

Graphic recorders

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Recording

Graphic panel recorders allow :

- continuous monitoring of the variation of electrical or physical parameters ;
- comparison of their variation together on the same chart ;
- recording of the history of changes in 1, 2 or 3 phenomena ;
- alarm triggering when measured quantity passes the limits set between two pointers.

	ECX1000	EUROPONT X2000
Accuracy class	1	0.5
Number of channels	1	1 to 3
Idc input	0-5 to 0-20 mA 1-5, 2-10, 4-20 mA	0-0.5 to 500 mA
Udc input	0-100 mV to 0-10 V	0-5 mV to 0-250 V
T° input	Pt 100	J - K - T - S - Pt100
Speed (mm/h)	5 to 240 mm/h	5 to 3600 mm/h ; 10 to 3600 mm/h
Auxiliary supply	115-127-220-230 V 50 Hz	24 to 240 Vac 50-60Hz, 24 to 125 Vdc
Back-up power	no	option
Plotting	100 mm	100 mm
Paper	120 mm	120 mm
Alarm relays	no	option
Relay output	no	3 A / 220 V
Scale	1	3
Portable version	no	yes

ECX 1000

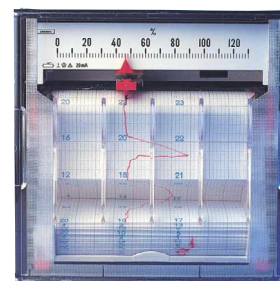
Economical single-channel recorder with continuous plotting.

Direct measurement of DC parameters : voltage, current, temperature, etc.
(5 mA to 20 mA and 4-20 mA, 100 mV).

Other parameters via transducers using analogue output.

Example. : (U, I, F, cos φ , Var, W, etc.). See section "Transducing".

8 selectable paper speeds : 5 to 240 mm/h.



EUROPONT X 2000

1- to 3-channel recorder with continuous plotting.

Direct measurement of DC parameters : U, I, temperature, etc.

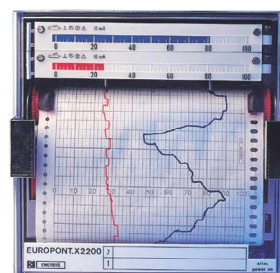
Indirect measurement of AC values via transducers using analogue output.

Example. : (U, I, F, cos φ , Var, W etc.). See section "Transducing".

Ink plotting - roll paper or fan-fold paper on request.

8-speed gear box : 5, 10, 15, 20, 30, 40, 60, 120 mm/h.

Auxiliary supply 230 Vac 50 Hz or other on request.



Model	Channels	Reference
Range : 4-20 mA	1	EX21 9000
Scale : 0-100%	2	EX22 0000
	3	EX23 0000

Consumable supplies

Product codes

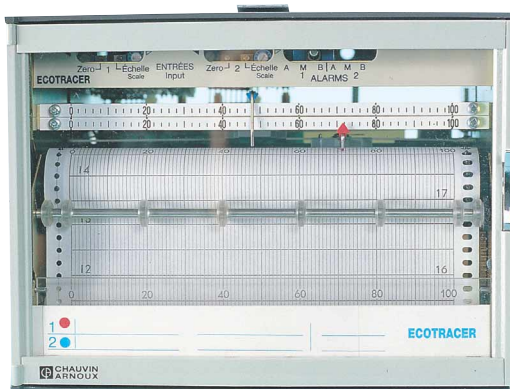
PAPER		ECX1000	EUROPONT	PLOTTING		ECX1000	EUROPONT
Without speed indication	Fan-fold, set of 2	B231 3332	B231 3332	Felt-tip ink cartridge	Red		B231 1354
	Roll, ink		B231 3326		Blue		B231 1358
	Metallic paper roll		B231 3338		Green		B231 1366
5-10-20 mm/h	Fan-fold, set of 2	B231 3334	B231 3334	Pen	Red	B231 2767	
	Roll		B231 3328		Blue	B231 2768	
15-30-60 mm/h	Fan-fold, set of 2	B231 3336	B231 3336				
	Roll		B231 3330				
0-130%	Fan-fold, set of 2	B225 7517					

ECOTRACER

1- to 3-channel strip-chart recorders, formats 144 x 144 and 192 x 144 mm.

The ECOTRACER is a potentiometric recorder which has independent measurement channels. They simultaneously record different physical parameters : temperature, flow, pressure, speed, level, pH..., current or voltage process measurement.

- Depth 200 mm
- 8 scroll speeds
- Up to 2 alarms per channel
- Class 0.5
- Plotting by felt-tip pen
- Electronic stop
- Roll or fan-fold chart, replaced by removable cassette
- Paper width 100 or 150 mm

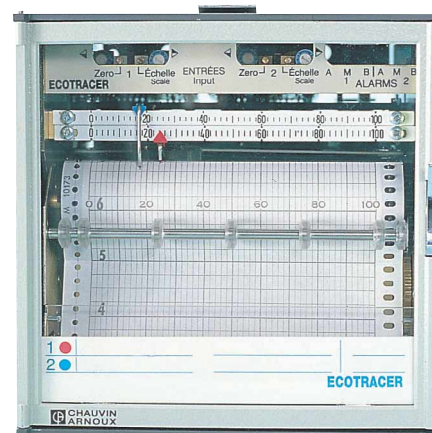


ECOTRACER format 192 x 144 mm.

Measurement inputs

	Input function card	Measuring range min	Measuring range max	Zero offset
LOW LEVEL	J couple	100°C	870°C	0...400°C
	T couple	100°C	400°C	-200...+300°C
	K couple	100°C	1372°C	-180...+580°C
	S couple	500°C	1768°C	0...1250°C
	Pt 100 Ω (3 wire)	20°C	650°C	-100...+100°C
	mV dc	4 mV	800 mV	-4...+40 mV
HIGH LEVEL	Vdc (1)	0,8 V	30 V	-1.1...+1.1 V
	mA dc	Measuring range		Shunt supplied
		0...4 mA ; 0...10 mA		250 Ω
		0...20 mA ; 1...5 mA		100 Ω
	4...20 mA		100 Ω	
	10...50 mA			

(1) Voltage divider up to 460 V



ECOTRACER format 144 x 144 mm.

Technical specifications

Accuracy	0.5 % of the measuring range
Reading scale	graduated length 100 mm or 150 mm (DIN standard)
Printing device	by easily interchangeable felt pens, average plotting duration : 3 months at min. speed. colour red, blue, purple
Response time	100 mm model : 1.2 s to 95 % of the scale
Max. external impedance	<ul style="list-style-type: none"> • 100 Ω/mV without line security • 10 Ω/mV with line security and compensation of imbalance
Chart	<ul style="list-style-type: none"> • on scrolling paper (length 16 m) • on fan-fold paper (length 8 or 16 m)
Chart speeds	15, 20, 40, 60, 120, 400, 600 or 1200 mm/h with multiplier coefficients by jumper 1/4, 1/2, 1, 2 and 4
Readability of chart	the graphs are simultaneously visible during recording
Analogue output	0... 5 V for 0... 100 % of input (option)
Alarms	on 3 A relays - 220 Vac resistive (option)
Power supply	110/220 Vac 50/60 Hz 240 Vac 50/60 Hz, 24 or 48 Vdc (option)
Consumption	10 VA
Protection level	<ul style="list-style-type: none"> • 100 mm model : IP 54 • 150 mm model : IP 41
Environmental conditions	nominal range : 5... 40°C / RH ≤ 80 % max. : +55°C / RH ≤ 95 %
Panel cut-out	138 x 138 or 186 x 138 mm
Dimensions / weight	144 x 144 x 200 or 192 x 144 x 200 mm / 3.1 kg

Dial calibration code tables

Thermometric resistance Pt 100 Ω at 0°C			
-100 ... 50°C			P01
-50 ... 50°C			P02
-50 ... 10°C			P03
-20 ... 40°C			P04
0 ... 50°C			P05
0 ... 100°C			P06
0 ... 160°C			P07
0 ... 200°C			P08
0 ... 250°C			P09
0 ... 300°C			P10
0 ... 400°C			P11
50 ... 100°C			P12
50 ... 150°C			P13
100 ... 200°C			P14

K thermocouple Nickel/Chrome-Nickel/Aluminium			
-50 ... 50°C			K01
0 ... 100°C			K02
0 ... 160°C			K03
0 ... 200°C			K04
0 ... 300°C			K05
0 ... 400°C			K06
0 ... 500°C			K07
0 ... 600°C			K08
0 ... 700°C			K09
0 ... 800°C			K10
0 ... 1000°C			K11
0 ... 1200°C			K12
200 ... 1200°C			K13
300 ... 600°C			K14
400 ... 800°C			K15
400 ... 1000°C			K16
500 ... 1000°C			K17
500 ... 1100°C			K18
600 ... 1000°C			K19
600 ... 1200°C			K20

T thermocouple Copper/Copper-Nickel			
-100 ... 100°C			T01
-50 ... 100°C			T02
-20 ... 180°C			T03
0 ... 100°C			T04
0 ... 120°C			T05
0 ... 160°C			T06
0 ... 200°C			T07
0 ... 250°C			T08
0 ... 300°C			T09
0 ... 350°C			T10

S thermocouple, Platinum-10% Rhodium/Platinum			
0 ... 1000°C			S01
0 ... 1200°C			S02
0 ... 1300°C			S03
0 ... 1400°C			S04
0 ... 1500°C			S05
0 ... 1600°C			S06
600 ... 1200°C			S07
700 ... 1500°C			S08
800 ... 1400°C			S09
800 ... 1600°C			S10
1000 ... 1500°C			S11
1000 ... 1600°C			S12
1100 ... 1750°C			S13
1400 ... 1750°C			S14

J thermocouple Iron/Copper-Nickel			
0 ... 100°C			J01
0 ... 120°C			J02
0 ... 200°C			J03
0 ... 250°C			J04
0 ... 300°C			J05
0 ... 400°C			J06
0 ... 500°C			J07
0 ... 600°C			J08
0 ... 700°C			J09
0 ... 800°C			J10
100 ... 600°C			J11
300 ... 600°C			J12

Parabolic calibration* for mV - V - mA inputs			
0 ... 10			300
0 ... 15			301
0 ... 20			302
0 ... 25			303
0 ... 30			304
0 ... 35			305
0 ... 40			306
0 ... 50			307
0 ... 60			308
0 ... 75			309
0 ... 80			310
0 ... 90			311
0 ... 100			312
0 ... 125			313

* If necessary specify the symbol of the calibration unit and the multiplier factor (example : x 10m³/h)

Linear calibration* for mV - V - mA inputs			
-50 ... 50			001
-25 ... 25			002
-10 ... 10			003
-0,1 ... 1			004
-0,04 ... 1			005
0 ... 10			006
0 ... 15			007
0 ... 20			008
0 ... 25			009
0 ... 40			010
0 ... 50			011
0 ... 60			012
0 ... 70			013
0 ... 80			014
0 ... 100			015
0 ... 150			016
0 ... 250			017
100 ... 0			018
1 ... -1			019
0 ... 1			020
0 ... 2			021
0 ... 4			022
0 ... 5			023

* If necessary specify the symbol of the calibration unit and the multiplier factor (example : x 10m³/h)

Product codes

Accessories	Reference
Red pen (channel 1)	P01.6099.03
Blue pen (channel 2)	P01.6099.04
Green pen (channel 3)	P01.6099.05
Set of 5 scrolling paper : 0-10 length 16 m (100 mm)	P01.6015.06
Set of 5 scrolling paper : 0-10 length 16 m (150 mm)	P01.6099.01
Set of 5 fan-fold paper : 0-10 length 8 m (100 mm)	P01.6015.07
Set of 5 fan-fold paper : 0-100 length 16 m (100 mm)	P01.6015.08
Set of 5 fan-fold paper : 0-100 length 16 m (150 mm)	P01.6099.02

How to order

Example :

ECOTRACER 150 2 Channel 1 BN J 0...500°C J07 R 21
 Channel 2 HN V 0...10 V 006 22
 Channel 3

- Paper width
100 - 100 mm
150 - 150 mm
- Number of channels
1 - 1 channel
2 - 2 channels
3 - 3 channels
- Input level(s)
HN - high
BN - low
- Input signal(s)
J - couple J
K - couple K
T - couple T
S - couple S

Pt - Pt 100 Ω probe
mV
mA
V

- Options (see table of codes)
- Paper chart
R - roll
A - fan-fold
- Calibration of dials (see table of codes)
- Measuring range (clearly)



Codes of options

Alarms

- 2 alarms on channel 1 (code : 21)
- 2 alarms on channel 2 (code : 22)
- 2 alarms on channel 3 (code : 23)
- 4 alarms on channel 1 (code : 41)
- Rear protection cover (code : CP)
- Portable version (code : VP)
- External scroll control (code : CV)
This option limits the number of alarms to 2

Power supply

- 240 V 50/60 Hz (code : 50)
- 24 Vdc (code : 24)
- 48 Vdc (code : 48)

Other options (ask for details)

- non-standard inputs
- sensor power supply (depth becomes 250 mm)
- selection of the speed by logic input
- event markers (suppress channel 1)

Consult us about compatibility between different options.

C.A 625 ECOPOINTER

Configurable recorders with 6 or 12 independent channels plotted by dots, 144 x 144 and 192 x 144 mm formats. Intelligent chart.

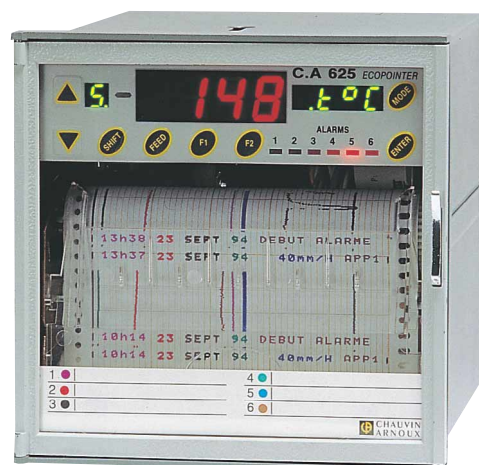
An economical instrument for intensive industrial use which is reliable and requires minimum maintenance. The ECOPOINTER can be used in all fields, for testing, monitoring and recording physical or physico-chemical electrical parameters.

- Depth 200 mm
- 6 or 12 analogue inputs
- 4 logic inputs
- Graphs with dots of 6 colours
- Digital display : channels, measurements, units
- Intelligent chart
- 12 configurable alarms, 6 indicator lights
- 100 mm chart (6 channels)
- 150 mm chart (6 or 12 channels)
- Outputs : relay, logic, analogue, digital
- Configuration on front panel or by PC
- Manual user security or by "soft" key
- Electronic rack that can be removed without dismantling the recorder

Type	Max scale
J couple	-50 ... +1200°C -50 ... +370°C (1)
K couple	-50 ... +1373°C -50 ... +500°C (1)
T couple	-50 ... +400°C
S couple	-50 ... +1769°C
R couple	-50 ... +1769°C
N couple	-50 ... +1300°C -50 ... +600°C (1)
B couple	-50 ... +1820°C
Pt 100 Ω probe (R line ≤ 20 Ω)	-200 ... +650°C -50 ... +200°C
Voltage dc (2)	0 ... 5 V 1 ... 5 V 0 ... 1 V 0.2 ... 1 V 0 ... 125 mV 0 ... 65 mV 0 ... 20 mV -25 ... +25 mV
Current dc on shunt	4 ... 20 mA 0 ... 20 mA
Potentiometer	100 ... 10000 Ω

(1) Reduced scale, automatically selected by the recorder if the programmed measuring range permits. Offers improved accuracy.

(2) Up to 100 V with divider.



Inputs

- The 6 or 12 analogue inputs are configurable in type and scale, with or without decimal point.

For a given type of input, the measuring range is defined by the user within the max. ranges (see table).

- Accuracy :
 - couple input or Pt 100 Ω : ±0.15 % EM
 - voltage or current input : ±0.1 % EM
- Four logic inputs can be used as event markers, for pre-defined operating functions.
 - stop recording (pause mode)
 - switching two paper scroll speeds
 - literal printout of digital channel data
 - printout of 4 messages, each 12 characters long

Display

- For each of the 6 or 12 channels, the digital displays indicate, from left to right :
 - the number of the channel currently being scanned (green)
 - the measured value (red)
 - the unit or the measurement symbol (green)
- This cyclical display can be interrupted by the user to constantly check one of the measurement channels.

Measurements monitoring

- Twelve programmable alarm thresholds can be allocated to one or more channels.
- Triggering an alarm causes the printout of a message and modifies the width of the plot for the channel concerned.
- The alarms can drive output relays (up to 6 optionally), to trigger any kind of automatic system.
- On the front panel of the instrument, six LEDs indicate alarms. The user can allocate them as required.

Printout

- Scanning : 250 ms per channel.
- Adjustable chart speed : 1...1000 mm/h, by step of 1 mm/h (depending of number of channels and messages).
- Resolution : 500 steps for 100 mm, i.e. 0.2 mm.
- Print rate : calculated according to the scroll speed of the paper, the speed and the amplitude of the variation of the measurement signal, so that the graph is always easy to read.
- Colours : the analogue inputs are printed in purple, red, black, green, blue and brown. The four logic inputs are printed in black.
- Spread : for each of the analogue inputs, the "0" and the "100 %" of the paper scale can be defined. This allows the paper to be divided into several zones, e.g. to separate the graph of the logic inputs from that of the measurement inputs.
- Intelligent chart : the scales, the time, the date, the paper scroll speed, the messages as well as the identification number of the instrument are printed periodically, if required by the user.

Output modules

The ECOPOINTER can incorporate 1, 2 or 3 option cards to get :

- "alarm" outputs on relay or logic voltage
- analogue outputs, U or I (measurement feedback)
- power supplies for 2 wire sensor
- an RS232 or RS485 serial link, MODBUS protocol

Product codes

Designation	Reference
C.A 625 ECOPOINTER 100 mm 6 channels	P01.6092.01
C.A 625 ECOPOINTER 150 mm 6 channels	P01.6093.01
C.A 625 ECOPOINTER 150 mm 12 channels	P01.6093.02
Supplied with 1 roll of paper, 1 fan-fold and 1 print wheel	
Option cards (maximum of 3 per recorder) :	
- 1 relay outputs C.A 625	P01.6094.01
- 2 relay outputs C.A 625	P01.6094.02
- RS 232 link C.A 625	P01.6094.03
- RS 485 link C.A 625	P01.6094.04
- Logic output C.A 625	P01.6094.05
- Sensor power supply C.A 625	P01.6094.06
- 20 mA copy C.A 625	P01.6094.07
- 10 V copy C.A 625	P01.6094.08

Programme and configuration

All the parameters necessary for the operation of the instrument are introduced on the front panel using the operating buttons, without dismantling the instrument. User security must be followed to access programming. This "soft key" prohibits any modification by non authorised personnel.

Two independent programmes are used, one to configure the recorder, the other to adapt it to operating conditions.

The parameters of the ECOPOINTER can also be set using a micro-computer, using the "PC configurable" kit available as an accessory.

Other specifications

Power supply	230 or 115 V, 50 / 60 Hz on demand : 12... 48 V
Common mode rejection	120 dB to 250 V, 50 Hz
Consumption	≤ 20 VA
Protection level	100 mm model : IP 54 150 mm model : IP 41
Environmental conditions	0...50°C / RH ≤ 80 %
Panel cut-out	100 mm model : 138 x 138 mm 150 mm model : 138 x 186 mm
Dimensions / weight	100 mm model : 144 x 144 x 200 mm / 4.3 kg 150 mm model : 144 x 192 x 200 mm / 5 kg

Accessories	Reference
- Shunt 50 Ω C.A 625	P01.6098.02
- Voltage divider 1/2 C.A 625	P01.6098.03
- PC config kit C.A 625	P01.6098.04
Supplied with software, RS card and connection lead	
- Print wheel	P01.6098.01
- Set of 5 fan-fold chart 0-10 length 8 m (100 mm)	P01.6015.07
- Set of 5 roll of paper 0-10 length 16 m (100 mm)	P01.6015.06
- Set of 5 fan-fold chart 0-100 length 16 m (100 mm)	P01.6015.08
- Set of 5 roll of paper 0-10 length 16 m (150 mm)	P01.6099.01
- Set of 5 fan-fold chart 0-10 length 16 m (150 mm)	P01.6099.02
Special versions upon request:	- C.A 625 tropicalised - C.A 625 portable version - C.A 625 supply 12...48 Vac