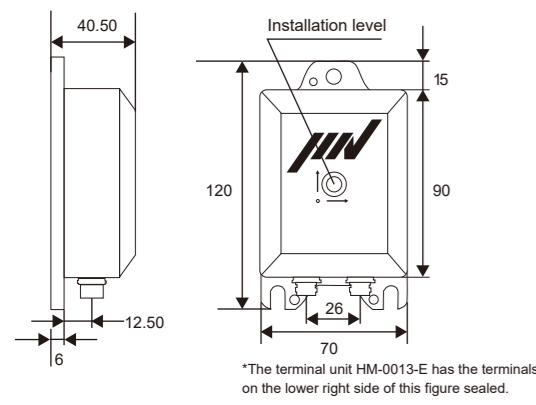
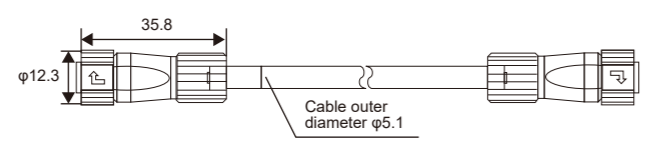


Outward dimensions (Unit: mm)

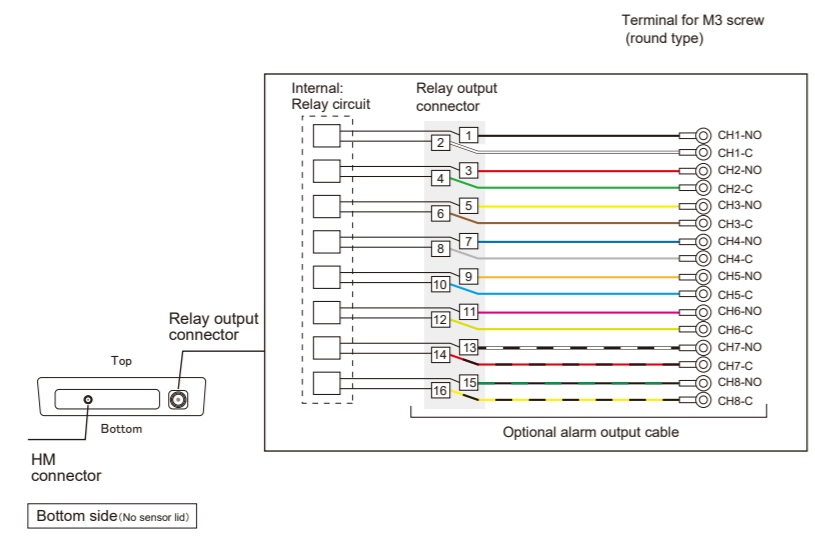
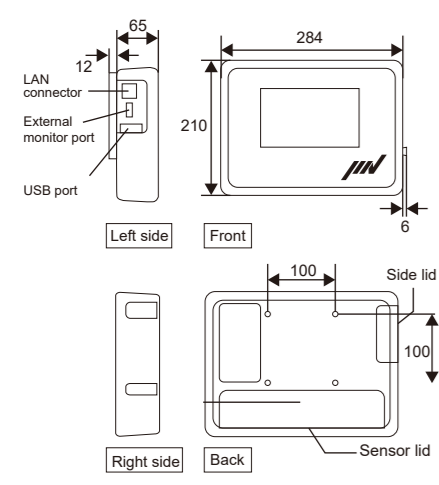
▶ HM-0013-M (Long period vibration monitoring unit)



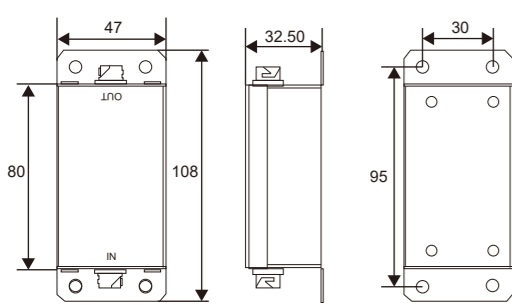
▶ CB-X013-□□ (Waterproof cable)



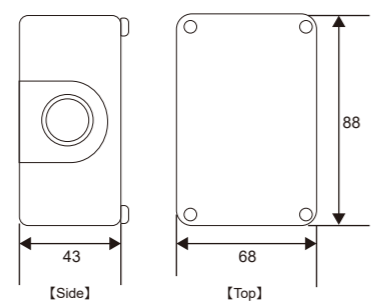
▶ TM-0013-HM (Smart display unit)



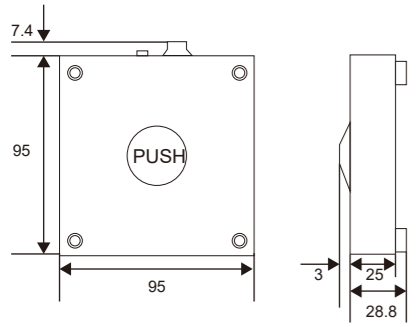
▶ RP-0013 (Power relay BOX) *Optional accessory



▶ TB-0013 (Cable relay box) *Optional accessory

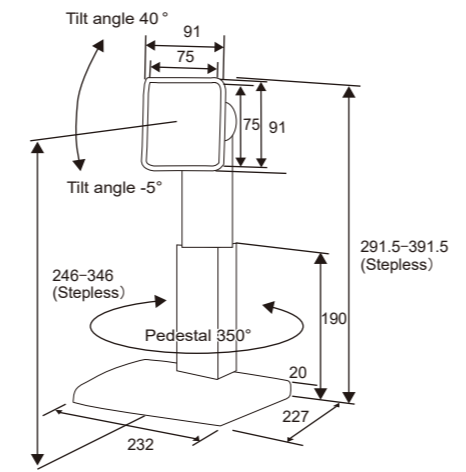


▶ UC-0013 (USB conversion box for HM-0013) *Optional accessory

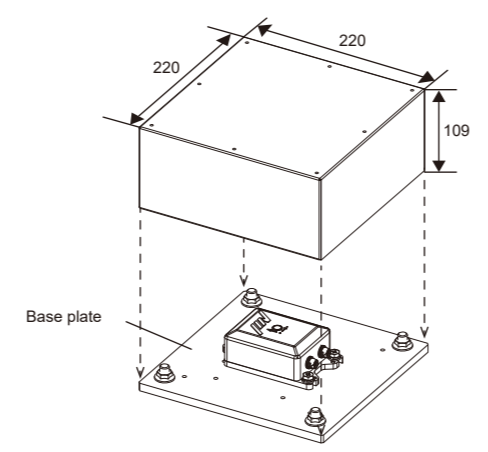


Outward dimensions (Unit: mm)

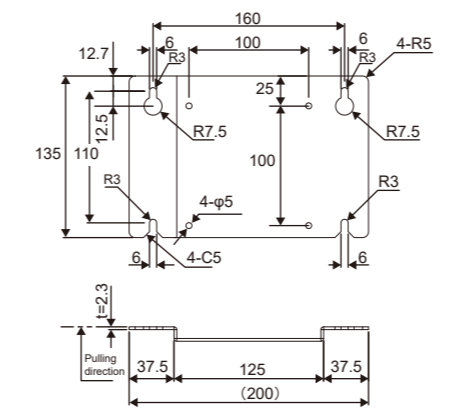
▶ CR-27BK (Stand for HM-0013) *Optional accessory



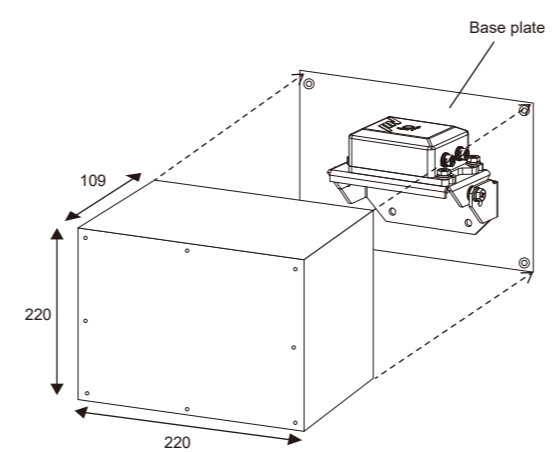
▶ HM-PB01 (Outdoor protection box for floor mounting) *Optional accessory



▶ TM-HMST (Wall mounting bracket) *Optional accessory



▶ HM-PB01ST (Outdoor protection box for wall mounting) *Optional accessory



IMV CORPORATION

Head Office
tel +81 6 6471 3155
web <https://www.imv.co.jp/e>

*The specifications and design are subject to change without notice.



Long period vibration monitoring unit (HM-0013 series) + Smart display unit (TM-0013-HM)

Multi-point earthquake monitoring system Earthquake Watcher



Widely monitoring from long period earthquake to strong earthquake

IMV CORPORATION



As soon as the number of observation points and cable length are determined, **actual measurement starts!**

By combining the long-period vibration monitoring unit and the smart display unit, it is possible to construct **a multi-point earthquake monitoring and observation system.**

Long period vibration monitoring unit

HM-0013-M (Middle unit)
HM-0013-E (End unit)

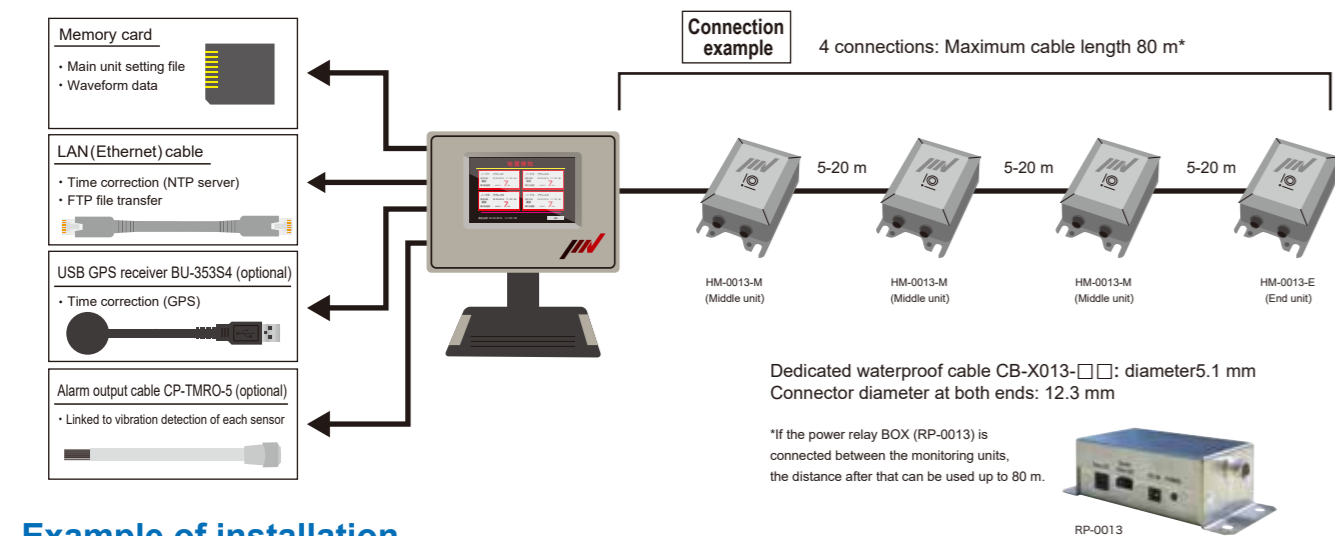
- Accurate detection of long cycle vibration
- Measurement of fine movement of 0.1 gal is possible
- Data save memory for power failure installed
- Protection grade IP67/Shock resistance 1000G

Smart display unit

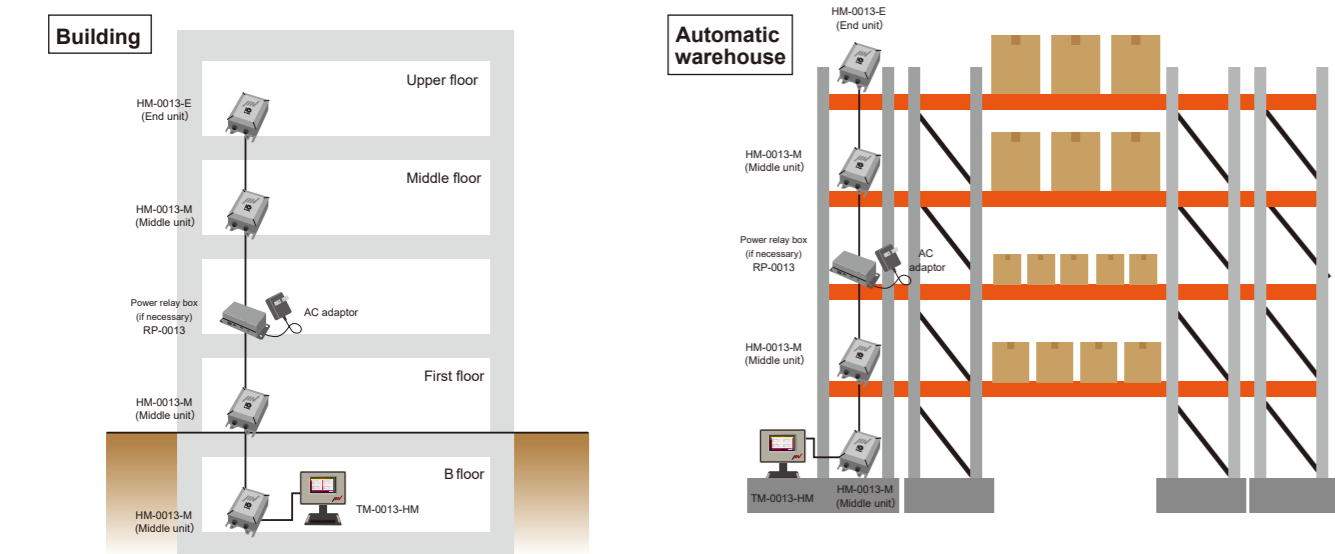
TM-0013-HM

- Up to 4 HM-0013 can be connected
- 7 inch touch panel installed
- Record waveform by time reservation
- Supports email notification via Ethernet

System Composition



Example of installation



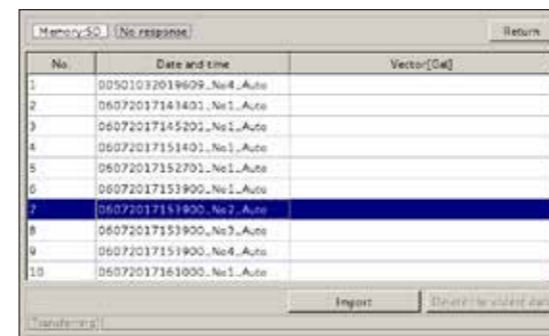
Function

Easy to operate with easy-to-read icons



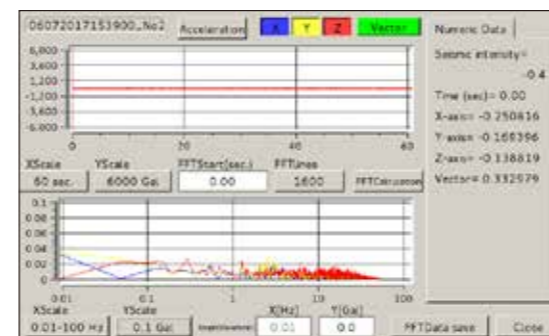
By adopting a color touch panel and menu display, it is possible to easily display and set the system status and waveform data.

Record up to 5000 records * Depending on memory card capacity



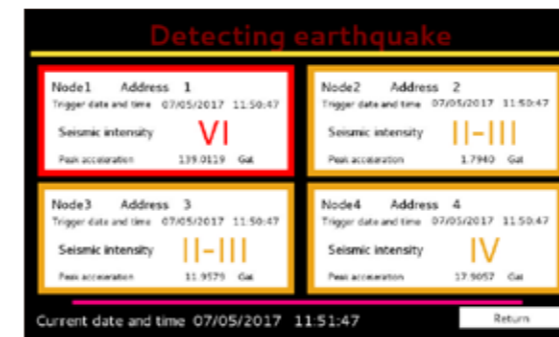
Up to 5000 recorded data* can be recorded.
*Depends on the capacity of the memory card.
The history can be checked in the list, and the waveform screen can be checked by clicking.

Can be analyzed from the waveform display screen



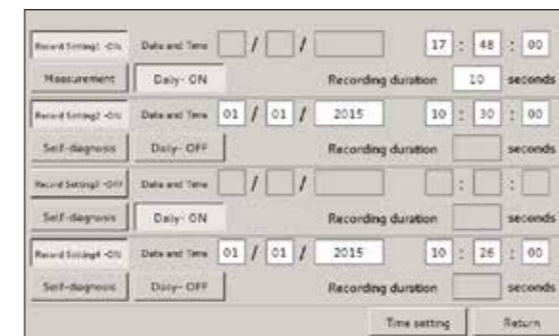
Acceleration waveform confirmation and FFT analysis of recorded data are possible. It is possible to always grasp the state of the building at normal times, of course, after the earthquake.

Warning flash screen that allows simultaneous confirmation of multiple points



When an earthquake occurs, the seismic intensity, maximum acceleration, and time of occurrence detected by each HM-0013 are displayed.

Status monitoring with reserved measurement



Up to 4 waveform recordings can be reserved depending on the settings, and the condition of the building can be monitored on a regular basis.

Easy data collection with memory card



The data is recorded on the upper memory card and can be taken out and replaced smoothly. Even if the display is damaged, the data can be retrieved if the record remains on the card.

Specifications

Long period vibration monitoring system (Common to HM-0013-M, HM-0013-E)

Item	High precision mode	High frequency mode	Note
Measurement axis	3axis (X, Y, Z)		—
Measurement range (full scale)	±2000 Gal	±6000 Gal	Each axis
Frequency range	up to 100Hz		Sensor only 1000 Hz
Acceleration accuracy	±0.5 %FS (±0.1 %FS)	±5.0 %FS (±1.0 %FS)	Standard (special)
Sensor noise density (rms)	XY: 0.0001g / √Hz label Z: 0.0002g / √Hz label	XY: 0.0003g / √Hz label Z: 0.0006g / √Hz label	0.1 Hz to 100 Hz (Less than 0.0004g / √Hz between 1 Hz to 100 Hz)
A/D resolution	24 Bit		ΔΣ type
Power supply	DC12 V±20 %		—
Structure	IP67		—
Communication	RS485 (Modbus)		Convertible in option
Time accuracy	5.0 ppm		Accurate with 13 seconds per month
Ambient temperature	-10 to +60 °C		—
Power consumption	30 mA		At DC12 V
Size	90 (H) × 70 (W) × 40 (D) mm		Excluding connectors etc.
Weight	Approx. 400 g		—
Function	Temperature correction Temperature output Daisy chain connection Sensor self check		— Near temperature of sensor module — Sensor condition confirmation

* Be sure to use the terminal unit HM-0013-E at the end of the monitoring unit connection. Otherwise, A communication error may occur.

Smart display unit (TM-0013-HM)

Item	Specifications
Clock	Accuracy: 20 ppm (daily difference 2 seconds) or less Time synchronization of the main clock is possible with NTP, GPS, etc.
Installation method	VESA standard 100 mm x 100 mm Installation hole Wall Installation bracket (optional)
Ambient temperature	0 to 40 °C
Ambient humidity	20 to 45 %RH (Non-condensing)
Power supply	AC100-240 V ±10 % 50 VA or less (When 4 pcs of HM-0013 are connected)
Size	210(H) x 284(W) x 65(D) mm (excluding connectors etc.)
Weight	Approx. 2 kg

Display part

Item	Specifications
Size	7.0-inch wide, 800 (H) x 480 (V) dots
Display method	TN 262, 144 color
Drive system	TFT active matrix
Back light	High-brightness white LED (OFF time can be changed by setting)
Touch panel method	Resistive film analog tablet

Interface

HM-0013 Connection [HM] System Composition Diagram

Item	Specifications
Connector shape	One-touch lock connector
The number of pins	6 pins
Bit rate setting	781250 bps/115200 bps (default)/57600 bps/38400 bps
Connector internal pin placement	Pin No. Signal name (HM-0013-M/E)
	1/2 Power supply +/Power supply -
	3/4 D-OUT/D-IN
	5/6 RS-485+/RS-485-

Contact output [Relay output] System configuration diagram

Item	Specifications
Connector shape	One-touch lock connector
The number of pins	16 pins
Contact specifications	The number of contacts: 8 (AQV252GA made by Panasonic) Contact rating: 60 V-2.5 A (AC/DC both use, peak value) Contact function: Linked to vibration detection of each HM-0013 Contact operation: Open during standby/Closed when vibration is detected
Connector internal pin placement	Pin No. Signal name
	1/2 CH1-NO/CH1-C
	3/4 CH2-NO/CH2-C
	5/6 CH3-NO/CH3-C
	7/8 CH4-NO/CH4-C
	9/10 CH5-NO/CH5-C
	11/12 CH6-NO/CH6-C
	13/14 CH7-NO/CH7-C
	15/16 CH8-NO/CH8-C

LAN (Ethernet) Possible with a commercially available cable with the following specifications

Item	Specifications
Connector shape	RJ45 connector
Standard	10BASE-T/100BASE-TX
Use	FTP client function: Automatic file transfer NTP client function: Time synchronization of the main clock

Dedicated waterproof cable (CB-X013-□□)

Name	Type	Specifications
Waterproof cable 5 m	CB-X013-05	Conductor Tri-plated annealed copper stranded wire
Waterproof cable 10 m	CB-X013-10	Insulator Special elastomer
Waterproof cable 20 m	CB-X013-20	Sheath material Oil resistance PVC
Waterproof cable 40 m	CB-X013-40	Ambient temperature -10 to 80 °C
Waterproof cable 80 m	CB-X013-80	Exterior Zinc alloy nickel plating Ambient temperature -25 to 85 °C

RP-0013 (Power relay box) *Optional accessories

Item	Specifications
DC IN Power supply voltage	DC4.5 V to 9 V
Power supply	15 V/250 mA
Ambient temperature	-10 to 60 °C
Size	80 (H) x 47 (W) x 32.5 (D) mm
Weight	150 g

*With AC adapter (2 flat pins), power supply voltage 100-240 VAC, ripple 10%

BU-353S4 (USB-GPS receiver) *Optional accessories

Item	Specifications
Size	Main unit: φ Approx. 60 x 20 (D) mm
Connector shape	USB connector
Cable length	152 mm
Ambient temperature	-40 to 80 °C, 5 to 95% (Non-condensing)
Other	With bottom magnet

TB-0013 (Cable relay box) *Optional accessories

Item	Specifications
Size	88 (H) x 68 (W) x 43 (D) mm (excluding connectors etc.)
Storage cable diameter	φ12 to 14.4 mm
Internal terminal block	M3 screw terminal 6P, M4 screw ground terminal
Material	Lid/body: Aluminum alloy die-cast

CR-27BK (Stand for TM-0013) *Optional accessories

Item	Specifications
Size	291.5 - 391.5 (H) x 232 (W) x 227 (D) mm
Mounting hole position	VESA standard (100 x 100 mm 4 places)
Withstand load	3 to 6 kg
Material	PS

UC-0013 (USB conversion box for HM-0013) *Optional accessories

Item	Specifications	Note
PC connection interface	microUSB connector	USB2.0
DC IN Power supply voltage	DC 4.5 V to 9.0 V	Dedicated AC adaptor AC100 V/240 V
Power supply	12 V/250 mA	When connecting the AC adaptor
	12 V/80 mA	When driven by USB bus power
Contact	1ch	60 V/2.5 A
Recommended contact plug	0395000002 mad by Molex	3.50 mm pitch
Top button	External trigger pin interlocking	—
Sensor switch	Power ON/OFF of connection HM	—
Ambient temperature	-10 to 60 °C	—
Size	95 (H) x 95 (W) x 28.8 (D) mm	excluding connectors etc.
Weight	Approx. 230 g	—

* When interlocking measurement is performed using the nearest node as a trigger, it is necessary to modify UC-0013 to loopback mode. Please check the measurement method before purchasing and order the required mode.