

Colour strip chart recorder *chroma-log sl*

Economical continuous line strip chart recorder with 1 to 3 analogue inputs.



Application

Chroma-log sl continuous line chart recorders are applied:

- in OEM applications
- for local information
- centrally in a control panel
- where analogue values must be recorded
- for fast changing measured values
- for up to 3 measurement points continuously plotted on chart paper

Features and benefits

Freely selectable

- Measurement range (standard signals, galvanically isolated)
- Feed rate
- Response/damping
- Zero and span
- Paper types
- Power supply to 2 wire transmitters

Endress+Hauser
Nothing beats know-how



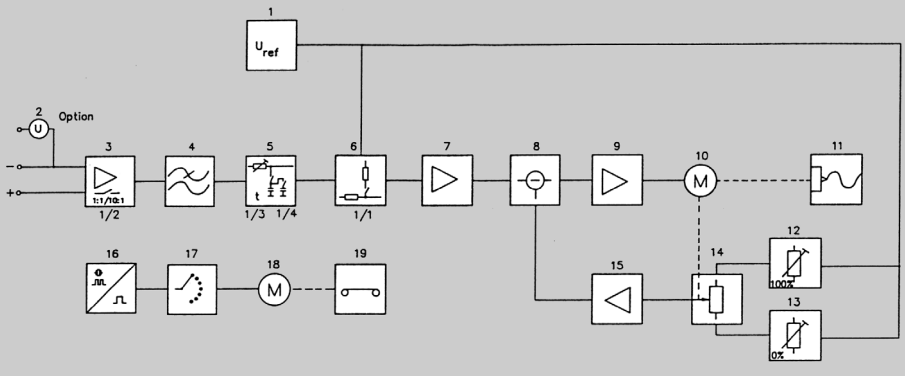
Function

- continuous line record using a compensation system with a ribbed drive belt
- fast pen response to input changes using a high torque motor
- accurate pen positioning for precise recording using a linear conductive feedback system
- easy to upgrade number of input channels due to modular recorder construction

Combination cassette for both roll chart and Z fold paper

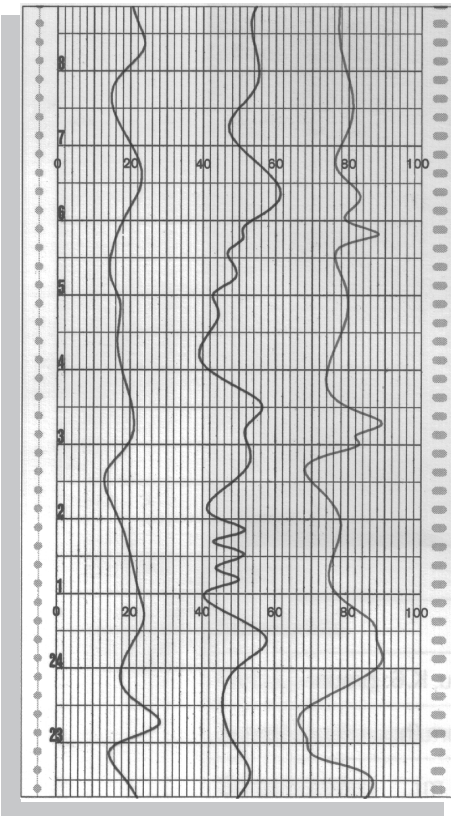
- Paper roll for long term recording
- Z fold paper for swift overview
- Stepper motor drive for reliable paper feed

Block Diagram



- | | |
|----------------------------|--------------------------------------|
| 1 Reference voltage source | 11 Indication and recording module |
| 2 Optional loop power | 12 Full scale calibration |
| 3 Input amplifier | 13 Zero calibration |
| 4 Input filter | 14 Linear potentiometer |
| 5 Damping calibration | 15 Impedance convertor |
| 6 Input range calibration | 16 Oscillator with frequency divider |
| 7 Impedance convertor | 17 Feed rate change |
| 8 Comparator | 18 Paper drive (stepper motor) |
| 9 Regulator amplifier | 19 Paper cassette |
| 10 Servo motor | |

Strip chart

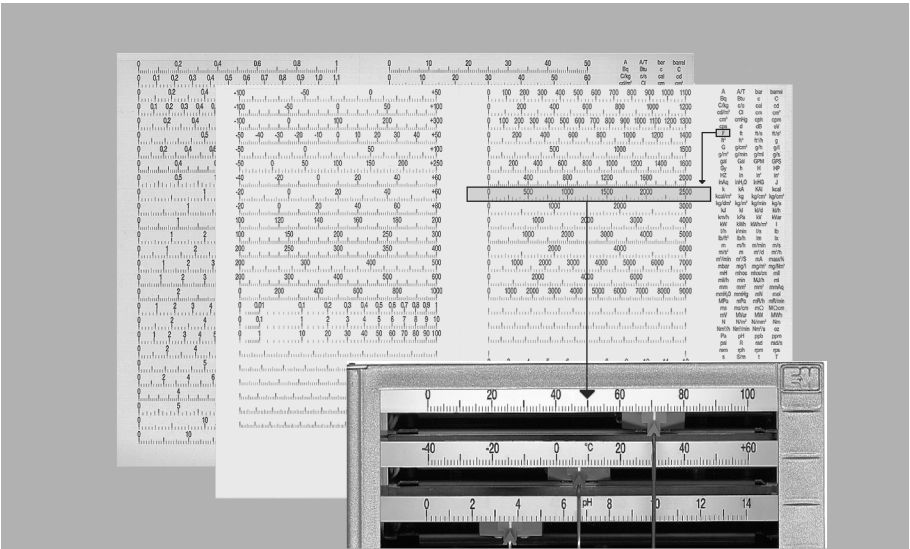


Strip chart example for chroma-log sl
... The timed sequences of 1 to 3 measurement points are documented as continuous coloured lines on 120 mm wide normal paper

Adhesive Scales

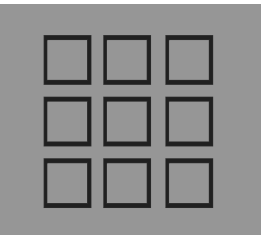
A sheet of adhesive scales per channel is delivered with the unit. This scale sheet contains a large number of the most used scales. Included are also a number of blank scales of various divisions.

These can be easily written on and therefore made to suit unusual requirements. The whole is completed by the addition of a large number of engineering unit stickers ($^{\circ}\text{C}$, l/s, $\mu\text{S}/\text{cm}$, ...)

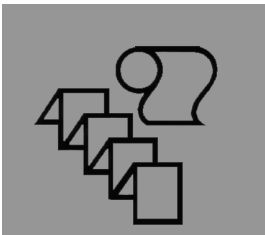


Adhesive scales

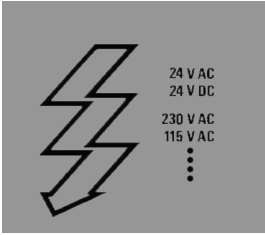
Advantages



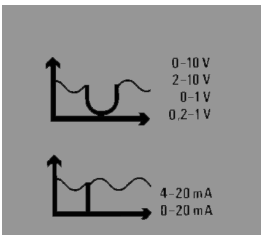
Side by side installation



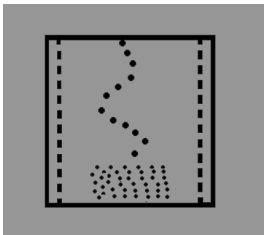
Roll chart or Z-fold paper with one cassette



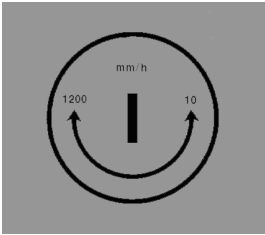
The correct power supply



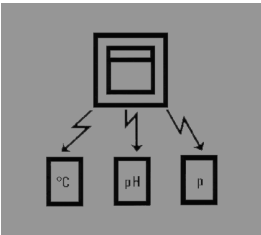
Variable input signals



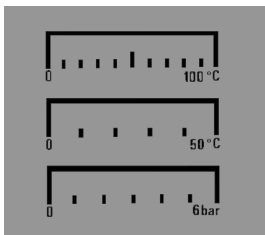
Presettable damping



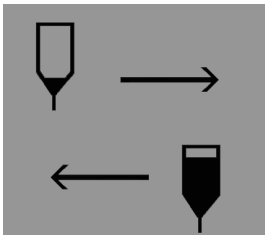
Presettable feed rate



Loop power supply

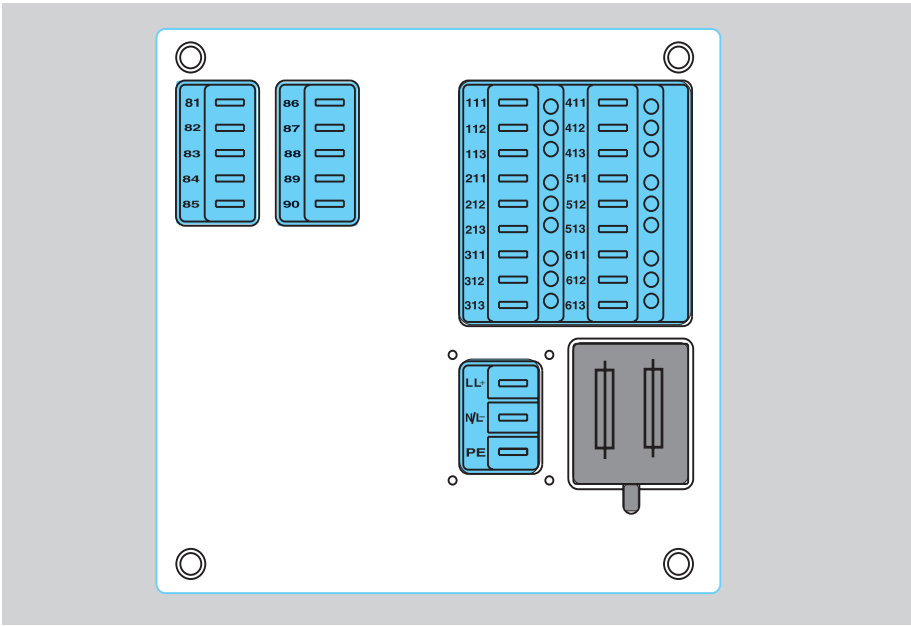
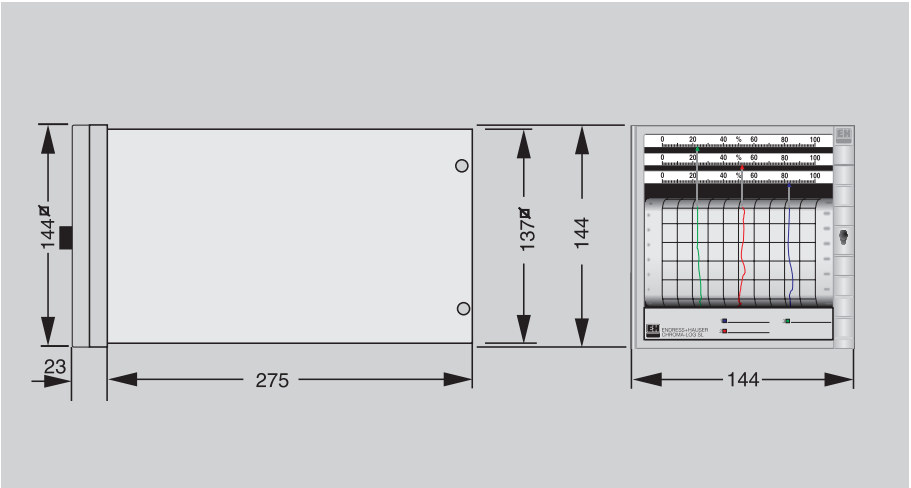


Made to measure scales



Easy pen change

Installation / Connections



Terminal layout

Terminal layout

Terminal identification	Power supply 24/115/230 VAC	
L/L +	L	
N/L -	N	
PE	Earth	
Terminal identification	Channel number	Standard input
111	Channel 1	+ input
112	Channel 1	- input
113	Channel 1	+ loop 24V (Option)
211	Channel 2	+ input
212	Channel 2	- input
213	Channel 2	+ loop 24 V (Option)
311	Channel 3	+ input
312	Channel 3	- input
313	Channel 3	+ loop 24 V (Option)
81-90	Not used	
411 - 613	Not used	

Technical Data

Operating

Signal inputs	Measurement ranges: Voltage: 0 ... 1 V,, 0.2 ... 1 V,, 0 ... 10 V,, 2 ... 10 V Current: 0 ... 20 mA,, 4 ... 20 mA using a shunt
	Input impedance > = 1 MOhm on voltage / 50 Ohm on current
	Accuracy: Class 0.5 to DIN 43782,, Part 2 Base accuracy: ≤ 0.5 % of FSD Long term drift: ≤ 0.2 % of FSD Power up drift (to 4h): ≤ 0.1 % of FSD Temperature drift: ≤ 0.1 % of FSD / 10 K Reference conditions (if not otherwise stated) are to IEC 65 B (co) 40: Temperature 20° C,, air pressure 860 - 1060 hPa,, relative humidity: 65 %
Influencing effects	Climatic To DIN 40040,, 43782/Part 2 Ambient temperature: 0 .. +50° C non condensing Storage temperature: -20 .. +70° C Recording paper: to DIN 16234
	EMC/Immunity To NAMUR recommendation (AK 05),, February 1988: No substantial functional interference due to - Elect. fast transient (burst): Level 3 IEC 801-4 VDE 0843/4 - Electrostatic discharge: Level 3 IEC 801-2 VDE 0843/2 - Electromagnetic fields: Level 2 IEC 801-3 VDE 0843/3
	Normal mode noise rejection 30 dB at input range/10 (50 Hz)
	Common mode noise rejection ≤ 0.1 % Measurement span at 250 V/50 Hz
	Power failure No functional loss on power loss for up to 20 ms
	Potential difference Channel to channel 250 V
	EMC/emission To EN 55011: Class B
Recorder/display	Scales Exchangeable adhesive scale per channel
	Recording system Fast compensation system with ribbed drive belt. Plot via an easily changed coloured pen. (Pen capacity at reference conditions for approx. 1500 m at 20 mm/h), Channel 1: blue, channel 2: red, channel 3: green
	Dead band ≤ 0,25 %
	Paper feed rate using selector switch Presetable to: 0-10-20-60-120-300-600-1200-3600 mm/h
	Paper type Selectable roll chart- (approx. 32 m) or Z fold (approx. 16 m)
Power	Supply ranges AC: 230 V - 115 V - 24 V (50/60 Hz - each +10/-15 %)
	Electrical security To VDE 0411/IEC 348
	Primary fuse 315 mA slow blow (230 V power supply) 630 mA slow blow (115 V power supply) 3.15 A slow blow (24 V AC power supply)
Housing/connections	Housing Stainless steel for panel mounting 144 x 144 mm, installation depth 275 mm
	Front door Metal door, protection IP54
	Protection class IP 54 to DIN 40050
	Operational angle 90° +/- 10° without limitation 90° +/- 30° with limitation on recording
	Connections Spade connectors (DIN 46244) 6.3 x 0.8 mm or 2.8 x 0.8 mm

Technical alterations reserved !

Colour strip chart recorder chroma-log SL

Power supply

- Power supply**
- | | |
|---|--------------------|
| H | 230 V AC, 50/60 Hz |
| F | 115 V AC, 50/60 Hz |
| D | 24 V AC, 50/60 Hz |

Model

- F 144 x 144 mm panel mounting

Front door

- 1 Metal door, protection class IP 54 with latch

Paper cassette

- A Cassette with roll chart paper (32 m)
B Cassette with Z-fold paper (16 m)

Number of analogue inputs

- | | |
|---|------------|
| 1 | 1 Channel |
| 2 | 2 Channels |
| 3 | 3 Channels |

Channel 1 input

- Channel 1 input**
 B 0-1/10V, 0/4-20mA, presettable
 C 0-1/10V, 0/4-20mA, with 24VDC loop power
 L Special current range 0-1 mA
 M Special current range 0-5 mA

Channel 2 input

- Channel 2 input**
A None (single channel unit)
Code/range as in channel 1

Channel 3 input

- Channel 3 input**
A None (single or two channel unit)
Code/range as in channel 1

Channel 1 scale

- 1 With adhesive scale sheet (channel 1)

Channel 2 scale

- 0 None (single channel unit)
1 With adhesive scale sheet (channel 2)

Channel 3 scale

- 0 None (single or two channel unit)
1 With adhesive scale sheet (channel 3)

Operating instructions

- D Instructions in German
E Instructions in English

RSL-

← Complete order code

International Head Quarter

Endress+Hauser
GmbH+Co. KG
Instruments International
Colmarer Str. 6
79576 Weil am Rhein
Deutschland

Tel. +49 76 21 9 75 02
Fax +49 76 21 9 75 34 5
www.endress.com
info@ii.endress.com

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Nothing beats know-how

