NEW
MW-II SERIES

Micro Weighing Scale

www.globalcas.com

OWNER'S MANUAL

CAS

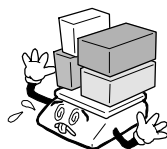# CONTENTS

PRECAUTIONS

⚠ Warning

Precautions when installing the scale. To ensure that you get the most from your scale, please follow these instruction.

Do not disassemble the scale.	**Do not overload beyond the maximum weight limit.**	**Scale must be grounded to minimize electricity static.**
When any damage or defect occurs, contact your CAS authorized dealer immediately for proper repair.		This will minimize defect or electric shock.

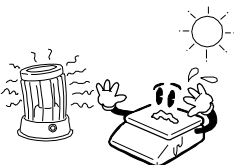| **Do not pull the plug by its cord when unplugging.**	**To prevent from fire occurring, Do not place or use the scale near flammable or corrosive gas.**	**To reduce electric shock or incorrect reading, Do not spill water on the scale or place it in humid condition.**
Damaged cord could cause electric shock or fire.		
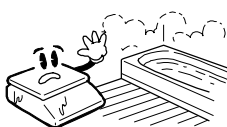
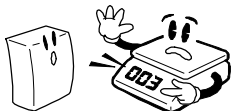| **Avoid placing the scale near heater or in direct sunlight.**	**Insert plug firmly to wall outlet to prevent electric shock.**	**Use proper Adapter.**
		Incorrect adapter could damage the scale.
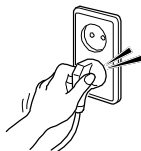
PRECAUTIONS

⚠ Attention

Make sure to plug your scal into the proper power outlet. For maximum performance, plug into a power outlet 30 minutes before the usage for warm up.

For consistent and accurate reading, maintain periodical check by your CAS authorized dealer.	Avoid sudden shock to the scale.	Grab on the bottom of the scale when moving.

Keep the scale away from other electromagnetic enerating devices.	Place the scale on firm and temperature consistent environment.	By adjusting 4 corners of the scale, set the scale even using the built in scale leveling indicator.

This may interfere with accurate reading.

Take the battery out when scale is not in use for long time. Leakage from the batteries is hazardous.

PREFACE

Thank you for the purchasing of our CAS MW-II Series.
These series has been designed with CAS reliability, under rigid quality control and with outstanding performances. Your departments can enjoy with this high quality reliable CAS product.
We believe that your needs will be satisfied and you will have reliability with in variable weight.
This manual will help you with proper operations and care of the MW-II series.
Please keep it handy for the future references.

NAMES AND FUNCTIONS

OVERALL VIEW

DISPLAY

CAS
Micro Weighing Scale MW-II
ZERO NET HOLD ✳ ▭▷ LO OK HI % oz pcs
8.8.8.8.8.8 dwt mom
kg lb ct SN

Max 600g Min 0.2g e=d= 0.01g ◑

KEYBOARD

▸0◂ | ▸T◂ | SET | MODE | PRINT | ⏻
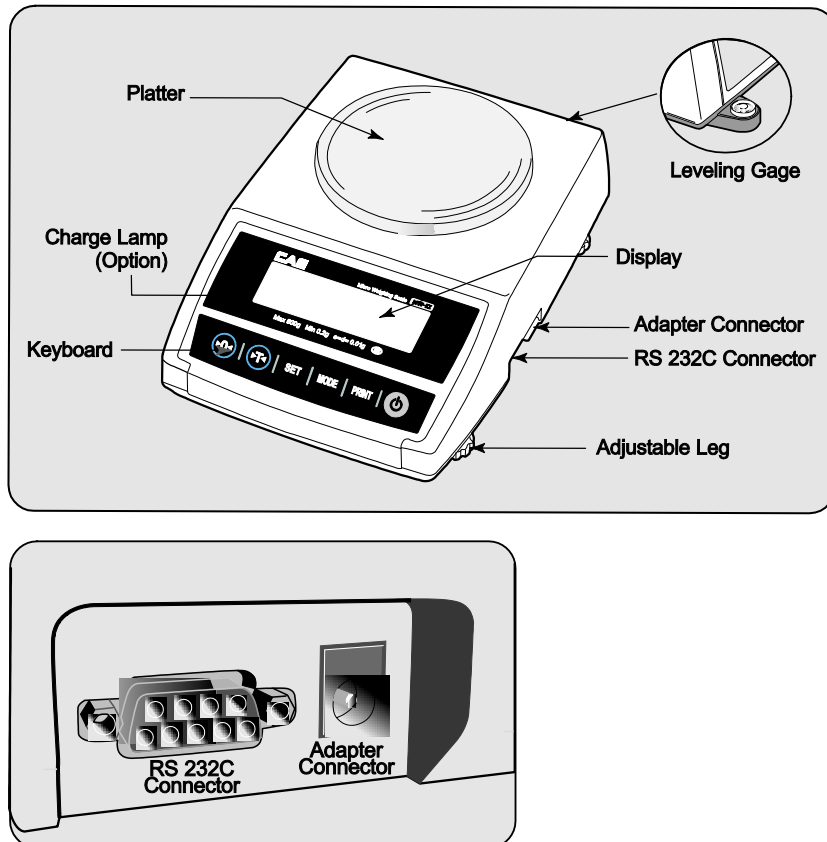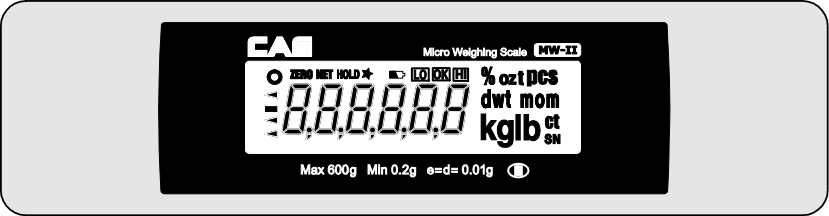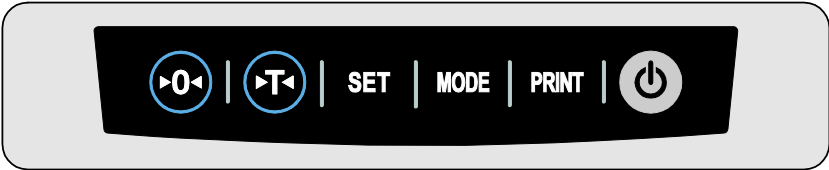
■ KEY FUNCTIONS

KEYS	FUNCTIONS
▸0◂	Used to set the zero point to 0. 00.
▸T◂	Used to enter a tare weight and used to cancel a tare weight.
SET	Used to enter the weight of sample in PCS and % mode.
MODE	Used to convert the mode as below. g-ct-oz-lb-tl-dwt-mom-GN-ozt-PCS-Percent(%) weighing mode.
PRINT	Used to print out.
⏻	Used to turn ON or OFF (When backlight off the scale, press the key for a moment.)

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POWER

Fig. 1

Use only DC 9V/300mA adaptor.
Insert the adaptor jack into the outlet
and turn on the scale.

OPERATIONS

■ When you turn on the display, make sure that the platter is empty.
Otherwise, the display will show the **"OL-H"**. In this case, make the platter
empty then the scale goes to the zero state.

■ The display indicates if the scale is at zero or if there is a tare entered into the
scale by way of a **ZERO** and **NET**.

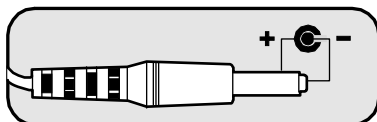■ When the weight of commodity is stable, the display will show the
(STABLE) lamp.

■ When the display is not zero though there is nothing on the platter, press the
ZERO key.

■ If you want to turn on or off back light, press the **ON/OFF** key for a moment.
It toggles between on and off.

■ When you have the low battery, the display shows **"LowbAt"** 5times and
"PwrOFF" and then power is turned off.

General Weighing

① The first weight unit is gram.
To use unit (ct). press the MODE key until
the display shows ct.

② Place a sample on the platter.

③ If you want to print this weight, press the PRINT key.

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■ Sample Print Format

```
2000/10/13
   13:24:52 w : 100.00 g
   13:34:52 w : 99.99 g
              .
              .
              .
   13:45:23 w : 100.00 g

2000/10/13
   13:24:47 w : 100.00 g
   13:34:54 w : 99.99 g
```

- Date is automatically printed after printing 10 items.

- If the mode is changed, date is printed automatically.

- W means that weight is stable and w means that weight is not stable.

■ Switching units

Display	Weight Unit	Conversion to Gram
g	gram	1
ct	metric carat	5
oz	ounce	0.035273961
ozt	troy ounce	0.032150746
lb	pound	0.002204622
tl	tael	0.026455446(Hongkong Tael)
		0.026666666(Taiwan Tael)
		0.026459926(Singapore Tael)
dwt	penny weight	0.643014931
mom	momme	0.266666666
GN	grain	15.43235835
PCS	Counting	
%	Percent weighing	

Whenever you press the MODE key, units will be changed as below. If you want to remove some units, change this setting in setup menu under Unit. See page 15.

g ⇒ ct ⇒ oz ⇒ lb ⇒ tl ⇒ dwt ⇒ mom ⇒ GN ⇒ ozt ⇒ PCS ⇒ Percent weighing.
※ There are four kinds of tael as above. But you can use one of three.

Weighing with Tare

■ Tare is the weight of container being used for a commodity.

■ The TARE key subtracts the weight of the container.

○ 17.30 g	① Place the container on the platter.
○ ZERO NET 0.00 g	② Press the TARE key, then you will see the NET on the display.
○ NET 5.30 g	③ Place a sample on the container then you will see the net weight of the commodity.
○ NET − 17.30 g	④ Remove the commodity and container, then you will see the negative weight.
○ ZERO 0.00 g	⑤ If you return weight mode, Press the TARE key.
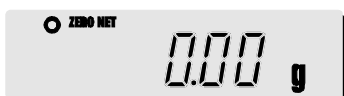
Counting Mode

■ Before counting samples, you have to set the sample size.

1) How to set the sample size

○ ZERO PUt 10 pcs	① To go to counting mode, press the MODE key until the display shows pcs.
○ PUt 20 pcs	

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`PUt 50` pcs

`PUt 100` pcs

`PUt 200` pcs

`10` pcs

`20` pcs

`50` pcs

`100` pcs

`200` pcs
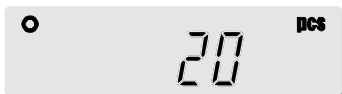
② To change sample size, press the PRINT key until the display shows "PUt 20", "PUt 50", "PUt100" or "PUt200".

③ Place 10 samples on the platter and press the SET key, when the display shows "Put 10". If the display shows "10", you can count samples from now. If the sample weight is lower than 0.005g, the display shows "LAck".(MW-II 200,300)

In case of "PUt 20", place 20 samples on the platter and press the SET key.

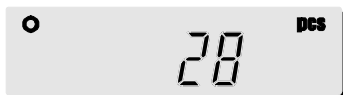In case of "PUt 50", place 50 samples on the platter and press the SET key.

In case of "PUt100", place 100 samples on the platter and press the SET key.

In case of "PUt200", place 200 samples on the platter and press the SET key.

■ Minimum Weight of a Sample

	Counting (pcs) Mode
MW-II 300	1.00g
MW-II 600	1.00g
MW--II 3000	10.0g
MW-II 6000	10.0g

2) Counting samples

If you have set the sample size, place another samples to count on the platter then the display shows the number of samples.
To exit this counting mode, press the MODE key.

▶ Note that you can use tare function and zero adjustment in counting mode.

% Mode

■ The weight is displayed as a percentage of the reference.

① To go to % mode, press the MODE key until the display shows %.

② Place a reference sample on the platter then press the SET key. The reference sample is set to 100%. Remove the sample from the platter.

③ Place sample on the platter, then the weight is displayed as a percentage of the reference.

④ Place sample on the platter, then the weight is displayed as a percentage of the reference.

⑤ Place sample on the platter, then the weight is displayed as a percentage of the reference.

■ Minimum Weight of a Sample

	Percent (%) Mode
MW-II 300	5.00g
MW-II 600	5.00g
MW--II 3000	50.0g
MW-II 6000	50.0g

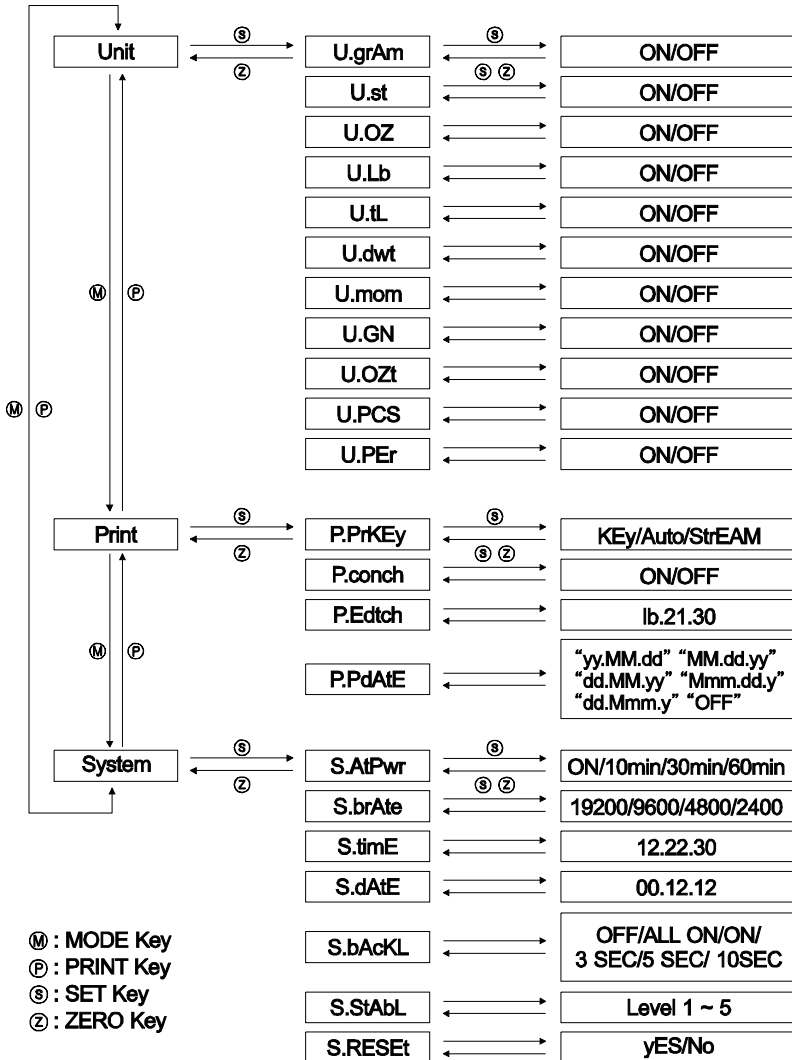▶ NOTE : Sample weight should be bigger than minimum sample weight.

Setup Mode

To go to setup mode, press the SET key for 3 seconds. In this mode, you can set the scale for your specific applications.

MENU	SUB MENU	OPTION	DESCRIPTION
Unit	U.grAm	ON/OFF	ON: You can use this unit or function on weighing mode.
	U.ct	ON/OFF	
	U.OZ	ON/OFF	
	U.Lb	ON/OFF	OFF: You can't use this unit or function on weighing mode.
	U.tL	ON/OFF	
	U.dwt	ON/OFF	
	U.mom	ON/OFF	※ There are three kinds of tael as follows. But you can see one of three.
	U.GN	ON/OFF	
	U.OZt	ON/OFF	U.tLH:Hongkong tael
	U.PCS	ON/OFF	U.tLt:Taiwan tael
	U.PEr	ON/OFF	U.tLS:Sigapore tael
Print	P.PrKEy	KEY/Auto/StrEAM	KEY : Printing is performed by pressing the PRINT key. AUTO : Printing is performed automatically, when the weight is stable. StrEAM : Printing is performed continually, when the weight is stable
	P.conch	ON/OFF	Print printer control message
	P.Edtch	1b.21.30	Set the print control code
	P.PdAtE	"yy.MM.dd" "MM.dd.yy" "dd.MM.yy" "Mmm.dd.y" "dd.Mmm.y" "OFF"	Set the print format of date
SyStEM	S.AtPwr	ON/10/30/60min	Set Auto Power off function
	S.brAtE	19200/9600/4800/2400	Select Baud Rate
	S.timE	00.00.00	Enter time
	S.dAtE	00.01.01	Enter date
	S.bAcKL	OFF/ALL ON/ON 3 SEC/5 SEC/10 SEC	Select back light function
	S.StAbl	Lebel 1 ~ 5	Set stability level
	S.rESEt	yES/No	Change to default settings. (Reset)

Table 1.

■ Bold character is the default on OPTION field.
■ To go to previous menu without saving, press the ZERO key.
■ To save settings, press the SET key.

U.OZt

MW-II (Setup Mode)

Unit	ⓈⓏ	U.grAm	Ⓢ ON/OFF
		U.st	Ⓢ Ⓩ ON/OFF
		U.OZ	ON/OFF
		U.Lb	ON/OFF
		U.tL	ON/OFF
		U.dwt	ON/OFF
Ⓜ Ⓟ		U.mom	ON/OFF
		U.GN	ON/OFF
		U.OZt	ON/OFF
		U.PCS	ON/OFF
		U.PEr	ON/OFF

Ⓜ Ⓟ

Print	ⓈⓏ	P.PrKEy	Ⓢ KEy/Auto/StrEAM
		P.conch	Ⓢ Ⓩ ON/OFF
		P.Edtch	lb.21.30
Ⓜ Ⓟ		P.PdAtE	"yy.MM.dd" "MM.dd.yy" "dd.MM.yy" "Mmm.dd.y" "dd.Mmm.y" "OFF"

System	ⓈⓏ	S.AtPwr	Ⓢ ON/10min/30min/60min
		S.brAte	Ⓢ Ⓩ 19200/9600/4800/2400
		S.timE	12.22.30
		S.dAtE	00.12.12
		S.bAcKL	OFF/ALL ON/ON/ 3 SEC/5 SEC/ 10SEC
		S.StAbL	Level 1 ~ 5
		S.RESEt	yES/No

Ⓜ : MODE Key
Ⓟ : PRINT Key
Ⓢ : SET Key
Ⓩ : ZERO Key

■ UNIT

$$Unit$$

① Press the SET key for 3 seconds. you will see the unit menu.

$$U.grAm$$

② Press the SET key, you can set unit gram.

$$On$$

③ Press the SET key, you will see the default.
- On : You can use gram unit on weighing mode.
- Off : You can not use gram unit on weighing mode.

$$OFF$$

④ To change this option, press the MODE key.

$$U.grAm$$

⑤ Press the SET key to save.
If you do not want to save, press the ZERO key.

⑥ Press the MODE key, you will see next unit. (Refer to table on page 17.)

⑦ Repeat step ② ~ ⑥ .

■ PRINT

1) "P.PrKEy"

$$Unit$$

① Press the SET key for 3 seconds. you will see the unit menu.

$$Print$$

② Press the MODE key to go to PRINT menu.

$P.PrtEY$

③ Press the SET key.

tEY

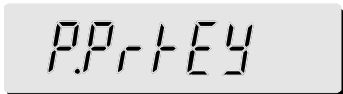④ Press the SET key, you will see the default.

$Auto$

⑤ Press the MODE key to change this option.
- KEY : Printing is performed by pressing the PRINT key.
- AUTO : Printing is performed automatically when the weight or the unit is changed and the display is stable..
- StrEAM : Printing is performed continually

$P.PrtEY$

$StrEAm$

⑥ Press the SET key to save.
If you do not want to save, press the ZERO key.

2) "P.conch"

① Press the MODE key, you will see "P .conch" menu on the display.
② Press the SET key, you will see the default.
③ Press the MODE key to change ON or OFF.
▶ ON : Character style is controlled by specific print code.
    If you change the setting, you have to turn OFF and ON the printer.
④ Press the SET key to save.
    If you do not want to save, press the ZERO key.

3) "P .Edtch"

① Press the MODE key, you will see "P .Edtch" menu on the display.
② Press the SET key.
③ "1b.21.10" is displayed. See table on 19 page. (print control code)
④ Press the MODE key to go to the right side.
⑤ Press the SET key to go to the right side.
   (To go to the left side, press the TARE key.)
⑥ Repeat step ④ ~ ⑤ steps to set the code you want.
⑦ Press the SET key to save.

    If you do not want to save, press the ZERO key.

■ Print Control Code

Letter Style	Code
Enlarged width + Double print	1b.21.30
Bold	1b.21.08
Double print	1b.21.10
Enlarged width	1b.21.20
Underline	1b.21.80

4) "P .PdAtE"

① Press the MODE key, you will see "P .PdAtE" menu on the display.
② Press the SET key.
③ Press the MODE key until the display shows date format you want.
   "yy.MM.dd" : 2001/06/19(Default)
   "MM.dd.yy" : 06/19/2001
   "dd.MM.yy" : 19/06/2001
   "Mmm.dd.y" : Jun/19/2001
   "dd.Mmm.y" : 19/Jun/2001
   "OFF" : Do not print date.
④ Press the SET key to save.
   If you do not want to save, press the ZERO key.

■ System

1) Auto Power Off

$$Unit$$

① Press the SET key for 3 seconds, you will see the unit menu.

$$SYSTEM$$

② Press the MODE key twice to go to system menu.

$$S.AtPYr$$

③ Press the SET key to set auto power off function.

$$ON$$

④ Press the SET key, you will see the default value.

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$$30 \ \bar{m}\iota \ n$$

⑤ Press the MODE key until the display shows option you want.

- ON : Power is always turned ON.
- 10 min : If you don't operate the scale for 10 minutes, power is turned off automatically.
- 30 min : If you don't operate the scale for 30 minutes, power is turned off automatically.
- 60 min : If you don't operate the scale for 60 minutes, power is turned off automatically.

$$S.AtP\_r$$
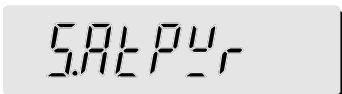
⑥ Press the SET key to save.
If you do not want to save, press the ZERO key.

2) Baud Rate - "S.brAtE"

① Press the MODE key, you will see "S.brAtE" menu on the display.
② Press the SET key, you will see the default. (9600)
③ Press the MODE key until the display shows baud rate you want.
 - 19200 bps, 9600 bps, 4800 bps, 2400 bps
④ Press the SET key to save. If you do not want to save, press the ZERO key.

3) Time - "S.timE"

① Press the MODE key, you will see "S.timE" menu on the display.
② Press the SET key, you will see time "18.49.01" (Hour. Minute. Second format).
③ Press the MODE key until the display shows hour you want.
④ Press the SET key to go to the right side. (To go to the left side, press the TARE key.)
⑤ Repeat ③ ~ ④ steps to set minute and second.
⑥ Press the SET key to save. If you do not want to save, press the ZERO key.

4) Date - "S.dAtE"

① Press the MODE key, you will see "S.dAtE" menu on the display.
② Press the SET key, you will see time "01.02.28" (Year. Month. Day format)
③ Press the MODE key until the display shows number you want.
④ Press the SET key to go to the right side. (To go to the left side, press the TARE key.)
⑤ Repeat ③ ~ ④ steps to set month and day.
⑥ Press the SET key to save. If you do not want to save, press the ZERO key.

5) Back light - " S.bAcKL"

▶ Note : If you purchase the scale with back light function, you can see this menu.

① Press the MODE key, you will see "S.bAcKL" menu on the display.
② Press the SET key, you will see the default(OFF).
③ Press the MODE key to change option.
　・OFF : Back light is always Off.
　　　　If you press ON/OFF key for a moment, back light is On.
　・ALL ON : Back light is always On(Default setting).
　　　　If you press ON/OFF key for a moment, back light is Off.
　・ON : Back light is On when a sample is placed on the platter.
　・3 SEC : Back light is On when a sample is placed on the platter and it is Off in
　　　　　3 seconds after the weight is stable.
　・5 SEC : Back light is On when a sample is placed on the platter and it is Off in
　　　　　5 seconds after the weight is stable.
　・10 SEC : Back light is On when a sample is placed on the platter and it is Off in
　　　　　10 seconds after the weight is stable.

※ In case of 3 SEC, 5 SEC and 10 SEC, back light is On for 1 second when you
　press any key.

④ Press the SET key to save. If you do not want to save, press the ZERO key.
⑤ To exit setup mode, press the ZERO key twice.

6) Stable - " S.StAbL "

① Press the MODE key, you will see " S.StAbL " menu on the display.
② Press the SET key, you will see the default (Level 1)
③ Press the MODE key to change level.
　(The higher the level gets, the faster the stabilization becomes relatively.)
④ Press the SET key to save. if you do not want to save, press the ZERO key.
⑤ To exit setup mode, press the ZERO key twice.

7) Reset - "S.rESEt"

① Press the MODE key, you will see "S.rESEt" menu on the display.
② Press the SET key, you will see the default (no).
③ Press the MODE key to change option.
　・Yes : All options are changed to the default.
　・No : Do not reset.
④ Press the SET key to save. If you do not want to save, press the ZERO key.

RS 232C INTERFACE

■ You can control the scale by using the PC.
  - Use Hyper terminal program.
■ Open the hyper terminal program and press the Z key on the keyboard of PC,
  zero adjustment is performed. If you press the P key on the keyboard of PC,
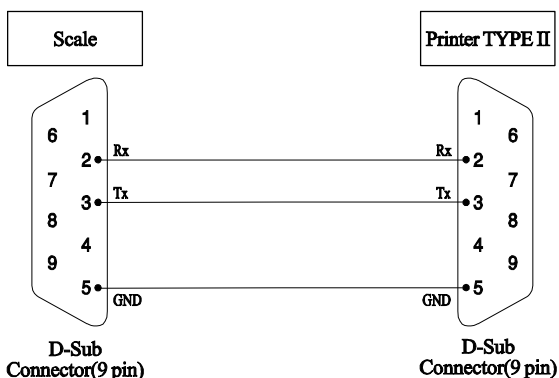 you will see the weight on the screen.

[Z : ZERO key, T : TARE key, S : SET key, M : MODE key, P : PRINT key]

RS232C connector

1) Scale(MW-II) PC or Printer Type I(2:Rx, 3:Tx)
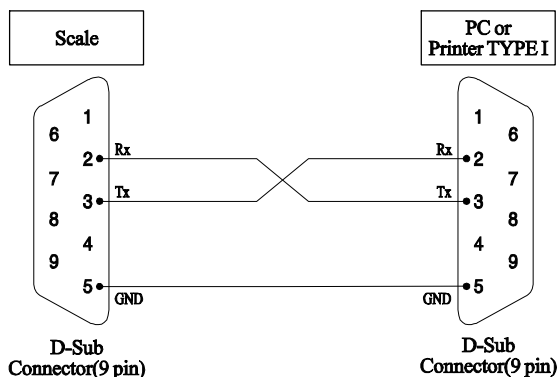
2) Scale(MW-II) Printer Type II(2:Tx, 3:Rx)

ERROR MESSAGE

ERROR	DESCRIPTION	SOLUTIONS
CALErr	Calibration Error	Call your CAS dealer for span calibration

OL -L	Under load Error
	① There is no platter
	② Sample weight is low
	  See minimum sample
	  weight (12 page)
		① Place the platter
		② Place more samples
		  on the platter

OL -H	Over load Error	Empty the platter and Turn on the power
U.StAbL	Unstable Error	Make the scale stable conditions

SPECIFICATION

※MW-2N High Resolution Series

MODEL	MW-200	MW-300	MW-600	MW-2000	MW-3000	MW-6000
MAXIMUM CAPACITY	200g	300g	600g	2kg	3kg	6kg
MINIMUM SCALE DIVISION	e = d = 0.005g		e=d= 0.01g	e = d = 0.05g		e=d= 0.1g
TARE SUBTRACTION	200g	300g	600g	2kg	3kg	6kg
DISPLAY	6 digit(L.C.D)					
WEIGHT UNIT	g, ct, oz, ozt, lb, tL, dwt, mom, GN, PCS, %					
LINEARITY	±0.005g		±0.01g	±0.05g		±0.1g
REPEATABILITY	±0.005g		±0.01g	±0.05g		±0.1g
STABILIZATION TIME	≤2 ~ 3 seconds					
DISPLAY SPEED	5 times/sec					
INTERFACE	RS 232C					
POWER SOURCE	AC 240(230) V/50Hz , DC 9V/300mA) Dry Battery(1.5V x 6 AA size) - 31 hours(Alkaline battery)					
sPOWER CONSUMPTION	0.7W					
OPERATING TEMPERATURE RANGE	5℃ ~ + 35℃					
OPTION	※ Dual(Rear Display)					
PLATTER SIZE(mm)	℄130			158 x 144.6		
PRODUCT SIZE(mm)	190(W) x 271(D) x 83(H)					
PRODUCT WEIGHT	1.04kg			1.3kg		

▶ Notice: Specifications are subject to change for improvement without notice.

※MW-2N Low Resolution Series

MODEL	MW-200	MW-300	MW-600	MW-2000	MW-3000	MW-6000
MAXIMUM CAPACITY	200g	300g	600g	2kg	3kg	6kg
MINIMUM SCALE DIVISION	e = d = 0.01g		e=d= 0.02g	e =d = 0.1g		e=d= 0.2g
TARE SUBTRACTION	200g	300g	600g	2kg	3kg	6kg
DISPLAY	6 digit(L.C.D)					
WEIGHT UNIT	g, ct, oz, ozt, lb, tL, dwt, mom, GN, PCS, %					
LINEARITY	±0.01g		±0.02g	±0.1g		±0.2g
REPEATABILITY	±0.01g		±0.02g	±0.1g		±0.2g
STABILIZATION TIME	≤2 ~ 3 seconds					
DISPLAY SPEED	5 times/sec					
INTERFACE	RS 232C					
POWER SOURCE	AC 240(230) V/50Hz , DC 9V/300mA) Dry Battery(1.5V x 6 AA size) - 31 hours(Alkaline battery)					
POWER CONSUMPTION	0.7W					
OPERATING TEMPERATURE RANGE	5℃ ~ + 35℃					
OPTION	※ Dual(Rear Display)					
PLATTER SIZE(mm)	∅130			158 x 144.6		
PRODUCT SIZE(mm)	190(W) x 271(D) x 83(H)					
PRODUCT WEIGHT	1.04kg			1.3kg		

▶ Notice: Specifications are subject to change for improvement without notice.

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NEW
MW-II SERIES
Micro Weighing Scale