

VR18 Paperless Recorder



6.1" Color TFT LCD with 640x480 pixels resolution

The Maximum Channels :

18 isolated analog input channels

Plug & Play Supported I/O Cards, 6 Slots

The High Flexibility :

User configurable I/O card

Expandable modular architecture

Flexible screen configuration

User-Friendly :

Soft keys coupled with interactive dialog simplify

setup & operation procedures

Easy - to - access function keys

Infrared Detector :

Shut off LCD automatically to prolong LCD life

and save power while nobody near by

Save Space :

Only 174 mm (6.9") depth behind panel

Various Display Formats :

Vertical trend, Horizontal trend,

Bar Graph, Numerical or mixed

Save Data in Flash ROM,

Compact Flash Card or PC

Communication :

Standard Ethernet and optional RS-232/422/485

The Highest Accuracy :

18-bit A-D analog input, 15-bit D-A analog output.

Fast Sampling Rate :

Within 200 msec for all channels,

Programmable Filter or Moving Average Sampling Method

Statistics with Instant, Average, Min./Max. Values

Programmable Alarms and Messages available

Portable / Bench Top Assembly Kit available



12 SOFT KEYS FOR EASY OPERATION

VR18 is the World First paperless recorder of the same size with the highest resolution (true VGA , 640x480 pixels), infrared detector, 18 channels, plug & play I/O card, high flexibility, the most user - friendly and the shortest depth. In chemical plant, food & beverage plant, petrochemical plant, semiconductor plant, metal alloy, automotive plant, environmental monitoring or laboratory, VR18 can be used to monitor, record, evaluate the processes in the plants.

The user can access data on the screen as well as on site from a remote place via RS-232, RS-485, RS-422 serial interface or Ethernet networking. The historical data can be stored in flash ROM, Compact Flash Card, or collected in a remote host PC for data evaluation and print-out.

Panel Mounted Style

6.1" color TFT LCD 640x480 pixels resolution

Infrared detector protect LCD & save power



Rear Terminals

standard Ethernet and optional RS-232/422/485



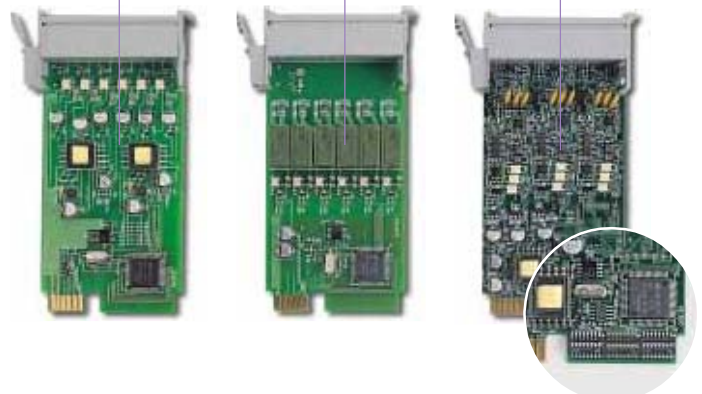
6 SLOTS for Plug & play I/O cards, maximum 18 analog input or mixed with analog & digital I/O cards

Input & Output Cards

Digital input

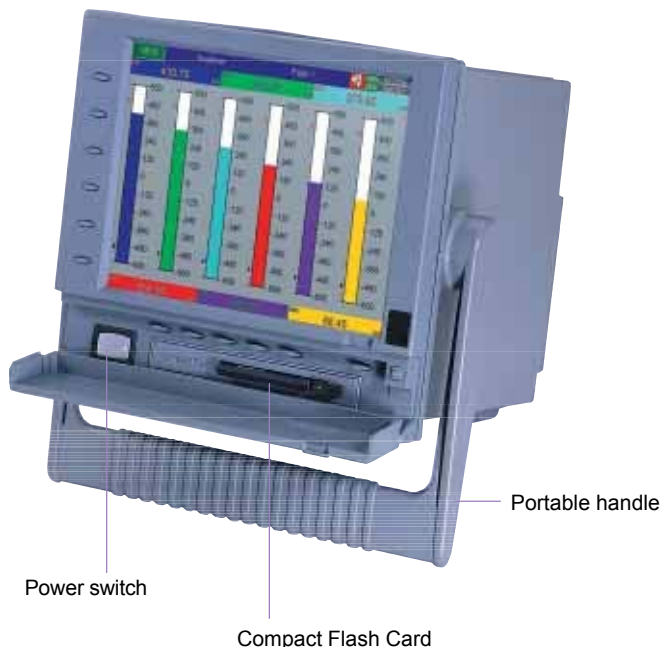
Digital output (6 alarms)

Analog

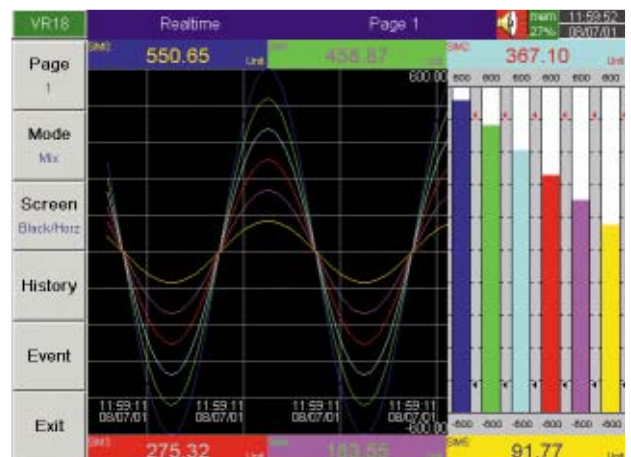


Configure input by DIP switches

Bench Top / Portable Style

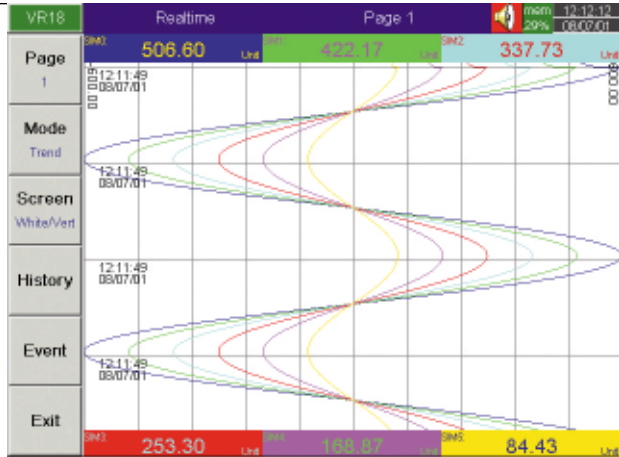


Mixed Mode



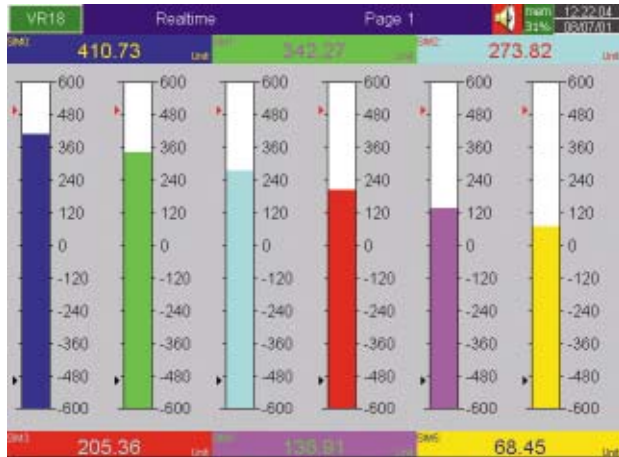
- View max. 6 mixed real time data trends horizontally.
- Display data in "Bars" and "Digits" together with mixed "Trends".
- Recognize data trends easily by different colors and tag names.
- Switch to other configured pages easily by "Page" function key.
- Display current "Time/Date" information.
- Remind the user of "Alarm" or "Memory Full".

Trend Mode



- View max. 6 real time data trends vertically.
- Recognize data trends easily by different colors and tag names.
- Switch to other configured pages easily by "Page" function key.
- Display current "Time/Date" information.
- Remind the user of "Alarm" or "Memory Full".

Bar Graph Mode



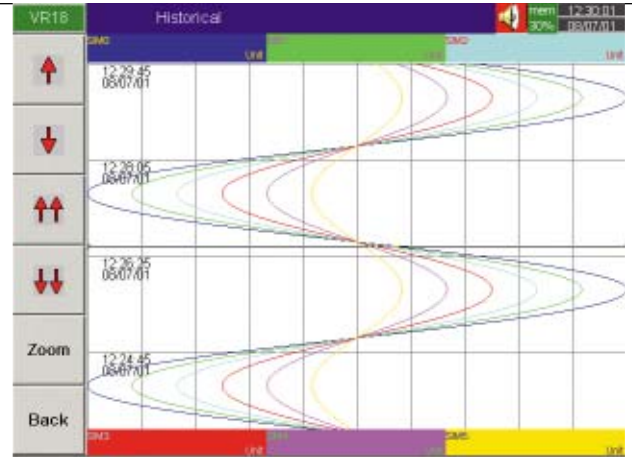
- View max. 6 real time data in bar graphs.
- Scale individually by user in "configuration".
- Display data value and tag name in different colors together with each bar graph.
- Mark "Hi/Lo" alarm limits.
- Display current "Time/Date" information.
- Remind the user of the "Alarm" or "Memory Full".

Numerical Mode



- View max. 6 real time data in numbers.
- Display data value and tag name in different color.
- Mark "Hi/Lo" alarm limits.
- Display current "Time/Date" information.
- Remind the user of the "Alarm" or "Memory Full".

Historical Mode



- Display max. 6 sets of historical data simultaneously.
- View desired data section by ? ?=C=? ? function keys.
- Access precise data value at a point selected by moving the "ruler".
- "Zoom" to expand/contract the display time span.
- View historical data trends and their respective data values.
- Recognize trends easily by different colors and individual tag names.

Alarm List

VR18	Event/Alarm List					
	Ack	Type	Source	Active Time	Clear Time	Status
3		Event	PW ON	2001/6/7 12:21:37		
4		LoAlarm	SM5	2001/6/7 12:21:41	2001/6/7 12:25:10	Cleared
5		LoAlarm	SM12	2001/6/7 12:21:41	2001/6/7 12:25:44	Cleared
6		LoAlarm	SM18	2001/6/7 12:21:41	2001/6/7 12:25:5	Cleared
7		HiAlarm	SM0	2001/6/7 12:22:12	2001/6/7 12:25:3	Cleared
8		HiAlarm	SM0	2001/6/7 12:25:33	2001/6/7 12:29:34	Cleared
9		HiAlarm	SM18	2001/6/7 12:25:48	2001/6/7 12:30:10	Cleared
10		HiAlarm	SM5	2001/6/7 12:26:35	2001/6/7 12:29:11	Cleared
11		HiAlarm	SM12	2001/6/7 12:26:45	2001/6/7 12:29:11	Cleared
12		LoAlarm	SM12	2001/6/7 12:29:12	2001/6/7 12:31:5	Cleared
13		HiAlarm	SM6	2001/6/7 12:29:57	2001/6/7 12:31:5	Cleared
14		LoAlarm	SM0	2001/6/7 12:30:38	2001/6/7 12:31:15	Cleared
15		LoAlarm	SM18	2001/6/7 12:30:52	2001/6/7 12:31:51	Cleared
16		HiAlarm	SM12	2001/6/7 12:31:5	2001/6/7 12:31:47	Cleared
17		LoAlarm	SM5	2001/6/7 12:31:38	2001/6/7 12:31:55	Cleared
18		LoAlarm	SM12	2001/6/7 12:31:48	2001/6/7 12:33:27	Cleared
19		HiAlarm	SM0	2001/6/7 12:32:16	2001/6/7 12:34:6	Cleared
20		HiAlarm	SM18	2001/6/7 12:32:32	2001/6/7 12:34:6	Cleared
21		HiAlarm	SM5	2001/6/7 12:33:16	2001/6/7 12:34:6	Cleared
22		HiAlarm	SM12	2001/6/7 12:33:28	2001/6/7 12:35:7	Cleared
23		LoAlarm	SM0	2001/6/7 12:34:6	2001/6/7 12:37:7	Cleared
24		LoAlarm	SM18	2001/6/7 12:34:12	2001/6/7 12:37:7	Cleared
25		LoAlarm	SM5	2001/6/7 12:34:58	2001/6/7 12:37:7	Cleared
26		LoAlarm	SM12	2001/6/7 12:35:8	2001/6/7 12:37:7	Cleared
27		HiAlarm	SM18	2001/6/7 12:37:19		Alarm
28		LoAlarm	SM0	2001/6/7 12:37:19		Normal
29		LoAlarm	SM18	2001/6/7 12:37:31		Alarm
30		LoAlarm	SM5	2001/6/7 12:37:31		Normal

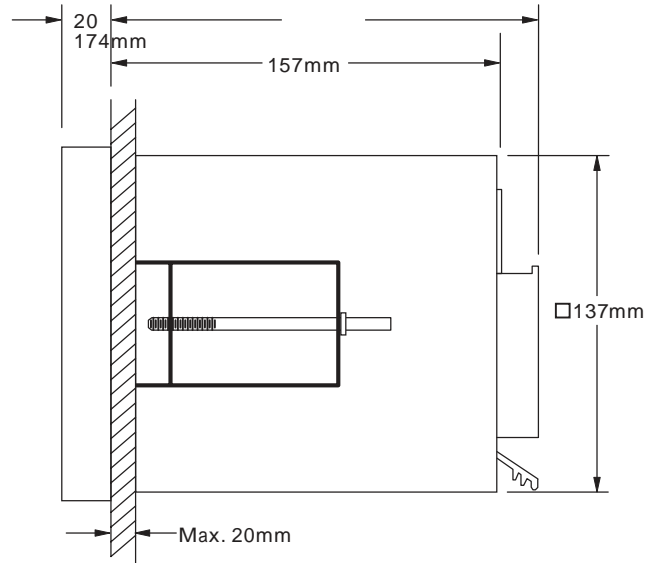
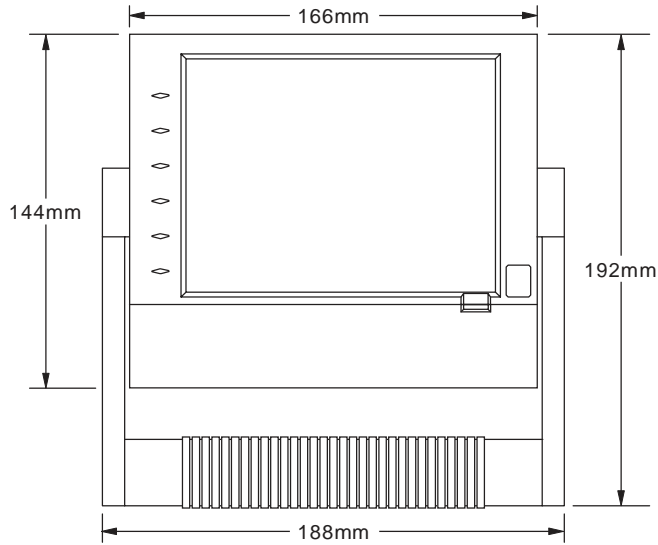
- List all the alarm records clearly with useful information .
- Browse through the alarm list or "acknowledge" alarm easily by function keys on the vertical bar.
- Remind the user of the alarm status in different colors.

Configuration Mode

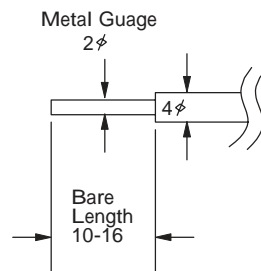
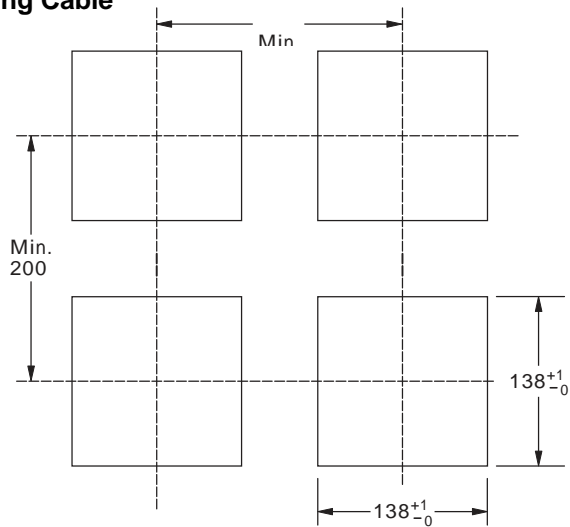
- Configure pen (input/output, pen name, event, job.....)
- Configure page (color, pen, decimal, pen width.....)
- Configure timer.
- Configure instrument (storage media, display, communication, time/date....)

INSTALLATION

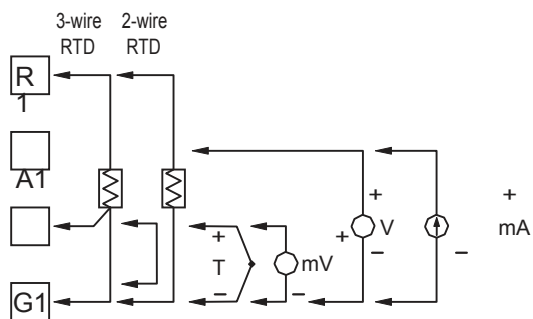
Mechanical



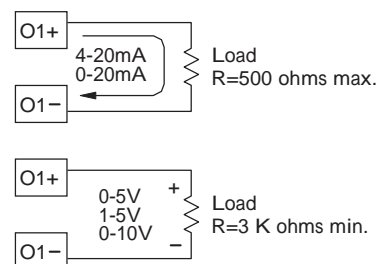
Panel Cutout Wiring Cable



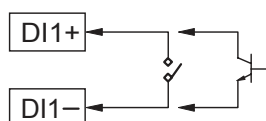
Analog Input Card (AI181, AI182, AI183)



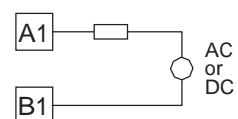
Analog Output Card (AO181)



Digital Input Card



Digital Output Card (DO181)



SPECIFICATIONS

Power

90-264VAC, 47-63Hz, 60VA, 30W maximum
11-18 or 18-36 VDC 60VA, 30W maximum

Display

6.1" TFT LCD, 640X480 pixel resolution, 256 colors

Memory

Storage Memory on board: 8MB.
CF Card: 16MB standard.
Optional 64,128MB

Analog Input Card (AI181, AI182, AI183)

Resolution: 18 bits

Sampling Rate: 5 times/second

Maximum Rating: -2 VDC minimum, 12 VDC maximum
(1 minute for mA input)

Temperature Effect: $\pm 1.5 \mu\text{V}/^\circ\text{C}$ for all inputs except mA input
 $\pm 3.0 \mu\text{V}/^\circ\text{C}$ for mA input

Sensor Lead Resistance Effect:

T/C: $0.2 \mu\text{V}/\text{ohm}$

3-wire RTD: $2.6\text{C}/\text{ohm}$ of resistance difference of two leads

2-wire RTD: $2.6\text{C}/\text{ohm}$ of resistance sum of two leads

Burn-out Current: 200nA

Common Mode Rejection Ratio (CMRR): 120dB

Normal Mode Rejection Ratio (NMRR): 55dB

Isolation Breakdown Voltage among channels: 430VAC min.

Sensor Break Detection:

Sensor open for TC,RTD and mV inputs,
below 1 mA for 4-20mA input,
below 0.25V for 1-5V inputs,
unavailable for other inputs.

Sensor Break Responding Time:

Within 10 seconds for TC, RTD and mV inputs,
0.1 second for 4-20 mA and 1-5V inputs.

Characteristics:

Type	Range	Accuracy @25°C	Input Impedance
J	-120°C - 1000°C (-184°F - 1832°F)	$\pm 1^\circ\text{C}$	2.2M Ω
K	-200°C - 1370°C (-328°F - 2498°F)	$\pm 1^\circ\text{C}$	2.2M Ω
T	-250°C - 400°C (-418°F - 752°F)	± 1	2.2M Ω
E	-100°C - 900°C (-148°F - 1652°F)	$\pm 1^\circ\text{C}$	2.2M Ω
B	0°C - 1820°C (32°F - 3308°F)	$\pm 2^\circ\text{C}$ (200°C - 1820°C)	2.2M Ω
R	0°C - 1767.8°C (32°F - 3214°F)	$\pm 2^\circ\text{C}$	2.2M Ω
S	0°C - 1767.8°C (32°F - 3214°F)	$\pm 2^\circ\text{C}$	2.2M Ω
N	-250°C - 1300°C (-418°F - 2372°F)	$\pm 1^\circ\text{C}$	2.2M Ω
L	-200°C - 900°C (-328°F - 1652°F)	$\pm 1^\circ\text{C}$	2.2M Ω
PT100 (DIN)	-210°C - 700°C (-346°F - 1292°F)	$\pm 0.4^\circ\text{C}$	1.3K Ω
PT100 (JIS)	-200°C - 600°C (-328°F - 1112°F)	$\pm 0.4^\circ\text{C}$	1.3K Ω
mV	-8mV - 70mV	$\pm 0.05\%$	2.2M Ω
mA	-3mA - 27mA	$\pm 0.05\%$	70.5 Ω
0~1V	-0.12 - 1.15V	$\pm 0.05\%$	32K Ω
0~5V	-1.3V - 11.5V	$\pm 0.05\%$	332K Ω
1~5V	-1.3V - 11.5V	$\pm 0.05\%$	332K Ω
0~10V	-1.3V - 11.5V	$\pm 0.05\%$	332K Ω

Digital Input Card (DI181)

Channels: 6 per card

Logic Low: -30V minimum, 0.8V maximum.

Logic High: 2V minimum, 30V maximum

External Pull-down Resistance: 1K Ω

maximum **External pull-up Resistance:** 1.5M Ω

Digital Output Card (DO181)

Channels: 6 per card

Contact Form: N.O. (form A) .

Relay Rating: 5A/240 VAC, life cycles 200,000 for resistive load.

COMM Module (CM181)

Interface: RS-232 (1 unit), RS-485 or RS-422 (up to 247 units)

Protocol: Modbus Protocol RTU mode

Address: 1-247

Baud Rate: 0.3~38.4 Kbits/sec.

Data Bits: 7 or 8 bits

Parity Bit: None, Even or Odd

Stop Bit: 1 or 2 bits

Standard Ethernet Communication

Protocol: Mod Bus TCP/IP, 10 BaseT

Auto polarity correction for 10 BaseT

Ports: AUI (Attachment Unit Interface) and

RJ-45 Auto- detect capability

Infrared Detector

Distance: Detect moving human body within 2 meters

Environmental & Physical

Operating Temperature: 5°C to 50°C

Storage Temperature: -25°C to 60°C

Humidity: 20 to 80% RH (non-condensing)

Insulation Resistance: 20 Mohms min. (at 500 VDC)

Dielectric Strength: 3,000VAC 50/60 Hz for 1 minute

Vibration Resistance: 10-55 Hz, 10m/S² for 2 hours

Shock Resistance: 30 m/S² (3g) for operation, 100g for transportation

Dimensions: 166mm(W) x 144mm(H) x 174mm(D) for panel mount

Approval Standards

Safety: UL873 (11'th edition, 1994)

CSA C22.2 No. 24-93

CE: EN61010-1 (IEC1010-1)

Overvoltage category II, Pollution degree 2

Protective Class:

IP 30 front panel, indoor use,

IP 20 housing and terminals

EMC

Emission: EN50081-1, EN61326

(EN55011 class B,

EN61000-3-2, EN61000-3-3)

Immunity: EN50082-2, EN61326

(EN61000-4-2, EN61000-4-3,

EN61000-4-4, EN61000-4-5,

EN61000-4-6, EN61000-4-11,

EN50204)

ACCESSORIES LIST

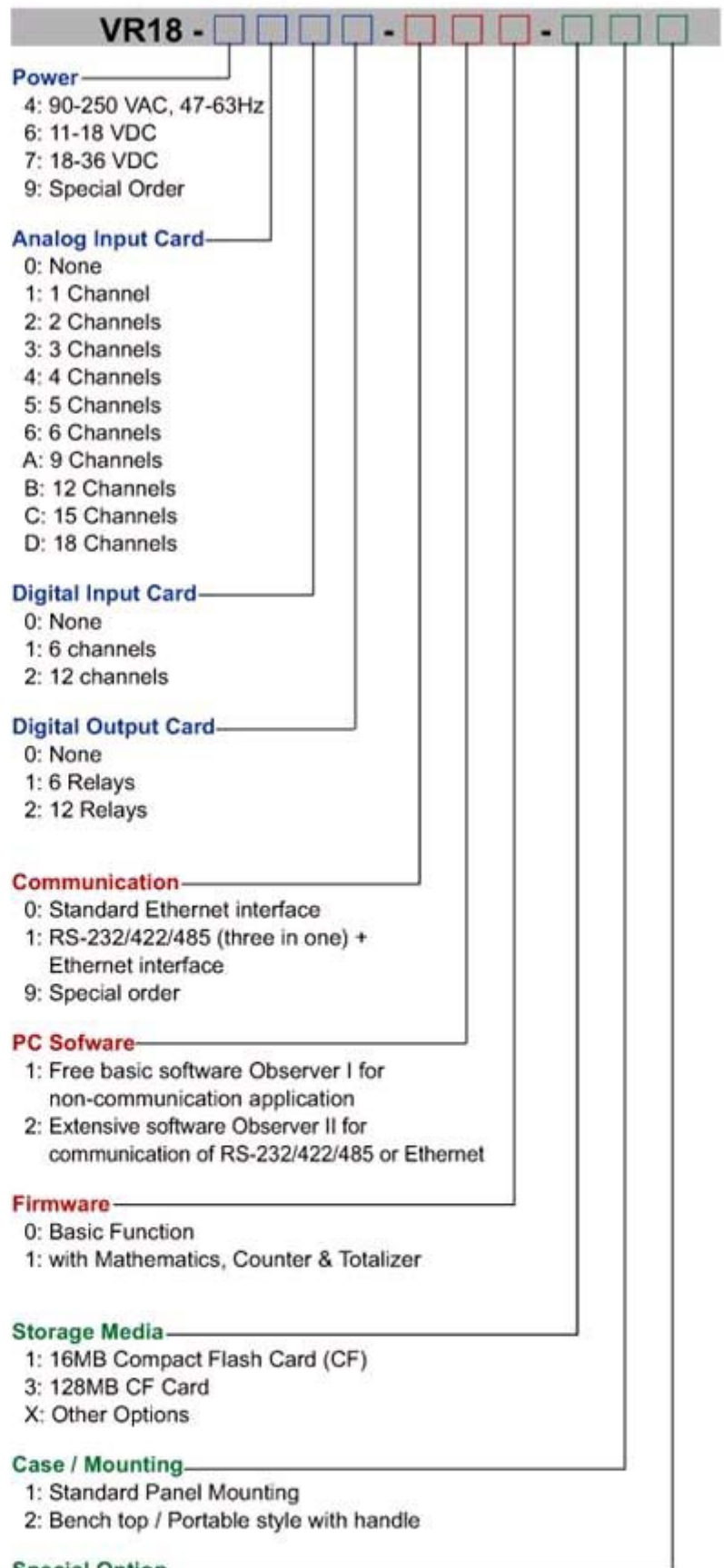
Part No.	Description
AI181	1 - Channel Analog Input Card
AI182	2 - Channel Analog Input Card
AI183	3 - Channel Analog Input Card
AI181V	1 - Channel Voltage Input Card (+ & - voltage only)
AI182V	2 - Channel Voltage Input Card (+ & - voltage only)
AI183V	3 - Channel Voltage Input Card (+ & - voltage only)
DI181	6 - Channel Digital Input Card
DO181	6 - Channel Relay Output Card (AC/DC)
AP181	24VDC Auxiliary Power Supply
CM181	RS - 232/422/485 + Ethernet COMM Module
CM182	Ethernet COMM Module
PM181	90-250 VAC, 47-63Hz Power Supply
PM182	11-18 VDC Power Supply Module
PM183	18-36 VDC Power Supply Module
PM184	90-250VAC, 47-63Hz Power Supply with Power Plug
MK181	Panel Mount Assembly Kit
MK183	Portable Handle/Bench Top Assembly Kit
CF016	16MB Compact Flash Card
CF128	128MB Compact Flash Card
AS181	Basic PC software Observer I
AS182	Extensive PC software Observer II
SC181	Slot cover for empty Slot
AO183	3 - Channel Analog Output Card
BT181	Boot ROM w/o Math, Counter & Totalizer
BT182	Boot ROM w/ Math, Counter & Totalizer
SNA-10A	RS-485 to RS-232 Converter
UMVR181	User's Manual



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 Tel: 886-2-27861299 Fax: 886-2-27861395
 E-mail: sales@brainchild.com.tw
 web site: http://www.brainchild.com.tw

ORDERING CODE



Note: • Standard model without option VR18-4X00-010-110.
 • The rear Slots of the recorder will only accept up to 6 optional cards in any combination.