

*Production lot traceability,
 at your fingertips*

**Pyrotracer[®]
 Vidéo
 C.A 650**



NEW
 4 economical
 limited versions

- 3 analogue channels
- 3 analogue channels + 6 relays
- 6 analogue channels
- 6 analogue channels + 6 relays

"Plug & play" paperless recorder for the traceability needs of the most demanding industry environments. Rapid set-up and ease of use.

Tamper-proof encrypted files for totally secure "Quality" recording.

- Very-high-definition 6.4-inch 256 colour TFT screen
- Up to 18 configurable isolated measurement channels
- Data back-up using 2 GB Compact Flash memory
- 21 CFR part 11 compliance
- Includes as standard Ethernet link + PC processing software

Pyro-Contrôle presents a "plug & play" paperless recorder equipped with an **18-bit converter**, offering **extremely high precision measurements** and a **polling speed of 200 ms per channel!**

With a very high definition 6.4" TFT display screen, and 18 isolated measurement channels, the **Pyrotracer Video** measures up to the most demanding of thermal process industry requirements.

The replacement of conventional recorders by paperless recorders offers the following advantages:

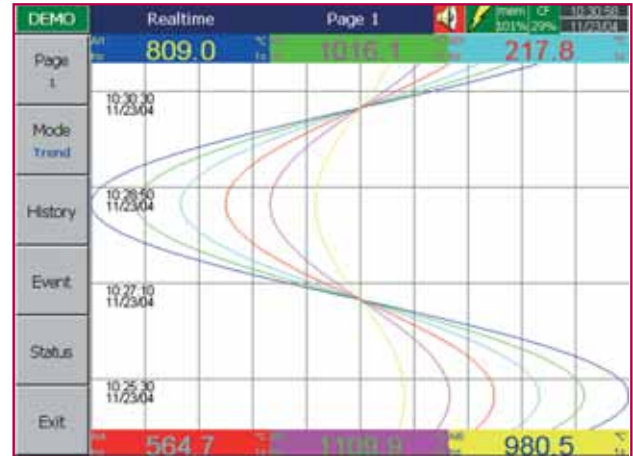
- Simpler maintenance - no longer any need to replace used parts;
- The increased benefits of digital precision over electromechanical precision;
- Computerised processing of data via PC link;
- Remote adjustment and calibration via field bus;
- Possibility of both on-site and remote processing of data.

Whatever the industry - food processing, laboratories & hospitals, chemicals, metallurgy, steel-making, petrochemicals or glass manufacturing - these instruments permit the acquisition, recording & display of the physical quantities of processes, thereby providing on-demand traceability for quality departments; as well as data for testing and calibration, the analysis and development of processes, and their troubleshooting and maintenance.

In addition to the simplicity of access provided by its system of "plug & play" cards, the Pyrotracer Video ensures total security of use, thanks to 18 fully-isolated channels and tamper-proof file encryption. Data is recorded in the instrument's integrated 8MB memory, and automatically transferred to the memory card when the memory use reaches 95%.

With total autonomy of use guaranteed by its 8 MB memory capacity, very-high-definition screen and Windows CE ergonomics, the recorder offers greatly enhanced data representation and analysis capabilities thanks to their direct processing on PC. For this reason, the Ethernet link and data processing software are included as standard. Data may also be accessed via a field bus connected to an RS 232 or RS 485 link.

Trend Mode



- ▶ Vertical or horizontal display of 6 curves in real time
- ▶ Curves identified by colour and process indicators
- ▶ Simplified "Page" display function
- ▶ Permanent date-time display
- ▶ Automatic "Alarm" and "Memory Full" Warning icon

Histogram mode



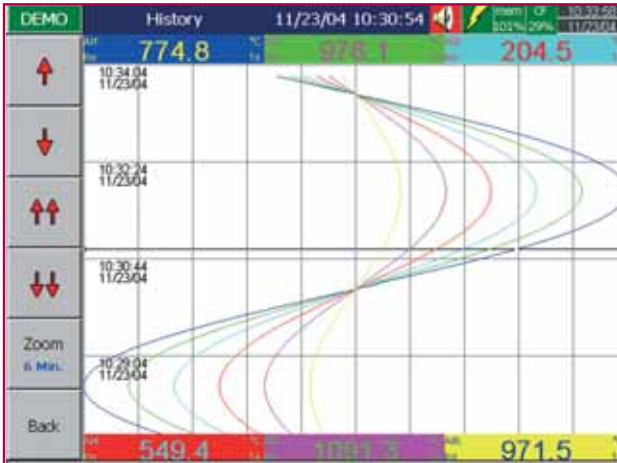
- ▶ 6-column bar graph display
- ▶ Individual scale configuration for each histogram
- ▶ Curves identified by colour and process indicators
- ▶ "Hi/Lo" alarm status indicators
- ▶ Permanent date-time display
- ▶ Automatic "Alarm" and "Memory Full" Warning icon

Digital input display



- ▶ Real-time display of 6 analogue inputs
- ▶ Colour differentiated value and process indicators
- ▶ "Hi/Lo" alarm status indicators
- ▶ Permanent date-time display
- ▶ Automatic "Alarm" and "Memory Full" Warning icon

Historical mode



- Vertical or horizontal display of 6 time series curves
- Automatic display of numerical values - selected by cursor
- "ZOOM" function for expanding and reducing Time scale
- Curves identified by colour and process indicator

Alarm log

Mode	Event/Alarm	Report				
Event	Ack	Type	Source	Active Time	Clear Time	Value
	2085	HiAlarm	A11	11/23 10:04:58	11/23 10:08:40	781.8
	2090	HiAlarm	A12	11/23 10:05:08	11/23 10:08:40	1060.
	2100	HiHiAlarm	A11	11/23 10:05:11	11/23 10:08:40	864.7
	2110	HiHiAlarm	A12	11/23 10:05:28	11/23 10:08:41	1176.
	2120	HiAlarm	A13	11/23 10:05:28	11/23 10:08:41	270.8
	2130	HiAlarm	A113	11/23 10:05:37	11/23 10:08:41	80.80
	2140	LoAlarm	A118	11/23 10:05:37	11/23 10:08:41	19.20
	2150	HiHiAlarm	A113	11/23 10:05:44	11/23 10:08:41	87.80
	2160	LoLoAlarm	A118	11/23 10:05:44	11/23 10:08:41	12.20
	2170	HiAlarm	A114	11/23 10:05:52	11/23 10:08:41	80.53
	2180	LoAlarm	A117	11/23 10:05:52	11/23 10:08:41	19.47
	2190	HiAlarm	A17	11/23 10:06:57	11/23 10:08:41	1436.
	2200	HiAlarm	A38	11/23 10:07:09	11/23 10:08:41	1942.
	2210	HiHiAlarm	A17	11/23 10:07:12	11/23 10:08:41	1588.
	2220	HiHiAlarm	A38	11/23 10:07:27	11/23 10:08:41	2154.
	2230	HiAlarm	A39	11/23 10:07:27	11/23 10:08:41	521.1
	2240	LoAlarm	A11	11/23 10:08:18		86.2
	2250	LoAlarm	A12	11/23 10:08:26		109.5
	2260	LoLoAlarm	A11	11/23 10:08:31		15.3
	2270	LoLoAlarm	A12	11/23 10:08:48		-6.0
	2280	LoAlarm	A13	11/23 10:08:48		-120.

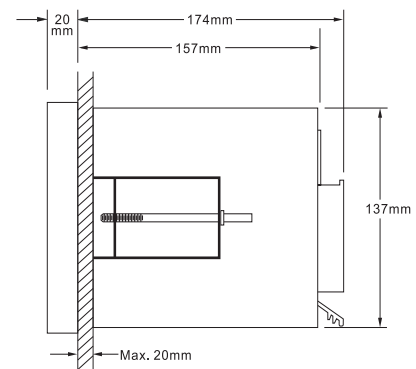
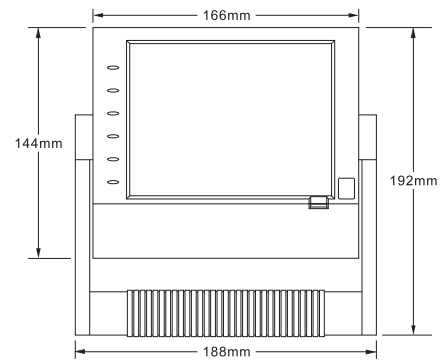
- Log includes full date/time listing of all alarms
- "Browse" function to select and clear alarms
- Uncleared alarms displayed in red for High, green for Low

Configuration of entry settings

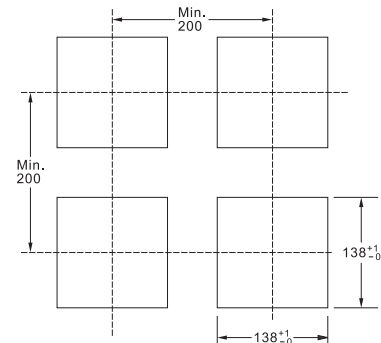
AI	AI1										
No	Type	Setpoint	Job 1	Job 2							
1	H	776.0	Log Alarm	No Action							
2	L	104.0	Log Alarm	No Action							
3	HH	860.0	Log Alarm	No Action							
4	LL	20.0	Log Alarm	No Action							

- Configuration of input/output/name/event pens
- Page configuration (colours, pens, decimal format, pen + link, etc.)
- Configuration of timer
- Configuration of internal functions (storage memory, display, communication, real-time clock, etc.)

DIMENSIONS

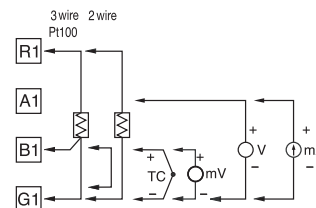


Subdivisions of the panels

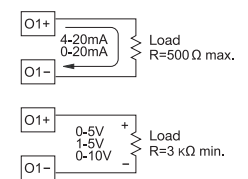


Connection of analogue inputs

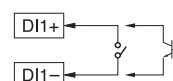
Pt100, TC, mV, V, mA



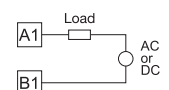
Connection of analogue outputs



Connection of logical inputs



Connection of relay outputs



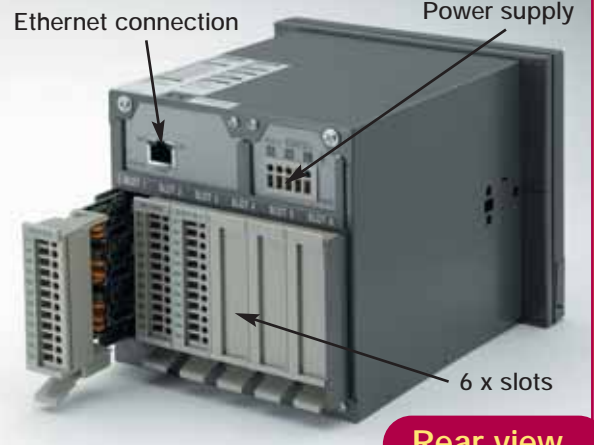
Front panel



6 Programming keys

View of the programming keys and memory card protection strip

Memory card



Rear view

6 slots for input/output boards
Each type of board is recognized individually.
Up to 18 analogue inputs possible (3 inputs x 6 slots)

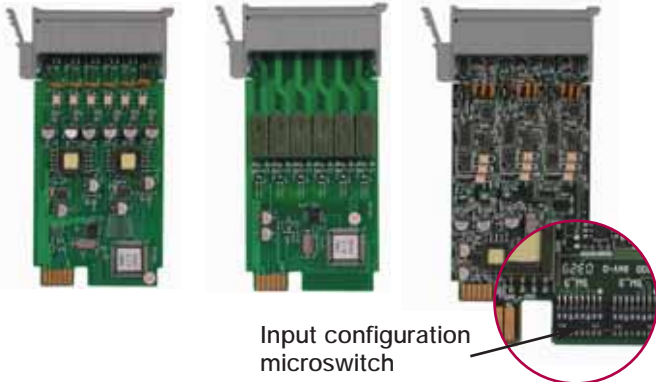
Infrared sensor for screen saver

Type of input/output boards

Logical input

Relay output

Analogue input



Input configuration microswitch

Portable version



On/Off switch

Memory card

Carrying handle

« 21CFR part 11 » compliance

The **Pyrotracer Vidéo**, equipped with the “Mathematical” option, complies with the provisions of the « 21 CFR part 11 » regulation.

This concerns the quality and security of electronic records and electronic signatures in order to obtain FDA (Food & Drug Administration) validation of pharmaceutical and agrifood processes.

The requirements of the « 21CFR part 11 » regulation are as follows:

- Ability to generate accurate and complete copies of records in both human-readable and electronic form for inspection, review, and copying by the Administration.
- Protection of records to enable accurate and immediate consultation throughout the record retention period.
- Limiting of system access to authorised individuals.
- Use of secure, computer-generated, time-stamped audit trails to independently record the date and time of operator actions which create, modify or delete electronic records. Record changes must not obscure previously recorded information. This audit trail documentation shall be retained for at least as long as retention period for the electronic records in question.



- Use of authorisation checks to ensure that only authorised individuals can use the system, electronically sign a record, access the input or output systems of the computer or instrument, alter a record or perform an operation manually.
- Use of verification systems to determine, as appropriate, the validity of the source of the input data or operational instructions.
- Guarantee that people developing, maintaining or using electronic record/electronic signature systems have the education, training and experience to accomplish the tasks assigned to them.
- Implementation of appropriate control over the system's documentation, including suitable control over the distribution of, access to and use of documentation for system operation and maintenance; this must be backed by a revision and change control procedure to maintain a time-stamped audit trail of documentation drafting and modifications.

MATHEMATICAL OPTION

See **TO ORDER** (next page)

7 C.A 650 software, option 1

Power supply

90-264 V_{AC}, 47-63 Hz, 60 VA, 30 W maximum
11-18, 18-36 or 36-72 V_{DC} 60 VA, 30 W maximum

Display / Screen

6.4" LCD TFT, 640 x 480 pixels, 256 colours

Memory

Basic storage memory: 8 MB
Compact Flash: 128 MB standard
512 MB optional

Analogue input board

Channels: 3 per board
Resolution: 18 bits

Polling time: 200 ms

Maximum value: -2 V_{DC} minimum, 12 V_{DC} maximum
(1 minute max. for mA)

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

Influence of line resistance: TC: 0.2 $\mu\text{V}/\Omega$

Pt100, 3 wires: 2.6 $^\circ\text{C}/\Omega$ of difference between two branches

Break-induced sensor current: 200 nA

Common mode rejection: 120 dB

Serial mode rejection: 55 dB

Insulation voltage between channels: at least 430 V_{AC} min

Detection of sensor failure:

Sensor open-circuit for TC, Pt100 and mV inputs,
below 1 mA for the 4-20 mA input, below 0.25 V for the 1-5 V input,
not applicable to the other inputs

Response time after a sensor failure:

10 seconds for TC, Pt100 and mV, 0.1 second for 4-20 mA and 1-5 V.

Type	Scale	Precision at 25 °C	Impedance
J	+120 ... +1 000 °C	± 1 °C	2.2 M Ω
K	-200 ... +1 370 °C	± 1 °C	2.2 M Ω
T	-250 ... +400 °C	± 1 °C	2.2 M Ω
E	-100 ... +900 °C	± 1 °C	2.2 M Ω
B	0 ... +1 820 °C	± 2 °C	2.2 M Ω
S	0 ... +1 767.8 °C	± 2 °C	2.2 M Ω
R	0 ... +1 767.8 °C	± 2 °C	2.2 M Ω
N	-250 ... +1 300 °C	± 1 °C	2.2 M Ω
L	-200 ... +900 °C	± 1 °C	2.2 M Ω
Pt100 (DIN)	-210 ... +700 °C	± 0.4 °C	1.3 k Ω
Pt100 (JIS)	-200 ... +600 °C	± 0.4 °C	1.3 k Ω
mV	-8 ... +70 mV	± 0.05 %	2.2 M Ω
mA	-3 ... +27 mA	± 0.05 %	70.5 Ω
V	-0.12 ... +1.15 V	± 0.05 %	332 k Ω
0/5 V	-1.3 ... +11.5 V	± 0.05 %	332 k Ω
1/5 V	-1.3 ... +11.5 V	± 0.05 %	332 k Ω
0/10 V	-1.3 ... +11.5 V	± 0.05 %	332 k Ω

Logical inputs board

Channels: 6 per board

Low level: -5 V minimum, 0.8 V maximum

High level: 2 V minimum, 5 V maximum

External pull-down resistance: 1 k Ω maximum

External pull-up resistance: 1.5 M Ω maximum

Relay outputs board

Relays: 6 per board

Type of contact: N.O. (normally open).

Type of relay: 5 A/240 V_{AC}, number of cycles: 200,000 (resistive load).

Analogue currents outputs board

Measurement input duplication board with function for possible multiplication, addition or subtraction of the inputs. Type: 0/4 - 20 mA.

Communication module

Interface: RS232 (1 x C.A 650), RS485, or RS422 (up to 247)

Protocol: Modbus RTU

Address: 1-247

Speed: 0.3-38.4 kbits/sec.

Data bits: 7 or 8 bits

Parity bit: None, Even, or Odd

Stop bit: 1 or 2 bits

Ethernet communication module

Protocoles : ModBus TCP/IP, 10 BaseT, Self-bias correction for 10 BaseT

Ports: AUI and RJ-45, auto-detect capability

Dimensions and environmental conditions

Operating temperature: 5 $^\circ\text{C}$ to 50 $^\circ\text{C}$

Storage temperature: -25 $^\circ\text{C}$ to 60 $^\circ\text{C}$

Humidity: 20 to 80% RH (without condensation)

Insulation resistance: at least 20 M Ω (at 500 V_{DC})

Dielectric strength: 3 kV_{AC} 50/60 Hz for 1 minute

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

Impact resistance: 30 m/s² (3 g) in operation, 100 g during transport

Dimensions: 166 mm (W) x 144 mm (H) x 174 mm (D), cabinet mounting

Compliance with standards

Safety: UL873 (11th edition, 1994) CSA C22.2 No. 24-93
CE: EN61010-1 (IEC1010-1)

Overvoltage category II, Pollution degree 2

Protection class for indoor use:

IP30 for front panel of cabinet, IP20 for wiring

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)

TO ORDER

CONFIGURABLE VERSIONS

C.A 650 **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11**

Caution: the recorder has a maximum of 6 slots

1 Power supply

4: 90-264 V_{AC} 47-63Hz

6: 11-18 V_{DC}

7: 18-36 V_{DC}

8: 36-72 V_{DC}

Code

standard

LR00110-000

LR00111-000

LR00129-000

LR00112-000

2 Analogue inputs*

0:	No analogue input	0
3:	3 Analogue inputs	1 slot
6:	6 Analogue inputs	2 slots
A:	9 Analogue inputs	3 slots
B:	12 Analogue inputs	4 slots
C:	15 Analogue inputs	5 slots
D:	18 Analogue inputs	6 slots

3 Logical inputs*

0:	No logical input	0
1:	6 Logical input	1 slot
2:	12 Logical input	2 slots

LR00113-000

4 Relays outputs*

0:	No relay	0
1:	6 Relays	1 slot
2:	12 Relays	2 slots

LR00114-000

5 Communication

0: standard \rightarrow Ethernet communication

1: RS232/422/485 (3 in 1) + Ethernet interface

LR00116-000

6 Configuration software

1: standard « Observer 1 » software

7 Software of the C.A 650

0: basic

1: mathematical, metering and totalizer functions
+ 21 CFR part 11

LR00117-000

8 Compact Flash

1: 128 MB standard

9 Mounting the C.A 650

1: Standard: cabinet mounting version

2: Portable version with carrying handle

LR00118-000

10 Option*

0: no option

1: 24 V_{DC} transmitter power supply (up to 6) [1 slot]

LR00115-000

11 Analogue outputs*

0:	No analogue output	0
3:	3 Analogue mA outputs	1 slot
6:	6 Analogue mA outputs	2 slots
A:	9 Analogue mA outputs	3 slots

LR00123-000

ACCESSORIES:

"Observer 2" software

512 MB Compact Flash memory

LR00122-000

LR00121-000

* Can be sold separately

LIMITED VERSIONS

C.A 650 Limited Version

3 analogue inputs:

CA650LV 4300-010-110-00

LR00104-000

3 analogue inputs + 6 relays outputs:

CA650LV 4301-010-110-00

LR00105-000

6 analogue inputs:

CA650LV 4600-010-110-00

LR00106-000

6 analogue inputs + 6 relays outputs:

CA650LV 4601-010-110-00

LR00107-000

For total control of the thermal process line



Temperature transmitters

For conditioning all temperature and process signals, a range of converters and transmitters, 1 or 2 channels, analogue or digital output, ...



Bluetooth radio modem/ RS485

Wireless communication, reliable and safe. Replaces RS485/RS232 wire connections. Bluetooth® technology.

Signal
transmission



Temperature controllers

A broad range of digital and analogue controllers, simple or elaborate models. Several formats, single or multi-input, ...

Signal
processing



Power blocks with thyristors

A range of thyristor power controllers, from 8 A to 2,900 A. Single or three-phase, for resistive and inductive loads. Several control and monitoring functions, ...

Electric
actuator



Digital panel meters

Several programmable digital panel meters for temperature and process signals. Memorisation of minimum and maximum values, ...



Recorders

Paperless model with very high definition video screen, up to 18 configurable measurement channels, PC software data processing, ...

Display
monitoring



Help service

Commissioning, training, ...

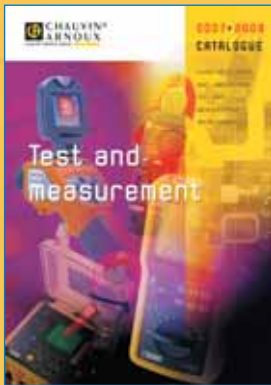
Setting up

Don't hesitate
to contact **Pyro-Contrôle**

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Hand held, electric and electronic test
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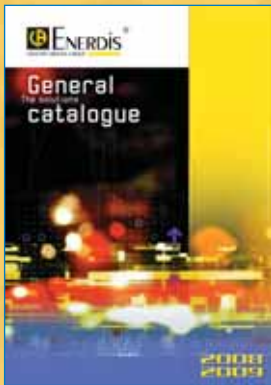
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Pyro-Contrôle

Pyro-Contrôle provides industrial solutions for all the temperature measurement, testing and calibration requirements of the leading process industries in the nuclear, chemicals, metallurgy, glass, plastics, semi-conductors and agri-food sectors.

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