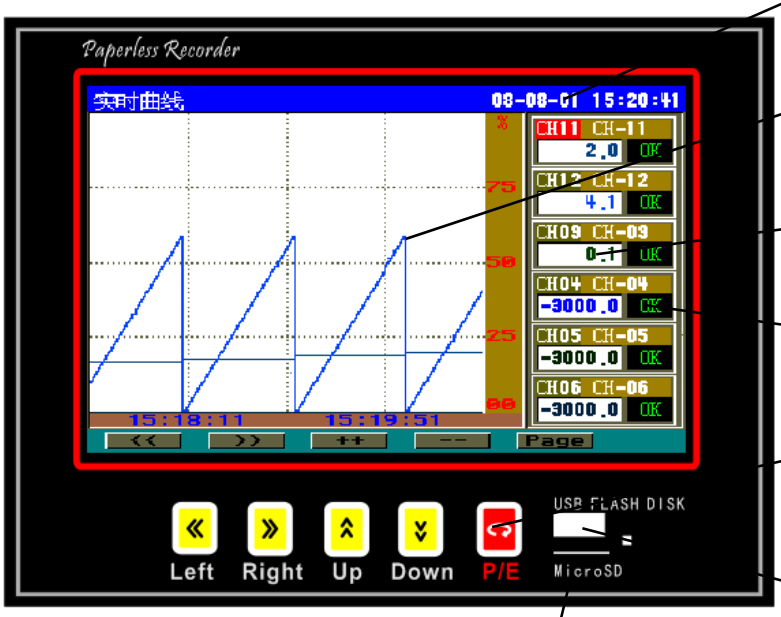
KH800G Paperless Recorder

Super-thin Color 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

Trend Display

Allow you to view data in trend forms

Digital Display

Allow you to view data in digital form

Alarm State

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

Key Panel

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

USB Port

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

CF Card port for extended big memorized data transferring

Long Time Memory

8MB capacitor built in for long time memory. At least can record up to 440 years data at most.

Screensaver

Recorder turns off the backlight of LCD and exit parameter setting screen when non-operation.

Universal Input, 8 Points Max. Recording

PHOTOMOS isolated universal input, 10 types of thermocouples, 3 types of resistance bulb, DC voltage, DC current, mV,0-5Hz frequency input are available.

MODBUS-RTU Communication

Photoelectrical isolated RS485 serial communication is available. Standard MODBUS-RTU protocol with reading and writing functions.

USB Drive, TF Card Data Transferring

Saved data transferred by USB flash drive directly, plug and play; CF card for extend memory transferring

MODBUS-TCP/IP Ethernet

10/100M Ethernet port, support MODBUS-TCP/IP protocol, can be configurable with HMI, DCS etc

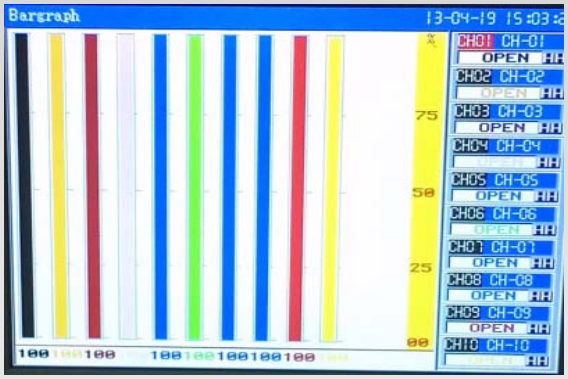
Math, Flow Totalizer Option

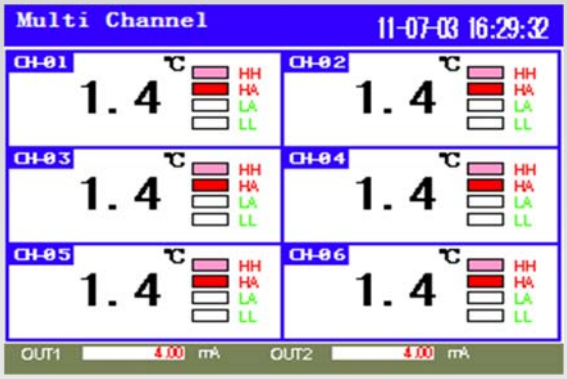
Math: addition: +, subtraction: -; multiplication: *; division: /; average; Max.; Min.

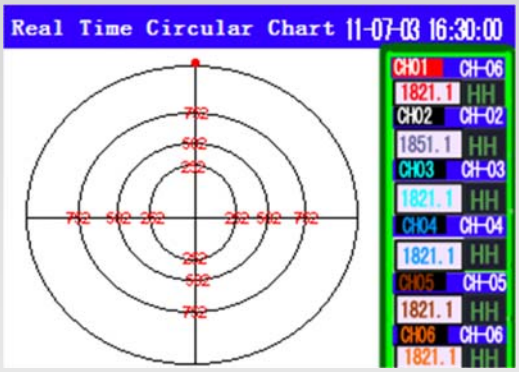
PC Support Software

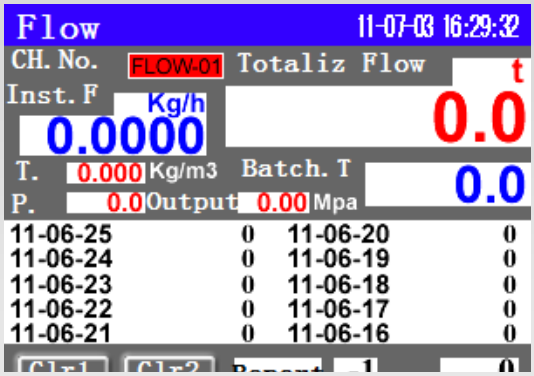
Display data in digit and trend format, Export data as Excel format for further analysis, Print trend data by

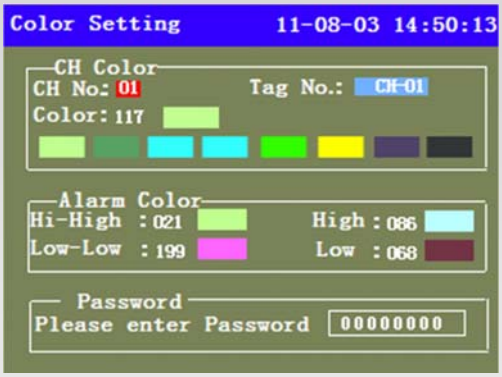
Various Screen Display Modes

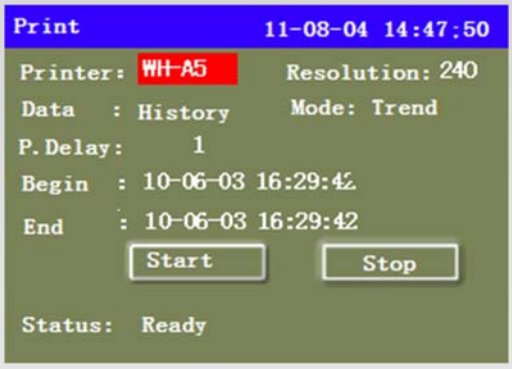












Specifications

General Specification

Power Supply	100-240VAC, 47-63Hz;
Power Consumption	Maximum 25VA
Insulation	Power to ground > 1500VAC Power to housing > 1500VAC
Keyboard	P/E, Left, Right, UP, Down
Materials	ABS for case and bezel
Terminal	M5 screw terminal
CPU	32bits, high performance and integrated ARM
Mount Method	Panel Flush Mounted
Size/Mount Size/Mass	195x145x60.5mm/lkg
Operation Temperature	Working Temperature:0-50degC Relative humidity; 10%-85%(now dew)
Transport /Storage	Temperature: -20-60□ Relative humidity : 5%-95%(nodew)

Input Specification

Number of inputs	1, 2, 3, 4,5,6,7,8 points; Can be extendable to 32 channels
Input Signal	Thermocouple: 10 types (K,S,B,E,J,N,R,T,WRe526,WRe325) RTD-Resistance bulbs: 3 types (Pt100, CU50,CU100) Linear DC Voltage: (0-5VDC, 1-5VDC,0-10VDC) DC Current: (4-20mA, 0-10 mA) mV:0-20mV,0-60mV, 0-100mV, 0-500mV Extendable RS485 input
Sample Rate	1 second for all channels
Scaling	-20000 to 20000
CMR Ratio	85-110dB
Temperature Shift	50PPM
Photoelectrical Isolation	1000VAC between channels ground 400VAC between channels
Input Independence	0-5VDC and 1-5VDC input: 500KΩ 4-20mA input: 250 Ω 0-10mA input: 500Ω

Display Specification

Input Error Action	Max, Min, Hold
Display	7.0 inch, 320X240 TFT, Color LCD display
Life of Backlight	50,000hours
Screensaver Time	0-30000s, settable
Unit	77 , settable and addable each channel
Display Contents	• Real time Trend Display In horizontal, selected in the refreshment cycles of 1 to 3600sec Scale display • Real time Circular Chart Display • Digital display Single and multi channels display • Bargraph Display • History Trend Display • History Circular Chart Display • Printing Setting Display • System Configuration

Recording Specification

Memory Media	USB memory , FAT16 format TF card for extended data transferring
Memory	Flash memory
Memory Capacity	8MB built in for long time record
Record Interval	1 to 3600 seconds, settable flexibly
Record Time	Record time =45daysx record interval÷ channel numbers. Can record 1 day data at least, also for 440 years at most
Recording Method	Start recording when power on. Stop recording when power off.
Data Save Cycle	Oldest data replaced by newest data accordingly when memory is full
Data Format	Binary format or cannot read or write

Optional Output Function

Relay Alarm	up to 8 points, 220VAC/30VDC/3A, NO
Print	RS232 print port for mini printer
USB	USB flash drive for data transferring
TF	TF card port for extend data transfer
Auxiliary Power Supply	24VDC, max.40mA for sensor and transmitters, up to 8 points built in
Communication	Serial RS485, standard MODBUS-RTU Protocol; Ethernet TCP/IP
Flow Totalize	Flow totalize and batch totalize

Alarm Function

Type of Alarm	High, Low, High-High, Low-Low limit
No. of Setting	Up to 4 alarms are settable for each

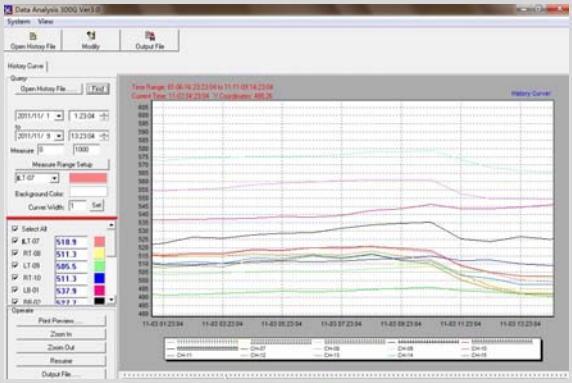
Specification

Alarm Indication	Alarm States is displayed in digital, trend, bargraph, circular chart. When alarm occurs, state flashing
Alarm output	Up to 8 points, 3A contact
Alarm Setting	Individual or common output
Communication Function	
Serial Communication	Photoelectrical isolated RS485 , communication port, read and write data and parameter, MODBUS-RTU
Ethernet	10/100M Ethernet port communication, MODBUS-TCP/IP
Cable	RS485 shielded twisted pair cable
Print Function	
Print Port	RS232C comm. Port, Baudrate: 9600
Printer	Dot-matrix mini printer; Ribbon Resolution: 60,120,240dots/line
Data Printed Type	History data, Real time data , history curve data, optional
Reference Performance	
Accuracy	• 0.2 grade when RTD, linear voltage, linear current and T.C input • 0.2%FS±2.0℃ when T.C input with cold junction compensation by internal part of recorder
Indication Resolution	0.1℃
Input Resistance	RTD: Current 2.5mA, three wire, max.10ohm per each wire. Thermocouple: not more than 1000Ω.

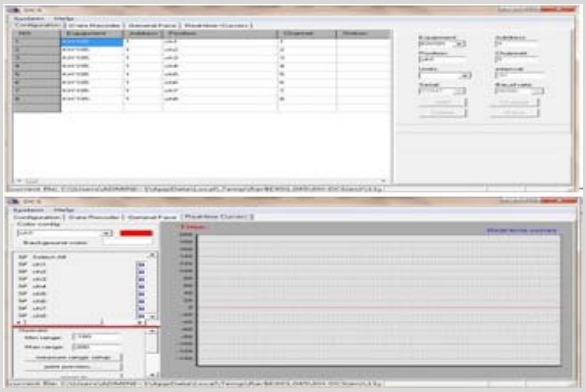
Clock	Clock accuracy: +-5ppm. After power off, Li battery for continual power supply. The validity of battery is 30days.
PC Support Software (Standard-supplied CD-ROM)	
O/S	Window 2000/XP, VISTA
Required Hard Disk Capacity	Free capacity of 30MB or larger required
Required Memory	1GB or larger
Contents	The follows types are included as standard: 1) Data Analysis Software • It allows you to view the past recorded data in digit and curve format from data saved in recorder to USB flash drive • It allows you to export the data as Excel format for further analysis • It allows you to print the curve data by office printer 2) DCS configuration Software • It allows you to view real time data in digit, curve format • It can save the past data with same function with data analysis software.

PC Support Software

History Data Transferred to USB flash drive or TF card can be viewed to personal computer (Data analysis software)



History and real time data by RS485 /RS232 can be viewed to personal computer (DCS software)



PC Support Software

USB /TF card Download Data automatically

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

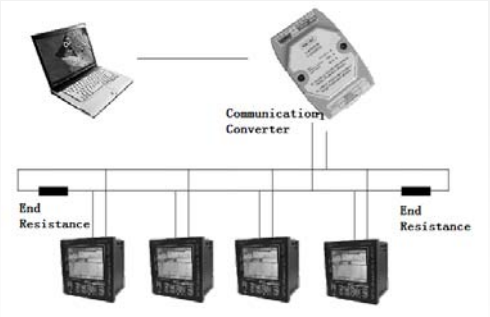
- O/S: Window 2000/XP, VSTA
- Required hard disk capacity :Free capacity of 30MB or larger required
- Software functions:

  .reading recording data and display the data in digital and curve type

  .Printing the curve data in software through office printer

  .Export the data as Excel format for further analysis.

MODBUS-RTU /MODBUS-TCP/IP communication



Please install DCS software for RS485 communication in CD before usage.

- O/S: Window 2000/XP, VSTA
- Required hard disk capacity :Free capacity of 30MB or larger required
- Repeater is needed when more than 100m communication distance.
- Software functions:

  .Real time reading and monitoring the data digital and curve type in PC.

  .Meanwhile, recording the recording data automatically, whose data also can be exported as Excel format for further analysis.

Size & Installation (Unit: mm)

Dimension

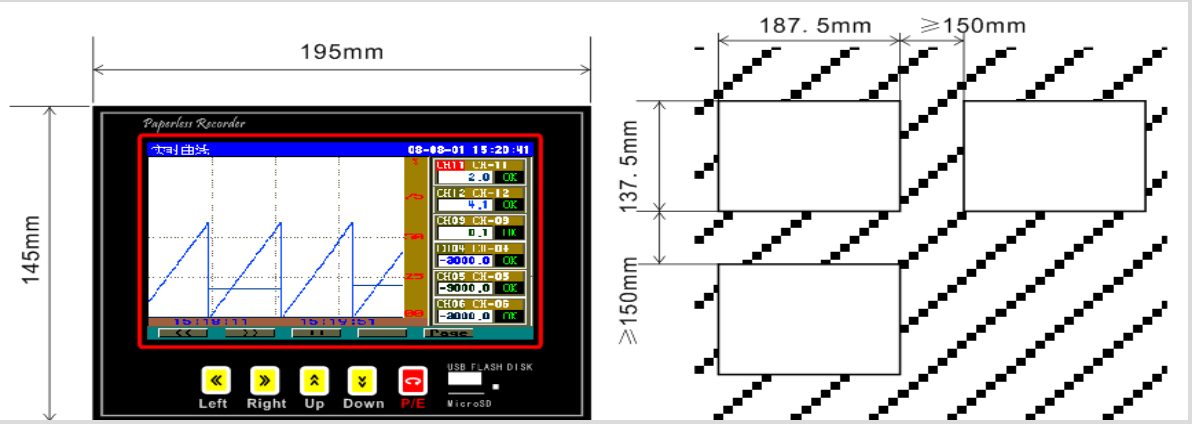
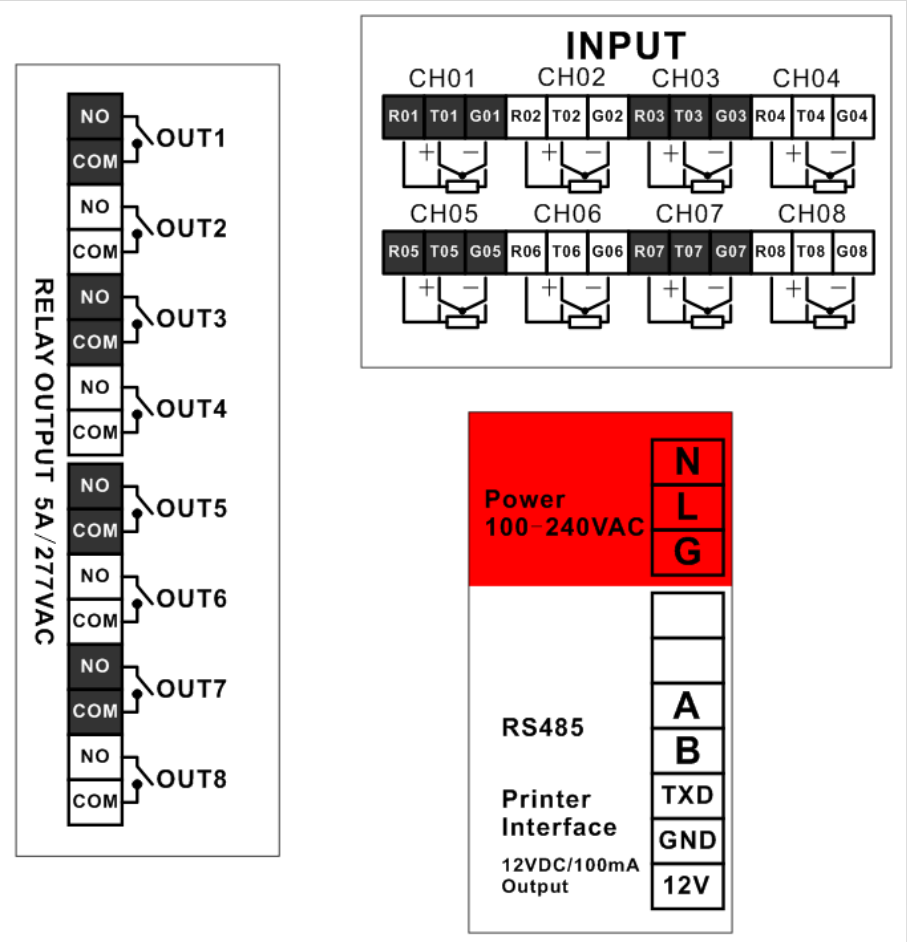
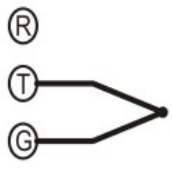
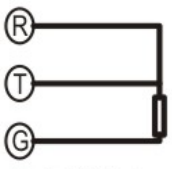


Diagram & Connection

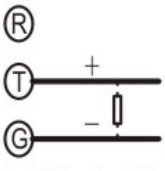




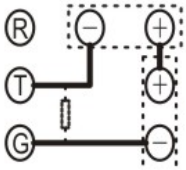
T.C. Input



RTD Input



Linear Analog Input



Two wire

COM	
NO	
NC	

DB9-232-S

PIN	Rs232-S
2	TXD
3	RXD
5	GND

Linear analog input: 4-20mA, 0-10mA, 0-5VDC,1-5VDC, 0-10VDC; 250ohm resister for 4-20mA, 500ohm for 0-10mA

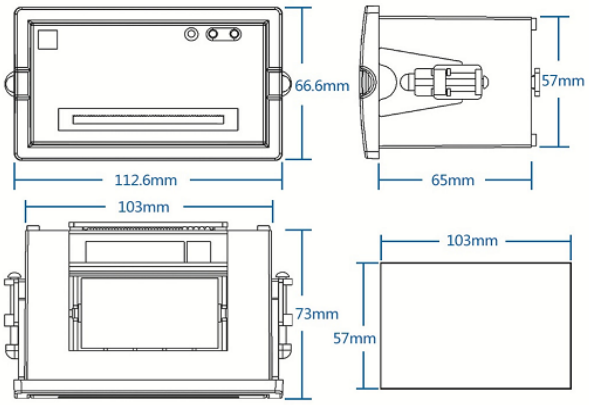
Order Code

Function	Code and Description												
KH8													KH800G suppler-thin Color Paperless Recorder
Channel No. (Analog Input)	00												None
	01												One Channel, Analog Input
	02												Two Channels, Analog Input
	…												……
	08												Eight Channels, Analog Input
LCD Color		GG-											Color TFT display
Extendable Channel No. (RS485 Input)			N-										None
			E8-										Extendable 8 channels RS485 input
			E16-										Extendable 16 channels RS485 input
			E32-										Extendable 24 channels RS485 input
Relay Alarm Output				N-									None
				1-									1 alarm: NO , 30VDC/3A, 220VAC/3A
				2-									2 alarm: NO ,30VDC/3A, 220VAC/3A
				….									……
				8-									8 alarm: NO ,30VDC/3A, 220VAC/3A
Communication port					N-								None
					S1-								RS485 communication. Port, MODBUS-RTU
					S3-								Ethernet communication. Port, MODBUS-TCP/IP
Printing						N-							None
						P-							RS232 printing port for mini printer, WH-E20 mini printer as default. Please advise the printer no. if the mini printer is customized.
USB function							U-						USB flash drive to download data to PC, free PC data analysis software offered
TF card port								T-					TF card port for extend data transferring automation.
Flow Totalizer with Temperature and Pressure compensation; Math									N-				None
									F-				Flow totalizer accumulation with compensation; or Basic math: +, -, x, /, min, max, average
Power supply										N			100-240VAC, 47-63HZ

Optional-Mini Printer

Printer

Size



Printing Method	Dot Matrix, Ribbon Type
Paper Width	44mm/57mm
Print Width	32mm/48mm
Resolution	96dots/line, 144dots/line,240dots/line
Character per line	16/24/40
Printing Speed	1line/sec, 0.7 line/sec, 0.4line/sec.
Character Size	6x8dots, 8x16dots,6x 12dots
Paper Type	Plain, 44mm/57mm wide, 30mmΦ

Power Supply	5VDC,1.5A
Outline Size:	122.6x66.6x73mm
Cut Size	103mm(W)x57mm(H)x65mm(D)
Interface	Serial RS232port
Operate Temperature	0-5C
Storage Temperature	-20 to 60C
Operating Humidity	10%-85%
Storage Humidity	10%-90%