

For your safety, please read the following before using.

- ① Suggest to connect, install, and set up by professional technicians.
- ② Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
- ③ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
- ④ Do not use in environment containing steam or oil vapor.
- ⑤ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
- ⑥ Wiring for pressure controller should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
- ⑦ Sensors at end-of-life must be disposed of in accordance with E-Waste regulations of the country/region, NOT disposed of with regular garbage.

A SPECIFICATIONS

MODEL		KP400E																			
Sensor Type (※1)		S0	S01	S02	S03	S04	S05	S06	S07	S08	S09	S10	S11	S12	S13	S14	S15	S16	S17		
Display Range (※1)	Self-Setting (※2)	0	-100.0	0	0	0	0	0	0	0	0	0	-300	-500	-1000	-5.00	-10.00	0	4		
	1000.0 kPa	100.0 kPa	-101.3 kPa	10.000 MPa	25.00 MPa	300.0 mL	500.0 mL	1000.0 mL	5.000 L	10.000 L	300 mL	500 mL	1000 mL	5.00 L	10.00 L	10 V	20 mA				
Set Resolution (※1)	Self-Setting	kPa	0.1	0.1	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
		MPa	0.0001	0.001	0.001	0.001	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	
		kgf/cm ²	0.001	0.001	0.001	0.01	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		bar	0.001	0.001	0.001	0.01	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		psi	0.01	0.01	0.01	0.1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		inHg	0.1	0.1	0.1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		mmHg	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		mmAq (mmH ₂ O)	1 (※3)	1 (※3)	1 (※3)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		mL	—	—	—	—	—	0.1	0.1	0.1	1	1	1	1	1	1	1	1	1	1	1
		L	—	—	—	—	—	0.0001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.01	—	0.01
mA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
V	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.001	—		
Pirani Gauge Brand and Model		Self-Setting			INFICON - VGC501			Leybold - TTR 91 N			Edwards - APG100/200			Edwards - WRG200							
Formula and Parameter (※4)	Formula	10 ^{((V-a)/b)}																			
	Parameter a - mbar	5.000 ~ 8.083			6.143			6.143			6			8							
	Parameter a - pa	5.000 ~ 8.083			3.572			3.572			4			6.666666666							
	Parameter a - Torr	5.000 ~ 8.083			6.304			6.304			6.125			8.0833333							
Parameter b	Parameter b	1.000 ~ 1.286			1.286			1.286			1			0.666667							
	Parameter b	1.000 ~ 1.286			1.286			1.286			1			0.666667							
Power Supply Voltage		15 ~ 24 V DC, Ripple (P-P) ≤ 10 %																			
Current Consumption		≤ 40 mA (with no load)																			
Sensor Input		KP400E : 0 ~ 10V / KP410E : 0 ~ 10V, 1 ~ 5V, 4 ~ 20mA selectable																			
Switch Output		2 NPN open collector outputs Max. Load Current : 150 mA Max. Supply Voltage : 30 V DC Residual Voltage : ≤ 1 V									2 PNP open collector outputs Max. Load Current : 150 mA Max. Supply Voltage : 24 V DC Residual Voltage : ≤ 1 V										
Repeatability		± 0.1 % F.S. ± 1 digit (Ambient temperature : 25 ± 3 °C)																			
Hysteresis	One Point Set Mode	Adjustable (※5)																			
	Hysteresis Mode	Adjustable (※5)																			
	Window Comparator Mode	Adjustable (※5)																			
Response Time of Digital Filter (※6)		oFF, 25 ms, 100 ms, 250 ms, 500 ms, 1000 ms, 1500 ms, 3000 ms selectable																			
Overcurrent Protection		Yes																			
Display		4 ½ digital, 7 segment LCD display (Red / White / Pink / Orange) (Sampling rate : 0.2, 0.5, 1 sec. / time)																			
Indicator Accuracy		± 0.5 % F.S ± 1digit (Ambient temperature : 25 ± 3 °C)																			
Switch on Indicator		Orange Indicator 1 : OUT1 & Orange Indicator 2 : OUT2																			
Analog Output (Voltage Output)		Output Voltage : 0 ~ 10 V ± 0.5 % F.S. Linearity : ± 0.5 % F.S. Output Impedance : 2 KΩ																			
Analog Output (Current Output) (※1)		Output Current : 4 ~ 20 mA ± 0.5 % F.S. Linearity : ± 0.5 % F.S. Max. Load Impedance : 250 Ω at power supply of 15 V, 600 Ω at power supply of 24 V Min. Load Impedance : 50 Ω																			
Environment	Enclosure	IP40																			
	Ambient Temp. Range	Operation : 0 ~ 50°C ; storage : -10 ~ 60°C (No condensation or freezing)																			
	Ambient Humidity Range	Operation / Storage : 35 ~ 85 % RH (No condensation)																			
	Withstand Voltage	1000 V AC in 1-min (between case and lead wire)																			
	Insulation Resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)																			
	Vibration	Total amplitude 1.5 mm or 10 G, 10 Hz ~ 150 Hz ~ 10 Hz scan for 1 minute, 2 hours each direction of X, Y and Z																			
Shock		100 m/s ² (10 G), 3 times each in direction of X, Y and Z																			
Temperature Characteristic		≤ ± 0.5 % F.S. of detected pressure (25 °C) at temp. (Range of 0 ~ 50 °C)																			
Communication Interface (※7)		RS485 Modbus RTU																			
Lead Wire		Ø4 PVC - 26 AWG (0.15 mm ²) - 5 cores																			
Weight (with 2 meter lead wire)		Approx. 67 g																			

※ 1. This function is only available for KP410E. The default setting of [F-00] input type is 0 ~ 10V.

※ 2. S0 : Set the sensor range (-1999 ~ 15000) by self. The decimal place can be adjusted.

※ 3. Actual value is 10 times display value while pressure unit is mmAq.

※ 4. This function is only available for KP400E.

※ 5. Hysteresis value is adjustable within 1 ~ 8 digits for one point set mode and window comparator mode.

※ 6. When digital filter function is OFF, the response time is 4 ms ~ 6 ms.

※ 7. This function is only available for Output Specification 02R and 04R.

B ORDERING INFORMATION

K P 4 1 0 E - 0 1 0

Input Specifications

0 : Pirani gauge
1 : Voltage or current input

Output Channel

0 : 1 Channel

Output Specifications

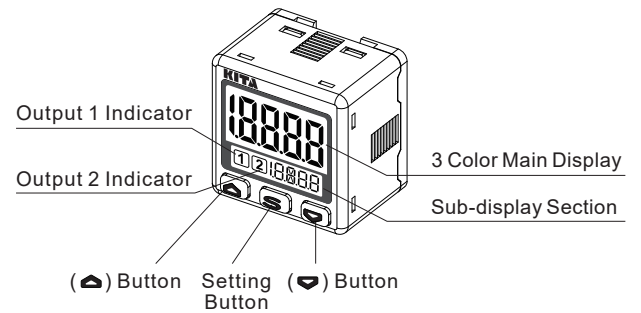
010 : 2 NPN outputs & Analog output (0 ~ 10 V)
011 : 2 NPN outputs & Analog output (4 ~ 20 mA) (only for KP410E)
030 : 2 PNP outputs & Analog output (0 ~ 10 V)
031 : 2 PNP outputs & Analog output (4 ~ 20 mA) (only for KP410E)
02R : 1 NPN output + RS485
04R : 1 PNP output + RS485

Optional Parts

BT-18 : Mounting bracket
BT-19 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter +
Front protective lid

CN-0046A : Sensor connector $\varnothing 0.8 \sim \varnothing 1.0$ mm, 26 ~ 24AWG
CN-0046B : Sensor connector $\varnothing 1.0 \sim \varnothing 1.2$ mm, 26 ~ 24AWG
CN-0046C : Sensor connector $\varnothing 1.2 \sim \varnothing 1.6$ mm, 26 ~ 24AWG
Transducer : KP10□ - 01, KP2, KFPS, KFS

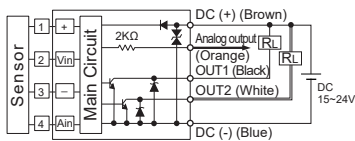
C PANEL DESCRIPTION



D OUTPUT CIRCUIT WIRING DIAGRAMS

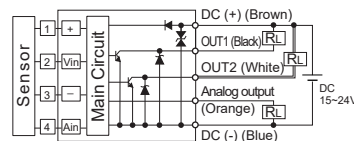
KP4□0E - 010

2 NPN + Analog Output (0 ~ 10 V)



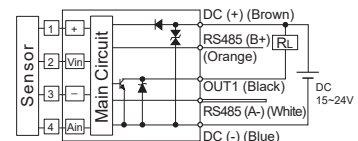
KP410E - 011

2 NPN + Analog Output (4 ~ 20 mA)



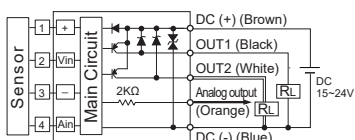
KP4□0E - 02R

1 NPN + RS485



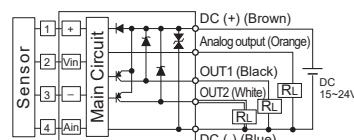
KP4□0E - 030

2 PNP + Analog Output (0 ~ 10 V)



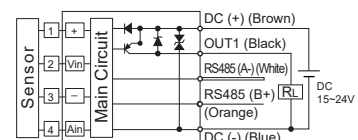
KP410E - 031

2 PNP + Analog Output (4 ~ 20 mA)

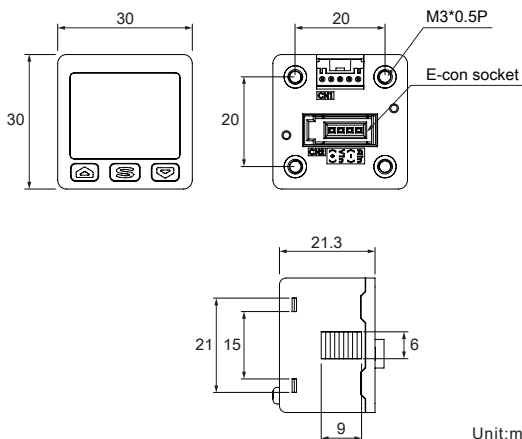


KP4□0E - 04R

1 PNP + RS485

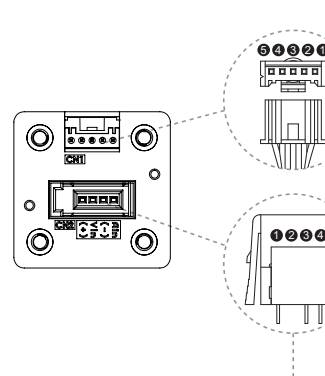


E DIMENSIONS



Unit:mm

F CONNECTOR



•CN1 : Cable

PINNO.	Wire color & Content
1	Brown : DC(+)
2	Orange : Analog output or RS485 (B+)
3	White : OUT2 or RS485 (A-)
4	Black : OUT1
5	Blue : DC(-)

•CN2 : Sensor connector

PINNO.	Content
1	DC(+)
2	Vin
3	DC(-)
4	Ain

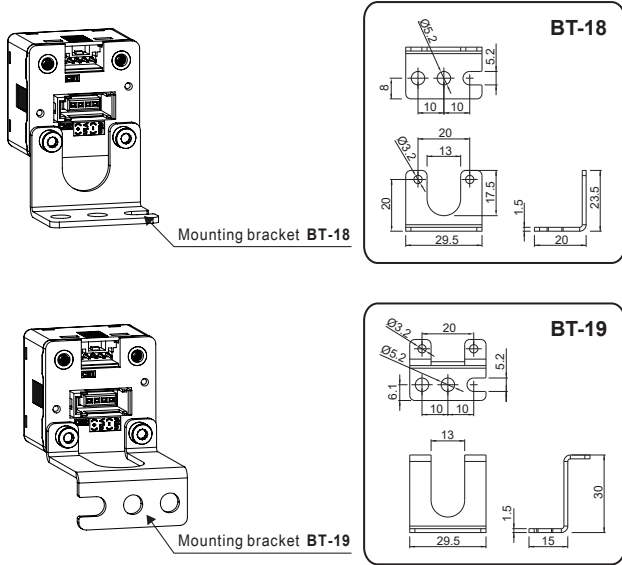
• Appended Table (Lead wire : 24 ~ 26 AWG)

Product No.	Diameter (mm)	3M Product No.
CN-0046A	$\varnothing 0.8 \sim \varnothing 1.0$	37104-3101-000FL
CN-0046B	$\varnothing 1.0 \sim \varnothing 1.2$	37104-3122-000FL
CN-0046C	$\varnothing 1.2 \sim \varnothing 1.6$	37104-3163-000FL

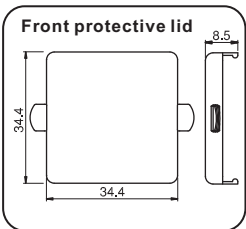
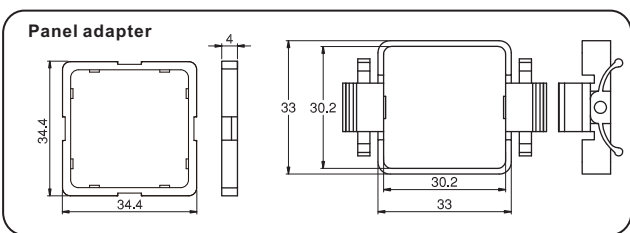
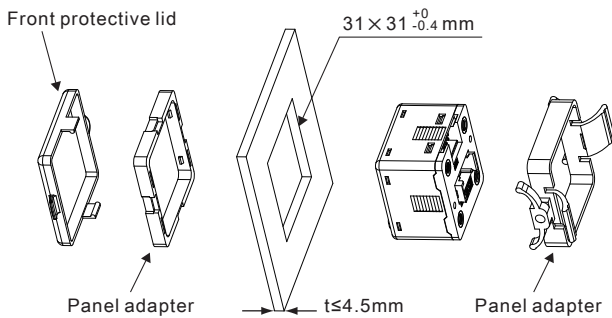
G OPTIONAL PARTS DIMENSIONS

H OUTPUT MODE

① Mounting bracket



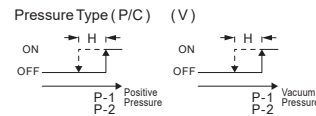
② Panel Mounting



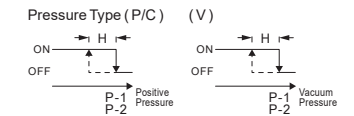
Unit:mm

(1) One point set mode :

Normal open mode

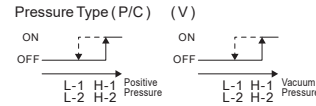


Normal close mode

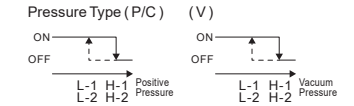


(2) Hysteresis mode :

Normal open mode

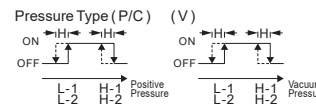


Normal close mode

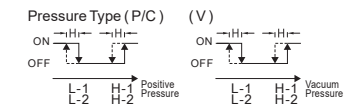


(3) Window comparator mode :

Normal open mode



Normal close mode



【NOTE :】

- ※1. In case hysteresis is set less than or equal to 2 digits, switch output may chatter if input pressure fluctuates near the set point.
- ※2. When using window comparator mode, the difference between two set points must be greater than the fixed hysteresis, otherwise will cause the switch output to malfunction.

I ERROR CODE INSTRUCTION

Error Type	Error Code	Error Condition	Troubleshooting
Excess load current error	out1 Er 1	Output 1 load current is more than 150 mA	Turn power off and check the cause of overload current or lower the current load under 150 mA, then restart.
	out2 Er 2	Output 2 load current is more than 150 mA	
Residual pressure error	Er 3	During zero point setting, ambient pressure is over ±3% F.S.	Change input pressure to ambient pressure and perform zero point setting again.
Applied pressure error	HHH	Supply pressure exceeds the upper limit of pressure setting.	Adjust the pressure within operating pressure range.
System error	Er 4	Internal system error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
	Er 5	Internal system error	
	Er 6	Internal data error	
	Er 7	Internal data error	

J PRESSURE UNIT CONVERSION TABLE

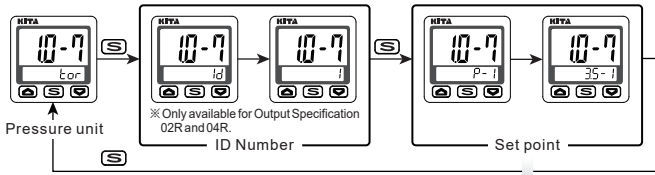
From To	kPa	kgf/cm ²	mmHg	psi	bar	inHg	mmAq
1 kPa	1	0.010197	7.500616	0.145038	0.010000	0.2953	101.97
1 kgf/cm ²	98.0665	1	735.559	14.2233	0.980665	28.95979	10000
1 mmHg	0.13332	0.0013595	1	0.019336	0.0013332	0.039370	13.595
1 psi	6.895	0.07031	51.7157	1	0.06895	2.036074	703.1
1 bar	100.0000	1.01972	750.062	14.5038	1	29.52998	10197.2
1 inHg	3.386388	0.034530	25.40000	0.491141	0.033863	1	345.30
1 mmAq	0.009806	0.0001	0.0735559	0.001423	0.000098	0.0029	1

※ Actual value is 10 times display value while pressure unit is mmAq.

K SUB-DISPLAY DISPLAY SETTING

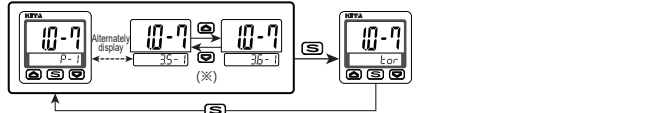
※ When selecting the voltage unit, the display will be the same as KP410E.

In measure mode (※), press **[S]** button to switch pressure unit / ID Number / set point, and set the set point. ※ KP400E is power-on and not in the function setting or checking state.



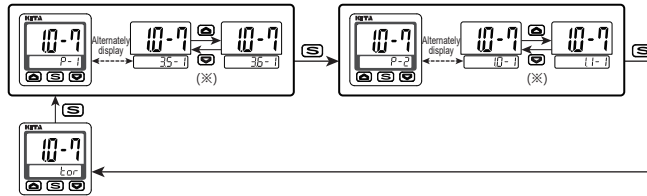
Setting Condition 1

OUT 1 : " oP5 " (One point set mode)
OUT 2 : " oFF " (Not used)



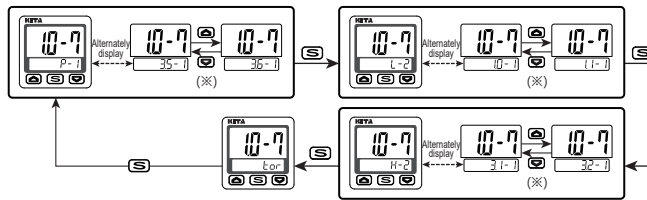
Setting Condition 2

OUT 1 : " oP5 " (One point set mode)
OUT 2 : " oP5 " (One point set mode)



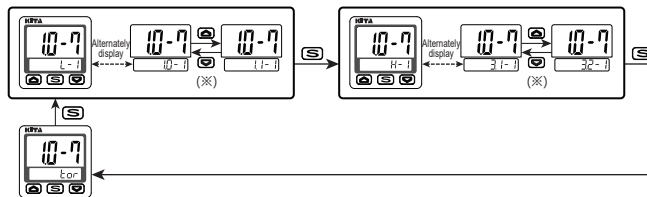
Setting Condition 3

OUT 1 : " oP5 " (One point set mode)
OUT 2 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)



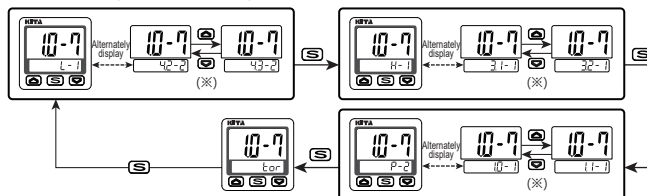
Setting Condition 4

OUT 1 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " oFF " (Not used)



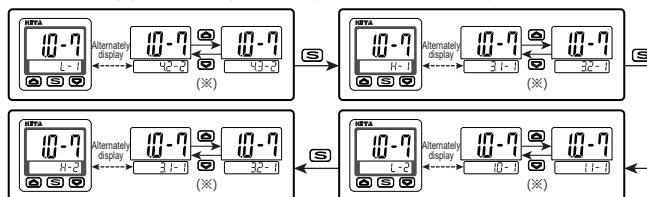
Setting Condition 5

OUT 1 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " oP5 " (One point set mode)



Setting Condition 6

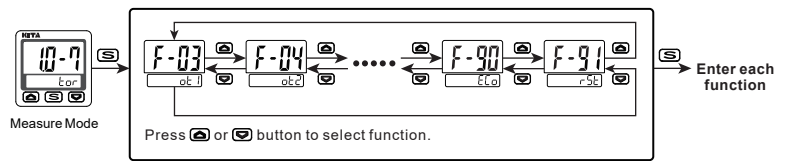
OUT 1 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)



L OPERATION INSTRUCTIONS

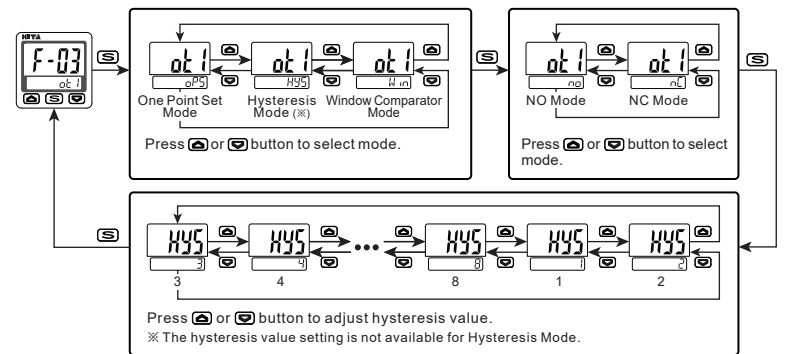
Function Selection

In Measure Mode, press **[S]** button for more than 3 sec. to display [F-03] [oE 1].
Press **[S]** for 3 sec. to return to Measure Mode.



[F-03] OUT1 Setting

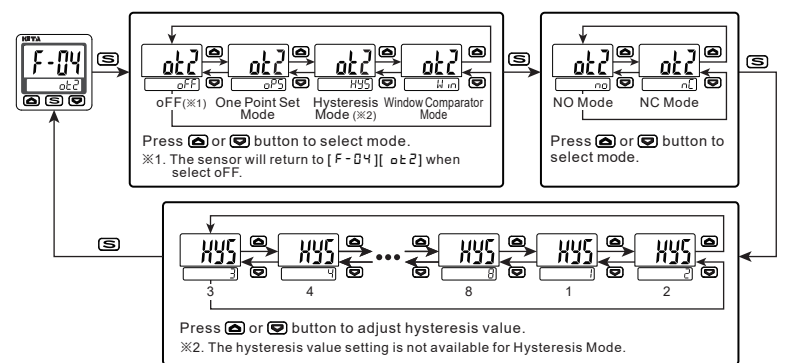
Press **[A]** or **[B]** button at Function Selection to [F-03] [oE 1].



[F-04] OUT2 Setting

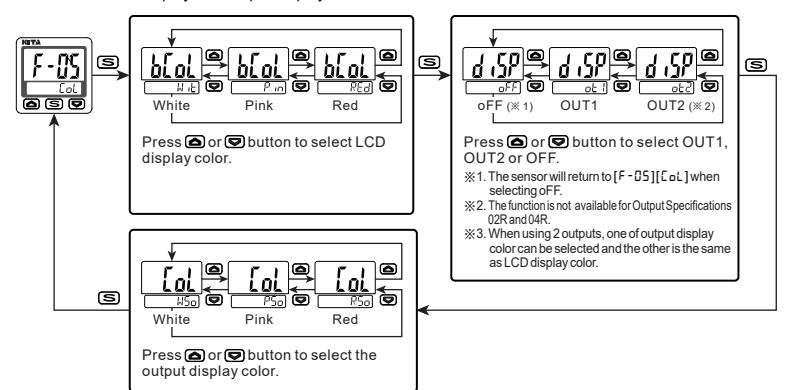
※ Not available for Output Specification 02R and 04R.

Press **[A]** or **[B]** button at Function Selection to [F-04] [oE 2].



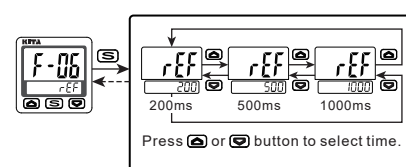
[F-05] LCD Display Color Setting

Press **[A]** or **[B]** button at Function Selection to [F-05] [oL].
The color of LCD display and output display can be different.



[F-06] Sampling Rate Setting

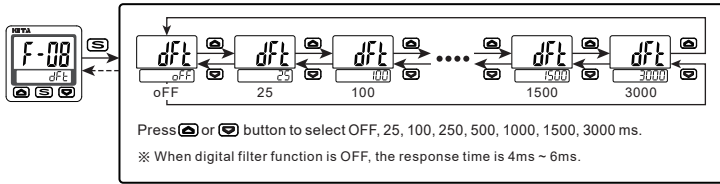
Press **[A]** or **[B]** button at Function Selection to [F-06] [rEF].



L OPERATION INSTRUCTIONS

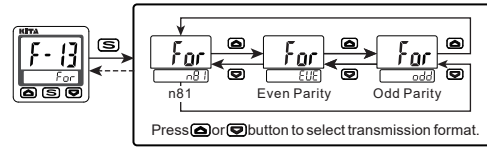
[F-08] Response Time of Digital Filter Setting

Press **[F]** or **[M]** button at Function Selection to [F-08][dFt].



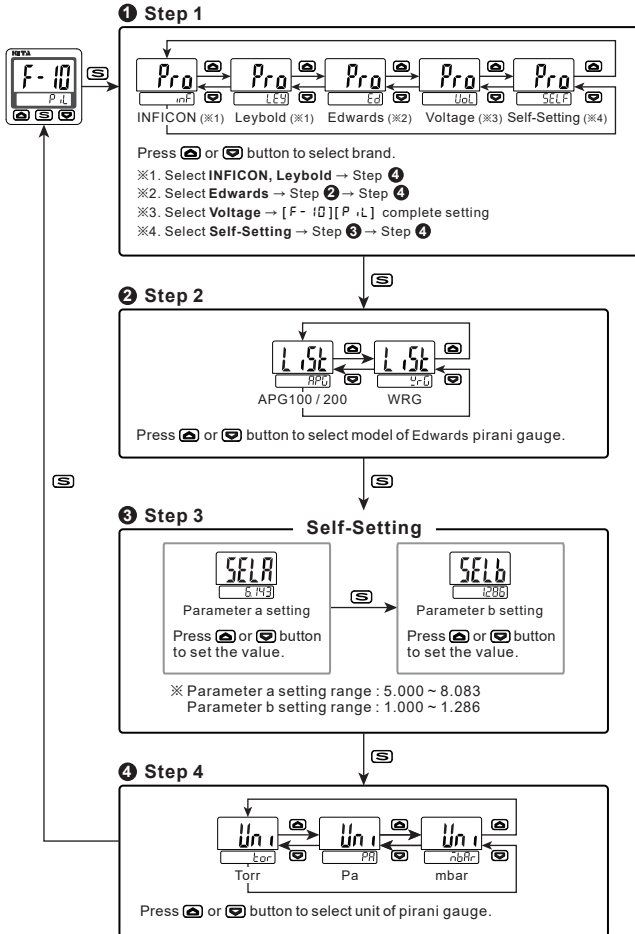
[F-13] RTU Transmission Format Setting

Press **[F]** or **[M]** button at Function Selection to [F-13][For].



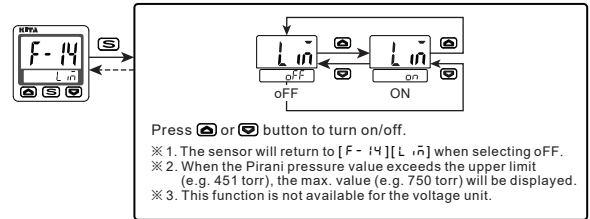
[F-10] Pirani Gauge Unit And Brand Setting

Press **[F]** or **[M]** button at Function Selection to [F-10][P .L].



[F-14] Pirani Gauge Display Limit Setting

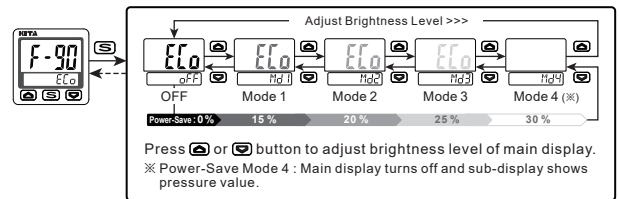
Press **[F]** or **[M]** button at Function Selection to [F-14][L .n].



[F-90] Power-Save Mode Setting

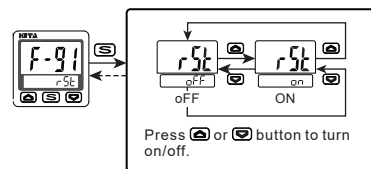
Press **[F]** or **[M]** button at Function Selection to [F-90][ECa].

When Power-Save Mode turns on,
 1. the main-display will be into the selected mode (Mode1 ~ 4), if no buttons are pressed after 30 seconds.
 2. the output indicator may not sync, but the sensor still work functionally.
 3. press any button back to measure mode.



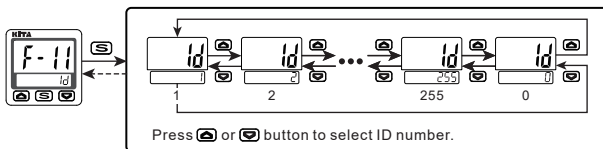
[F-91] Reset to Default Setting

Press **[F]** or **[M]** button at Function Selection to [F-91][r5t].



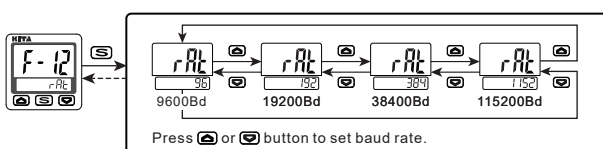
[F-11] RTU ID Number Setting

Press **[F]** or **[M]** button at Function Selection to [F-11][Id].

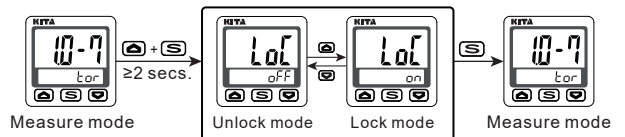


[F-12] RTU Baud Rate Setting

Press **[F]** or **[M]** button at Function Selection to [F-12][rRt].



M KEY LOCK/UNLOCK MODE



- Use key lock mode to prevent unauthorized or accidental tampering setting values.
- When lock mode is selected, panel will display "LoL".



N COMMUNICATION PROTOCOL (Modbus RTU)

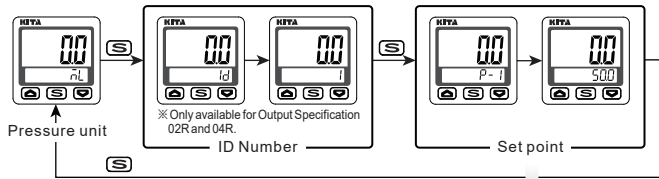
Function Code	Description	Operation
0000	ID Number (Range : 0 ~ 255)	Read Write
0002	Voltage value (Range : 0 ~ 10000)	Read
0003	Unit setting (0 : mbar , 1 : torr , 2 : pa , 3 : mV)	Read Write
0005	Switch output mode (0 : OPS , 1 : HYS , 2 : WIN)	Read Write
0006	Switch output mode (0 : NO , 1 : NC)	Read Write
0007	Response time of digital filter (0 : OFF , 1 : 25ms , 2 : 100ms , 3 : 250ms , 4 : 500ms , 5 : 1000ms , 6 : 1500ms , 7 : 3000ms)	Read Write
0008	Display color selection (0 : White , 1 : Red , 2 : Pink)	Read Write
0009	Hysteresis value (Range : 0 (1 digit) ~ 7 (8 digits))	Read Write
000A	Power-Save mode (0 : OFF , 1 : Mode 1 , 2 : Mode 2 , 3 : Mode 3 , 4 : Mode 4)	Read Write
000C	Baud rate (0 : 9600 bps , 1 : 19200 bps , 2 : 38400 bps , 3 : 115200 bps)	Read Write
000D	Transmission format (0 : n81 , 1 : Even , 2 : Odd)	Read Write
000E	Communications protocol (0 : RTU)	Read
000F	Reset to default setting (0 : ON)	Write
0010	Switch set point (P-1 or L-1) (Range : 0 ~ 10000 mV)	Read Write
0011	Switch set point (H-1) (Range : 0 ~ 10000 mV)	Read Write

Function Code	Description	Operation
0012	Switch output state (0 : OFF , 1 : ON)	Read
0013	Key lock/unlock mode (0 : Unlock , 1 : Lock)	Read Write
0014	Switch output type (0 : NPN , 1 : PNP)	Read
0015	Sampling rate (0 : 200ms , 1 : 500ms , 2 : 1000ms)	Read Write
0018	Real numbers of Pirani display value (Range : 10 (1.0) ~ 99 (9.9))	Read
0019	Exponent of Pirani display value (Range : -9 ~ 19)	Read
001A	Limit switch of pilani gauge (0 : OFF , 1 : ON)	Read Write
001B	Pilani gauge brand (0 : INFICON , 1 : Leybold , 3 : Edwards , 4 : Voltage)	Read Write
001C	Model of Edwards pirani gauge (0 : Edwards-APG , 1 : Edwards-WRG)	Read Write
001D	Real numbers of Pirani set point (L1) (Range : 10 (1.0) ~ 99 (9.9))	Read Write
001E	Exponent of Pirani set point (L1) (Range : -9 ~ 19)	Read Write
001F	Real numbers of Pirani set point (H1) (Range : 10 (1.0) ~ 99 (9.9))	Read Write
0020	Exponent of Pirani set point (H1) (Range : -9 ~ 19)	Read Write
0021	LCD display color output selection (0 : OFF , 1 : OUT1)	Read Write
0022	Output LCD display color selection (0 : White , 1 : Red , 2 : Pink)	Read Write

※ Each read command is limited to 10 registers maximum.

K SUB-DISPLAY DISPLAY SETTING

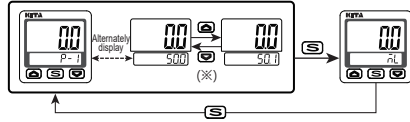
In measure mode (*), press **[S]** button to switch pressure unit / ID Number / set point, and set the set point. ※ KP410E is power-on and not in the function setting or checking state.



Setting Condition 1

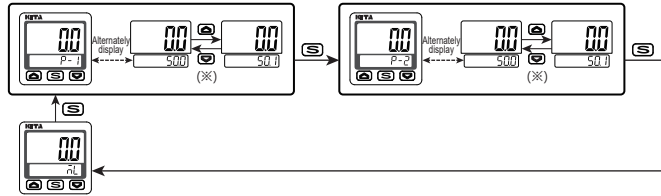
OUT 1 : " oP5 " (One point set mode)
OUT 2 : " oFF " (Not used)

※ Press **[▲]** or **[▼]** button to adjust set value.



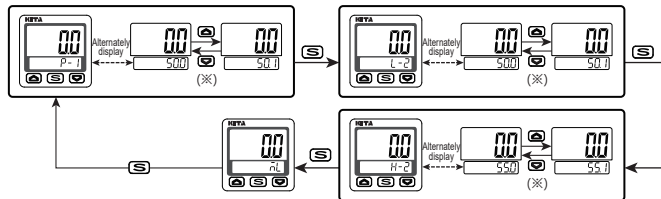
Setting Condition 2

OUT 1 : " oP5 " (One point set mode)
OUT 2 : " oP5 " (One point set mode)



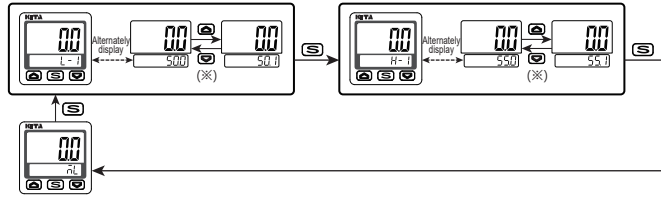
Setting Condition 3

OUT 1 : " oP5 " (One point set mode)
OUT 2 : " HY5 " (Hysteresis mode) or " Win " (Window comparator mode)



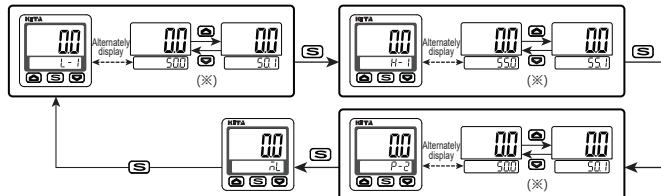
Setting Condition 4

OUT 1 : " HY5 " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " oFF " (Not used)



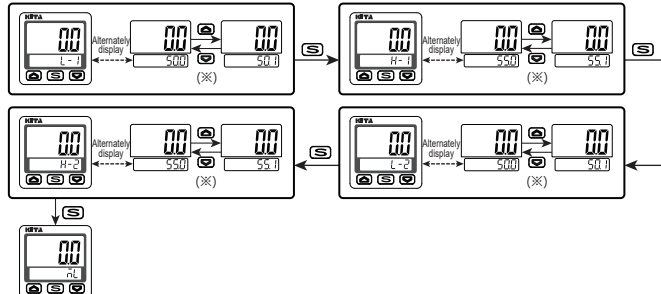
Setting Condition 5

OUT 1 : " HY5 " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " oP5 " (One point set mode)



Setting Condition 6

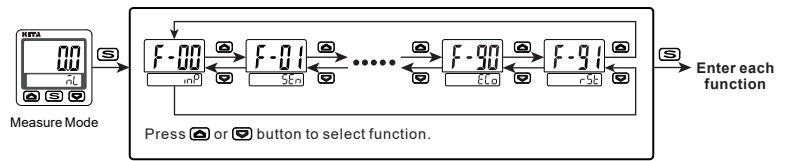
OUT 1 : " HY5 " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " HY5 " (Hysteresis mode) or " Win " (Window comparator mode)



L OPERATION INSTRUCTIONS

Function Selection

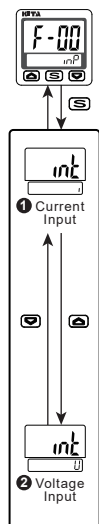
In Measure Mode, press **[S]** button for more than 3 sec. to display [F-00] [nP]. Press **[S]** for 3 sec. to return to Measure Mode.



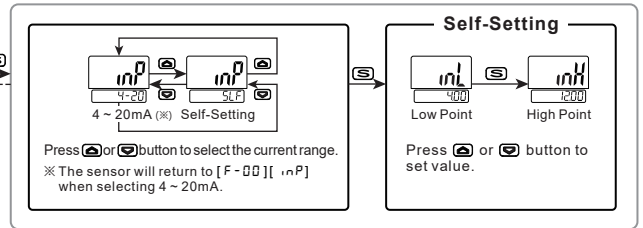
[F-00] Input Type Setting

※ The function is not available for S16 and S17.

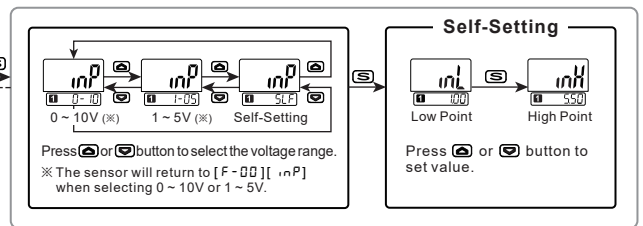
Press **[▲]** or **[▼]** button at Function Selection to [F-00] [nP].



1 Current Input

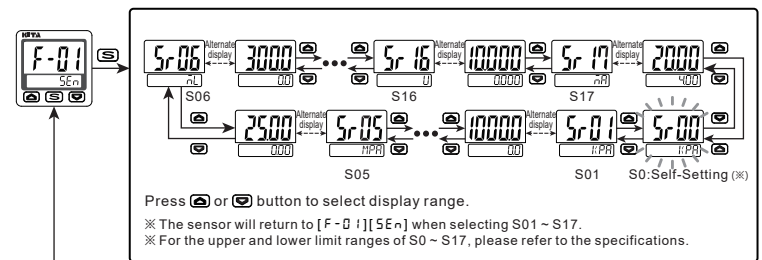


2 Voltage Input

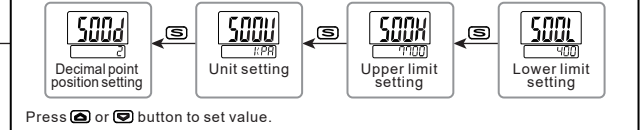


[F-01] Display Range Setting

Press **[▲]** or **[▼]** button at Function Selection to [F-01] [SEn].

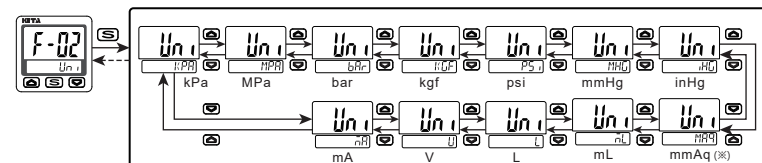


S0 : Self-Setting



[F-02] Unit Setting

Press **[▲]** or **[▼]** button at Function Selection to [F-02] [Un].

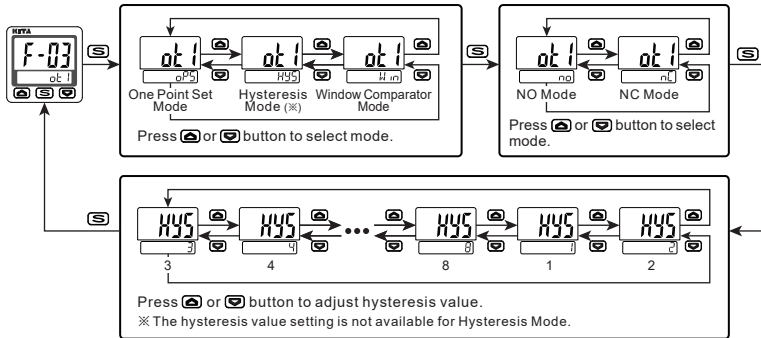


Display range	Unit
S0	kPa · MPa · bar · kgf · psi · mmHg · inHg · mmAq · mL · L
S01 ~ S03	kPa · MPa · bar · kgf · psi · mmHg · inHg · mmAq
S04 ~ S05	MPa · bar · kgf · psi · inHg
S06 ~ S13	mL · L
S14 ~ S15	L
S16	V
S17	mA

L OPERATION INSTRUCTIONS

[F-03] OUT1 Setting

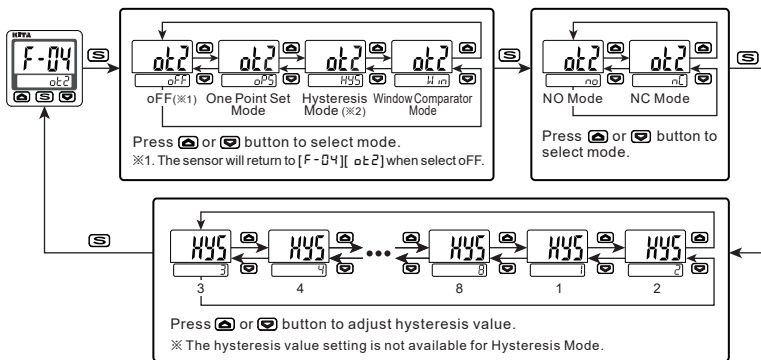
Press **[F]** or **[M]** button at Function Selection to [F-03][ot1].



[F-04] OUT2 Setting

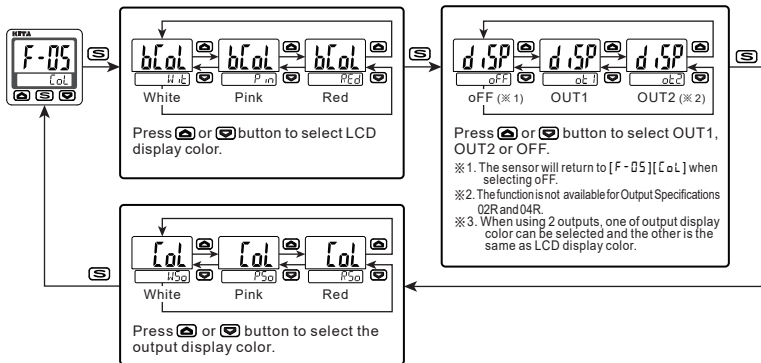
※ Not available for Output Specification 02R and 04R.

Press **[F]** or **[M]** button at Function Selection to [F-04][ot2].



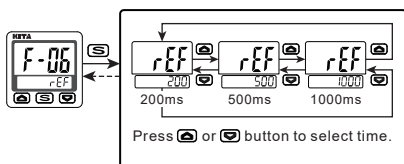
[F-05] LCD Display Color Setting

Press **[F]** or **[M]** button at Function Selection to [F-05][CoL].



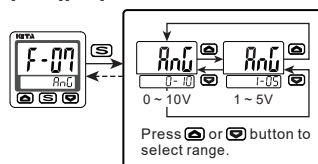
[F-06] Sampling Rate Setting

Press **[F]** or **[M]** button at Function Selection to [F-06][rEF].



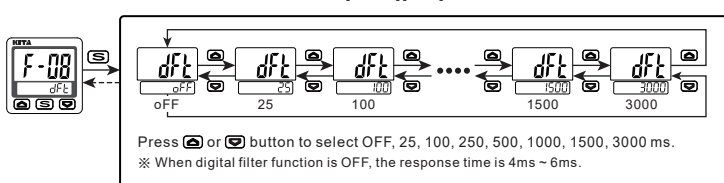
[F-07] Voltage Analog Output Range Setting

Press **[F]** or **[M]** button at Function Selection to [F-07][RnG].



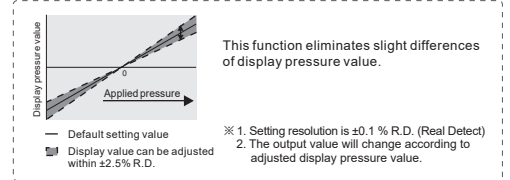
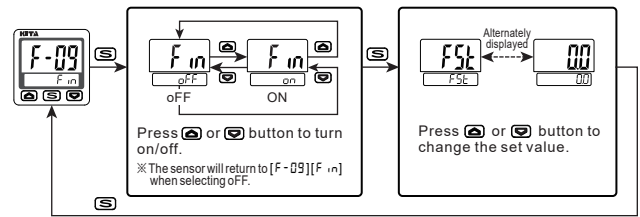
[F-08] Response Time of Digital Filter Setting

Press **[F]** or **[M]** button at Function Selection to [F-08][dFL].



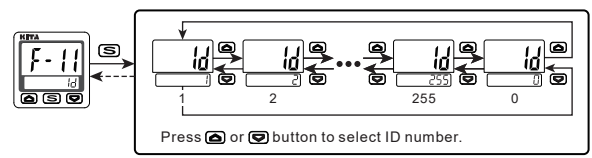
[F-09] Fine Adjustment Setting

Press **[F]** or **[M]** button at Function Selection to [F-09][F.in].



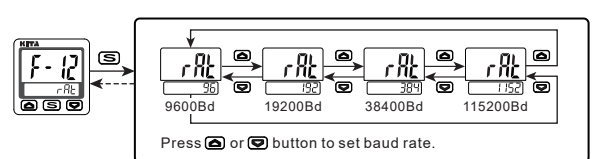
[F-11] RTU ID Number Setting

Press **[F]** or **[M]** button at Function Selection to [F-11][Id].



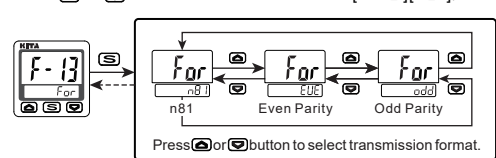
[F-12] RTU Baud Rate Setting

Press **[F]** or **[M]** button at Function Selection to [F-12][rRt].



[F-13] RTU Transmission Format Setting

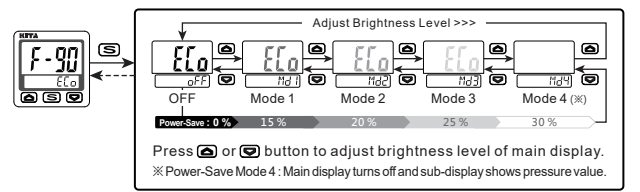
Press **[F]** or **[M]** button at Function Selection to [F-13][For].



[F-90] Power-Save Mode Setting

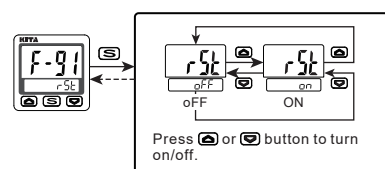
Press **[F]** or **[M]** button at Function Selection to [F-90][EEo].

When Power-Save Mode turns on,
 1. the main-display will be into the selected mode (Mode1 ~ 4), if no buttons are pressed after 30 seconds.
 2. the output indicator may not sync, but the sensor still work functionally.
 3. press any button back to measure mode.



[F-91] Default Setting

Press **[F]** or **[M]** button at Function Selection to [F-91][rSt].



N COMMUNICATION PROTOCOL (Modbus RTU)

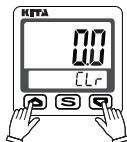
Function Code	Description	Operation
0000	ID Number (Range : 0 ~ 255)	Read Write
0001	Sensor type (1 : S01, 2 : S02, 3 : S03, 4 : S04, 5 : S05, 6 : S06, 7 : S07, 8 : S08, 9 : S09, 10 : S10, 11 : S11, 12 : S12, 13 : S13, 14 : S14, 15 : S15, 16 : S16, 17 : S17)	Read Write
0002	Pressure value (Range : -1999 ~ 15000)	Read
0003	Unit setting (0 : kPa, 1 : kgf/cm ² , 2 : bar, 3 : psi, 4 : inHg, 5 : mmHg, 7 : mmAq)	Read Write
0004	Decimal place (Range : 0 ~ 4)	Read
0005	Switch output mode (0 : OPS, 1 : HYS, 2 : WIN)	Read Write
0006	Switch output mode (0 : NO, 1 : NC)	Read Write
0007	Response time of digital filter (0 : OFF, 1 : 25ms, 2 : 100ms, 3 : 250ms, 4 : 500ms, 5 : 1000ms, 6 : 1500ms, 7 : 3000ms)	Read Write
0008	Display color selection (0 : White, 1 : Red, 2 : Pink)	Read Write
0009	Hysteresis value (Range : 0 (1 digit) ~ 7 (8 digits))	Read Write
000A	Power-Save mode (0 : OFF, 1 : Mode 1, 2 : Mode 2, 3 : Mode 3, 4 : Mode 4)	Read Write
000B	Fine adjustment (Range : -25 (-2.5%) ~ 25 (2.5%))	Read Write
000C	Baud rate (0 : 9600 bps, 1 : 19200 bps, 2 : 38400 bps, 3 : 115200 bps)	Read Write

※ Each read command is limited to 10 registers maximum.

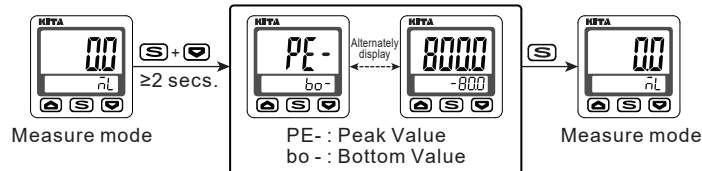
Function Code	Description	Operation
000D	Transmission format (0 : n81, 1 : Even, 2 : Odd)	Read Write
000E	Communications protocol (0 : RTU)	Read
000F	Reset to default setting (0 : ON)	Write
0010	Switch set point (P-1 or L-1) (Range : 0 ~ 10000 mV)	Read Write
0011	Switch set point (H-1) (Range : 0 ~ 10000 mV)	Read Write
0012	Switch output state (0 : OFF, 1 : ON)	Read
0013	Key lock/unlock mode (0 : Unlock, 1 : Lock)	Read Write
0014	Switch output type (0 : NPN, 1 : PNP)	Read
0015	Sampling rate (0 : 200ms, 1 : 500ms, 2 : 1000ms)	Read Write
0016	Zero point setting (0 : ON)	Write
0017	Sensor input (1 : 0 ~ 10V, 2 : 1 ~ 5V, 3 : 4 ~ 20mA)	Read Write
0018	LCD display color output selection (0 : OFF, 1 : OUT1)	Read Write
0019	Output LCD display color selection (0 : White, 1 : Red, 2 : Pink)	Read Write

O ZERO POINT SETTING

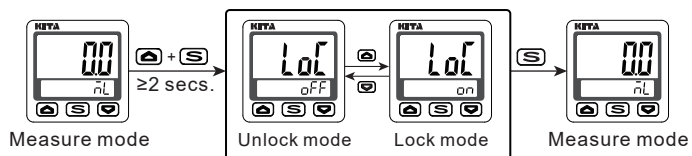
Press the + button at the same time until the "00" is shown.



P PEAK/BOTTOM HOLD FUNCTION



Q KEY LOCK/UNLOCK MODE



- Use key lock mode to prevent unauthorized or accidental tampering setting values.
- When lock mode is selected, panel will display "LoC".

