

# KP Series

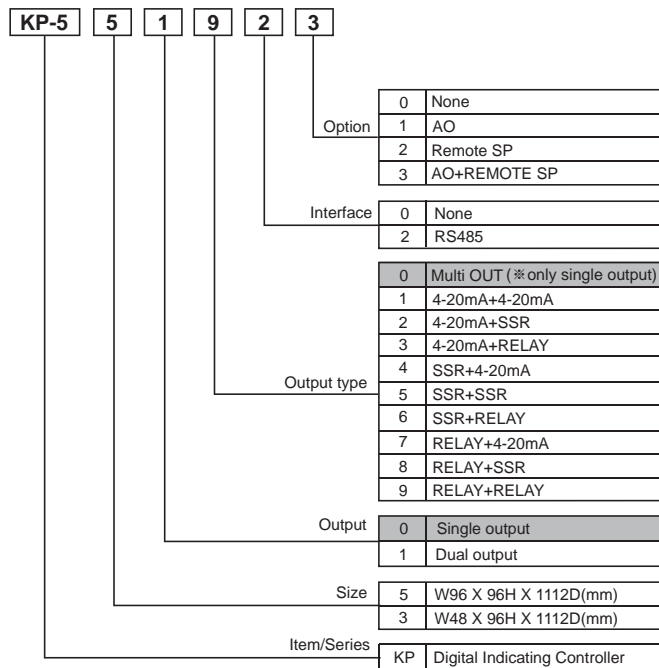
# Digital Indicating Controller

The digital indicating controller adopts 8bit micro-process for optimal system controlling. It has various controlling modes and multiple input/output.

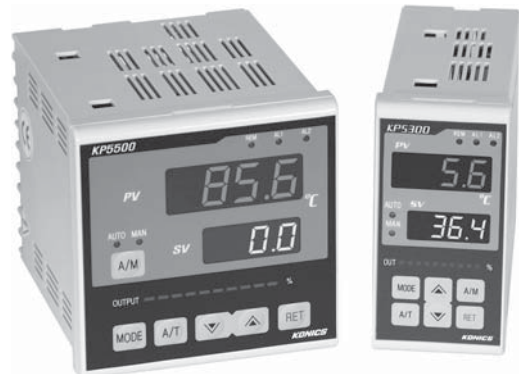
## Features

- Multiple input/ output
- Scaling range of -1999~9999
- Optional : Interface RS-485  
Remote SP  
Analog Output (4-20mA)
- 2 output
- Emergency output

## Ordering Information



※ AO : Analog output(4-20mA)



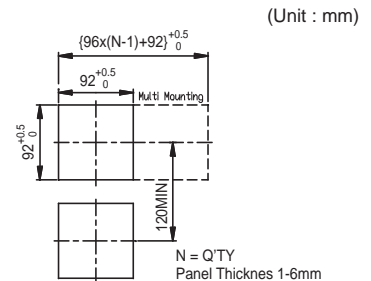
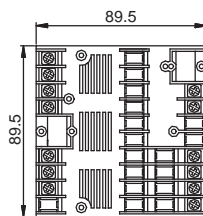
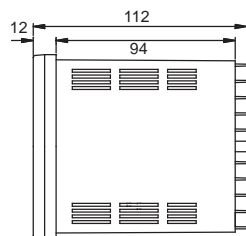
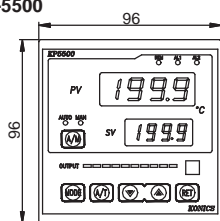
## Input Range for the Sensors

• Input : Universal Range Type

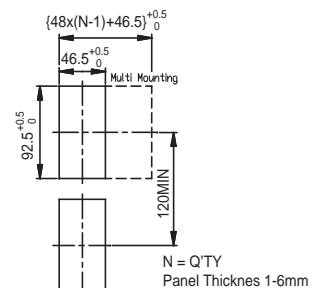
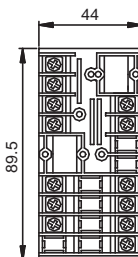
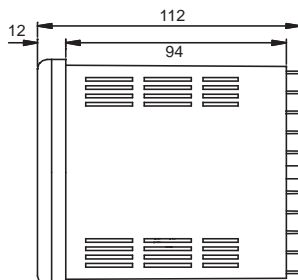
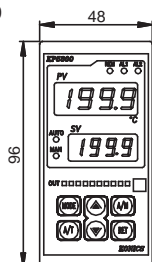
INPUT TYPE	SCALE RANGE		
	°C	°F	
T/C	B(PR30%)	0~1800	32~3273
	R(PR13%)	0~1750	32~3182
	S(PR10%)	0~1750	32~3182
	K(CA)	-200~1350	-328~2462
	E	-200~800	-328~1472
	J(IC)	-200.0~800.0	-328~1472
	T(CC)	-200.0~400.0	-328~752
RTD	DPT100	-200~600	-328~1112
	DPT100(0.1)	-200.0~600.0	-328~1112
	JPT100	-200~600	-328~1112
mV	± 200	-1999~9999	
mA	± 20		
V	± 20		

## Dimensions, Panel Cutout

KP-5500



KP-5300



- A Recorders
- B Indicators
- C Converters
- D Controllers
- E Thyristor Units
- F Pressure Transmitters
- G Temperature Transmitters

- KC Series
- KP Series

### Specifications

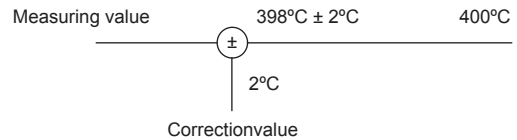
- Output :** CURRENT4-20mA(Load resistance Max. 600)  
 REALY contact(250VAC/8A, 30VDC/2A)  
 SSR Drive ON ... 24VDC(Max. 20mA)  
 OFF ...0VDC
- Input resistance :** Volt type Min. 200kΩ  
 mA type 250Ω remote resistance  
 Others Min. 1MΩ
- Accuracy :** Higher value of 0.25% or Digit(Full scale)
- Signal :** Resistance(Max.) Others Max. 300Ω  
 RTD Type 20Ω(Max.) or less per line
- Scale :** TC/RTD Set within the full scale  
 mV, V, mA, -1.999~+9.999, -1999~+9999
- Display :** PV, SV display simultaneously -1999~+9999  
 LED 7Segment 4Dight PV ... RED.  
 SV or output ... GREEN  
 Bar graphic 10 Bar(0.0~100.0%) RED
- Direct/reverse action change :** Standard
- Input measuring & controlling cycle :** 100ms
- Control mode :** PID. PD. ON/OFF(comm. No.1, 2 output)  
 PD- ON/OFF, ON/OFF-RD (No.2 output) only
- Control constant :** Proportional band(p) 0.1~999.9%(No.1 Output)  
 Integral time(I) 0.1~99.99min.  
 Derivative time(D) 0~20.00min.  
 Manual reset- 0.0~100.0%  
 P2 0.1~999.9(optional No.2 output)  
 Dead band ±0.5(optional No.2 output)
- Auto-tuning function :** Standard
- Cycle time :** 1~120sec.(In case of relay/SSR drive output)
- C.M.R.R :** Min. 140dB
- N.M.R.R :** Min. 40dB
- Burn out :** TC, RTD, mV, Scale up, V, mV, Scale down
- Input filter function :** FIR filter built-in
- Sensor correction :** Full scale
- °C ↔ °F change**
- Self-diagnosis :** Standard
- Insulation resistance :** FG-input(100Ω)  
 FG -power(100Ω)  
 Power-input(100Ω)  
 Input-output(100Ω)
- Alarm :** High low limit alarm set point deviation deadband ... 0~99
- Alarm point :** 2point(AL1, AL2)
- Alarm response time :** 100ms
- Contact rating :** 125VAC/0.5A, 30VDC/5A
- Data backup :** Save by EEPROM
- Ambient temp/humidity :** Operating temp. humidity -5~55°C/10~90%  
 Storage temp. humidity -20~70°C/5~95%
- Automatic return :** No key operation for automatically return to mode
- Power supply :** 100-240VAC, 50~60Hz
- Power consumption :** 5VA(110VAC)
- Weight :** Approx. 500g
- Mounting :** Front panel mounting

### Functions

#### • Correction of sensor

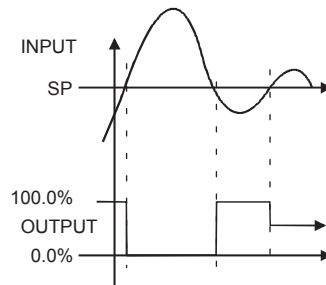
For the measuring value(PV)-Possible to add or subtract the correction value within a scope of full-scale  
 Sensor = 398°C(Before correction)

$$\begin{aligned} \text{Sensor(After correction)} &= \text{Measuring value} \\ &= \text{Correction value} \\ &= 398^\circ\text{C} + 2^\circ\text{C} \\ &= 400^\circ\text{C} \end{aligned}$$



#### • 2-Auto-Tuning function

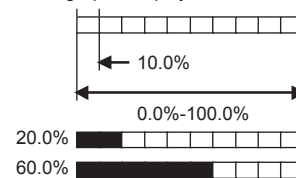
- In case of the output is 0.0% or 100.0(In case of electric current output)take measurement the specific characteristics of process of the changes of measuring value for the lowest value of the output limit or highest limit.
- Set a new value after operated the most suitable control hand depending upon the result of measurement.



#### • Output display function

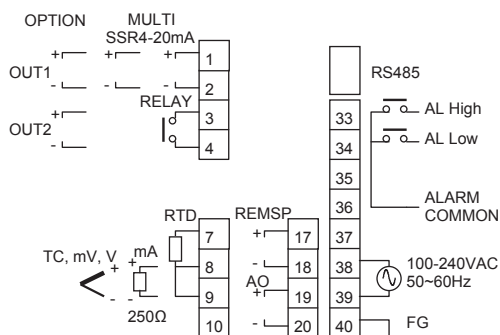
- 1st output : If you press the Auto/Man key one time,the outputting volume indicated on the SP window which was outputted from the current from the 1st output  
 (SP Value → the 1st output volume → SP Value ...)
- In case of the 2nd output(option) Press the A/M key gradually and indicate the outputting volume in the order of SP value → the 1st outputting volume → the 2nd outputting volume → SP value...
- In case of the normal mode indicator outputting volume currently, manual outputting volume shall be indicated in the manual output mode.

Bar graphic display

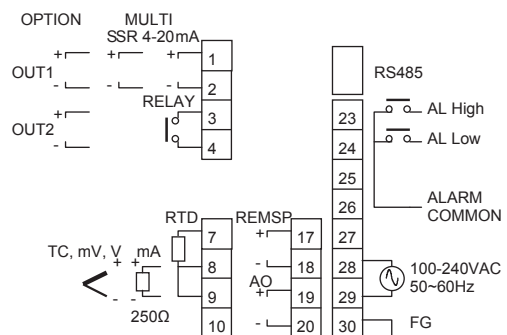


### Connections

#### <KP-5500 >

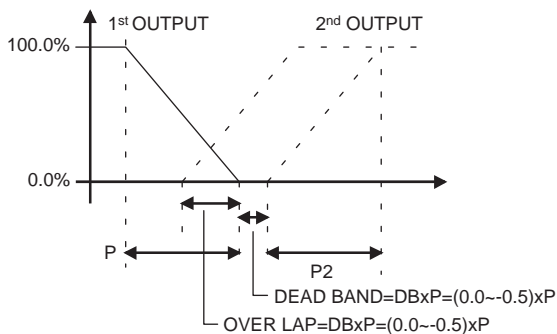


#### <KP-5300>

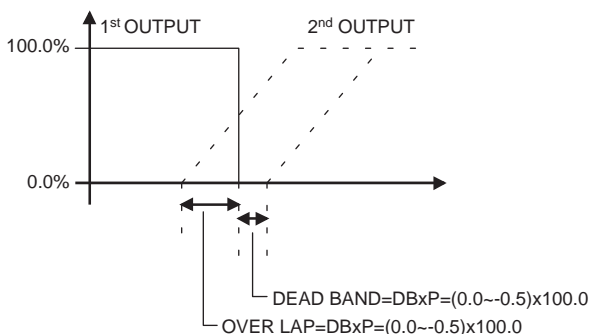


• **Dual output function(option)**

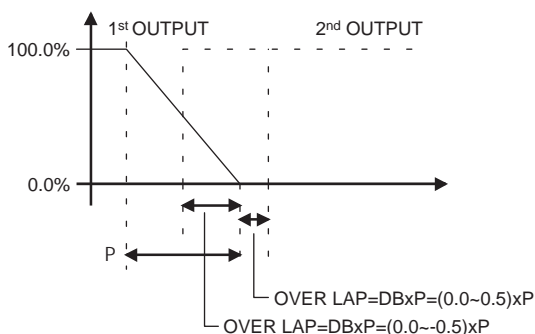
- This should be used in case of regulated by one (1) regulator for heating an cooling.
- The overlap of dead band shall be set up by % for the width of scale.
- There gulating mode is possible to use upon making choice among the PID,PD,ON/OFF,PD-ON/OFF,ON/OFF-PD.
- 1<sup>st</sup>OUTPUT(PID) + 2<sup>nd</sup>OUTPUT2(PID)



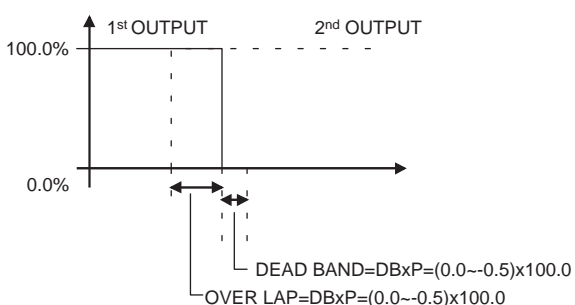
- 1<sup>st</sup>OUTPUT(ON/OFF) + 2<sup>nd</sup>OUTPUT2(PD)



- 1<sup>st</sup>OUTPUT(PD) + 2<sup>nd</sup>OUTPUT2(ON/OFF)



- 1<sup>st</sup>OUTPUT(ON/OFF) + 2<sup>nd</sup>OUTPUT2(ON/OFF)



Option

- **Communication interface** : RS 485
- **Remote set point** : 1~5V
- **Analog output** : 4~20mA
- **Dual output**

A	Recorders
B	Indicators
C	Converters
D	Controllers
E	Thyristor Units
F	Pressure Transmitters
G	Temperature Transmitters

KC Series
KP Series