

# [3] PXR Ordering code

## 24x48mm Size

Digit	Specification	Note	PXR	4	5	6	7	8	9	10	11	12	13	14
4	<Size of front H x W> 24 x 48 mm													
5	<Input signal> Thermocouple °C Thermocouple °F RTD Pt100Ω 3-wire type °C RTD Pt100Ω 3-wire type °F 1 to 5V DC 4 to 20mA DC				T	R	N	S	A	B				
6	<Control output 1> Relay contact output SSR/SSC driving output 4 to 20mA DC output								A	C	E			
7	<Control output 2> None Relay contact output SSR/SSC driving output 4 to 20mA DC output	Note 1 Note 1 Note 1							Y	A	C	E		
8	<Revision code>								1					
9	<Optional specifications 1> None Alarm 1 point 8 ramp/soak Alarm 1 point + 8 ramp/soak Alarm 2 point Alarm 2 point + 8 ramp/soak	Note 2 Note 2							0	1	4	5	F	G
10	<Instruction Manual> <Power supply voltage> None English None English									N	V	C	B	
11	<Optional specifications 2>									Y	Y	Y		
12	None									0	0	0		
13	RS-485 Modbus interface RS-485 Z-ASCII interface Re-transmission + Digital input 1 point Re-transmission Digital input 2 points RS-485 Modbus interface + Digital input 1 point RS-485 Z-ASCII interface + Digital input 1 point	Note 3 Note 3								M	0	0		
14	<Non-standard specification> Non-standard parameter setting													Y

Note 1: Process alarm (2 points) (the codes " F and G " in the 9th digit) cannot be specified.  
 Note 2: Control output 2 (the codes " A, C, and E " in the 7th digit) cannot be specified.  
 Note 3: Control output 2, communication digital input (2 points), alarm (2 points), and 24V power supply (the codes " A, C and E " in the 7th digit, " F and G " in the 9th digit, and " A, B, and C " in the 10th digit) cannot be specified.

## PXR3 : Optional items

Contents	Model
Adaptor for Din rail	ZZP*CTK368715P1

## 48x48mm Size 72x72mm Size

Digit	Specification	Note	PXR	4	5	6	7	8	9	10	11	12	13									
4	<Front dimensions> 48 x 48 mm Screw-terminal type 72 x 72 mm Screw-terminal type																					
5	<Input signal> Thermocouple °C Thermocouple °F Resistance bulb Pt100 3-wire type °C Resistance bulb Pt100 3-wire type °F 1 to 5V DC 4 to 20mA DC				T	R	N	S	A	B												
6	<Control output 1> Relay contact output SSR/SSC driving output 4 to 20mA DC output	Note 1							A	C	E											
7	<Control output 2> None Relay contact output SSR/SSC driving output 4 to 20mA DC output Re-transmission (4 to 20mA DC)	Note 2 Note 2 Note 2 Note 2							Y	A	C	E										
8	<Revision code>								1													
9	<Optional specifications 1> None Alarm 1 point Alarm for heater break Alarm 1 point + Alarm for heater break 8 ramp/soak Alarm 1 point + 8 ramp/soak Alarm for heater break + 8 ramp/soak Alarm 1 point + Alarm for heater break + 8 ramp/soak Alarm 2 point Alarm 2 point + 8 ramp/soak Alarm 2 point + Alarm for heater break + 8 ramp/soak Alarm 3 point R-SP R-SP + Alarm 2 point	Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3 Note 3							0	1	2	3	4	5	6	7	F	G	H	M	D	P
10	<Instruction Manual for><Power> None English None English	Note 5 Note 5 Note 5 Note 5								N	V	C	B									
11	<Optional specifications 2>									Y	Y	Y										
12	None									0	0	0										
13	RS 485 (Modbus) RS 485 (Z-ASCII) Digital input (1 point) Digital input (2 point) RS 485 (Modbus) + Digital input (1 point) RS 485 (Z-ASCII) + Digital input (1 point)	Note 4								M	0	0										
14	<Non-standard specification> Non-standard parameter setting												Y									

## 48x96mm Size 96x96mm Size

Digit	Specification	Note	PXR	4	5	6	7	8	9	10	11	12	13									
4	<Front dimensions> 48 x 96mm Screw terminal type 96 x 96mm Screw terminal type																					
5	<Input signal> Thermocouple °C Thermocouple °F Resistance bulb Pt100 3-wire type °C Resistance bulb Pt100 3-wire type °F 1 to 5V DC 4 to 20mA DC				T	R	N	S	A	B												
6	<Control output 1> Relay contact output SSR/SSC driving output 4 to 20mA DC output	Note 1							A	C	E											
7	<Control output 2> None Relay contact output SSR/SSC driving output 4 to 20mA DC output Re-transmission (4 to 20mA DC)	Note 1							Y	A	C	E										
8	<Revision code>								1													
9	<Optional specifications 1> None Alarm 1 point Alarm for heater break Alarm 1 point + Alarm for heater break 8 ramp/soak Alarm 1 point + 8 ramp/soak Alarm for heater break + 8 ramp/soak Alarm 1 point + Alarm for heater break + 8 ramp/soak Alarm 2 point Alarm 2 point + 8 ramp/soak Alarm 2 point + Alarm for heater break + 8 ramp/soak Alarm 3 point R-SP R-SP + Alarm 2 point	Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2 Note 2							0	1	2	3	4	5	6	7	F	G	H	M	D	P
10	<Instruction manual> <Power supply voltage> None English None English	Note 4 Note 4 Note 4 Note 4								N	V	C	B									
11	<Optional specifications 2>									Y	Y	Y										
12	None									0	0	0										
13	RS485 (Modbus) communication RS485 (Z-ASCII) communication Digital input 1 point Digital input 2 points RS485 (Modbus) communication + Digital input 1 point RS485 (Z-ASCII) communication + Digital input 1 point	Note 3								M	0	0										
14	<Non-standard specification> Non-standard parameter setting												Y									

Note 1: Cannot be combined with heater break alarm.  
 (No. 2, 3, 6, 7 and H on the 9th digit cannot be specified.)  
 Note 2: Cannot be combined with RS485 + 1-point digital input.  
 (V00 and W00 on the 11, 12, and the 13th digits cannot be specified.)  
 Note 3: In the case of 2-point digital input, either of control output 2 or heater break alarm or R-SP can be selected.  
 (2-point digital input, control output 2 + heater break alarm cannot be specified at the same time.)  
 Note 4: The parameter of manual operation is hidden when it is default setting.

The default settings of input signals, measured ranges, and setting values are shown below.

**Thermocouple specified** : Thermocouple K, Measured range: 0 to 400°C, Setting value: 0°C  
**Resistance bulb specified** : Pt, Measured range: 0 to 150°C, Setting value: 0°C  
**Voltage, Current specified** : Scaling: 0 to 100%, Setting value: 0%

In any case other than the description above, specify input signals and measured range.  
 The input signals for the thermocouple and the resistance bulb can be switched with the front panel keys.

The default settings of control action is reverse for control output 1 and direct for control output 2.  
 The reverse and direct actions can be switched with keys on the face panel.

## PXR4/5/9 : Optional items

Contents	Model
Terminal Cover	PXR4/7 : ZZP PXR1-A230 PXR5/9 : ZZP PXR1-B230
CT for heater burnout alarm	1~30A: ZOZ*CCCTL-6-S-H 20~50A: ZOZ*CCCTL-12-S36-8

Note 1: Cannot be combined with heater break alarm.  
 (2, 3, 6, 7, H cannot be specified on 9th digit.)  
 Note 2: In case of the combination 9th digit code:3, 7, F, G, H, M or P and PXR4 the following installation condition are required.  
 1) Max.ambient temperature: 40°C  
 2) Individual mounting. (Side-by-side mounting is not allowed.)  
 Note 3: Cannot be combined with RS485 + 1-point digital input.  
 (V and W cannot be specified on 11th digit.)  
 Note 4: In the case of control output 2, either of heater break alarm or remote SV input can be selected.  
 (A, C, E and R on the 7th digit, and 2,3,6,7,H, D and P on the 9th digit cannot be specified.)  
 Note 5: The parameter of manual operation is hidden when it is default setting.

## [4] Specifications

### ■ General specifications

<b>Power supply voltage</b>	100 V (-15%) to 240 V (+10%) AC, 50/60 Hz or 24 V (±10%) AC 50/60 Hz, 24 V (±10%) DC
<b>Power consumption</b>	When using 100 V AC: 6 VA (PXR3), 8 VA (PXR4,7), 10 VA (PXR5,9) When using 220 V AC: 8 VA (PXR3), 10 VA (PXR4,7), 12 VA (PXR5,9) When using 24 V AC/DC: 8 VA (PXR3), 10VA (PXR4,7), 12VA (PXR5,9)
<b>Insulation resistance</b>	20 MΩ or more (500 V DC)
<b>Dielectric strength</b>	Power supply-ground ... 1500 V AC for 1 min Power supply-others ... 1500 V AC for 1 min Ground-relay output ... 1500 V AC for 1 min Ground-alarm output ... 1500 V AC for 1 min Others ... 500 V AC for 1 min
<b>Input impedance</b>	Thermocouple: 1 MΩ or more Voltage: 450Ω k or more Current: 250Ω (external resistor)
<b>Allowable signal source resistance</b>	Thermocouple: 100Ω or less Voltage: 1kΩ or less
<b>Allowable wiring resistance</b>	Resistance bulb: 10Ω or less per wire
<b>Reference junction compensation accuracy</b>	±1°C (at 23°C)
<b>Input value correction</b>	±10% of measuring range
<b>Set value correction</b>	±50% of measuring range
<b>Input filter</b>	0 to 900.0 sec settable in 0.5 sec steps (first order lag filter)
<b>Noise reduction ratio</b>	Normal mode noise (50/60 Hz): 50 dB or more Common mode noise (50/60 Hz): 140 dB or more
<b>Applicable standards</b>	UL (UL873) CSA (C22.2 No.24-93) ... Not available on 72x72mm size CE mark (LVD : EN61010-1, EMC : EN61326-1)

### ■ Control function of standard type

<b>Control action</b>	PID control (with auto tuning, self-tuning) Fuzzy control (with auto tuning)
<b>Proportional band (P)</b>	0 to 999.9% of measuring range settable in 0.1% steps
<b>Integral time (I)</b>	0 to 3200 sec settable in 1 sec steps
<b>Differential time (D)</b>	0 to 999.9 sec settable in 0.1 sec steps On/off action if P = 0. Proportional action when I, D = 0.
<b>Proportional cycle</b>	1 to 150 sec settable in 1 sec steps Only for relay contact output or SSR/SSC drive output
<b>Hysteresis width</b>	0 to 50% of measuring range For On/off action only
<b>Anti-reset windup</b>	0 to 100% of measuring range Automatically validated at auto tuning
<b>Input sampling cycle</b>	0.5 sec
<b>Control cycle</b>	0.5 sec

### ■ Input section

<b>Input signal</b>	Thermocouple : J, K, R, B, S, T, E, N, PL II Resistance bulb : Pt100 Voltage, current: 1 to 5 V DC, 4 to 20 mA DC (Apply current input after connecting the furnished 250Ω resistor to input terminal.)
<b>Measuring range</b>	See measuring range table
<b>Burnout</b>	For thermocouple or resistance bulb input Control output upper/lower are selectable

### ■ Output section of standard type (control output 1)

<b>Control output 1</b>	Select one as follows Relay contact: SPDT contact: 220V AC/30V DC, 3A (resistive load) For PXR3, SPST contact Mechanical life 10 million operations (no load) Electrical life 100,000 operations (rated load) Minimum switching current 100mA (24V DC) For PXR3, 10 mA (5 V DC) SSR / SSC drive (Voltage pulse): ON: 17 to 25 V DC, For PXR3, 12 to 16 V DC OFF: 0.5V DC or less Max. current: 20mA or less 4 to 20mA DC: Allowable load resistance 600Ω or less For PXR3, 100 to 500Ω
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### ■ Control functions of heating/cooling control type (option)

<b>Control action</b>	PID control (with auto tuning)
<b>Heating side proportional band (P)</b>	0 to 999.9 % of measuring range
<b>Cooling side proportional band (P)</b>	Heating side "P" × cooling side coefficient (Automatically set in auto tuning) Cooling side proportional band coefficient: 0 to 100.0 On/off action if P=0
<b>Integral time (I)</b>	0 to 3200 sec (common to heating and cooling sides)
<b>Differential time (D)</b>	0 to 999.9 sec (common to heating and cooling sides) P,I,D=0:ON/OFF action (without dead band) for heating and cooling I,D=0:Proportional action
<b>Proportional cycle</b>	1 to 150 sec For relay contact output or SSR/SSC drive output only
<b>Hysteresis width</b>	0.5% of measuring range common to heating and cooling sides, For On/off action only
<b>Anti-reset windup</b>	0 to 100% of measuring range Automatically validated at auto tuning
<b>Overlap, dead band</b>	±50% of heating side proportional band
<b>Input sampling cycle</b>	0.5 sec
<b>Control cycle</b>	0.5 sec
<b>Manual operation</b>	Manual operation -3 to 103% (except for PXR3)

### ■ Output section of heating/cooling control type (control output 2) (option)

<b>Control output 2</b>	Select one as follows Relay contact: SPST contact: 220V AC/30V DC, 3A (resistive load) Mechanical life 10 million operations (no load) Electrical life 100,000 operations (rated load) Minimum switching current 100mA (24V DC) For PXR3, 10 mA (5 V DC) SSR/SSC drive (Voltage pulse): ON: 17 to 25 V DC, For PXR3, 12 to 16 V DC OFF: 0.5V DC or less Max. current: 20mA or less 4 to 20mA DC: Allowable load resistance 600Ω or less For PXR3, 100 to 500Ω
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### ■ Operation and display section

<b>Parameter setting method</b>	Digital setting by 3 keys With key lock function
<b>Display</b>	Process value/set value Selective display (PXR3 : Single display) 4 digits, 7-segment LED
<b>Status display LED</b>	Control output, process alarm output, Heater burnout alarm output (unavailable for PXR3)
<b>Setting accuracy</b>	0.1% or less of measuring range
<b>Indication accuracy (at 23°C)</b>	Thermocouple: (0.5% of measuring range) 1 digit 1°C For thermocouple R at 0 to 500°C ... (1% of measuring range) 1 digit 1°C For thermocouple B at 0 to 400°C ... (5% of measuring range) 1 digit 1°C Resistance bulb, voltage/current: (0.5% of measuring range) 1 digit

### ■ Alarm (option)

<b>Alarm kind</b>	Absolute alarm, deviation alarm, zone alarm with upper and lower limits for each Hold function available (see page 15) Alarm latch, Excitation/non-excitation selecting function provided
<b>Alarm ON-delay</b>	Delay setting 0 to 9999 sec settable in 1 sec steps
<b>Process alarm output</b>	Relay contact: SPST contact: 220 V AC/30 V DC, 1 A (resistive load) Mechanical life 10 million operations (no load) Electrical life 100,000 operations (rated load) Minimum switching current 100 mA (5 V DC) For PXR3, 10 mA (5 V DC). MAX 2 points (PXR3), MAX 3 points (PXR4, 5, 7, 9) output cycle 0.5 sec

## [4] Specifications

### ■ Heater burnout alarm (option, unavailable for PXR3)

<b>Heater current detection (option), unavailable for PXR3</b>	Current detector: CTL-6-S-H for 1 to 30 A / CTL-12-S36-8 for 20 to 50 A Current detection accuracy: 10% of measuring range Alarm settable range: 1 to 50 A Available only when control output is relay contact or SSR/SSC drive. However, detection is possible when control output ON lasts 500 ms or longer.
<b>Heater burnout alarm output unavailable for PXR3</b>	Relay contact: SPST contact: 220 V AC/30 V DC, 1 A (resistive load) Mechanical life 10 million operations (no load) Electrical life 100,000 operations (rated load) Minimum switching current 100 mA (24 V DC) 1 output, output updating cycle 0.5 sec

### ■ Digital input (option)

<b>Points</b>	1 or 2
<b>Electrical specifications</b>	5 V DC, approx. 2 mA (OFF judgment for 3 V DC or more, ON judgment for 2 V DC or less)
<b>Input pulse width</b>	Min. 0.5 sec
<b>Function (any one settable)</b>	Set value (front SV, SV1 to 3) changeover Control action start/stop Ramp/soak action start / reset Auto tuning start / stop Alarm latch cancel and built-in timer start

### ■ Timer function (option)

<b>Start</b>	By digital input
<b>Setting</b>	0 to 9999 sec settable in 1 sec steps
<b>Action</b>	Event ON-delay or OFF-delay
<b>Signal output</b>	Alarm output relay used. Up to 3 points available.

### ■ Communication function (option)

<b>Physical specifications</b>	EIA RS485
<b>Communication protocol</b>	Modbus™ RTU mode or PXR protocol (Z-ASC II)
<b>Communication method</b>	2 wire method. Half duplex bit serial, start-stop sync type.
<b>Data type</b>	8 bits. Parity: odd/even/none.
<b>Communication rate</b>	9600bps
<b>Connection aspect</b>	multi-drop/up to 32 controllers connectable including master station
<b>Communication distance</b>	Total extension 500 m or less.
<b>RS232C / RS485 Signal converter (recommendation)</b>	Isolated type Manufacturer: RA Systems Corp. (Japan) Model: RC-77 <a href="http://www.ras.co.jp">http://www.ras.co.jp</a> Manufacturer: OMRON Co., Ltd (Japan) Model: KS3C-10 <a href="http://www.omron.co.jp">http://www.omron.co.jp</a>

### ■ Re-transmission output function (option)

<b>Output signal</b>	DC 4-20mA
<b>Load resistance</b>	500Ω or less (PXR3), 600Ω or less (PXR4, 5, 7, 9)
<b>Output updating</b>	500ms
<b>Output accuracy</b>	0.3% FS (at 23°C)
<b>Resolution</b>	2000 or more
<b>Kind of output signal</b>	Any one among PV, SV, DV and MV (selectable by parameter)

### ■ Remote setpoint (option, not available on 24x48mm size)

<b>Input signal</b>	1 to 5 V DC, 1 point
<b>Accuracy</b>	±0.5% 1 digit (at 23°C)
<b>Input sampling cycle</b>	0.5 sec
<b>Input scaling</b>	Allowed
<b>Display of remote mode</b>	LED on Front panel
<b>Input impedance</b>	1MΩ or more

### ■ Other functions

<b>Parameter mask function</b>	Parameter display is disabled by software.
<b>Ramp/soak function (option)</b>	2 program pattern of 4 steps each, or 1 program pattern × 8 steps Digital input allows to start/reset the action.

### ■ Power failure processing

<b>Memory protection</b>	Held by non-volatile memory
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### ■ Self-check

<b>Method</b>	Program error supervision by watchdog timer
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### ■ Operation and storage conditions

<b>Ambient operating temperature</b>	-10°C to 50°C
<b>Ambient operating humidity</b>	Less than 90% RH (no condensation)
<b>Storage temperature</b>	-20°C to 60°C

### ■ Optional items

<b>Current detector (CT) (unavailable for PXR3)</b>	For 1 to 30 A: CTL-6-S-H For 20 to 50 A: CTL-12-S36-8 (see page 17)
<b>DIN rail mounting adapter (for PXR3)</b>	ZZP*CTK368715P1 (for outline diagram, see page 11)
<b>Terminal cover</b>	PXR4 : ZZPPXR1-A230 PXR5/9 : ZZPPXR1-B230 (for outline diagram, see page 11)
<b>Instruction manual</b>	For communication function (see list of related documents on page 10)

### ■ Structure

<b>Mounting method</b>	Panel flush mounting PXR3 can be mounted to rail/wall by using the DIN rail mounting adapter available at option.
<b>External terminal</b>	Plug-in terminal (PXR3) or M3 screw terminal (PXR4, 5, 7, 9)
<b>Case material</b>	Plastic (non-combustible grade UL94V-0 equivalent)
<b>Dimensions</b>	See the outline diagram on page 11.
<b>Weight</b>	Approx. 150 g (PXR3), 200 g (PXR4), 250g (PXR7) 300 g (PXR5), 300 g (PXR9)
<b>Protective structure</b>	Front waterproof structure: NEMA4X (IEC standard IP66 equivalent)(when mounted on panel with our genuine packing. Waterproof feature unavailable in close mounting of multiple units) Rear case: EC IP20
<b>Outer casing</b>	Black (front frame, case)

### ■ Scope of delivery

<b>Scope of delivery</b>	Controller, panel mounting bracket, front watertight packing, instruction manual, 250 resistor (for current input)
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### ■ Measuring range table

input signal		measuring range(°C)	measuring range(°F)
<b>resistance bulb</b>	Pt100	-199 to 850	-326 to 1562
	<b>Thermocouple</b>		
	J	0 to 800	32 to 1472
	K	0 to 1200	32 to 2192
	R	0 to 1600	32 to 2912
	B	0 to 1800	32 to 3272
	S	0 to 1600	32 to 2912
	T	-150 to 400	-238 to 752
	E	-150 to 800	-238 to 1472
	N	0 to 1300	32 to 2372
	PL II	0 to 1300	32 to 2372
<b>DC voltage</b>	1 to 5V	scaling range	-1999 to 9999
<b>DC current</b>	4 to 20mA		

Note 1: For current input connect the supplied 250Ω resistor at the input terminal.

Note 2: When the measuring range exceeds 1000°C (1832°F), decimal point cannot be used.

## [4] Specifications

### ■ Insulation block diagram

Power supply section	Measurement input Heater current detector input Remote SV input Internal circuit ----- Voltage pulse, 4 to 20mA DC control output 1 Voltage pulse, 4 to 20mA DC control output 2 Transfer output ----- Digital input (In case of Re-Transmission by PXR3)
Relay contact control output 1	
Relay contact control output 2	
Alarm relay output 1	
Alarm relay output 2	
Alarm relay output 3 or heater break alarm output (PXR3 not included)	Communication (RS-485) Digital input (In case of Re-Transmission by PXR3, 4, 5, 7, 9)

Note: Basic insulation (dielectric strength 1500 V AC) between blocks delimited by line — .  
 Functional insulation (dielectric strength 500 V AC) between blocks delimited by line - - - - .  
 Non isolated between blocks which are not delimited from each other.

### ■ Caution in use Control output

Model	Voltage puls (for SSR drive)		DC 4 to 20 mA Allowable load resistance
	Voltage	Max. Current	
PXR3	15V DC	20mA	100 to 500Ω
PXR4, 5, 7, 9	24V DC	20mA	600Ω or less
PXV3	5.5V DC	20mA	600Ω or less
PXV	24V DC	60mA	600Ω or less
PXW	24V DC	60mA	600Ω or less
PXZ	24V DC	60mA	600Ω or less

Differences from other models are listed at left. For replacement, check is required to see if the specifications of control end are satisfied.

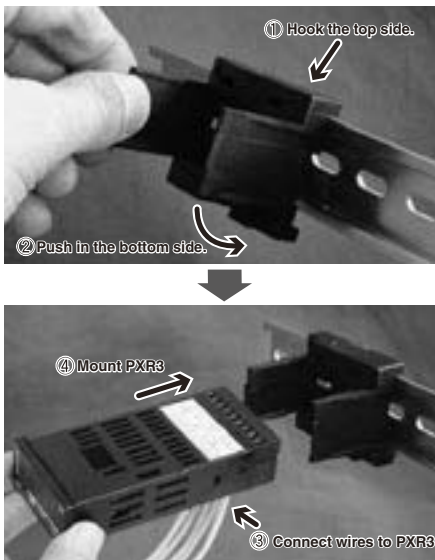
### ■ List of related documents

	PXR3	PXR4, 7	PXR5	PXR9
Instruction manual	TN1PXR3-E	TN1PXR-E	TN1PXR5/9-E	
Operation manual	ECNO:409	ECNO:406		
Communication function manual	MODBUS	TN512642-E		
	Z-ASCI	TN512644-E		

\*The above documents can be downloaded from our Internet home page. <http://www.fic-net.jp/eng>

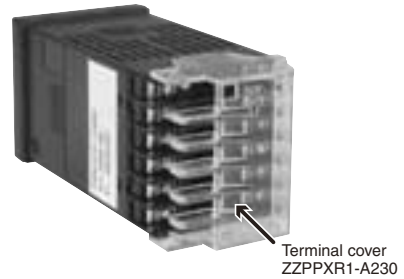
### Mounting to DIN rail (PXR3 only)

Mountable to a DIN rail using the DIN rail mounting adapter available at option. With this adapter, also mountable to a wall.

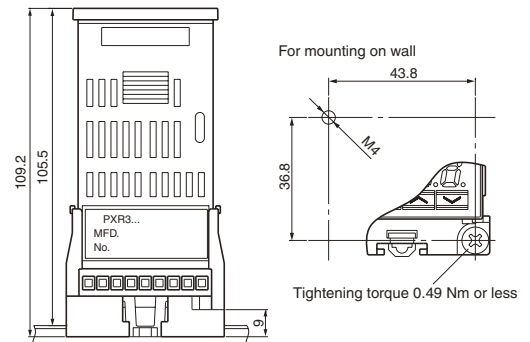
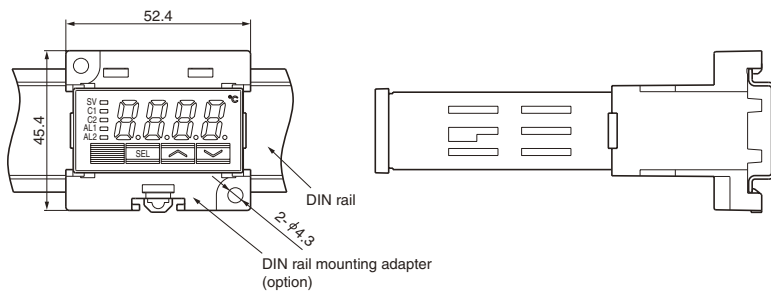


### Terminal cover (PXR4)

The terminal block can be protected by the terminal cover available at option.



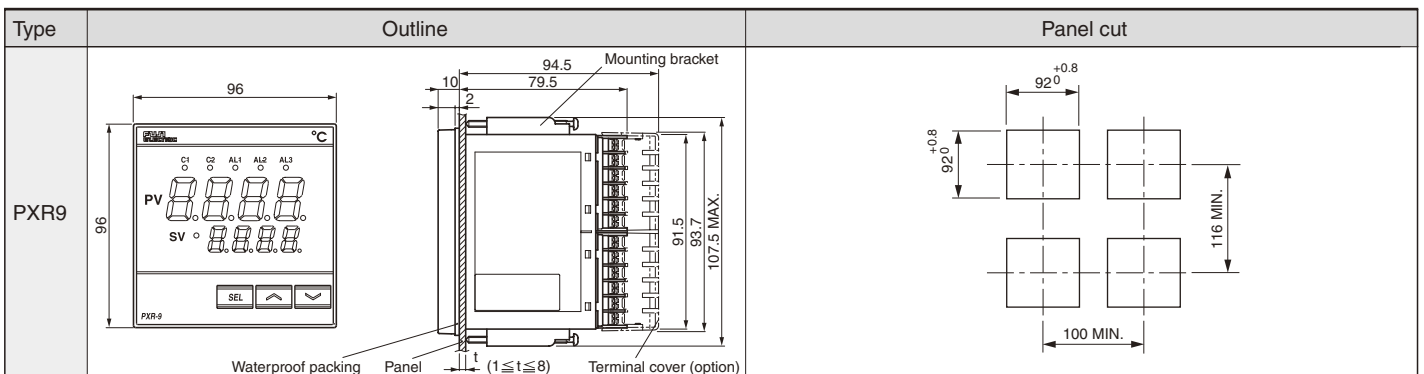
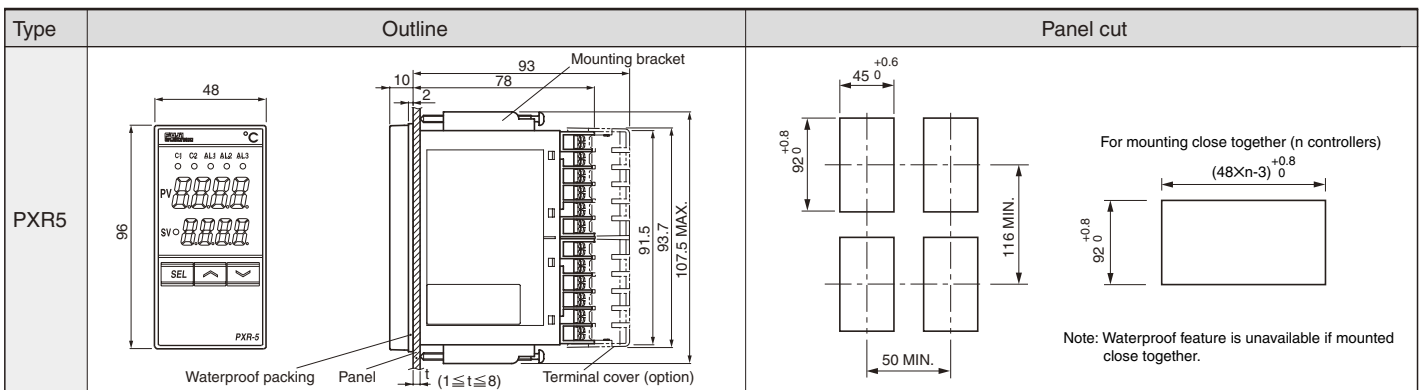
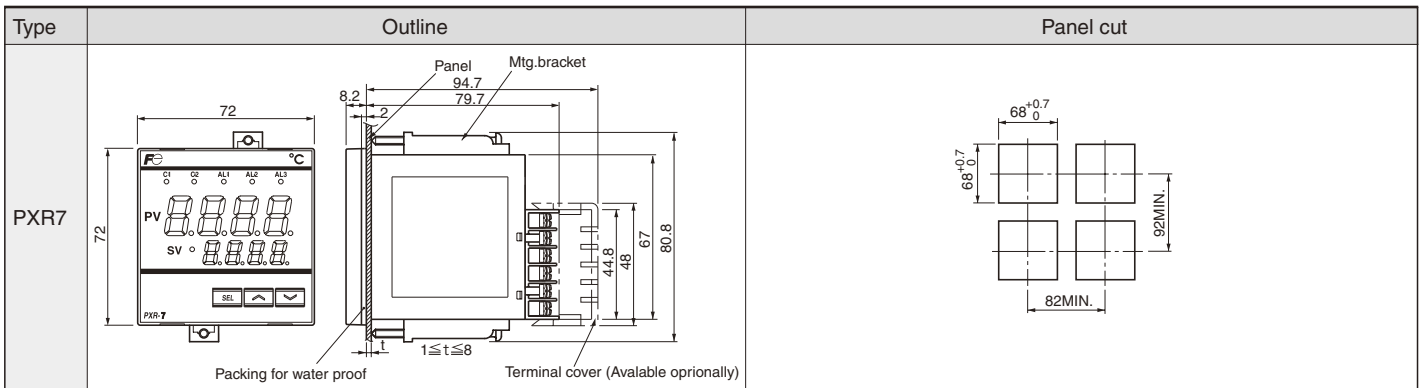
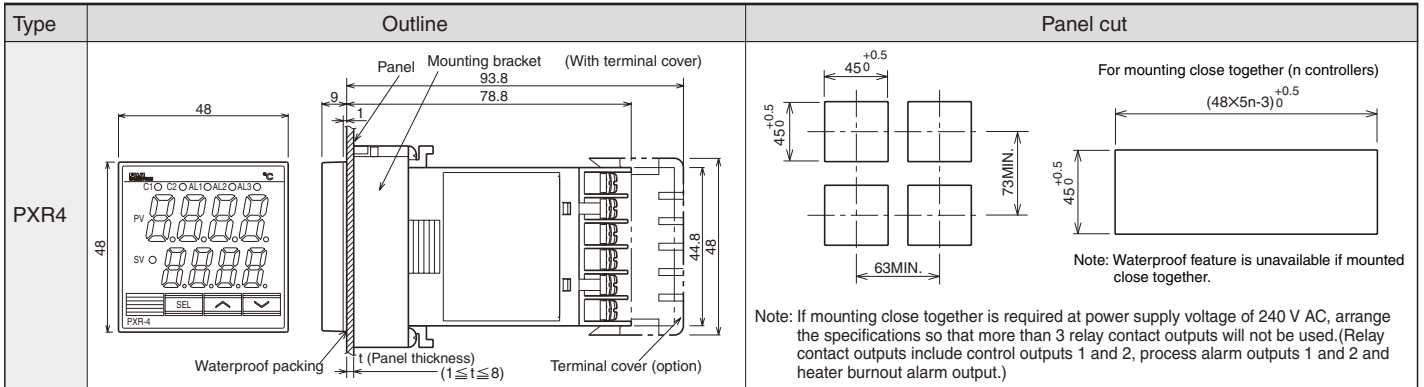
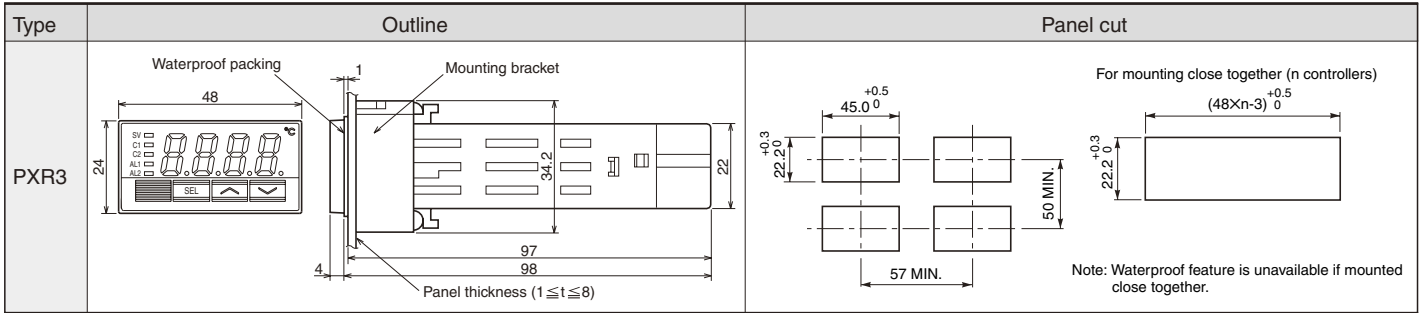
### With PXR3 DIN rail mounting adapter (available at option)



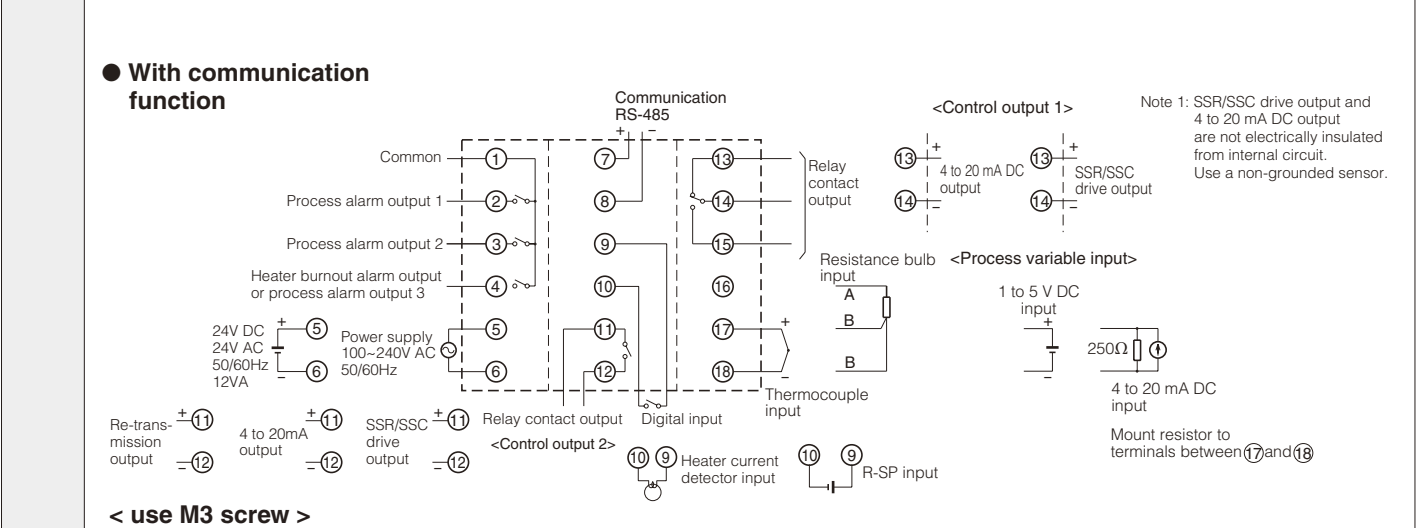
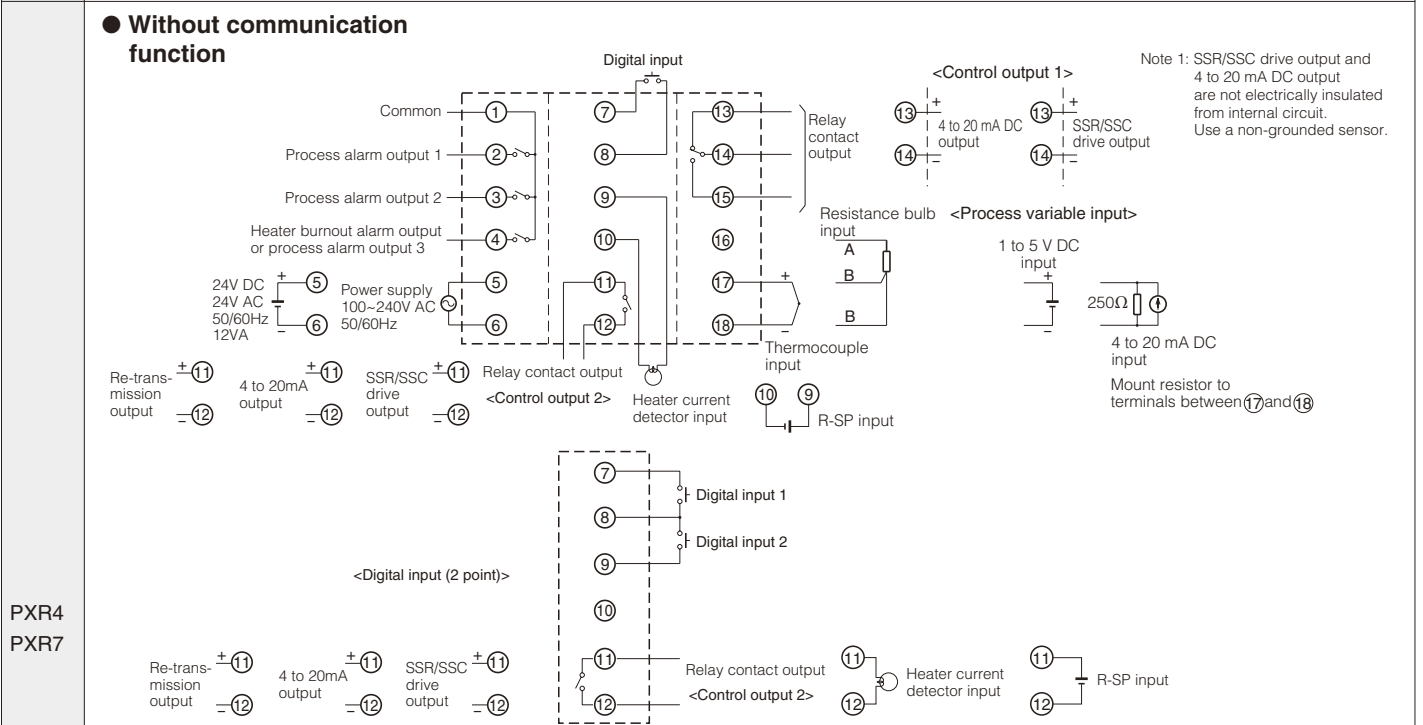
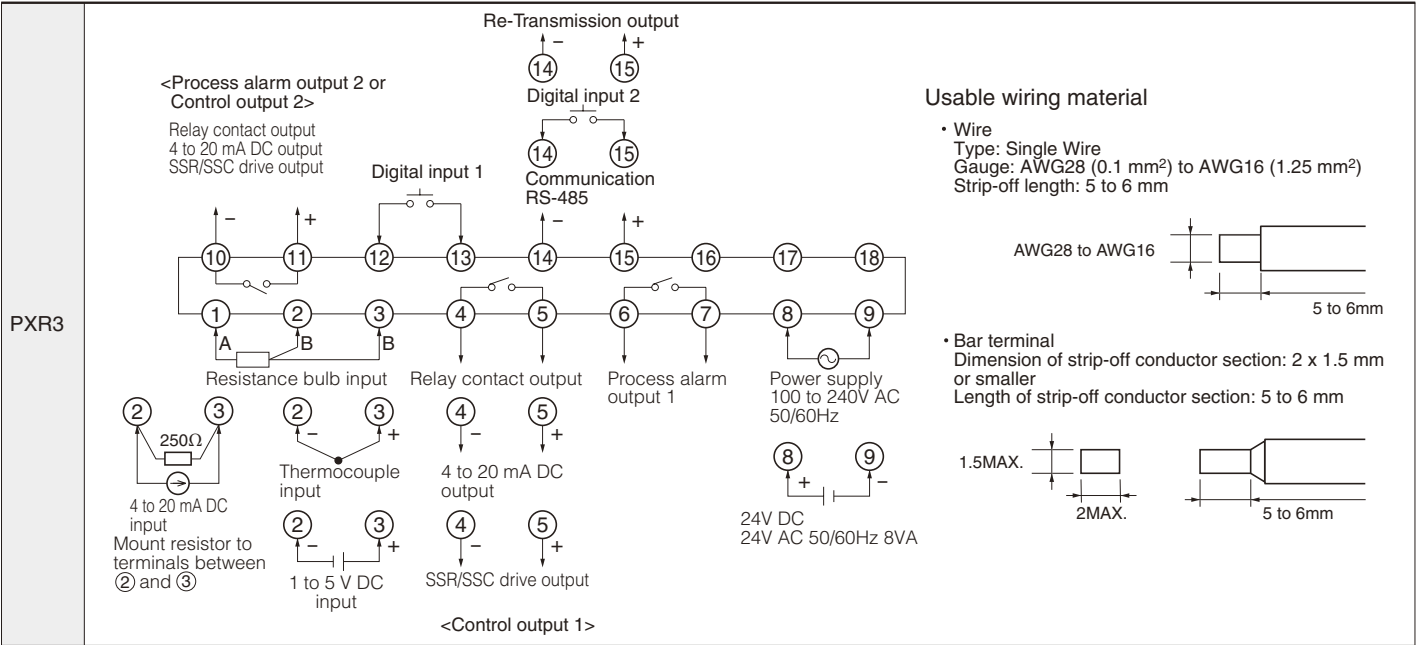
Caution on drilling in panel: In case of coating, etc. after drilling, the above dimensions must be followed in the finished status.

# [5] Outline and Panel Cutout Dimensions

(unit: mm)



## [6] External connection diagram



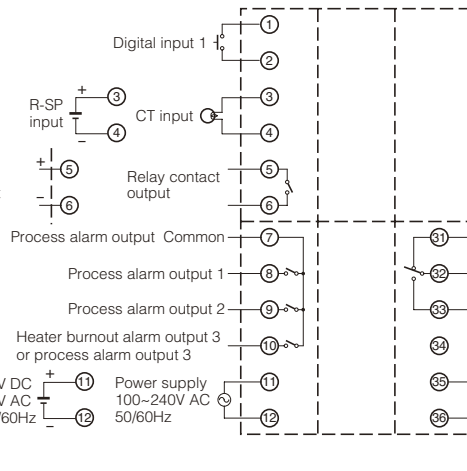
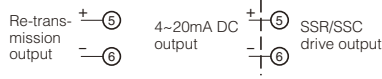


# [6] External connection diagram

## ● Without communication function

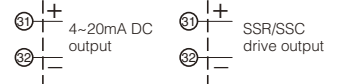
### < Non digital input or with digital input (1 point) >

<Control output 2>



Note 1: Mount supplied resistor to terminals between 35 and 36

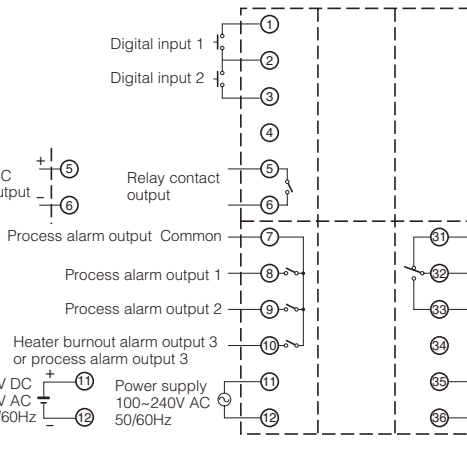
<Control output 1>



## ● Without communication function

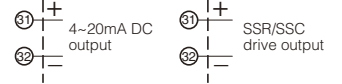
### < With digital input (2 point) >

<Control output 2>



Note 1: Mount supplied resistor to terminals between 35 and 36

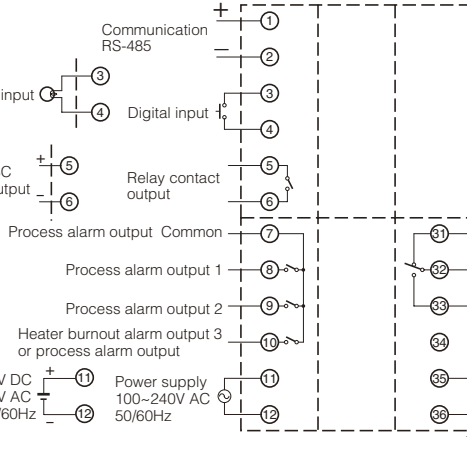
<Control output 1>



PXR5  
PXR9

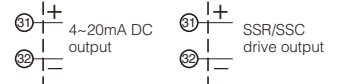
## ● With communication function

<Control output 2>



Note 1: Mount supplied resistor to terminals between 35 and 36

<Control output 1>

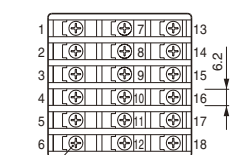


< use M3 screw >

PXR3

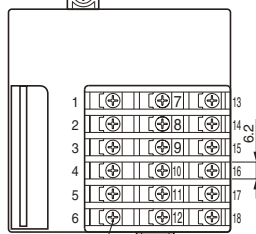


PXR4



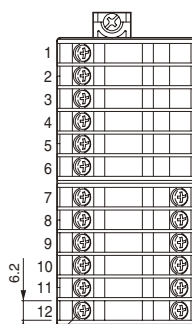
M3 screw terminal

PXR7



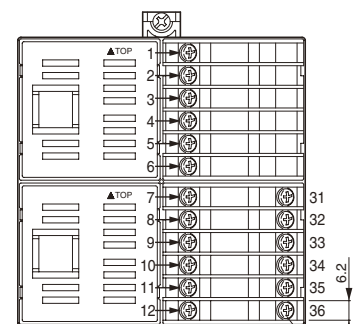
M3 screw terminal

PXR5



M3 screw terminal

PXR9



M3 screw terminal

## [7] Functions

### Function0 Manual Operation

This function is selectable operation mode either "Auto" or "Manual" operation by change the parameter.  
 MV output value is changeable by manual operation on Manual mode.

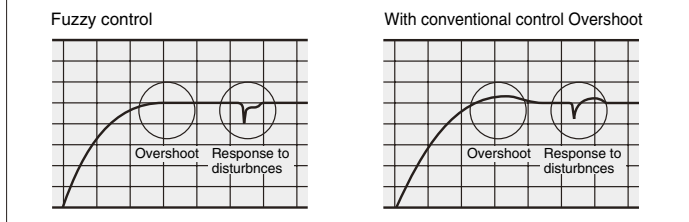
- Operation mode is stored while power down.
- Changeover method: Auto → Manual: Balanceless bump less  
 Manual → Auto: Balance bump less
- MV setting value resolution: 1%(Settable by front key)
- MV setting range: -3~103%
- Auto-tuning and Self-tuning are not available while manual operation mode.

### Function1 Control function

#### Fuzzy control function

Fuzzy operation is used to suppress overshoot so that the response to external disturbances is improved. By monitoring process value, overshoot is suppressed with the startup time remaining unchanged. At the same time, response to external disturbances is also improved.

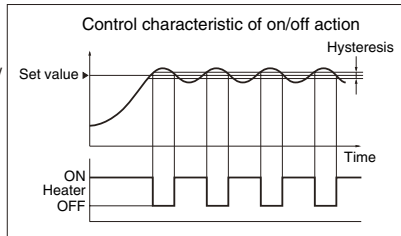
- Comparison between fuzzy control and conventional control



#### On/off action (2-position action)

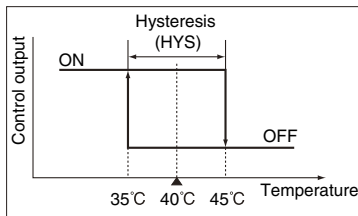
When process value (PV) is below the set value (SV), output is turned on and the heater is energized as shown below. When PV is above SV, output is turned off and the heater is de-energized. In this way, output is turned on/off repeatedly with respect to the SV to keep the temperature constant. This method of control is called "on/off action (2-position action)."

- When "0" is assigned to parameter P, the on/off action will be selected.



#### Point On/off action hysteresis setting

In on/off control, output turns on/off with respect to the set value. Therefore, output would change frequently in response to a slight change in the temperature. This might shorten the service life of the output relay and adversely affect the equipment connected with the temperature controller. To prevent this, a gap (hysteresis) is provided in the on/off action. This action gap is usually called "hysteresis."

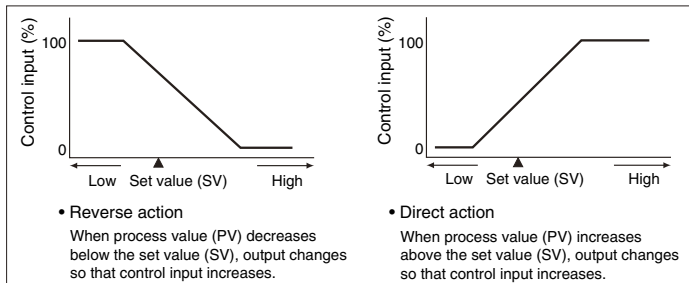


Example 1) Suppose that the temperature controller has a measuring range of 0 to 150°C and a hysteresis (HYS) of 10. When the set value is adjusted to 40°C, the heater turns off at 45°C and turns on at 35°C.

Example 2) For turning off the heater at 45°C in the figure at left, parameter [SVOF] should be set at "-5." Then, the heater turns off at 45°C and turns on at 35°C. (The above action is effective when the ONOFF parameter is set at OFF.)

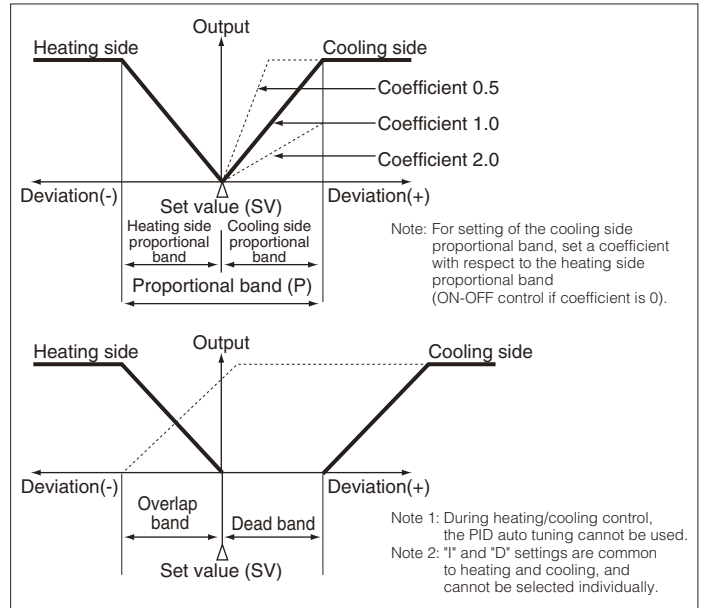
#### Point Changeover of output action

Direct action or reverse action is settable by parameter [P-n1].



#### Heating / cooling control (option)

By a single controller both heating and cooling control output are obtained. (Both control outputs 1 and 2 are used.)

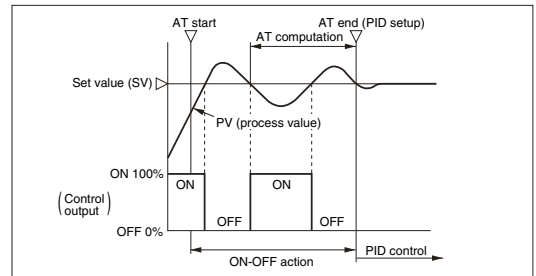


### Function2 PID tuning function

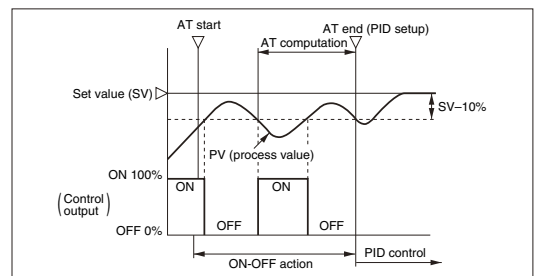
#### Auto-tuning (AT)

PID parameters are automatically set by the controller's measurement and computation function. This instrument provides 2 types of auto-tuning functions; the standard type (auto-tuning with SV used as reference) and the low SV type (auto-tuning with the value 10% below SV used as reference).

(a) Standard type

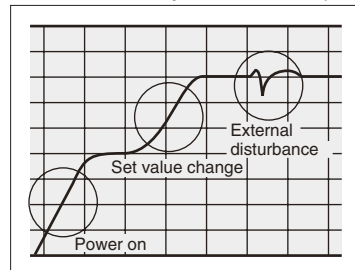


(b) Low PV type



#### Self-tuning function

At power on, changing a set value or during external disturbance, tuning is made automatically so that the PID parameters are reoptimized.



Note: For some objects to control, PID values could not be optimized.



## Function3 Alarm (option)

### • Kind of alarm and alarm type code

	ALM1	ALM2	ALM3	Alarm type	Operation figure
	0	0	0	No alarm	
Absolute value alarm	1	1	1	Upper-limit absolute value	
	2	2	2	Lower-limit absolute value	
	3	3	3	Upper-limit absolute value (with hold)	
	4	4	4	Lower-limit absolute value (with hold)	
Deviation value alarm	5	5	5	Upper-limit deviation	
	6	6	6	Lower-limit deviation	
	7	7	7	Upper and lower limits deviation	
	8	8	8	Upper-limit deviation (with hold)	
	9	9	9	Lower-limit deviation (with hold)	
	10	10	10	Upper and lower limits deviation (with hold)	
Range alarm	11	11	11	Range upper and lower limits deviation (ALM1/2 independent operation)	
	-	12	-	Range upper and lower limits absolute value	
	-	13	-	Range upper and lower limits deviation	
	-	14	-	Range upper limit absolute value and lower limit deviation	
	-	15	-	Range upper limit deviation and lower limit absolute value	

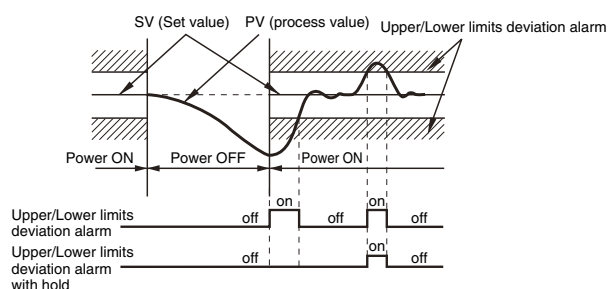
### • Timer code

	ALM1	ALM2	ALM3	Alarm type	Operation figure
Timer	32	32	32	ON-delay timer	
	33	33	33	OFF-delay timer	
	34	34 <td 34	ON/OFF-delay timer		

If change the kinds of parameter, please power ON/OFF PXR.

- Note: (1) Alarm output is ON in the alarm band marked (2) What is alarm with hold?

The alarm is not turned ON immediately even when the measured value is in the alarm band. It turns ON when it goes out the alarm band and enters again.



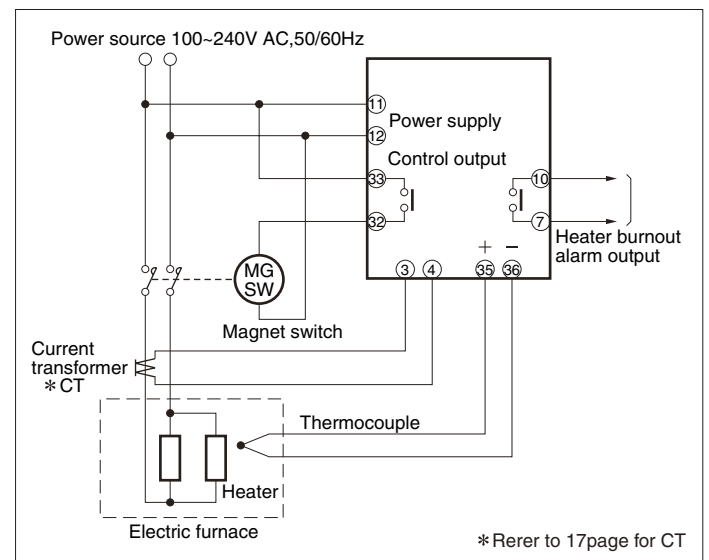
### • Alarm code for setting value 2 points

	ALM1	ALM2	ALM3	Alarm type	Operation figure	
Upper and lower limits alarm	16	16	16	Upper and lower limits absolute value		
	17	17	17	Upper and lower limits deviation		
	18	18	18	Upper limit absolute value and lower limit deviation		
	19	19	19	Upper limit deviation and lower limit absolute value		
	20	20	20	Upper and lower limits absolute value (with hold)		
	21	21	21	Upper and lower limit deviation (with hold)		
	22	22	22	Upper limit absolute value and lower limit deviation (with hold)		
	23	23	23	Upper limit deviation and lower limit absolute value (with hold)		
	Range alarm	24	24	24	Range upper and lower limits absolute value	
		25	25	25	Range upper and lower limits deviation	
26		26	26	Range upper limit absolute value and lower limit deviation		
27		27	27	Range upper limit deviation and lower limit absolute value		
28		28	28	Range upper and lower limits absolute value (with hold)		
29		29	29	Range upper and lower limits deviation (with hold)		
30		30	30	Range upper limit absolute value and lower limit deviation (with hold)		
31		31	31	Range upper limit deviation and lower limit absolute value (with hold)		

## Function4 Heater burnout alarm (option)

- Heater burnout is detected then the alarm is emitted immediately.
- Separate type current transformer(CT)specified by Fuji should be used.
- Alarm action point can be set by front panel keys.
- Detection is made only on a single-phase heater.
- This function cannot be used when controlling a heater with thyristor phase angle control system.

- Example of the connection of the heater burnout alarm (type PXR5, PXR9)



## [7] Functions

### Function5 Parameter mask function

This instrument provides a function (parameter mask function) to mask (conceal) the display of individual parameters. To effect parameter mask(non-display)or non- mask (display),appropriate values should be set to DSP1-13.

Example of setting to (DSP1-13)

(a) To mask parameter P

- 1) Check DSP value for Preferring to parameter table
- 2) Add 2 to the value set to DSP3.



Parameter	DSP
P	DSP3-2
I	DSP3-4
D	DSP3-8

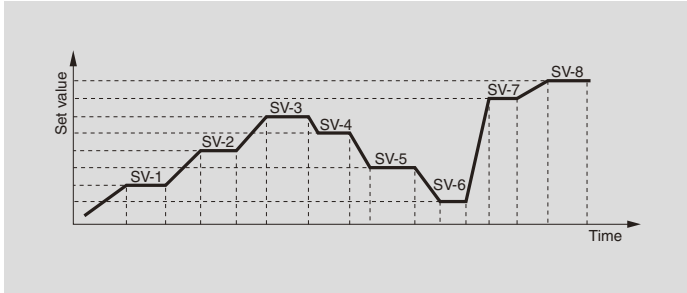
(b) To mask parametaer P,I,D

- 1) Check DSP value for P,I,D referring to parameter table.
- 2) Add 2+4+8=14 to the value set to DSP3.

For allocation of DSP of each parameter, refer to the parameter table on Page18. DSP1-13 cannot be masked.

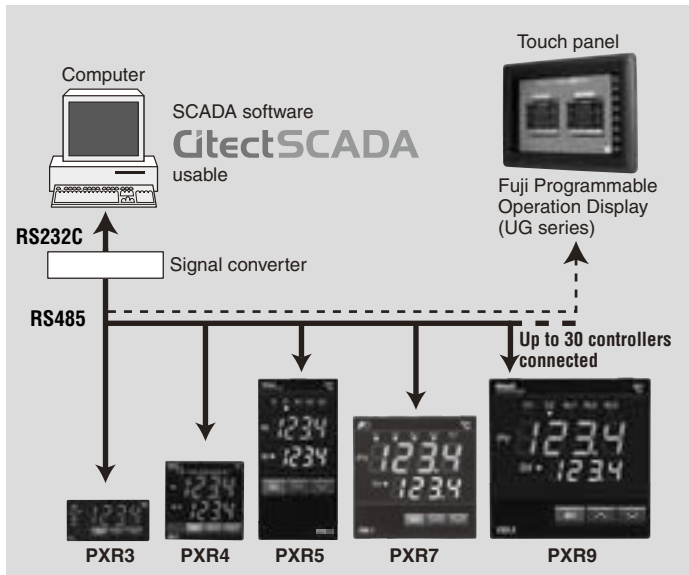
### Function6 Ramp soak function (option)

Function of automatically changing the set point value with the elapsing of time, in accordance with the preset pattern, as shown below.This function is capable of programming a 2 program pattern of 4 steps each, or 1 program pattern × 8 steps.



### Function7 RS-485 Communication function (option)

With RS-485 (Modbus™ protocol) interface, a connection with computer, touch panel or PLC is allowed.



Either communication protocol below is selectable. Selection should be made according to system configuration.

- 1) Modbus™ RTU mode: An open protocol generally used in particular outside Japan. In case the host side supports this protocol, connection is allowed without a program.
- 2) Z-ASCII (Fuji's original) Because transmission code is ASCII, programming with PLC, etc. is simple.

### Function8 Digital input (option)

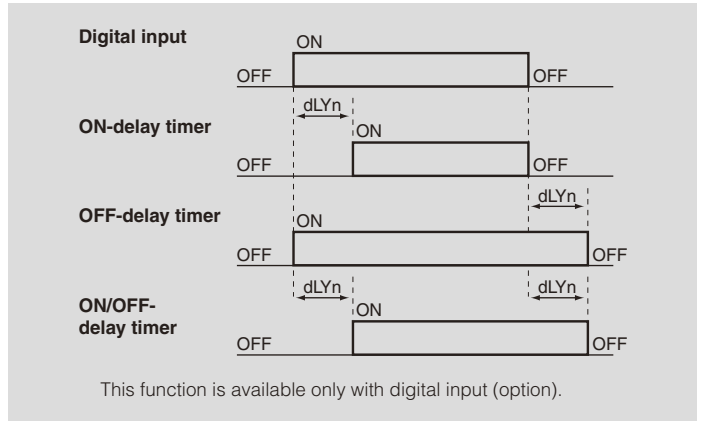
External digital input allows one of the following functions.

- Change the set value (Front SV, SV1-3)
- Start/stop the control action
- Start/reset the ramp/soak
- Start/stop the auto tuning
- Cancel the alarm latch
- Start the incorporated timer

\* The above functions can be combined when two digital inputs are used.

### Function9 Timer function (option)

By Digital input, ON-delay or OFF delay timer can be started. That is, relay output is turned on/off after certain period of time preset in parameter dLY1/dLY2/dLY3. As for relay output, alarm output relays are used. Up to 3 timer outputs can be obtained.

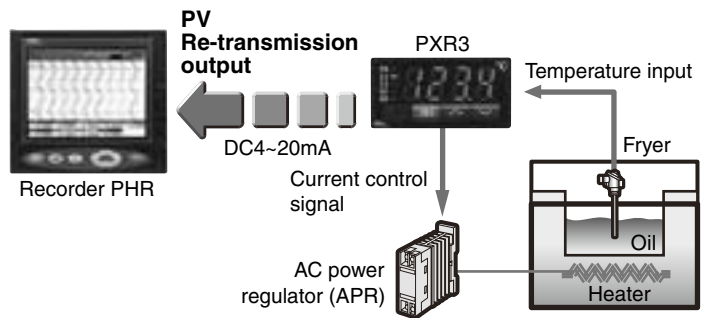


This function is available only with digital input (option).

### Function10 Analog Re-transmission (option)

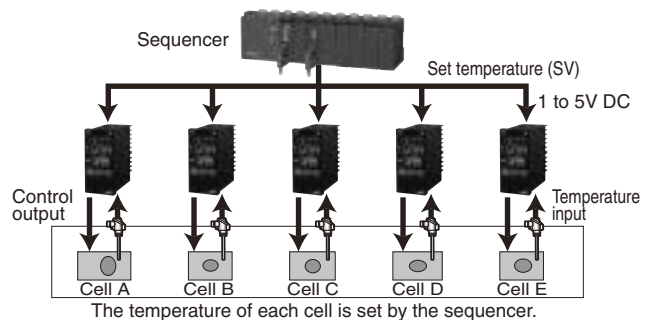
- Output signal : 4 to 20 mA DC
- Kind of output : Any one of process value (PV), set value (SV), manipulated output value (MV) and process variable - set value (DV) (setting by front keys)

A cost corresponding to one temperature sensor can be reduced just by connecting a PV transfer signal to a recorder.



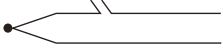

### Function11 Remote SV input (option)

- SV (set value) can be selected with signals from outside.
- SV input signal: 1 to 5V DC

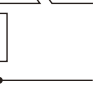
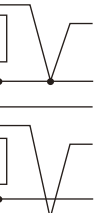


# [8] Sensor fault operation

## • Thermocouple

Condition	Display	Control output
Break 	UUUUU	ON or more than 20mA OFF or less than 4mA (Note)
Short circuit 	short-circuit point Temperature display	Input is controlled as short-circuit point temperature. (Note)

## • Resistance bulb input

Condition	Display	Control output
Break 	UUUUU	ON or more than 20mA OFF or less than 4mA (Note)
	LLLLL	OFF or less than 4mA ON or more than 20mA (Note)
	LLLLL	ON or more than 20mA OFF or less than 4mA (Note)
2-wire or 3-wire break		
Short circuit 	LLLLL	OFF or less than 4mA ON or more than 20mA (Note)

## • 1-5V DC

Break 	LLLLL	OFF or less than 4mA ON or more than 20mA (Note)
Short circuit 		

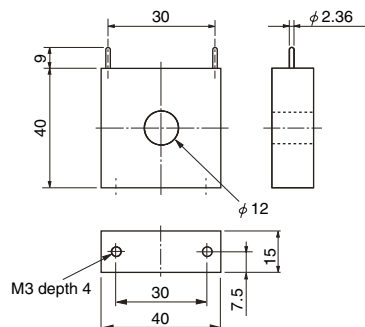
## • 4-20mA DC

Over-range	UUUUU	OFF or less than 4mA (Note)
Under-range	LLLLL	ON or more than 20mA

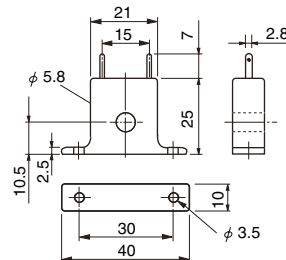
(Note) Control output changes in operation according to the designation of burnout direction (parameter, "P-n1").  
In case of Manual Mode, control output signal is MV output value.

## Heater burnout alarm current detector (CT)

- Specification : For 20-50A
- Type : CTL-12-S36-8



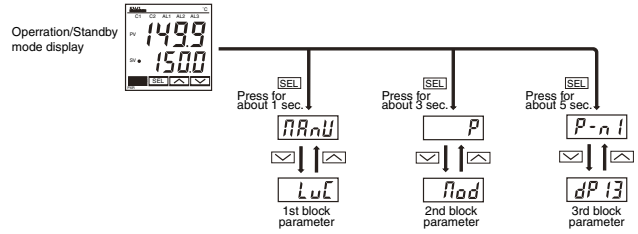
- Specification : For 1-30A
- Type : CTL-6-S-H
- "CTL-6-S" is printed on commodity as type.



## [9] Parameter table

### Parameter table PXR (1/4)

Parameters for the PXR are classified under three blocks according to the frequency of use. The parameters of the second and third blocks are used at initialization or when they are of absolute necessity. Some parameters may not be displayed at the time of delivery depending on the type.



#### Parameters of the first block

Parameter display symbol	Parameter name	Description	Setting range	Value prior to delivery	User's set value	Parameter mask DSP																																							
MANU	MANU	Auto/Manual setting	Switches between Auto and Manual mode.	on : Manual mode oFF : Auto mode	OFF	dSP13-32																																							
STby	STby	Standby setting	Switches between RUN and Standby for control.	on: Control standby (Output: OFF, Alarm: OFF) oFF: Control RUN	OFF	dSP1-1																																							
CMod	CMod	Remote/Local setting	Switches between Remote and Local operations.	rEM : Remote LoCL : Local	LoCL	dSP13-8																																							
ProG	ProG	Ramp-soak control	Switches between Start, Stop, and Hold for ramp-soak control.	oFF: Stop rUn: Start HLd: Hold	OFF	dSP1-2																																							
LACH	LACH	Alarm latch cancel	Cancels the alarm latch.	0: Keeps the alarm latch. 1: Opens up the alarm latch.	0	dSP1-4																																							
AT	AT	Auto-tuning	Used for setting the constants for P, L, and d by auto-tuning.	0: OFF (Resets the auto-tuning or does not use it.) 1: ON (Performs the auto-tuning in the SV standard type.) 2: ON (Performs the auto-tuning in low PV type (SV value-10%FS).)	0	dSP1-8																																							
TM-1	TM-1	Timer 1 display	Displays the remaining time of timer 1.	- (Unit: seconds)	—	dSP1-16																																							
TM-2	TM-2	Timer 2 display	Displays the remaining time of timer 2.	- (Unit: seconds)	—	dSP1-32																																							
TM-3	TM-3	Timer 3 display	Displays the remaining time of timer 3.	- (Unit: seconds)	—	dSP1-64																																							
AL1	AL1	Set value of alarm 1	Sets the value at which alarm 1 is detected.	Type 1 to 3 Possible to set up within input range. When the alarm type is absolute value: 0 to 100%FS When the alarm type is deviation: -100 to 100%FS When the alarm type is absolute value: 0 to 100%FS When the alarm type is deviation: -100 to 100%FS When the alarm type is absolute value: 0 to 100%FS When the alarm type is deviation: -100 to 100%FS When the alarm type is absolute value: 0 to 100%FS When the alarm type is deviation: -100 to 100%FS	10	dSP1-128																																							
A1-L	A1-L	Lower limit value of alarm 1	Sets the lower limit value at which alarm 1 is detected.		10	dSP2-1																																							
A1-H	A1-H	Upper limit value of alarm 1	Sets the upper limit value at which alarm 1 is detected.		10	dSP2-2																																							
AL2	AL2	Set value of alarm 2	Sets the value during which alarm 2 is detected.		10	dSP2-4																																							
A2-L	A2-L	Lower limit value of alarm 2	Sets the lower limit value at which alarm 2 is detected.		10	dSP2-8																																							
A2-H	A2-H	Upper limit value of alarm 2	Sets the upper limit value at which alarm 2 is detected.		10	dSP2-16																																							
AL3	AL3	Set value of alarm 3	Sets the value at which alarm 3 is detected.		10	dSP2-32																																							
A3-L	A3-L	Lower limit value of alarm 3	Sets the lower limit value at which alarm 3 is detected.		10	dSP2-64																																							
A3-H	A3-H	Upper limit value of alarm 3	Sets the upper limit value at which alarm 3 is detected.		10	dSP2-128																																							
LoC	LoC	Key lock	Setting of key lock status. <table border="1"> <thead> <tr> <th rowspan="2">LoC</th> <th colspan="2">All parameters</th> <th colspan="2">SV</th> </tr> <tr> <th>Front key</th> <th>Comm-unication</th> <th>Front key</th> <th>Comm-unication</th> </tr> </thead> <tbody> <tr><td>0</td><td>○</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>1</td><td>×</td><td>○</td><td>×</td><td>○</td></tr> <tr><td>2</td><td>×</td><td>○</td><td>○</td><td>○</td></tr> <tr><td>3</td><td>○</td><td>×</td><td>○</td><td>×</td></tr> <tr><td>4</td><td>×</td><td>×</td><td>×</td><td>×</td></tr> <tr><td>5</td><td>×</td><td>×</td><td>○</td><td>×</td></tr> </tbody> </table> ○: Setting enable, ×: Setting disable	LoC	All parameters		SV		Front key	Comm-unication	Front key	Comm-unication	0	○	○	○	○	1	×	○	×	○	2	×	○	○	○	3	○	×	○	×	4	×	×	×	×	5	×	×	○	×	0		dSP3-1
LoC	All parameters		SV																																										
	Front key	Comm-unication	Front key	Comm-unication																																									
0	○	○	○	○																																									
1	×	○	×	○																																									
2	×	○	○	○																																									
3	○	×	○	×																																									
4	×	×	×	×																																									
5	×	×	○	×																																									

## Parameter table PXR (2/4)



### Parameters of the second block

Parameter display symbol	Parameter name		Description	Setting range	Value prior to delivery	User's set value	Parameter mask DSP
<i>P</i>	P	Proportional band	Set <i>P</i> to 0.0 to select the ON/OFF control (Two-position control).	0.0 to 999.9%	5.0		dSP3-2
<i>I</i>	i	Integral time	Integration OFF at 0	0 to 3200 seconds	240		dSP3-4
<i>d</i>	d	Differential time	Differentiation OFF at 0	0.0 to 999.9 seconds	60.0		dSP3-8
<i>HYS</i>	HYS	Hysteresis range for ON/OFF control	Sets the hysteresis for ON/OFF control.	0 to 50%FS	1		dSP3-16
<i>Cool</i>	Cool	Cooling-side proportional band coefficient	Automatically set by auto-tuning function. Selecting 0 switches to cooling-side ON/OFF operation.	0.0 to 100.0	1.0		dSP3-32
<i>db</i>	db	Dead band	Shifts the cooling-side output value.	-50.0 to +50.0	0.0		dSP3-64
<i>bAL</i>	bAL	Manual reset value	Do not modify the default value set at the factory.	-100 to 100%	0.0/50.0		dSP3-128
<i>Ar</i>	Ar	Anti-reset windup	Automatically set by auto-tuning function.	0 to 100%FS	100		dSP4-1
<i>Ctrl</i>	Ctrl	Control algorithm	Selects the control algorithm.	Pid: Runs normal PID control. FUZY: Runs PID control with fuzzy logic. SELF: Runs PID control with self-running.	Pid		dSP4-2
<i>SLFb</i>	SLFb	PV (Measured value) stable range	Sets the PV stable range for the self-tuning operation.	0 to 100%FS	2%FS		dSP4-4
<i>onoF</i>	onoF	Setting HYS (Hysteresis) mode	Selects the hysteresis operation at ON/OFF control.	oFF: Starts the two-position control at the values of SV+HYS/2 and SV-HYS/2. on: Starts the two-position control at the values of SV and SV+HYS, or SV and SV-HYS.	ON		dSP4-8
<i>TC</i>	TC	Cycle time of control output 1	Not shown at 4-20mA DC output	RY, SSR: 1 to 150 seconds (Contact output = 30, SSR/SSC-drive output=2)	30/2		dSP4-16
<i>TC2</i>	TC2	Cycle time of control output 2 (cooling-side)	Not shown at 4-20mA DC output	1 to 150 seconds (Contact output = 30, SSR/SSC-drive output=2)	30/2		dSP4-32
<i>P-n2</i>	P-n2	Input signal code	Set this parameter when changing the types of temperature sensors.	1 to 16	Note 1		dSP4-64
<i>P-SL</i>	P-SL	Lower limit of measuring range		-1999 to 9999	Note 1		dSP4-128
<i>P-SU</i>	P-SU	Upper limit of measuring range		-1999 to 9999	Note 1		dSP5-1
<i>P-dP</i>	P-dP	Setting the decimal point position		0 to 2	Note 1		dSP5-2
<i>PVOF</i>	PVOF	PV (process value) offset	Shift the display of the PV.	-10 to 10%FS	0		dSP5-8
<i>SVOF</i>	SVOF	SV (Setting value) offset	Shift the SV. But the SV display is not changed.	-50 to 50%FS	0		dSP5-16
<i>P-dF</i>	P-dF	Time constant of input filter		0.0 to 900.0 seconds	5.0		dSP5-32
<i>ALN1</i>	ALM1	Alarm type 1	Sets the types of alarm operations.	0 to 34	0/5		dSP5-64
<i>ALN2</i>	ALM2	Alarm type 2	Sets the types of alarm operations.	0 to 34	0/9		dSP5-128
<i>ALN3</i>	ALM3	Alarm type 3	Sets the types of alarm operations.	0 to 34	0/0		dSP6-1
<i>STAT</i>	STAT	Status display of ramp-soak		-	OFF		dSP6-2
<i>PTn</i>	PTn	Selecting ramp-soak execute type	Selects ramp-soak patterns.	1: Performs 1st to 4th segments. 2: Performs 5th to 8th segments. 3: Performs 1st to 8th segments.	1		dSP6-4
<i>Sv-1</i>	Sv-1	1st target value/ Switching-SV value	Sets the 1st target SV of ramp-soak operation. / Selected at switching-SV function for DI1	Within the SV limit.	0%FS		dSP6-8
<i>TM1r</i>	TM1r	First ramp segment time	Sets the first ramp segment time.	0 to 99h59m	0.00		dSP6-16
<i>TM1S</i>	TM1S	1st soak segment time	Sets the 1st soak segment time.	0 to 99h59m	0.00		dSP6-32

Note 1: When a customer does not specify the settings while ordering, the following settings are selected as factory defaults.

Thermocouple input : Thermocouple K Measured range: 0 to 400°C  
Resistance bulb input : Measured range: 0 to 150°C  
Voltage/Current input : Scaling: 0 to 100%

## [9] Parameter table

## Parameter table PXR (3/4)



## •Parameters of the second block

Parameter display symbol	Parameter name		Description	Setting range	Value prior to delivery	User's set value	Parameter mask DSP
<i>Sv-2</i>	Sv-2	2nd target SV	Sets the 2nd target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP6-64
<i>TM2r</i>	TM2r	2nd ramp segment time	Sets the 2nd ramp segment time.	0 to 99h59m	0.00		dSP6-128
<i>TM2S</i>	TM2S	2nd soak segment time	Sets the 2nd soak segment time.	0 to 99h59m	0.00		dSP7-1
<i>Sv-3</i>	Sv-3	3rd target SV	Sets the 3rd target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP7-2
<i>TM3r</i>	TM3r	3rd ramp segment time	Sets the 3rd ramp segment time.	0 to 99h59m	0.00		dSP7-4
<i>TM3S</i>	TM3S	3rd soak segment time	Sets the 3rd soak segment time.	0 to 99h59m	0.00		dSP7-8
<i>Sv-4</i>	Sv-4	4th target SV	Sets the 4th target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP7-16
<i>TM4r</i>	TM4r	4th ramp segment time	Sets the 4th ramp segment time.	0 to 99h59m	0.00		dSP7-32
<i>TM4S</i>	TM4S	4th soak segment time	Sets the 4th soak segment time.	0 to 99h59m	0.00		dSP7-64
<i>Sv-5</i>	Sv-5	5th target SV	Sets the 5th target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP7-128
<i>TM5r</i>	TM5r	5th ramp segment time	Sets the 5th ramp segment time.	0 to 99h59m	0.00		dSP8-1
<i>TM5S</i>	TM5S	5th soak segment time	Sets the 5th soak segment time.	0 to 99h59m	0.00		dSP8-2
<i>Sv-6</i>	Sv-6	6th target SV	Sets the 6th target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP8-4
<i>TM6r</i>	TM6r	6th ramp segment time	Sets the 6th ramp segment time.	0 to 99h59m	0.00		dSP8-8
<i>TM6S</i>	TM6S	6th soak segment time	Sets the 6th soak segment time.	0 to 99h59m	0.00		dSP8-16
<i>Sv-7</i>	Sv-7	7th target SV	Sets the 7th target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP8-32
<i>TM7r</i>	TM7r	7th ramp segment time	Sets the 7th ramp segment time.	0 to 99h59m	0.00		dSP8-64
<i>TM7S</i>	TM7S	7th soak segment time	Sets the 7th soak segment time.	0 to 99h59m	0.00		dSP8-128
<i>Sv-8</i>	Sv-8	8th target SV	Sets the 8th target SV of ramp-soak operation.	Within the SV limit.	0%FS		dSP9-1
<i>TM8r</i>	TM8r	8th ramp segment time	Sets the 8th ramp segment time.	0 to 99h59m	0.00		dSP9-2
<i>TM8S</i>	TM8S	8th soak segment time	Sets the 8th soak segment time.	0 to 99h59m	0.00		dSP9-4
<i>Mod</i>	Mod	Ramp-soak mode	Selects the power-on start, repeat, and standby functions for ramp-soak operations.	0 to 15	0		dSP9-8

## •Parameters of the third block

Parameter display symbol	Parameter name		Description	Setting range	Value prior to delivery	User's set value	Parameter mask DSP
<i>P-n1</i>	P-n1	Control action	Specifies control action and output at the input burn-out.	0 to 19	0/4		dSP9-16
<i>Sv-L</i>	Sv-L	SV (Setting value) lower limiter	Sets the lower limit of the SV.	0 to 100%FS	0%FS		dSP9-32
<i>Sv-H</i>	Sv-H	SV (Setting value) upper limiter	Sets the upper limit of the SV.	0 to 100%FS	100%FS		dSP9-64
<i>dLY1</i>	dLY1	Delay time 1	Delay time or timer value for alarm 1 relay.	0 to 9999 seconds	0		dSP9-128
<i>dLY2</i>	dLY2	Delay time 2	Delay time or timer value for alarm 2 relay.	0 to 9999 seconds	0		dSP10-1
<i>dLY3</i>	dLY3	Delay time 3	Delay time or timer value for alarm 3 relay.	0 to 9999 seconds	0		dSP10-2
<i>CT</i>	CT	Current transe display	Displays the current detector input value for HB alarm.	-	-		dSP10-4

# Parameter table PXR (4/4)

## Parameters of the third block

Parameter display symbol	Parameter name		Description	Setting range	Value prior to delivery	User's set value	Parameter mask DSP
<i>Hb</i>	Hb	HB (Set value of heater break alarm) setting	Sets the operation value that detects the heater break.	0 to 50.0A (Setting to 0.0A turns off the HB alarm.)	0.0		dSP10-8
<i>A1hY</i>	A1hY	Alarm 1 hysteresis	Sets the hysteresis range of ON and OFF of alarm 1.	0 to 50%FS	1		dSP10-16
<i>A2hY</i>	A2hY	Alarm 2 hysteresis	Sets the hysteresis range of ON and OFF of alarm 2.	0 to 50%FS	1		dSP10-32
<i>A3hY</i>	A3hY	Alarm 3 hysteresis	Sets the hysteresis range of ON and OFF of alarm 3.	0 to 50%FS	1		dSP10-64
<i>A1oP</i>	A1oP	Alarm 1 options	Sets the optional functions of alarms 1 and 2. 8888 Alarm latch (1: use, 0: not use) Alarm of error status (1: use, 0: not use) De-energized output (1: use, 0: not use)	000 to 111	000		dSP10-128
<i>A2oP</i>	A2oP	Alarm 2 options		000 to 111	000		dSP11-1
<i>A3oP</i>	A3oP	Alarm 3 options		000 to 111	000		dSP11-2
<i>PLC1</i>	PLC1	Lower limit for output 1	Sets the lower limit for output 1.	-3.0 to 103.0%	-3.0		dSP11-4
<i>PHC1</i>	PHC1	Upper limit for output 1	Sets the upper limit for output 1.	-3.0 to 103.0%	103.0		dSP11-8
<i>PLC2</i>	PLC2	Lower limit for output 2	Sets the lower limit for output 2.	-3.0 to 103.0%	-3.0		dSP11-16
<i>PHC2</i>	PHC2	Upper limit for output 2	Sets the upper limit for output 2.	-3.0 to 103.0%	103.0		dSP11-32
<i>PCUT</i>	PCUT	Output limit types	Sets the limit types of outputs 1 and 2 (breaking the limit, or maintained within the limit).	0 to 15	0		dSP11-64
<i>oUT1</i>	oUT1	Output value (MV) display	Displays the value of output 1.	-	-		dSP11-128
<i>oUT2</i>	oUT2	Output value (MV) display	Displays the value of output 2.	-	-		dSP12-1
<i>rCJ</i>	rCJ	RCJ (Cold junction compensation) setting	Sets the cold junction compensation function to ON/OFF.	ON: Performs the RCJ (Cold junction compensation). OFF: Does not perform the RCJ (Cold junction compensation).	on		dSP12-2
<i>GAIN</i>	GAin	PV gradient		0.001 to 2.000	1.000		dSP12-4
<i>AdJ0</i>	AdJ0	User-definable zero adjustment	Shifts the zero point of input value.	-50 to 50%FS	0		dSP12-8
<i>AdJ5</i>	AdJ5	User-definable span adjustment	Shifts the span of input value.	-50 to 50%FS	0		dSP12-16
<i>di-1</i>	di-1	DI1 (Digital input 1) operation	Sets the DI1 operations.	0 to 12	0		dSP12-32
<i>di-2</i>	di-2	DI2 (Digital input 2) operation	Sets the DI2 operations.	0 to 12	0		dSP12-64
<i>STno</i>	STno	Station No.	Sets the station No. for communication.	0 to 255	1		dSP12-128
<i>CoM</i>	CoM	Parity setting	Sets the parity for communication. (The baud rate is fixed at 9600bps.)	0: Odd parity 1: Even parity 2: No parity	0		dSP13-1
<i>PCoL</i>	PCoL	Communication protocol setting	Switches communication protocol between Modbus and ASCII.	0: Z-ACSII 1: Modbus (RTU)	Depends on the type.		dSP13-2
<i>Ao-T</i>	Ao-T	Re-transmission output type	Selecting re-transmission output type.	0: PV / 1: SV / 2: MV / 3: DV	0		dSP13-4
<i>Ao-L</i>	Ao-L	Re-transmission base scale	Setting re-transmission base scale.	-100.0 to 100.0%	0.0		dSP13-4
<i>Ao-H</i>	Ao-H	Re-transmission span scale	Setting re-transmission span scale.	-100.0 to 100.0%	100.0		dSP13-4
<i>rENO</i>	rEMO	Remote SV input zero adjustment	Shifts the zero point of input value.	-50 to 50%FS	0		dSP13-16
<i>rENS</i>	rEMS	Remote SV input span adjustment	Shifts the span point of the input value.	-50 to 50%FS	0		dSP13-16
<i>r-dF</i>	r-dF	Remote SV input filter constant	Sets the filter constant of remote SV input value.	0.0 to 900.00 seconds	0.0		dSP13-16
<i>rSv</i>	rSv	Remote SV input value display	Displays the input value of remote SV input.	-	-		dSP13-16
<i>dSP1</i> <i>dSP9</i> <i>dP10</i> <i>dP13</i>	dSP1 dSP9 dP10 dP13	Parameter mask	Sets whether or not to display each parameter.	0 to 255	Ordering specification		-