GX-M Series

Options

INSTRUCTION MANUAL

GXM-04

GXM-06

COMPARATOR OUTPUT

ANALOG VOLTAGE OUTPUT

A&D

A&D Company, Ltd.

The contents of this manual and the specifications of the instrument covered by this manual are subject to change for improvement without notice.

Introduction

1. Introduction

This manual describes how the GXM-04, GXM-06 (Comparator output, analog voltage output) works and how to get the most out of it in terms of performance. Read this manual thoroughly before using and keep it at hand for future reference.

2. Features

The following options can be used for the GX‐M series and GF‐M series.

- GXM‐04   Comparator output (with buzzer) / External contact input x 2 / RS-232C
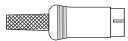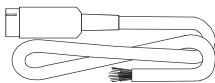- GXM‐06   Analog voltage output / RS-232C
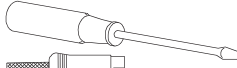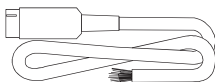
GXM–04: Comparator output / External contact input

- The GXM‐04 can compare the weighing value and preset threshold values and can output the result to the contact output.
- The GXM‐04 is equipped with six contact outputs: "HH", "HI", "OK", "LO", "LL" of the comparison output and "READY" output to indicate the status of the balance.
  3-stage comparison or 5-stage comparison can be selected.
- The GXM‐04 can sound a buzzer according to the comparison result.
- The GXA-04 is equipped with external control input terminals that can make the $\boxed{\text{RE-ZERO}}$ and $\boxed{\text{PRINT}}$ key operations. An optional foot switch (AX‐SW137‐PRINT, AX‐SW137‐RE-ZERO) can be used.

GXM–06: Analog voltage output

- The GXM‐06 can output analog voltage in the following modes :
  "mode where the specified digits of the weighing value are converted to voltage" and
  "mode where weighing value is converted to voltage in range between gross zero or net zero and full scale".
- The voltage output range can be selected using the "0V～/0.2V～" switch on the panel.
  It can be selected "0 to 1V" range and "0.2V to 1V" range. The factory setting is "0 to 1V" range.

3. Packing List

GXM‑04	Mini DIN connector (8 pin, plug)	1	
	Cable with connector (AX-KO5692)	1	
	This manual	1	
GXA-06	Screwdriver for adjustment	1	
	Mini DIN connector (4 pin, plug)	1	
	Cable with connector (AX-KO5692)	1	
	This manual	1	

4. Installing the Option

Caution Disconnect the AC adaptor before installing the option to the balance.

Installing the option board to the balance

Install the GXM-04 and GXM-06 according to the following procedure.
(The installation procedure of the GXM-04 and GXM-06 is the same.)

Step1   Remove the two screws from the panel and remove the RS-232C / USB board from the balance.

Step2   Pull gently and remove the two cables from the RS-232C / USB board.
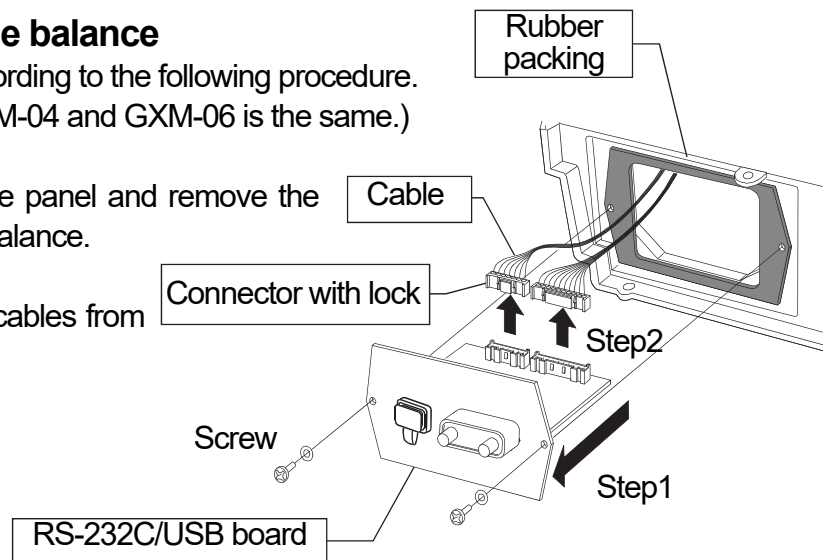
Step3   Insert the two cables into the sockets of the GXM-06 board.

Step4   Insert the rubber packing and plug the GXM-06 into the balance.
Screw the panel of GXM-06.
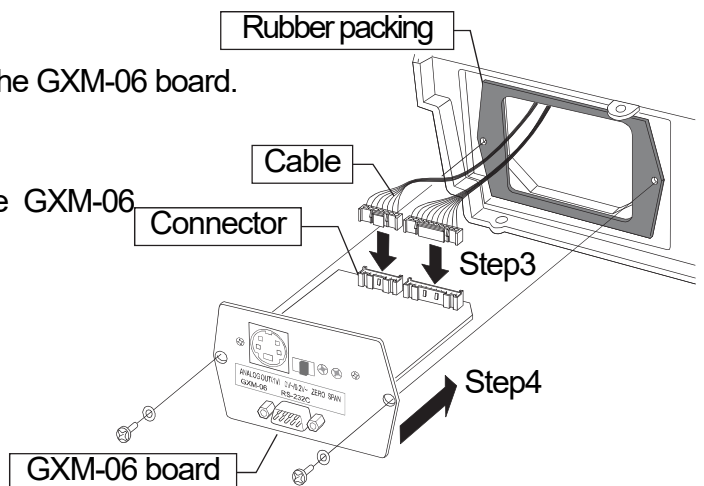
Caution
- When inserting the GXM-06, pay attention to the top and bottom orientation of the board.
- The rubber packing has a deep groove on the balance side.

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Assembling the mini-DIN connector

Step1   Pass the cable through the rubber sleeve.

Step2   Solder wires and terminal.

Step3   Cover the terminal with the top metal case and bottom metal case.

Step4   Fasten wires with the top metal case.

Step5   Insert the assembled parts into the rubber sleeve.

Part to secure wires

Top metal case

Terminal

Cable

Rubber sleeve

Fasten wires tightly

Solder wires and terminal

Bottom metal case
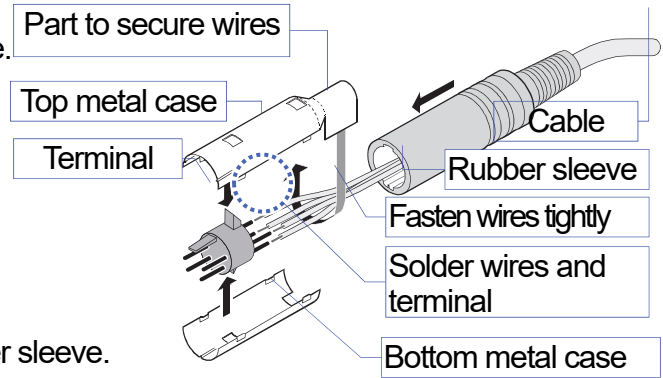
5. Function Table of Balance

The function table stores parameters that specify how to operate the balance, and it is used to mointor or update those parameters. These parameters are stored in memory even if the AC adaptor is removed and are retained until overwritten. Balance operations are specified by this table when using the GXA-04 and GXA-06. The table menu consists of two layers as shown in the diagram below. The first layer is the "**Class**" and the second layer is the "**Item**". Each item stores a "**parameter**". The last displayed parameter is in effect. After the PRINT key is pressed, these updated parameters are applied to operations of the balance.

Example of settings and menu structure

Example : Set to "**Center value using sample weight input**" of "**Input method**" in "**Comparator**".
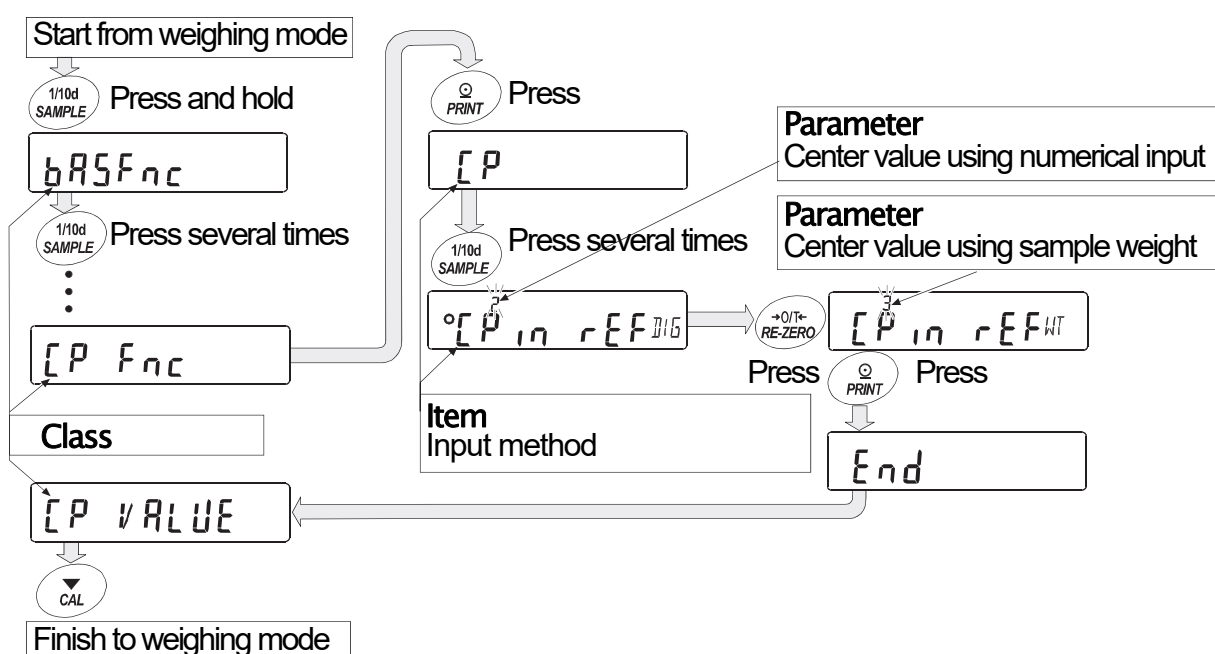
Caution

The balance may not function properly, depending on the settings and the operating environment. Be sure to set parameters correctly.

5.1.   Operation Keys and Display of Function Table

°	The ○ indicates that the parameter displayed is in effect.
1/10d SAMPLE	Enters the function table when pressed and held in the weighing mode. Selects the class or item in the function table.
→0/T← RE-ZERO	Changes the parameter.
⊙ PRINT	Moves to an item in the class when a class is displayed. Stores the new parameter and displays the next class when an item is displayed.
▼ CAL	Cancels new parameter and displays the next class when an item is displayed. Exits the function table and returns to the weighing mode when a class is displayed.

5.2. Items List of the Function Table

Note Functions available differ by model of the balance.

Class	Item	Parameter	Description
`bASFnc` Environment・display `CL AdJ` Clock adjustment			(Refer to the instruction manual of main unit)
`CP Fnc` Comparator	`CP` Comparator mode	■*0*	No comparison (Comparator is not used)
		1	Comparison when stable value or overloaded
		2	Comparison always
	`CP-t` Comparator method	■*0*	3-stage comparison HI , OK , LO
		1	5-stage comparison HH , HI , OK , LO , LL
	`CP-Z` Zero near	*0*	Comparison including near zero
		1	Comparison excluding ±5 digits (counts) from zero
		■*2*	Comparison excluding ±10 digits (counts) from zero
		3	Comparison excluding ±20 digits (counts) from zero
		4	Comparison excluding ±50 digits (counts) from zero
		5	Comparison excluding ±100 digits (counts) from zero
	`CP-P` Polarity	*0*	Comparison of positive values only
		1	Comparison of negative values only
		■*2*	Comparison of both polarities
	`CP-r` Comparison results	■*1*	Not added Select whether or not to add the comparison results to the output data.
		2	Added
	`CP in` Input method	■*0*	Threshold value using numerical input `CP HH`,`CP Hi`,`CP Lo` and
		1	Threshold value using sample weight `CP LL` are used
		2	Center value using numerical input `CP rEF`,`CP LMt` and
		3	Center value using sample weight `CP LMt2` are used
	`CP-Frd` Flow measurement	■*0*	Comparison by flow rate value
		1	Comparison by weighing value (g)
	`CP-b` Main display comparison	■*0*	OFF Displays the results on the main portion of the display in place of the weight value.
		1	ON

Class	Item	Parameter		Description
[P VALUE Comparator threshold value	_[P HH_ Second upper limit			Refer to explanation of "**6. GXM-04 Comparator output**". Upper / lower limits when using the data input method (_[P in_ _0_ or _[P in_ _1_) is selected. _[P HH_ , _[P LL_ are displayed when 5-stage comparison (_[P-t_ _1_) is selected.
	_[P Hi_ Upper limt			
	_[P Lo_ Lower limit			
	_[P LL_ Second lower limit			
	[P rEF Center value			Refer to explanation of "**6. GXM-04 Comparator output**". Reference value when using the data input method (_[P in_ _2_ or _[P in_ _3_) is selected. _[P LMt2_ is displayed when 5-stage comparison (_[P-t_ _1_) is selected.
	[P LMt Tolerance range from center value			
	[P LMt2 Second tolerance range from center value			

■ indicates factory settings.   Digit is the unit of minimum division (readability).

Class	Item	Parameter		Description	
CP bEEP Comparator buzzer	*bEP HH* HH buzzer	■ *0*	Off	Displayed only when 5-stage comparison (*CP-t* *1*) is selected.	
		1	On		
	bEP H1 Hi buzzer	■ *0*	Off		
		1	On		
	bEP oK OK buzzer	■ *0*	Off		
		1	On		
	bEP Lo Lo buzzer	■ *0*	Off		
		1	On		
	bEP LL LL buzzer	■ *0*	Off	Displayed only when 5-stage comparison (*CP-t* *1*) is selected.	
		1	On		
dout Data output				(Refer to instruction manual of main unit)	
S1F Serial interface					
USb USB interface					
Aout Analog output	*An* Analog output mode	■ *0*	2-digit output mode	Displayed only when the GXM-06 is connected.	
		1	3-digit output mode		
		2	Net full scale output mode		
		3	Gross full scale output mode		
	SEL Output digit selection	■ *0*	First digit	Displayed only when the GXM-06 is connected.	
		1	Second digit		
		2	Third digit		
		3	4th digit		
		4	5th digit		
		5	6th digit		
		6	7th digit		
AP Fnc Application				(Refer to instruction manual of main unit)	
MW Fnc Alarm function for minimum weighing value					
Un1t Unit					
dS Fnc Density function					
1d ID number					
PASSwd Password lock					
Auto CAL ※ Automatic calibration					
CS 1n ※ Internal mass value correction				(Refer to instruction manual of main unit)	

■ indicates factory settings. ※ : Settings for GX-A series.

6. GXM‑04   Comparator Output

The comparator output (GXM‑04) has the function to compare between the weighing value and preset second upper limit, upper limit, lower limit or second lower limit. The result of comparison can be output to the contact. When the contact is shorted, this option can select whether or not to sound the buzzer.

■ Optional foot switch (AX‑SW137‑PRINT, AX‑SW137‑RE‑ZERO) or other external switches can be used.

6.1.   Specifications of comparator Output

Maximum contact voltage: 50 V DC
Maximum contact current: 100 mA DC
Maximum contact resistance: 20 Ω
Output connector   Compatible plug :   8 pin mini DIN connector [Female] (Accessory)
E8‑200J‑100 or equivalent

External contact input connector   Compatible plug :   φ3.5 mm 3 pole mini stereo
jack

MP‑013LC or equivalent parts

Panel External View

Comparator output circuit

External contact input circuit

Pin assignments and wire colors of accessory cable

Pin No.	Description		Wire color
1	READY	Output	Red
2	LL	Output	White
3	LO	Output	Black
4	N.C.	No connection	Yellow
5	OK	Output	Blue
6	HI	Output	Green
7	HH	Output	Brown
8	COM		Gray
Housing	Case		Shield

Pin No.	Description	
1	GND	
2	RE-ZERO	External contact input
3	PRINT	External contact input

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Optional foot switch can connect to either input.

Balance (DCE) Inside the balance	Straight cable	PC side (DTE) PC terminal example
RXD 2	▶	RXD
TXD 3	◀	TXD
RTS 7	◀	RTS
About 5V CTS 8	▶	CTS
DSR 6	▶	DSR
SG 5		SG
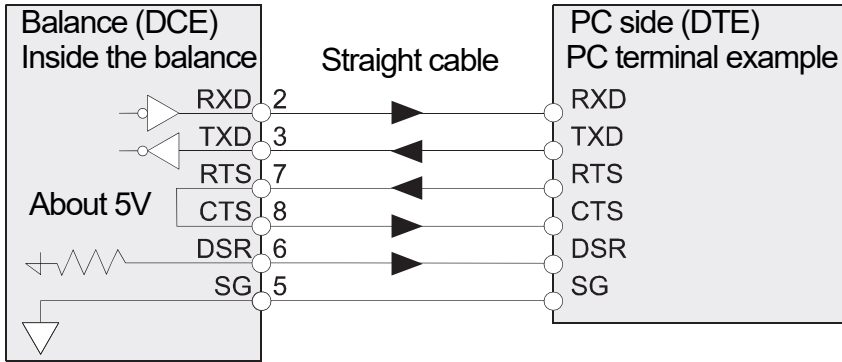
Using External Contact Input

When 1 pin and 3 pin or 1 pin and 2 pin of lead wire of optional foot switch (AX‒SW137‒PRINT, AX‒SW137‒RE-ZERO) is shorted 100 ms or longer, it can be operated the same as the ⌷ PRINT ⌷ key and ⌷ RE-ZERO ⌷ key on the panel.

6.2. Using the Comparator Output

This option can output results of the 3-stage comparison or 5-stage comparison that is specified at "Comparison method ($CP\text{-}t$)" in the function table of the balance. Comparison results are displayed using HI , OK , LO and are output using contacts of I/O terminals. Comparison tolerance ranges are the following 3 types and they can be specified at "Comparator mode (CP)" in the function table.

"No comparison",   "Comparison when stable value or overloaded", or   "Comparison always" The range of near zero can is specified at "Near zero ($CP\text{-}7$)" in the function table. There are two types of comparison method. One is the method using second upper limit, upper limit, lower limit and second lower limit. Another is the method using center value and tolerance range. There two types of input methods for second upper limit, upper limit, lower limit and second lower limit. One is the numerical input. Another is the input using sample weight. Balance can sound a buzzer according to the comparison result. That can be specified at "Comparator buzzer ($CP\ bEEP$)" in the function table.

When weighing value is not displayed in performing RE-ZERO, etc., READY contact becomes "open". When weighing value is displayed, READY contact becomes "short".

3-stage comparison result   3-stage comparison – display, contact output

Weighing value

Threshold value   Formula

	Result	Display		Contact output HI	OK	LO	Buzzer
UL < WV	HI	HI	illuminated	Short		Open	bEP Hi
LL ≦ WV ≦ UL	OK	OK	illuminated		Short		bEP oK
WV < LL	LO	LO	illuminated	Open		Short	bEP Lo

Weighing value: WV,   Upper limit: UL,   Lower limit: LL

5-stage comparison result   5-stage comparison – display, contact output

Weighing value

Threshold value   Formula

	Result	Display		Contact output HH	HI	OK	LO	LL	Buzzer
SUL < WV	HH	HI	blinking	Short					bEP HH
UL < WV ≦ SUL	HI	HI	illuminated		Short		Open		bEP Hi
LL ≦ WV ≦ UL	OK	OK	illuminated			Short			bEP oK
SLL ≦ WV < LL	LO	LO	illuminated		Open		Short		bEP Lo
WV < SLL	LL	LO	blinking					Short	bEP LL

Weighing value: WV, Second upper limit: SUL, Upper limit: UL, Lower limit: LL, Second lower limit: SLL

6.3. Comparison Method Selection (Tolerance Range and Center Value or Threshold Values)

Setting Example

Comparison always .... `[P` `2`
5-stage comparison ·· `[P-t` `1`
Comparison excluding ±5 digits (counts) from zero .... `[P-Z` `1`
Comparison of both polarities .... `[P-P` `2` Factory setting
Center value using numerical input .... `[P in` `2` or
Center value using sample weight .... `[P in` `3`

Procedure

Step 1 Press and hold the ⎡SAMPLE⎤ key to enter the function table.
`bASFnc` is displayed.

Step 2 Press the ⎡SAMPLE⎤ key to display `[P Fnc` (Comparator).

Step 3 Press the ⎡PRINT⎤ key to enter `[P Fnc` (Comparator).

Step 4 Press the ⎡RE-ZERO⎤ key several times to display `[P` `2`
(Comparison always).

Step 5 Press the ⎡SAMPLE⎤ key to display `[P-t` (Comparison method).

Step 6 Press the ⎡RE-ZERO⎤ key to display `[P-t` `1` (5-stage comparison).

Step 7 Press the ⎡SAMPLE⎤ key to display `[P-Z` (Near zero).

Step 8 Press the ⎡RE-ZERO⎤ key several times to display `[P-Z` `1`
(Comparison excluding ±5 digits (counts) from zero).

Step 9 Press the ⎡SAMPLE⎤ key several times to display `[P in` (Input method).

Step 10 Press the ⎡RE-ZERO⎤ key several times to select input method.
`[P in` `2` (Center value using numerical input) or,
`[P in` `3` (Center value using sample weight)

Step 11 Press the ⎡PRINT⎤ key to store new settings and use them.

`bASFnc`

`[P Fnc`

`[P²       ALL`

`[P¹-t 5  LV`

`[P¹-Z EX  5d`

`[P² in rEF IIG`

or

`[P³ in rEF WT`

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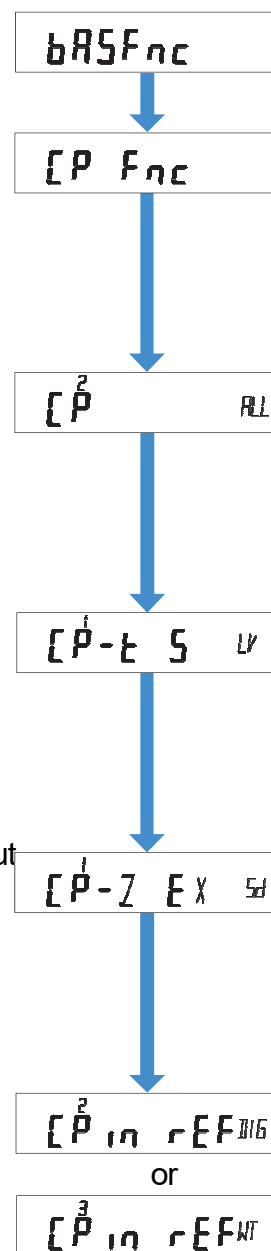
6.4. Setting Threshold Values

This explanation uses $CP\text{-}t$ 1 (5-stage comparison) and specifies $CP\ in$ 0 (Threshold value using numerical input) or $CP\ in$ 1 (Threshold value using sample weight) to $CP\ in$ (input method) in the function table and inputs the threshold value.

Selecting a input method　　　　　　　　　　　(If $CP\ in$ 0 or 1)

Step 1　Press and hold the SAMPLE key to enter the function table. $bASFnc$ is displayed.

Step 2　Press the SAMPLE key several times to display $CP\ VALUE$ (Comparator threshold value).

Step 3　Press the PRINT key to enter $CP\ VALUE$ (Comparator threshold value).

Step 4　Press the SAMPLE key several times to input threshold value. Refer to the following "Threshold value using numerical input" or "Threshold value using sample weight".

Step 5　If the PRINT key is pressed when threshold value is displayed, the current parameters are displayed (all digits blinks).

Numerical input of threshold values　　　　　　　(If $CP\ in$ 0)

Step 6　If changing the parameters, press the RE-ZERO key to store the following keys.

SAMPLE key	Moves blinking digit.
RE-ZERO key	Changes value of blinking digit.
MODE key	Changes polarity.
PRINT key	Stores and proceeds to step 7.
CAL key	Cancels and proceeds to step 7.

If the current parameters will be maintained, press the PRINT or CAL key to proceed to step 7.

Step 7　Repeat step 4, 5 and 6 for other threshold values.

Storing threshold values using sample weight　　(If $CP\ in$ 1)

Step 8　Press the RE-ZERO key to display 0.00 g .
　　　　Put the sample on the weighing pan and press the PRINT key to store weighing value as the threshold value.

RE-ZERO key	Resets display of the balance to zero.
PRINT key	Stores weighing value and proceeds to step 9.

Step 9　Repeat step 4, 5 and 6 for other threshold values.

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Storing threshold values using RS-232C commands from peripherals

\#   The second upper limit, upper limit, lower limit and second lower limit can be specified using RS-232C commands from peripherals.

Example command   HH: +1000.000 ⌴ ⌴g   second upper limit

                                        HI: +0800.000 ⌴ ⌴g   upper limit

                                          LO: +0600.000 ⌴ ⌴g   lower limit

                                          LL: +0400.000 ⌴ ⌴g   second lower limit

                                                        ⌴ : space of ASCII code 20 h

6.5.   Setting Center Value and Tolerance Range

This explanation uses `[P-t` `1` (5-stage comparison), specifies `[P in` `2` (Center value using numerical input) or `[P in` `3` (Center value using sample weight input) to `[P in` (input method) in the function table, and compares using the center value and numerical input of tolerance range.

Selecting a input method   (If `[P in` `2` or `3`)

Step 1   Press and hold the |SAMPLE| key to enter the function table. `bASFnc` is displayed.

Step 2   Press the |SAMPLE| key several times to display `[P VALUE` (comparator threshold value).

Step 3   Press the |PRINT| key to display `[P VALUE` (comparator threshold value).

Step 4   Press the |SAMPLE| key several times to display "**Center value using numerical input**" or "**Center value using sample weight**". Specify the center value, tolerance range and second tolerance range.

Numerical input of center value   (If `[P in` `2`)

Step 5   Press the |PRINT| key while displaying `[P rEF`. The current parameter is displayed (all digits blinking). If parameter does not need to be changed, press the |PRINT| key or |CAL| key and proceed to step 6. If the parameter is to be changed, press the |RE-ZERO| key and change it using the following keys.

|SAMPLE| key   Moves blinking digit.
|RE-ZERO| key   Changes value of blinking digit.
|MODE| key   Changes polarity.
|PRINT| key   Stores and proceeds to step 6.
|CAL| key   Cancels and proceeds to step 6.

Step 6   Proceed to "**Storing tolerance range from center value using numerical input**".

Storing center value using sample weight   (If `[P in` `3`)

Step 7   Press the |PRINT| key while displaying `[P rEF`. The current parameter is displayed (all digits blinks). Press the |RE-ZERO| key to enter to the sample weight input mode. Press the |RE-ZERO| key to display |0.00 g|. Put sample of center value on the pan and press the |PRINT| key. The current parameter can be confirmed (all digits blinking). Press the |PRINT| key to store the center value.

Step 8   Next, `[P LMt` is displayed.

Step 9   Proceed to "**Storing tolerance range from center value using numerical input**".

Storing tolerance range from center value using numerical input

Step 10　Press the ⌊PRINT⌋ key while displaying ⌊CP LMt⌋. The current parameter is displayed.

If the tolerance range is to be changed, change it using the following keys.

Input the tolerance range with center value assumed to be 100%.

⌊SAMPLE⌋ key	Moves blinking digit.
⌊RE-ZERO⌋ key	Changes value of blinking digit.
⌊PRINT⌋ key	Stores and proceeds to step 11.
⌊CAL⌋ key	Cancels and proceeds to step 11.

Step 11　Press the ⌊PRINT⌋ key while displaying ⌊CP $LMt2$⌋. The current parameter is displayed.

If the second tolerance range is to be changed, change it using the following keys.

Input the second tolerance range with center value assumed to be 100%.

⌊SAMPLE⌋ key	Moves blinking digit.
⌊RE-ZERO⌋ key	Changes value of blinking digit.
⌊PRINT⌋ key	Stores and proceeds to step 12.
⌊CAL⌋ key	Cancels and proceeds to step 12.

Step 12　Press the ⌊CAL⌋ key to return to weighing mode.GXM-06 Analog Voltage Output

The analog voltage output (GXM-04) can convert the specified weighing value to analog voltage between 0 and 1 V and output it.
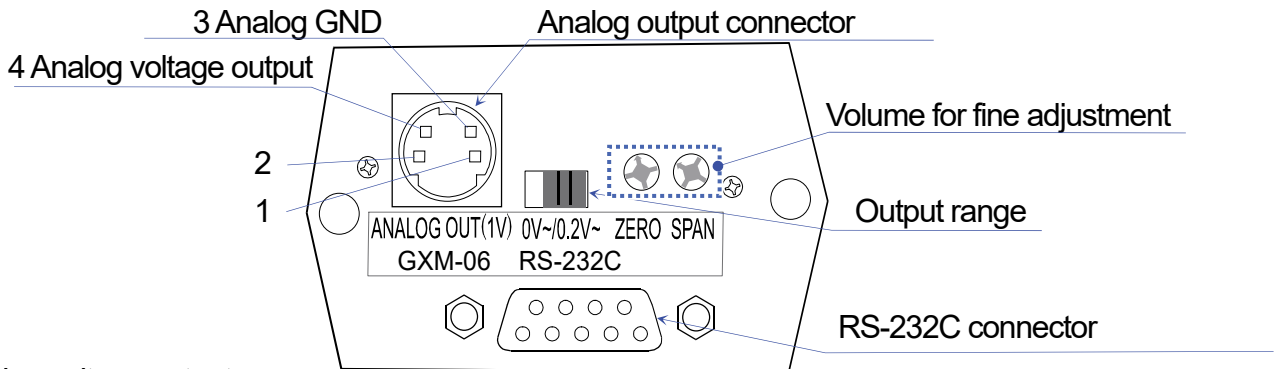
7. GXM-06 Analog Voltage Output

The analog voltage output (GXM-06) can convert the specified weighing value to analog voltage between 0 and 1 V and output it.

## 7.1. Specifications of Analog Voltage Output

Analog Voltage Output

|		
Output impedance	100 Ω or less	
Linearity	±0.3% or less	
Output connector	Compatible plug:	4 pin mini DIN connector [Female] (Accessory)
		E4-200J-100 or equivalent
Pin connections	Output	4 pin
	GND	3 pin
Output range	0 V to 1 V	With the slide switch set to "0V～"
	0.2 V to 1 V	With the slide switch set to "0.2V～"
Input impedance of	10 kΩ or greater	
the device connected		

Panel External View

Analog voltage output

Output circuit
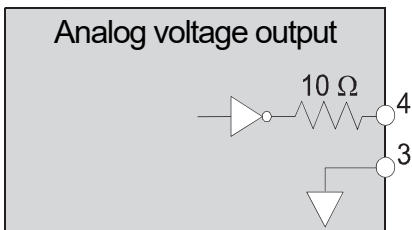
Pin assignments and wire colors of accessory cable

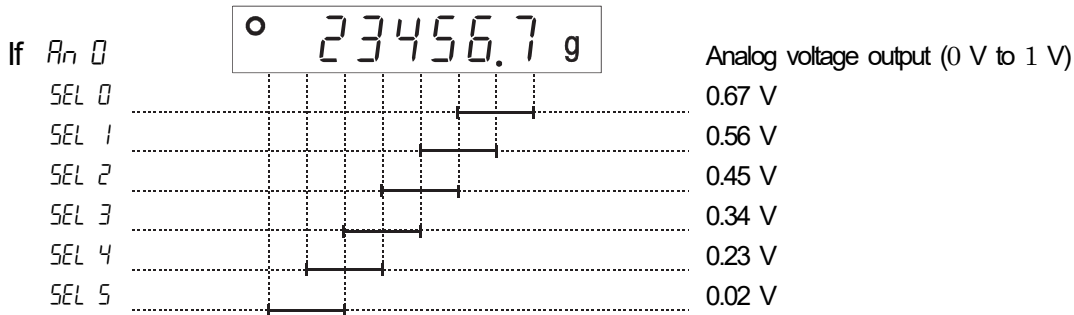| Pin No.	Description		Wire color
1	N.C.	No connection	Black
2	N.C.	No connection	Blue
3	Analog GND	(0V)	Red
4	Analog voltage output		White
Housing	Case		Shield
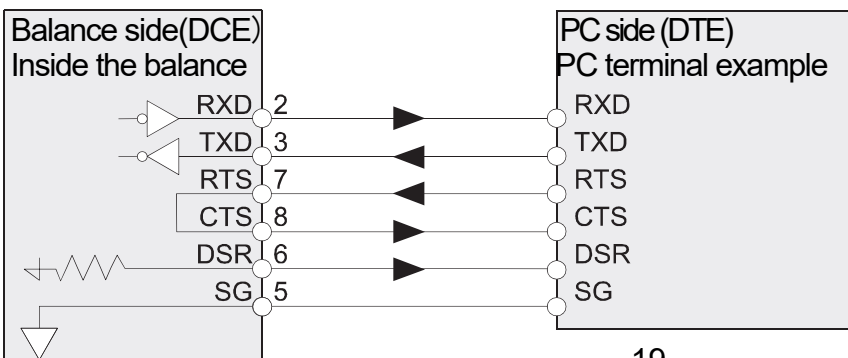
$Rout$ of the function table can be selected when this option is connected.

$Rout$ **Analog output**

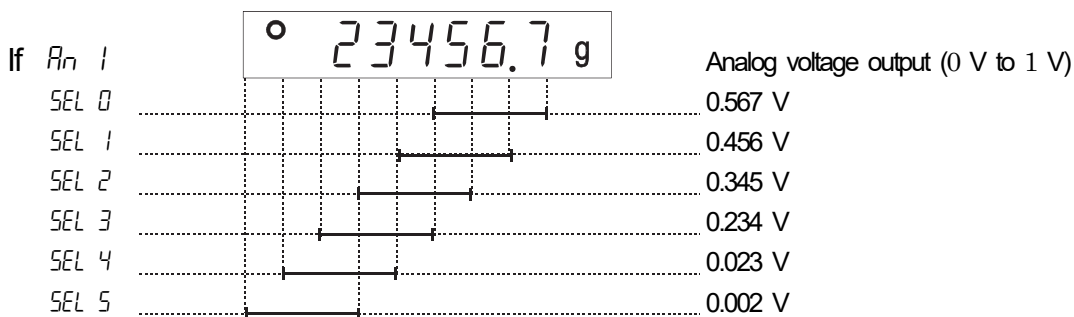| Item	Parameter	Description
Rn Analog output mode	∎0	2-digit output mode Converts 2 consecutive digits with minimum digit selected by SEL to voltage.
	1	3-digit output mode Converts 3 consecutive digits with minimum digit selected by SEL to voltage.
	2	Net full scale output mode Outputs 0.000 V when the net weight is zero. Outputs 1.000 V when the net weight is full scale. Output is 0.000 V when zero is set using the RE-ZERO key.
	3	Gross full scale output mode Outputs 0.000 V when the gross weight is zero. Outputs 1.000 V when the gross weight is full scale. Tare operation using the RE-ZERO key will not affect the output. (Note: If tare is extremely light, tare operation might change the zero point. Thus affecting the output.)
SEL Output digit selection		Specify minimum digit to be output at Rn mode. When Rn is set to 0 or 1, the setting is in effect.
	∎0	Specify first digit as minimum digits.
	1	Specify second digit as minimum digits.
	2	Specify third digit as minimum digits.
	3	Specify 4th digit as minimum digits.
	4	Specify 5th digit as minimum digits.
	5	Specify 6th digit as minimum digits.
	6	Specify 7th digit as minimum digits.

∎ indicates factory settings.

Example

If *An 0*

Display:	○ 23456.7 g	Analog voltage output (0 V to 1 V)
SEL 0		0.67 V
SEL 1		0.56 V
SEL 2		0.45 V
SEL 3		0.34 V
SEL 4		0.23 V
SEL 5		0.02 V

Caution The hidden high-order digits are regarded as zero.

The hidden least significant digit is regarded as zero (when the least significant digit is hidden using the SAMPLE key).

If *An 1*

Display:	○ 23456.7 g	Analog voltage output (0 V to 1 V)
SEL 0		0.567 V
SEL 1		0.456 V
SEL 2		0.345 V
SEL 3		0.234 V
SEL 4		0.023 V
SEL 5		0.002 V

If *An 2* or *An 3*

Model				Full scale
GX-8202M	GX-8202MD	GF-8202M	GF-8202MD	8 kg
GX-10202M		GF-10202M		10 kg
GX-12001M		GF-12001M		12 kg
GX-22001M		GF-22001M		22 kg
GX-32001M	GX-32001MD	GF-32001M	GF-32001MD	32 kg

Example When the GX-10202M displays 1 kg, the voltage output of *An 2* is 0.1 V.
(Using "0V～" of the slide switch)

$$1.000V \times \frac{1 \, kg}{10 \, kg} = 0.100V$$

Caution "Full scale" of the full scale output mode indicates the full scale values shown in the tables above. The output voltage may exceed 1.000 V, depending on the weighing value.

Example When the GX-10202M displays 10.2 kg, the voltage output is 1.02 V.
(Using "0V～" of the slide switch)

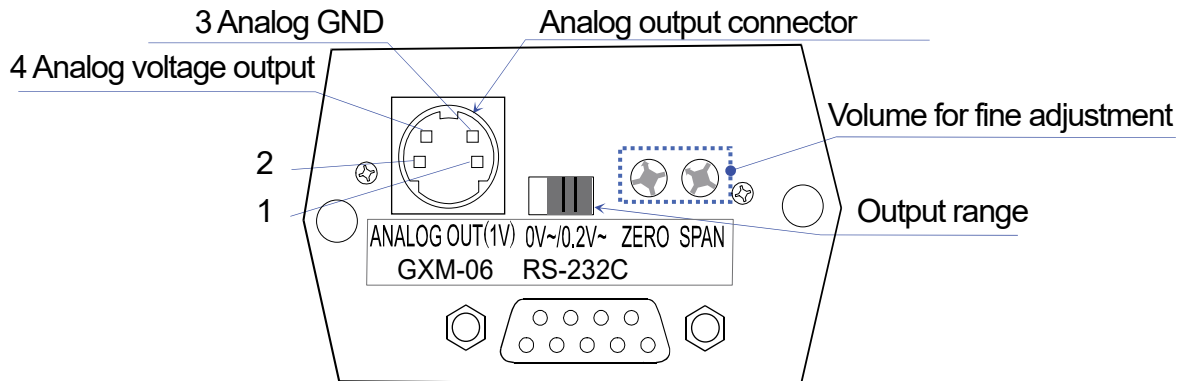$$1.000V \times \frac{10.2 \, kg}{10 \, kg} = 1.02V$$

7.3. Voltage Output Selection

The range of output voltage can be change using the slide switch on the panel.
Factory settings is "0V 〜".

- "0V〜"   (0 to 1 V)   : Zero 0.000 V,   full scale 1.000 V
- "0.2V〜" (0.2 to 1 V) : Zero 0.200 V,   full scale 1.000 V

Panel External View

3 Analog GND
Analog output connector
4 Analog voltage output
Volume for fine adjustment
2
1
Output range
ANALOG OUT(1V) 0V~/0.2V~ ZERO SPAN
GXM-06   RS-232C

7.4. Voltage Output Fine Adjustment

The voltage output has been adjusted at the factory before shipment.
Using the ZERO volume and SPAN for fine adjustment and a voltmeter, voltage output can be finely adjusted.
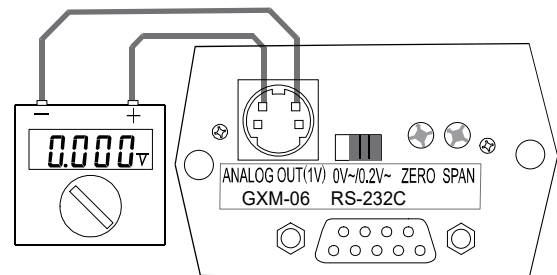
Procedure

Step 1 Turn off the display using the ON:OFF key.
Voltage output becomes zero point status.
Adjust the ZERO volume so that the voltmeter indicates
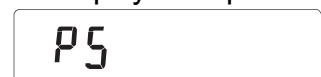0.000 V (when the slide switch is set to "0V〜").
Adjust the ZERO volume so that the voltmeter indicates
0.200 V (when the slide switch is set to "0.2V〜").

The display to output 0 V (0.2 V).

Step 2 While pressing and holding the PRINT and
 SAMPLE keys, press the ON:OFF key to enter the
initializing mode. Then 1 V is output. Adjust the SPAN
volume so that the voltmeter indicates 1.000 V

The display to output 1 V.

PS

Step 3 Repeat step 1 and step 2 until the correct voltage output is
obtained.

7.5.　Fixed Voltage Output

The voltage output is fixed under the following conditions:

Step 1　With the display off, 0 V is output (or 0.2 V if the slide switch is set to "0.2V～") when not weighing during calibration, etc.

Step 2　During the re-zeroing operation in gross full scale output mode ($\boxed{Rn}$ $\boxed{3}$), the previous output value is retained.
During the re-zeroing operation in 2-digit output mode ($\boxed{Rn}$ $\boxed{0}$), 0 V is output (or 0.2 V if the slide switch is set to "0.2V～").
During the re-zeroing operation in 3-digit output mode ($\boxed{Rn}$ $\boxed{1}$), 0 V is output (or 0.2 V if the slide switch is set to "0.2V～").

Step 3　When $\boxed{-E}$ (weighing value is negative overload) is displayed,
0 V is output (or 0.2 V if the slide switch is set to "0.2V～").

Step4　When $\boxed{E}$ (weighing value is positive overload) is displayed,
the following voltages are output.

Example　Voltage output when $\boxed{E}$ is displayed if the slide switch is set to "0V～".

Model	$\boxed{Rn}\boxed{0}$、 $\boxed{Rn}\boxed{1}$	$\boxed{Rn}\boxed{2}$、 $\boxed{Rn}\boxed{3}$
GX-8202M　　GX-8202MD　　GF-8202M　　GF-8202MD	1.000 V	1.025 V
GX-10202M　　　　　　　GF-10202M	1.000 V	1.02 V
GX-12001M　　　　　　　GF-12001M	1.000 V	1.017 V
GX-22001M　　　　　　　GF-22001M	1.000 V	1.009 V
GX-32001M　　GX-32001MD　　GF-32001M　　GF-32001MD	1.000 V	1.006 V

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