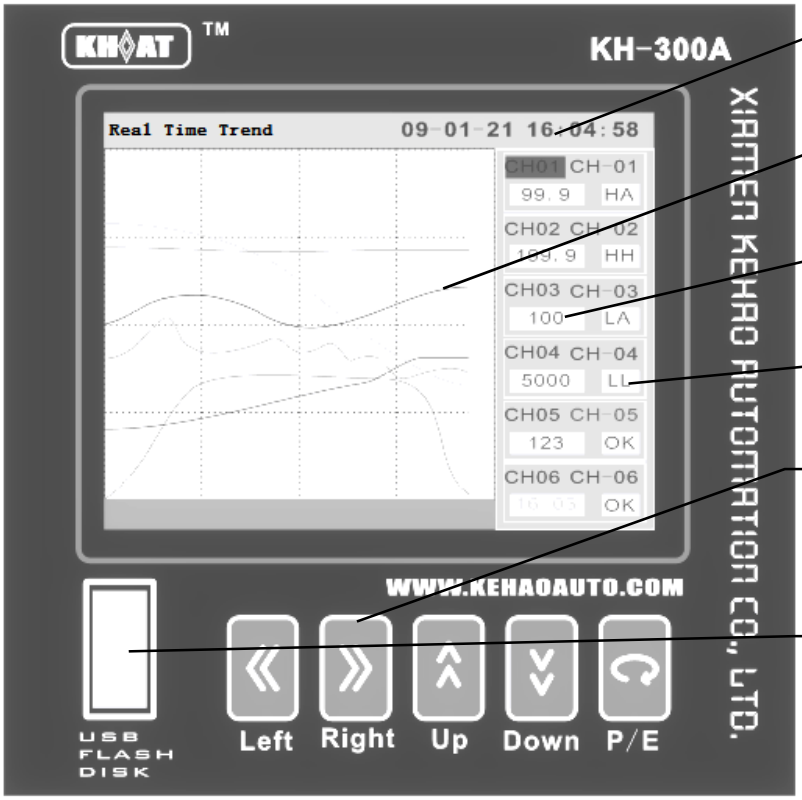
KH300A-G Paperless recorder

Intelligent 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

Long Time Memory

8MB built in memory for long time memory. Record time =45days÷Channel No.s x Record interval time

Screensaver

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

Universal Input, 6 Points Max. Recording

Photoelectrical isolated universal input, 10 types of thermocouples, 3 types of resistance bulb, DC voltage, DC current are available.

Communication

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

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

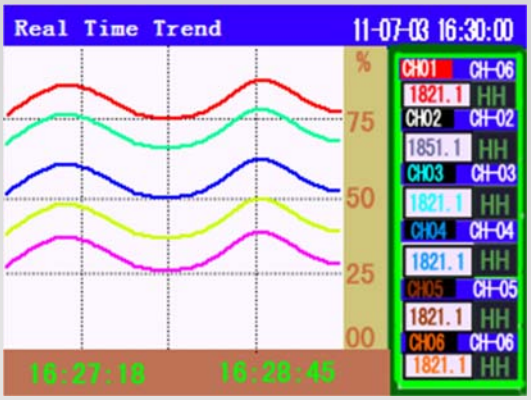
PC Support Software

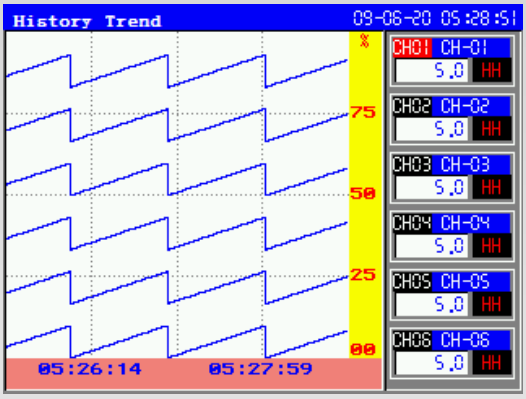
Data Analysis Software supplied in a CD-ROM as part of accessory. DCS configurable software as option.

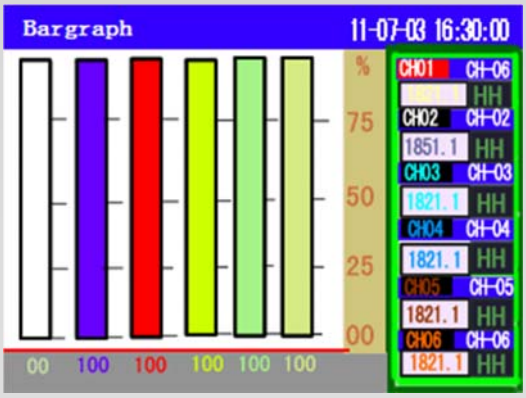
PC Support Software

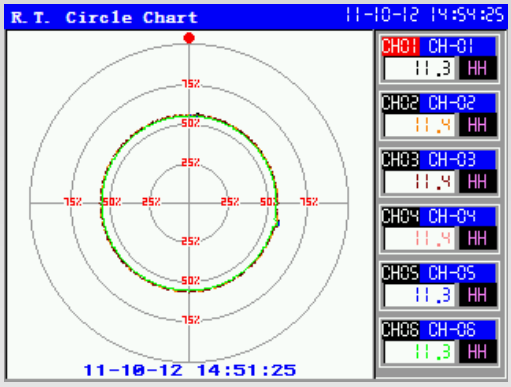
Display data in digit and trend format, Export data as Excel format for further analysis, Print trend data by office printer.

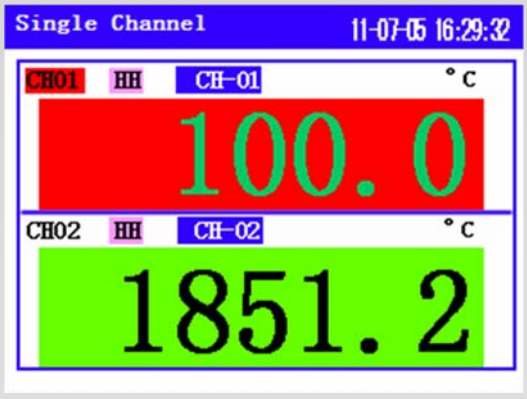
Various Screen Display Modes

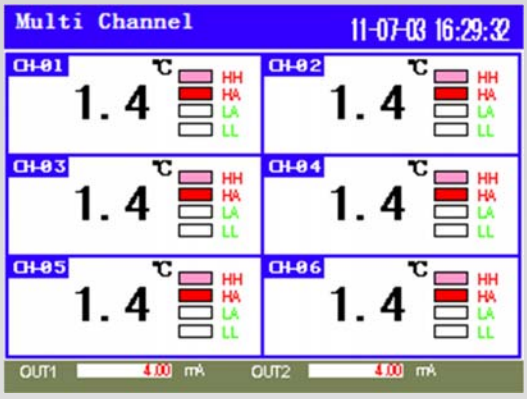


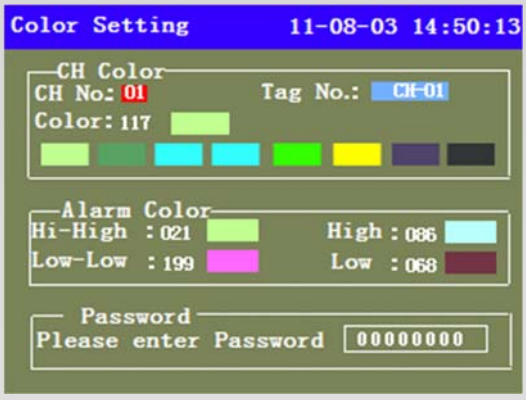


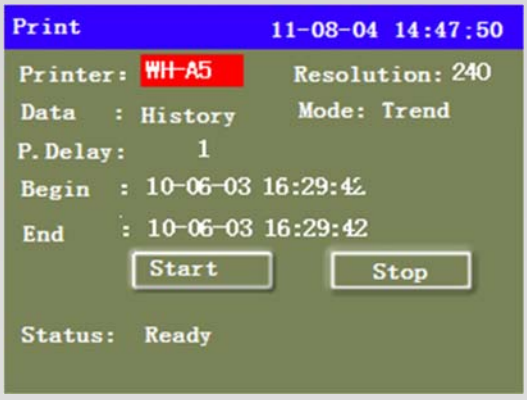












Specifications

General Specification

Power Supply	100-240VAC, 47-63Hz; 24VDC
Power Consumption	Maximum 5VA(5W)
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	96x 96x85mm, 92x92mm, 0.5kg
Operation Temperature	Working Temperature:0-50C 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 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) Others: 4 types (0-20mV,0-60mV, 0-100mV, 0-500mV)
Sample Rate	1s/6 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 KΩ 0-10mA input: 500KΩ Other signal input :20MΩ
Input Error Action	Max, Min, Hold

Display Specification

Display	3.2 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 (2GB), FAT16 format
Memory	Flash memory
Memory Capacity	8MB built in for long time record
Record Interval	1 to 3600 seconds, settable flexibly
Record Time	45days÷Channel no * Record interval 45days per 1s record interval per CH 7years per 1 min. record interval per ch
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 2 points, 250VAC,3A, NO or NC
Retransmission	4-20mA, up to 2 point
Print	RS232 print port
USB	USB flash drive
Auxiliary Power Supply	24VDC, 50mA for sensor and transmitters
Communication	RS485 MODBUS-RTU protocol

Alarm Function

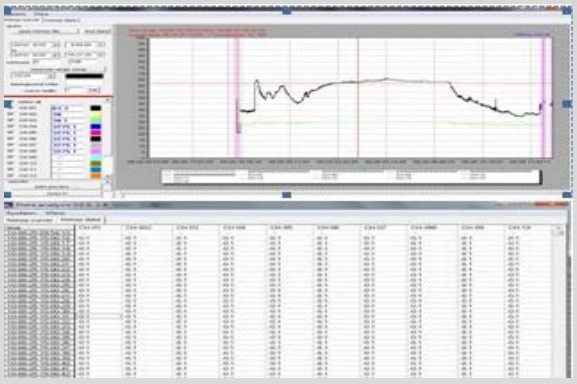
Type of Alarm	High, Low, High-High, Low-Low limit
No. of Setting	Up to 4 alarms are settable for each channel, configurable flexibly

Specification

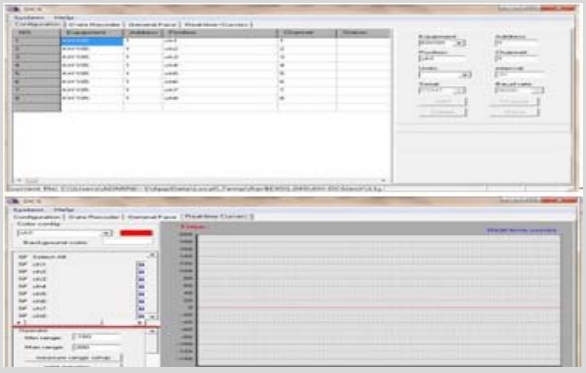
Alarm Indication	Alarm States is displayed in digital, trend, bargraph, circular chart. When alarm occurs, state flashing
Alarm output	Up to 2 points, 3A contact
Alarm Setting	Individual or common output
Communication Function	
Communication	Photoelectrical isolated RS485 communication port, read and write
Protocol	Modbus RTU, can communicate with modern PLC and HMI directly
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.
C.J Compensation	Tolerance: maximum +-2℃
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, WISTA
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 can be viewed to personal computer



History and real time data by RS485 can be viewed to personal computer.



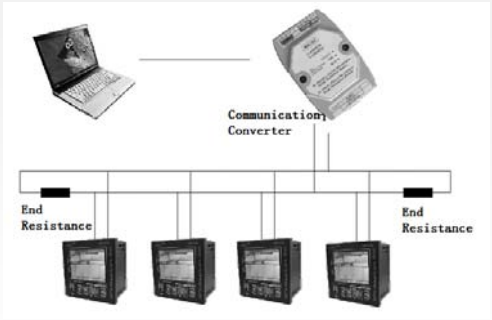
PC Support Software

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

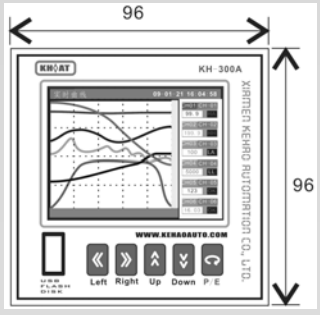


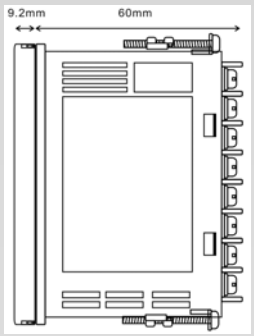
Please install the software in CD before usage.

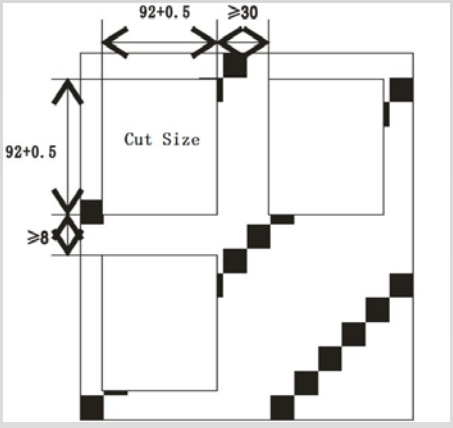
- O/S: Window 2000/XP, WISTA
- Required hard disk capacity :Free capacity of 30MB or larger required
- Recommend cable: RS485 shielded twisted pair cable
- Repeater is needed when more than 100m communication distance.

Size & Installation (Unit: mm)

Dimension







Installation

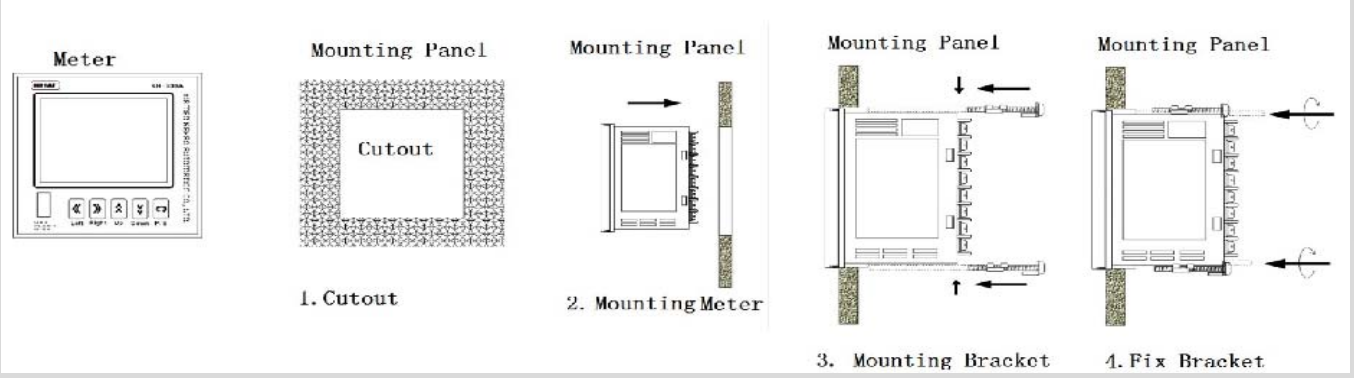
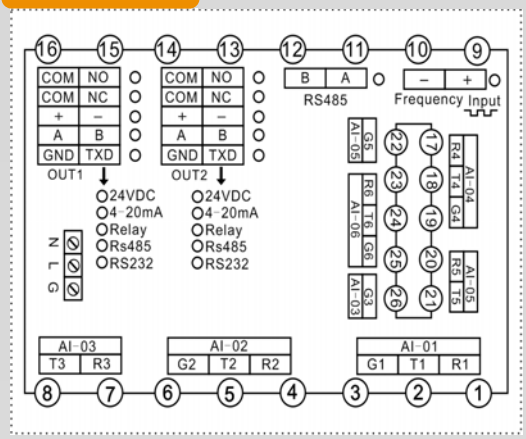
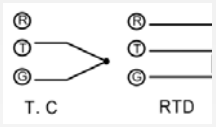
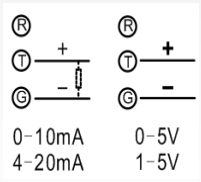


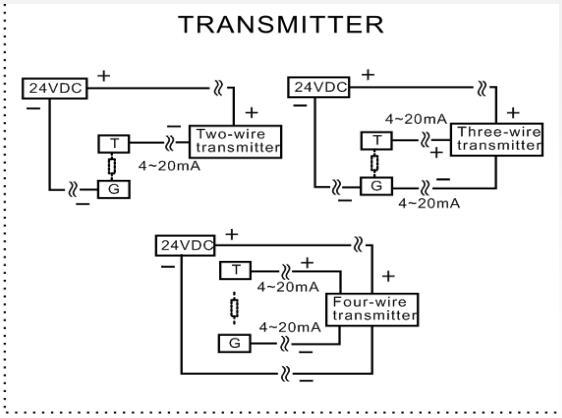
Diagram & Connection (Unit: mm)

Diagram

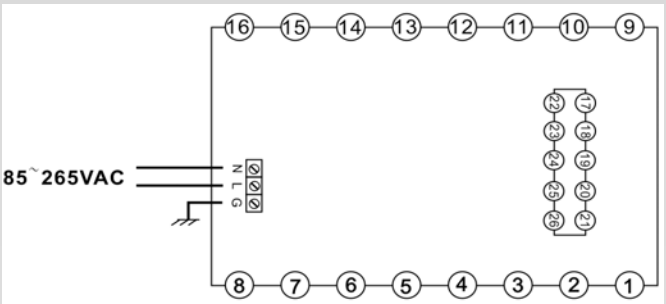


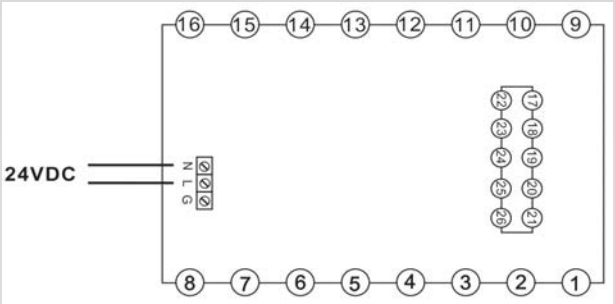




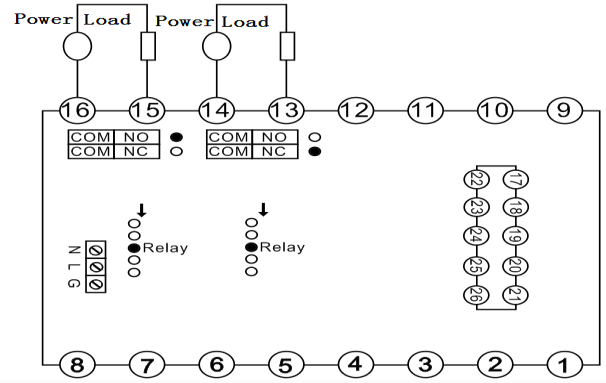


Power Diagram

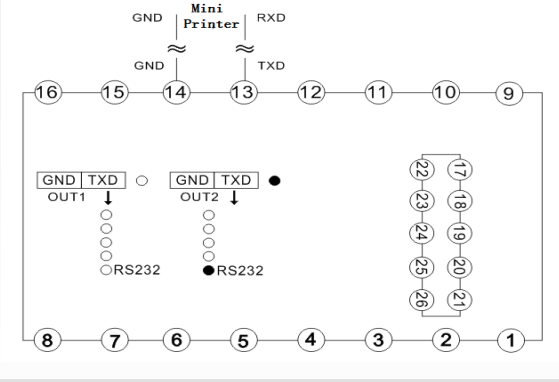




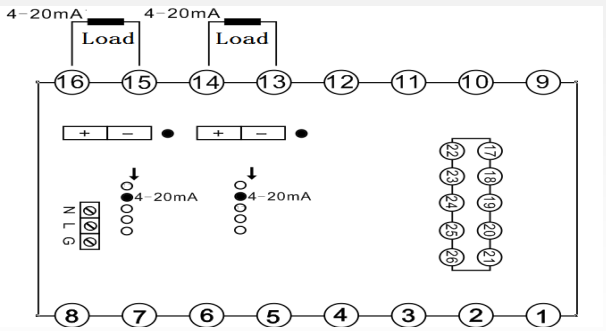
Alarm Output Diagram



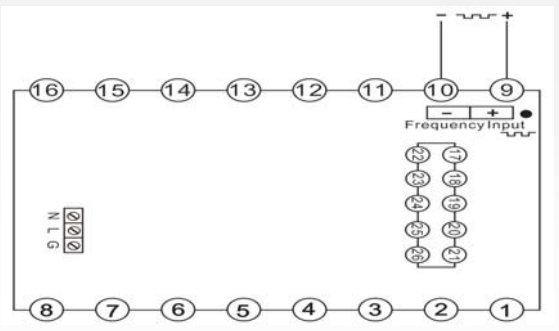
Mini Printer Diagram



4-20mA Output Diagram



Frequency Input Diagram



Order Code

Function	Code and Description									
Basic Code	KH3	A					U-			KH300AG Color Paperless Recorder
Channel No.	01									One Channel
	02									Two Channels
	…									……
	06									Six Channels
Size		A								96*96*85mm(L*W)
LCD color			G							Color
OUT1				-N						None
				-R2A						Relay alarm: NO ,30VDC/3A, 220VAC/3A
				-R2B						Relay alarm: NC ,30VDC/3A, 220VAC/3A
				-U3						Isolated auxiliary 24VDC power supply for transmitter, sensor and other device, max.40mA
				-I1						Isolated4-20mA retransmission output , only for max.250ohm load
OUT2					-N					None
					-R2A					Relay alarm: NO ,30VDC/3A, 220VAC/3A
					-R2B					Relay alarm: NC ,30VDC/3A, 220VAC/3A
					-U3					Isolated auxiliary 24VDC power supply for transmitter, sensor and other device, max.40mA
					-P					RS232 printing port for mini printer, WH-A5 mini printer as default.
					-I1					Isolated 4-20mA retransmission output , only for max.250ohm load
Communication						-N				None
						-S1				RS485 communication port, Modbus-RTU
USB							-U			USB flash drive for download data
Frequency Input								-N		None
								-Q		One channel, 0-5KHZ frequency input
Power Supply									-N	85-240VAC
									-D	24VDC

Note:

1) Code “P” is RS232 printing port, used for WH-E20 mini printing to print data. If mini printer is needed, please advise.

2) 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 advice.

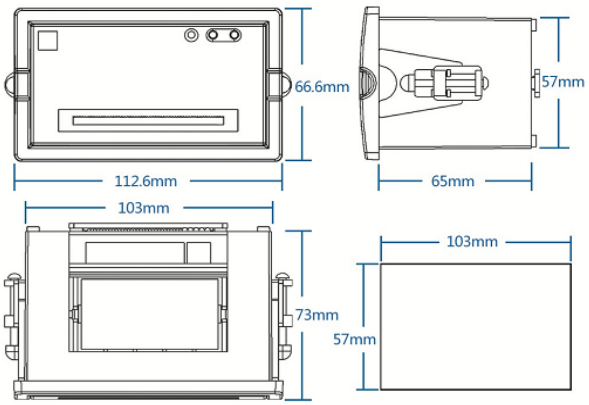
3) Code “I1” is retransmission output, but only max. one channel output in OUT1 or OUT2 in a recorder.

Eg.: Order Code: KH306AG-R2A-U3-S1-U-NN, functions as follows: KH300AG Color paperless recorder, 6 channels, a relay alarm output, a 24VDC auxiliary power supply, a RS485 communication port, USB data transferring function., 110-240VAC power supply.

Optional-Mini Printer

Mini Printer-WH-E20

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%