

# *ECS-200, EIS-201*



**Easy operation, Easy viewing LED!**

***Shinho***

# Features

## Auto-reset function

Stable control can be obtained with automatic one-touch offset correction.

## Setting value lock function

Setting values can be protected by this function.

Once setting values are locked, they cannot be changed during basic operation.

## Large LED(14.3×8mm)

Large, bright and easy viewing LED display  
Character size: 14.3 x 8mm (H x W)

## Multiple power supply

100 to 240V AC, 24V AC/DC

## Model name

ECS-2		□ □ - □/□, □□□□		ECS-230 (W48 x H48 x D85mm)		
Control action	1			ON/OFF action		
	2			PD action		
Alarm	0			No alarm action		
	2			High limit alarm		
	3			Low limit alarm		
	4			High/Low limits alarm		
	6			High/Low limit range alarm		
	8			Process high alarm		
Control output	R			Relay contact 1a, 3A 250V AC (resistive load), 1A 250V AC (inductive load cosφ=0.4)		
	S			Non-contact voltage (for SSR drive): 12V DC Max.40mA (short circuit protected)		
Input	E			Thermocouple: K, J (Must be specified)		
	R			RTD: Pt100, JPt100 (Must be specified)		
Option	H			Standby function is added to High limit, Low limit or High/Low limits alarm		
	W (5A)			Heater burnout alarm	Rated current: 5A	
	W (10A)					Rated current: 10A
	W (20A)					
	CM			Cooling action		
	SB ( )*			Specified proportional band: 0.1 to 9.9% (input span)		
	SK ( )*			Specified control sensitivity: 0.1 to 2.0% (input span)		
	SC ( )*			Specified proportional cycle: 1 to 99sec.		
BK			Color Black			
BL			Screw type mounting bracket			

Please designate the specification from the □,□□□□ columns. When adding an option, enter it punctuated by a comma. ( ) \* Specify required value within the range.

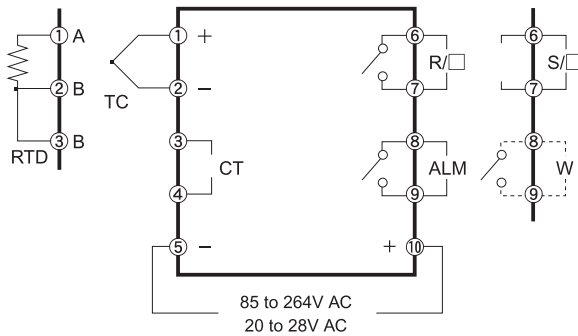
## Standard specifications

Display	PV/SV — Red 3-digit Character size: 14.3 x 8mm (H x W) Must be specified.		
Input	<ul style="list-style-type: none"> <li>Thermocouple — K, J External resistance: 100Ω or less</li> <li>RTD — Pt100, JPt100 3-wire system (resistance: 10Ω or less per wire)</li> <li>Scale — Refer to the Rated scale. (Must be specified)</li> <li>Resolution — 1°C</li> </ul>		
Accuracy (Setting, Indication)	Within ±0.5% of input span ±1 digit (However, for thermocouple: 300°C or more of input span, for RTD: 200°C or more of input span)		
Input sampling period	0.25 seconds		
Control action	Specify one from the following. <ul style="list-style-type: none"> <li>ON/OFF action</li> <li>Control sensitivity — ±0.3% of input span (hysteresis: 0.6%)</li> <li>PD action</li> <li>Proportional band (P) — ±2.5% of input span</li> <li>Derivative time (D) — 32sec.</li> <li>Proportional cycle — 30sec. (relay contact output), 3sec. (non-contact voltage output type)</li> </ul>		
Control output	Specify one from the following. <ul style="list-style-type: none"> <li>Relay contact — 1a 3A 250V AC (resistive load), 1A 250V AC (inductive load cosφ=0.4), Electrical life: 100,000 times</li> <li>Non-contact voltage — 12V DC (load resistance: 1.5kΩ) Max.40mA (short circuit protected) Temperature alarm</li> </ul>		
Temperature alarm	Specify one from the following. <ul style="list-style-type: none"> <li>No alarm action</li> <li>High limit alarm (Deviation setting) Setting range: -100 to 100°C Model ECS-2□2-□/□</li> <li>Low limit alarm (Deviation setting) Setting range: -100 to 100°C Model ECS-2□3-□/□</li> <li>High/Low limits alarm (Deviation setting) Setting range: ±(1 to 100)°C Model ECS-2□4-□/□</li> <li>High/Low limits range alarm (Deviation setting) Setting range: ±(1 to 100)°C Model ECS-2□6-□/□</li> <li>Process high alarm Setting range: Scaling low limit value to Scaling high limit value * Model ECS-2□8-□/□</li> </ul> * For RTD input with process high alarm action, the alarm is activated even if alarm action point is set to 0. Accuracy — The same as indication accuracy Action — ON/OFF action Hysteresis — 1°C (°F) Output — Relay contact 1a, 3A 250V AC (resistive load), 1A 250V AC (inductive load cosφ=0.4)		
Supply voltage	Specify one from the following. <ul style="list-style-type: none"> <li>100 to 240V AC 50/60Hz · 24V AC/DC 50/60Hz</li> </ul> Allowable voltage fluctuation range: 85 to 264V AC, 20 to 28V AC/DC	Power consumption	Approx. 5VA
Insulation resistance	10MΩ or more, at 500V DC Between Input terminal and Ground, Between Input terminal and Power terminal Between Power terminal and Ground Between Output terminal and Ground, Between Output terminal and Power terminal	Dielectric strength	1.5kV AC for 1 minute Between Input terminal and Ground Between Input terminal and Power terminal Between Power terminal and Ground Between Output terminal and Ground Between Output terminal and Power terminal
Environment	Ambient temperature: 0 to 55°C Ambient humidity: 35 to 85%RH (Non-condensing)	Material, Color, Weight	Material: Polycarbonate resin, Color: Light gray, Weight: Approx. 150g
Mounting method	Flush, Mounting bracket: One-touch type Mountable panel thickness: 1 to 3mm	Setting method	Membrane sheet key input
Accessories	Mounting bracket 1 set, Instruction manual 1 copy, When W option is added, CT (CTL-6S) 1 piece		
Attached function	Setting value lock, Self-diagnosis, Automatic cold junction temperature compensation (only for thermocouple), Scaling, Sensor correction, Power failure countermeasure, Burnout (thermocouple)		

## Options

Temperature alarm output with standby [H]	Alarm output ceases until input reaches alarm setting range upon connecting power to the instrument. Alarm output also ceases until input reaches alarm setting range when SV was changed during control. Standby function can be added to High limit alarm, Low limit alarm and High/Low limits alarms.
Heater burnout alarm [W]	Monitors heater current with CT (current transformer), and detects burnout. Specify one from 5A, 10A, 20A heater rated current. Setting accuracy — Within $\pm 5\%$ of heater rated current Setting range — 0 to 100% of heater rated current Control output — Relay contact 1a, 3A 250V AC (resistive load) 1A 250V AC (inductive load $\cos\phi=0.4$ ) Output self holding — Usable Accessories — CT (CTL-6S 1 piece)
Cooling action (Direct action) [CM]	<ul style="list-style-type: none"> <li>ON/OFF action</li> <li>Control sensitivity — <math>\pm 0.3\%</math> of input span (Hysteresis: 0.6%)</li> <li>PD action</li> <li>Proportional band (P) — <math>\pm 2.5\%</math> of input span</li> <li>Derivative time (D) — 32sec.</li> <li>Proportional cycle — 20sec. (Relay contact output), 3sec. (Non-contact voltage output)</li> </ul>
Specified proportional band [SB]	Specified range: 0.1 to 9.9% (input span) Specify a numeric value within the range.
Specified control sensitivity [SK]	Specified range: 0.1 to 2.0% (input span) Specify a numeric value within the range.
Specified proportional cycle [SC]	Specified range: 1 to 99sec. Specify a numeric value within the range.
Color Black[BK]	Color: Black (Faceplate: Dark gray)
Screw type mounting bracket [BL]	One-touch type is standard. By adding this option, screw type mounting bracket is provided. Mountable panel thickness: 1 to 8mm

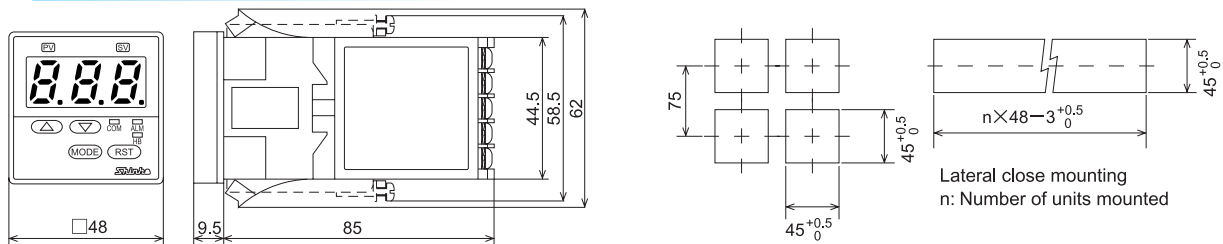
### Terminal arrangement



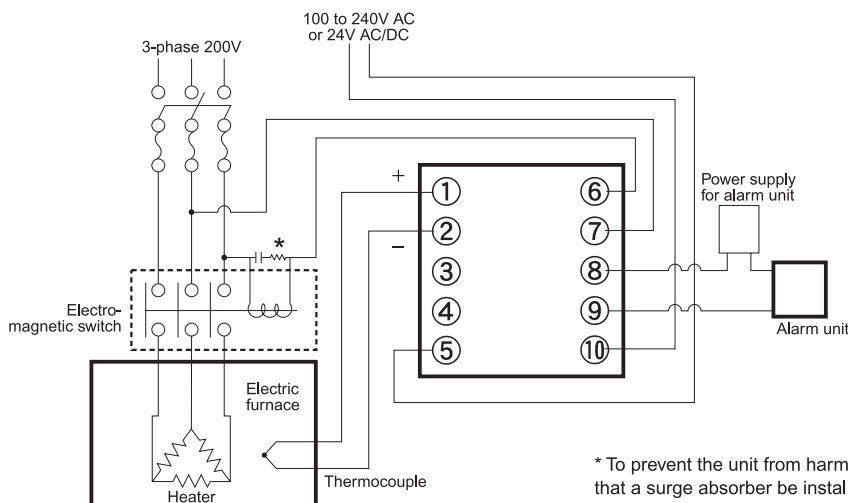
### Rated scale

Thermocouple		RTD
K	J	Pt100, JPt100
0 to 300°C	0 to 300°C	0 to 200°C
0 to 400°C	0 to 400°C	-100 to 300°C
0 to 600°C	0 to 600°C	
0 to 800°C	0 to 800°C	
0 to 999°C	0 to 800°C	

### External dimensions (unit: mm)



### Wiring example



\* To prevent the unit from harmful effects of unexpected high level noise, it is recommended that a surge absorber be installed between the electromagnetic switch coils.

# Features

## ■ Compact, Light

Meets most size requirements.

## ■ Large LED(14.3×8mm)

Large, bright and easy viewing display  
Character size: 14.3 x 8m (H x W)

## ■ Model name

EIS - 201 - □, □□ EIS - 201 (W48 x H48 x D85mm)	
Input point	1 point
Input	E Thermocouple: K, J (Must be specified) R RTD: Pt100, JPt100
Option	BL Screw type mounting bracket

Please designate the specification from the □,□□ columns. When adding an option, enter it punctuated by a comma.

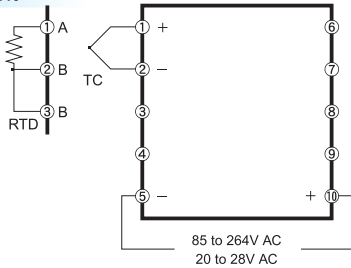
## ■ Standard specifications

Display	PV — Red 3-digit Character size: 14.3 x 8mm (H x W) Type (Must be specified)		
Input	· Thermocouple — K, J External resistance: 100Ω or less · RTD — Pt100, JPt100 3-wire system (Resistance: 10Ω or less per wire) Scale — Refer to the Rated scale. (Must be specified) Resolution — 1°C		
Indicating accuracy	Within ±0.5% of input span ± 1digit		
Input sampling period	0.5 seconds		
Supply voltage	Must be specified · 100 to 240V AC 50/60Hz, 24V AC/DC 50/60Hz Allowable voltage fluctuation range: 85 to 264V AC, 20 to 28V AC/DC	Power consumption	Approx. 5VA
Burnout indication	Upscale	Insulation resistance	10MΩ or more, at 500V DC
Dielectric strength	Input terminal-Ground — 500V AC for 1 minute Power terminal-Ground — 1.5kV AC for 1 minute		
Environment	Ambient temperature: 0 to 55°C Ambient humidity: 35 to 85%RH (non-condensing)	Material, Color, Weight	Material: Polycarbonate resin, Color: Light gray, Weight: Approx. 150g
Mounting method	Flush, Mounting bracket: One-touch type Mountable panel thickness: 1 to 3mm		
Attached function	Burnout (when thermocouple is burnt out)		

## ■ Option

Screw type mounting bracket [BL]	One-touch type is standard. By adding this option, screw type mounting bracket will be provided. Mountable panel thickness: 1 to 8mm
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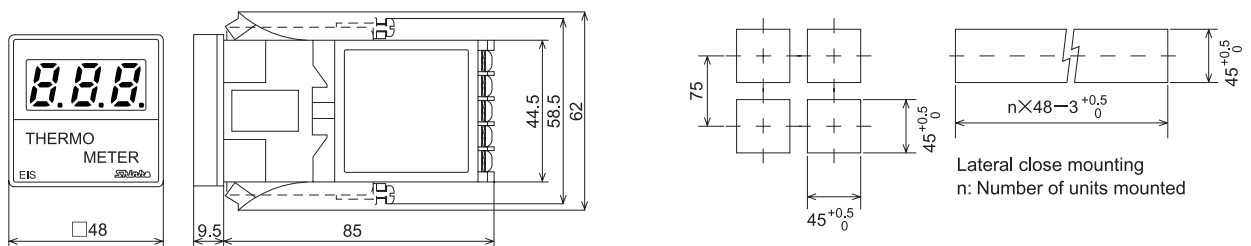
## Terminal arrangement



## Rated scale

Thermocouple		RTD
K	J	Pt100, JPt100
0 to 300°C	0 to 300°C	
0 to 400°C	0 to 400°C	0 to 200°C
0 to 600°C	0 to 600°C	-100 to 300°C
0 to 800°C	0 to 800°C	
0 to 999°C	0 to 800°C	

## External dimensions (unit: mm)



**SAFETY PRECAUTIONS**

- To ensure safe and correct use, thoroughly read and understand this manual before using this instrument.
- This instrument is intended to be used for industrial machinery, machine tools and measuring equipment. Verify correct usage after consulting purpose of use with our agency or main office, (Never use this instrument for medical purposes with which human lives are involved.)
- External protection devices such as protection equipment against excessive temperature rise, etc. must be installed, as malfunction of this product could result in serious damage to the system or injury to personnel. Also proper periodic maintenance is required.
- This instrument must be used under the conditions and environment described in this manual. Shinko Technos Co., Ltd. does not accept liability for any injury, loss of life or damage occurring due to the instrument being used under conditions not otherwise stated in this manual.

## Caution with respect to Export Trade Control Ordinance

To avoid this instrument from being used as a component in, or as being utilized in the manufacture of weapons of mass destruction (i.e. military applications, military equipment, etc.), please investigate the end users and the final use of this instrument. In the case of resale, ensure that this instrument is not illegally exported.



• This catalog is as of June 2005, and specifications are subject to change without notice. • When inquiring, please consult us or our agency.

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