



BLAZE 100

weighing electronic scale

Specifications Version 3.62

<i>serial number .</i>	<i>date</i>	<i>Version</i>	<i>Remark</i>
1	20 1 8 - 0 1 - 03	V1.00	third edition
2	20 1 8 - 10 - 12	V1.01	Modify the weight unit to display "g", (unit conversion prohibited) S PEC03.BIT3="1"
3	20 1 9 - 10 - 15	V3.30	Modify the serial communication protocol
4	2020-05-09 _ _	V3.42	Factory setting change



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5	2020-09-15 --	V3.50	Increase (P OS/ECR) communication
6	2020-12-03 --	V3.51	Add SPEC07.3 (unit symbol flashing control)
7	2022-03-15 --	V3.60	To modify the fixed volume setting
8	2022-08-15 --	V3.61	shutdown unit save
9	2022-09-15 --	V3.62	Modify S PEC edit mode

1. overview

BLAZE-100 weighing electronic scale is a newly designed compact and multi-functional integrated weighing product. It can not only weigh in real time, but also

With data acquisition and output capabilities, the weighing data can be transmitted to external devices in real time through the RS-232 serial port or USB interface .

BLAZE-100 has a flexible power supply mode, which can be powered by dry batteries, AC power adapter and USB interface .

BLAZE-100 not only has a weighing function but also has two counting modes, which can be switched at any time during use.

In the weighing mode, four weight units can be selected according to the requirements of the use (g, kg, lb, oz). And you can choose double volume by setting

Remote weighing mode to improve the display resolution of weighing.

BLAZE-100 weighing electronic scale is not only suitable for use in factories, restaurants, shops, and homes. Can also be used as a front end for cash registers in the retail industry weighing equipment.

1.1. Product number: :BLAZE-100C

1. 2. Functions and Specifications

1.2.1 basic skills BLAZE-100C has weighing and counting functions, backlit display with automatic energy saving mode. and backlit

Brightness and auto-off time are set by the user. In addition to the AC adapter, the built-in communication

Powered by dry batteries (battery model R20P SIZE-D 1.5V alkaline dry batteries) , very suitable for use in mobile working environments.

The brightness level of the display backlight can be set to 10 levels (0~ 9) , the backlight is turned off at level 0, and the brightness is the brightest at level 9.

1.2.2 Maximum weighing range : MAX = 3000g, 6000g, 15000g, 30000g,
3.000kg, 6.000kg, 15.000kg, 30.000kg
6.000lb, 15.000lb, 30.000lb, 60.00lb
96.00oz, 240.00oz, 480.00oz, 960.0 oz

1.2.3 Maximum counting range : 0 ~ 60000 PCS

1.2.4 Weighing platform size : 230 (mm) x 195 (mm)

1.3. Circuit Internal Parameters

1.3.1 Number of divisions:

Number of internal resolutions: Maximum 100000

Display divisions: Range 1000 ~ 200 00 (optional when setting free range)

(Settable values 1000, 1250, 1 500, 2000,
2500,
3000, 4000, 5000, 6000,
7500
10000, 12500, 15000, 20000)

1.3.2. Nonlinear error: : <0.008% FS (display only)

2. General description

2.1. Display device : 6 -digit 7 -segment digital LCD. (character height 1.0 inches) and 1 4 indicators

4 battery capacity indicators.

5 weight unit indicators. (g , kg , lb , oz , pcs)

6 weighing status indicators. (ZERO, STABLE, NET, S1, S2 , S3)

The decimal point symbol can choose " . " or " , " .

2.2. Operation keys: 4 operation keys. ([REZERO] , [Unit/ ←] , [Tare/ ↑] , [ON/ OFF])

2.3. Data communication interface: A standard RS-232 interface. This interface can be connected to external data terminal equipment.

An optional USB interface, which can be used for weight data output and system power supply.

(6 00 ~ 576 00 bit/s baud, 8bit Data , 1bit Stop, No parity bit)

2.4. System full scale calibration mode:

Manual software calibration

2.5. Power supply:

(1) The built-in battery uses 4 R20P SIZE D 1.5 V dry batteries

(2) External AC adapter DC 6 ~ 12 V / 0.5A _

(3) USB interface (5 V/0.5 A)

2. 6. Operating temperature range :

0 ~ 40 °C

2. 7. Use relative humidity :

15% ~ 85% RH (No condensing)

2. 8. Dimensions :

280 (W) × 230 (L) × 115 (H) mm

3. Display and keyboard definition

3.1 Operation panel



3.2 . Numerical display : 6 -digit numerical display



3.3 . Definition of indicator lights

- (1) [ZERO] : Weight zero indicator light, light up when the weight is "0".
- (2) [STA] : When the weight value is stable, the indicator light is on.
- (3) [NET] : When the displayed value is net weight, the indicator light is on.
- (4) [S1] : When the counting mode is set in the number of samples, the indicator light is on.
- (5) [S2] : When the electronic scale is in the process of setting and calibrating, the indicator light is on.
- (6) [S3] : When the weight is locked (HOLD) , the indicator light is on.
- (7) [g] : This indicator lights up when the weight unit of the displayed value is "g" (gram) .
- (8) [kg] : This indicator lights up when the weight unit of the displayed value is "kg" (kilograms) .
- (9) [lb] : The light is on when the weight unit of the displayed value is "lb" (pound) .
- (10) [oz] : When the weight unit of the displayed value is "oz" (ounce), the indicator light is on.
- (11) [PCS] : When entering the counting mode , the indicator light is on.

3 . 4 Keyboard function definition

Keyboard definition in standard mode (MODEL: BLAZE-100)

- [1] RE ZERO : Zero key
It is the operation confirmation and data saving button in the setting mode, and the zero-setting operation button in the weighing mode .
- [2] Unit/PE/ ← : Unit conversion key/shift selection key
In the setting mode, select the digit setting, and in the weighing mode, press the unit conversion or counting sampling confirmation key (valid only if counting mode

allows).

[3] Tare / PS/ ↑ : Tare function key/counting mode operation key

In the setting mode, choose to set the digit, in the weighing mode, go to the tare operation or press and hold for 5 seconds to enter the counting mode button (only valid under the conditions allowed by the counting mode) .

[4] ON/ OFF : Power key

Host power switch, in the setting mode is to exit the setting

3.5 __ Composite function definition of keyboard operation (the operation of this item should not be written in the user manual, but can only be explained in the product service manual)

[1] Enter the user function setting mode: RE ZERO + ← ← ←

[2] Enter the system function setting mode: RE ZERO + ← ↑ ←

[3] Enter the system internal code detection mode: RE ZERO + ↑ ↑ ←

[4] Enter the system full scale calibration mode: RE ZERO + ← ↑ ↑

[5] Enter the calibration switch state detection: RE ZERO + ↑ ON/ OFF ON/ OFF

[6] Calibration switch open operation : RE ZERO + ← ON/OFF ↑

(This operation is only carried out when the state detection of the calibration switch shows S P OFF).

[7] Restore factory SPEC setting operation: RE ZERO + ↑ ON/OFF ←

(This operation is only carried out when the state detection of the calibration switch shows S P ON).

Note: All complex functions need to be pressed after RE ZERO key, press the next three keys in sequence. after operation

Let go of all keys. Enter the corresponding operating mode.

4. Initial setting and full scale calibration

4.1 . Customization of functional specifications

4.1.1. Customer function setting

operation entry code: [REZERO] + [←]

[←][←]

Indicator lights : (● steady on ○ flashing) 1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 :

S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
pressing the [REZERO] key, press [←][←][←] three keys.	88 8 888	●	●					kg	
	SP 00	●	●					kg	Show SPEC number
	1111	●	●					kg	Displays preset data.
Press the [←] key	1110	●	●					kg	Data is shifted to the left while inputting " 0 "
Press the [↑] key	1101	●	●					kg	When "1" is input, the data is shifted to the left
Press the [RE-ZERO] key	SP 01	●	●					kg	Save the data and enter the SPEC of the next item at the same time
Press the [ON/OFF] key once	0.00	●	●					kg	Exit setup mode and enter weighing mode.

Note: 1. The calibration switch (SPAN SW) is in the OFF position.

2. If the calibration switch (SPAN SW) is in the ON position, press [M/ ←] once to **enter** this mode.

4.1.2 . System function setting

Operation entry code: [REZERO] +

[←][↑][←]

Indicator lights : (● steady on ○ flashing) 1: ZERO 2 : STA 3 : NET 4 : S1 5 : S2

6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
pressing the [REZERO] key, press [←][↑][←] three keys.	8888 8 8	●	●					kg	The calibration switch (SPAN SW) must be turned on
	SP 04	●	●					kg	Show SPEC number
	1111	●	●					kg	Displays preset data.
Press the [←] key	1110	●	●					kg	Data is shifted to the left while inputting " 0 "
Press the [↑] key	1101	●	●					kg	When "1" is input, the data is shifted to the left
Press the [RE-ZERO] key	SP 05	●	●					kg	Save the data and enter the SPEC of the next item at the same time
Press the [ON/OFF] key once	0 . 00	●	●					kg	Exit setup mode and enter weighing mode.

Note: 1. The calibration switch (SPAN SW) is in the OFF position. And when SPEN is ON.

2. If the calibration switch (SPAN SW) is in the ON position, press [P/↑] once to **enter** this mode.

4.2 . Full weight calibration



4.2.1. Standard weight calibration (when SPEC 12 BIT3 ="0")

Operation entry

code: [REZERO] + [←] [↑] [↑]

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
pressing the [REZERO] key, press [←] [↑] [↑] three keys.	888888	●	●			●		kg	The calibration switch (SPAN SW) must be turned on
	CAL	●	●			●		kg	Display calibration status prompt information
	15.000	○	●			●		kg	Displays the calibrated maximum weight
Press the [←] and [↑] keys	5.000	○	●			●		kg	To modify the weight of a sample weight
press [REZERO] key	CAL 0	○	●			●		kg	Enter zero calibration and wait
	- - - - -		●			●		kg	Go to Zero Calibration
press [REZERO] key	Cal SP	●	●			●		kg	Enter full calibration and wait
	- - - - - -		●			●		kg	Enter full calibration
	5.000		●					kg	Full scale calibration is completed, return to weighing mode

Note : (1) DS W - 1 00 weighing scale can be calibrated at full capacity with standard weights greater than 10% of full capacity.

(2) The calibration switch (SPAN SW) must be turned on.

4.2.2 . Carry out full weight calibration rate correction and zero confirmation

Operation entry code: [REZERO] + [←] [↑] [↑]

(SPEC 12 BIT3="1")

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
add weight	50.35		●			●		kg	The calibration switch (SPAN SW) must be turned on
pressing the [REZERO] key, press [←] [↑] [↑] three keys.	888888		●			●		kg	
	CAL E		●			●		kg	Display calibration status prompt information
	26 1 0 .0 5		●			●		kg	Display previously calibrated calibration parameters
Press the [←] and [↑] keys	2591.90		●			●		kg	Modify the input calculated scale rate parameters
remove heavy objects	CAL 00		●			●		kg	
press [REZERO]	CAL 00		●			●		kg	Note 1. Enter the zero position to confirm the calibration and wait
	- - - - -		●			●		kg	Enter zero confirmation

	-									
	0.00	●	●						kg	Full scale calibration is completed, return to weighing mode
add weight	50.00		●						kg	Display the actual weight value of the modified weight

Note : (1) When there are items on the load-bearing platform or zero confirmation is not required, you can press the [ON/OFF] key to directly exit the calibration mode and return to the weighing mode.

(2) The calibration switch (SPAN SW) must be turned on.

(3) The calculation of the new standard rate is as follows: the actual weight W1=50.00kg, the displayed weight W2=50.35kg, the original standard rate of the instrument is V1= 2610.05

Then the correction rate V2 = $W1 \cdot V1 / W2 = 5000 \cdot 261005 / 5035 = 259190$

4. 3. System internal code check and display

Operation entry

code: [REZERO] + [↑] [↑] [←]

Indicator light : (● steady on ○ flashing) (when SPEC 05 BIT 0 = "1", SPAN SW must be ON)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
pressing the [REZERO] key, press [↑] [↑] [←] three keys.	88888	●	●			●		kg	
	0	●	●			●			Display the internal code of the weight, and there is no weight on the weighing pan
Press [↑]	15012		●			●			Display A/D internal code
Press [ON/OFF]	0.00	●	●					kg	Return to weighing mode

Note : (1) The maximum internal code value may be different in different measuring ranges and different weight units.

4. 4. Prompt information list

4.4.1 Weight overload _ _

OF

Remove the weight, or re-calibrate the weight. Error message display can be eliminated.

4.4.2 Gross weight or net weight is negative

UF.

Set zero or clear tare. Error message display can be eliminated.

4.4.3 When the zero setting key [REZERO] is pressed

8 8 8 8 8 8

Release the zero button. Error message display can be eliminated.

4.4.4 The zero position of the system is wrong or exceeds the allowable range

O - E r

zr . E rr

Remove the weight, or re-calibrate the weight. Error message display can be eliminated.

4.4.5 The calibration switch is in the " on " state

SO n

After the prompt appears for 5 seconds, the information display is automatically dismissed.

4.4.6 The calibration switch is in the "off" state

SOFF

After the prompt appears for 5 seconds, the information display is automatically dismissed.

5. List of defined settings for system functions and specifications

The specification table is divided into two parts.

The first part is used for items that users can set and change by themselves, and has nothing to do with the definition settings of measurement specifications. It is called a user setting item.

The second part is used for the definition and setting of measurement specifications, which cannot be changed by the user and must be set by professional technicians. Known as a service setting item.

5.1 List of user setting items and function definitions.

The user's functional requirements for the system can be set by changing the data. For the operation of this setting, please refer to the previous example in 5.1.

Operation entry code: [REZERO] + [←] [←]

[←] .

SPEC N	BIT3	BIT 2	BIT 1	BIT 0
0 .				
00	Backlight auto off time setting 00 : 10 seconds 0 1 : 20 seconds 10 : 30 seconds 11: not closed (When the backlight brightness is set to "0", the backlight will not be turned on automatically)		Allow automatic battery saver mode 0: allow 1: prohibit (60 seconds into power saving mode)	Automatic shutdown time setting (after 3 minutes of inactivity) 0 : no automatic shutdown 1 : Allow automatic shutdown
01	Backlight function settings 0: allow 1: Disabled	RS-232 baud rate setting 000: port closed, 001: 1200 , 010: 2400 , 011: 4800 100: 9600 , 101: 19200, 110: 38400, 111: 57600		
02	RS-232 /USB communication mode setting 0 0: General command response mode 0 1: simple command (A) response mode 10 : P OS/ECR communication method 11: Continuous weight data output mode		Allows RS-232 port data output when weight is unstable 0: allow 1: Disabled	RS-232 port data output formatting 0: standard 1: special
03	Allow 'comma' as decimal point (display only) 0: allow 1: forbidden	Weight unit conversion [UNIT/ ←] (valid only when using fixed volume) 0: allow 1: prohibit	[TARE/ ↑] key function settings (in weighing mode) 00: Weight display lock (HOLD) 01: Gross weight/net weight switching 10: Counting mode function key 11: Tare operation key only	
2 0	RS-232 SPECIAL DATA MODE SELECT (continuous data output) 00: special format 1: data format protocol 1 , 01: special format 2: data format protocol 2, 10: special format 3 : TOLEDO MODE protocol format 11: special format 4 : DIGI MODE protocol format		RS-232 communication protocol RS-232 SERIES DATA BIT AND PARITY VALUES 00: 8 data bits, no parity (NO Parity) 01: 7 data bits, even parity (Even Parity) 10: 7 data bits, Odd Parity 11: 7 data bits, Mark Parity	

2 1	Do not use Not use	<p>POS/ECR communication protocol selection (can be switched by pressing [Tare key] when starting up)</p> <p>000 : POS/ECR TYPE - 0 <i>Most POS, ECRs and Some TEC POS System</i></p> <p>001 : POS/ECR TYPE - 1 NOT USE</p> <p>010 : POS/ECR TYPE - 2 <i>SHARP ER-Axxx, ER-A450T, New SANYO ECRs</i></p> <p>011 : POS/ECR TYPE - 3 NOT USE</p> <p>100 : POS/ECR TYPE - 4 <i>CRS, NCR2170 and Many other ECRs, Most POS</i></p> <p>101 : POS/ECR TYPE - 5 <i>NCI General, SAMSUNG SPS-300, ER-900, Most POS</i></p> <p>110 : POS/ECR TYPE - 6 <i>SAMSUNG ER-670, ER-5100, SPS-520, Most POS</i></p> <p><u>111 : POS/ECR TYPE - 7 DELTA cash register protocol</u> (command "D , CR, LF " response mode)</p> <p>Note: POS/ECR TYPE - PROTOCOL (interface protocol) 0 ~ 7 , please refer to the follow-up instructions of this article (POS/ECR INTERFACE) 9600 Baud rate, 7 Data bit, Even Parity, 1 Stop bit (TYPE-6: 9600 Baud rate, 8 Data bits, None Parity, 1 Stop bit)</p>
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Note : 1. Set the unused setting bit to "0".

2. RS232C interface data format , the stop bit is 1 bit, and the data bit is 7 or 8 bits optional. (SPEC 01,02 = SELECT .)

3. After the USB port is connected, the machine will automatically detect the data input by the USB port, and if there is data input, the data communication of the USB port will be turned on.

5.2 List of service setting items and function definition

Service personnel can set the measurement performance, specification and function requirements of the system by changing the data. For the operation of this setting, please refer to the previous 5.2

example . The span sw must be opened during the service setting operation .

Operation entry code: [REZERO] + [←] [T]

[←]

SPEC No.	BIT3	BIT 2	BIT 1	BIT 0
04	Reset range selection 00 : ± 2%FS 01 : ± 4 % FS <u>10 : ± 10%FS</u> 11 : No limit		Preset tare operation NO PRESET TARE OP. <u>0: prohibit</u> 1: allow	Tare range selection TARE RANGE <u>0: < 50% FS</u> 1:< 100% FS
05	Automatically clear condition selection Auto clear conduction 0 : when the net weight is greater than 5d <u>1: When the net weight is greater than 5d and gross weight more than the 21d</u>	Initial zero allowable range selection SYSTEM ON START ZERO RANGE 00 : ± 2%FS 01 : ± 4 %FS <u>10 : ± 10%FS</u> 11 : No limit		Allows automatic tare clearing AUTO CLEAR TARE 0: allow <u>1: prohibit</u>
06	Negative weight display mode 0 0: When the net volume is less than negative 2D, display "UF." 0 1 : When the gross weight is less than negative 2D, display "UF." <u>10: There is no negative weight prompt display, and the negative weight value is displayed</u> 11 : invalid setting		Manual Tare Clear Manual TARE CLEAR <u>0: allow</u> 1: prohibit	When the calibration enable switch is off Allow weight internal code display 0: allow <u>1: prohibit</u>
07	Count operations allowed <u>0: allow</u> 1: prohibit	after tare (tare weight is not equal to zero) 0: unit conversion prohibited <u>1: Switching after automatic clearing of tare</u>	Zero reset operation after tare <u>0: allow</u> 1: Disabled	Exceeding the zero zone at start-up Raw zeros are allowed 0 : allow <u>1 : prohibit</u>
08	Allow tare weight increase operation NO Tare Accumulation <u>0 : allow</u> 1 : Disabled	Tare reduction operation allowed No Tare Subtraction <u>0 : allow</u> 1 : Disabled	Weight is not zero, preset tare WHEN WEIGHT IS NOT ZERO, NO PRESET TARE OP. 0: allow <u>1: Disabled</u>	Unstable weight lock allowed (Not Stable Hold) <u>0: allow</u> 1: Disabled
09	Reference (calibration) weight unit selection (g/ kg/ lb/ oz) 00: g. , 01:kg_ <u>10: lb. ,</u> 11: ON Z E		Fixed range selection Fix full capacity select mode (Only valid when SPEC 10, bit0= " 1 ") <u>00: 3000g, 3.000kg, 6.000lb, 96.00oz</u> 01: 6000g, 6.000kg, 15.000lb, 240.00oz 10: 15000g, 15.000kg, 30.000lb, 480.00oz 11: 30000g, 30.000kg, 60.00lb, 960.0 oz	
10	Dual range weighing display selection	Dual range (fixed range only)	Weight unit symbol "blinks" after weight	Range setting mode selection

	Dual range weight display Select. 0 : net weight dual range display 1 : Gross weight dual range display	Multi interval (only for fix mode) 0 : single range 1 : Dual range	unit conversion allow settings 0: allow 1: Disabled	System mode select 0: free weight full value setting 1: Fixed weight full value setting
11	Do not use	Weight display decimal point position Decimal point position on of scale 000: no decimal point 001: one decimal place (00000.0) 010 : Two decimal places (0 000.00) 011 : three decimal places (000.000) 100: Four decimal places (00.0000) 101: Five decimal places (0.00000) Other settings are invalid		
12	Select CALIBRATION MODE for full scale calibration "0" : Weight calibration mode "1" : full correction mode	Freely set the range_weight minimum division value 000: 1 , 001: 2 , 010: 5 , 011: 10 100: 20, 101: 50, 110: 100, 111: Not used		
13	Freely set the range_resolution selection 0000: 1000d 0001: 1250d 0010: 1500d 0011: 2000d 0100: 2500d 0101: 3000d 0110: 4000d 0111: 5000d 1000: 6000d 1001: 7500d 1010: 10 000d 1011: 12500d 1100: 15000d 1101: 20000d OTHERS Not Used			
SPEC NB.	BIT 3	BIT 2	BIT 1	BIT 0
14	Allow overloading to display divisions 0000: 0d, 0001: 1d, 0010: 2d, 0011: 3d 0100: 4d, 0101: 5d, 0110: 6d, 0111: 7d 1000: 8d, 1001: 9d , 1010: 10d, 1011: 11d 1100: 12d, 1101: 13d, 1110: 14d, 1111: 15d			
15	Do not use		Do not use	
16	allowable weight unit shutdown save 0: allow 1: prohibit	S PEC edit mode 0: standard mode 1: US version model	S PEC value editing show item number 0: Allow serial number display 1: Suppress serial number display	Do not use
17	Do not use	Do not use	Do not use	Displays measured internal values 0: allow 1: Disabled

18	Do not use	Do not use	Items that display the measured voltage 0: display battery voltage 1: Display the remaining battery power percentage of
19	Do not use	Do not use	

Note : 1. Set the unused setting bit to "0".

*2. FS is the full weight value .

3. The number of **decimal places** when the range is fixed, the electronic scale is automatically fixed and set according to the range and unit as shown in the table below

Unit setting value S PEC09.bit3.2 Range setting value S PEC09.bit 1,0	Single range decimal point setting (SPEC10.bit1 = " 0 ")				Dual range decimal point setting (SPEC10.bit1= "1")			
	00: g.	01: kg	10: lb.	11: oz .	00: g.	01: kg	10: lb.	11: oz.
00	0	0.000	0.000	0.00	0.0	0.0000	0.000	0.00
01	0	0 . 000	0.000	0 . 00	0	0 . 000	0.000	0 . 00
10	0	0 . 000	0 . 00	0 . 0	0	0 . 000	0 . 000	0 . 00
11	0	0 . 00	0.00 _	0 . 0	0	0 . 000	0 . 00	0 . 0

4. The **minimum division value (e=d)** when the measuring range is fixed, the electronic scale is automatically fixed and set as shown in the table below

Unit setting value S PEC09.bit3.2 Range setting value S PEC09.bit 1,0	Single-range minimum division value (e, e₂) (SPEC10.bit1 = " 0 ")				Dual-range minimum division value (e₁) (SPEC10.bit1= "1")			
	00: g.	01: kg	10: lb.	11: oz .	00: g.	01: kg	10: lb.	11: oz.
00 : 3000g, 3.000kg, 6.000lb, 96.00oz	1	0.001	0.002	0.02	0.5	0.0005	0.001	0.01
01:6000g, 6.000kg, 15.000lb, 240.00oz	2	0.002	0.005	0.05	1	0.001	0.002	0.02
10:15000g, 15.000kg, 30.00lb, 480.00oz	5	0.005	0.01	0.1	2	0.002	0.005	0.05
11:30000g, 30.000kg, 60.00lb, 960.0 oz	10	0.01	0.02	0.2	5	0.005	0.01	0.1

Note: The display division value of this electronic scale is e=d.

5. The **maximum number of divisions (N Max)** when the measuring range is fixed, and the electronic scale is automatically fixed and set as shown in the table below

Unit setting value S PEC09.bit3.2 Range setting value S PEC09.bit 1,0	Single-range maximum division number (N_{Max}, N_{2M}ax) (SPEC10.bit1= " 0 ")				Dual-range maximum division number (N_{1Max}) (SPEC10.bit1= "1")			
	00: g.	01: kg	10: lb.	11: oz .	00: g.	01: kg	10: lb.	11: oz.
00 : 3000g, 3.000kg, 6.000lb, 96.00oz	3000	3000	3000	4800	3000	3000	3000	3000
01:6000g, 6.000kg, 15.000lb, 240.00oz	3000	3000	3000	4800	3000	3000	3000	3000
10:15000g, 15.000kg, 30.00lb, 480.00oz	3000	3000	3000	4800	3000	3000	3000	3000
11:30000g, 30.000kg, 60.00lb, 960.0 oz	3000	3000	3000	4800	3000	3000	3000	3000

6. The **maximum range (MAX, MAX₁, MAX₂)** when the range is fixed, the electronic scale is automatically fixed and set as shown in the table below

Unit setting value S PEC09.bit3.2 Range setting value S PEC09.bit 1,0	Single range maximum range (MAX,MAX₂) (SPEC10.bit1= " 0 ")				Dual range maximum range (MAX₁) (SPEC10.bit1= "1")			
	00: g.	01: kg	10: lb.	11: oz .	00: g.	01: kg	10: lb.	11: oz.
00 : 3000g, 3.000kg, 6.000lb, 96.00oz	3000	3.000	6.000	96.00	1500	1.500	3.000	30.00
01:6000g, 6.000kg, 15.000lb, 240.00oz	6000	6.000	15.000	240.00	3000	3.000	6.000	60.00
10:15000g, 15.000kg, 30.00lb, 480.00oz	15000	15.000	30.00	480.0	6000	6.000	15.000	150.00
11:30000g, 30.000kg, 60.00lb, 960.0 oz	30000	30.000	60.00	960.0	15000	15.000	30.00	300.0

7. When the tare is removed (such as the tare weight is not equal to zero), there are two options for the conversion operation of the weight unit (selected by SPEC07.2) . 【Factory setting = " 1 "】

①. SPEC07.2 = "0" prohibits weight unit conversion operation , ②. SPEC07.2 = "1" Automatically clears the tare weight and converts the weight unit.

5.3 . Factory standard setting table (SPEC LIST)

Factory setting: fixed volume, the maximum volume of dual range mode is 6 . 000lb

$$\text{MAX } 2 = 6.000\text{lb} / \text{MAX } 1 = 3.000\text{lb}, \quad e_2 = d_2 = 0.002\text{lb} / e_1 = d_1 = 0.001\text{lb}, \quad T = -2.999\text{lb}$$

SPEC 00	SPEC 01	SPEC 02	SPEC 03	SPEC 20	SPEC 21
0100	0100	1000	1011	0000	0111

SPEC 04	SPEC 05	SPEC 06	SPEC 07	SPEC 08	SPEC 09	SPEC 10
1000	1101	1001	0101	0011	1000	0011
SPEC 11	SPEC 12	SPEC 13	SPEC 14	SPEC 15	SPEC 16	SPEC 17
0011	0001	0101	1001	0000	0111	1111
SPEC 18	SPEC 19					
0000	0000					-----

6. System weight calibration before delivery

BLAZE-100 weighing electronic scale has two setting modes of weighing range. Free range mode and fixed range mode. in

In fixed-range working mode, unit conversion and dual-range weighing are allowed. In the free range mode, the maximum weighing range and divisions can be freely set according to the requirements of the use, and weight unit conversion and dual-range weighing are not allowed at this time.

6.1. Simple full weight calibration in free range mode (effective when SPEC10.0= " 0")

- Connect the power adapter (MAX 12V , MIN 5V) or install 4 dry batteries (R20P SIZE D 1.5V) in the machine.
- To adjust the level of the electronic scale, by observing the level indicator on the display panel, adjust the four supporting feet of the machine so that the level indicator in the level indicator
The blister is located in the middle, and the four support feet are reliably supported without gaps.
power is turned on, the circuit board is automatically in the initialization process and waits for it to complete.
- Press the [ONOFF] button to turn on the power, and perform the following operations

Indicator lights : (● steady on

○ flashing)

ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
Press and hold the calibration switch	SP--ON	●						kg	The calibration switch is located at the bottom of the machine (SPAN SW)
press [REZERO] key once	n . 3000	●	●					kg	Display the number of full-scale divisions (prompt information)
Press the [←] key 3 times	n . 6000							kg	Change the desired number of



										divisions (6000 divisions)	
press [REZERO] key once	d.1	●	●							kg	Display the minimum division value (prompt message)
										kg	To change the division value, press [←] to select
press [REZERO] key once	dp. 3	●	●							kg	Display the position of the decimal point (prompt message)
										kg	To change the position of the decimal point, press [←] to select
press [REZERO] key once	6.000	●	●			●				kg	Display the maximum weight of full capacity (prompt information)
Press the [←] and [↑] keys	5.000	○	●			●				kg	To modify the weight of a sample weight
press [REZERO] key once	CAL 0	○	●			●				kg	Enter zero calibration and wait
	- - - - -		●			●				kg	Go to Zero Calibration
press [REZERO] key	Cal SP		●			●				kg	Enter full scale calibration and wait, plus the weight of the sample weight 5.0 kg
press [REZERO] key	- - - - - -		●			●				kg	Enter full calibration
	5.000		●							kg	Full scale calibration is completed, return to weighing mode

Note : (1) DS W - 1 00 weighing scale can be calibrated at full capacity with standard weights greater than 10% of full capacity.
(2) The calibration switch (SPAN SW) must be on.
(3) After the calibration is completed, remember to turn off the calibration switch and turn the calibration switch to the "OFF" position. And cover the small cover plate, and add lead seal.

6. 2. Fixed simple full weight calibration by range mode (effective when SPEC10.0= " 1")

a) Connect the power adapter (MAX 12V , MIN 5V) or install 4 dry batteries (R20P SIZE D 1.5V) in the machine.

b) Adjust the level of the electronic scale. By observing the level indicator on the display panel, adjust the four supporting feet of the machine so that the level indicator in the level indicator

The blister is located in the middle, and the four support feet are reliably supported without gaps.

power is turned on, the circuit board is automatically in the initialization process and waits for it to complete.

C) Press the [ONOFF] button to turn on the power, and perform the following operations

Indicator lights : (● steady on
○ flashing)

ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
Press and hold the calibration switch	SP--ON	●						kg	hold the calibration switch (SPAN SW) , the calibration switch is located under the front of the machine

press [REZERO] key once	S.Unit	●	●				lb	Display the current weight unit (message) (g,kg,lb,oz)
Press the [←] key 1 ~ 3 times	S.Unit		●				kg	To change the desired weight unit, press [←] to select
press [REZERO] key once	6.000	●	●				kg	Display the maximum range value (prompt message)
Press the [←] key 1 ~ 3 times	15.000						kg	To change the maximum range, press [←] to select
press [REZERO] key once	nEt.-do	●	●				kg	Display current net weight mode, dual range (prompt information)
Press the [←] key once	Gro-Si	●	●				kg	Display the current gross weight mode, single range (prompt information)
Press the [←] key once	Gro-do	●	●				kg	Display current gross weight mode, dual range (prompt information)
Press the [←] key once	nEt.-Si	●	●				kg	Display current gross weight mode, dual range (prompt information)
press [REZERO] key once	15.000	○	●			●	kg	Display the current maximum range, modify the weight of the sample weight
Press the [←] and [↑] keys	5.000	○	●			●	kg	To modify the weight of a sample weight
press [REZERO] key once	5.000	○	●			●	kg	Display the current maximum range (prompt information)
press [REZERO] key once	CAL 00	○	●			●	kg	Enter zero calibration and wait (prompt message)
	- - - - -		●			●	kg	Enter zero calibration (prompt message)
press [REZERO] key	Cal SP		●			●	kg	Enter full scale calibration and wait, plus the weight of the sample weight 5.0 kg
press [REZERO] key	- - - - - -		●			●	kg	Enter full scale calibration (prompt message)
	5.000		●				kg	Full scale calibration is completed, return to weighing mode

Note : (1) DS W - 3 00 instrument system can be calibrated with a standard weight greater than 10% of the full capacity.

(2) The calibration switch (SPAN SW) must be on.

(3) After the calibration is completed, remember to turn off the calibration switch and turn the calibration switch to the "OFF" position. And cover the small cover plate, and add lead seal.

7. BLAZE 100 basic operation example

7.1 Operation in shutdown state

7.1.1 Start-up operation

Indicator lights : (● steady on

○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
(1) Press the [ON/FF] key									Connect to AC power, not required for battery version
	DS-100								The model number of the instrument is displayed first
	Ur 1.xx								software version number
	11111								Show Field Check
	22222								

	99999								
	888888								
(2) After initialization, enter weighing mode	0.000	●	●					kg	weighing mode

Note: 1) During field inspection, press [REZERO] key to exit field inspection and enter weighing mode.

2) When the battery capacity indicator shows only one frame, it means that the internal battery voltage is too low, please replace the battery.

(Please use R20P SIZE-D 1.5V alkaline dry battery).

7.1.2 Manual shutdown

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
weight steady state	0.000	●	●					kg	
(1) Press the [ON/OFF] key									
(2) Unplug the AC power outlet									When not in use, please unplug the AC power

7.2 Zero operation

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						Remark
---------	------	-----------------	--	--	--	--	--	--------

	weight	1	2	3	4	5	6	unit	
weight steady state	0.000	●	●					kg	
(1) put a heavy object (Ex. 0.500kg)	0.500		●					kg	Must be less than the allowable zero range set
(2) Press the [REZERO] key	0.000	●	●					kg	
(3) Remove the weight.	- 0.500		●					kg	
(4) Press the [REZERO] key	0.000	●	●					kg	

Note :

(1) If the weight placed exceeds the zero setting range , press the [REZERO] key to complete the tare operation.

(2) The zero setting range can be selected by setting SPEC 04 BIT 3, BIT2 .

7.3. Tare operation

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
weight steady state	0.000	●	●					kg	
(1) put a heavy object (Ex. 2.50kg)	2.500		●					kg	Must be less than the allowable tare range set
(2) Press the [REZERO] key	0.000		●	●				kg	
(3) Remove the weight.	- 2.500	●	●	●				kg	
(4) Press the [REZERO] key	0.000	●	●					kg	

Note :

(1) If the weight placed exceeds the allowable zero-setting range, the Tare operation will be performed after pressing the Tare key.

(2) The tare range can be changed to 50%FS or 100%FS by modifying SPEC 04 BIT 0 .

7.4. Counting and weighing operation

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
weight steady state	0.000	●	●					kg	
(1) Place 20 counted sample weights on the weighing platform	0.122		●					kg	
(2) Press [↑] key for 5 seconds	C. _ 10		●		●			PCS	Display the number of samples, (press the button for 5 seconds)
(3) Press [↑] key once	C. _ 20		●		●			PCS	Select the number of samples (the sample number range is as follows:) 10,20,30,40,50,100,200,300, 400,500
(4) Press the [←] key once	P. _ 20		●		●			PCS	The counting sample is taken and the counting can begin.
(5) Place the counted weight (1.220 kg) on the weighing platform	P. _ 200		●		●			PCS	Display count value 200
(6) Press [←] key once	1.220		●					kg	Return to weighing mode
(7) Remove the heavy	0.000	●	●					kg	

objects placed on the weighing platform									
-----------------------------------------	--	--	--	--	--	--	--	--	--

Note : (1) To start this switching function, you must set SPECO 7 bit. 3 to "0". (Enable counting operation)

7.5. Weight unit conversion (kg/LB)

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
weight steady state	0.000	●	●					kg	
(1) Place a weight of 4.270kg on the weighing platform	4.270		●					kg	
(2) Press [←] key	9.414		●					lb	Enter the function operation mode, and display the value of lb.
(3) Press [←] key	4.270		●					kg	exit lb mode
(4) Remove the weight.	0.000	●	●					kg	
(5) Press the [REZERO] key	0.000 _	●	●					kg	

Note : (1) To start this switching function, SPECO3 bit.2 must be set to 1,

7.6. Display backlight brightness setting

Indicator lights : (● steady on ○ flashing)

1 : ZERO 2 : STA 3 : NET 4 : S1 5 : S2 6 : S3

operate	show	indicator light						unit	Remark
	weight	1	2	3	4	5	6		
weight steady state	0.000	●	●					kg	
(1) Press [←] key, hold for 5 seconds	0.000	●	●					lb	Hold for 5 seconds until the display changes to BL.S " 3 "
(2) Press [←] key	BL.S 3	●	●					lb	The displayed value "3" is the brightness level.
(3) Press [←] key	BL.S 4	●	●					lb	The brightness level becomes "4", and the brightness increases by 1
(5) Press the [REZERO] key	0.000 _	●	●					lb	Save the set brightness setting value and return to weighing

Note : 1. The brightness level is 0~9 , the backlight is turned off at level 0, and the brightness is the brightest at level 9.

2. When working with batteries, reduce the brightness level of the backlight as much as possible. To reduce battery consumption and prolong battery life.

8. Serial port (RS232) and USB interface:

8.1 P OS serial protocol used in China :

8.1.1. RS232C _ _ _ Interface protocol: the baud rate is set by S PEC01, bit2~0 (1200~57600) . The stop bit is 1 bit, and the data bit is 8 bits.

8.1.2. The RS232C interface can be used through the settings of SPEC 02, 20 , and 21.

8.1.3. The RS232C interface is commonly used as a digital scale communication protocol . Provide continuous weight data output format.

PEC at the factory is: baud rate = 9600bit/s, data = 8, STOP = 1, no check digit.

SPEC 01= X 100 , Baud = 9600bit/s

SPEC 02= 11 0 0 , continuous weight data output

SPEC 20 = XX 00 , Data=8bit, Stop=1bit, no parity bit

SPEC 21 = 0XXX . _ The output data is synchronized with the display data (when there is weight unit conversion)

SPEC 21 = 1 XXX . The output data is not synchronized with the display data (only the output calibration is the set weight unit)

8.1.4 . Digital balance protocol, continuous weight data output (standard) format : (according to factory settings)

Serial port data output standard format:

SPEC SETUP: SPEC 01=0100, SPEC 02 = 1100 , SPEC 20 = 0000, SPEC 21 = 0000 .

DATA FORMAT. 06 20 67 30 0D 47 30 30 31 2E 30 30 30 0D 54 30 31 30 2E 30 30 30 0D 0A
① ② ③ ④ ⑤ ⑥ ④ ⑤ ⑥ ④ ⑦

① 06H Boot byte, the first byte of the message output.

② 20H 67H "_ g" weight units, (6 BH,67H "k g ", 6CH,62H "l b ", 6FH,7AH "o z ")

③ 30H/31H 30H= stable weight/ 31H= unstable weight.

④ 0DH data segment separator.

⑤ 47H "G" Gross weight data field start byte, 4EH " N " net weight data field start byte, 54H " T " tare data field start byte

⑥ Weight data field

⑦ 0 AH message end character.

8.1.5 . Serial port continuous weight data output special format

8.1.5.1 Continuous data output, special format 1 (Special data type 1)

SPEC SET: SPEC02 = 11 X 1 , SPEC20 = 00 00 , SPEC21 = XXXX

DATA FORMAT. 3DH(=), 3XH(MSB), 3XH, 3XH, 2EH("."), 3XH, 3XH, 3XH(LSB), 0DH

"="	NET WEIGHT (XXX.XXX)	CR
-----	------------------------	----

Note 1: All characters are output in the form of A SCII code. "=" leading character (3 DH), including decimal point and terminator C R (0DH) , the high digit value comes first .

When the value is "negative", the highest bit output is 2 EH (" - ") . Value fields are 7 -byte (A SCII) characters.

Note 2 : There is no weight unit symbol, when there is weight conversion, the value output is the value of the weight unit set during calibration.

For example: 1. When the weight value is 2.56 , the output message: 3DH, 30H, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH.

2. When the weight value is -2.56 , the output message: 3DH, 2DH, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH.

Note 1: All characters are printed in ASCII format."=" boot (3DH), with decimal point and ending CR(0DH), with the highest value before. When the value is "negative", the highest bit output is 2EH(" - ").

The numeric field is a 7-byte (ASCII) character.

Note 2: No weight unit symbol. When weight is converted, the value output is the value of the unit of weight

set at the time of calibration.

For example: 1. The weight value of 2.56,

The output data: 3DH, 30H, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH

2. The weight value value is -2.56,

The output data : 3DH, 2DH, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH

8.1.5.2 Continuous data output, special format 2 (Special data type 2)

SPEC SET: SPEC02 = 11 X 1 , SPEC 20 = 01 00 , SPEC 21 = XXXX

DATA FORMAT. 3XH(MSB), 3XH, 3XH, 3XH, 2EH("."), 3XH, 3XH(LSB), 0DH

NET WEIGHT (XXX.XXX)	CR
------------------------	----

Note 1: All characters are output in the form of A SCII code. Contains only numerical symbol, net weight value and end character C R(0DH) , the high digit value comes first .

When the value is "negative", the highest bit output is 2 DH (" - ") , including the decimal point (2 EH). Value fields are 7 -byte (A SCII) characters.

Note 2 : There is no weight unit symbol, when there is weight conversion, the value output is the value of the weight unit set during calibration.

For example: 1. When the weight value is 2.56 , the output message: 30H, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH.

2. When the weight value is -2.56 , the output message: 2DH, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH.

Note 1: All characters are printed in ASCII code. Contains only the numerical symbol, the net weight value, and the ending character CR(0DH), with the higher value coming first. When the value is "negative", The highest bit output is 2EH(" - "). The numeric fields are 7-byte (ASCII) characters.

Note 2: No weight unit symbol. When weight is converted, the value output is the value of the unit of weight set at the time of calibration.

For example: 1. The weight value of 2.56,

The output data: 30H, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH

2. The weight value of -2.56,

The output data: 2DH, 30H, 30H, 32H, 2EH, 35H, 36H, 0DH

8.1.5.3 Continuous data output, special format 3 (Special data type 3) (TOLEDO SCALES TYPE)

SPEC SET: SPEC02 = 11 X 1 , SPEC 20 = 10 00 , SPEC 21 = XXXX

STX	SW 1	SW 2	SW 3	NET WEIGHT	TARE WEIGHT	CR
-----	------	------	------	------------	-------------	----

No decimal point command. Total has 17 digital ASCII code.

[STX] WORD ASCII START FLAGE (02H) , [CR] WORD ASCII (0DH)

STATE WORD ,[SW1]

STATE WORD 1			
BIT0,1,2			
BIT 0	BIT 1	BIT 2	DECIMAL POINT POSITION
1	0	0	XXXXX0
0	1	0	XXXXXX
1	1	0	XXXX, X
0	0	1	XXX.XX

1	0	1	XX.XXX
BITS 3 , BITS 4			show SUBBSECTION
0	0		
0	1		
1	0		
1	1		X5
BIT 5			= " 1 "
BIT 6			= " 1 "
BIT 7			= "0"

STATE WORD , [SW2] STATE WORD [SW3]

SW 2 STATE WORD 2	
BITS	FOUNCTION
0	GROSS = " 0 " , NET = " 1 "
1	NEGTIVER = " 1 " positive = " 0 "
2	OVER FULL = " 1 " , NOMRA = " 0 "
3	Stable="1",Not stable" 0 "
4	Weight U nit : g = "00" ,kg= "
5	0 1 "
	lb= "10", once="11"
6	"1"
7	" 0 "

SW 3 STATE WORD 3	
BI T S	FOUNCTION
0	= " 0 "
1	= " 0 "
2	= " 0 "
3	= " 0 "
4	= " 1 "
5	= " 1 "
6	= " 1 "
7	= "0"

Ex 1. The NET WEIGHT is -124.50kg

The data format is 0x0 2 , 0x7c,0x59,0x70,0x30,0x31,0x32,0x34,0x35,0x30, 0x30,0x31,0x32,0x34,0x35,0x30,0x0d . _

8.1.5.4 Continuous data output, special format 4 (Special data type 4) (TERAOKA SCALES TYPE)

DIGI RS232 Communication type .

SPEC SET: SPEC02 = 11 X 1 , SPEC 20 = 11 00 , SPEC 21 = XXXX

STABLE WORD	NET WEIGHT TEXT (With decimal point) + RS_CR + RS_LF
-------------	-------------------------------------------------------

This data format can only output fixed weight unit values, including stable state characters (3 OH/31H), decimal points and net weight values.

Stable flag characters: 0x30 (30H) = stable weight, 0x31 (31H) = unstable weight.

Message data end character RS_CR = 0x0D (ODH)

Message end line feed character RS_LF = 0x 0A (OAH)

Note 1: The above setting value 'X' is the bit that doesn't affect how this works, (0/1 are both fine)

Note 2 : There is no weight unit symbol, when there is weight conversion, the value output is the value of the weight unit set during calibration.

The mode efficiency NET WEIGHT data length is 7 digital With decimal point & with stable word .

STABLE word 0x30 (30H) = STABLE , 0x31 (31H) = UNSTABLE

RS_CR 0x0D (ODH)

RS_LF 0x 0A (OAH)

Note 1: The above setting value 'X' is the bit that does not affect this mode of operation, (0/1 is ok)

Note 2: No weight unit symbol. When weight is converted, the value output is the value of the unit of weight set at the time of calibration.

Ex 1. The NET WEIGHT is -124.50kg (Negative weight display function spec06.bit3,2=10 has been set)

The data format is 0x30,0x2d,0x31,0x32,0x34,0x2e,0x35,0x30,0x0d,0x0a

Ex 2 . When NET WEIGHT is overload. (weight overload)

The data format is 0x30,0x2 0 ,0x 2 0,0x 20 ,0x 20 ,0x 20 ,0x 4F ,0x 46 ,0x0d,0x0a

Ex 3 . When NET WEIGHT is underload. (When the weight is less than -2 divisions, and the negative weight M ASK function has been set

s pec06.bit3,2=00,01)

The data format is 0x30,0x2 0,0x 2 0,0x 20,0x 20,0x 20,0x 55,0x 46,0x0d , 0x0a _ _ _ _

8 .1.6. Obtain weight data by command :

8.1.6.1. Obtain standard weight data command 1 (simple command to obtain weight data with a single character)

SPEC SETUP: SPEC 01= X 100 , Baud = 9600bit/s

SPEC 02= 01 0 X , simple command mode data output

SPEC 20 = XX 00 , Data=8bit, Stop=1bit, no parity bit

Input command: Use single character (byte) command: A(41H) or a(61H)

Output message: Output 6 Byte (ASCII Code) weight data, no decimal point, high digits in front,

with sign.

For example: weight = 1.235kg then: 30H, 31H, 32H, 33H, 35H

Note: 1. The above setting value 'X' is the bit that doesn't affect how this works, (0/1 are both fine)

2. When using this command to obtain weight data, the output data format does not include the weight unit, and after the weight unit is converted, the number

The value output does not change, only the value of the weight unit set during calibration.

(It has nothing to do with the settings of S PEC02.0, SPEC20.3, 2)

8.1.6.2. Obtain standard weight data command 2 (Use standard command to obtain weight data)

SPEC SETUP: SPEC 01= X 100 , Baud = 9600bit/s
SPEC 02= 00 0 X , command mode data output
SPEC 20 = XX 00 , Data=8bit, Stop=1bit, no parity bit

Input command: 3-byte command: 02H, 0DH, 0AH

Output message: Output 24 Byte (ASCII Code) weight data, including weight unit, stability indicator, decimal point, sign,

Highest digit first.

Message format: 06 20 67 30 0D 47 30 30 31 2E 30 30 30 0D 54 30 31 30 2E 30 30 30 0D 0A

Note: 1. The above setting value 'X' is the bit that doesn't affect how this works, (0/1 are both fine)

2. When using this command to obtain weight data, the output data format includes the weight unit, and after the weight unit is converted, the data

The value output will be based on the unit value of the displayed weight.

8.2 Common standard P OS serial protocol :

BLAZE-100 FOR POS/ECR INTERFACE & Protocol

8.2.1 POS/ECR Interface

BLAZE-100 POS/ECR Version can interface with most POS/ECRs by selecting

TYPE 0 to TYPE 7. (TYPE 0, 2, 4, 5, 6, 7)

8.2.2 POS /ECR (Type Selection)

(1) POS/ ECR-Type TYPE selected in making sure the power has been turned off. Press and hold the tare key before turning on the power.

At this point, the electronic scale will display the currently selected POS/ECR type, which will be displayed on the monitor as "P.OS.T. 0".

Indicates that you have selected (POS/ ECR-type 0). You can press the tare key again to select another POS/ECR.

Press zero to save the Settings and return to weighing mode.

POS/ECR-TYPE type selection, make sure the power is off. Press and hold the [Tare] key, and then turn on the power.

At this time, the electronic scale will display the currently selected POS/ECR type, which will be displayed as " P.OS.t.0 " on the display.

It means that (POS/ECR- TYPE 0) has been selected, and you can press the [Tare] key again to select other types of P OS/ECR .

Press [ZERO] to save the setting and return to weighing mode.

(2) If you want to change POS/ECR type then press 'TARE' key to change POS/ECR Type.

If you want to change the POS/ECR type, please press the [Tare] key to change the POS/ECR type. In the process of power-on initialization, press and hold the "TARE" button until the indicator light of S1 lights up, and then release the button. After the initialization is completed, it will enter the selection of POS type. Press the "TARE" key and the value will increase by "1".

(3) To save current POS/ECR type, press the [ZERO] key.

To save the current POS/ECR type, press the [ZERO] key. Save the modified POS/ECR type, and return to weighing mode.

Table 1 (Table 1)

DISPLAY	MENU	Description / RS-232C Serial
' _ 00 '	P O S / E C R -TYPE 0	Most POS, ECRs and Some TEC POS System / 9600 Baud rate, 7 Data bit, Even Parity, 1Stop bit Most POS, ECR and some TEC POS system software adopt 9 600 (b ps/S) baud rate, 7 data bits, even parity , 1 stop bit.
' _ 02 '	P O S / E C R -TYPE 2	SHARP ER-Axxx, ER-A450T, New SANYO ECRs , Using RS-232 and others /9600 Baud rate, 7 Data bit, Even Parity, 1Stop bit Sharp ER-Axxx, ER-A450T , new Sanyo ECRs , use RS-232 , etc., using 9 600 (b ps/S) baud rate, 7 data bits, even parity, 1 stop bit.
' _ 04 '	P O S / E C R -TYPE 4	CRS, NCR2170 and Many other ECRs, Most POS Software / 9600 Baud rate, 7 Data bit, Even Parity, 1Stop bit. CRS, NCR2170 and many other P .OS systems, using 9 600 (b ps/S) baud rate , 7 data bits, even parity, 1 stop bit.
' _ 05 '	P O S / E C R -TYPE 5	NCI General, SAMSUNG SPS-300, ER-900, Most POS Software / 9600 Baud rate, 7 Data bit, Even Parity, 1Stop bit. NCI General , Samsung SPS-300, ER-900 , and most other P .OS software adopt 9 600 (b ps/S) baud rate , 7 data bits, even parity, and 1 stop bit.
' _ 06 '	P O S / E C R -TYPE 6	SAMSUNG ER-670, ER-5100, SPS-520, Most POS Software / 9600 Baud rate, 8 Data bit, Non Parity, 1Stop bit. Samsung ER-670, ER-5100, SPS-520, and most other POS software adopt 9600 (bps/S) baud rate, 8 data bits, no parity, and 1 stop bit .

' 07 '	POS/ECR -TYPE 7	DELTA cash register protocol Communication type / 9600 Baud rate, 8 Data bit, Non Parity, 1 Stop bit. Adopt 9600 (bps/S) baud rate, 8 data bits, no parity, 1 stop bit .
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8.2.3 TYPE-0 INTERFACE

→ Most POS Systems, ECRs and some TEC POS Systems.

1) PROTOCOL

EXTERNAL DEVICE		SCALE(BLAZE-100)
<ENQ>	-----→	Initiate communication
	<-----	<ACK> : Acknowledge the request of weight data
<DC2>	-----→	Request of weight data (Inquiry)
	<-----	<STX> : start transmission
	<-----	< ID > : Scale type identifier
	<-----	<W5> : Weight data
	<-----	<W4> : Weight data
	<-----	<W3> : Weight data
	<-----	<W2> : Weight data
	<-----	<W1> : Weight data
	<-----	<BCC> : Block Check Character
	<-----	<ETX> : Transmission end

POS/ECR, PC

BLAZE-100

D-SUB Connector

(9-PIN SUB CONNECTOR)

i> Scale Type Identifies

ID	
2kg → G (47H)	-
5kg → H (48H)	5lb → K (4BH)
6kg → C (43H)	-
10kg → I (49H)	10lb → L (4CH)
15kg → A (41H)	15lb → F (46H)
20kg → J (4AH)	20lb → M (4DH)
25kg → P (50H)	-
30kg → B (42H)	30lb → D (44H)
-	50lb → N (4EH)
60kg → O (4FH)	60lb → E (45H)

Data Byte: <STX><ID><W5><W4><W3><W2><W1><BCC><ETX>

ii> Block Check Character

: <BCC> has all data bytes except <STX> and <ETX> through exclusive OR(XOR).

* Parity Bit: Even

iii> Serial Communication 9600 Baud rate, 7 Data bit, Even Parity, 1 Stop bit

※ Response time: Typ. 50ms, Max. 150ms

8.2.4 TYPE-2 INTERFACE

: Discontinual RS-232C Interface

→ SHARP ER-AXXX, ER-A450T, New SANYO ECRs using RS-232, TOLEDO 3213 etc.

1) PROTOCOL

POS/ECR SCALE(BLAZE-100)	
Command <W>	-----→
	<----- Response



<STX> XXXXX <CR> : weight data (kg, lb, oz)
Error message : <STX><status byte><CR>

2) REMAKE

W : 57H (ASCII code)
STX : 02H (ASCII code)
CR : 0DH (ASCII code)

3) STATUS BYTE

PARITY BIT	ALWAYS==1	ZERO	MINUS	OVERLOAD	MOTION
Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2
				Bit 1	Bit 0

Bit 4 = 1 Scale at Zero, Bit 4 = 0 Not at Zero
 Bit 2 = 1 Weight is Minus, Bit 2 = 0 Weight is not Minus
 Bit 1 = 1 Over Capacity, Bit 1 = 0 Not Over Capacity
 Bit 0 = 1 Scale in Motion, Bit 0 = 0 Stable

4) Serial Communication 9600 Baud rate, 7 Data bit, Even Parity, 1 Stop bit

Ex) Weight : 12.34lb
 POS/ECR SCALE (BLAZE-100)
 W<57H> ----->
 <-----> <02H><30H><31H><32H><33H><34H><0DH> : ASCII code
 STX 0 1 2 3 4 CR

Ex) Weight : 423.5 oz
 POS/ECR SCALE (BLAZE-100)
 W<57H> ----->
 <-----> <02H><30H><34H><32H><33H><35H><0DH> : ASCII code
 STX 0 4 2 3 5 CR

※ Response time: Typ. 50ms, Max. 150ms

8.2.5 TYPE-4 INTERFACE

→ NCI ECR(NCR2170), SAMSUNG ER-5100, ER-5115, CRS .etc

1) PROTOCOL

POS/ECR SCALE (BLAZE-100)
 <W> ----->
 <CR> ----->
 ===== Inquiry
 <-----> <LF> XX.XXX LB <CR>
 <-----> <LF> S b1b2 <CR><ETX>
 ===== lb CASE
 <-----> <LF> XX.XXX KG <CR>
 <-----> <LF> S b1b2 <CR><ETX>
 ===== kg CASE

Weight unit ascii code table

No _	U NIT	Unit Character	A SCII CODE	
1	LB	The Characters l and b	(0x6C)	(0x62)
2	KG	The Characters k and g	(0x6B)	(0x67)
3	g	The Characters " " and g	(0x20)	(0x67)
4	OZ	The Characters o and z	(0x6F)	(0x7A)

(A) XX.XXX = Weight value (Decimal point: variable)

(B) S = The Character S

(C) b1b2 = Two status Characters

i> Status Bytes

Bit No	B1	B2
Bit7	Parity Bit	Parity Bit
Bit6	0	0
Bit5	1 (Always 1)	1 (Always 1)



Bit4	1 (Always 1)	1 (Always 1)
Bit3	0	0
Bit2	0	0
Bit1	1 = Scale at Zero 0 = Not at Zero	1 = Over Capacity 0 = Not Over Capacity
Bit0	1 = Scale in Motion 0 = Stable	1 = Under Capacity 0 = Not Under Capacity



ii> Simplified Status Codes

B1	B2	STATUS Definition
ASCII Character (ASCII Code)	ASCII Character (ASCII Code)	
0 (30H)	0 (30H)	OK
1 (31H)	0 (30H)	motion
2 (32H)	0 (30H)	Scale at Zero
0 (30H)	1 (31H)	Under capacity
0 (30H)	2 (32H)	Overcapacity

i ii> Serial Communication 9600 Baud rate, 7 Data bit, Even Parity, 1 Stop bit

※ Response time: Typ. 100ms, Max. 300ms

8.2.6 TYPE-5 INTERFACE

→ NCI GENERAL , SAMSUNG ER-5115, ER-5100 and Most POS Software

1) PROTOCOL

```

POS/ECR          SCALE (BLAZE-100)
<W> ----->
<CR> ----->
===== Inquiry
<-----<LF> XX.XXX LB <CR>
<-----<LF> S b1b2 <CR><ETX>
===== lb CASE
<-----<LF> XX.XXX KG <CR>
<-----<LF> S b1b2 <CR><ETX>
===== kg CASE
  
```

Weight unit ascii code table

No _	U NIT	Unit Character	A SCII CODE	
1	LB	The Characters l and b	(0x6C)	(0x62)
2	KG	The Characters k and g	(0x6B)	(0x67)
3	g	The Characters " "and g	(0x20)	(0x67)
4	OZ	The Characters o and z	(0x6F)	(0x7A)

(A) XX.XXX = Weight value (Decimal point: variable)

(B) S = The Character S(0x53)

(C) b1b2 = Two status Characters

i> Status Bytes

Bit No	B1	B2
Bit7	Parity Bit	Parity Bit
Bit6	0	0
Bit5	1 (Always 1)	1 (Always 1)
Bit4	1 (Always 1)	1 (Always 1)
Bit3	0	0
Bit2	0	0
Bit1	1 = Scale at Zero 0 = Not at Zero	1 = Over Capacity 0 = Not Over Capacity
Bit0	1 = Scale in Motion 0 = Stable	1 = Under Capacity 0 = Not Under Capacity

ii> Simplified Status Codes

B1	B2	STATUS Definition
ASCII Character (ASCII Code)	ASCII Character (ASCII Code)	

0 (30H)	0 (30H)	OK
1 (31H)	0 (30H)	motion
2 (32H)	0 (30H)	Scale at Zero
0 (30H)	1 (31H)	Under capacity
0 (30H)	2 (32H)	Overcapacity

iii> Weight Data Decimal point (Type 4, 5)

kg	position	lb	position	oz	position
2kg	X.XXX	5 lbs	X.XXX	80oz	XX.XX
5kg	X.XXX	10 lbs	XX.XXX	160oz	XXX.X
6kg	X.XXX	12 lbs	XX.XXX	200oz	XXX.X
10kg	XX.XXX	20lb	XX.XX	400oz	XXX.X
20kg	XX.XX	50lb	XX.XX	800oz	XXX.X
30kg	XX.XX	60lb	XX.XX	1000oz	XXXX.X

iv> Serial Communication 9600 Baud rate, 7 Data bit, Even Parity, 1 Stop bit

※ Response time: Typ. 100ms, Max. 300ms

8.2.7 TYPE-6 INTERFACE

- SAMSUNG ECR (ER-670, ER-5100, SPS-520), Most POS
- 9600 baud rate
- 8 Data bits
- Non Parity
- 1 stop bit

1> PROTOCOL

EXTERNAL DEVICE (ECR)

<ENQ> ----- →

SCALE (BLAZE-100)

Initiate communication

<----->

<ACK> : Acknowledge the request of weight data

<DC1> or <DC2> ----- →

DC1 : For Weight Data

DC2 : For All Data (**BLAZE-100 NOT USE**)

<----->

Send Data Block

2> The Data Trains

1. "DC1"

SOH STX STA SIGN W5 W4 W3 W2 W1 W0 UN1 UN0 BCC ETX EOT

Command DATA BLOCK Command

→ ◊ ™ ○ ⊕ □ & _

- STA : A WEIGHING STATUS OF THE SCALE
SCALE IS STABLE -> "S",
NOT STABLE -> "U"

- SIGN : SIGN OF THE WEIGHT DATA
ZERO AND POSITIVE WEIGHT -> " ",
NEGATIVE WEIGHT -> "-"
OVER LOAD -> "F"

- W5 THROUGH W0 ->
WEIGHT DATA
※ BUT ALL "F" WHEN THE SCALE IS PUT ON OVER LOAD.

- UN1 THROUGH UN0 ->
UNIT OF WEIGHT (Kg , g , lb , oz)

- BCC : BLOCK CHECK CHARACTER

Serial Communication 9600 Baud rate, 8 Data bits, None Parity, 1 Stop bit

※ Response time: Typ. 50ms, Max. 150ms

8.2.8 TYPE-7 INTERFACE

→ DELTA cash register protocol Communication type (only original weight unit value output)

FIX WORD	NET WEIGHT TEXT (With decimal point) + RS_CR + RS_LF
----------	-------------------------------------------------------

1> PROTOCOL



2> The Data Trains

D : 0x44
 C_R : 0x0D
 L_F : 0x0A

S : Sign "+": 2BH, "-" : 2DH

WWW . WWW : 6 digits for WEIGHT
 . : 0x2E

This type efficiency NET WEIGHT data length is 7 digital With decimal point .

S (FIX WORD) 0x 2B (Weight is positive valve) / 0x2d (Weight is minus value)
 D 0x44
 RS_CR 0x0d
 RS_LF 0x0a

3) Serial Communication 9600 Baud rate, 8 Data bit, Non Parity, 1 Stop bit

Ex 1. When NET WEIGHT is 0.460kg .

The data format is 0x2b, 0x30, 0x30, 0x30, 0x2e, 0x34, 0x36, 0x30, 0x0d, 0x0a

Ex 2. When NET WEIGHT is -0.460kg .

The data format is 0x2d, 0x30, 0x30, 0x30, 0x2e, 0x34, 0x36, 0x30, 0x0d, 0x0a