KDM30-α Instruction Manual

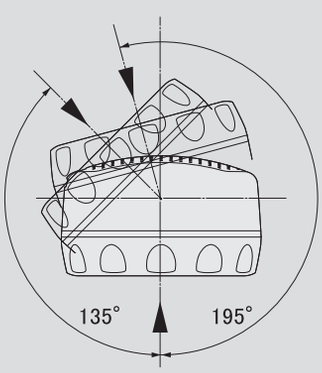
For Battery / External Power Supply

! CAUTION

Please use spanner / wrench when install / remove KDM30.
Installing / removing KDM30 by screwing KDM30 body causes product break.

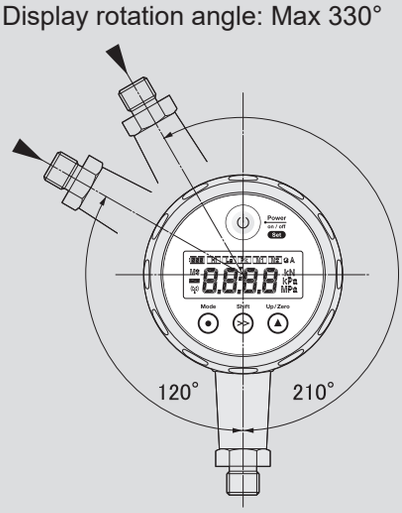
Flexible Display JPN:PN#4967093/USA:PN#8.468.893/KOR:PN#10-2010-7026661

Neck rotation angle: Max 330°

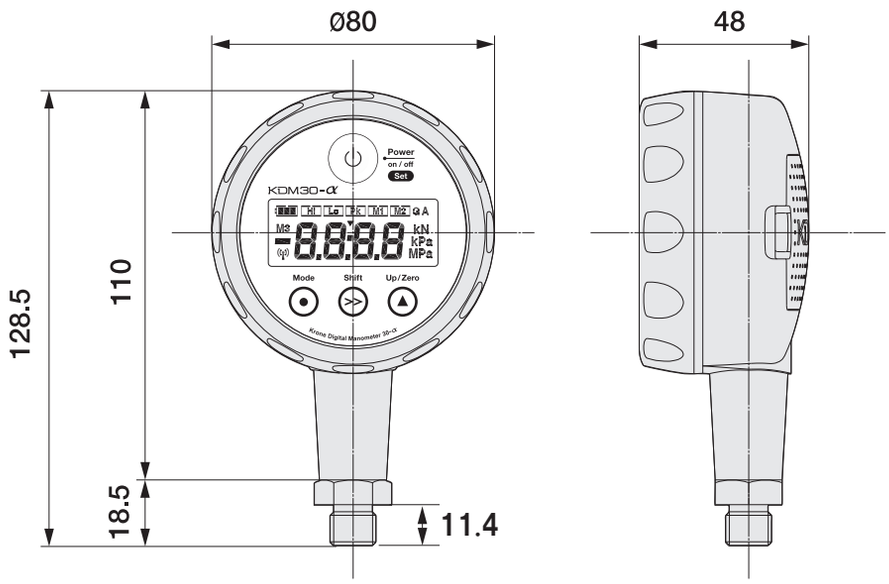


(front)

Display rotation angle: Max 330°

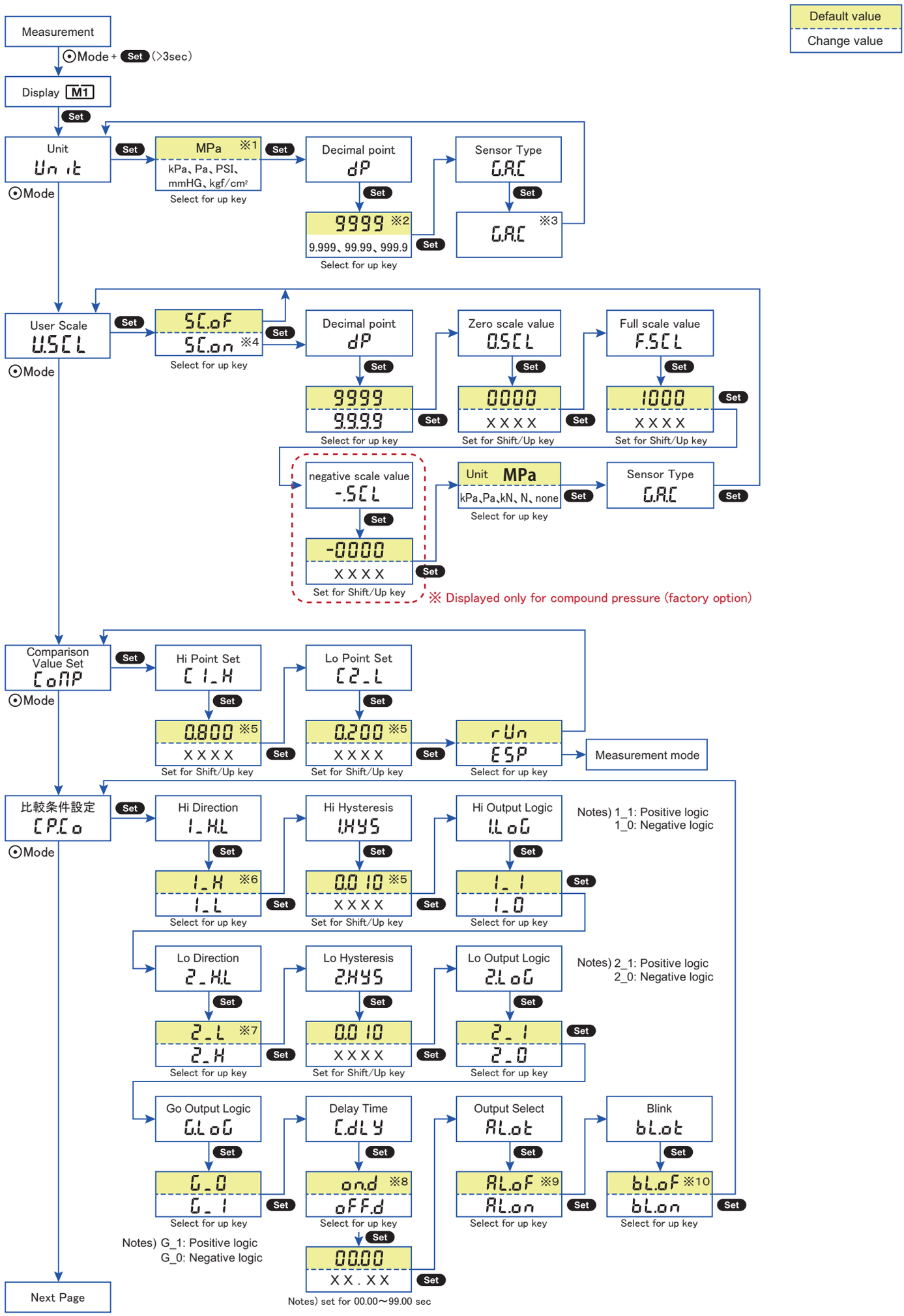


■ Explanation of the operation Button & Monitor

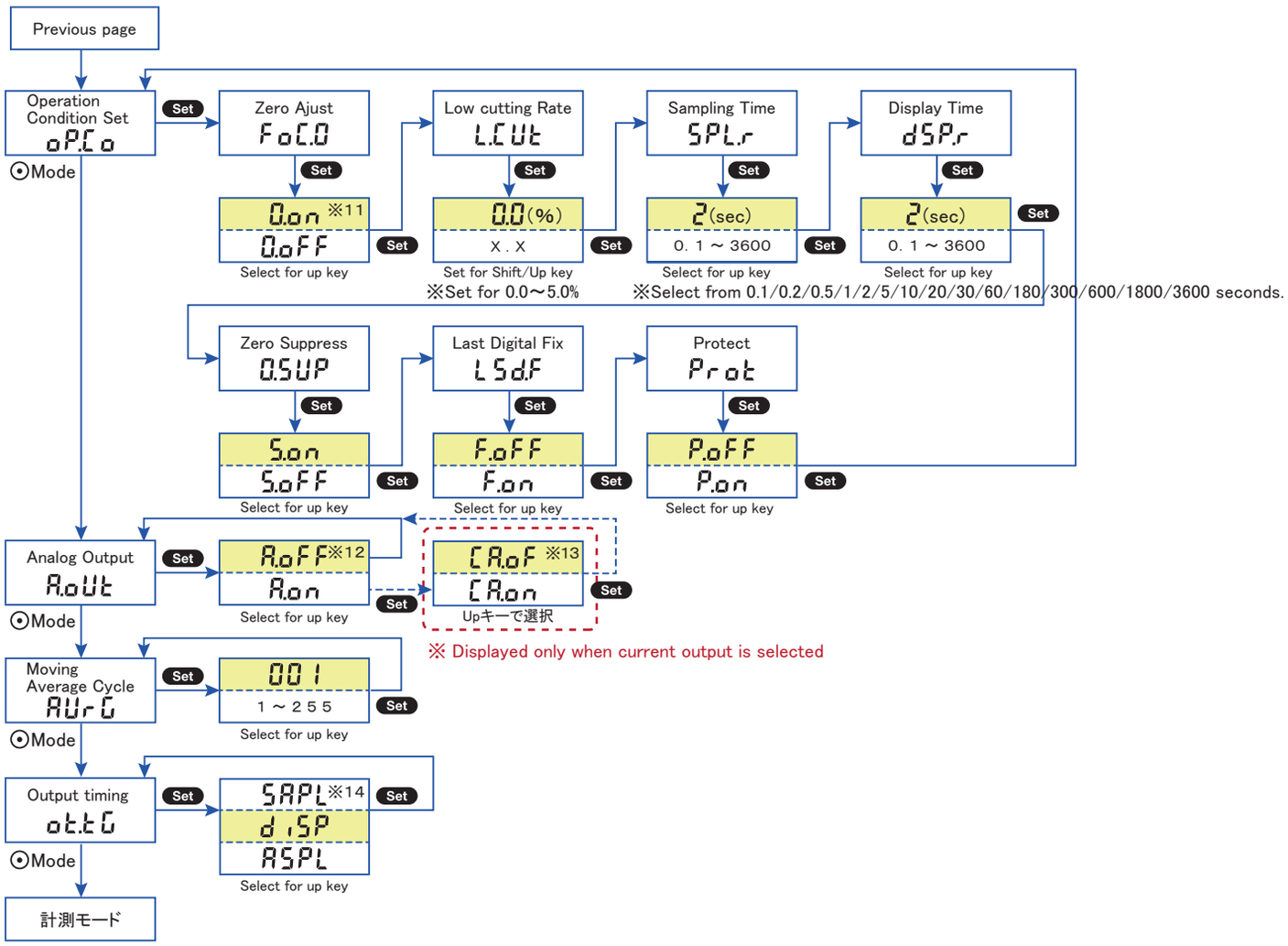


Item	Function	How to operate
Power / Set	Power ON/OFF	ON：Press the **Power/Set** button . OFF：Press the **Power/Set** button(≧3 sec) .
	Backlight ON/OFF	Press the **Power/Set** button , and the backlight is turned on . Press the **Power/Set** button again , and the backlight is turned off .
	Mode change	Press the **Power/Set** button , and you can switch to the another mode .
Mode	Calling up the setting M1 and M2	M1：Press the **Mode** and **Set** button simultaneously M2：Press the **Shift** button during the mode M1
Shift	Monitor display/output of the pressure value	Press the **Shift** button shortly during the normal measurment , the instantaneous value of the pressure is displayed and output (recorded on the monitor software side) .
	Changing the digit of the setting value	In case that you want to change the digits of the setting value , press the **Shift** button .
Up	Selection of the setting item	In case that you choose one of the two , press the **Up** button .
	Changing of the setting value	Press the **Up** button in case of changing of the setting value , and you can change the setting value .
Zero	Zero-point correction	Performed electronically by pressing the **zero** button
	Clearing of peak/valley values	Press the **Zero** button shortly , and the peak/valley value data recorded is clear .
	Battery remaining amount display	Battery is not needed to replace . Battery is needed to prepare the replacement battery . Battery shuld be replaced immediately. （caution） ・If the battery run out of power , the data of the peak/valley value is not recorded . ・The battery recommended replacement time(Battery model : 006P alkali battery) ex）Sampling time：2 sec・・・for about 3 months Sampling time：0.1sec・・・for about 1-2 days
bAt.L	Insufficient supply voltage display	bAt.L is displayed when the supply voltage is shotage .
Lobt	Run out of battery	When the battery voltage drops below 7.0V, this message will be displayed for 2 seconds and the power will shut down.
FULL	Log Storage Space	*Peak and valley values ??will not be saved. (Other settings will be saved.) Displayed when the log memory limit is reached. Output the log externally or delete it
Hi	Comparing to the level of measurement values (High)	When the measurement value is higher than the setting value " Hi " , the digital display flush " Hi " .
Lo	Comparing to the level of measurement values (Low)	When the measurement value is lower than the setting value " Lo " , the digital display flush " Lo " .
Pk	Peak / Valley display	When the peak or valley value is set , Pk is displayed .
M1	Mode 1	Mode 1 function (see the Page 3 "Mode 1 Parameter table")
M2	Mode 2	Mode 2 function (see the Page 4 "Mode 2 Parameter table")

■ Mode1 Parameter table

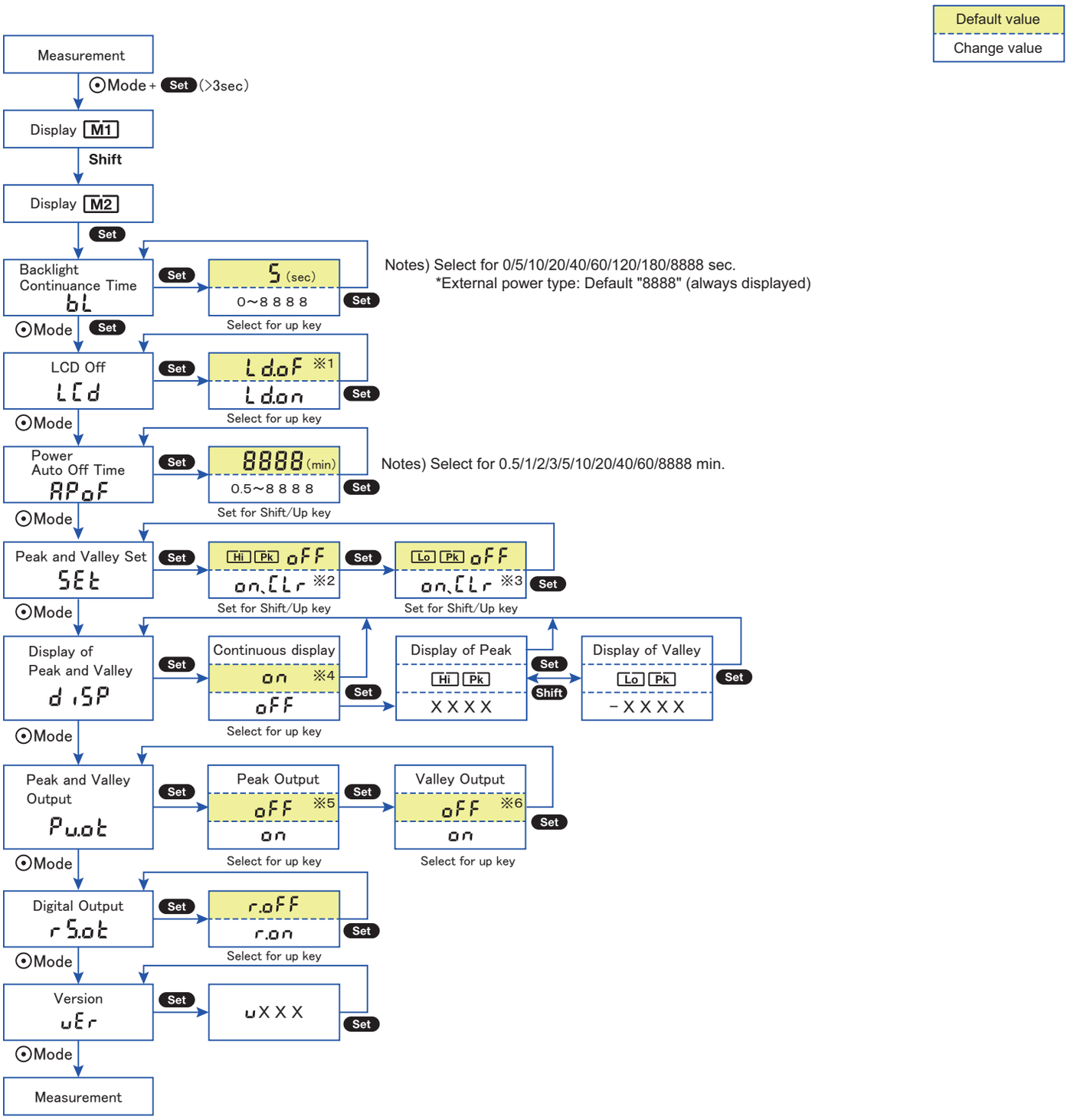


■ Mode1 Parameter table (continuation)



※1 If you select PSI, mmHG, or kgf/cm2, the unit will not be displayed on the LCD. The converted value will be displayed.
※2 Even if you select three decimal places, if the number of significant digits in the integer part is two, two decimal places will be displayed.
※3 In the case of compound pressure C, both A and G on the LCD display will be turned off.
※4 When US.on, the unit setting for Mode 1 is disabled.
※5 The unit and decimal point position selected in Unit and dP will be reflected.
Example: If the unit is Pa and dP is 9999, the above example shows a Hi value of 800 Pa and a Lo value of 200 Pa.
※6 1_H will transition to Hi state when it exceeds the Hi value, and the Hi state will be canceled when it is less than Hi value − hys.
1_L will transition to Hi state when it exceeds Hi value + hys, and the Hi state will be canceled when it is less than Hi value.
1_1 is A contact: normally open, 1_0 is B contact: normally close.
※7 For 2_H, the Lo state is released when the Lo value is exceeded, and the state changes to Lo when the value is less than Lo value − hys value.
For 2_L, the Lo state is released when the Lo value + hys is exceeded, and the state changes to Lo when the value is less than Lo value.
2_1 is A contact: normally open, 2_0 is B contact: normally close.
※8 oFF.d: Response time after the set value falls below the set value.
Example: 02:00 = 2 seconds.
on.d: Response time after the set value is exceeded.
※9 Default AL.off when using battery, default AL.on when using external power supply
※10 The LCD backlight will blink when the Hi/Lo comparison output is applicable.
When the input pressure is over +10%, it will blink (the display itself will blink) even at bL.oF.
When in gauge mode, it will also blink when below 0 and over −1%.
※11 It is invalid at absolute pressure.
※12 The external power supply type is set to A.on by default.
※13 When CA.oF is selected, the I.err display does not occur if the load is disconnected.
When CA.on is selected, the I.err display occurs if the load is disconnected.
Press the set key to enter measurement mode and operate normally.
※14 When in SAPL, Aout, digital output, Hi, Lo, and Go outputs raw values at the SPL.r timing.
When in DISP, the display, Aout, digital output, Hi, Lo, and Go outputs reflect averaging at the Disp timing.
When in ASPL, Aout, digital output, Hi, Lo, and Go outputs reflect averaging at the SPL timing.
*If either the peak or valley output in mode 2 is on, it will operate in SAPL.

■ Mode2 Parameter table



※1 The LCD will turn off after 60 seconds. Press the shift key to turn it back on.
※2 When On, peak values are recorded. Briefly pressing the zero-key clears the memory and displays the pressure value at that time. Note that the moving average is not reflected in the peak value.
※3 When On, valley values are recorded. Briefly pressing the zero-key clears the memory and displays the pressure value at that time. Note that the moving average is not reflected in the valley value.
※4 On allows you to select dISP On. When set to On, the peak and valley values will be displayed after returning to measurement mode.
※5 When the peak output is on, the peak value at that time is output.
※6 When the valley output is on, the valley value at that time is output.

■ User scale setting procedure

(1) If you want to use the user scale, set to and proceed to the scale setting.

If you do not use the user scale, it will automatically return to the factory scaling.

(2) Setting the decimal point position ... Set the decimal point to the required position.

(3) Zero scale setting ... Enter the value you want to display when the minimum value of the pressure gauge is reached.

(4) Full scale setting ... Enter the value you want to display when the maximum value of the pressure gauge is reached.

(5) Negative scale setting ... Enter the value you want to display when the maximum negative value of the pressure gauge is reached.

* Displayed only when coupled pressure is applied.

* If not applicable, enter 0000 or the same value as the zero scale value.

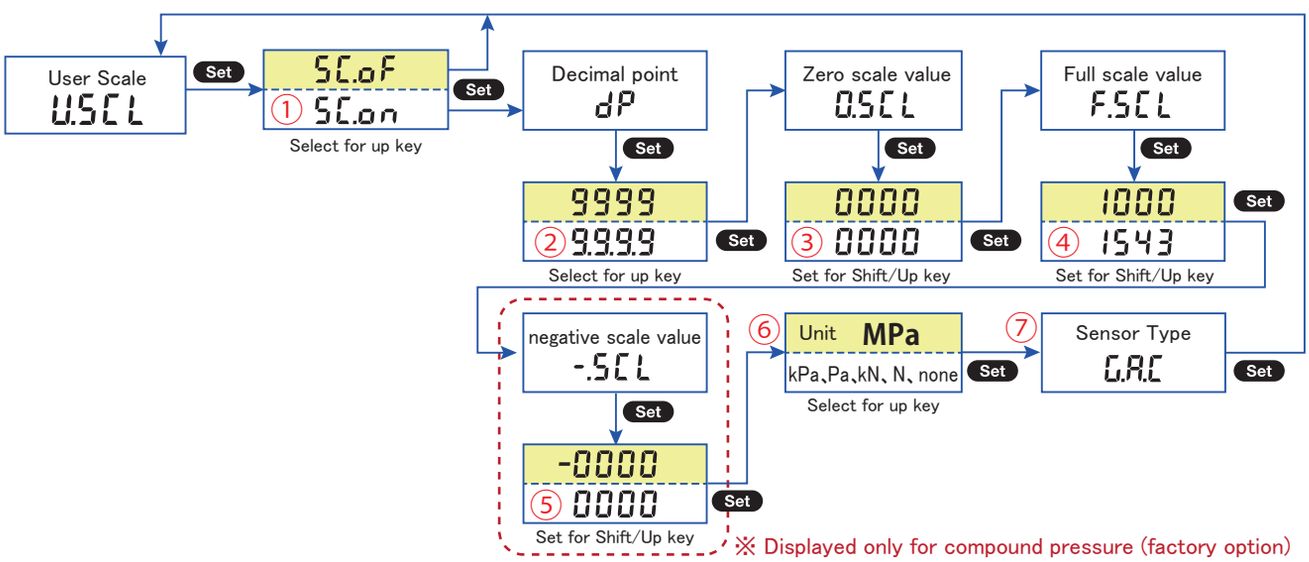
⑥ Unit selection… Select a unit. Select blank (none) if you do not want to display it.

⑦ Select the pressure type. (G: gauge pressure, A: absolute pressure) Select blank (none) if not displayed.

Example) When scaling to 0-1543 (kN) for a gauge pressure of 0-10 (MPa), set as follows.

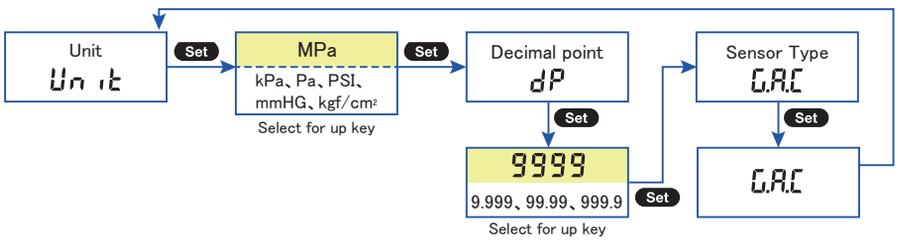
* Since the unit kN is not in the menu, set a blank (none) for the unit and attach a sticker such as Tepla to the LCD separately.

[Pressure value]		[Conversion value]
10.00MPa	⇒	1543kN
0MPa	⇒	0kN



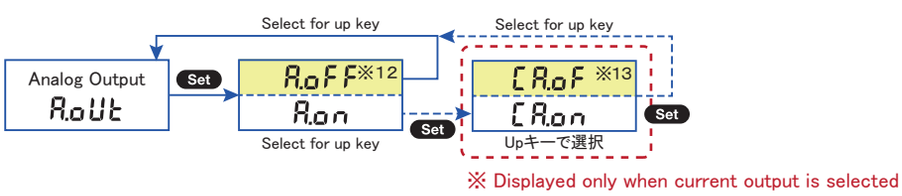
■ Unit conversion

Unit conversion can be selected from MPa/kPa/Pa/PSI/mmHG/kgf/cm2 in the Mode.1 Unit setting. For PSI/mmHG/kgf/cm2, the converted value will be displayed, but the unit will not be displayed.



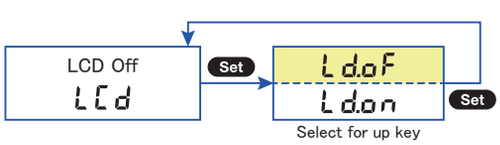
■ Wire Break Detection

① The wire break detection function can be selected from the Analog Out (A.oUt) in Mode 1.
When set to CA.on,『I.err』is displayed when the output wire is disconnected.
② Even when set to CA.on and the output wire is not connected,『I.eer』is displayed. Therefore, set CA.on only when the wire is connected.



■ LCD off function

① The LCD off function can be set from Mode.2『LD.oF』. If LD.on is selected, the display will disappear after 60 seconds.
② Press the shift key to redisplay for 60 seconds
③ Even if you press the shift key, radio signals will not be output. (They will be output at the sampling rate setting.)



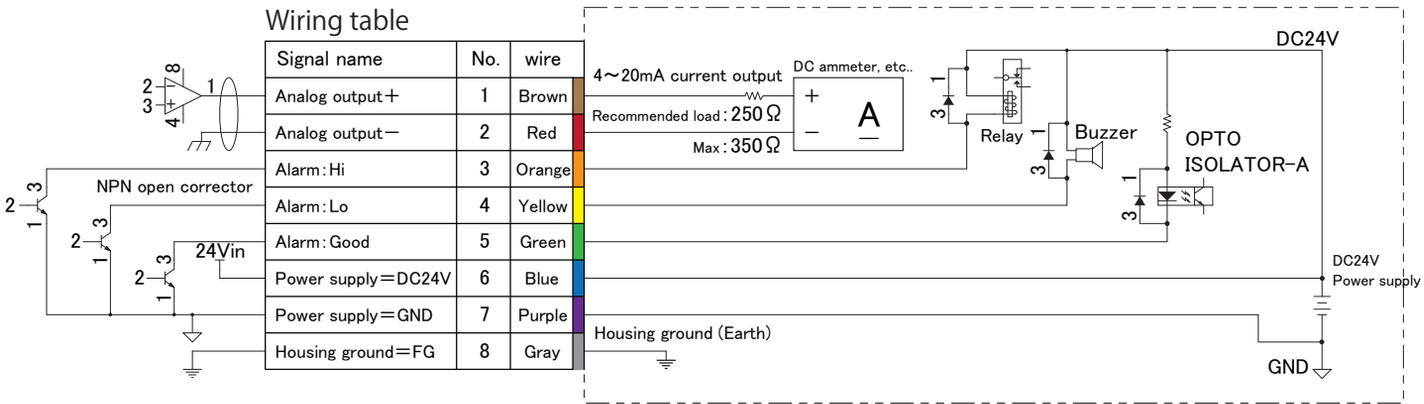
■ Input / output connection example (External 24VDC power supply)

・4-20mA current output

▼User side connection example

Wiring table

Signal name	No.	wire
Analog output＋	1	Brown
Analog output－	2	Red
Alarm：Hi	3	Orange
Alarm：Lo	4	Yellow
Alarm：Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray

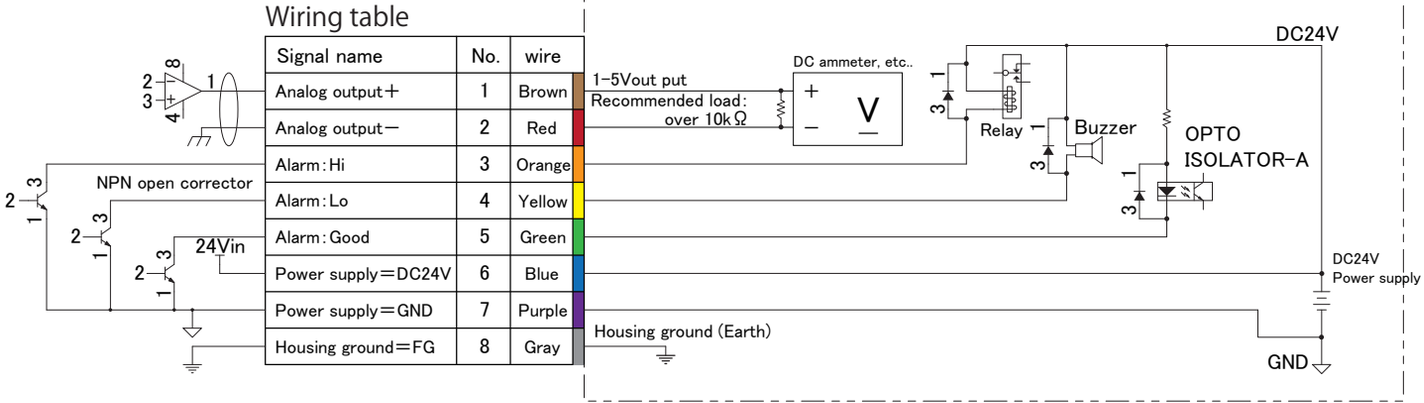


・1-5VDC voltage output

▼User side connection example

Wiring table

Signal name	No.	wire
Analog output＋	1	Brown
Analog output－	2	Red
Alarm：Hi	3	Orange
Alarm：Lo	4	Yellow
Alarm：Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray

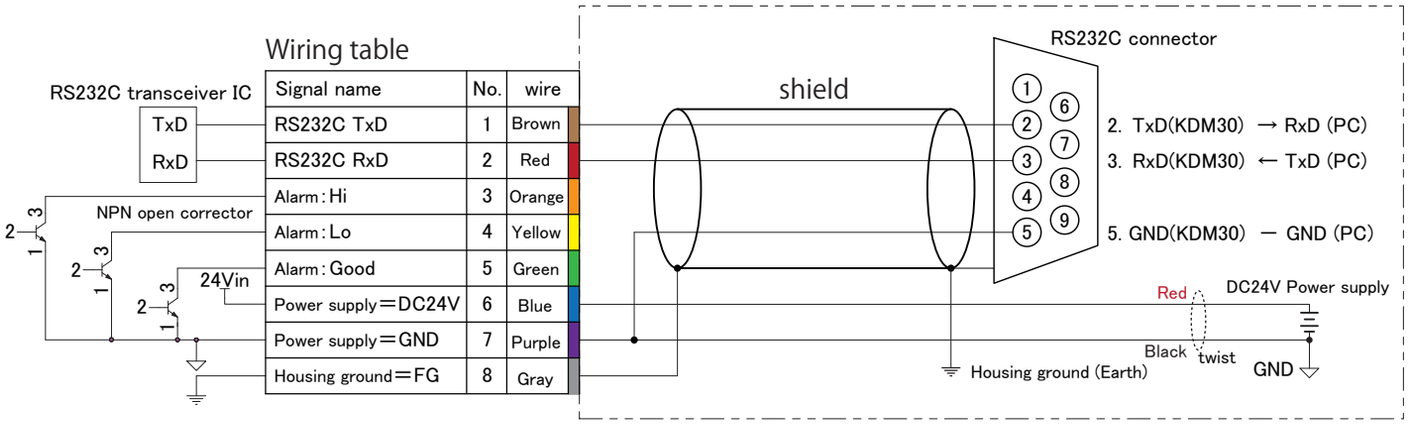


・RS232C output

▼User side connection example

Wiring table

Signal name	No.	wire
RS232C TxD	1	Brown
RS232C RxD	2	Red
Alarm：Hi	3	Orange
Alarm：Lo	4	Yellow
Alarm：Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray



■ Input / output connection example (External AC100V adapter power supply)

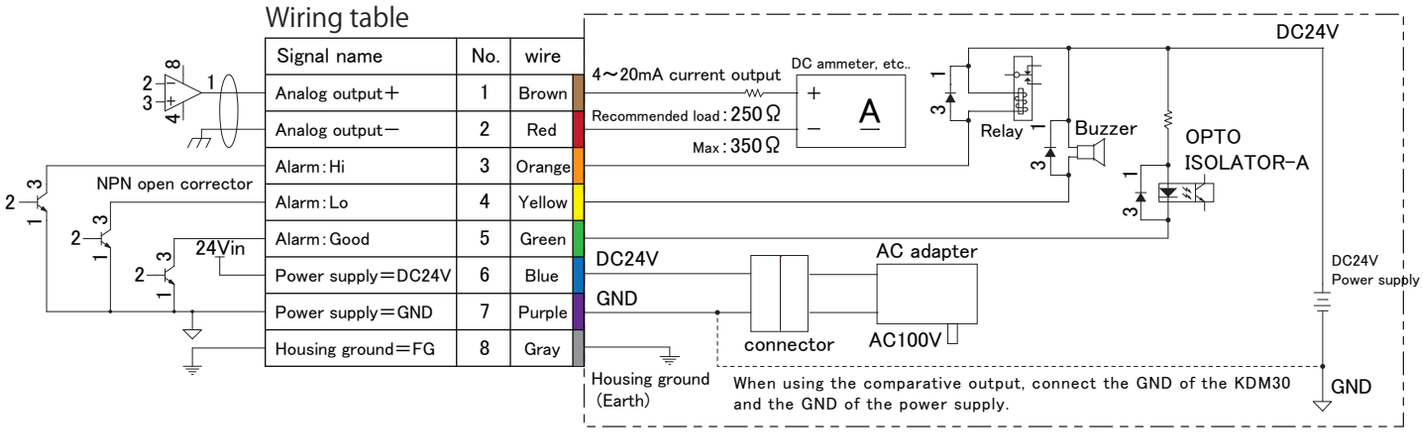
Please make a ground (Earth) connection when using the AC100V power adapter.
When using the power adapter AC100V, If the displayed value fluctuates or deviates from the accuracy, Pin 8 connect to ground (Earth).

・4-20mA current output

▼User side connection example

Wiring table

Signal name	No.	wire
Analog output＋	1	Brown
Analog output－	2	Red
Alarm：Hi	3	Orange
Alarm：Lo	4	Yellow
Alarm：Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray

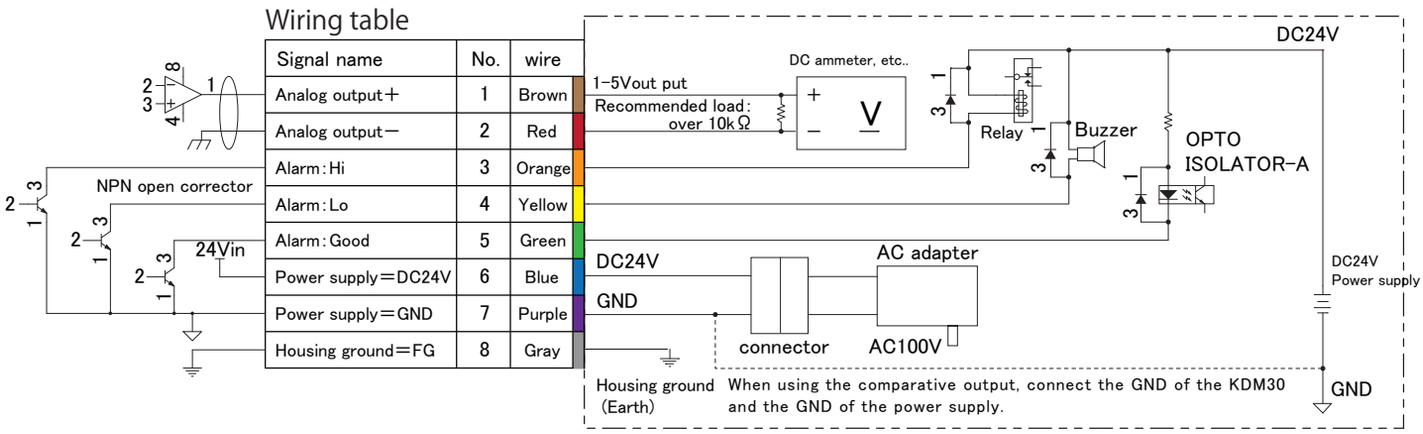


・1-5VDC voltage output

▼User side connection example

Wiring table

Signal name	No.	wire
Analog output＋	1	Brown
Analog output－	2	Red
Alarm：Hi	3	Orange
Alarm：Lo	4	Yellow
Alarm：Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray

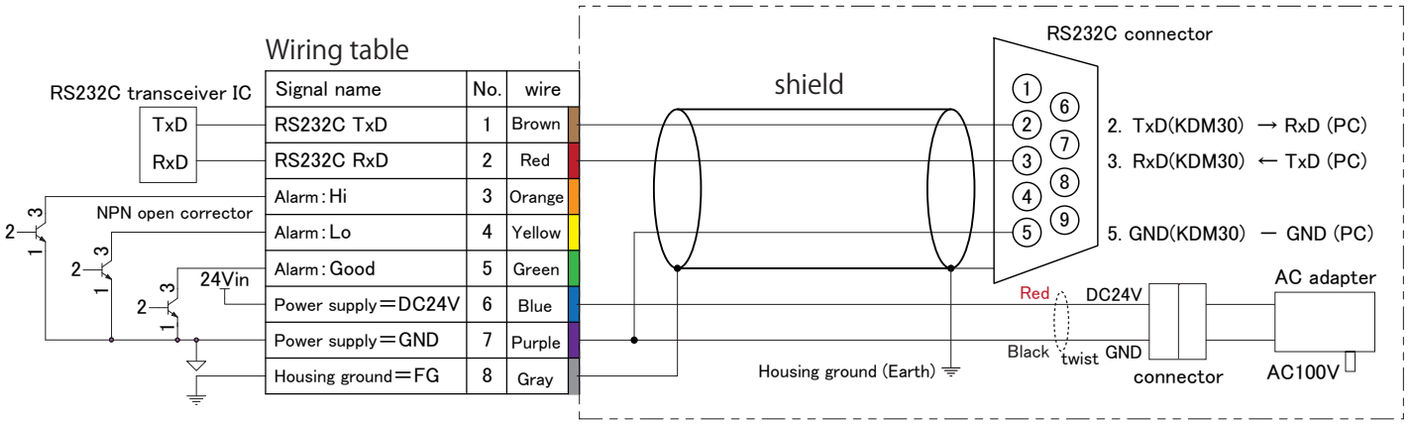


・RS232C output

▼User side connection example

Wiring table

Signal name	No.	wire
RS232C TxD	1	Brown
RS232C RxD	2	Red
Alarm：Hi	3	Orange
Alarm：Lo	4	Yellow
Alarm：Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray



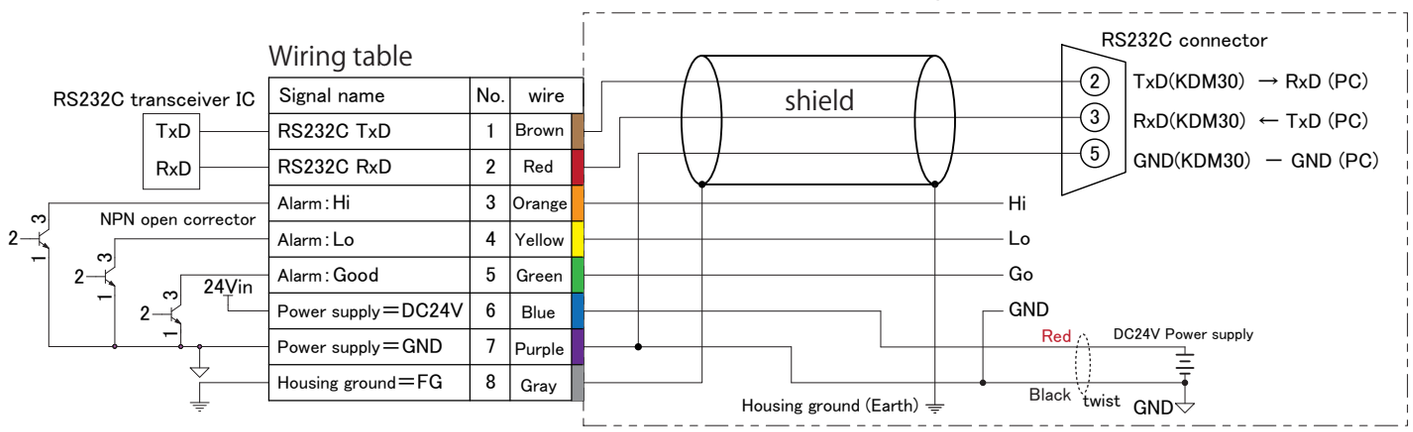
■ Input / output connection example (Hi / Go / Lo Comparative output)

・External 24VDC power supply / RS232C output

▼User side connection example

Wiring table

Signal name	No.	wire
RS232C TxD	1	Brown
RS232C RxD	2	Red
Alarm : Hi	3	Orange
Alarm : Lo	4	Yellow
Alarm : Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray

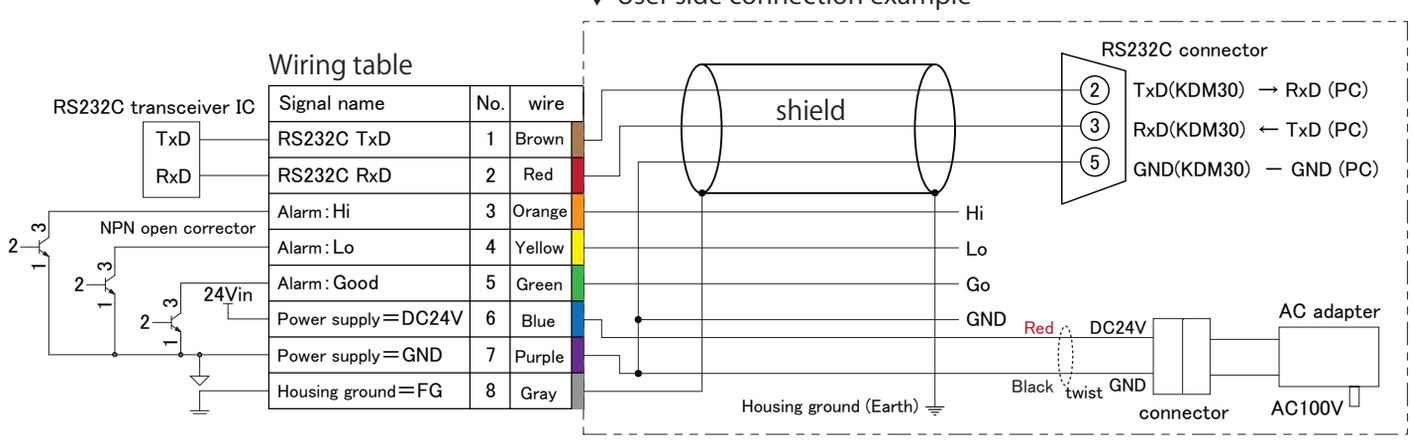


・External AC100V power supply / RS232C output

▼User side connection example

Wiring table

Signal name	No.	wire
RS232C TxD	1	Brown
RS232C RxD	2	Red
Alarm : Hi	3	Orange
Alarm : Lo	4	Yellow
Alarm : Good	5	Green
Power supply＝DC24V	6	Blue
Power supply＝GND	7	Purple
Housing ground＝FG	8	Gray



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*The design and specifications are subject to change
without prior notice for product improvement.
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