KP58E Series | IP65 Pressure Sensor

KITA

PR-0766C 2026/04 Online Version

c UL us E466118 CE UKCA

For your safety, please read the following before using.

① Suggest to connect, install, and set up by professional technicians.
② Do not use corrosive or flammable gas or liquid with this product.
③ Please use within the rating pressure range. Do not apply pressure beyond recommended maximum withstand pressure, permanent damage to the pressure sensor may occur.
④ Do not drop, hit or allow excessive shock. Even if switch body appears undamaged, internal components may be broken and can cause malfunction.
⑤ Turn power off before connecting wiring. Wrong wiring or short circuit will damage and / or cause malfunction.
⑥ Do not use in environment containing steam or oil vapor.
⑦ This product is not explosion-proof rated. Do not use in atmosphere containing flammable or explosive gases.
⑧ Wiring for pressure sensor should avoid power source line and high voltage line. If use in the same circuit, noise may cause malfunction.
⑨ For Use on a Flat Surface of a Type 1 Enclosure.
⑩ 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		KP58E (Positive Pressure)	KP58EH (High Pressure)
Rated pressure range		-101.3 ~ 1000.0 kPa	-101.3 ~ 2000.0 kPa
Set pressure range		-101.3 ~ 1000.0 kPa	-101.3 ~ 1999.9 kPa
Withstand pressure		1500 kPa	3000 kPa
Fluid		Filtered air, Non-corrosive / Non-flammable gas	Fluid or air that will not corrode SUS316L
Sealed Liquid		–	Silicone oil
Set Pressure Resolution	kPa	0.1	0.1
	kgf/cm²	0.001	0.001
	bar	0.001	0.001
	psi	0.01	0.01
	inHg	0.1	0.1
	mmHg	1	1
	mmAq (mmH₂O)	1 (※1)	–
Power supply voltage		15 ~ 24 V DC · Ripple (P-P) ≤ 10 % (UL Class 2)	
Current consumption		≤ 40 mA (With no load)	
Switch output		Open collector 2 outputs (NPN/PNP) Max. load current : 150 mA Max. supply voltage : 24 V DC Residual voltage : ≤ 1 V	
Repeatability (※2)		± 0.2% S.R. (Ambient temperature 25±3°C)	
Hysteresis	One point set mode	Adjustable (※3)	
	Hysteresis mode		
	Window comparator mode		
Response time of digital filter (※4)		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 selectable	
Indicator accuracy (※2)		**C :** -100.0 ~ 100.0 kPa ± 1 % S.R. **V :** -101.3 ~ 0.0 kPa ± 1 % S.R. **P :** -100.0 ~ 1000.0 kPa ± 0.5 % S.R. **A :** -101.3 ~ 1000.0 kPa ± 0.5 % S.R.	**C :** -100.0 ~ 100.0 kPa ± 1 % S.R. **V :** -101.3 ~ 0.0 kPa ± 1 % S.R. **P :** -100.0 ~ 1000.0 kPa ± 0.5 % S.R. **H :** -101.3 ~ 1999.9 kPa ± 0.5 % S.R. **A :** -101.3 ~ 1999.9 kPa ± 0.5 % S.R.
		(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 : about 2 KΩ	
Analog output (Current output)		Output current : 4 ~ 20 mA ± 0.5 % F.S. Linearity : ± 0.5 % F.S. Max. load impedance : 250Ω at power supply of 15V, 600Ω at power supply of 24V Min. load impedance : 5 Ω	
Environment	Enclosure	IP65 (※5)	
	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	1000V AC in 1-min. (between case and lead wire)	250V AC in 1-min. (between case and lead wire)
	Insulation resistance	≥ 50 MΩ (at 500 V DC, between case and lead wire)	
	Vibration	Double amplitude 1.5 mm or 10 G, 10 Hz ~ 150 Hz ~ 10 Hz (1-minute sweep), 2 hours each in X, Y, and Z axes	
	Shock	100 m/s² (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 (※6)		RS485 Modbus RTU	
Port size		F1 : R1/8, M5 ; F3 : G1/8 (BSPP), M5 ; M5 : M5 female thread	F4 : R1/4, M5 ; F6 : G1/4 (BSPP), M5 FV2 : 1/4, Face Seal Fitting
Lead wire		Ø4 PVC - 26AWG (0.15mm²) - 5 cores	
Weight (with 2 meter lead wire)		Approx. 65g	Approx. 94 g (Rear ported) Approx. 96 g (Bottom ported)

※ 1. In mmAq, actual value equals displayed value × 10.
※ 2. S.R.: Set range
※ 3. Hysteresis value is adjustable within 1 - 8 digits for one point set mode and window comparator mode.
※ 4. When digital filter function is OFF, the response time is 4ms ~ 6ms.
※ 5. Dustproof protector must be installed to maintain IP65.
※ 6. This function only available for Output Specification -02R and -04R.

B ORDERING INFORMATION

K P 5 8 E [H] - [0 1 0] - [F 1] [ ]

Pressure Range
Blank : -101.3 ~ 1000.0 kPa
H : High Pressure (-101.3 ~ 1999.9 kPa)

Output Specifications
010 : 2 NPN Output & Analog Output (0 ~ 10 V)
011 : 2 NPN Output & Analog Output (4 ~ 20 mA)
030 : 2 PNP Output & Analog Output (0 ~ 10 V)
031 : 2 PNP Output & Analog Output (4 ~ 20 mA)
02R : 1 NPN Output + RS485
04R : 1 PNP Output + RS485

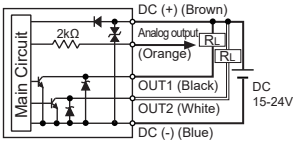
Pressure Port
F1 : R1/8, M5
F3 : G1/8 (BSPP), M5
M5 : M5 female thread
F4 : R1/4, M5
F6 : G1/4 (BSPP), M5
FV2 : 1/4, Face Seal Fitting
※ F1,F3,M5 for KP58E ; F4,F6,FV2 for KP58EH

Piping Direction
Blank : Rear ported
L : Bottom ported (for KP58EH)

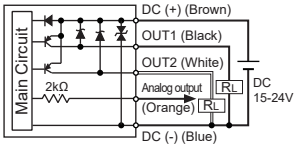
Optional Parts
BT-22 : Mounting bracket
BT-23 : Mounting bracket
BT-31 : Mounting bracket
BT-32 : Mounting bracket
PA-C : Panel adapter
PA-D : Panel adapter + Front protective lid
I-0360 : Snubber (for Pressure Port F4 & F6)
※ KP58EH series suggest to select a snubber.

C OUTPUT CIRCUIT WIRING DIAGRAMS

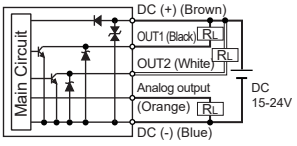
KP58E□ - 010 - □
2 NPN + Analog Output (0 ~ 10 V)



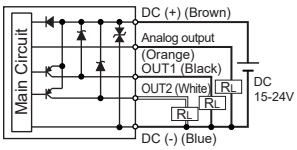
KP58E□ - 030 - □
2 PNP + Analog Output (0 ~ 10 V)



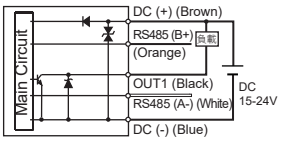
KP58E□ - 011 - □
2 NPN + Analog Output (4 ~ 20 mA)



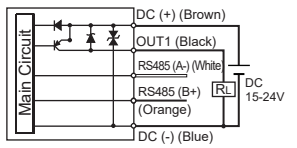
KP58E□ - 031 - □
2 PNP + Analog Output (4 ~ 20 mA)



KP58E□ - 02R - □
1 NPN + RS485

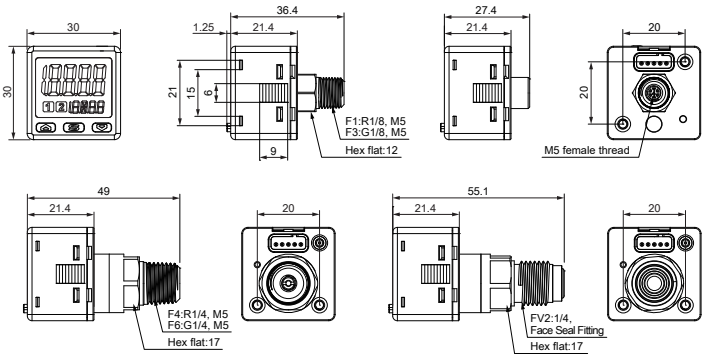


KP58E□ - 04R - □
1 PNP + RS485

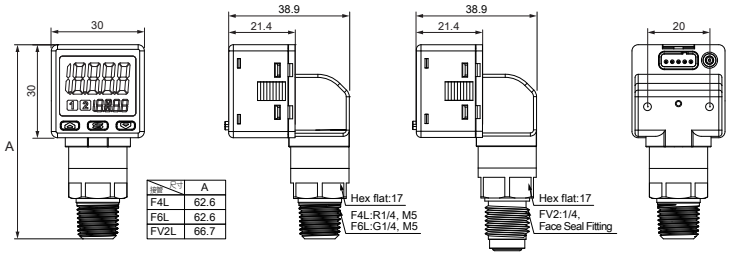


D DIMENSIONS

① F1.F3.M5.F4.F6.FV2



② F4L.F6L.FV2L

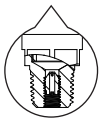


	A
F4L	62.6
F6L	62.6
FV2L	66.7

Removable Snubber Installed

Pressure port equipped with snubber can avoid damage caused by sudden pressure surge of water or oil, improve product durability.

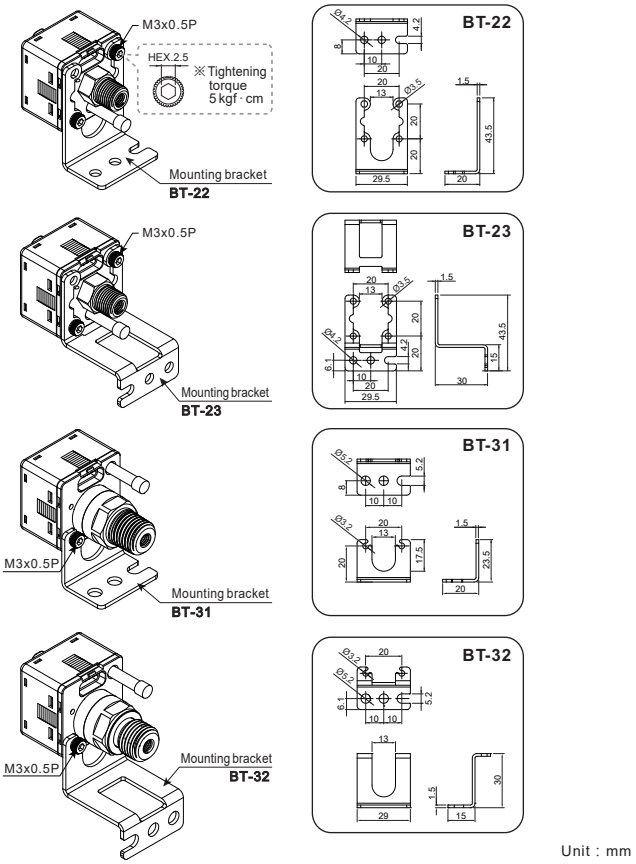
※ When snubber is clogged with contaminants, please use a flat head screwdriver to remove the snubber, clean and reinstall.



Unit : mm

E OPTIONAL PARTS DIMENSIONS

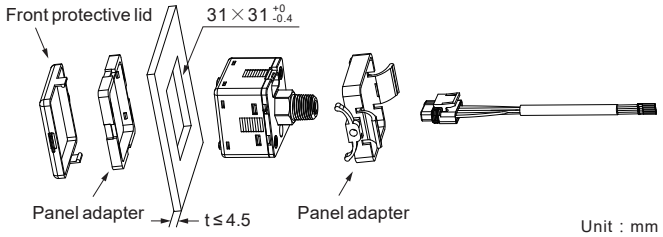
① Mounting bracket



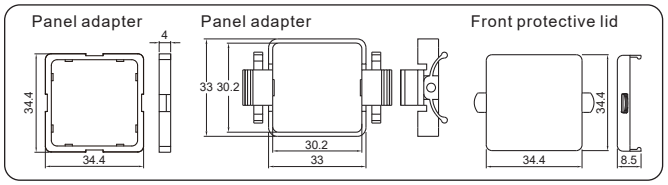
Unit : mm

E OPTIONAL PARTS DIMENSIONS

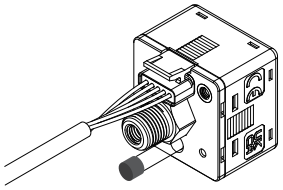
② Panel Mounting



Unit : mm



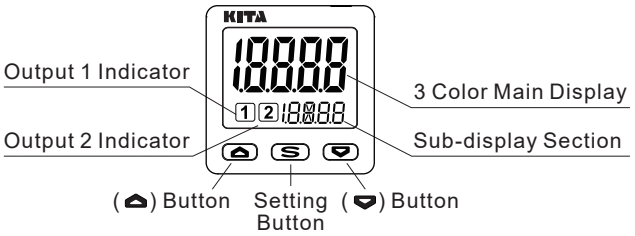
③ Accessory



Caution :

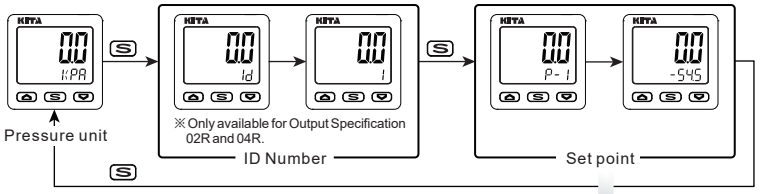
This device must be installed to maintain IP 65 (Dust and splash proof) enclosure rating.

F PANEL DESCRIPTION



G SUB-DISPLAY DISPLAY SETTING

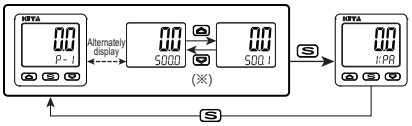
In measure mode (※), press (S) button to switch pressure unit / ID number / set point, and set the set point. ※ KP58E(H) is power-on and not in the function setting or checking state.



※ Press ▲ or ▼ button to adjust set value.

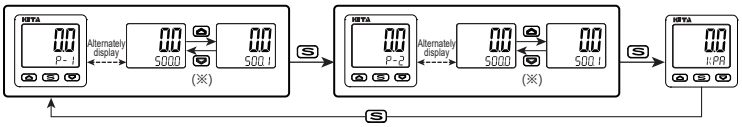
Setting Condition 1

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



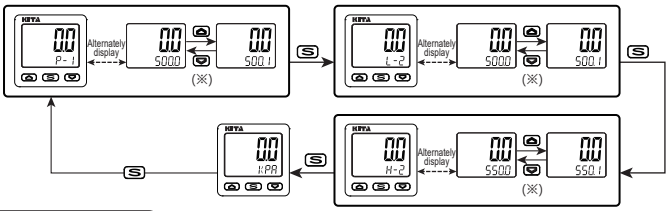
Setting Condition 2

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



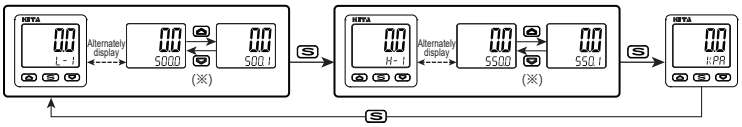
Setting Condition 3

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



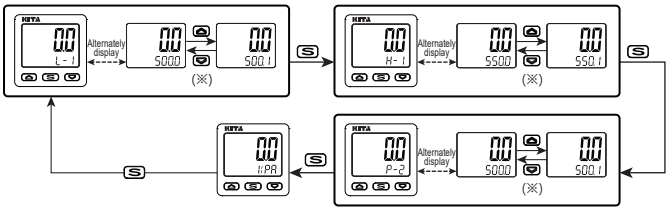
Setting Condition 4

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



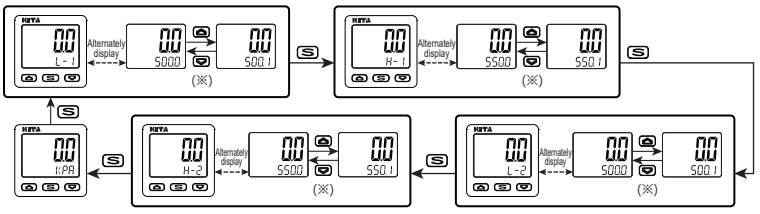
Setting Condition 5

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



Setting Condition 6

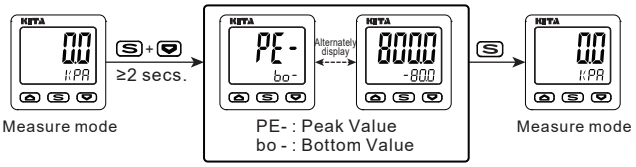
OUT 1 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)
OUT 2 : " HYS " (Hysteresis mode) or " Win " (Window comparator mode)



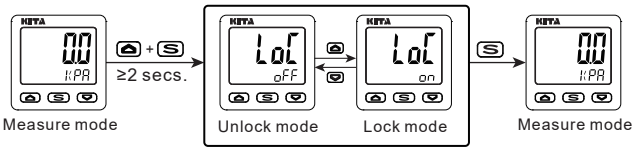
H ZERO POINT SETTING

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

I PEAK/BOTTOM HOLD FUNCTION



J KEY LOCK/UNLOCK MODE

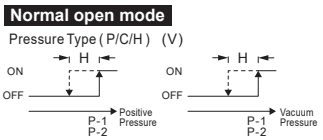


- Use key lock mode to prevent unauthorized or accidental tampering setting values.
- When lock mode is selected, panel will display " LoC ".

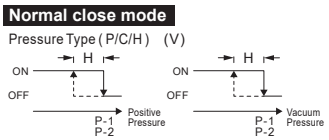
K OUTPUT MODE

(1) One point set mode :

Normal open mode

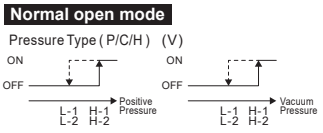


Normal close mode

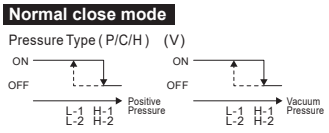


(2) Hysteresis mode :

Normal open mode

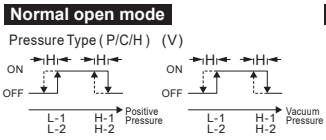


Normal close mode

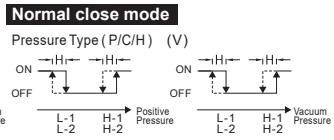


(3) Window comparator mode :

Normal open mode



Normal close mode



【NOTE :】
※1. In case hysteresis is set at 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.

L ERROR CODE INSTRUCTION

Error Type		Error Code	Error Condition	Troubleshooting
Excess load current error	out1	Er1	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	Er2	Output 2 load current is more than 150 mA	
Residual pressure error		Er3	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		Er4	Internal system error	Turn power off, and then restart. If error condition remains, please return to factory for inspection.
		Er5	Internal system error	
		Er6	Internal data error	
		Er7	Internal data error	

M PRESSURE UNIT CONVERSION TABLE

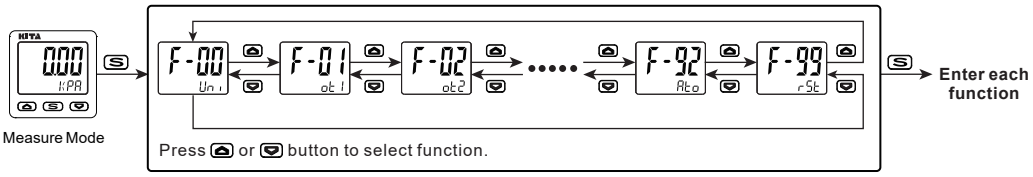
From \ To	kPa	kgf/cm²	mmHg	psi	bar	inHg	mmAq
1 kPa	1	0.010197	7.500616	0.145038	0.010000	0.2953	101.97
1 kgf/cm²	98.0665	1	735.559	14.2233	0.980665	28.95979	10000
1 mmHg	0.13332	0.0013595	1	0.019336	0.0013332	0.039370	13.595
1 psi	6.895	0.07031	51.7157	1	0.06895	2.036074	703.1
1 bar	100.0000	1.01972	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

※ In mmAq, actual value equals displayed value × 10.

N OPERATION INSTRUCTIONS

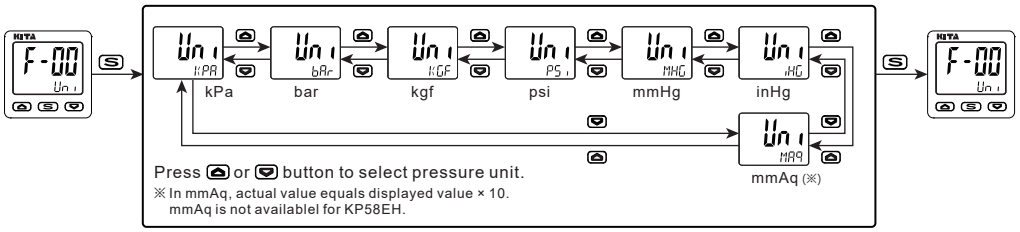
Function Selection

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



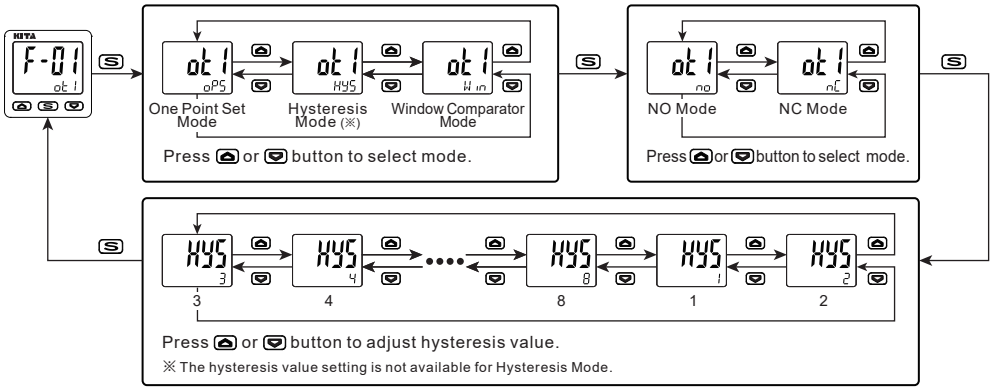
[F-00] Unit Setting

Press ▲ or ▼ button at Function Selection to [F-00][Un i].



[F-01] OUT1 Setting

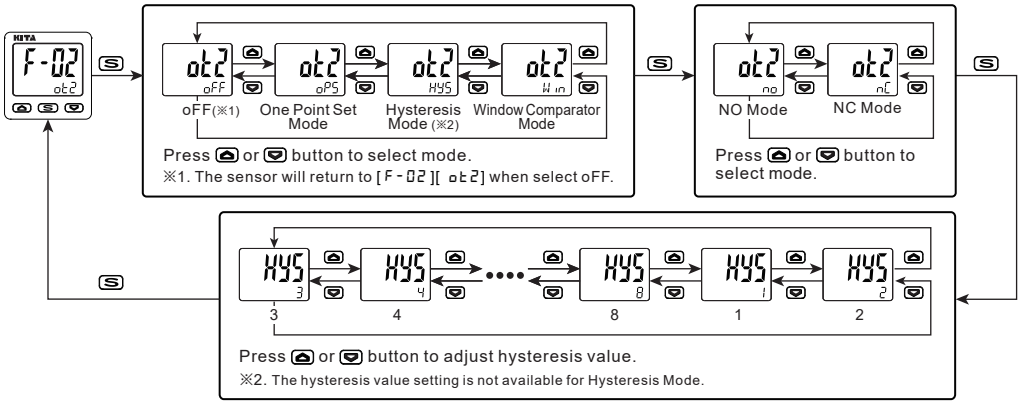
Press ▲ or ▼ button at Function Selection to [F-01][ot 1].



[F-02] OUT2 Setting

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

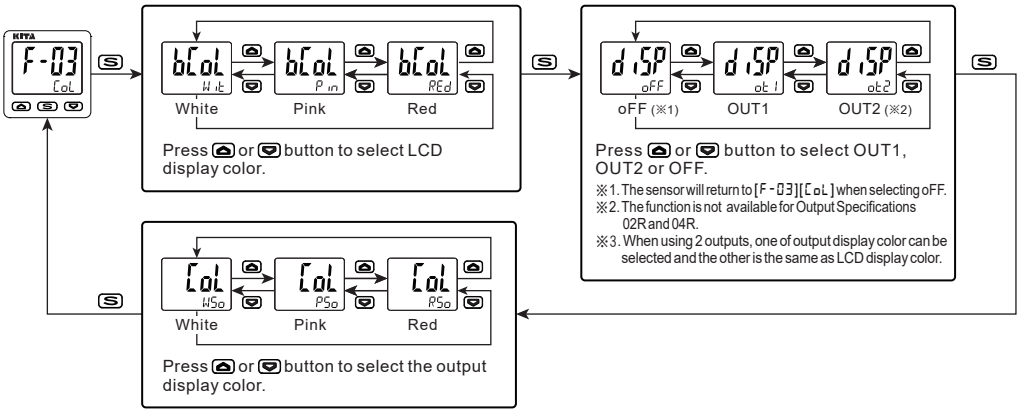
Press ▲ or ▼ button at Function Selection to [F-02][ot2].



N OPERATION INSTRUCTIONS

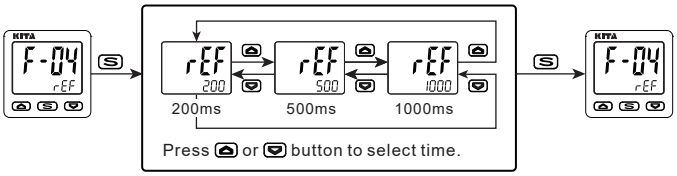
[F-03] LCD Display Color Setting

Press ▲ or ▼ button at Function Selection to [F-03][CoL]. The color of LCD display and output display can be different.



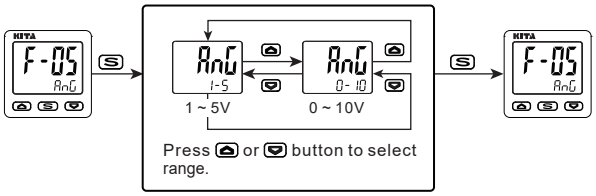
[F-04] Sampling Rate Setting

Press ▲ or ▼ button at Function Selection to [F-04][rEF].



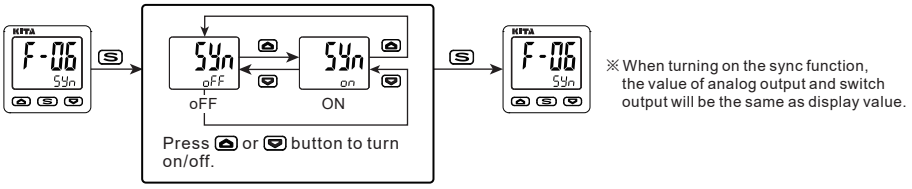
[F-05] Voltage Analog Output Range Setting

Press ▲ or ▼ button at Function Selection to [F-05][AnG].



[F-06] Output & Display Sync

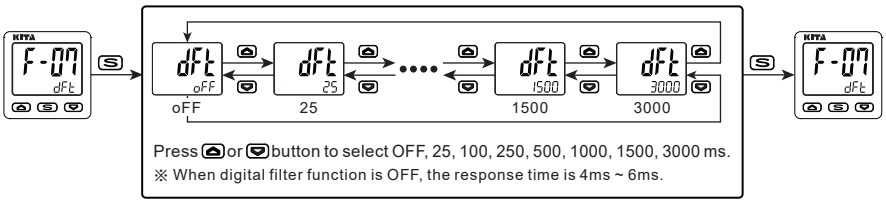
Press ▲ or ▼ button at Function Selection to [F-06][Syn].



※ When turning on the sync function, the value of analog output and switch output will be the same as display value.

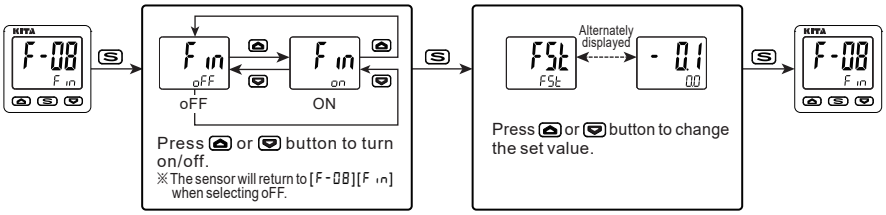
[F-07] Response Time of Digital Filter Setting

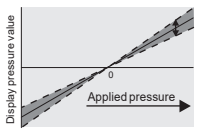
Press ▲ or ▼ button at Function Selection to [F-07][dFt].



[F-08] Fine Adjustment Setting

Press ▲ or ▼ button at Function Selection to [F-08][F in].





— Default setting value

Display value can be adjusted within ±2.5% R.D.

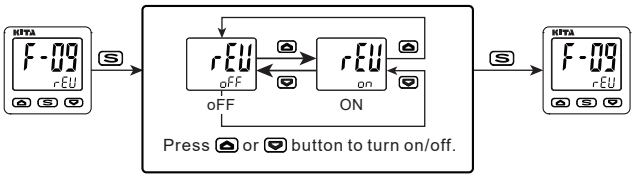
This function eliminates slight differences of display pressure value.

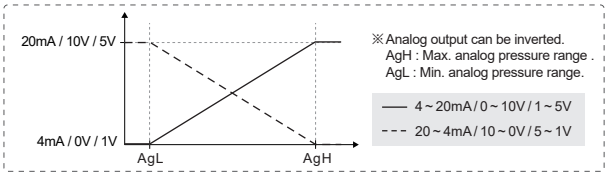
※ 1. Setting resolution is ±0.1 % R.D. (Real Detect)
2. The output value will change according to adjusted display pressure value.

N OPERATION INSTRUCTIONS

[F-09] Invert Analog Output Setting

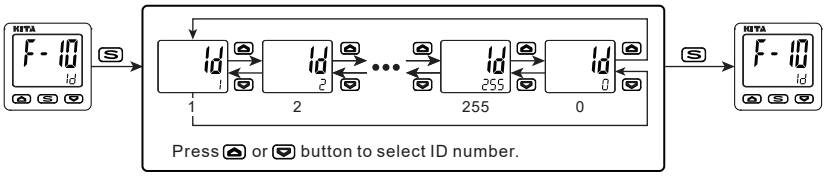
Press ▲ or ▼ button at Function Selection to [F-09][rEU].





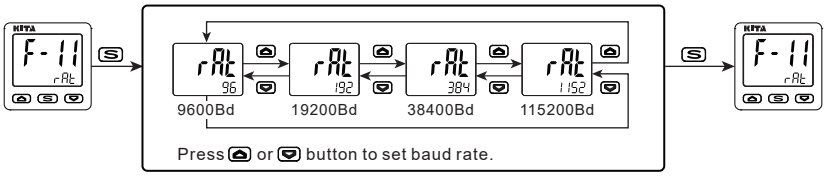
[F-10] RTU ID Number Setting

Press ▲ or ▼ button at Function Selection to [F-10][Id].



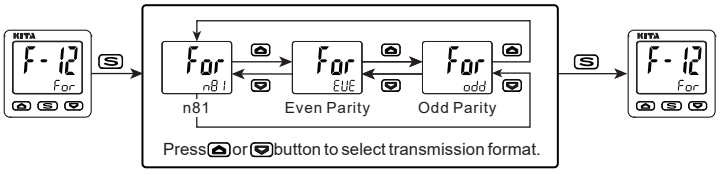
[F-11] RTU Baud Rate Setting

Press ▲ or ▼ button at Function Selection to [F-11][rAt].



[F-12] RTU Transmission Format Setting

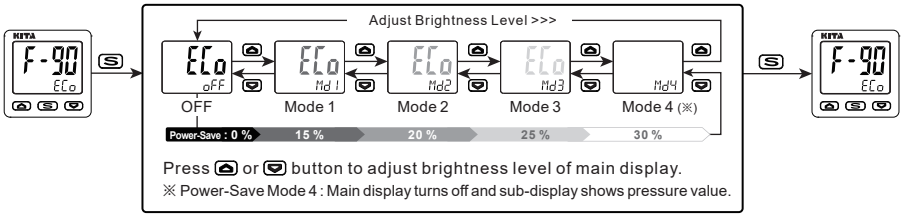
Press ▲ or ▼ button at Function Selection to [F-12][For].



[F-90] Power-Save Mode Setting

Press ▲ or ▼ button at Function Selection to [F-90][ECo].

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.

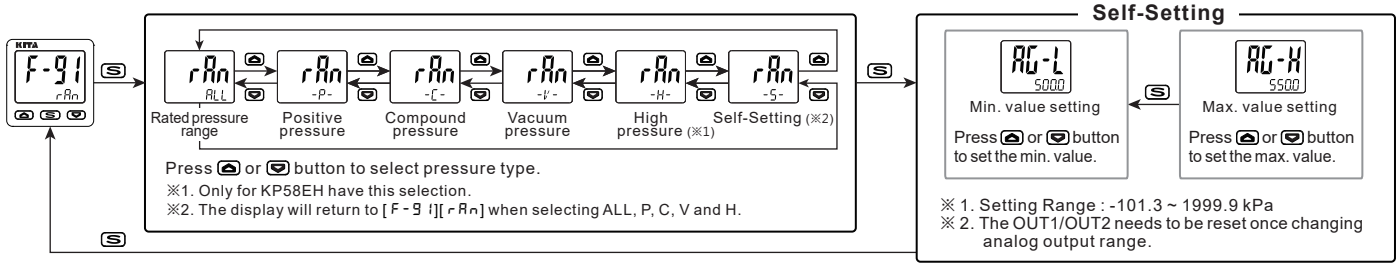


N OPERATION INSTRUCTIONS

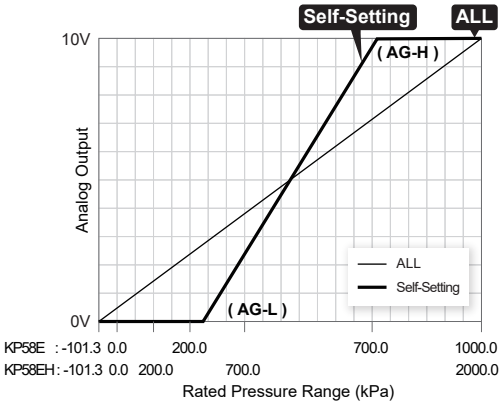
[F-91] Analog Output Range Setting

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

Press ▲ or ▼ button at Function Selection to [F-91][rAn].



Example:



Analog Voltage		0 ~ 10 V 1 ~ 5 V
Analog Current		4 ~ 20 mA
Analog Output Range Setting	**ALL** (Rated pressure)	KP58E : -101.3 ~ 1000.0 KP58EH : -101.3 ~ 2000.0
	P (Positive pressure)	-100.0 ~ 1000.0
	V (Vacuum pressure)	-101.3 ~ 0.0
	C (Compound pressure)	-100.0 ~ 100.0
	H (High pressure)	-101.3 ~ 1999.9
	S (Self-Setting)	AG-L ~ AG-H

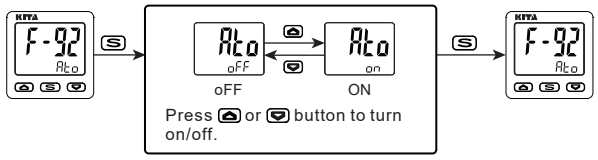
Pressure Unit : kPa

Default set point :

Set point / Output mode	ALL Rated pressure	P Positive pressure	V Vacuum pressure	C Compound pressure	S Self-Setting
OPS	500.0	500.0	-50.0	50.0	500.0
Win H	550.0	550.0	-55.0	55.0	550.0
Win L	500.0	500.0	-50.0	50.0	500.0
Hys H	550.0	550.0	-55.0	55.0	550.0
Hys L	500.0	500.0	-50.0	50.0	500.0

[F-92] Auto Zero Point Setting

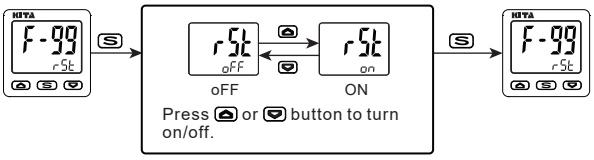
Press ▲ or ▼ button at Function Selection to [F-92][Ato].



※ 1. When the setting turns on, the display value will be 0 automatically every 10 secs and not be recorded after power off, then will be 0 automatically after supplying power again.
※ 2. The auto zero range is ±1% F.S.

[F-99] Reset to the Default Setting

Press ▲ or ▼ button at Function Selection to [F-99][rSt].



O COMMUNICATION PROTOCOL (Modbus RTU)

Function Code	Description	Operation
0000	ID Number (Range : 0 ~ 255)	Read Write
0001	Pressure type (0 : ALL)	Read
0002	Pressure value (Range : -32768 ~ 32767)	Read
0003	Unit setting (※) (0 : kPa , 1 : kgf/cm², 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 : 5ms , 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

Function Code	Description	Operation
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
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 : According to pressure type and unit)	Read Write
0011	Switch set point (H-1) (Range : According to pressure type and unit)	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
0016	Zero point setting (0 : ON)	Write
0017	Auto zero point (0 : OFF , 1 : ON)	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
0020	Output & Display sync (0 : OFF , 1 : ON)	Read Write

※1. mmAq is not availablel for KP58EH.
※2. Each read command is limited to 10 registers maximum.