

**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:**

Paperless recorder.....(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 this product, please refer to Users Manual (EM-8631-G), downloadable at M-System's web site: <http://www.m-system.co.jp>

**POINTS OF CAUTION****■ CONFORMITY WITH EU DIRECTIVES**

- The equipment must be mounted inside the instrument panel of a metal enclosure.
- The actual installation environments such as panel configurations, connected devices, connected wires, may affect the protection level of this unit when it is integrated in a panel system. The user may have to review the CE requirements in regard to the whole system and employ additional protective measures to ensure the CE conformity.

**■ POWER INPUT RATING & OPERATIONAL RANGE**

- Locate the power input rating marked on the product and confirm its operational range as indicated below:  
24V DC rating: 24V  $\pm$ 10%, approx. 18W

**■ GENERAL PRECAUTIONS**

- Before you remove the unit or mount it, turn off the power supply for safety.
- The unit does not support hot insertion/removal. of modules. When the unit is used in combination with R30 I/O modules, hot insertion/removal. of module is not supported for R30 I/O modules.
- Before you remove the terminal block or mount it, turn off input signal for safety.

**■ ENVIRONMENT**

- Indoor use.
- 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 0 to 50°C (32 to 122°F) with relative humidity within 10 to 90% RH in order to ensure adequate life span and operation.

**■ WIRING**

- 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.
- Max. wiring length for FE terminal should be 3 m.
- Be sure to attach the terminal cover for safety.

**■ ABOUT SD CARDS**

- Do turn off the power of the unit during writing data. Insert or eject SD card according to the specified procedure.
- Confirm the front and back side of the SD card.

**■ CALENDAR CLOCK**

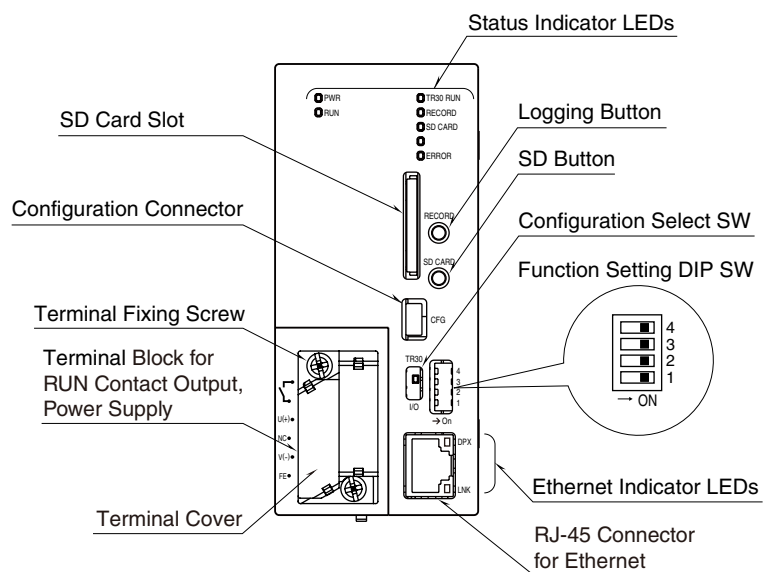
- A backup battery is employed for calendar clock IC. Backup period without power supply is approx. 2 years.
- In order to prevent battery drain, battery back up is OFF at factory default. Turn it ON prior to start using.
- With power on, the battery is not drained. When total power off period is approx. 2 years, the battery cannot backup the calendar clock. The calendar clock cannot keep correct date and time.
- The battery is not replaceable by customer. When replacement is required, consult M-System.

**■ AND ....**

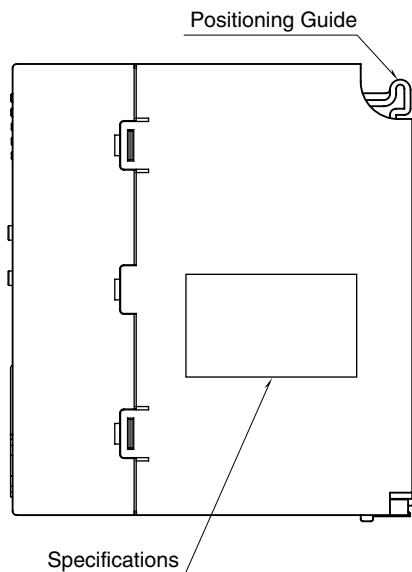
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

# COMPONENT IDENTIFICATION

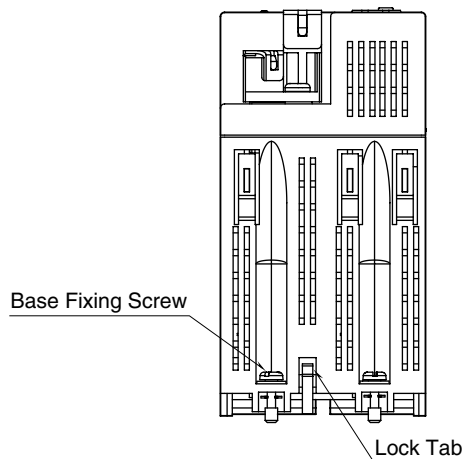
## FRONT VIEW



## SIDE VIEW



## BOTTOM VIEW



### ■ STATUS INDICATOR LED

LED	COLOR	FUNCTION
PWR	Green	ON when power is on OFF when power is off
RUN	Green	ON when normal operation OFF when abnormal operation
TR30 RUN	Green	Blinking while TR30 module is booting up ON after boot up OFF when abnormal operation
RECORD	Green	ON when logging OFF when logging stopped
SD CARD	Green	ON when SD card recognized Blinking when accessing to SD card OFF when SD card is removed or not recognized
ERROR	Red	Blinking when abnormal operation OFF when normal operation

### ■ ETHERNET INDICATOR LED

LED	COLOR	FUNCTION
DPX	Green	ON at full duplex
LNK	Amber	ON at link

### ■ CONFIGURATION SELECT SW

(\*) Factory setting

SW POSITION	CONFIGURATION OBJECT
TR30	TR30 configuraton (*)
I/O	R30 I/O modules configuration

### ■ DIP SW

(\*) Factory setting

#### • TR30 CONFIGURATION DESTINATION SETTING

SW1	TR30 Configuration USB Destination
OFF	TRGCFG (*)
ON	Terminal for Communication Log

#### • EVENT REPORTING E-MAIL SETTING

SW2	EVENT REPORTING E-MAIL
OFF	Enable (*)
ON	Disable

#### • CALENDAR CLOCK BATTERY BACKUP SETTING

SW4	CALENDAR CLOCK BATTERY BACKUP
OFF	Disable (*)
ON	Enable

Note 1: Be sure to set unused SW3 to OFF.

Note 2: In order to prevent battery drain, battery back up is OFF at factory default. Turn it ON prior to start using.

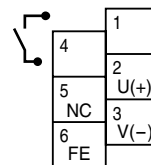
### ■ LOGGING BUTTON

Pressing and holding 1 second starts and stops logging.

### ■ SD BUTTON

Pressing and holding for 4 seconds turns SD CARD LED off and makes the card removable.

### ■ TERMINAL ASSIGNMENT



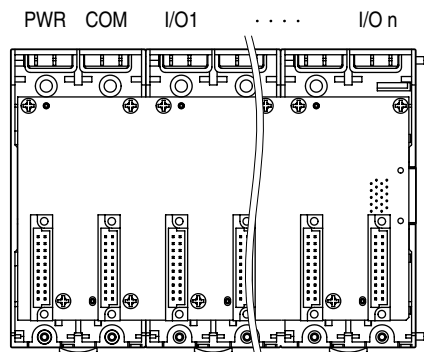
NO.	ID	FUNCTION
1	RUN contact output	RUN contact output
2	U (+)	Power supply (24 V DC)
3	V (-)	Power supply (0 V DC)
4	RUN contact output	RUN contact output
5	NC	Not used
6	FE	Functional earth

## INSTALLATION

### ■ INSTALLATION TO THE BASE

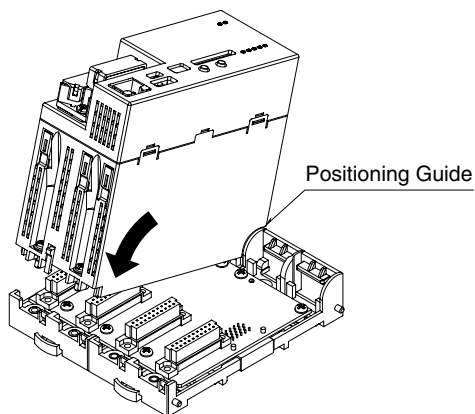
Use the Installation Base Model: R30BS.

Mount the unit to the PWR and COM slot in the base.

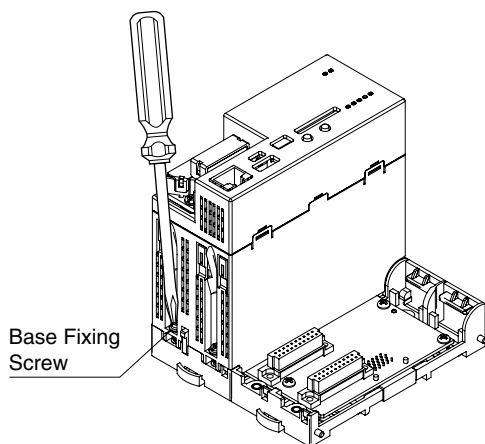


### ■ HOW TO MOUNT THE MODULE ON THE BASE

- 1) Set the positioning guide of the module to the base.
- 2) Push down the module until lock tab is locked as rotating around the positioning guide.

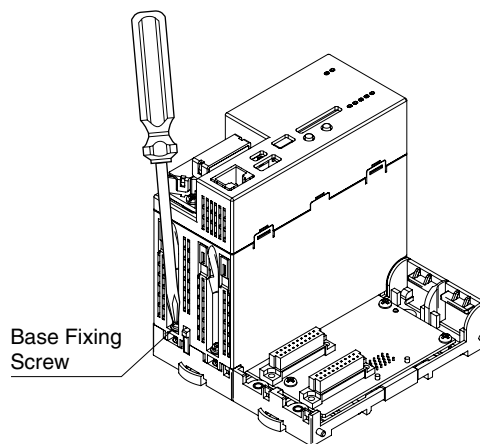


- 3) Tighten the base fixing screw with a screw driver (stem length: 70 mm/2.76" or more) (torque 0.5 N·m)

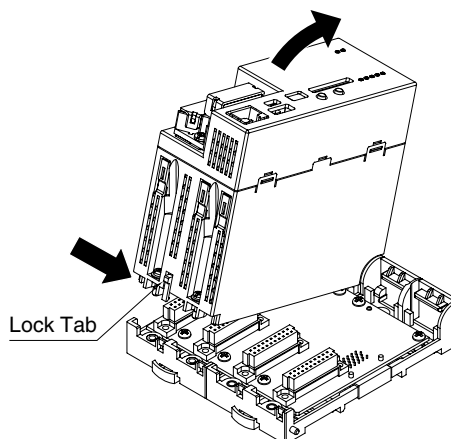


### ■ HOW TO UNMOUNT THE MODULE ON THE BASE

- 1) Loosen the base fixing screw with a screw driver (stem length: 70 mm/2.76" or more).



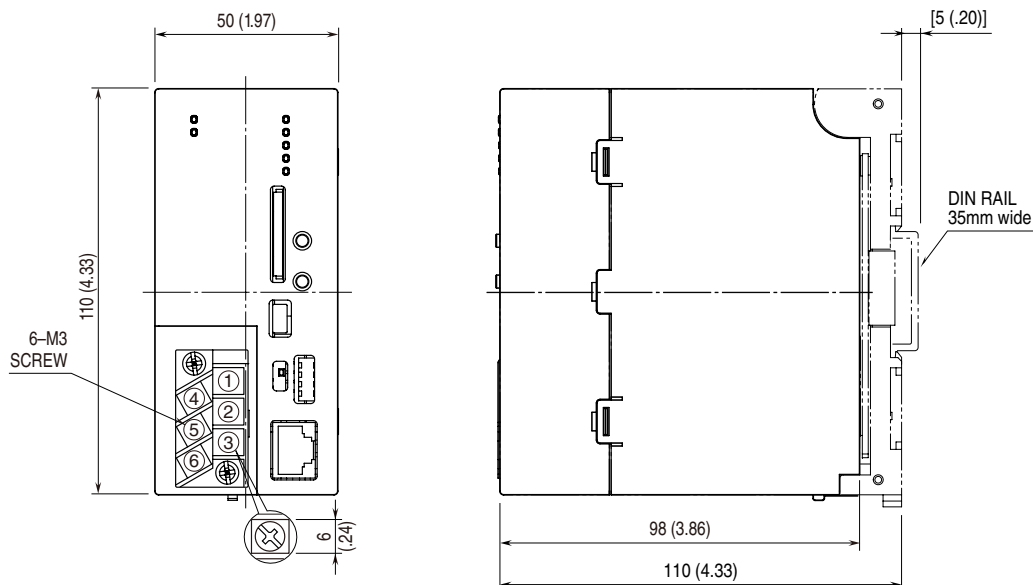
- 2) Push up the module as pushing the knob of the lock tab.
- 3) Remove the positioning guide of the module from the base.



## TERMINAL CONNECTIONS

Connect the unit as in the diagram below.

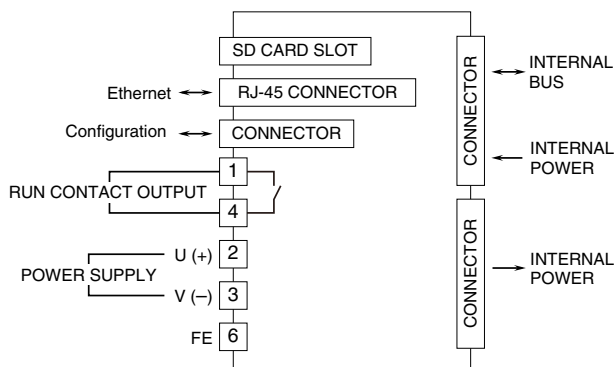
### EXTERNAL DIMENSIONS unit: mm (inch)



### CONNECTION DIAGRAM

In order to improve EMC performance, bond the FE terminal to ground.

Caution: This terminal is NOT a protective conductor terminal.



## WIRING INSTRUCTIONS

### TORQUE

Wiring screw for separable terminal: 0.5 N·m

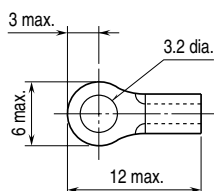
Fixing screw for separable terminal: 0.5 N·m

### SOLDERLESS TERMINAL unit: mm (inch)

Refer to the drawing below for recommended ring tongue terminal size. Spade tongue type is also applicable. Solderless terminals with insulation sleeve do not fit.

Recommended manufacturer: Japan Solderless Terminal MFG.Co.Ltd, Nichifu Co.,ltd

Applicable wire size: 0.25 – 0.75 mm<sup>2</sup>



### HOW TO UNMOUNT THE SEPARABLE TERMINAL

The separable terminal of the unit is 2 piece constructions. It is possible to remove the terminal by loosening two screws of terminal alternately.