【SHOCK DATA LOGGER】

# IMPAK-02

## The shock in logistics can always be observed.

IMPAK–02 employs capacitive accelerometer, and records shock given to packages, containers, and vehicles etc. during transportation. IMPAK–02 offers important information for the logistics management.

It makes Technological Sense

STC SANTEST

# SHOCK DATA LOGGER
# IMPAK-02

- The highly accurate, electrostatic capacitive element is adopted for shock recording of X/Y/Z axes.
- With timer function, recording starts and ends automatically
- Dustproof, waterproof, robust, aluminum case
- With built-in rechargeable battery
- USB connection with Windows PC
- Easy analysis and storage of data with included software 「ViewPak-02」
- It is possible to connect directly to the printer.
- With alarm output

## Outline

IMPAK-02 is a compact data logger that records shocks given to packages, containers, and vehicles. The shock value in terms of (G) from X-Y-Z axes and the time are recorded. The data of harmful shock given during loading, transporting, and handling will help you for warranty of transportation and packing plan. It is possible to analyze and store the data with Windoows PC, and therefore important information is offered to management of total logistics.

## Product explanation

Using acceleration sensor (electrostatic capacitive type), IMPAK-02 observes shocks given during transportation. Setting a threshold for shock value (G) and selecting a recording interval (Seven sampling periods are available, from 1 second to 60 minutes) beforehand, IMPAK-02 observes the given shock continuously and records the maximum shock, which exceeds the threashold with the date and time by a built-in nonvolatile memory. The recorded data for shock is the maximum G value for each axis (X, Y, Z) in the selected recording interval. IMPAK-02 has a rechargeable battery built-in and works for 30 days continuously with full charge. After transportation, connecting to PC through USB cable, the recorded data is listed up and graphed instantly. It is also possible to output to the CSV or Excel file, and to analyze data freely.
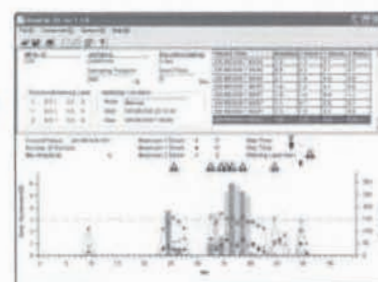
## Method for utilization

### ①The setting is transmitted to IMPAK-02

### ②Attached to the packages during transportation.

### ③The shocks are inspected and analyzed with PC.

## Applications

### ●For the quality control of transportation

Investigation of the possibilities and causes of damage on the packages or accidental collapse of piled cargos during transportation.

### ●For the protection of mechanical equipment such as presses

In case that a large shock, which can damage the machine, is given, you can use alarm output from IMPAK-02 for automatically stop and protect the machine.

### ●For feedback of the wrap/packing design

Making drop or shock test for wrapped and packed goods together, it can be learned how the wrap/packing can stand against shocks.
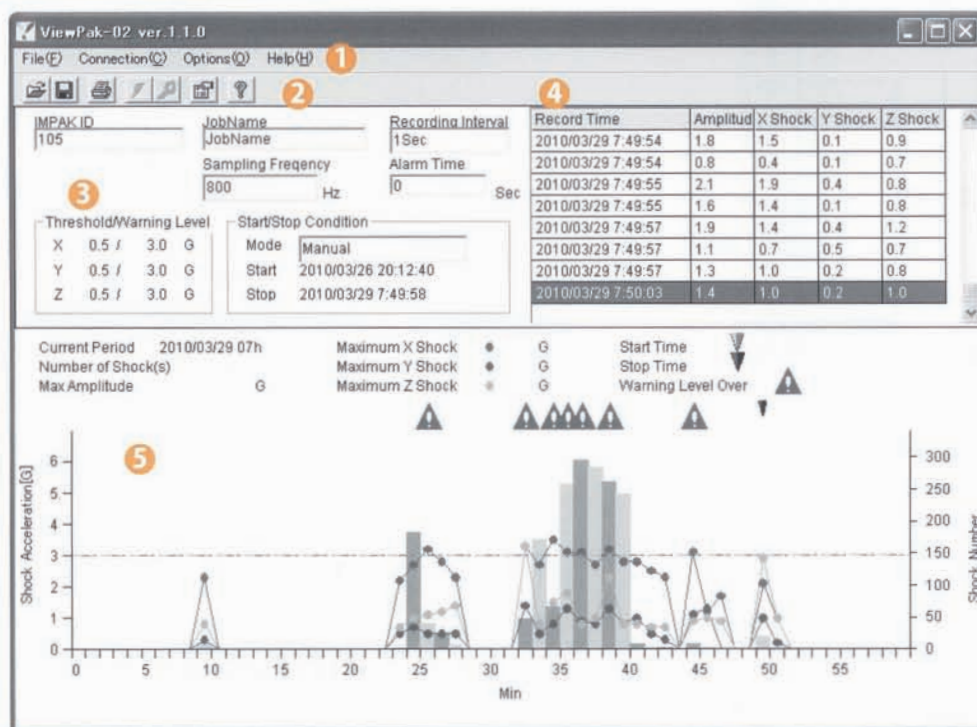
### ●For warranty record of transportation

You can obtain detailed reports about shocks given to precision equipment during transportation and use the reports for insurance claims.

# Attached software
# ViewPak-02

- Transmitting the setting data to operate IMPAK-02 and receiving the impact data from IMPAK-02
- Displays recorded data
- The transition of the shock value and the number of shocks are graphed.
- Time axis is adjustable. Visible/Invisible in the graph of each affiliate is switched, and its color can be arranged.
- Print of shock report (with graph) is possible.
- It is possible to export data to the CSV or Excel file, and to use it with other software.

## Main screen

| ViewPak-02 ver.1.1.0 |
|---|
| File(F)  Connection(C)  Options(O)  Help(H) ❶ |

❷ Toolbar area

**IMPAK ID** 105
**JobName** JobName
**Recording Interval** 1Sec
**Sampling Fregency** 800 Hz
**Alarm Time** 0 Sec

❸ Threshold/Warning Level
| | | |
|---|---|---|
| X | 0.5 / | 3.0 G |
| Y | 0.5 / | 3.0 G |
| Z | 0.5 / | 3.0 G |

Start/Stop Condition
Mode Manual
Start 2010/03/26 20:12:40
Stop 2010/03/29 7:49:58

❹ Data table:

| Record Time | Amplitud | X Shock | Y Shock | Z Shock |
|---|---|---|---|---|
| 2010/03/29 7:49:54 | 1.8 | 1.5 | 0.1 | 0.9 |
| 2010/03/29 7:49:54 | 0.8 | 0.4 | 0.1 | 0.7 |
| 2010/03/29 7:49:55 | 2.1 | 1.9 | 0.4 | 0.8 |
| 2010/03/29 7:49:55 | 1.6 | 1.4 | 0.1 | 0.8 |
| 2010/03/29 7:49:57 | 1.9 | 1.4 | 0.4 | 1.2 |
| 2010/03/29 7:49:57 | 1.1 | 0.7 | 0.5 | 0.7 |
| 2010/03/29 7:49:57 | 1.3 | 1.0 | 0.2 | 0.8 |
| 2010/03/29 7:50:03 | 1.4 | 1.0 | 0.2 | 1.0 |

Current Period 2010/03/29 07h
Number of Shock(s)
Max Amplitude G

Maximum X Shock ● G
Maximum Y Shock ● G
Maximum Z Shock ● G

Start Time
Stop Time
Warning Level Over

❺ Data graph (Shock Acceleration[G] vs Min / Shock Number)

### ❶ Menu

### ❷ Toolbar

### ❸ Reception setting field
- Job name
- Recording interval
- Threshold level / Warning level
- Beginning/end condition

### ❹ Data table
- Record time and date
- Shock value
- Each shock value of X/Y/Z axis

### ❺ Data graph
- Shock graph (polygonal graph)
- Shock number graph (bar graph)
- Warning mark
- Record beginning/end date

## Transmission setting dialog

**Configuration Dialog**

**IMPAK System Time** ❶ 2010/08/17 18:28:54
**JobName** ❷ JobName
**Recording Inte** ❸ 1Sec
**Sampling Fregency** ❹ 3200 Hz
**Alarm Time** ❺ 0 Sec

❻ ❼ Threshold/Warning Level
Threshold 1.0 G
Warning X 3.0 G
Warning Y 3.0 G
Warning Z 3.0 G

Start/Stop Condition ❽
Mode Timer
Start 2010/08/17 18:33:00
Stop 2010/08/17 18:38:00

Buttons: Use current configuration | Open | SaveAs | Transmit Configuration Data | Close

## Print report

IMPAK Shock Data Report

### ❶ System time — Time of built-in clock
### ❷ Job name — Name that identifies record
### ❸ Recording interval — Interval time when shock data is preserved in IMPAK-02
### ❹ Sampling frequency — Frequency of data collection
### ❺ Alarming time — Duration of alarm output
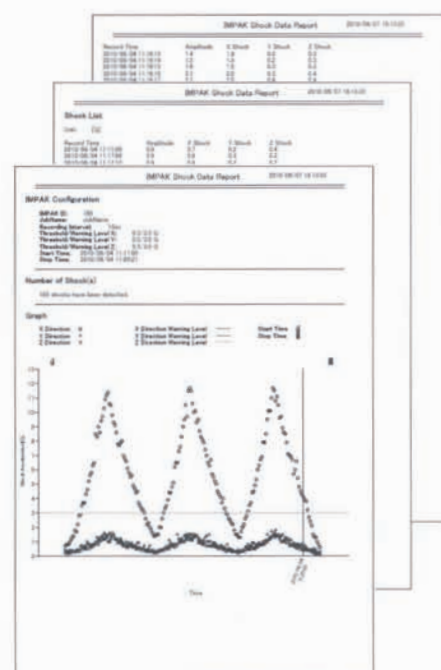### ❻ Threshold level — Threshold of shock recorded in IMPAK-02
### ❼ Alarming level — Threshold of shock that displays warning mark
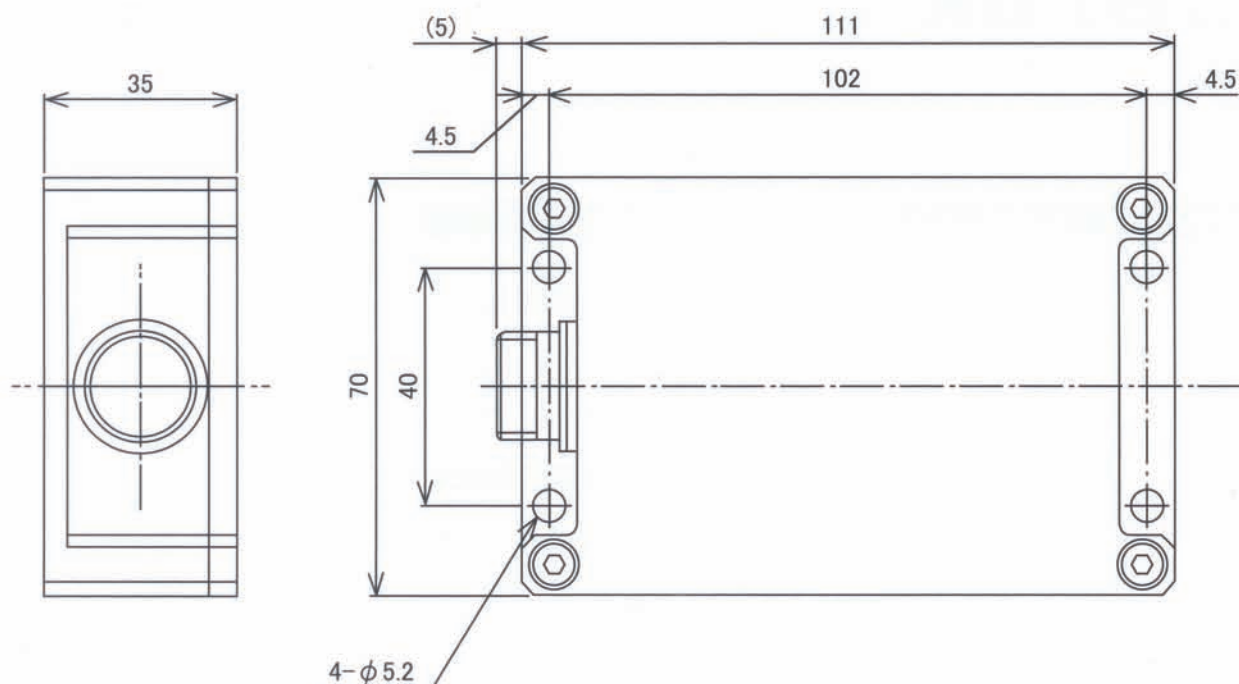### ❽ Beginning/end condition — Beginning/end condition that is timer or manual.

※The maximum shock value that exceeded the threshold level is preserved in every recording interval.

## Dimensions



## Specifications

| Record item | X/Y/Z axes impact value and generation date |
|---|---|
| Measurement range | 16G (cross axis sensitivity ±1%) |
| Threshold level | 0.5G~14.9G (common value for 3 axes) |
| Alarming level | Up to 14.9G > Threshold (each axis individually) |
| Axis | 3 axes (X, Y, Z) |
| Data storage capacity | 1 million data (one data includes X,Y,Z and date) |
| Recording interval | 1sec/5sec/10sec/1min/10min/30min/1hour |
| Resolution | 0.1G |
| Accuracy | ±0.2G |
| Sampling frequency | 3200/1600/800/400/200Hz |
| Memory | Flash memory (1GB) |
| PC interface | USB |
| Battery | Ni-MH AAA size (2pcs) |
| Battery life | 400 times rechargeable |
| Typical measurment life time(*) | 30 days (with full charge) |
| Operating Temp | −5℃~45℃ (no condensation) |
| Protection grade | IP63 (Cap mount for Standard type) |
| | IP67 (Water proof cap mount for Option type) |
| Accessory | Included software ViewPak-02 |
| | USB cable and vinyl connector cap |
| Weight | approximately 420g |

(*)External Battery possible for long days measurements

## Model

# IPK-02

## Optional Accessories

- Waterproof connector cap
- External battery case
- Printer connection cable