Micro Controller PXW,PXZ,PXV

PXW of 3-key type

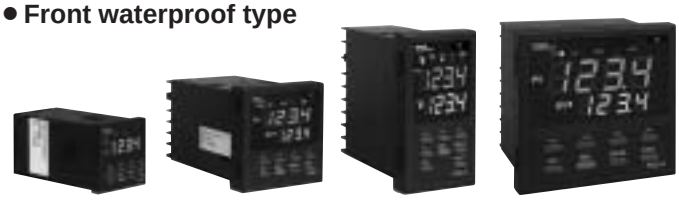
● **Standard type**

● **Front waterproof type**

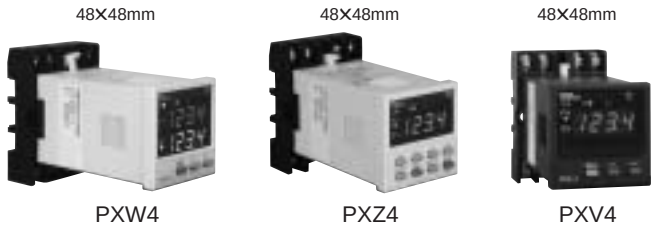
PXZ of 8-key type

● **Standard type**

● **Front waterproof type**



Rail mounting types (PXW4, PXZ4, PXV4)



PXV of 1-stage display and 3-key type

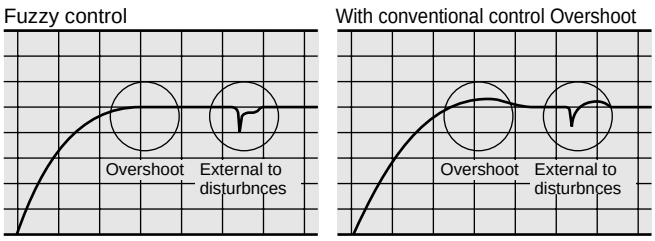
● **Standard type**

● **Front waterproof type**

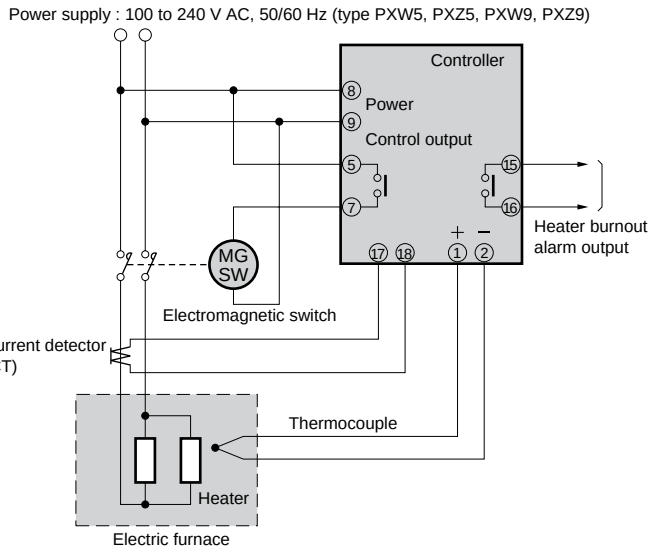
Features

● **Fuzzy control**

Excellent controllability is ensured unaffected by overshoot and external disturbance.

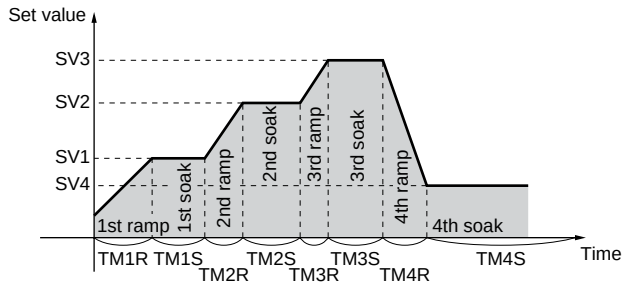


● **Heater burnout alarm (option)**



● **Ramp/soak function (option)**

Control follows the predetermined SV.



● **Free line voltage**

100 to 240 V AC or 24 V DC/AC line has been prepared.

● **Heating and cooling control (option)**

A single controller can issue both control outputs for heating and cooling.

● **PID with auto tuning**

Standard-provided with auto tuning function for calculation of optimum PID parameters.

[1] Ordering code

PXV

Model name: Digital temperature controller (Micro controller X) 3-key type

PXV 4 5 6 7 8 – 9 10 11 12 13 – 14

Digit	Specification	Note	4	5	6	7	8	9	10	11	12	13	14
4	**<Front panel size>**												
	48 × 48 mm		4										
5	**<Input signal>**												
	Thermocouple (°C)			T									
	Thermocouple (°F)			R									
	Resistance bulb Pt 100,3-wire (°C)			N									
	Resistance bulb Pt 100,3-wire (°F)			S									
	4-20mA DC			B									
	1-5V DC			A									
6	**<Control output>**												
7	Contact reverse action output				A	Y							
	Contact direct action output				B	Y							
	SSR/SSC drive reverse action output				C	Y							
	SSR/SSC drive direct action output				D	Y							
	4-20mA DC reverse action output				E	Y							
	4-20mA DC direct action output				F	Y							
8	**<Version No.>**						2						
9	**<Additional specifications>**												
	None							0					
	With process alarm (1point)							1					
	With 4 ramp/soak							4					
	With process alarm (1point) + 4 ramp/soak							5					
	With process alarm (2points)							F					
	With process alarm (2points) + 4ramp/soak							G					
10	**<Instruction manual and power supply voltage>**												
	Japanese,100 to 240V AC								Y				
	English,100 to 240V AC								V				
	Japanese, 24V AC/24V DC								A				
	English, 24V AC/24V DC								B				
11	**<Socket>**												
12	None									0	0	0	
13	For rail mounting (8-pin screw terminal)	Note 1								1	0	0	
	For panel mounting (8-pin screw terminal)	Note 2								2	0	0	
	For panel mounting (8-pin soldered terminal)	Note 3								3	0	0	
	For rail mounting (11-pin screw terminal)	Note 4								4	0	0	
	For panel mounting (11-pin screw terminal)	Note 5								5	0	0	
14	**<Optional specification>**												
	Front panel water-proof structure (NEMA-4X), black case												D

PXW

Model name: Digital temperature controller (Micro controller X) 3-key type

PXW 4 5 6 7 8 – 9 10 11 12 13 – 14

Digit	Specification	Note	4	5	6	7	8	9	10	11	12	13	14
4	**<Front panel size>**												
	48 × 48 mm		4										
	48 × 96 mm		5										
	72 × 72 mm		7										
	96 × 96 mm		9										
5	**<Input signal>**												
	Thermocouple (°C)			T									
	Thermocouple (°F)			R									
	Resistance bulb Pt 100,3-wire (°C)			N									
	Resistance bulb Pt 100,3-wire (°F)			S									
	4-20mA DC			B									
	1-5V DC			A									
6	**<Control output 1>**												
	Contact reverse action output				A								
	Contact direct action output				B								
	SSR/SSC drive reverse action output				C								
	SSR/SSC drive direct action output				D								
	4-20mA DC reverse action output				E								
	4-20mA DC direct action output				F								
7	**<Control output 2>**												
	None					Y							
	Contact reverse action output	Note 6				A							
	Contact direct action output	Note 6				B							
	SSR/SSC drive reverse action output	Note 6				C							
	SSR/SSC drive direct action output	Note 6				D							
	4-20mA DC reverse action output	Note 6				E							
	4-20mA DC direct action output	Note 6				F							
8	**<Version No.>**						2						
9	**<Additional specifications>**												
	None							0					
	With process alarm	Note 8						1					
	With heater burnout alarm	Note 6						2					
	With process alarm + heater burnout alarm	Note 6						3					
	With 4 ramp/soak							4					
	With process alarm + 4 ramp/soak	Note 8						5					
	With heater burnout alarm + 4 ramp/soak	Note 6						6					
	With process alarm + heater burnout alarm + 4 ramp/soak	Note 6						7					
	With process alarm (2points)	Note 9						F					
	With process alarm (2points) + 4ramp/soak	Note 9						G					
10	**<Instruction manual and power supply voltage>**												
	Japanese,100 to 240V AC								Y				
	English,100 to 240V AC								V				
	Japanese, 24V AC/24V DC	Note 7							A				
	English, 24V AC/24V DC	Note 7							B				
11	**<Socket>**												
12	None									0	0	0	
13	For rail mounting (8-pin screw terminal)	Note 1								1	0	0	
	For panel mounting (8-pin screw terminal)	Note 2								2	0	0	
	For panel mounting (8-pin soldered terminal)	Note 3								3	0	0	
	For rail mounting (11-pin screw terminal)	Note 4								4	0	0	
	For panel mounting (11-pin screw terminal)	Note 5								5	0	0	
14	**<Optional specification>**												
	Front panel water-proof structure (NEMA-4X), black case												D

PXZ

Model name: Digital temperature controller (Micro controller X) 8-key type

PXZ 4 5 6 7 8 – 9 10 11 12 13 – 14

Digit	Specification	Note	4	5	6	7	8	9	10	11	12	13	14
4	**<Front panel size>**												
	48 × 48 mm		4										
	48 × 96 mm		5										
	72 × 72 mm		7										
	96 × 96 mm		9										
5	**<Input signal>**												
	Thermocouple (°C)			T									
	Thermocouple (°F)			R									
	Resistance bulb Pt 100,3-wire (°C)			N									
	Resistance bulb Pt 100,3-wire (°F)			S									
	4-20mA DC			B									
	1-5V DC			A									
6	**<Control output 1>**												
	Contact reverse action output				A								
	Contact direct action output				B								
	SSR/SSC drive reverse action output				C								
	SSR/SSC drive direct action output				D								
	4-20mA DC reverse action output				E								
	4-20mA DC direct action output				F								
7	**<Control output 2>**												
	None					Y							
	Contact reverse action output	Note 6				A							
	Contact direct action output	Note 6				B							
	SSR/SSC drive reverse action output	Note 6				C							
	SSR/SSC drive direct action output	Note 6				D							
	4-20mA DC reverse action output	Note 6				E							
	4-20mA DC direct action output	Note 6				F							
8	**<Version No.>**						2						
9	**<Additional specifications>**												
	None							0					
	With process alarm	Note 8						1					
	With heater burnout alarm	Note 6						2					
	With process alarm + heater burnout alarm	Note 6						3					
	With 4 ramp/soak							4					
	With process alarm + 4 ramp/soak	Note 8						5					
	With heater burnout alarm + 4 ramp/soak	Note 6						6					
	With process alarm + heater burnout alarm + 4 ramp/soak	Note 6						7					
	With process alarm (2points)	Note 9						F					
	With process alarm (2points) + 4ramp/soak	Note 9						G					
10	**<Instruction manual and power supply voltage>**												
	Japanese,100 to 240V AC								Y				
	English,100 to 240V AC								V				
	Japanese, 24V AC/24V DC	Note 7							A				
	English, 24V AC/24V DC	Note 7							B				
11	**<Socket>**												
12	None									0	0	0	
13	For rail mounting (8-pin screw terminal)	Note 1								1	0	0	
	For panel mounting (8-pin screw terminal)	Note 2								2	0	0	
	For panel mounting (8-pin soldered terminal)	Note 3								3	0	0	
	For rail mounting (11-pin screw terminal)	Note 4								4	0	0	
	For panel mounting (11-pin screw terminal)	Note 5								5	0	0	
14	**<Optional specification>**												
	Front panel water-proof structure (NEMA-4X), black case												D

Note) If not otherwise specified when ordering, the input signal and range are as follows :
Thermocouple input : K thermocouple, 0 to 400℃ (SV at 0℃)
Resistance bulb input : 0 to 150℃(SV at 0℃)
Voltage input : Scaling 0 to 100% (SV at 0%)
Kind of the input range should be filled in the code except for the above specifications.
Use the front key to change the king of the thermocouple input or resistance bulb input.

Note) Item of 48 X 48mm size requires socket which needs to be specified in the space of 11,12 and 13 digits.
This socket is not required for items of other sizes.

Note1) Type: TP48X

Note2) Type: TP48SB

Note3) Type: ATX1NS

Note4) Type: TP411X

Note5) Type: TP411SBA

Note6) Not available on 48 X 48mm size
Heater burnout alarm unit cannot be mounted on current output type.
Set the parameter "TC" more than 20sec,or hearter burnout function doesn't work correctly.

Note7) Not available on 72 X 72mm size

Note8) Alarm output (s) : 1point (48 X 48mm type), 2points (other types)

Note9) Avairable only on 48 X 48mm type.

Micro Controller PXW,PXZ,PXV

[2] Specifications PXW/PXZ/PXV

■ Control function — Standard type

Control action	PID control with auto-tuning / auto-tuning with Fuzzy control
Proportional band(P)	0 to 999.9% of measuring range,setting in 0.1% steps
Integral time(I)	0 to 3200sec,setting in 1sec step
Differential time(D)	0 to 999.9%,setting in 0.1% steps
P=0:2-position action I,D=0:Proportional action	
Proportional cycle	1 to 150sec,setting in 1sec step,relay contact output, SSR/SSC drive output only
Hysteresis width	1 to 50% of measuring range,2-position action only
Anti-reset wind up tuning	0 to 100% of measuring range,auto setting with auto-tuning
Input sampling cycle	0.5sec
Control cycle	0.5sec

■ Control function — Heating/cooling type (option)

Heating proportional band(P)	0 to 999.9% of measuring range
Cooling proportional band(P)	Heating proportional band × cooling proportional band coefficient Cooling proportional band coefficient=0 to 100.0 0:ON/OFF action
Integral time(I)	0 to 3200sec for heating and cooling
Differential time(D)	0 to 999.9sec for heating and cooling
P,I,D=0:ON/OFF action (without dead band) for heating and cooling I,D=0:Proportional action	
Proportional cycle	1 to 150sec,relay contact output,SSR/SSC drive only
Hysteresis width	ON/OFF action for heating and cooling:0.5% of measuring range
Anti-reset wind up	0 to 100% of measuring range,auto setting with auto-tuning
Overlap/dead band	±50% of heating proportional band
Input sampling cycle	0.5sec
Control cycle	0.5sec

■ Input

Input signal	Thermocouple : J K R B S T E N PLⅡ Resistance bulb : Pt100 Voltage/current : 1 to 5V DC 4 to 20mA DC (Current input is used with supplied 250Ω external resistor)
Measuring range	See Measuring range table.
Burnout	For thermocouple/resistance bulb input,control outputover scale direction is serectable upper side or lower side

■ Output — Standard type

Control output	1 of the following 3 types is selected. Relay contact (SPDT contact): 220V AC/30V DC, 3A (resistive load) Mechanical life:10 million cycles or more (no load) Electrical life:100 thousand cycles or more (rated load) Minimum switching current:100mA (24V DC) SSR/SSC drive (voltage pulse): 15 to 30V DC at ON/ 0.5V DC or less at OFF, Max. current: 60mA or less 25mA(With alarm 2points on 48X48mm size) 30mA(at 24V DC/24V AC supply voltage) 4 to 20mA DC:Allowable load resistance; 600Ω or less

■ Output — Heating/cooling type (option)

Control output	For dual output type, 1 of the following 3 types is selected on both heating and cooling types. 48 × 48mm type is not acceptable. Relay contact (SPDT contact): 220V AC/30V DC, 3A (resistive load) Mechanical life:10 million cycles or more (no load) Electrical life:100 thousand cycles or more (rated load) Minimum switching current:100mA (24V DC) SSR/SSC drive (voltage pulse): 15 to 30V DC at ON/ 0.5V DC or less at OFF, Max. current is 60mA or less. 4 to 20mA DC:Allowable load resistance; 600Ω or less (Note) When SSR/SSC drive output of heating/cooling side is selected,the total current should be less than 60mA.

■ Setting and indication

Parameter setting method	PXV/PXW;digital setting with 3 keys PXZ:digital setting with 8 keys
PV/SV display method	PXV4,PXZ4;PV/SV select display LED;4 digits,red PXW,PXZ5,7,9;PV/SV individual display LED,4 digits each,PV;red SV;green
Status display	Control output,alarm output heater burnout alarm output,LED lamp (red)
Setting accuracy	0.1% of measuring range or less
Indication accuracy (at 23℃):	Thermocouple;±(0.5% of measuring range)±1digit±1℃ R thermocouple 0 to 500℃;±(1% of measuring range) ±1digit±1℃ B thermocouple 0 to 400℃;±(5% of measuring range) ±1digit±1℃ Resistance bulb,voltage,current;±(0.5% of measuring range)±1digit

■ Alarm (Option)

Kind of alarm	See table “Kind of alarm”.
Alarm output	Relay contact (SPST contact), 220V AC /30V DC, 1A (resisitive load), Mechanical life:10 million cycles or more (no load) Electrical life:100 thousand cycles or more (rated load) Minimum switching current:100mA (24V DC) 48X48mm type;output..1point or 2points Other types;output..2points
Heater burnout alarm output	Relay contact (SPST contact), 220V AC/30V DC,1A (resistive load) Mechanical life:10 million cycles or more (no load) Electrical life:100 thousand cycles or more (rated load) Minimum switching current:100mA (24V DC) 48X48mm type;not available, output;1 point

■ Power failure processing

Memory protection	Non-volatile memory hold After the recovery of power from failure, control is started at the value before power failure.

■ Self-check

Method	Monitoring of program error with watchdog timer

■ Operation and storage condition

Operating temperature	–10 to 50℃
Operating humidity	90%RH or less (Non condensing)
Storage temperature	–20 to 60℃

[2] Specifications PXW/PXZ/PXV

■ General specifications

Rated voltage	100 (–15%) to 240 (+10%) V AC 50/60Hz, 24V AC (±10%) 50/60Hz, 24V DC (±10%)
Power consumption	10VA or less (100V AC) 15VA or less (240V AC, 24V AC, 24V DC)
Insulation resistance	20MΩ or more (500V DC)
Withstand voltage	Power source-Earth,1500V AC,1min Power source-Other,1500V AC,1min Earth-Relay output,1500V AC,1min Earth-Alarm output,1500V AC,1min Other,500V AC,1min
Input impedance	Thermocouple;1MΩ or more Voltage;400kΩ or more Current;250Ω (external resistor)
Allowable signal source resistance	Thermocouple;100Ω or less Voltage;1kΩ or less
Allowable wiring resistance	Resistance bulb;10Ω or less per wire
Reference junction compensation accuracy	±1℃:(at 23℃)
PV offset	±10% of measuring range
SV offset	±50% of measuring range
Input filter	0 to 900.0sec,setting in 0.1sec steps (primary lagging filter)
Noise reduction ratio	Normal mode noise (50/60Hz) ;50dB or more Common mode noise (50/60Hz) ;140dB or more

■ Other functions

Paramater mask function	Parameter display is disabled by software.
Ramp soak function(option)	4 ramp/4 soak
Heater burnout alarm output (option) unavailable for 48 X 48 size	Current detector: CTL-6-S-H for 1 to 30A CTL-12-S36-8F for 20 to 50A Alarm settable range: 1 to 50A Set the parameter "TC" more than 20 sec, or heater burnout function doesn't work correctly.
Applicable standards	UL, C-UL, CE mark

■ Structure

Mounting method	Panel flush mounting or surface mounting Surface mounting;48X48mm type only
External terminal	48X48mm type;8-pin or 11-pin socket Other types;screw terminal (M3.5 screw)
Case material	Plastic
External dimensions	See outline diagrdam.
Mass	48X48mm;approx 150g 48X96mm;approx 300g 72X72mm;approx 300g 96X96mm;approx 400g
Protective structure	Front panel water-proof structure; NEMA4X (equivalent to IEC standards IP66)(option) Rear case;IEC IP20
Enclosure color	Standard type;ivory (front panel,case) Water-proof type;black (front panel,case)

■ Scope of delivery

Standard type	48X48mm type;controller,panel mounting bracket, socket (when specified),instruction manual 1volume Other types;controller,panel mounting bracket, instruction manual 1volume
Water-proof type	48X48mm type;contoroller,panel mounting bracket, socket (when specified), water-proof packing, instruction manual 1volume Other types;controller,panel mounting bracket,water-proof packing,instruction manual 1volume

■ Measuring range table

Input signal	Input range(℃)	Input range(℉)
Resistance bulb		
Pt100Ω	0 to 150	32 to 302
Pt100Ω	0 to 300	32 to 572
Pt100Ω	0 to 500	32 to 932
Pt100Ω	0 to 600	32 to 1112
Pt100Ω	–50 to 100	–58 to 212
Pt100Ω	–100 to 200	–148 to 392
Pt100Ω	–150 to 600	–238 to 1112
Pt100Ω	–150 to 850	–238 to 1562
Thermocouple		
J	0 to 400	32 to 752
J	0 to 800	32 to 1472
K	0 to 400	32 to 752
K	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	–199 to 200	–328 to 392
T	–150 to 400	–238 to 752
E	0 to 800	32 to 1472
E	–199 to 800	–328 to 1472
N	0 to 1300	32 to 2372
PLⅡ	0 to 1300	32 to 2372
DC voltage 1 to 5V DC	Scaling range;–1999 to 9999	
DC current 4 to 20mA DC	For current input,use a 250 resistor to obtain 1 to 5V DC input.	

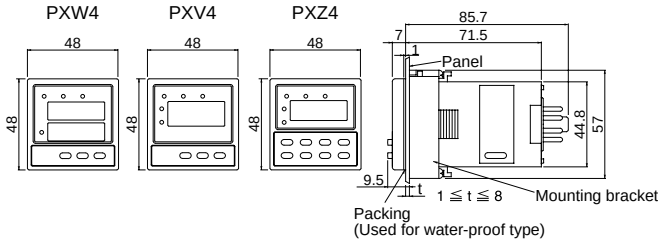
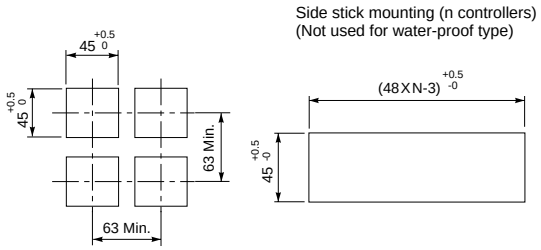
Note) Input signals can be selected within the same type.
It is impossible to select input signals of a different type.

Micro Controller PXW,PXZ,PXV

[3] Outline diagram/panel cut [Standard type]

1) 48 × 48mm type

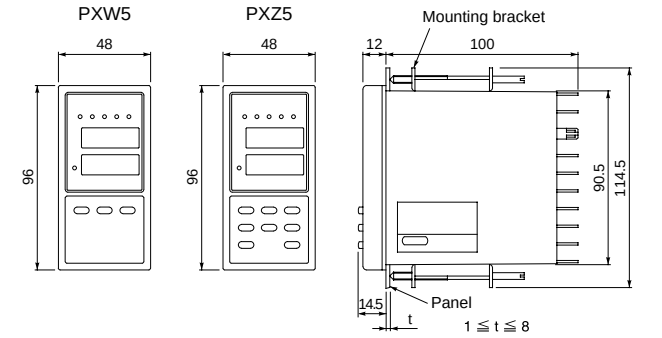
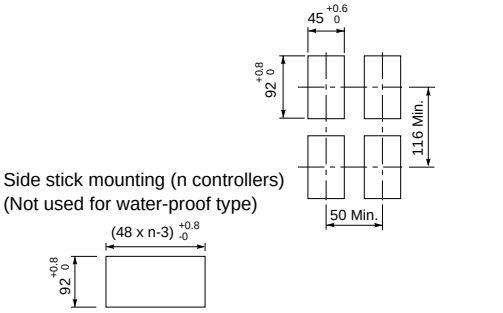
(unit: mm)

Type	Outline	Panel cut
PXV4 PXW4 PXZ4		

Note) PXV4, PXW4 and PXZ4 are common to standard types and water-proof types.

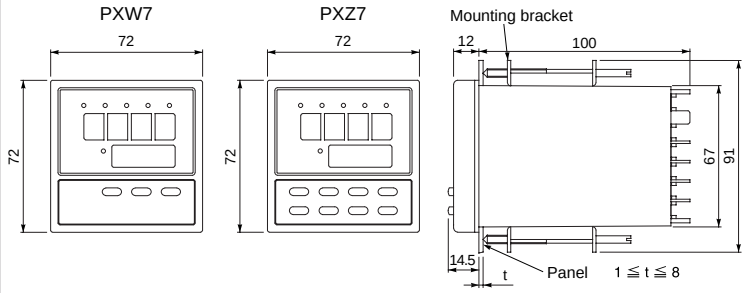
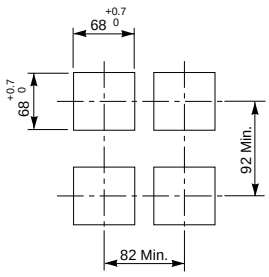
2) 48 × 96mm type

(unit: mm)

Type	Outline	Panel cut
PXW5 PXZ5		

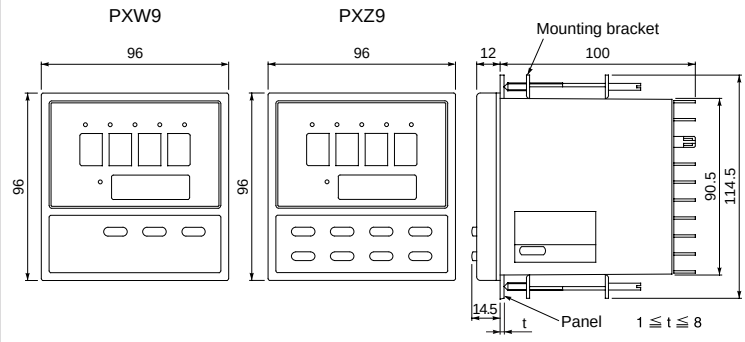
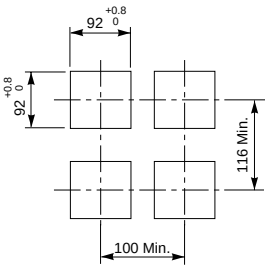
3) 72 × 72mm type

(unit: mm)

Type	Outline	Panel cut
PXW7 PXZ7		

4) 96 × 96mm type

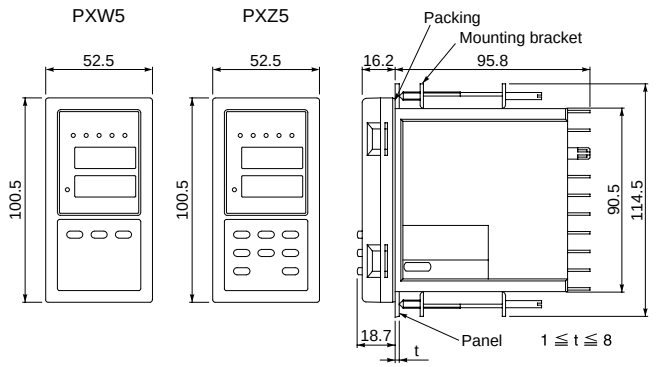
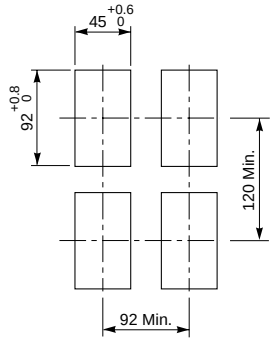
(unit: mm)

Type	Outline	Panel cut
PXW9 PXZ9		

[3] Outline diagram/panel cut [Water-proof type]

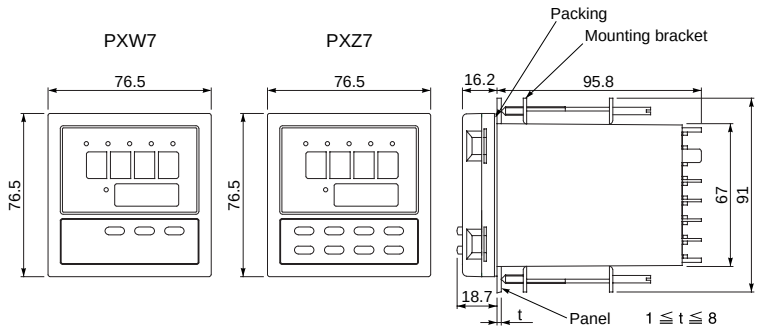
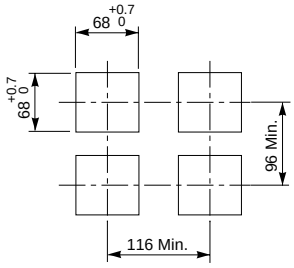
1) 48 × 96mm type

(unit: mm)

Type	Outline	Panel cut
PXW5 PXZ5		

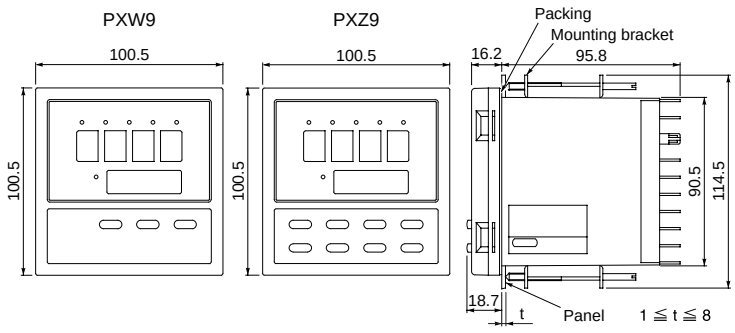
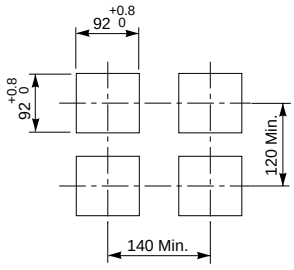
2) 72 × 72mm type

(unit: mm)

Type	Outline	Panel cut
PXW7 PXZ7		

3) 96 × 96mm type

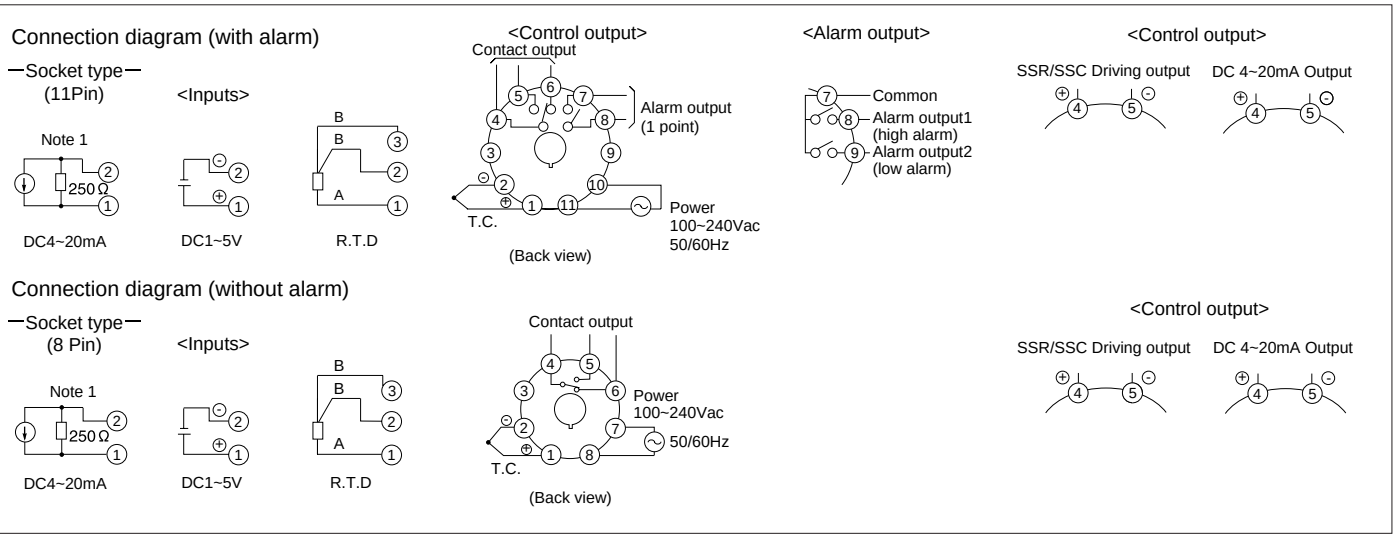
(unit: mm)

Type	Outline	Panel cut
PXW9 PXZ9		

Micro Controller PXW,PXZ,PXV

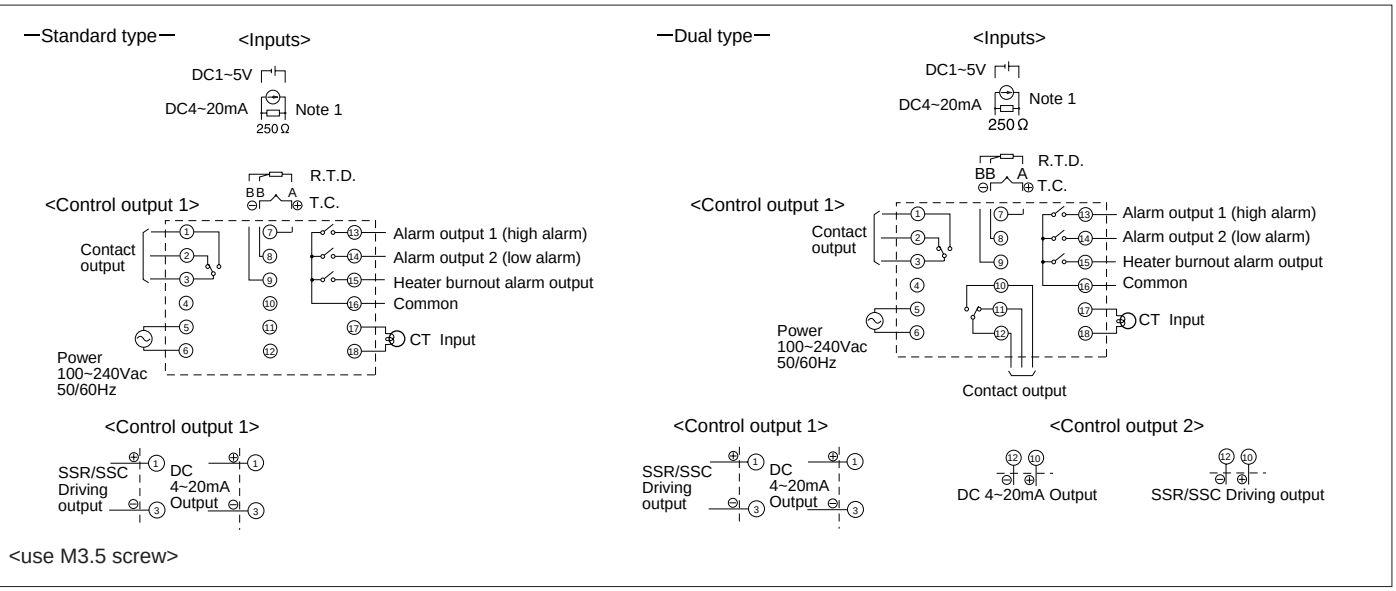
[4] Connection diagram [for 100 to 240V AC power supply]

1) PXW4 · PXZ4 · PXV4 type



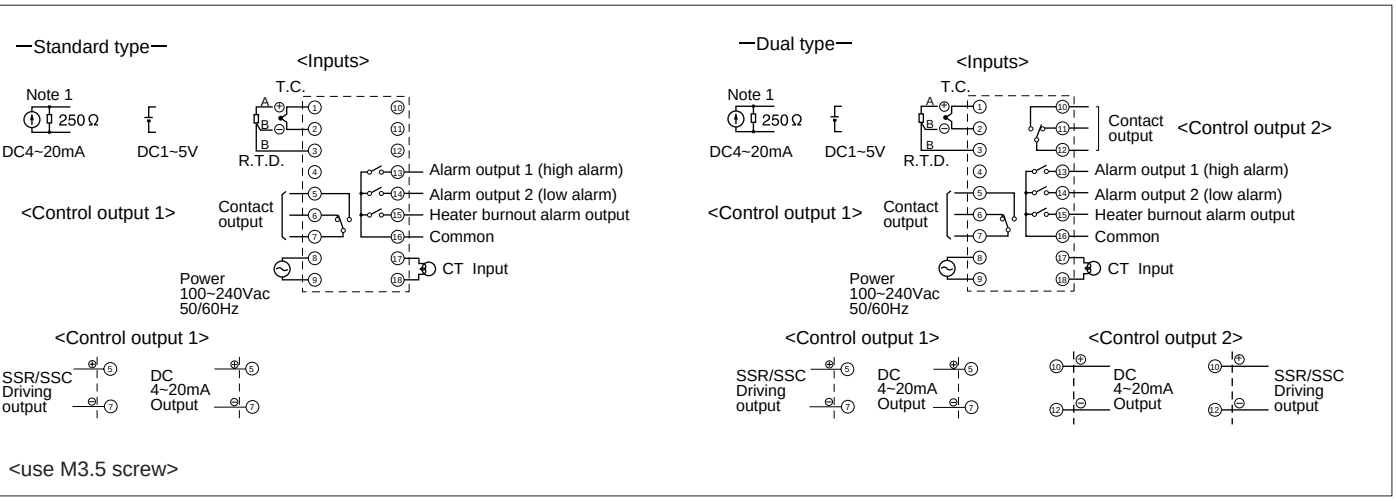
Note1: Use the 250Ω resistance(accessory).
Note2: SSR/SSC drive output and DC4~20mA output are not electrically insulated from inner circuits. So,non-grounding type sensor must be used.

2) PXW7 · PXZ7 type



Note1: Use the 250Ω resistance(accessory).
Note2: SSR/SSC drive output and DC4~20mA output are not electrically insulated from inner circuits. So,non-grounding type sensor must be used.

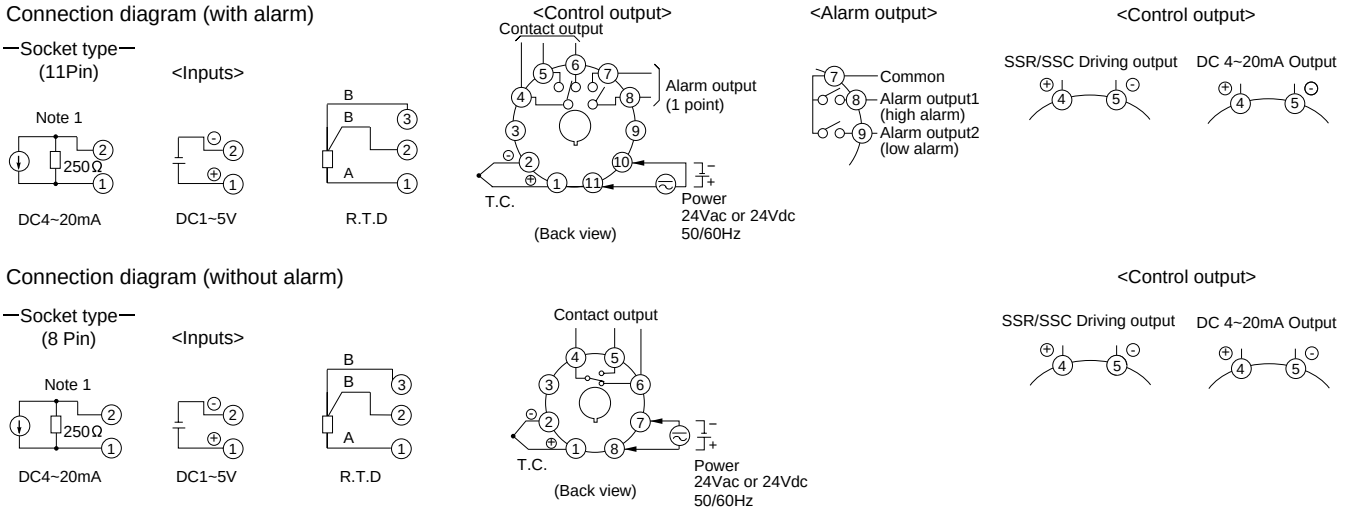
3) PXW5 · 9 · PXZ5 · 9 type



Note1: Use the 250Ω resistance(accessory).
Note2: SSR/SSC drive output and DC4~20mA output are not electrically insulated from inner circuits. So,non-grounding type sensor must be used.

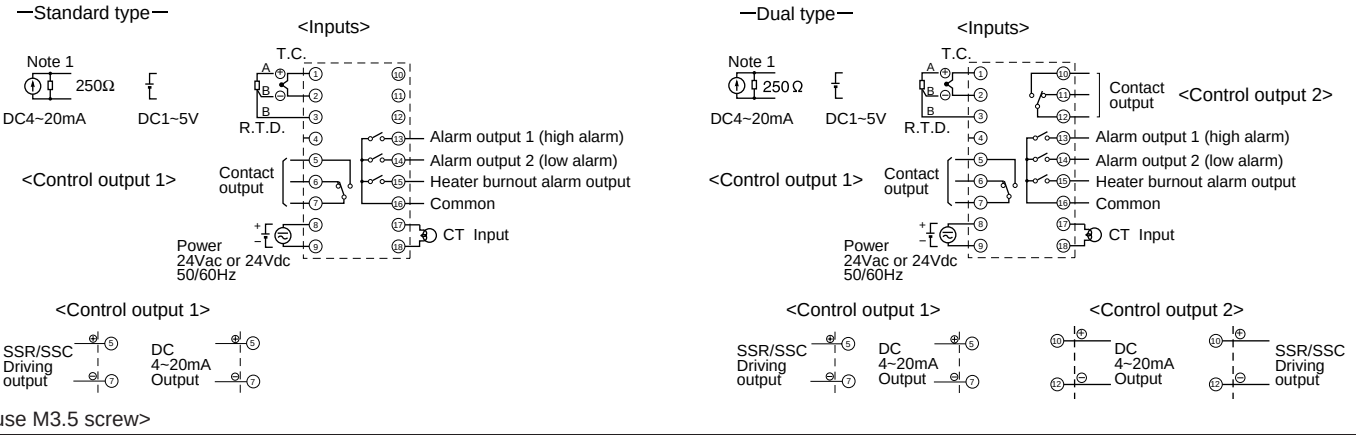
[4] Connection diagram [for 24V DC/24V AC power supply]

1) PXW4 · PXZ4 · PXV4 type



Note1: Use the 250Ω resistance(accessory).
Note2: SSR/SSC drive output and DC4~20mA output are not electrically insulated from inner circuits. So,non-grounding type sensor must be used.

2) PXW5 · 9 · PXZ5 · 9 type



Note1: Use the 250Ω resistance(accessory).
Note2: SSR/SSC drive output and DC4~20mA output are not electrically insulated from inner circuits. So,non-grounding type sensor must be used.

⚠ Caution: Before connection to each controller, carefully check the voltage and polarities of the power supply to be used.
The above connections correspond to 24 V AC or DC.
If power supply within 100 to 240 V is connected, each controller will be permanently damaged and will not operate.

PXW4 **PXW7** **PXW5** **PXW9**

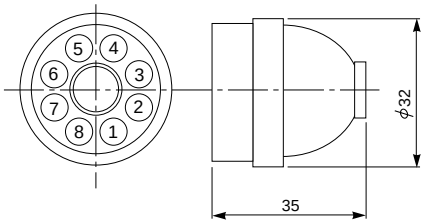
PXZ4 **PXZ7** **PXZ5** **PXZ9**

Micro Controller PXW,PXZ,PXV

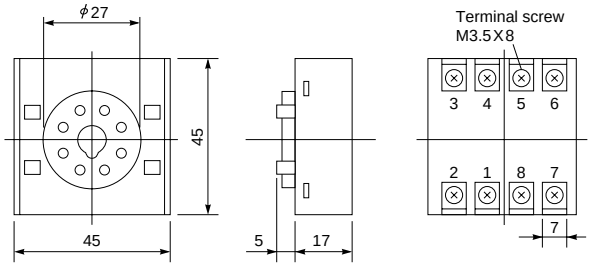
[5] Socket outline diagram [PXW4,PXZ4,PXV4 type]

Without alarm

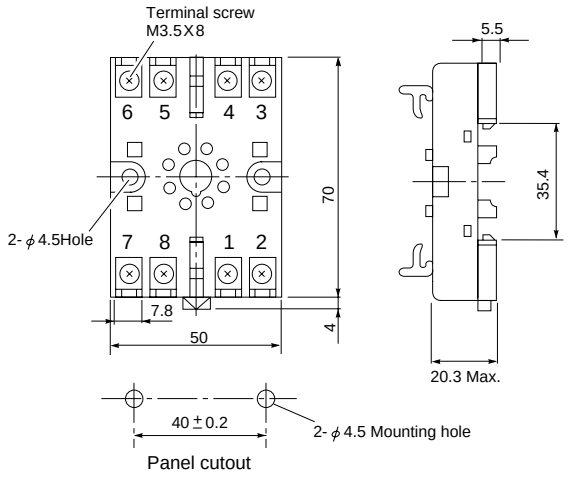
ATX1NS type (US socket)



TP48SB type (back screw wiring)

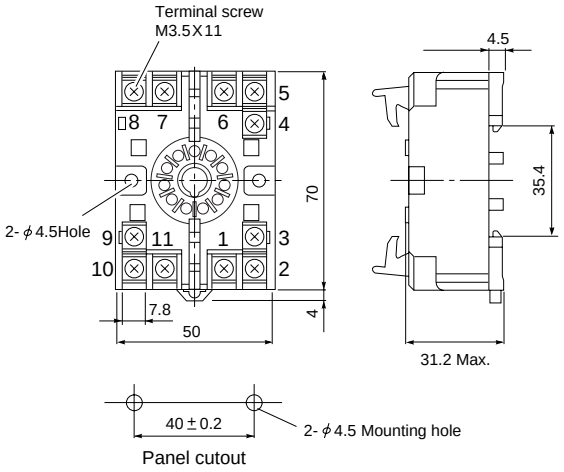


TP48X type (rail mounting)

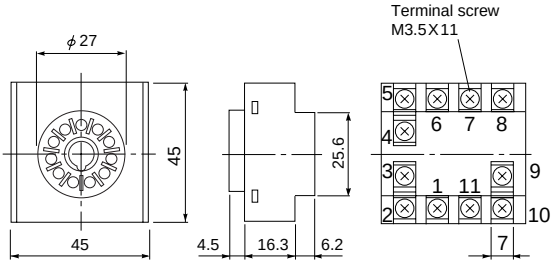


With alarm

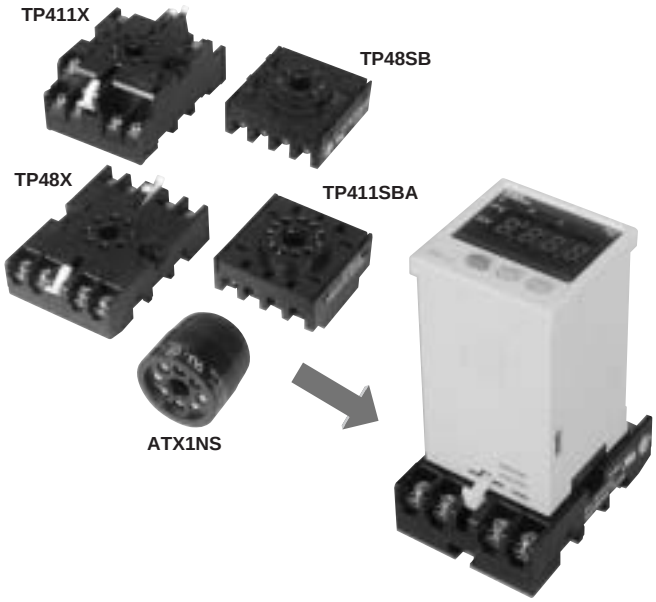
TP411X type (rail mounting)



TP411SBA type (mounting panel)



Appearance of various sockets



[6] Alarm code table

Alarm

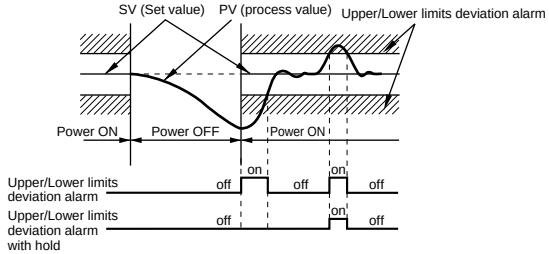
- Kind of alarm and alarm type code

	P-AH (ALM1)	P-AL (ALM2)	Kind of alarm	Action diagram
	0	0	Without alarm	PV
Absolute alarm	1	1	High absolute alarm	AH AL PV
	2	2	Low absolute alarm	AH AL PV
	3	3	High absolute alarm (with hold)	AH AL PV
	4	4	Low absolute alarm (with hold)	AH AL PV
Deviation alarm	5	5	High deviation alarm	AH AL SV PV
	6	6	Low deviation alarm	AH AL SV PV
	7	7	High/low deviation alarm	AH AL AH AL SV PV
	8	8	High deviation alarm (with hold)	AH AL SV PV
	9	9	Low deviation alarm (with hold)	AH AL SV PV
	10	10	High/low deviation alarm(with hold)	AH AL AH AL SV PV
Zone	11	11	High/low range deviation alarm(ALM1/2 individual action)	AH AL AH AL SV PV
	—	12	High/low range absolute alarm	AL AH PV
	—	13	High/low range deviation alarm	AL AH SV PV
	—	14	High range absolute alarm and low range deviation alarm	AL SV AH PV
	—	15	High range deviation alarm and low range absolute alarm	AH AL SV PV

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.



Reference data

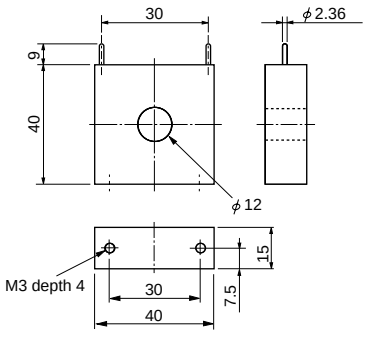
Comparison of the alarm code with conventional types
Conversion table for PYZ/W series “P-Ab” and PX series “P-AH” “P-AL”

- Alarm code conversion table(PYV/W/Z→PXV/W/Z)

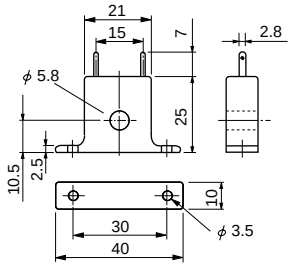
Kind of alarm	PXV/W/Z code		PXV/W/Z code	
	P-Ab		P-AH	P-AL
High deviation alarm	10		5	0
Low deviation alarm	5		0	6
Low deviation alarm with hold	69		0	9
High/low deviation alarm	15		5	6
High/low deviation alarm with hold	79		5	9
High-high absolute alarm	19		1	1
High absolute alarm	2		1	0
Low absolute alarm	1		0	2
Low absolute alarm with hold	65		0	4
High/low absolute alarm	3		1	2
High/low absolute alarm with hold	67	→	1	4
High absolute high deviation alarm	23		1	5
High absolute low deviation alarm	7		1	6
High deviation low absolute alarm	11		5	2
High deviation low absolute alarm with hold	75		5	4
High absolute low deviation alarm with hold	71		1	9
High/low absolute range alarm	179		–	12
High/low deviation range alarm	191		–	13
High absolute low deviation range alarm	183		–	14
High deviation low absolute range alarm	187		–	15

Heater burnout alarm current detector (CT)

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



・Specification : For 1-30A
・Type : CTL-6-S-H



Micro Controller PXW,PXZ,PXV

[7] Parameter table

PXW/PXV parameter table

Note : Figure with %* table below means "% of measuring range".

	Parameter	Setting range	Meaning of parameter	Unit	Value prior to delivery	User's set value	DSP assignment
No.1 block parameter	PRoG	roFF/rrUn/rHLd	Ramp soak control (start/stop/pause)	—	—		dsp1-1
	H	0-100%*	High alarm (ALM1) set value	Industrial/deviation industrial value	10		dsp1-2
	L	0-100%*	Low alarm (ALM2) set value	Industrial/deviation industrial value	10		dsp1-4
	HB	0.0-50.0	Heater burnout detect value setting (function OFF at 0)	A (ampere)	0.0		dsp1-8
	AT	0-2	Auto-tuning command (0:OFF/1:Standard/2:Low PV)	—	0		dsp1-16
	LoC	0-2	Setting lock (0:OFF/1:All lock/2:Lock,other than SV)	—	0		dsp1-32
No.2 block parameter	P	0.0-999.9	Proportional band (2-position action at 0)	%	5.0		dsp1-128
	I	0-3200	Integral time (integration OFF at 0)	Second	240		dsp2-1
	D	0.0-999.9	Differentional time (Differentiation OFF at 0)	Second	60.0		dsp2-2
	TC	1-150	Output 1 proportional cycle (RY:30/SSR:2/4 to 20mA:0)	Second	30/2/0		dsp2-4
	HYS	0-50%*	2-position action hysteresis	Deviation industrial value	1		dsp2-8
	TC2	1-150	Output 2 proportional cycle (RY:30/SSR:2/4 to 20mA:0)	Second	30/2/0		dsp2-16
	CooL	0.0-100.0	Cooling side proportional band coefficient	—	1.0		dsp2-32
	db	-50.0-50.0	Dead band	%	0.0		dsp2-64
	bAL	-100.0-100.0	Manual reset value (single 0.0/dual 50.0 prior to delivery	%	0.0/50.0		dsp2-128
	Ar	0-100%*	Anti-reset wind up (100%* prior to delivery)	Deviation industrial value	100%*		dsp3-1
	P-n2	0-16	Input type code	—	Ordering specification		dsp3-2
	P-SL	-1999-9999	0% input scale	industrial value	Ordering specification Note3)		dsp3-4
	P-SU	-1999-9999	100% input scale	industrial value	Ordering specification Note3)		dsp3-8
	P-dP	0-2	Decimal point position code (0:□□□□/1:□□□.□/2:□□.□□)	—	Ordering specification Note3)		dsp3-16
	P-AH	0-11	High (ALM2) type code	—	Ordering specification		dsp3-32
	P-AL	0-15	Low (ALM1) type code	—	Ordering specification		dsp3-64
	PVOF	-10-10%*	Input bias	Deviation industrial value	0		dsp3-128
	SVOF	-50-50%*	Set value bias	Deviation industrial value	0		dsp4-1
	P-F	℃/℉	℃/℉ designation	—	Ordering specification		dsp4-2
	STAT	···	Ramp soak present position	—	—		dsp4-4
	SV-1	0-100%*	No.1 target value	industrial value	0% Note5)		dsp4-8
	TM1r	0-99h59m	No.1 ramp segment time	Hour/minute	0.00		dsp4-16
	TM1S	0-99h59m	No.1 soak segment time	Hour/minute	0.00		dsp4-32
	SV-2	0-100%*	No.2 target value	industrial value	0% Note5)		dsp4-64
	TM2r	0-99h59m	No.2 ramp segment time	Hour/minute	0.00		dsp4-128
	TM2S	0-99h59m	No.2 soak segment time	Hour/minute	0.00		dsp5-1
	SV-3	0-100%*	No.3 target value	industrial value	0% Note5)		dsp5-2
	TM3r	0-99h59m	No.3 ramp segment time	Hour/minute	0.00		dsp5-4
	TM3S	0-99h59m	No.3 soak segment time	Hour/minute	0.00		dsp5-8
	SV-4	0-100%*	No.4 target value	industrial value	0% Note5)		dsp5-16
	TM4r	0-99h59m	No.4 ramp segment time	Hour/minute	0.00		dsp5-32
	TM4S	0-99h59m	No.4 soak segment time	Hour/minute	0.00		dsp5-64
	Mod	0-15	Control designation before and after ramp soak	—	0 Note4)		dsp5-128
No.3 block parameter	P-n1	0-19	Control type code	—	Ordering specification		dsp6-2
	P-dF	0.0-900.0	Input filter time constant (filter OFF at 0)	Second	5.0		dsp6-4
	P-An	0-50%*	Alarm hysteresis	Deviation industrial value	1		dsp6-8
	PLC1	-3.0-103.0	Output 1 minimum ON pulse width	%	-3.0		dsp6-32
	PHC1	-3.0-103.0	Output 1 minimum OFF pulse width	%	103.0		dsp6-64
	PLC2	-3.0-103.0	Output 2 minimum ON pulse width	%	-3.0		dsp6-128
	PHC2	-3.0-103.0	Output 2 minimum OFF pulse width	%	103.0		dsp7-1
	FUZY	OFF/ON	Fuzzy control ON/OFF designation	—	OFF		dsp7-4
	ADJO	-50-50%*	Zero shift	Deviation industrial value	0		dsp7-16
	ADJS	-50-50%*	Span shift	Deviation industrial value	0		dsp7-32
	dSP1-7	0-255	Parameter display mask designation code	—	—		—

Note 1) Items shown in ▭ are not indicated at the time of delivery. Note 2) Parameters shown in ▭ are indicated in accordance with your model.
Note 3) When you change these value, check all parameter's value after changing these value.
Note 4) Don't change this value from 0 to others. Note5) 0% is equal to the setting value of "P-SL".

PXZ parameter table

Note : Figure with %* table below means "% of measuring range".

	Parameter	Setting range	Meaning of parameter	Unit	Value prior to delivery	User's set value	DSP assignment
No.1 block parameter	PRoG	oFF/rUn/HLd	Ramp soak control (start/stop/pause)	—	—		dsp1-1
	P	0.0-999.9	Proportional band (2-position action at 0)	%	5.0		dsp1-2
	I	0-3200	Integral time (integration OFF at 0)	Second	240		dsp1-4
	D	0.0-999.9	Differentional time (Differentiation OFF at 0)	Second	60.0		dsp1-8
	AL	0-100%*	Low alarm (ALM2) set value	Industrial/deviation industrial value	10		dsp1-16
	AH	0-100%*	High alarm (ALM1) set value	Industrial/deviation industrial value	10		dsp1-32
	TC	1-150	Output 1 proportional cycle (RY:30/SSR:2/4 to 20mA:0)	Second	30/2/0		dsp1-64
	HYS	0-50%*	2-position action hysteresis	Deviation industrial value	1		dsp1-128
	Hb	0.0-50.0	Heater burnout detect value setting (function OFF at 0)	A (ampere)	0.0		dsp2-1
	AT	0-2	Auto-tuning command (0:OFF/1:Standard/2:Low PV)	—	0		dsp2-2
	TC2	1-150	Output 2 proportional cycle (RY:30/SSR:2/4 to 20mA:0)	Second	30/2/0		dsp2-4
	CooL	0.0-100.0	Cooling side proportional band coefficient	—	1.0		dsp2-8
	db	-50.0-50.0	Dead band	%	0.0		dsp2-16
	PLC1	-3.0-103.0	Output 1 minimum ON pulse width	%	-3.0		dsp2-32
	PHC1	-3.0-103.0	Output 1 minimum OFF pulse width	%	103.0		dsp2-64
	bAL	-100.0-100.0	Manual reset value (single 0.0/dual 50.0 prior to delivery	%	0.0/50.0		dsp3-1
	Ar	0-100%*	Anti-reset wind up (100%* prior to delivery)	Deviation industrial value	100%*		dsp3-2
	LoC	0-2	Setting lock (0:OFF/1:All lock/2:Lock,other than SV)	—	0		dsp3-4
	STAT	···	Ramp soak present position	—	—		dsp3-8
	SV-1	0-100%*	No.1 target value	industrial value	0% Note5)		dsp3-16
	TM1r	0-99h59m	No.1 ramp segment time	Hour/minute	0.00		dsp3-32
	TM1S	0-99h59m	No.1 soak segment time	Hour/minute	0.00		dsp3-64
	SV-2	0-100%*	No.2 target value	industrial value	0% Note5)		dsp3-128
	TM2r	0-99h59m	No.2 ramp segment time	Hour/minute	0.00		dsp4-1
	TM2S	0-99h59m	No.2 soak segment time	Hour/minute	0.00		dsp4-2
	SV-3	0-100%*	No.3 target value	industrial value	0% Note5)		dsp4-4
	TM3r	0-99h59m	No.3 ramp segment time	Hour/minute	0.00		dsp4-8
	TM3S	0-99h59m	No.3 soak segment time	Hour/minute	0.00		dsp4-16
	SV-4	0-100%*	No.4 target value	industrial value	0% Note5)		dsp4-32
	TM4r	0-99h59m	No.4 ramp segment time	Hour/minute	0.00		dsp4-64
	TM4S	0-99h59m	No.4 soak segment time	Hour/minute	0.00		dsp4-128
	Mod	0-15	Control designation before and after ramp soak	—	0 Note4)		dsp5-1
No.2 block parameter	P-n1	0-19	Control type code	—	Ordering specification		dsp5-4
	P-n2	0-16	Input type code	—	Ordering specification		dsp5-8
	P-dF	0.0-900.0	Input filter time constant (filter OFF at 0)	Second	5.0		dsp5-16
	P-SL	-1999-9999	0% input scale	industrial value	Ordering specification Note3)		dsp5-32
	P-SU	-1999-9999	100% input scale	industrial value	Ordering specification Note3)		dsp5-64
	P-AL	0-15	Low(ALM1)type code	—	Ordering specification		dsp5-128
	P-AH	0-11	High(ALM2)type code	—	Ordering specification		dsp6-1
	P-An	0-50%*	Alarm hysteresis	Deviation industrial value	1		dsp6-2
	P-dP	0-2	Decimal point position code (0:□□□□/1:□□□.□/2:□□.□□)	—	Ordering specification Note3)		dsp6-4
	PVOF	-10-10%*	Input bias	Deviation industrial value	0		dsp6-16
	SVOF	-50-50%*	Set value bias	Deviation industrial value	0		dsp6-32
	P-F	℃/℉	℃/℉ designation	—	Ordering specification		dsp6-64
	PLC2	-3.0-103.0	Output 2 minimum ON pulse width	%	-3.0		dsp6-128
	PHC2	-3.0-103.0	Output 2 minimum OFF pulse width	%	103.0		dsp7-1
	FUZY	OFF/ON	Fuzzy control ON/OFF designation	—	OFF		dsp7-2
	ADJO	-50-50%*	Zero shift	Deviation industrial value	0		dsp7-8
	ADJS	-50-50%*	Span shift	Deviation industrial value	0		dsp7-16
	dSP1-7	0-255	Parameter display mask designation code	—	—		—

Note 1) Items shown in ▭ are not indicated at the time of delivery. Note 2) Parameters shown in ▭ are indicated in accordance with your model.
Note 3) When you change these value, check all parameter's value after changing these value.
Note 4) Don't change this value from 0 to others. Note5) 0% is equal to the setting value of "P-SL".