Mini-indicator

User Manual

Table of Contents

> ### *Before using the product*
> Thanks for your purchase of this indicator. In order
> to operate it smoothly, extend its durability and
> reduce the chance of breakdown, please read this
> user manual carefully.

Safety Precaution

- Switch off the indicator before installation or dismantlement.
- Keep the indicator away from the direct sun light. The operation temperature is between 0 ~ +40°C.
- The ground connection of this indicator is necessary and this ground impedance is less than 100Ω.
- Do not connect the ground with other equipments which need huge power consumption.
- Non-ground or incorrect connection might cause an electric shock or a product breakdown.
- Please wait more than one minute before re-power on.

Chapter 1 Keypad Instruction

Function	Operation	Description
General Function Setting	Press and hold ENTER, then press F1/▲	Refer to <Chapter 5> External Function Parameter Setting for details
Weighing Parameter Setting	Adjust calibration switch to ON	Setting for decimal point, capacity, division, zero tracking, and unstable detection, etc. Refer to 6-1 Specification Setting for details.
Calibration	Adjust calibration switch to ON	Refer to 6-2 Weight Calibration for details.
Self-test Mode	During the countdown of power on, press and hold ZERO +	Refer to 9-4 Self-test Mode for details.
Restore Default Setting for All Parameters	Adjust calibration switch to ON, and then press and hold F1/▲ ENTER	Refer to 9-1 for details.
Restore Default Setting for General Function Parameters	During the countdown of power on, press and hold F1/▲ ENTER.	Refer to 9-3 for details.

📄 During the operation, use the following keys to complete all works.

ZERO + ⇒ Increase the flash value by one   F2 ▸ ⇒ Move the cursor rightward

ZERO + ⇒ Decrease the flash value by one   ENTER ⇒ Save setting

GROSS NET ◂ ⇒ Move the cursor leftward   (ESC) ⇒ Abort setting / Exit

ZSME300000148

Chapter 2 Specifications

Analog Specification
◆ Load Cell Current   : DC 5 V ±5% 60 mA (Up to Four 350 Ω Load Cells)
◆ Max. Load Cell Input Voltage : 16 mV
◆ Input Sensitivity   : 0.15 μV/d or more
◆ Conversion Rate   : Approximately 120 times/s (max.)
◆ Resolution   : 20 bits

Digital Specification
◆ Display   : LCD, 6 digits, 25.4 x 10 mm (W x H), LED backlight
◆ Display Frequency   : 50 times/s (max)
◆ Display Range   : - 999999 ~ 999999
◆ Min. Division   : 1, 2, 5, 10, 20, 50
◆ Decimal Point   : 0, 0.0, 0.00, 0.000, 0.0000
◆ Memory   : Calibration parameters and function settings are all stored in EEPROM.

Optional Interface Card
◆ OP-01 RS-232 / RS-485 (Includes RTC Function)

Power Requirement
◆ Adaptor Spec   : Input 120 / 230 V AC 50 ~ 60 Hz
                            Output 9 V / 1000 mA
◆ Optional 2 types of batteries : 6 V NiMH rechargeable battery kit (5 pcs) (1800 mA/hr) or general batteries (5 pcs)
◆ Max. Power Consumption   :110 mA (with 4 Load Cells + backlight + RS-232 interface)
                            NiMH battery → 15 hours
                            General battery → 24 hours
                            45 mA (with 1 Load Cell + no backlight + no RS-232 interface)
                            NiMH battery → 36 hours
                            General battery → 60 hours
▤ Please charge the Ni-MH battery at least 12~14 hours for first use.

Others
◆ Operation Temperature   : 0 ~ 40 °C
◆ Operation Humidity   : < 85% R.H.
◆ Dimensions (W × D × H) (mm) : 193 × 49.5 × 94.4 (excluding protrusions)
                            225 × 60 × 134.7 (including protrusions)
◆ Weight   : 700 g

Chapter 3 Front and Rear Panels

3-1 Front Panel
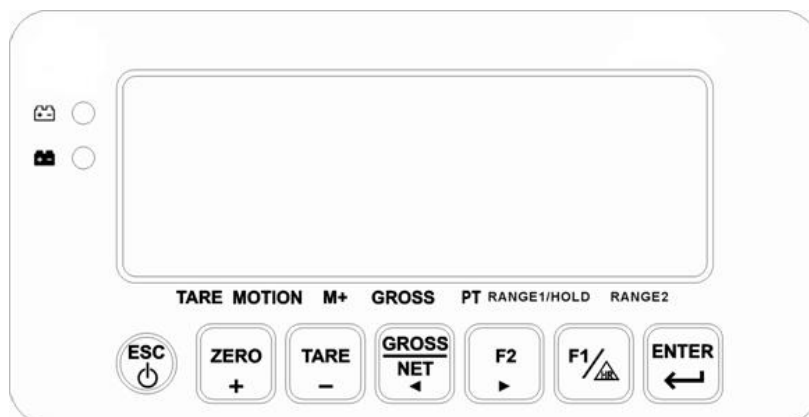
Indication:

⊞	:	Battery is charged (only available for rechargeable model)
■	:	Battery is charging (only available for rechargeable model)
TARE	:	Tare mode
MOTION	:	Unstable weighing
M+	:	Accumulation mode
GROSS	:	Gross weight
PT	:	Pre-Tare
RANGE1/HOLD	:	Dual-range resolution indication (1)
RANGE2	:	Dual-range resolution indication (2)

Description of RANGE1 and HOLD:

The light is default on. When using CFN-05 Animal Scale Mode or FNC-07 Maintain Beeper Value, it

works as HOLD LED light. When opening dual-range resolution, it works as RANGE1 LED light.

CFN-05 Animal Scale Mode and FNC-07 Maintain Beeper Value can't be run at the same time.

Keypad:

ESC
1) Power ON / OFF. Press and hold this key for 3 seconds to shut down.
2) Abort or exit when setting.

ZERO +
1) Weight backs to zero.
2) Increase the flash value by one when setting.

TARE —
1) Eliminate the gross weight.
2) Decrease the flash value by one when setting.

GROSS/NET ◄
1) Switch Gross / Net weight shown on display.
2) Move the cursor leftward when setting.

F2 ►
1) Keypad function (FNC-02 & FNC-03).
2) Move the cursor rightward when setting.

F1
Keypad function (FNC-02 & FNC-03).

ENTER
Confirm key.

3-2 Rear Panel
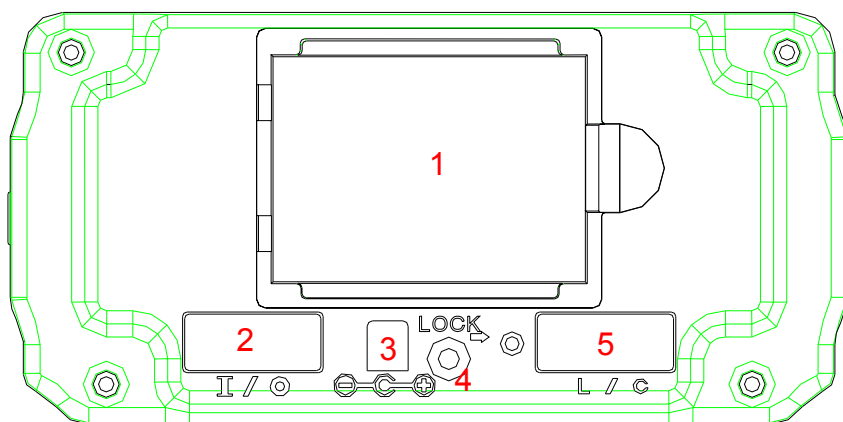
1. Battery Case
2. RS-232 / RS-485 Input / Output
3. DC 9 V Power Input
4. Calibration Switch
5. Load Cell Connect Socket

Chapter 4 Installation

4-1 Load Cell
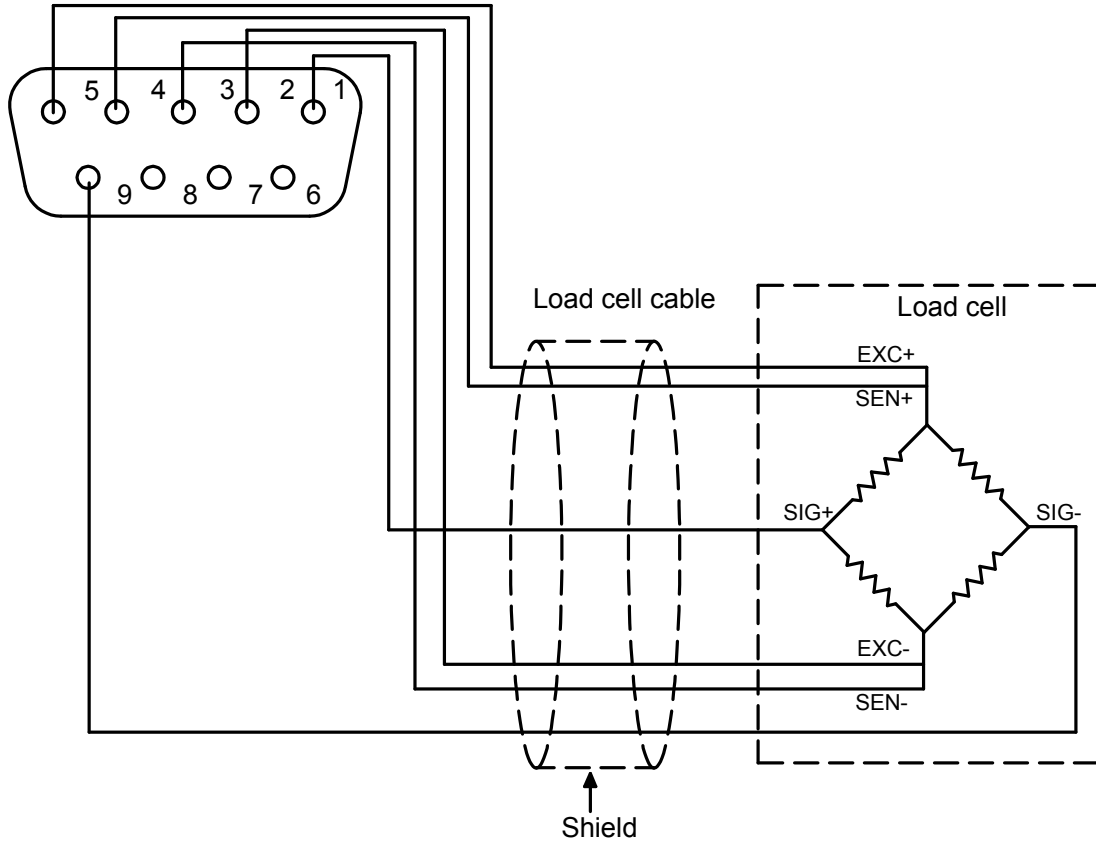
4-wired (5-wired) Load Cell

Pin 1 connects with SIG+
Pin 2, 3 short to connect with EXC-
Pin 4, 5 short to connect with EXC+
Pin 6, 7, 8 connect with shield
Pin 9 connects with SIG-

6-wired (7-wired) Load Cell

Pin 1 connects with SIG+
Pin 2 connects with SEN-
Pin 3 connects with EXC-
Pin 4 connects with SEN+
Pin 5 connects with EXC+
Pin 6, 7, 8 connect with shield
Pin 9 connects with SIG-

ZSME300000148

4-2 Dimensions

225.0

134.7

60.0

193.0

94.4

49.5

LOCK

II / ○   L / ○
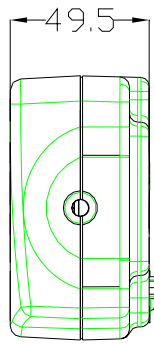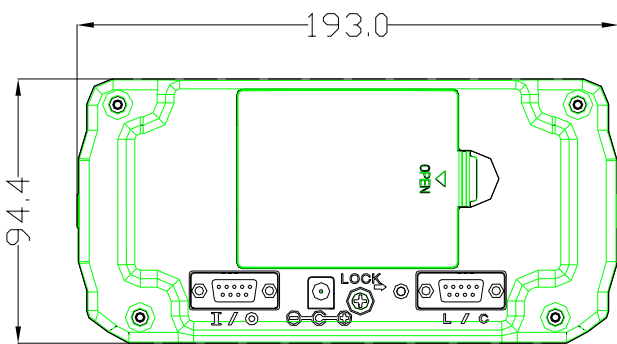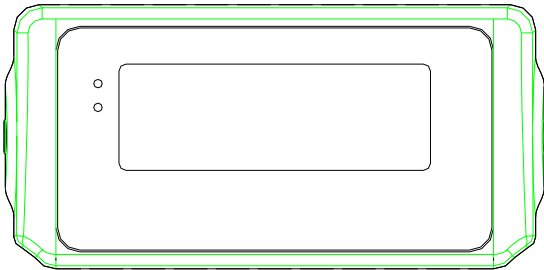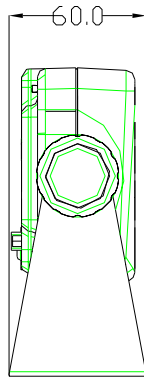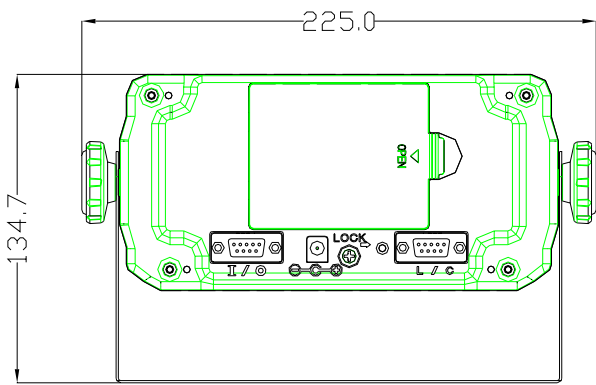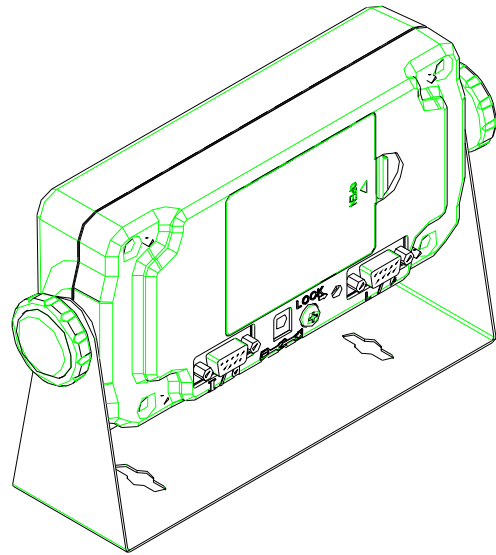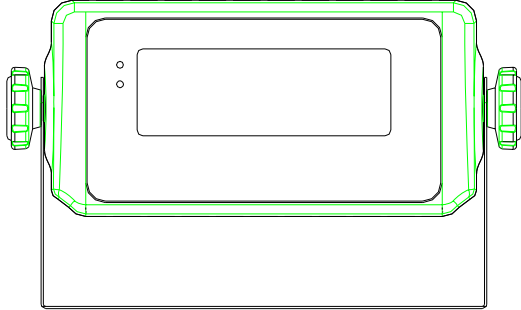
4-3 Battery Assemblage
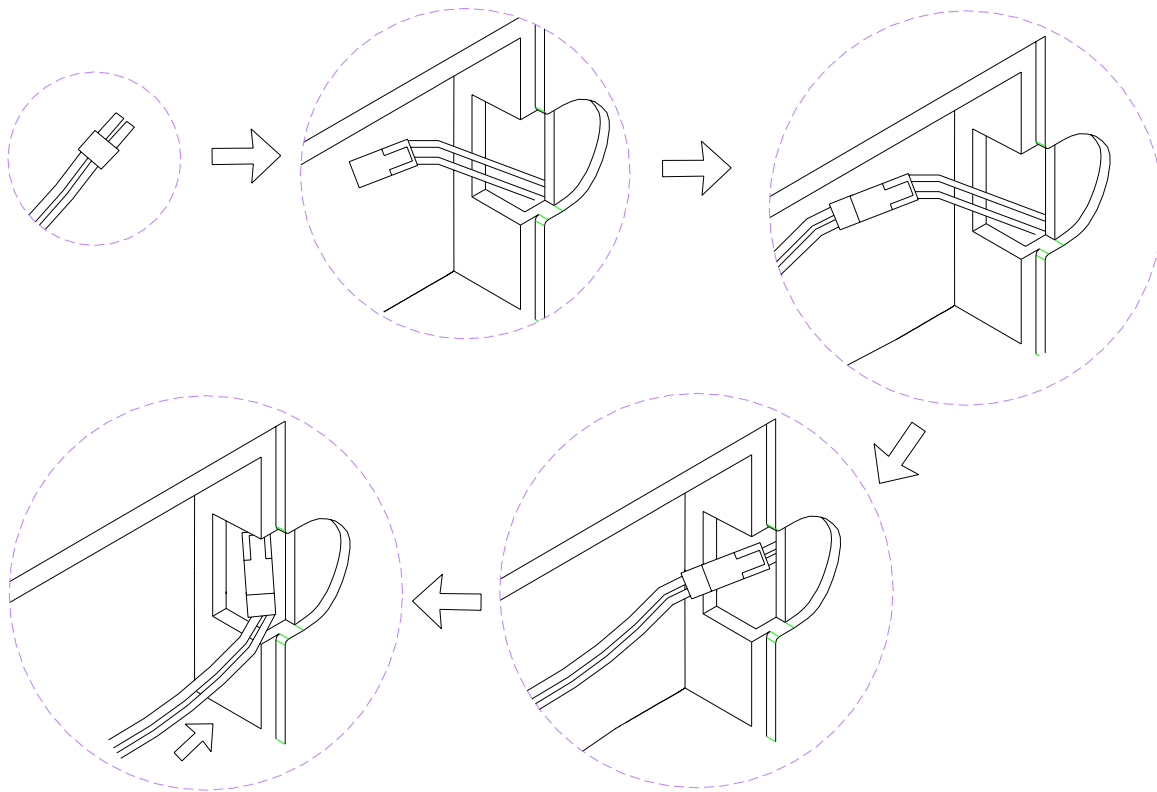
Stuff the surplus wires into the battery case.
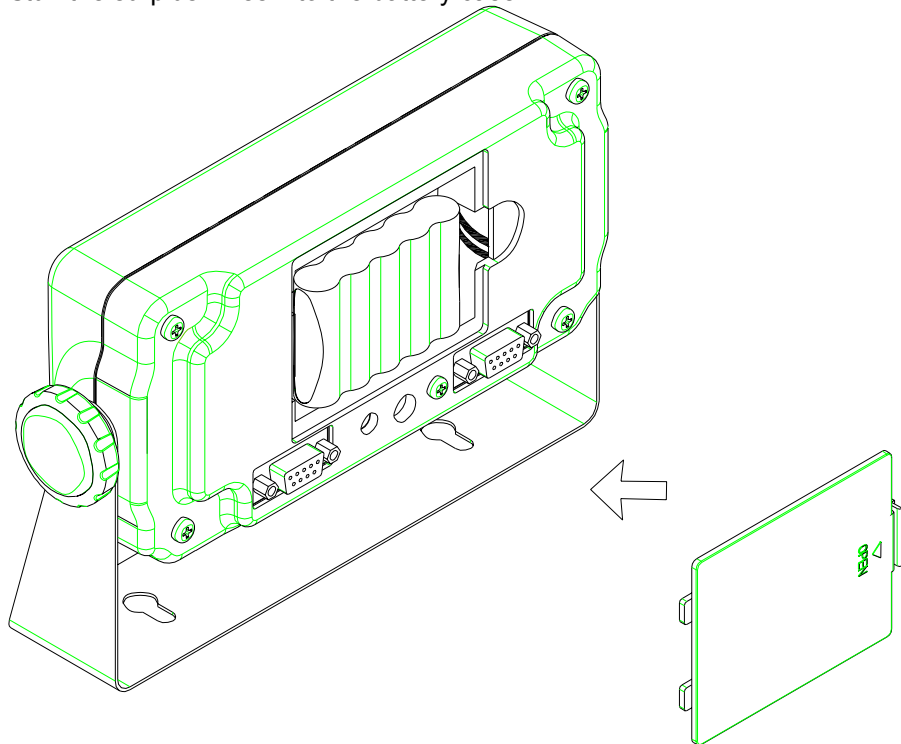
Chapter 5 External Function Parameter Setting

Under general weighing condition, press [F1/⚠] [ENTER], and the screen will show:

```
   01  FnC      →[ENTER]→      FnC  00
```

Press [TARE] key ↑ | ↓ Press [ZERO +] key

```
   03  rSl      →[ENTER]→      rSl  00
```

Press (ESC) to escape.
Back to weighing condition.
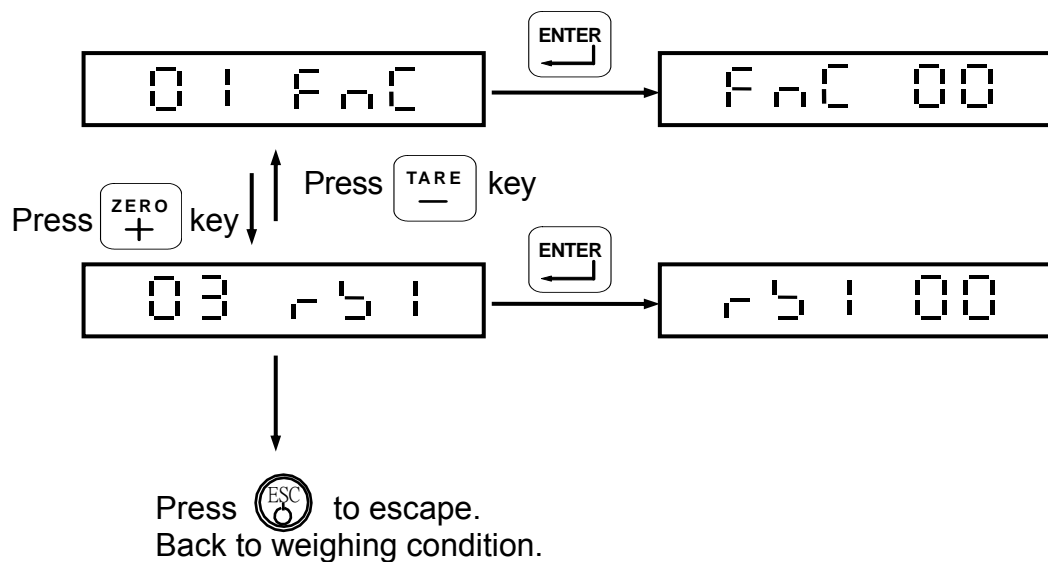
```
   01  FnC   ⇒ External function setting

   03  rSl   ⇒ RS-232 / RS-485 interface function
```

5-1 `01 FnC` External Function Setting

Parameter Code

`01 FnC`

Press `ENTER`

`FnC-00`

Select the desired parameter code.

`FnC-04`

Press `ENTER`

`000000`

`FnC-02`

Press `(ESC)` to escape the setting.
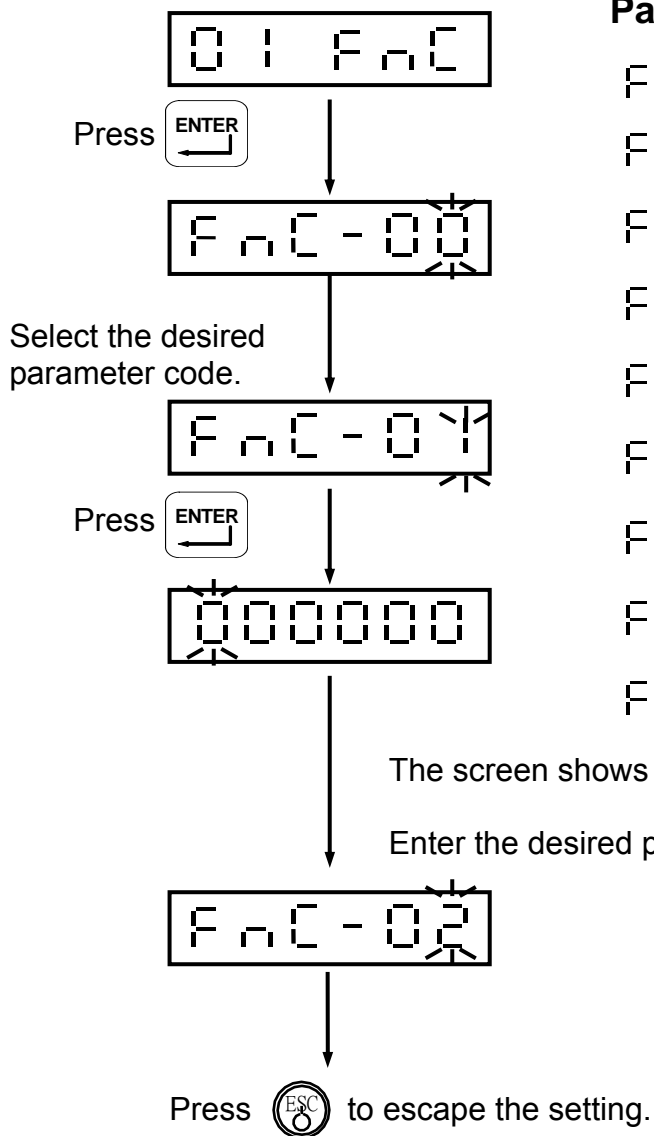
`FnC-00` ⇒ Key Disable

`FnC-01` ⇒ DSP Update (Display Update)

`FnC-02` ⇒ F1 Setting

`FnC-03` ⇒ F2 Setting

`FnC-04` ⇒ ENTER + F2 Setting

`FnC-05` ⇒ Backlight Function Setting

`FnC-06` ⇒ Beeper Setting

`FnC-07` ⇒ Maintain Beeper Value

`FnC-08` ⇒ Auto-power Off

The screen shows previous parameter setting.

Enter the desired parameter setting. Press `ENTER`.

`ZERO +`	⇒ Increase the flash value by one
`TARE —`	⇒ Decrease the flash value by one
`GROSS NET ◄`	⇒ Move the cursor leftward
`F2 ►`	⇒ Move the cursor rightward
`ENTER`	⇒ Save setting
`(ESC)`	⇒ Abort setting or exit

ZSME300000148

External Function Parameter Setting

Parameter Code	Function	Setting Value		Default Setting
		Parameter	Description	
FNC-00	Key disable	0000 ↓ 1111	0 ON / 1 OFF — 0000 is corresponding to:(from left to right) ZERO+ TARE− GROSS/NET◄ F2►	0*000
FNC-01	DSP Update	0	No Limit	1
		1	20 times/s	
		2	10 times/s	
		3	5 times/s	
		4	1 times/s	
FNC-02	F1 Setting	0	Print (printing)	5
		1	Units (units switch)	
		2	M+ (accumulation and printing)	
		3	MC (memory clearing)	
		4	Weight / Times Accumulation / Weight Accumulation Display Switch	
		5	HR (high resolution switch)	
		6	Pre-Tare (Pre-Tare function)	
FNC-03	F2 Setting	0	Print (printing)	1
		1	Units (units switch)	
		2	M+ (accumulation and printing)	
		3	MC (memory clearing)	
		4	Weight / Times Accumulation / Weight Accumulation Display Switch	
		5	HR (high resolution switch)	
		6	Pre-Tare (Pre-Tare function)	
FNC-04	ENTER+F2 Setting	0	Print (printing)	0
		1	Units (units switch)	
		2	M+ (accumulation and printing)	
		3	MC (memory clearing)	
		4	Weight / Times Accumulation / Weight Accumulation Display Switch	
		5	HR (high resolution switch)	
		6	Pre-Tare (Pre-Tare function)	
FNC-05	Backlight Setting	0	Auto Backlight On (backlight on in operation only)	1
		1	Backlight On (backlight always on)	
		2	Backlight Off	
FNC-06	Beeper Setting	0	Beeper off	1
		1	Beeper on	
FNC-07	Maintain Beeper Value	0*	No function	0
		1	Mode 1	
		2	Mode 2	
FNC-08	Auto-power Off (Minutes)	0	No function	0
		1 ~ 60	It works when the weight is stable and non-key is pressed in weighing mode.	

The symbol "*" is standard for OIML Certification in context.

5-2 `03` `rS1` RS-232 Setting

```
03  rS1
```

Press [ENTER]

```
rS1-00
```

Select the desired parameter code with

```
rS1-01
```

Press [ENTER]

```
000000
```

The screen shows previous parameter setting. Enter the desired parameter setting.
Press [ENTER] .

```
rS1-02
```
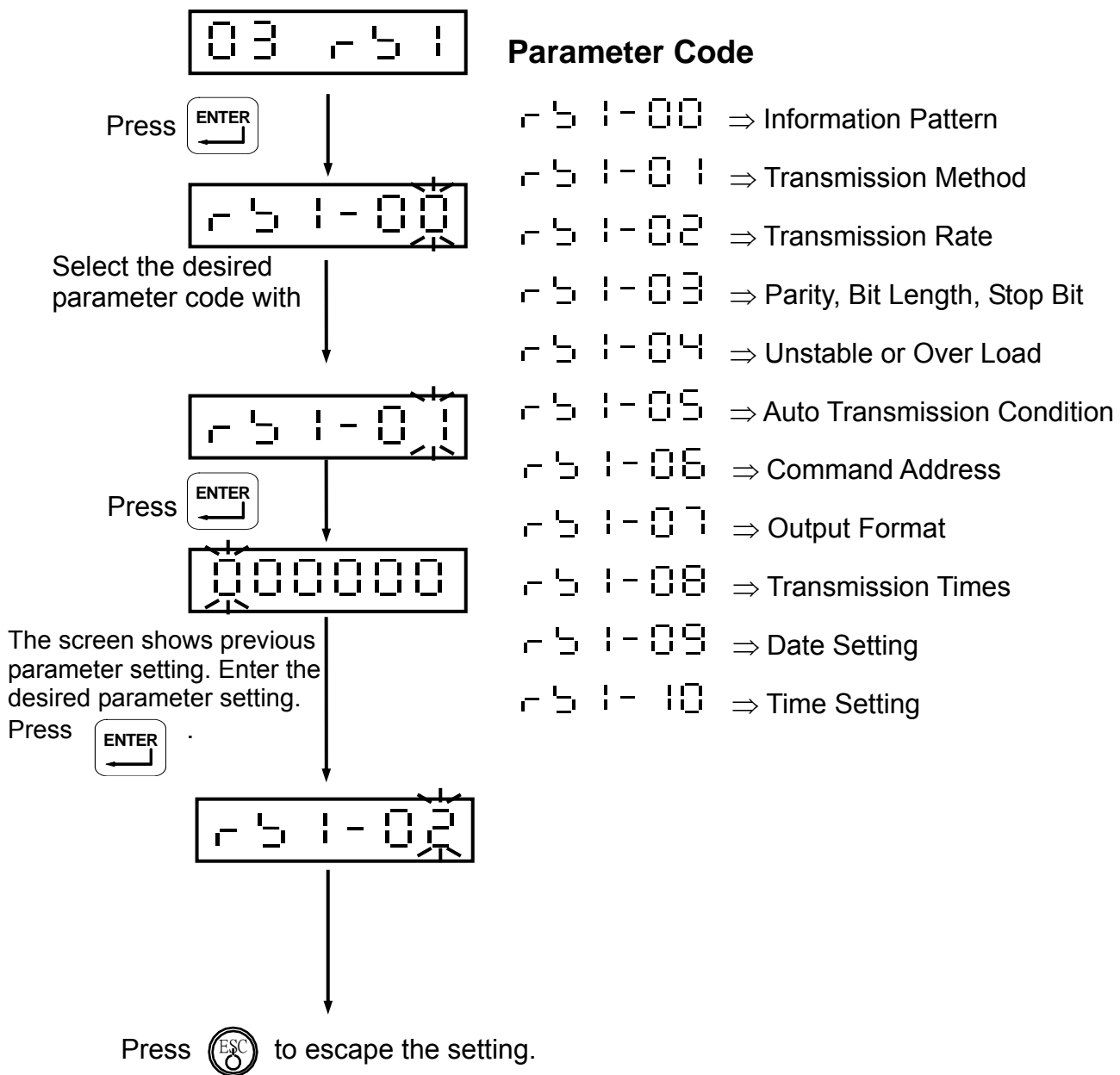
Parameter Code

`rS1-00` ⇒ Information Pattern

`rS1-01` ⇒ Transmission Method

`rS1-02` ⇒ Transmission Rate

`rS1-03` ⇒ Parity, Bit Length, Stop Bit

`rS1-04` ⇒ Unstable or Over Load

`rS1-05` ⇒ Auto Transmission Condition

`rS1-06` ⇒ Command Address

`rS1-07` ⇒ Output Format

`rS1-08` ⇒ Transmission Times

`rS1-09` ⇒ Date Setting

`rS1- 10` ⇒ Time Setting

Press (ESC) to escape the setting.

[ZERO +]	⇒ Increase the flash value by one
[TARE −]	⇒ Decrease the flash value by one
[GROSS NET ◄]	⇒ Move the cursor leftward
[F2 ▶]	⇒ Move the cursor rightward
[ENTER]	⇒ Save setting
(ESC)	⇒ Abort setting or exit

⊞ OP-01/ RS-232 / RS-485 Interface Function

Parameter Code	Function	Setting Value		Default Setting
		Parameter	Description	
RS1-00	Information Pattern	0	Display Correspondingly	0
		1	Gross Weight	
		2	Net Weight	
		3	Tare	
		4	Weight Accumulation Value	
		5	Times Accumulation Value	
		6	Output with Date & Time	
		7	PT Output with Date & Time	
RS1-01	Transmission Method	0	Continuous Transmission	0
		1	Auto Transmission	
		2	Press [F1/△] or [F2/▸] for transmission	
		3	Command Mode (no address)	
		4	Command Mode (with address)	
RS1-02	Transmission Rate	0	1 200	3
		1	2 400	
		2	4 800	
		3	9 600	
RS1-03	Parity, Bit Length, Stop Bit	0	N,8,1 — No Parity, 8 Bits Length, 1 Stop Bit	0
		1	O,7,1 — Odd Parity, 7 Bits Length, 1 Stop Bit	
		2	E,7,1 — Even Parity, 7 Bits Length, 1 Stop Bit	
RS1-04	Unstable or Over Load	0	Continuous Output	0
		1	Stop Output	
RS1-05	Auto Transmission Condition	0	Positive (over + 10d)	0
		1	Positive / Negative (over + 10d, under – 10d)	
RS1-06	Command Address	00 ↓ 99	Available only if RS1-01 setting is "4"	0
RS1-07	Output Format	0*	Standard Format	0
		1	UMC 600	

▤ The symbol "*" is standard for OIML Certification in context.

RS1-08	Transmission Times	0	No Limit	4
		1	1 times/s	
		2	2 times/s	
		3	5 times/s	
		4	10 times/s	
		5	20 times/s	
RS1-09	Date Setting			
RS1-10	Time Setting			

Remark:

- **This is general certification option when the parameter is set for "0~5" in RS1-00 and the data is transmitted to printer.**

- **This is general certification option when the parameter is set for "6" in RS1-00 and the parameter is set for "6" in FNC-02 (or the parameter is set for "6" in FNC-03).**

- **This is general certification option when the parameter is set for "0" in RS1-04 and the parameter is set for "6" in RS1-00.**

⊟ Transmission Format

RS1-00 ⇒ 0 ~ 3

| S | T | , | G | S | , | + | 1 | 2 | 3 | 4 | . | 5 | 6 | | g | CR | LF |

Header 1 — Header 2 — Weight Data (8 digits) — Unit — Terminators
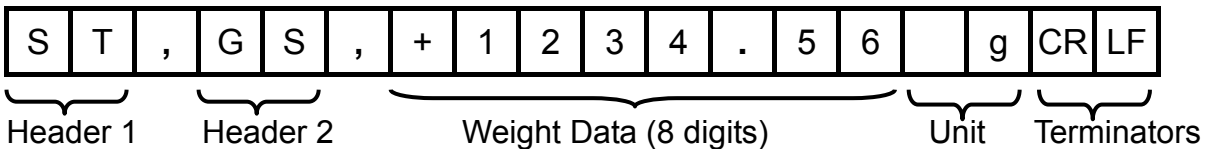
Header 1
ST: Stable Weight / US: Unstable Weight / OL: Weight Overload

Header 2
GS: Gross Weight / NT: Net Weight / TR: Tare

Weight Data (8 digits)
The first digit of weight data indicates " + / - " value of weight. The other 7 digits, including decimal point, indicate the weight value. If the weight is over load (Header 1: OL), the screen only shows " + / - " and decimal point.

Unit
(kg, t or "blank")* or kg, lb, t or "blank"

Terminators
CR and LF are data termination code.

RS1-00 = 4

| T | N | , | 1 | 2 | 3 | CR | LF |
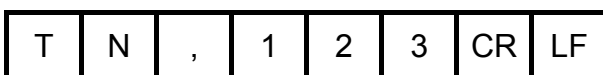
- The symbol "*" is standard for OIML Certification in context.

RS1-00 = 5

T	W	,	+	1	2	3	4	.	5	6	k	g	CR	LF

RS1-00 = 6

D	A	T	E		:	2	0	X	X	/	X	X	/	X	X	CR	LF
T	I	M	E		:	X	X	:	X	X	:	X	X	CR	LF		
G	R	O	S	S	:	+	1	2	3	4	.	5	6	k	g	CR	LF
N	E	T			:	+	1	2	3	4	.	5	6	k	g	CR	LF
T	A	R	E		:	+	1	2	3	4	.	5	6	k	g	CR	LF
T	N				:	X	X	X	CR	LF							
T	W				:	+	1	2	3	4	.	5	6	k	g	CR	LF

RS1-00 = 7

D	A	T	E		:	2	0	X	X	/	X	X	/	X	X	CR	LF
T	I	M	E		:	X	X	:	X	X	:	X	X	CR	LF		
G	R	O	S	S	:	+	1	2	3	4	.	5	6	k	g	CR	LF
N	E	T			:	+	1	2	3	4	.	5	6	k	g	CR	LF
T	A	R	E		:	+	1	2	3	4	.	5	6	k	g	CR	LF
P	T					+	1	2	3	4	.	5	6	K	g	CR	LF
T	N				:	X	X	X	CR	LF							
T	W				:	+	1	2	3	4	.	5	6	k	g	CR	LF

⊟ Command Mode

Command	Function	Command	Function
READ / RW	Weight Reading	CT	Tare Clearing
ZERO / MZ	Weight Re-zeroing	RI	Weight Accumulation
TARE / MT	Gross Weight Deducting	Rm	Times Accumulation
NTGS	Gross / Net Switch	Rn	Date
MG	Gross Weight Indicating	Ro	Time
MN	Net Weight Indicating	AT	Weight and Times Accumulation
		DT	Weight and Times Accumulation Clearing

❶ After setting above commands, it must add the termination code "CR (0DH) and LF (0AH)".

❷ If the command is not correct, it shows "E" + "Command Unidentified".

❸ If the command mode is chosen with address (RS1-01 = 4), add "@ address" in front of each command.

Example: When RS1-06 = 1, for reading weight value, the whole complete command should be "@01RW (CR) (LF)".

Chapter 6 Internal Calibration

Adjust calibration switch to "ON", and the screen displays:

```
 SEt
```

After 2 seconds ↓

```
01 CSP     ENTER →     CSP 00
```

Press ZERO + ↓ ↑ Press TARE —

```
02 CAL     ENTER →     ZEro
```

Press ZERO + ↓ ↑ Press TARE —

```
04 CFn     ENTER →     CFn 00
```

↓

Adjust calibration switch back to "OFF".
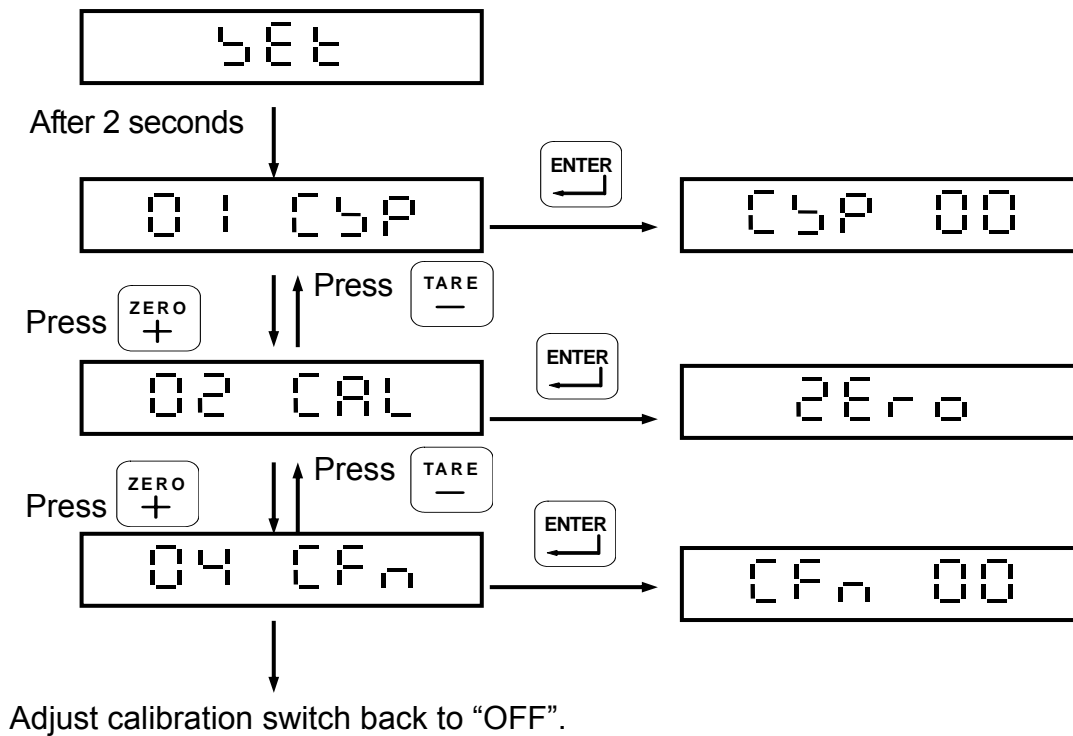
```
01 CSP
```
⇒ Specification Calibration

```
02 CAL
```
⇒ Weight Calibration

```
04 CFn
```
⇒ Internal Function Setting

6-1 `01 CSP` Specification Calibration
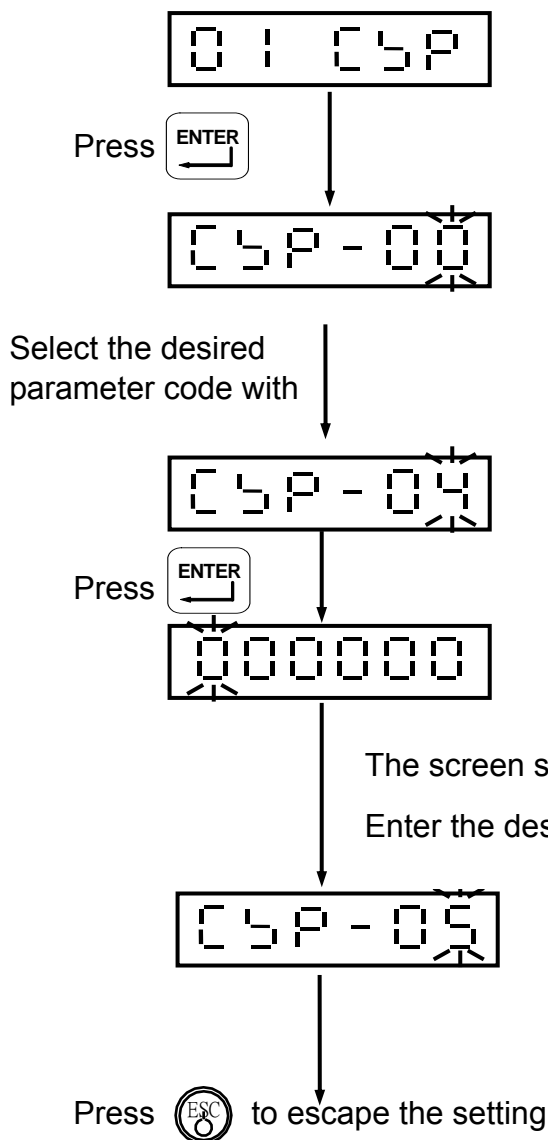
`01 CSP`

Press ENTER

`CSP-00`

Select the desired parameter code with

`CSP-04`

Press ENTER

`000000`

The screen shows previous parameter setting.

Enter the desired parameter setting. Press ENTER .

`CSP-05`

Press (ESC) to escape the setting

Parameter Code

`CSP-00` ⇒ Decimal Point

`CSP-01` ⇒ Maximum Weighing Capacity

`CSP-02` ⇒ Division 1

`CSP-03` ⇒ Division 2

`CSP-04` ⇒ Zero Tracking Setting

`CSP-05` ⇒ Unstable Detection Setting

Key	Function
ZERO +	⇒ Increase the flash value by one
TARE −	⇒ Decrease the flash value by one
GROSS/NET ◄	⇒ Move the cursor leftward
F2 ►	⇒ Move the cursor rightward
ENTER	⇒ Save setting
ESC	⇒ Abort setting or exit

⧉ Specification Parameter Description

Parameter Code	Function	Setting Value		Default Setting
		Parameter	**Description**	
CSP-00	Decimal Point		Refer to descriptions in next page.	0
CSP-01	Maximum Weighing Capacity	999999 ↓ 000000	Max. value for weight display	999999
CSP-02	Division 1	1 2 5 10 20 50	Min. value for weight display	1
CSP-03	Division 2	1 2 5 10 20 50	Min. value for weight display	1
CSP-04	Zero Tracking Setting		Refer to descriptions in next page.	0.25d
CSP-05	Unstable Detectiion Setting		Refer to descriptions in next page.	0.25d

⊟ Parameter Display Description

CSP-00 Decimal Point

Display	Decimal Point Digit
d 0	None
d 0.0	1 digit
d 0.00	2 digits
d 0.000	3 digits
d 0.0000	4 digits

CSP-04 Zero Tracking Setting

Display	Division/Time
0.25 d	0.25 d / 1 s*
0.5 d	0.5 d / 1 s*
0.75 d	0.75 d / 1 s
1 d	1d / 1 s
1.25 d	1.25 d / 2 s
1.5 d	1.5 d / 2 s
1.75 d	1.75 d / 2 s
2 d	2 d / 2 s
no	No Zero Tracking

CSP-05 Unstable Detection Setting

Display	Division / Time
0.25 d	0.25 d / 1 s*
0.5 d	0.5 d / 1 s*
0.75 d	0.75 d / 1 s
1 d	1d / 1 s
1.25 d	1.25 d / 2 s
1.5 d	1.5 d / 2 s
1.75 d	1.75 d / 2 s
2 d	2 d / 2 s
no	No Unstable Detection

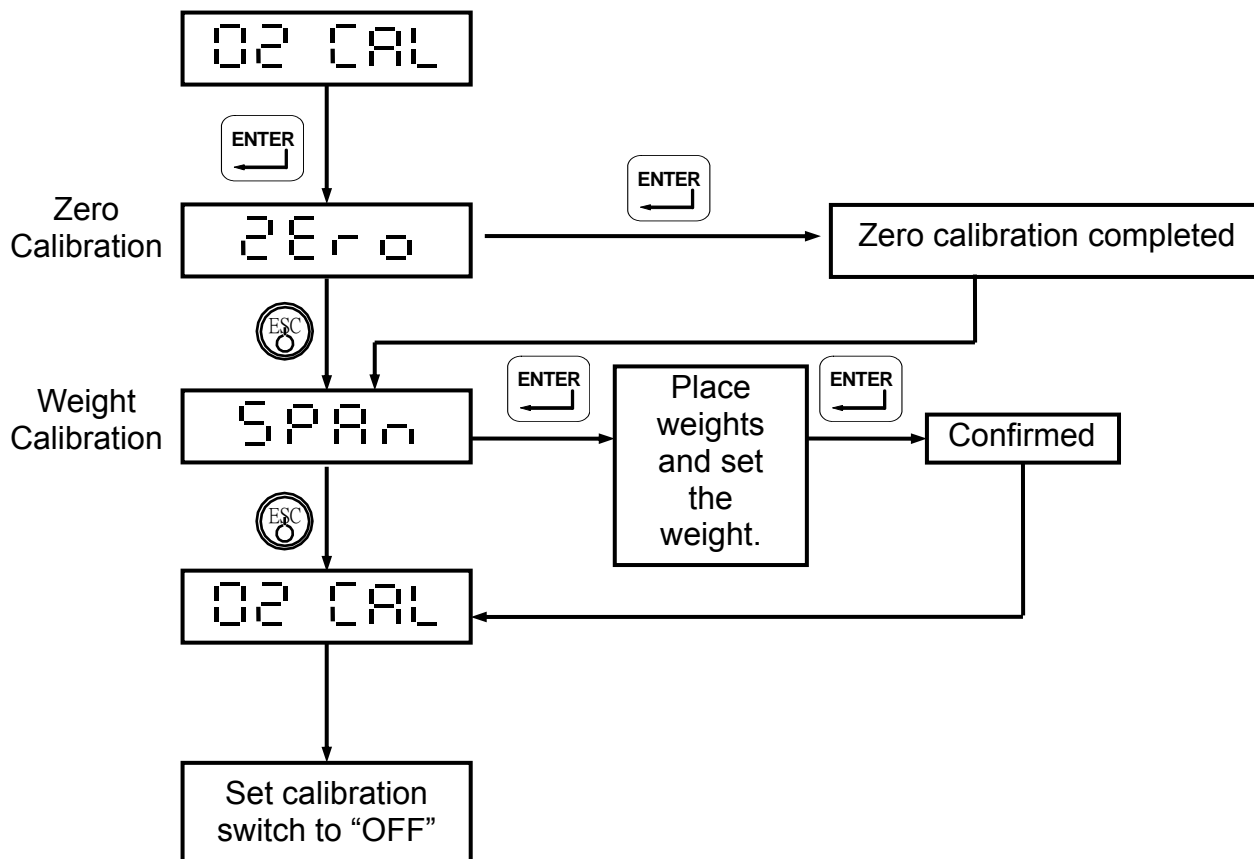📑 The symbol "*" is standard for OIML Certification in context.

6-2 `02 CAL` **Weight Calibration**

Turn on and warm up the machine for 15 to 30 minutes before calibration.

Adjust the calibration switch to "ON", and the screen will show `SEt`.

Press `TARE −` or `ZERO +` to select `02 CAL`.

Procedure

```
          ┌─────────────┐
          │   02 CAL    │
          └─────────────┘
                │ ENTER
                ▼
Zero      ┌─────────────┐   ENTER    ┌──────────────────────────┐
Calibration│    2Ero    │ ────────▶  │ Zero calibration completed│
          └─────────────┘            └──────────────────────────┘
                │ ESC                             │
                ▼                                 │
Weight    ┌─────────────┐  ENTER  ┌────────┐ ENTER ┌───────────┐
Calibration│    SPAn    │ ──────▶ │ Place  │ ────▶ │ Confirmed │
          └─────────────┘         │weights │       └───────────┘
                │ ESC             │and set │             │
                ▼                 │  the   │             │
          ┌─────────────┐         │weight. │             │
          │   02 CAL    │ ◀───────┴────────┘◀────────────┘
          └─────────────┘
                │
                ▼
          ┌─────────────┐
          │Set calibration│
          │switch to "OFF"│
          └─────────────┘
```

Zero Calibration

a) Ensure nothing on the platter. After the scale being stable, press `ENTER`, and the screen will display "**.......** ". The zero calibration will be completed after 5 seconds.

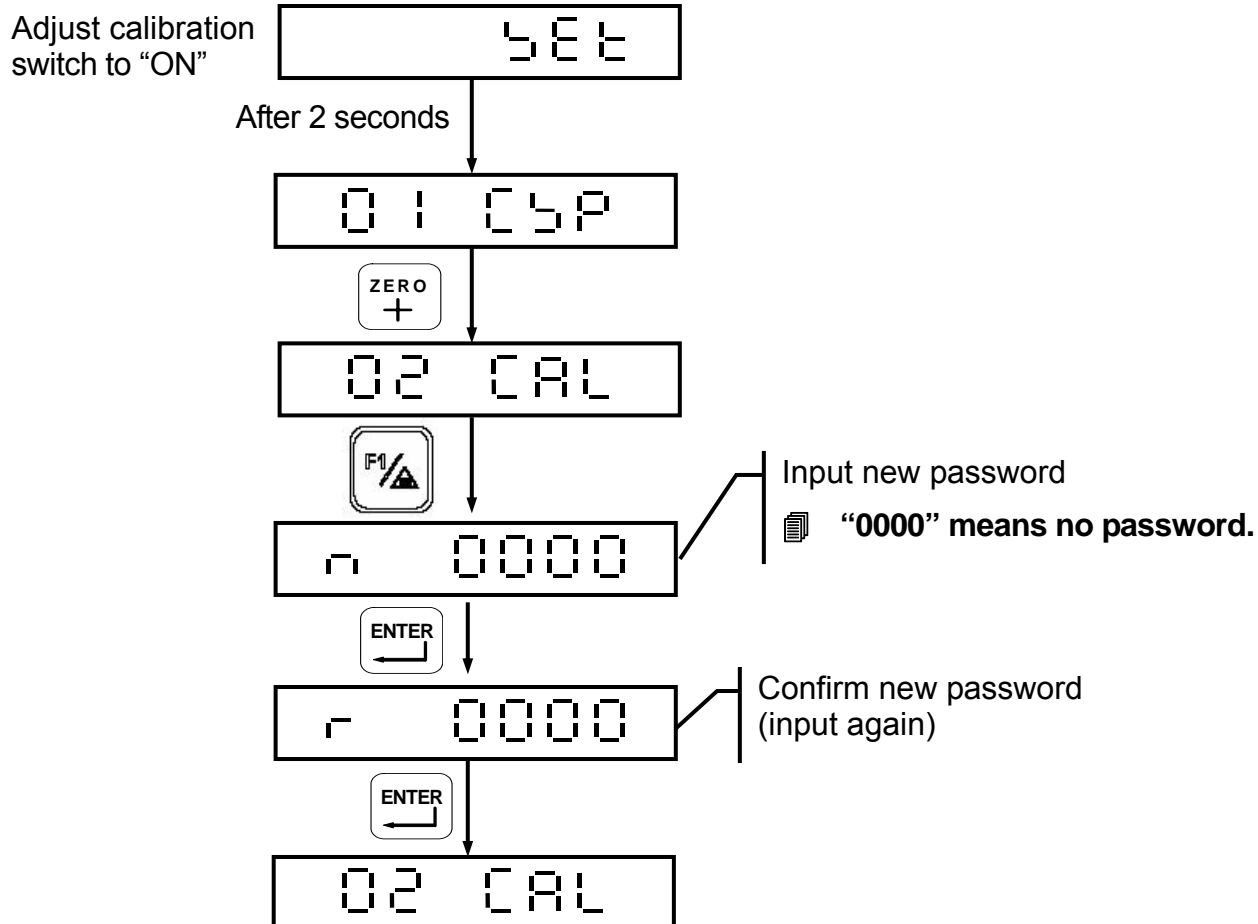b) To abort zero calibration, just press `ESC` .

Weight Calibration

a) Place an object which weight is known on the platter. Input the weight value and wait the scale to be stable, then press `ENTER` . The screen will show "------". The weight calibration will be completed after 5 seconds.

b) To abort weight calibration, just press `ESC` .

Password Setting

Adjust calibration
switch to "ON"

```
        5Et
```

After 2 seconds

```
    01  C5P
```

[ZERO +]

```
    02  CAL
```

[F1/△]

```
  n     0000
```

Input new password

📑 **"0000" means no password.**

[ENTER]

```
  r     0000
```

Confirm new password
(input again)

[ENTER]

```
    02  CAL
```
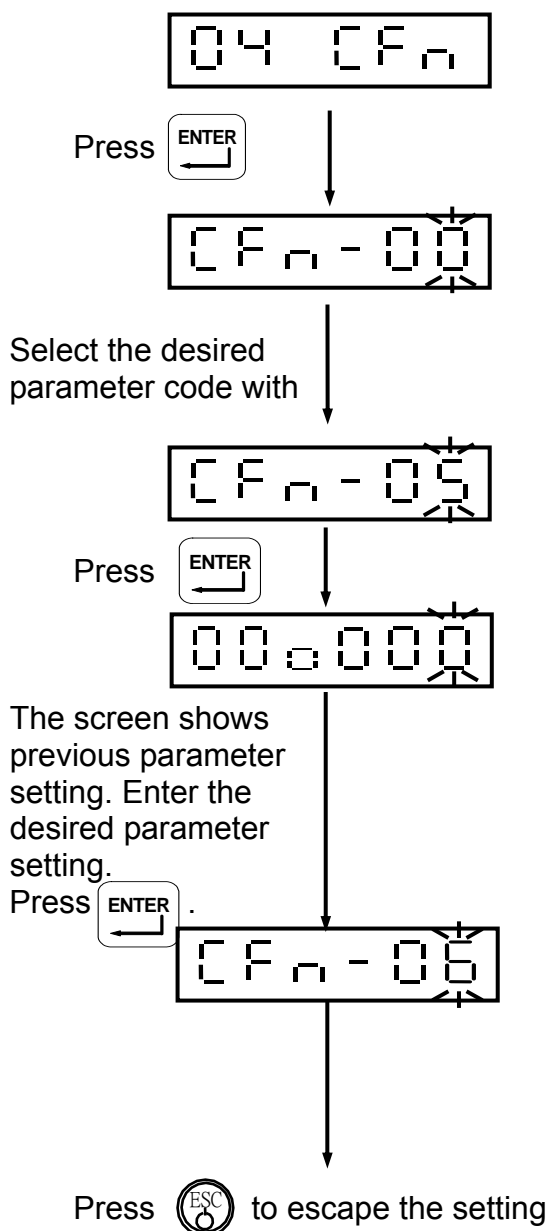
📑 After complete password setting, when entering calibration mode or function setting mode, the screen shows $P\bar{u}$ for 1 second, and then $0\ 0\ 0\ 0$.
It's necessary to input the correct password to continue each setting.

If the input password is incorrect, the screen shows Err.

6-3 04 CFn Internal Function Setting

04 CFn

Press ENTER

CFn-00

Select the desired parameter code with

CFn-05

Press ENTER

00₀000

The screen shows previous parameter setting. Enter the desired parameter setting.
Press ENTER .

CFn-06

Press ESC to escape the setting

Parameter Code

CFn-00 ⇒ Tare or Zero Function under Unstable Status

CFn-01 ⇒ Zero when Scale Turned on

CFn-02 ⇒ Back to Zero Range

CFn-03 ⇒ Filter Sampling Rate

CFn-04 ⇒ Filter Strength

CFn-05 ⇒ Animal Scale Mode

CFn-06 ⇒ Animal Scale Stable Range

CFn-07 ⇒ Animal Scale Sampling Frequency

CFn-08 ⇒ Dual Range Resolution Setting

CFn-09 ⇒ Midpoint Setting for Dual Range Resolution

CFn-10 ⇒ Gravity Calibration

CFn-11 ⇒ Operation of Accumulative Value/ Times upon Unstable Condition

ꝰ Internal Function Parameter Description

Parameter Code	Function	Setting Value		Default Setting
		Parameter	Description	
CFN-00	Tare or Zero Function under Unstable Status	0	ON	1
		1*	OFF	
CFN-01	Zero when Scale Turned on	0	OFF	1
		1	ON	
CFN-02	Back to zero range	0% ~ 30%	0%: Full range re-zero 1% ~ 30%: Capacity × ± setting value% **(The parameter is less than or equal to 2.)** ∗	2
CFN-03	Filter Sampling Rate	0 ~ 9	The larger number setting, the lower speed rate is.	6
CFN-04	Filter Strength	0 ~ 5	The larger number setting, the stronger filter is.	2
CFN-05	Animal Scale Mode	0	OFF	0
		1	Mode 1: The weight value won't be shown if the weighing condition is unstable.	
		2	Mode 2: The weight value shows in stable or unstable weighing condition.	
CFN-06	Animal Scale Stable Range	0 ~ 100%	Mode 2: Stable Range Setting **(The parameter is less than or equal to 10.)** ∗	10
CFN-07	Animal Scale Sampling Frequency	0	8 times	2
		1	16 times	
		2	32 times	
		3	64 times	
		4	128 times	
CFN-08	Dual Range Resolution Setting	0	Multi - interval	0
		1	Multi - range	
CFN-09	Midpoint Setting for Dual Range Resolution	0 ~ 999999	Set the demarcation point for dual range resolution.	5 000
CFN-10	Gravity Calibration	9.78032 | 9.83218	Gravity calibration for the different using & production zone.	9.79423
		1	Zero when Scale turned on.	
CFN-11	Operation of Accumulative Value/ Times upon Unstable Condition	0	ON	1
		1*	OFF	

ꪲ The symbol "∗" is standard for OIML Certification in context.

6-4 Error Messages

(1) Err 0   Load Cell or A/D circuit is abnormal.

(2) Err 2   Real weighing value is lower than or equal to zero value.

(3) Err 6   Internal resolution is lower than 0.15 µV/d range.

(4) Err.   Incorrect password

(5) E 1   Internal value is lower than zero range.

(6) E 2   Internal value is higher than zero range.

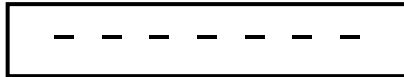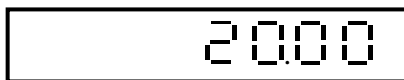# *Chapter 7 Special Function*

7-1 Animal Scale Setting

⛶ **CFN-05 = 1**

(Animal Scale Mode1: The weight value won't be shown if the weighing condition is unstable.)

When there is nothing on the platter, the screen will show:

```
– – – – – – –
```

When an object is on the platter, take a 20-gram object for example, the screen will show:

```
20.00
```

The weight value will be kept on the display if the weight is lower than 10d or you can push "Enter" key to reset weighing process, then the screen will show:

```
– – – – – – –
```

⛶ **CFN-05 = 2**

(Animal Scale Mode 2: The weight value shows in stable or unstable weighing condition The weight value shows on the display under the stable or unstable weighing condition.)

When the weight value reaches the range of CFN-06 and CFN-07 setting, the screen will keep showing the weight value.

When the weight value is over the range of CFN-06 and CFN-07 setting, the screen will show the normal weight measurement.

For example: CFN-06=30　　CFN-07=2
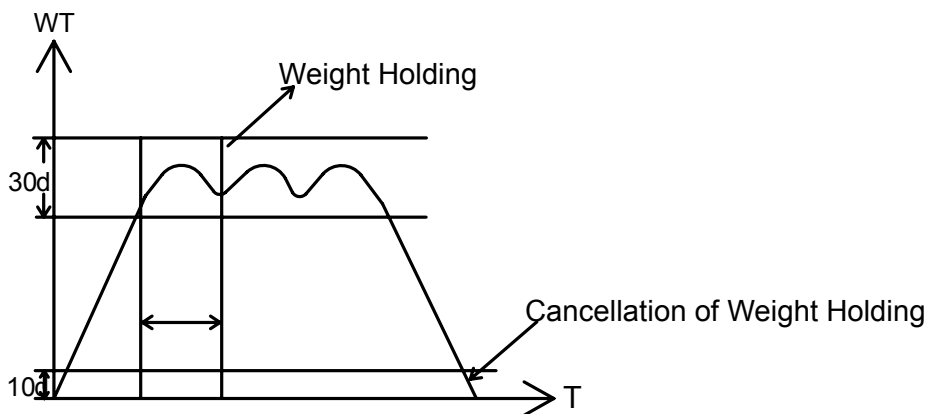
7-2 Dual Range Resolution Switch Function

The dual range resolution will be available when the parameter settings of CSP-02 and CSP-03 are different.
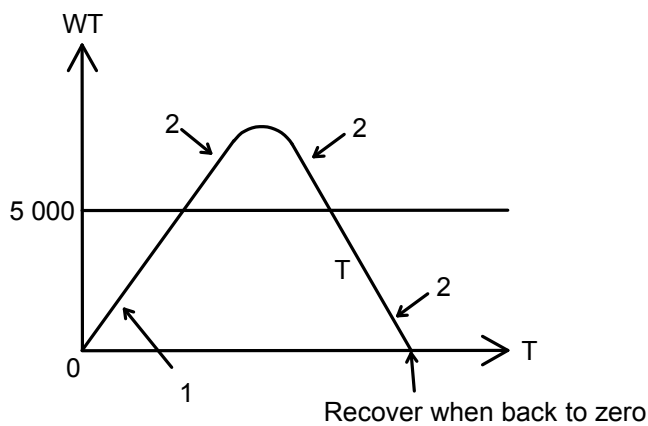
⎁ CFN-08 = 0   Multi - interval

If CFN-09 = 5 000
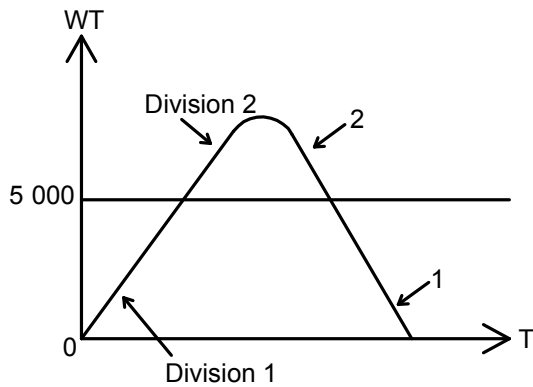
⎁ CFN-08 = 1   Multi - range

If CFN-09 = 5 000
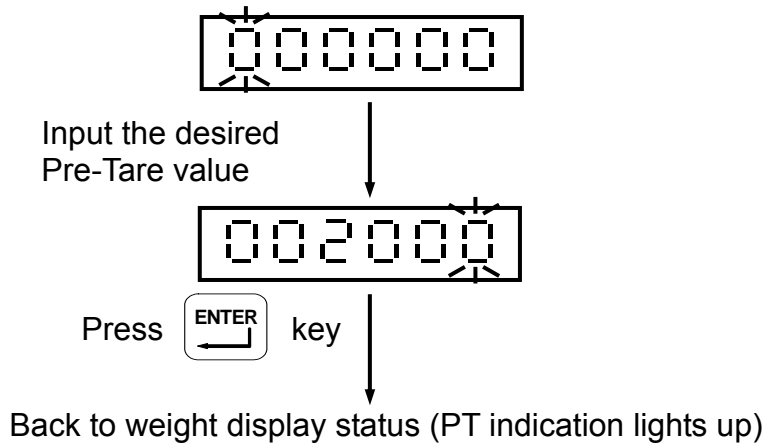
7-3 Pre-Tare Function

⊡ **FNC-02 or FNC-03 setting is at parameter 6. (Pre-Tare Function)**

Under weight display status, press [F1/▲] **or** [F2/▶] **key (according to FNC setting), the screen will show:**

```
000000
```

Input the desired
Pre-Tare value
↓

```
002000
```

Press [ENTER] key

↓

Back to weight display status (PT indication lights up)

Pre-Tare Cancellation

When the gross weight column shows "0", press [TARE] key to cancel the Pre-Tare value.

7-4 Resolution Switch Function

⊡ **FNC-02 or FNC-03 setting is at parameter 5.**

Under weight display status, press [F1/▲] **or** [F2/▶] **key (according to FNC setting), the display will show 10 times of the original division value and it will return back to the original one after 5 seconds.**
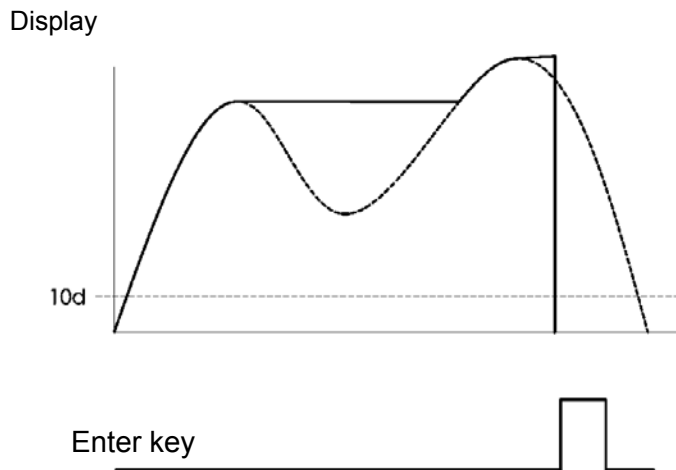
7-5 Maintain Beeper Value Setting

Mode 1

RS-232 transmission mode enters into HOLD value transmission mode automatically. When the weight is higher than 10d, the indicator holds the max value of weight. Press [ENTER] key to unlock HOLD mode.

RS-232 tansmits one data of PEAK of HOLD value when press [ENTER] .

Mode 2

RS-232 transmission mode enters into HOLD value transmission mode automatically.

When the weight is higher than 10d, the indicator holds the max value of weight.

When the weight is lower than 10d, the indicator unlocks HOLD value automatically and shows the weight value which is lower than 10d.

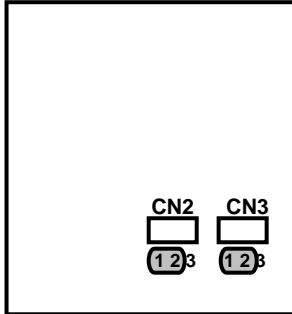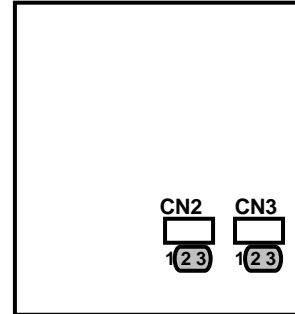RS-232 tansmits one data of PEAK HOLD value. The data point is from PEAK HOLD value to lower than 10d.
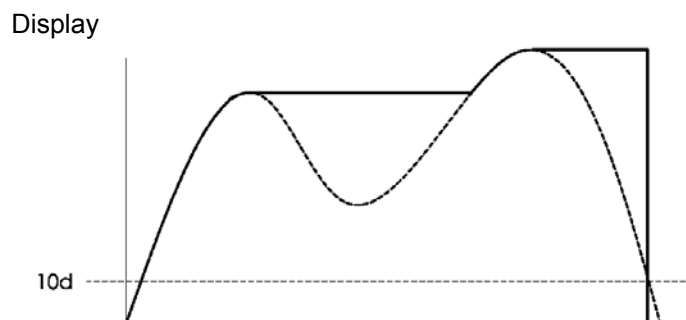
Chapter 8 Interface

8-1 OP-01 RS-232 / RS-485 Serial Output with RTC (Real Time Clock)

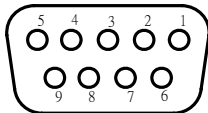**CN2   CN3**

Short 1 and 2 pins to get RS-485 output.

CN2   CN3

Short 2 and 3 pins to get RS-232 output.

⊟   **Pin Allocation of Rear Panel**

Pin	Function
2	RXD
3	TXD
5	SG
6	DA
7	DB

▤   RS-485 interface is capable to connect up to 10 mini-indicators.

Connection Description (RS-485)
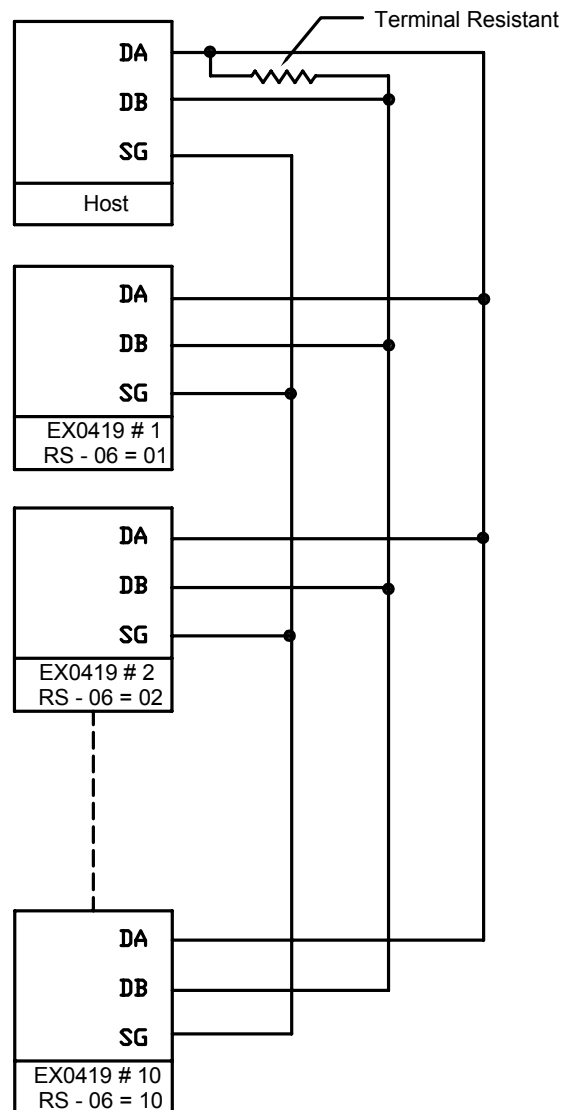
📑 Notice

♦ If the terminal resistant is built-in the host interface, it's not necessary to connect with another one from outside.

♦ If the host computer is no signal ground (SG), it's not necessary to connect with it.

Chapter 9 Maintenance

9-1 Restore Default Setting for All Parameters (General Certification)

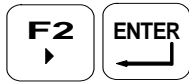(1) Adjust the calibration switch to "ON" during the countdown of power on, press

[F1/△] [ENTER] and hold them simultaneously.

(2) The screen will show ᴵⁿ ⁱᵗ.ᴬᴸᴸ

(3) To confirm, press [ENTER] and hold until showing ᴱⁿᵈ, and then adjust the calibration switch to "OFF".

9-2 Restore Default Setting for All Parameters (OIML Certification)

(1) Adjust the calibration switch to "ON" during the countdown of power on, press

[F2 ▸] [ENTER] and hold them simultaneously.

(2) The screen will show ᴵⁿ ⁱᵗ.ᴬᴸᴸ

(3) To confirm, press [ENTER] and hold until showing ᴱⁿᵈ, and then adjust the calibration switch to "OFF".

9-3 Restore Default Setting for General Function Parameters

(1) Press [F1/△] [ENTER] and hold simultaneously during the countdown of power on.

(2) The screen will show ᴵⁿ ⁱᵗ.ᶠⁿ

(3) To confirm, press [ENTER] and hold until re-turning on.

9-4 Self-test Mode

(1) Press [ZERO +] and hold it during the countdown of power on.

(2) The screen will show ᵁᴱᵣ, which means entered self-test mode.

(3) Use [ZERO +] or [TARE −] keys to select test program.

Press [ENTER] key to enter self-test, and press (ESC) key to exit.

Item	Display	Testing Item
1	ūEr	Program Version Number Displaying
2	dSP	7-Segment Display Testing
3	HEY	Keypad and Calibration Switch Testing
4	AdC	A/D Conversion Value Displaying
5	EEP	EEPROM Testing
6	rEC	RTC Date & Time Testing
7	232	OP-1 RS-232 Serial Output Interface Testing

9-4-1 Program Version Number

7-Segment display shows program version number XXXXXX.

Press ⏎ENTER again to show   1 : General certification

2 : OIML certification

3 : No meaning

9-4-2 7-segment Display Testing

7-Segment display shows ⎕ to ⎍ and ".".

9-4-3 Keypad & Calibration Switch Testing

Adjust calibration switch to "ON", and press any key, the corresponding bit will be changed from ı to ı̇.

9-4-4 A/D Conversion Value

7-Segment display shows the internal value of the scale.

9-4-5 EEPROM Testing

Showing PASS represents in normal condition.
Showing FAIL represents in abnormal condition.

9-4-6 RTC Time & Date Testing

Press ⏎ENTER key to enter the testing mode, and the screen will show date YY.MM.DD.

For example: "05.11.03" represents 3rd of November, 2005.

Press ⏎ENTER key again to show time HH.MM.SS.

For example: "09.45.50" represents 9 o'clock, 45 minutes and 50 seconds.

9-4-7 RS-232 Serial Output Interface Testing (OP - 01)

(1) Short Pin 2 and Pin 3 of the 9-pin D-SUB socket of serial output.

Showing PASS represents in normal condition.
Showing FAIL represents in abnormal condition.

(2) If connected with a computer (protocol must be corresponding), the screen will show ⎕ to ⎍, which means RS-232 output is in normal condition.

Appendix   7-Segment Display Characters

Number	Display	Letter	Display	Letter	Display
0		A		N	
1		B		O	
2		C		P	
3		D		Q	
4		E		R	
5		F		S	
6		G		T	
7		H		U	
8		I		V	
9		J		W	
		K		X	
		L		Y	
℃		M		Z	