

**MULTI POWER MONITOR**  
(4 digital displays, CC-Link)

MODEL **54UC**

**BEFORE USE ....**

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below. If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

**■ PACKAGE INCLUDES:**

- Multi power monitor  
(body + mounting bracket × 2 + gasket) .....(1)
- Terminating resistor (110 Ω, 0.5 W).....(1)

**■ MODEL NO.**

Confirm Model No. marking on the product to be exactly what you ordered.

**■ INSTRUCTION MANUAL**

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

For detailed explanations to operate and program the module, please refer to Model 54UC Operating Manual (EM-6489-B).

The 54UC is programmable either by using the front control buttons or the PC Configurator Software. For detailed information on the PC configuration, refer to the PMCFG users manual.

Software and manuals are downloadable at M-System's web site: <http://www.m-system.co.jp>

**POINTS OF CAUTION**

**■ AUXILIARY POWER SUPPLY RATING & OPERATIONAL RANGE**

- Locate the auxiliary power supply rating marked on the product and confirm its operational range as indicated below:
  - 100 – 240V AC rating: 85 – 264V AC, 47 – 66 Hz, < 8VA
  - 110 – 240V DC rating: 99 – 264V DC, < 4W

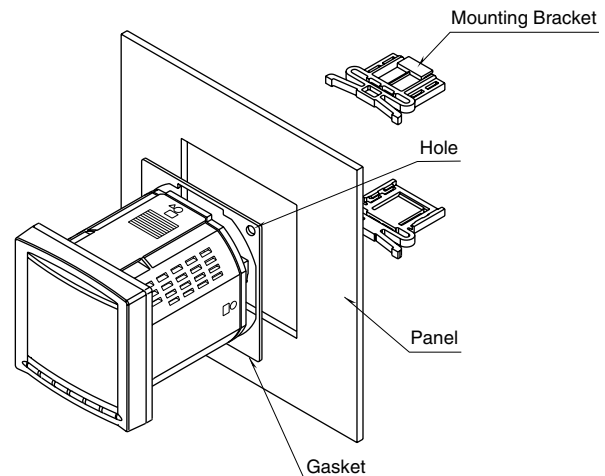
**■ GENERAL PRECAUTION**

- Before you remove or mount the unit, turn off the power supply and input signal for safety.

**■ ENVIRONMENT**

- Indoor use.
- Do not install the unit where it is directly exposed to rain, water droplets or sunlight.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 90% RH in order to ensure adequate life span and operation.

- Contrast of the LCD screen depends upon viewing angles. Choose the height and angle where it is the most legible.
- Do not apply physical impact to the front face.
- To ensure the designated ingress protection, insert the gasket before attaching the mounting brackets.
- When using the mounting brackets, remove the mounting screws and turn back the gasket as shown below.



**■ WIRING**

- Wiring to the unit must be conducted by qualified service personnel.
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

**■ AND ....**

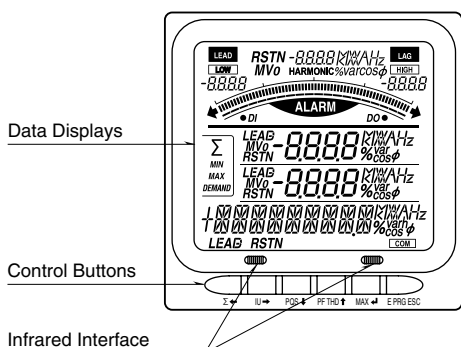
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.
- Altitude up to 2000 meters.
- The equipment must be mounted inside a panel.

**LIGHTNING SURGE PROTECTION**

M-System offers a series of lightning surge protector for protection against induced lightning surges. Please contact M-System to choose appropriate models.

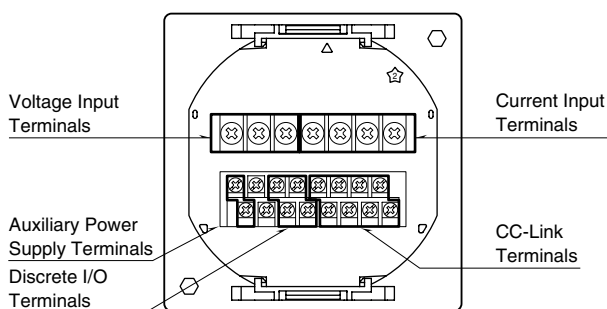
## COMPONENT IDENTIFICATION

### FRONT VIEW

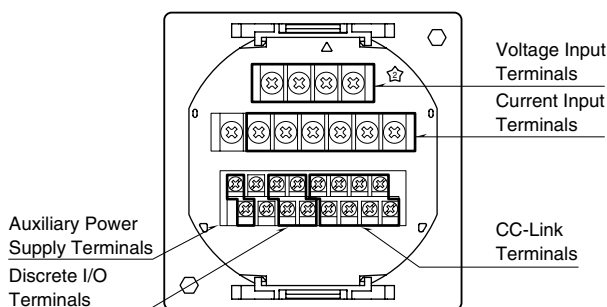


### REAR VIEW

#### CONFIGURATION CODE: 1



#### CONFIGURATION CODE: 2

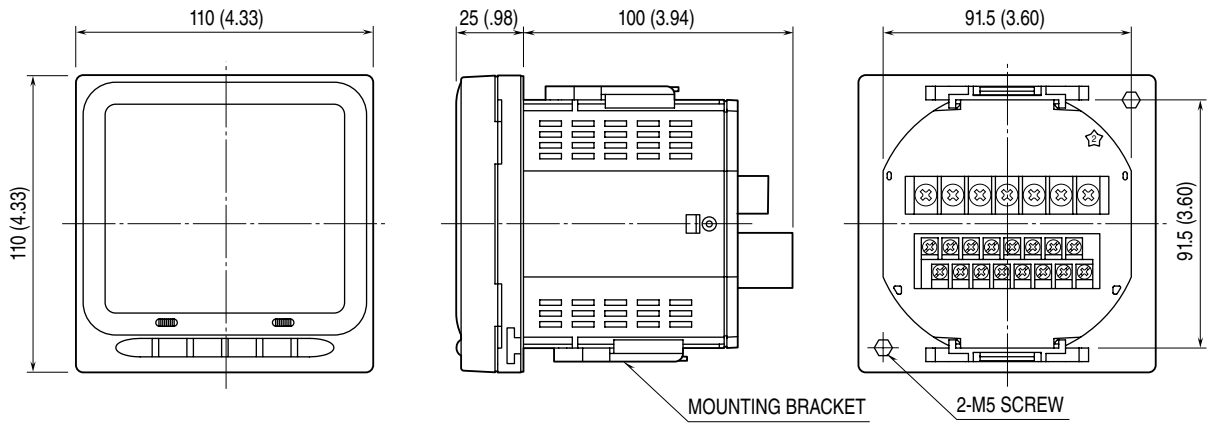


### CONTROL BUTTON OPERATIONS

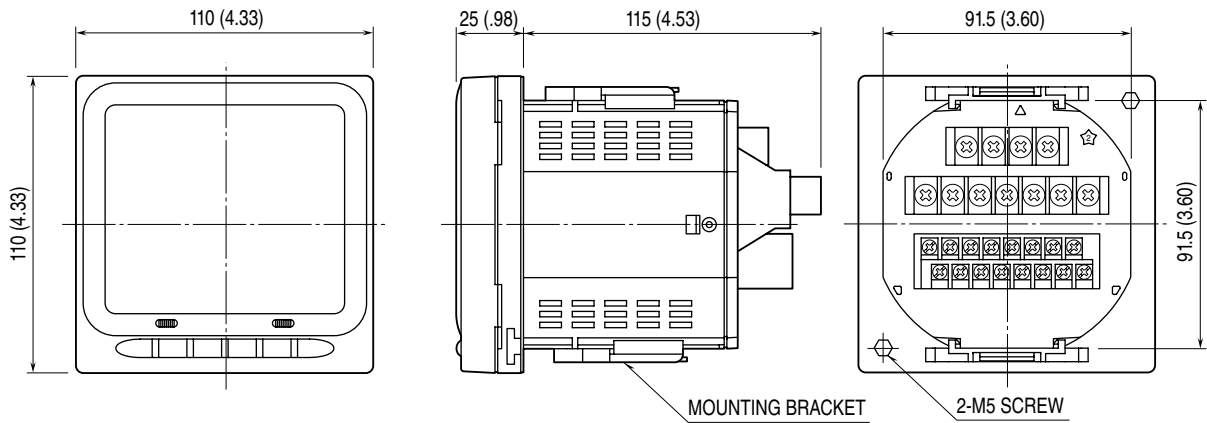
BUTTON OPERATION	FUNCTIONS	
	NORMAL MODE	SETTING MODE
$\Sigma$ ◀	Indicates $\Sigma$ values	Go Left
IU ▶	Indicates Voltage or Current	Go Right
PQS ▼	Indicates Power	Go Down
PF THD ▲	Indicates Power Factor or THD	Go Up
MAX ENTER	Indicates totalized values (max., min., average/demand)	Selects menu; Enables setting changes
E PRG ESCAPE	Switches Energy readings	Cancels setting changes
$\Sigma$ ◀ Hold down	Switches to My Default mode	----
IU ▶ Hold down	Switches to PC Configuration mode	----
E PRG ESCAPE Hold down	Switches to Setting mode	----
IU ▶ + PF THD ▲ Hold down	Indicates Harmonics by degrees	----
$\Sigma$ ◀ + E PRG ESCAPE Hold down	Switches Energy reading units	----
PQS ▼ Hold down	Indicates the shortcut menu	----

# EXTERNAL DIMENSIONS unit: mm (inch)

## ■ CONFIGURATION CODE: 1

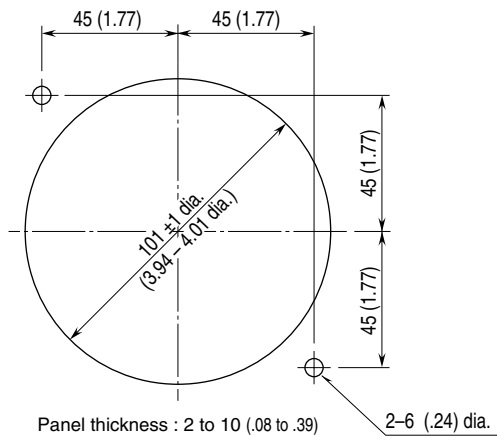


## ■ CONFIGURATION CODE: 2

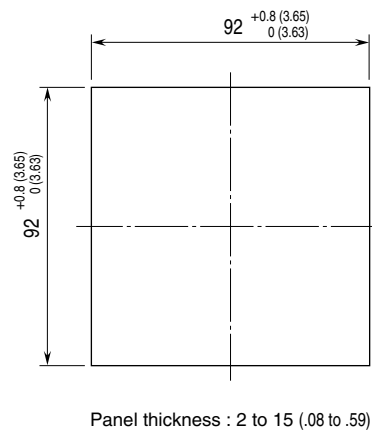


## ■ PANEL CUTOUT unit: mm (inch)

- USING MOUNTING SCREWS  
Remove the mounting brackets.

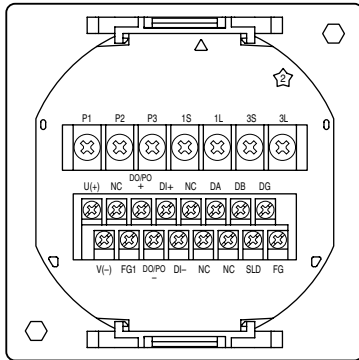


- USING MOUNTING BRACKETS  
Remove the mounting screws.



# TERMINAL CONNECTIONS

■ CONFIGURATION CODE: 1

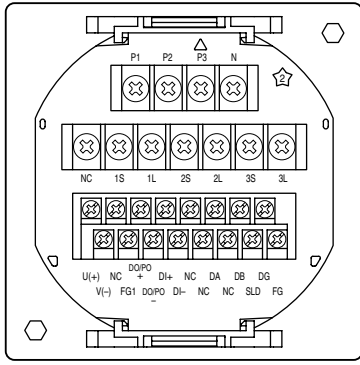


System / Application	Terminal
Single-phase / 2-wire	<p>Two wiring diagrams for single-phase 2-wire systems. The left diagram shows terminals P1, P2, 1S, and 1L. The right diagram shows terminals P1, P2, 1S, 1L, 3S, and 3L. Both diagrams show source connections (1, 2) and load connections (K, L) with a ground symbol.</p>
Three-phase / 3-wire, balanced load	<p>Two wiring diagrams for three-phase 3-wire systems with balanced load. The left diagram shows terminals P1, P2, P3, 1S, and 1L. The right diagram shows terminals P1, P2, P3, 1S, 1L, 3S, and 3L. Both diagrams show source connections (1, 2, 3) and load connections (K, L) with a ground symbol.</p>

System / Application	Terminal
Single-phase / 3-wire	<p>Two wiring diagrams for single-phase 3-wire systems. The left diagram shows terminals P1, P2, P3, 1S, 1L, 3S, and 3L. The right diagram shows terminals P1, P2, P3, 1S, 1L, 3S, and 3L. Both diagrams show source connections (1, N/2, 2/3) and load connections (K, L) with a ground symbol.</p>
Three-phase / 3-wire, unbalanced load (2CT)	<p>Two wiring diagrams for three-phase 3-wire systems with unbalanced load (2CT). The left diagram shows terminals P1, P2, P3, 1S, 1L, 3S, and 3L. The right diagram shows terminals P1, P2, P3, 1S, 1L, 3S, and 3L. Both diagrams show source connections (1, N/2, 2/3) and load connections (K, L) with a ground symbol.</p>

Note: For low voltage circuit, grounding is not required.

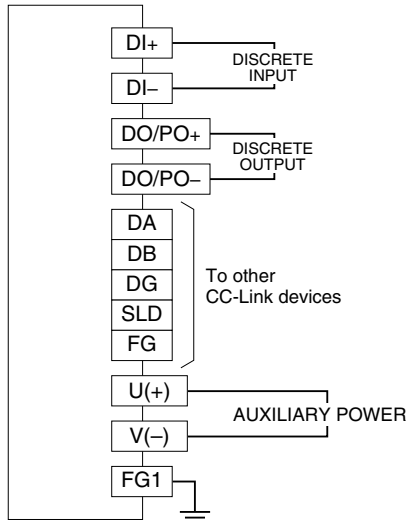
■ CONFIGURATION CODE: 2



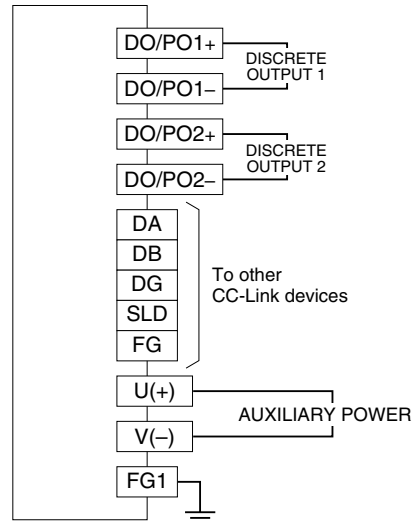
System / Application	Terminal	System / Application	Terminal
Single-phase / 2-wire		Single-phase / 3-wire  Three-phase / 3-wire, unbalanced load (2CT)	
Three-phase / 3-wire, balanced load		Three-phase / 4-wire, balanced load	
Three-phase / 3-wire, unbalanced load (3CT)		Three-phase / 4-wire, unbalanced load	

Note: For low voltage circuit, grounding is not required.

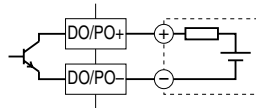
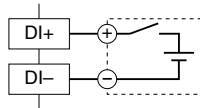
■ EXTERNAL INTERFACE CODE: 1



■ EXTERNAL INTERFACE CODE: 2



• Discrete Input Connection E.g. • Discrete Output Connection E.g.



**WIRING INSTRUCTIONS**

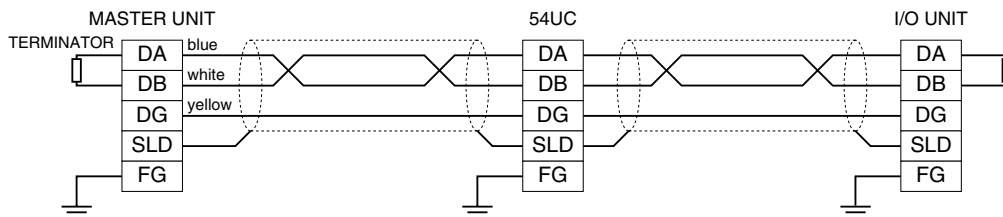
■ M3 Screw (discrete input, discrete output, CC-Link, auxiliary power)

Torque: 0.6 N·m

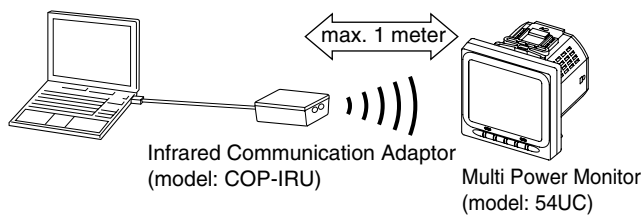
■ M4 Screw (voltage input, current input)

Torque: 1.4 N·m

**COMMUNICATION CABLE CONNECTION**



**CONFIGURATION VIA INFRARED COMMUNICATION**



Note 1: Hold down IU button to enter to Infrared Communication mode (IR-READY on the display).  
 Hold down IU button to exit Infrared Communication mode.  
 During Infrared Communication mode, CC-Link master communication are not available.

Note 2: COP-IRU communicates with one 54UC. DO NOT set more than one 54UC to Infrared Communication mode simultaneously.