

# PROGRAMMABLE CONTROLLER

## PC-800 Series



Programmable Controller

- Accuracy:  $\pm 0.1\%$
- Input sampling period: 0.1 seconds
- Simple operation with a Memory-card
- Interactive setting system with LCD display
- Meets the needs of difficult process control



[When the Memory-card is inserted.]

### ■ Model name

Model name		Description
PC-8□5-□/□.□		
Main output	835-R	Relay contact
	835-S	Non-contact voltage
	835-A	DC current
	835-T	Non-contact relay
	855-R	ON/OFF servo
Input	E	Thermocouple
	R	RTD
	A	DC current
	V	DC voltage
Option	□	Refer to option items

### ■ Display example

[Pattern setting]

```
*PATTERN SETS*
PATTERN_No.=01
```

[Step temperature setting]

```
*STEP SETS* 01
TEMP= 89.1°C
```

[Manipulating value display]

```
MV(main) 100.0%
[Progress Bar]
```

[PID block selection]

```
*Block Sets Gr*
(PID BLOCK)
```

[Reading of Memory-card data]

```
*MEMORY*
CARD= SAVE
```

[Step time display]

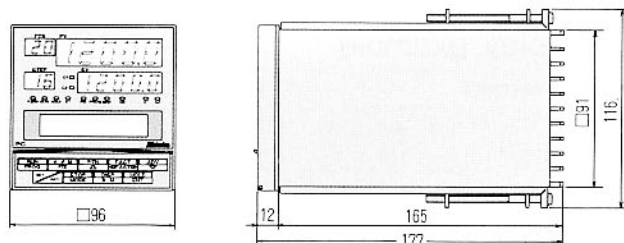
```
STEP TIME 3:53m
[Progress Bar]
```

# Shinko

## Standard specifications

<b>Input (Multi-range system)</b>	
• Thermocouple	K, J, R, S, PL-II, B, E, T, W/Re5-26 and N Input impedance: 1M $\Omega$ or greater Signal source resistance effect: 0.5 $\mu$ V/ $\Omega$
• RTD	Pt100, 3-wire system Allowable input lead wire resistance: 50 or less per wire 0 to 20mAdc, 4 to 20mAdc
• DC current	Input impedance: 250 $\Omega$
• DC voltage	-10 to 10mVdc, 0 to 10mVdc, -1 to 1Vdc, 0 to 1Vdc, 1 to 5Vdc and 0 to 10Vdc Input impedance: 1M $\Omega$ or greater Allowable input voltage: 15V or less
<b>Displays</b>	
• Process variable	: 7-segment, Red LED display, 5-digit Size, 14.3(H) $\times$ 8(W)mm
• Setting value	: 7-segment, Green LED display, 5-digit Size, 10.0(H) $\times$ 5(W)mm
• Pattern number	: 7-segment, Red LED display, 2-digit Size, 8(H) $\times$ 4(W)mm
• Step number	: 7-segment, Green LED display, 2-digit Size, 8(H) $\times$ 4(W)mm
• Multi-display	: LCD 16-digit $\times$ 2-line, with back-light (Contrast is adjustable.)
<b>Accuracy</b>	
• Indication	: Within $\pm$ 0.1% of full scale $\pm$ 1 digit, however, when thermocouple, Setting T input, Range -270 to 200 $^{\circ}$ C...Within $\pm$ 5 $^{\circ}$ C R, S input, Range 0 to 200 $^{\circ}$ C...Within $\pm$ 3 $^{\circ}$ C B input, Range 0 to 300 $^{\circ}$ C...Without the range of accuracy guarantee
• Cold junction temperature compensation	: $\pm$ 0.5 $^{\circ}$ C at 25 $^{\circ}$ C $\pm$ 10 $^{\circ}$ C
<b>Control action (PID action (with auto-tuning function))</b>	
• Proportional band (P)	: 0.1 to 1000.0% (ON/OFF action when set to 0)
• Integral time (I)	: 1 to 10000sec. (OFF when set to 0)
• Derivative time (D)	: 1 to 10000sec. (OFF when set to 0)
• Anti-reset windup (ARW)	: 0 to 100.0%
• Proportional band offset	: $\pm$ Proportional band span
• Proportional cycle	: 1 to 120sec. (Factory adjusted as 30sec. I-R/ $\square$ , -T/ $\square$ 3sec. [-S/ $\square$ ])
• Output limiter	: 0 to 100.0% (-5.0 to 105.0% for [-A/ $\square$ ])
• Output changing rate limiter	: 0.1 to 100.0%/sec. (OFF when set to 0)
• Output filter	: 0 to 100.0sec.
• Wait value	: $\pm$ 1 to 10% of scaling span (OFF when set to 0)
<b>Control output</b>	
• Relay contact [-R/ $\square$ ]	: 1a Control capacity, 220Vac 3A (resistive load) 220Vac 1A (inductive load $\cos\phi=0.4$ )
• Non-contact voltage [-S/ $\square$ ]	: 15Vdc (load resistance 250 to 1.2k $\Omega$ ) Max. 20mAdc (short circuit protected)
• DC current [-A/ $\square$ ]	: 4 to 20mAdc (isolated type, load resistance max. 600 $\Omega$ ) Output resolution 1/10000
• Non-contact relay [-T/ $\square$ ]	: Control capacity 250Vac 1A (isolated type)
• ON/OFF servo [-855-R/ $\square$ ]	: Relay contact 1a $\times$ 2 Dead band, 0 to 100.0% of the proportional band Control capacity, 220Vac 3A (resistive load) 220Vac 1A (inductive load $\cos\phi=0.4$ )
<b>Alarm</b>	
• Number of point	: 2 points (A1 and A2)
• Action	: ON/OFF action (Operating points of ON and OFF are settable individually.)
• Kind	: High limit, low limit, High/low limits, High/low limit range, Process value, High limit with standby function, low limit with standby function and High/low limits with standby function
• Output	: Relay contact 1a $\times$ 2 Control capacity 220Vac 0.5A (resistive load) 220Vac 0.2A (inductive load $\cos\phi=0.4$ )
<b>Others</b>	
• Sampling period	: 0.1 seconds
• Supply voltage	: 100 to 240Vac 50/60Hz
• Instantaneous power failure	: Within 30ms
• Dielectric strength	: Terminals between Input-Power, Ground 500Vac for 1min. Terminals between Power-Ground 1.5kVac for 1min. *Terminals between Output-Power, Ground 1.5kVac for 1min. *Not available to S/ $\square$ , A/ $\square$
• Insulation resistance	: 10M $\Omega$ or greater at 500Vdc (However, the Voltage must not be applied to the terminals Input and output for S/ $\square$ , A/ $\square$ .)
• Ambient temperature	: 0 to 50 $^{\circ}$ C
• Ambient humidity	: 35 to 85%RH (non-condensing)
• Power consumption	: Approx. 10W
• Mounting method	: Flush
• Case	: Incombustible resin, Color: Black
• Weight	: Approx. 1kg
• Accessories	: Mounting bracket 1 set Instruction manual 1 copy Unit nameplate 1 sheet
• Attached functions	: Scaling, Input filter, Sensor correction, Auto-tuning bias, Setting value lock, etc.

## External dimensions



- \* The contents of this catalog is as of December 2003. Specifications are subject to change without notice.
- \* For any inquiry of this controller, please.

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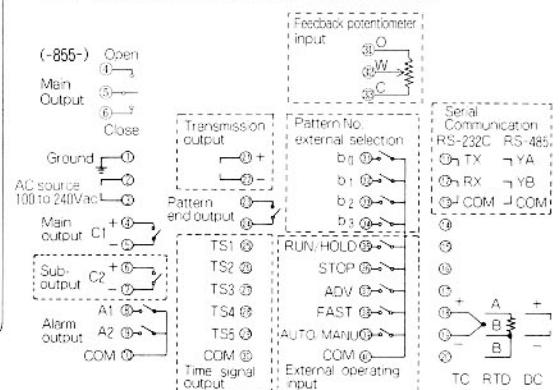
## Program specifications

Number of patterns	20 (linkable)
Number of steps	320 (16 steps/pattern)
Number of repeats	10000 times
Program time range	0 to 120h. 00min./step or 0 to 120min. 00sec./step
Time setting accuracy	Within $\pm$ 0.1% of setting time

## Options

Function	Optional code
Heating/Cooling control (Relay contact output)	DR
Heating/Cooling control (Non-contact voltage output)	DS
Heating/Cooling control (4 to 20mA output)	DA
Heating/Cooling control (Non-contact relay output)	DT
External operation	EC
Transmission output (4 to 20mA output)	<input type="checkbox"/> TA
Transmission output (0 to 1V output)	<input type="checkbox"/> TV
Serial communication (RS-232C)	C
Serial communication (RS-485)	C5
External memory (Memory-card is attached)	DM
External memory (Memory-card is not attached)	DMD
Time signal output	TS
Step setting value indication	SS
Pattern number external selection	PTN
Automatic start	AST
Standby after restored the power failure	PS
Hold after restored the power failure	PRH
PV (process variable) start	PST
Minute and second setting	MS
Security setting	SE
Feedback potentiometer is applicable	FP (-855-R/ $\square$ )

## Terminal arrangement



## Panel cutout

