19eA & 19eS

Multi-Function Indicator

Operation Manual (Full Version)

PLEASE READ THIS MANUAL VERY CAREFULLY
BEFORE OPERATING THIS INSTRUMENT

Specifications subject to change without prior notice

V113 September 2021 Rev 1

Content

1. Reminders

1.1 Metrological Legislation

Because of metrological legislation, some metrological parameter settings are limited to be done by authorized personnel only. Do not attempt to change any parameters under internal function number F60 ~ F99. Contact your dealer for installation and technical assistance.

1.2 Seal & Serial Number

This instrument is legal for trade only when it is sealed (and/or stamped) and bearing a serial number. Do not attempt to break the seal (or stamp) or serial number affixed to this instrument. No warranty service will be provided if the seal (or stamp) or data plate affixed to this instrument is damaged or removed. Always contact your dealer for after sales service.

1.3 Warm Up Time

Allow warm up period of not less than 60 seconds before calibration and usage. The higher the setup resolution of the scale, the longer the warm up period is required. In most cases, 120 seconds is a safe warm up period for all applications. This warm up period is needed to energy all components to reach a stable status.

The internal count value is deemed stable when the internal AD count varies less than 3 counts within 2 seconds.

To read the internal AD count value, enter internal function F1. The internal AD count value of a not yet fully energized PCB will go up continuously.

1.4 Placing the Weighing Platform

In order to obtain an accurate weighing result, the weighing platform must be placed on a strong and level surface. Avoid using the platform and this instrument and the weighing platform in any environment where excessive wind flow, vibration and extreme temperature change exist.

1.5 Cautions

a. The instrument is not an explosion proof device.
b. The instrument is not a water proof device.
c. Do not open the instrument, no user serviceable parts inside. Always contact your dealer for service.

d. Do not place this instrument in where shock, excessive vibration or extremes of temperature (before or after installation) exist.

1.6 Support & Service

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

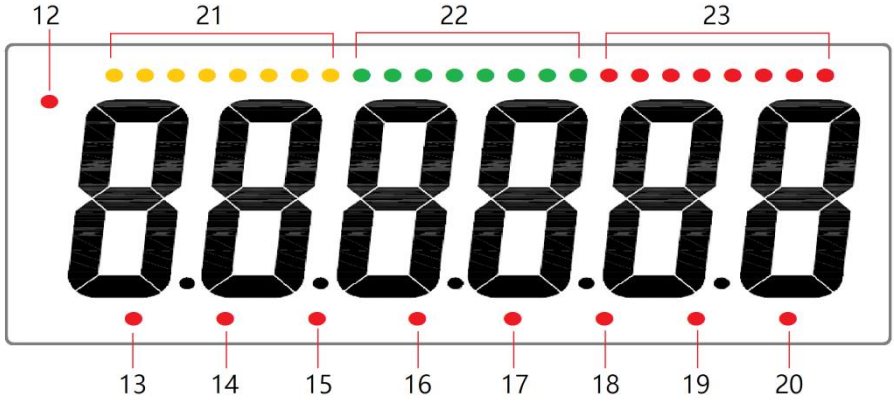
2. Specifications

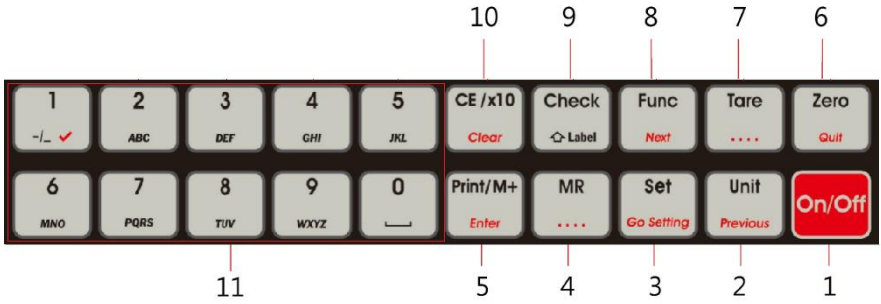
Capacity and Readability	Free Setting
Weighing Range	Single Range, Dual Range, Dual Interval
Load Cell Connection	• Excitation Voltage = 5V DC • Support both 4-wire & 6-wire Load Cells • Maximum Load Cell Connection = 12 x 350Ω Load Cells or 24 x 700Ω Load Cells
A/D Converter & & Internal Resolution	• 24 bit Low-Noise Delta to Sigma (Δ-Σ) • 4,000,000 Counts at 20 mV • Minimum input per d = 0.05μV
Max. Tare Range	-Max or -Max_1 (Subtractive Tare)
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
Operation Environment	-10 ~ 40°C. Non-condensed. R.H.≦ 85%

In the interest of improvement, specifications may change prior to notice

3. Keys, Display & Connection Points

3.1 Keys & Display Indicators





1. **On/Off Key**

Press this key to turn this instrument on or off.

2. **Unit Key**[1]

Press this key to shift among various weight units (if weight unit conversation is enabled).

1 Refer to F9 on how to enable/disable weight units.

3. **Set Key**

Press this key: -

- When in weighing mode: - to access internal function setting mode (F1~F32) or to prompt/introduce an operation parameter/value during piece count, auto tare accumulation and animal weighing mode.
- During power on countdown process: - to access internal function mode (F1~F99)[2].

4. **MR Key**

Press this key to recall total stored transactions.

5. **Print/M+ Key**

Press this key to send print data out and/or accumulate current value to memory[3].

6. **Zero Key**

Press this key to set weight displayed to zero when unloaded.

7. **Tare Key**

Press this key to tare off the weight of a container.

8. **Function Key**

Press this key to shift between weighing, piece count, auto tare accumulation, peak hold, animal weighing[4] and PCd mode.

9. **Check Function Key**

- When in operation mode: - Press this key to start check function and to enter value for LO and HI Limit.
- When in Setting Mode: - Quick access to label file settings[5].
- When in Customer & Product Code Entry Mode: - Shift between Upper and Lower case letter.

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2 F60~F99 requests password or jumper to access.

3 Refer to F16 and F17 settings for details.

4 Depends on F11 setting.

5 When LP50 or TSC is selected in F16 or F17

10. **CE/x10 Key**

Press this key to: -

- clear value entered during setting process, or
- trigger the extended display mode[6].

11. **Numeric Keys**

- During Setting Mode: - Numeric keys 0~9.
- When in Customer & Product Code Entry Mode: - Shift between numeric number or letter/symbol marked below the key.

12. **Charge Status Indicator**

- Red color: Recharging battery,
- Green color: Charging completed.

13. **Zero Indicator**

Visible when instrument is at zero status.

14. **Net Indicator**

Visible when net result is being displayed.

15. **Weight (kg) / Stable Indicator**

Visible when weight unit is = kg.

- Flashing = Weight unstable
- Lit on = Weight stable

16. **Weight (g) / Stable Indicator**

Visible when weight unit is = g.

- Flashing = Weight unstable
- Lit on = Weight stable

6 When F68 = OIML or NTEP.

17. **Weight (lb) / Stable Indicator**

Visible when weight unit is = lb.

- Flashing = Weight unstable
- Lit on = Weight stable

18. **Count Function Indicator**

Visible when instrument is in Piece Count mode.

- PCS Indicator only = Value being displayed is number of pieces.
- PCS Indicator + any Weight Indicator = Value being displayed is unit piece weight.

19. **M+ Indicator**

Visible when memory contains of accumulated data.

20. **Lo Battery Indicator**

- Flashing: - Battery level is low. Apply power adaptor to recharge battery as soon as possible.
- Lit on: - Battery level is at extreme low. Apply power adaptor to recharge battery immediately otherwise instrument will power off automatically shortly.

21. **LO Light Bar**[7]

Visible when check result is = LO.

22. **OK Light Bar**

Visible when check result is = OK.

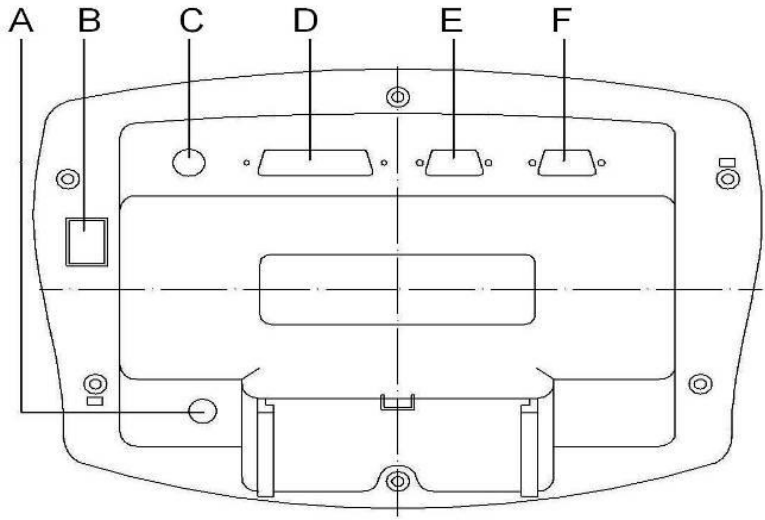
23. **HI Light Bar**

Visible when check result is = HI.

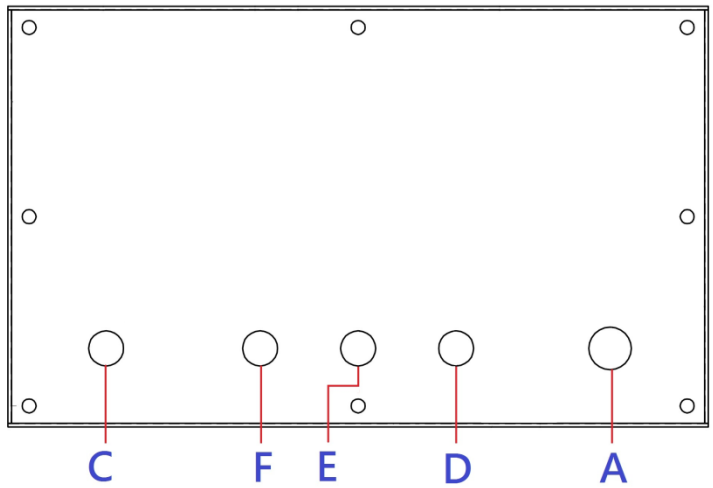
7 Light Bar is only visible when Check Function is employed.

3.2 Connection Points

19eA



19eS



A**. DC Jack Input for Indicator**
External power adaptor (DC9 ~ 12V) is plugged in here. Do not plug in any other power adaptor than the one which comes with this instrument.

B**. Reserved**

C. **Load Cell Connector (7-Pin)**

- 19eA: - Signal wires from load cell (or junction box) are connected here.
- 19eS: - Thread though signal cable from load cell (or junction box) here.

D**. Reserved**

E**. Comport 2**[8]

- 19eA: - Comport 2
- 19eS: - Thread through cable of Comport 2

F**. Comport 1**[9]

- 19eA: - Comport 1
- 19eS: - Thread through cable of Comport 1

4. Power & Connections

4.1 Power Adaptor

Always use the power adaptor supplied together with this instrument to avoid un-recoverable damages to this instrument.

4.2 Built-In Rechargeable Battery

Before first time use, recharge the built-in batter for at least 8 hours to ensure the best battery performance.

8 Settings of comport #2 is done through F17.

9 Settings of comport #1 is done through F16.

4.3 Connect[10] with Weighing Platform or Load Cell Junction Box

Connect this instrument with a weighing platform (load cell) through load cell connector located at the back according to the below pin assignment table.

Note: - If a 4-wire load cell or junction box is used, short-circuit pin 1&2 and pin 3&4. Otherwise, this instrument will not work.

4.3.1 Load cell connector pin assignment

Pin # on Load Cell Connector	Pin Assignment
1	Excitation +ve
2	Remote Sense +ve
3	Excitation -ve
4	Remote Sense -ve
5	Signal +ve
6	Signal -ve
7	Ground

4.4 Comports on Instrument

There are 2 built-in comports on this instrument. Both comports support bi-directional communication when set as PC and CMD modes. Refer to **5.5** for setting details.

4.5 Comports Pin Assignment

Refer to below table for pin assignment between this instrument and a computer or serial printer.

10 Turn this instrument off and unplug power adaptor before making any connection or disconnection.

Comport pin assignment on instrument

Comport 1 (male)	Comport 2 (female)
2 = RXD	2 = TXD
3 = TXD	3 = RXD
5 = GND	5 = GND
9 = DC 5V Output	Nil

Notes: -

- Comport 1 is assigned as DTE and has a male connector.
- Comport 2 is assigned as DCE and has a female connector.

5. Initial Setup

There are 2 groups of internal function: -

- Group #1: - F1~F32 are accessible without restriction.
- Group #2: - F60~F99 are restricted functions which request a password or hardware key to access. These functions are for dealer and authorized personnel only. Do not change any settings of these functions to avoid operation errors.

Below paragraphs describe those settings related to F1~F32.

5.1 Internal Functions & Settings

Application parameters can be checked and set through internal function. Set all preferred operation parameters according to **5.4.**

5.2 How to Enter & Select Internal Function[11]

Follow the below procedures for internal function setup: -

a. In weighing function, press **[Set]**.
b. Instrument displays F1 and is now in internal function mode.
c. Press **[Func]** and **[Unit]** to access the preferred internal function number.

11 Internal function mode can only be accessed when instrument is in weighing mode.

d. Quick access to a function number: -

- Press **[1]** to go to F10.
- Press **[2]** to go to F20.
- Press **[3]** to go to F30.
- Press **[6]** to go to F60 (for dealer and authorized personnel only).
- Press **[8]** to go to F80 (for dealer and authorized personnel only).
- Press **[9]** to go to F90 (for dealer and authorized personnel only).
- Press **[0]** to go to F1.

5.3 Key Function under Internal Function Mode

Key	Function in Setup & Calibration
[On/Off]	Quit without saving and power off
[Unit]	Go to previous page
[Set]	To enter internal function number F1~F32 during weighing mode
[Print/M+]	Enter, save and return
[Zero]	Quit without saving
[Tare]	Set F1 value being shown to zero and to display the net span gain of additional load applied
[Func]	Go to next page
[CE/x10]	Clear
[Check]	Quick access to label settings

5.4 Internal Function Table

Refer to the below tables for internal function number, parameter and setting notes.

No.	Description	Parameters / Note Default = **		
F1	Internal Analogue to Digital (ad) Value	**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.** • When ADC is more than 1 million, LO Light Bar will appear. Actual ADC is = 1 million plus the ADC value being displayed. • When ADC is more than 2 million, OK Light Bar will appear. Actual ADC is = 2 million plus the ADC value being displayed. • When ADC is more than 3 million, HI Light Bar will appear. Actual ADC is = 3 million plus the ADC value being displayed. **Press [Zero] to quit to F1.**		
F2	All Segment & Battery Voltage Check	**All display segments and capacity bars will be lit on. Check any segments or LED of bars are missing.** To check battery voltage, press **[Check]**.		
F3	Capacity, Division & Default Weight Unit	**Display basic metrology characteristics (capacity, division and weight unit). Value displayed = Max + 1e**		
F4	Date Format & Date	DD/MM/YY	**** YY/MM/DD**	MM/DD/YY
	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.			
F5	Time	HH/MM/SS		
	To change time, press [Print/M+], then enter a new value and press [Print/M+].			

F6	System Initialization (Set F7~F32) to Default)	**** NO**			YES				
	If YES is selected, press [1] when "SURE?" is displayed. Indicator shows Done when initialization is completed.								
F7	Auto Power Off Time (Minute)	OFF	1	3	**** 5**	10	20		
	Auto power off function will be disabled when an energized power adaptor is plugged in.								
F8	Brightness	1	2	3	**** 4**	5			
	1 = dimmest; 5 = brightest Press **[Func]** or **[Unit]** to change setting and then press **[Print/M+]**.								
F9	Weight Unit Enable / Disable	kg (**** On**/Off)			g (On/**** Off**)			lb (On/**** Off**)	
F10	Filter Strength	1	2	3	4	**** 5**	6	7	8	9
	Select: - • 1 (strongest filter) for bad working environment where vibration, wind flow… etc. affect stable reading, • 5 for normal environment, • 9 (least filter) for very good working environment where wind and vibration have no effect to stable reading. Press **[Zero]** to quit, or press **[Set]** to select conversion speed. 4 parameters are available. Press **[Func]** or **[Unit]** to select: - • ** 15 times per second • 30 times per second. Recommended maximum resolution = 30,000 division								

<table>
<tr><td></td><td colspan="6">• 60 times per second. Recommended maximum resolution = 15,000 division
• 120 times per second. Recommended maximum resolution = 7,500 division

Note: - After conversion speed is changed, instrument will automatic restart.</td></tr>
<tr><td>F11</td><td>Auxiliary Function</td><td colspan="5">• Cnt (Counting) On / ** Off
• AtM (Action Tare Memory) On / ** Off
• PEK (Peak) On / ** Off
• Ani (Animal) On / ** Off
• PCd (Quick Access to Customer & Product Code Setting) On / ** Off</td></tr>
<tr><td>F12</td><td>Auto Tare Function</td><td colspan="2">** OFF</td><td colspan="2">ON</td><td>Contin</td></tr>
<tr><td></td><td colspan="6">Notes: -
• Off = Auto Tare Function disable.
• On = Only the first table weight applied will be tare off. Minimum tare load ≥ 5d.
• Contin = All stable weight applied will be tare off. Minimum tare load ≥ 10d.
• If Contin is set, select also d.t. (delay time, 0.0 ~ 9.9 second. Default = 0.5 second). Delay time is the time duration from when a stable weight is detected until it is automatically tare off.
• Enter the preferred d.t. value through numeric keys and then press [Print/M+] to save.</td></tr>
<tr><td>F13</td><td>Repetitive Tare Function</td><td colspan="3">OFF</td><td colspan="2">** ON</td></tr>
<tr><td></td><td colspan="6">If F12 is set = Contin, Repetitive Tare setting “Off” will be surpassed.</td></tr>
<tr><td>F14</td><td>Buzzer</td><td colspan="3">Kb (keypad buzzer)
(**On/Off)</td><td colspan="2">St (System buzzer)
(**On/Off)</td></tr>
<tr><td>F15</td><td>Check Result</td><td>OFF</td><td>** IN</td><td>OUT</td><td>Hi</td><td>Lo</td></tr>
</table>

	Buzzer/Light Bar Format					

Setting procedures: -

1. Set Check Result Buzzer then press **[Print/M+]**.
2. Set Light Bar Format then press **[Print/M+]**.
3. Set Action on Negative Value.

Check Result Buzzer

- 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.

Light Bar Format

- Li Bar 0 = Light Bar off.
- **** Li Bar** 1 = Check Result Mode (Progress Mode).
- Li Bar 2 = Check Result Mode (Single Bar Mode).
- Li Bar 3 = Capacity Result Mode (Single Dot Mode).
- Li Bar 4 = Check Result Mode (Range Position Mode).

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.

F16	Set Comport 1	Off	Auto 1	Auto 2	Auto 3	Manual	**** PC**	Scanner
	Refer to F17 for details							
F17	Set Comport 2	Off	Auto 1	Auto 2	Auto 3	Manual	PC	****CMD**
	• Off = No data output. • 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 to printer or computer. • PC = Continuous output. • CMD = Command / information request mode and APP mode. • Scaner = Serial scanner only. **Notes: -** • Refer to operation manual for detailed setup information. • Restart instrument (by power off then power on again) after F16 and/or F17 setting is changed under normal operation status.							
F18	Machine ID and Group Number	Machine ID				Group		
	• Id = Machine ID number (0000~9999). Press **[CE/x10]** to skip or clear machine ID. • Gp = Group number (00~99). Press **[CE/x10]** to skip or clear machine group.							

F19	Manual Customer & Product Code Setting	H Code	M Code	L Code
	• Customer & Product code by keyboard accept both numeric numbers and alphabets. Maximum length = 18 digits. • Enter code starting from H code, then M code and finally L Code. Press **[Print/M+]** to confirm and end editing after last digit has been input. • Customer & Product code does not support print format 1 (Lab 1). • If a customer/product code has been entered, this code will be included in print format 2, 3, 4 and 5 (Lab 2 ~ Lab 5) automatically.			
F20	Keyboard Lock	**** OFF** (Disable)	ON (Enable)	
	When keyboard lock is = **ON**, only **[Zero]**, **[Tare]**, **[Set]** & **[On/Off]** key will be accessible during operation status.			
F21	Lab 2 Weight Function Output Print Format	**** STD**	CUSTOM	
F22	Lab 2 Counting Function Output Print Format	**** STD**	CUSTOM	
F23	Reserved.			
F24	Lab 2 Animal Functions Output Print Format	**** STD**	CUSTOM	
F25	Reserved.			
F26	Near Zero Weight Value	**** 000000**		
	Near Zero value is useful for dynamic weight check applications to bypass unnecessary LO alarm during uploading and unloading process. Notes: -			

<table>
<tr><td></td><td colspan="3">• 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>F27</td><td colspan="3">Reserved.</td></tr>
<tr><td>F28</td><td>Ask for Operator Number when Power on</td><td>Yes</td><td>** No</td></tr>
<tr><td></td><td colspan="3">• Yes: - Instrument will ask for operator number during countdown process when power on. Enter 4-digit operator number or press [CE/x10] to skip operator number when being asked.
• No: - Instrument will not ask for operation number.</td></tr>
<tr><td>F29</td><td colspan="3">Read Calibration and parameter set counts.
• O (Parameter set count): - shows total times that the important parameters (F80~F88) has been altered.
• C (Calibration count): - shows total times of calibration.</td></tr>
<tr><td>F30</td><td>Allow Letters and Symbols for Customer & Product Code Manual Entry</td><td>On</td><td>** Off</td></tr>
<tr><td>F31</td><td>Auto Power Saving</td><td>Off</td><td>** On</td></tr>
<tr><td></td><td colspan="3">• Off = Auto Power Saving disable.
• On = Display brightness will switch to minimum when weight remains unchanged for 30 seconds.</td></tr>
</table>

	Note: - Auto Power Saving will be disabled when an energized power adaptor is plugged in.	
F32	Optical Key Assignment	• **** Off (Key disable)** • **[Zero]** • **[Tare]** • **[Print / M+]**

5.5 Setting Comport 1 & Comport 2

2 comports are on this instrument. Following the below procedures to setup comports.

a. Go to F16 or F17.
   - F16 is used to configure Comport 1.
   - F17 is used to configure Comport 2.

b. Press **[Func]** or **[Unit]** to shift among parameters Off, PC, Scanner (Comport 1 only), CMD (Comport 2 only), Auto1, Auto 2, Auto 3 and Manual. **Notes: -**
   - Off = Comport disable. Select this when a particular comport is not used.
   - PC & CMD is data string related modes.
   - Auto 1, Auto 2, Auto 3 and Manual are print related modes.
   - All working modes (except Off, LP50, TSC and Sbarco) of Comport 1 accept scanner data input during operation.
   - All working modes (except Off, LP50, TSC and Sbarco) of Comport 2 accept and responses to System Parameter Inquiry and also System Parameter Setting commands during operation.
   - When both ports are set to data string related modes, **[Print/M+]** key is used as M+ (memory accumulation) and can only be activated when value is stable and ≥ 20d.
   - If both comports are set to print related mode (e.g. comport 1 is set to Auto 1, comport 2 is set to Auto 2) and at the same time Auto memory accumulation is selected by both modes, then Auto memory accumulation serves only comport 1.

c. Select the preferred output type parameters then press **[Print/M+]** to save.

d. At this point: -
   - If PC is selected, refer to **5.5.1** for setting details.
   - If CMD is selected, refer to **5.5.2** for setting details.
   - If Manual is selected, refer to **5.5.3** for setting details.
   - If Auto 1~3 is selected, refer to **5.5.4** for setting details.
   - If Scanner is selected, refer to **5.5.5** for setting details.

5.5.1 When comport is set as PC

1. Instrument displays baud rate. 9 parameters (1200~256000) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
2. Instrument displays Parity. 3 parameters (None, odd, even) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
3. Instrument displays Data length. 2 parameters (7, 8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
4. Instrument displays output protocol type. 9 predefined parameters (Prot 1~9) and one custom protocol are available (refer to **Appendix B1** and **B2** for details) Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
5. Instrument displays time interval (in second) between each output. 10 parameters (0, 0.5, 1, 1.5, 10, 30, 60, 90, 120, and 300) are available. 0 = continuous output. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
6. At this point, PC setup is completed.

5.5.2 When comport is set as CMD

1. Instrument displays baud rate. 9 parameters (1200~256000) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
2. Instrument displays Parity. 3 parameters (None, odd, even) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
3. Instrument displays Data length. 2 parameters (7, 8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
4. At this point, CMD setup is completed.

5.5.3 When comport is set as Manual

1. Instrument displays baud rate. 9 parameters (1200~256000) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
2. Instrument displays Parity. 3 parameters (None, odd, even) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
3. Instrument displays Data length. 2 parameters (7, 8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
4. Instrument displays Auto Accumulation. 2 parameters (on, off) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
   - On = when pressing **[Print/M+]** during normal operation, the instrument does print and M+ at the same time,
   - Off = when pressing **[Print/M+]** during normal operation, the instrument does print only.
5. Instrument displays Check Control. 2 parameters (on, off) are available. By default, print data will only be transmitted under all auto print modes. Press **[Print/M+]** to save.
   - 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 requirement is disable.
6. Instrument displays Stability control. 2 parameters (Yes, no) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
   - Yes = **[Print/M+]** (during normal operation) will only function when the weight is stable.
   - No = **[Print/M+]** (during normal operation) will always function disregarding the stable condition of the weight when **[Print/M+]** is pressed.
7. Instrument displays minimum output weight. 21 parameters (0d~20d) are available. Instrument will not generate any output if the actual weight is less than the minimum output weight selected here. Press

[Func] or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.

8. Instrument displays print format. 7 parameters (Lab 1, Lab 2, Lab 3, Lab 4, Lab 5, LP-50, TSC and Sbarco). Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
    - Lab 1 = Output in Landscape direction. If Lab 1 is selected, refer to **5.5.3.1** for other settings.
    - Lab 2 = Output in Portrait Direction. If Lab 2 is selected, refer to **5.5.3.2** for other settings.
    - Lab 3 = Database output mode.
    - Lab 4 = Journal output format with gross and net weight of each individual transaction. This format supports weighing, piece count and ATM mode only. Refer to **5.5.3.3** for other settings.
    - Lab 5 = Journal output format with time and net weight of each individual transaction. This format supports weighing, piece count and ATM mode only. Refer to **5.5.3.3** for other settings.
    - LP-50 = Output to LP-50 label printer. Refer to **5.5.3.4** for other settings.
    - TSC = Output to TSC label printer. Refer to **5.5.3.4** for other settings.
    - Sbarco = Output to Sbarco label printer. Refer to **5.5.3.4** for other settings.

5.5.3.1 Other settings if Lab 1 is selected

1. Instrument displays Line number. Line number is the number of lines in between which the report heading is repeated. Line number should be from 00~99. 00 means no header output. Input the desired line number then press **[Print/M+]** to save.
2. At this point, Lab 1 setup is completed.

5.5.3.2 Other settings if Lab 2 is selected

1. Instrument displays number of copy to generate each time. 8 parameters (1~8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+] t**o save.
2. At this point, Lab 2 setup is completed.

5.5.3.3 Other settings if Lab 4 / Lab 5 is selected

1. Instrument displays current statistic data output[12] (Sd) setting (On / Off). When Sd is set to On, the below statistical results will also be transmitted.
   - Max = Maximum Value
   - Min = Minimum Value
   - Diff = Differentiation (Max – Min)
   - X = Mean (Average)
   - Sd = Standard Deviation. Formula used: $S = \sqrt{\frac{\Sigma(X - \overline{X})^2}{N}}$
   - Srel = Relative Standard Deviation
2. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+] t**o save.
3. At this point, Lab 4 / Lab 5 setup is completed.

5.5.3.4 Other settings if LP-50 / TSC / Sbarco is selected

1. Instrument displays number of copy to generate each time. 8 parameters (1~8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
2. Instrument displays label file number (FL1 01 ~ FL1 99) to print in label format group 1. Press **[Func]** or **[Unit]** until the preferred label file number appears then press **[Print/M+]** to save.
3. Instrument displays label file number (FL2 01 ~ FL2 99) to print in label format group 2. Press **[Func]** or **[Unit]** until the preferred label file number appears then press **[Print/M+]** to save.
4. At this point, LP-50 / TSC / Sbarco setup is completed.

5.5.4 When comport is set as Auto (Auto 1~3)

1. Instrument displays baud rate. 9 parameters (1200~256000) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
2. Instrument displays Parity. 3 parameters (None, odd, even) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears

12 Statistic data output calculates weight data only extra statistic data will be output if Sd is set to On.

then press **[Print/M+]** to save.

3. Instrument displays Data length. 2 parameters (7, 8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
4. Instrument displays Auto Accumulation. 2 parameters (on, off) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
   - On = Auto memory accumulation enable. Instrument will accumulate the printed value to memory.
   - Off = Auto memory accumulation disable.
5. Instrument displays Check Control. 2 parameters (on, off) are available. By default, print data will only be transmitted under all auto print modes. Press **[Print/M+]** to save.
   - 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 requirement is disable.
6. Instrument displays Stability control. 2 parameters (Yes, no) are available. ***By default, only stable value will be transmitted under all auto print modes***. Press **[Print/M+]** to save.
7. Instrument displays minimum output weight. 21 parameters (0d~20d) are available. ***By default, only stable value which is ≥20d under all auto print modes***. Press **[Print/M+]** to save.
8. Instrument displays print format. 7 parameters (Lab 1, Lab 2, Lab 3, Lab 4, Lab 5, LP-50, TSC and Sbarco). Instrument will not generate any output if the actual weight is less than the parameter weight selected. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
   - Lab 1 = Output in Landscape direction. If Lab 1 is selected, refer to **5.5.3.1** for other settings.
   - Lab 2 = Output in Portrait Direction. If Lab 2 is selected, refer to **5.5.3.2** for other settings.
   - Lab 3 = Database output mode.
   - Lab 4 = Journal output format with gross and net weight of each individual transaction. This format supports weighing, piece count

and ATM mode only.

- Lab 5 = Journal output format with time and net weight of each individual transaction. This format supports weighing, piece count and ATM mode only.
- LP-50/TSC/Sbarco = Output to LP-50 / TSC / Sbarco label printer. If LP-50/TSC/Sbarco is selected, refer to **5.5.3.4** for other settings.

9. At this point, Auto (Auto 1~3) setup is completed.

5.5.5 When Comport 1 is set as Scanner

1. Instrument displays baud rate. 9 parameters (1200~256000) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then **[Print/M+]** to save.
2. Instrument displays Parity. 3 parameters (None, odd, even) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
3. Instrument displays Data length. 2 parameters (7, 8) are available. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
4. At this point, scanner setup is completed.

5.6 Optical Key

An optical key is located on the display panel. Refer to the marking for exact location of this key. The vertical detection distance is about 2.5cm.

According to F32 setting, this optical key can be disabled or assigned to simulate as one of the **[Zero]**, **[Tare]** or **[Print/M+]**. To disable optical key, select **Off** in F32.

6. Basic Operations

6.1 Power On, Inputting Operator Number & Power Off

- To power on press and hold **[On/Off]** for 0.5 second.
- To power off press and hold **[On/Off]**.

After powered on, instrument will display: -

a. Software number.
b. Software revision.
c. All display segments.
d. Calibration count value.
e. Parameter set count value.
f. Battery voltage.
g. Capacity & division set (in the format of Max plus 1 division).
h. 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]** then **[Print/M+]** to skip operator number when oP appears.
i. At this point, instrument is in weighing mode and is ready for operation.

6.2 Warm Up Time & set Weight to Zero when Unloaded

It is important to allow the instrument enough warm up time. This is especially important when this instrument is running at high resolution (e.g. 6000d or higher) application. Refer to **1.3** for details.

If zero result is not obtained when unloaded, press **[Zero]** to set weight displayed to zero.

6.3 Keyboard Lock

When keyboard lock is enabled, only **[On/Off]**, **[Zero]**, **[Tare]** and **[Set]** key can function. Refer to F20 on **5.4** for keyboard lock settings.

6.4 Tare Modes

Tare function is used to cancel the weight of a box or a container in order to get the net weight result. Various tare modes are available. Refer to below paragraphs for details.

6.4.1 Manual Tare[13]

1. Remove all loads from platform.
2. Make sure that the **Zero Indicator** is on. If not, press **[Zero]**.
3. Place container on platform.
4. Press **[Tare]**.
5. Weight displayed will become zero and **Net Indicator** appears to indicator tare is in effect and weight being displayed is net weight.
6. To cancel tare effect, remove all loads from platform and press **[Tare]**.
7. **Net Indicator** disappears.

6.4.2 Auto Tare (F12) [14]

3 parameters are available: - Off, Auto and Contin

- Off: - Auto tare disable.
- 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.
- Contin (continuous auto tare): - all stable weight (≥ 20d or $20d_1$) applied will be tare 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 = 0.5 second**).
- Delay time is the time duration from when a stable weight is detected until it is automatically tare off.

---

13 Maximum tare (subtractive) = -Max for single range mode and dual weighing range/interval mode.

14 Set F12 = ON to enable Auto Tare Function.

- Enter the preferred d.t. value through numeric keys and then press **[Print/M+]** to save.

6.4.3 Repetitive Tare (F13)[15]

When F13 is set to OFF, this instrument does not permit multiple tare operation. Tare effect can only be cancelled when container is removed and gross weight is zero.

When F13 is set to ON, this instrument will permit multiple tare operation provided that **both** of the below requirements are met: -

a. The tare operation does not permit a reduction of the value of the tare, and
b. The tare effect can only be cancelled when there is no load on the platform.

6.4.4 Preset Tare (F63)[16][17]

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

During weighing mode and when weight is zero, press **[0]**, then 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 displays is net weight.

15 Set F13 = ON to enable Repeated Tare Function.

16 Set F63 = ON to enable Preset Tare Function. Some countries may not consider preset tare function as a legal for trade function. Contact your dealer for more information.

17 Set also F12 to Off.

To cancel preset tare effect: -

- Remove all loads from platform then press **[Tare],** or
- Enter a zero preset tare value then press **[Set]**.

Notes: -

- The pre-determined tare weight entered will be rounded to the nearest division of the instrument. This does not affect the accuracy of the subsequent weighing and operation.
- Manual tare is possible when Repetitive Tare (F13) is set to ON.

6.5 Select the Preferred Function Mode[18]

This instrument supports the below function modes. Abbreviation of each function mode is bracketed.

- Weighing (**Weigh**).
- Piece Count (**Count**).
- Action-Tare-Memory **(AtM)**.
- Peak Hold Function (**Peak**).
- Animal Weighing (**Ani**).
- Quick access to Customer & Product Code Setting (**PCd**).

Press **[Func]** until the abbreviation of the desired function mode appears then press **[Print/M+]** to enter.

The working mode employed before powering off will be employed again automatically when re-powered on.

6.6 Weight Units[19]

This instrument supports kg, g and lb. To shift among various weight units, press **[Unit]** to shift among various weight units.

18 Depends on F11 setting.

19 Depends on F9 setting.

6.6.1 Weight unit gram (g)

Disregarding to the setting of **F9**, weight unit gram (g) is available only when 3 or 4 decimal places (0.000 or 0.0000) is selected in F81. Contact your dealer for more information about this.

6.6.2 Select the preferred weight unit[20]

The desired weight units should enable in F9. Press **[Unit]** until the preferred weight unit appears.

6.7 Memory Accumulation[21]

There are 2 types of memory accumulation: -

a. Automatic accumulation mode, and
b. Manual Accumulation mode.

Maximum accumulation limit is = 8 digits (e.g. 99999999) plus decimal (if any). **Err 28** appears when maximum accumulation limit is exceeded.

6.7.1 Automatic Accumulation[22]

Automatically accumulation is activated when Auto Accumulation is set to **On** in Auto 1, Auto 2, Auto 3 or Manual mode is selected in F16 and/or F17.

Under the automatic accumulation mode, corresponding results will be accumulated automatically.

6.7.2 Manual Accumulation[23]

Manual Accumulation is activated when scanner, PC or CMD mode is selected for **both** F16 and/or F17.

Under the Manual Accumulation mode, press **[Print/M+]** to accumulate the current value to memory.

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20 Changing weight unit during operation will clear all accumulate weight data from memory.

21 Memory accumulation does not support Peak Mode.

22 Refer to **5.5.4** for setting details.

23 Refer to **5.5.3** for setting details.

6.7.3 When data is accumulated to memory[24] [25] [26]

1. When a result is accumulated to memory, this instrument displays "**n____x**". **M+ Indicator** appears to indicate that memory contains stored data. "x" means the total number of transactions accumulated to memory.
2. This instrument returns to normal display status after 2 seconds.

6.7.4 Memory recall and clearance

Accumulation data will be stored in memory and will not be erased by normal power off (by pressing the **[ON/Off]** key) process. But changing weight unit or to another working mode will automatically erase accumulation data stored.
Follow below procedures to recall and clear accumulation data.

1. Press **[MR]** to recall total accumulated weight.
2. Instrument flashes between "A____Y" (Y means the number of transactions accumulated) and total accumulated result.
3. At this point: -
   - Press **[Zero]** to quit, or
   - Press **[CE/x10]** to clear memory. After **[CE/x10]** is pressed, instrument display Clear and M+ Indicator disappears to indicate all no data is stored in memory.
4. Press **[MR]** to recall total accumulated weight**.**
5. Instrument flashes between "**A____Y"** (**Y** means the number of transactions accumulated) and total accumulated result.
6. At this point: -
   - Press **[Zero]** to quit, or
   - Press **[CE/x10]** to clear memory. After **[CE/x10]** is pressed, instrument display Clear and M+ Indicator disappears to indicate all no data is stored in memory.

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24 Memory Accumulation Function accumulated weight results only.

25 When F16 and F17 is set to mode Auto1~3, unstable result or result which is less than 20d (or $20d_1$ for dual weighing range/interval mode) will not be accumulated to memory.

26 All data stored will be erased when weight unit or working mode is changed.

6.8 Extended Display Mode[27]

When F68 is set to OIML or NTEP, by pressing **[CE/x10]** the weighing resolution will be temporary (for 5 seconds) changed to 10 times finer. Display keeps flashing when instrument is displaying the extended result.

6.9. Auto Power Off, Display Brightness

6.9.1 When powered by external power adaptor

Both auto power off function and auto power saving function will be automatically disabled.

6.9.2 When instrument is powered by rechargeable battery

When F31 is set to on, LED indications and light bars brightness will turn to minimum when weight remains stable / unchanged for 30 second.

6.10 Customer & Product Code

This instrument supports product and customer code entry. Both Product and Customer code accept numeric numbers, letters, symbols and any combination of these. Maximum code length = 18 digits. Refer to below table for code entry assignment.

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				

27 When F68 = OIML or NTEP.

Note: - When inputting upper case letters, OK Light Bar will appear.

6.10.1 Enter a customer & product code manually[28]

1. Go to customer/product code setting manual by either one of the below method.
   - If Quick Manual Code Entry function (PCd) in F11 is set to on: -
     - Press **[Func]** until C.P. Code appears then press **[Print/M+]**.
     - Press **[Func] or [Unit]** until the desired mode appears (select C Code to enter customer code or select P Code to enter product code), then press **[Print/M+]** to confirm.
   - If Quick Manual Code Entry function (PCd) in F11 is set to Off: -
     - Go to F19, then press **[Print/M+]**.
     - Press **[Func]** or **[Unit]** until the desired mode appears (C Code for customer code, P Code for product code), then press **[Print/M+]** to confirm.
2. 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.
3. 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.
4. 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.
5. Instrument displays **PLu=?**. At this point: -
   - Press the preferred PLU position (numeric key 0 ~ 9), then press **[Print/M+]** to save to that PLU position or
   - Press **[Print/M+]** to utilize the code immediately but without saving to PLU, or
   - Press **[Zero]** to quit.
6. To go to other internal function, press **[Unit]** or **[Func]** or press **[Zero]** to quite to operation status.

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28 If a customer/product code is less than 18 digits, press **[Print/M+]** to skip all blank digits displayed until instrument return to F19.

6.10.2 Enter a customer & product code by scanner[29]

Default scanner input target is product code. To change scanner input target, scan either one of the below barcodes, then scan a customer or product barcode.

6.10.3 Clear a customer & product code entered

To clear a customer/product code entered, press **[CE/x10]** for procedures **2**, **3** and **4** on paragraph **6.10.1**.

6.10.4 Print a customer & product code entered[30]

Once a customer/product code is entered, it will be printed automatically through the assigned comport. No other setting is required.

6.11 Quick Access PLU

10 each quick access PLUs are available for each of the below: -

a. Weight limits for each of the weight unit (g, kg and lb).
b. Quantity limit for Piece Count Mode.
c. Preset Tare value for each of the weight unit (g, kg and lb).

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29 Maximum = 18 digits.

30 Print format LAB 1 does not support customer/product code.

d. Customer Code.
e. Product Code.

6.11.1 Weight limits PLUs

6.11.1.1 Save weight limits to PLU

Follow the below steps to save Lo and Hi Limit for weight value.

1. Select desired operation mode and weight unit, then press **[Check]**.
2. Instrument displays Low followed by a 6-digital value. Enter the Lo weight limit through numeric keys then press **[Print/M+]**.
3. Instrument displays HIGH followed by a 6-digital value. Enter the Hi weight limit through numeric keys then press and hold **[Check]** for 2 seconds.
4. Instrument displays **Save =?**. At this point: -
   - Press the preferred PLU position (numeric key 0 ~ 9), then press **[Print/M+]** to save to that PLU position and utilize these limits immediately, or
   - Press **[Print/M+]** to utilize these limits immediately but without saving to PLU, or
   - Press **[Zero]** to quit.

6.11.1.2 Recall weight limits from PLU

Follow the below steps to recall Lo and Hi limits.

1. Select desired operation mode and weight unit, then press and hold **[Check]** for 2 seconds.
2. Instrument displays **CHK =?**. Press PLU position (numeric key 0 ~ 9) then press **[Print/M+]** to recall the Lo & Hi limits stored in that position.
3. Instrument displays Lo and Hi limits and these values are now effective.

6.11.1.3 Clear weight limits from PLU

Refer to **6.11.1.1**. Enter zero value for both Lo and Hi limits in step number 2 and 3. Then press the preferred PLU position to clear.

6.11.2 Quantity limits PLUs

6.11.2.1 Save quantity limits to PLU

Follow the below steps to save Lo and Hi limits for quantity.

1. Go to piece count mode under desired weight unit, then press **[Check]**.
2. Instrument displays Low followed by a 6-digital value. Enter the Lo quantity limit through numeric keys then press **[Print/M+]**.
3. Instrument displays HIGH followed by a 6-digital value. Enter the Hi quantity limit through numeric keys then press and hold **[Check]** for 2 seconds.
4. Instrument displays **Save =?**. At this point: -
   - Press the preferred PLU position (numeric key 0 ~ 9), then press **[Print/M+]** to save to that PLU position and utilize these limits immediately, or
   - Press **[Print/M+]** to utilize these limits immediately but without saving to PLU, or
   - Press **[Zero]** to quit.

6.11.2.2 Recall quantity limits from PLU

Follow the below steps to recall Lo and Hi limits.

1. Go to piece count mode under desired weight unit, then press and hold **[Check]** for 2 seconds.
2. Instrument displays **CHK =?**. Press PLU position (numeric key 0 ~ 9) then press **[Print/M+]** to recall the Lo & Hi limits stored in that position.
3. Instrument displays Lo and Hi limits and these values are now effective.

6.11.2.3 Clear quantity limits from PLU

Refer to **6.11.2.1**. Enter zero value for both Lo and Hi limits in step number **2** and **3**. Then press the preferred PLU position to clear.

6.11.3 Preset Tare PLUs

6.11.3.1 Save preset tare to PLU

Follow the below steps to save preset tare value.

1. Select desired operation mode and weight unit.
2. Enter preset tare value through numeric keys then press and hold **[Tare]**

for 2 seconds.

3. Instrument displays **Save =?**. At this point: -
   - Press the preferred PLU position (numeric key 0 ~ 9), then press **[Print/M+]** to save to that PLU position, or
   - Press **[Print/M+]** to utilize this preset tare immediately but without saving to PLU, or
   - Press **[Zero]** to quit.

6.11.3.2 Recall preset tare from PLU

Follow the below steps to recall preset tare value.

1. Select desired operation mode and weight unit, then press and hold **[Tare]** for 2 seconds.
2. Instrument displays **PT =?**. Press PLU position (numeric key 0 ~ 9) then press **[Print/M+]** to recall the preset tare value stored in that position.
3. Preset tare value stored is now effective.

6.11.3.3 Clear preset tare from PLU

Refer to **6.11.3.1**. Enter zero value in step number **2**. Then press the preferred PLU position to clear.

6.11.4 Customer / product code PLUs

6.11.4.1 Save customer/product code to PLU

Refer to **6.10.1** for procedures to save a customer/product code to PLU.

6.11.4.2 Recall a customer / product code from PLU

Follow the below steps to recall a customer/product code from PLU.

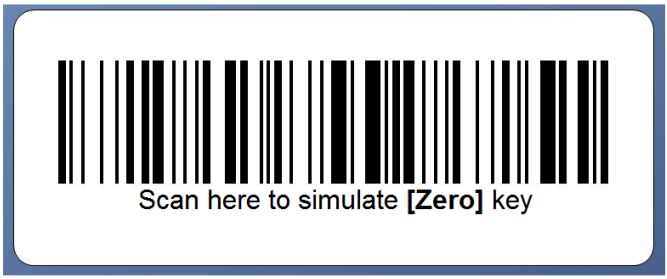
1. Select desired operation mode and weight unit, then press and hold the PLU position (numeric key 0 ~ 9) then press **[Print/M+]** to recall the product or customer code stored in that position.
2. Press **[Func]** or **[Unit]** until the desired mode appears (select C Code for customer code or select P Code for product code), then press **[Print/M+]** to confirm.
3. Code stored is now effective.

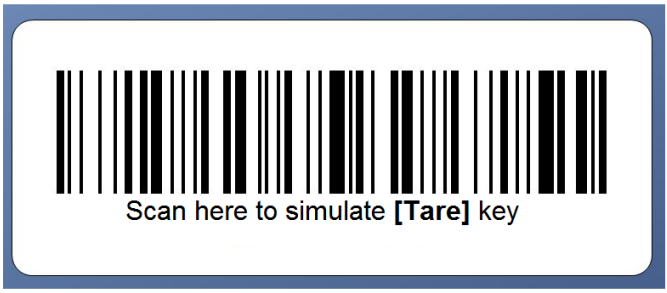
6.11.4.3 Clear customer / product code from PLU

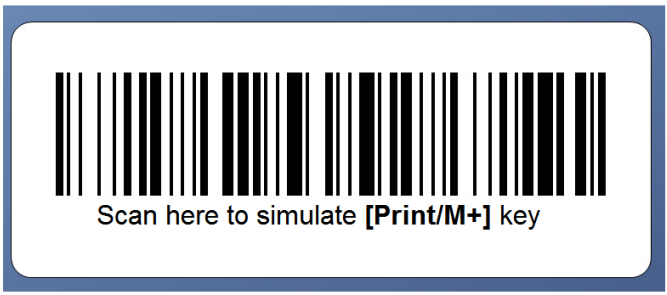
Refer to **6.10.1** and enter blank value for all H, M and L codes in step numbers **2**, **3** and **4**. Then press the preferred PLU position to clear.

6.12 Enter a Key Command by Scanner

Simply scan one of the below barcodes to simulate pressing the **[Zero]**, **[Tare]** and **[Print/M+]** on keyboard.







7. Weighing Mode

1. Refer to **6.6** on how to select the desired weight unit.
2. If zero weight cannot be obtained when unloaded, press **[Zero]**. After **[Zero]** is pressed, the **Zero Indicator** will appear[31].
3. Always place an object onto platform gently. Excessive force / shock applied to platform may cause un-recoverable damage to the weight sensor inside platform.
4. The weight of the object is displayed automatically.
5. It is a good practice to remove all loads from platform after weighing. It will prolong the life of the weight sensor.

8. Piece Count Mode

a. Refer to **6.6** on how to select the desired weight unit.
b. If a container is used, place it onto the platform and press **[Tare]**.
c. Apply samples with the known quantity (sample size) on platform.
d. Press **[Set]** then input the sample quantity through numeric keys then press **[Print/M+]**.
e. This instrument will calculate, store the average piece weight and confirm with 2 beeps. The quantity is then displayed.
f. Add to or remove from the platform, the corresponding quantity will be displayed automatically.
g. To count different articles, press **[Set]** and repeat procedures listed above.

8.1 Auto Unit Piece Weight Enhancement Function

In order to obtain the best counting result and minimize sampling error, this instrument is equipped with Auto Unit Piece Weight Enhancement Function.

This function will automatically be employed when Unit piece weight is determined by actual sample method.

31 Maximum weight value can be zero depends on F65 setting. Contact your dealer for detail.

Auto Unit Piece Weight Enhancement Function is built-in the Piece Count mode. This function starts automatically when all of the below are met: -

a. Unit piece weight is determined by actual sampling method.
b. The quantity **added** to platter is more than 5 pieces but less than current quantity on scale.
c. The total quantity on scale is less than 10000 pieces.

When all the above requirements are met, a new unit piece weight will be calculated and stored in memory and confirmed by a "beep" sound.

8.2 Shift among Quantity, Average Piece Weight and Weight Info

a. Press **[Unit]** to shift among quantity, average piece weight and weight info.
b. Quantity Display format = numeric numbers & PCS (e.g1000 PCS). Average piece weight display format = numeric numbers & weight unit &/PCS (e.g. 499.960g/PCS).
c. Weight display format (when Piece Count Function is in effect) = numeric numbers & weight unit & PCS (e.g. 500 kg PCS).

8.3 Recall the Average Piece Weight before Powered Off

Press **[Set]**, then **[MR]** to recall the last average piece weight before instrument was powered off.

9. Action-Tare-Memory (ATM)

9.1 Description of ATM Mode

It means action, then tare, then memory: -

- Action = load or remove weight from weighing platform.
- Tare = the above weight added on or removed from will be tare off automatically.
- Memory = the above weight will be added to or deducted (in case of removal) from accumulated memory.

9.2 Basic ATM Settings

a. Refer to **6.6** on how to select the desired weight unit.
b. Enter ATM mode.
c. Press **[Set]** to select Auto Accumulation target then press **[Print/M+]**.
   - Gross = Gross weight will be accumulated.
   - Net = Net weight will be accumulated.
d. Instrument prompts for delay time (second). Delay time is the time interval (00 ~ 99 seconds): -
   - Between a valid stable weight result is obtained and before it is tare off and accumulated to memory.
   - Display time of total accumulated weight result (after all loadings are removed) and before it is clear from print out memory.
e. Enter delay time through numeric keys then press **[Print/M+]** to enter.
f. At this point, ATM mode is ready for use.

9.3 Start using ATM[32]

a. Apply container on platform. Instrument will tare off the weight of the container.
b. Apply or removed load on or from platform. The weight result is displayed for the time interval set forth by above point 2. Then instrument will accumulate the weight result in memory then clear it from the display.
   Notes: -
   - Both positive and negative weight will be accumulated to memory.
   - Positive weight will be added to the accumulated memory.
   - Negative weight will be deducted from the accumulated memory.
c. Apply/remove another load on/from platform. The weight result is displayed for the time interval set forth by above point 2. Then instrument will accumulate the weight result in memory and clear it from the display.
d. Repeat point 3 until all weighing sequence is completed.
e. To recall current total accumulated weight, press **[MR]**.
f. At this point: -
   - Press **[Zero]** to quit, or

32 Weight changed less than 10d will not be processed.

- Press **[Print/M+]** to print the current accumulated weight.

g. When all loads are removed from weighing platform. Total accumulated weight value will then be erased automatically.

9.3.1 Weight Check Control for ATM

When weight Check Control is in effect, only weights within LO and HI limit will be tare off and accumulated.

9.3.1.1 Comport settings of weight Check Control for ATM when an external peripheral is connected to instrument.

1. Set F26 (near zero value) according to application requirement or 00000 to disable near zero value control. Refer to **13.1** for more information about F26 near zero function.
2. Refer to **5.5.4** on comport settings and set Check Control = On.
3. In ATM mode, refer to **12.1** to enter LO and HI limit.

9.3.1.2 Settings of weight Check Control for ATM when no external peripheral is connected to instrument.

1. Set both Comport 1 and Comport 2 to Off on F16 and F17.
2. Set F26 (near zero value) according to application requirement or 00000 to disable near zero value control. Refer to **13.1** for more information about F26 near zero function.
3. At this point, ATM comport setup is completed for this mode.

10. Peak Hold Mode[33]

10.1 Description of Peak Hold Mode

Under this mode, the instrument will display and hold the highest load/force detected. This mode can be used for tension (positive) or compression (negative) tests, all peak results are treated as absolute values.

33 Peak hold mode does not support memory accumulation, weight unit conversation or weight check function.

10.2 Comport Settings for Peak Hold Mode[34]

Refer to **5.5** on comport settings. Output type parameters Auto 1 ~ 3 are **not** suggested. If a printer is used, set the connected comport to Manual and the other comport to any data string related modes.

During comport setting procedures, following the below recommendation for parameters selection.

a. Baud rate setting. If an external peripheral is used, always use the highest available baud rate of it. The highest baud rate this instrument can support is 256000. Baud rate of the peripheral has to be set accordingly.
b. Parity setting: -
   - Set according to the external peripheral connected.
   - Select any if there is no external peripheral is connected.
c. Data length setting: -
   - Set according to the external peripheral connected.
   - Select any if there is no external peripheral is connected.
d. Auto Accumulation setting: - Select any. Instrument will deem No as default value for this mode.
e. Check Control setting: - Select Off.
f. Stability control setting: - Select any. Instrument will deem No as default value for this mode.
g. Minimum output setting: - Select any. Instrument will deem 0d as default value for this mode.
h. Print format setting: - Set according to the external peripheral connected.

At this point, comport setup is completed for this mode.

10.3 Start Using Peak Hold

a. Refer to **6.6** on how to select the desired weight unit.
b. Refer to **6.5** on how to enter Peak Hold mode.

---

34 Set both Comport 1 and Comport 2 to Off if no external peripheral is connected to this instrument.

c. Complete all necessary test setup. If mounting/support accessories are used, apply all of them.
d. Press **[Tare]** to cancel the effect of any extra loads.
e. Start measuring process, the peak value detected will be held and flashing.
f. To print the peak value, press **[Print/M+]**.
g. To display actual current value (e.g. after a tension force has been decreased), press **[CE/x10]**.

11. Animal Weighing Mode[35]

11.1 Description of Animal Weighing Mode

Animal weighing mode is used to weigh live animals.

11.2 Basic Animal Weighing Settings

a. Refer to **6.6** on how to select the desired weight unit.
b. Enter Animal Weighing mode.
c. Press **[Set]** to select the preferred filter speed by pressing **[Func]** or **[Unit]** key, 5 filter speed are available from (FLt 1 ~ FLt 5).
   - FLt 1 = Fast (Weight value is based on least number sampling data, accuracy will be lowest).
   - FLt 3 = Normal (Displayed average weight is calculated based on the last 8 internal readings).
   - FLt 5 = Slow (Weight value is based on most number of sampling data, accuracy will be highest).
d. Press **[Print/M+]** to save and set weight release variation value.
e. Press **[Func] or [Unit]** key to select the preferred weight release variation value. 10 parameters are available from Off to 20): -
   - rE oFF = auto release disabled.
   - rE 2 = auto release when weight varies ≥2% of rate capacity or W1 for dual weighing range/interval mode).

35 Animal Weighing function will not operate when weight is less than 20d (or $20d_1$ for dual weighing range/interval).

- …….
- rE 20 = auto release when weight varies ≥20% of rate capacity (or W_1 for dual weighing range/interval mode).

f. Press **[Print/M+]** to save.

g. Instrument is now ready for animal weighing application.

11.3 Start using Animal Weighing

a. Get an animal on platform.

b. This instrument will calculate the weight of an animal. The result obtained will be flashing.

c. In case more animals have to be weight in the same transaction, then get other animals on platform. An updated weight will be calculated and displayed[36] as above step **b**.

d. To update the weight reading manually, press **[CE/x10]**.

12. Static Check Function[37] [38] [39] [40] [41]

This function is used to compare current weight result with the preset LO and HI Limit. The comparison results (LO, OK, HI) will then be displayed on the Light Bars with or without buzzer[42]. Targets of Check mode are: -

- Weighing mode = weight value.
- Piece Count mode = piece value.
- Auto Tare Accumulation mode = weight value.

---

36 Provide that extra weight added/removed fulfills the weight release variation value listed on point 5 of **11.2.**

37 Check mode will not operate when weight is less than 20d (or $20d_1$ for dual weighing range/interval mode).

38 Set also F15 for desired Check buzzer output, light bar working mode and action on negative value

39 When F25 = Mode 1, set also F26 (Near Zero weight value).

40 Check mode does not support peak hold or animal weighing mode.

41 Set F26 to zero.

42 Set F15 for preferred buzzer output configuration.

12.1 Set LO & HI Limit

Follow the below steps to set LO and HI Limit.

a. During desired operation mode, press **[Check]**.

b. Instrument displays Low followed by a 6-digital value. Enter the LO limit through numeric keys or press **[CE/x10]** to set LO limit to zero then press **[Print/M+]** to save.

c. Instrument displays HIGH followed by a 6-digital value. Enter the HI limit through numeric keys or press **[CE/x10]** to set LO limit to zero then press **[Print/M+]** to save.

d. Check Mode is now enabled. The check result is shown by one of the Light Bar[43].

12.2 Hints for Entering LO and HI Limits

a. For normal comparison, set both LO and HI Limit.

b. To check only if result is lower than or equal to LO (result ≤ LO), set HI Limit = 0.

c. To check only if result is higher than or equal to HI (result ≥ HI), set LO Limit = 0.

d. To check if result is equal to a specified value, set both HI Limit and LO Limit = the specified value.

12.3 To Cancel Check Function

To cancel check function, press **[CE/x10]** on point **b** and **c** of **12.1**.

12.4 Tri-color Check Result Light Bar

This instrument is equipped with a tri-color light bar. The tri-colors are: -

- Yellow to represent LO status.
- Green to represent OK status.
- Red to represent HI status.

43 Yellow = Lo; Green = OK; Red = Hi.

12.4.1 Setting Light Bar working mode[44]

5 light bar working modes are available: -

- Li Bar 0 = Light Bar off.
- Li Bar 1 = Progress Mode. Under this mode, light bar starts from zero and all the way to current position.
- Li Bar 2 =Single Bar Mode. Under this mode, light bar shows only the current result by lighting up all 8 x LEDs of respective check result.
- Li Bar 3 = Single Dot Mode. Under this mode, light bar shows only the current result by lighting up a single LED dot of respective check result. Position of the dot depends on actual result.
- Li Bar 4 = Range Position Mode. Under this mode, light bar shows only the current result by lighting up one or several LED dot of respective check result. Number of dots depends on the actual result.

12.4.2 Light Bar action when result is negative

2 options are available: -

- Off = Light bar will be disable when result is negative.
- On = Light bar will treat all results as positive and react upon.

13. Dynamic Check Mode[45]

Check function mode also supports dynamic applications which within the below specifications listed.

a. Maximum belt speed: - 30 meter per minute.
b. Maximum accuracy: - 3000d.
c. Maximum speed: - 30 pack per minutes.

44 Light Bar is only visible when Check Function is employed.

45 Set preferred near zero weight value in F26. By default, system will ignore any near zero which is less than 20d. If it is the case, system will deem 20d as near zero weight value.

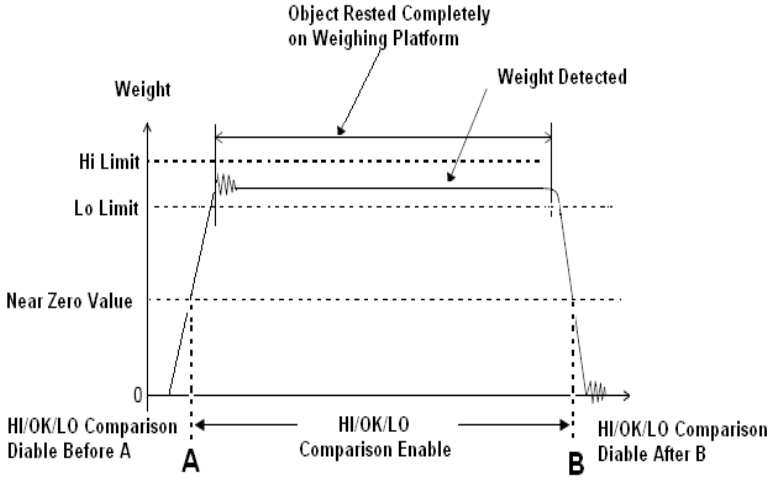
This instrument supports near zero function. Enter near zero value in F26. It is recommended that this value is = 70% of the target weight value. Refer to **13.1** for details.

13.1 Near Zero Function Description

Near zero value is very useful for dynamic and conveyor weighing applications. It is used to avoid false LO signal output when load is approaching and leaving the weighing platform.

HI/OK/LO comparison will only start when weight reading exceeds the preset near zero value. Refer to below diagram for more illustration.

13.2 Near Zero Value Illustration Diagram



After Hi, Lo limits and near zero value have been entered, this instrument is ready for dynamic checking.

14. Communication & Outputs[46]

14.1 Print Output & Formats

If Manual is selected in F16 and/or F17, refer to **5.5.3.1** (Lab 1), **5.5.3.2** (Lab 2) and **5.5.3.4** (LP-50 / TSC / Sbarco) for details.

14.2 Auto 1~3 Output & Formats

If Auto 1~3 is selected in F16 and/or F17, refer to **5.5.4** for details.

14.3 PC Output & Protocol

If PC is selected in F16 and/or F17, then select also the preferred output protocol.

14.3.1 Predefined output protocols

9 predefined output protocols (Prot 1~9) are available. If PC is selected in F16 and/or F17, refer to **Appendix B1** for protocol details.

14.3.2 Custom output Protocol

Refer to **Appendix B2** for details about custom output protocol format and setting procedures.

14.4 Sending Keyboard Commands from Computer

When Comport 2 is assigned as CMD, keyboard commands can be sent by an external device to this instrument. Refer to **Appendix A** for details.

14.5 Requesting Operation Results & System Parameters by Computer

To obtain operation results and system parameters by computer, set F17 to CMD.

- Refer to **Appendix C** for details to obtain operation results.
- Refer to **Appendix D** for details to obtain system parameters.

46 Instrument should be re-started (by power off then power on again) after F16 and/or F17 setting is changed under normal operation status.

14.6 PC Software (Rathohan 19e-II End User Program)

A PC software is built to work with this instrument. This software enables users to preform: -

- Real Time Operation Status Monitoring
- Operation Parameters Setting
- Real Time Process Monitoring
- Individual and Totalized Record Storage
- Database File Output

Click / visit the below link to down this software and operation manual of it.

www.fi-measurement.com/resource/driversnsoftwares

Before using this software, read carefully the Software License Agreement of using this software. Do not use it if you do not agree with all terms and conditions listed on the License Agreement. It is assumed that by using this software, user agrees with all content of the License Agreement.

14.7 iOS and Android Apps

iOS and Android Apps are available to work with this instrument. They can be download at: -

- iOS App is named **i19**. Visit App Store and search for i19 or Fidelity Measurement.
- Android App is named **a19**. Visit Google Play and search for a19.

These 2 Apps support both Bluetooth and WIFI connection.

14.7.1 Connecting Transmission Devices to Instrument

1. Transmission devices for App (Bluetooth / WIFI / LAN) should be connected to Comport 2.
2. Then go to F17 and select CMD, then select baud rate, parity and data length. Baud rate, parity and data length settings should be the same as the setting of the transmission devices. Baud rate 115200 or higher is recommended.

14.7.2 Running App on a Smart Device

1. Download App from App Store or Google Play. Refer to **14.7** for more information.
2. Power on instrument and transmission device.
3. Start running App on Smart device.

- For connection via WIFI, select WiFi Connection on App screen, then enter IP and Port number of the transmission device connected to instrument.
- For connection via Bluetooth, select Bluetooth on App screen, then select the Bluetooth transmission device connected to instrument.

15. Printing Formats

15.1 Lab 1 Print Format[47]

No header will be generated when line number is set = 00. See below tables for print format illustrations and explanations.

47 Lab 1 format does not support Customer or Produce Code.

15.1.1 Weighing, ATM & Animal Mode Illustration

Date	Time	Seq	Net	Tare	Gross	Total	Ref.	R
4/23/2020	14:14:55	1 W	5.000kg	0.000kg	5.000kg	5.000kg		L
4/23/2020	14:14:58	2 W	9.999kg	0.000kg	9.999kg	14.999kg		L
4/23/2020	14:15:00	3 W	14.993kg	0.000kg	14.993kg	29.992kg		A
4/23/2020	14:15:03	4 W	19.997kg	0.000kg	19.997kg	49.989kg		H

15.1.2 Piece Count Mode Illustration

Date	Time	Seq	Net		Tare	Gross	Total	Ref.	R
4/23/2020	14:17:01	1 C	100 P		0.000kg	5.002kg	5.002kg	50.005g	L
4/23/2020	14:17:04	2 C	200 P		0.000kg	10.000kg	15.002kg	50.005g	L
4/23/2020	14:17:06	3 C	300 P		0.000kg	14.994kg	29.996kg	50.005g	L
4/23/2020	14:17:09	4 C	400 P		0.000kg	19.998kg	49.994kg	50.005g	L

Explanations: -

- Date = Date of Output
- Time = Time of Output
  Seq = Accumulate Sequence No & Working Mode Type
  - W = Weighing, C = Piece count
- Net = Net Weight
- Tare = Tare Weight
- Gross = Gross Weight
- Total = Total Accumulated Weight
- Ref. = Unit weight
- Result = Check Result: -
  - A = Within Lo & Hi limit
  - L = Lower than Lo limit
  - H = Higher than Hi Limit

15.2 Standard Lab 2 Print Format[48]

Standard ticket/receipt printout of various function modes are described illustrated below.

15.2.1 Standard Lab 2 print format for Weighing & ATM mode

Refer to below diagram for printout content.

Time	21:39:17	*Time of Output*
Date	2020-03-28	*Date of Output*
Seq	1	*Accumulate Sequence No.*
Name	Customer Code	*Customer Code (if entered)*
Pcode	Product Code	*Product Code (if entered)*
Net	3.006kg	*Net Weight*
Tare	0.000kg	*Tare Weight*
Gross	3.006kg	*Gross Weight*
Total	3.006kg	*Total Accumulated Net Weight*
High	3.500kg	*Hi Limit (if entered)*
Low	2.500kg	*Lo Limit (If entered)*
Accept		*Check Result*

48 When Lab 2 is selected under in F16 and/or F17

15.2.2 Standard Lab 2 print format for Piece Count mode

Refer to below diagram for printout content.

Time	21:40:48	*Time of Output*
Date	2020-03-28	*Date of Output*
Seq	2	*Accumulate Sequence No.*
Name	Customer Code	*Customer Code (if entered)*
Pcode	Product Code	*Product Code (if entered)*
Net	5.000kg	*Net Weight*
Count	100pcs	*Count Value*
Total	20.000kg	*Tare Weight*
Total	400pcs	*Total Accumulated Count Value*
High	2500pcs	*Hi Limit (if entered)*
Low	1500pcs	*Lo Limit (If entered)*
Accept		*Check Result*

15.2.3 Standard Lab 2 print format for Peak Hold mode

Refer to below diagram for printout content.

```
Time   09:42:53
Date  2016-09-10
Name  ANDHFYROLSJFHEIOMC
Pcode 562188261631321879
Peak     14.760kg
```

Data Explanation

Time of Printout
Date of Printout
Customer Code (If entered)
Product Code (If entered)
Peak Value

15.2.4 Standard Lab 2 print format for Animal Weighing mode

Refer to below diagram for printout content.

Time	21:43:12	*Time of Output*
Date	2020-03-28	*Date of Output*
Seq	1	*Accumulate Sequence No.*
Name	Customer Code	*Customer Code (if entered)*
Pcode	Product Code	*Product Code (if entered)*
Hold.W	2.998kg	*Weight Held*
Total	2.998kg	*Total Accumulated Weight*

15.3 Customizing Lab 2 Print Format[49]

Custom printout is available for the below modes: -

- Weighing.
- Auto-Tare-Memory.
- Piece Count.
- Animal weighing.

19 variants + 2 commands (**Cr LF and End**) are available for custom print output format. Refer to the below **Print output format variants table** for more detail.

49 When Lab 2 is selected under in F16 and/or F17

15.3.1 Print output format variants table

Symbol	Description
End	Edit finished
Cr LF	Insert one blank row
dAtE	Date of printing
time	Time of print
nEt	Net weight
tArE	Tare weight
GroSS	Gross weight
Unit	Average piece weight
Count	Number of piece
H rEF	HI limit
L rEF	LO limit
Ani	Weight Hold (Animal weighing)
Ch rES	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
P Code	Product code
Peak	Peak hold value
Id	Machine ID
GrouP	Machine group number
oPCodE	Operator number
C CodE	Customer code

15.3.2 To edit custom Lab 2 print output format

Follow the below steps to create custom printout.

a. Go to internal function and select the desired function number to edit,
b. Select **CUSTOM** and press **[Print/M+]**,
c. This instrument displays **Line 1** and the last variant or command (see **15.3.1** for details) stored,
d. Press **[Print/M+]** to confirm or select other variant or command by press **[Func]** or **[Unit]**. Then press **[Print/M+]** to confirm and save,
e. This instrument displays **Line 2** and the last variant or command stored,
f. Repeat steps **d** and **e** for other lines,
g. To finish editing, select command **End**, then press **[Print/M+]** to confirm.
h. This instrument returns to and displays the current internal function number,
i. If required, repeat steps **a** to **h** to create and edit custom printout format for other modes.

15.4 Lab 3 Data Base Output Format[50]

Current working mode and all related data are sent under this mode. Refer to below table for data output format.

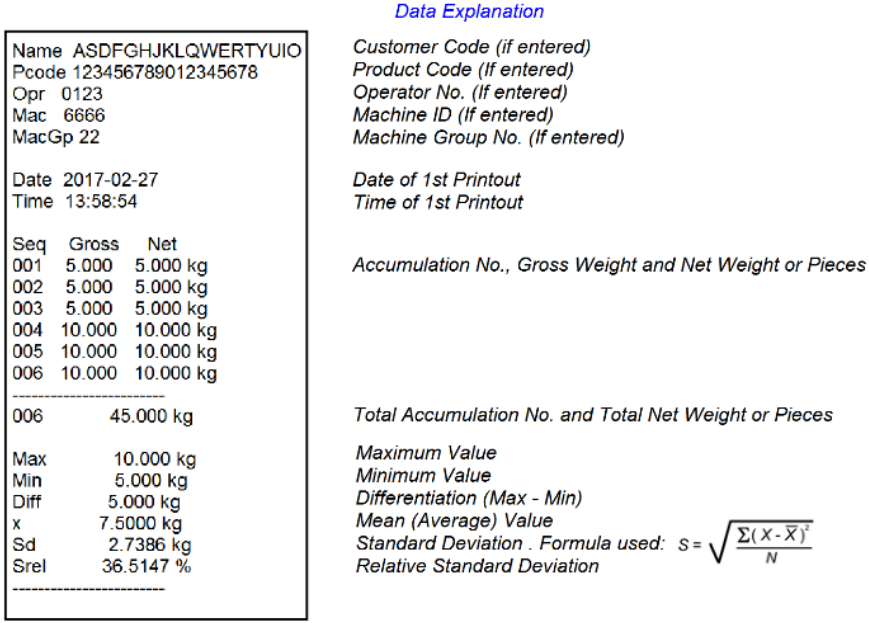
Function & Output	Weighing	Count	ATM	Peak Hold	Animal
Data 1	Opr	Opr	Opr	Opr	Opr
Data 2	Seq	Seq	Seq	(Blank)	Seq
Data 3	0	1	2	3	4
Data 4	Mac	Mac	Mac	Mac	Mac
Data 5	MacGp	MacGp	MacGp	MacGp	MacGp
Data 6	Date	Date	Date	Date	Date
Data 7	Time	Time	Time	Time	Time
Data 8	Name	Name	Name	Name	Name
Data 9	Pcode	Pcode	Pcode	Pcode	Pcode
Data 10	Gross	Gross	Gross	Tare	Gross
Data 11	Tare	Tare	Tare	Peak	Tare
Data 12	Net	Net	Net	Unit	Net
Data 13	Low	Total.W	Low	CR LF	Total.W
Data 14	High	Unit	High		Unit
Data 15	Result	Count	Result		CR LF
Data 16	Total.W	Unit.W	Total.W		
Data 17	Unit	Unit	Unit		
Data 18	CR LF	Low	CR LF		
Data 19		High			
Data 20		Result			
Data 21		Total.C			
Data 22		CR LF			

Note: - Semi colon is inserted between data.

50 When Lab 3 is selected under in F16 and/or F17

15.5 Lab 4 Print Format[51]

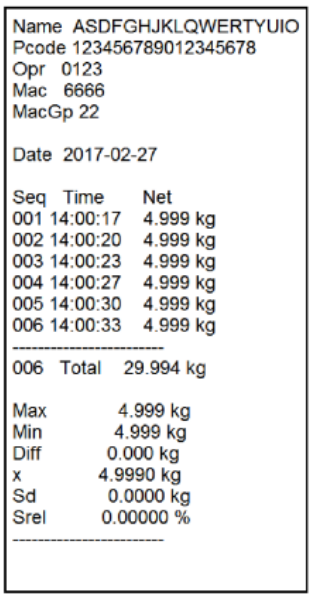
Transaction data is sent in journal output format with gross and net weight of each individual transaction. Refer to below diagram for details.



51 When Lab 4 is selected under in F16 and/or F17

15.6 Lab 5 Print Format[52]

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



Printout Format #5
with Statistic Results Ouput

Data Explanation

Customer Code (if entered)
Product Code (If entered)
Operator No. (If entered)
Machine ID (If entered)
Machine Group No. (If entered)

Date of 1st Printout

Accumulation No., Time of Printout and Net Weight or Pieces

Total Accumulation No. and Total Neyt Weight or Pieces

Maximum Value
Minimum Value
Differentiation (Max - Min)
Mean (Average) Value
Standard Deviation . Formula used: $S = \sqrt{\frac{\Sigma(X - \bar{X})^2}{N}}$
Relative Standard Deviation

52 When Lab 5 is selected under in F16 and/or F17

16. Label Printing

This instrument supports the below 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 according to F16 and/or F17 listed on **5.4.**
- Refer to **Appendix E** 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 F** for Sbarco Printer Installation, setup procedures and detail on how to create and upload label to Sbarco printer by BarDrawer software.

Cautions: -

1. Do not combine data of different working modes on the same label.
2. Do not print any labels of non-current working mode. This will retrieve wrong data of non-current working mode.
3. Print only label data when the same working mode is in operation.
4. Do not combine data of various working modes on same label. This will retrieve wrong data of non-current working mode.

16.1 Label Format Groups & Label File Names

2 label format groups are available, these are: -

- FL1 (label file group 1), and
- FL2 (label file group 2).

16.1.1 FL1 (Label Format Group 1)

FL1 (format group 1) is for current transaction data printing (during normal working status).

100 printout selections (00 ~ 99) are available in format group 1. In order to trigger the preferred label to be printed, label files stored in 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 printer.
- FL1 02: - Select this to print label file AA02 stored in printer.
- ….
- FL1 98: - Select this to print label file AA98 stored in printer.
- FL1 99: - Select this to print label file AA99 stored in printer.

16.1.2 FL2 (Label Format Group 2)

FL2 (format group 2) is for totalized (MR) data printing (during normal working status).

100 printout selections (00 ~ 99) are available in format group 2. In order to trigger the preferred label to be printed, label files stored in 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 printer.
- FL2 02: - Select this to print label file BB02 stored in printer.
- ….
- FL2 98: - Select this to print label file BB98 stored in printer.
- FL2 99: - Select this to print label file BB99 stored in printer.

16.2 Label Programming

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

Caution: - Do not combine information of different working mode on the same label.

16.2.1 Label programing information table

Prompt Command[53]		Description	Working Mode[54]	Suggested Length
LP50 & TSC	Sbarco			
K	4B	Date	All	10
L	4C	Time	All	8
f	66	Operator Number	All	4
d	64	Machine ID	All	4
e	65	Machine Group Number	All	2
Z	5A	Customer Code	All	18
b	62	Product Code	All	18
S	53	LO limit[55]	All	11

53 Prompt commands are case sensitive.

54 "All" means the information is good for all working modes.

55 Each working mode has its own Lo Limit format (weight for weighing mode& auto tare accumulation; pieces for piece count mode). If Hi Limit has to be printed, set Hi Limit value under the preferred working mode.

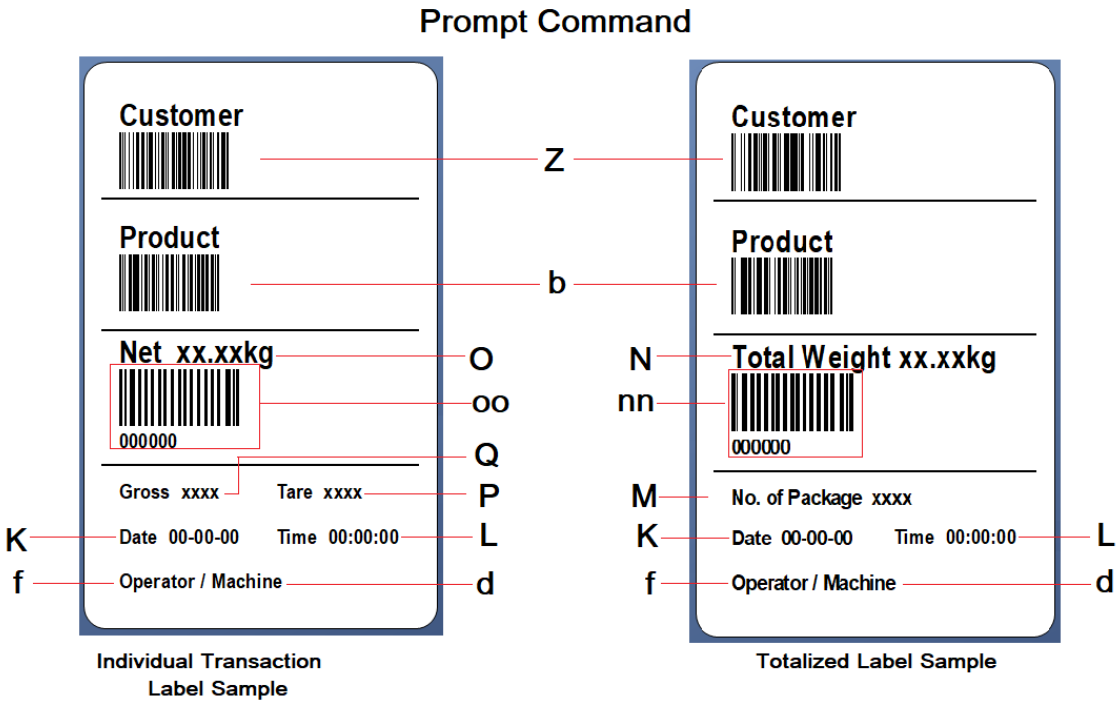
R	52	HI limit[56]	All	11
T	54	Comparison Result	All	11
Q	51	Gross weight	All	10
qq	71	Gross weight without unit or decimal	All	6
P	50	Tare weight	All	10
pp	70	Tare weight without unit or decimal	All	6
O	4F	Net weight	All	10
oo	6F	Net weight without unit or decimal	All	6
M	4D	No. of accumulated transaction (8 digits with leading space)	All	8
mm	6D	No. of accumulated transaction (6 digits with leading zero)	All	
N	4E	Total accumulated weight	All	6
nn	6E	Total accumulated weight without unit or decimal	All	
U	55	Number of piece	Piece Count	11
V	56	Average piece weight	Piece Count	6

56 Each working mode has its own Hi Limit format (weight for weighing & auto tare accumulation mode; pieces for piece count mode). If Hi Limit has to be printed, set Hi Limit value under the preferred working mode.

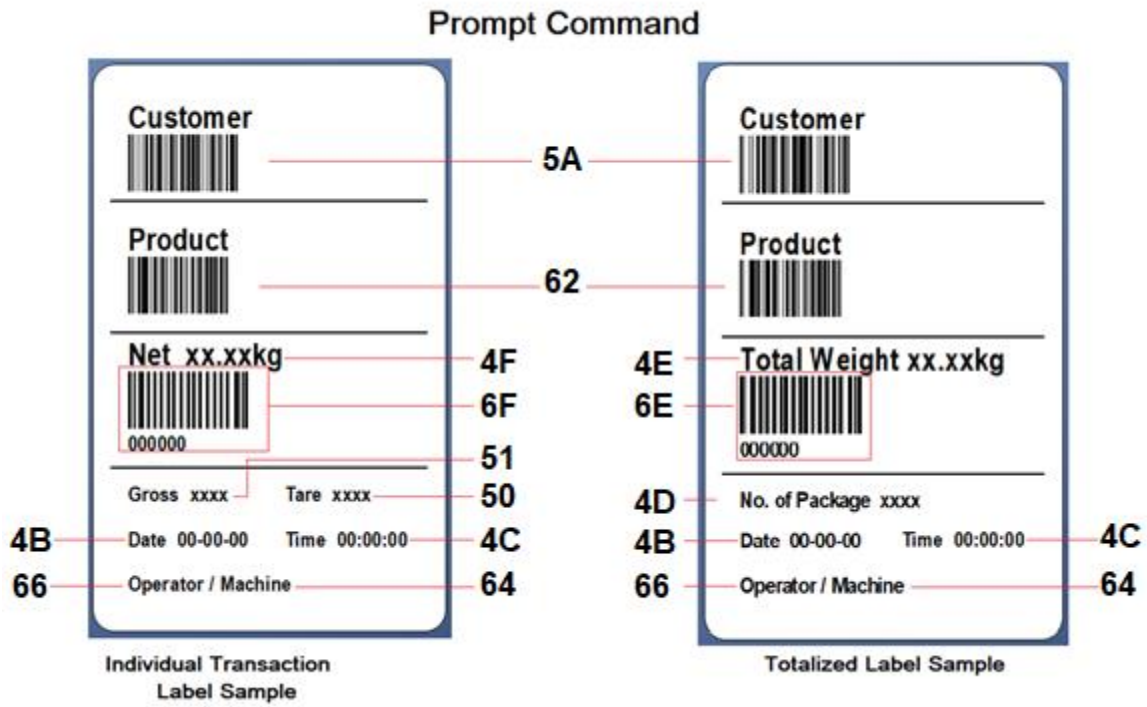
c	63	Total accumulated pieces	Piece count	11
Y	59	Weight hold	Animal Weighing	11
yy	79	Weight hold without unit or decimal	Animal Weighing	6
a	61	Peak Value	Peak	10

16.2.2 Label programming sample

16.2.2.1 Label Illustration for LP50 & TSC



16.2.2.2 Label Illustration for Sbarco



16.2.3 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

16.3 Quick Access to Label Settings

If label printer is selected either for Comport 1 or Comport 2, follow the below procedures to access quick label settings during operation.

a. Press **[Set]**.
b. Instrument displays F1.
c. Press **[Check]**, instrument displays number of copy to generate each time. Press **[Func]** or **[Unit]** until the preferred parameter appears then press **[Print/M+]** to save.
d. Instrument displays label file number (FL1 01 ~ FL1 99) to print in label format group 1. Press **[Func]** or **[Unit]** until the preferred label file number appears then press **[Print/M+]** to save.
e. Instrument displays label file number (FL2 01 ~ FL2 99) to print in label format group 2. Press **[Func]** or **[Unit]** until the preferred label file number appears then press **[Print/M+]** to save.
f. At this point, label settings are completed.

16.4 Repetitive Printout

This Instrument supports repetitive printout under Manual print mode. Press **[Print/M+]** for additional printout copies.

Conditions and criteria as below: -

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

17. Built-in Battery & Recharging

17.1 Battery Operation Time

Depends on the battery operation condition, a new and fully charged rechargeable battery can provide[57] 50~80 operation hours. The following setting helps increasing battery service time: -

- F8 Brightness: - the brighter the LED indicator, the shorter the battery service time.
- F31 Auto Power Saving: - always set this to On. This will help save power especially when the instrument is unattended.

Remaining battery power of the built-in rechargeable battery is displayed by the **Battery Power/Level Indicator.**

17.2 Symbols & Remaining Power

When **Lo Battery Indicator** appears, battery level is low. Apply power adaptor to recharge battery immediately otherwise instrument will power off automatically shortly.

- Flashing: - Battery level is low (less than 20%). Apply power adaptor to recharge battery as soon as possible.
- Lit on: - Battery level is at extreme low (less than 15%)

To protect the built-in rechargeable battery, this instrument will be powered off automatically when battery is at extremely low level. If this is the case, do not attempt to power this instrument on. Recharge this instrument immediately. Fail to do so may cause unrecoverable damages to the built-in rechargeable battery.

17.3 Battery Charging Status

Battery charging status is shown on the dual color **Charge Status Indicator**: -

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

57 When connect to one 350 ohm load cell.

18. Error Codes

Error Code No.	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 (5 minutes for OIML and NTEP mode)
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 is higher than HI limit (and HI is not = 0)
Err 10	(F25 Mode 3) Container weight is higher than tArE H
Err 11	(F25 Mode 3) Container weight is lower than tArE L
Err 12	(F25 Mode 3 and Mode 4) Actual weight is higher than SP3
Err 13	Exceed maximum power on (5 minutes for OIML and NTEP mode)
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, e1 > e2
Err 25	Span gain is too low
Err 26	Not able to obtain stable status for longer than 10 sec
Err 27	• Theoretical 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).
--oL--	Overload (Gross weight is more than Max plus 9d)
HALT	Major system error detected. Power off instrument and remove power adaptor immediately. Then check load cell connection and system power status.
UndEr	Negative Weight values 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

19. Daily Care & Maintenance

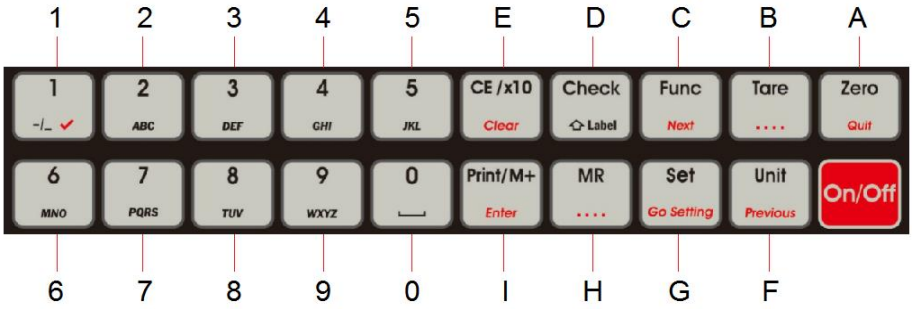
a. Clean the instrument with a soft, damp cloth. If necessary, use a mild detergent in water.
b. Do not use any harsh, abrasive material, acetone, volatile solvent, thinner or alcohol for cleaning.
c. Verify the accuracy of this instrument periodically. Re-calibrate if necessary. In some countries, calibration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

Appendix A: - Keyboard Commands[58]

Keyboard commands can be sent to this instrument from computer through any standard communication program to simulate keyboard entries.

To enable keyboard commands, connect the external peripheral which generates keyboard commands to Comport 2 and set Comport 2 to CMD. Keyboard Command format as below: -

a. Hex code 0D (CR), then
b. Hex code 0A (LF) then
c. Letter shown on below illustration diagram, then
d. Space (Hex code 20).



58 Keyboard commands are case sensitive.

Data Code	Description
,	Comma
+,-	Polarity Sign Positive = space. Negative = minus (-)
P	Polarity Sign Positive = 0. Negative = minus (-)
C	Control command • ETX : End of Text • STX : Start of Text • CF : Carriage Return • LF : Line Feed • SOH : Start of Heading • = : ASCII equal sign (DEC 61, HEX 3D)
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.

Weight

Protocol 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	s	s	,	G/N		+,-	w	w	w	w	w	w	w	,	u	u	c	c
1.000kg	S	T	,	G	S				1	.	0	0	0	,	k	g	CR	LF
-0.012kg	S	T	,	G	S	-			0	.	0	1	2	,	k	g	CR	LF
220.450lb	S	T	,	G	S		2	2	0	.	4	5	0	,	l	b	CR	LF

Protocol 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
	c	SWA	SWB	SP	Field 1 (Net Weight)						Field 2 (Tare Weight)						CR	
Net	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Tare Value
-0.015kg	STX	5	7		0	0	0	0	1	5	0	0	2	0	0	0	CR	2.000kg
220.450lb	STX	5	!		2	2	0	4	5	0	1	0	0	0	0	0	CR	100.000lb

Protocol 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	c	c	SP	+,-	w	w	w	w	w	w	w	SP	u	u	SP	SP	SP	SP	c	c
1.000kg	SOH	STX					1	.	0	0	0		k	g					CR	LF
-0.015kg	SOH	STX		-			0	.	0	1	5		k	g					CR	LF
220.450lb	SOH	STX			2	2	0	.	4	5	0		l	b					CR	LF

Protocol 4

	1	2	3	4	5	6	7	8	9
	c	r	r	r	r	r	r	r	p
1.000kg	=	0	0	0	.	1			0
-0.015kg	=	5	1	0	.	0			-
220.450lb	=	0	5	4	.	0	2	2	0

Protocol 5

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	s	s	,	G/N		,	+,-	w	w	w	w	w	w	w	u	u	c	c
1.000kg	S	T	,	G	S	,				1	.	0	0	0	k	g	CR	LF
-0.015kg	S	T	,	G	S	,	-			0	.	0	1	5	k	g	CR	LF
220.450lb	S	T	,	G	S	,		2	2	0	.	4	5	0	l	b	CR	LF

Protocol 6

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	NET			SP	+,-	w	w	w	w	w	w	w	u	u	c	c
1.000kg	N	E	T					1	.	0	0	0	k	g	CR	LF
-0.014kg	N	E	T		-			0	.	0	1	4	k	g	CR	LF
220.450lb	N	E	T			2	2	0	.	4	5	0	l	b	CR	LF

Protocol 7

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	c	c	SP	+,-	w	w	w	w	w	w	w	SP	u	u	SP	SP	SP	c	c
1.000kg	SOH	STX					1	.	0	0	0		k	g				CR	LF
-0.015kg	SOH	STX		-			0	.	0	1	5		k	g				CR	LF
220.450lb	SOH	STX			2	2	0	.	4	5	0		l	b				CR	LF

Protocol 8

	1	2	3	4	5	6	7	8	9	10
	c	+,-	w	w	w	w	w	w	w	c
1.000kg	STX				1	.	0	0	0	ETX
-0.015kg	STX	-			0	.	0	1	5	ETX
220.450lb	STX		2	2	0	.	4	5	0	ETX

Protocol 9

	1	2	3	4	5	6	7	8	9	10	11	12
	c	+,-	SP		w	w	w	w	w	u	u	c
1.000kg	STX				1	.	0	0	0	k	g	ETX
-0.015kg	STX	-			0	.	0	1	5	k	g	ETX
220.450lb	STX		2	2	0	.	4	5	0	l	b	ETX

Appendix B2: - Custom PC Output Protocol

Under this mode: -

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

are available from instrument. Setup procedures: -

1. Go to F16 or F17 depends on 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.

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.

5. Select preferred data separator CoMMA (comma) or SemiCo (semi colon) then press **[Print/M+]**.
6. Instruments 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 **[Func]** and **[Unit]** until the preferred content appears. then press **[Print/M+]**. Refer to below **Custom PC Output Content Table** for details.
8. Repeat step **6** to include other transaction data or control.
9. To complete and save a Custom output, select **End** then press **[Print/M+]**.
10. Then select output time interval (refer to **5.5.1** for details).
11. Press **[Print/M+]** to save.

Custom PC Output Content Table

Symbol	Explanations	Nature	No. of Digit	Remarks
CoMMA	Comma	Data Separator	1	
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	
Tare	Tare Weight		8	
Gross	Gross Weight		8	
Unit	Weight Unit		2	kg = Kilogram / (space)g =g / lb = Pound
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	01 ~ 99, ** = None

Group	Machine Group Number		2	00 ~ 99, ** = None
Op Code	Operator Number		4	0000 ~ 9999, **** = None
P Code	Product Code		1 ~ 18	Blank = not entered
C Code	Customer Code		1~ 18	Blank = not entered
Trans	No. of accumulated transaction		8	Blank = none
ACC	Total Accumulated Weight	Transaction Data	8	Blank = none
unit.Wt	Average piece weight		8	When weight unit is = kg, unit weight is based on g
Count	Number of piece		8	Piece Counting Mode only
t.Count	Total Accumualted Pieces		8	Piece Counting Mode only
Ani	Weight hold (Animal Weighing)		8	Animal Weighing Mode Only
PEAk	Peak Value		8	Peak Hold Mode Only
End	End of Input		None	

Appendix C: - Operation Result Commands[59]

Operation Result commands are those commands which are used to request operation result and details from this instrument. These commands can be sent to this instrument from computer through any standard communication program. Command format as below: -

a. Hex code 0D (CR), then
b. Hex code 0A (LF) then
c. Command code listed on below command table, then
d. Space (Hex code 20).

Refer to below table for commands details.

Operation Result Commands Table

Prompt Command[60]	*Description*
a	Peak Value
b	Product Code
c	Total accumulated pieces
d	Machine ID
e	Machine Group Number
f	Operator Number
g	Customer Code
J	Current status, weight and tare weight values
K	Date
L	Time
M	No. of accumulated transaction
N	Total accumulated weight
n	Total accumulated weight without unit or decimal
O	Net weight
o	Net weight without unit or decimal

59 Connect the external peripheral which generates operation result commands to Comport 2 and set Comport 2 to CMD.

60 Prompt commands are case sensitive.

P	Tare weight
p	Tare weight without unit or decimal
Q	Gross weight
q	Gross weight without unit or decimal
R	HI limit
S	LO limit
T	Comparison Result
U	Number of piece
V	Average piece weight
Y	Weight hold
y	Weight hold without unit or decimal
Z	Read internal count (AD) value

Appendix D: - System Parameter Inquiry Commands[61]

System parameter inquiry commands are used to check system parameter settings. Command format as below: -

a. Hex code 0D (ASCII code $0D), then
b. Hex code 0A (LF) (ASCII code $0A), then
c. Command code listed on below table (all commands are case sensitive), then
d. Hex code 20 (ASCII code $20).

Command Code	Description	Number & Description Responded Parameters **Notes: -** a. If more than one parameter, semi colon separation is inserted between parameters. b. Response from instrument always end up with Hex code 0D 0A
Aa	Calibration weight unit and application	• **d1** = calibration weight unit: - 0 = kg; 1 = lb. • **d2** = application: - 0 = none; 1 = OIML; 2= NTEP
Ab	Decimal format, decimal point of kg, g and lb	• **d1** = decimal format: - 0 = dot (fixed) • **d2** = kg: - 0 = no decimal; 1 = 1 decimal place…… 4 = 4 decimal place • **d3** = g: - 0 = no decimal; 1 = 1 decimal place…… 4 = 4 decimal place; n = not applicable • **d4** = lb: - 0 = no decimal; 1 = 1 decimal place…… 4 = 4 decimal place

61 Connect the external peripheral which generates system parameter inquiry commands to Comport 2 and set Comport 2 to CMD.

Ac	Capacity1 of kg, g, lb	• **d1** = capacity in kg. Data length = 8 including decimal with leading space (Hex code 20) • **d2** = capacity = g. Data length = 8 including decimal with leading space (Hex code 20) • **d3** = capacity = lb. Data length = 8 including decimal with leading space (Hex code 20)
Ad	Capacity 2 of kg, g, lb	• **d1** = mode: - 0 = Off; 1 = dual weighing range; 2 = dual interval • **d2** = capacity in kg. Data length = 8 including decimal with leading space (Hex code 20) • **d3** = capacity = g. Data length = 8 including decimal with leading space (Hex code 20) • **d4** = capacity = lb. Data length = 8 including decimal with leading space (Hex code 20)
Ae	Division 1 of kg, g, lb	• **d1** = kg: - 0 = 1; 1 = 2; 2 = 5; 3 = 10; 4 = 20; 5 = 50 • **d2** = g: - 0 = 1; 1 = 2; 2 = 5; 3 = 10; 4 = 20; 5 = 50 • **d3** = lb: - 0 = 1; 1 = 2; 2 = 5; 3 = 10; 4 = 20; 5 = 50
Af	Division 2 of kg, g, lb	• **d1** = kg: - 0 = 1; 1 = 2; 2 = 5; 3 = 10; 4 = 20; 5 = 50 • **d2** = g: - 0 = 1; 1 = 2; 2 = 5; 3 = 10; 4 = 20; 5 = 50 • **d3** = lb: - 0 = 1; 1 = 2; 2 = 5; 3 = 10; 4 = 20; 5 = 50
Ag	Gravity Factor of Calibration Place and Operation Place	• **d1** = gravity factor of calibration place. Data length = 8 including decimal with leading space (Hex code 20). • **d2** = gravity of location of operation place. Data length = 8 including decimal with leading space (Hex code 20).

Ah	Linearity Compensation Function	0 = Off; 1 = On
Ai	ad value of zero point (offset) value, weight value of LD1, ad value of LD1, weight value of LD2 and ad value of LD2	• **d1** = ad value of zero point. Data length = 8 including decimal with leading space (Hex code 20). • **d2** = weight value of LD1. Data length = 8 including decimal with leading space (Hex code 20). • **d3** = ad value of LD1. Data length = 8 (integers only) with leading space (Hex code 20). • **d4** = weight value of LD2. Data length = 8 including decimal with leading space (Hex code 20). • **d5** = ad value of LD2. Data length = 8 (integers only) with leading space (Hex code 20).
Aj	ad value of zero point (offset), span weight value, net span AD value	• **d1** = as value of zero point. Data length = 8 (integers only) with leading space (Hex code 20). • **d2** = span weight value. Data length =8 including decimal with leading space (Hex code 20). • **d3** = net span AD value. Data length = Data length = 8 (integers only) with leading space (Hex code 20)
Ak	Weight unit enable/disable for kg, g and lb	• **d1** = kg: - 0 = Off; 1 = On • **d2** = g: - 0 = Off; 1 = On • **d3** = lb: - 0 = Off; 1 = On
Al	Filter strength	0 = level 1; 1 = level 2; … ;7 = level 8; 8 = level 9

Am	Initial Zero range, manual zero range, auto zero tracking speed	• **d1** = initial zero range: - 0 = Off, 1 = 1%, 2 = 2%; … 5 = 5%; 6 = 10%; 7 = 20% • **d2** = manual zero range: - 0 = 1%; 1 = 2%; 2 = 3%; 3 = 4%; 4 = 5%; 5 = 10%; 6 = 20%; 7 = 50%; 8 = 75%; 9 = 100% • **d3** = auto zero tracking speed: - 00 = Off; 01 = 0.25e; 02 = 0.50e; 03 = 10e; 04 = 1.5e; 05 = 2.0e; 06 = 2.5e; 07 = 3.0e; ….; 09 = 5e; 10 = 7.5e; 11 = 10e
An	Auto tare, repetitive tare and preset tare	• **d1** = auto tare: - 0 = Off; 1 = On; 2= Continuous • **d2** = repetitive tare: - 0 = Off; 1 = On • **d3** = Preset tare: - 0 = Off; 1 = On
Ao	Stability control of manual zero and manual tare	• **d1** = manual zero stability control: - 0 = no (disable); 1 = Yes (enable) • **d2** = manual tare stability control: - 0 = no (disable); 1 = Yes (enable)
Ap	Auto power off time, backlight brightness, auto power saving, keypad buzzer and system buzzer	• **d1** = auto power off time: - 0 = Off; 1 = 1 minute; 2 = 3 minute; 3 = 5 minute; 4 = 10 minute; 5 = 20 minute • **d2** = backlight brightness (01 ~ 04). 01 = lowest, 04 = highest. • **d3** = auto power saving: - 00 = Off; 01 = On • **d4** = keypad buzzer: - 0 = Off; 1 = On • **d5** = system buzzer: - 0 = Off; 1 = On
Aq	Check result buzzer, near zero value, high limit for weighing, low	• **d1** = check result buzzer: - 0 = Off; 1 = In; 2 = Out; 3 = hi, 4 = lo • **d2** = near zero value. Data length = 8 with leading space (Hex code 20)

	limit for weighing, high limit for counting, low limit for counting	• **d3** = Hi Limit for weighing. Integer only. Data length = 8 including decimal with leading space (Hex code 20). • **d4** = Lo Limit for weighing. Integer only. Data length = 8 including decimal with leading space (Hex code 20). • **d5:** = Hi Limit for counting. Integer only. Data length = 8 (integers only) with leading space (Hex code 20). • **d6**: = Lo Limit for counting. Integer only. Data length = 8 (integers only) with leading space (Hex code 20).
Ar	Comport 1 working mode, baud rate, output protocol, print stability control, transmission interval, Auto Accumulation, number of copy, check result control, print format, label format group 1 file number, label format group 2 file number, data length, parity, minimum output weight value	• **d1** = working mode: - 0 = Auto 1; 1 = Auto 2; 2 = Auto 3; 3 = Manual; 4 = PC; 5 = Scanner; 6 = Off • **d2** = baud rate: - 0 = 1200; 1 = 2400; 2 = 4800; 3 = 9600; 4 = 19200; 5 = 38400; 6 = 57600; 7 = 115200; 8 = 256000 • **d3** = protocol: - 0 = Protocol 1; 1 = Protocol 2; …; 8 = Protocol 9 • **d4** = print stability control: - 0 = no (disable); 1 = Yes (enable) • **d5** = transmission interval: - 0 = int 0; 1 = int 0.5; 2 = int 1.0; 3 = int 1.5; ….; 9 = int 300. • **d6** = Auto Accumulation: - 0 = Off (disable); 1 = On (enable) • **d7** = number of copy: - 0 = 1 copy; … 7 = 8 Copy • **d8** = check result control: - 0 = no (disable); 1 = Yes (enable) • **d9** = print format: - 0 = Lab 1; 1 = Lab 2; 2 = Lab 3; 3= Lab 4; 4 = Lab 5; 5 = LP-50; 6 = TSC; 7 = Sbarco • **d10** =label format group 1 file number (00~99): - 00 = file AA00; 1 = file AA01; …98 = file AA98; 99 = file AA99

		• **d11** = label format group 2 file number (00~99): - 00 = file BB00; 1 = file BB01; …98 = file BB98; 99 = file BB99 • **d12** = data length: - 0 = 7bit; 1 = 8bit • **d13** = parity: = 0 = none; 1 = 0dd; 2 = even • **d14** = minimum output weight value: - 0 = from 00d; 01 = from 01d; …; 20 = from 20d. Data length = 2 with leading zero
As	Comport 2 working mode, baud rate, output protocol, print stability control, transmission interval, Auto Accumulation, number of copy, check result control, print format, label format group 1 file number, label format group 2 file number, data length, parity, minimum output weight value	• **d1** = working mode: - 0 = Auto 1; 1 = Auto 2; 2 = Auto 3; 3 = Manual; 4 = PC; 5 = CMD; 6 = Off • **d2** = baud rate: - 0 = 1200; 1 = 2400; 2 = 4800; 3 = 9600; 4 = 19200; 5 = 38400; 6 = 57600; 7 = 115200; 8 = 256000 • **d3** = protocol: - 0 = Protocol 1; 1 = Protocol 2; …; 8 = Protocol 9 • **d4** = print stability control: - 0 = no (disable); 1 = Yes (enable) • **d5** = transmission interval: - 0 = int 0; 1 = int 0.5; 2 = int 1.0; 3 = int 1.5; ….; 9 = int 300. • **d6** = Auto Accumulation: - 0 = Off (disable); 1 = On (enable) • **d7** = number of copy: - 0 = 1 copy; … 7 = 8 Copy • **d8** = check result control: - 0 = no (disable); 1 = Yes (enable) • **d9** = print format: - 0 = Lab 1; 1 = Lab 2; 2 = Lab 3; 3= Lab 4; 4 = Lab 5; 5 = LP-50; 6 = TSC; 7 = Sbarco • **d10** =label format group 1 file number (00~99): - 00 = file AA00; 1 = file AA01; …98 = file AA98; 99 = file AA99 • **d11** = label format group 2 file number (00~99): - 00 = file BB00; 1 = file BB01; …98 = file BB98; 99 = file BB99 • **d12** = data length: - 0 = 7bit; 1 = 8bit

		• **d13** = parity: = 0 = none; 1 = 0dd; 2 = even • **d14** = minimum output weight value: - 0 = from 00d; 01 = from 01d; …; 20 = from 20d. Data length = 2 with leading zero
At	Current weight unit and function mode	• **d1** = weight unit: - 0 = kg; 1 = g; 2 = lb • **d2** = function mode: - 0 = weighing; 1 = piece count; 2 = AT 1; 3 = peak hold; 4= animal weighing
Av	Auxiliary Function mode enable/disable status	• **d1** = Piece count: - 0 = Off; 1 = On • **d2** = ATM: - 0 = Off; 1 = On • **d3** = Peak Hold: - 0 = Off; 1 = On • **d4** = Animal Weighing: - 0 = Off; 1 = On
Aw	Machine ID & group number	• **d1** = 4-digit machine ID number. Nothing = no machine ID is set • **d2** = 2-digit machine group number. Nothing = no group number is set
Ax	Operator Number	4-digit operator number. **** = no operator number is set

Appendix E: - TSC Printer Installation, Setup & Label Upload Procedures

E.1 Before Installation

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
   TCF file for the label printer. The suitable TCF file can be downloaded at www.fi-measurement.com/resource/driversnsoftwares

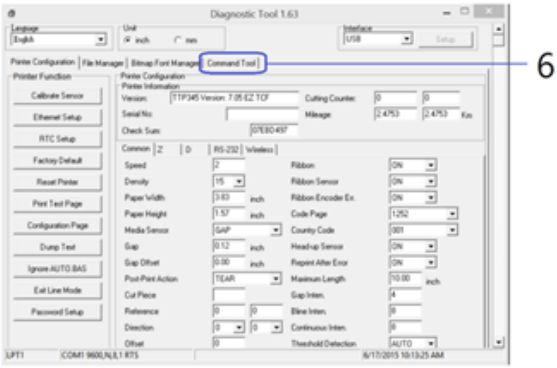
E.2 Printer Installation

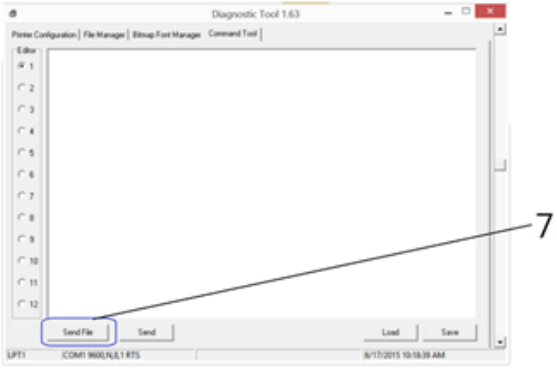
1. Turn off the printer, connect the appropriate cable, and then turn on the printer.
2. If the printer supports Plug-and-Play, and you have connected it using a USB or Parallel cable, then the Windows Add Hardware Wizard will automatically detect the printer and display a dialog that allows you to install 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.

E.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 **E.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 automatically.





E.4 Create & Upload Label to TSC Printer

E.4.1 Selecting the Correct Edition for Bartender Software

To enable label uploading from computer to TSC printer, it is necessary to run as Bartender as Automation or Enterprise Automation edition. Procedures as below: -

1. Install Bartender Software to computer. The Bartender software usually comes with the TSC printer. If not, please contact your printer supplier.
2. Run Bartender, then click on Help, then click on Edition Selection.
3. Select Enterprise Automation or Automation, then click OK.
4. At this point, correct Bartender edition is selected.

E.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 for more details if in doubt.

1. Create the foundation of a label by Bartender. All information to be obtained from instrument should be added afterward.
2. Once the label foundation has been completed; (a) click on File and (b) select Export Printer Code Template.
3. On Print System;
   a. select TSC KP-100/200 (Flash) and
   b. select to Port.
4. Click More Option.
5. Then: -
   a. click Print Dialog Data Sources, then
   b. click on Format ID/Name.
6. On Template Field, select
   Template Field for Type.
7. Enter the correct label file name on Name/Value. Refer to **16.1** for correct file name format.
8. Then: -

a. Click Copies and 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.

    a. check the box below External Keyboard, then

    b. enter the appropriate command on the Prompt Box (refer to **16.2.1** for command detail).

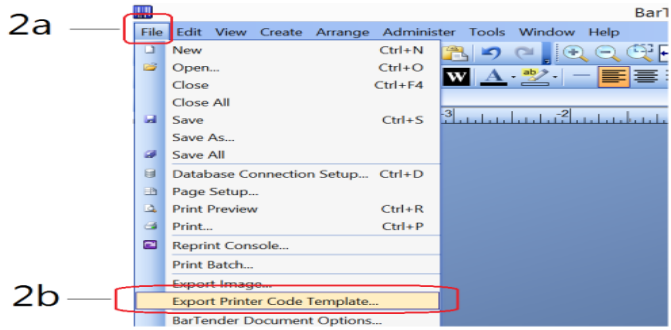
12. Select Auto on the Source box under Template Field

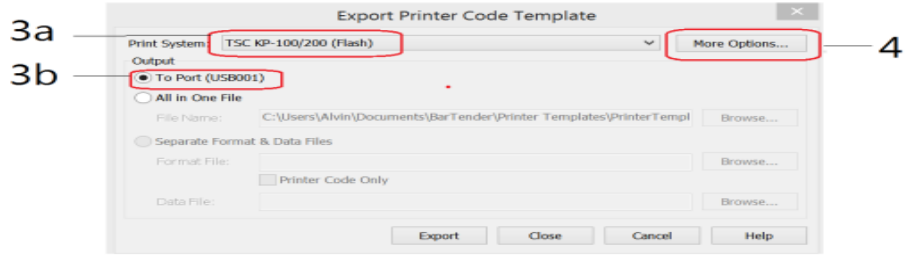
13. Repeat point 11 to ~ 12 for all other data sources.

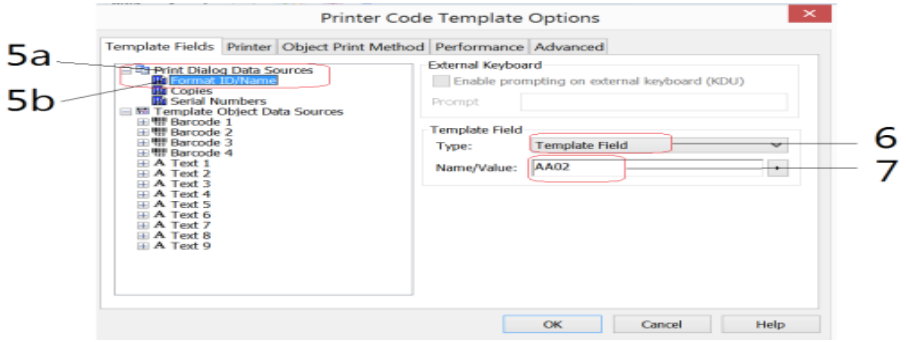
14. Click OK.

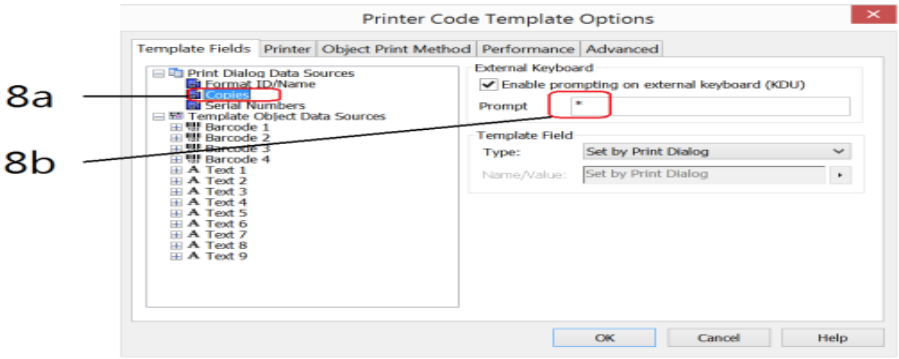
15. Click Export. In case of Verification Messages appear, select one of method on the dialogue box to fix and click Continue.

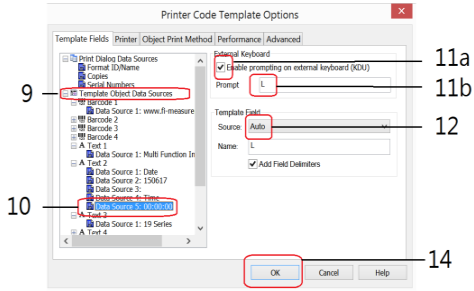
Refer to below diagrams with step numbers when operating.

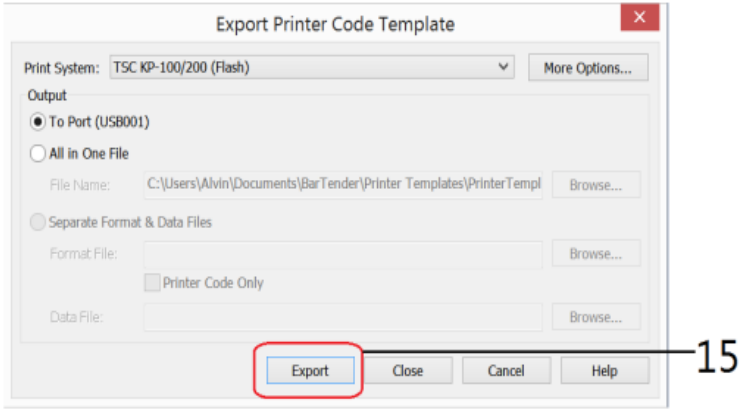



3a
3b
Export Printer Code Template
Print System:
TSC KP-100/200 (Flash)
More Options...
4
Output
To Port (USB001)
All in One File
File Name:
C:\Users\Alvin\Documents\BarTender\Printer Templates\PrinterTempl
Browse...
Separate Format & Data Files
Format File:
Browse...
Printer Code Only
Data File:
Browse...
Export
Close
Cancel
Help


5a
5b
Printer Code Template Options
Template Fields
Printer
Object Print Method
Performance
Advanced
Print Dialog Data Sources
Format ID/Name
Copies
Serial Numbers
Template Object Data Sources
Barcode 1
Barcode 2
Barcode 3
Barcode 4
A Text 1
A Text 2
A Text 3
A Text 4
A Text 5
A Text 6
A Text 7
A Text 8
A Text 9
External Keyboard
Enable prompting on external keyboard (KDU)
Prompt
Template Field
Type:
Template Field
6
Name/Value:
AA02
7
OK
Cancel
Help

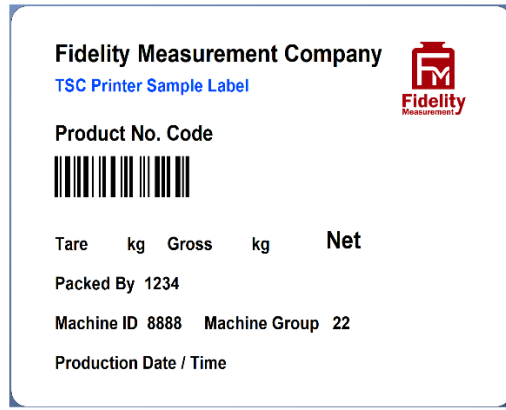

8a
8b
Printer Code Template Options
Template Fields
Printer
Object Print Method
Performance
Advanced
Print Dialog Data Sources
Format ID/Name
Copies
Serial Numbers
Template Object Data Sources
Barcode 1
Barcode 2
Barcode 3
Barcode 4
A Text 1
A Text 2
A Text 3
A Text 4
A Text 5
A Text 6
A Text 7
A Text 8
A Text 9
External Keyboard
Enable prompting on external keyboard (KDU)
Prompt
*
Template Field
Type:
Set by Print Dialog
Name/Value:
Set by Print Dialog
OK
Cancel
Help





E.5 Sample Label

Sample label (for TSC printer) on right is available for download at: - www.fi-measurement.com/resource/driversnsoftwares



Appendix F: - Sbarco Printer Installation, Setup & Label Upload Procedures

F.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

F.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.

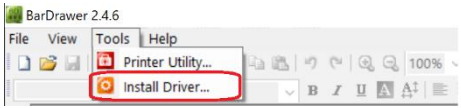


Figure 1

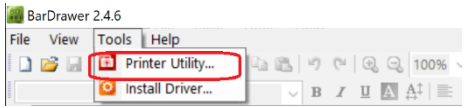


Figure 2

Figure 3

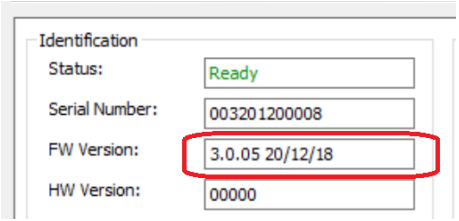


Figure 4

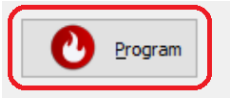
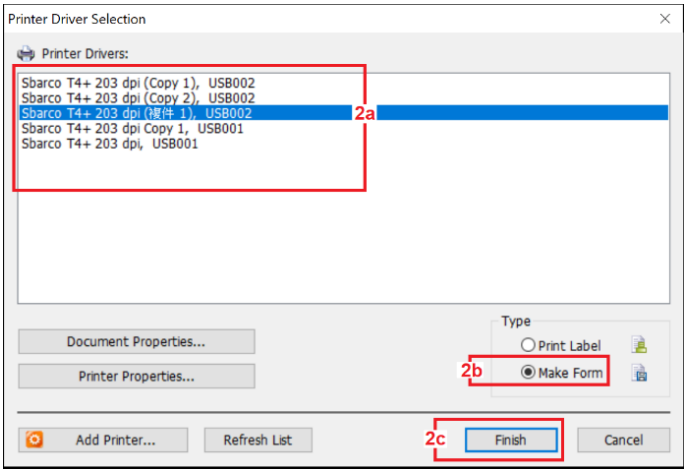


Figure 5

F.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
    c. 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,

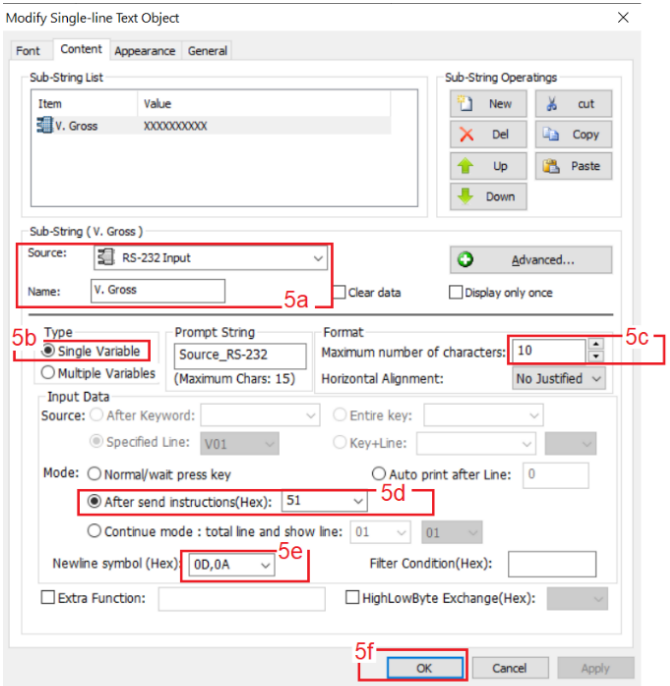
c. On Format section, enter value of Maximum number of characters. Refer to **16.2.1** Suggested Length column for suggested value.

d. On Input Data section, select After send instructions (Hex). Then enter the Prompt Command listed on **16.2.1**

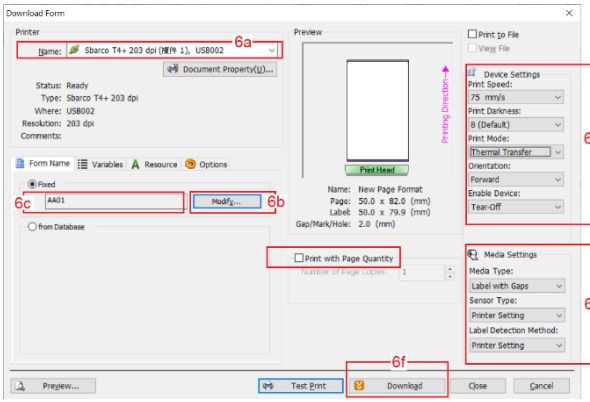
e. Always select 0D,0A for Newline symbol (Hex) box.

f. Click OK to save above settings for this variable.

g. Repeat above a ~ f for all other variables.

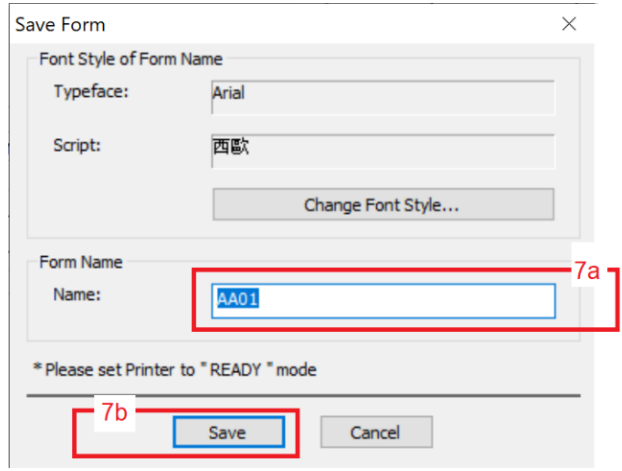


6. Once the label foundation has been completed, then click on File then click on Print. On Download Form page: -
   a. select name of Print to output,
   b. click Modify and then give proper name to the file (e.g. AA01… AA99 for individual transaction label and BB01…BB99 for totalized label).
   c. 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.

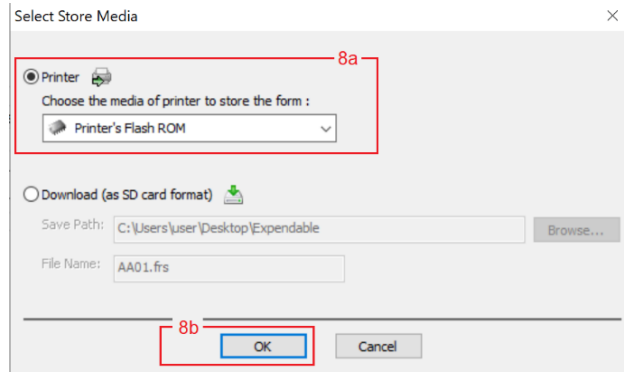


g.

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



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