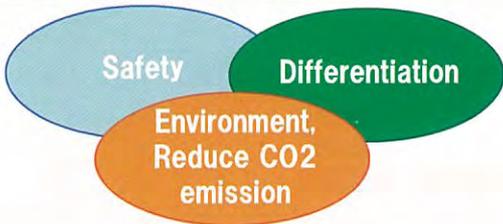


Simply place them for automatic recording of temperature, relative humidity and shock.

WATCH LOGGER are easy-to-use and reliable data acquisition system.

Benefit of using WATCH LOGGER : It is ideal for demanding industry applications.



- Pursuit of visibility
- Ideal for ensuring adherence to ISO quality and environment standard
- Contribution to energy-saving measure

Representative Model : WATCH LOGGER are available to meet various customer needs.

Stick type (temperature and relative humidity and a shock)

/Smallest model (NFC Standard) KT-295F
Shock measurement during transportation (food, pharmaceutical product, materials, parts, etc.)



Open Price .
Sample capacity 6,000 points
(Shock XYZ axis each 2,000 points)

/USB port communication model KT-295U
Direct connection to PC through USB interface
No reader is required



Open Price .
Sample capacity 6,000 points
(Shock XYZ axis each 2,000 points)

**Communication method
Non contact by
electromagnetic coupling**

Reader for Stick type
(NFC Reader)



Open Price

Card type (temperature and relative humidity)

/Standard model KT-275
Temperature recording for cold chain system
Temperature monitoring for refrigeration control equipment.



Open Price .
Sample capacity 15,000 points
Battery life 1 year

/LCD model KT-215XL
Temperature and relative humidity control for refrigerated warehouse, hospital, factory, office, clean rooms, etc.



Open Price .
Sample capacity 15,000 points
Battery life 3 year

Reader for Card type
(KT-300)



Open Price

...With exclusive software...

How to use : Simply place them for automatic data reading.

Configure settings of measurement conditions using exclusive PC software, and place WATCH LOGGER where temperature, relative humidity and shock needs to be measured. Just put WATCH LOGGER on PC connected reader for downloading measured data. Setting of measurement conditions and data downloading are user-friendly.

STEP 1 →
Measuring temperature/humidity and shock



Set WATCH LOGGER where measurement needs to be taken

STEP 2 →
Simple, just to put on the reader



Put it on PC connected reader (available separately) for data downloading. USB type requires PC connection through USB port.

STEP 3 →
Data collection and control



Control data using exclusive PC software.

Software : Exclusive easy-to-use software allows data downloading and data exporting to reporting file format.

Condition setting window

Allows settings for measurement starting date and time, ending date and time. Sampling interval can be set from 1 minute to 255 minutes.



Graph display window

Just put it on the reader to start automatic data downloading. Display trend graphs, maximum, minimum and average value.

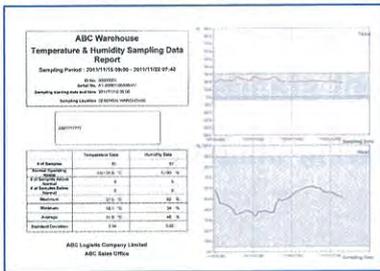


Sampling Date	Temp	Humi
2010/02/14 18:00	19.5	51.0
2010/02/14 18:10	20.5	53.0
2010/02/14 18:20	22.5	63.5
2010/02/14 18:30	40.0	51.0

★Upper limit and lower limit of temperature and humidity can be set in condition setting display. Value beyond the limit will be displayed in red.

Recording certificate report

Software can print measured data in report format. Data can be stored in CSV format and original report can be generated. (Recording certificate report that ensures reliability)



Sampling Date	Temp	Humi	Shock (X)	Shock (Y)	Shock (Z)
2010/02/14 18:00	19.5	51.0	72	-5	23
2010/02/14 18:00	20.5	53.0	13	16	-6
2010/02/14 18:01	22.5	63.5	8	25	67



★Threshold and upper limit of the shock can be set in condition setting display. Value beyond the limit will be displayed in red.

Case study : Versatile with many applications, such as warehouses, factories, food cold chain distributions, etc.



Used in cold chain distribution of frozen noodle. It will not be fresh anymore when frozen condition is not maintained. In order to control temperature during distribution, they put loggers in all distribution boxes. (Noodle chain)



Used in the warehouse for pharmaceutical products in order to control temperature and relative humidity. It is capable of measuring temperature and relative humidity of the warehouse in 120 minutes interval. Data is collected and controlled on monthly basis. (Pharmaceutical company)



Used for risk management of high quality apple export. Useful for quality control of fresh food that can be damaged easily by shock.

Specifications and features : Capable of collecting reliable data surely.

Measuring range

Temperature

-40°C ~ +80°C
±1°C
(Card & USB type)
±0.3°C
(NFC Standard type)

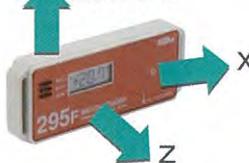
Humidity

5% ~ 90%
±5%
*Operating temperature for humidity measurement is (+5°C ~ +45°C)

Shock

5G ~ 75G
±15%
Please refrain from using it in the area where strong magnetic noise is observed. Shock measurement depends on the time that shock is applied.

Shock is measured in 3 axis, i.e. X Y Z



Recording time chart (reference only) of measurement intervals (Adjustable in the range of 1 minute to 255 minutes interval)

Sample capacity	6,000	15,000
1 minute	Approx. 4 days	Approx. 10 days
5 minutes	Approx. 20 days	Approx. 52 days
10 minutes	Approx. 41 days	Approx. 104 days
30 minutes	Approx. 125 days	Approx. 312 days

* Value will be half of the above chart when taking both temperature and relative humidity measurement.
* Shock is recorded whenever it is applied.

- Operating system compatibility and environment : Windows /XP/Vista/, CPU: more than Pentium 200MHz, MS Excel. CD-ROM and USB port.
- The products in the catalogue are subject to change for improvement without notice. Color of products in the catalogue and actual product may not be exactly the same due to printing effect.

USB Data Logger

Practical !



Electronic recording device to monitor accidents during transportation

- ◆ Require USB cable only – No exclusive reader required
- ◆ Compact body – Useful for getting a sample of shock of various objects and places
- ◆ Conform RTCA/DO-160D standard – Available for airplanes

Temperature and Humidity data logger



KT-155U
Embedded sensor type
(Open price)



KT-255U
Embedded sensor type
(Open price)

Temperature recording of cold chain/Temperature and Humidity control in warehouse or green house

Shock data logger



KT-195U
Embedded sensor type
(open price)



KT-295U
Embedded sensor type
(open price)

Possible to identify the exact time of drop or collision !

shock measurement during transportation
(food/medicines/precision machinery/materials/parts/etc)

USB cable connection allows direct setting, sampling, recording and checking



- ① Connect DATA LOGGER and PC with USB cable
- ② Data is automatically collected after USB connection
- ③ Control of temperature, humidity and shock is realized by user friendly graph display

Software Data graph display and report generation software is attached as standard accessory

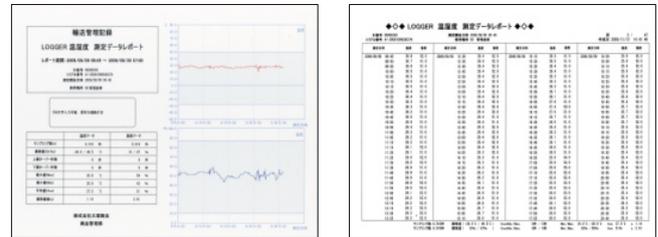
Graph display screen

Automatic data reading is available just by connecting the logger and PC with USB cable. Maximum value, minimum value, average value other than transitive value can be displayed on the screen.



Report of recording certificate

Sampling data can be printed in report format. The data can be also stored in CSV format so that it can generate an original report.



Accessory software

Data collecting software is attached with the logger as standard accessory. Just installing it in the computer to start working immediately.



Sampling Date	Tempe		
2010/09/15 16:00	28.7	55.0	
2010/09/15 16:16	30.2	52.0	
2010/09/15 16:17	31.0	51.0	
2010/09/15 16:18	31.9	50.0	

Sampling Date	Shock (X)	(Y)	(Z)
2010/09/15 16:08	3	14	3
16:08	2	-5	3
2010/09/15 16:08	42	30	-16
16:12	9	15	-11

★Abnormal data is displayed in red by setting lower value or upper value of temperature, Humidity and Shock in condition setting screen.

Specification Easily visualize consistent temperature variation, Shock generation during transportation and storage.

Model	KT-155U	KT-255U	KT-195U	KT-295U
Appearance				
Sampling item	Temperature	Temperature/Humidity	Shock/Temperature	Shock/Temperature/Humidity
Sampling range	Temperature	-40°C~80°C	-40°C~80°C	-40°C~80°C
	Humidity	—	5%~90%	—
	Shock	—	—	±5G~±75G
Resolution	Temperature	0.1°C	0.1°C	0.1°C
	Humidity	—	1%	—
	Shock	—	—	1G
Accuracy	Temperature	±1.0°C	±1.0°C	±1.0°C
	Humidity	—	±5%	—
	Shock	—	—	±15%
Sampling capacity	Temperature	14,000 samples	14,000 samples	6,000 samples
	Humidity	—	14,000 samples	—
	Shock	—	—	XYZeach axis2,000samples
Sampling interval (10min. sampling interval)	55days	55days	40days(No Shock)	40days(No Shock)
Battery	Type	CR2477		CR2477
	Life	2 years		60days
Dimension	90(W) × 34(H) × 15(D)mm			
Weight	About45g			
Water proof structure	IP54	—	IP54	—
Sampling interval	1min.~255min. interval(Shock is recorded when it is sensed)			
Corresponding readers	(USB cable direct communication)			

- Battery life depends on usage. Please use this information just for a reference.
- WATCHLOGGER (Watch logger) is a registered trade mark of Fujita Electric Works, Ltd
- Operational environment, OS:Windows/XP/Vista/7, CPU: Pentium 200Mhz or more, CD-ROM drive and USB port.
- Specifications in the catalogue are subject to change for improvement without prior notice
- There may be some color differences between actual product and catalogue due to finish of the printing.

Water Proof Data Logger

Genuine !



Reliable Quality !
Electronic recording device for
temperature, humidity and shock

- ◆ Water proof structure that can stand even if it is dropped in the water(patent pending). Humidity measurement type is now released that has never been so far!
- ◆ Conforms NFC communication standard, which is international standard correspondence- Available for airplanes!

Temperature and Humidity data logger



KT-155F
Embedded sensor type
(Open price)

KT-255F
Embedded sensor type
(open price)

KT-155FP
External sensor type
(Open price)

KT-255FP
External sensor type
(open price)

Temperature recording of cold chain/Temperature and Humidity control in warehouse or green house

Shock data logger



KT-195F
Embedded sensor type
(open price)

KT-295F
Embedded sensor type
(open price)

Possible to identify the exact time of drop or collision !

shock measurement during transportation (food/medicines/precisionmachinery/materials/parts/etc)

Just putting it closer to the reader for setting, sampling, recording and checking

“PaSoRi”



“FeliCa” Port PC



NFC communication reader “PaSoRi” RC-S330/S are available from us

NFC communication

NFC stands for Near Field Communication . It is international communication standard that is operable in overseas. FeliCa standard or “SuiCa” and “Edy” that are used in Japan as electronic money also satisfy the same standard.

Software Free software for data graph display and report generation are available for download

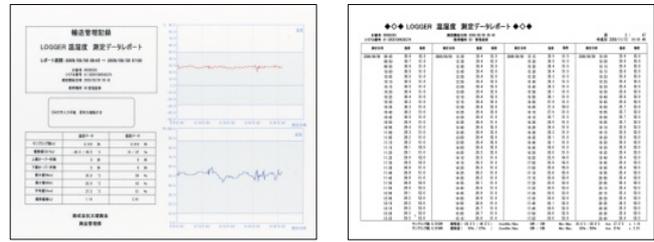
Graph display screen

Automatic data reading is available by putting a logger above the reader. Maximum value, minimum value, average value other than transitive value can be displayed on the screen.



Report of recording certificate

Sampling data can be printed in report format. The data can be also stored in CSV format so that it can generate an original report.



Sampling Date	Temp	Humi
2010/09/15 16:00	28.7	55.0
2010/09/15 16:16	30.2	52.0
2010/09/15 16:17	31.0	51.0
2010/09/15 16:18	31.9	50.0

Sampling Date	Shock(X)	(Y)	(Z)
2010/09/15 16:08	3	14	3
16:08	2	-5	3
2010/09/15 16:08	42	30	-16
16:12	9	15	-11

★ Abnormal data is displayed in red by setting lower value or upper value of temperature, Humidity and Shock in condition setting screen.

Specification Easily visualize consistent temperature variation, Shock generation during transportation and storage.

Model	KT-155F	KT-255F	KT-195F	KT-295F
Appearance				
Sampling item	Temperature	Temperature/Humidity	Shock/Temperature	Shock/Temperature/Humidity
Sampling range	Temperature	-40°C~80°C	-40°C~80°C	-40°C~80°C
	Humidity	—	5%~90%	—
	Shock	—	—	±5G~±75G
Resolution	Temperature	0.1°C	0.1°C	0.1°C
	Humidity	—	1%	—
	Shock	—	—	1G
Accuracy	Temperature	±0.3°C	±0.3°C	±0.3°C
	Humidity	—	±5%	—
	Shock	—	—	±15%
Sampling capacity	Temperature	8,000 samples	8,000 samples	6,000 samples
	Humidity	—	8,000 samples	—
	Shock	—	—	XYZ each axis 2,000sample
Sampling interval	1~255 min. interval (Shock is recorded whenever it is sensed)			
Examples of sampling interval calculation (10 min. sampling interval)	55days	55days	40days(No Shock)	40days(No Shock)
Battery	Type	CR2477		CR2477
	Life	2 years		60 days
Water proof structure	IP67	IP67 filter used	IP67	IP67 filter used
Dimension	90(W) × 34(H) × 15(D)mm			
Weight	About 45g			
Corresponding reader	NFCcommunication (USBconnection reader "PaSoRi"+"FeliCa"port PC, "FeliCa"port mobile phone(OSAIFU-KEITAI))			

- Operational temperature range ±0.3°C (-10°C~+50°C), ±0.5°C (-40°C~-10°C/+50°C~+80°C)
- Battery life depends on usage. Please use this information as reference.
- WATCHLOGGER (Watch Logger) is a registered trade mark of Fujita Electric Works, Ltd.
- FeliCa and PaSoRi are registered trade mark of SONY Corporation.
- Official SONY PaSoRi models are RC-S370, RC-S360/S, RC-330/S.
- Operational environment, OS:Windows/XP/Vista/7, CPU: Pentium 200Mhz or more, CD-ROM drive and USB port.
- Specifications in the catalogue are subject to change for improvement without prior notice.
- There may be some color differences between actual product and catalogue due to finish of the printing.