



Paperless Recorder VersaVu

TFT display 6,4"

Web based visualisation and configuration

Measurement data acquisition from 200 ms

4, 8, or 12 universal 16-bit inputs; Class 0,2 %

Up to 12 relay outputs

Channel visualization in up to 8 groups

Storage medium: USB-Stick

Ethernet interface for configuration

RS 485 for Modbus master or Modbus slave

Mathematical functions in realtime

Front protection mode IP 65 / Nema 4X

GENERAL

The Paperless Recorder is a freely configurable, microprocessor-controlled device for measurement, storage, visualization, monitoring, documenting, and evaluating measurement data. Various versions are available, with 4, 8, or 12 universal inputs. Via a Modbus link, the unit can be expanded with 12 additional channels.

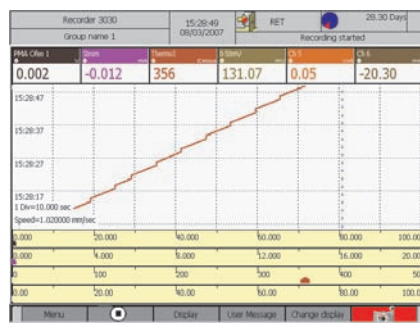
Measured data are buffered in the internal memory, from where they can be exported to a USB stick. By means of a Web-based visualisation the measurement data can be displayed and a first evaluation of the historical data is possible.

The device has been designed for industrial use, and apart from numerous extra functions. It offers the latest communication possibilities. For example, via the Ethernet interface the VersaVu can be configured completely, and the integrated web server permits convenient monitoring. E-mail messaging and FTP functions put a finishing touch to the Ethernet communication concept.

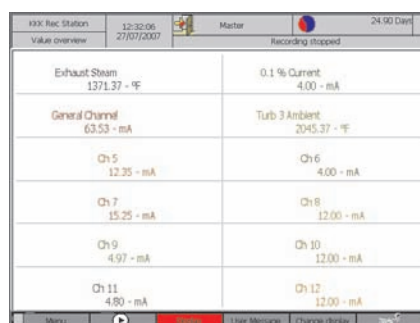
In its immediate automation environment, the VersaVu is also very communicative: a serial interface with Modbus function can be used for slave or master operation.

Another highly important link to the process is the 6,4-inch TFT display with a resolution of 640 x 480 pixels. The display provides excellent readability even at wide angles.

Measurement values can be displayed either as trend curves or bargraphs in horizontal or vertical direction; a numeric display is also possible.



Trend display



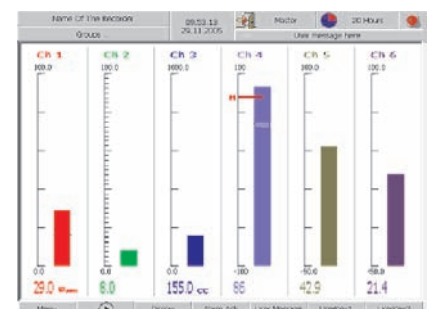
Digital display

The VersaVu features a group manager, with which the different input signals can be assigned freely to a visualization group.

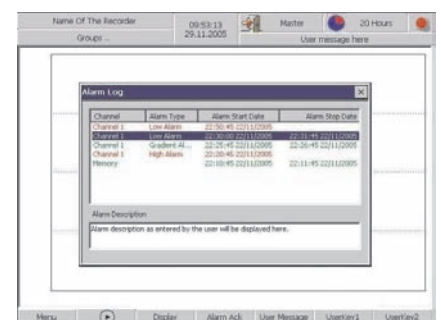
Any input signal can be assigned to several groups. Grouping the inputs helps to improve transparency, and also permits the use of different parameters for every signal within a group.

The VersaVu offers 8 visualization groups, whereby every group can contain up to 12 channels.

Within a visualization group, different displays can be activated.



Bargraph display



Event list

From the horizontal displays, it is also possible to call a historic display of the data stored in the memory.

TECHNICAL DATA

ANALOG INPUTS

General

Programmable sensor type and measurement range.

Within a measurement range, span start and end can be configured freely.

Scanning cycle

all inputs from 200 ms upwards

Resolution: 16 bits

Thermocouples

Input Type	Measurement range
L	-0,1 ... 761,4 °C
J	-200,1...1200,3 °C
K	-240,1...1372,9 °C
N	0 ... 1399,6 °C
S	0 ... 1759 °C
R	0 ... 1759 °C
T	-240 ... 400,5 °C
E	-240 ... 1000 °C
B	100... 1824 °C

Resistance thermometers

Type	Measurement range
Pt 100	-199,9 ... 800,3 °C
Ni 120	-80 ... 260 °C

For all thermocouples and resistance thermometers, the smallest display span is 0,1 °C.

Direct voltage DC

Voltages can be measured and displayed in the following ranges:

Input Type	Measurement range min	Measurement range max
DC Linear 0-50 mV	0 ...	50 mV
DC Linear 10-50 mV	10 ...	50 mV
DC Linear 0-5 V	0 ...	5 V
DC Linear 1-5 V	1 ...	5 V
DC Linear 0-10 V	0 ...	10 V
DC Linear 2-10 V	2 ...	10 V

Direct current

Input Type	Measurement range min	Measurement range max
Current 0 - 20 mA	0 ...	20 mA
Current 4 - 20 mA	4 ...	20 mA

Accuracy and display

The errors specified in the table are referred to the following conditions:

Humidity: 55% ± 10%

Temperature: 23 °C ± 2°C

Supply voltage: 180 to 250 V at 50/60 Hz ± 1%

The VersaVu must have been in operation for at least 30 minutes (warm-up time)

Standard performance

- Measuring accuracy (in %)

DC: +/- 0.1% of Span +/- 1 LSD
 RTD: +/- 0.1% of Span +/- 0.3 deg C
 TC: +/- 0.1% of Span, + 1 deg C for CJC, +0.3 deg C for 0.1 deg C resolution ranges or 1 deg C for 1 degree resolution ranges

Recording accuracy (in resolution of the digital display)

Fastest recording & displaying rates are 1 second. (1 data per sec in file & 1 pix per sec on display).

- Reference junction compensation accuracy
 (This is already addressed under measuring accuracy)

GENERAL INFORMATION

Maximum Input Voltage: DC voltage input (±2 V or less)/thermocouple input (burnout disable), ±10 Vdc

Input resistance: DC voltage, thermocouple input; approximately 1 MΩ

Allowable Signal Source Resistance:

Thermocouple Input (Burnout Disable)/DC voltage input (±2 V or less):

1 kΩ or less

DC Voltage Input (±5 to ±50 V):

100 Ω or less

Resistance Thermometer:

Per wire 10 Ω or less (same resistance for 3 wires)

Input bias current: 10 nA or less

Interference across channels: 120 dB (for 500 Ω input external resistance and 60 V input to other channel)

Noise (50/60Hz power supply) for VDC, RTD and TC input

Maximum common mode noise voltage: 250 VAC rms (50/60 Hz)

Normal mode rejection ratio (NMRR): 40 dB (50/60 Hz ±0.1%)

Common mode rejection ratio (CMRR): 120 dB (50/60 Hz ±0.1%, 500 Ω unbalanced, across minus terminal and ground)

Maximum noise voltage across channels: 250 VAC RMS (50/60 Hz)

Interference across channels: 120 dB (for 500 Ω input external resistance and 60 V input to other channel)

DISPLAY / OPERATION

TFT colour display

Screen diagonal: 6,4 inches

Resolution: 640 x 480 pixels

Selectable operating languages: English (under construction: German, French, Italy and Spain)

The VersaVu is operated via "twist and push button" in the front panel or via the integrated Webserver

Unit configuration is also done via the front or via the USB medium (Option).

DATA STORAGE

Internal data storage: 150MB Flash

Optional external storage:

Data storage will be initiated automatically in a range of 1sec. to 60 min.

Historical data can be downloaded via USB-Stick, Webserver or FTP Transfer.

POWER SUPPLY

Supply voltage: 100..240 VAC

Frequency: 50/60 Hz

(automatic detection)

ENVIRONMENTAL CONDITIONS

Normal operating conditions:

Operating Temperature	Industrial 0 to 55 deg C or 32 to 131 deg F
Operating humidity range	Relative Humidity 30 to 90% non-condensing; no specific pressure range

Warm-up time: 30 minutes

TRANSPORT AND STORAGE CONDITIONS

Temperature: -10...55°C

Humidity: 5...95%, no condensation

Vibration: 10-55 Hz, 10m/ s² for 2 hours

CONFORMITY / SAFETY

Safety and EMC standards

- UL 508 / CE
- -EN 61010-1 (OV II, PD II & Protection Class II)

EMC requirements

- EN 61000-6-2 (EN 50082) and EN 61000-6-4 (EN 50081)
- EN 61326-1

Test conditions

- Dielectric Strength: 3000 VAC, 50/60 Hz for 1 minute - per UL test
- Insulating resistance: 20 MΩ or greater across output and main unit ground (500 VDC)
- Withstand voltage: 500 VAC across output and main unit ground (50/60 Hz; I = 10 mA), for one minute

Signal insulation:

- Between communication terminal : 500 V rms withstand voltage and ground (50/60 Hz, for one minute)
- Across input terminals: 500 VAC (50/60 Hz; I = 10 mA), for one minute

ALARM OUTPUTS

Depending on version, the unit has up to 12 alarm outputs. The outputs are relay contacts rated for 250 VAC (50/60 Hz), 3A. Relay contact capacitance: 250 VDC/0.1 A (resistance load).

RETRANSMISSION OUTPUTS

- Retransmission of up to 6 internal channels to analog outputs.
- The outputs can be configured to unpowered or powered.

Analog Output

Output Range	0-20 or 4-20mA (Configurable thro' HMI)
Resolution	12 bits
Accuracy at 25 °C	+/-0.1%
Temperature Drift	+/- 0.01% / °C
Output current Ripple	1%
Output Load	0 – 650 Ohm
Isolation between Channels	500 V (NA if used with external power supply)
Rise time from 10% to 90%	100mS

SERIAL INTERFACES

The recorder has a RS 485 and Ethernet interface as a standard.

The Ethernet interface can be used for configuration by means of the Webbrowser.

With Modbus operation, the unit can be configured as Modbus master (external channels) or as Modbus slave .

- Ethernet: Modbus TCP
- RS 485: Modbus RTU

When configured as Modbus master, up to twelve additional external channels can be read.

ETHERNET INTERFACE

The Ethernet interface offers the following protocols and functions:

- Timeserver
- E-mail function for sending alarm messages and data.
- Web server function for displaying a standard operating interface on a browser (IE6 or higher).
- FTP client function for automatic data transfer from the recorder to an FTP server.
- Configuration of the unit with the integrated webserver
- Download of the data via browser

MATHEMATICS FUNCTION (OPTION)

The 'Mathematics' function enables up to twelve additional channels to be defined.

The functions include general arithmetic calculations, logic operations, statistical functions, reporting functions, and triggering of automatic sequences.

DIGITAL INPUTS (OPTION)

Depending on version, the VersaVu can be fitted with 8 remote control inputs. These inputs are used to trigger different functions in the unit, e.g.:

- Start / Stop of recording
- Timer reset
- Counter function
- Operating hours counter
- Display / recording of the digital input
- Screen dump
- Operator message

Digital Input

Switching thresholds	
Maximum low level voltage	U _{lmax} < 5V
Minimum high level voltage	U _{hmin} > 15V
Nominal differential Input voltage	24 V DC
Permissible range of inputs	-3 V to + 36 V DC or 0 to 25 VAC
Nominal Input current for U _{in}	5 mA
Permissible cable length to the sensor	100 m
Isolation between channels	500V

BUFFER OVERFLOW (OPTION)

The 'buffer overflow' signal is available as a relay output rated at 250 VAC, 3 A. The signal is triggered at a specified time during recording. It is always available as standard alarm (alarm list)

GENERAL

PROTECTION MODE

To EN 60529
Front IP 65, rear IP 20
NEMA 4X

HOUSING

Sheet steel housing for mounting in a panel cutout.
Panel fixing elements to DIN.

Construction

5.375" H X 5.44" W X 7.0" D (Enclosure)
6.5" H X 7.375 X 1.06" D (Bezel)

Weight:

5.56 lbs without packaging and
7 lbs with packaging

Versa VU

Videographic Recorder

DC= I RC= R

WARR = 2 YR.

VU3 - - 0 0 - 0

INPUT SLOT1

4 Universal Inputs 4

INPUT SLOT2

none 0
4 Universal Inputs 4

INPUT SLOT3

none 0
4 Universal Inputs 4

OUTPUTS

none 0
12 Relay Outputs A

Fixed Character

0 0

TRANSMITTER POWER SUPPLY

none 0
12 Transmitter Power Supply Outputs A

Fixed Character

0

FIRMWARE OPTIONS

none	0
Batch Report	1
Math Functions	2
External Channels	3
Batch + Math	4
Batch + External Channels	5
Math + External Channels	6
Batch + Math + External Channels	7