

SATO

No. 514

# General Catalog



# Corporate Profile

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Products Meteorological instruments, scientific instruments and laboratory apparatus  
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Establishment April, 1958

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The certificates we have been registered.

JCSS



ISO9001



ISO14001



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### No. 0022-38 STANDARD THERMOMETER SET (Set of 8 pcs. in a case)

Used for calibration and test of all thermometers as stable and reliable reference. These thermometers can help you meet the documents dealt with ISO 9001 and traceability.

- \* Dual tubing with a scale plate enclosed.
- \* Mercury-filled thermometers with an ice-point determination
- \* All thermometers are 9 to 10mm in diameter and 400mm in length.
- \* Calibration certificate issued by JCSS is attached.  
(JCSS: Japan Calibration Service System)

No.	Range	Div.	No.	Range	Div.
0	-50 to 0°C	0.1°C	4	150 to 200°C	0.1°C
1	0 to 50°C	0.1°C	5	200 to 250°C	0.1°C
2	50 to 100°C	0.1°C	6	250 to 300°C	0.1°C
3	100 to 150°C	0.1°C	7	300 to 360°C	0.1°C

— Can be sold loose —

### No. 0022-08 STANDARD THERMOMETER SET (Set of 8 pcs. in a case)

- same as the above, but calibration certificate is issued by manufacturer.



### No. 0021-10 STANDARD THERMOMETER SET (Set of 8 pcs. in a case)

- \* Dual tubing with a scale plate enclosed.
- \* Mercury-filled thermometers
- \* All thermometers are 6 to 7mm in diameter and 300mm in length.
- \* Calibration certificate issued by manufacturer is attached.

### No. 0020-10 STANDARD THERMOMETER SET (Set of 8 pcs. in a case)

- same as the above, but thermometers are etched-stem type.

## No. 0110 ALCOHOL-FILLED ETCHED-STEM THERMOMETERS

— Total immersion —

- \* Scale is etched on the surface of the glass tube

Minimum quantity: 10 pcs.

Cat No.	Range	Div.	Length	Metal case
0110-00	0 to 100°C	1°C	300mm	No. 0955-00 for 300mm thermometer
0120-00	-5 to 105°C	1°C	300mm	
0140-00	-20 to 105°C	1°C	300mm	
0220-00	0 to 50°C	1°C	300mm	
0230-00	-20 to 50°C	1°C	300mm	
0240-00	-30 to 50°C	1°C	300mm	
0260-00	-50 to 50°C	1°C	300mm	No. 0956-00 packed in a slide pack for 300mm thermometer
0280-00	0 to 150°C	1°C	300mm	
0290-00	0 to 200°C	1°C	300mm	
0315-00	-30 to 105°C	1°C	300mm	
0320-00	-70 to 50°C	1°C	300mm	
0330-00	-40 to 50°C	1°C	300mm	
0335-00	-80 to 50°C	1°C	300mm	No. 1710-90 for 150mm thermometer
0340-00	-100 to 50°C	1°C	300mm	
0600-00	-20 to 50°C	1°C	150mm	
0610-00	0 to 50°C	1°C	150mm	
0620-00	0 to 100°C	1°C	150mm	

Material of the metal cases: SUS304





No. 8161-00 DATALOGGER MODEL SK-L200TII (Temperature measurement type)

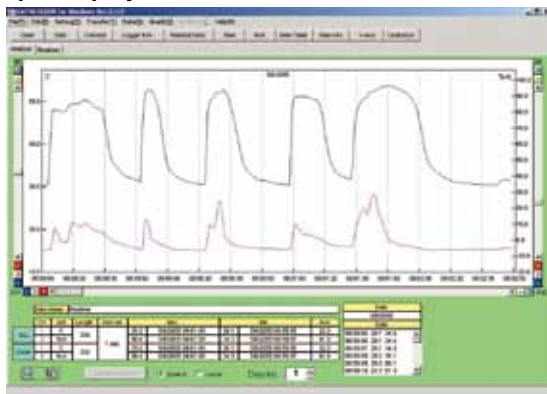
No. 8175-00 DATALOGGER MODEL SK-L200THII  $\alpha$  (Temperature and humidity measurement type)



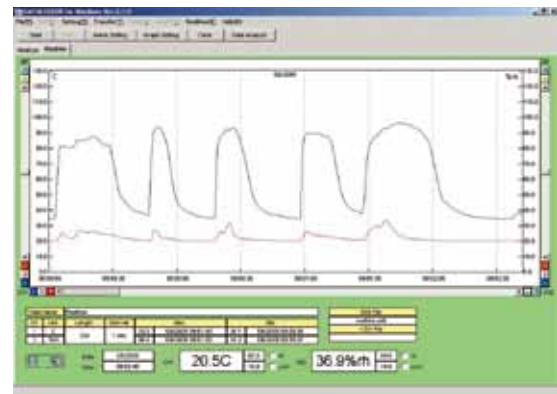
## FEATURES

- The memory capacity is 8100 lines of data per channel.  
The data for about 506 days can be stored with logging interval of 90 minutes.
- The method of storing data is selectable among four logging options; Once, Repeatedly, Ends at and By pages.
- The software for data analysis and real-time transmission is provided as standard accessories.
- The date and time to start logging automatically can be specified by setting the preset start.
- The measurement data can be transmitted in real-time to a personal computer.
- The USB transmission is adopted.
- The upper and lower thresholds for warning can be set. When the temperature or humidity threshold is triggered, the alarm mark (Hi or Lo) will light.
- The probes are interchangeably used with the main units.
- The storage memory can be varied with the memory indicator.
- The logging interval can be selected from 14 options: 1 sec, 2 sec, 5 sec, 10 sec, 15 sec, 30 sec, 1 min, 2 min, 5 min, 10 min, 15 min, 30 min, 60 min and 90 min.
- Even if the power is turned off, data stored in the EEPROM memory is retained.
- The datalogger ID can be set. This is useful to identify multiple dataloggers.
- By using the data analysis software attached, the acquired data can be evaluated easily and quickly, and also evaluated by using commercial spreadsheet software supporting the "CSV" extension such as Microsoft Excel.

## Graph Displays on the PC screen



By Data Analysis Software



By Real-Time Transmission Software

## SPECIFICATIONS

## 1. Main Units (DC Type)



Cat. No.	8161-00	8175-00
<b>Model</b>	<b>SK-L200T II (for temperature)</b>	<b>SK-L200TH II α (for temperature and humidity)</b>
Display range	-45 to 205.0°C (depending on a probe connected)	-15 to 65.0°C, 10 to 99.9%RH (depending on a probe connected)
Resolution (Temp.)	0.1°C (-9.9 to 205.0°C) 1°C (-10°C or less)	0.1°C (-9.9 to 65.0°C) 1°C (-10°C or less)
Resolution (Humi.)	—	0.1%RH (15.0 to 99.9%RH) 1%RH (15.0%RH or less)
Accuracy (Temp.)	±(0.1°C + 1 digit)	±(0.1°C + 1 digit)
Accuracy (Humi.)	—	±(0.1%RH + 1 digit)
Applicable probes	SK-LT II series probes	SK-LTH II α series probes
Sampling (display)	About 1 sec.	
Display functions	TIME (display time), INT (logging interval) REC (during logging), RES (during preset standby), OUT (during real-time transmission), LCD bars (used memory) CALL (call for the current measurement data during logging), ID number Current temperature, Current humidity, Current date and time, low battery mark, Temp. upper limit (Hi), Temp. lower limit (Lo), Humi. upper limit (Hi), Humi. lower limit (Lo), Temp. alarm ON (Alarm), Humi. alarm ON (Alarm), logging option, setting value of upper and lower limits, error message	
Memory capacity	Up to 8100 lines of data depending on the logging option (four logging options: Once, Repeatedly, Ends at, By pages)	
Logging intervals	1 sec. 2 sec. 5 sec. 10 sec. 15 sec. 30 sec. 1 min. 2 min. 5 min. 10 min. 15 min. 30 min. 60 min. 90 min.	
Communication	USB	
Operating ambient	-10 to 60°C, no condensing	
Storage ambient	0 to 50°C	
Power requirement	"AAA" size alkaline battery x 2	
Battery life	<ul style="list-style-type: none"> <li>Under continuous measurement mode : more than 500 hours</li> <li>Under logging mode: possible to log 8100 data with every logging interval (ex.: about 506 days with logging interval of 90 minutes.)</li> </ul>	
Dimensions	100(W) x 73(H) x 22(D) mm	
Weight	About 123g (without batteries)	
Materials	ABS resin	
Standard accessories	CD-ROM (data analysis software, real-time software), USB cable (1.5 m), USB port cap (factory set), hand strap, "AAA" size alkaline battery x 2 (Probe is not included in the standard accessories)	

## 2. Main Units (AC/DC Type)

No. 8161-10 Model SK-L200TIID  
(Temperature measurement type)

No. 8175-10 Model SK-L200THIIαD  
(Temperature/humidity measurement type)



\* Power requirements: "AAA" size battery x 2 or AC adapter (option)  
(Other specifications are the same as SK-L200TII and SK-L200THII α respectively)

## 3. No. 8161-50 AC adapter Model AD0601000-2 (input: 100 to 240VAC)

Applicable to SK-L200TIID and SK-L200THIIαD dataloggers

## 4. Standard Probes



Cat. No.	8162-00	8163-00	8176-00	8177-00	8178-00
<b>Model</b>	<b>SK-LT II-1</b> Plug-in type	<b>SK-LT II-2</b> w/ sensor cord	<b>SK-LTH II α-1</b> Plug-in type	<b>SK-LTH II α-2</b> w/ sensor cord	<b>SK-LTH II α-3</b> Stick type w/ sensor cord
Sensor (Temp.)	Thermistor		Thermistor		
(Humi.)	—		High Polymeric Resistance change type		
Measuring range	−10 to 60.0°C	−40 to 105.0°C	−10 to 60.0°C		
	—	—	20.0 to 98.0%RH (at 23°C)		
Accuracy (Temp.)	±0.5°C (20.0 to 30.0°C) ±1°C (other than above)	±0.5°C (15.0 to 35.0°C) ±2°C (lower than −10°C) ±1°C (other than above)	±0.5°C (20.0 to 30.0°C) ±1°C (other than above)	±0.5°C (15.0 to 35.0°C) ±1°C (other than above)	
Accuracy (Humi.)	—	—	±3%RH (20.0 to 30.0°C, 30 to 90%RH) ±7%RH (lower than 10.0°C, higher than 50.0°C) ±5%RH (other than above)	±3%RH (15.0 to 35.0°C, 30 to 90%RH) ±7%RH (lower than 0°C, higher than 50.0°C) ±5%RH (other than above)	
Dimensions	25W x 70H x 20D mm	Sensing part: (tip) Ø5 x L20 mm Cord Length: 1.5 m	25W x 70H x 20D mm	Sensing part: 18W x 51H x 10D mm Cord Length: 1.5 m	Ø8 x L35 mm Cord Length: 1.5 m
Weight	Approx. 13g	Approx. 43g	Approx. 15g	Approx. 65g	Approx. 69g
Materials	ABS resin	ABS resin, PVC resin	ABS resin	ABS resin, PVC resin	ABS resin, PVC resin, Polyacetal resin
Accessories	Test Result	Test Result	Test Result	Test Result	Test Result

## 5. Optional Probes for SK-L200T II Datalogger (Temperature measurement)



Sensing stem: Ø3 x 150 mm (w/ grip)

**No.8164-00 Penetration type Model SK-LT II-3**

– Water protection level IP X5 –  
 Measuring range : −40 to 105.0°C  
 Cord length : 3.75 m

**No.8165-00 Penetration type Model SK-LT II-4**

– Water protection level IP X5 –  
 Measuring range : −40 to 105.0°C  
 Cord length : 5.0 m

**No.8167-01 for High temperature Model SK-LT II-7**

– Water protection level IP X5 –  
 Measuring range : −40 to 200.0°C  
 Sensing stem : Ø3 x 150 mm (w/ grip)  
 Cord length : 1.5 m

**No.8167-02 for High temperature Model SK-LT II-8**

– Water protection level IP X5 –  
 Measuring range : −40 to 200.0°C  
 Sensing stem : Ø3 x 400 mm (w/ grip)  
 Cord length : 1.5 m



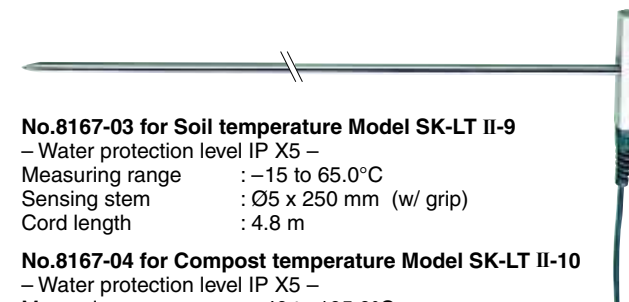
Sensing tip: Ø5 x 20 mm

**No.8166-00 Cylindrical tip type Model SK-LT II-5**

– Water protection level IP X7 –  
 Measuring range : −40 to 105.0°C  
 Cord length : 3.75 m

**No.8167-00 Cylindrical tip type Model SK-LT II-6**

– Water protection level IP X7 –  
 Measuring range : −40 to 105.0°C  
 Cord length : 5.0 m

**No.8167-03 for Soil temperature Model SK-LT II-9**

– Water protection level IP X5 –  
 Measuring range : −15 to 65.0°C  
 Sensing stem : Ø5 x 250 mm (w/ grip)  
 Cord length : 4.8 m

**No.8167-04 for Compost temperature Model SK-LT II-10**

– Water protection level IP X5 –  
 Measuring range : −40 to 105.0°C  
 Sensing stem : Ø8 x 900 mm (w/ grip)  
 Cord length : 4 m

## SK-110TRHII SERIES DIGITAL THERMOHYGROMETERS



(Type 1)



(Type 2)

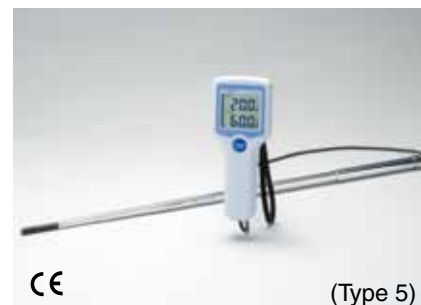
NB: The main body and the probe are unified.



(Type 3)



(Type 4)



(Type 5)

## SPECIFICATIONS

Cat. No.	8111-00	8112-00	8113-00	8114-00	8115-00
Type	Type 1	Type 2	Type 3	Type 4	Type 5
Measuring range	(temp.)	-10 to 60.0°C			
	(humi.)	20.0 to 98.0% (at 23°C)			
Resolution	(temp.)	0.1°C (but at -10°C or lower: 1°C)			
	(humi.)	0.1%RH (but at lower than 15%RH: 1%)			
Accuracy	(temp.)	±0.5°C (15.0 to 35.0°C) ±1°C (other than above)			
	(humi.)	±3%RH (30 to 90%RH, 15.0 to 35.0°C) ±7%RH (lower than 0°C, higher than 50.0°C) ±5%RH (other than above)			
	(temp.)	Thermistor			
Sensor	(humi.)	High polymeric resistance change type			
Operating ambient		0 to 50°C, lower than 80%RH, no condensing			
(Probe)		-10 to 60°C, no condensing			
Sampling time		About 1 sec.			
Display functions		LCD dual display (temperature and RH are displayed simultaneously) <b>B</b> insufficient voltage of battery			
Power requirement		3VDC ("AAA" size alkaline battery x 2)			
Battery life		About 600 hours continuous (w/ alkaline batteries at normal temperature)			
Dimensions	Main body	70 (W) x 168 (H) x 26.5 (D) mm (Material: ABS resin)			
	Probe(Grip)	Ø20 x L224 mm			Ø(8 to 18.7) x L(130 to 885)mm
	(Sensing part)	—	Ø9 x L55 mm + Ø8 x L294 mm	Ø8 x L338 mm	Ø6 x L1000 mm
(Cord)	Ø4 x L1340 mm	Ø4 x L960 mm	Ø4 x L960 mm	Ø4 x L1340 mm	Ø4 x L(600 to 1350)mm
Weight (approx.)	200 g	270 g	270 g	220 g	250 g
Standard accessories	Test result, hand strap, "AAA" size alkaline battery x 2, vinyl case				

**SK-RHC SERIES TEMPERATURE/HUMIDITY TRANSMITTERS**

- No. 8920-01 Model SK-RHC-V (0 to 1V) : Voltage output: 0 to 1V  
 No. 8920-02 Model SK-RHC-V (0 to 100mV) : Voltage output: 0 to 100mV  
 No. 8920-03 Model SK-RHC-I : Electric current output: 4 to 20mA  
 No. 8920-04 Model SK-RHC-C : Serial output: RS-485



Main unit with SK-RHCS-1 probe



Main unit with SK-RHCS-2 probe

**FEATURES**

- Wall-mount type transmitters
- Three kinds of outputs signals: voltage, electric current and RS-485 are available
- Three types of probes are interchangeably used with the main units

**SPECIFICATIONS (Main units)**

Display range	Temperature: -15 to 65.0°C	Humidity: 5.0 to 99.9%RH
Measuring range	Depends on the probe connected (refer to the probe specifications)	
Accuracy	Depends on the probe connected (refer to the probe specifications)	
Output signals	Voltage: 0 to 1V, 0 to 100mV, Electric current: 4 to 20mA, Serial: RS-485	
Output accuracy	Temperature: ±1°C	Humidity: ±1%RH
Resolution	Temperature: 0.1°C (at more than -9.9°C), 1°C (at other range) Humidity: 0.1%RH (at more than 15%RH), 1%RH (at other range)	
Power requirement	12 to 24 VDC or Optional AC adapter (9VDC)	
Functions	Upper/Lower limit alarm output (No voltage ON-OFF 2 position control)	
Sampling time	Switchable (1 sec. /10 sec.)	
Dimensions	118 (w) x 100 (H) x 42 (D)mm	
Weight	Approx. 220g	
Accessories	Fixing screw for probe x 1	

**OPTIONAL PROBES****SPECIFICATIONS**

Cat. No.	8921-00	8922-00	8922-10
Model	SK-RHCS-1	SK-RHCS-2	SK-RHCS-3
Type	Plug-in	With sensor cord	With sensor cord
Sensor (Temp.) (Humi.)	Thermistor High polymeric resistance change type		
Measuring range (Temp.) (Humi.)	-10 to 60.0°C 20.0 to 95.0%RH (at 23°C)		
Accuracy (Temp.) (Humi.)	±0.5°C (at 20.0 to 30.0°C) ±1°C (at other range) ±3%RH (at 20 to 30°C / 30 to 90%)		±0.7°C (at 20.0 to 30.0°C) ±4%RH (at 20 to 30°C / 30 to 90%)
Dimensions	29(w) x 121(H) x 24(D)mm	29(w) x 121(H) x 24(D)mm	6 dia. x 35(L)mm
Cord length	—	5m (*)	1.5m
Weight	Approx. 42g	Approx. 228g	Approx. 87g

\* Available to extend sensor cord at option



## TEMPERATURE/HUMIDITY INDICATORS

No. 8091-00 Temperature Indicator  
Model SK-M460-T



No. 8091-50 Temperature & Humidity Indicator  
Model SK-M460-TRH



No. 8092-00 Temperature Indicator  
Model SK-M350-T



No. 8092-50 Temperature & Humidity Indicator  
Model SK-M350-TRH



## SPECIFICATIONS

Cat. No.	8091-00	8091-50	8092-00	8092-50
Model	SK-M460-T	SK-M460-TRH	SK-M350-T	SK-M350-TRH
Display range	Temp.	-20.0 to 80.0°C	0.0 to 60.0°C	-10.0 to 60.0°C
	Humi.	—	0.0 to 99.9%RH	0.0 to 99.9%RH
Display accuracy	Temp.	±(0.5+ 1 digit)°C		
	Humi.	—	±(0.5+ 1 digit) %RH	±(0.5+ 1 digit) %RH
Height of character	100mm	57mm	57mm	57mm
Input	Temp.	Pt100Ω	0 to 600mVDC	Pt100Ω
	Humi.	—	0 to 999mVDC	—
Operating ambient	0 to 50°C, less than 85%RH (no condensing)			
Power requirement	12VDC (exclusive AC adapter is attached)			
Installation	Wall-mount/Pendant		Desk-top (multi angle type)	
Dimensions	463(W)×213(H)×65(D)mm		350(W) ×165(H)×85(D)mm	360(W) ×202(H)×85(D)mm
Weights	3.7kg	3.5kg	3.0kg	3.7kg
Accessories	AC adapter, mount fitting x 4 pcs.		AC adapter	
Option	Alarm function (upper and lower limits setting)			

\* SK-M460-TRH and SK-M350-TRH are connectable with SK-RHC-V transmitter (0 to 1V)

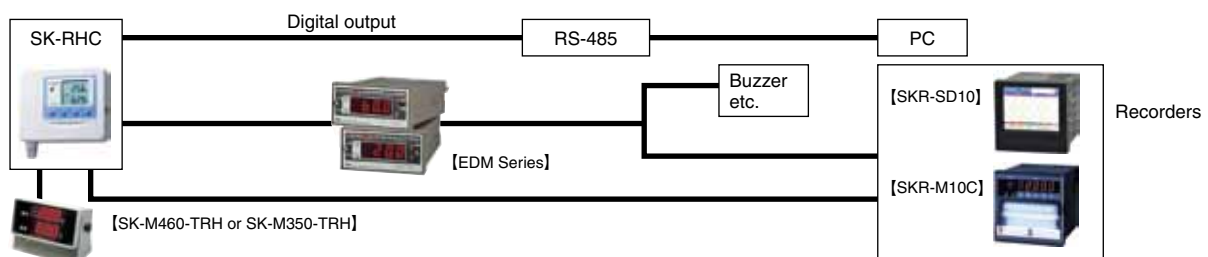
## OPTIONAL PROBE (applicable to SK-M460-T and SK-M350-T)

## No. 8091-10 Air temperature probe Model SR-56A-015

Input : Pt100Ω (JIS class B)  
Cord length : 1.5m (available to extend up to 10m at option)  
Dimensions : 18(w) x 51.3(H) x 10.3(D)mm  
Weight : approx. 50g



## Application Diagram



## No. 7435-00 MULTIPLE MEASURING SYSTEM FOR TEMPERATURE AND HUMIDITY MODEL SK-5RAD-SP



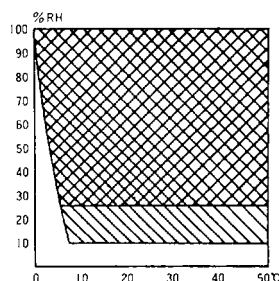
SK-5RAD-SP

## FEATURES

- Easy to read by high brightness digital display
- Assure high accuracy in compact body
- Eliminate an aging thanks to Pt100 ohm sensors
- With error message display functions avoiding possible accident and mis-operation
- Alarm message "L" is displayed in case of insufficient voltage
- High accurate sensors ensure accuracy within 0.2%  $\pm$ 1 digit
- Brushless motor is available at option

## PRINCIPLE OF MEASUREMENT

This model employs 'DRY AND WET BULB METHOD' which has been so called as most stable method for measurement of humidity. The R/V converter inside detects the temperature measured by two Pt 100 ohm sensors and then the data is processed by the micro-computer installed inside so that high accurate relative humidity, absolute humidity and dew point are obtained.



\* Measuring range

- ▣ part and ▤ part show the measuring range of SK-5RAD-SP.
- ▣ part shows the range can be measured for continuous long time.
- ▣ part shows the range can be measured for continuous short time.

## SPECIFICATIONS

Model	No. 7435-00 SK-5RAD-SP				
Elements	Dry bulb temperature	Wet bulb temperature	Relative humidity	Dew point temperature	Absolute humidity
Measuring range	0 to 50.0°C	0 to 50.0°C	—	—	—
Operating range	—	—	0 to 99.9%RH	-40 to 50.0°C	0 to 83 g/m <sup>3</sup>
Display	7 segment red LED 3 digits	7 segment red LED 3 digits	7 segment red LED 3 digits	7 segment red LED 3 digits	7 segment red LED 2 digits
Resolution	0.1°C	0.1°C	0.1%RH	-40 to -10°C : 1°C -9.9 to 50°C : 0.1°C	1 g/m <sup>3</sup>
Measuring Accuracy	within $\pm$ 0.2% F.S.	within $\pm$ 0.2% F.S.	—	—	—
Operation Accuracy	—	—	within $\pm$ 0.01%	within $\pm$ 0.01%	within $\pm$ 0.01%
Indication Accuracy	0.2% F.S. $\pm$ 1 digit	0.2% F.S. $\pm$ 1 digit	1% $\pm$ 1 digit	0.1°C $\pm$ 1 digit	within 1%
Sampling time	about 4 sec.				
Detecting element	Pt100 $\Omega$	Pt100 $\Omega$	—	—	—
Output	0 to 50°C / 0 to 1 VDC	—	0 to 100%RH/ 0 to 1VDC	—	—
Output impedance	500 $\Omega$	—	500 $\Omega$	—	—
Airflow speed	more than 3 m/s at outlet of airflow			—	—
Operating ambient	Temperature: 0 to 50°C (wet bulb shall not frozen)			Humidity: no condensing	
Power requirement	100 VAC $\pm$ 10% 50/60 Hz				
Power consumption	100 VAC 0.1A				
Dimensions	Indicator	311 (W) x 192.5 (H) x 144 (D) mm			
	Detector	80 (W) x 264 (H) x 110 (D) mm			
Weight	Indicator: about 4.5 kg		Detector: about 1.5 kg (including cord)		
Standard accessories	2 m power cord: 1 pc. Wicks: 20 pcs. Remote cord: 10 m (up to 50 m at option) Water supply bottle				

## No.7435-50 MULTIPLE MEASURING SYSTEM FOR TEMPERATURE AND HUMIDITY WITH PAPERLESS RECORDER MODEL SK-5RAD-MR



### FEATURES

- This model consists of a sensor section based on the principle of an Assmann psychrometer and a paperless recorder
- Long term measurement with stability: use of Pt100 ohm sensor that eliminates aged deterioration, compared to electrical humidity sensor
- Simultaneous display of all four factors: dry bulb & wet bulb temperatures, relative humidity and dew point
- Digital display with various functions such as trend display
- Using SD card to save measured values, the collected data can be used for data analysis and graphs with usage of a spread sheet software

### SPECIFICATIONS

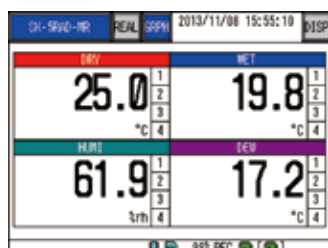
Model		No. 7435-50 SK-5RAD-MR			
Elements		Dry bulb temperature	Wet bulb temperature	Relative humidity	Dew point temperature
Measuring range		5.0 to 50.0°C	5.0 to 50.0°C	—	—
Operating range		—	—	0.0 to 99.9%RH	-40.0 to 50.0°C
Measuring accuracy		±(0.1%rdg+0.2)°C	±(0.1%rdg+0.2)°C	—	—
Detecting element		Pt100 Ω	Pt100 Ω	—	—
Airflow speed		More than 3m/s			
Display		5.7" TFT LCD touch panel			
Recording method		SD memory card (SD/SDHC standard) (*1)			
Waterproof rate		JIS C 0920 IP65 (*2)			
Power requirement		100 to 240VAC±10% 50/60Hz Continuous operation: within 24 hours.			
Dimensions	Recorder	150 (W) × 155 (H) × 186 (D) mm (protuberance not included)			
	Detector	80 (W) × 264 (H) × 110 (D) mm			
Weight		Recorder: approx. 1.0 kg Detector: approx. 1.5 kg			
Standard accessories		CD-ROM (various tools), tweezers, water supply bottle, hook for wall-mount, stand, protection cover, 20 wicks, fixture band, power cord (for 100VAC), fixture for panel, packing for water protectionx2			

\* 1. SD memory card is not included in the set.

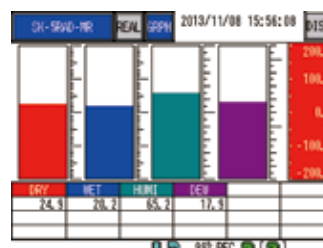
\* 2. Only for the front of the recorder in use of packing for the panel mount

### VARIOUS DISPLAY FUNCTIONS

Digital Display



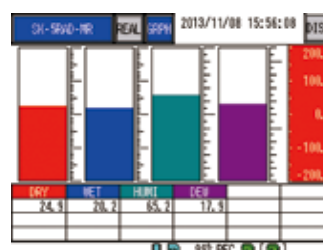
Bar-graph Display



Trend Display (Horizontal)



Trend Display (Vertical)



**SK-250WP II SERIES WATERPROOF DIGITAL THERMOMETERS**

No. 8062-00 MODEL SK-250WP II-N FOR GENERAL PURPOSE

No. 8064-00 MODEL SK-250WP II-T WITH TIMER FUNCTION

No. 8066-00 MODEL SK-250WP II-R WITH MEMORY FUNCTION

No. 8068-00 MODEL SK-250WP II-K FOR SIMPLE OPERATION

**MUTUAL FEATURES**

- Main units are waterproof construction conforming to **IP X6** rated — protected against strong jets of water. — limited ingress permitted. They will not be affected in function at the touch of wet hands or with splash water.
- Measured value can be held. (HOLD function)
- Power automatically turn off after 60 minutes. (AUTO POWER-OFF function)

**MUTUAL SPECIFICATIONS (MAIN UNITS)**

Cat. No.	8068-00	8062-00	8064-00	8066-00
Model	SK-250WP II-K	SK-250WP II-N	SK-250WP II-T	SK-250WP II-R
Measuring range	-40 to 250°C (depends on the probe connected: SWP II series)			
Resolution	0.1°C at -9.9 to 199.9°C 1°C at other range			
Accuracy (body)	±(0.1+1 digit)°C at -9.9 to 199.9°C ±(1+1 digit)°C at other than above			
Waterproof property	Conforming to JIS C 0920 IPX6			
Operating ambient	0 to 50°C			
Sampling time	Approx. 1 sec.			
Functions	Data Hold, Auto power-off, Low battery mark			
	Min/Max memory data			
	Clock display (24h)			
	Timer function (buzzer sounds)			
	Alarm Upper/Lower limits (buzzer)			
	Data memory (100)			
Power requirement	3VDC (AAA size battery x 2)			
Battery life	Approx. 1000 hours continuous with alkaline batteries (350 hours under use of buzzer)			
Material	ABS resin			
Dimensions	71(W)×170(H)×36(D)mm			
Weight	Approx. 145g			
Accessories	SWP II-01M probe w/test result, hand strap, vinyl cover, "AAA" size alkaline battery x 2			

## SWPII SERIES OPTIONAL PROBES (PBT resin grip)

**No. 8071-01 SWPII-01M Standard probe**

Range: -40 to 250°C (waterproof)  
 Ø3 x L100mm (Pointed end) w/1m cord

**No. 8072-01 SWPII-02M High sensitive probe**

Range: -15 to 250°C (waterproof)  
 Ø3 x L100mm (Pointed end) w/1m cord

**No. 8073-00 SWPII-03 Surface temperature probe**

Range: -15 to 200°C  
 Sensing part: Ø9mm Grip: Ø12 x L110mm w/1m cord

**No. 8074-01 SWPII-04M Penetration probe**

Range: -15 to 250°C (waterproof)  
 Ø2 x L150mm (Pointed end) w/1m cord

**No. 8075-01 SWPII-05M Long stem probe**

Range: -15 to 250°C (waterproof)  
 Ø3 x L400mm (Round end) w/1m cord

**No. 8076-01 SWPII-06M Tapered stem probe**

Range: -40 to 250°C (waterproof)  
 Ø2 x L45 + Ø3 x L55mm (Pointed end) w/1m cord

## SWPII SERIES OPTIONAL PROBES (STAINLESS GRIP TYPE)

**No. 8077-10 SWPII-07 Standard probe**

Range: -40 to 250°C (waterproof)  
 Ø3 x L100mm (Pointed end) w/1m cord

**No. 8077-20 SWPII-08 Long stem probe**

Range: -15 to 250°C (waterproof)  
 Ø3 x L400mm (Round end) w/1m cord

**No. 8077-30 SWPII-09 General purpose probe**

Range: -40 to 250°C (waterproof)  
 Ø3 x L200mm (Pointed end) w/1m cord

**No. 8077-40 SWPII-10 Penetration probe**

Range: -15 to 250°C (waterproof)  
 Ø2 x L150mm (Pointed end) w/1m cord

## MUTUAL SPECIFICATIONS (PROBES)

Cat. No.	8071-01	8072-01	8073-00	8074-01	8075-01	8076-01	8077-10	8077-20	8077-30	8077-40	
Model	SWPII-01M	SWPII-02M	SWPII-03	SWPII-04M	SWPII-05M	SWPII-06M	SWPII-07	SWPII-08	SWPII-09	SWPII-10	
Measuring Range	-40 to 250°C	-15 to 250°C	-15 to 200°C	-15 to 250°C	-15 to 250°C	-40 to 250°C	-40 to 250°C	-15 to 250°C	-40 to 250°C	-15 to 250°C	
Accuracy	-40 to -16°C	±2°C		— (out of measuring range)			±2°C		—	±2°C	—
	-15 to -10°C	±2°C	±1°C	±2°C	±1°C		±2°C	±1°C	±2°C	±1°C	
	-9.9 to -0.1°C	±1°C									
	0.0 to 40.0°C	±0.6°C	±0.3°C	±0.8°C				±0.6°C			
	40.1 to 105.0°C	±0.7°C		±1°C				±0.7°C			
	105.1 to 145.0°C	±1°C		±1.5°C				±1°C			
145.1 to 250°C	±2°C		—				±2°C				
Sensor	Thermistor										
Waterproofness	IP X7		—							IP X7	
Shape of stem end	Pointed end		for surface	Pointed end	Round end	Pointed end		Round end	Pointed end		
Materials	Sensing stem		SUS304	Cu + Ni plate		SUS304		SUS316	SUS304		
	Grip		PBT resin	PET, Tefron		PBT resin			SUS303		
	Cord		PVC resin								
Weights	100g		50g	99g	105g	99g	140g	145g	143g	139g	



**No. 8080-05 WATERPROOF DIGITAL THERMOMETER MODEL SK-1260****FEATURES**

- Measured data can be stored in memory with a simple operation.
  - \* The memory can store up to 150 data in the manual mode.
  - \* The memory can store up to 100 data in the automatic mode.
- Print function
  - \* Temperature data stored in memory can be printed on an optional printer.
- Setting of upper and lower limits is available.
  - \* If the temperature reaches the set upper limit or the set lower limit, the warning buzzer sounds and "V" flashes on the panel.
- Waterproof
  - \* **IP X4** rated (No adverse effects of water splashes from any direction.)
- Both inputs of Thermistor and K Thermocouple are available only from us.
- Various kinds of optional probes for a wide variety of applications.

**SPECIFICATIONS**

Model	Waterproof Digital Thermometer SK-1250MC II $\alpha$	
Measuring range	Thermistor	: -30.0 to 150.0°C
	K Thermocouple	: -99.9 to 1250°C
Resolution	Thermistor	: 0.1°C at -30.0 to 150.0°C
	K Thermocouple	: 0.1°C at -99.9 to 199.9°C
		: 1°C at 200°C to 1250°C
Accuracy	Thermistor	Main unit : $\pm 0.2^\circ\text{C}$ Sensor : $\pm(0.1\% \text{ rdg} + 0.3^\circ\text{C})$ at 0.0 to 100.0°C : $\pm(0.2\% \text{ rdg} + 0.4^\circ\text{C})$ at -30.0 to -0.1°C, 100.1 to 150.0°C
	K Thermocouple	Main unit : $\pm(0.1\% \text{ rdg} + 0.3^\circ\text{C})$ at 0.0 to 199.9°C : $\pm 0.5^\circ\text{C}$ at -99.9 to -0.1°C : $\pm(0.2\% \text{ rdg} + 1^\circ\text{C})$ at 200 to 1250°C Sensor : $\pm 1.5^\circ\text{C}$ at -40.0 to 375°C (JIS class 1) : $\pm 0.004(t)$ at 375 to 1000°C
Operational functions	MAX: maximum memory data, MIN: minimum memory data, HOLD: data hold, ALARM: upper and lower limit setting, REL: measurement of variation, TIME: time settings, REC/PRINT: record and print function	
Waterproof property	Conforming to <b>IP X4</b> rated	
Sampling time	1 sec.	
Sensor	Thermistor / K Thermocouple	
Power requirement	6 VDC ("AAA" size battery x 4) or AC adapter (option)	
Battery life	About 180 hours continuous with manganese batteries About 280 hours continuous with alkaline batteries	
Materials	Main unit	: ABS resin
	Probe	: Sensing stem Stainless (SUS304) Handle Polyphenylene Oxide
Dimensions	Main unit: 66 (W) x 175 (H) x 25 (D) mm	
Weight	Approx. 200 g (main body including batteries)	
Standard accessories	Standardized probe, soft pouch with strap, "AAA" size manganese battery x 4	

**No. 8009-50 OPTIONAL PRINTER MODEL DPU-414**

By connecting the optional printer with the SK-1260 via an exclusive cable, the data stored in memory can be printed out by simple key operation.

**SPECIFICATIONS**

Power requirements : 100 VAC using AC adapter or built-in battery  
 Ambient temperature : 0 to 40°C  
 Dimensions : 160 (W) x 66.5 (H) x 170 (D) mm  
 Weight : Approx. 700g  
 Standard accessories : Printing paper 1 roll (about 28 m), exclusive cable 1 pc.

**No. 8008-90 OPTIONAL AC ADAPTER MODEL AD-0601000-1**

Input : 100 to 240VAC 50/60Hz

## THERMISTOR PROBES



**No. 8080-80 SK-S100T Standard probe**  
Range: -30 to 199.9°C, Ø2 x 100mm w/1.1m cord  
Use for semisolid, viscosity and liquid.



**No. 8080-82 SK-S101T Penetration probe**  
Range: -30 to 199.9°C, Ø3 x 100mm w/1.1m cord  
Use for semisolid, viscosity and liquid.



**No. 8080-84 SK-S101WT Waterproof type penetration probe**  
Range: -30 to 199.9°C, Ø3 x 120mm w/1.1m cord  
Suitable for food industry



**No. 8080-86 SK-S102T Water temperature probe**  
Range: -30.0 to 100.0°C, Ø17 x 110mm w/10m cord  
Water pressure resistance type



**No. 8080-88 SK-S103T Rectum temperature probe**  
Range: +30.0 to 50.0°C, Ø3 x 110mm w/1.1m cord



**No. 8080-90 SK-S201T Air temperature probe**  
Range: -30.0 to 150.0°C, Ø5 x 100mm w/1.1m cord  
Used in offices and warehouses.

## K TYPE THERMOCOUPLE PROBES



**No. 8080-20 SK-S100K Standard probe**  
Range: -100 to 300°C, Ø2.3 x 150mm w/1.1m cord  
Use for semisolid, viscosity and liquid.



**No. 8080-22 SK-S100WK Waterproof type penetration probe**  
Range: -100 to 300°C, Ø2.3 x 150mm w/1.1m cord  
Suitable for food industries



**No. 8080-24 SK-S101K General purpose probe**  
Range: -100 to 700°C, Ø3.2 x 250mm w/1.1m cord



**No. 8080-26 SK-S102K High temperature probe**  
Range: 0 to 800°C, Ø4.8 x 500mm w/1.1m cord



**No. 8080-28 SK-S103K Asphalt temperature probe (w/ stainless steel grip)**  
Range: 0 to 300°C, Ø5 x 250mm w/1.1m stainless heat resistance cord



**No. 8080-30 SK-S104K High sensitivity probe**  
Range: -100 to 300°C, Ø1 x 1000mm w/1.1m cord  
Use for viscosity and liquid.



**No. 8080-32 SK-S105K Duplex wire probe (stainless steel shield wire)**  
Range: -100 to 300°C, Ø0.65 x 10m w/0.3m stainless heat resistance cord



**No. 8080-36 SK-S107K High temperature probe (sensor: inconel alloy)**  
Range: 0 to 1000°C, Ø4.8 x 1000mm w/1.1m cord  
(Option : Range : 0 to 1250°C, Ø8.0 x 1000mm)



**No. 8080-50 SK-S301K Surface temperature probe**  
Range: 0 to 600°C, Ø25 x 40mm w/1.1m cord



**No. 8080-56 SK-S304K Surface temperature probe**  
Range: 0 to 300°C, Mount on flat surface with screws.  
14 x 17 x t0.6mm w/3m heat resistance cord



**No. 8080-58 SK-S305K Tilting (in 90°) type surface temperature probe**  
Range: -30 to 500°C, Sensing part Ø17 x 36mm w/1.1m cord



**No. 8080-60 SK-S306K Point surface temperature probe**  
Range: -30 to 250°C, Sensing part Ø10 x 12mm w/1.1m cord



**No. 8080-62 SK-S307K Surface temperature probe**  
Range: -30 to 400°C, Sensing part Ø17 x 25mm w/1.1m cord  
14 x 17 x t0.6mm w/3m heat resistance cord



**No. 8080-64 SK-S308K L shape type surface temperature probe**  
Range: -30 to 600°C, Sensing part Ø17 x 30mm w/1.1m cord

\* There are also probes other than describing. Visit our web-site.

\* Cord used is a super flexible type which resists oil and can be used in a low temperature state.

**JUMBO LCD DIGITAL THERMOMETERS**

No. 8014-03 MODEL SK-1110 1-CHANNEL TYPE

No. 8014-04 MODEL SK-1120 2-CHANNEL TYPE

**SPECIFICATIONS**

Model	SK-1110	SK-1120
Cat. No.	8014-03	8014-04
Number of channel	1 channel	2 channels
Functions	MAX/ MIN: maximum/ minimum memory data AVG: average value HOLD: data hold OFFSET: offset value Memory function (150 data) Auto power-off (about 30 min.)	Automatic resolution switching function MAX/ MIN: maximum/ minimum memory data AVG: average value HOLD: data hold, backlight OFFSET: offset value Auto power-off (about 30 min.) Measurement of variation (CH1 – CH2)
Measuring range	-50 to 1300°C (depending on the probe connected)	
Display range	-73.3 to 1371.0°C	-203.3 to 1368°C
Accuracy (main body)	±(0.5%rdg + 1) °C at -50 to 0.0°C ±(0.3%rdg + 1) °C at 0.1 to 1000°C ±(0.5%rdg + 1) °C at 1001 to 1300°C	
Resolution	0.1°C	0.1°C/1°C (w/ auto switching function)
Sampling time	About 0.5 sec.	
Sensor	K Thermocouple, Connector: ANSI standard (yellow)	
Accuracy (sensor)	K Thermocouple, class 1	
Operating ambient	0 to 50°C for temperature, less than 70%RH for humidity (no condensing)	
Power requirements	6 "AAA" manganese batteries	6 "AAA" alkaline batteries
Battery life	About 110 hours continuous with manganese batteries	About 80 hours (Backlight OFF) continuous with alkaline batteries
Materials	Main unit : ABS resin Probe : PVC resin Sensor cable: PVC resin	
Dimensions	Main unit : 72(W) x 151(H) x 35(D) mm	
Weight	approx. 240g (including batteries)	approx. 255g (including batteries)
Standard accessories	"AAA" size manganese battery x 6 Vinyl cover	"AAA" size alkaline battery x 6 Vinyl cover

\* Probes are not included in the standard accessories.

**OPTIONAL PROBES****No. 8014-30 SK-K010  
STANDARD PENETRATION PROBE**Range: -50 to 300°C Ø2.3 x 150mm (SUS316)  
Cord Length: approx. 75cm**No. 8014-31 SK-K020  
QUICK RESPONSE PROBE**Range: -50 to 300°C Ø1.0 x 100mm (SUS316)  
Cord Length: approx. 75cm  
t100 = within 5 sec.

\* Splash proof: SUS316 pipe and grip parts are confirming to JIS C 0920. (Protection Class 5)

\* Other 10 kinds of optional probes are available. Visit our web site.

## No. 8260-00 LASER MARKER INFRARED THERMOMETER MODEL SK-8700



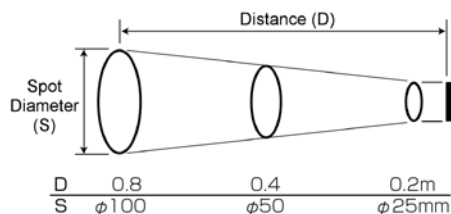
CE

## FEATURES

- The backlit LCD facilitates reading even in dark places
- Emissivity is fixed at 0.95
- Auto power off function
- Laser marker is switchable in ON and OFF
- Temperature unit Celsius (°C) and Fahrenheit (°F) is selectable

## SPECIFICATIONS

Measuring range	: -20 to 420°C/0 to 786°F
Accuracy (at 23°C±5°C)	: ±2°C at -20 to 100°C, ±2%rdg at other range
Resolution	: 1°C/1°F
Emissivity	: 0.95 (fixed)
Distance to spot size (D:S)	: 8:1
Laser sighting	: 1 point / class II laser (less than 1mW of power)
Sampling time	: Approx. 0.5 sec.
Operating ambient	: 0 to 50°C, less than 80%RH (no condensing)
Power requirement	: 9VDC (6F22 battery x 1)
Functions	: °C/°F selectable, Backlight ON/OFF, Laser marker ON/OFF Auto power-off
Dimensions	: 41.5(W) x 160(H) x 65(D)mm
Weight	: Approx. 140g (including battery)
Accessories	: Soft pouch, vinyl cover, lens cap, hand strap, 6F22 battery x 1



## No. 8266-00 LASER MARKER INFRARED THERMOMETER MODEL SK-8940



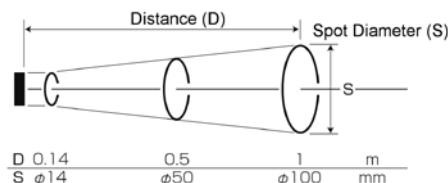
CE

## FEATURES

- A wide range of temperature from -40 to 500°C
- Emissivity can be set in increment of 0.01 within the range of 0.30 and 1.00
- The backlit LCD facilitates reading even in dark places
- Auto power off function
- A measured value is automatically held (fixed) for about six seconds
- Ideal for food processing industries where clean and hygienic measurement is required

## SPECIFICATIONS

Measuring range	: -40 to 500°C
Accuracy	: ±2°C or ±2%rdg at -19.9 to 450°C
(at 23°C±5°C at ε0.95)	: ±4°C or ±4%rdg at other range
Resolution	: 0.1°C at -40 to 99.9°C / 1°C at higher than 100°C
Emissivity	: Adjustable between ε0.30 and 1.0 in 0.01 step
Distance to spot size (D:S)	: 10:1
Laser sighting	: 1 point / class II laser (less than 1mW of power)
Sampling time	: Approx. 0.5 sec.
Operating ambient	: 0 to 50°C, less than 80%RH (no condensing)
Power requirement	: 9VDC (6F22 battery x 1)
Functions	: Backlight ON/OFF, Laser marker ON/OFF Auto power-off, HOLD
Dimensions	: 45(W) x 157(H) x 80(D)mm
Weight	: Approx. 151g (including battery)
Accessories	: Soft pouch, hand strap, 6F22 battery x 1



**SK-8100 SERIES INFRARED THERMOMETERS**

No. 8211-00 CIRCLE LASER MARKER INFRARED THERMOMETER MODEL SK-8110

No. 8212-00 CIRCLE LASER MARKER INFRARED THERMOMETER MODEL SK-8120

No. 8213-00 CIRCLE LASER MARKER INFRARED THERMOMETER MODEL SK-8130

No. 8214-00 DUAL POINT LASER INFRARED THERMOMETER MODEL SK-8140

**MUTUAL FEATURES OF SK-8100 SERIES INFRARED THERMOMETERS**

- Non-contact and clear laser marker for easy and accurate measurement
- Waterproof property of IPX4: No adverse effects of water splashes
- Auto power-off function for conserving battery power
- Auto backlight function when used in the dark
- Selectable °C and °F

**MODEL SK-8110**

This standard type is favored for its simple operation.

- Circle laser marker
- Selectable emissivity among 0.95, 0.90 and 0.85
- Measuring range: -40 to 400°C
- Distance to spot size ratio about 15:1

**MODEL SK-8120**

With upper and lower thresholds set, the alarm sounds with a buzzer when the reading exceeds either preset values.

- Circle laser marker
- Selectable emissivity among 0.95, 0.90 and 0.85
- Measuring range: -40 to 400°C
- Distance to spot size ratio about 15:1

**MODEL SK-8130**

This model has PEAK/VALLEY function for the instrument to display the maximum and minimum readings during a measurement and also with alarm function.

- Circle laser marker
- Adjustable emissivity from 0.10 to 1.00 in 0.01 steps
- Wide measuring range: -50 to 500°C
- Distance to spot size ratio about 15:1

**MODEL SK-8140**

This particular model is specifically designed to measure a small spot with dual point lasers and also with alarm and PEAK/VALLEY functions.

- Dual point laser marker
- Adjustable emissivity from 0.10 to 1.00 in 0.01 steps
- Wide measuring range: -50 to 500°C
- Measurable spot of 2.5 mm in dia. from about 27 mm away



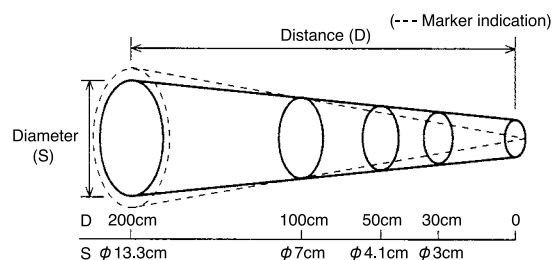


**DISTANCE TO SPOT SIZE RATIO (D:S)**

(Applicable for SK-8110, SK-8120 and SK-8130)

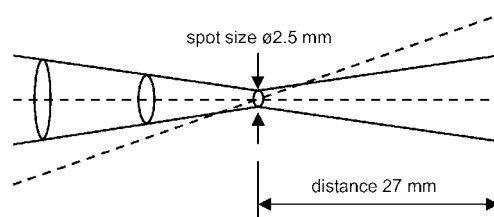
The infrared thermometer focuses infrared energy from an object onto its detector at a rate.

15:1 distance to spot size ratio (D:S) means that the infrared thermometer read the temperature of an area of 7 cm diameter from 100 cm away.

**DUAL POINT LASER INFRARED THERMOMETER**

(Applicable for SK-8140)

This particular thermometer is designed for measuring temperature of a small spot, marked by two laser beams focused. The size of measurable spot is 2.5 mm in diameter measured from about 27 mm away.

**SPECIFICATIONS**

Name	Circle Laser Marker Infrared Thermometer			Dual Point Laser Infrared Thermometer
Cat. No.	8211-00	8212-00	8213-00	8214-00
Model	SK-8110	SK-8120	SK-8130	SK-8140
Measuring range	- 40 to 400°C			- 50 to 500°C
Accuracy (emissivity at 0.95 in 23±5°C)	±1% rdg. at above 200°C ±2°C at 1 to 199°C ±5°C at below 0°C			
Temperature drift (emissivity at 0.95)	±0.1% / °C rdg. at above 200°C ±0.2°C / °C at below 200°C			
Repeatability	less than 1°C at above 30°C (emissivity at 0.95 in 23±5°C)			
Response time	approx. 1.5 second (90% response)			
Emissivity	Selectable among 0.95, 0.90 and 0.85		Adjustable from 0.10 to 1.00 in 0.01 steps	
Distance coefficient	D : S = approx. 15 : 1 (D: distance, S: spot size)			Measuring distance: 27 mm Spot size (diameter): ø 2.5 mm
Detector	Thermopile			
Wavelength	8 to 14 μm			
Targeting system	Circle Laser Marker		Dual Point Laser Marker	
Function	Wavelength: 650 nm Laser output: less than 1 mW (Class II Laser)			
	Auto power-off, Auto backlight			
	High and low temperature alarm PEAK / VALLEY selectable			
Operating ambient	0 to 50°C for temperature Less than 85% RH for humidity (no condensing)			
Waterproof property	JIS C 0920 equivalent to IPX4			
Power requirement	3VDC ("AA" (LR6) size Alkaline battery x 2) Consumption current: 120 mA			
Battery life	approx. 16 hours with use of laser and new Alkaline batteries			
Dimensions	44(W) x 152(H) x 27.5(D) mm			
Weight	approx. 140g (including batteries)			
Materials	Main body: Polycarbonate, Lens: Silicon			
Accessories	Neck strap, "AA" (LR6) size Alkaline battery x 2			

**SIGMA II THERMOHYGROGRAPH**



CE

**SPECIFICATIONS**

Cat. No.: No. 7210-00 (Quartz type)  
 Model: NSII-Q  
 Measuring range: -15 to 40°C for temperature  
 0 to 100% for relative humidity  
 Clock: Quartz type:  
 1 day, 7 day and 32 day by change-over switch  
 Battery: "C" size battery x 2  
 Battery life: 1 year for continuous use  
 Sensors: Aged bimetallic strip for temperature  
 Human hair bundle for humidity  
 Accuracy: ±1°C for temperature (10 to 30°C)  
 ±3%RH for humidity (20 to 95%RH at 15 to 25°C)  
 ±5%RH (other range)  
 Chart graduation: 1°C for temperature  
 1% for RH  
 Recording pens: Cartridge pens (violet)  
 Dimensions: 336 (W) x 148 (D) x 295 (H) mm  
 Weight: Approx. 3.1 kg  
 Accessories: 7 day chart for 1 year use (55 sheets/pad), Test result  
 "C" size battery x 2

Cat. No.: No. 7211-00 (Quartz type)  
 Measuring range: -10 to 50°C for temperature  
 0 to 100% for relative humidity  
 Other specifications: same as 7210-00

Cat. No.: No. 7215-00 (Spring-wound type)  
 Model: NSII-S  
 Clock: Spring-wound type  
 Drum rotation: 1 day and 7 day changed by gear  
 Weight: Approx. 3.5kg  
 Accessories: 7 day chart for 1 year use (55 sheets/pad),  
 chart holder, Test result  
 Other specifications: same as 7210-00 quartz type



Use an external fan for faster response and more accurate measurement. It is in combination with this fan that the maximum capability of measurement for temperature and humidity can be achieved. The fan inhales fresh air into the instrument and makes the response of sensor faster, resulting in the detection of accurate data. It is effective, particularly in warehouses which are excluded from the open air, laboratories where ventilation is poor or air tight small space.

Cat. No.	7238-22
Model	Axial AC Fan
Power requirements	100 to 115 VAC ±10% 50/60 Hz
Power consumption	70/55 mA
Revolution of fan	2700/3300 rpm
Max. airflow	0.73/0.94 m <sup>3</sup> min
Max. static pressure	3.4/5 mmAq

**SIGMA II THERMOGRAPH**

CE

**SPECIFICATIONS**

Cat. No.:	No. 7230-00
Model:	NSII-TQ
Measuring range:	-15 to 40°C (option: -10 to 50°C)
Clock:	Quartz type 1 day, 7 day and 32 day by change-over switch
Battery:	"C" size battery x 2
Battery life:	1 year for continuous use
Sensor:	Aged bimetallic strip
Accuracy:	±1°C (10 to 30°C) ±2°C (other range)
Chart graduation:	1°C
Recording pen:	Cartridge pen (violet)
Dimensions:	336 (W) x 148 (D) x 295 (H) mm
Weight:	Approx. 2.9 kg
Accessories:	7 day chart for 1 year use (55 sheets/pad) "C" size battery x 2

**SIGMA II HYGROGRAPH**

CE

**SPECIFICATIONS**

Cat. No.:	No. 7234-00
Model:	NSII-HQ
Measuring range:	0 to 100% for relative humidity
Clock:	Quartz type 1 day, 7 day and 32 day by change-over switch
Battery:	"C" size battery x 2
Battery life:	1 year for continuous use
Sensor:	Human hair bundle
Accuracy:	±3% RH (20 to 95%RH at 15 to 25°C) ±5% RH (other range)
Chart graduation:	1% RH
Recording pen:	Cartridge pen (violet)
Dimensions:	336 (W) x 148 (D) x 295 (H) mm
Weight:	Approx. 2.9 kg
Accessories:	7 day chart for 1 year use (55 sheets/pad) "C" size battery x 2

**SIGMA II BAROGRAPH**

CE

**SPECIFICATIONS**

Cat. No.:	No. 7237-00
Model:	NSII-BQ
Measuring range:	940 to 1045 hPa
Clock:	Quartz type 1 day, 7 day and 32 day by change-over switch
Battery:	"C" size battery x 2
Battery life:	1 year for continuous use
Sensor:	Bellows
Temperature compensation:	Bimetal
Accuracy:	±1 hPa (950 to 1040 hPa) ±2 hPa (other range)
Chart graduation:	1 hPa
Recording pen:	Cartridge pen (violet)
Dimensions:	336 (W) x 148 (D) x 295 (H) mm
Weight:	Approx. 3.1kg (Quartz type)
Accessories:	7 day chart for 1 year use (55 sheets/pad) "C" size battery x 2

\* Spring-wound type is available for ordering.

**No. 7012-00 LONG TERM THERMOHYGROGRAPH MODEL AURORA90 III****SPECIFICATIONS**

Sensors:	Aged bimetallic strip for temperature Human hair bundle for humidity
Measuring range:	-20 to 50°C for temperature 0 to 100% for humidity
Accuracy:	±1°C (at 10 to 30°C) for temperature ±2°C at other range ±3%RH for humidity (20 to 95%RH at 15 to 25°C) ±5%RH at other range
Chart graduation:	1°C for temperature 1% for RH
Clock:	Quartz type
Recording cycle:	1 month and 3 month
Power:	"C" size battery x 2
Recording pens:	Cartridge pens (violet)
Dimensions:	336 (W) x 148 (D) 295 (H) mm
Weight:	Approx. 3.8 kg
Accessories:	3 rolls of 3 month chart Spare cartridge pen (violet) x 2 "C" size battery x 2, Test result

CE

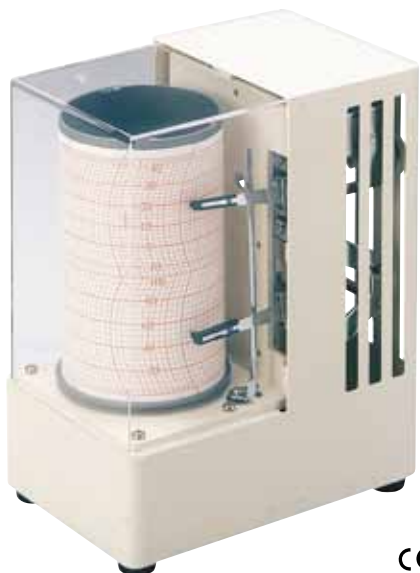
**No. 7006-00 THERMOHYGROGRAPH MODEL MINI- $\alpha$  (Alpha) (BLUE BASE)****SPECIFICATIONS**

Sensors:	Aged bimetallic strip for temperature Humidity sensing coil for humidity
Measuring range:	-15°C to 50°C for temperature 10 to 100% for humidity
Accuracy:	±2°C (at 10 to 30°C) for temperature ±3°C at other range ±5%RH for humidity (30 to 90% at 15 to 25°C) ±7%RH at other range
Chart graduation:	2°C for temperature 5% for RH
Clock:	Quartz type
Drum rotation:	7 day
Recording pens:	Cartridge pens (violet)
Power:	"AA" size battery x 1
Dimensions:	185 (H) x 125 (W) x 110 (D) mm
Weight:	Approx. 0.8 kg
Accessories:	7 day chart for one year use (55 sheets/pad) "AA" size battery x 1

CE

**No. 7006-10**

As same as 7006-00, but base color is mocha brown.

**No. 7008-00 THERMOHYGROGRAPH MODEL MINI-CUBE**

CE

**SPECIFICATIONS**

Sensors:	Aged bimetallic strip for temperature Human hair bundle for relative humidity
Measuring range:	-15 to 40°C for temperature 5 to 100% for humidity
Accuracy:	±2°C (at 10 to 30°C) for temperature ±3°C at other range ±5%RH for humidity (30 to 90%RH at 15 to 25°C) ±7%RH at other range
Chart graduation:	2°C for temperature 5% for RH
Clock:	Quartz type
Drum rotation:	7 day
Power:	"AA" size battery x 1
Recording pens:	Cartridge pens (violet)
Dimensions:	190 (H) x 148 (W) x 97 (D) mm
Weight:	Approx. 1.6 kg
Accessories:	7 day chart for one year use (55 sheets/pad) "AA" size battery x 1



**No. 7200-00 SIGMA II REMOTE ONE-POINT THERMOGRAPH****SPECIFICATIONS**

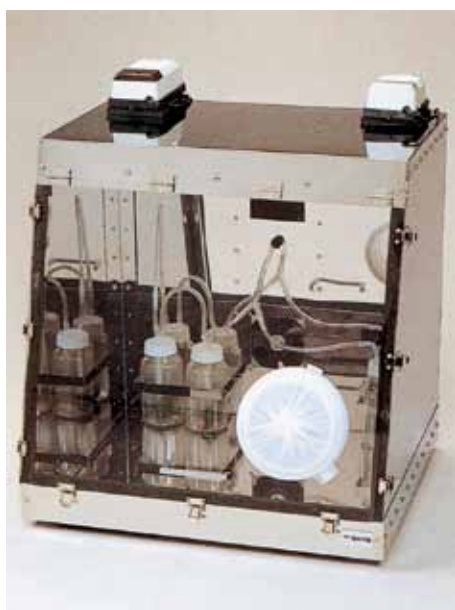
Measuring range:	-15 to 50°C
Model:	NSII-ES1 (one-point type)
Clock:	Quartz type
Drum rotation:	7 day and 32 day by change-over switch
Sensor:	Liquid in stainless steel capillary
Lead length:	5 m (vinyl coated)
Accuracy:	±1°C
Chart graduation:	1°C
Recording pen:	Cartridge pen (violet)
Dimensions:	336 (W) x 148 (D) x 295 (H) mm
Weight:	Approx. 3.6 kg
Accessories:	7 day chart for one year use (55 sheets/pad) "C" size battery x 2

**No. 7202-00 SIGMA II REMOTE TWO-POINT THERMOGRAPH****SPECIFICATIONS**

Measuring range:	-15 to 50°C
Model:	NSII-ES2 (two-point type)
Clock:	Quartz type
Drum rotation:	7 day
Sensors:	Liquid in stainless steel capillary
Lead length:	5 m (vinyl coated)
Accuracy:	±1°C
Chart graduation:	1°C
Recording pens:	Cartridge pens (violet)
Dimensions:	336 (W) x 148 (D) x 295 (H) mm
Weight:	Approx. 4.2 kg
Accessories:	7 day chart for one year use (55 sheets/pad) "C" size battery x 2

**No. 6000-00 HUMIDITY CONSTANT CHAMBER MODEL SK-120CHB**

The SK-120CHB is a simplified Humidity Constant Chamber that provides a constant and stable humidity atmosphere (around 55%) according to the splitting method. It can be used for verification of indicated value and adjustment of the SIGMAII series Thermohygrographs/Hygrograph.

**SPECIFICATIONS**

NAME	HUMIDITY CONSTANT CHAMBER
Model	SK-120CHB
Cat. No.	6000-00
Operation ambient	Temperature : 15 to 30°C (temperature fluctuation must be within ±1°C per hour) Humidity : 30 to 80% (no condensing)
Humidity generated in chamber	Around 55% (It will be stable around 45 to 65% depending on desiccant and ambient)
Stability of humidity in chamber	Within ±1% (temperature fluctuation: within ±0.5°C/hour) Within ±1.5% (temperature fluctuation: within ±1°C/hour)
Range of humidity in chamber	Within ±0.5% at the position for installing
Power requirement	100 VAC ±10% 50/60 Hz
Fuse	Ø6.4 x 30 mm 125 VAC 0.3A
Dimensions	600 (W) x 600 (H) x 581 (D) mm
Materials	Stainless steel
Weight	16 kg
Accessories	Desiccant (500 g) 1 ea. Spare fuse 1 ea.



## Exclusive Charts

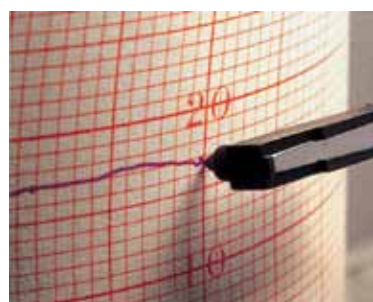
Recorder	Recording cycle	Cat. No.	Quantity	Remarks
No. 7210-00/7215-00 Thermohygrograph	1 day	7210-60	400 sheets	C 241540
	7 day	7210-62	55 sheets	C 1681540
	32 day (※)	7210-64	55 sheets	C 321540
No. 7211-00 Thermohygrograph	1 day	7211-60	400 sheets	
	7 day	7211-62	55 sheets	
	32 day	7211-64	55 sheets	
No. 7012-00 Thermohygrograph	3 month	7012-60	1 roll	3L 1002050-III
	1 month	7012-70	1 roll	1L 1002050-III
No. 7230-00 Thermograph	1 day	7230-60	400 sheets	AT 241540
	7 day	7230-62	55 sheets	AT 1681540
	32 day	7230-64	55 sheets	AT 321540
No. 7234-00 Hygrograph	1 day	7234-60	400 sheets	NH 240100
	7 day	7234-62	55 sheets	AH 1680100
	32 day	7234-64	55 sheets	AH 320100
No. 7237-00 Barograph (hPa scale)	1 day	7237-60	400 sheets	NB 244045
	7 day	7237-62	55 sheets	AB 1684045
	32 day	7237-64	55 sheets	AB 324045
No. 7200-00 Remote one point Thermograph	7 day	7200-62	55 sheets	AR 140-1
	32 day	7200-64	55 sheets	AR 320
No. 7202-00 Remote two point Thermograph	7 day	7202-62	55 sheets	AR 140-2
No. 7005-00 MINI-STAR Thermohygrograph	7 day	7005-62	55 sheets	S168-5100X640
No. 7006-00/7006-10 MINI-ALPHA Thermohygrograph	7 day	7006-62	55 sheets	S168-1550
No. 7008-00 MINI-CUBE Thermohygrograph	7 day	7008-62	55 sheets	S168-5100X1540

The charts for "SIGMA II" series can be interchangeably used with "SIGMA" series recorders except 32 day chart.

※ 32 day chart is not usable with No.7215-00 Thermohygrograph.

## Other Accessories

Items	Cat. No.	Quantity	Remarks	Applicable recorder
Cartridge pen (violet)	7210-90	1	SK-051-079	Recorders listed above
Cartridge pen (red)	7210-92	1	SK-051-079	Recorders listed above
Dustproof cover	7238-20	1		"Sigma II" Series recorders
Axial fan	7238-22	1	100 to 115VAC±10% 50/60Hz	"Sigma II" Series recorders





### No. 7540-00 HAIR HYGROMETER WITH THERMOMETER MODEL HIGHEST I

#### SPECIFICATIONS

Sensors:	Human hair for humidity Glass thermometer for temperature
Measuring range:	20 to 100% for relative humidity -10 to 50°C for temperature
Min. graduation:	1% for relative humidity 2°C for temperature
Accuracy:	±3%RH (40 to 80%, 15 to 25°C) ±5%RH (other than above) ±2°C for temperature
Dimensions:	150 mm dia. x 40 (D) mm
Weight:	Approx. 280 g



### No. 7542-00 HAIR HYGROMETER WITH DIGITAL THERMOMETER MODEL HIGHEST II

#### SPECIFICATIONS

Sensors:	Human hair for humidity Thermistor for temperature
Measuring range:	20 to 100% for relative humidity 0 to 50°C for temperature
Min. graduation:	2% for relative humidity 0.1°C for temperature
Resolution:	0.1°C for temperature
Accuracy:	±4%RH (15 to 25°C, 40 to 80%) ±7%RH (other than above) ±1°C (at 0 to 40°C) for temperature ±2°C (other than above)
Dimensions:	135 mm dia. x 33 (D) mm
Weight:	Approx. 230 g
Accessories:	Bracket (160 mm dia. x 4 (D) mm) , "AA" size battery x 2



### No. 7562-00 HYGROTHERMOMETER MODEL PALMA II

#### SPECIFICATIONS

Sensors:	Synthetic hair for humidity Glass thermometer for temperature
Measuring range:	20 to 99% for relative humidity -10 to 50°C for temperature
Min. graduation:	1% for relative humidity 5°C for temperature
Accuracy:	±4%RH (40 to 80%, 15 to 25°C) ±8%RH (other than above)
Dimensions:	95 mm dia. x 18 (D) mm
Weight:	Approx. 100 g



### No. 1013-00 THERMOHYGROMETER MODEL TH-300

#### SPECIFICATIONS

Sensors:	Coil for humidity Bimetallic strip for temperature
Measuring range:	20 to 100% for relative humidity -30 to 50°C for temperature
Min. graduation:	5% relative humidity 2°C for temperature
Accuracy:	±5%RH (15 to 25°C, 40 to 70%) ±8%RH (other than above) ±2°C for temperature
Dimensions:	285 (W) x 285 (H) x 35 (D) mm
Weight:	Approx. 750 g



### No. 1050-00 DIGITAL THERMOHYGROMETER MODEL PC-5000TRH II

#### SPECIFICATIONS

Measuring range:	0 to 50°C for temperature, 25 to 95% RH (Internal Sensor) -50 to 70°C for temperature (External Sensor)
Accuracy:	Temperature (Internal sensor) ±1°C (0 to 40°C) ±2°C (other than above) (External sensor) ±1°C (0 to 40°C) ±2°C (-30 to 0°C) ±3°C (other than above) Humidity (Internal sensor) ±5%RH (15 to 40°C, 40 to 80%RH) ±7%RH (other than above)
Cord length:	3 m
Dimensions:	98 (W) x 107 (H) x 20 (D) mm
Weight:	Approx. 145 g

## No. 7450-00 ASSMANN TYPE PSYCHROMETER (AC/DC TYPE) MODEL SK-RHG

## FEATURES

- Can be used at any convenient place with an optional compact stand.
- A water reservoir is suitable for continuous observation.
- Continuous operation for 20 hours with 2 batteries (3 VDC).
- Power requirements both of AC and DC are available.
- Easy to fix thermometers to the main unit using a screw cap.
- By use of the wick, no need to wrap the wet bulb with cotton gauze.

## SPECIFICATIONS

**Thermometers:** Dual-tube thermometer mercury-filled

Measuring range : 0 to 50°C  
 Division : 0.2°C  
 Accuracy : ±0.2°C  
 Length : 30 cm

**Instrument**

Speed of air flow : 3 m/s to 5 m/s  
 Power requirements : 3 VDC ("D" size battery x 2) or AC adapter  
 Battery life : About 20 hours (continuously use at more than 3 m/s)  
 Outer dimensions : 80 (W) x 450 (H) x 110 (D) mm  
 Weight : Instrument : 0.74 kg (without batteries)  
                   Stand (option) : 1.65 kg

**Standard accessories:**

Water supply bottle, Dustproof cover, Humidity conversion table, Humidity conversion rule, Test result for thermometers, 20 wicks, "D" size battery x 2, AC adapter (100 to 240VAC use), Carrying case (possible to accommodate all accessories)

## OPTION

- **Spare thermometers:** 2 pcs./set, w/test result

**Mercury-filled thermometers**

	Range	Div.	Accuracy
No. 7450-50	0 to 50°C	0.2°C	±0.2°C
No. 7450-60	-30 to 50°C	0.2°C	±0.2°C
No. 7450-65	0 to 40°C	0.1°C	±0.2°C

**Alcohol-filled thermometers**

No. 7450-67	0 to 50°C	0.2°C	±0.2°C
No. 7450-68	-30 to 50°C	0.5°C	±0.5°C

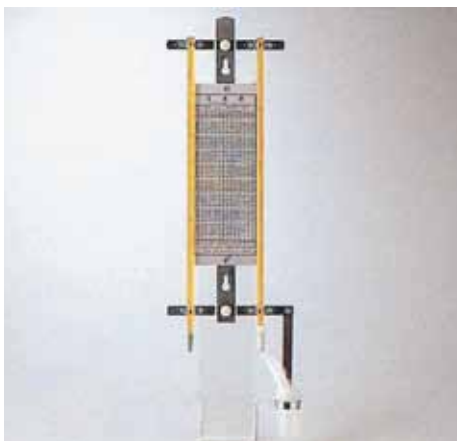
• **Stand**

No. 7450-30 Compact stand in exclusive use for SK-RHG  
 No. 7450-40 Tripod in general use for Assmann Psychrometer

• **Others**

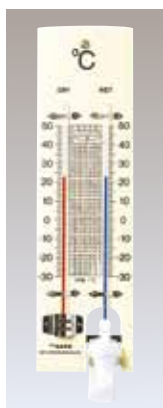
No. 7450-70 Spare wicks in exclusive use for SK-RHG (60 pcs./box)  
 No. 7450-75 AC adapter (for 100 to 240 VAC)





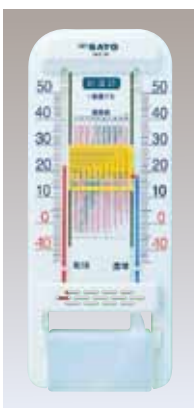
**No. 7320-00 AUGUST PSYCHROMETER**  
SPECIFICATIONS

Measuring range: -20 to 50°C  
 Min. graduation: 0.5°C  
 Accuracy: ±0.5°C  
 Dimensions: 420 (W) x 110 (H) mm  
 Weight: 140 g  
 Accessories: Metal frame, conversion table



**No. 1518-00 WOODEN BASE PSYCHROMETER**  
SPECIFICATIONS

Measuring range: -30 to 50°C  
 Min. graduation: 1°C  
 Accuracy: ±1°C at 0 to 30°C  
 ±2°C at other range  
 Dimensions: 79 (W) x 271 (H) x 29 (D) mm  
 Weight: Approx. 125 g



**No. 1519-00 PSYCHROMETER MODEL SK-1**  
SPECIFICATIONS

Measuring range: -10 to 50°C  
 Min. graduation: 1°C  
 Accuracy: ±1°C at 0 to 30°C  
 ±2°C at other range  
 Dimensions: 104 (W) x 260 (H) x 28 (D) mm  
 Weight: Approx. 110 g



**No. 1060-00 DIGITAL MIN-MAX THERMOMETER MODEL PC-6800**  
SPECIFICATIONS

Measuring range: -50 to 70°C (External Sensor)  
 -5 to 50°C (Internal Sensor)  
 Accuracy: ±1°C at 0 to 40°C  
 ±2°C at other range  
 Cord length: 3 m  
 Dimensions: 98 (W) x 107 (H) x 20 (D) mm  
 Weight: 145 g



**No. 1740-50 DIGITAL MIN-MAX THERMOMETER MODEL PC-3500**  
SPECIFICATIONS

Measuring range: -50 to 70°C (External Sensor)  
 -5 to 50°C (Internal Sensor)  
 Accuracy: ±1°C at 0 to 40°C  
 ±2°C at other range  
 Cord length: 3 m, Accordance with JIS C 0920 (Drip-proof)  
 Dimensions: 67 (W) x 65 (H) x 16 (D) mm  
 Weight: 50 g



**U-TUBE MIN-MAX THERMOMETER**  
SPECIFICATIONS

Min. graduation: 1°C  
 Accuracy: ±1°C  
 Dimensions: 76 (W) x 220 (H) x 25 (D) mm  
 Weight: 135 g  
 No. 1506-00 Measuring range: -20 to 50°C  
 No. 1506-50 Measuring range: -40 to 50°C



**No. 7308-00 MIN-MAX THERMOMETER WITH HYGROMETER**  
SPECIFICATIONS

Measuring range: -30 to 50°C for temp.  
 25 to 95%RH for humi.  
 Accuracy: ±2°C for temperature  
 ±5%RH (30 to 80%RH, 15 to 25°C)  
 for humidity  
 ±8%RH at other range  
 Dimensions: 180 (W) x 180 (H) x 35 (D) mm  
 Weight: 240 g





**No. 7610-20 ANEROID BAROMETER WITH THERMOMETER**

**SPECIFICATIONS**

Measuring range: 930 to 1,070 hPa, 700 to 800 mmHg  
 Min. graduation: 1 hPa / 1 mmHg  
 Temperature compensation: Bimetal  
 Accuracy: ±1 hPa at 980 to 1,020 hPa  
 ±3 hPa at other range  
 Temperature: Glass thermometer  
 Range: -10 to 50°C  
 Accuracy: ±2°C  
 Usable altitude: Up to 500 m  
 Case material: Brass  
 Dimensions: Ø158 x 50 (D) mm  
 Weight: Approx. 690 g



**No. 7612-00 BAROMETER WITH DIGITAL THERMOMETER**

**SPECIFICATIONS**

Air pressure:  
 Measuring range: 945 to 1,045 hPa (black scale)  
 710 to 780 mmHg (red scale)  
 Min. graduation: 1 hPa / 1 mmHg  
 Accuracy: ±1 hPa at 980 to 1,020 hPa  
 ±3 hPa at other range  
 Temperature:  
 Measuring range: 0 to 50°C  
 Resolution: 0.1°C  
 Accuracy: ±1°C (at 0 to 40°C)  
 ±2°C at other range  
 Dimensions: Ø135 x 33 (D) mm  
 Weight: Approx. 220 g  
 Accessories: Bracket (Ø160 x 4 (D) mm), "AA" size battery x 1



**No. 7640-00 PRECISION FORTIN BAROMETER**

This instrument consists of Scale, Mercury-filled glass tube and Cistern. Scale is graduated in hPa (mb) and mmHg on a brass tube marking apex of ivory pointer as cardinal point and is read by the vernier in 0.1 mm graduation.

**SPECIFICATIONS**

Measuring method: Mercury column  
 Measuring range: 870 to 1,090 hPa  
 650 to 820 mmHg  
 Min. graduation: 1 hPa / 1 mmHg  
 Vernier readings: 0.1 hPa / 0.1 mmHg  
 Accuracy: ±0.5 hPa  
 Mounted Thermometer: Mercury-filled glass thermometer  
 Measuring range: -20 to 50°C  
 Min. graduation: 0.5°C  
 Dimensions: 1,130 (H) x 100 (W) x 100 (D) mm  
 Weight: Barometer: approx. 2.5 kg  
 Mounting board: approx. 1.8 kg

For the safety shipment, mercury is separately packed in a glass container.

The relation between elevation and air pressure (JIS W02101)

Elevation (m)	Air pressure (hPa)	Mercury column (mmHg)	Elevation (m)	Air pressure (hPa)	Mercury column (mmHg)	Elevation (m)	Air pressure (hPa)	Mercury column (mmHg)	Elevation (m)	Air pressure (hPa)	Mercury column (mmHg)
0	1013.25	760.00	750	926.34	694.81	1500	845.56	634.22	2250	770.58	577.98
50	1007.26	755.51	800	920.76	690.63	1550	840.38	630.34	2300	765.78	574.38
100	1001.29	751.03	850	915.22	686.47	1600	835.23	626.48	2350	761.01	570.80
150	995.36	746.58	900	909.70	682.33	1650	830.11	622.63	2400	756.26	567.24
200	989.45	742.15	950	904.21	678.21	1700	825.01	618.81	2450	751.53	563.69
250	983.58	737.74	1000	898.74	674.11	1750	819.94	615.00	2500	746.82	560.16
300	977.73	733.35	1050	893.31	670.04	1800	814.89	611.22	2550	742.14	556.65
350	971.90	728.99	1100	887.90	665.98	1850	809.87	607.45	2600	737.49	553.16
400	966.11	724.64	1150	882.51	661.94	1900	804.87	603.70	2650	732.86	549.69
450	960.35	720.32	1200	877.15	657.92	1950	799.90	599.97	2700	728.25	546.23
500	954.61	716.01	1250	871.82	653.92	2000	794.95	596.26	2750	723.66	542.79
550	948.90	711.73	1300	866.52	649.94	2050	790.03	592.57	2800	719.10	539.37
600	943.22	707.47	1350	861.24	645.98	2100	785.13	588.90	2850	714.56	535.96
650	937.56	703.23	1400	855.99	642.04	2150	780.26	585.24	2900	710.05	532.58
700	931.94	699.01	1450	850.76	638.12	2200	775.41	581.60	2950	705.55	529.21



### Descriptions on Hot Wire Anemometers

Adopting the principle of thermal anemometer, hot wire anemometers can measure wide range of air velocity. Due to the temperature compensation function, the measured value can be read without correction and conversion.



#### No. 7683-01 HOT WIRE ANEMOMETER MODEL SK-28V

##### FEATURES

- \* This is a multi-functioned hot wire anemometer which can measure air velocity, air temperature and static pressure
- \* Powered by batteries, SK-28V can be brought to anywhere to take measurements
- \* With its wide measuring range from 0 to 120°C
- \* The dual range of 0 to 3 m/s and 3 to 40 m/s for air velocity and wide widens the usage areas
- \* Usable in various places such as duct or air compressor factories, testing rooms and laboratories

##### SPECIFICATIONS

Measurement object:	Clean air at normal pressure and humidity
Measuring range:	Air velocity: 0.5 to 3 m/s, 3 to 40 m/s (dual range) Air temperature: 0 to 60°C, 60 to 120°C (dual range) Static pressure: 0 to 500 Pa, 500 to 4500 Pa (dual range)
Accuracy:	Air velocity: ±5% F.S. +0.1 m/s at 18 to 28°C Air temperature: ±0.5°C Static pressure: ±2% F.S.
Temperature compensation:	0 to 120°C
Power requirements:	9 VDC ("C" size alkaline battery x 6)
Operating ambient:	Main body: 5 to 45°C for air temperature less than 85%RH for humidity Probe: In the measuring range
Outer dimensions:	214 (W) x 117 (H) x 155 (D) mm
Probe Sensor:	Coated platinum element
Dimensions:	Ø8 to 18.7 mm x 180 to 930 (L) mm (telescoping type)
Cord:	Ø6 mm x 3 (L) m
Weight:	Approx. 2 kg (with batteries)
Standard accessories:	Carrying case, "C" size battery x 6, test result

#### No. 7693-00 HOT WIRE ANEMOMETER MODEL SK-73D

##### FEATURES

- \* Compact body allows the operation with one hand
- \* Easy to read measured value with the Large LCD
- \* Telescoping type probe is suitable for the measurement of air-flow and temperature at the ducts and outlet of air-conditioners
- \* Available to read data easily using HOLD function
- \* Wide measuring range: 0 to 30 m/s for air velocity and 0 to 80°C for temperature



##### SPECIFICATIONS

Measurement object:	Clean air at normal pressure and humidity
Measuring range:	Air velocity: 0 to 30 m/s Air temperature: 0 to 80°C
Accuracy:	Air velocity: ±3% F.S. ±1 digit Air temperature: ±0.5°C ±1 digit
Resolution:	Air velocity: 0.1 m/s Air temperature: 0.1°C
Temperature compensation:	0 to 80°C
Power requirements:	7.5 VDC ("AA" size alkaline battery x 5)
Battery life:	About 6 hours (continuously use at 30 m/s at 25°C)
Operating ambient:	Main body: 5 to 45°C for air temperature less than 85%RH for humidity Probe: In the measuring range
Outer dimensions:	84 (W) x 206 (H) x 42 (D) mm
Probe Sensor:	Coated platinum element
Dimensions:	Ø8 to 18.7 mm x 180 to 930 (L) mm (telescoping type)
Cord:	Ø6 mm x 2 (L) m
Weight:	Approx. 475 g (with batteries)
Materials of case:	ABS resin
Standard accessories:	Vinyl case, "AA" size battery x 5, test result

**No. 2150-B BIMETAL THERMOMETER FOR ASPHALT****SPECIFICATIONS**

Case diameter:	Ø80 mm
Dial diameter:	Ø75 mm (Black scale plate is provided)
Case material:	SPCC Nickel plating
Cover material:	SUS304
Window material:	Glass
Stem dimensions:	Ø8 x 200 mm, pointed end
Stem material:	SUS304
	No. 2150-10 Black scale plate
	No. 2150-20 White scale plate
Temp. range:	0 to 200°C (5/1)

**No. 2250-10 BIMETAL THERMOMETER FOR ASPHALT (LARGE TYPE II)****SPECIFICATIONS**

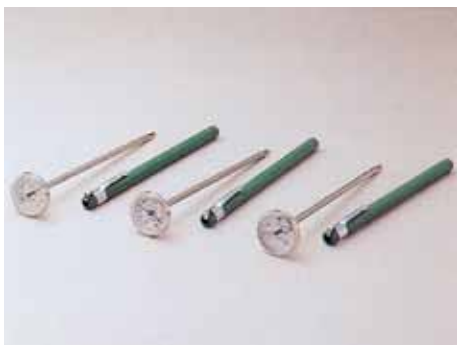
Case diameter:	Ø175 mm
Dial diameter:	Ø150 mm
Case & cover material:	Polyamide resin
Window material:	Glass
Stem dimensions:	Ø8 x 200 mm, pointed end
Stem material:	SUS304
Temp. range:	0 to 200°C (2/1)

**No. 2180-B BIMETAL THERMOMETERS FOR GRAIN****SPECIFICATIONS**

Case diameter:	Ø80 mm
Dial diameter:	Ø75 mm
Case material:	SPCC Nickel plating
Cover material:	Aluminum
Window material:	Glass
Stem dimensions:	No. 2180-00 Ø8 x 250 mm
	No. 2185-00 Ø8 x 500 mm
Stem material:	SUS304
Temp. range:	-10 to 50°C (1/1)

**No. 2340-B BIMETAL THERMOMETERS FOR SURFACE TEMPERATURE WITH MAGNET****SPECIFICATIONS**

Case diameter:	Ø64 mm x 16 mm (t)
Dial diameter:	Ø60 mm
Case material:	Bs chrome plating
Cover material:	SUS304
Window material:	Glass
Bulb dimensions:	Ø25 x 7 mm (t)
Temp. range:	No. 2340-20 0 to 200°C (2/1)
	No. 2340-40 0 to 400°C (5/1)

**No. 2060-B POCKET BIMETAL THERMOMETERS****SPECIFICATIONS**

Case diameter:	Ø26 mm
Dial diameter:	Ø24 mm
Case & cover material:	SUS304
Window material:	Glass
Stem dimensions:	Ø4 x 130 mm, pointed end
Stem material:	SUS304
Sheath material:	Polyvinyl chloride
Accessories:	Plastic window cover
Temp. range:	No. 2060-45 -40 to 50°C (1/1)
	No. 2060-11 -10 to 110°C (1/1)
	No. 2060-20 0 to 200°C (5/1)

**BIMETAL THERMOMETERS (STOCK ITEMS) MODEL BM-S-90S/BM-T-90S/BM-T-75S**



BM-S-90S



BM-T-90S



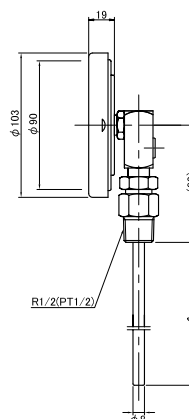
BM-T-75S

**MUTUAL SPECIFICATIONS**

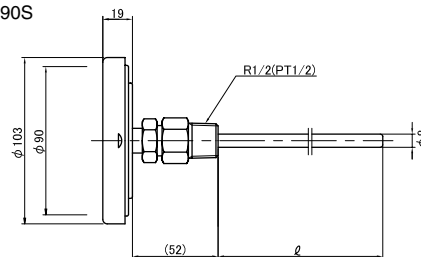
Cat. No.	2010-B	2030-B	2110-B
Model	BM-S-90S	BM-T-90S	BM-T-75S
Case dia.	103mm		80mm
Dial dia.	90mm		75mm
Materials Case Window	SUS304 glass		
Sensing stem Materials	Ø8 mm SUS304		
Screw Materials	PT1/2 SUS304		
Withstand pressure	5kgf/cm <sup>2</sup>		2kgf/cm <sup>2</sup>

Measuring range	Stem length	BM-S-90S	BM-T-90S	BM-T-75S
-30 to 50°C	60mm	○	○	○
	100mm	○	○	○
	150mm	○	○	○
	200mm	○	○	—
0 to 100°C	50mm	○	○	○
	100mm	○	○	○
	150mm	○	○	○
	200mm	○	○	—
0 to 150°C	50mm	○	○	—
	100mm	○	○	—
	150mm	○	○	—
	200mm	○	○	—
0 to 200°C	50mm	—	○	—
	100mm	—	○	—
	150mm	—	○	—
	200mm	—	○	—

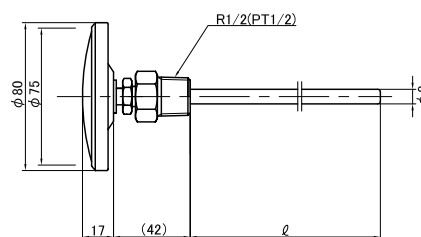
BM-S-90S



BM-T-90S

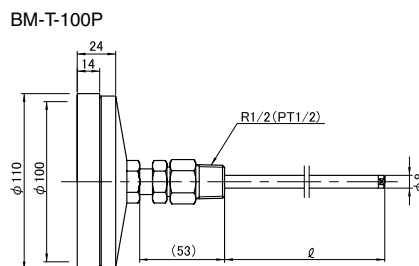
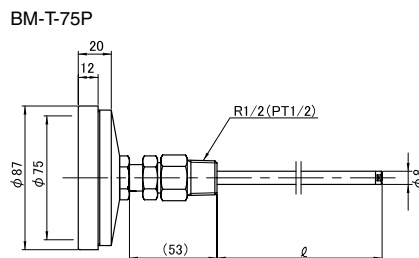
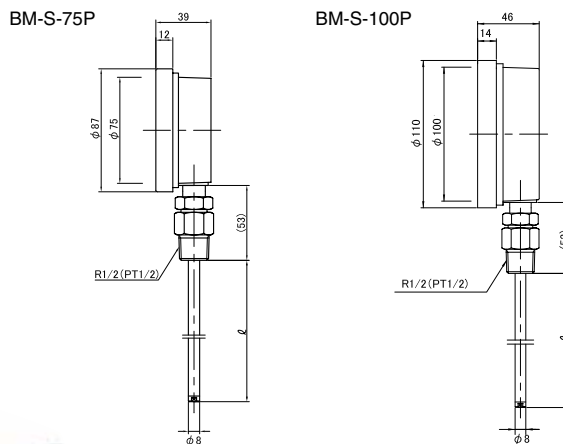


BM-T-75S



\* Other specifications are available by order. Please contact us for more information.

**BIMETAL THERMOMETERS (STOCK ITEMS) MODEL BM-T-75P/BM-S-75P/BM-T-100P/BM-S-100P**



**MUTUAL SPECIFICATIONS**

Cat. No.	2075-B	2078-B	2080-B	2085-B
Model	BM-T-75P	BM-S-75P	BM-T-100P	BM-S-100P
Case dia.	87mm		110mm	
Dial dia.	75mm		100mm	
Materials Case Window	Polyamide(PA) resin glass			
Sensing stem Materials	Ø8 mm Brass plating (Bs)			
Screw Materials	PT1/2 Brass plating (Bs)			

Measuring range	Stem length	BM-T-75P	BM-S-75P	BM-T-100P	BM-S-100P
0 to 50°C	50mm	○	○	○	○
	100mm	○	○	○	○
	150mm	○	○	○	○
0 to 100°C	50mm	○	○	○	○
	100mm	○	○	○	○
	150mm	○	○	○	○
0 to 150°C	50mm	○	○	○	○
	100mm	○	○	○	○
	150mm	○	○	○	○
0 to 200°C (for ordering)	50mm	○	○	○	○
	100mm	○	○	○	○
	150mm	○	○	○	○


**BIMETAL THERMOMETERS (BACK CONNECTION)  
MODEL BM-T-40S/BM-T-60S/BM-T-70S/BM-T-90S**

## SPECIFICATIONS

Cat. No.	2440-B	2460-B	2470-B	2490-B
<b>Model</b>	<b>BM-T-40S</b>	<b>BM-T-60S</b>	<b>BM-T-70S</b>	<b>BM-T-90S</b>
Dimensions	Case	44mm dia.	63mm dia.	80mm dia.
	Dial	42mm dia.	60mm dia.	70mm dia.
Case construction	Splash-proof type			
Measuring range	-50 to 500°C (See page 34)			
Materials	Case	SUS304		
	Window	Glass	Glass (option: Acryl)	
	Sensing stem	SUS304		
Sensing stem dia.	4,6,8,10 mm	6, 8, 10, 12 mm		
Withstand pressure	2kgf/cm <sup>2</sup>	5kgf/cm <sup>2</sup>		


**BIMETAL THERMOMETERS (BOTTOM CONNECTION)  
MODEL BM-S-60S/BM-S-70S/BM-S-90S**

## SPECIFICATIONS

Cat. No.	2465-B	2475-B	2495-B
<b>Model</b>	<b>BM-S-60S</b>	<b>BM-S-70S</b>	<b>BM-S-90S</b>
Dimensions	Case	63mm dia.	80mm dia.
	Dial	60mm dia.	70mm dia.
Case construction	Splash-proof type		
Measuring range	-50 to 500°C (See page 34)		
Materials	Case	SUS304	
	Window	Glass (option: Acryl)	
	Sensing stem	SUS304	
Sensing stem dia.	6, 8, 10, 12 mm		
Withstand pressure	5kgf/cm <sup>2</sup>		


**BIMETAL THERMOMETERS (TILTING TYPE)  
MODEL BM-F-70S/BM-F-90S**

## SPECIFICATIONS

Cat. No.	2700-B	2710-B
<b>Model</b>	<b>BM-F-70S</b>	<b>BM-F-90S</b>
Dimensions	Case	80mm dia.
	Dial	70mm dia.
Case construction	Splash-proof type	
Measuring range	-50 to 300°C (See page 34)	
Materials	Case	SUS304
	Window	Glass (option: Acryl)
	Sensing stem	SUS304
Sensing stem dia.	6, 8, 10, 12 mm	
Withstand pressure	5kgf/cm <sup>2</sup>	





STANDARD SPECIFICATIONS OF BIMETAL THERMOMETERS

A. STANDARD FOR CASE (Material: SUS304)

Type	Dial dia.	Model	Type number
T	Ø40 mm	BM-T-40S	2440-B
	Ø60 mm	BM-T-60S	2460-B
	Ø70 mm	BM-T-70S	2470-B
	Ø75 mm	BM-T-75S	2472-B
	Ø90 mm	BM-T-90S	2490-B
S	Ø60 mm	BM-S-60S	2465-B
	Ø70 mm	BM-S-70S	2475-B
	Ø90 mm	BM-S-90S	2495-B
F	Ø70 mm	BM-F-70S	2700-B
	Ø90 mm	BM-F-90S	2710-B

Type T ... Back connection type  
 Type S ... Bottom connection type  
 Type F ... Tilting type

B. STANDARD FOR SCALE PLATE

Temp. range (unit: °C)	Minimum div.	Dial diameter (mm)				
		Ø40	Ø60	Ø70	Ø75	Ø90
-50 to 50	2/1	○	○	○	○	○
-30 to 50	1/1	○	○	○	○	○
0 to 50	1/1	○	○	—	○	○
0 to 100	2/1	○	○	○	○	○
0 to 120	2/1	○	○	○	○	○
0 to 150	2/1	○	○	○	○	○
0 to 200	5/1	○	○	○	○	○
0 to 300	10/1	○	○	○	○	○
0 to 400	10/1	—	○	○	○	○
0 to 500	10/1	—	○	○	○	○

○ are available.

C. STANDARD FOR STEM

Material	Stem diameter (mm)			
	Ø6	Ø8	Ø10	Ø12
SUS304	○	○	○	○
SUS316	○	○	○	○

○ available

D. STANDARD FOR SCREW

Name	Applied bulb dia. (mm)	Material		
		SUS304	SUS316	SUS304*
PT • PF1/4	Ø6	○	○	—
PT • PF3/8	Ø6, 8, 10	○	○	○
PT • PF1/2	Ø6, 8, 10, 12	○	○	○
PT • PF3/4	Ø6, 8, 10, 12	○	○	○
PT • PF1/1	Ø6, 8, 10, 12	○	○	○

○ available

\* with slide screw type.

SHAPE OF CONNECTOR FOR STEM

B ... For bimetal type L/S ... For remote sensing type ○ ... Available × ... Not available

Type	Name	Drawing	B	L/S	Type	Name	Drawing	B	L/S
SW	Union type		○	○	SC	With fixed screwed connection type		○	×
SF	Semi-union type		○	○	UW	Union type with thermowell		○	○
NB	Screwless type		○	○	SG	With fixed position cap swivel connection type		○	○
NS	Plain connection without pipe thread type		×	○	SG	Slide screw type		○	○
FG	Flange type		○	○	FW	Flange type with thermowell		○	○
TM	Bent type		×	○	* NB Screwless type: Shapes and sizes will change due to the size and material of the case used. ** TM Bent type: Specify the length of L longer than 500 mm.				

## STANDARD SPECIFICATIONS OF REMOTE SENSING DIAL THERMOMETERS

## A. STANDARD FOR CASE

	Dial dia.	Model name	Type number	
Wall-mount bottom outlet	Ø75 mm	LB-75S	3050-L	*1
		SB-75S	3450-S	
	Ø100 mm	LB-100S	3010-L	
		SB-100S	3405-S	
	Ø150 mm	LB-150S	3020-L	
		SB-150S	3420-S	
Flush-mount back outlet	Ø75 mm	LD-75S	3060-L	*2
		SD-75S	3460-S	
	Ø100 mm	LD-100S	3030-L	
		SD-100S	3430-S	
Rigid stem type	Ø100 mm S type	LAS-100S	3012-L	
		SAS-100S	3412-S	
	Ø100 mm L type	LAL-100S	3014-L	
		SAL-100S	3414-S	
	Ø100 mm T type	LAT-100S	3015-L	
		SAT-100S	3415-S	
Ø100 mm Tilting type	LAF-100S	3058-L		
	SAF-100S	3480-S		
*3	Ø100 S type	SASW-100SO	3453-S	
	Ø100 T type	SATW-100SO	—	

\*1 Waterproof type (LBW-100S / SBW-100S) available.

\*2 Waterproof type (LDW-100S / SDW-100S) available.

\*3 Oil-filled for vibration-proof type.

## B-1. STANDARD FOR SCALE PLATE (L: Liquid type)

Temp. range (unit: °C)	Dial diameter		
	Ø75mm	Ø100mm	Ø150mm
-150 to 50	—	5/1	—
-100 to 50	5/1	2/1	2/1
-50 to 50	2/1	2/1	2/1
-30 to 50	2/1	1/1	1/1
0 to 50	2/1	1/1	1/1
0 to 80	2/1	1/1	1/1
0 to 100	2/1	2/1	2/1
0 to 120	2/1	2/1	2/1
0 to 150	5/1	2/1	2/1
0 to 200	5/1	5/1	5/1
0 to 300	10/1	10/1	10/1

\* Other range and Fahrenheit scale available upon quantity.

## B-2. STANDARD FOR SCALE PLATE (S: Mercury type)

Temp. range (unit: °C)	Dial diameter		
	Ø75mm	Ø100mm	Ø150mm
0 to 400	—	5/1	5/1
0 to 500	10/1	10/1	10/1
0 to 600	10/1	10/1	10/1
50 to 650°C/F	10/1	10/1	10/1

\* Other range and Fahrenheit scale available upon quantity.

## C. STANDARD FOR LEAD WIRE

Name	Type	Specifications
SUS 304 Flexible tube	FS	SUS304 lead wire is coated with flexible tube
Flexible tube coated with polyvinyl chloride (P.C.)	FSB	Same as above FS type, but coated with P.C.
Lead wire only	LS	SUS304 lead wire without any coating
Lead wire in flexible tube & bulb are coated with teflon tube	TTC	Same as above BTC type, but coated with P.C.

## D. STANDARD FOR STEM

Material	Stem diameter		
	Ø8mm	Ø10mm	Ø12mm
SUS304	○	○	○
SUS316	○	○	○

○ available

## E. SHAPE OF CONNECTOR FOR STEM

(Refer to page 34.)

## F. STANDARD FOR SCREW

Name	Applied bulb dia. (mm)	Material			
		SUS304	SUS316	SUS304*1	SUS304*2
PT•PF3/8	Ø8, 10	○	○	○	—
PT•PF1/2	Ø8, 10, 12	○	○	○	○
PT•PF3/4	Ø8, 10, 12	○	○	○	○
PT•PF1/1	Ø8, 10, 12	○	○	○	—

○ available

\*1 with slide screw type

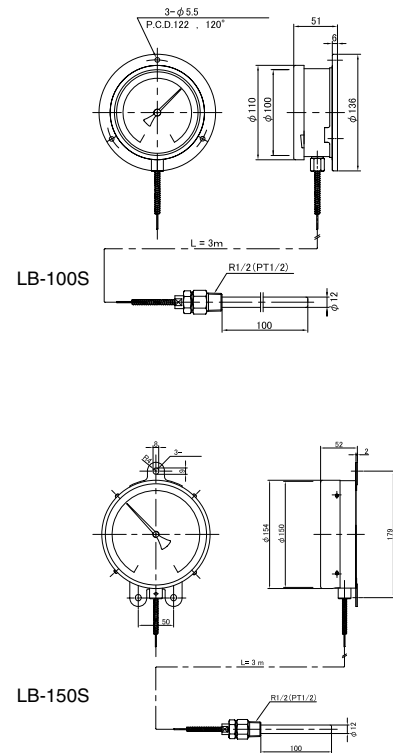
\*2 with fixed position cap swivel connection type

## G. MINIMUM LENGTH SENSING STEM (for LIQUID TYPE)

Unit : mm

Connection type	Dia.	Measuring Range (°C)								
		0 to 50	-30 to 50	0 to 80	-50 to 50	0 to 100	0 to 120	0 to 150	0 to 200	0 to 300
Union type	Ø8	90	75	75	70	70	70	70	70	45
	Ø10	70	60	60	60	60	60	60	60	45
	Ø12	65	65	65	50	50	50	50	50	40
Plain connection w/o thread	Ø8	105	90	90	85	85	85	85	—	—
	Ø10	85	75	75	75	75	75	75	—	—
	Ø12	110	110	110	100	100	90	90	—	—

**REMOTE SENSING DIAL THERMOMETERS (STOCK ITEMS)**  
**MODEL LB-100S / LB-150S / SB-100S (WALL-MOUNT BOTTOM OUTLET)**



**MUTUAL SPECIFICATIONS**

Cat. No.	3000-L	3020-L	3400-S
Model	LB-100S	LB-150S	SB-100S
Type	Wall-mount bottom outlet		
Sensing element	Liquid		Mercury
Dimensions			
Case dia.	110mm	154mm	110mm
Dial dia.	100mm	150mm	100mm
Materials			
Case	SUS304		SUS304
Window	Glass		Glass
Sensing stem	Ø12mm x 100mm(L) Materials: SUS304		
Screw	PT1/2 Materials: SUS304		
Lead wire	Length: 3m Materials: SUS304		

Measuring range	LB-100S	LB-150S	SB-100S
-50 to 50°C (div. 2°C)	○	○	—
0 to 50°C (div. 1°C)	○	○	—
0 to 100°C (div. 1°C)	○	○	—
0 to 150°C (div. 2°C)	○	○	—
0 to 200°C (div. 5°C)	○	○	—
0 to 300°C (div. 5°C)	○	—	—
0 to 500°C (div. 10°C)	—	—	○

**No. 4300-V REMOTE SENSING DIAL THERMOMETER (STOCK ITEM)**  
**MODEL VB-100P (WALL-MOUNT BOTTOM OUTLET)**



**SPECIFICATIONS**

Model	VB-100P
Measuring range	0 to 80°C 0 to 100°C 0 to 120°C
Sensing element	Vapor
Case dia.	110mm (Dial dia.: 100mm)
Case construction	Splash-proof type
Materials Case	Six nylon + glass 30%
Window	Glass
Sensing stem	Plain connection w/o pipe thread Ø8 mm x 100 mm(L) CuT. + Nickel plating
Lead wire Length	2m (but, 1m for the range of 0 to 80°C)
Materials	CuT. + Nickel plating

\* Scale : unequal division

**REMOTE SENSING DIAL THERMOMETERS (FOR ORDERING)**  
**MODEL LB-75S / LB-100S / LB-150S (WALL-MOUNT BOTTOM OUTLET)**



**SPECIFICATIONS**

Cat. No.		3050-L	3010-L	3020-L
Model		LB-75S	LB-100S	LB-150S
Dimensions	Case	80mm dia.	110mm dia.	154mm dia.
	Dial	75mm dia.	100mm dia.	150mm dia.
Case construction		Splash-proof type		
Sensing element		Solid liquid		
Range		-50 to 300°C (See page 35)		
Materials	Case	SUS304		
	Window	Glass (option: Acryl)		
	Sensing stem	SUS304		
	Lead wire	SUS304		
Sensing stem dia.		8, 10, 12mm		
Mount (Qty x hole dia.)		3 x Ø5mm	3 x Ø5.5mm	3 x Ø8mm



**REMOTE SENSING DIAL THERMOMETERS**  
**MODEL LD-75S / LD-100S / LD-150S**  
**(FLUSH-MOUNT BACK OUTLET)**

**SPECIFICATIONS**

Cat. No.		3060-L	3030-L	3040-L
Model		LD-75S	LD-100S	LD-150S
Dimensions	Case	80mm dia.	110mm dia.	174mm square
	Dial	75mm dia.	100mm dia.	150mm dia.
Case construction		Splash-proof type		Indoor use
Sensing element		Solid liquid		
Range		-50 to 300°C (See page 35)		
Materials	Case	SUS304		Aluminum casting
	Window	Glass (option: Acryl)		
	Sensing stem	SUS304		
	Lead wire	SUS304		



LAS, SAS-100SO

**RIGID STEM TYPE DIAL THERMOMETERS  
MODEL LAS-100SO / SAS-100SO  
(OIL-FILLED FOR VIBRATION-PROOF TYPE)**

**SPECIFICATIONS**

Cat. No.	3053-L	3453-S
Model	LAS-100SO	SAS-100SO
Dimensions Case	101mm dia.	
Dial	90mm dia.	
Case construction	Splash-proof type (Rate: IPX1)	
Sensing element	Solid liquid	Mercury
Range	-150 to 300°C (See page 35)	-50 to 650°C (See page 35)
Material of oil	Silicon	
Materials Case	SUS304	
Window	Glass (option: Acryl)	
Sensing stem	SUS304	
Sensing stem dia.	10 mm	



LAF-100S

LAL-100S

LAT-100S

LAS-100S

**RIGID STEM TYPE DIAL THERMOMETERS  
MODEL LAF-100S / LAS-100S / LAL-100S / LAT-100S**

**SPECIFICATIONS**

Cat. No.	3058-L	3012-L	3014-L	3015-L
Model	LAF-100S	LAS-100S	LAL-100S	LAT-100S
Connection	Bottom	Bottom	Bottom	Back
Stem shape	Tilting	Straight	L shape	Straight
Dimensions Case	110mm dia.			
Dial	100mm dia.			
Case construction	Splash-proof type (Rate: IPX1)			
Sensing element	Solid liquid			
Range	-150 to 300°C (See page 35)			
Materials Case	SUS304			
Window	Glass (option: Acryl)			
Sensing stem	SUS304			



LB-100SE

LB-100SE

LB-75E

**REMOTE SENSING DIAL THERMOMETERS  
w/ELECTRIC CONTACT  
MODEL LB-75E / LB-100SE  
(WALL-MOUNT BOTTOM OUTLET)**

**SPECIFICATIONS**

Cat. No.	3150-L	3110-L
Model	LB-75E	LB-100SE
Dimensions Case	85mm dia.	110mm dia.
Dial	75mm dia.	100mm dia.
Sensing element	Solid liquid	
Range	-150 to 300°C (See page 35)	
Contact capacity	100VAC: 0.3A	100VDC: 0.02A
Wire connection	Terminal block	
Method	Contact	
Materials Case	ADC (Aluminum casting)	SUS304
Window	Acryl resin	
Sensing stem	SUS304	
Lead wire	SUS304	
Sensing stem dia.	8, 10, 12mm	

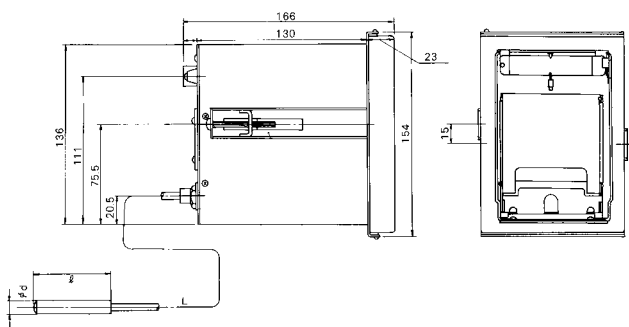




**No. 3750-L ULTRA LOW TEMPERATURE RECORDER MODEL LMMC-1**  
**Solid liquid actuated 1 point recording**

**SPECIFICATIONS**

- Case: SPCC
- Finish: Melamine-baked plating
- Window: AS resin, transparent
- Lead wire: Flexible tube (SUS304)  
 Length: 2 m (available up to 3m at option)
- Sensing bulb: NS type (plain connection w/o pipe thread) SUS304  
 Dimensions: Ø10 x 80mm  
 (available up to 200mm at option)
- Electric contact point: Lead switch type 1 point contact (option)
- Alarm preset temp. range: Refer to the chart
- Chart drive: Quartz motor
- Power requirements: 1.5 VDC ("C" size battery x 1)
- Battery life: about 1 year (in continuous use)
- Recording period: 60 days
- Chart feed speed: 2.5 mm/h
- Chart paper: Fold type (73 (W) mm x 4.2 (L) m)
- Recording pen: No. 3750-53 CPV-77 Cartridge pen (violet)
- Accessories: 6 pcs. of chart, 2 cartridge pens, "C" size battery x 1, fittings



**TEMPERATURE RANGES AND CHARTS**

Temp. range (°C)	Min. DIV.	For LMMC-1	Alarm preset (°C)
-100 to 50	5	2L-10040	-80 to -10
-50 to 50	2.5	2L-T40	-30 to 0
-50 to 100	5	2L-50100	-30 to 30
0 to 100	2.5	2L-T40	20 to 10
0 to 150	5	2L-0150	20 to 80
0 to 200	5	2L-T40	40 to 100

(6 pcs./box for 1 year use)



**No. 3720-L TEMPERATURE RECORDER MODEL LSY-A1**  
**Solid liquid actuated 1 point recording**  
**(2-point recording type (LSY-A2) is available)**

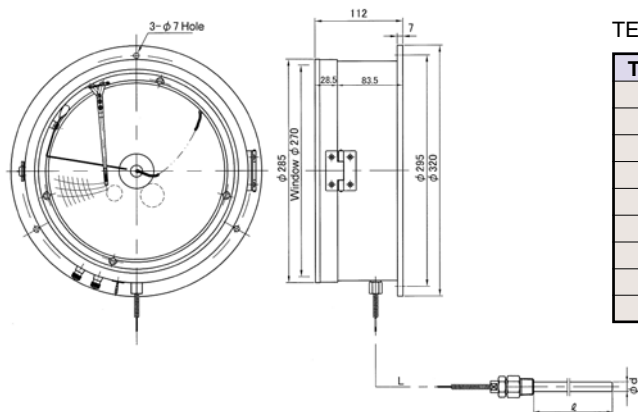
**SPECIFICATIONS**

- Case & cover: Aluminum Cast Alloy (ADC)
- Finish: Melamine-baked plating
- Window: Glass
- Lead wire: Flexible tube (SUS304)  
 Length: up to 3m
- Sensing bulb: SW (union) type connection with PT1/2" screw (SUS304)  
 Length: up to 200mm
- Chart drive: DC, AC and spring-wound driven (selectable at ordering)
- Recording pen: No. 7210-90 Cartridge pen (violet) for LSY-A1  
 No. CPW-II Cartridge pen (red and violet) for LSY-A2
- Accessories: 100 sheets of chart, cartridge pen (factory set)

**TEMPERATURE RANGES AND CHARTS**

Temp. range (°C)	Min. DIV.	12H/REV.	24H/REV.	168H/REV.
-50 to 50	2	—	245050	1685050
-20 to 50	1	—	242050	1682050
0 to 50	1	—	2450	16850
0 to 100	2	12100	24100	168100
0 to 120	2	12120	24120	168120
0 to 150	5	12150	24150	168150
0 to 200	5	—	24200	168200
0 to 250	5	—	24250	168250
0 to 300	5	—	24300	168300

(100 sheets/box)



## DIAL THERMOMETERS WITH ELECTRIC CONTACTS

○ means available contact arrangements. – not available.

	Dial dia.	Model	Type	Contact Point Type			Micro Switch Type	
				Upper or Lower Limit 1 contact point	Upper or Lower Limit 2 contact points	Upper & Lower Limit 1 contact point	1 contact point	2 contact points
※	Ø100mm	BM-T-100E	2685-B	○	–	–	–	–
Wall-mounted bottom outlet	Ø75mm	LB-75E	3150-L	○	–	○	–	–
		SB-75E	3550-S	○	○	○	–	–
	Ø100mm	LB-100SE	3510-L	○	–	–	–	–
		SB-100SE	3510-S	○	○	○	–	–
Flush-mounted back outlet	Ø75mm	LD-75E	3160-L	○	–	○	–	–
		SD-75E	3560-S	○	○	○	–	–
	Ø100mm	LD-100SE	3130-L	○	–	–	–	–
		SD-100SE	3530-S	○	○	○	–	–
Right stem type	Ø100mm S type	LAS-100SE	3112-L	○	–	–	–	–
		SAS-100SE	3512-S	○	○	○	–	–
	Ø100mm L type	LAL-100SE	3114-L	○	–	–	–	–
		SAL-100SE	3514-S	○	○	○	–	–
	Ø100mm T type	LAT-100SE	3115-L	○	–	–	–	–
		SAT-100SE	3515-S	○	○	○	–	–
	Ø100mm Tilting type	LAF-100SE	3158-L	○	–	–	–	–
SAF-100SE		3558-S	○	○	○	–	–	
Waterproof type	Ø130mm w/o terminal box	LBW-130MS	3094-L	–	–	–	○	–
		SBW-130MS	3494-S	–	–	–	○	○
	Ø130mm w/o terminal box	LBW-130EB	3092-L	○	–	–	–	–
		SBW-130EB	3492-S	○	○	○	–	–

※ Bimetal type



## No. 3990-60 BUZZER BOX MODEL BH-8

This buzzer box is used with a dial thermometer with electric contacts when the buzzer with large capacity (100VAC, 8VA) is required. The dial thermometer with electric contacts is available to set the point that the buzzer sounds.

Set the reference pointer to the point of target temperature with the front knob. The indicating pointer moves by the changes of temperature. When the indicating pointer reaches to the setting point and contacts with the reference pointer, an electric circuit is made to let the electric current flow into the coil of the buzzer, thus the buzzer sounds.

Sound volume: 75dB (distance: 1m)

Cord length: 1m

\* Specify your power requirements.



## RELAY UNIT

This is a relay unit to be combined with the thermometer with upper limit 2 contact points or lower limit 2 contact points to control the temperature to the fixed temperature range. The current which flow into the special circuits of the relay unit (delay circuit and self-hold circuit) becomes weak current and flows into the contact section, so sparks do not occur at the contact section and therefore there are no adhesions or carbons at the contact section. Even if a slight vibration is given to the contact section, chattering at the switching action does not occur.

## No. 3990-01 RELAY UNIT MODEL RU-1 (STOCK item)

## SPECIFICATIONS

Outer dimensions: 126 (W) x 50 (D) x 110 (H) mm

Installation sizes: 94.5 x 90 mm

Weight: 0.5 kg

Power requirement: 100/200VAC 50/60Hz

Rated

	Braking capacity	
	current (A)	
voltage (V)	resistance load (cos Ø = 1)	inductive load (cos Ø = 0.4) L/R = 7 mS
250VAC	3 (max. 5)	1 (max. 2)
30VDC	1 (max. 5)	1 (max. 3)

\* Specify your power requirements.

## No. 3990-02 RELAY UNIT MODEL KR-A2

Selectable either one at ordering

\* Two contacts for upper limits or lower limits

\* Two contacts for upper and lower limits

## SPECIFICATIONS

Outer dimensions: 120 (W) x 77 (D) x 160 (H) mm

Weight: 1.3 kg

Rated

	Braking capacity	
	current (A)	
voltage (V)	resistance load (cos Ø = 1)	inductive load (cos Ø = 0.4) L/R = 7 mS
100VAC 200VAC	10	3
100VDC 200VDC	0.3 0.15	0.11

\* Specify your power requirements.

**SWITCH MODE FOR ALARM (FOR DIAL THERMOMETERS WITH ELECTRIC CONTACTS)**

Switch Mode (pointer moves clockwise)	Contact Point System (example for connection)	Type No.	Switch Mode (pointer moves clockwise)	Contact Point System (example for connection)	Type No.
Upper limit 1 contact point	Instrument Power Source C H Buzzer Lamp	CU1	H1 H2	Instrument Power Source C H1 H2 Lamp Buzzer	CU2
Lower limit 1 contact point	Instrument Power Source L C Buzzer Lamp	CL1	L H1 H2	Instrument Power Source C L H1 H2 Lamp Lamp Buzzer	CU2L1
Upper limit 1 contact point Lower limit 1 contact point	Instrument Power Source C H L Buzzer Buzzer	CUL1	L2 L1	Instrument Power Source C L1 L2 Lamp Buzzer	CL2

\* In case a buzzer or lamp etc. with large load are used, use a buzzer box (refer to page 40).

**SWITCH MODE FOR CONTROL (\*1)**

Switch Mode (pointer moves clockwise)	Contact Point System + Relay Unit (example for connection) (RU-1) (KR-A2)	Type No.	Micro Switch System	Type No.
Upper limit 1 contact point	Instrument Relay Unit Power source Load	CH1RU CH1KR	Red needle Load Power source	MS1
Lower limit 1 contact point	Instrument Relay Unit Power source Load	CL1RU CL1KR	Red needle Load Power source	MS1
Upper limit 1 contact point Lower point 1 contact point	Instrument Relay Unit 2 Circuits Power source Load Load	CUL1RU CUL1KR	Green needle Red needle Load Load Power source	MS2
Upper limit 1 contact point Lower limit 1 contact point			Green needle Red needle Load Load Power source	MS2
H1 H2	Instrument Relay Unit Power source Load	CU2RU CU2KR	H1 Green needle Red needle Load Load Power source	MS2
H1 H2 L	Instrument Relay Unit 2 Circuits Power source Load Load	CU2L1RU CU2L1KR		
L2 L1	Instrument Relay Unit Power source Load	CU2RU CU2KR	L1 Green needle Red needle Load Load Power source	MS2

(\*1) -1. Specify type of switch mode for alarm in case relay unit is prepared at your end.  
-2. RU and KR in the type number represent type (page 40) of relay unit.

**No. 7802-00 DIGITAL WIND SPEED AND DIRECTION INDICATOR**  
SPECIFICATIONS

**Wind Speed and Direction Sensor**

Wind direction: Aeroplane type counterbalanced tail, Potentiometer  
Wind speed: Generated by 4-blade propeller

Starting speed: 2 m/s  
Withstand speed: 90 m/s

Measuring range: Wind direction: 0 to 540°  
Wind speed: 2 to 70 m/s

Output voltage: Wind direction: 0 to 5 VDC / 0 to 540° (540° = N.E.S.W.N.E.S.)  
Wind speed: 0 to 5 VDC / 0 to 70 m/s

Power supply: 12VDC ±5% (consumption: 10 mADC max.)  
Dimensions, weight: 510 (W) x 600 (H) mm, 3kg

**Wind Speed and Wind Direction Indicator**

Input voltage: Wind direction: 0 to 5 VDC / 0 to 540°  
Output voltage: Instant/Mean Wind direction: 0 to 10 mV, 0 to 1 V / 0 to 540°  
(Instant or mean selected by switch)

Instant/Mean Wind speed: 0 to 10 mV, 0 to 1 V / 0 to 70 m/s  
(Instant and mean signals output simultaneously)

Display: Wind direction: 16 cardinal points, LED (dot display)  
Wind speed: 3 digits, LED (7 segments)

Accuracy: Wind direction: Within ±5°  
Wind speed: Within ±0.5 m/sec. at less than 10 m/s  
Within ±5% at more than 10 m/s

Measuring system: Instant and mean (CR integration t = 120 sec.)  
Power requirement: 100 VAC ±10% 50/60 Hz (Other voltage is available)

Power consumption: 100 mA max.

Operating ambient: 0 to 40°C  
30 to 85% RH (no condensing)  
Atmosphere of approx. 1,013 hPa, free from corrosive gas.

Storage temperature: -10 to 70°C

Dimensions, weight: 263 (W) x 136 (H) x 239 (D) mm, 3.5kg



**No. 7804-2-00 DIGITAL MICRO WIND SPEED AND DIRECTION INDICATOR**  
SPECIFICATIONS

**Micro Wind Speed and Direction Sensor**

Wind direction: Aeroplane type counterbalanced tail  
Rotary encoder (8 bit gray code)

Wind speed: 4-blade propeller coupled to DC generator  
Starting speed: 0.4 m/s  
Withstand wind speed: 70 m/s

Measuring range: Wind direction: 0 to 540°  
Wind speed: 0.4 to 50 m/s

Output voltage: Wind direction: 8 bit gray code / 0 to 540°  
(540° = N.E.S.W.N.E.S.)

Wind speed: 0 to 2 VDC / 0 to 50 m/s

Power requirement: 12 VDC ±5% (consumption: 90 mA max.)

Dimensions, weight: 620 (W) x 630 (H) mm, 3kg

**Micro Wind Speed and Direction Indicator**

Input voltage: Wind direction: 8 bit gray code / 0 to 540°  
Wind speed: 0 to 2 VDC / 0 to 50 m/s

Measuring method: Instant  
Mean: CR integration t = 120 sec.

Output voltage: Instant wind direction: 0 to 10 mV, 0 to 1 V / 0 to 540°  
Mean wind direction: 0 to 10 mV, 0 to 1 V / 0 to 540°  
(Instant and Mean are selected by switch.)  
(540° = N.E.S.W.N.E.S.)

Instant wind speed: 0 to 10 mV, 0 to 1 V / 0 to 10 m/s  
0 to 10 mV, 0 to 1 V / 0 to 50 m/s  
Mean wind speed: 0 to 10 mV, 0 to 1 V / 0 to 10 m/s  
0 to 10 mV, 0 to 1 V / 0 to 50 m/s

(Range of 0 to 10 m/s or 0 to 50 m/s is selected by wind speed selector)

Display: Wind direction: 16 cardinal points: LED (dot display)  
Wind speed: 3 digits: LED (7 segments)

Combined accuracy: Wind direction: Within ±5°  
Wind speed: Within ±0.3 m/s under 5 m/s  
Within ±5% of indicated value over 5 m/s

Power requirement: 100 VAC ±10% 50/60 Hz (Other voltage is available)

Power consumption: 100 VAC less than 100 mA

Operating ambient: 0 to 40°C  
30 to 85% RH (no condensing)  
Atmosphere of approx. 1,013 hPa, free from corrosive gas.

Storage temperature: -10 to 70°C

Dimensions, weight: 263 (W) x 136 (H) x 340 (D) mm, 3.5kg







**No. 7790-00 WIND SPEED AND DIRECTION INDICATOR**

**SPECIFICATIONS**

**Wind speed and direction sensor**

Wind direction: Counterbalanced tail  
 Wind speed: 4-blade propeller  
 Transducer: Wind direction: synchro motor  
 Wind speed: AC generator  
 Dimensions: 510 (W) x 600 (H) mm  
 Weight: Approx. 3.0 kg

**Indicator**

Measuring range: Wind direction: 360° continuous (16 divisions)  
 Wind speed: 2 to 60 m/s (min. scale 1 m/s)  
 (option: 2 to 70m/s)  
 Accuracy: Wind direction: within ±5°  
 Wind speed: within ±0.5 m/s at less than 10 m/s  
 within ±5% at more than 10 m/s  
 Power requirement: 100 VAC±10%  
 Operating ambient: -10 to 50°C, 40 to 85% RH  
 Dimensions: 300 (W) x 170 (H) x 150 (D) mm  
 Weight: Approx. 3.6 kg



**No. 7760-00 3-CUP ANEMOMETER**

**Components: Sensor, Indicator, 20m cable**

**SPECIFICATIONS**

Measuring range: 2 to 60 m/s  
 Transducer: AC generator  
 Starting speed: 2 m/s  
 Withstand wind speed: 90 m/s  
 Accuracy: Within ±0.5 m/s at less than 10 m/s  
 Within ±5% at more than 10 m/s  
 Power requirement: Self-generated  
 Dimensions: Sensor: 304 (W) x 353 (H) x 130 (D) mm  
 Indicator: 180 (W) x 180 (H) x 131 (D) mm  
 Weight: Sensor: 1.0 kg  
 Indicator: 1.7 kg



**No. 7760-01 3-CUP ANEMOMETER WITH ALARM**

**Components: Sensor, Indicator, 20m cable**

**SPECIFICATIONS**

Measuring range: 2 to 60m/s  
 Alarm setting range: 2 to 60m/s  
 Transducer: AC generator  
 Starting speed: 2 m/s  
 Withstand wind speed: 90 m/s  
 Accuracy: Within ±0.5 m/s at less than 10 m/s  
 Within ±5% at more than 10 m/s  
 Power requirement: 100VAC (50/60Hz)  
 Dimensions: Sensor: 304 (W) x 353 (H) x 130 (D) mm  
 Indicator: 200 (W) x 169 (H) x 191 (D) mm  
 Weight: Sensor: 1.0 kg  
 Indicator: 2.4 kg



**No. 7763-2 DIGITAL ANEMOMETER WITH ALARM**

**SPECIFICATIONS**

**Sensor**

3-cup anemometer  
 Photo coupler system  
 48 pulses per rotation  
 1564 pulses per 60 m/s (wind speed)  
 Measuring range: 2 to 60 m/s  
 Starting wind speed: 2 m/s  
 Withstand wind speed: 90 m/s  
 Measuring range: 2 to 60 m/s  
 Outer dimensions: 310 (W) x 380 (H) mm  
 Weight: 0.8 kg

**Indicator with alarm**

Measuring range: 0 to 60 m/s  
 Accuracy: Within  $\pm 0.5$  m/s at less than 10 m/s  
 Within  $\pm 0.5\%$  at more than 10 m/s

**Alarm**

Alarm set: 2 points  
 Range for setting: 0 to 60 m/s  
 2 digits digital switch  
 1 m/s step  
 Alarm display: 1st alarm: Yellow LED lights, Signal by a buzzer  
 2nd alarm: Red LED lights, Signal by a buzzer  
 Alarm output: Relay contact output (NO, NC)  
 Contact capacity (120 VAC 5A, 30 VDC 4A)  
 Buzzer: Selectable ON or OFF by switch  
 Alarm reset: Manual reset

**Display**

Instant wind speed: 3 digits LED, 7 segments  
 Mean wind speed: 3 digits LED, 7 segments

**Methods of measurements:**

Instant  
 Mean (selectable interval 1, 2 or 10 min.)

Power requirement: 100 VAC  $\pm 10\%$  50/60 Hz  
 Outer dimensions: 263 (W) x 136 (H) x 239 (D) mm  
 Weight: 3.5 kg  
 Panel-cut size: 256 (W) x 129 (H) mm



**No. 7720-00 HAND HELD ANEMOMETER**

**SPECIFICATIONS**

System: Cup-generation system  
 Measuring range: 2 to 30 m/s  
 Accuracy: Within  $\pm 1$  m/s at less than 10 m/s  
 Within  $\pm 10\%$  at more than 10 m/s  
 Starting wind speed: 1.5 m/s  
 Withstand wind speed: 40 m/s  
 Outer dimensions:  $\varnothing 174$  x 313 (H) mm  
 Weight: Approx. 0.7 kg  
 Standard accessories: Remote measuring cable (2 m), carrying case



**No. 7730-00 HAND HELD COMBINATION ANEMOMETER**

**SPECIFICATIONS**

System: Wind speed: Cup-generation system  
 Wind direction: Counterbalanced vane  
 Measuring range: Wind speed: 2 to 30 m/s  
 Wind direction: 360°  
 Graduation for wind direction: 16 cardinal points  
 Accuracy (Wind speed): Within  $\pm 1$  m/s at less than 10 m/s  
 Within  $\pm 10\%$  at more than 10 m/s  
 Starting wind speed: 1.5 m/s  
 Withstand wind speed: 40 m/s  
 Outer dimensions: 360 (W) x 351 (H) mm  
 Weight: 1.5 kg  
 Standard accessories: Remote measuring cable (2 m), carrying case



**No. 7932-02 DIGITAL RAIN GAUGE WITH ALARM**

**Components:** Rainfall sensor, Indicator, 20 m cable

**SPECIFICATIONS**

**Sensor**

Type of sensor: Tipping bucket type rainfall sensor  
 Output: 1 contact point pulse per 0.5 mm of rainfall amount  
 Dimensions: Ø200 x 450 (H) mm  
 Weight: Approx. 2.2 kg

**Indicator**

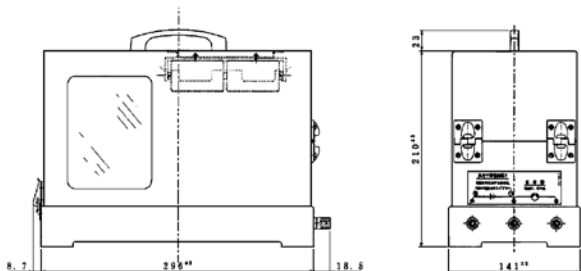
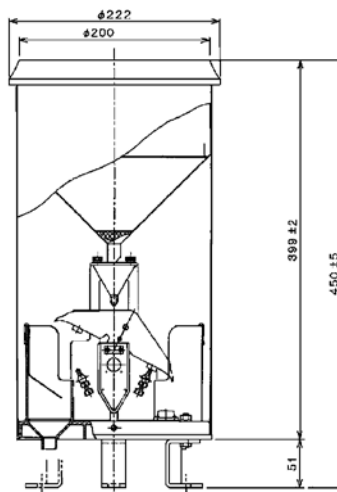
Measuring range: 0 to 1000 mm (repeat) 0.5mm step  
 Display range: 000.0 to 999.5 mm  
 Setup time: 1 to 99 minutes  
 Alarm point: 1 point (Integrated amount or Amount per setup time)  
 Alarm setting range: 0 to 999 mm  
 Power requirement: 100VAC ±10%, 50/60Hz  
 (Built-in battery works for approx. 7 hours at the time of blackout)

Power consumption: 150mA max.  
 Dimensions: 206 (W) x 106 (H) x 305 (D) mm  
 Weight: Approx. 4.0 kg



**No. 7980-S-40 RAINFALL SENSOR**

Sensor: Tipping bucket type  
 Orifice: 200 mm  
 Output: 1 contact point pulse per 0.5 mm of rainfall amount  
 Switch: Reed switch (contact time 0.1 second)  
 Contact rating: 1 ADC max. 250 VDC max.  
 Accuracy: Within 2% (100 mm/hr.)  
 Materials: Stainless steel (SUS304)  
 Cable: 20 m (Two conductors)  
 Dimensions: Ø200 x 450 (H) mm  
 Weight: Approx. 2.2 kg



**No. 7820-00 EVENT RECORDER**

This instrument is used connecting with a rainfall sensor. Amount of rainfall measured can be recorded with numbers of electric contacts (pulse) on a chart.

**SPECIFICATIONS**

Mechanism: Solenoid and electromagnet activated ratchet drive the pen with snail cam. When the pen reaches 100 pulses, it returns to zero and rises again.  
 Measuring range: 0 → 100 (pulse counting method)  
 Drum rotation: 1 day and 7 day changed by gear  
 Power requirement: 3VDC ("D" size battery x 2)  
 Power consumption: 100mA  
 Width of input pulse: More than 0.1 sec. (ON/OFF signal by contact)  
 Contact interval: More than 0.2 sec. (interval between OFF and ON)  
 Operating ambient: -10 to 40°C  
 Dimensions: 300(W) x 200(H) x 140(D) mm  
 Weight: Approx. 3.7kg  
 Standard accessories: 1 pad of 7 day chart (55 sheets/pad), "D" size battery x 2, "C" size battery x 1

**Consumables:**  
 No. 7820-60 1 day chart (400 sheets/pad)  
 No. 7820-62 7 day chart (55 sheets/pad)  
 No. 7210-90 Cartridge pen (violet)

**No. 6400-00 HANDY TYPE DIGITAL PH METER MODEL SK-620PH**

**SPECIFICATIONS**

Measuring range: pH: 0.00 to 14.00pH  
 Temp.: 0.0 to 50.0°C  
 Accuracy: pH: ±(0.3+1 digit)pH at 0 to 2pH  
 ±(0.1+1 digit)pH at 2 to 12pH  
 ±(0.4+1 digit)pH at 12 to 14pH  
 Temp.: ±0.5°C at 20 to 30°C, ±0.7°C at other  
 Resolution: 0.01pH / 0.1°C  
 Elements: pH: Glass electrode  
 Temp.: Thermistor  
 Power requirements: 9 VDC (6F22 (006P) x 1 pc.) or AC adapter (optional)  
 Materials: Case: ABS resin Probe: Glass  
 Dimensions: 72(W) x 182(H) x 31.5(D) mm  
 Weight: about 220 g (including battery)  
 Standard accessories: PHP-31 probe, bottle for glass electrode, vinyl cover, carrying case,  
 6F22 (006P) battery x 1, standard liquid set (Phthalate solution,  
 Neutral phosphate solution, Carbonate solution)



**No. 6410-00 PEN TYPE DIGITAL PH METER MODEL SK-610PHII**

**SPECIFICATIONS**

Measuring range: pH: 2.0 to 12.0pH  
 Temp.: 0.0 to 50.0°C  
 Accuracy: pH: ±2pH  
 Temp.: ±0.6°C at 20 to 30°C, ±0.8°C at other  
 Resolution: 0.01pH / 0.1°C  
 Elements: pH: Glass electrode  
 Temp.: Thermistor  
 Power requirements: 6VDC (3V Lithium button battery CR2032 x 2)  
 Materials: Case: ABS resin Probe: Glass  
 Dimensions: 37(W) x 150(H) x 42(D) mm  
 Weight: about 77 g (including batteries)  
 Standard accessories: Vinyl pouch, Lithium button battery x 2



**POCKET TYPE DIGITAL PH METERS**

- No. 6416-00 MODEL SK-630PH**
- No. 6418-00 MODEL SK-631PH**
- No. 6420-00 MODEL SK-632PH**

**FEATURES**

- Calibration function
- HOLD function
- Auto power-off function
- Auto temperature compensation (ATC)  
 (Not applicable for model SK-630PH)



SK-630PH



SK-631PH



SK-632PH

**SPECIFICATIONS**

Model		SK-630PH	SK-631PH	SK-632PH
Measuring range	pH	2.0 to 12.0pH	2.0 to 12.0pH	2.00 to 12.00pH
	Temp.	—	0.0 to 50.0°C	0.0 to 50.0°C
Accuracy	pH	±0.6pH	±0.5pH	±0.4pH
	Temp.	—	±1.0°C	±0.5°C
Resolution	pH	0.1pH	0.1pH	0.01pH
	Temp.	—	0.5°C	0.1°C
Elements	pH	Glass electrode		
	Temp.	—	Thermistor	
Measuring ambient		0 to 50°C		
Power requirement		6VDC (Button battery LR44 1.5VDC x 4)		
Battery life		about 20 hours in continuous use		
Materials		Case: ABS resin Sensor: Glass		
Dimensions		36 (W) x 150 (H) x 25 (D) mm		
Weight		approx. 65 g (including batteries)		
Standard accessories		Button battery LR44 (GPS76E) x 4		



**No. 6427-00 DESKTOP TYPE DIGITAL PH METER MODEL SK-650PH****FEATURES**

- Sensor arm is helpful for continuous measurement
- Automatic temperature compensation function is provided
- Measured value, date and time are simultaneously displayed

**SPECIFICATIONS**

Display range	: pH : 2.0 to 12.0pH	Temp.: 0.0 to 50.0°C
Repeatability	: pH : $\pm(0.01 + 1 \text{ digit})\text{pH}$	Temp.: $\pm(0.1 + 1 \text{ digit})^\circ\text{C}$
Resolution	: pH : 0.01pH	Temp.: 0.1°C
Functions	: 3 points calibration (pH4.01, pH6.86 and pH10.01 or pH9.18) Hold, Time display, Memory function (90 data, data max/min) Analog output (output electro motive force of pH sensor) Sensor sensitivity, stable display displays, real-time transmission (RS-232C)*	
Power requirements	: exclusive AC adapter (in 100 to 240VAC use)	
Dimensions	: 215(W) x 170(L) x 58(T) mm	
Weight	: approx. 615g	
Accessories	: Sensor arm assembly, AC adapter (100 to 240VAC) (Probe is not included in the standard accessories)	

\* Various probes are available. Please visit our web site

\* RS-232C cable is available at option

**PEN TYPE DIGITAL PH METERS**

**No. 6428-00 MODEL SK-660PH**

**No. 6429-00 MODEL SK-661PH**

**No. 6430-00 MODEL SK-662PH**

**FEATURES**

- Auto temperature compensation (ATC)
- Waterproof construction conforming to JIS C 0920 IPX5
- 3 points calibration (pH4.01, pH6.86 and pH10.01 or pH9.18)
- Replaceable sensors

**SPECIFICATIONS**

Model		SK-660PH	SK-661PH	SK-662PH
Measuring range	pH	2.0 to 12.0pH	0.0 to 14.0pH	0.0 to 14.00pH
	Temp.	0.0 to 50.0°C	0.0 to 50.0°C	0.0 to 50.0°C
Accuracy	pH	$\pm 0.3\text{pH}$	$\pm 0.2\text{pH}$	$\pm 0.05\text{pH}$
	Temp.	$\pm 1.0^\circ\text{C}$	$\pm 1.0^\circ\text{C}$	$\pm 0.5^\circ\text{C}$
Resolution	pH	0.1pH	0.1pH	0.01pH
	Temp.	0.1°C	0.1°C	0.1°C
Sensing elements	pH	Glass electrode (no need to refill KCL)		
	Temp.	Thermistor		
Functions	Auto Power-off, Hold, Sensor sensitivity display, stability display			
Power requirement	6VDC (Button battery (LR44) x 4)			
Materials	Case: ABS resin Sensor: glass			
Dimensions & weight	$\varnothing 38 \times 171(\text{L})$ mm, approx. 82g (including batteries)			
Accessories	Button battery (LR44) x 4, hand strap			

## R SERIES HAND HELD REFRACTOMETERS

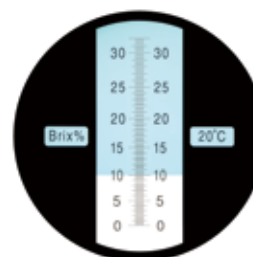
No. 0180-00	MODEL SK-100R	No. 0186-00	MODEL SK-106R
No. 0181-00	MODEL SK-101R	No. 0187-00	MODEL SK-107R
No. 0182-00	MODEL SK-102R	No. 0189-00	MODEL SK-109R
No. 0184-00	MODEL SK-104R	No. 0190-00	MODEL SK-200R

The R Series Hand Held Refractometers measure liquid concentration by determining the refractive index of the liquid, based on the principle of total internal reflection.



## FEATURES

- Easy to read boundary of the blue field of the scale
- Light body
- The body is made with environment-friendly materials.
- Auto temperature correction function in the range of 10 to 30°C



Scale

## SPECIFICATIONS

Cat. No.	0180-00	0181-00	0182-00	0184-00	0186-00	0187-00	0189-00	0190-00
Model	SK-100R	SK-101R	SK-102R	SK-104R	SK-106R	SK-107R	SK-109R	SK-200R
Scale (Brix)	0.0 to 32.0%	28.0 to 62.0%	0.0 to 18.0%	0.0 to 10.0%	58.0 to 92.0%	45.0 to 82.0%	0 to 50%	0.0 to 28.0% (*1)
Min. Scale	0.2%	0.2%	0.1%	0.1%	0.2%	0.5%	0.5%	0.2%
Grip dia.	29 mm	29 mm	29 mm	29 mm	29 mm	29 mm	29 mm	29 mm
Length	170 mm	160 mm	195 mm	195 mm	150 mm	145 mm	155 mm	170 mm
Weight	105 g	105 g	120 g	120 g	100 g	100 g	100 g	105 g
Materials	Main unit: Aluminum alloy Prism: Optical glass Adjusting screw: Copper				Cover plate: Polycarbonate Grip: Synthetic rubber			
Standard accessories	Wipe-out cloth, carrying case, screwdriver, dropper, distilled water(*2), saturation salt water(*3), oil for adjustment (*4), block for adjustment(*5)							

- (\*1) Salt concentration  
 (\*2) Applicable for SK-100R, SK-102R, SK-104R, SK-109R and SK-200R  
 (\*3) Applicable for SK-101R only  
 (\*4) Applicable for SK-106R and SK-107R  
 (\*5) Applicable for SK-106R and SK-107R



Accessories



**No. 8050-00 WALL-MOUNT WATERPROOF DIGITAL THERMOMETER  
MODEL SK-100WP**

**SPECIFICATIONS**

Measuring range	: -10.0 to 110.0°C
Resolution	: 0.1°C
Sampling time	: Approx. 10 sec.
Waterproof property	: IP X7 rated
Power requirement	: "AAA" size battery x 4 pcs.
Battery life	: Approx. 1 year continuous (with alkaline batteries in normal temperature)
Dimensions	: 122(W) x 85(H) x 30(D)mm
Weight	: Approx. 205g (including batteries)
Accessories	: "AAA" size manganese battery x 4 pcs.

**No.8051-00 STANDARD PROBE MODEL S100WP-01**

Measuring range	: -10.0 to 110.0°C
Accuracy	: ±1°C
Sensing element	: Thermistor
Waterproof property	: IP X7 rated
Dimensions	: Ø5 x 500mm (L) (round-end)
Cord length	: 1.5m (available to extend cord length for ordering)
Weight	: Approx. 90g
Accessories	: Clip for holding stem



SK-100WP with S100WP-01 probe

**No.8310-00 WBGT HEAT STRESS MONITOR MODEL SK-150GT**
**SPECIFICATIONS**

	Air Temp.(TA)	Globe Temp. (TG)	WBGT Index	Relative Humidity
<b>Measuring range</b>	0.0 to 50.0°C	0.0 to 80.0°C	0.0 to 50.0°C	10.0 to 95.0%RH
<b>Accuracy</b>	±0.6°C	±2°C	±2°C	±3% at 20 to 90%RH, at 20 to 30°C ±5% at other than above
<b>Resolution</b>	0.1°C	0.1°C	0.1°C	0.1%
<b>Sampling time</b>	Approx. 2 seconds			
<b>WBGT alarm</b>	Setting range 20.0 to 49.9°C (no cancelation)			
<b>Operating ambient</b>	0 to 50°C less than 95%rh (no condensing)			
<b>Storage ambient</b>	-10 to 50°C (no condensing)			
<b>Functions</b>	Change-over switch for WBGT Index of indoor and outdoor Auto power-off, MAX/MIN, HOLD			
<b>Power requirement</b>	9VDC (6F22 (006P) battery x 1)			
<b>Battery life</b>	Approx. 600 hours in continuous use (w/o use of alarm)			
<b>Dimensions</b>	Main Unit : 71 (W) x 27.5 (H) x 30 (D) mm, Globe : Ø 60 mm			
<b>Weight</b>	Approx. 240 g (including battery)			
<b>Standard accessories</b>	6F22 (006P) battery x 1, Carrying case			


**No. 8310-60 EXCLUSIVE TRIPOD MODEL EX-430SK**

The tripod is recommended for continuous measurement. Select a location free from effects of radiation heat.

Height: 1513mm Weight: 1.2kg

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Cat. No.	Page	Model No.	Cat. No.	Page	Model No.	Cat. No.	Page	Model No.	Cat. No.	Page	Model No.
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0021-10	3		3720-L	39	LSY-A1	7450-00	26	SK-RHG	8080-50	15	SK-S301K
0022-08	3		3750-L	39	LMMC-1	7450-30	26	Compact stand	8080-56	15	SK-S304K
0022-38	3		3990-01	40	RU-1	7450-40	26	Tripod	8080-58	15	SK-S305K
0110-00	3		3990-02	40	KR-A2	7450-70	26	Wicks	8080-60	15	SK-S306K
0120-00	3		3990-60	40	BH-8	7450-75	26	AC Adapter	8080-62	15	SK-S307K
0140-00	3		6000-00	23	SK-120CHB	7540-00	25	HIGHEST I	8080-64	15	SK-S308K
0180-00	48	SK-100R	6167-00	6	SK-LT II-6	7542-00	25	HIGHEST II	8080-80	15	SK-S100T
0181-00	48	SK-101R	6416-00	46	SK-630PH	7562-00	25	PALMA II	8080-82	15	SK-S101T
0182-00	48	SK-102R	6418-00	46	SK-631PH	7610-20	28	Aneroid	8080-84	15	SK-S101WT
0184-00	48	SK-104R	6420-00	46	SK-632PH	7612-00	28	Baromex	8080-86	15	SK-S102T
0186-00	48	SK-106R	6427-00	47	SK-650PH	7640-00	28	Fortin	8080-88	15	SK-S103T
0187-00	48	SK-107R	6428-00	47	SK-660PH	7683-00	29	SK-28V	8080-90	15	SK-S201T
0189-00	48	SK-109R	6429-00	47	SK-661PH	7693-00	29	SK-73D	8091-00	9	SK-M460-T
0190-00	48	SK-200R	6430-00	47	SK-662PH	7720-00	44	Anemometer	8091-10	9	SR-56A-015
0220-00	3		7005-62	24	7 day chart	7730-00	44	Anemometer	8091-50	9	SK-M460-TRH
0230-00	3		7006-00	22	Mini- $\alpha$	7760-00	43	Anemometer	8092-00	9	SK-M350-T
0240-00	3		7006-62	24	7 day chart	7763-2	44	Anemometer	8092-50	9	SK-M350-TRH
0260-00	3		7008-00	22	Mini-Cube	7790-00	43		8111-00	7	SK-110TRH II-1
0280-00	3		7008-62	24	7 day chart	7802-00	42		8112-00	7	SK-110TRH II-2
0290-00	3		7012-00	22	Aurora90 III	7804-2-00	42		8113-00	7	SK-110TRH II-3
0315-00	3		7200-00	23	NS II-ES1	7820-00	45	Event recorder	8114-00	7	SK-110TRH II-4
0320-00	3		7200-62	24	7 day chart	7932-02	45	Rain gauge	8115-00	7	SK-110TRH II-5
0330-00	3		7200-64	24	32 day chart	7980-S-40	45	Rainfall sensor	8161-00	5	SK-L200H II
0335-00	3		7202-00	23	NS II-ES2	8008-90	14	AD-0601000-1	8161-10	5	SK-L200H II D
0340-00	3		7202-62	24	7 day chart	8009-50	14	DPU-414	8161-50	5	AD0601000-2
0600-00	3		7208-00	27	Min-Max	8014-03	16	SK-1110	8162-00	6	SK-LT II-1
0610-00	3		7210-00	20	NS II-Q	8014-04	16	SK-1120	8163-00	6	SK-LT II-2
0620-00	3		7210-60	24	1 day chart	8014-30	16	SK-K010	8164-00	6	SK-LT II-3
0955-00	3		7210-62	24	7 day chart	8014-31	16	SK-K020	8165-00	6	SK-LT II-4
0956-00	3		7210-64	24	32 day chart	8050-00	49	SK-100WP	8166-00	6	SK-LT II-5
1013-00	25	TH-300	7210-90	24	Cartridge pen	8051-00	49	S100WP-01	8167-01	6	SK-LT II-7
1050-00	25	PC-5000TRH II	7210-92	24	Cartridge pen	8062-00	12	SK-250WP II-N	8167-02	6	SK-LT II-8
1060-00	27	PC-6800	7211-00	20	NS II-Q	8064-00	12	SK-250WP II-T	8167-03	6	SK-LT II-9
1506-00	27	U-Tube	7211-60	24	1 day chart	8066-00	12	SK-250WP II-R	8167-04	6	SK-LT II-10
1506-50	27	U-Tube	7211-62	24	7 day chart	8068-00	12	SK-250WP II-K	8175-00	5	SK-L200TH II $\alpha$
1518-00	27	Psychrometer	7211-64	24	32 day chart	8071-01	13	SWP II-01M	8175-10	5	SK-L200TH II $\alpha$ D
1519-00	27	SK-1	7215-00	20	NS II-S	8072-01	13	SWP II-02M	8176-00	6	SK-LTH II $\alpha$ -1
1710-90	3		7230-00	21	NS II-TQ	8073-00	13	SWP II-03	8177-00	6	SK-LTH II $\alpha$ -2
1740-00	27	PC-3500	7230-60	24	1 day chart	8074-01	13	SWP II-04M	8178-00	6	SK-LTH II $\alpha$ -3
2010-B	31	BM-S-90S	7230-62	24	7 day chart	8075-01	13	SWP II-05M	8211-00	18	SK-8110
2030-B	31	BM-T-90S	7230-64	24	32 day chart	8076-01	13	SWP II-06M	8212-00	18	SK-8120
2060-B	30	Pocket bimetal	7234-00	21	NS II-BQ	8077-10	13	SWP II-07	8213-00	18	SK-8130
2075-B	32	BM-T-75P	7234-60	24	1 day chart	8077-20	13	SWP II-08	8214-00	18	SK-8140
2078-B	32	BM-S-75P	7234-62	24	7 day chart	8077-30	13	SWP II-09	8260-00	17	SK-8700
2080-B	32	BM-T-100P	7234-64	24	32 day chart	8077-40	13	SWP II-10	8266-00	17	SK-8940
2085-B	32	BM-S-100P	7237-00	21	NS II-BQ	8080-05	14	SK-1260	8310-00	49	SK-150GT
2110-B	31	BM-T-75S	7237-60	24	1 day chart	8080-20	15	SK-S100K	8920-01	8	SK-RHC-V
2150-B	30		7237-62	24	7 day chart	8080-22	15	SK-S100WK	8920-02	8	SK-RHC-V
2180-B	30		7237-64	24	32 day chart	8080-24	15	SK-S101K	8920-03	8	SK-RHC-I
2250-10	30		7238-20	24	Dust cover	8080-26	15	SK-S102K	8920-04	8	SK-RHC-C
2340-B	30		7238-22	20	Axial fan	8080-28	15	SK-S103K	8921-00	8	SK-RHCS-1
3000-L	39	LB-100S	7320-00	27	August	8080-30	15	SK-S104K	8922-00	8	SK-RHCS-2
3020-L	39	LB-150S	7435-00	10	SK-5RAD-SP	8080-32	15	SK-S105K	8922-10	8	SK-RHCS-3

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1 day chart	24	7210-60	HIGHEST II	25	7542-00	SK-250WP II-R	12	8066-00	SK-S100K	15	8080-20
1 day chart	24	7211-60	KR-A2	40	3990-02	SK-250WP II-T	12	8064-00	SK-S100T	15	8080-80
1 day chart	24	7230-60	LB-100S	39	3000-L	SK-28V	29	7683-00	SK-S100WK	15	8080-22
1 day chart	24	7234-60	LB-150S	39	3020-L	SK-5RAD-MR	11	7435-50	SK-S101K	15	8080-24
1 day chart	24	7237-60	LMMC-1	39	3750-L	SK-5RAD-SP	10	7435-00	SK-S101T	15	8080-82
32 day chart	24	7210-64	LSY-A1	39	3720-L	SK-630PH	46	6416-00	SK-S101WT	15	8080-84
32 day chart	24	7211-64	Mini-Cube	22	7008-00	SK-631PH	46	6418-00	SK-S102K	15	8080-26
32 day chart	24	7230-64	Mini- $\alpha$	22	7006-00	SK-632PH	46	6420-00	SK-S102T	15	8080-86
32 day chart	24	7234-64	Min-Max	27	7208-00	SK-650PH	47	6427-00	SK-S103K	15	8080-28
32 day chart	24	7237-64	NS II-BQ	21	7237-00	SK-660PH	47	6428-00	SK-S103T	15	8080-88
32 day chart	24	7200-64	NS II-ES1	23	7200-00	SK-661PH	47	6429-00	SK-S104K	15	8080-30
7 day chart	24	7210-62	NS II-ES2	23	7202-00	SK-662PH	47	6430-00	SK-S105K	15	8080-32
7 day chart	24	7211-62	NS II-HQ	21	7234-00	SK-73D	29	7693-00	SK-S107K	15	8080-36
7 day chart	24	7230-62	NS II-Q	20	7210-00	SK-8110	18	8211-00	SK-S201T	15	8080-90
7 day chart	24	7234-62	NS II-Q	20	7211-00	SK-8120	18	8212-00	SK-S301K	15	8080-50
7 day chart	24	7237-62	NS II-S	20	7215-00	SK-8130	18	8213-00	SK-S304K	15	8080-56
7 day chart	24	7200-62	NS II-TQ	21	7230-00	SK-8140	18	8214-00	SK-S305K	15	8080-58
7 day chart	24	7202-62	PALMA II	25	7562-00	SK-8700	17	8260-00	SK-S306K	15	8080-60
7 day chart	24	7005-62	PC-3500	27	1740-00	SK-8940	17	8266-00	SK-S307K	15	8080-62
7 day chart	24	7006-62	PC-5000TRH II	25	1050-00	SK-K010	16	8014-30	SK-S308K	15	8080-64
7 day chart	24	7008-62	PC-6800	27	1060-00	SK-K020	16	8014-31	SR-56A-015	9	8091-10
AC Adapter	26	7450-75	Pocket bimetal	30	2060-B	SK-L200T II	5	8161-00	SWP II-01M	13	8071-01
AD-0601000-1	14	8008-90	Psychrometer	27	1518-00	SK-L200T II D	5	8161-10	SWP II-02M	13	8072-01
AD0601000-2	5	8161-50	Rain gauge	45	7932-02	SK-L200TH II $\alpha$	5	8175-00	SWP II-03	13	8073-00
Anemometer	43	7760-00	Rainfall sensor	45	7980-S-40	SK-L200TH II $\alpha$ D	5	8175-10	SWP II-04M	13	8074-01
Anemometer	44	7763-2	RU-1	40	3990-01	SK-LT II-1	6	8162-00	SWP II-05M	13	8075-01
Anemometer	44	7720-00	S100WP-01	49	8051-00	SK-LT II-10	6	8167-04	SWP II-06M	13	8076-01
Anemometer	44	7730-00	SB-100S	39	3400-S	SK-LT II-2	6	8163-00	SWP II-07	13	8077-10
Aneroid	28	7610-20	SK-1	27	1519-00	SK-LT II-3	6	8164-00	SWP II-08	13	8077-20
August	27	7320-00	SK-100R	48	0180-00	SK-LT II-4	6	8165-00	SWP II-09	13	8077-30
Aurora90 III	22	7012-00	SK-100WP	49	8050-00	SK-LT II-5	6	8166-00	SWP II-10	13	8077-40
Axial fan	20	7238-22	SK-101R	48	0181-00	SK-LT II-6	6	6167-00	TH-300	25	1013-00
Baromex	28	7612-00	SK-102R	48	0182-00	SK-LT II-7	6	8167-01	Tripod	26	7450-40
BH-8	40	3990-60	SK-104R	48	0184-00	SK-LT II-8	6	8167-02	U-Tube	27	1506-00
BM-S-100P	32	2085-B	SK-106R	48	0186-00	SK-LT II-9	6	8167-03	U-Tube	27	1506-50
BM-S-75P	32	2078-B	SK-107R	48	0187-00	SK-LTT II $\alpha$ -1	6	8176-00	Wicks	26	7450-70
BM-S-90S	31	2010-B	SK-109R	48	0189-00	SK-LTT II $\alpha$ -2	6	8177-00			
BM-T-100P	32	2080-B	SK-110TRH II-1	7	8111-00	SK-LTH II $\alpha$ -3	6	8178-00			
BM-T-75P	32	2075-B	SK-110TRH II-2	7	8112-00	SK-M350-T	9	8092-00			
BM-T-75S	31	2110-B	SK-110TRH II-3	7	8113-00	SK-M350-TRH	9	8092-50			
BM-T-90S	31	2030-B	SK-110TRH II-4	7	8114-00	SK-M460-T	9	8091-00			
Cartridge pen	24	7210-90	SK-110TRH II-5	7	8115-00	SK-M460-TRH	9	8091-50			
Cartridge pen	24	7210-92	SK-1110	16	8014-03	SK-RHC-C	8	8920-04			
Compact stand	26	7450-30	SK-1120	16	8014-04	SK-RHC-I	8	8920-03			
DPU-414	14	8009-50	SK-120CHB	23	6000-00	SK-RHCS-1	8	8921-00			
Dust cover	24	7238-20	SK-1260	14	8080-05	SK-RHCS-2	8	8922-00			
Event recorder	45	7820-00	SK-150GT	49	8310-00	SK-RHCS-3	8	8922-10			
EX-430EX	49	8310-60	SK-200R	48	0190-00	SK-RHC-V	8	8920-02			
Fortin	28	7640-00	SK-250WP II-K	12	8068-00	SK-RHC-V	8	8920-01			
HIGHEST I	25	7540-00	SK-250WP II-N	12	8062-00	SK-RHG	26	7450-00			

## INFORMATION

### HOW TO ORDER

#### CATALOG ITEMS:

To order instruments, parts or accessories, please indicate the appropriate model number and name. Where applicable, indicate power requirements, or any optional features listed in the specifications.

#### CUSTOM SYSTEMS:

Upon request, we, SATO KEIRYOKI MFG. CO., LTD. will provide a complete quotation on individual system requirements. The quote will detail all necessary components, list fixed prices for a given period of time, and provide ordering instructions.

#### PRICES:

The prices listed in Price List are subject to change without notice. It is suggested to verify prices prior to ordering, at which time the price quoted will normally be guaranteed for 30 days or longer. Prices include the cost of standard export packing. Our shipment terms would be Ex-works Tokyo basis.

#### TERMS OF PAYMENT:

Shipment to foreign destinations are against cash transfer to our bank account (advance payment).

#### BANK INFORMATION:

Beneficiary: Sato Keiryoki Mfg. Co., Ltd.  
3, Nishi Fukudacho, Kanda, Chiyodaku, Tokyo 101-0037 Japan  
Tel: +81-3-3254-8117

Bank name: The Bank of Tokyo-Mitsubishi UFJ Limited, Muromachi Branch  
1-3-2, Nihonbashi Hongokucho, Chuoku, Tokyo 103-0021 Japan

Account No.: 308700  
Swift address: BOTKJPJT

#### SHIPPING:

Unless specific instructions accompany the order, we will use our judgment as to the best method of shipment. Export shipments in wooden case packing may incur an extra packing charge.

#### SPECIFICATIONS:

We reserve the right to discontinue any item without prior notice and to change specifications as required without incurring any obligation to incorporate new features on instruments or equipment previously sold.

#### SERVICE:

We, SATO KEIRYOKI MFG. CO., LTD., maintain a complete repair and calibration service in our factories.

## WARRANTY POLICY

#### Warranty

Our products are warranted to be free from defects in materials and workmanship for a period of one year from date of shipment. If repair or adjustment is necessary and has not been the result of abuse or misuse within the one-year-period, please return the units on - Freight Prepaid - and correction of the defect will be made without charges. We alone will determine if the product problem is due to deviations or customer misuse.

#### Out-of-warranty products will be repaired on charge basis.

#### Return of items

Authorization must be obtained from us before returning items for any reason. When applying for authorization, please include data regarding the reasons the items are to be returned.

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This publication supersedes all previous publications on this subject.



**Distributed by**

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