# VX6100 color paperless recorder

## Product overview:

VX6000R 16-channel universal input color paperless recorder can input the standard current, standard voltage, frequency, millivolt, thermocouple, thermal resistance and other signals. In addition, it has some other functions, including isolated power distribution output of sensor, relay alarm output, transmitter output, flow accumulation, temperature and pressure compensation, transfer storage of historical data, printing and remote communication.


## Features:

● **System**

◆Using the latest large-scale integrated circuit.

◆Use high-speed, high-performance 32-bit ARM microprocessor.

◆5.6 inch 320 * 234 dot-matrix TFT high brightness and color graphic LCD, LED backlight, clear picture and wide viewing angles.

◆Fully isolated universal input, which can input a variety of signals. It can be configured by software without jumper.

◆New switching power supply, which can function properly within the range of 85VAC ~ 265VAC.

◆Integrated hardware real -time clock, which can run accurately in case of power down.

◆Provide isolated 24VDC power distribution for transmitter.

◆Large capacity storage of FLASH memory chips to store historical data, which will never lost data in case of power-down.

◆12-way relay alarm output. (VX6116 series only support 8-channel relay alarm output.)

**●Signal**

◆You can input a variety of standard signals: standard current, standard voltage, frequency, millivolt, thermocouple, thermal resistance.

◆Signal full- scale accuracy: ±0.2%.

◆Optoelectronic devices are used between channels and they are completely isolated.

◆Provide standard 4-20mA for transmitter output

**● Software**

◆Use password to protect configuration data.

◆Easy menu configuration, which can configure freely and display the engineering tag number and engineering units.

◆Engineering quantities display wide range of values. It can show five digits: -9999 ~ 19999, and it also supports the display of vacuum scientific notation.

◆Indicate the low low alarm, low alarm, high alarm, high high alarm of all channel simultaneously. It can record up to recent 15 alarms.

◆Each channel all supports flow accumulation function, and provides hourly report, 8-hour shift report, 12-hour shift report, daily and monthly reports and other reports.

◆Trend display mode can select horizontal trend or vertical trend.

◆4 groups of trend combination are provided, and each group can be free to choose channel, free and the color of trends.

◆It has a powerful T6 input method which is easy to operate. It supports numbers,characters, special symbols, subscripts and superscripts input, etc.

**●Communication**

◆Standard serial communication interface: RS-485 or RS-232C.

◆It supports the standard Modbus-RTU communication protocol, providing a variety of data types, such as the percentage, engineering quantities, accumulation and so on. In addition to supporting our company's data management software, it also supports some popular professional configuration software, such as the iFIX, MCGS, etc.

◆Use USB2.0 interface for transfer storage and backup of history records. It can support maximum 8G USB flash drives.

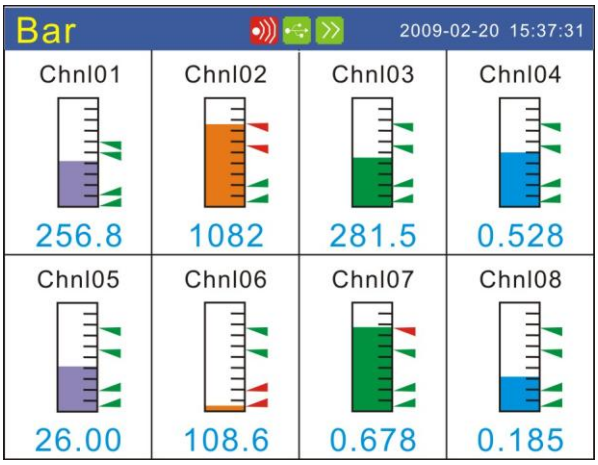
◆It supports the FAT32 file system. Windows can automatically identify the backup data files without format conversion.

◆It can connect with an external micro-printer, so you can manually print data and trends, and automatically print real-time on a regular basis to meet the needs of the user to print on the filed.

## Display screen

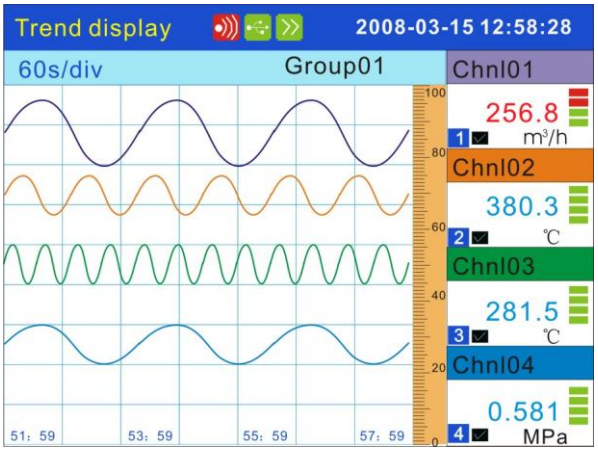

**Digital display**

In addition to displaying the test values, digital display can also display the tag number of channels, industrial units, alarm status, and accumulation information.



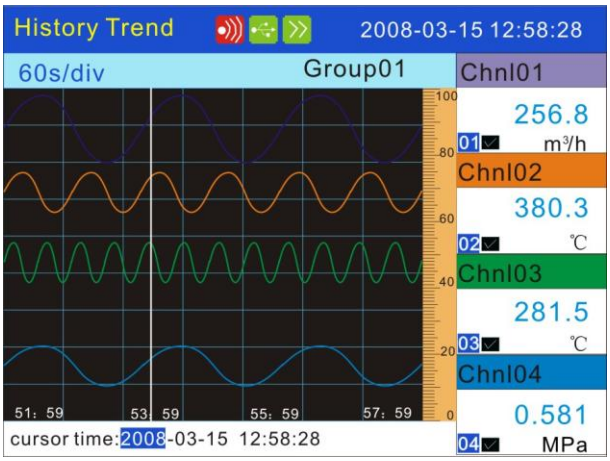

**Bar graph display**

It is convenient and visualized to use bar graph to display the test value.
Meantime, it also displays the tag number of channels, industrial units and alarm state information.




**Trend display**

Horizontal and vertical display type can be selected.
It can be freely combined for the displayed trends and the trend colors.




**Historical trend display**

It can reappear the historical data stored in memory.
Horizontal and vertical display types can be selected.


**Alarm information display**

Display the information of the latest channel alarm time, the cancellation alarm time.

## Main Specifications

### General Specifications

**●Structure**

Installation: Install the embedded instrument panel (vertical instrument panel). It is allowed a maximum 30 degrees tilt back in installation.
Dashboard thickness:2-26mm
Dimensions: 144 (W) * 122 (H) * 220 (D) mm
Weight: 4kg

**●Input section**

Input points: 1-12 channels, 16 channel
Measuring period: 1 second

Input Type:

| Input | Type | Measuring range |
|---|---|---|
| Current | 10m A | 0.00～10.00m A |
| | 20m A | 4.00～20.00m A |
| Voltage | 20m V | 0.00～20.00m V |
| | 100m V | 0.00～100.00m V |
| | 5V | 0.000～5.000V |
| | 10V | 0.000～10.000V |
| Resistance | 350Ω | 0.0～350.0Ω |
| RTD | Cu50 | -50.0～140.0$^0$C |
| | Cu53 | -50.0～140.0$^0$C |
| | BA1 | -100.0～600.0$^0$C |
| | BA2 | -100.0～600.0$^0$C |
| | Pt100 | -200.0～650.0$^0$C |
| Thermocouple | B | 500～1800 |
| | S | 0～1600 |
| | K | 0～1300 |
| | E | 0～1000 |
| | J | 0～1000 |
| | R | 0～1600 |
| | N | 0～1300 |
| | T | 0～380 |
| | WRe5-26 | 0～1800 |
| High Temperature Radiometer | F1 | 700～2000 |
| | F2 | 700～2000 |
| Frequency | Voltage | 0～10000Hz |

**●Display section**

Displayer: 5.6 inch TFT color LCD (320 * 234 points)

Note: Because some LCD displayers display or do not work for a long time, there will be changes in brightness. This is caused by the liquid crystal characteristics, and the displayer is not damaged.

Display Group:

Display groups: 3 groups (1 ~ 12 channels), 4 groups (16 channels)

The number of channels which be can set: 4 channels

Display color: 256 colors

Channel tag number: 10 letters (numbers)

Channel Unit: 7 letters (numbers)

Status display: Display the screen name, card status, alarm status, USB device identification, recycling display signs

Display screen: Measuring data display(overview, digital display, bar graph display, the trend display), the historical trend display, the information display (alarm information, the accumulative reports), functional screen (data backup, printing)

Overview: Display data and alarm status in all of the measuring channel.
Digital Display Update rate: 1 second
Trend display: vertical or horizontal
History trend: it can reproduce the data stored in memory
1/2/4/8/16/32 times can be magnified.
Alarm Information: it can totally display 15 records

**●Storage function**

External storage
Media: USB flash drives
Format: FAT32
Mode: File
Capacity: Maximum 8G

Internal storage
Media: Flash Memory
Format: Binary save
Mode: Continuous recording
Capacity:

1～12 channel

| **Recording interval** | **Storage time** |
|---|---|
| 1 second | 3 days |
| 2 seconds | 6 days |
| 5 seconds | 15 days |
| 10 seconds | 30 days |
| 15 seconds | 45days |
| 30 seconds | 90 days |
| 1 minute | 180 days |
| 2 minutes | 360 days |
| 4 minutes | 720 days |

16 channels

| **Recording interval** | **Storage time** |
|---|---|
| 1 second | 40 hours |
| 2 seconds | 3 days |
| 5 seconds | 8 days |
| 10 seconds | 16 days |
| 15 seconds | 24 days |
| 30 seconds | 48 days |
| 1 minute | 96 days |
| 2 minutes | 192 days |
| 4 minutes | 384 days |

**● Alarm function**

Set numbers: it can be set up to 4 alarms per channel.

Alarm types: high high limit alarm, high limit alarm, low limit alarm and low low limit alarm.

Delay Alarm: it can be set in the parameter settings, and all alarms use the same setting.

Setting range: 0 ~ 10 seconds

Display: when an alarm occurs, the display screens of measuring data display alarm status.

**●About the clock**

Clock: Hardware clock. It can keep running in case of power-down.

Operating Range: 2001 ~ 2099

Clock Accuracy: ± 10ppm (0 ~ 50 ℃), not including the delayed error (1 sec) caused by turning on the power.

**● Power supply**

Voltage: 220VAC

Voltage range: 85VAC ~ 265VAC

Frequency: 50Hz

Power consumption: Max 30W (including optional function)

**●Normal operating conditions**

Power Supply Voltage: 220VAC

Power frequency: 50Hz

Ambient temperature: 0-50 ℃

Humidity: 0% -85% (non-condensing)

Installation location: indoor

## Additional Specifications

**●Alarm output relay (/ A6, / A8, /A 12)**

Output points: it can be selected from 12 and 24 points.

**●Communication function (/ C2, / C3)**

Media: RS-232 (/ C2) or RS-485 (/ C3)

Protocol: Modbus-RTU (slave) protocol

Communication rate: 1200/2400/4800/9600/19200/38400/57600

**●Print function (/ C4)**

Printer: Panel-type micro printer

Print content: real-time data, historical data, accumulative reports

Printing method: manual print, regular print

**●Analog output (/ T1, / T2, / T 3, / T4)**
Signal type:4-20mA
Output points: it can be selected from 1- 4 points.
Output type: transmission output of the measuring channels.
Maximum load: 750Ω
Note: VX6116 has no analog output function.

**●24VDC transmitter power output (/ TP 4)**
Output Voltage: 24VDC
Rated output current: 4 ~ 20mADC
Maximum output current: 65mADC (over -current of protection operation current: about 90mA)

**●USB Interface (/ U)**
USB interface specification: it meets the Rev2.0 standards, host function
Interface Number: 1 (front)
The device which can be connected: USB Disk
**● Accumulative / reporting (/ L)**
Accumulated points: same as the number of input channels, and each input channel can be accumulative.
Accumulative range: 0 ~ 999,999,999
Report Type: hourly, 8-hour shift report, 12-hour shift report, daily and monthly report
Report Length:

| **Report Type** | **The length of time** |
|---|---|
| Hour report | 16 days |
| 8 –hour shift report | 128 days |
| 12 –hour shift report | 192 days |
| Daily and Monthly report | 1 year |

## Selection Table

### The Selection Table (A series) of Paperless Recorder VX6100 Series

| Type | Function code | Specification code | Specifications |
|---|---|---|---|
| VX6101 | | | Signal input 1 *1 |
| VX6102 | | | Signal input 2 *1 |
| VX6103 | | | Signal input 3 *1 |
| VX6104 | | | Signal input 4 *1 |
| VX6105 | | | Signal input 5 *1 |
| VX6106 | | | Signal input 6 *1 |
| VX6107 | | | Signal input 7 *1 |
| VX6108 | | | Signal input 8 *1 |
| VX6109 | | | Signal input 9 *1 |
| VX6110 | | | Signal input 10 *1 |
| VX6111 | | | Signal input 11 *1 |
| VX6112 | | | Signal input 12 *1 |
| Function type | R | | Common recording function |
| Additional specifications | | /F4 | Frequency input 4 *2*3 |
| | | /F8 | Frequency input 8*2*3 |
| | | /F12 | Frequency input 12*2*3 |
| | | /FB4 | Frequency input 4，12VDC isolated power distribution per channel *2*3 |
| | | /FB8 | Frequency input 8，12VDC isolated power distribution per channel *2*3 |
| | | /FB12 | Frequency input 12，12VDC isolated power distribution per channel *2*3 |
| | | /FC4 | Frequency input 4，24 VDC isolated power distribution per channel *2*3 |
| | | /FC8 | Frequency input 8，24 VDC isolated power distribution per channel *2*3 |
| | | /FC12 | Frequency input 12，24 VDC isolated power distribution per channel *2*3 |
| | | /T1 | Analog output 1 *4 |
| | | /T2 | Analog output 2 *4 |
| | | /T3 | Analog output 3 *4 |
| | | /T4 | Analog output 4 *4 |
| | | /A6 | Alarm output relay 6 points *5 |
| | | /A12 | Alarm output relay 12 points *5 |
| | | /C2 | RS232 communication *6 |
| | | /C3 | RS485 communication *6 |
| | | /C4 | RS232 communication / printing *6*7 |

| | | |
|---|---|---|
| Additional specifications | /U | USB interface |
| | /L | Accumulation/ Report |
| | /TP4 | 24VDC transmitter power output (4 loops) |

* 1. The Number of signal channels is the total number of channels for the analog input and frequency input.
* 2. / F4, / F8, / F12, / FB4, / FB8, / FB12, / FC4, / FC8, / FC12 can not be specified at the same time.
* 3. It can not specify / F4, / F8, / F12, / FB4, / FB8, / FB12, / FC4, / FC8, / FC12 for VX6100C series.
* 4. / T1, / T2, / T3, / T4 can not be specified at the same time.
It can not specify / T1, / T2, / T3, / T4 for the VX6109, VX6110, VX6111, VX6112.
It can not specify / F4, / FB4, / FC4 and / T1, / T2, / T3, / T4 at the same time for the VX6105, VX6106, VX6107, VX6108.
Analog output only supports 4-20mA signal output.
* 5. / A 6, / A 12 can not be specified at the same time.
* 6. / C2, / C3, / C4 can not be specified at the same time.
* 7. Only supports for Pangu-specific micro-printer.

## Accessories (sold separately)

| Product | Type | Specification |
|---|---|---|
| U disk | 860204 | 1GB |
| | 860205 | 2GB |
| | 860206 | 4GB |
| Communication cable | 862003 | RS232 communication connection cable (1.5m) |
| | 862004 | RS485 communication connection cable (1.5m) |
| Communication converter module | 862101 | RS232/RS485 conversion module |
| Power Filter | 863101 | 220VAC/1:1/50W |
| Software | 864004 | Data Management 4 : data management software |
| Software | 864801 | MDMR multi-machine data management software |

**Selection Tables (A series) of Paperless Recorder VX6116 Series**

| Type | Function code | Specification code | Specifications |
|---|---|---|---|
| VX6116 | | | Signal input 16*1 |
| Function type | R | | Common recording function *2 |
| Additional specifications | | /F8 | Frequency input 8 *3 |
| | | /F16 | Frequency input 16 *3 |
| | | /FB8 | Frequency input 8 channel， 12VDC isolated power distribution per channel *3 |
| | | /FB16 | Frequency input 16 channel， 12VDC isolated power distribution per channel *3 |
| | | /FC8 | Frequency input 8 channel， 24 VDC isolated power distribution per channel *3 |
| | | /FC16 | Frequency input 16 channel， 24 VDC isolated power distribution per channel *3 |
| | | /A8 | Alarm output relay 8 points |
| | | /C2 | RS232 communication *4 |
| | | /C3 | RS485 communication *4 |
| | | /C4 | RS232 communication / printing *4*5 |
| | | /U | USB interface |
| | | /L | Accumulation / Report |
| | | /TP4 | 24VDC transmitter power output (4 loops) |

* 1. The number of signal channels is the total channel number for the analog input and frequency input.
* 2. If the recording interval is 1 second, the storage is 40 hours; the rest can be calculated by analogy.
* 3. / F8, / F16, / FB8, / FB16, / FC8, / FC16 can not be specified at the same time.
* 4. / C2, / C3, / C4 can not be specified at the same time.
* 5. Only support for Pangu-specific micro-printer.

## Accessories (sold separately)

| Product | Type | Specification |
|---|---|---|
| U disk | 860204 | 1GB |
| | 860205 | 2GB |
| | 860206 | 4GB |
| Communication cable | 862003 | RS232 communication connection cable (1.5m) |
| | 862004 | RS485 communication connection cable (1.5m) |
| Communication converter module | 862101 | RS232/RS485 conversion module |
| Power Filter | 863101 | 220VAC/1:1/50W |
| Software | 864004 | DataManagement 4 data management software |
| Software | 864801 | MDMR multi-machine data management software |

## Installation size （unit：mm）