# ATTACHMENT F.
# - USER'S MANUAL

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# CASTON

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## CRANE SCALE

**CAS CORPORATION**

# Federal Communications Commission Requirements

Warning : Changes or modifications not expressly approved by the party responsible for compliance with the FCC'S rules could void the user's authority to operate the equipment.

THIS DEVICE COMPLIES WITH PARTS 15 OF FCC RULES
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS
(1)THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE,
AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE
RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE
UNDESIRED OPERATION.

# CONTENTS

# 1. INTRODUCTION

We greatly appreciate your purchase of the CASTON-β. These goods perform excellently and exhibit splendid properties through strike tests. The CASTON-β is delicately designed to coincide with the special requirements of several industrial fields and includes many functions and various external interfaces. Also, it is programmed for the user's convenience and contains display functions that are easily accessible. Before using The CASTON-β, it is recommended that you read this manual carefully so you may use this device to its full potential.

# 2. PRECAUTION

When the CASTON-β is installed, safety pin in hook should be fixed to prevent dropping out from    lift eye bolt.

Check the scale's stability.

Do not press the keys with excessive force, the keys are to be pressed with a soft touch.

Do not use ignitable material for cleaning.

Keep the CASTON-β away from the rain.

Avoid sudden temperature change.

The operating temperature range is    10   to   40   .

Do not install CASTON-β in a place with high voltage and excessive electrical noises.
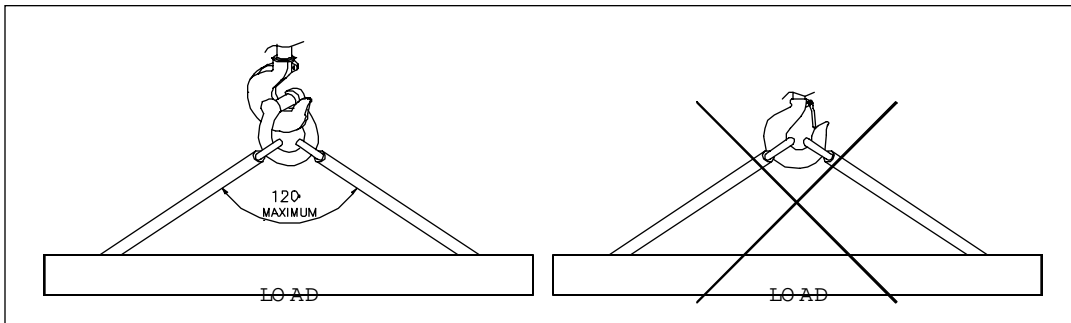
Keep it in dry place.

Do not use under direct rays or in a dusty place.

Do not use in an area with excessive electrical noises and vibration.
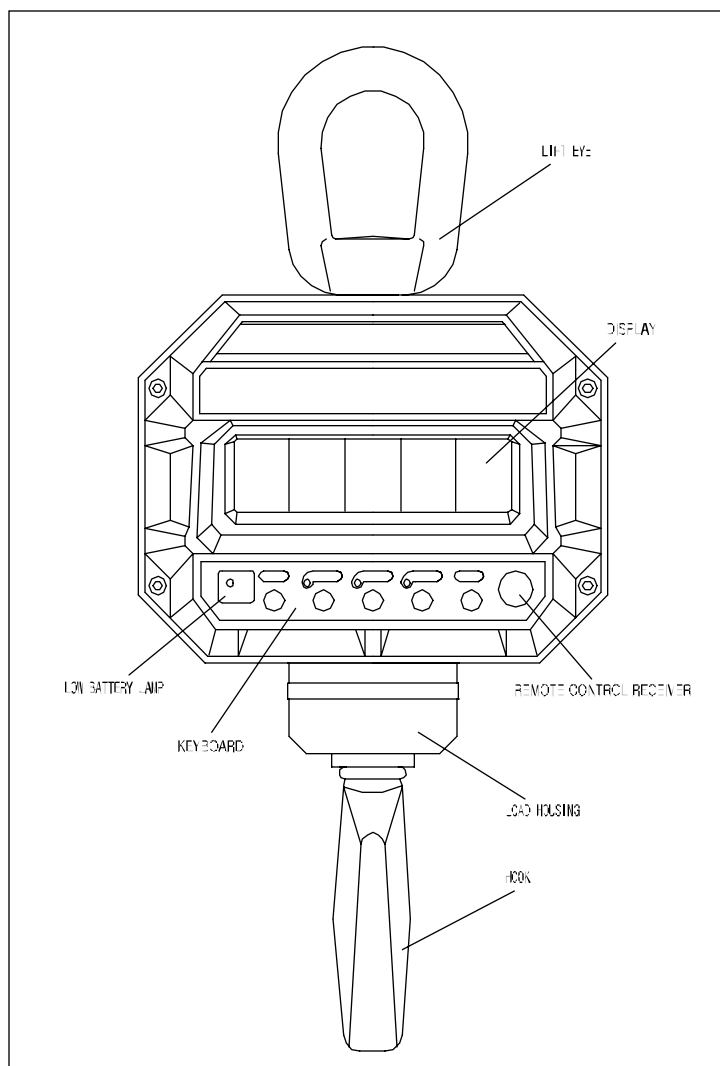
Do not stand under the scale while weighing the load, and you should be careful to provide against
 a safety accident.

If you don't use the scale for a long time, you should turn off POWER S/W on the rare panel.

The load which hang on the hook should be a vertical load. (Refer to the next features.)

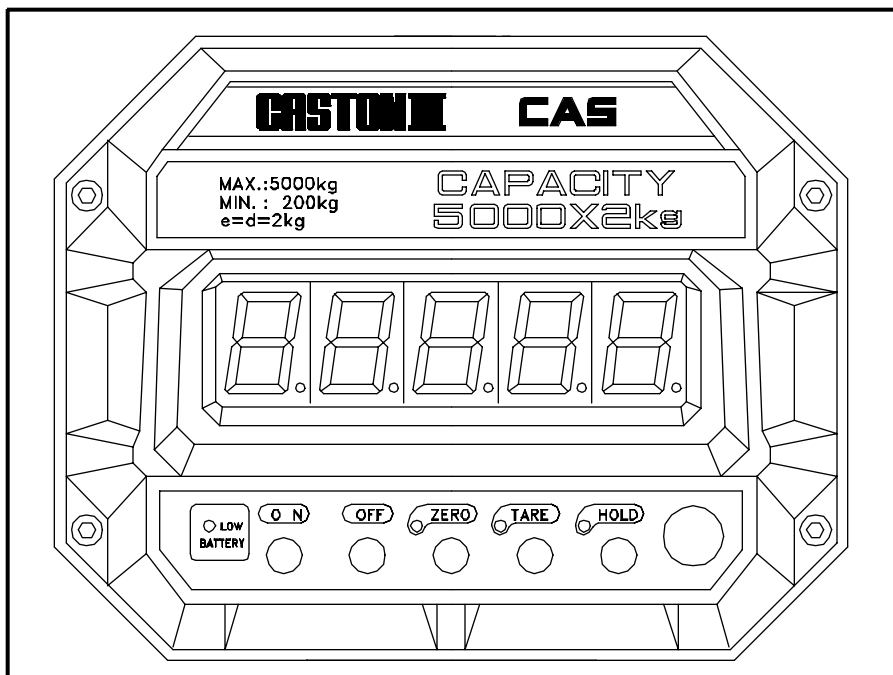## 3. OVERALL VIEW



## 4. SPECIFICATIONS

| MAX. TARE WEIGHT | FULL TARE |
|---|---|
| DISPLAY | L.E.D.(1.5 inch) |
| TEMPERATURE RANGE | 10 < 40 |
| POWER SOURCE | 6V |
| POWER CONSUMPTION | 1.2W |
| DISPLAY LAMP | ZERO, TARE, HOLD, LOW BATTERY LAMP |

# 5. DISPLAY & KEY FUNCTIONS



€DISPLAY
 - WEIGHT DISPLAY : Displays weight or messages.
 - ZERO LAMP : Indicates that scale is stable and at zero.
 - TARE LAMP : Indicates that scale is currently using a tare.
 - HOLD LAMP : Indicates that the HOLD feature has been activated.
 - LOW BATTERY LAMP : Indicates that battery is low and must be changed soon.

€KEY FUNCTIONS

# 6. FUNCTION OF REMOTE CONTROL

| ON | Used to turn ON. |
|---|---|
| OFF | Used to turn OFF. |
| ZERO | Used to set the zero point to 0 . |
| TARE | Used to enter tare weight and to clear tare entries. |
| HOLD | Used to weigh unstable things. (Liquids, Livestock, etc.) |

## (1) Remote Control Operation

€RED LAMP : Blinks when keys are pressed.

€ON/OFF KEY: Same as **ON/OFF** key of Scale.
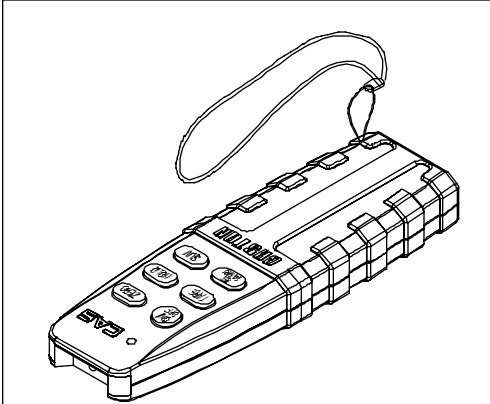
€ZERO KEY : Same as **ZERO** key of Scale.

€TARE KEY : Same as **TARE** key of Scale.

€HOLD KEY : Same as **HOLD** key of Scale.

€SET(Clear) KEY : Used to clear previously added weights.

€SUM KEY : Used to add weights.

If you press **SUM** key, it will be showed the accumulated value, and then it will moved to WEIGHING MODE a few seconds later.
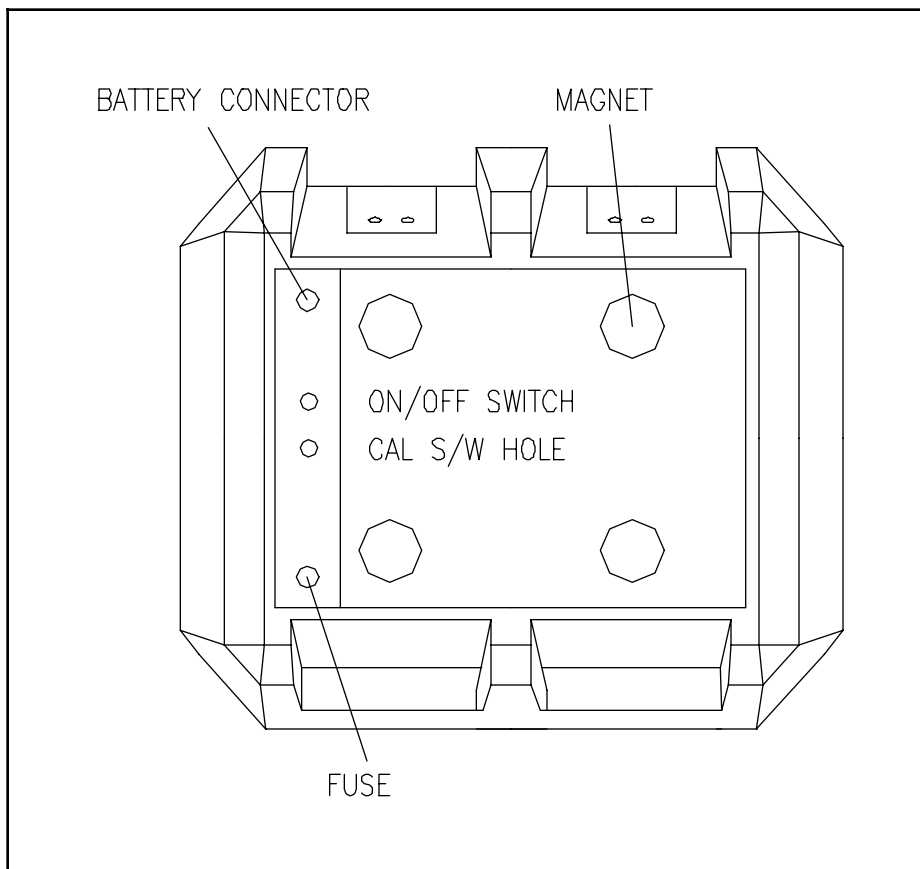
## (2) Remote Control Specification

| Available Distance | 6 m < 10 m |
|---|---|
| Available Angle | 60° |
| Power | 3V (1.5V AMM · 2) |

# 7. BATTERY USAGE

€ Open the battery lid located in back of the scale and turn main power switch off.

€ Separate the battery connector and take out the discharged battery.

€ Put a charged battery in rear and connect the battery connector.
  Turn main power switch on and cover the battery lid.



€ Check the voltage of

# 8. USE OF BATTERY CHARGER

battery charger before use.

  (It is fixed to 220V before shipping)

€ Insert charger A.C cord into the power source and connect the discharged battery to the
  connector.

€ Turn ON the switch on the battery charger, charging will start.

€ You can check charging condition with red L.E.D in charger.

€ Estimated time for charging is 8 hours.

  (Charging time can be varying according to the battery condition.)

# 9. FUNCTIONS & DESCRIPTIONS

Turn the power switch before using the scale. Power switch is located on the rear panel.

## (1) ON/OFF KEY
€ Press the **ON/OFF** key then The scale will perform self-test on Weight Display and will be ready to weigh when ZERO lamp turns on.

## (2) ZERO FUNCTION
€ Used to remove small variations in the scale's zero.
  (You can adjust the zero up to 2% or 10% of the maximum capacity)
€ If the weight is not zero though there is nothing on the hook, you can press **ZERO** key to go to zero state.

## (3) TARE FUNCTION
€ Tare is the weight of container being used for a commodity. The **TARE** key subtracts the weight of the container.
€ After hanging a container on the hook, press the **TARE** key. Then the scale will memorize the weight of the tare, and will display 0 kg with turning on the TARE lamp.
€ If you weigh items, you will see the net weight.
€ To release this function, remove everything from the hook and press the **TARE** key. Then the TARE LAMP will turn off and this function is terminated.
; The weight including TARE weight can't exceed the maximum capacity.

## (4) HOLD FUNCTION
  Automatic Hold Function (This function is performed whenever you weigh an item)
€ Press the **HOLD** key when the hook is empty (in zero value condition)
€ The Weight Display will display "AH on" sequentially.
€ The scale will change from the Normal mode to Auto-hold mode, and HOLD lamp will turn on.
€ If you weigh unstable things in Auto-hold mode, "HoLd" will display on the Weight Display. And then, the average value of the weight fluctuation will display.
€ If the weight fluctuation range exceeds within ±10% of weight, the scale will retry Auto-hold function.
€ To escape from Auto-hold mode, press the **HOLD** key.
  It will be returned to the Normal mode and "AHoFF" will be displayed with HOLD lamp turning off.

α Manual Hold Function (Execute when you press **HOLD** key)

€ Press the **HOLD** key while weighing an unstable item.
  "HoLd" will display and then, the average value of the weight fluctuation will display on
  the Weight Display.

€ To escape from this mode, empty the hook or press **HOLD** key.
  Then the scale changes from Hold mode to Normal mode.

## 10. SET MODE

### (1) How to enter

€ Press the **ON/OFF** key while pressing the **TARE** key, and SET mode starts.

### (2) Key Usage

€ ZERO : Returns the display to 0.
€ TARE : Increase the set value to 1.
€ SET : Store and move into next menu.

### (3) Set Menu(F1 - F5)

€ F1 : Digital Filter Setting

| Set Value | Description |
|---|---|
| F1- 1 | In high speed (Less vibration) |
| F1- 4 | In normal speed |
| F1- 9 | Very slowly (Much vibration) |

€ F2 : Automatic zero tracking compensation

| Set Value | Description |
|---|---|
| F2- 0 | No compensation |
| F2- 4 | Compensation for gradual change below 2 divisions. |
| F2- 9 | Compensation for gradual change below 4.5 divisions. |

€ F3 : Weight backup (Power on actual weight)

| Set Value | Description |
|---|---|
| F3- 0 | Weight backup is OFF |
| F3- 1 | Weight backup is ON |

**NOTE.** If you press **SET** key after F3 setting, it will display "bye" and enter to Normal mode.

€ F4 : Zero key operation range set

| Set Value | Description |
|---|---|
| F4- 0 | ±2% : Zero key operation within ±2% of maximum weight. |
| F4- 1 | ±10% : Zero key operation within ±10% of maximum weight. |

€ F5 : Option select

| Set Value | Description |
|---|---|
| F5- 0 | TW-150 |
| F5- 1 | TW-100 |

## 11. TEST MODE

### (1) How to enter

€ Press the **ON/OFF** key while pressing the **ZERO** key and TEST mode starts.

### (2) Key Usage

€ SET : Move to the next menu.

€ ZERO, TARE, HOLD : Perform the test.

### (3) Test Menu (TEST 1 - TEST 3)

€ TEST 1 : Display test

| Display | Description |
|---|---|
| *8.8.8.8.8.* | •TEST 1 is performed.<br>•After display test completing, it will be moved to test 2 automatically. |

€ TEST 2 : Key & Remote control test

| Key Code | | Description |
|---|---|---|
| ZERO | 1 | •Press the key to be tested and the code of the key    is displayed. |
| TARE | 2 | •Press the key to be test and the No of key mode    should be identify with code of key. |
| HOLD | 3 | •If you press SET key, it will be moved to test 3. |

€ TEST 3 : A/D converter test (Load cell test)

| Display | Description |
|---|---|
| Digital value of current weight<br>Ex) 5500 | •Display digital value of current weight.<br> This value means converted digital value.<br>•If you press SET key after test 3 completing, it    will enter to Normal mode. |

 Check whether digital value changes. If the digital value is fixed or zero is displayed,
 Please request A/S to head office.

# 12. OPTIONS

 It is connected with CASTON(crane scale) by use of wireless communication.
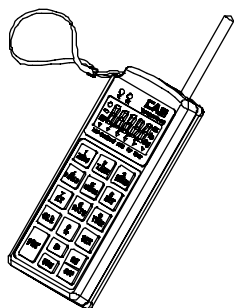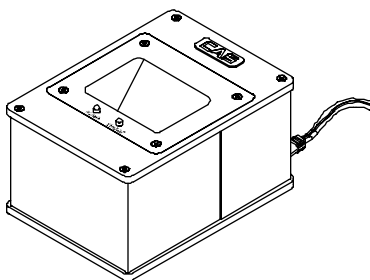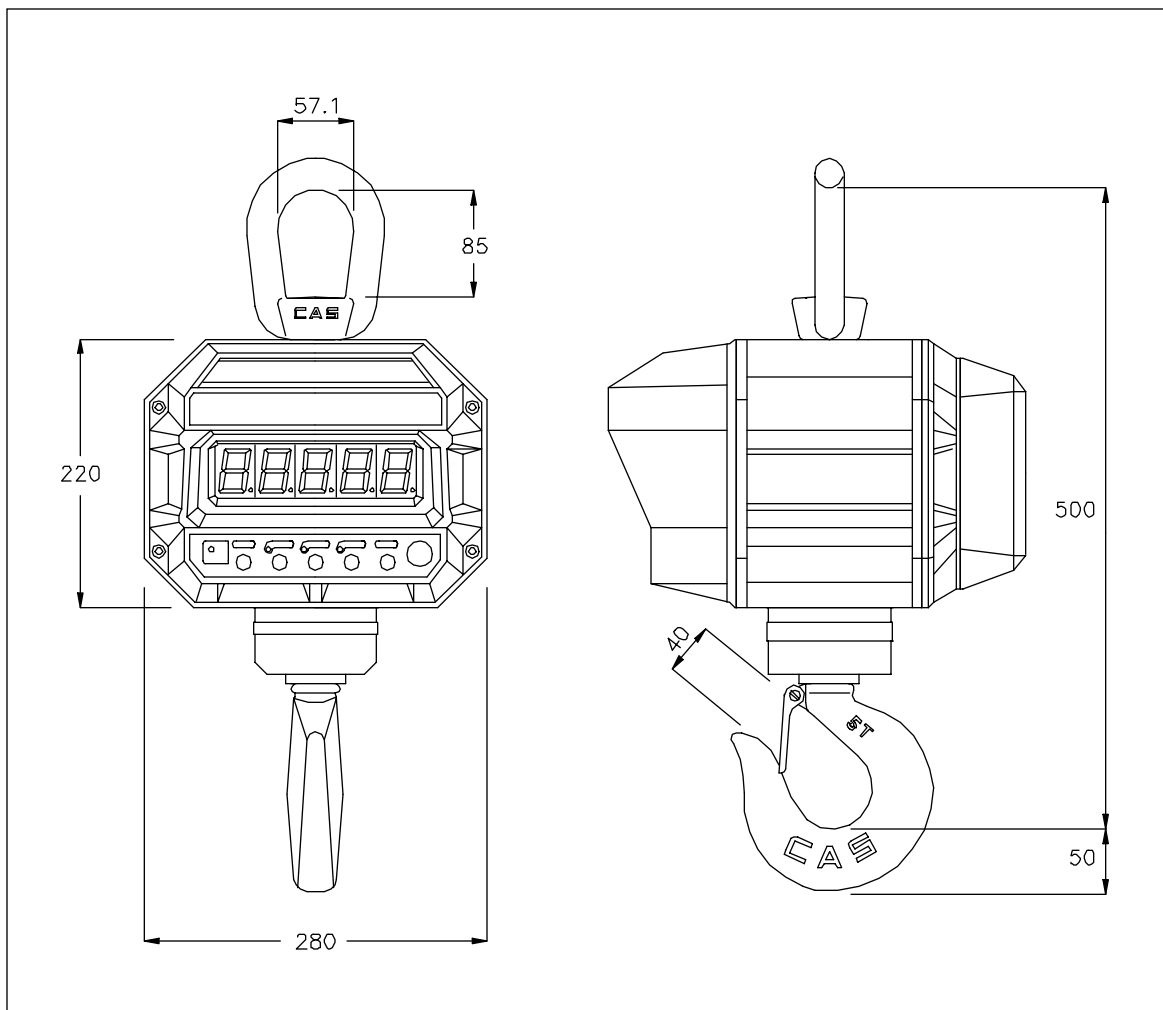

## (1) Option 1 : TW-100



Fig.1                                    TW-100

Fig.2 Charger

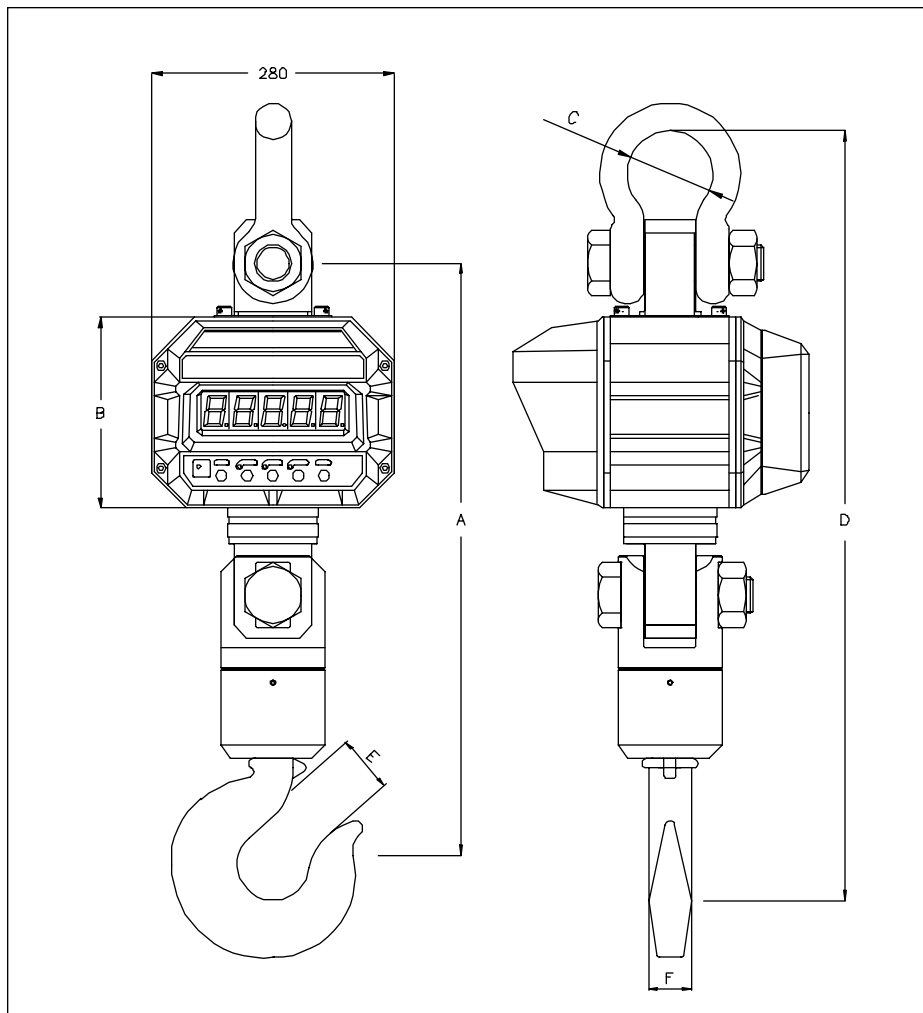| Frequency | 903.000Mhz < 918.500Mhz |
|---|---|
| Channel interval | 500Khz |
| Channel | 32 channel |
| Generating power | Max. 10mW |
| Communication method | FSK (Frequency Shift Keying fsk) |
| Comm. speed | 9600bps |
| Comm. distance | Max. 100M |
| Display | LCD (5 digit) |
| Size of letter | 12 mm (Height) |
| Display below zero | "-" displayed |
| Battery life time | Approx. 10 hours |
| Battery charging time | Approx. 4 hours |
| Power | TW-100 : Rechargeable DC Battery 7.2V  720mA<br>Charger : AC220V/60Hz |
| Power consumption | 0.5 W |
| Temperature range | -10  <+40 |
| Function | PC interface, zero, tare, gross, net, hold, print, clock,<br>id setting, key tare setting, weight sum, peak hold. |
| Product size(mm) | 62(W)·28(D)·147(H) |

## 13. PRODUCT SIZE

**(1) 10TON 50TON**

(UNIT : mm)



| MODEL | CAPACITY | PRODUCT WEIGHT |
|-------|----------|----------------|
| 1THD | 1000 ·0.5 | 26 |
| 2THD | 2000 ·1 | 28 |
| 3THD | 3000 ·2 | 31 |
| 5THD | 5000 ·2 | 31 |

## (2) 10TON 50TON



(UNIT : mm)

| MODEL | CAPACITY | A | B | C | D | E | F | PRODUCT WEIGHT |
|-------|----------|------|-----|------|------|------|-------|----------------|
| 10THD | 10000 ·5 | 667 | 220 | ø83 | 845 | 57.2 | 42 | 44 |
| 15THD | 15000 ·10 | 682 | 220 | ø99 | 886 | 63.5 | 50 | 53 |
| 20THD | 20000 ·10 | 725 | 220 | ø126 | 990 | 86 | 60 | 76 |
| 30THD | 30000 ·20 | 895 | 220 | ø138 | 1200 | 108 | 92 | 220 |
| 50THD | 50000 ·20 | 1400 | 220 | ø180 | 1520 | 106 | 112.7 | 390 |

## 14. ERROR MESSAGE

**CH 01**

≤ Reason

Internal RAM is erased.

Trouble-shooting

Please request A/S to head office.

**CH 02**

≤ Reason

Load cell connection failure or error in A/D conversion part.

Trouble-shooting

Please request A/S to head office.

**CH 03**

≤ Reason

The Zero range exceed from ±10% of Max.

Trouble-shooting

Check that there is nothing on the hook.

**Over**

≤ Reason

The display weight is larger than the Maximum capacity you've set.

Trouble-shooting

Don't load the article whose weight is larger than the Max. Capacity on the platform. This may damage Load Cell.