Fidelity Measurement

DC-29

Dual Counting Indicator

Operation Manual (Full Version)

PLEASE READ THIS MANUAL VERY CAREFULLY BEFORE OPERATING THIS INSTRUMENT

Specifications subject to change without prior notice

V270 February 2025

Content

Cautions

- The instrument is neither explosion-proof nor waterproof.
- Avoid opening the instrument as there are no user-serviceable parts inside. Always contact your dealer for service.
- Do not place this instrument in locations with excessive shock, vibration, or extreme temperatures (before or after installation).

1. Reminders

1.1 Metrological Legislation

- Certain metrological parameter settings are restricted to authorized personnel only, as per metrological legislation.
- Do not attempt to change parameters under internal function numbers F39 to F99.
- Always contact your dealer for installation and technical assistance.

1.2 Seal & Serial Number

- This instrument is legal for trade only when sealed (and/or stamped) and bearing a serial number.
- Avoid breaking the seal or removing the serial number affixed to the instrument. Warranty service will not be provided if these are tampered with.
- For after-sales service, contact your dealer.

1.3 Placing the Weighing Platform

To ensure accurate weighing results:

- Place the weighing platform on a strong, level surface.
- Avoid environments with excessive wind, vibration, or extreme temperature changes.

1.4 Support & Service

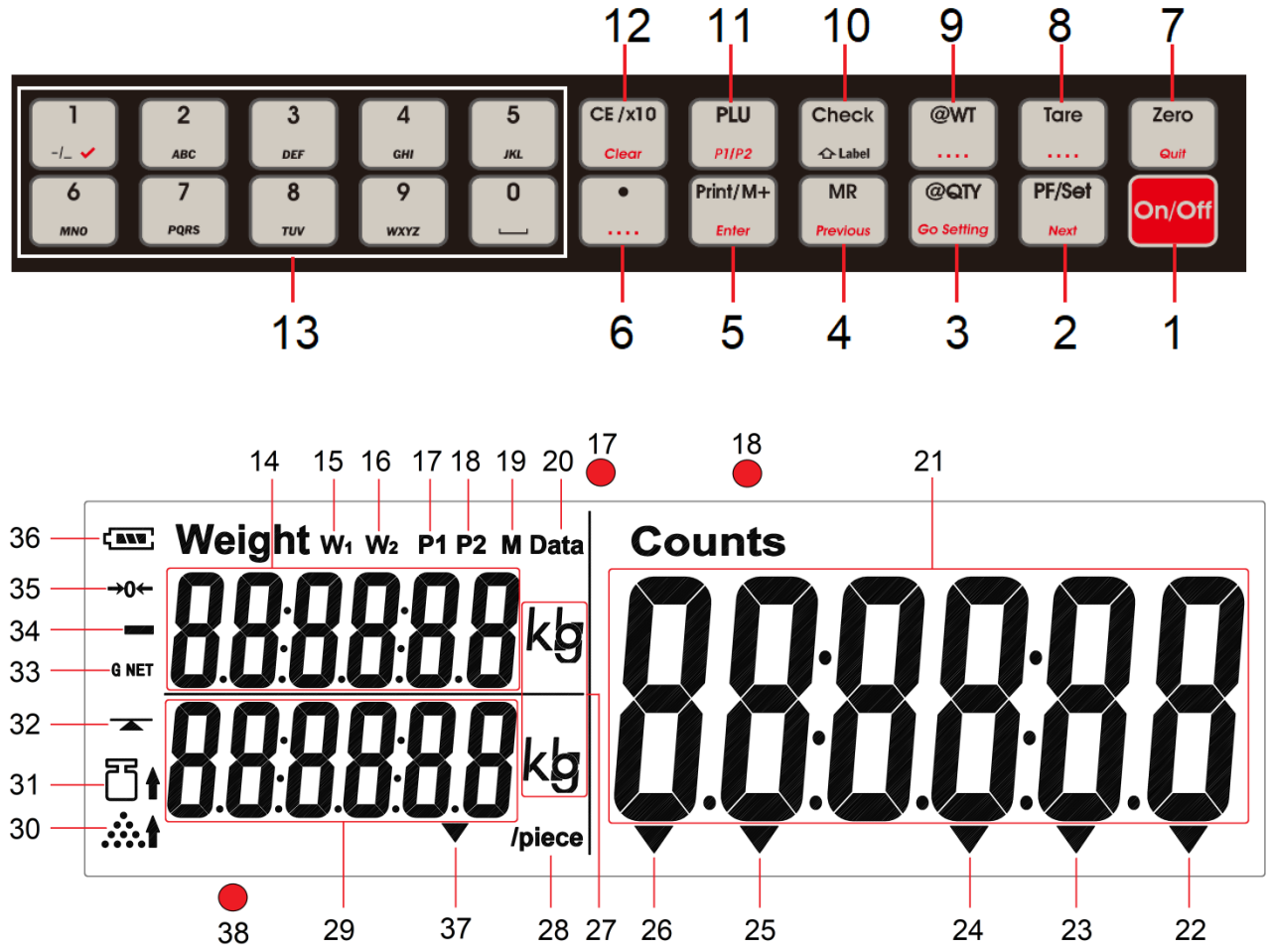
For any inquiries, after-sales service, or product information, please contact your authorized dealer.

2. Specifications

Description	Platform #1 (P1)	Platform #2 (P2, Optional)
Capacity & Readability	Free Setting	
Weighing Range	Single Range, Dual Range, Dual Interval	
Weight Units	kg, g	
Displays	• Display #1: 6 x 36mm LCD Numeric Digits • Display #2: 6 x 17mm LCD Numeric Digits • Display #3: 6 x 17mm LCD Numeric Digits	
Load Cell Connection	• Excitation Voltage = 5V DC • Supports both 4-wire and 6-wire Load Cells • Max Load Cell Connection: 10 x 350Ω or 20 x 700Ω Load Cells • Max Load Cell Rated Output: 4mV/V	
A/D Converter & Internal Resolution	• 24 bit Low-Noise Delta to Sigma (Δ-Σ) • 3.200,000 Counts at 15 mV • Minimum input per d = 0.05μV	
AD Conversion Speed	Selectable: 15, 30, 60, 120 times/second	
Max. Tare Range	• -Max for Single Range • -Max_i Subtractive Tare) for Range / Interval	
Calibration Methods	• 2 Span Points Calibration (Linearity Calibration) • 1 Span Point Calibration • Numeric Calibration	
Power Source	• Built-in Rechargeable Battery = 6V, 4AH • External Power Adaptor = DC 12V, 1A	
Accessories	Pillar Mount Holder (ψ35~38mm), Built-in Rechargeable Battery, Universal Power Adaptor, Dust Cover	
Packing	• Individually Packed: Dimensions = 36 x 32 x 16 cm. Net/Gross Weight = 2.50 / 3.10 kg • 4 Units in a Shipping Carton: Dimensions = 63 x 35 x 43 cm. Net/Gross Weight = 10.00 / 13.50 kg	
Operation Environment	-10 ~ 40°C. Non-condensed. R.H.≦ 85%	

In the interest of improvement, specifications may change without prior notice

3. Panel and Keys



3.1 Key Board Description

No.	Description	Function Description	
		Normal Operation	**Internal Function Setting**
1	**[On/Off]**	Power instrument on or off.	Quit without saving and power off.
2	**[PF/Set]**	• When F31 = P.F.: Shift among P1, P2 and P1+P2. • When F31 = Set: Access internal function setting mode (F1~F37).	Go to the next parameter or function.
3	**[@QTY]**	• Numeric value + **[@QTY]** = To introduce the numeric value being displayed on LCD3 as sample quantity. • **[@QTY + [Check]** = Start inputting Lo and Hi limit in terms of quantity.	Access internal function during countdown.
4	**[MR]**	Recall total stored transactions.	Go to the previous parameter or function.
5	**[Print/M+]**	Send print data and/or accumulate value.	Save and return.
6	**[.]**	Decimal.	Decimal.
7	**[Zero]**	Set weight display to zero when unloaded.	Quit without saving.
8	**[Tare]**	Tares off the weight of a container.	Nil.
9	**[@WT]**	• Numeric value + **[@WT]** = To introduce the numeric value being displayed on LCD3 as unit weight. • Short press = To save current unit weight to quick PLU. • Long press = To recall a unit weight from quick PLU. • **[@WT] + [Check]** = Start inputting Lo and Hi limit in terms of weight.	Nil.
10	**[Check]**	• Short press = Starting inputting Lo and Hi limit under current checking condition (in terms of weight or quantity). • Long press = To recall Lo and Hi limit from quick PLU.	Quick access to label settings.
11	**[PLU]**	• Save current operation parameters to Customized Setting PLU. • Recall operation parameter from Customized Setting PLU.	To shift between P1 and P2.
12	**[CE/x10]**	• Clear value entered during setting process, or • Trigger the extended display mode.	Clear.
13	**[0] ~ [9]**	Numeric keys.	• Numeric, letters and symbol keys. • Press **[0]** to go to F1. • Press **[1]** to go to F10. • …… • Press **[9]** to go to F90.

3.2 Display Panel Description

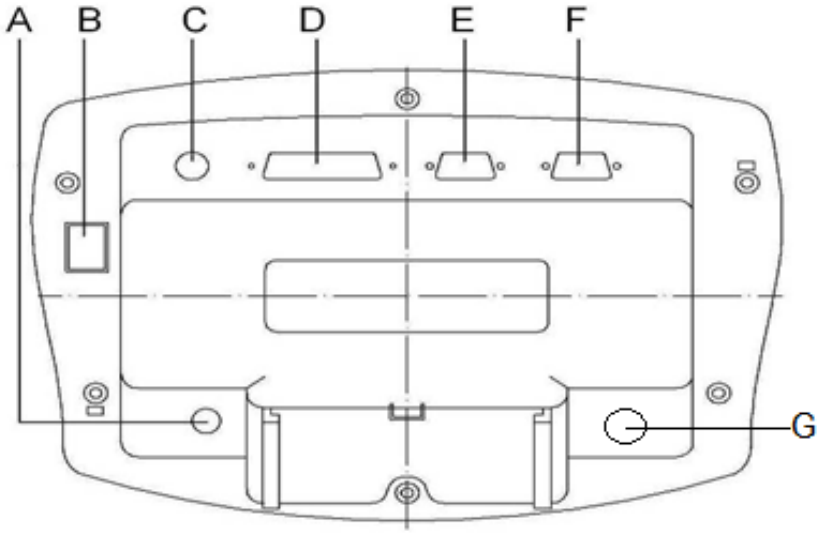
No.	Name	Description
14	**LCD2**	Displays the weight value.
15	**Max$_1$ Indicator**[1]	(When under dual weighing range/interval mode) Visible when operating in the first weighing range (W_1).
16	**Max$_2$ Indicator**[2]	(When under dual weighing range/interval mode) Visible when operating in the second weighing range (W_2).
17	**P1 Indicator**	(When under dual platform configuration) Indicates current or accumulated results of Platform 1 (P1).
18	**P2 Indicator**	(When under dual platform configuration) Indicates current or accumulated results of Platform 2 (P2).
19	**M+ Indicator**	Visible when memory contains of accumulated data.
20	**Pre-Tare Indicator**	Visible when a preset-tare value is in effect.
21	**LCD1**	Displays the number of pieces being weighed or counted.
22	**Alibi Indicator**	Flash when a transaction record is sent to alibi memory (Alibi memory)
23	**Reserved**	
24	**Customized Setting Indicator**	Visible when instrument is running under customized settings.
25	**Qty Check Indicator**	Visible when current Hi/Lo check function is in term of quantity.
26	**Weight Check Indicator**	Visible when current Hi/Lo check function is in term of weight.
27	**Weight Unit Indicator**	• kg = kilogram • g = gram
28	**Unit Weight Indicator**	Visible when unit weight value is being shown on LCD3.
29	**LCD3**	Unit weight and value being edited is displayed here.
30	**Unit Weight Lo Indicator**	Visible when unit weight entered is less than 1/10d or d_1.
31	**Sample Weight Lo Indicator**	Visible when calculated unit weight of sample quantity entered is less than 1/10d or d_1.
32	**Stable Indicator**	Illuminates when the weight value is stable.
33	**Gross/Net Indicators**	• **G**: Visible when gross result is being displayed. • **Net**: Visible when net result is being displayed.
34	**Minus Indicator**	Visible when a negative value is displayed.
35	**Zero Indicator**	Visible when instrument is at zero status.
36	**Battery Level Indicator**	Displays remaining battery charge for the built-in rechargeable battery.

1 (For Dual Range Mode) Visible when weighing range is = W_1.

2 (For Dual Range Mode) Visible when weighing range is = W_2.

37	**Lower Case Indicator**	Visible when lower case letter entry is in effect.
38	**Charge Status Indicator**	• Red color: Recharging battery, • Green color: Charging completed.

4. Connection Points



4.1 Connection Pins & Plugs

No.	Name	Description
A	**DC Jack Input for Indicator**	Connect external power adapter (DC 12V, 1A, center positive). Do not use unauthorized adapters.
B	**Reserved**	
C	**P1 Load Cell Connector (7-Pin)**	Refer to paragraph **4.2**, for details.
D	**Control Output Port**	Refer to paragraph **4.3** for details.
E	**Comport 1 (UART 1 RS232)**	Refer to paragraph **4.4** for details.
F	**Comport 0 (UART 0 RS232)**	
G	**P2 Load Cell Cable Gland**	Route load cell cable for Platform 2 through this gland.

4.2 P1 Load Cell Connector Pin Assignment Table

Pin #	Pin Assignment	Notes
1	Excitation +ve	• Apply both the 4/6-wire load cell jumpers on the mainboard when using a 4-wire load cell. • Remove both the 4/6-wire load cell jumpers from the mainboard when using a 6-wire load cell.
2	Remote Sense +ve	
3	Excitation -ve	
4	Remote Sense -ve	
5	Signal +ve	
6	Signal -ve	
7	Ground	

4.3 Relay Pin Assignment and Connection Table

Pin# on DB 25 Control Output Port	Relay Pin#	Remarks
1	Relay 4, Normal Open	Synchronized with HI Output
2	Relay 4, Common	
3	Relay 4, Normal Close	
4	Relay 3, Normal Open	Synchronized with OK Output
5	Relay 3, Common	
6	Relay 3, Normal Close	
8	Relay 2, Normal Open	Synchronized with LO Output
9	Relay 2, Common	
10	Relay 2, Normal Close	
11	Relay 1, Normal Open	Synchronized with Buzzar Output
12	Relay 1, Common	
13	Relay 1, Normal Close	

Notes:

- When the control output is used, always plug in the power adapter that comes with this instrument. Otherwise, no output signal will be sent.
- The common terminal of a specific output is independent of the common terminals of other control outputs.
- Dry contacts only.

4.4 RS232 Comports Pin Assignment for UART 0 and UART 1

Comport 0 (Male)	Comport 1 (Female)
2 = RXD	2 = TXD
3 = TXD	3 = RXD
5 = GND	5 = GND
9 = DC 5V Output	Nil

5. Power Adaptor, Built-In Batteries and Recharging

5.1 Power Adapter

Always use the power adapter supplied with this instrument to avoid unrecoverable damage to the device.

5.2 Before Plugging in the Power Adapter to the Electricity Grid

Double-check if the input voltage marked on the adapter matches the electricity grid. If not, do not plug it in and contact your dealer immediately.

5.3 Before First-Time Use

To ensure optimal battery performance, plug in the power adapter and recharge the built-in battery for at least 8 hours before powering on the instrument.

5.4 CR1220 Real-Time Clock Backup Battery

A CR1220 battery is installed to back up the system's real-time clock and other application parameters. Replace this battery every 12 months for optimal performance. Contact your dealer for details and support.

5.5 Battery Voltage and Battery-Operation Application

The battery voltage is displayed during the power-on countdown process on LCD1 and can also be checked using internal function F2.

Battery voltage below 6.0 V is considered low and is not recommended for any battery-operated applications lasting longer than 60 minutes (depending on the actual system configuration).

5.6 Battery Low (Lo.Bat)

When the "Lo.Bat" message appears on LCD1, the battery level is low. Connect the power adapter immediately to recharge the battery; otherwise, the instrument will automatically power off shortly.

To protect the built-in rechargeable battery, the instrument will automatically power off when the battery level is critically low. If this occurs, do not attempt to power on the instrument. Recharge the battery immediately. Failure to do so may cause unrecoverable damage to the built-in rechargeable battery.

5.7 Battery Charging Status

The battery charging status is indicated by the dual-color Charge Status Indicator:

- Red: Recharging in process,
- Green: Charging completed.

6. Internal Function Settings

6.1 About Internal Function Table

To enable this instrument to give the best performance under various application requirements and demands, a set of internal functions is built-in.

These internal functions are divided into 2 categories: -

- User accessible functions (F1 ~ F37 of below table) do not request any password to access.
- Other internal functions are not for access to end-users and may need a password to access. Do not attempt to access or alter any parameters without authorization to avoid system malfunction.

6.2 How to Enter & Select Internal Function[3]

Depends on F31 settings:

- If F31 is = P.F.: Power off instrument and power on again. During countdown process, press **[@QTY]**.
- If F31 is = Set: Press **[PF/Set]** during normal operation status.

1. Instrument displays F1 and is now in internal function mode.
2. Press **[PF/Set]** and **[MR]** to access the preferred internal function number.
3. Quick access to a function number:
   a. Press **[0]** to go to F1.
   b. Press **[1]** to go to F10.
   c. Press **[2]** to go to F20.
   d. Press **[3]** to go to F30.

6.3 Key Function during Internal Function Setting & Operation Mode

Key	Function Description
[On/Off]	Quit without saving and power off
[PF/Set]	Go to next parameter or next internal function number
[@QTY]	Enter internal function during power on countdown process
[MR]	Go to previous parameter or previous internal function number
[Print/M+]	Enter, save and return
[Zero]	Quit without saving
[Check]	Quick access to label settings
[PLU]	To shift between P1 and P2
[CE/x10]	Clear
[0]~ [9]	Numeric, letters and symbol keys
[.]	Decimal

6.4 Shift between Platform #1 (P1) and Platform #2 (P2)

Some internal functions are platform-specific, allowing distinct settings for P1 and P2 under the same internal function number.

For platform-sensitive internal functions, the current platform number is displayed on LCD3 prior to the internal function number. To switch between P1 and P2 platforms, press **[PLU]**.

3 To fulfil the metrology law of certain countries, accessing to internal function by **[PF/Set]** may be disabled. Contact your dealer for more information.

6.5 Internal Function Table

<table>
<tr><th>No.</th><th>Description</th><th colspan="3">Parameters / Note
Default = **</th></tr>
<tr><td>F1</td><td>Analogue to Digital (AD) Value</td><td colspan="3">Press [Print/M+] to set offset value to zero when unloaded. Then add load on the platform to observe the span value of load applied.
• LCD2 represents the million digits of the AD value.
• LCD3 represents the AD value up to 999,999.
For example: -
• LCD2 displays 1
• LCD3 displays 083690
Then the actual AD value is 1,083,690.

Press [Zero] to quit to F1.</td></tr>
<tr><td>F2</td><td>All Segment Check & Battery Voltage</td><td colspan="3">All display segments and indicators will be lit on. Check any segments or indicators are missing.

Press [Zero] to quit to F2 or [Check] to show current battery voltage.</td></tr>
<tr><td>F3</td><td>Capacity, Division & Default Weight Unit</td><td colspan="3">Display basic metrology characteristics (capacity, division, and weight unit).
• Capacity x Division of MAX_1 is shown on LCD2. Value displayed = $Max_1 + d_1$.
• Capacity x Division of W_2 (if set) is shown on LCD3. Value displayed = $Max_2 + d_2$.</td></tr>
<tr><td>F4</td><td>Date Format & Value</td><td>DD/MM/YY</td><td>** YY/MM/DD</td><td>MM/DD/YY</td></tr>
<tr><td></td><td colspan="4">• Press [MR] or [PF/Set] to change date format and press [Print/M+] to confirm.
• Then press [Print/M+] to check current date value.
• To change date value, press [Print/M+] then enter date value and then press [Print/M+] to confirm.
• Instrument will then convert and display the month and date value entered into week and day number (0 ~ 6 for Sunday ~ Saturday) of the year value entered.
• Select Date Output formats: - 2 formats are available: -
➢ Date = Normal date format as per input above.
➢ Week = WWYYDD format. WW = week number; YY = year value; DD = weekday (Monday = 01… Sunday = 07).
• Press [MR] or [PF/Set] to select Date Output Type and press [Print/M+] to confirm.</td></tr>
</table>

<table>
<tr><td>F5</td><td>Time</td><td colspan="7">HH/MM/SS</td></tr>
<tr><td></td><td colspan="8">To change time, press [Print/M+], then enter a new value and press [Print/M+].</td></tr>
<tr><td>F6</td><td>System (F7~F37)
Initialization</td><td colspan="3">** NO</td><td colspan="4">YES</td></tr>
<tr><td></td><td colspan="8">• Press [PF/Set] to shift between NO and YES and press [Print/M+] to confirm.
• If YES is selected, press [1] when “SURE?” is displayed. Instrument shows Done when initialization is completed.</td></tr>
<tr><td>F7</td><td>Auto Power Off</td><td>Off</td><td>1</td><td>3</td><td>** 5</td><td>10</td><td>20</td><td>Other</td></tr>
<tr><td></td><td colspan="8">Notes: -
• Off = Auto power off disabled.
• 1 ~ 20 = Auto power off after this idle time (minute).
• Other = Set specific auto power off time.
• Auto Power off time parameter 1 ~ 20 will be ignored when instrument is powered by power adaptor.

To enter a specific auto power off time: -
1. Select Other and press [Print/M+],
2. Enter the specific power off time in the format of HH.MM.SS then press [Print/M+] to save.</td></tr>
<tr><td></td><td colspan="8">Auto power off function will be disabled when an energized power adaptor is plugged in.</td></tr>
<tr><td>F8</td><td>Brightness & Color</td><td colspan="3">Brightness (01 ~ 99)
** Default = 60</td><td colspan="4">Color Ratio (01 ~ 99)
** Default = 50</td></tr>
<tr><td></td><td colspan="8">• To change setting, enter value through numeric keys and then press [Print/M+].
• Set brightness (bt) first, then set color ratio. Color ratio is used to generate the preferred yellow color.
When instrument is powered by built-in rechargeable battery, backlight will be turned to minimum when battery is low or when weight value remains unchanged for 5 seconds.</td></tr>
<tr><td>F9</td><td>Platforms Totalization</td><td colspan="3">** Off
(Disabled)</td><td colspan="4">On
(Enabled)</td></tr>
<tr><td></td><td colspan="8">Notes: -
• Select On to enable results totalization of 2 platforms.</td></tr>
</table>

	• When F79 is set to Off, this internal function is not accessible.									
F10	Filter Strength and AD Conversion Speed	1	2	3	4	** 5	6	7	8	9
	Press **[MR]** or **[PF/Set]** to select: - a. 1 (strongest filter) for bad working environment where vibration, wind flow… etc. affect stable reading, b. 5 for normal environment, c. 9 (least filter) for very good working environment where wind and vibration have no effect to stable reading. d. Then press **[Zero]** to quit or **[Print/M+]** to save and continue with AD conversion speed setting. 5 AD conversion speed parameters (15 ~ 120 time per second) are available. Press **[PF/Set]** or **[MR]** to select: - a. **** 15** times per second. b. 30 times per second. Recommended maximum resolution = 30,000 division c. 60 times per second. Recommended maximum resolution = 15,000 division d. 120 times per second. Recommended maximum resolution = 7,500 division **Note**: - After the AD conversion speed is changed, instrument will restart automatically.									
F12	Auto Tare Function	**** Off**		On			Contin			
	Notes: - • **Off** = Auto Tare Function disable. • **On** = Only the first table weight applied will be tared off. Minimum tare load ≥ 2d. • **Contin** = All stable weight applied will be tared off. Minimum tare load ≥ 20d. • If Contin is set, select also delay time (0.0 ~ 9.9 second). Delay time is the time duration from a stable weight is detected and until it is automatically tare off. • Delay time value is displayed on LCD3. Enter the preferred delay time value through numeric keys and then press **[Print/M+]** to save.									
F13	Repetitive Tare Function	Off		**** On**						
	If F12 is set = Contin, Repetitive Tare setting “Off” will be surpassed.									

<table>
<tr><td>F14</td><td>Function Buzzer</td><td>K_beep (Keypad buzzer)
(**On/Off)</td><td>S_beep (System buzzer)
(**On/Off)</td><td>M_Beep (Alibi Memory buzzer)
(**On/Off)</td></tr>
<tr><td></td><td colspan="4">To enable and disable a specific function buzzer: -
1. Press [MR] or [PF/Set] until the preferred parameter is displayed.
2. Press [Print/M+] to save and go to the next function buzzer.
3. Repeat the above procedures until instrument returns to F14.</td></tr>
<tr><td>F15</td><td>Check Buzzer & Action on Negative Value</td><td>oFF</td><td>** in</td><td>out</td><td>Hi</td><td>Lo</td></tr>
<tr><td></td><td colspan="5">• oFF = Check Buzzer disabled.
• in = Check Buzzer activates when reading is within range.
• out = Check Buzzer activates when reading is out of range.
• Hi = Check Buzzer activates when reading more than Hi limit.
• Lo = Check Buzzer activates when reading lower than Lo limit.

Setting procedures: -
1. Press [MR] or [PF/Set] until the preferred parameter is displayed.
2. Then [Print/M+] to save and continue with Action on Negative Value (Neg.Cop) setting. 2 parameters are available: -
• On = Check function applies also to negative results.
• Off = Check function does not apply to negative results.
3. Then [Print/M+] to save and return to F15.

Note: Action on Negative Value
• Off = Check Mode Disable when value is less than zero.
• ** On = Absolute value, all negative values will be deemed and checked as positive ones.</td></tr>
<tr><td>F16</td><td>UART (Comport) Setting</td><td colspan="3">4 UARTs (UART 0, 1, 2, 3) are available. Refer to operation manual for more setting details.</td></tr>
<tr><td>F18</td><td>Machine ID and Group Number</td><td>Machine ID</td><td colspan="2">Group Number</td></tr>
<tr><td></td><td colspan="4">Notes: -
a. Machine ID number entered is also used as the address number of the instrument for RS485 communication.
b. When machine ID is = blank. It means that this instrument does not have any address number in the RS485 network.</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">c. In multi-instrument application with the same RS485 network, each machine should have a unique machine ID number.
d. Group number can be considered as production line number in multi-instrument application.
e. The machine ID and group number entered will be carried out automatically on output formats Lab 2 ~ Lab 5.

Setting procedures: -
1. Go to F18 and then press [Print/M+].
2. Set Machine ID number (00 ~ 98) then press [Print/M+]. To clear machine ID number, press [CE/x10] then press [Print/M+] to save.
3. Set group number (00 ~ 99) then press [Print/M+]. To clear group number, press [CE/x10] then press [Print/M+] to save and return to F18.</td></tr>
<tr><td>F19</td><td>Manual Entry for Customer / Product Code & Description</td><td>P Code
Product Code & Description</td><td>C Code
Customer Code & Description</td></tr>
<tr><td></td><td colspan="3">f. Customer & Product code accept both numeric numbers and alphabets. Maximum length = 18 digits.
g. To allow letters and symbols entry via keyboard, set F30 to Yes.
h. Enter code starting from H, then M and finally L. Press [Print/M+] to confirm and end editing after last digit has been input.
i. Instrument displays first 6 digit of description content.
j. Enter description starting from H, then M1, M2, M3 and finally L. Press [Print/M+] to confirm and end editing after last digit has been input.
k. Instrument displays Save = ?. At this step: -
➢ Press one of the numeric keys (0 ~ 9) to save the code and description entered to that PLU location number, or
➢ Press [Print/M+] to confirm without saving to PLU.

Notes: -
a. If a Product/Customer Code is = blank, Product/Customer Description will be ignored.
b. Customer and Product code does not support print format 1 (Lab 1).
c. Customer and product code entered will be carried out automatically on output formats Lab 2 ~ Lab 5.
d. Customer and product description entered will be carried out automatically on output Lab 2.</td></tr>
<tr><td>F20</td><td>Keyboard Lock</td><td>** Off (Disable)</td><td>On (Enable)</td></tr>
<tr><td></td><td colspan="3">When keyboard lock is = On, only [Zero], [Tare] & [On/Off] key will be accessible during operation status.</td></tr>
<tr><td>F22</td><td>Lab 2 Output Print Format</td><td>** STD</td><td>CUSTOM</td></tr>
<tr><td>F26</td><td>Near Zero Value</td><td colspan="2">** 20d or 20d$_1$</td></tr>
</table>

<table>
<tr><td></td><td colspan="4">Near Zero value is useful for dynamic weight check applications to bypass unnecessary Lo alarm during uploading and unloading process. Notes: -
• Value entered valid only when Check function is activated.
• Near zero weight value can be any value between 20d and Lo limit.
• Any near zero value which less than 20d will be ignored. Instrument will deem 20d as minimum near zero weight value.
• The Hi Lo comparison remains non-activated when weight reading is less than the near zero value entered here.</td></tr>
<tr><td>F28</td><td>Ask for Operator Number when Power On</td><td colspan="2">Yes</td><td>** No</td></tr>
<tr><td></td><td colspan="4">• Yes: - Instrument will ask for operator number when power on. Enter 4-digit operator number or press [CE/x10] to skip operator number when asked.
• No: - Instrument will not ask for operation number when instrument power on.

Notes: -
• If a different operator number (than what is running now) is entered, instrument displays Clear.
• The operator number entered will be carried out automatically on output formats Lab 3 ~ Lab 5.</td></tr>
<tr><td>F29</td><td colspan="4">Read Calibration & Parameter Counts and Pointer Value
• C (Calibration count): - shows total times of calibration.
• O (Parameter set count): - shows total times that the important parameters (F80~F88) has been altered.

Press [Zero] to quit to F29 or [Check] to display the current pointer value. Pointer Value is the system serial number of the next transaction to be saved to non-resettable memory.</td></tr>
<tr><td>F30</td><td>Allow Letters and Symbols for Customer & Product Code Manual Entry via Keyboard on Instrument</td><td colspan="2">** No</td><td>Yes</td></tr>
<tr><td>F31</td><td>[PF/Set] Key Assignment</td><td colspan="2">** Set
(Access to Internal Function Setting when in Operation Status)</td><td>P.F.
(Shift between P1 and P2)</td></tr>
<tr><td></td><td colspan="4">Note: - When F79 is set to Off, Mode Key is always = Set and this internal function is not accessible.</td></tr>
<tr><td>F32</td><td>External Input Assignment</td><td>in1</td><td>in2</td><td>in3</td></tr>
</table>

<table>
<tr><td></td><td></td><td>(Input 1)</td><td>(Input 2)</td><td>(Input 3)</td></tr>
<tr><td></td><td colspan="4">1 of the below 7 input parameters can be assigned to each external input.
• ZEro = [Zero]
• tAre = [Tare]
• Print = [Print/M+]
• ACC-Mr = [MR]
• CLEAr = [CE/x10]
• P.F.= Shift among P1, P2 and PA.
• Set = Access internal function setting mode (F1~F37).

Setting procedures: -
1. Go to F32 then press [Print/M+].
2. Name of the current external input No. is displayed on LCD2.
3. Press [MR] or [PF/Set] until the preferred external input point No. appears on LCD2 then press [Print/M+].
4. Press [MR] or [PF/Set] until the preferred input parameter appears on LCD3 then press [Print/M+] to save
5. Instrument displays the next external input point No. on LCD2.
6. Repeat above steps 2 ~ 5 for all other external input points.</td></tr>
<tr><td>F33</td><td>Report Output Comport & Content Settings</td><td colspan="3">Set report output comport No. and report content setting</td></tr>
<tr><td></td><td colspan="4">Setting procedures: -

1. Go to F33 and press [Print/M+].
2. Name of the report output port is displayed.
Note: - avoid assigning RS485 for report output purpose unless Machine ID (set in F18) is = blank.
3. Press [PF/Set] or [MR] until the preferred report output UART number appears and press [Print/M+].
4. Instrument displays report detail setting. 3 parameters are available:
a. Off = None of the 12 below-mentioned report detail will be outputted. If Off is selected, instrument returns to F33. In this case, output report contains only the following data: -
• Alibi Record Number (ABNR),
• Date of the individual transaction,</td></tr>
</table>

- Net Weight of the individual transaction,
- Tare weight of individual transaction,
- Gross weight of individual transaction.

b. All = All the 16 below-mentioned report detail will also be outputted. If All is selected, instrument returns to F33.
c. Custom = To customize which of the below-mentioned report detail will be outputted.

Report detail: -

- oP.Code (Operator No.)
- P.F. (Platform #)
- id (Machine ID)
- Group (Machine Group No.)
- Time (Time of the individual transaction)
- C Code (Customer Code)
- C_dESC (Customer Description)
- P Code (Product Code)
- P_dESC (Product Description)
- qty (No. of pieces)
- Ref (Lo and Hi limit value of the individual transaction)
- Result (Check result of the individual)
- Title
- Header
- Footer
- CHKS = Checksum

5. If Custom is selected, follow the below procedures for report detail settings.
   a. Instrument displays the report detail and parameter.
   b. Press **[PF/Set]** or **[MR]** until the preferred parameter (On = enabled; Off – Disabled) and press **[Print/M+]** to save and go to the next report detail and parameter.
   c. Repeat the above step **a** and **b** to set all other report detail until instrument returns to F33.
   d. At this point, the report detail setting is completed.

Refer to paragraph **14** of operation manual for more information.

<table>
<tr><td>F34</td><td>Report Output Criteria &
Date Range</td><td>** ALL
(Output all transactions of the specified date range)</td><td>And
(Only transactions fulfil the selected criteria of the specified selection will be outputted)</td></tr>
<tr><td></td><td colspan="3">
2 report output criteria are available: -
• All = All data of the selected date duration will be outputted.
• And = Only data meets with the criterion/criteria selected and inputted will be outputted.

Setting procedures: -
1. Press [PF/Set] or [MR] until the preferred output criteria appears and press [Print/M+].
• If All is selected, instrument goes to step 2 below.
• If And is selected, name of output criteria and its current setting are displayed.
a. Press [PF/Set] or [MR] until the preferred parameter appears.
b. Select On/Off to enable/disable that output criterion and then enter/select the criterion value. Then press [Print/M+] to confirm.
c. Name of the next output criterion is displayed. Repeat the above steps a and b for all other output criteria until instrument displays Report.
• oP.Code (Operator No.)
• C Code (Customer Code)
• P Code (Product Code)
• Check (Check Result) which includes Low, NG (not = OK), OK, High, Low)

Note: - If more than one criterion is selected, only data which meets will all selected criteria will be outputted.

2. Instrument is now in report output date duration setting status. 6 output date duration parameters are available: -
• Day = All transaction of a specified date
• Month = All transaction records of a specified month
• Period = All transaction records within the specified period
• All = All transaction records in Alibi Memory.
• Last = Last Alibi Record Number Saved. This parameter appears only when and is select in step 1. This parameter will output all content disregarding the And criteria selected.
• Range = Range of the Alibi Record. This parameter appears only when And is select in step 1. This parameter will output all content disregarding the And criteria selected.

3. Press [PF/Set] or [MR] until the preferred output date duration parameter appears and press [Print/M+].
</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">If Day is selected, input the requested date value and press [Print/M+] to output.
If Month is selected, input the first date of the requested month value (e.g., 19.12.01 for the month of December 2019) and press [Print/M+] to output.
If Period is selected, input the requested starting date value and press [Print/M+] and then input the requested ending date value and press [Print/M+] to output.
If Range is selected, enter the first ABNR then the last ABNR then press [Print/M+] to output.
If Last is selected, simply press [Print/M+] to output.
If All is selected, press [Print/M+] to output.</td></tr>
<tr><td>F35</td><td>Average Piece Weight</td><td>rC.Unit
(Recall last Average Piece Weight before Powered Off)
** Off / On</td><td>AVG
(Auto Unit Weight Enhancement Function)
Off / ** On</td></tr>
<tr><td>F36</td><td>Expiry Duration</td><td colspan="2">Expiry duration = **0 ~ 9999

Notes: -
XXX = Today + xxx day
**0 =Today
1 = Tomorrow
14 = Today + 14 days
Setting procedures: -
Enter expiry duration through numeric keys then press [Print/M+] to confirm and save.
To clear an expiry duration, press [CE/x10] then press [Print/M+].</td></tr>
<tr><td>F37</td><td>PLU Auto Search via Barcode Scanner Input</td><td>C Code (Auto Search by Customer Code)
**Off (Disable)/On (Enable)</td><td>P Code (Auto Search by Product Code)
**Off (Disable)/On (Enable)</td></tr>
</table>

7. Recommended Setting Procedures for User

1. Power off instrument and remove power adaptor.
2. Set all jumpers according to Paragraph 1 Main Board Layout.
3. Connecting load cell platform / junction box.
   Notes:
   - For single-platform configuration: Connect to P1.
   - For dual-platform configuration: Connect the lower capacity or lower division platform to P1, and the higher capacity or higher division platform to P2.
4. Apply power adaptor and power on.
5. Go to F1 and check internal count value. Verify connection with weighing platform(s) is correctly done, by applying and removing loads from weighing platform. Internal count value increases when extra loads are applied to weighing platform. Likewise, internal count value decreases when loads are removed from weighing platform.
6. Go to F2 and check and make sure no display segments or indicators are missing.
7. Go to F3 and make sure that capacity x division are correctly set.
8. Go to F4 to check and set date format and value.
9. Go to F5 to check and set time value.
10. Go to F6 to do system initialization.
11. Check and set all other operation parameters from F7, F8, F9…. F37 according to numeric order of the internal function number.
12. Conduct test runs to determine if the above settings best suit the application requirements. If not, set again the corresponding parameters.
    Notes:

a. Some of the above internal functions are platform sensitive and it is possible to have different settings for PF#1 and PF#2 under the same internal function number.
b. Complete first all settings/checking for P1. Then go to F1 again, press **[PLU]** to change to P2. Repeat above point #5 ~ #12 for P2.

Always contact your dealer for product information, after sales service and questions when in doubt.

8. UART & Comport Settings

An UART (Universal Asynchronous Receiver/Transmitter) is the communication device inside the MCU of this instrument which controls the communication device to which it is attached.

An UART can be converted into various transmission types (e.g. RS232, RS485, WIFI, LAN, Bluetooth, TTL) with the assistance of corresponding components.

A comport is the physically connection port to which an external equipment is connected with this instrument. This instrument is equipped with 4 built-in UARTs. Refer to below table for transmission type and assigned comport number.

8.1 UART Transmission Type & Assigned Comport No. Table

UART #	Transmission Type	Connected to Comport #	Remark
UART 0	RS232	Comport 0	Standard
UART 1	RS232	Comport 1	Standard
UART 2	RS485/TTL	Contact dealer for support	Optional
	Bluetooth	N.A.	Optional
UART3	WIFI	N.A.	Optional
	LAN	Contact dealer for support	Optional

Note: only one transmission type can be selected per each UART.

Setting procedures[4]:

1. Go to F16 then press **[Print/M+]**.
2. Name of the current UART # appears on **LCD2**.
3. Press **[PF/Set]** until the UART # (UART 0 ~ 3) appears on **LCD2** then press **[Print/M+]**.
4. Press **[PF/Set]** or **[MR]** until the preferred transmission type appears on **LCD3** then press **[Print/M+]** to set data communication types. 7 parameters are available:
   - Off = Disabled.
   - Auto 1 = Auto print when weight is stable.
   - Auto 2 = The highest stable weight value (of a weighing process) will be automatically printed when all loads are removed (and gross weight returns to zero or minus).
   - Auto 3 = The last stable weight value (of a weighing process) will be automatically printed when all loads are removed (and gross weight returns to zero or minus).
   - Manual = Manual output by pressing **[Print/M+]**.
   - PC = Continuous or selected periodic output of real time result according to predefined format.
   - CMD = Command communication and APP mode.
   - Scaner = Connect with a Barcode Scanner. (UART #0 and UART #2 only)

   Notes:
   - If PC/CMD/Scaner is set, refer to **paragraph 8.2** for rest of the setting.
   - If Auto 1 ~ 3 or Manual is set, refer to **paragraph 8.3** for rest setting.
5. Repeat above steps 1 ~ 4 for all other UARTs.

4 Auto 1 ~ 3 do not support PA.

8.2 Parameters Table for PC & Command & Scanner

Step No.	Set Item	Parameters	PC	CMD	SCANER
1	Baud Rate	1200 ~ 921600 in 12 steps Default = 115200	■	■	■
2	Parity	None / Odd / Even Default = None	■	■	■
3	Data Length	7 / 8 Default = 8	■	■	■
4	Protocol Type **Note G**	Protocol 0 ~ 9 & Custom Default = Protocol 1	■	Completed	Completed
5	Transmission Interval **Note A**	0 ~ 300 (second) in 10 steps Default = 0	Completed		

8.3 Parameters Table for Auto 1 ~ 3 & Manual[5]

Step No.	Set Item	Parameters	Auto 1	Auto 2	Auto 3	Manual
1	Baud Rate	1200 ~ 921600 in 12 steps Default = 115200	■	■	■	■
2	Parity	None / Odd / Even Default = None	■	■	■	■
3	Data Length	7 / 8 Default = 8	■	■	■	■
4	Auto Accumulation **Note B**	Off / On Default = On	■	■	■	■
5	Check Control **Note C**	Off / On Default = Off	■	■	■	■
6	Stability Control **Note D**	Yes / No Default = Yes	■	■	■	■
7	Minimum Output Weight **Note E**	10 ~ 20d in 11 steps Default = 20d	■	■	■	■
8	Output Format **Note F**	Lab 1 ~ Lab 5, LP 50, TSC and Sbarco Default = Lab 2	■	■	■	■
9	Other Procedures		**Note H ~ K**			

Note A: Transmission interval is the time interval (in second) between each output. 0 = continuous output.

Note B: On = Auto Memory accumulation enabled.
Off = Auto Memory accumulation disabled.

Note C: On = (When check function is in effect) Only OK value (value which is within Lo and Hi Limits) will be transmitted.
Off = (When check function is in effect) Check control is disabled.

Note D: Yes = Only stable weight will be transmitted.
No = Transmission is activated when **[Print/M+]** is pressed disregarding the weight stable status.

5 Auto 1 ~ 3 do not support PA.

Note E: Minimum weight value to be transmitted. Instrument will not generate any output if the actual weight is less than the minimum output weight selected here.

Note F: Output format description:

- Lab 1 = Output in landscape direction. Refer to **Appendix C** for more information.
- Lab 2 = Output in portrait direction. Refer to **Appendix D & E** for more information.
- Lab 3 = Database output mode. Refer to **Appendix F** for more information.
- Lab 4 = Journal output format with gross and net weight of each individual transaction. Refer to **Appendix G** for more information.
- Lab 5 = Journal output format with time and net weight of each individual transaction. Refer to **Appendix H** for more information.
- LP-50/TSC/Sbarco = Output to LP-50 / TSC / Sbarco label printer. Refer to **Appendix I ~ K** for details.

Note G:

- Refer to Appendix A for Predefined PC Output Prot 1 ~ Prot 9.
- Refer to Appendix B for Customized PC Output Protocol.

Note H: If Lab 1 is set in Print format, select print format:

a. STD for predefined output format and press **[Print/M+]** to save, or
b. Custom for customized output format and press **[Print/M+]** to save.

Hints:

- If STD is set, then select line number and press [Print/M+] to save. Setup is then completed. Line number is the number of transactions sent after which the header will be repeated.
- If CUSTOM is set, refer to Appendix C.2 for other detailed settings.

Note I: If Lab 2 is set in Print format, select number of copy then press **[Print/M+]** to save. Setup is then completed.

Note J: If Lab 3, 4 or 5 is set in Print format, press **[Print/M+]** to save. Setup is then completed.

Note K: If LP50/TSC/Sbarco is selected:

a. Select number of copy (1 ~ 8) and press **[Print/M+]** to continue the below setting,
b. Select individual transaction label file number (FL1 00 ~ FL1 99) to print and press **[Print/M+]** to continue the below setting. FL1 00 = current transaction label printing output disabled.
c. Select Totalized label file number (FL2 00 ~ FL2 99) to print and press **[Print/M+]** to continue the below setting. FL2 00 = totalized (MR) data label printing output disabled.

8.4 Heartbeat Connection Check Function for WIFI & LAN

In additional to the setting procedures listed on paragraph **8.2** and **8.3**, if WIFI or Lan is selected, set also the heartbeat connection check (ConChk) parameter. 5 time interval parameters are available:

- Off (heartbeat connection check function disabled)
- 60 (second)
- 120 (second)
- 240 (second)
- 300(second)

Heartbeat connection check function is used verify the connection with via WIFI and Lan is connected or not.

When this function is enabled, the peripheral connected should send text string *STCCHK# to this instrument within the time interval set.

If the above the text string is not received within the time interval set, instrument will display: -

- L=Out to indicate Lan connection with peripheral is interrupted.
- Fi=Out to indicate WIFI connection with peripheral is interrupted.

8.5 Android and iOS APP

Android and iOS App are available to work with this instrument:

- For Android App: Visit Google Play and search for aConnect.
- For iOS App: Visit Apple App Store and search for FMDirect.

These Apps support both Bluetooth and WIFI connection.

8.5.1 Settings when Using App via WIFI Connection

1. Make sure that the optional built-in WIFI or LAN module is ordered.
2. Set UART #3 of internal function F16 to WIFI or LAN depends on the options ordered. Then set transmission type to CMD.
3. Make sure that the weighing instrument and your smart device is under the same Network / SSID.
4. Enter the IP and port number of the built-in WIFI / LAN module on the starting page of the APP.
5. Once the IP and port numbers are entered, APP starts automatically.

Contact your dealer for support / more setting information about built-in WIFI / LAN module.

8.5.2 Settings when Using App via Bluetooth Connection

1. Make sure that the optional built-in Bluetooth module is ordered.
2. UART #2 of internal function F16 should be either set to BT. Then set transmission type should be set to CMD.
3. Bluetooth Type of internal function F50:
    - For Android, set to BT2.0. Then set Bluetooth working type to Andro.
    - For iOS, set to BT4.0. Then set Bluetooth working type to iOS.
4. Then change or take note of the BT device name and pin number
5. Pair your smart device with the built-in Bluetooth module before starting the APP.
6. Start APP, and select the correct Bluetooth device on the starting page of the APP.
7. Once the correct Bluetooth name is selected, APP starts automatically.

Contact your dealer for support / more setting information about built-in Bluetooth module.

9. Basic Operation

9.1 Power Instrument On and Off

- To power on: press **[On/Off]** and then release.
- To power off: press **[On/Off]** and then release.

9.2 Power on Countdown Process

After powered on, instrument goes through the power on countdown process and display the below information.

1. Software number (LCD1) and version (LCD2).
2. All display segments.
3. Calibration count value (LCD2), parameter set count value (LCD3) and Battery voltage (LCD1).
4. Capacity & division set of P1 (LCD1) in the format of Max plus 1 division (LCD2 = Max_1 + e_1); (LCD2 = Max_2 +d_2).
5. Capacity & division set of P2 (LCD1) in the format of Max plus 1 division (LCD2 = Max_1 + e_1); (LCD2 = Max_2 +d_2).
6. At this point, depends on internal function number F28 setting, instrument may ask for operator number input. If this is the case:
    - Input 4-digit operator number, or
    - Press **[CE/x10]** to skip operator number

7. Then press **[Print/M+]** to enter,
8. At this point, instrument is in weighing mode and is ready for operation.

9.3 Operator Code

If F28 is set to Yes, instrument will ask for operator code input during power on countdown process.

- Input operator code: when prompted, input 4-digit operator code then press **[Print/M+]**. If a Barcode Scanner is connected, then simply scan the operator number barcode.
- To clear operator code: when prompted, press **[CE/x10]** then press **[Print/M+]**.

Once an operator code entered, instrument will automatically transmit the code entered in Lab 1, Lab 3, Lab 4 and Lab 5 output format.

9.4 Warm Up Time

Allow a warm up period of not less than 60 seconds after powered on before using.

9.5 Dual Platform Operation

If the secondary platform is ordered but it is not enabled, contact your dealer for support.

9.5.1 Select preferred weighing platform by [PF/Set]

To enable platform selection through the **[PF/Set]**, set internal function F31 to **P.F.** After that, by pressing **[PF/Set]**, instrument will shift among P1 only, P2 only and both. Platform (s) in operation is indicated by **P1** or **P2** or **PA** Indicator.

9.5.2 Summing up transaction results of both platforms

Transaction results of P1 and P2 can be totalized (sum total). To enable platform selection through the **[PF/Set]**, set internal function F9 to **On**.

- When only **P1 Indicator** appears = Only P1 is in operation.
- When only **P2 Indicator** appears = Only P2 is in operation.
- When both P1 and P2 indicators appear = Both P1 and P2 (hereinafter P1 + P2 is referred as PA) are in operation and transaction results of both platforms are totalized and being displayed.

9.6 Keyboard Lock

When keyboard lock is enabled in F20, only **[On/Off]**, **[Zero]**, **[Tare]** and **[On/Off]** keys can function during normal operation.

9.7 Loads and Weighing Platform

- Always place an object onto platform gently. Excessive force / shock applied to platform may cause un-recoverable damage to the weight sensor inside platform.
- It is a good practice to remove all loads from platform after weighing. It will prolong the life of the weight sensor.

9.8 Manual Zero

If zero weight cannot be obtained when unloaded, press **[Zero]**. **Zero Indicator** lights up when instrument is at zero status.

9.9 Tare Functions

9.9.1 Manual and automatic tare

This instrument is equipped with the below auto tare functions. These functions can be selected in F12.

a. Off: Manual Tare
b. Auto: Instrument will assume the first stable weight (≥ 20d or $20d_1$) applied is a container and will then tare off the weight of it automatically. When container is removed and gross weight result is zero, tare effect will be cancelled automatically.
c. Contin (continuous auto tare): All stable weight (≥ 20d or $20d_1$) applied will be tared off automatically. When all loads are removed and gross weight result is zero, tare effect will be cancelled automatically.

Notes:

- If Contin is set, select also d.t. (delay time, 0.0 ~ 9.9 second**. Default = 1.5 second**).
- Delay time is the time duration from when a stable weight is detected until it is automatically tared off.
- Enter the preferred d.t. value through numeric keys and then press **[Print/M+]** to save.

9.9.2 Repetitive / multiple tare

This instrument is equipped with multiple tare operation. F13 is required in a weighing process, set F13 to On.

- Set F13 to on to allow multiple tare operation in a single weighing operation. If it is the case, instrument will permit multiple tare operation and tare effect can only be cancelled when there is no load on the platform.
- Set F13 to off to reject multiple tare operation in a single weighing operation. If this is the case, tare effect can only be cancelled when container is removed and gross weight is zero.

9.9.3 Preset tare

Preset tare allows a pre-determined tare weight value can be entered via numeric keys.

9.9.3.1 Introduce a preset tare value

Enter the pre-determined tare weight value through numeric keys then press **[Print/M+]** to enter. After the pre-determined tare value has been entered:

- Instrument displays the preset tare value entered.
- **Net indicator** appears to indicate the value being displayed is net weight.

Note: Preset tare function is disabled when in PA mode.

9.9.3.2 Cancel a preset tare value

A preset tare value can be cancelled by entering a zero preset tare value (numeric 0) then press **[Print/M+]**.

9.10 Auto Power Saving & Auto Power off Time

This instrument is equipped auto power saving and auto power off time function. Refer to **F7** on **paragraph 6.5** for details.

9.11 Expiry Date

This instrument support expiry date output according to predetermined expiration period. If expiry date is required for operation, enter the expiry duration in internal function F36. Refer F36 of **paragraph** 6.5 for details.

9.12 Print a Customer & Product Code Entered[6]

Once a customer/product code is entered, it will be printed automatically through the assigned comport.

6 Print format Lab 1 does not support customer/product code.

9.13 Inputting Numbers, Letters, Symbols by Keyboard

This instruction supports numbers, letters and some select symbols entries through keyboard. To enable symbol and letter entry through keyboard, set **F30** to **Yes**.

Default setting for letter is = upper case, to change to lower case letter, press **[Check]**. Lower case indicator appears to denote lower case letter entry is in effect.

Cursor location of current entry is indicated by flashing decimal sign at its right side. Refer to below table for input assignment.

Numbers, Letters, Symbols Assignment Table

Key	Assignment				
0	0	Space			
1	1	-	/	_	
2	2	A	B	C	
3	3	D	E	F	
4	4	G	H	I	
5	5	J	K	L	
6	6	M	N	O	
7	7	P	Q	R	S
8	8	T	U	V	
9	9	W	X	Y	Z
Check	Shift				

10. Count Function

Before count transaction / process:

1. Remove all loads from weighing platform.
2. If zero weight cannot be obtained when unloaded, press **[Zero]**. After **[Zero]** is pressed, the **Zero Indicator** will appear.
3. If a container is needed, place it onto the platform and press **[Tare]** manually (in case auto tare is not enabled).

10.1 Obtain Unit Weight

Average Piece Weight is the basic of all piece count transaction / process. Average Piece Weight can be created and obtained through one of the below methods:

a. Direct unit weight entry method.
b. Sampling method.
c. Employ last unit weight when power on
d. Recall from quick PLU.

10.1.1 Direct unit weight entry method

This method is used when unit weight is known. Procedures:

1. During normal operation status, enter the unit weight through numeric keys, then press [@WT].

2. Unit weight entered is then displayed on LCD3

10.1.2 Sampling method

This method is used when the unit weight is not known. Procedures:

1. Apply samples with known quantity on weighing platform.
2. Enter quantity through numeric keys, then press **[@QTY]**.
3. Calculation unit weight is then displayed on LCD3.

10.1.3 Employ the last unit weight when power on

To employ this function, set F35 **rC.unit** = On. Under this setting the last unit weight (before powered off) will be employed automatically when powered on again.

To disable this function, set F35 **rC.unit** to Off.

Note: Unit weight obtained by this function is not supported by Auto Unit Weight Enhancement Function

10.1.4 Recall unit weight from quick PLU

Refer to **paragraph 11.1.2** for details.

10.2 Start Counting Process

Once unit weight is entered (by either method listed on **paragraph 10.1**, instrument is ready for counting operation. By adding more to or removing some from weighing platform, the corresponding quantity will be displayed on LCD1 automatically.

10.3 Auto Unit Weight Enhancement Function

In order to obtain the best counting result and minimize sampling error, this instrument is equipped with Auto Unit Weight Enhancement Function. This function will automatically be employed when unit weight is determined by sampling method[7].

Auto Unit Weight Enhancement Function starts automatically when **all** of the below are met:

a. Unit weight is obtained by sampling method as listed on **10.1.2**.
b. 6 pieces ≦ quantity **added** ≦ 9999 pieces.
c. 6 pieces ≦ quantity **added** ≦ 100% of last total quantity on weighing platform.
d. When all the above requirements are met, a new unit weight will be calculated and displayed on LCD3 automatically.

Notes:

1. To enable this function, set F35 **AVG** = On.
2. To disable this function, set F35 **AVG** = Off.
3. Auto Unit Weight Enhancement Function stops automatically when total quantity on weighing platform reaches 10000 pieces or more.

7 Refer to **paragraph 10.1.2** for details.

10.4 Check Function[8] [9] [10]

Check function is used to compare current weighing or counting result with the preset Lo and Hi Limit. The comparison results (Lo, OK, Hi) will then be displayed in different backlight colors with or without buzzer[11]. Check results are also sent to Control Output Port[12].

Check functions accept various values value and targets for P1 and P2. Settings for P1 and P2 are independent to each other.

10.4.1 Check types and target

Below 2 types of check target are available.

- Quantity Check: Check target = quantity value
- Weight check Count: Check target = weight value.

10.4.1.1 Direct entry method

1. Enter check type:
   - For quantity check, press **[QTY]** then press **[Check]**.
   - For weight check, press **[@WT]** then press **[Check]**.
2. Instrument displays **Low** on LCD1.
3. Enter Lo weight check limit through numeric key then press **[Print/M+]**.
4. Instrument displays **High** LCD1.
5. Enter Hi weight check limit through numeric key the press **[Print/M+]**.
6. Instruments returns to normal operation status.

At this point, weight check limit is saved and in effect.

10.4.1.2 Employ last check type and limits when power on

Last check type and limits (before powered off) will be employed automatically when powered on again.

10.4.1.3 Recall check type and limits from quick PLU

- For quantity check: Refer to **paragraph 11.2.2** for details.
- For weight check: Refer to **paragraph 11.3.2** for details.

10.4.2 Hints for entering Lo and Hi limits

- For normal comparison, set both Lo and Hi limits.
- To check only if result is lower than or equal to Lo (result ≤ Lo), set Hi Limit = 0 to disable Hi Limit.
- To check only if result is higher than or equal to Hi (result ≥ Hi), set Lo Limit = 0 to disable Lo limit.
- To check if result is equal to a specified value, set both Hi Limit and Lo Limit = the specified value.

10.4.3 Cancel check function

To clear check function, follow **paragraph 10.4.1.1** and enter zero value by pressing **[CE/x10]** in steps **2** and **4**.

---

8 Check mode will not operate when weight is less than 20d (or 20d1 for dual weighing range/interval mode).

9 Set also F15 for desired Check buzzer output.

10 If necessary, set F26 to meeting operation requirements.

11 Set F15 for preferred buzzer output configuration.

12 Refer to **paragraph 4.3** for details.

10.4.4 Check Function priority rules for dual platform (PA) operation

Instrument follows the below priority rule numbers to determine the Lo and Hi check limits for dual platform (PA) operation.

1. The platform with larger capacity.
2. The platform with larger division value.
3. P1 when both platforms have the identical capacity and division settings.

10.4.5 Relay output

If optional relay output is equipped:

- Relay 1 output synchronizes with buzzer.
- Relay 2 output synchronizes with Lo.
- Relay 3 output synchronizes with OK.
- Relay 4 output synchronizes with Hi.

Note: Set internal function F15 to enable/disable buzzer output.

10.5 Memory Accumulation

Below memory accumulation modes are available for each UART port:

a. Memory accumulation disabled.
b. Manual accumulation.
c. Automatic accumulation.

Notes:

- During counting operation, both net weight and piece value will be accumulated.
- Date stored will not be erased when powered off.
- Data stored will be erased when operator code is changed.

10.5.1 Memory accumulation settings

To enable/disable memory accumulation, an UART should be set to one of the following modes: Auto 1; Auto 2; Auto 3; Manual.

- To enable memory accumulation, set Auto Accumulation to On in internal function number F16.
- To disable memory accumulation, set Auto Accumulation to Off in internal function number F16.

Refer to step **4** of **paragraph 8.3** for setting details.

10.5.2 Manual accumulation

Press **[Print/M+]** to accumulate the current value to memory.

10.5.3 Automatic accumulation[13]

Automatically memory accumulation of an UART is activated automatically when **Auto Accumulation** is set to **On** in Auto 1, Auto 2, Auto 3. Under the automatic accumulation mode, corresponding results will be accumulated automatically.

Unstable results or results which are less than 20d (or $20d_1$ for dual weighing range/interval mode) will not be automatically accumulated.

13 Auto 1 ~ 3 do not support PA.

10.5.4 When data is accumulated to memory

When a result is accumulated to memory:

- Instrument displays "**n____x**" on LCD3.
- **M+ Indicator** appears to indicate that memory contains stored data. "x" means the total number of transactions accumulated to memory.
- This instrument returns to normal display status after 2 seconds.

10.5.5 Memory recall and clearance

To recall memory, press **[MR]** to recall total accumulated summary.

- Number of accumulations is displayed on LCD3.
- Total accumulated weight is displayed on LCD2.
- Total accumulated piece number is displayed on LCD1.

At this point, press **[Zero]** to return to operation or press **[CE/x10]** to clear memory.

10.5.6 Dual platform accumulation rules

This instrument provides independent memory to store accumulation data from P1 and P2. Refer to **paragraph 9.5.1** for how to select preferred weighing platform and **9.5.2** for how to sum up transaction results of both platforms.

10.5.6.1 Platform in use

- When only **P1 Indicator** appears, only transaction data of **P1** will be accumulated and save. **[MR]** and memory clearance refers to **P1** only.
- When only **P2 Indicator** appears, only transaction data of **P2** will be accumulated and save. **[MR]** and memory clearance refers to **P2** only.
- When both **P1** and **P2** indicators appear = transaction data of both platforms will be accumulated and save. **[MR]** and memory clearance refers to both platforms.

10.5.6.2 Dual platform accumulation rules

When dual platform (PA) operation is selected, transaction data will only be accumulated to memory when all below conditions are met.

- Weights on both platforms are higher than 20d and started from zero or negative, and
- Weights on both platforms are stable.

10.5.6.3 Accumulation data illustration for PA

MR data of PA is the sum up results of P1 and P2. The following data of P1 and P2 is summed up and then displayed when **[MR]** is pressed.

- Accumulation sequence (Seq).
- Accumulated weight.
- Accumulated quantity.

Platform No.	Accumulation Sequence	Accumulated Weight	Accumulated Quantity
P1	4	30.000kg	3000pieces
P2	8	50.000kg	5000piece
PA	12	80.000kg	8000pieces

11. Quick PLUs

This instrument is equipped with 10 quick PLUs for each for the below. Some of these quick PLUs may accept various values for P1 and P2. If it is the case, settings for P1 and P2 are independent to each other.

a. Unit weight
b. Quantity check limit (Quick PLU settings for P1 and P2 are independent to each other)
c. Weight check limit (Quick PLU settings for P1 and P2 are independent to each other)
d. Preset tare value (Quick PLU settings for P1 and P2 are independent to each other)
e. Product code and product description
f. Customer code and customer description

11.1 Unit Weight Quick PLU

11.1.1 Create & save unit weight to quick PLU

Procedures:

1. During normal operation status, enter the unit weight through numeric keys.
2. Long press **[@WT]**. Instrument displays **Save** on LCD1.
3. Save unit weight to a preferred quick PLU by pressing the quick PLU number (0~9), then press **[Print/M+]**.
4. Instrument displays **Done** on LCD3.

At this point, unit weight is saved and in effect.

11.1.2 Recall unit weight from quick PLU

Procedures:

1. During normal operation status, press **[0]** then press **[@WT]**.
2. Instrument displays **Recall** on LCD1.
3. Press the preferred quick PLU number (0~9), then press **[Print/M+]**.
4. Instrument displays **Done** on LCD3.

At this point, selected unit weight is recalled and in effect.

11.1.3 Clear unit weight from quick PLU

To clear unit weight from quick PLU, follow **paragraph 11.1.1** and enter zero value in step 1.

11.2 Quantity Check Limit Quick PLU

11.2.1 Create & save quantity check limit to quick PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. During normal operation status, press **[Qty]** then **[Check].**
3. Enter Lo quantity check limit through numeric key then press **[Print/M+]**.
4. Enter Hi quantity check limit through numeric key then long press **[Check]**.
5. Instrument displays **Save** on LCD1.
6. Save quantity check limit to a preferred quick PLU by pressing the quick PLU number (0~9), then press **[Print/M+]**.

At this point, quantity check limit is saved and in effect.

11.2.2 Recall quantity check limit from quick PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. During normal operation status, press **[Qty]** then **[Check]** then **[PLU]**
3. Instrument displays **Recall** on LCD1.
4. Press the preferred quick PLU number (0~9), then press **[Print/M+]**.
5. Instrument displays the recalled Lo and high quantity limit then returns to operation status.

At this point, selected quantity check limit is recalled and in effect.

11.2.3 Clear quantity check limit from quick PLU

To clear quantity check limit from quick PLU, follow paragraph **11.2.1** and enter zero value in steps **3** and **4**.

11.3 Weight Check Limit Quick PLU

11.3.1 Create & save weight check limit to quick PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. During normal operation status, press **[@WT]** then **[Check].**
3. Enter Lo weight check limit through numeric key then press **[Print/M+]**.
4. Enter Hi weight check limit through numeric key then long press **[Check]**.
5. Instrument displays **Save** on LCD1.
6. Save weight check limit to a preferred quick PLU by pressing the quick PLU number (0~9), then press **[Print/M+]**.

At this point, weight check limit is saved and in effect.

11.3.2 Recall weight check limit from quick PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. During normal operation status, press **[@WT]** then **[Check]** then **[PLU]**
3. Instrument displays **Recall** on LCD1.
4. Press the preferred quick PLU number (0~9), then press **[Print/M+]**.
5. Instrument displayed the recalled Lo and high weight limit then returns to operation status.

At this point, selected weight check limit is recalled and in effect.

11.3.3 Clear weight check limit from quick PLU

To clear weight check limit from quick PLU, follow paragraph **11.3.1** and enter zero value in steps **3** and **4**.

11.4 Preset Tare Value Quick PLU

11.4.1 Create & save preset tare value to quick PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. During normal operation status, enter the preset tare value through numeric keys.
3. Long press **[Tare]**. Instrument displays **Save** on LCD1.
4. Save preset tare value to a preferred quick PLU by pressing the quick PLU number (0~9), then press **[Print/M+]**.
5. Instrument displays **Done** on LCD3.

At this point, preset tare value is saved and in effect.

11.4.2 Recall preset tare value from quick PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. During normal operation status, press **[0]** then press **[Tare]**.
3. Instrument displays **Recall** on LCD1.
4. Press the preferred quick PLU number (0~9), then press **[Print/M+]**.
5. Instrument displays tare value recalled on LCD3 then returns to operation status.

At this point, selected preset tare value is recalled and in effect.

11.4.3 Clear preset tare value from quick PLU

To clear preset tare value from quick PLU, follow **paragraph 11.4.1** and enter 00 in step **2**.

11.5 Product Code and Product Description[14] quick PLU

11.5.1 Create & save product code and product description to quick PLU

Procedures:

1. Go to F19, then press **[Print/M+]**.
2. Press **[PF/Set] or [MR]** until **P Code** appears on LCD2, then press **[Print/M+]** to confirm.
3. Instrument displays H code followed by the 1st 6 digits. Enter the first 6 digits of the code here, then press **[Print/M+]** to confirm.
4. Instrument displays M code followed by the 2nd 6 digits. Enter the 7th ~ 12th digits of the code here, then press **[Print/M+]** to confirm.
5. Instrument displays L code followed by the 3rd 6 digits. Enter the last 6 digits of the code here, then press **[Print/M+]** to confirm.
6. Instrument displays first 6 digits of description content.
7. Enter description starting from H, then M1, M2, M3 and finally L. Press **[Print/M+]** to confirm and end editing after last digit has been input.
8. Instrument displays **PLU = ?** on LCD3.
9. Save product code and product description to a preferred quick PLU by entering the quick PLU number (01~99) and press **[Print/M+]**.
10. Instrument displays **Done** on LCD3.
11. At this point, product code and product description are saved and in effect.

11.5.2 Recall product code and product description from quick PLU

Procedures:

1. During normal operation status, long press any numeric number key (0 ~ 9).
2. Press **[PF/Set]** or **[MR]** until P **Code** appears on LCD1 and press **[Print/M+]**.
3. Instrument displays **PLU = 00** on LCD3.
4. Enter the 2-digit PLU number then press **[Print/M+]**.
5. Instrument displays customer code on LCD3.
6. At this point, selected product code and product description is recalled and in effect.

11.5.3 Clear product code and product description from quick PLU

To clear product code and product description quick PLU, follow **paragraph 11.5.1** and press **[Clear/x10]** then press **[Print/M+]** in step 3.

14 If Product Code is empty, product description will be ignored.

11.5.4 Applying blank product code and product description

To apply blank customer code and customer description:

1. During normal operation status, long press numeric number key **0**.
2. Press **[PF/Set] or [MR]** until P **Code** appears on LCD1 and press **[Print/M+]**.
3. Instrument displays **PLU = 00** on LCD3.
4. Press **[Print/M+]** to confirm.
5. Instrument displays **Clear** on LCD3. At this point, product code and product description effect is cancelled.

11.6 Customer Code and Customer Description[15] quick PLU

11.6.1 Create & save customer code and customer description to quick PLU

Procedures:

1. Go to F19, then press **[Print/M+]**.
2. Press **[PF/Set] or [MR]** until **C Code** appears on LCD2, then press **[Print/M+]** to confirm.
3. Instrument displays H code followed by the 1st 6 digits. Enter the first 6 digits of the code here, then press **[Print/M+]** to confirm.
4. Instrument displays M code followed by the 2nd 6 digits. Enter the 7th ~ 12th digits of the code here, then press **[Print/M+]** to confirm.
5. Instrument displays L code followed by the 3rd 6 digits. Enter the last 6 digits of the code here, then press **[Print/M+]** to confirm.
6. Instrument displays first 6 digits of description content.
7. Enter description starting from H, then M1, M2, M3 and finally L. Press **[Print/M+]** to confirm and end editing after last digit has been input.
8. Instrument displays **PLU = ?** on LCD3.
9. Save customer code and customer description to a preferred quick PLU by entering the quick PLU number (01~99) and press **[Print/M+]**.
10. Instrument displayed **Done** on LCD3.
11. At this point, customer code and customer description are saved and in effect.

11.6.2 Recall customer code and customer description from quick PLU

Procedures:

1. During normal operation status, long press the preferred PLU number (0 ~ 9).
2. Press **[PF/Set] or [MR]** until **C Code** appears on LCD1, then press **[Print/M+]**.
3. Instrument displays customer code on LCD3.

At this point, selected customer code and customer description is recalled and in effect.

11.6.3 Clear customer code and customer description from quick PLU

To clear customer code and customer description quick PLU, follow **paragraph 11.6.1** and press **[Clear/x10]** then press **[Print/M+]** in step 3.

11.6.4 Applying blank customer code and customer description

To apply blank customer code and customer description:

1. During normal operation status, long press numeric number key **0**.
2. Press **[PF/Set] or [MR]** until **C Code** appears on LCD1 and press **[Print/M+]**.
3. Instrument displays **PLU = 00** on LCD3.
4. Press **[Print/M+]** to confirm.

15 If Customer Code is empty, customer description will be ignored.

5. Instrument displays **Clear** on LCD3. At this point, customer code and customer description effect is cancelled.

12. Customized Setting PLUs for Operation Settings & Parameters

This instrument is equipped with 100 Customized Setting PLUs for each of P1, P2 and PA. These PLUs are used to save all of the below operation settings/parameters of the current operation.

1. Platform No.
2. Customer Code
3. Customer Description
4. Product Code
5. Product Description
6. Unit Weight
7. Lo Check Limits and target (weight / quantity)
8. Hi Check Limits and target (weight / quantity)
9. Check Target (weight / quantity)
10. Auto Tare Type (i.e. Manual or Auto or Continuous)
11. Preset Tare Value
12. Date Format
13. Expiry Duration

12.1 Save Current Operation Settings/Parameters to Customized Setting PLU

Procedures:

1. If more than one weighing platform is used, shift to the preferred platform # by pressing **[PF/Set]**.
2. Create and make sure that all the above-mentioned 12 operation settings and parameters (#2 ~#13) are correctly set and entered.
3. Long press **[PLU]**.
4. Instrument displays **Save** on LCD1.
5. Enter the preferred Customized Setting PLU number (01 ~ 99) through numeric key then press **[Print/M+]**.
6. Instrument displays **Done** on LCD3.

At this point, current operation settings/parameters are saved and in effect.

12.2 Recall Operation Settings/Parameters from Customized Setting PLU

12.2.1 By Instrument keyboard

Procedures:

1. During normal operation status, press **[PLU]**.
2. Instrument displays **Recall** on LCD1.
3. Enter the preferred Customized Setting PLU number (01 ~ 99) through numeric key then press **[Print/M+]**.
4. Instrument displays preset tare value saved in this Customized Setting PLU on LCD3, then returns to normal operation status.

At this point, **Customized Setting Indicator** appears and selected operation settings/parameters are recalled and in effect.

12.2.2 By Execution Command

Refer to Appendix **M.3** on for how to execute and recall a Customized Settings PLU.

12.3 Clear Customized Setting PLU

12.3.1 By Instrument keyboard

1. If more than one weighing platform is used, shift to the preferred platform # (under which the log PLU is save) by pressing **[PF/Set]**.
2. Long press **[PLU]** then **[CE/x10]**.
3. Instrument displays **Clear** on LCD1.
4. Enter the preferred Customized Setting PLU number (01 ~ 99) to clear through numeric key then press **[Print/M+]**.
5. Instrument displayed **Done** on LCD3.

At this point, current operation settings/parameters are cleared from PLU.

12.3.2 By Execution Command

Refer to paragraph **M.2** on **Appendix M** and enter 00 for PLU number.

12.4 Quit Current Customized Setting PLU Effect

Procedures:

1. During normal operation status, press **[PLU]**.
2. Instrument displays **Recall** on LCD1.
3. Enter **00** through numeric key then press **[Print/M+]**.

At this point, **Customized Setting Indicator** disappears and instrument is running according to system setting.

13. Data Output Protocols & Formats

This instrument supports various PC data output protocol and output formats. Refer to below paragraphs and **paragraph 8** for details and setting procedures.

13.1 PC Output Protocols

- 9 predefined PC Output Protocols. Refer to **Appendix A** for details.
- 1 customized Output Format. Refer to **Appendix B** for details.

Note: RS485 is not a suitable transmission mode for PC output protocol unless machine ID is set = blank in internal function F18.

13.2 Data & Print Formats

13.2.1 Predefined Output Formats

5 predefined output formats (Lab1 ~ Lab 5). Refer to below **Appendix**es for details.

- Lab 1 Output Format (**Appendix C**)
- Lab 2 Standard Output Format (**Appendix D**)
- Lab 3 Output Format (**Appendix F**)
- Lab 4 Output Format (**Appendix G**)
- Lab 5 Output Format (**Appendix H**)

13.2.2 Lab 2 Customized Output Format

This instrument supports customized Lab 2 output format. Refer to **Appendix E** for details.

13.2.3 Label Printing

This instrument supports the following label printer models:

- LP50 by Datecs (www.datecs.bg/en)
- TDP247, TDP345, TTP247, TTP345 by TSC (www.tscprinters.com)
- All models with serial communication by Sbarco (http://www.Sbarcotech.com)

Notes:

- Set all preferred operation parameters and label printer model according to paragraph **8**.
- Refer to **Appendix I** for TSC printer installation, setup procedures and detail on how to create and upload label to TSC printer by Bartender Label software.
- Refer to **Appendix J** for Sbarco Printer Installation, setup procedures and detail on how to create and upload label to Sbarco printer by BarDrawer software.
- Refer to **Appendix K** for detail on label programming and illustration samples.

13.2.3.1 Label Format Groups & Label File Names

2 label format groups are available: - -
FL1 (label file group 1), and
FL2 (label file group 2).

13.2.3.2 FL1 (Label Format Group 1)

FL1 (format group 1) is used to print the data of the current and individual transactions. 100 printout selections (00 ~ 99) are available in format group 1.

To trigger the preferred label to be printed, label files stored in the printer for this format group 1 must have a file name of AA01, AA02, AA03…. AA99.

FL1 00: - Select this to disable current transaction label printing.
FL1 01: - Select this to print label file AA01 stored in the printer.
FL1 02: - Select this to print label file AA02 stored in the printer.
….
FL1 98: - Select this to print label file AA98 stored in the printer.
FL1 99: - Select this to print label file AA99 stored in the printer.

13.2.3.3 FL2 (Label Format Group 2)

FL2 (format group 2) is used to print the totalized (MR) data.

100 printout selections (00 ~ 99) are available in format group 2. To trigger the preferred label to be printed, label files stored in the printer for this format group 1 must have a file name of BB01, BB02, BB03…. BB99.

FL2 00: - Select this to disable totalized (MR) data label printing.
FL2 01: - Select this to print label file BB01 stored in the printer.
FL2 02: - Select this to print label file BB02 stored in the printer.
….
FL2 98: - Select this to print label file BB98 stored in the printer.
FL2 99: - Select this to print label file BB99 stored in the printer.

14. Alibi Transaction Memory & Management Report

14.1 Alibi Memory Description

This instrument is equipped with Alibi memory to record all individual transaction records.

Management reports can be generated based on data saved in transaction memory, and:

- Criteria set forth in F71 (supervisor password is needed to access this internal function), and
- Format set forth in F33, and
- Search criteria and time duration set forth in F34.

Notes:

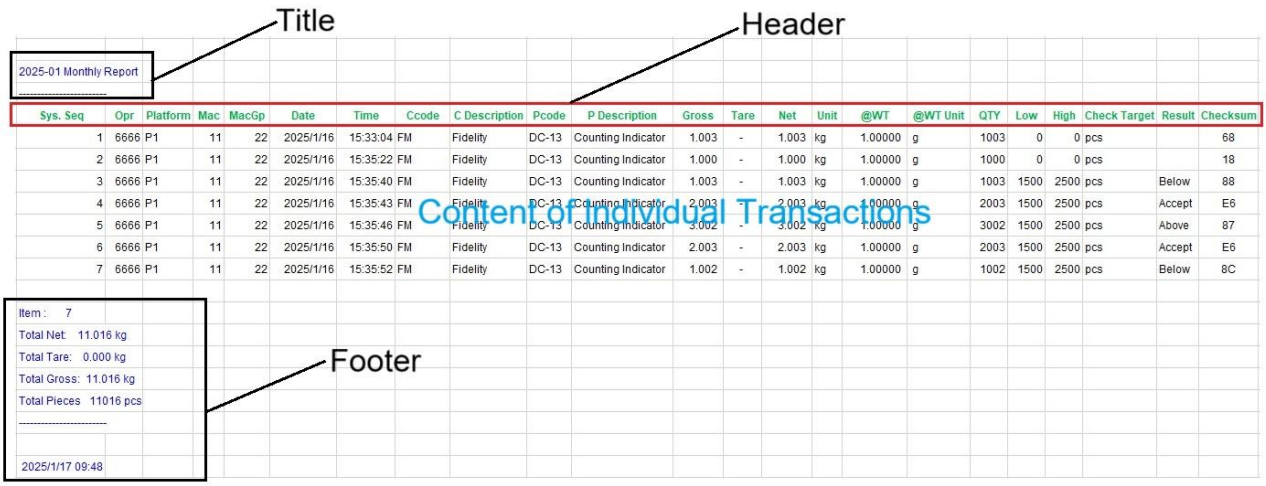
- The Alibi memory is independent to those data obtained through memory accumulation (e.g. manual memory accumulation by pressing **[Print/M+]** key and auto accumulation result by ACC = On in transmission type Manual and Auto 1 ~ Auto 3) during an operation.
- Maximum records can be saved = 131,072 transaction.
- When remaining memory is low: Instrument displays Li xxx in power on countdown process. xxx is the number of memory remains before instrument starts overwriting historical records.
- When memory is full: Instrument overwrites old records with new record based on first in first out principle.

An Alibi Management report is constructed of the followings:

a. Report Title show report output data range and search criteria.
b. Report Header explain the nature of an output column.
c. Content of Individual transactions.
d. Footer showing 4 different kinds of totalized results. Refer to paragraph **14.5** for details.

To enable / disable Title, Header and Footer output, simply select **On** or **Off** when being asked. Refer to point #6 of F33 in paragraph **6.5** for settings.

Alibi Management Report Structure Illustration Table



Sys. Seq	Opr	Platform	Mac	MacGp	Date	Time	Ccode	C Description	Pcode	P Description	Gross	Tare	Net	Unit	@WT	@WT Unit	QTY	Low	High	Check Target	Result	Checksum
1	6666	P1	11	22	2025/1/16	15:33:04	FM	Fidelity	DC-13	Counting Indicator	1.003	-	1.003	kg	1.00000	g	1003	0	0	pcs		68
2	6666	P1	11	22	2025/1/16	15:35:22	FM	Fidelity	DC-13	Counting Indicator	1.000	-	1.000	kg	1.00000	g	1000	0	0	pcs		18
3	6666	P1	11	22	2025/1/16	15:35:40	FM	Fidelity	DC-13	Counting Indicator	1.003	-	1.003	kg	1.00000	g	1003	1500	2500	pcs	Below	88
4	6666	P1	11	22	2025/1/16	15:35:43	FM	Fidelity	DC-13	Counting Indicator	2.003	-	2.003	kg	1.00000	g	2003	1500	2500	pcs	Accept	E6
5	6666	P1	11	22	2025/1/16	15:35:46	FM	Fidelity	DC-13	Counting Indicator	3.002	-	3.002	kg	1.00000	g	3002	1500	2500	pcs	Above	87
6	6666	P1	11	22	2025/1/16	15:35:50	FM	Fidelity	DC-13	Counting Indicator	2.003	-	2.003	kg	1.00000	g	2003	1500	2500	pcs	Accept	E6
7	6666	P1	11	22	2025/1/16	15:35:52	FM	Fidelity	DC-13	Counting Indicator	1.002	-	1.002	kg	1.00000	g	1002	1500	2500	pcs	Below	8C

14.2 Define when a Transaction Data is saved to Alibi memory[16]

It is important to first define when transaction data should be saved to Alibi memory during system setup. To do so, go to F71 (distributor is needed) and select the preferred parameter. 6 parameters are available.

a. Off = No transaction will be recorded.
b. Auto 1 = All stable weight (starts from gross zero or minus) is recorded by system automatically.
c. Auto 2 = The highest stable weight value of a weighing process is recorded by system automatically (when all loads are removed and gross weight returns to zero or minus).
d. Auto 3 = The last stable weight value of a weighing process is recorded by system automatically (when all loads are removed and gross weight returns to zero or minus).
e. Manual = Transaction is recorded by system automatically when **[Print/M+]** is pressed.
f. ACC = Transaction is recorded by system automatically when a new accumulated data is created automatically or manually.

14.3 Checksum

To ensure the content of each individual record outputted and received are identical, a 2-digit checksum can be included at the end of each individual record when outputting. Checksum method used is = Simple sum method & mask 0xFF.

To enable checksum output:

1. In F33, select All to enable all content output, including checksum, in detail setting, or
2. In F33, select On when CHKS (checksum) appears during Custom output setting.

To disable checksum output
To disable the checksum output, Select Off when CHKS (checksum) appears during Custom output setting.

16 Auto 1 ~ 3 do not support PA.

14.4 Output and Settings for Alibi Memory & Management Report

Complete both 2 procedures below to output management report.

1. Define report output comport and report content in F33. Refer to **F33** of **Internal Function Table** on **paragraph 6** for details. Avoid assigning RS485 for report output unless Machine ID (set in F18) is = blank.
2. Define search for search criteria and date range in F34. Refer to **F34** of **Internal Function Table** on **paragraph 6** for details. Multiple search criteria are acceptable based on condition “AND”. For example, Operator Code number XXXX and Produce Code YYYY. All transactions which fulfil **both** these 2 criteria will be outputted.

14.5 Totalization

Except date range “All” is selected, instrument will automatically output the totalized data of below result at the end of the output.

- Total number of transactions of the date range
- Total Net Weight
- Total Gross Weight
- Total Piece Count

15. Barcode Scanner

This instrument supports both serial barcode scanner and CT10 Bluetooth barcode scanner.

15.1 Barcode Scanner Setup

15.1.1 Serial barcode scanner setup

1. Serial barcode scanner should be connected to comport 0.
2. Refer to paragraph **8.2** for scanner settings.

15.1.2 CT10 serial barcode scanner setup

1. To use this instrument with a CT10 Bluetooth scanner, the optional BT2.0 module must be equipped. Contact your dealer for assistance.
2. To enable CT10 communication, refer to the setting procedures in paragraph **8.1** and: -
   a. Select UART 2 at step **3**.
   b. Select Scaner at step **4**.
3. Pairing this instrument with CT10
   a. Restart this instrument and CT10.
   b. Scan the Enter Setup barcode on the left.
   c. Scan the Enable SPP barcode on the left.
   d. Scan the Password 10010 barcode on the left.
   e. Scan the Exit with Save barcode on the left.

Notes: -

- After the above is done, paring will be completed (and confirm with a short high tone from CT10) within 10 seconds depends on connection status. To ensure pairing is successful, scan the Zero key barcode in paragraph **15.2** when instrument is unloaded. Instrument should response with a beep once the Zero key barcode is scanned.
- In case of mis-operation, scan the Exit without Save barcode, then repeat step **a** ~ **e** above.
- For other CT10 settings, refer to the user guide which comes with the CT10.

The barcode scanner is used to: -

a. introduce an operation key,
b. input an operator number,
c. input a customer/product code. The code scanned will also trigger the PLU auto search function. Refer to paragraph **15.2.2** for more information.

15.2 Barcode Scanner Functions

15.2.1 Simulating operation key

To simulate **[Zero]**, **[Tare],** and **[Print/M+]** key inputs, simply scan the corresponding barcodes below.

15.2.2 Entering Customer/Product Code & Operator Number

Customer/product and operator number can be inputted through barcode scanner. Procedures: -

1. Define first data nature (customer/product code or operator number) of data by scanning first one of the below 3 input targets.
2. Once an input target is scanned, all following scanner data inputs will be considered as the same data nature.
3. To change the scanner input target, scan the desired input target barcode, followed by the customer, product, or operator number barcode.

Input Target Barcodes

15.3 Embedding Input Target Information into a Barcode/RFID Tag

Procedure of scanning the input target mentioned on paragraph on **15.2.2** can be skipped by adding the below prefix to a barcode.

In case RFID tags are used, include the following prefixes to the RFID tag content to bypass the input target scan:

- %PC% for product code. For example, %PC%412985 for product code 412985.
- %CC% for customer code. For example, %CC%Fidelity for customer code Fidelity.
- %OP% for operator code. For example, %OP%1234 for operator number 1234.

15.4. Barcode Scanner & Auto Database Search

When a customer or product code is scanned, the instrument automatically searches the appropriate PLU database based on the F37 setting.

- F37 = ON: The instrument searches within the Production Settings PLU database.
- F37 = OFF: The instrument searches within the Customer/Product Code & Description Quick Access PLU database.

Search Sequence & Actions

Once a customer or product code is scanned: -

a. (If F37 is set to **On**), instrument searches the code scanned in the Production Settings PLU database.
   - If the scanned code exists, the corresponding settings are immediately applied.
   - If the code does not exist, then instrument will employ code scanned.

b. (If F37 is set to **Off**), Instrument searches the Customer/Product Code & Description Quick Access PLU database.
   - If the scanned code exists, then the description of the code scanned will be applied immediately.
   - If the code does not exist in this database, then instrument will employ code scanned.

Notes: -

a. Each database assumes all customer and product codes are unique.
b. If duplicate codes exist, the instrument applies the first matching record found.
c. Auto Database Search only applies to codes scanned via a barcode scanner. Manually entered codes (via the instrument or an external keyboard) do not trigger auto search.
d. Production Settings PLU operation resets upon instrument restart.

16. Commands

The following types of command are available:

a. Keyboard commands are used to simulate key entries on keyboard.
b. Execution commands are used to execute an action.
c. System parameter & operation entry setting commands are used to send system parameters and operation entries to this instrument.
d. System parameter reading commands are used to read system parameters.
e. Operation entry reading commands are used to read those operation information entered (e.g. date, time, product and customer codes), current and accumulated operation results.
f. Operation result reading commands are used to read current and accumulated operation results.
g. Customized operation settings PLU saving commands are used to create and save customized operation settings to PLU.
h. Customized operation settings PLU reading commands are used to read customized operation settings saved PLU.
i. Quick PLU saving Commands are used to create and save operation settings to quick PLU.
j. Quick PLU reading Commands are used to read operation settings saved in PLU.

Commands can be sent to this instrument from computer through any standard communication program. Refer to **Appendix L** to U for details of the above command types.

The UART port which assigned for command communication should be set to CMD in F16. Refer to **paragraph 8** for setting details and procedures.

17. System Message & Error Code

17.1 System Message Table

Message	Description
--oL--	Overload (Gross weight is more than Max plus 9d).
bAt.Lo	Battery level low.
HALT	Major system error detected. Power off instrument and remove power adaptor immediately. Then check load cell connection and system power status.
L.i = xxx	• Remain system memory is = xxx. System will start overwriting historical transaction records (on FIFO basic) when system memory is completely full. To preserve historical data in system memory, output all transaction records in system memory to external backup file asap. • To clear this message, press **[Print/M+]** followed by **[CE/x10]**.
UndEr	Negative Weight value exceeds display range.
Reboot	Important parameters have been changed. Power off and then power on instrument again to reboot.
------	Negative Tare value exceeds display range.
L = Out	No heartbeat signal is received via Lan within the time interval set.
Fi = Out	No heartbeat signal is received via WIFI within the time interval set.

17.2 Error Code Table

Error Code	Description
Err 1	Time value error
Err 2	Date value error
Err 3	Exceed manual zero
Err 4	Offset out of range / unstable during power on
Err 5	No load cell detected
Err 6	Tare operation error
Err 7	Logic error. Hi limit set is lower than Lo limit (and Hi is not = 0)
Err 8	Logic error. Lo limit set is higher than Hi limit (and Hi is not = 0)
Err 13	Exceed maximum power on
Err 19	Capacity or division setting error (Division set is higher than 10000d)
Err 22	Manual Zero and Tare stability error
Err 23	Capacity setting error, Capacity 1 > Capacity 2
Err 24	Division setting error, $d_1 > d_2$
Err 25	Span gain is too low
Err 26	Not able to obtain stable status for longer than 10 seconds

Err 27	• Calculated value per e of Cal 2 varies more than 1% as of Cal 1. Properly a load cell problem. • Mass value of Cal 2 is less than 150% of Cal 1.
Err 28	Maximum accumulation limit is exceeded
Err 29	Standard deviation data exceed memory size (300 transactions)
Err 30	Working mode (Operation mode AP or STA or AP&STA)
Err 31	WAN Setting
Err 32	Network Protocol Setting
Err 33	Lan Setting
Err 34	Cannot access to command mode of WIFI module
Err 35	STA SSID & KEY Setting
Err 36	AP SSID & KEY Setting
Err 38	Cannot Reload Setting
Err 39	Cannot read MAC of Link
Err 40	Lan Port Communication Error
Err 42	Cannot communicate with Bluetooth module
Err 43	Cannot set Bluetooth module
Err 44	Report output from RS485 port but Machine ID not = blank
Err 46	PLU recalled is blank

18. Daily Care & Maintenance

- Clean the instrument with a soft, damp cloth. If necessary, use a mild detergent in water.
- Do not use any harsh, abrasive material, acetone, volatile solvent, thinner or alcohol for cleaning.
- Verify the accuracy of this instrument periodically. Re-calibrate if necessary. In some countries, calibration requires authorized/qualified agent. Contact your dealer for more information.
- Store this instrument in a dry and clean place.
- Recharge battery before and every 4 months during long time storage.

Appendix A: Pre-Defined PC Output Protocols

A.1 Data Abbreviation Table

Data Code	Description
,	Comma
+,-	Polarity Sign Positive = space. Negative = minus (-)
P	Polarity Sign Positive = 0. Negative = minus (-)
A	7 digits ADC value with lead space
G/N	Gross/Net • NT = Net weight • GS = Gross weight
NET	Net Weight
S	Status Code • ST for Stable • US for unstable
R	Revered 7 digits weight value including location of decimal point. If there is no decimal point, then the last character = space.
SP	Space
SWA	Status Word A
SWB	Status Word B
U	Weight Unit • kg = kilogram • lb = pound • g(space) = gram
W	7 digits weight value including location of decimal point. If there is no decimal point, then the first character = space.

A.2 Output Formats Tables

Protocol 0 Output Format

Position	1	2	3	4	5	6	7	8	9	10
Data	+,-	A	A	A	A	A	A	A	CR	LF

Protocol 1 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Data	S	S	,	G/N		+,-	W	W	W	W	W	W	W	,	U	U	CR	LF

Protocol 2 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Data	STX	SWA	SWB	SP	Field 1 (Net Weight)						Field 2 (Tare Weight)						CR

Protocol 3 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Data	SOH	STX	SP	+,-	W	W	W	W	W	W	W	SP	U	U	SP	SP	SP	SP	CR

Protocol 4 Output Format

Position	1	2	3	4	5	6	7	8	9
Data	=	R	R	R	R	R	R	R	P

Protocol 5 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Data	S	S	,	G/N		,	+,-	W	W	W	W	W	W	W	U	U	CR	LF

Protocol 6 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Data	N	E	T	SP	+,-	W	W	W	W	W	W	W	U	U	CR	LF

Protocol 7 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Data	SOH	STX	SP	+,-	W	W	W	W	W	W	W	SP	U	U	SP	SP	SP	CR	C

Protocol 8 Output Format

Position	1	2	3	4	5	6	7	8	9	10
Data	STX	+,-	W	W	W	W	W	W	W	ETX

Protocol 9 Output Format

Position	1	2	3	4	5	6	7	8	9	10	11	12
Data	STX	+,-	SP		W	W	W	W	W	U	U	ETX

Appendix B: Customized PC Output Protocol

This instrument supports customized PC output protocol. Under this mode: -

- 2 data separation types
- 7 control codes, and
- 26 different transaction data

are available from instrument.

B.1 Customized PC Output Protocol Setting Procedures

1. Go to F16 and select the preferred UART number depends on the output comport number.
2. Select PC, then set baud rate, parity and data length.
3. Select Custom in Protocol page. Then press **[Print/M+]**.
4. Instrument displays **Separa** then followed by data separator selection page.
5. Select preferred data separator CoMMA (comma) or SemiCo (semi colon) then press **[Print/M+]**.
   Notes:
   - Data separator is a symbol inserted between transaction data and is usually used by computer program to separate various data.
   - No data separator is inserted between in front or after control commands.
   - Separator in front and after a control code will not be surpassed. For example:

     STXdata,data,dataETX
   - Exception of above is when control codes are in between 2 data. For example:

     data,CR LF data
6. Instrument displays Item Number, then followed by the content page.
   Note: Item number means output sequence, e.g. Item 1 = the first content to output, Item 3 = the third content to output.
7. Press **[PF/Set]** and **[MR]** until the preferred content appears then press **[Print/M+]**. Refer to below **Customized PC Output Content Table** for details.
8. Repeat step **6** to include other transaction data or control.
9. To complete and save a customized output, select **End** then press **[Print/M+]**.
10. Then select output time interval (refer to **paragraphs 8.1 & 8.2** for details).
11. Press **[Print/M+]** to save.

B.2 Customized PC Output Content Table

Symbol	Explanations	Nature	No. of Digit	Remarks
CoMMA	Comma	Data Separator	1	Select either one
SemiCo	Semi Colon		1	
Cr LF	HEX Code 0D 0A	Control Code	2	
Cr	HEX code 0D		1	
LF	HEX code 0A		1	
SOH	HEX code 01		1	
STX	Hex code 02		1	
ETX	Hex code 03		1	
Status	Weigh Status	Transaction Data	2	• ST = Stable • US = Unstable • OL = Overload
nT-GS	Net/Gross Sign		2	NT = Net / GS = Gross
Date	Date of Output		10	
Time	Time of Output		8	
Net	Net Weight		8	Numeric value only, without weight unit
Tare	Tare Weight		8	
Gross	Gross Weight		8	
Unit	Weight Unit		2	• kg = Kilogram • (space)g =gram
H ref	Hi Limit		8	8-digital including decimal (if any)
L ref	Lo Limit		8	8-digital including decimal (if any)
Ck res	Comparison Result		2	Lo/Ok/Hi / Grade Result for grading
id	Machine ID		2	00 ~ 98, Blank = None
Group	Machine Group Number		2	00 ~ 99, Blank = None

Op Code	Operator Number		4	0000 ~ 9999, **** = None
P Code	Product Code		1 ~ 18	Blank = not entered
P-Desc	Product Description		1 ~ 30	Blank = not entered
C Code	Customer Code		1~ 18	Blank = not entered
C-Desc	Product Description		1 ~ 30	Blank = not entered
Trans	No. of accumulated transaction		8	Blank = none
ACC	Total Accumulated Weight	Transaction Data	8	Blank = none
unit.Wt	Unit weight		8	8-digital including decimal (if any) in terms of gram
Qty	Number of piece		8	8-digital
t._.Qty	Total Accumulated Pieces		8	8-digital
P.F.	Platform #		2	• P1 = PF1 • P2 = PF 2 • PA = Dual Platform
t._GS	Accumulated Gross Weight		8	8-digital including decimal
t._Tare	Accumulated Tare Weight		8	
Expiry	Expiry Duration		8	
Abnr	Last Alibi Record Number Saved. *Do not use this parameter if Alibi memory function is not activated.*		8	
CHKS	Check Sum of all content at the left side		2	
End	End of Input		None	

Appendix C: Lab 1 Output Formats

C.1 Predefined Lab 1 Print Format[17]

When Lab 1 Std (Predefined) is selected, output in default format will be generated with printed data is sent. No header will be generated when line number is set = 00. See below table for print format and explanations.

Lab 1 Predefined Output Format Illustration Table

Date	Time	Seq	Platform #	Net	Tare	Gross	Total_WT	QTY	@WT	Total_QTY	Ref.	Result
2018/8/19	11:51:31	5	P2	10.00kg	0.00kg	10.00kg	80.00kg	5000	2.00000g	40002	kg	Below
2018/8/19	11:54:09	1	P1	10.00kg	2.64kg	12.64kg	10.00kg	4999	2.00000g	45001	kg	Accept
2018/8/19	11:54:58	8	PA	20.00kg	2.64kg	22.64kg	110.00kg	10000	2.00000g	55001	kg	Below
2018/8/19	12:10:37	10	PA	20.00kg	2.64kg	22.64kg	130.00kg	10000	2.00000g	65001	pcs	Accept

Notes:

- Date = Date of Output
- Time = Time of Output
- Seq = Accumulate Sequence No.
- Platform # =
    - P1 = Platform #1, P2 = Platform #2, PA = Dual platform
- Net = Net Result
- Tare = Tare Weight
- Gross = Gross Weight
- Total_WT = Total Accumulated Weight
- Qty = Quantity
- Total_QTY = Total Accumulated Quantity
- @WT = Unit Weight
- Ref = Check Target
    - kg = weight in kilogram, g= weight in gram , pcs = quantity
    - Result = Check Results: Accept= Ok, Below = Lo, Above = Hi

17 Lab 1 format does not support Customer or Produce Code or Lab 1 output format.

C.2 Customized Lab 1 Output Formats

This instrument supports customized Lab 1 output format. Under this output: -

- 2 data separation types
- 7 control codes, and
- 29 different transaction data

are available from instrument.

Lab 1 Customized Output Setting Procedures

1. Select Custom in output format page. Press **[Print/M+]**.
2. Instrument displays one of the data separators.
3. Press **[PF/Set]** to shift between data separator Comma (comma) and SemiCo (semicolon) and press **[Print/M+]**.

   Notes:
   - Data separator is a symbol inserted between transaction data and used by a computer program to separate various data.
   - No data separator is inserted between in front or after control commands.
   - Separator in front and after a control code will not be surpassed. For example: STXdata,data,dataETX
   - Exception of above is when control codes are in between 2 data. For example: data,CR LF data
4. Instrument displays item number, then followed by the content page.

   Note: Item number means the output sequence, e.g., Item 1 = the first content to output, Item 3 = the third content to output.
5. Press **[PF/Set]** or **[MR]** until the preferred content appears and press **[Print/M+]**. Refer to Appendix **B.2** for detailed selectable output content information.
6. Repeat steps **5** and 6 to include other content to output
7. To complete and save a customized output, select **End** and press **[Print/M+]**.
8. Then select line number and press **[Print/M+]**. to save. Line number is the number of transactions sent after which the header will be repeated.
9. Setup is then completed.

Appendix D: Predefined Lab 2 Output Format

Predefined Lab 2 Output Format Illustration Table

Time	12:24:18	*Time of Output*
Date	2018/8/19	*Date of Output*
Seq	11	*Accumulate Sequence No.*
Platform #	P1	*Platform No.*
Name	Product Code	*Customer Code*
Line for Customer Description		*Customer Code Description*
Pcode	Product Code	*Product Code*
Line for Product Description		*Product Code Description*
Net	10.00kg	*Net Weight*
Total_WT	120.00kg	*Total Accumulated Net Weight*
QTY	4999pcs	*Quantity*
@WT	2.00000g	*Unit Weight*
Total_QTY	59990pcs	*Total Accumulated Quantity*
One Blank Line is inserted here		
High	20.00kg	*Hi Limit*
Low	10.00kg	*Lo Limit*
Result	Accept	*Check Result*

Appendix E: Customized Lab 2 Output Format

25 variants + 2 commands (**Cr LF and End**) are available for customized Lab 2 output format. Refer to the below table for more detail.

E.1 Customized Lab 2 Output Format Variants Table

Symbol	Description
End	Edit finished
CrLF	Insert one blank row
dAtE	Date of printing
time	Time of printing
nEt	Net weight
tArE	Tare weight
GroSS	Gross weight
unit.Wt	Unit weight
Qty	Number of piece
HrEF	Hi limit
LrEF	Lo limit
ChrES	Comparison result
trAnS	Transaction sequent number (if this transaction is accumulated to memory)
ACC	Total accumulated weight (when accumulation function is in effect)
SiGn	Signature
PCode	Product Code
P-Desc	Product Description
Id	Machine ID
GrouP	Machine group number
oPCodE	Operator number
CCode	Customer Code
C-Desc	Product Description
Week	Week No.
P.F.	Platform No.
t._GS	Accumulated Gross Weight
t._Tare	Accumulated Tare Weight
Expiry	Expiry Date
Abnr	Last Alibi Record Number Saved. *Do not use this parameter if Alibi memory function is not activated.*
End	End of Input

E.2 Edit Customized Lab 2 Print Output Format

Follow the below steps to create customized printout.

1. Go to internal function F22. Press **[PF/Set]** or **[MR]** until **Custom** appears.
2. Press **[Print/M+]**,
3. This instrument displays **Line 1** and the last variant or command (refer to **Appendix E.1** for details) stored,
4. Press **[Print/M+]** to confirm or select other variant or command by press **[PF/Set]** or **[MR]**. Then press **[Print/M+]** to confirm and save,
5. This instrument displays **Line 2** and the last variant or command stored,
6. Repeat steps **4** and **5** for other lines,
7. To finish editing, select command **End**, then press **[Print/M+]** to confirm,
8. This instrument returns to and displays the current internal function number.

At this point, customized print output is completed.

Appendix F: Lab 3 Output Formats

Current working mode and all related data are sent under this mode. Refer to below table for data output format. Semi colon is inserted between data.

Lab 3 Output Format Illustration Table

Data Output	Output Content
Data 1	Operator Number
Data 2	No. of Accumulated Transaction
Data 3	Platform Number
Data 4	Machine ID
Data 5	Machine Group Number
Data 6	Date of Output
Data 7	Time of Output
Data 8	Customer Code
Data 9	Product Code
Data 10	Gross Weight
Data 11	Tare Weight
Data 12	Net Weight
Data 13	Accumulated Weight
Data 14	Weight Unit
Data 15	Quantity
Data 16	Unit Weight
Data 17	Weight Unit of Unit weight
Data 18	Lo limit
Data 19	Hi limit
Data 20	Check Target
Data 21	Comparison Result
Data 22	Total Accumulated Pieces

Appendix G: Lab 4 Output Format

Transaction data is sent in journal output format with quantity and net weight of each individual transaction. Refer to below for details.

Lab 4 Output Format Illustration

	Data Explanation
Name Customer Code	*Customer Code (if entered)*
Pcode Product Code	*Product Code (if entered)*
Opr 8888	*Operator Code (if entered)*
Mac 11	*Machine ID (if entered)*
MacGp 22	*Machine Group Number (if entered)*
Date 2018-08-19	*Date of 1st output*
Time 13:44:00	*Time of 1st Output*
Seq QTY Net	
0001 P1 4999 10.00kg	*Accumulation No., platform No., quantity and net weight*
0002 P2 5000 10.00kg	
0005 PA 10000 20.00kg	

0005 PA	*Total accumulation No and platform No. of last output*
Total 19999 40.00kg	*Total accumulated quantity and weight.*

Appendix H: Lab 5 Output Format

Transaction data is sent in journal output format with time and quantity of each individual transaction. Refer to below for details.

Lab 5 Output Format Illustration

	Data Explanation
Name Customer Code	*Customer Code (if entered)*
Pcode Product Code	*Product Code (if entered)*
Opr 8888	*Operator Code (if entered)*
Mac 11	*Machine ID (if entered)*
MacGp 22	*Machine Group Number (if entered)*
Date 2018-08-19	*Date of 1st output*
Seq Time QTY	
0002 PA 14:09:07 10000	
0004 PA 14:09:15 10000	*Accumulation No., platform No., time and quantity*
0003 P1 14:09:25 4999	
0003 P2 14:09:29 5001	

0003 P2 Total: 15003	*Total accumulation No, platform No. of last output and total accumulated quantity*

Appendix I: TSC Printer Installation, Setup & Label Upload Procedures

I.1 Get the below ready before Printer Installation

1. An appropriate cable to connect printer and computer. This cable usually comes with the printer. If not, contact your printer supplier.
2. Printer installation driver. This driver usually comes with the printer. If not, contact your printer supplier.
3. Diagnostic tool for printer. This tool usually comes with the printer. If not, contact your printer supplier or download it at: https://www.fi-measurement.com/files/1/Drivers%20&%20Softwares/DiagTool_V163.zip
4. TCF file for the label printer. The suitable TCF file can be downloaded at: www.fi-measurement.com/resource/driversnsoftwares

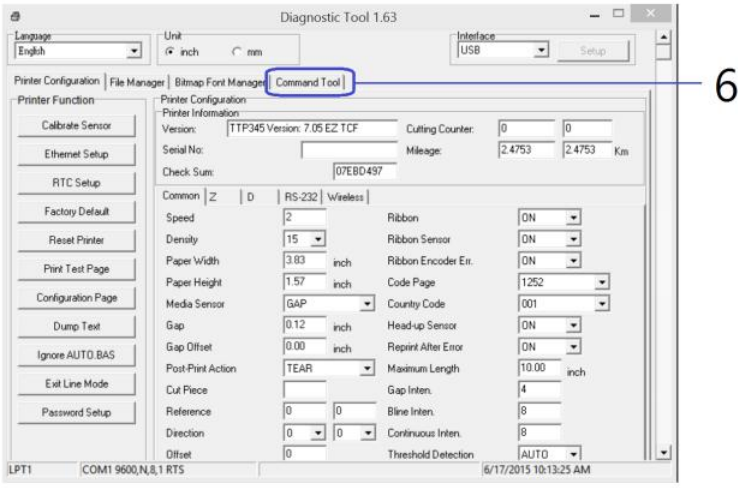
I.2 Printer Installation

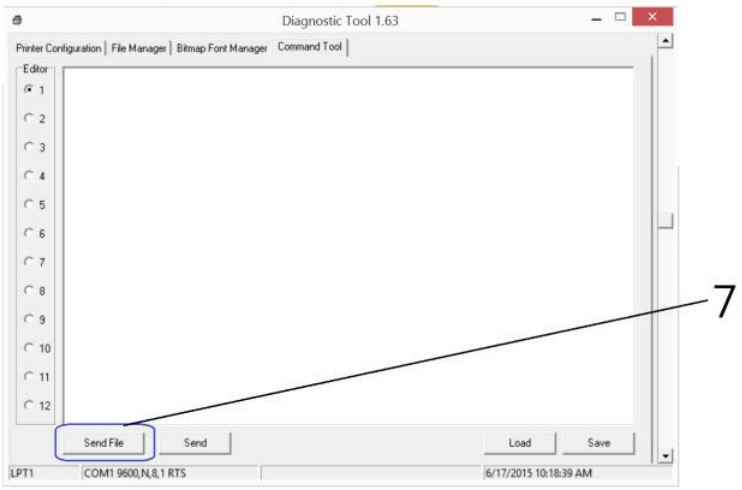
1. Turn off the printer, connect the appropriate cable, and then turn on the printer.
2. If the printer supports Plug-and-Play, and you have connected it using a USB or Parallel cable, then the Windows Add Hardware Wizard will detect the printer and display a dialog that allows you to install a driver. Click Cancel and do not install the driver using this wizard.
3. Run the Driver Wizard utility from the Installation Directory where the driver files are located.
4. Select Install Printer Drivers and complete the wizard.
5. The driver should now be installed.

I.3 Uploading TCF File to Printer

In order to allow proper operation between this instrument and TSC label printer, a TCF file must be uploaded to printer.

1. Connect printer with computer.
2. Power on printer.
3. Download the correct TCF file point 4 of **I.1**.
4. Unzip the download file and save in to computer.
5. Run Diagnostic tool for printer.
6. Click on Command Tool.
7. Click on Send file.
8. Double click on the TCF file and it will be uploaded to printer.





I.4 Create & Upload Label to TSC Printer

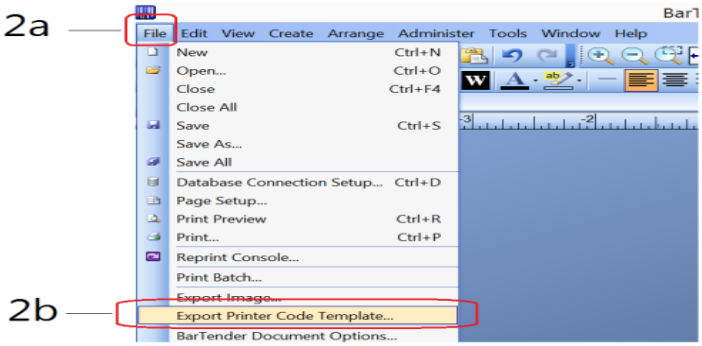
I.4.1 Selecting the Correct Edition for Bartender Software

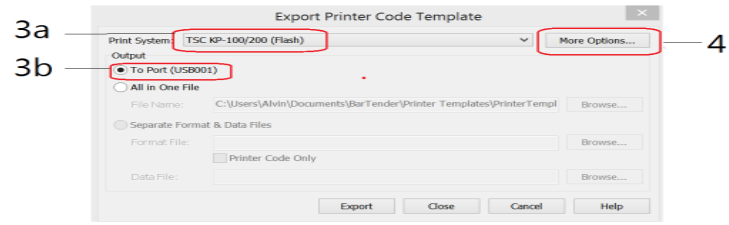
1. To enable label uploading from computer to TSC printer, it is necessary to run Bartender as Automation or Enterprise Automation edition. Procedures as below:
2. Install Bartender Software to computer. The Bartender software usually comes with the TSC printer. If not, please contact your printer supplier.
3. Run Bartender, then click on Help, then click on Edition Selection.
4. Select Enterprise Automation or Automation, then click OK.
5. At this point, correct Bartender edition is selected.

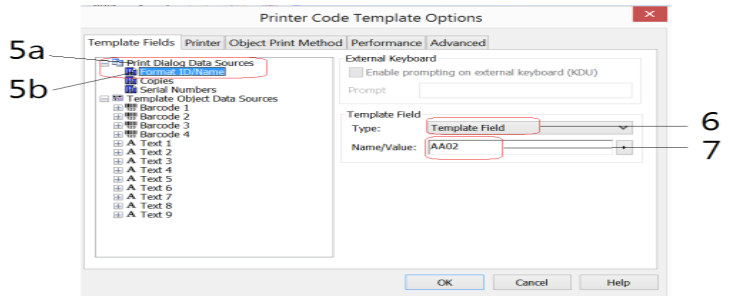
I.4.2 Adding Information from Instrument to Label & Uploading to a TSC Printer

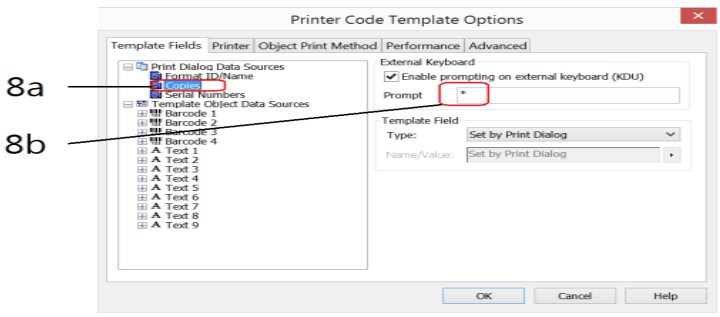
The below procedures are based on Bartender Label Software. If a different label creating software is used, contact your label software dealer for more details if in doubt.

1. Set the label printer as the default printer of your computer.
2. Create the foundation of a label by Bartender. All information to be obtained from instrument should be added afterward.
3. Once the label foundation has been completed; (a) click on File and (b) select Export Printer Code Template.
4. On Print System; (a) select TSC KP-100/200 (Flash) and (b) select to Port.
5. Click More Option.
6. Then (a) click Print Dialog Data Sources, then (b) click on Format ID/Name.
7. On Template Field, select Template Field for Type.
8. Enter the correct label file name on Name/Value. Refer to paragraph **13.2.3** for correct file name format. (a) Click Copies, check KDU and (b) input asterisk (*) on Prompt box.
9. Below procedures explain how to edit information to be obtained from instrument.
10. Click Template Object Data Sources and Select the object which information from instrument (for example net, gross, tare weight and product code) to be sent to printer and printed on label.

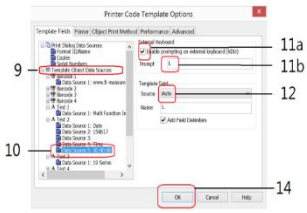


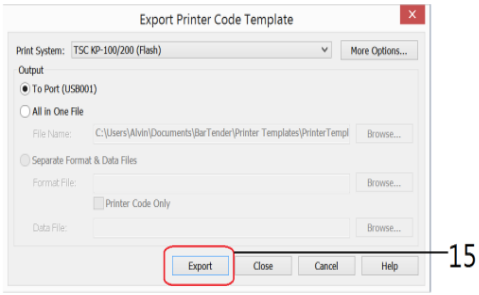






11. Double click on the preferred data source to which variant(s) has/have to add.
12. check the box below External Keyboard, then
13. enter the appropriate command on the Prompt Box (refer to **Appendix K.1** for command detail).
14. Select Auto on the Source box under Template Field.
15. Repeat point 11 to 12 for all other data sources.
16. Click OK.
17. Click Export. In case of Verification Messages appear, select one of method on the dialogue box to fix and click Continue.





Appendix J: Sbarco Printer Installation, Setup & Label Upload Procedures

J.1 Get the below ready before Printer Installation

1. An appropriate cable to connect printer and computer. This cable usually comes with the printer. If not, contact your printer supplier.
2. A serial cable to connect printer and this instrument. Pin #9 of this cable must be without any connection.
3. Download BarDrawer software at http://www.sbarcotech.com/cht/download.php?gid=1

J.2 BarDrawer Software & Printer Driver Installation

1. Turn off the printer, connect computer and printer by cable, and then turn on the printer.
2. Install BarDrawer software according to the wizard. After that BarDrawer software is installation is done.
3. Run BarDrawer software.
4. Click Install Driver under Tools (figure 1 below). Then install printer driver according to the wizard.
5. After printer driver installation, click Printer Utility under Tools (figure 2 below).
6. Click Load from Printer (figure 3 below).
7. Check FW version:
   - If FW version = 3.0.05 (date = 2020/12/18) or newer, printer installation is done.
   - If FW version is lower than 3.0.05 (date = 2020/12/18), then FW update is necessary. Continue with below step for FW update.
8. Download the latest Sbarco Printer FW at https://www.fi-measurement.com/resource/driversnsoftwares
9. Open file located of the Sbarco printer FW downloaded.
10. Doble click on the FW file name to start Firmware Tool.
11. Click Program (figure 4 below) to start FW update.
12. Click OK after FW update is completed.

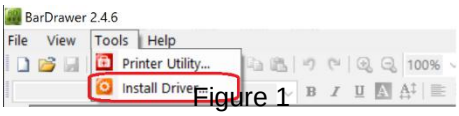


Figure 1

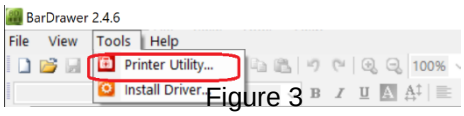


Figure 3

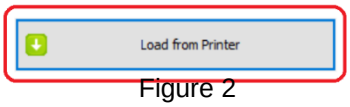


Figure 2

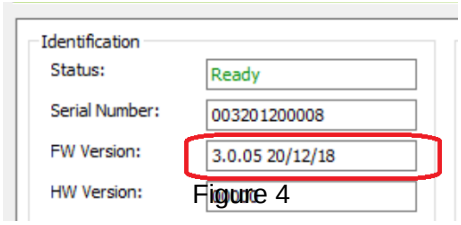


Figure 4

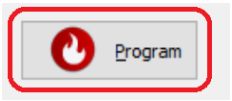
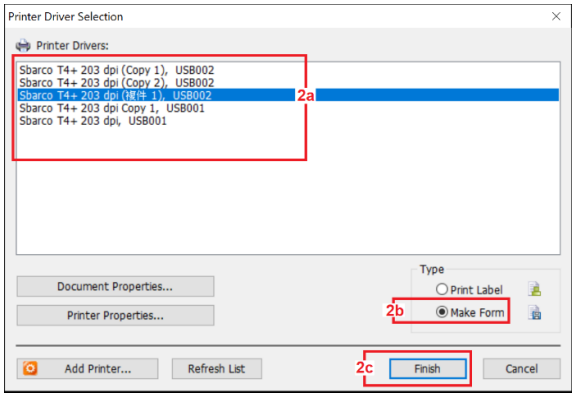


Figure 5

J.3 Create & Upload Label to Sbarco Printer

1. Run BarDrawer. Click File and then New.

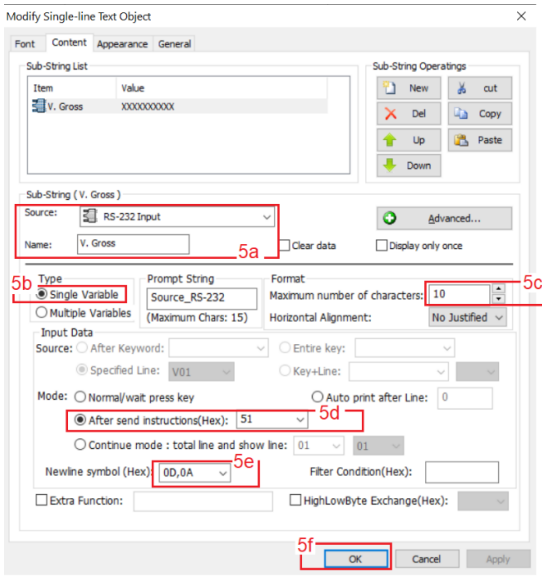
2. On Printer Driver Selection page:
   a. click on the preferred printer driver, then
   b. select Make Form under Type, then
   a click Finished.

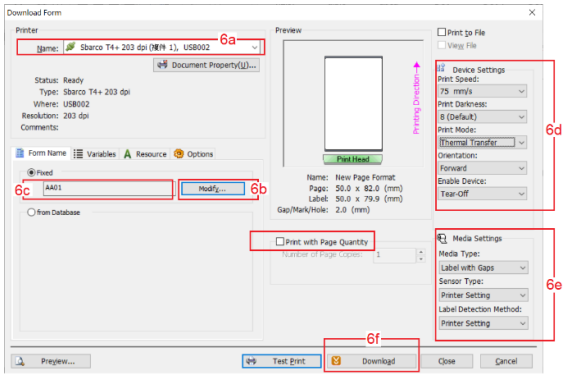


3. Double click in blank label area, then complete all settings on Page, Label Layout, Measuements and Orientation. Then click OK

4. Create all fixed content and variables on label.

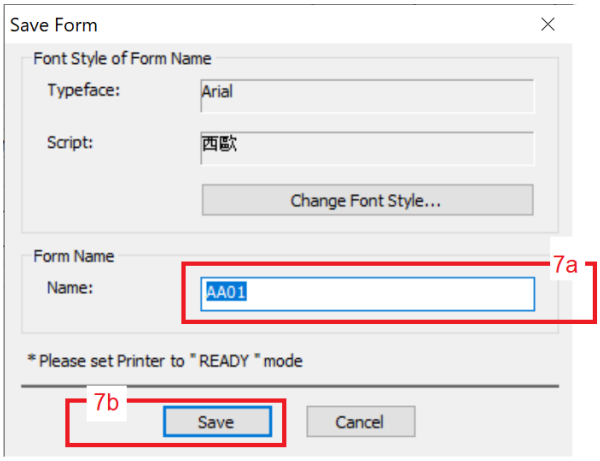
5. To program variables, double click on the variable to program. On Content page:
   a. On Sub-String section, select RS-232 Input for Source and give a proper name to the select variable (optional)
   b. On Type section, select Single Variable,
   c. On Format section, enter value of Maximum number of characters. Refer to **Appendix K.1** Suggested Length column for suggested value.
   d. On Input Data section, select After send instructions (Hex). Then enter the Prompt Command listed on **K.1**.
   e. Always select 0D,0A for Newline symbol (Hex) box.
   f. Click OK to save above settings for this variable.
   g. Repeat above a ~ f for all other variables.



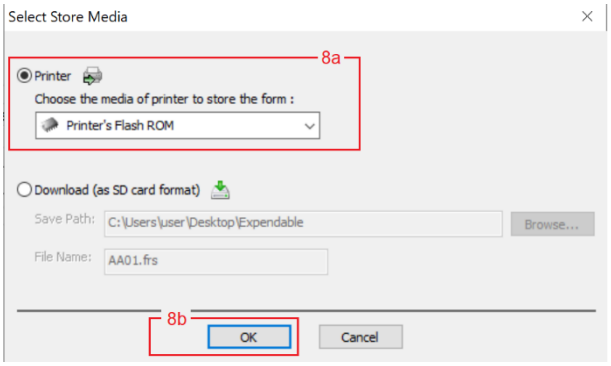


6. Once the label foundation has been completed, then click on File then click on Print. On Download Form page:
   a. select name of Print to output,
   b. click Modify and then give proper name to the file (e.g. AA01… AA99 for individual transaction label and BB01…BB99 for totalized label).
   c. always leave Print with Page Quantity box unchecked.
   d. set all boxes under Device Settings,
   e. set of boxes under Media Settings
   f. Click Download.

7. On Save Form page:
   a. make sure that the Form name is correct, then
   b. Click Save



8. On Select Store Media page:
   a. select Printer, then
   b. select Printer’s Flash ROM, then
   c. click OK



Appendix K: Label Programming, Illustration & Samples

Prompt commands, information description, working mode and suggested length on label are listed on the below table.

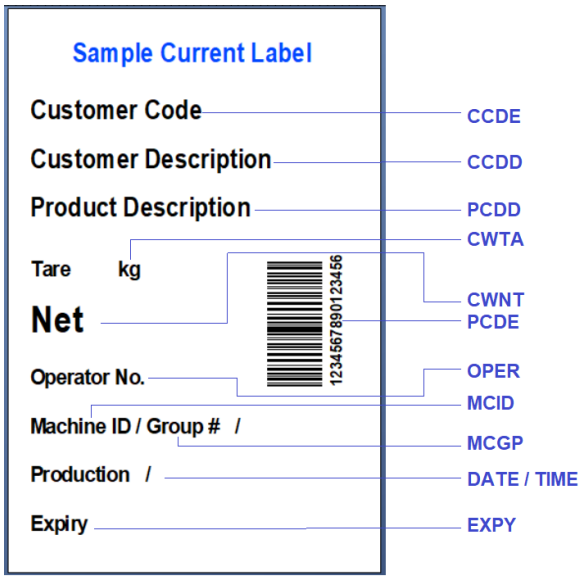
K.1 Label Prompt Command Table

Prompt Command		Description	Suggested Length
Sbarco	LP50 & TSC		
4B	DATE	Date	10
4C	TIME	Time	8
45	EXPY	Expiry Date	10
46	WEEK	Week	6
66	OPER	Operator No.	4
64	MCID	Machine ID	4
65	MCGP	Machine Group	2
5A	CCDE	Customer Code	18
43	CCDD	Customer Code Description	30
62	PCDE	Product Code	18
44	PCDD	Product Code Description	30
53	CHKL	Low Limit	11
73	chkl6	Low Limit in 6-digit integer	6
52	CHKH	High Limit	11
72	chkh6	High Limit in 6-digit integer	6
54	CHKR	Check Result	11
51	CWGS	Current Gross Weight	10
71	cwgs6	Current Gross Weight in 6-digit integer	6
50	CWTA	Current Tare Weight	10
70	cwta6	Current Tare Weight in 6-digit integer	6
4F	CWNT	Current Net Weight	10
6F	cwnt6	Current Net Weight in 6-digit integer	6

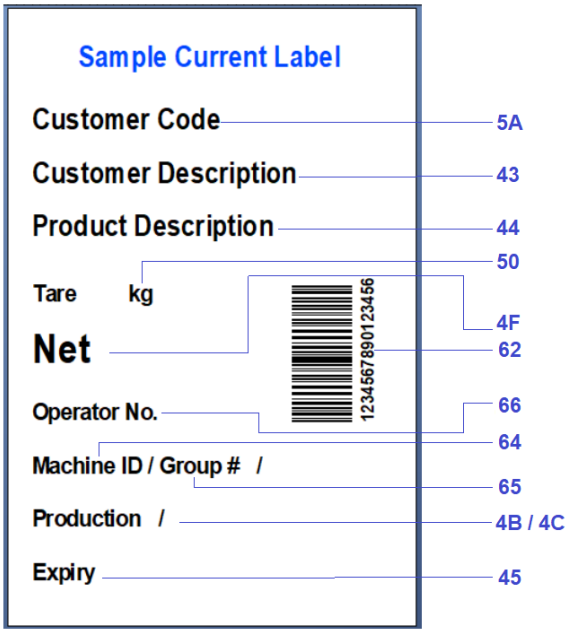
55	CQTY	Quantity	11
75	cqty6	Quantity in 6-digit integer	6
56	AVGW	Unit Weight	10
76	avgw6	Unit Weight in 6-digit integer	6
59	CWNT	Current Animal Weight	11
79	cwnt6	Current Animal Weight in 6-digit integer	6
4D	ASEQ	Accumulation Sequence No.	8
6D	aseq6	Accumulation Sequence No. in 6-digit integer	6
47	AWGS	Accumulated Gross Weight	11
67	awgs6	Accumulated Gross Weight in 6-digit integer	6
4A	AWTA	Accumulated Tare Weight	11
6A	awta6	Accumulated Tare Weight in 6-digit integer	6
4E	AWNT	Accumulated Net Weight	11
6E	awnt6	Accumulated Net Weight in 6-digit integer	6
63	AQTY	Accumulated Quantity	11
69	aqty6	Accumulated Quantity in 6-digit integer	6
4E	AWNT	Accumulated Animal Weight	11
6E	awnt6	Accumulated Animal Weight in 6-digit integer	6
68	ABNR	Last Alibi Record Number Saved *Do not use this parameter if Alibi memory function is not activated.*	8

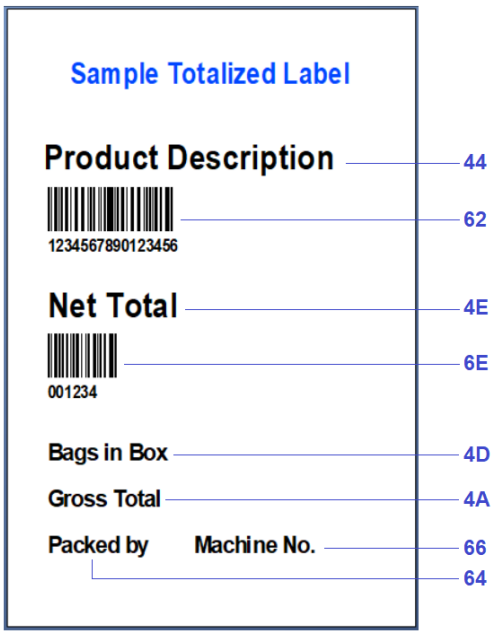
K2. Label programming Illustration

K.2.1 Label Illustration for LP50 & TSC



K.2.2 Label Illustration for Sbarco





K.3 Sample Labels

Label files of the above samples (size = 50 x 80mm) with prompt commands are available for download at: - https://www.fi-measurement.com/resource/driversnsoftwares

K.4 Quick Access to Label Settings

If label printer (TSC or LP50) is selected, follow the below procedures to access quick label settings during operation.

1. Enter F1, then press **[Check]**,
2. Instrument displays number of copy to generate each time. Press **[PF/Set]** or **[MR]** until the preferred parameter appears then press **[Print/M+]** to save.
3. Instrument displays label file number (FL1 00 ~ FL1 99) to print in label format group 1. Enter the preferred file number through numeric then press **[Print/M+]** to confirm.
4. Instrument displays label file number (FL2 00 ~ FL2 99) to print in label format group 2. Enter the preferred file number through numeric then press **[Print/M+]** to confirm.
5. At this point, label settings are completed.

K.5 Repetitive Printout

This instrument supports repetitive output under Manual Print Mode. Press **[Print/M+]** for additional output copies.

Conditions and criteria as below:

- When Auto Accumulation is set to On: Repetitive print is only possible when the actual weight on scale is equal to the weight value of the 1st printout.
- When Auto Accumulation is set to Off: Repetitive print is possible if minimum output weight set is matched and when **[Print/M+]** is pressed.
- Weight value of repetitive output will not change the total accumulation result. Only the weight value of the 1st output will be accumulated to memory.

Appendix L: Keyboard Command

Keyboard command format as below: -

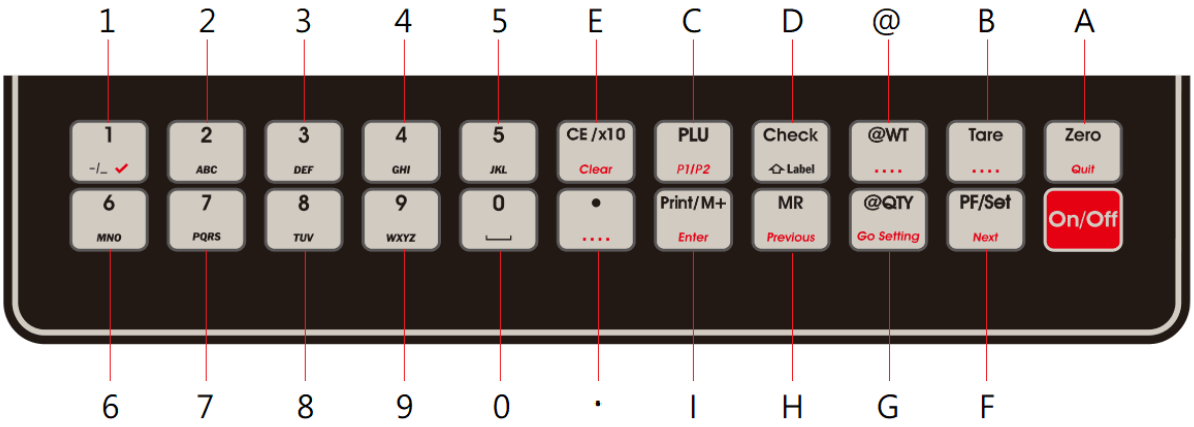
a. Start String * “asterisk” (Hex code 02A), followed by
b. Letters KB, followed by
c. Letter shown on below illustration diagram (keyboard commands are case sensitive), followed by
d. End String # “number sign” ((Hex code 23).

Example to send manual Zero key command to instrument, enter *KBA#

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Keyboard Command Illustration Diagram



Appendix M: Execution & Operation Parameter Setting Commands

Execution command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

M.1 System Related Command Table

Command Definition	Command Format			
	Start String	Command Code		End String
System Reboot	*	EX	F000	#
All Segment Check	*	EX	F002	#
System (F7~F34) Initialization	*	EX	F006	#
Reset WIFI Module to Default Setting	*	EX	F048	#
Reset Bluetooth Module (BT 2.0 only)	*	EX	F053	#
Reload Factory Settings to BT Module (BT 2.0 only)	*	EX	F054	#
Save changes and restart	*	EX	F999	#

M.2 Customized Setting PLU Related Command Table

Command Definition	Command Format				Parameter Description
	Start String	Command Code		Parameter & End String	
Execute customized Setting PLU saved for PF#1	*	E1	LP	;d1#	• d1 = PLU number 00 ~ 99. 00 = quit all customized settings and return to instrument normal settings.
Execute customized Setting PLU saved for PF#2	*	E2	LP	;d1#	
Execute customized Setting PLU saved for #PA	*	EA	LP	;d1#	

M.3 System & Operation Parameter Setting Commands

System parameter & operation entry setting command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. Parameter(s) listed on below table. Always insert semi colon (;) in front of each parameter, followed by
d. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Command Description Table

Command Definition	Command Format				Parameter Description
	Start String	Command Code (Note A)		Parameter & End String	
Set Date Format, Value and Output	*	ST	F004	;d1;d2;d3#	• d1 = Date Format (0 = DD-MM-YY, 1 = YY-MM-DD, 2 = MM-DD-YY) • d2 = 8-digit date value as per above setting (AA-BB-CC) • d3 = Date Output Format (0 = Normal Format, 1 = Week Format)
Set Time	*	ST	F005	;d1#	8-digit time value (HH:MM:SS)
Set Auto Power Off	*	ST	F007	;d1#	0 = Off, 1 = 1 minute, 2 = 3 minute, 3 = 5 minute 4 = 10 minute, 5 = 20 minute, HH:MM:SS = exact power off time
Set Brightness and Color Ratio	*	ST	F008	;d1;d2#	• d1 = Brightness (01~99) • d2 =Color Ratio (01~99)
Set Totalization of Platform #1 & #2	*	ST	F009	;d1#	0 = Off (disable) 1 = On (Enable)
Set Filter Strength & AD Conversion Speed	*	ST	F010	;d1;d2#	• d1= Filter (1~9 for Filter 1~9) • d2 = AD Conversion Speed (015/030/060/120)

Command Definition	Command Format				Parameter Description
	Start String	Command Code (Note A)		Parameter & End String	
Set Auto Tare Function	*	ST	F012	;d1#	M = Off, A = Auto, 00 ~ 99 = Continuous tare (in term of 1/10 second)
Set Repetitive Tare Function	*	ST	F013	;d1#	0 = Off, 1 = On
Set Buzzer	*	ST	F014	;d1;d2;d3#	• d1 = Keyboard Buzzer (0 = Off, 1 = On) • d2 = System Buzzer (0 = Off, 1 = On) • d3 = Non-Resettable Memory Buzzer (0 = Off, 1 = On)
Set Result Buzzer & Action on Negative Value	*	ST	F015	;d1;d2#	• d1 = Check Buzzer (0 = Off, 1 = IN, 2 = Out, 3 = Hi, 4 = Lo) • d2 = Action on Negative Value (0 = Off, 1 = On)
Set Keyboard Lock	*	ST	F020	;d1#	0 = Off, 1 = On
Set Near Zero Value	*	S1 or S2	F026	;d1#	Maximum 8 digits including decimal (if any)
Set Ask for Operator Number when Power On	*	ST	F028	;d1#	0 = No, 1 = Yes
Set Allow Letters and Symbols for Customer & Product Code Manual Entry	*	ST	F030	;d1#	0 = No, 1 = Yes
Set PF/Set Key Assignment	*	ST	F031	;d1#	0 = Set, 1 = Platform
Set External Input Assignment	*	ST	F032	;d1;d2;d3#	• d1= Int 1 (0~5) • d2 = Int 2 (0~5) • d3 = Int 3 (0~5) 0 = Zero, 1 = Tare, 2 = PF/Set; 3 = Print/M+, 4 = MR, 5 = Clear
Set Report Output Comport	*	ST	F033	;d1#	0 = UART 0, 1 = UART 1, 2 = UART 2, 3 = UART 3
Set Average Piece Weight before Power Off	*	ST	F035	;d1#	0 = Off, 1 = On
Set Customer Code and Description	*	ST	CCDE	;d1;d2#	• d1 = Customer Code. Maximum 18 characteristics. Asterisk (*), number sign (#) and semi colon not

Command Definition	Command Format				Parameter Description
	Start String	Command Code (Note A)		Parameter & End String	
					accepted. Blank = Nothing • d2 = Customer description. Maximum 30 characteristics. Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing
Set Product Code and Description	*	ST	PCDE	;d1;d2#	• d1 = Product Code. Maximum 18 characteristics. Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing • d2 = Product description. Maximum 30 characteristics. Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing
Set Weight Check Limits	*	S1 or S2	CHKW	;d1;d2#	• d1= Lo limit. Maximum 6 digit plus decimal (if any). • d2 = Hi limit. Maximum 6 digit plus decimal (if any).
Set Quantity Check Limits	*	S1 or S2	CHKQ	;d1;d2#	• d1= Lo limit. Maximum 6 digit. Decimal not accepted. Blank = nothing • d2 = Hi limit. Maximum 6 digit. Decimal not accepted. Blank = nothing
Set Pre-set Tare Value **(Note B)**	*	S1 or S2	PSTA	;d1#	Maximum 6 digit plus decimal (if any).
Set @WT	*	ST	AVGW	;d1#	Maximum 6 digit plus decimal (if any). Blank = 0
Set Expiry Duration	*	ST	EXPY	;d1#	4 digits. 0000 = today, 9999 = 9999 days plus today

Note A:

- S1 = command to set parameter for PF#1.
- S2 = command to set parameter for PF#2.
- ST = command to set parameter for #PA.

Note B: If old preset tare value already exists in memory, 2 command strings are necessary:

a. 1st command string to clear this old preset tare value first.

2nd command string to set new preset tare value.

Appendix N: - Management Report Output Commands

N.1 Report Output Commands Table

Command Definition	Command Format				Parameter Description
	Start String	Command Code		Parameter & End String	
Output all data in alibi memory.	*	EX	RPTA	;d1;d2;d3;d4#	Search Criteria • d1 = Operator Code 0000~9999. Blank = all. • d2 = C Code. 1~18 digit Customer Code. Blank = all. • d3 = P Code. 1~18 digit Product Code. Blank = all. • d4 = Check Result. LO = Below; OK = Accept; HI = Above; NG = LO or HI. Blank = all.
Output data of today in alibi memory.	*	EX	RPTD	;d1;d2;d3;d4#	
Output data of current month in alibi memory.	*	EX	RPTM	;d1;d2;d3;d4#	
Output data of specific period in alibi memory.	*	EX	RPTP	;d1;d2;d3;d4;d5;d6 #	Search Criteria • d1 = Data starting date. 6 digit according F4 setting. • d2 = Data ending date. 6 digit according F4 setting • d3 = Operator Code 0000~9999. Blank = all. • d4 = C Code. 1~18 digit Customer Code. Blank = all. • d5 = P Code. 1~18 digit Product Code. Blank = all. • d6 = Check Result. LO = Below; OK = Accept; HI = Above; NG = LO or HI. Blank = all.
Output data for a specific system sequence range in Alibi memory. (**See Appendix N.2**)	*	EX	RPTR	;d1;d2#	• d1 = Starting number of the system sequence (range: 0 to 131071). • d2 = Ending number of the system sequence (range: 0 to 131071). Note: The search criteria function is disabled under this command. All content within the data range will be outputted.
Output the last data in Alibi memory. (**See Appendix N.2**)	*	EX	RPTL	#	**Note:** The search criteria function is disabled under this command. All content within the data range will be outputted.

N.2 Relationship between ABSN (Alibi Memory Address Number) and ABNR (Alibi Record Number)

N.2.1 About Alibi Memory Address Number (ABSN)

- ABSN is the actual physical address of a transaction record in the Alibi memory.
- The ABSN ranges from 0 to 131,071. After reaching 131,071, it resets to 0 and starts counting again.

N.2.2 About Alibi Record Number (ABNR)

- ABNR is a unique number assigned to a transaction record.
- The ABNR ranges from 0 to 99,999,999. After reaching 99,999,999, it resets to 0 and begins counting again.

N.2.3 Cycle Relationship:

Assuming both the ABSN and ABNR start at 0, when the ABNR surpasses 131,071, it indicates that the Alibi Memory Address Number (ABSN) has completed one full cycle. Each additional cycle of the ABSN is represented by a corresponding increase in the ABNR value beyond 131,071.

N.2.4 Example Scenario

Assuming both the ABSN and ABNR start at 0:

- From 0 to 131,071, the values of ABSN and ABNR are identical.
- After 131,071, the ABSN resets to 0, but the ABNR continues to increase. This means that from this point forward, the ABNR will always be higher than the ABSN.

Detailed Example

- Assume both the ABSN and ABNR start from 0.
- When ABNR is 800,000:
  1. Each complete cycle of ABSN is 131,072 (0 to 131,071).
  2. Determine how many full cycles have been completed:
     - Divide ABNR by the cycle length of ABSN: 800,000/131,072 = 6 full cycles, with a remainder.
  3. Calculate the remainder to find the current ABSN value:
     - 800,000−(6×131,072) = 800,000−786,432=13,568.

Result:

- When ABNR = 800,000, the corresponding ABSN = 13,568.
- This indicates that the ABSN has completed 6 full cycles and is currently at 13,568 in the 7th cycle

Appendix O: System Parameter Reading Commands

System parameter reading command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Refer to below table for content of output. A semi colon is inserted between parameters.

Command Description Table

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code		End String		
Read Internal AD value	*	R1 or R2	F001	#	d1	8 digits AD value
Read Capacity, Division & Default Weight Unit	*	R1 or R2	F003	#	d1;d2	• d1 = Capacity x Division of MAX1 • d2 = Capacity x Division of MAX2 (if set)
Read Date Format, Value and Output Settings	*	RD	F004	#	d1:d2;d3	• d1 = Date Format (0 = DD-MM-YY, 1 = YY-MM-DD, 2 = MM-DD-YY) • d2 = 8-digit date value as per above setting (AA-BB-CC) • d3 = Date Output Format (0 = Normal Format, 1 = Week Format)
Read Time	*	RD	F005	#	d1	8-digit time value (HH:MM:SS)
Read Auto Power Off	*	RD	F007	#	d1	0 = Off, 1 = 1 minute, 2 = 3 minute, 3 = 5 minute, 4 = 10 minute, 5 = 20 minute, HH:MM:SS =

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code		End String		
						exact power off time
Read Brightness and Color Ratio	*	RD	F008	#	d1;d2	• d1 = Brightness (01~99) • d2 =Color Ratio (01~99)
Read Totalization of Platform #1 & #2	*	RD	F009	#	d1	0 = Off (disable) 1 = On (Enable)
Read Filter Strength & AD Conversion Speed	*	RD	F010	#	d1;d2	• d1= Filter (1~9 for Filter 1~9) • d2 = AD Conversion Speed (015/030/060/120)
Read Auto Tare Function	*	RD	F012	#	d1	M = Off, A = Auto, 00 ~ 99 = Continuous tare (in term of 1/10 second)
Read Repetitive Tare Function	*	RD	F013	#	d1	0 = Off, 1 = On
Read Buzzer	*	RD	F014	#	d1;d2;d3	• d1 = Keyboard Buzzer (0 = Off, 1 = On) • d2 = System Buzzer (0 = Off, 1 = On) • d3 = Non-Resettable Memory Buzzer (0 = Off, 1 = On)
Read Result Buzzer & Action on Negative Value	*	RD	F015	#	d1;d2	• d1 = Check Buzzer (0 = Off, 1 = IN, 2 = Out, 3 = Hi, 4 = Lo) • d2 = System Buzzer (0 = Off, 1 = On)
Read Keyboard Lock	*	RD	F020	#	d1	0 = Off, 1 = On
Read Near Zero Value	*	R0 or R1 or R2	F026	#	d1	Maximum 8 digits including decimal (if any)
Read Ask for Operator Number when Power On	*	RD	F028	#	d1	0 = No, 1 = Yes

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code		End String		
Read Calibration & Parameter Counts and Pointer Value	*	RD	F029	#	d1;d2;d3	• d1= Calibration Count • d2 = Parameter Set Count • d3 = Pointer Value
Read Allow Letters and Symbols for Customer & Product Code Manual Entry	*	RD	F030	#	d1	0 = No, 1 = Yes
Read PF/Set Key Assignment	*	RD	F031	#	d1	0 = Set, 1 = Platform
Read External Input Assignment	*	RD	F032	#	d1;d2;d3	• d1= Int 1 (0~5) • d2 = Int 2 (0~5) • d3 = Int 3 (0~5) 0 = Zero, 1 = Tare, 2 = Mode; 3 = Print/M+, 4 = MR, 5 = Clear
Read Report Output Comport	*	RD	F033	#	d1	0 = UART 0, 1 = UART 1, 2 = UART 2, 3 = UART 3
Read Average Piece Weight before Power Off	*	RD	F035	#	d1	0 = Off, 1 = On

Note C:

- R1 = command to read parameter for PF#1.
- R2 = command to read parameter for PF#2.
- RD = command to read parameter which is common for both PF#1 and PF#2.

Appendix P: Operation Entry Reading Commands

Operation entry reading command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Command Description Table

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code		End String		
Read Customer Code	*	RD	CCDE	#	d1	1~18-digit Customer Code. Blank = nothing
Read Customer Code Description	*	RD	CCDD	#	d1	1~24 Customer Code Adscription. Blank = nothing
Read Product Code	*	RD	PCDE	#	d1	1~18-digit Product Code. Blank = nothing
Read Product Code Description	*	RD	PCDD	#	d1	1~24 Product Code Description. Blank = nothing
Read Machine ID	*	RD	MCID	#	d1	2-digit Machine ID Number. Blank = nothing
Read Machine Group	*	RD	MCGP	#	d1	2-digit Machine Group Number. Blank = nothing
Read Operator No.	*	RD	OPER	#	d1	4-digit Operator Number. Blank = nothing
Read @WT	*	RD	AVGW	#	d1	Maximum 9 digit including decimal.

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code		End String		
Read @WT unit	*	RD	AVGU	#	d1	(space)g = gram, lb = 1/1000 lb
Read Date Value	*	RD	DATE	#	d1	8-digit date value
Read Expiry Duration	*	RD	F036	#	d1	0 ~ 9999 (Day)
Read Time Value	*	RD	TIME	#	d1	8-digit time value
Read Week Value	*	RD	WEEK	#	d1	6-digit time value
Read Expiry Date	*	RD	EXPY	#	d1	8 digits. Format as per F4 setting
Read @WT in 6-digit format and without decimal	*	RD	avgw6	#	d1	6 digits without decimal
Read Last Alibi Record Number (ABNR) Saved *Do not use this parameter if Alibi memory function is not activated.*		RD	ABNR	#	d1	Maximum 8 digits

Appendix Q: Operation Result Reading Commands

Operation result reading command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Command Description Table

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code (Note D)		End String		
Read Current Tare Weight	*	R0 or R1 or R2 or RA	CWTA	#	d1	8 digits including decimal
Read Current Gross Weight	*	R0 or R1 or R2 or RA	CWGS	#	d1	8 digits including decimal (if any)
Read Current Net Weight	*	R0 or R1 or R2 or RA	CWNT	#	d1	8 digits including decimal (if any)
Read Weight Unit of Current Net, Tare and Gross Weight	*	R0 or R1 or R2 or RA	CWUN	#	d1	8 digits including decimal (if any)
Read Qty Value	*	R0 or R1 or R2 or RA	CQTY	#	d1	8 digits
Read Low Limit	*	R0 or R1 or R2 or RA	CHKL	#	d1	8 digits including decimal (if any)
Read High Limit	*	R0 or R1 or R2 or RA	CHKH	#	d1	8 digits including decimal (if any)
Read Check Target	*	R0 or R1 or R2 or RA	CHKT	#	d1	kg = kilogram, (space)g = gram, pcs = quantity

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code (Note D)		End String		
Read Check Result	*	R0 or R1 or R2 or RA	CHKR	#	d1	Below/Accept/Above
Read Accumulated Gross Weight	*	R0 or R1 or R2 or RA	AWGS	#	d1	8 digits including decimal (if any)
Read Accumulated Tare Weight	*	R0 or R1 or R2 or RA	AWTA	#	d1	8 digits including decimal (if any)
Read Accumulated Net Weight	*	R0 or R1 or R2 or RA	AWNT	#	d1	8 digits including decimal (if any)
Read Weight Unit of Accumulated Net, Tare and Gross Weight	*	R0 or R1 or R2 or RA	AWUN	#	d1	8 digits including decimal (if any)
Read Accumulated Qty Value	*	R0 or R1 or R2 or RA	AQTY	#	d1	8 digits
Read Accumulation sequence No.	*	R0 or R1 or R2 or RA	ASEQ	#	d1	6 digits
Read Current Tare Weight in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	cwta6	#	d1	6 digits without decimal
Read Current Gross Weight in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	cwgs6	#	d1	6 digits without decimal
Read Current Net Weight in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	cwnt6	#	d1	6 digits without decimal
Read Qty Value in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	cqty6	#	d1	6 digits without decimal
Read Low Limit in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	chkl6	#	d1	6 digits without decimal
Read High Limit in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	chkh6	#	d1	6 digits without decimal

Command Definition	Command Format				Parameter Output	Parameter Description
	Start String	Command Code (Note D)		End String		
Read Accumulated Gross Weight in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	awgs6	#	d1	6 digit without decimal
Read Accumulated Tare Weight in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	awta6	#	d1	6 digit without decimal
Read Accumulated Net Weight in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	awnt6	#	d1	6 digit without decimal
Read Accumulated Qty Value in 6-digit format and without decimal	*	R0 or R1 or R2 or RA	aqty6	#	d1	6 digit without decimal
Read Accumulation sequence No	*	R0 or R1 or R2 or RA	aseq6	#	d1	6 digit without decimal

Note D:

- R0 = command to read entries and result of current platform in used.
- R1 = command to read entries and result of PF#1.
- R2= command to read entries and result of PF#2.
- RA = to read the totalized result of #PA.

Appendix R: Quick PLU Saving Commands

Quick PLU saving command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. Parameters listed on below table. Always insert semi colon (;) in front of each parameter, followed by
d. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Command Description Table

Command Definition	Command Format					Parameter Description
	Start String	Command Code (Note E)			Parameter & End String	
Save Preset Tare to Quick PLU	*	S1/S2	QP	PSTA	;d1;d2#	• d1 = Quick PLU number 0~9. • d2 = Maximum 6 digits plus decimal.
Save Unit Weight (in term of g) to Quick PLU	*	ST	QP	AVGW	;d1;d2#	• d1 = Quick PLU number 0~9 • d2 = Maximum 6 digits plus decimal.
Save Check WT Limits to Quick PLU	*	ST/S1/S2	QP	CHKW	;d1;d2;d3#	• d1 = Quick PLU number 0~9. • d2 = Low check limit. Maximum 6 digits plus decimal. • d3 = Hi check limit. Maximum 6 digits plus decimal.
Save Check QTY Limits to Quick PLU	*	ST/S1/S2	QP	CHKQ	;d1;d2;d3#	• d1 = Quick PLU number 0~9. • d2 = Low check limit. Maximum 6 digits. • d3 = Hi check limit. Maximum 6 digits.

Command Definition	Command Format					Parameter Description
	Start String	Command Code (Note E)			Parameter & End String	
Save Customer Code and Description to Quick PLU	*	ST	QP	CCDE	;d1;d2;d3#	• d1 = Quick PLU number 01 ~ 99 • d2 = Customer Code. 1~18-digit . Maximum 30 characteristics Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing. • d3 = Customer Description. Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing.
Save Product Code and Description to Quick PLU	*	ST	QP	PCDE	;d1;d2;d3#	• d1 = Quick PLU number 01 ~ 99 • d2 =Product Code. 1~18-digit Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing. • d3 = Product Description. Maximum 30 characteristics Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing.

Note E:

- S1 = command to set parameter to Quick PLU of PF#1.
- S2 = command to set parameter to Quick PLU of PF#2.
- ST = command to set parameter to Quick PLU which is common for both PF#1 and PF#2.

Appendix S - Quick PLU Reading Commands

Quick PLU reading command format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

Command Description Table

Command Definition	Command Format					Parameter Output	Parameter Description
	Start String	Command Code (Note F)			Parameter & End String		
Read Preset Tare from Quick PLU	*	R1/R2	QP	PSTA	;0~;9 or ;A (0~9 = PLU number. A = all)	d1	Maximum 8 digits plus decimal.
Read Unit Weight (in term of g) from Quick PLU	*	RD	QP	AVGW		d1	Maximum 8 digits plus decimal
Read Check WT Limits from Quick PLU	*	RD/R1/R2	QP	CHKW		d1;d2	• d1 = Low check limit. • d2 = Hi check limit.
Read Check QTY Limits from Quick PLU	*	RD/R1/R2	QP	CHKQ		d1;d2	• d1 = Low check limit. • d2 = Hi check limit.
Read Customer Code and Description from Quick PLU	*	RD	QP	CCDE	;01~;99 or ;A (01~99 = PLU number. A = all)	d1;d2	• d1 = Customer Code. Blank = Nothing. • d2 = Customer Description. Blank = Nothing.
Read Product Code and Description from Quick PLU	*	RD	QP	PCDE		d1;d2	• d1 =Product Code. Blank = Nothing. • d2 = Product Description. Blank = Nothing.

Remark: If parameter A is entered, instrument sends content by Quick PLU numeric sequence.

Note F:

- R1 = command to read content from Quick PLU of PF#1.
- R2 = command to read content from Quick PLU of PF#2.
- RD = command to read content from Quick PLU which is common for both PF#1 and PF#2.

Appendix T: Customized Operation Settings PLU Saving Commands

Customized operation settings PLU saving commands format as below:

a. Start String ***** “asterisk” (Hex code 02A), followed by
b. Command code as shown on below table (all commands are case sensitive), followed by
c. Parameters listed on below table. Always insert semi colon (;) in front of each parameter, followed by
d. End String **#** “number sign” (Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

T.1 Command Description Table

Start String	Command Code (Note G)		Parameter	End String
*	S1 or S2 or SA	LP	;d1;d2;d3;d4;d5;d6;d7;d8;d9;d10;d11;d12;d13	#

Note G:

- S1 = command to set parameter for PF#1.
- S2 = command to set parameter for PF#2 .
- SA = command to set parameter for #PA.

T.2 Parameter Description Table

Parameter #	Description	Parameter
d1	PLU #	01 ~ 99
d2	Customer Code	Maximum 18 characteristics Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing
d3	Customer Description	Maximum 30 characteristics Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing
d4	Product Code	Maximum 18 characteristics Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing
d5	Product Description	Maximum 30 characteristics Asterisk (*), number sign (#) and semi colon not accepted. Blank = Nothing
d6	Unit Weight In term of g for metric version In term of 1/1000 lb for lb version	Maximum 6 digit plus decimal. Blank = 0
d7	Low Check limit	When Check Target is = W: Maximum 6 digit plus decimal. Blank = 0 When Check Target is = Q: Maximum 6 digit. Blank = 0
d8	Hi Check limit	When Check Target is = W: Maximum 6 digit plus decimal. Blank = 0 When Check Target is = Q: Maximum 6 digit. Blank = 0
d9	Check Target	W = Weight Q = PCS Blank = PCS
d10	Auto Tare Type	M = Manual tare A = auto tare 00 ~ 99 = Continuous tare in term of 1/10 second

Parameter #	Description	Parameter
		Blank = current instrument setting.
d11	Preset Tare Value	Maximum 6 digit plus decimal (if any). Blank = 0. If Platform # is = PA; enter zero value here.
d12	Date Format	0 = Normal 1 = Week
d13	Expiry Duration	Maximum 4 digits (0 ~ 9999) 0 or blank = F4 value 1 ~ 9999 = No. of day plus F4 value

Appendix U: Customized Operation Settings PLU Reading Commands

Customized operation settings PLU reading commands format as below: -

a. Start String ***** “asterisk” (Hex code 02A), then followed by
b. Command string listed on below table, then followed by
c. Parameters listed on below table. Always insert semi colon (;) in front of each parameter, followed by
d. End String **#** “number sign” ((Hex code 23).

Notes:

- For RS485 communication, add @xx before start string.
- xx = machine ID number set in F18.

U.1 Command Description Table

Start String	Command Code (Note H)		Parameter & End String	Parameter Output
*	R1 or R2 or RA	LP	;01~;99 or ;A (01~99 = PLU number. A = all)	d1;d2;d3… ;d14

Remark: If parameter A is entered, instrument sends content of quick from PLU 01 to PLU 99 in numeric sequent.

Note H:

- R1 = command to read PLU content of PF#1.
- R2= command to read PLU content of PF#2.

RA = command to read PLU content of #PA.
Refer to below table for content of output. A semi colon is inserted between parameters.

U.2 Parameter Output Description Table

Parameter #	Parameter Output	Parameter Description
d1	Platform #	P1 = Platform #1 P2 = Platform #2 PA = Platform #1 + Platform #2
d2	PLU #	01 ~ 99
d3	Customer Code	1~18-digit (* or and # will not be accepted). Blank = Nothing

d4	Customer Description	Maximum 30 characteristics (* and # will not be accepted).
		Blank = Nothing

d5	Product Code	1~18-digit (* or and # will not be accepted). Blank = Nothing

d6	Product Description	Maximum 30 characteristics (* and # will not be accepted).
		Blank = Nothing

d7	Unit Weight (in term of g)	Maximum 8 digits including decimal. Blank = Nothing
d8	Low Check limit	Maximum 8 digits including decimal. Blank = Nothing
d9	Hi Check limit	Maximum 8 digits including decimal. Blank = Nothing
d10	Check Target	W = Weight Q = PCS
d11	Auto Tare Type	0 = Manual; 1 = Auto Tare; 2 = Continuous Tare
d12	Preset Tare Value	Maximum 8 digits including decimal. Blank = Nothing If Platform # is = PA; then enter zero value here.
d13	Date Format	0 = Normal; 1 = Week
d14	Expiry Duration	Maximum 4 digits (0 ~ 9999) 0 = F4 value; 1 ~ 9999 = No. of day plus F4 value