB for Download (USB Client)		1 Client Ver. 1.1					
USB for Data Storage / Printer (USB Host)		✔				✔	✔
LCD Module		LED Back Light	CCFL Back Light	CCFL Back Light	CCFL Back Light	CCFL Back Light	2CCFL Back Light
Function Key		4	4	4	4	6	7
Perpetual Calendar (RTC)		Built-In					
Cooling Method		Natural Air Circulation					
Safety Approval (Waterproof for Front Panel)		IP65 / NEMA 4X / CE / UL / cUL / C-Tick					
Operating Temp.		32° – 122°F (0° – 50°C)					
Storage Temp.		-4° – 140°F (-20° – 60°C)					
Ambient Humidity		10% – 90% RH (0° – 40°C), 10% – 55% RH (41° – 50°C)					
Shock		30G @ 11 mS					
Vibration Resistance		IEC61131-2 compliant When vibration is NOT continuous: 5 Hz – 9 Hz 3.5 mm, 9 Hz – 150 Hz 1G X, Y, Z directions for 10 times					
Dimensions (W) x (H) x (D) in Inches (mm)		5.54 x 4.13 x 1.76 (140.8 x 104.8 x 44.8)	7.25 x 5.67 x 1.85 (184.1 x 144.1 x 47)			9.57 x 7.01 x 2.06 (243.1 x 178.1 x 52.4)	11.70 x 8.74 x 2.01 (297.1 x 222.1 x 51.1)
Weight in Lbs. (kg)		.69 (.315)	1.69 (.768)			2.52 (1.147)	3.79 (1.721)
Backup Battery		3V Lithium Battery CR2032 x 1 / Battery Life: 5 Years					
Buzzer		85dB					
Operation Voltage		DC +24V (10% – 20%) (Please use isolated power supply) ①					
Wattage		2.64	7.2	7.2	7.2	14	15
NIT Rating		100 cd/m²	130 cd/m²		100 cd/m²	400 cd/m²	330 cd/m²

① Please use isolated power supply (not applicable for HMI08CE and HMI10CE).
② Recipe memory uses program memory.

Additional Help and Support

For technical support, please contact the Technical Resource Center at 1-800-356-1243, Option 3.

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