

# KH200B-F Paperless recorder



Economic Blue Paperless Recorder



# Memory Flash Drive Data Saving

**Provides flexibility and variety in the handing of record data**



## Time Display

Indicate date and time of recorded data

## USB Port

Allows you to download data from recorder to PC by USB flash drive

## Key Panel

Allows you to perform selection of display, setting, data change, and channel no. change

## Data Display

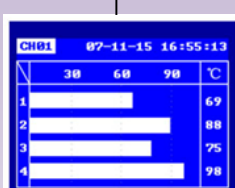
Allow you to view data in digital, trend, bargraph form

## Alarm State

Alarm state display: HH,LL,H,L when alarm



Trend Display



Bargraph Display



Digital Display

## Long Time Memory

2MB/4MB built in memory for long time memory.  
Record time can be 1sec to 15year data recorded.

## Universal Input, 16 Points Max. Recording

10 types of thermocouples, 3 types of resistance bulb, DC voltage, DC current are available.

## Communication

Photoelectrical isolated RS485/RS232 serial communication, standard MODBUS-RTU protocol

## USB Download Data Directly

Saved data transferred by USB flash drive directly, plug and play, easy to operation

## Printing

Curve or digital data can be printed by connecting mini printer directly or through software by RS232 port

## SMT Technology, Modular Output

Modular output, configurable flexibly according to the site requirements.

## PC Support Software

Data Analysis Software and DCS Configurable Software supplied in a CD-ROM as part of accessory.

## PC Support Software

Display data in digit and trend format, Export data as Excel format for further analysis, Print trend data

General Specification		<b>Display Contents</b> <ul style="list-style-type: none"><li>Real time Trend Display</li></ul> In horizontal, selected in the refreshment cycles of 1 to 3600sec Scale display <ul style="list-style-type: none"><li>Digital display</li></ul> Single and multi channels display <ul style="list-style-type: none"><li>Bargraph Display</li><li>History Trend Display</li><li>Printing Setting Display</li><li>System Configuration</li></ul>
Accuracy	+-(0.2%FS+1) digit	
Power Supply	85-240VAC, 50/60Hz; 24VDC	
Power Consumption	Maximum 5VA(5W)	
Keyboard	PR/EN, UP, Down, Move	
Materials	ABS for case and bezel	
Terminal	M3 screw terminal	
Mount Method	Panel Flush Mounted	
Size/Mount Size/Mass	72x72x105mm, 68x68mm,0.5kg	
Operation Temperature	Working Temperature:0-50C Relative humidity; 10%-85%( now dew)	
Transport /Storage	Temperature: -20-60℃ Relative humidity : 5%-95%(nodew)	
Transport /Storage	Temperature: -20-60℃ Relative humidity : 5%-95%(nodew)	
Clock	Clock accuracy: +-5ppm. After power off, Li battery for continual power supply. The validity of battery is 30days.	
Input Specification		<b>Recording Specification</b>
Number of inputs	1, 2, 3, 4 points	
Input Signal	Thermocouple: 7 types (K,S,B,E,J,N,T,R,Wer523,Wer526) RTD-Resistance bulbs: 3 types (Pt100, CU50,CU100) DC Voltage: (0-5VDC, 1-5VDC) DC Current: (4-20mA, 0-10 mA)	
Sample Rate	1s/1 channels,	
Modular Output Function		
Relay Alarm	up to 2 points, 220VAC,0.8A, NO or NC	
Retransmission	4-20mA, 0-10Ma,one point	
Print	RS232 print port	
USB	USB flash drive to download data	
Communication	RS485,RS232 serial communication	
Auxiliary Power Supply for sensors	5V, 12V,24VDC, 50mA for sensor and transmitters	
Display Specification		<b>Memory Media</b> USB memory , FAT16 format <b>Memory</b> Flash memory <b>Memory Capacity</b> 2MB built in for long time record <b>Record Interval</b> 1 to 3600 seconds, settable flexibly <b>Record Cycle</b> 1 second to 15years by interval time 36hours per 1s record interval 90 days per 1 min. record interval... <b>Recording Method</b> Start recording when power on. Stop recording when power off. <b>Data Save Cycle</b> Oldest data replaced by newest data accordingly when memory is full <b>Data Format</b> Binary format or cannot read or write <b>Alarm Function</b> <b>Type of Alarm</b> High, Low, High-High, Low-Low limit <b>No. of Setting</b> Up to 4 alarms are settable per channel <b>Alarm Indication</b> Alarm States is displayed in digital, When alarm occurs, state flashing <b>Alarm output</b> Up to 2 points, 0.8A contact <b>Alarm Setting</b> Individual or common output <b>Communication Function</b> <b>Communication</b> Photoelectrical isolated RS485 ,RS232 communication port <b>Protocol</b> Modbus RTU, can communicate with modern PLC and HMI directly <b>Cable</b> RS485 shielded twisted pair cable <b>Print Function</b> <b>Print Port</b> RS232 Port, Baudrate: 9600 <b>Printer</b> Dot-matrix mini printer; Ribbon Resolution: 60,120,240dots/line <b>Data Printed Type</b> History data, Real time data , history curve data, optional
Display	2.8 inch LCD, 128x64 dot-matrix	
Life of Backlight	50,000hours	
Screensaver Time	0-30000s, settable	
Unit	77 , settable and addable per channel	
Scaling	-20000 to 20000	

## Specification

### PC Support Software (Standard-

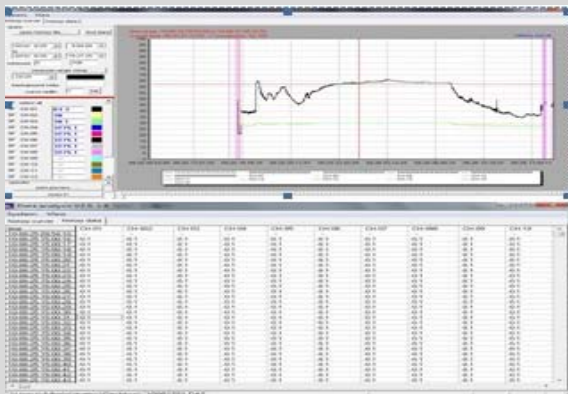
<b>O/S</b>	Window 2000/XP, WISTA
<b>Required Hard Disk Capacity</b>	Free capacity of 30MB or larger required
<b>Required Memory</b>	1GB or larger
<b>Contents</b>	<p>The follows are included as standard:</p> <ol style="list-style-type: none"> <li>1) Data Analysis Software <ul style="list-style-type: none"> <li>• It allows you to view the past recorded data in digit and curve format from data saved in recorder to USB flash drive</li> <li>• It allows you to export the data as Excel format for further analysis</li> <li>• It allows you to print the curve data by office printer</li> </ul> </li> <li>2) DCS configuration Software <ul style="list-style-type: none"> <li>• It allows you to view real time data in digit, curve format</li> <li>• It can save the past data with same function with data analysis software.</li> </ul> </li> </ol>

### Input Signal (Table)

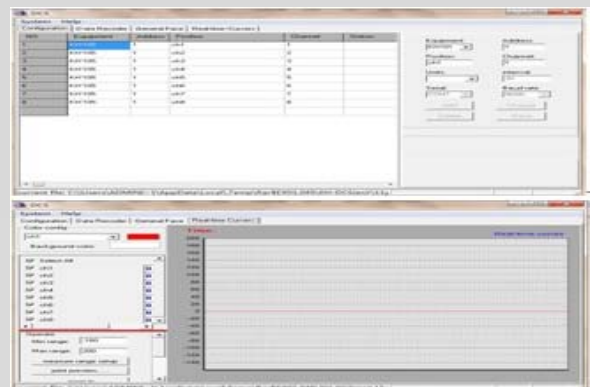
Input Type		Reference Ranges
Thermocouple T.C.	B	300.0 to 1800.0°C
	S	-50 to 1700.0°C
	K	-50.0 to 1300.0°C
	E	0.0 to 800.0°C
	J	0.0 to 100.0°C
	T	-200-350°C
	N	0-1300°C
Resistance bulb RTD	Pt100	-200.0 to 600.0°C
	Cu50	-50.0 to 150.0°C
	Cu100	-50.0 to 150.0°C
DC voltage	1-5V	1.000 to 5.000V
	0-5V	0.000 to 5.000V
DC Current	0 to 10mA	0.000 to 10.000mA
	4 to 20mA	4.000 to 20.000mA

## PC Support Software

**Data Analysis Software:** as standard accessories. Recorded history data transferred to USB flash drive can be viewed to personal computer



**DCS Software:** Reading, monitoring real time data by RS485 or RS232 can be viewed to personal computer, while recording history data automatically



## PC Support Software

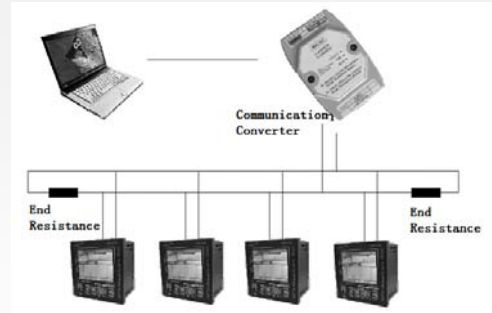
### USB Download Data, Plug and Play



Please install the software in CD and USB flash drive to PC before usage.

- O/S: Window 2000/XP, WISTA
- Required hard disk capacity :Free capacity of 30MB or larger required
- Recommend USB flash driver: Kingston
- FAT16 format.

### Communication

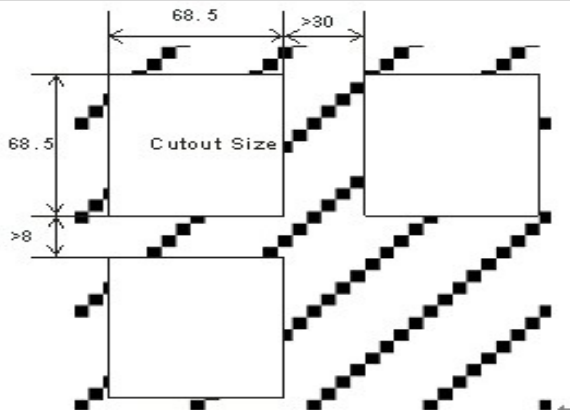
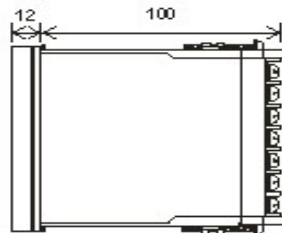
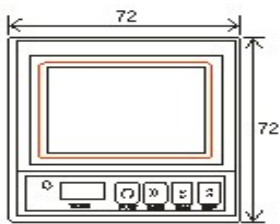


Please install the software in CD before usage.

- O/S: Window 2000/XP, WISTA
- Required hard disk capacity :Free capacity of 30MB or larger required
- Recommend cable: RS485 shielded twisted pair cable
- Repeater is needed when more than 100m communication distance.

## Size & Installation (Unit: mm)

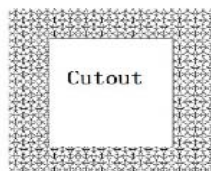
### Dimension (Unit: mm)



### Installation

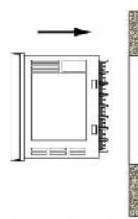


Mounting Panel



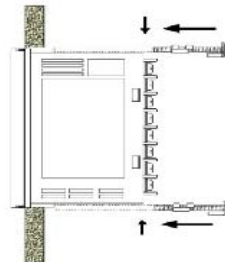
1. Cutout

Mounting Panel



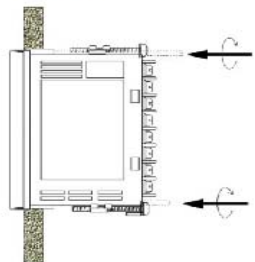
2. Mounting Meter

Mounting Panel



3. Mounting Bracket

Mounting Panel

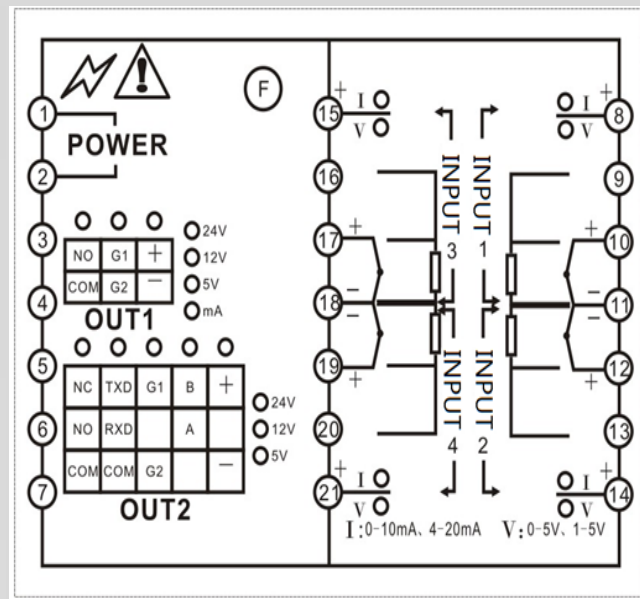


4. Fix Bracket

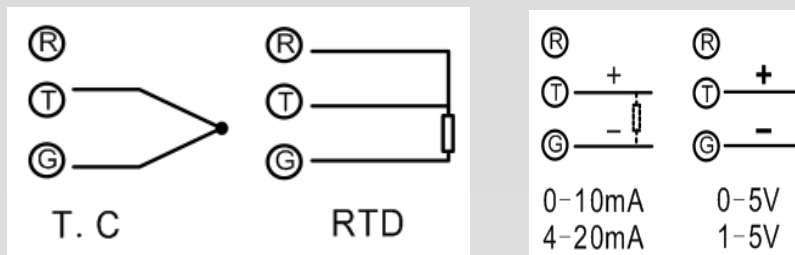


## Diagram & Connection (Unit: mm)

### Diagram

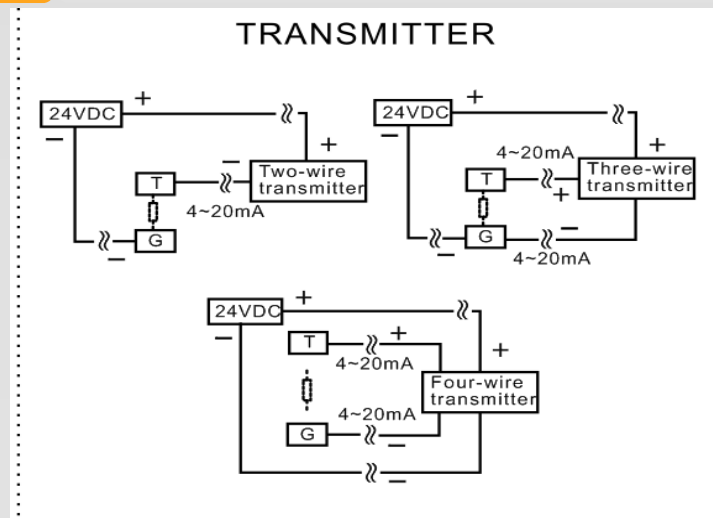


### Connection with sensor input



Note: 250ohm resistance will be needed when 4-20mA input; 500ohm resistance will be needed when 0-10mA input;

### Connection with transmitter



## Order Code

Function	Code and Description						
Basic Code	KH2	B-	F-			U-	KH200B-F Monochrome Paperless Recorder
Channel No.	01						One Channel
	02						Two Channels
	03						.....
	04						Four Channels
LCD color	B-						Blue
Size		F-					72*72*105mm(L*W*D)
OUT1			N-				None
			R2A-				Relay alarm output: NO ,30VDC/3A, 220VAC/3A
			R2B-				Relay alarm output :NC ,30VDC/0.8A, 220VAC/0.8A
			U1-				Isolated auxiliary 5VDC power supply for transmitter, sensor and other device, max.100mA
			U2-				Isolated auxiliary 12VDC power supply for transmitter, sensor and other device, max.100mA
			U3-				Isolated auxiliary 24VDC power supply for transmitter, sensor and other device, max.100mA
OUT2			N-				None
			R2C-				Relay alarm output: NO+NC ,30VDC/3A, 220VAC/3A
			S1-				RS485 communication port , Modbus-RTU protocol
			S2-				RS232 communication port, Modbus-RTU protocol
			P-				RS232 Printing port for mini printer
USB				U-			USB flash drive for download data, free PC data analysis software offered.
Power Supply				N-			85-240VAC
				D-			24VDC

### Note:

- Code “P” is RS232 printing port, used for WH-E20 mini printing to print data. If mini printer is needed, please advise.
- Code “S1” “S2” is serial communication port, based on standard MODBUS-RTU protocol, which can be configurable with SCADA, OPC server etc flexibly. Meanwhile, we have PC DCS software for it. If DCS software required, please advise.

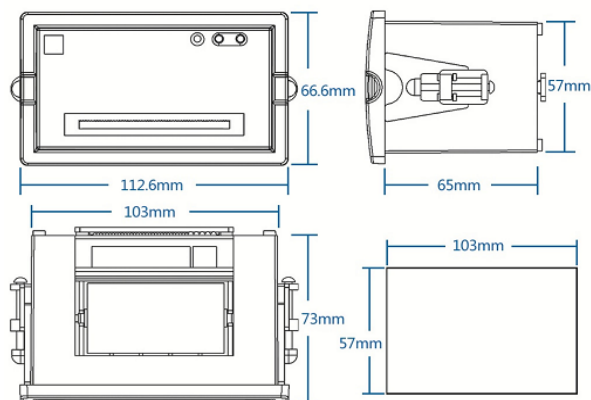
E.g.: Order Code: KH204B-D-R2A-S1-U-N, functions as follows: KH200B-F monochrome paperless recorder, 4 channels, A relay alarm output, a RS485 communication port, USB data transferring function, 85-240VAC power supply.

## Optional-Mini Printer

### Printer



### Size



<b>Printing Method</b>	Dot Matrix, Ribbon Type	<b>Power Supply</b>	5VDC, 1.5A
<b>Paper Width</b>	44mm/57mm	<b>Outline Size:</b>	122.6x66.6x73mm
<b>Print Width</b>	32mm/48mm	<b>Cut Size</b>	103mm(W)x57mm(H)x65mm(D)
<b>Resolution</b>	96dots/line, 144dots/line, 240dots/line	<b>Interface</b>	Serial RS232port
<b>Character per line</b>	16/24/40	<b>Operate Temperature</b>	0-5C
<b>Printing Speed</b>	1line/sec, 0.7 line/sec, 0.4line/sec.	<b>Storage Temperature</b>	-20 to 60C
<b>Character Size</b>	6x8dots, 8x16dots, 6x 12dots	<b>Operating Humidity</b>	10%-85%
<b>Paper Type</b>	Plain, 44mm/57mm wide, 30mmΦ	<b>Storage Humidity</b>	10%-90%