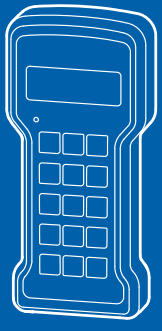
INDUSTRIAL WEIGHING SOLUTION™

CRC-100

RF Controller



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OWNER'S MANUAL

CAS

NOTE

(1) The unauthorized copying of some or all of this manual is prohibited.

(2) The information contained herein is subject to change without notice.

(3) If there are any questions such as wrong or missing parts of the contents listed in this manual, please contact us.

(4) To improve the product performance, functions can be changed with no notice.

(5) Please understand that CAS does not have responsibility for a demand related to loss, lost profit etc. caused by operating the product, regardless of the third clause.

WARNING DEFINITIONS	
	This is warning & caution mark
	This is hazard alert mark
	This is useful information mark

CONTENTS

1. Precautions

Please be informed that we're not responsible for any incident or mishap caused by partial modification of this product. To avoid such situation, customers need to contact our customer service team or system installation staff in advance, and any modification should be conducted under our surveillance.

- Use only approved enhancements and batteries. Do not connect incompatible products. Use only batteries, chargers, adaptor, and enhancements approved by CAS for use with this particular model.
  The use of any other types may invalidate any approval or warranty, and may be dangerous. For availability of approved enhancements, please check with your dealer.
- Do not install the product in strong direct sunlight and dust.
- Please confirm that the local voltage is correct for the power adapter.
- Do not use inflammable substances for cleaning.
- Avoid sudden changes of temperature if possible
- Do not use the product in a place with a high-voltage current or severe electronic noise.
- Do not use the product in a place with severe vibration.
- Do not put too much pressure to keys.
- Avoid from the shock of excessive weight.

2. Introduction

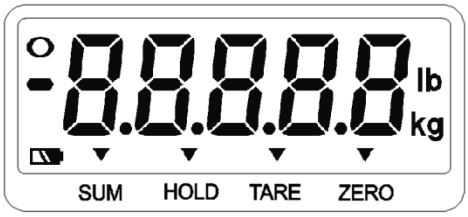
- ZigBee wireless communication
- Long battery lifetime by one time charging
- Weight storage: 2,500
- Item & client management: each 70
- Standard RS232C
- Automatic storage function

3. How to Use a Rechargeable Battery

Use only approved power adaptor and batteries.
Do not connect incompatible products.
Use only batteries, chargers, adaptor, and enhancements approved by CAS for use with this particular model.
The use of any other types may invalidate any approval or warranty, and may be dangerous. For availability of approved enhancements, please check with your dealer.

Step1. Check the power adaptor voltage is (DC 5V, 1A).
Step2. Connect the charging jack to the port from adaptor.
Step3. If adaptor is still being charged, the RED lamp is on.
Step4. If a charging is completed, the GREEN lamp is on.
Step5. The battery charging time takes about 6~8 hr.
(Charging time is subject to be changed according to battery condition.)

4. Description of Panels and Symbols



● CHARGE

DISPLAY	
88888	Indicates weight and status
O	Displayed when the weight is stable
-	Displayed when the weight is minus
	Displayed when a battery has to be recharged
SUM	Displayed when you press SUM key
HOLD	Displayed when you press HOLD key to weight moving or alive
TARE	Displayed when tare weight is stored
ZERO	Displayed when the weight is zero
kg lb	Indicates the weighing unit
CHARGE	Light up when power adaptor is connected

KEYBOARD	
ON/OFF	Turn on and off the scale.
CALL	Use confirm weight storage
F	Used to turn on and off the backlight / hold function
ZERO 1	Return the display to zero
TARE 2	Used to weigh an item by using the container
kg/lb 3	Used to change unit
PRINT 4	Designated printing form is printed
TOTAL 5	Used to print overall total weight
SUM 6	Used to accumulate the weight
ITEM 7	Used to register ID code
CLIENT 8	Used to register Client code
SETUP 9	Used to enter the setting mode
CLEAR	Used to initialize the accumulated weights
* 0	Used to save weighing data by manual
ENTER	Used to save current condition and exit in Test, Setting mode

5. General Functions and Descriptions

5.1. Zero function

Use to correct drifted zero value when the scale is unloaded, and motion is not detected. This function works when ZERO KEY is pressed, and the ZERO mark turns on.

5.2. Tare function (Refer to setting mode F12)

The function is used to display a net value with the container weight subtracted from the total weight, if you place an object into a container to weigh it.

Step1. Place the tare on the weighing tray.
Step2. Press the TARE key to store the tare weight after the STABLE mark turns on and then the display changes to net.

To escape this function, remove everything from the scale, and press the TARE key.
Then the TARE lamp will turn off and this function is terminated.

ⓘ The sum weight of the tare and any item on a scale cannot exceed maximum capacity.
ⓘ When zeroing with the ZERO key, tare is cleared.

5.3. Preset tare function (Refer to setting mode F12)

When you already know the tare weight, press TARE key and input tare weight using by numeric keys and memorize it by pressing ENTER key.

5.4. Hold function (F13 of setting mode must be set to 1)

■ Manual hold function

Step1. Press F(hold) key after loading a thing.
Step2. Sequentially the message of - - - - - is shown with appearing the average weight.
Step3. To escape the manual hold mode, remove everything from a weighing tray, or press the F(hold) key. Then, HOLD mark will be turns off and the scale changes from a hold mode to a normal mode.

■ Automatic hold function

Step1. Press F(hold) key when the scale is empty. (Initial zero state)
Step2. The display will indicate AH on and HOLD mark will be turns on.
Step3. After loading a thing, a display shows - - - - - automatically and average weight will appear.
Releasing the data when a displayed value smaller than initialization hold weight.
Step4. To escape the automatic hold mode, when zero point is on, press F(hold) key
Then the message of AHoFF is displayed and HOLD mark will be turns off and normal weighing mode is reverted.

5.5. Print function

If PRINT key is pressed, the print format you chose in set mode (Refer to setting mode F03) is to be printed.

5.6. Overall total print function

If TOTAL key is pressed, "totAL" is displayed and will be printed as shown below.
After printing is done, the total weight and count are reset.

```
--------------------------
      OVERALL-TOTAL
--------------------------
DATE :          2008.11.25
TIME :               9:55
COUNT:                 50
TOTAL:          760.0 lb
```

5.7. Item code registration

Step1. Press ITEM key.
Step2. Input the item code. The code range is from 0 to 69.
Step3. To escape from this mode, Press the ENTER key.
ⓘ Refer to "8. Management of the Item & Client"

5.8. Item code registration

Step1. Press CLIENT key.
Step2. Input the client code. The code range is from 0 to 69.
Step3. To escape from this mode, Press the ENTER key.
ⓘ Refer to "8. Management of the Item & Client"

5.9. Storage data clear

In weighing mode, you can clear storage data with press CLEAR key for 3 seconds.
Also, you can clear storage data using F09-1 of setting mode

5.10. Weight accumulation

Press SUM key to accumulate weight data when the STABLE mark is on.
And then the accumulated data is displayed.
After that, about 2 sec later, a weighing mode is reverted.
If you press CLEAR key, accumulated weights are cleared.

6. Weight Storage

6.1. Automatic storage – Peak data

Step1. Set the setting mode F10-1
Step2. Set the setting mode F11 (1d~9d)
ⓘ you set F11-5, the weight of 5division or less will not be automatically stored.
Step3. Input the client and item code.
If you don't use client and item code, you can ignore this step.
Step4. Measure the weight and CRC-100 store the weight of the peak.
ⓘ Data can be stored after the weight data enters the zero band range of F12.

6.2. Automatic storage – Hold data

Step1. Set the setting mode F10-2
Step2. Input the client and item code.
If you don't use client and item code, you can ignore this step.
Step3. If you measure with Hold function, holding data is stored in the memory.

6.3. Manual storage

Step1. Set the Setting mode F10-0.
Step2. Input the client and item code.
If you don't use client and item code, you can ignore this step.
Step3. Measure the weight.
Step4. Press * key when the STABLE mark is on.
Step5. The serial number and code (client & item) are displayed alternately.
(Serial number: 0078 client & item : 17-39)
Step6. Press * key to store and then SAvE is displayed and the weight is stored.
ⓘ The capacity of memory is 25K. FULL is displayed if it arrives at the capacity.
In this case, take backup memory to PC and execute a memory initialization.

6.4. Stored data check

Step1. Press CALL key and then U id-- is displayed. Enter your client code.
Step2. Storage value and sequence number are displayed.
Step3. Press ENTER key to check the stored value.
Step4 If you check the last data, totAL is displayed. And then return to weighing mode after total weight of its client is displayed.
ⓘ if you press CLEAR key, return to weighing mode.

7. Calling the Stored Data

Step1. Press CALL key and then U id- - is displayed.
Step2. Press CALL key again and then 1-6 is displayed.
Step3. Refer to the call method of the downside and press 1 to 6 key.

(1) By date

1	2014	Press ENTER key after input to a year
2	1013	Press ENTER key after input to a date (10:month 13:data)
3	1-Prt	If you press PRINT key, data is transmitted

(2) By serial number

1	5- - - -	Press ENTER key after input to the serial number
2	2-Prt	If you press PRINT key, data is transmitted

(3) By item code

1	id- -	Press ENTER key after input to item code
2	3-Prt	If you press PRINT key, data is transmitted

(4) By client code

1	U id- -	Press the ENTER key after input to client code
2	4-Prt	If you press PRINT key, data is transmitted

(5) whole storage data

1	5-Prt	If you press PRINT key, data is transmitted

(6) By client, item code and date

1	U id- -	Press the ENTER key after input to client code
2	id- -	Press ENTER key after input to item code
3	2014	Press ENTER key after input to a year
4	1013	Press ENTER key after input to a date (10:month 13:data)
5	6-Prt	If you press PRINT key, data is transmitted

(1)~(5) Print format (F06-1)

```
2014.10.13 12:30
S/N 0101          50.0 lb
CLIENT: CAS
ITEM   : Weighing scale

2014.10.13 15:35
S/N 0119          30.5 lb
CLIENT: Samsung
ITEM   : IC
```

(6) Print format (F06-1)

```
_____________________
CAS
Weighing scale
_____________________
2007.10.13 09:51
S/N 0038          35.8 lb
2008.01.01 12:30
S/N 0101          50.0 lb
_____________________
ITEM TOTAL        85.8 lb
CONFIRM :
_____________________
```

(1)~(6) PC format (F06-2)

Start code		Year, month, day, time										
S	S	1	4	1	0	1	3	1	2	0	0	blank

Serial number					Item		Client	
0	0	0	1	blank	ASCII 20 byte	blank	ASCII 20 byte	blank

Weighing data									
0	0	0	1	2	.	0	blank	CR	LF

8. Setting Mode

8.1. How to enter

Press the SETUP key. Then it turns into the setting mode.

8.2. Function menu

■ F01: Sending data to PC or printer (0~6) ▶Initial value: 0

Value	Description
0	Not used
1	Command mode If the device ID is received from PC, it transmits the weighing value
2	Transmission in an state of stable and unstable
3	Transmission only in stable state
4	Manual print (With PRINT key)
5	Automatic print
6	Automatic hold value print

ⓘ Refer to data format of "9. RS232C Interface"

■ F02: Device ID (0~9) ▶Initial value: 0

Value	Description
0	Device ID 0
5	Device ID 5
9	Device ID 9

■ F03: Printing format (0,1) ▶Initial value: 0

Value	Description
0	Form 0 (Date, weigh No., Item, Client, Weight)
1	Form 1 (Date, weigh No., Weight)

[FORM 0]

```
2014.10.13 12:30
NUMBER: 001        50.0 lb
CLIENT: CAS
ITEM   : Weighing scale
```

[FORM 1]

```
2014.10.13 12:30
NUMBER: 001        50.0 lb
2014.10.13 12:31
NUMBER: 002        30.5 lb
```

■ F04: Number of copies (0,1) ▶Initial value: 0

Value	Description
0	A sheet of paper
1	Two sheet of paper

■ F05: Printer type (0,1) ▶Initial value: 0

Value	Description
0	Thermal printer
1	Dot printer

■ F06: Method sending of storage data (0,1) ▶Initial value: 0

Value	Description
0	For Printer
1	For PC

ⓘ Refer to data format of "9. RS232C Interface"

■ F07: Initialization of item code (0,1) ▶Initial value: 0

Value	Description
0	Maintain current item code
1	Initialization

■ F08: Initialization of client code (0,1) ▶Initial value: 0

Value	Description
0	Maintain current client code
1	Initialization

■ F09: Storage data clear (0,1) ▶Initial value: 0

Value	Description
0	Maintain current storage data
1	Clear weighing data storage data

ⓘ In weighing mode, you can clear storage data with press CLEAR key for 3 seconds.

■ F10: Automatic storage (0~2) ▶Initial value: 0

Value	Description
0	Not used (By manual)
1	Store the peak weight data by automatic
2	Store the average hold data by automatic

■ F11: Zero band (0~9) ▶Initial value: 0

Value	Description
0	0d
5	less than or equal to 5d
9	less than or equal to 9d

ⓘ Data can be stored after the weight data enters the zero band range.

■ F12: Preset tare function (0,1) ▶Initial value: 0

Value	Description
0	Not used
1	Preset tare

■ F13: F key function (0,1) ▶Initial value: 0

Value	Description
0	Backlight ON/OFF key
1	HOLD key

■ F14: Backlight conditions (0~2) ▶Initial value: 0

Value	Description
0	Manual ON/OFF
1	Automatic ON/OFF (Weighing: ON / Zero: OFF)
2	Always ON

9. Real Time Clock

When the controller is power off press ON/OFF key while pressing PRINT key, Then this mode is started.

Display	Description
YEAr	Year input readiness.
2014	Modify the year by pressing the numerical keys and press ENTER key
dAtE	Month & date input readiness.
1013	Modify the date by pressing the numerical keys and press ENTER key
tIME	Time input readiness.
1800	Modify the time by pressing the numerical keys and press ENTER key
End	The end

10. Test Mode

When the controller is power off press ON/OFF key while pressing ZERO key,
Then this mode is started.

■ TEST 1: Display test

Key	Display	Description
ENTER : To next menu		TEST 1 runs automatically.

■ TEST 2: Keyboard test

Key	Display	Description
ENTER : To next menu Other key : Perform test	- -	Press the key to be test and the No. and code corresponding to the key is displayed.

Key number

Key	Number	Key	Number	Key	Number
CALL	13	F	14		
ZERO 1	01	TARE 2	02	kg/lb 3	03
PRINT 4	04	TOTAL 5	05	SUM 6	06
ITEM 7	07	CLIENT 8	08	SETUP 9	09
CLEAR	11	* 0	10	ENTER	12

11. RS-232C Interface

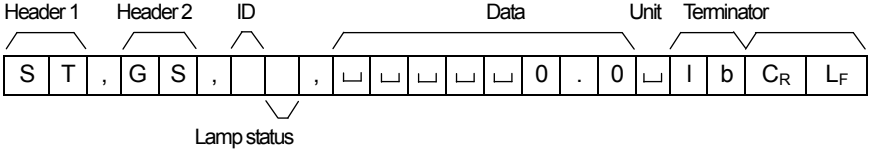
11.1. Specifications

- Method: Full-duplex, asynchronous transmission format
- Baud rate: 9600 bps
- Data bit: 8 bits
- Parity bit: Non parity
- Start bit: 1bit / Stop bit: 1bit
- Adaptable connector (D-SUB 9P FEMALE)

2P	3P	5P
TXD	RXD	GND

11.2. Data format

When data is sent to computer? Set in setting mode (F01)



Header 1	ST	Stable weight data (0x53) (0x54)						
	US	Unstable weight data (0x55) (0x53)						
	OL	Overload (0x4F) (0x4C)						
	HD	Hold weight data (0x48) (0x44)						
Header 2	GS	Gross data (0x47) (0x53)						
	NT	Net data (0x4E) (0x54)						
ID	Command address ID is selected in F02 (If ID is 1, 0x31 is sent)							
Lamp status	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
	1	Stable	1	Hold	1	Net	Tare	Zero
Data	Example 1) 13.5 lb ‘ ’, ‘ ’, ‘ ’, ‘ ’, ‘1’, ‘3’, ‘.’, ‘5’ Example 2) 135 lb ‘ ’, ‘ ’, ‘ ’, ‘ ’, ‘1’, ‘3’, ‘5’, ‘ ’ Example 3) -13.5 lb ‘-’, ‘ ’, ‘ ’, ‘ ’, ‘1’, ‘3’, ‘5’, ‘ ’							
Unit	Kg	(0x6B) (0x67)						
	g	(0x20) (0x67)						
	lb	(0x6C) (0x62)						
Terminator	C_R L_F	(0x0D) (0x0A)						

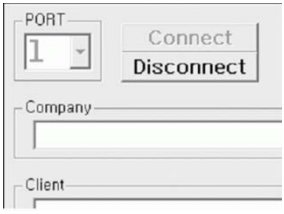
12. Wireless Pairing

Step	Operation & Description
1	*How to enter the pairing mode* **1) CCB crane scale** When the display is off, press ON/OFF key while pressing * key. When "t=40 1"(Firmware version) is displayed, press kg/lb key. Then, "rFSEt" is displayed. **2) CRD-F wireless display** Press the ON/OFF key to power on and immediately press kg/lb key. And press the kg/lb key again. Then, "rFSEt" is displayed. **3) CRC-100 controller** When the display is off, press ON/OFF key while pressing ENTER key. When "t=60 1"(Firmware version) is displayed, press3 key. Then, "rFSEt" is displayed. **4) CRC-200 wireless dongle** Press the SET KEY for the 5 seconds with the power on that connected. Then, the green light is blinking.
2	*Pairing* When "rFSEt" is displayed at both products, if you press * key of CCB crane scale, pairing will finish. ⚠ Please check "End" message at both products. If ending message is not appear, please repeat the pairing.

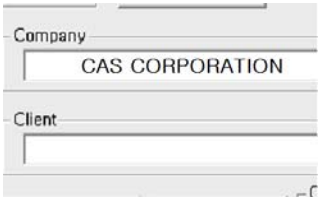
13. Code Management

13.1. Using PC

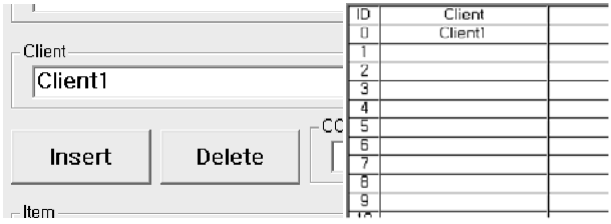
1) Connect the CRC-100 and PC with a serial cable.
2) When the display is off, press ON/OFF key while pressing * key then "- - - - -" is displayed.
3) Start the CRC-100 PC Sync.
4) Confirm the PC port and click the CONNECT



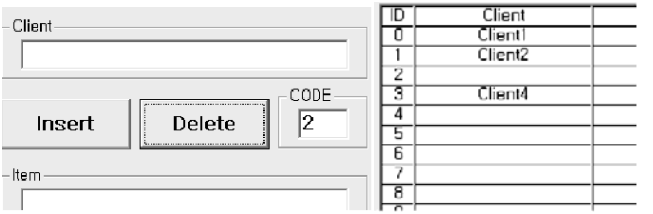
5) Input the company name (Company name to be printed at first line)



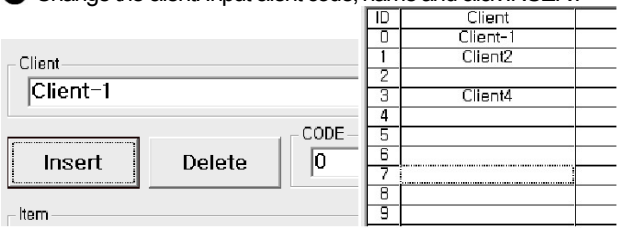
6) Input the client name and click the INSERT (Code range: 0~69)



ⓘ Delete the client: Input client code and click DELETE

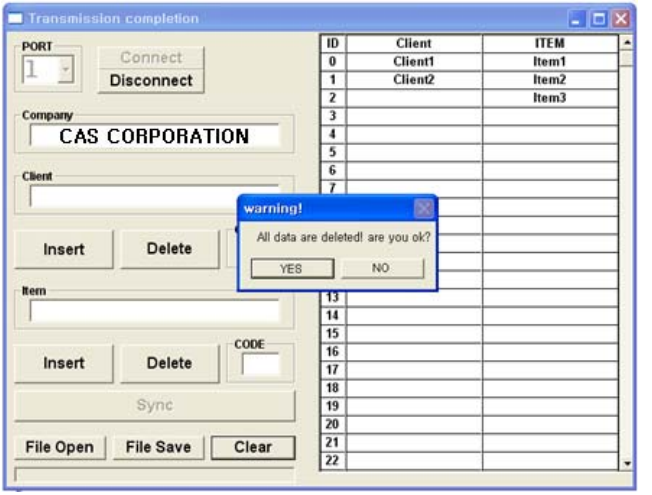


ⓘ Change the client: Input client code, name and click INSERT

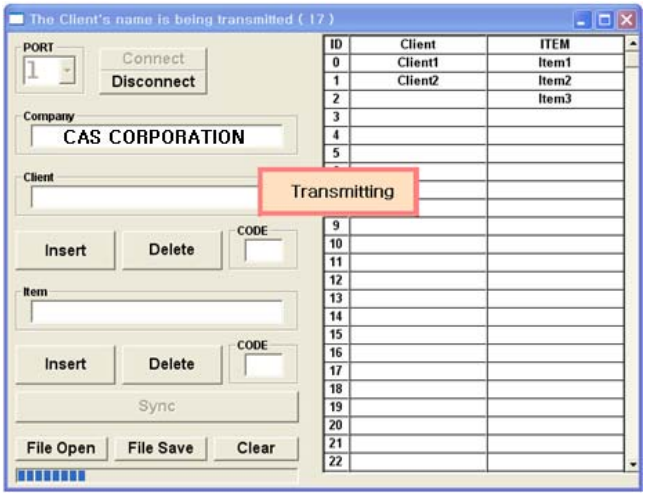


7) Item and client management method are the same

ⓘ Initialization: Click CLEAR



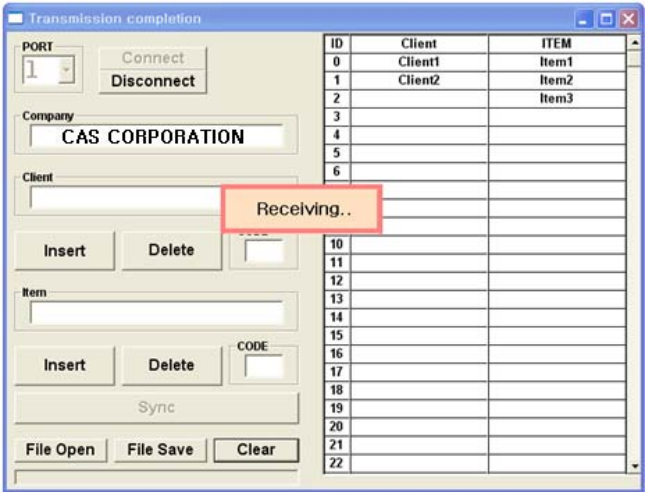
8) PC → CRC-100: Click SYNC



ℹ Current list stored in Excel file: Click File Save

ℹ Open the Excel file: Click File Open

9) CRC-100 → PC: Press SETUP key of CRC-100



13.2. Using itself function

No	Display	Description
1	id--	**Item text input:** When the display is off, press ON/OFF key while pressing ITEM key.
	U id--	**Client text input:** When the display is off, press ON/OFF key while pressing CLIENT key ► Input the item or client code and press ENTER key.
	USEr	**Company text input:** When the display is off, press ON/OFF key while pressing SETUP key. ► Press ENTER key.
Designate as follows if you want to add item name “IRON" on item code.		
2	00032	00 Data start (032 is start code) ► Press CALL key
3	01073	01 ASCII Character : ‘I’(073) ► Press CALL key
4	02082	02 ASCII Character : ‘R’(082) ► Press CALL key
5	03079	03 ASCII Character : ‘O’(079) ► Press CALL key
6	04078	04 ASCII Character : ‘N’(078) ► Press CALL key
7	05255	05 Data end (255 is end code) ► Press CALL key
8	Press ENTER key	

ⓘ The range of item & client coordinate is from 0 to 21. (Company: 0 to 71)

ASCII CODE

ASCII	CODE	ASCII	CODE	ASCII	CODE	ASCII	CODE	ASCII	CODE	ASCII	CODE
SP	32	0	48	@	64	P	80	`	96	p	112
!	33	1	49	A	65	Q	81	a	97	q	113
“	34	2	50	B	66	R	82	b	98	r	114
#	35	3	51	C	67	S	83	c	99	s	115
$	36	4	52	D	68	T	84	d	100	t	116
%	37	5	53	E	69	U	85	e	101	u	117
&	38	6	54	F	70	V	86	f	102	v	118
‘	39	7	55	G	71	W	87	g	103	w	119
(	40	8	56	H	72	X	88	h	104	x	120
)	41	9	57	I	73	Y	89	i	105	y	121
*	42	:	58	J	74	Z	90	j	106	z	122
+	43	;	59	K	75	[	91	k	107	{	123
,	44	<	60	L	76	\	92	l	108	|	124
-	45	=	61	M	77	]	93	m	109	}	125
.	46	>	62	N	78	^	94	n	110	~	126
/	47	?	63	O	79	_	95	o	111	END	255

14. Specifications

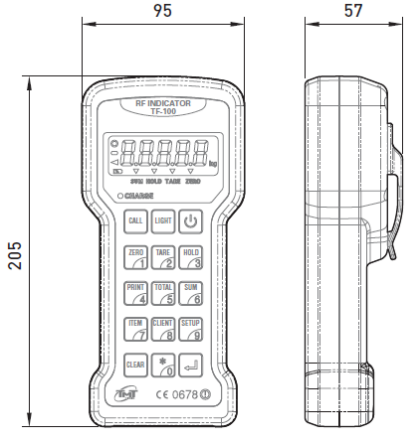
■ General specification

Display	5 digit LCD (Height: 15mm) & Backlight
Enclosure	Engineering plastic
Keyboard	15 Tact switch
Battery life	Approx. 90hr
Operating temperature	-20℃ ~ 60℃
Operating humidity	85% R.H. (No condensation)
Product weight	Approx. 450g
Power	3.7V⎓ 4A Lithium polymer battery
Charging adapter	AC/DC Adapter 5V⎓ 1A

■ Wireless specification

Wireless method	ZigBee
RF frequency range	2400 ~ 2483.5 MHz
Output power	Max. 4dBm
Channel width	2 MHz
Frequency offset	< ±30ppm
Transmit data rate	250Kbps,500Kbps
Receiver sensitivity	-99dBm (PER <1%)
Maximum input level	0dBm
RF In/out impedance	50 ohm (TXRF, RXRF)
Spurious(2nd harmonics)	< -30dBm
Radio link effective range	Approx. 100M (Open space)

■ Dimensions [mm]



15. Check Message

Code	Description
ouEr	The gross weight of scale is over maximum capacity. Don't load the article at scale whose weight is heavier than the maximum capacity
- - - - -	When the scale and CRC-100 doesn't communicate, this is displayed. Check the radio link effective range.
FULL	When memory capacity is exceeded, this is displayed. Take backup to PC and execute a memory initialization.

MEMO

MEMO

CRC-100

RF Controller

CAS BLDG., #1315, YANGJAE-DAERO,
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