

Model **HD-1000 series** Handheld Thermometer



Model HD-1000 series handheld thermometers allow easy temperature measurement.

These general-purpose thermometers can be used for on-site temperature measurement and various other applications.

HD-1000模式系列

追求高精度，可靠性，操作简单的HD-1000系列可以和安立计器的多种多样的温度传感器配合使用于不同领域。

HD-1000シリーズは、簡単に温度測定が出来るハンディタイプの温度計測器です。現場での温度チェックなど、汎用にご使用いただけます。

HD-1150K
HD-1150E



HD-1150K

HD-1250K
HD-1250E



HD-1250K

HD-1350K
HD-1350E



HD-1350K

HD-1450K
HD-1450E



HD-1450K

HD-1550K
HD-1550E



HD-1550K

Function of HD-1000 series

ASP model	ANP model	WATER PROOF	DISPLAY	BACK LIGHT	AUTO OFF	HOLD	P/V HOLD	1/0.1	CAL	ALARM	ANALOG	°C / °F	MEMORY
HD-1100K HD-1100E	HD-1150K HD-1150E	●	LCD		●	●						°C	
HD-1200K HD-1200E	HD-1250K HD-1250E	●	LCD	●	●	●	●	●				°C	
HD-1201K HD-1201E	HD-1251K HD-1251E		LCD	●	●	●	●	●			1mV/°C	°C	
HD-1202K HD-1202E	HD-1252K HD-1252E		LCD	●	●	●	●	●			10mV/°C	°C	
HD-1300K HD-1300E	HD-1350K HD-1350E		LCD	●	●	●	●	●	●	●		°C	
HD-1301K HD-1301E	HD-1351K HD-1351E		LCD	●	●	●	●	●	●	●	1mV/°C	°C	
HD-1302K HD-1302E	HD-1352K HD-1352E		LCD	●	●	●	●	●	●	●	10mV/°C	°C	
HD-1400K HD-1400E	HD-1450K HD-1450E	●	LED		●	●						°C	
HD-1500K HD-1500E	HD-1550K HD-1550E		LCD	●	●	●	●	●				°C	●
	HD-1650K HD-1650E	●	LCD		●	●						°C / °F	
	HD-1750K HD-1750E	●	LCD	●	●	●	●	●				°C / °F	

Connector type 连接传感器

2 types of connectors available
有2种插口可供选择。




















ASP:
Standard size connector


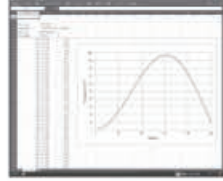


ANP:
Miniature size connector

Functions 功能

<p>Waterproof specifications 防水功能</p> <p>Waterproof specifications : Equivalent to IPX5 Protected against water jets- Water projected at all angles through a 6.3mm nozzle at a flow rate of 12.5 liters/min at a pressure of 30kN/m² for 3 minutes from a distance of 3 meters. IPX5防水功能。可防御来自任何方向的喷水(12.5L/分)。</p>	<p>Memory function 记录功能</p> <p>Stores readings at user - selected time intervals. User specified time interval and the remaining amount of memory are displayed on the sub-display. The playback function allows you to check data stored in memory. 设定记录间隔和剩余可记录数同时显示。可回放显示所记录的温度数据。</p> 
<p>Display 显示</p> <p>Large easy - to - read LCD display 便于确认的大型显示屏</p>	<p>Backlight 背光灯</p> <p>The backlight will operate by the  key and the LCD display will be visible even in a dark place. 按  键打开背光灯，可在黑暗处确认数据</p>
<p>AUTO OFF Auto power - off 自动关闭</p> <p>The thermometer will turn the power off automatically after 5 minutes. 5分钟以上不使用按钮，主机将自动关闭。</p> 	<p>1/0.1 Resolution change 分辨率切换</p> <p>Press the  key to change the resolution of readings. 按  键切换分辨率</p> 
<p>HOLD Hold 固定测量数据</p> <p>The thermometer stops measurement by the  key and holds the present readings. 按  键，可固定测量数据并保持该数据的显示。</p> 	<p>P/V HOLD P / V Hold P/V 值固定</p> <p>The peak (Max.) value and the valley (Min.) value can be displayed by the  key on the sub-display. 可固定测量温度的最大值或最小值</p> 
<p>CAL SET Calibration 校准</p> <p>The displayed value can be adjusted by the  key. 可设定测量标准值。</p> 	<p>ALM SET Alarm output 报警输出</p> <p>The thermometer gives an alarm when readings go beyond the high or low limits. 表示温度超出设定范围外时，可显示·蜂鸣·信号输出进行警告。</p> 
<p>Analog output 模拟输出</p> <p>1mV/°C Output 1mV per °C in conjunction with readings. 10mV/°C Output 10mV per °C in conjunction with readings. 电压输出时1°C为1mV或1°C为0.1mV。</p>	<p>°C / °F °C / °F Change °C / °F 切换</p> <p>Press the  key to change the temperature unit of the displayed temperature. 按  键切换°C与°F。</p>

Software for HD-15*0 (AMS-100) 专用软件

<p>Data stored in memory can be transmitted to a personal computer through a USB interface and can be converted into CSV files. 可用USB导线将数据传到电脑，以CSV形式保存。</p> 	<p>Easily create graphs and tables from CSV files by Microsoft® Excel® or other spreadsheet software. 用Excel等软件进行制表·画图。</p> 
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Operational environment of software (AMS-100)

O S	Microsoft® Windows® 7, Windows® 8.1, Windows® 10(for English)
Memory · Hard-disk space	Normal operating environment of OS

※ All PCs under the recommended environment are not guaranteed to work successfully with AMS-100.

※ AMS-100 can be used only by the user that has a system administrative right (Administrator).

※ AMS-100 does not support Mac OS.

※ Microsoft® Windows® 7, Windows® 8.1, Windows® 10 and Excel® are registered trademarks of Microsoft Corporation in the United States and other countries.



※ Image picture of waterproof specifications
 ※ 防水功能图片



※ Image picture of temperature measurement
 ※ 测量温度图片

● Supplied accessories and Optional accessories 附件和选件

Supplied accessories

Test report
 试验成绩书



Soft case
 主机套



SCHD
 Thermometer not included
 不包括本体。

Hand strap
 手带



Thermometer not included
 不包括本体。

Optional accessories

AC-Adaptor
 AC电源

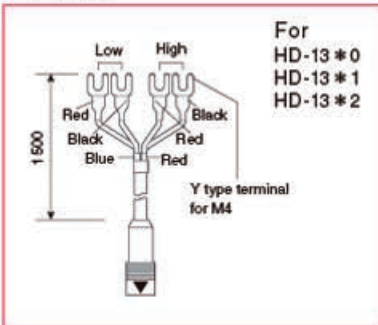


For
 HD-12*1
 HD-12*2
 HD-13**
 HD-15*0

AD-115-500-HR-R (for AC115V)
 AD-220-500-HR-R (for AC220V)
 Not CE-approval

Supplied accessories

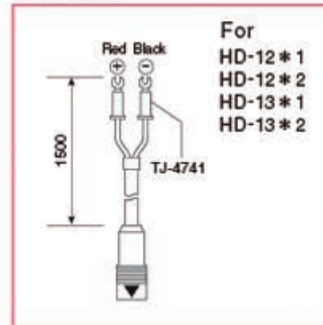
Alarm output cable
 报警输出线



For
 HD-13*0
 HD-13*1
 HD-13*2

ALMHA-1.5

Analog output cable
 模拟输出线



For
 HD-12*1
 HD-12*2
 HD-13*1
 HD-13*2

ANGHA-1.5

Communication cable
 通信用USB线



For
 HD-15*0

AM-USB (for USB)

Software for HD-15*0 (CD-ROM)
 软件



For
 HD-15*0

AMS-100

※ An alarm output cable and an analog output cable cannot be used simultaneously.
 ※ 不能同时使用报警输出线和模拟输出线

Specifications

Model	HD-1100 HD-1150 HD-1650	HD-1200 HD-1250 HD-1750	HD-1201 HD-1251	HD-1202 HD-1252	HD-1300 HD-1350	HD-1301 HD-1351	HD-1302 HD-1352	HD-1400 HD-1450	HD-1500 HD-1550	
Waterproof specifications / Equivalent to IPX5	●	●						●		
Display	LCD		LCD with Backlight					LED	LCD with Backlight	
Input connector	ASP model : HD-1*0* / ANP model : HD-1*5*									
Channel	1ch									
Input type	Thermocouple input : Type E or K (HD-1*0*) / Type E, K, J, T or R (HD-1*5*) Not switchable									
Signal source resistance	MAX 500Ω									
Measurement range	*TABLE I									
Measurement accuracy	*TABLE II									
Reference junction compensation accuracy	±0.2°C at 25°C±10°C [±0.4°F at 77°F±18°F]									
Temperature coefficient	±0.01% of F / S per °C [±0.01% of F / S per °F] ※ F / S : full scale									
Environmental	Operation	0~40°C, 0~80%RH (Non condensing) [32~104°F, 0~80%RH (Non condensing)]								
	Storage	-20~50°C, 0~85%RH (Non condensing) [-4~122°F, 0~85%RH (Non condensing)]								
Battery life	300h	300h	150h	150h	300h	150h	150h	150h	150h	
Power supply	Dry battery	4 AA Alkaline batteries								
	AC power	—	—	AC-Adaptor (Option)				—	AC-Adaptor (Option)	
Sampling rate	approx. 300ms								approx. 300ms *1	
Plinearizer	Digital linearizer method (Compliant with IEC 60584-1 (2013))									
Dimensions	approx. 76(W) × 167(H) × 36(D) mm [Protruded parts excluded]									
Weight	approx. 350g [Include Batteries]									
Supplied accessories	Manual, Test report, Softcase, Hand strap, 4 AA Alkaline batteries									
	—	—	Analog output cable		Alarm output cable		—	Communication cable, Software (AMS-100)		
Analog output	—	—	1mV/°C	10mV/°C	—	1mV/°C	10mV/°C	—	—	
	—	—	*TABLE III	*TABLE III	—	*TABLE III	*TABLE III	—	—	
Alarm output	—	—	—	—	●	●	●	—	—	
	—	—	—	—	*TABLE IV	*TABLE IV	*TABLE IV	—	—	
Memory function	—	—	—	—	—	—	—	—	●	
	—	—	—	—	—	—	—	—	*TABLE V	
Compatible standards	CE Marking, RoHS									

*1 Sampling period will be a user-selected time interval when time interval is specified at 10 seconds or more.

***TABLE I (Measurement range)**

Thermocouple type	°C		°F	
	1°C Resolution	0.1°C Resolution	1°F Resolution	0.1°F Resolution
E	-200 ~ 800°C	-100.0 ~ 500.0°C	-328 ~ 1472°F	-148.0 ~ 932.0°F
K	-200 ~ 1370°C		-328 ~ 2498°F	
J	-200 ~ 1100°C		-328 ~ 2012°F	
T	-200 ~ 400°C	-100.0 ~ 400.0°C	-328 ~ 752°F	-148.0 ~ 752.0°F
R	0 ~ 1760°C		32 ~ 3200°F	

* Switches automatically to 1°C resolution range when measured temperatures fall outside the 0.1°C resolution range.

***TABLE II (Measurement accuracy)**

Thermocouple type	°C		°F	
	0.1°C Resolution	1°C Resolution	0.1°F Resolution	1°F Resolution
E, K, J, T	0.1°C Resolution	0°C ~ ±(0.05% of reading + 0.2°C)	32°F ~ ±(0.05% of reading + 0.4°F)	
		~0°C ±0.5°C	~32°F ±0.5°F	
	1°C Resolution	0°C ~ ±(0.1% of reading + 1°C)	32°F ~ ±(0.1% of reading + 2°F)	
		~0°C ±(0.5% of reading + 1°C)	~32°F ±(0.5% of reading + 2°F)	
R	1°C Resolution	±(0.1% of reading + 3°C)	1°F Resolution ±(0.1% of reading + 6°F)	

***TABLE III (Analog output)**

Model	HD-12*1	HD-13*1	HD-12*2	HD-13*2
Rate	1mV/°C		10mV/°C	
Range	All range at 1°C resolution		All range at 0.1°C resolution	
Resistance	100Ω			
Accuracy	±(0.15% of F/S + 1mV) at 25°C±5°C ±(0.15% of F/S + 1mV) ±(0.01% of F/S) except 25°C±5°C			

***TABLE IV (Alarm output)**

Output pattern	Upper limit	Lower limit
More than upper limit	H (5V)	L (0V)
Between upper and lower limit	L (0V)	L (0V)
Less than lower limit	L (0V)	H (5V)

* Signal current of up to 5 mA can be taken out.

***TABLE V (Memory function)**

Time interval	1second, 5 seconds, 10 seconds, 30seconds, 1minute, 5 minutes, 10minutes, 30 minutes, 60minutes and manual memory
Memory capacity	9999 data

Model AP-400 series

Thermo Printer

Model AP-400 series thermometers have built-in printers for on-the-spot printing of measurement data.

AP-400模式系列
AP-400模式系列产品是内装打印机型温度计。
测定出的数据可以立即打印。

AP-400シリーズは、プリンタを内蔵した温度計測器です。
測定データを、その場で印刷することができます。

AP-400K
AP-400E



AP-400K

AP-450K
AP-450E



AP-450K

Functions 功能

<p>Manual print 手动打印</p> <p>Manual print-out is available simply by pushing the PRINT key. Measured data with absolute time (Hours:Minutes:Seconds) can be printed.</p> <p>按 PRINT 键可打印测量时间和温度。</p>	<p>Interval print 间隔打印</p> <p>The INT key enables the operator to select a time mode from eight kinds of intervals.</p> <p>按照设定的间隔打印测量时间和温度。</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>Time interval : 3s,10s,30s,1min,5min,10min, 30min and 60min 间隔时间 : 3秒·10秒·30秒·1分·5分·10分·30分·60分</p> </div>
<p>Number print 代码打印</p> <p>The numbering print provides the sequential numbering and measured data.</p> <p>按 START 键打印温度数据代码和温度。</p>	<p>Memory function 记录功能</p> <p>The memory function makes it possible to batch print the measured data stored in the internal memory. (max. 100 lines data)</p> <p>数据可记录于主机内部后进行统一打印。(最多记录100行)</p>
<p>Hold function 固定测量数据</p> <p>The thermometer stops measurement by the HOLD key and holds the present readings.</p> <p>按 HOLD 键, 可固定测量数据并保持该数据的显示。</p>	<p>Power supply 电源</p> <p>4AA (LR6) alkaline dry cells or AC adaptor (Optional accessory)</p> <p>单3电池 (LR6) 4只或专用AC电源。(另售)</p>

Specifications

Model	AP-400		AP-450
Display	LCD		
Input connector	ASP	ANP	
Input type (Thermocouple input)	Type E or K (Not switchable)	Type E, K, J, T or R (Not switchable)	
Channel	1ch		
Signal source resistance	MAX 500 Ω		
Measurement range	*TABLE I		
Measurement accuracy	*TABLE II		
Reference junction compensation accuracy	±0.2°C at 25°C ±10°C		
Temperature coefficient	±0.01% of measurement range / °C: Outside 25°C ±10°C		
Environmental limit	Operation	0~40°C, 0~80%RH (Non condensing)	
	Storage	-20~50°C, 0~85%RH (Non condensing)	
Sampling rate	*TABLE III		
Battery life	*TABLE III		
Power supply	Dry battery	4 AA Alkaline dry cell batteries	
	AC power	AC Adaptor (Optional accessories)	
Linearizer	Digital linearizer method (Compliant with IEC 60584-1 (2013))		
Print out	Character size 2.5mm, Paper width 37mm (1000 lines/roll), Thermal line dot printing		
Memory	100 data		
Internal battery	Lithium battery (For clock backup)		
Dimensions	Approx. 68 (W) × 201 (H) × 42 (D) mm [Protruded parts excluded]		
Weight	Approx. 350g [Include batteries]		
Supplied accessories	Soft case, 4 AA Alkaline dry cell batteries, Paper jam fixer, User's manual, Print paper (ACAP4), Test report, User registration form		
Optional accessories	AC Adaptor		

***TABLE I (Measurement range)**

Thermocouple type	°C	
	1°C Range	0.1°C Range
E	-200 ~ 800°C	-104.9 ~ 504.9°C
K	-200 ~ 1370°C	
J	-200 ~ 1100°C	
T	-200 ~ 400°C	
R	0 ~ 1760°C	-104.9 ~ 400.0°C

※ Switch automatically to 1°C resolution range when measured temperatures fall outside the 0.1°C resolution range.

***TABLE II (Measurement accuracy)**

Thermocouple type	°C		
	0.1°C Range	0°C ~	± (0.05% of reading + 0.2°C)
E, K, J, T		1°C Range	~0°C
	500°C ~		± (0.1% of reading + 1°C)
R	1°C Range	~-100°C	± (0.5% of reading + 1°C)
			± (0.1% of reading + 3°C)

● Supplied accessories

Soft case 主机套



Thermometer not included
不包括本体

Print paper 打印纸
ACAP4



5 pcs/set

Paper jam fixer 镊子



● Optional accessories

AC Adaptor AC电源
AD-115-500-HR-R (for AC115V)
AD-220-500-HR-R (for AC220V)



Not CE-approval

Model AM-8000 series

Compact Thermologger



Model AM-8000 series thermometers are compact handheld units that store measurement data in memory. Data held in memory can then be transferred to a PC via dedicated software for later analysis or other use.

AM-8000模式系列

AM-8000模式系列产品是简便型温度数据记录器。可以记忆储存测试数据并通过专用软件传送到电脑中进行数据处理。

AM-8000シリーズは、ハンディタイプの温度データロガーです。計測データをメモリ専用ソフトにてパソコンへ転送することで、データ処理が可能です。

6ch

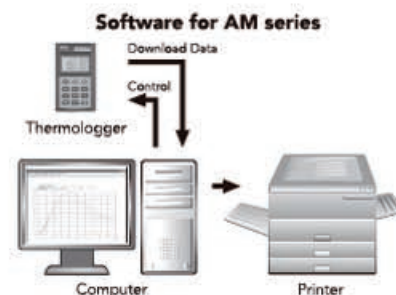
12ch



TB



AMS-850



Features

- Interface**
The link to the PC is by USB or RS-232C.
- Number of inputs**
6ch model (capable of storing 60,000 measurements) or 12ch model (capable of storing 120,000 measurements)
- Input type**
A multi-function temperature / voltage model is also available for simultaneous recording of temperature and voltage.
- Interval**
The high-speed model is capable of measuring at 100ms intervals.
*Except remote measurement.

TB-6002*

Heat-resistant box for 6ch model
Application limit : 300°C/20min
External dimensions :
320 (W) × 190 (H) × 250 (D) mm
(not including protrusions)
Weight : approx. 10kg

TB-6003-SP13*

Waterproof box for 6ch model
(For the container to φ98mm)
Application limit : 100°C/60min
External dimensions :
205 (W) × 155 (H) × 405 (D) mm
(not including protrusions)
Weight : approx. 8kg

* in Type denotes the type of thermocouple (E or K)

* The above products are sold separately. Please contact us for more information.

Software specifications

The software enables use of data on a PC.

- Graph production
- Formatted document output
- csv file output

Compatible OSs

Microsoft® Windows® 7
Windows® 8.1, Windows® 10
(for English)

- * All PCs under the recommended environment are not guaranteed to work successfully with AMS-850.
- * AMS-850 can be used only by the user that has a system administrative right (Administrator).
- * AMS-850 does not support Mac OS.
- * Microsoft® Windows® 7, Windows® 8.1, Windows® 10 and Excel® are registered trademarks of Microsoft Corporation in the United States and other countries.
- * Software is sold separately.

Function of AM-8000 series

Model		Interface		Number of inputs		Input type		Interval	
Type K	Type E	USB	RS-232C	6ch.	12ch.	Temp.	V	Normal	High speed
AM-8000K	AM-8000E	●		●		●		●	
AM-8001K	AM-8001E	●		●		●		●	●
AM-8050K	AM-8050E	●		●		●	●	●	
AM-8051K	AM-8051E	●		●		●	●	●	●
AM-8010K	AM-8010E	●			●	●		●	
AM-8011K	AM-8011E	●			●	●		●	●
AM-8060K	AM-8060E	●			●	●	●	●	
AM-8061K	AM-8061E	●			●	●	●	●	●
AM-8100K	AM-8100E		●	●		●		●	
AM-8101K	AM-8101E		●	●		●		●	●
AM-8150K	AM-8150E		●	●		●	●	●	
AM-8151K	AM-8151E		●	●		●	●	●	●
AM-8110K	AM-8110E		●		●	●		●	
AM-8111K	AM-8111E		●		●	●		●	●
AM-8160K	AM-8160E		●		●	●	●	●	
AM-8161K	AM-8161E		●		●	●	●	●	●

Specifications

6ch. model

Model	AM-8000	AM-8001	AM-8100	AM-8101	AM-8050	AM-8051	AM-8150	AM-8151
Input type	Temperature				Temperature / DC Voltage			
Measurement range	*TABLE I				Temperature : *TABLE I DC Voltage : $\pm 19.999V$			
Resolution	0.1°C / 1°C (fixed)				Temperature : 0.1°C / 1°C (fixed) DC Voltage : 0.001V			
Measurement accuracy	*TABLE II				Temperature : *TABLE II DC Voltage : $\pm (0.06\% \text{ of reading} + 0.02\% \text{ of F/S})$			
Memory capacity	60,000 data							
High-speed interval	1 sec.	0.1 sec.	1 sec.	0.1 sec.	1 sec.	0.1 sec.	1 sec.	0.1 sec.
Interface	USB1.1		RS-232C		USB1.1		RS-232C	
Dimensions / Weight	92 (W) × 155 (H) × 36 (D) mm [Protruded parts excluded] / approx. 380g [Including dry batteries]							

12ch. model

Model	AM-8010	AM-8011	AM-8110	AM-8111	AM-8060	AM-8061	AM-8160	AM-8161
Input type	Temperature				Temperature / DC Voltage			
Measurement range	*TABLE I				Temperature : *TABLE I DC Voltage : $\pm 19.999V$			
Resolution	0.1°C / 1°C (fixed)				Temperature : 0.1°C / 1°C (fixed) DC Voltage : 0.001V			
Measurement accuracy	*TABLE II				Temperature : *TABLE II DC Voltage : $\pm (0.06\% \text{ of reading} + 0.02\% \text{ of F/S})$			
Memory capacity	120,000 data							
High-speed interval	1 sec.	0.2 sec.	1 sec.	0.2 sec.	1 sec.	0.2 sec.	1 sec.	0.2 sec.
Interface	USB1.1		RS-232C		USB1.1		RS-232C	
Dimensions / Weight	96 (W) × 160 (H) × 60 (D) mm [Protruded parts excluded] / approx. 480g [Including dry batteries]							

Common specifications

Input connector	ANP connector (Miniature plug)	
Reference junction compensation accuracy	$\pm 0.3^\circ\text{C}$ at $25^\circ\text{C} \pm 10^\circ\text{C}$	
Temperature coefficient	$\pm (0.01\% / ^\circ\text{C})$ of measurement range except $25^\circ\text{C} \pm 10^\circ\text{C}$	
Time interval	Standard mode : 1 second to 99 minutes 59 seconds High-speed mode (6ch.model) : 0.10 seconds to 0.99 seconds High-speed mode (12ch.model) : 0.20 seconds to 0.99 seconds	In the case of remote measurement through a PC : 1 second to 99 minutes 59 seconds
Signal source resistance	Temperature : 500 Ω or less (standard mode), 100 Ω or less (high-speed mode) DC Voltage : Input impedance app. 2M Ω or less	
Safe excitation voltage	Between input pins on same channels : $\pm 10V$ DC (temperature), $\pm 30V$ DC (Voltage) Between input pins on adjacent channels : $\pm 60V$ AC	
Linearizer	Digital Linearizer method (Compliant with IEC 60584-1 (2013))	
Interface	USB 1.1 MINI-B or RS-232C	
Display	Graphic liquid crystal display, 128×64 dots (55×27mm)	
Environment	Operation	0~40°C, 20~80%RH (Non condensing)
	Storage	-10~50°C, 10~90%RH (Non condensing)
Power supply	4 AA Alkaline batteries or AC-Adapter (Option accessories)	
Supplied accessories	4 AA Alkaline batteries, Test report, Manual, Softcase, Communications cable (USB or RS-232C)	
Optional accessories	AC-Adapter, Special data analysis software (AMS-850), Carrying case	
Compatible standards	CE Making, RoHS	

*TABLE I (Measurement range)

Type	1°C Range	0.1°C Range
E	-200 ~ 800°C	-100.0 ~ 500.0°C
K	-200 ~ 1370°C	
J	-200 ~ 1100°C	-100.0 ~ 400.0°C
T	-200 ~ 400°C	
R	0 ~ 1760°C	-

*Switches automatically to 1°C resolution range when measured temperatures fall outside the 0.1°C resolution range.

*TABLE II (Measurement accuracy)

Type	Resolution	Measurement range	Measurement accuracy
E, K, J, T	1°C	0°C ~	$\pm (0.1\% \text{ of reading} + 1^\circ\text{C})$
		-100 ~ -1°C	$\pm (0.5\% \text{ of reading} + 1^\circ\text{C})$
		-200 ~ -101°C	$\pm (1\% \text{ of reading} + 2^\circ\text{C})$
R	0.1°C	0.0°C ~	$\pm (0.1\% \text{ of reading} + 0.3^\circ\text{C})$
		-100.0 ~ -0.1°C	$\pm 0.5^\circ\text{C}$
R	1°C	0°C ~ 1760°C	$\pm (0.1\% \text{ of reading} + 3^\circ\text{C})$

Not including reference junction compensation accuracy, at $25^\circ\text{C} \pm 10^\circ\text{C}$

*TABLE III (Battery life)

Interval	0.1sec	1sec	10sec	10min
Battery life	approx. 20h	approx. 40h	approx. 80h	approx. 240h

*Note: When operated with AA Alkaline batteries at 25°C typ.

● Supplied accessories

Soft case
SC-6
SC-12



Communication cable
AM-USB (for USB)



Communication cable
AM-RS9 (for RS-232C)



● Optional accessories

AC-Adaptor
AD-115-500-HR-R (for AC115V)
AD-220-500-HR-R (for AC220V)



Carrying case



Model **HS** series

Soldering Iron Thermometer

Model HS series thermometers designed for exclusive use with the CR series soldering iron tip temperature probes. The HS-30K measures temperatures only, while the HS-50K can measure temperature, resistance between soldering iron tip and ground, and leakage voltage.

HS模式系列

HS模式系列是烙铁头专用温度计,可直接搭配CR模式系列烙铁头温度探头测量烙铁头温度。

HS-30K能测量烙铁头温度,HS-50K能测量烙铁头温度,烙铁头与地线之间的电阻与漏电压。

HSシリーズは、コテ先用温度センサ CRシリーズ専用の温度計測器です。

HS-30Kは温度、HS-50Kは温度・コテ先アース間抵抗・リーク電圧の計測ができます。



HS-30K

Temperature probe sold separately.



HS-50K

Temperature probe sold separately.

※ Leakage voltage and the resistance between soldering iron tip and ground can be measured only when using a three-wire soldering iron with temperature control capability.



※ 烙铁头与地线之间的电阻与漏电压,仅可以测定带有三线式温度调节功能的烙铁。

※ コテ先アース間抵抗とリーク電圧は、三線式の温度調節機能付きはんだコテのみ測定可能です。

Specifications

Model	HS-30K	HS-50K
Display	LCD	LED
Input type	Temperature (Thermocouple : Type K)	Temperature (Thermocouple : Type K) Resistance (between the iron ahead ground) leak electric voltage
Measurement range	0~500°C	Temperature : 0~500°C Resistance (between the iron ahead ground) : 0.0~99.9 Ω leak electric voltage : 0.0~99.9mV (RMS)
Resolution	1°C	Temperature : 1°C Resistance (between the iron ahead ground) : 0.1 Ω leak electric voltage : 0.1mV
Measurement accuracy	± (0.3% of reading + 1) °C	Temperature : ± (0.1% of reading + 1) °C Resistance (between the iron ahead ground) : ± (4% of reading + 0.3) Ω leak electric voltage : ± (3% of reading + 0.3) mV
Reference junction compensation accuracy	±0.5°C (at 23°C ±10°C)	±0.2°C (at 25°C ±10°C)
Temperature coefficient	± (0.03% /°C) of measurement range except 23°C ±10°C	± (0.01% /°C) of measurement range except 25°C ±10°C
Environmental limit	Operation	10~40°C, 0~85%RH (Without dew)
	Storage	0~50°C, 0~85%RH (Without dew)
Linearizer	Analog linearizer method (Compliant with IEC 60584-1 (2013))	Digital linearizer method (Compliant with IEC 60584-1 (2013))
Power supply	4" AA" (LR6) Alkali Batteries	AC 100V~240V
Battery Life	approx. 180 h	—
Dimensions	152 (W) × 45 (H) × 80 (D) mm	180 (W) × 55 (H) × 150 (D) mm
Weight	approx. 460 g	approx. 950 g
Accessories	Manual, 4 Batteries, Test report	Manual, Spare fuse, Power supply cord, Ground cord, Test report

● Exclusive probes

	CR-31K	CR-32K
Model	 2 pieces set	 2 pieces set
Thermocouple type	Type K	
Max. temp.	500°C	
Tolerance	±4°C (at 300°C)	
Diameter of the supporting iron future	Less than φ1.5mm	φ1.5mm~φ4mm



Model ACS II series

Temperature Calibration System

Model ACSII series products are temperature calibration systems for surface temperature and internal temperature measuring devices. Temperatures can be set across a wide range, from room temperature to 500°C. These calibration systems are designed for calibration or to check temperature measuring probes.

ACSII 模式系列

ACSII 模式系列产品是表面温度、内部温度的标准校正器。从室温到500°C之间的温度可以自由设定,可用于温度感应器的校正、检测等用途。

ACS II シリーズは、表面温度、内部温度の基準校正器です。

室温から500°Cまで、自由に温度を設定できます。温度センサの校正、チェックなどにご使用ください。

ACSII-1000

For Surface Temperature Max. 300°C



※Please specify a power supply voltage when ordering (choose from 100 VAC, 115 VAC, or 230 VAC).

ACSII-2000

For Surface Temperature Max. 500°C



Specifications

OVERALL ACCURACY

Model		ACSII-1000	ACSII-2000	ACSII-3000	ACSII-4000	
Calibration object		Surface temperature	Surface temperature	Internal temperature	Surface temperature	Internal temperature
Range	Rt~100°C	+0.5 / -0.7 °C	+0.5 / -0.7 °C	±0.26°C	+0.4 / -0.6 °C	±0.26°C
	100~200°C	+0.5 / -1.1 °C	+0.5 / -1.1 °C	±0.32°C	+0.3 / -0.9 °C	±0.32°C
	200~300°C	+0.5 / -1.5 °C	+0.5 / -1.5 °C	±0.37°C	+0.1 / -1.1 °C	±0.37°C
	300~400°C	—	+0.4 / -2.0 °C	±0.43°C	+0.2 / -1.5 °C	±0.43°C
	400~500°C	—	-0.1 / -2.9 °C	±0.48°C	-0.9 / -2.2 °C	±0.48°C

CONTROL UNIT

Model		ACSII-1000	ACSII-2000	ACSII-3000	ACSII-4000
Surface range		Rt~300°C	Rt~500°C	—	Rt~500°C
Internal range		—	—	Rt~500°C	Rt~500°C
Control principle		PID Auto-Tuning Control			
Control	Input	Pt 100Ω, φ3.2			
	Accuracy	±(0.2% of reading) °C			
	Display	8mm high LED display			
Reference sensor	Input	—		Pt 100Ω, φ4.8	
	Accuracy	—		±(0.05% of reading +0.05) °C	
	Display	—		12.5mm high LED display	
Power consumption		approx. 160W	approx. 700W	approx. 1600W	approx. 1600W
Dimensions W×H×D (mm)		320×177×350		430×177×350	
Weight		approx. 4.5kg		approx. 5.0kg	

CALIBRATION UNIT

Model	ACSII-1000	ACSII-2000	ACSII-3000	ACSII-4000
Testing surface	φ78mm	φ100mm	—	□150mm
Test point	—	—	8 holes based on specified dimension	
Temp. distribution	±0.1°C			
Heater	150W	600W	1500W	1500W
Dimensions W×H×D (mm)	260×130×260	390×230×360	450×405×400	
Weight	approx. 7kg	approx. 20kg	approx. 70kg	
Overheating prevention mechanism	Bimetal breaker			
Heating time	Rt→150°C 20min. Rt→300°C 40min.	Rt→250°C 20min. Rt→500°C 50min.	Rt→250°C 60min. Rt→500°C 150min.	
Cooling time	300→150°C 20min. 150→50°C 40min.	500→250°C 30min. 250→50°C 70min.	500→250°C 220min. 250→100°C 430min.	

●Supplied accessories

Model	ACSII-1000	ACSII-2000	ACSII-3000	ACSII-4000
Supplied accessories	Power cable, Heater cable, Sensor cable, Manual, Test report			
	Protective cover for calibration block		Standard sensor for calibration (Pt 100Ω platinum resistor)	

Model **FL** series


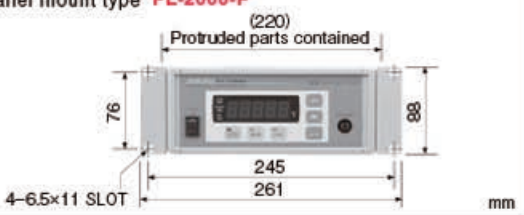

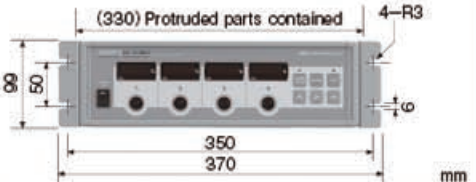
Fiber Optic Thermometer

The products in the FL Series can measure temperatures in environments subject to high-frequency waves, microwaves, or high voltages-areas where electric thermometers such as thermocouples, platinum resistance temperature detectors, and thermistors are typically ineffective.

FL模式系列

荧光式光纤温度计FL模式系列可以测量金属测棒温度计不能测量的高频率、微波及高电压等特殊环境的温度。

蛍光式光ファイバー温度計 FLシリーズは、熱電対やPt、サーミスタなどの電気式温度計では計測困難な高周波・マイクロ波または高電圧などの過酷な環境下において接触式で温度計測が可能です。

<p>1ch. model FL-2000</p> <p>Stand type FL-2000</p> 	<p>Panel mount type FL-2000-P</p> 
<p>4ch. model FL-2400</p> <p>Stand type FL-2400</p> 	<p>Panel mount type FL-2400-P</p> 

Features

- Capable of measurements in environments subject to high-frequency waves or high voltages.
 - A fiber optic thermometer offering a wide measurement range.
 - Analog output capability allows use for machine temperature control.
 - Measurement data can be imported into a PC using software bundled with the thermometer.
- 可在高频率、高电压的环境下测量。
 - 此荧光式光纤温度计可测量广域温度。
 - 信号输出功能可用于设备的温度控制。
 - 附带的PC软件可采集测量数据。

●Operational environment of software (AMS-850)

OS	Microsoft® Windows® 7, Windows® 8.1, Windows® 10 (for English)
Memory	64MB or more (Operational environment of corresponding OS)
HDD	Min. 5MB of free space (Operational environment of corresponding OS)
Monitor	Min. resolution of 800 × 600 pixels

※ All PCs under the recommended environment are not guaranteed to work successfully with AMS-850.

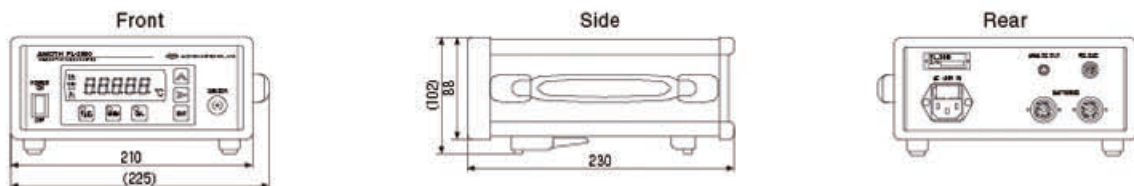
※ AMS-850 can be used only by the user that has a system administrative right (Administrator).

※ AMS-850 does not support Mac OS.

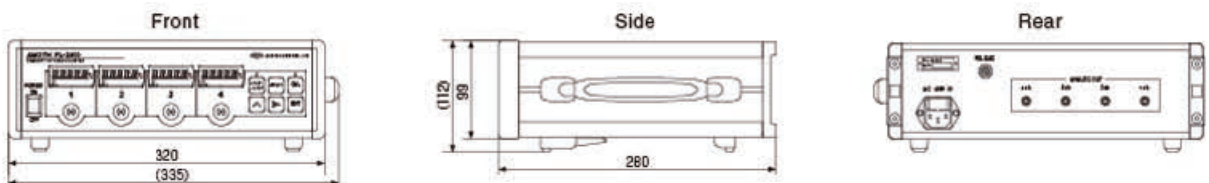
※ Microsoft® Windows® 7, Windows® 8.1, Windows® 10 and Excel® are registered trademarks of Microsoft Corporation in the United States and other countries.

External dimensions

FL-2000



FL-2400



mm

Fiber probes

FS100 -* M	General-purpose type	temp. range : -190°C ~ 260°C	FS300 -* M	Light-resistant type	temp. range : -190°C ~ 260°C																				
<p>Applications involving microwaves, high magnetic fields, certain food preparation processes, power lines, and electric circuit components</p>			<p>Measurements performed in laser beam, plasma, or other intense light</p>																						
FS150 -* M	High durability general-purpose type	temp. range : -190°C ~ 260°C	FS400 -* M	High temperature type	temp. range : 20°C ~ 400°C																				
<p>The durable type which sensing part of FS100 made of the same thickness as the cable</p>			<p>Various materials, excluding liquids, in semiconductor manufacturing equipment or microwave heating devices</p>																						
FS100H -***- * M	Liquid and chemical-resistant type	temp. range : -190°C ~ 260°C	FS500 -* M	Needle type	temp. range : -60°C ~ 260°C																				
<p>Oils, liquid or chemicals</p>			<p>Semisolid substances, e.g., food</p>																						
FS150H -***- * M	High durability liquid and chemical-resistant type	temp. range : -190°C ~ 260°C	FS600 -* M	Plastic type	temp. range : 0°C ~ 80°C																				
<p>The durable type which sensing part of FS100H made of the same thickness as the cable</p>			<p>Animal tests using hyperthermia equipment or MRI or NMR systems</p>																						
FS200 -* M	Chemical-resistant type	temp. range : -30°C ~ 200°C	<p style="color: red; font-weight: bold;">How to order of Fiber probes</p> <p>It can be chosen the length of cable and Teflon coating to suit the purposes of specific your application.</p> <div style="display: flex; justify-content: space-around; font-weight: bold; color: red;"> FS100 -* M FS100H -***- * M </div> <div style="display: flex; justify-content: space-around; font-size: small;"> ① ② ① </div> <p>Replace the asterisk (*) in the model with selectable number.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center; font-size: x-small;"> <tr> <td rowspan="3" style="vertical-align: middle;">①</td> <td>Cable length</td> <td>2</td> <td>2m</td> <td rowspan="3" style="vertical-align: middle;">②</td> <td>Teflon coating length</td> <td>01</td> <td>0.1m</td> </tr> <tr> <td>(Specify a cable length in 1m increments.)</td> <td>3</td> <td>3m</td> <td>(Specify a Teflon coating length in 0.1m increments, MAX. length : 1m)</td> <td>05</td> <td>0.5m</td> </tr> <tr> <td></td> <td>...</td> <td>...</td> <td></td> <td>10</td> <td>1m</td> </tr> </table>			①	Cable length	2	2m	②	Teflon coating length	01	0.1m	(Specify a cable length in 1m increments.)	3	3m	(Specify a Teflon coating length in 0.1m increments, MAX. length : 1m)	05	0.5m			10	1m
①	Cable length	2	2m	②	Teflon coating length		01	0.1m																	
	(Specify a cable length in 1m increments.)	3	3m		(Specify a Teflon coating length in 0.1m increments, MAX. length : 1m)		05	0.5m																	
				10	1m																		
<p>Chemicals</p>																									

※ The length of a fiber probe will be short after repair when the optical fiber is broken.

Specifications

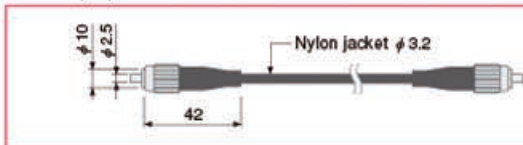
Type		FL-2000	FL-2400
Input point		1	4
Measurement range		-195.0~450.0°C	
Resolution		0.1°C	
Accuracy	Calibration not executed	-195.0~399.9°C : ±2°C, 400.0~450.0°C : ±5°C	
	Calibration executed	±0.5°C (within ±50°C of calibration point) (at an ambient temp. of 25°C±5°C)	
Temperature coefficient		± (0.01% of F.S. /°C) within operating temperature	
Operating environment		Temperature : 0~40°C, Humidity : 15~80%RH (non-condensing)	
Storage environment		Temperature : -10~50°C, Humidity : 10~85%RH (non-condensing)	
Display		Height of character : 15mm, RED LED	Height of character : 8mm, RED LED
Display update		1 s	
Light source		Blue LED	
Power supply	AC power	Please specify a power supply voltage when ordering (choose from 100 VAC, 115 VAC, or 230 VAC).	
	Dry battery	six AA-size alkaline batteries	—
Power consumption		approx. 12 VA	approx. 40 VA
Memory		Up to 15,000 data, one second interval (synchronized with display)	No memory
Interface		RS-232C Transfer rate : 9600bps Data formation : 7bit, odd parity, 1 stop bit	
Calibration		One-point calibration (using real temperature within a measured area)	
Analog output	Output rate	10mV/°C	
	Resolution	1mV	
	Accuracy	± (0.2% of F.S.) at an ambient temperature of 25°C ±5°C	
	Temperature coefficient	± (0.01% of F.S. /°C)	
External dimensions		210 (W) × 88 (H) × 230 (D) mm Protruded parts excluded	320 (W) × 99 (H) × 280 (D) mm Protruded parts excluded
Weight		approx. 3 kg	approx. 5 kg
Supplied accessories		Power cable (two-wire plug attached) × 1 Fuse (2A mini fuse) × 1 Analog output cable × 1 Communication cable × 1 PC software AMS-850 (CD ROM) × 1 User's manual (main unit and software) × 1	Power cable (two-wire plug attached) × 1 Fuse (2A mini fuse) × 1 Analog output cable × 4 Communication cable × 1 Conversion cable (RS-232C→USB) PC software AMS-850 (CD ROM) × 1 User's manual (main unit and software) × 1

Optional accessories

Extension cable

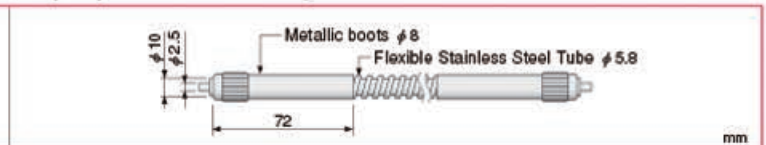
FK1-∗M

General-purpose extension cable for normal use.



FK2-∗M

Heavy-duty extension cable for rough environments.



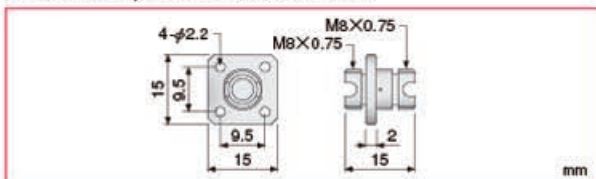
Replace the asterisk (∗) in the model number with a cable length in meters. The extension cable cannot be used with FS600-∗M (plastic fiber).

FA1 (Optical adapter) is required for the connection of fiber sensors and relay cables.

Optical adapter

FA1

Can connect a probe to an extension cable.

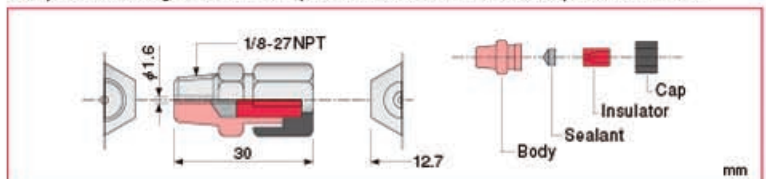


Compression fitting

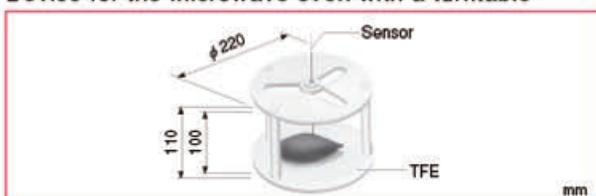
FN1-T (sealant material : TFE)

FN1-V (sealant material : Viton)

Compression fitting used to insert probe into a vacuum device or pressure vessel.



Device for the microwave oven with a turntable



Pressure rating 1.33×10⁻⁴Pa~11.0 MPa at 20°C using stainless steel rod

Various options can be tailored to meet special requirements. Please contact us for more information.

Model AR-6500 series

Contact & Non-Contact Thermometer

AR-6500 series infrared thermometers are capable of non-contact temperature measurement and come with contact type thermometer functions.

AR-6500模式系列

AR-6500模式系列为非接触式红外线温度计,同时也搭配了接触式温度计功能。

AR-6500シリーズは、非接触で温度測定が可能な放射温度計に、接触式温度計の機能を搭載した温度計です。



AR-6500 Series
Handy type

Features

- Broad measurement range
- Small measurement area
- Wide range of emissivity settings
- Automatic emissivity setting using contact-type probe

Specifications

Model	AR-6500	AR-6501	AR-6500-H	AR-6501-H
Measurement range	-50~500°C		0~1200°C	
Resolution	0.1°C		1°C	
Laser aiming	●	●	●	●
Contact mode	●	●	●	●
Measurement accuracy	*TABLE I		*TABLE II	
Reference junction compensation accuracy	±0.2°C at 25±10°C			
Temperature coefficient	±0.01% of full scale °C			
Power supply	Ni-Cd rechargeable battery (4AA)			
Battery life	30 hours~ (10 hours when laser is used continuously)			
Environmental limit	0~40°C, 0~80%RH (Without dew)			
Operation Storage	-20~50°C, 0~85%RH (Without dew)			
Analog output (*Table III)	—	1mV/°C	—	1mV/°C
Weight	approx. 400g			
Accessories	Manual, Soft case, Lens cap, Charger, Test report			
	—	Output cable	—	Output cable

*TABLE I

AR-6500, AR-6501		Field of view
		unit : mm
Non-contact	250.1~500.0°C	± (0.8% of reading + 1digit)
	0.0~250.0°C	± (2°C + 1digit)
	-50.0~ -0.1°C	± (3°C + 1digit)
Contact	-50.0~500.0°C	± (0.05% of reading + 0.1°C) ± 1digit

Non-contact mode

Detector	Thermopile
Spectral response	8~14μm
Repeatability	± (0.4% of reading + 1digit)
Response time	approx. 300ms
A-constant adjustment	0.10~2.00 (0.01 step)
Laser aiming	L2 models meet IEC Class2

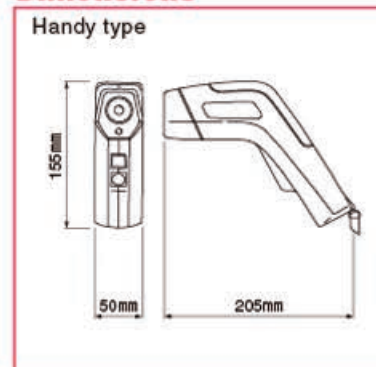
Contact mode

Input	Thermocouple Type:K
Sampling time	approx. 300ms
Input connector	ANP connector (Miniature plug)

*TABLE II

AR-6500-H, AR-6501-H		Field of view
		unit : mm
Non-contact	601~1200°C	± (0.5% of reading + 1digit)
	251~ 600°C	± (3°C + 1digit)
	0~ 250°C	± (4°C + 1digit)
Contact	0~1200°C	± (0.1% of reading + 1digit)

Dimensions



Accessories

Charger
B-115/230-5.5
(for AC115V or 230V)



Not CE-approval

*TABLE III

Output rate	1mV / °C
Accuracy	± (0.15% of F/S+1mV) : at 25±5°C ± (0.15% of F/S+1mV) ±0.01% of F/S : except 25°C±5°C