HALEX by TAKAMISAWA

計測震度計

GP-888

SEISMIC ACCELEROGRAPH + INTENSITY METER

Quick and Initial Response for the Earthquake Disaster Prevention can be achieved by catching correct Seismic Intensity Information.
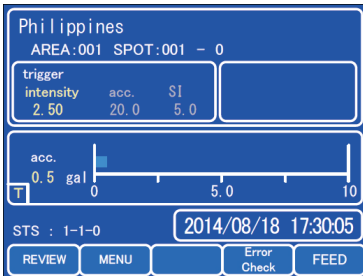
When an earthquake occurs, the GP-888 automatically measures and displays the seismic scale which is categorized into twelve levels (I :Instrumental, II :Feeble, III :Slight, IV :Moderate, V :Rather Strong, VI :Strong, VII :Very Strong, VIII :Destructive, IX :Ruinous, X :Disastrous, XI :Very Disastrous, XII: Catastrophic) by utilizing the algorism that is a specified by MMI (Modified Mercalli Scale). It is officially certified by JMA (Japan Meteorological Agency) as a seismic accelerograph accelerometer and intensity meter. It has many functions other than measuring and displaying. It can record and store the various data that are associated with earthquake, and it can notify those data to host system as it equips data communication function. In addition, it makes the "Earthquake Early Warming System" workable with creating a system network by making use of optional "earthquake early detecting function".
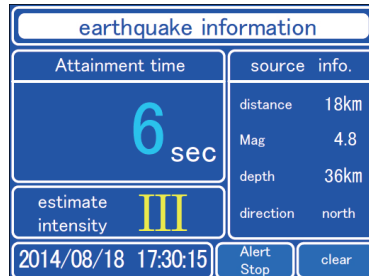
Features

・Officially Certified Product by JMA (Japan Meteorological Agency)
It is an officially certified product by JMA as a seismic intensity meter.

・Earthquake Early Detecting Function
It is capable to have a calculation feature with functions on basis of estimation algorithm under the earthquake early warning seismometer while taking into consideration various earthquake factors. (optional function)
Note: This algorithm is a joint patent together with Railway Technical Research Institute and JMA.

・Achieves High Dynamic Range of over 130dB by the High-Performance A/D (Analog-Digital) conversion technology
Since it adopts 24-bit delta-sigma A/D convertor, the high-accuracy measurement data can be achieved by its high dynamic range which can bring the properties of acceleration sensor into full performance.

・Compatible with Network
The GP-888 supports various protocols such as TCP/IP, FTP, Telnet etc. In addition, it allows dial-up connection with using optional modem unit.

・Can be increased speed of information-processing with Real-Time calculation Algorism of Seismic Intensity.
By the feature of advance announcement function which enables it to start data transfer of the earthquake to host-system only after 2.5 second from start-up of seismic trigger, it allows to create an immediate warning network system. (our own patent: No. 3241486)

・Enables to install High-Capacity Compact Flash Cards (32GB)
The recording for the big data of earthquake information and seismic waveform can be performed to the compact flash cards. This feature allows to utilize data analysis using PC.

・Color Liquid Crystal Touch Panel Display provides a High Level of Visibility
It adopts a 5.7- inch color LCD with touch-screen feature, therefore it makes possible for interactive configuration of data display or operation setup.

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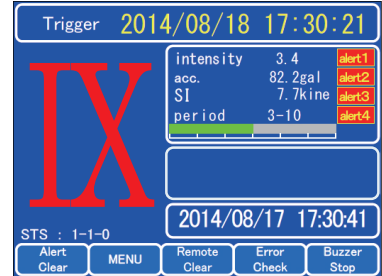# GP-888
SEISMIC ACCELEROGRAPH + INTENSITY METER

◆ Features

Standing By

Philippines
AREA:001 SPOT:001 - 0
trigger
intensity   acc.   SI
2.50   20.0   5.0

acc.
0.5 gal
T   0   5.0   10

STS : 1-1-0   2014/08/18 17:30:05

REVIEW | MENU | | Error Check | FEED

When an Earthquake is detected a few seconds ahead in the event of maximum shake arrives

earthquake information

Attainment time	source info.
6 sec	distance 18km Mag 4.8 depth 36km direction north
estimate intensity **III**	
2014/08/18 17:30:15	Alert Stop	clear

(Notifying as advance information for estimated seismic intensity and expected duration till maximum shake comes up.)
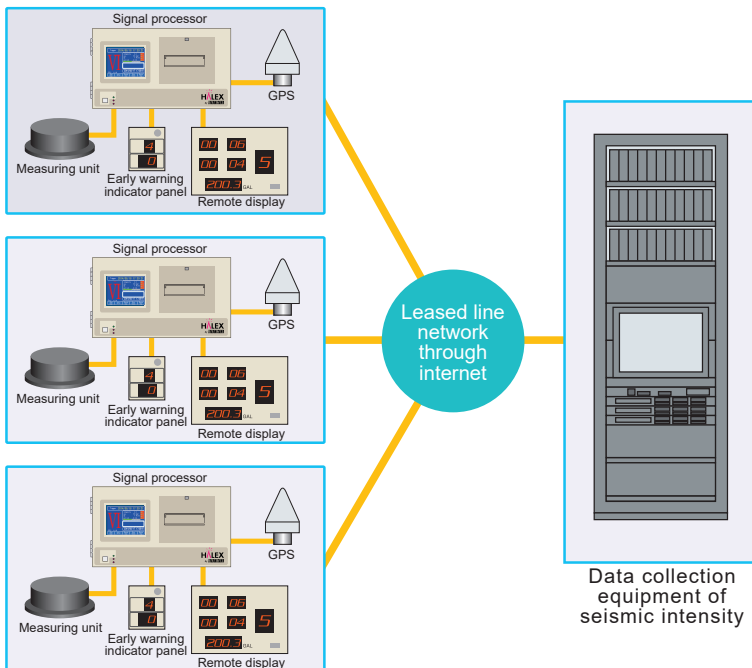This is an optional feature.

When maximum shake occurs

Trigger 2014/08/18 17:30:21

IX

intensity   3.4   alert1
acc.   82.2gal alert2
SI   7.7kine alert3
period   3-10   alert4

STS : 1-1-0   2014/08/17 17:30:41

Alert Clear | MENU | Remote Clear | Error Check | Buzzer Stop

(informing of both actual seismic intensity and time of occurrence.)

Display Clear

◆ Example of Earthquake Information Network System

Setting the instruments on purural spots and collecting the data in host system enable to build the seismic intensity information network system.

Thus, system operators can get the seismic intensity information quickly and use the information for disaster prevention, controlling automatic instrument.

Signal processor
GPS
Measuring unit
Early warning indicator panel
Remote display

Signal processor
GPS
Measuring unit
Early warning indicator panel
Remote display

Signal processor
GPS
Measuring unit
Early warning indicator panel
Remote display

Leased line network through internet

Data collection equipment of seismic intensity

Disaster prevention
To announce publicly to media, municipal governments, companies, various facilities, etc.

Controlling social systems
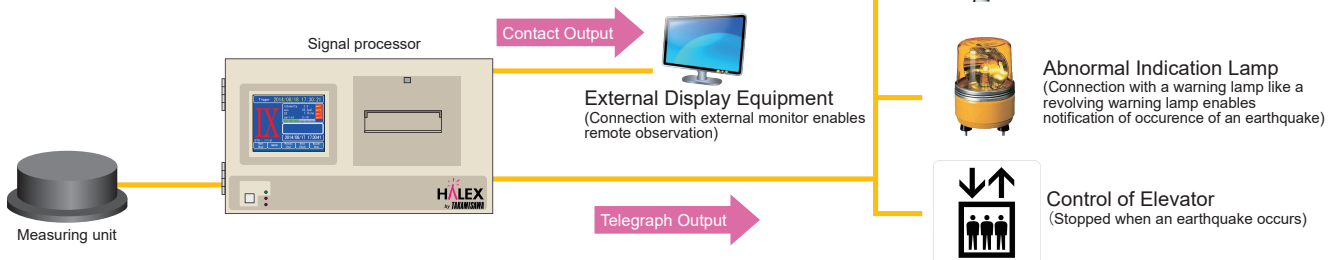To stop power plant, factory operations, elevators, etc.
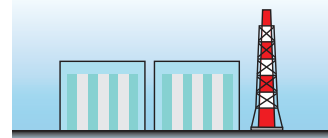
DPWH
Delivery of observation data

◆ Example using the Alarm Output

GP-888 can be utilized in wider range if connected with the options.
Include these, connecton with various equipment is possible.

Signal processor

Measuring unit

Contact Output

External Display Equipment
(Connection with external monitor enables remote observation)

Telegraph Output

Broadcasting Facility
(Connection with broadcasting equipment enable notification of the occurance of an earhquake with voice to promote evacuation)

Abnormal Indication Lamp
(Connection with a warning lamp like a revolving warning lamp enables notification of occurence of an earthquake)

Control of Elevator
(Stopped when an earthquake occurs)

SPECIFICATIONS

Measuring Unit

Seimoscope
Maximum measured acceleration: ±3000gal

Resolution Measurement: 0.63mgal

Components: 3 components (X-axis,Y-axis and Z-axis)

A/D(analog/digital) converting section
A/D Converter: 24-bit Delta-Sigma converter

Sampling frequency: 100Hz

Frequency characteristic: 0 ~ 40Hz

Dynamic range: 130dB +

Sampling synchronization: To be synchronized with built-in high-precision clock (The clock is to be calibrated by GPS.)

Communication Section
Interface/rate/range for Signal processor and Measuring unit:
Interface : RS-422   Rate : 38400 bps

General Specifications
Power supply: DC 15V (12V to 18V), supplied by Signal processor

Power consumption: Ca. 6W

Power outage measure:
Covered by battery backup function of Signal processor

Operation: Ambient temperature : -20°C ~ +60°C
Relative humidity : 100% or less (enclosed structure)

IP Level : IP67   Solid particle protection: 6
Liquid ingress protection: 7

Outline dimensions: (Diameter) 278mm × (H) 95mm

Weight: Ca. 5 kg

Attached External Devices

Joint Box, GPS Antenna, Coaxial lightning arrester, Switching HUB

Signal Processor

Performance/Functions
JMA Certitication: Certified as to conform seismic intensity category of 7 on the calculation basis of specified algorithm by JMA.

Carculated data: Seismic intensity scale, Instrumental seismic intensity, SI value, Maximum measured acceleration, Dominant period, MMI
*Time of earthquake observation, Earthquake Early Detection information (option)

Time calibration: Automatic calibration by GPS or NTP
(Built-in GPS receiver unit device)

Starting: Triggering level method select from 3ways (Instrumental seismic intensity, 3 components resultant acceleration, SI value)

Alarm Function: 4 alarm contacts, 2 failure contact outputs,
Relay type, Electronic sound Buzzer approx. 65dB

Test Function: Sensor test, Battery test, Printer test, Indicator test,
Alarm contact test, Buzzar test, Communication test

Storage: Media: CF card 32GB Storage period: Approx. 1.5years data

Recording: Earthquake information, Acceleration waveform,
Earthquake accleleration wave form, Log information

Communication: Serial: RS-232C (2 ports)
LAN: Ether port 10BASE-T/100BASE-TX (2 ports)
TCP/IP, FTP, Telnet

Display: Touch Panel 5.7-inch TFT Color display
Resolution 320 × 240 dots

Printing: Printable data : Seismic intensity, Acceleration, Wave form,
Configuration information, various system history, etc.
Method: Thermal printing

General Specifications
Power supply: AC220V±10V 50/60Hz

Power consumption: Less than 35W (During charging)
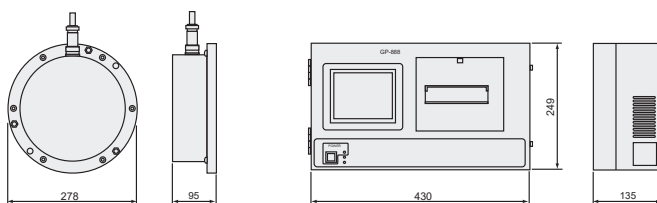Less than 25W (Full charge)

Power outage measure: Coverd by built-in UPS power source unit
Operation by built-in battery within 2-hours

Operation: Amblent temperature : -10°C ~ +50°C
Relative humidity : 90% or les (Noncondensing)

Outline dimensions: (W) 430mm × (H) 249mm × (D) 135mm

Weight: Ca. 10 kg

Outline dimensions

Measuring unit   **Signal processor**