

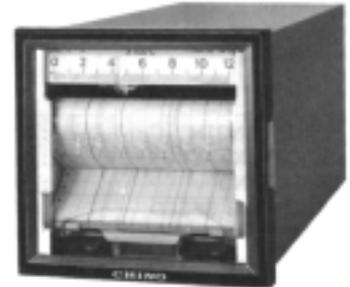
EL SERIES COMPACT ELECTRONIC RECORDER



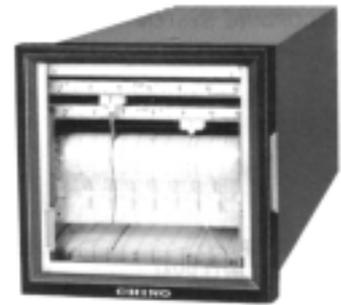
The EL recorders are compact and modular in design to provide versatility, easy maintenance and reliable operation.

The EL series includes a full range of models which accept inputs from mV• mA , thermocouples, resistance thermometers or thermistors. All EL models use fanfold chart paper, 100mm wide. Model EL includes 1, 2, 3, or 6 point recording systems, and a highly dependable one, two or three-pen continuous writing systems.

The EL series offers a variety of options. For example, chart speeds are available with one, two, three or six selectable positions. In addition, alarms can be provided at high and/or low limits. The alarms feature adjustable set points which can be set to provide 1.0% accuracy. These recorders can also include optional analog transmission signals used to obtain actual values on a process controller.



MODEL EL 100-06



MODEL FLI 100

MODELS

● 1-pen and dotting type instrument

Recording system	Type	Alarm action	Measurement				
			mV · mA type	Thermocouple	Resistance thermometer	Thermistor	
1-Pen	Recorder		EL800-01	EL100-01	EL200-01	EL300-01	
	Recording alarm	High (low) limit	EL826-01	EL126-01	EL226-01	EL326-01	
		High/low limits	EL836-01	EL136-01	EL236-01	EL336-01	
Dotting (multi.) point)	Recorder		EL800-□	EL100-□	EL200-□	EL300-□	
	Recording alarm	High (low) limit	EL826-□	EL126-□	EL226-□	EL326-□	*1
		High/low limits	EL836-□	EL136-□	EL236-□	EL336-□	

*1□ : 01D, 02, 03, 06 4 kinds

● 2-pen type instrument

Recording system	Type	Alarm action of 2nd pen	Alarm action of 1st pen			
			Record	High (low) limit	High/low limits	
2-pen	Recorder		FL□□ 00	—	—	
	Recording alarm	High (low) limit	FL□□ 06	FL□□ 66	—	
		High/low limits	FL□□ 07	—	FL□□ 77	

□ : Measurement System of 2nd pen 8 : mV -mA type, 1: Thermocouple type, 2 : Resistance thermometer type, 3 Thermistor type

● 3-pen type instrument

Recording system	Type	Alarm action of 3rd pen	Alarm action of 2nd pen			
			Record	High (low)	High/low limits	
3-pen	Recorder		GL□□□000	—	—	
	Recording alarm	High (low) limit	GL□□□007	GL□□□066	—	
		High/low limits	GL□□□006	—	GL□□□077	
		High (low) limit		GL□□□666	—	*2
	High/low limits			GL□□□777	*3	

□ : Measurement system of 1st-pen, 2nd pen and 3rd pen 8 : mV mA type, 1: Thermocouple type, 2 : Resistance thermometer type, 3 : Thermistor type

*2 1st pen high (low) limit

*3 1st pen high/low limits

■ GENERAL SPECIFICATIONS

INPUT	:DC voltage	—————	More than	10mV DC span, less than 100V DC span
	DC current	—————	More than	20 μ A DC span, less than 50 mA DC span
	Thermocouple	—————	More than	250°C span (K)
			More than	150°C span (E)
			More than	200°C span (J, T)
			More than	800°C span (R)
Resistance thermometer	—————	More than	50°C span (Pt 100, JPt 100)	
Thermistor	—————	More than	50°C span (at about room temperature)	

SCALE LENGTH	: 100mm
INDICATING ACCURACY	: $\pm 0.5\%$ of input span
DEAD BAND	: 0.2% of input span
BALANCING SPEED	: About 2 sec, (50Hz) or 1.6 sec (60Hz) for traveling full scale
CHART	: Fanfold chart
	Effective width 100mm
	Total width 11.4mm
	Total length 10m
	: Pen-writing type — 1-pen, 2-pen, or 3-pen
	Dotting type — 1, 2, 3, or 6 points
RECORDING POINTS	: Pen-writing type — 1-pen continuous recording (red)
	— 2-pen continuous recording (1st-pen : red 2nd-pen green)
RECORDING SYSTEM	— 3-pen continuous recording (1st-pen: red 2nd-pen: green 3rd-pen: blue)
	Dotting type — 1, 2, 3, or 6 points
	Ink pad dotting recording at each point with each color
	{ 1 point ————— red
	{ 2 points ————— 1 red, 2 black
	{ 3 points ————— 1 red, 2 black, 3 blue
	{ 6 points ————— 1 red, 2 black, 3 blue, 4 green, 5 brown, 6 purple
	: 20mm/h
	: 5sec (60Hz)
	$\pm 1.0\%$ of measuring range
	Full scale
	0.4% of measuring range
	: 100V, 110V AC — 1A
	200V, 220V AC — 0.5A

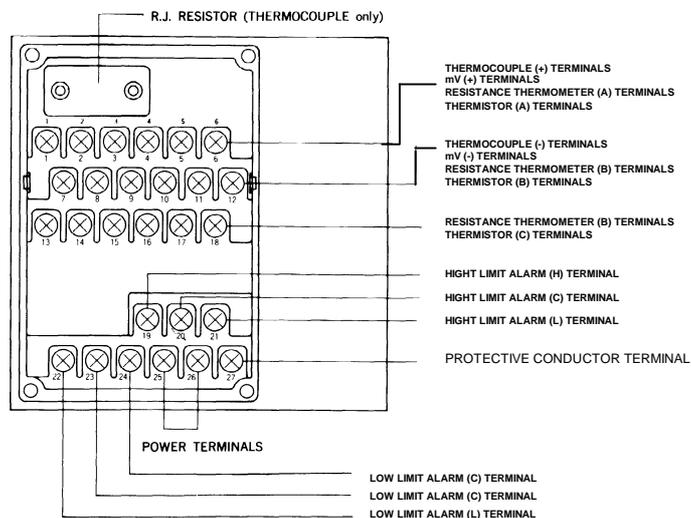
POWER SUPPLY	: 100, 110, 115, 120, 200, 220, 230 or 240V AC, 50Hz or 60Hz
ALLOWABLE VOLTAGE FLUCTUATION	: (+)10 — (-)10% of rated value
AMBIENT TEMPERATURE	: (-) 10 to 50°C
AMBIENT HUMIDITY	: 30 to 90% RH
LE SIGNAL SOURCE RESISTANCE	mV ——— Less than 10k Ω
	Thermocouple — Less than 10k Ω (with burnout circuit less than 150 Ω)
	Resistance thermometer — Less than 10 Ω (per wire)
	: DC voltage input — 10mV \leq Span voltage \leq 500mV About 8M Ω
	50 μ V $<$ Span voltage \leq 100V About 1M Ω
	Thermocouple input — About 8M Ω
	DC current input — 20 μ A \leq Span current \leq 200 μ A About 500 Ω
	20 μ A $<$ Span current \leq 50mA About 10 Ω

MAXIMUM COMMON MODE VOLTAGE	: AC 200V
COMMON MODE REJECTION RATIO (CMRR)	: More than 100 dB
SERIES MODE REJECTION RATIO (SMRR)	: More than 50 dB
INSULATION RESISTANCE	: 500V DC, 20M Ω or more between measuring terminals and ground terminal
	1000V DC, 20M Ω or more between power terminals and ground terminal
	1000V DC, 20M Ω or more between measuring terminals and power terminals
WITHSTAND VOLTAGE	: 500V AC, for 1 min between measuring terminals and ground terminal
	1000V AC, for 1 min between power terminals and ground terminal
	1000V AC, for 1 min between measuring terminals and power terminals
POWER CONSUMPTION	: About 8VA (1-pen type)
	About 10VA (Dotting type)
	About 16VA (2-pen type)
	About 20VA (3-pen type)

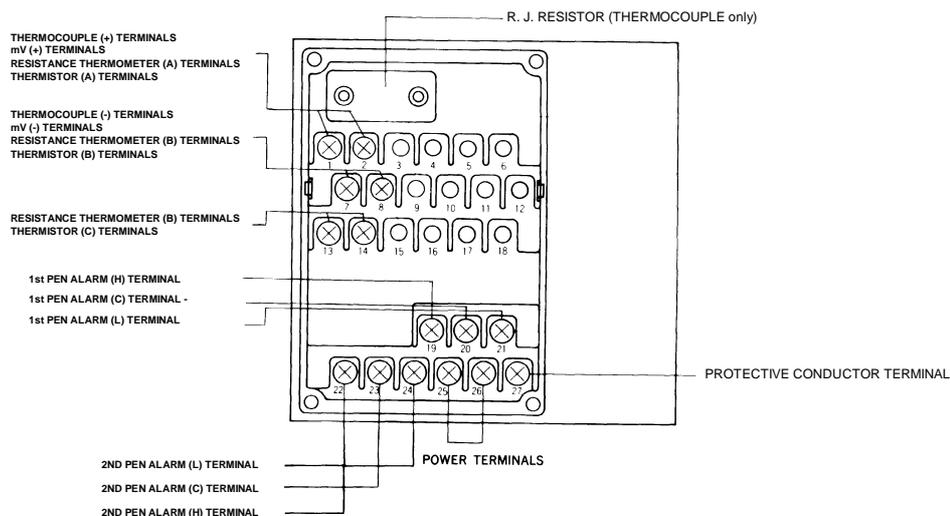
CASING	: Front door — ABS resin
	: Rear case — Steel plate
COLOR	: Door — Black
	: Case — Metallic silver
MOUNTING	: Flush panelmount
WEIGHT	: About 3.4kg (1-pen), about 3.8kg (Dotting), about 4.9kg (2 pen), about 5.6kg (3-pen)

■ **TERMINAL BOARD**

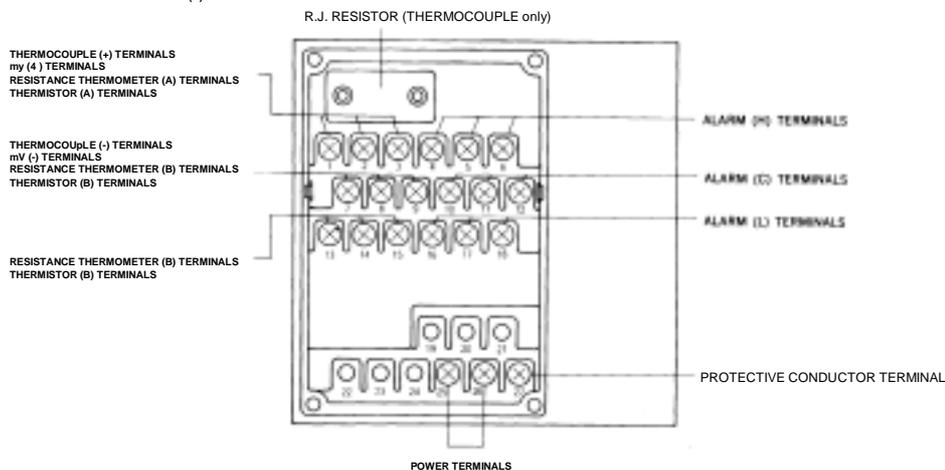
● **1-pen and dotting type**



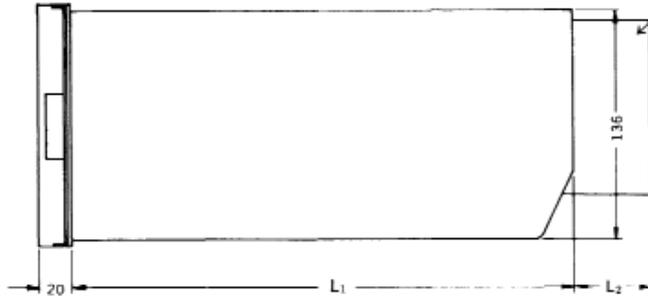
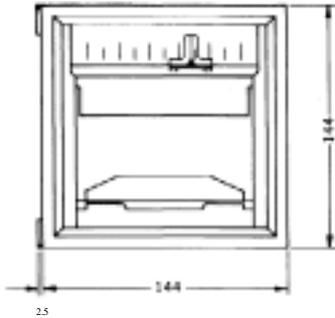
● **2-pen type**



3-pen type



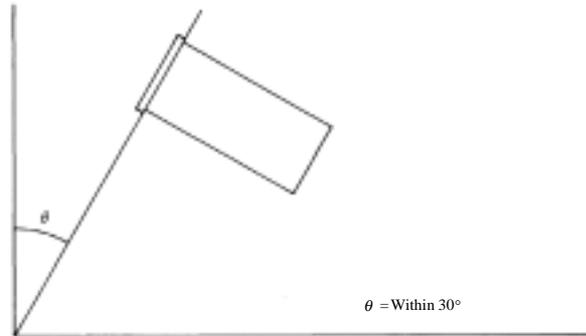
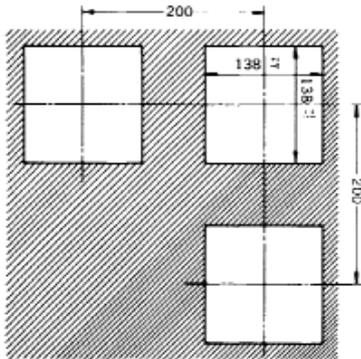
■ EXTERNAL DIMENSIONS



When the power supply is other than AC100V, a down-transformer is installed on the instrument case as shown in the left drawing.

L₁ : 1-pen and dotting type — 200mm
 2-pen and 3-pen type — 350mm
 L₂ : 2-pen and 3-pen type — 80mm

PANEL CUTOUT AND MOUNTING ANGLE



$\theta = \text{Within } 30^\circ$

■ STANDARD SCALE

	Input	Standard scale (°C)
Thermocouple	R	0 to 1400(20) 0 to 1600(20) 800 to 1600(10)
	K	0 to 250(5) 0 to 300(5) 0 to 400(5) 0 to 600(10) 0 to 800(10) 0 to 1000(20) 0 to 1200(20) 500 to 1200(10)
	E	0 to 150(2) 0 to 200(5) 0 to 300(5) (-)50 to 100(2)
	J	0 to 300(5) 0 to 400(5)
	T	0 to 200(5) 0 to 300(5) (-)50 to 150(5)
mV		0 to 10mV(0.2) 0 to 20mV (0.5) 0 to 50mV(1) (-)5 to 5mV(0.2) (-)10 to 10mV(0.5)

	Input	Standard scale (°C)
Resistance thermometer	Pt 100 JPt 100	0 to 50(1) 0 to 100(2) 0 to 150(2) 0 to 200(5) 0 to 300(5) 0 to 500(10) (-)20 to 80(2) (-)50 to 50(2) (-)50 to 150(5)
	Thermistor	0 to 100(2) 0 to 200(5)
Linear scale		4 to 20mA 1 to 5V

() shows 1 graduation.

Specifications subject to change without notice. 2001.4

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