VR18 Paperless Recorder

VR18 PAPERLESS RECORDER

BrainChild

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

BrainChild

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.

12 SOFT KEYS FOR EASY OPERATION

Rear Terminals

standard Ethernet and optional RS-232/422/485   Power supply

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

Panel Mounted Style

color TFT LCD 640x480 pixels resolution

Infrared detector protect LCD & save power

Input & Output Cards

Digital input   Digital output (6 alarms)   Analog input

Configure input by DIP switches

BenchTop / Portable Style
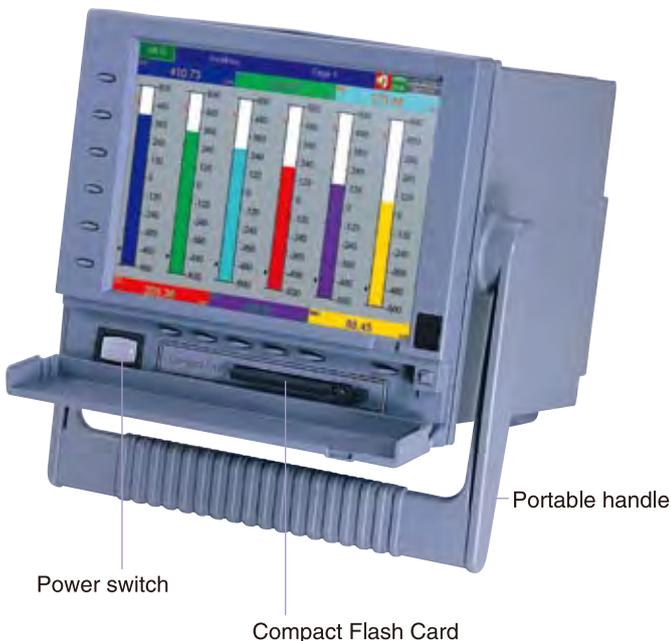
Portable handle

Power switch

Compact Flash Card

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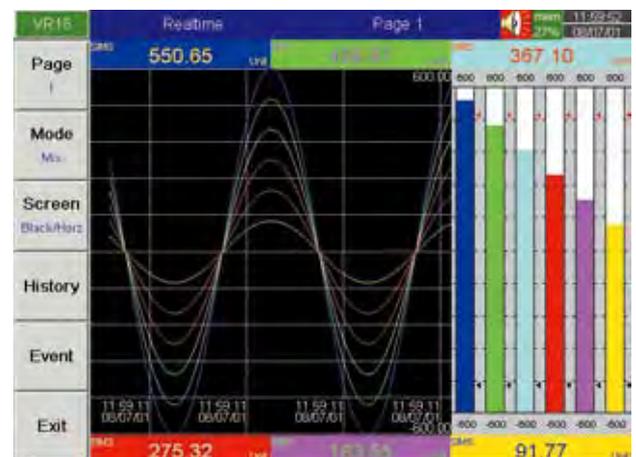
• View max. 6 mixed real time data trends horizontally.
• Display data in "Bars" and "Digits" together with mixed "Trends".
• Recognize data trends easily by different colors and tag names.
• Switch to other configured pages easily by "Page" function key.
• Display current "Time/Date" information.
•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

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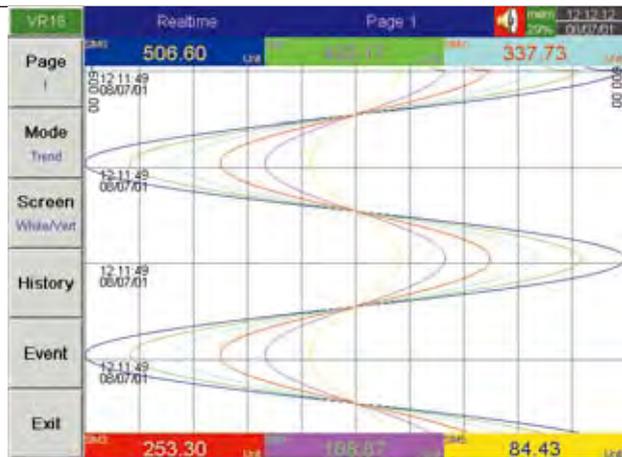
- View max. 6 real time data trends vertically.
- Recognize data trends easily by different colors and tag names.
- Switch to other configured pages easily by "Page" function key.
- Display current "Time/Date"information.
- Remind the user of "Alarm" or "Memory Full"

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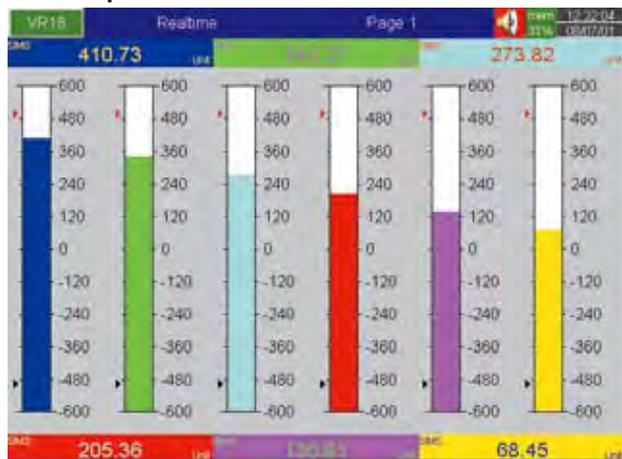
- View max. 6 real time data in bar graphs.
- Scale individually by user in "configuration".
- Display data value and tag name in different colors together with each bar graph.
- Mark "Hi/Lo" alarm limits.
- Display current "Time/Date" information.
- Remind the user of the "Alarm" or "Memory Full".

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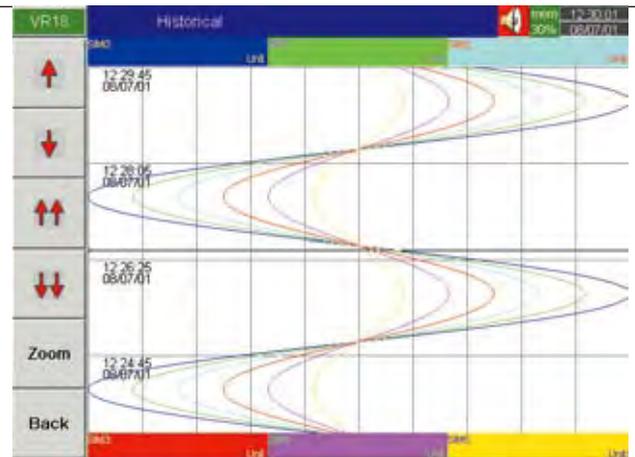
- Display max. 6 sets of historical data simultaneously.
- View desired data section by " ↑ "&" ↓ " function keys.
- Access precise data value at a point selected by moving the "ruler".
- "Zoom" to expand/contract the display time span.
- View historical data trends and their respective data values.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

Alarm List

- 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....)

Mechanical Data
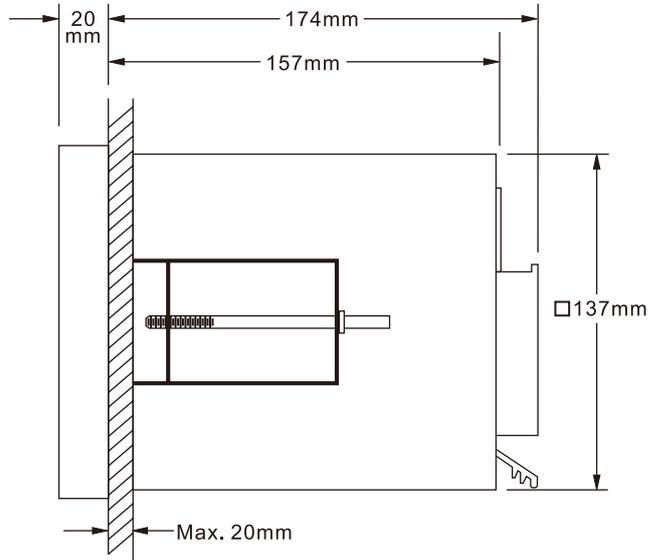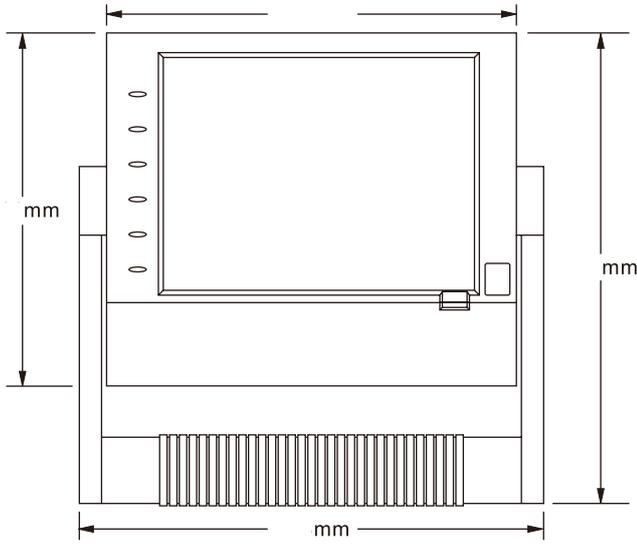
Panel Cutout
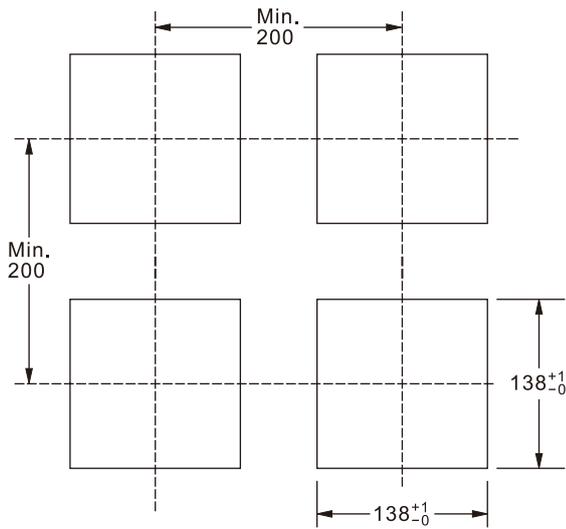
Wiring Cable
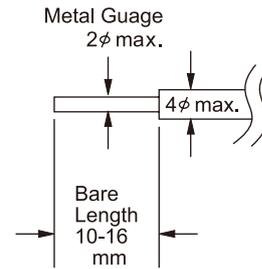
Analog Input Card (AI181, AI182, AI183)
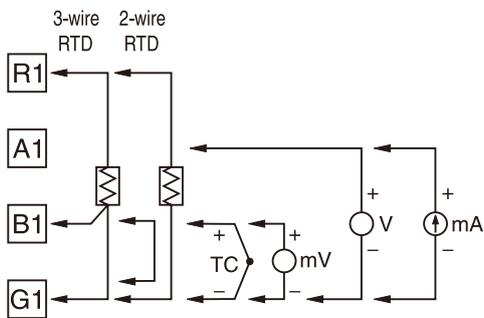
Analog Output Card (AO183I, AO183V)
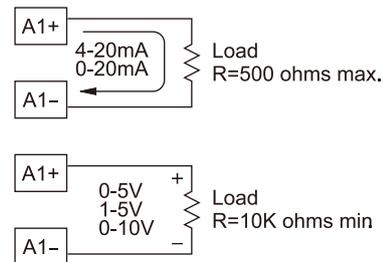
Digital Input Card (DI181)
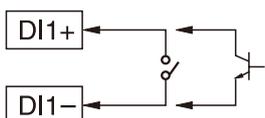
Digital Output Card (DO181)
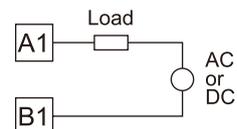
SPECIFICATIONS

Power
90-250VAC or 20-28VAC, 47-63Hz, 60VA, 30W maximum
11-18, 18-36 or 36-72 VDC 60VA, 30W maximum

Display
TFT LCD, 640X480 pixel resolution, 256 colors

Memory
Storage Memory on board: 16MB
CF Card: 1GB standard

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: ±1.5 µV/°C for all inputs except mA input
±3.0 µV/°C for mA input
Sensor Lead Resistance Effect:
T/C: 0.2 µV/ohm
3-wire RTD: 2.6°C/ohm of resistance difference of two leads
2-wire RTD: 2.6°C/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)	±1°C	2.2MΩ
K	-200°C - 1370°C (-328°F - 2498°F)	±1°C	2.2MΩ
T	-250°C - 400°C (-418°F - 752°F)	±1°C	2.2MΩ
E	-100°C - 900°C (-148°F - 1652°F)	±1°C	2.2MΩ
B	0°C - 1820°C (32°F - 3308°F)	±2°C (200°C - 1820°C)	2.2MΩ
R	0°C - 1767.8°C (32°F - 3214°F)	±2°C	2.2MΩ
S	0°C - 1767.8°C (32°F - 3214°F)	±2°C	2.2MΩ
N	-250°C - 1300°C (-418°F - 2372°F)	±1°C	2.2MΩ
L	-200°C - 900°C (-328°F - 1652°F)	±1°C	2.2MΩ
PT100 (DIN)	-210°C - 700°C (-346°F - 1292°F)	±0.4°C	1.3KΩ
PT100 (JIS)	-200°C - 600°C (-328°F - 1112°F)	±0.4°C	1.3KΩ
mV	-8mV - 70mV	±0.05%	2.2MΩ
mA	-3mA - 27mA	±0.05%	70.5Ω
0~1V	-0.12 - 1.15V	±0.05%	32KΩ
0~5V	-1.3V - 11.5V	±0.05%	332KΩ
1~5V	-1.3V - 11.5V	±0.05%	332KΩ
0~10V	-1.3V - 11.5V	±0.05%	332KΩ

Analog Input Card (AI183V)

Type	Range	Accuracy @25°C	Input Impedance
-60~60mV	-62~62mV	±0.1%	2.2MΩ
-2~2V	-2.2~2.2V	±0.3%	332KΩ
-20~20V	-22~22V	±0.1%	332KΩ
-20~20mA	-22~22mA	±0.1%	70.5Ω

Digital Input Card (DI181)
Channels: 6 per card
Logic Low: -5V minimum, 0.8V maximum
Logic High: 2V minimum, 5V maximum
External Pull-down Resistance: 1KΩ maximum
External pull-up Resistance: 1.5MΩ minimum

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

Analog Output Card (AO183I, AO183V)
Output Signal : 4-20mA, 0-20mA (AO183I)
0-5V, 1-5V, 0-10V (AO183V)
Resolution : 15 bits
Accuracy: ±0.05% of Span ±0.0025% / °C
Load Resistance: 0-500 ohms (for current output)
10K ohms minimun (for voltage output)
Output Regulation: 0.01% for full load change
Output Setting Time: 0.1 sec (stable to 99.9 %)
Isolation Breakdown Voltage: 1000VAC min.
Integral Linearity Error: ±0.005% of Span
Temperature Effect: ±0.0025% of Span / °C

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: RJ-45

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: 1350VAC 50/60 Hz for 1 minute
Vibration Resistance: 10-55 Hz, 10m/S^2 for 2 hours
Shock Resistance: 30 m/S^2 (3g) for operation, 100g for transportation

Approval Standards
Safety: UL61010 C-1
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 A,
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, EN61000-4-8,
EN61000-4-11)

ACCESSORIES LIST

Part No.	Description
AI181	1-channel analog input card (Universal except -mA, -V)
AI182	2-channel analog input card
AI183	3-channel analog input card
AI183V	3-channel analog input card (±mA, ±V only)
DI181	6-channel digital input card
DO181	6-channel relay output card
AP181	24VDC auxiliary power supply
CM181	RS-232/422/485 & Ethernet Comm module
CM182	Ethernet Comm module
PM181	90~250 VAC power supply
PM182	11-18 VDC power supply
PM183	18-36 VDC power supply
PM184	90~250 VAC power supply with power plug
PM185	36-72 VDC power supply
PM186	20-28 VAC power supply
MK181	Panel mount assembly kit
MK183	Portable handle/bench top assembly kit
CF102	1GB compact flash card
AS181	Basic PC software Observer I
AS182	Extensive PC software Observer II
SC181	Slot cover for empty slot
AO183I	3-channel analog output card with current output
AO183V	3-channel analog output card with voltage output
BT182	Boot ROM w/ Math, Counter, Totalizer & FDA 21 CFR part11
SNA-10A	RS-485 to RS-232 converter
UMVR181	User Manual

BrainChild Electronic Co., Ltd.
No. 209, Chung Yang Rd., Nan Kang Dist.,
Taipei, 115 Taiwan
Tel: 886-2-27861299   Fax: 886-2-27861395
E-mail : sales@brainchild.com.tw
website : http://www.brainchild.com.tw

Ordering Code:

VR18 – ☐ ☐ ☐ ☐ - ☐ ☐ ☐ - ☐ ☐ ☐

Power
- 4: 90-250 VAC, 47-63Hz
- 5: 20-28VAC, 47-63Hz
- 6: 11-18VDC
- 7: 18-36VDC
- 8: 36-72VDC

Analog input card
- 0: none
- 1: 1 channel with AI181
- 2: 2 channels with AI182
- 3: 3 channels with AI183
- 4: 4 channels with AI181 & AI183
- 5: 5 channels with AI182 & AI183
- 6: 6 channels with AI183
- A: 9 channels with AI183
- B: 12 channels with AI183
- C: 15 channels with AI183
- D: 18 channels with AI183
- G: 3 channels with AI183V
- H: 6 channels with AI183V
- J: 9 channels with AI183V
- K: 12 channels with AI183V
- L: 15 channels with AI183V
- M: 18 channels with AI183V
- *See AI181/2/3 (V) to the left.

Digital input card
- 0: none
- 1: 6 channels
- 2: 12 channels
- 3: 18 channels
- 4: 24 channels
- 5: 30 channels
- 6: 36 channels

Digital output card
- 0: none
- 1: 6 relays
- 2: 12 relays
- 3: 18 relays
- 4: 24 relays

Communication
- 0: standard Ethernet interface
- 1: RS-232/422/485 (three in one)+Ethernet interface

PC software
- 1: free basic software Observer I for non-communication application
- 2: extensive software Observer II for RS-232/422/485 or Ethernet

Firmware
- 1: with Mathematics, Counter , Totalizer & FDA 21 CFR part11 compliance

Storage media
- 6: 1GB compact flash card

Case / Mounting
- 1: standard panel mounting in grey case
- 2: bench top / portable style with handle, power cable for USA, in grey case
- 3: bench top / portable style with handle, power cable for Europe, in grey case

Special option
- 0: none
- 1: 24VDC auxiliary power supply (for transmitter, 6 channels)
- 2: 3-channel current output
- 3: 6-channel current output
- 4: 9-channel current output
- D: 3-channel voltage output
- E: 6-channel voltage output
- F: 9-channel voltage output
- G: panel mounting with rear power plug & Europe power cable
- 5: panel mounting with rear power plug & USA power cable
- 6: panel mounting with front power switch
- 7: 7=1+5, 24VDC auxiliary power supply with rear power plug
- 8: 8=1+6, 24VDC auxiliary power supply with front power switch
- 9: 9=1+5+6, 24VDC auxiliary power supply with rear power plug and front power switch
- X: other options

Note: * Standard model without option VR18-4X00-011-610
       * The rear slots of the recorder will only accept up to 6 optional cards in any combination

2012.02

VR06	Bezpapírový zapisovač	
	1-kanálový	20 300
	3-kanálový	21 800
	6-kanálový	24 000

Cena platí pro standardní provedení:

Napájení 90-250 VAC, X univerzálních analogových vstupních kanálů, bez digitálních vstupů, bez digitálních výstupů, s komunikací Ethernet, se softwarem Observer I, matematické funkce, čítač, totalizér, karta CF 1GB, panelové provedení

Rozšíření		
AI181	Karta analogových vstupů 1-kanálová (na rozšíření)	1 500
AI182	Karta analogových vstupů 2-kanálová (na rozšíření)	2 500
AI183	Karta analogových vstupů 3-kanálová (na rozšíření)	3 500
AO183I	Karta analogových výstupů s proudovým výstupem - 3 kanály	3 000
AO183V	Karta analogových výstupů s napěťovým výstupem - 3 kanály	3 000
DI181	Karta digitálních vstupů - 6 kanálů	2 400
DO181	Karta digitálních výstupů - 6 relé	2 400
CM181	Komunikační modul RS-232/422/485 & Ethernet	1 340
SNA-10A	Převodník RS-485/RS-232	1 500
AS182	PC software Observer II se zobrazením v reálném čase *	2 000
MK183	Bench Top / Přenosné provedení	2 000
AP181	Pomocné napájení 24 VDC pro max. 6 převodníků	1 840

* Základní PC software Observer I pro konfiguraci a čtení dat je standardní součástí dodávky každého zapisovače.

VR18	Bezpapírový zapisovač	
	1-kanálový	26 400
	3-kanálový	27 600
	6-kanálový	29 400
	9-kanálový	37 200
	12-kanálový	41 200
	15-kanálový	45 200
	18-kanálový	49 200

Cena platí pro standardní provedení:

Napájení 90-250 VAC, X univerzálních analogových vstupních kanálů, bez digitálních vstupů, bez digitálních výstupů, s komunikací Ethernet, se softwarem Observer I, matematické funkce, čítač, totalizér, karta CF 1GB, panelové provedení

Rozšíření		
AI181	Karta analogových vstupů 1-kanálová (na rozšíření)	1 500
AI182	Karta analogových vstupů 2-kanálová (na rozšíření)	2 500
AI183	Karta analogových vstupů 3-kanálová (na rozšíření)	3 500
AO183I	Karta analogových výstupů s proudovým výstupem - 3 kanály	3 000
AO183V	Karta analogových výstupů s napěťovým výstupem - 3 kanály	3 000
DI181	Karta digitálních vstupů - 6 kanálů	2 400
DO181	Karta digitálních výstupů - 6 relé	2 400
CM181	Komunikační modul RS-232/422/485 & Ethernet	1 340
SNA-10A	Převodník RS-485/RS-232	1 500
AS182	PC software Observer II se zobrazením v reálném čase *	2 000
MK183	Bench Top / Přenosné provedení	2 000
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