

# GCR-500



## Model name

GCR-53		Series name: GCR-500 (W96×H48×D100mm)	
Control action	3	PID auto-tuning	
Alarm 1 (A1)	A	Alarm action applied (Selectable by key operation)	
	O	No alarm action	
Control output	R	Relay contact : 1a1b	
	S	Non-contact voltage (For SSR drive) : 12 <sup>+2%</sup> V DC	
	A	DC current : 4 to 20mA DC	
Input	E	Thermocouple : K, J, E	
	R	RTD : Pt100, JPt100	
Option	A2	Alarm 2 (A2) (Selectable by key operation) *1	
	W (20A)	Heater burnout alarm *2	CT input rating : 20A
	W (50A)		CT input rating : 50A
	DR	Heating/Cooling control *3	Relay contact : 1a
	DS		Non-contact voltage (For SSR drive) : 12 <sup>+2%</sup> V DC
	DA		Current: 4 to 20mA DC
	MR	Multi-range	
	BK	Color : Black	
BL	Screw type mounting bracket		
IP	Dust-proof·Drip-proof		
TC	Terminal cover		

If \*1 and \*2 are applied together, \*3 cannot be added.

If \*2 and \*3 are applied together, \*1 cannot be added.

If \*3 and \*1 are applied together, \*2 cannot be added.

## Features

• *Stable control.*

*(Overshoot suppression function applied)*

• *Various specification settings: Alarm action selection, Heat/Cool selection, Set value limit setting, etc.*

## Rated scale

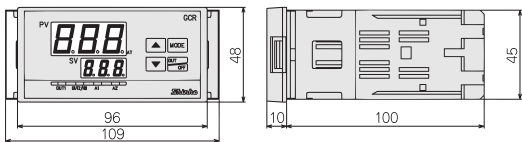
Input type		Input range	
Thermocouple	K	0 to 400 °C	0 to 999 °F
	J	0 to 999 °C	
	E	0 to 600 °C	0 to 999 °F
RTD	Pt100	-19.9 to 99.9 °C	-199 to 999 °F
		-199 to 400 °C	
	JPt100	-19.9 to 99.9 °C	-199 to 999 °F

## Specifications

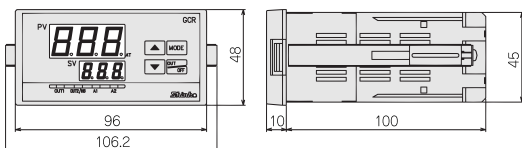
<b>Input</b>	Thermocouple : K, J, E External resistance: 100 Ω or less When input burnout : Upscale RTD : Pt100, JPt100 3-wire system Allowable input lead wire resistance (Resistance per wire: 10 Ω or less) Range : Refer to the Rated Scale Resolution : Thermocouple, RTD-----1°C(°F) RTD(With decimal point)----0.1°C		
<b>Accuracy (Set, Indication)</b>	Within ±0.3% of full scale ±1 digit or Within ±2°C(4°F) whichever is greater		
<b>Control action</b>	<ul style="list-style-type: none"> <li>• PID action (With auto-tuning function)</li> <li>• PD action (With auto-reset function): In case Integral time is set to 0</li> <li>Proportional band(P): 0 to 999°C(°F) or 0.0 to 99.9°C (ON/OFF action when set to 0 or 0.0)</li> <li>Integral time (I): 0 to 999s (Off when set to 0)</li> <li>Derivative time (D): 0 to 300s (Off when set to 0)</li> <li>Proportional cycle : 1 to 120s (Not available for DC output)</li> <li>• ON/OFF action : When proportional band is set to 0 or 0.0</li> <li>Hysteresis : 0.1 to 99.9°C(°F)</li> </ul>		
<b>Control output</b>	Relay contact : 1a1b, Control capacity, 3A 250V AC (resistive load), 1A 250V AC (inductive load cos φ=0.4) Non-contact voltage (for SSR drive): 12 <sup>+</sup> V DC, maximum 40mA (short circuit protected) Current: 4 to 20mA DC, load resistance maximum 550 Ω		
<b>Temperature Alarm 1 (A1)</b>	Type	Setting range	
	• No alarm		
	• High limit alarm	(Deviation setting) : -199 to input range max. value °C(°F) or -19.9 to 99.9°C(Off when set to 0 or 0.0)	
	• Low limit alarm	(Deviation setting) : -199 to input range max. value °C(°F) or -19.9 to 99.9°C(Off when set to 0 or 0.0)	
	• High/low limits alarm	(Deviation setting) : ±(0 to input range max. value)°C(°F) or ±(0.0 to 99.9)°C(Off when set to 0 or 0.0)	
	• High/low limit range alarm	(Deviation setting) : ±(0 to input range max. value)°C(°F) or ±(0.0 to 99.9)°C(Off when set to 0 or 0.0)	
	• Process high alarm	: input range min. to input range max.	
	• High limit alarm with standby	(Deviation setting) : -199 to input range max. value °C(°F) or -19.9 to 99.9°C(Off when set to 0 or 0.0)	
	• Low limit alarm with standby	(Deviation setting) : -199 to input range max. value °C(°F) or -19.9 to 99.9°C(Off when set to 0 or 0.0)	
	• High/low limits alarm with standby	(Deviation setting) : ±(0 to input range max. value)°C(°F) or ±(0.0 to 99.9)°C(Off when set to 0 or 0.0)	
	Setting accuracy	: Within ±0.3% of full scale ±1 digit or Within ±2°C(4°F) whichever is greater	
	Action	: ON/OFF action, Hysteresis: 0.1 to 99.9°C(°F)	
	Output	: Relay contact 1a, Control capacity: 3A 250V AC (resistive load), 1A 250V AC (inductive load cos φ=0.4)	
<b>Input sampling period</b>	0.25s(When the option Heater burnout alarm is applied, it is 0.5s)		
<b>Supply voltage</b>	100 to 240V AC, 50/60Hz 24V AC/DC, 50/60Hz	<b>Insulation resistance</b>	10MΩ or more at 500V DC
<b>Allowable voltage fluctuation</b>	100 to 240V AC: 85 to 264V AC 24V AC/DC: 20 to 28V AC/DC	<b>Dielectric strength</b>	Between Input terminal and Ground terminal 1.5kV AC for 1min Between Input terminal and Power terminal 1.5kV AC for 1min Between Output terminal and Ground terminal 1.5kV AC for 1min Between Output terminal and Power terminal 1.5kV AC for 1min
<b>Power consumption</b>	Approx. 8VA		Between Power terminal and Ground terminal 1.5kV AC for 1min
<b>Ambient temperature</b>	0 to 50°C (32 to 122°F)	<b>Case, Front panel</b>	Flame resisting resin Color: Light gray, Membrane sheet
<b>Ambient humidity</b>	35 to 85%RH (Non-condensing)	<b>Weight</b>	Approx. 250g
<b>External dimension</b>	96×48×100mm (W×H×D)		
<b>Mounting method</b>	Flush		
<b>Attached function</b>	Sensor correction, Set value lock, Power failure countermeasure, Self-diagnosis, Automatic cold junction temperature compensation, Sensor burnout alarm, Warm-up display		
<b>Option</b>	Temperature alarm 2 [A2], Heater burnout alarm [W], Heating/Cooling control output [DR, DS, DA], Multi-range [MR], Color black [BK], Screw type mounting bracket [BL], Dust-proof·Drip-proof [IP], Terminal cover [TC]		
<b>Specified specification</b>	Shipped as specified input, scale range, Temperature alarm action, cooling action, control (PD or ON/OFF action) action and hysteresis.		

## External dimensions

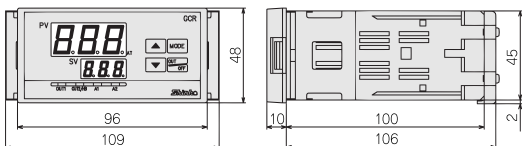
When one-touch mounting bracket (Standard) is used



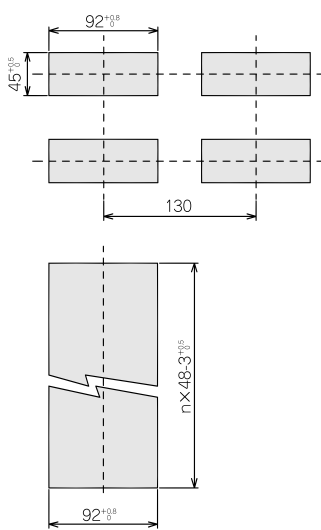
When screw type mounting bracket (Option: BL) is used



When terminal cover (Option: TC) is used

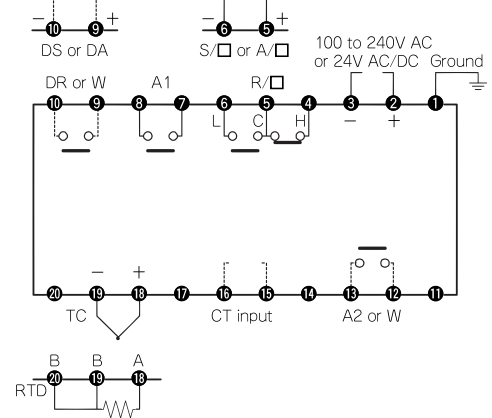


## Panel cutout



Lengthwise close mounting  
n : Number of units mounted

## Terminal arrangement



- R/□ : Relay contact output
  - S/□ : Non-contact voltage output
  - A/□ : DC current output
  - A1 : Temperature alarm 1 (A1)
  - A2 : Temperature alarm 2 (A2)(Option)
  - W : Heater burnout alarm (Option)
  - DR, DS, DA : Heating/Cooling control (Relay contact, Non-contact voltage, Current)(Option)
- Dotted line shows the option, and no terminal is equipped if it is not specified.

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

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