

RP Series

Multi pulse meter

- Auto zero time setting
- Comparative output (HH, H, GO, L, LL)
- Starting compensation timer function
- Save Max value 5 types and min value 5 types
- Power backup compensation function (F9 mode)
- Max 10 KHz input



E

Multi Pulse Meter

○ Suffix code

RP3

Model	Code	Description
RP	<input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Multi Pulse Meter
Dimension	3	96(W) X 48(H) mm
Displayable digit	5	5 digits (0 – 99999)
Power supply voltage	A	100 – 240 V AC 50 – 60 Hz
	D	24 – 60 V DC/AC (dual usage) 50 – 60 Hz
Output	N	Displaying Only
	1	3 stages relay
	2	5 stages relay
	4	NPN open collector 5 stages output, transfer output(4–20mA DC)

RP1

Model	Code	Description
RP	<input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Multi Pulse Meter
Dimension	1	48(W) X 24(H) mm
Displayable digit	4	4 digits (0 – 9999)
Power supply voltage	A	100 – 240 V AC 50 – 60 Hz
Output	N	Displaying Only
	1	Relay high output

RP4

Model	Code				Description
RP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Multi Pulse Meter
Dimension	4				48(W) X 48(H) mm
Displayable digit		5			5 digits (0 - 99999)
Power supply voltage			A		100 - 240 V AC 50 - 60 Hz
			D		24 - 60 V DC / AC (dual usage) 50 - 60 Hz
Output			N		Displaying Only
			1		Relay high output

RP6

Model	Code				Description
RP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Multi Pulse Meter
Dimension	6				72(W) X 36(H) mm
Displayable digit		5			5 digits (0 - 99999)
Power supply voltage			A		100 - 240 V AC 50 - 60 Hz
			D		24 - 60 V DC / AC (dual usage) 50 - 60 Hz
Output			N		Displaying Only
			1		3 stages relay
			3		NPN open collector 5 stages output, Retransmission output(4-20 mA DC)

E
Multi Pulse Meter

RP7

Model	Code				Description
RP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Multi Pulse Meter
Dimension	7				72(W) X 72(H) mm
Displayable digit		5			5 digits (0 - 99999)
Power supply specification			A		100 - 240 V AC 50 - 60 Hz
			D		24 - 60 V DC / AC (dual usage) 50 - 60 Hz
Output			N		Displaying Only
			1		3 stages relay
			2		5 stages relay
			5		NPN open collector 5 stages output, Retransmission output(4-20 mA DC)

Specification

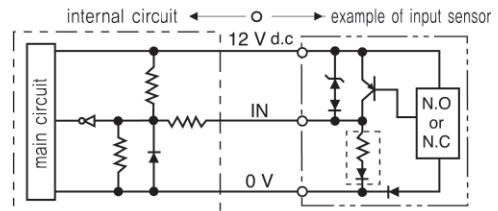
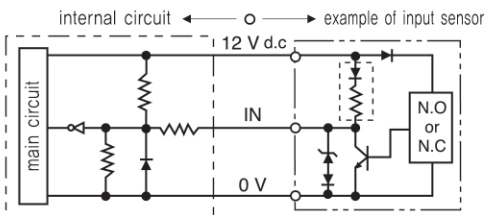
Input

Non contact input	10 KHz max. (Duty ratio 50%, each more than 50 μ s) (ON voltage : 4.5 V – 24 V, OFF voltage : 0 – 1.0 V)	
Contact input	30 Hz max. (Duty ratio 50%, each more than 16.6 ms) (Sufficiently open / close the 12V DC 2 mA of current)	
Max displayable digit	5 digits (0 ~ 99999), 4 digits (0 ~ 9999)	
Displaying time	0.05 sec, 0.5 sec, 1 sec, 2 sec, 4 sec, 8 sec	
Measurement range	Revolutions, frequency, velocity (F1)	0.0003 Hz ~ 10 KHz
	Moving velocity (F2)	0.003 Hz ~ 1000 Hz
	Cycle (F3), Passing time (F4), Time difference (F5), Time range (F6)	0.001 s ~ 3,200 s
	Pulse width (F7), Pulse interval (F8), Adding counter (F9)	0 ~ 4 X 10 ⁹ Count

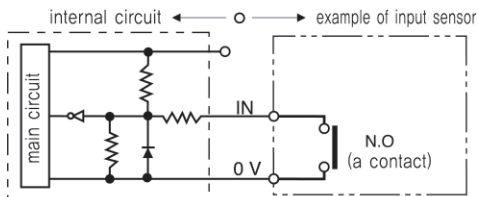
Input type selection (using input sensor selection)

- $nPnno$: NPN Normal Open
- $nPnnc$: NPN Normal Close

- $PnPno$: PNP Normal Open
- $PnPnc$: PNP Normal Close



- $Contct$: contact input Normal open



Caution when selecting sensor type

- The desired measurement value cannot be obtained if input type is not selected properly so please check the input type before connecting.

- Example of input type setting

$nPnno$ – Normally open, when closed due to the operation → (NPN NO)

$nPnnc$ – Normally close, when opened due to the operation → (NPN NC)

Performance

Measurement accuracy	±0.02 % rdg ±1 dig (Mode F1, F2, F3, F4, F5) ±0.1 % rdg ±1 dig (Mode F6)
Life expectancy (mechanical)	20 million times
Life expectancy (electrically)	When opening/closing the 250 V AC 3 A(30 V DC 3 A) 100 thousand times When opening/closing the 250 V AC 5 A(30 V DC 5 A) 50 thousand times Standard opening/closing speed is 20 times per min
Noise immunity	Square wave noise by the ±2,000 V noise simulator (pulse width 1μs)
Insulation resistance	10 MΩ min (500 V DC electrically chargeable part–non electrically chargeable part)
Dielectric strength	2,000 V AC 60 Hz for 1 min (power terminal–case, power terminal–input terminal)

Function

Displaying type	7 Segment LED					
Alphabet size(mm)	Model	RP1	RP4	RP6	RP3	RP7
	width	6.3	4.6	7.6	8.3	7.6
	height	10	8	13.8	14	13.8
Operation mode	Revolutions / frequency / velocity (F1), moving velocity (F2), Cycle (F3), Passing time (F4), Time difference (F5), Time range (F6), Pulse width (F7), Pulse interval (F8), Adding counter (F9)					
Pre scale	0.0001 X 10 ⁻⁹ ~ 9.9999 X 10 ⁹ RP1 : 0.001 X 10 ⁻⁹ ~ 9.999 X 10 ⁹					
Hysteresis	0 ~ 9999 (only applied to the output type, connected to the mode so the setting range varies.)					
Other function	Time unit selecting function, movement compensation timer function, displayable cycle setting function, parameter lock function, auto zero time setting function, power backup compensation function (only applied to the F9), min measurement value 4 kinds, min measurement average value, max measurement value 4 kinds, max measurement average value saving function (total 10 kinds), comparative output function, (HH,H,GO,L,LL) current output range selecting function (only applied with the current output type)					

E
Multi Pulse
Meter

Output

Comparative alarm output	NPN open collector (HH, H, GO, L, LL) (12 – 24 V DC 100 mA max.)
	Relay (HH, H, GO, L, LL) (5 A 250 V AC)
Retransmission output (displaying value)	4 – 20 mA DC (resistive load less than 600 Ω)

Standard specification

Model		RP1	RP3	RP4	RP6	RP7
Power supply voltage	AC	100 – 240 V AC 50 – 60 Hz				
	DC	24 – 60 V DC / AC				
Voltage fluctuation		±10 % of the power supply voltage				
Power consumption	AC	Approx. 10 VA	Approx. 9.5 VA	Approx. 12 VA	Approx. 12 VA	Approx. 9.5 VA
	DC	–	Approx. 5 W	Approx. 6 W	Approx. 5 W	Approx. 5 W
Weight(g)		Approx. 115	Approx. 230	Approx. 115	Approx. 160	Approx. 225
Power only for sensor		12 V DC ±10 %, 120 mA max.				
Vibration resistance		10 – 55 Hz Double amplitude 0.75 mm for 2 hour each in 3 axis direction				
Shock resistance		300 % 3 times each in X, Y and Z direction				
Ambient temperature		-10 ~ 50 °C (with no condensation)				
Ambient humidity		35 ~ 85 % RH				
Storage temperature		-20 ~ 60 °C (with no condensation)				

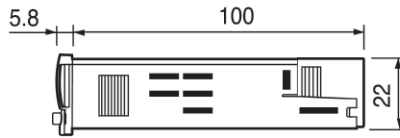
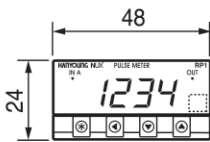
E

Multi Pulse Meter

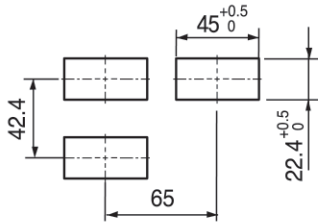
Dimension and panel cutout (Unit : mm)

RP1

● Dimension

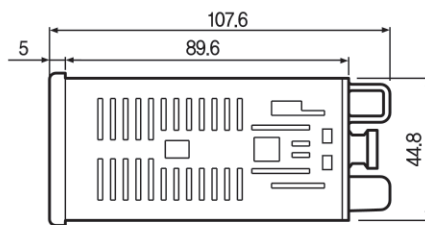
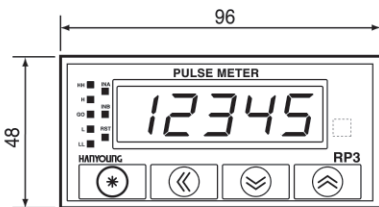


● Panel cutout

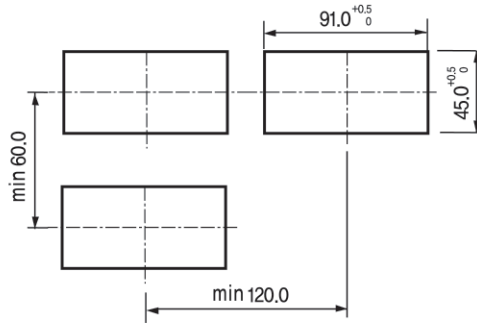


RP3

● Dimension

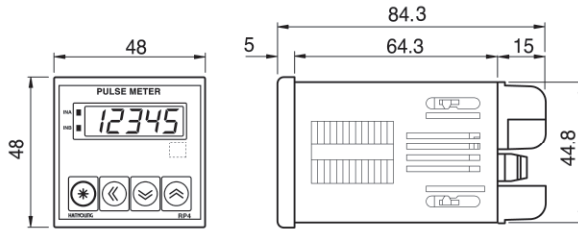


● Panel cutout

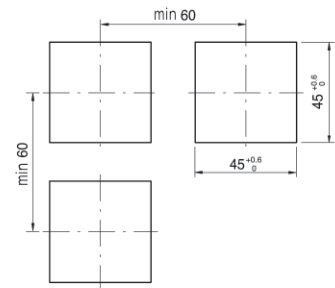


RP4

● Dimension



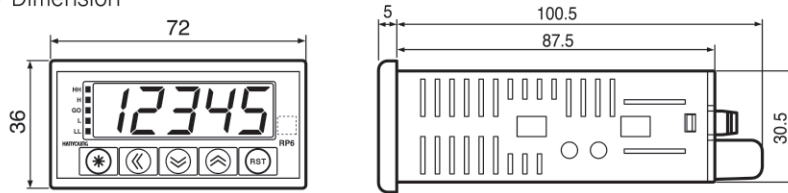
● Panel cutout



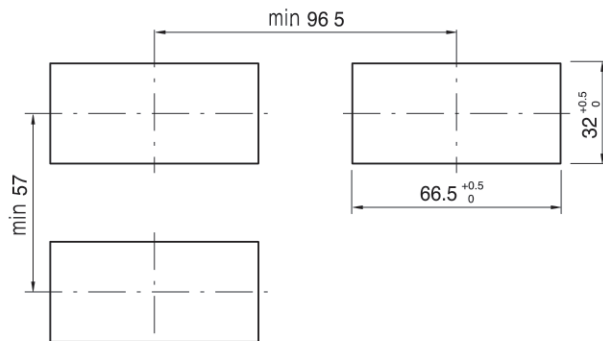
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Meter

RP6

● Dimension

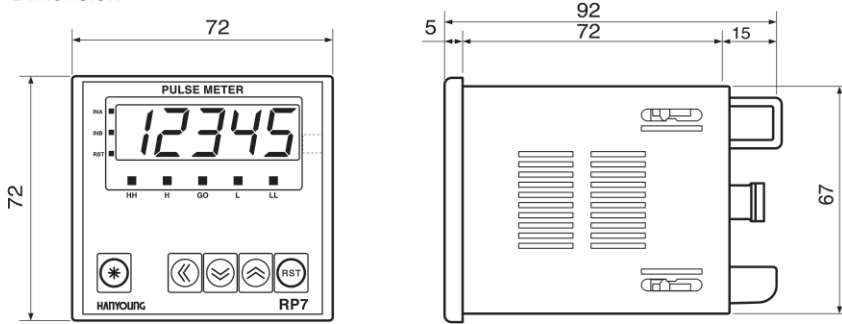


● Panel cutout

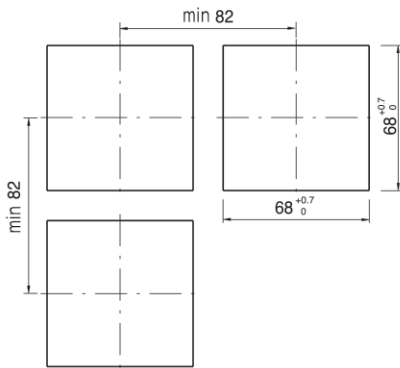


RP7

● Dimension

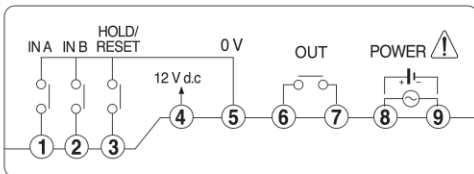


● Panel cutout



● Connection diagram

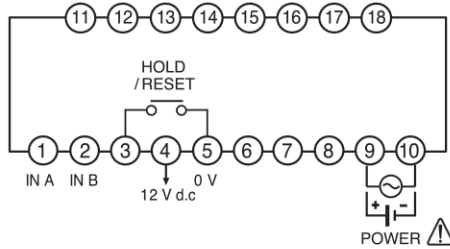
RP1



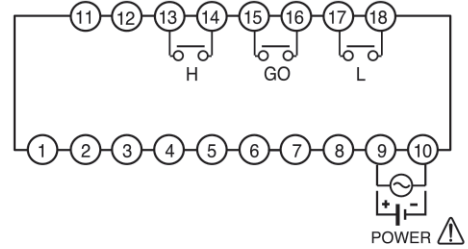
- ※ No output (OUT) in case of displaying only – There isn't output(OUT) in case of displaying only.
- ※ Output (OUT) in case of Relay high output only – There is only output(OUT) in case of relay high output.

RP3

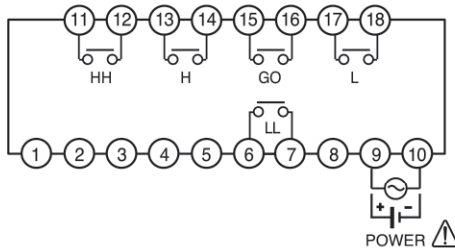
- Displaying only (RP3-5□N)



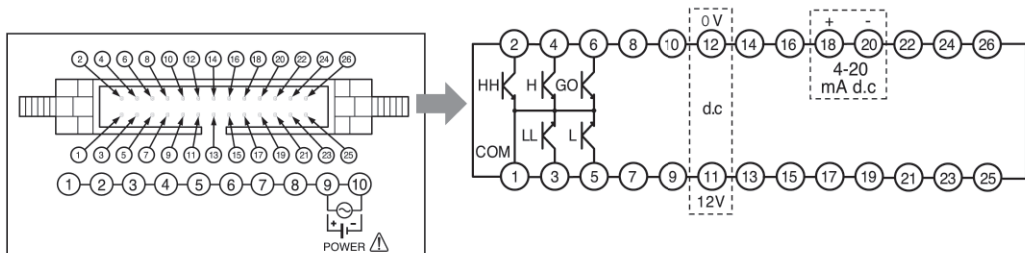
- 3 stages contact output (RP3-5□1)



- 5 stages contact output (RP3-5□2)



- NPN Open Collector + transfer output (4 – 20 mA DC) (RP3-5□4)

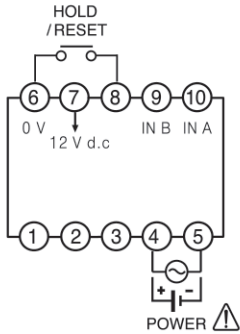


- It is Hirose connector HIF3BA-26PA-2.54DS and commonly used with the auxiliary connector.
- When purchasing this product, socket of connector is excluded.

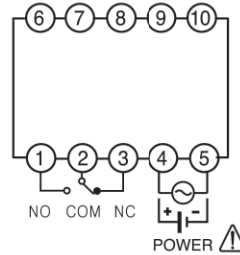
E
Multi Pulse
Meter

RP4

- Displaying only (RP4-5□N)

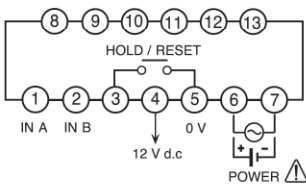


- Relay high output (RP4-5□1)

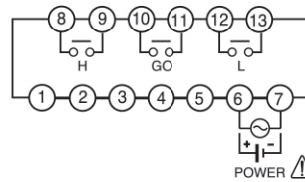


RP6

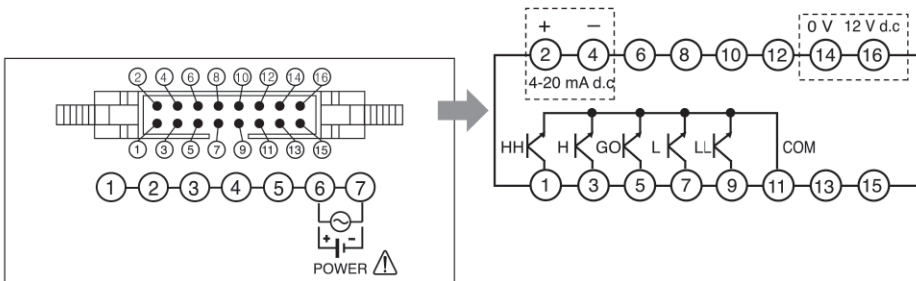
- Displaying only (RP6-5□N)



- 3 stages contact output (RP6-5□1)



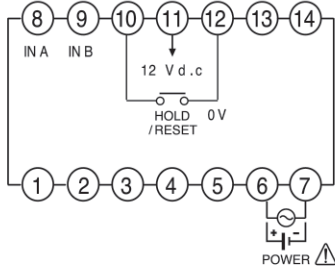
- NPN Open Collector + transfer output (4 – 20 mA DC) (RP6-5□3)



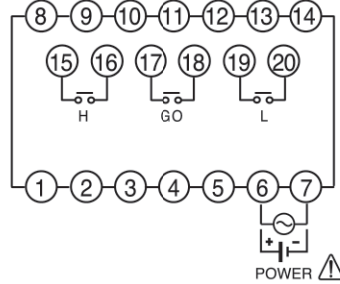
- It is Hirose connector HIF3BA-16PA-2.54DS and commonly used with the auxiliary connector.
- When purchasing this product, socket of hirose connector is excluded.

RP7

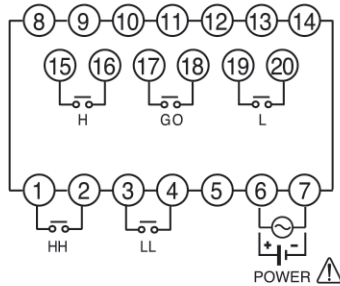
- Displaying only (RP7-5□N)



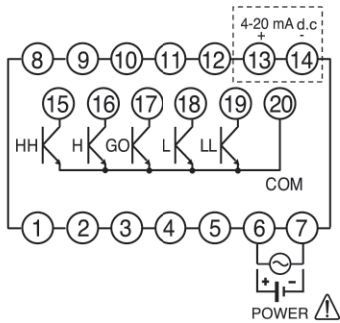
- 3 stages contact output (RP7-5□1)



- 5 stages contact output (RP7-5□2)



- NPN Open Collector + transfer output (4 - 20 mA DC) (RP7-5□5)

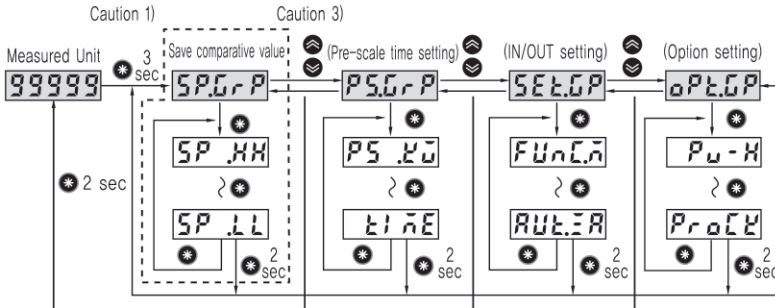


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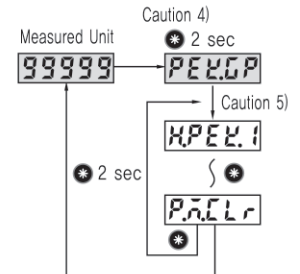
Parameter composition and setting

Menu Setting Flow Chart

- Menu selection



- Peak value save



- ※ Note 1) Enter into menu selection by pressing * key for 3 seconds
- ※ Note 2) SP Group is not shown on "Display Only" product.
- ※ Note 3) In each Group, you can move to other Groups by press ⏪, ⏩ key. Pressing * key for 1 second leads to enter into measured screen.
- ※ Note 4) Pressing * key for 2 seconds leads to enter into PEtGrP
- ※ Note 5) In case of entering into PEtGrP out of HPEt.1 please take hand off the key or press the key.

Parameter Group Flow Chart

SP Group (Comparative Setting Group)

set menu	Meaning	Setting information	initial value
	Select the comparative value setting group	In case of setting a measured value under a decimal point, below set values could be converted to be set under decimal point.	
SP.HH	Set the comparative value HH		00000
SP.H	Set the comparative value H ^①		00000
SP.SET	Set value ^② (Valid only in the D output)	• F1, F2, F7, F8, F9 : 0 ~ 99999 • F3, F4, F5, F6 : 0 ~ Set time range	00000
SP.L	Set the comparative value L		00000
SP.LL	Set the comparative value LL		00000

- * Comparative value set group is the group that sets each output condition (HH, H, GO, L,LL) which sets each parameter and inputting hysteresis value will generate desired output in a stable condition. But, display only product does not use above parameter setting group.
- * ① : Only comparative value H(High value) setting could be shown on RP1, PR4 model.
- * ② : It is only used in Output out-d only, it is not displayed on other output modes.

PS Group (Pre-scale and time option setting group)

set menu	meaning	setting information	initial value
	Select the pre-scale setting group	Group that sets the pre-scale value of comparative value	
PS.X	Set the Pre-scale X of IN A	0.0000-9.9999	6.0000
PS.Y	Set the Pre-scale Y of IN A	10-9~10 9	10 1
PS.d	Set position of decimal point of the display value	It is possible to set the decimal point as you want. 9.9999-9.9999.9-9.9999-9.9999-9.9999	9.9999
dS.d	Set the displaying cycle	It is possible to set the display sampling cycle as you want. 0.05-0.5-1-2-4-8	0.05
HYS	Set the hysteresis of output value	It is possible to set the Hysteresis value as you want. 0000~9999	0000
t n E	Set the input time unit (Operation ode F3,F4,F5,F6)	It is possible to set the time setting value as you want. 10-S.ddd-d.S.ddd-S.S.S.ddd-S.S.S.S.S.d-S.S.S.S.S.S 60-S.S.ddd-n.n.S.S.S.d-n.n.n.S.S.S-H.n.n.S.S-S.H.H.H.n.n	S.ddd

● Setup Group (IN/OUT set group)

set menu	meaning	setting information	initial value
	Select the input/output control setting group	This is input / output control setting group that sets according to the input and output.	
SPGrP	Set the input operation mode	F1~F9	F1
FunCn	Set the IN A sensor type	nPnoo: NPN Normal Open nPnnc: NPN Normal Close PnPoO: PNP Normal Open PnPnC: PNP Normal Close CoNtE: Contact Normal Open nPnoo-nPnnc-PnPoO-PnPnC-CoNtE	nPnoo
In-R	Set the IN B sensor type	nPnoo: NPN Normal Open nPnnc: NPN Normal Close PnPoO: PNP Normal Open PnPnC: PNP Normal Close CoNtE: Contact Normal Open nPnoo-nPnnc-PnPoO-PnPnC-CoNtE	nPnoo
Out-n	Set the output mode	oUt-S-oUt-J-oUt-H-oUt-L-oUt-F-oUt-d	oUt-S
RULtA	Set the IN A Starting compensation timer	00.1~999	000
RULtB	Set the IN B Starting compensation timer	00.1~999	000
RULtR	Set the IN A Auto Zero timer	0000.1~9999.9	00000

※ ① : Displayed only with the models RP3, RP6 and RP7. But it is not displayed with the model for indication only.



● Option Group (Option setting group)

set menu	meaning	setting information	initial value
	Select the option setting group	This is option setting group that sets the option of input/output setting parameter.	
OpTGrP	Set the upper value of PV transfer output	• F1, F2, F7, F8, F9 : 0 ~ 99999	99999
OpTGrP	Set the lower value of PV transfer output	• F3, F4, F5, F6 : 0 ~ Set time range	00000
Pw-H	Power failure backup setting	oN : Power failure compensation(Backup) - Memorizing the previously measured value in case power supply voltage is ON/OFF oFF : Not use power failure mode oN-oFF	oN
nEnoR	parameter lock setting	oFF- : cancel all modes LoLk1- : P1~P3 Lock RLl : P1~P4 Lock LoLk2- : P2~P4 Lock LoLk3- : P3~P4 Lock LoLk4- : only P4 Lock oFF-LoLk1-LoLk2-LoLk3-LoLk4-RLl	oFF

① : It could be displayed on the 4 – 20 mA output models.

② : P1(SP Group), P2(PS Group), P3(Setup Group), P4(Option Group)

● Peak Display Group (Peak Value Save Group)

set menu	meaning	setting information	initial value
	Peak value saving group	Save the max and min of peak values divided into 10 stages individually	
	Max value among the HIGH peak values	Save the highest value among the HIGH peak values	00000
	2nd highest values among the HIGH peak values	Save the 2nd highest value among the HIGH peak values	00000
	3rd highest values among the HIGH peak values	Save the 3rd highest value among the HIGH peak values	00000
	4th highest values among the HIGH peak values	Save the 4th highest value among the HIGH peak values	00000
	Average value of 4 HIGH peak values	Calculate the average values of 4 saved HIGH peak values and save it	00000
	Min value among the LOW peak values	Save the lowest value among the LOW peak values	00000
	2nd lowest values among the LOW peak values	Save the 2nd lowest value among the LOW peak values	00000
	3rd lowest values among the LOW peak values	Save the 3rd lowest value among the LOW peak values	00000
	4th lowest values among the LOW peak values	Save the 4th lowest value among the LOW peak values	00000
	Average value of 4 LOW peak values	Calculate the average values of 4 saved LOW peak values and save it	00000
	Delete the peak value memory	Delete all of currently saved values	

- ※ Saved values in the Peak Display Group cannot be revised individually but able to delete all of them together.
- ※ Saved peak values will be erased automatically in case of changing mode or power ON/OFF.