19i & 19s

Multi-Function Indicator

Operation Manual (Full Version)

PLEASE READ THIS MANUAL VERY CAREFULLY
BEFORE OPERATING THIS INSTRUMENT

Specifications subject to change without prior notice

V161 September 2021 Rev 1

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

a. 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.
b. The internal count value is deemed stable when the internal AD count varies less than 3 counts within 2 seconds.
c. 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 = 10 x 350Ω Load Cells or 20 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.$\leqq$ 85%

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

3. Keys, Display & Connection Points

3.1 Keys & Display Indicators
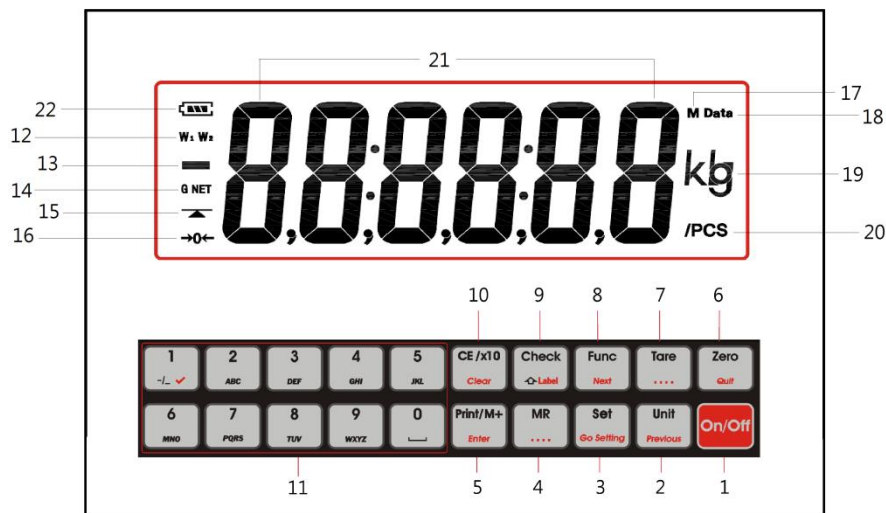
1. On/Off Key
Press this key to turn this instrument on or off.

2. Unit Key[1]
Press this key to shift among various weight units (if weight unit conversation is enabled).

3. Set Key
Press this key: -

   When in weighing mode: - to access internal function setting mode (F1~F30) 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 and animal weighing[4] 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 settings.

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

2   F60~F99 requests password or jumper to access.

3   Refer to F16 and F17 settings for details.

4   Depends on F11 setting.

When in Customer & Product Code Entry Mode: - Shift between Upper and Lower case letter.

10. CE/x10 Key
Press this key: -

to clear value entered during setting process, or

to trigger the extended display mode[5].

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. Weighing Range Indicator
W_1 **Indicator[6]: -** (When under dual weighing range/interval mode) Visible when this instrument is operating at the first weighing range (W_1).

W_2 **Indicator[7]: -** (When under dual weighing range/interval mode) Visible when this instrument is operating in the second weighing range (W_2).

13. Minus Indicator
Visible when a negative value is displayed.

14. Gross/Net Indicators
G: - Visible when gross result is being displayed.

Net: - Visible when net result is being displayed.

15. Stable Indicator
Visible when weight value is stable.

16. Zero Indicator
Visible when instrument is at zero status.

17. M+ Indicator
Visible when memory contains of accumulated data.

18. Preset Tare Indicator
Visible when preset-tare value has been entered.

19. Weight Unit indicators
kg = kilogram.

g = gram.

lb = pound.

20. Counting Function Indicators
PCS = Pieces (Piece Count Mode in function).

kg/PCS, g/PCS and lb/PCS = Weight per piece (when Piece Count Mode in function).

21. Numeric & Alphabetical Info Panel
Numeric value and alphabetical Info are shown here.

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5   When F68 = OIML or NTEP.

6   Not visible when single range is selected.

7   This indicator will not appear when this instrument is in single range mode.

22. Battery Power/Level Indicator

Visible to show: -

When instrument is powered by built-in rechargeable: - remaining battery of the built-in rechargeable battery.

When instrument is powered by external power adaptor: - Battery rechargeable recharging status.

3.2 Connection Points
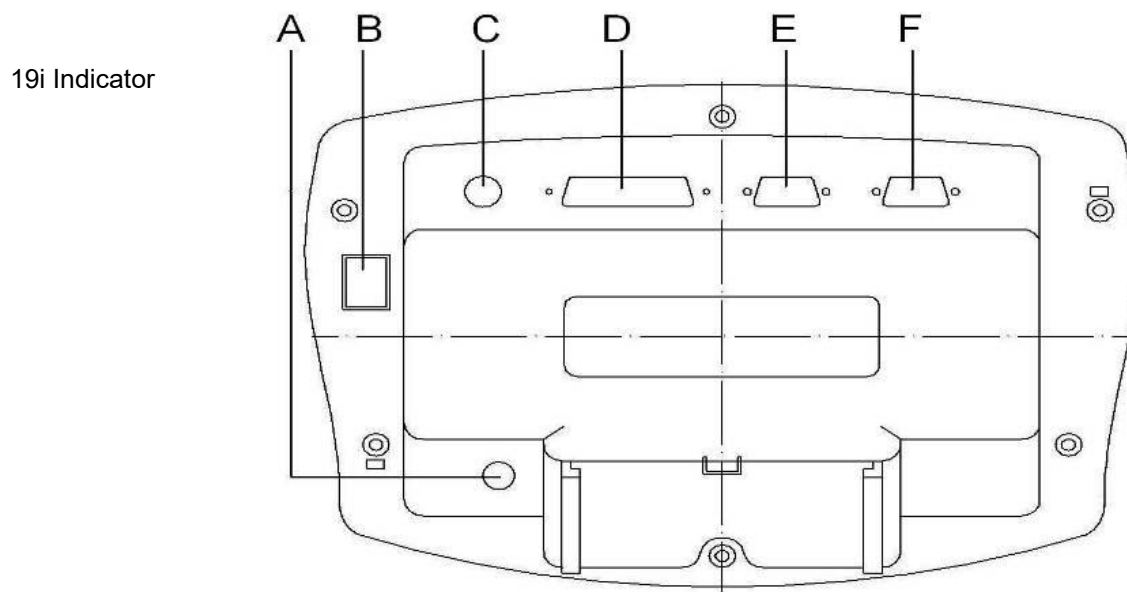
19i Indicator
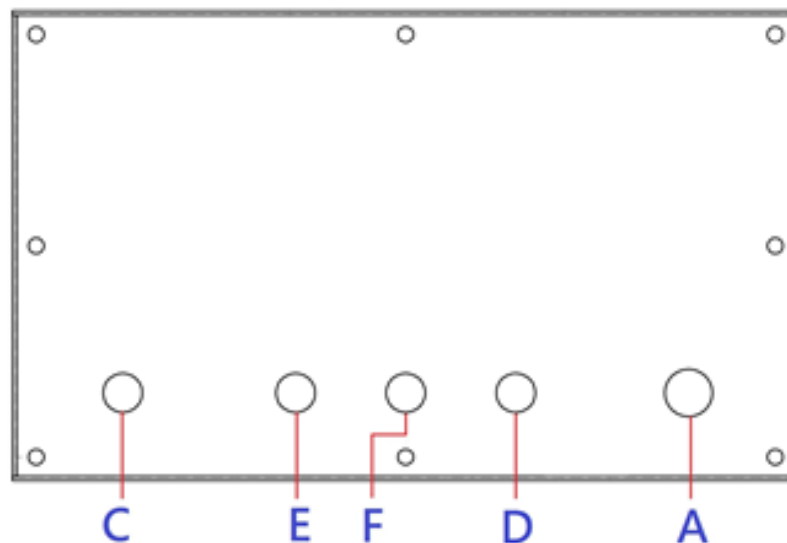
19s Indicator

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)**

19i: - Signal wires from load cell (or junction box) are connected here.

19s: - Thread though signal cable from load cell (or junction box) here.

D. **Control Output Port**

    19i: - Optional Control output port.

    19s: - Thread through optional control put cable here.

E. **Comport 2**[8]

    19i: - Comport 2 (serial).

    19s: - Thread through cable of Comport 2 (serial).

F. **Comport 1**[9]

    19i: - Comport 1 (serial or TTL)

    19s: - Thread through cable of Comport 1 (serial or TTL)

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.

Note: - When an energized power adaptor is plugged in, this instrument will power on automatically.

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.

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: -

    Comport 1 can be used for serial or TTL communication depends on the jumper setting of the Serial/TTL selection jumper. Default setting = serial. Contact your dealer in case TTL output is required for Comport 1.

    Comport 2 supports only serial communication.

Both comports support bi-directional communication when set as PC and CMD modes. Refer to **5.5** for setting details.

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    8   Settings of comport #2 is done through F17.

    9   Settings of comport #1 is done through F16.

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

4.5 Comports Pin Assignment

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

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.

4.6 Control Output Port

Control Output Port Pin Assignment

Pin No. on Control Output Port	Description[11]
1	Control Output #4, Normal Open
2	Control Output #4, Common
3	Control Output #4, Normal Close
4	Control Output #3, Normal Open
5	Control Output #3, Common
6	Control Output #3, Normal Close
8	Control Output #2, Normal Open
9	Control Output #2, Common
10	Control Output #2, Normal Close
11	Control Output #1, Normal Open
12	Control Output #1, Common
13	Control Output #1, Normal Close

Notes: -

In case control output is used, always plug in the power adaptor which comes with this instrument. Otherwise, no output signal will be sent.

Common of a particular output is independent to the common of other control outputs.

Max. loading per relay = DC30V 2A / AC125V 1A.

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11   When this instrument is in check function mode: -

- Output #1 = Buzzer Output
- Output #2 = LO Output
- Output #3 = OK Output
- Output #4 = HI Output

5. Initial Setup

There are 2 groups of internal function: -

Group #1: - F1~F30 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~F30.

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[12] [13]

Follow the below procedures for internal function setup: -

1. In weighing function, press **[Set]**.
2. Instrument displays F1 and is now in internal function mode.
3. Press **[Func]** and **[Unit]** to access the preferred internal function number.
4. 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 F99 (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~F30 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

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

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

5.4 Internal Function Table

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

Function 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. W_1 sign will appear. Actual ADC is = 1 million plus the ADC value being displayed. When ADC is more than 2 million. W_2 sign will appear. Actual ADC is = 2 million plus the ADC value being displayed. When ADC is more than 3 million. Both W_1 & W_2 sign will appear. Actual ADC is = 3 million plus the ADC value being displayed. Press **[Zero]** to quit to F1.					
F2	All Segment Check	All display segments and backlight colors will be lit on. Check any segments or backlight colors are missing.					
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, 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~F30 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 pulled in.						
F8	Backlight Brightness	Brightness (01 ~ 99) ** Default = 60			Color Ratio (Green Vs Red) ** Default = 50		
	To change setting, enter value through numeric keys and then press **[Print/M+]**. Set brightness (bt) first, then set color ratio. Color ratio is used to generate the preferred yellow color. When instrument is powered by built-in rechargeable battery, backlight will be turned to minimum when battery is low or when weight value remains unchanged for 5 seconds.						
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
	Press **[Func]** or **[Unit]** to select: -						

		1 (strongest filter) for bad working environment where vibration, wind flow… etc. affect stable reading,

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.

Then press **[Zero]** to quit or **[Print/M+]** to save and continue AD conversion speed setting.

4 parameters are available. Press **[Func]** or **[Unit]** to select: -

** 15 times per second

30 times per second. Recommended maximum resolution = 30,000 division

60 times per second. Recommended maximum resolution = 15,000 division

120 times per second. Recommended maximum resolution = 7,500 division

Note: - After AD conversion speed is changed, instrument will automatic restart.

F11	Auxiliary Function	• Cnt (Counting) / On/** Off

- Cnt (Counting) / On/** Off

  Note: If on is selected, set also Auto Unit Piece Weight Enhancement Function settings.
  - On = Enable; Off = Disable.

  Refer to paragraph **8.1** for details about the Auto Unit Piece Weight Enhancement Function
- AtM (Action Tare Memory) / On/** Off
- PEK (Peak) / On/** Off
- Ani (Animal) / On/** Off
- PCd (Quick Access to Customer/Product Code Setting) / On/** Off

F12	Auto Tare Function	** OFF	ON	Contin

Notes: -

Off = Auto Tare Function disable

On = The first table weight applied will be tare off. Minimum tare load ≥ 2d

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.

F13	Repetitive Tare Function	** OFF	ON

If F12 is set = Contin, Repetitive Tare setting "Off" will be surpassed.

F14	Buzzer	Kb (keypad buzzer) (**On/Off)	St (System buzzer) (**On/Off)

F15	Check Result Buzzer	OFF	** IN	OUT	Hi	Lo

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.						
F16	Set Comport 1	Off	Auto 1	Auto 2	Auto 3	Manual	**** PC**	Scanner only	bt
	Refer to F17 for details							
F17	Set Comport 2	Off	Auto 1	Auto 2	Auto 3	Manual	PC	**** CMD only**

	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.
	Scaner = Serial scanner.
	bt = Bluetooth connection with iOS and Android App.
	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.
	Disconnect all Bluetooth connection before attempting any Bluetooth setting.

F18	Machine ID and Group Number	Machine ID	Group Number
	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	Weight Function Output Print Format	**** STD**		CUSTOM	
F22	Counting Function Output Print Format	**** STD**		CUSTOM	
F23	Reserved.				
F24	Animal Functions Output Print Format	**** STD**		CUSTOM	
F25	Control Mode	Mode 0	**** Mode 1**	Mode 2	Mode 3	Mode 4

	Mode 0 = Static Check Mode Mode 1 = Standard static/Dynamic Weight Check Mode. Mode 2 = Inflow/Outflow Control Logic Mode. Mode 3 =Constant Feeding Mode. Mode 4 = Constant Dispensing Mode **Note: -** if Mode 1 is selected, set also F26.
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**: - 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.

F27	Decimal Point Format	**** Dot (.)**	Comma (,)
F28	Ask for Operator Number when Power on	Yes	**** No**

	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.
F29	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.

F30	Allow Letters and Symbols for Customer & Product Code Manual Entry	Yes	**** No**

5.5 Setting Comport 1 & Comport 2

2 comports are on this instrument. Default setting for both comports = serial. Contact your dealer in case of TTL output is required for Comport 1. Following the below procedures to setup comports.

1. Go to F16 or F17.

   F16 is used to configure Comport 1.

   F17 is used to configure Comport 2.

2. 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.

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

4. 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 parameters (Prot 1~9) are available. 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. 5 parameters (Lab 1, Lab 2, Lab 3, 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.

   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 = Output to LP-50 label printer. Refer to **5.5.3.3** for other settings.

   TSC = Output to TSC label printer. Refer to **5.5.3.3** for other settings.

   Sbarco = Output to Sbarco label printer. Refer to **5.5.3.3** for other settings.

5.5.3.1 Other settings if Lab 1 is selected

a. 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.

b. At this point, Lab 1 setup is completed.

5.5.3.2 Other settings if Lab 2 is selected

a. 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.

b. At this point, Lab 2 setup is completed.

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

a.   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.

b.   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.

c.   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.

d.   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 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. 4 parameters (Lab 1, Lab 2, 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 **5.5.3.3** 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 press 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.

6. Basic Operations

6.1 Power On, Inputting Operator Number & Power Off

To power on instrument, press **[On/Off]** for 0.5 second.

After powered on, instrument will display software number… software revision...all display segments… calibration count value… parameter set count value.

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.

After above, the instrument will go to the last working mode before powered off and is ready for operation.

To power off instrument, simply press **[On/Off]**.

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[14]

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 indicate 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. **Gross Indicator** appears to indicate tare effect has been removed and weight displayed is gross weight.

6.4.2 Auto Tare (F12) [15]

3 parameters are available: - Off. Auto and Contin
    Off: - Auto tare disable.
    Auto: - instrument will assume the first stable weight ($\geq$ 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 ($\geq$ 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.

---

14   Maximum tare (subtractive) = -Max for single range mode and dual weighing range/interval mode.
15   Set F12 = ON to enable Auto Tare Function

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

6.4.3 Repetitive Tare (F13)[16]

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 **<u>both</u>** 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)[17] [18]

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 though 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.
 Preset Tare Indicator appears to indicate Preset tare mode is in effect.

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[19]

This instrument supports the below function modes. Abbreviation of each function mode is bracketed.
 a. Weighing (**Weigh**).
 b. Piece Count (**Count**).
 c. Action-Tare-Memory **(AtM)**.
 d. Peak Hold Function (**Peak**).
 e. Animal Weighing (**Ani**).
 f. 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 power off will be employed again automatically when re-powered on.

---

16 Set F13 = ON to enable Repeated Tare Function.

17 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.

18 Set also F12 to Off

19 Depends on F11 setting.

6.6 Weight Units[20]

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

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[21]

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

6.7 Memory Accumulation[22]

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[23]

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[24]

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.

6.7.3 When data is accumulated to memory[25] [26] [27]

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.

Instrument will automatically erase accumulation data stored when: -
        Changing weight unit, or
        Change to another working mode, or
        A different operator number is entered during power on process.

---

20   Depends on F9 setting.
21   Changing weight unit during operation will clear all accumulate weight data from memory.
22   Only weight result will be accumulated.
23   Refer to **5.5.4** for setting details.
24   Refer to **5.5.3** for setting details.
25   Memory Accumulation Function accumulated weight results only.
26   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.
27   All data stored will be erased when weight unit or working mode is changed.

Follow below procedures to recall and clear accumulation data manually.

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 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 no data is stored in memory.

6.8 Extended Display Mode[28]

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 Tri-color Backlight

This instrument is equipped with a tri-color backlight. The tri-colors are yellow, green and red.

In normal operation, green is used for display illumination.

When check function is activated, yellow = Lo; green = OK; red = Hi.

6.9.1 When powered by built-in rechargeable battery

Backlight will turn to minimum when weight remains stable/unchanged for 5 second. In order to save power, stable for backlight means ±5 division variation.

6.9.2 When powered by external power adaptor

Backlight will remain on always.

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				

---

28   When F68 = OIML or NTEP.

Notes: -
- When inputting upper case letters, the gross sign will appear.
- When inputting lower case letters, the decimal (or the psc) sign right to cursor will appear.

6.10.1 Enter a customer & product code manually [29]
a. 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.

b. Instrument display H code followed by the 1st 6 digits. Enter the first 6 digits of the code here, then press **[Print/M+]** to confirm.

c. Instrument display M code followed by the 2nd 6 digits. Enter the 7th ~ 12th digits of the code here, then press **[Print/M+]** to confirm.

d. Instrument display L code followed by the 3rd 6 digits. Enter the last 6 digits of the code here, then press **[Print/M+]** to confirm.

e. 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.

f. To go to other internal function, press **[Unit]** or **[Func]** or press **[Zero]** to quite to operation status.

6.10.2 Enter a customer & product code by scanner[30]
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.

Scan here to change target to Product Code

Scan here to change target to Customer Code

6.10.3 Clear a customer & product code entered
To clear a customer/product code entered, press **[CE/x10]** on above procedures **b**, **c** and **d** on paragraph **6.10.1**.

---

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

30 Maximum = 18 digits.

6.10.4 Print a customer & product code entered[31]

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).

    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.

---

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

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 for both Lo and Hi limits 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[32].
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

1. Refer to **6.6** on how to select the desired weight unit.
2. If a container is used, place it onto the platform and press **[Tare]**.
3. Apply samples with the known quantity (sample size) on platform.
4. Press **[Set]** then input the sample quantity through numeric keys then press **[Print/M+]**.
5. This instrument will calculate, store the average piece weight and confirm with 2 beeps. The quantity is then displayed.
6. Add to or remove from the platform, the corresponding quantity will be displayed automatically.
7. 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.

8.1.1. Procedures to enable/disable the Auto Unit Piece Weight Enhancement Function

1. Go to F11,
2. Select Cnt (Counting) On, then press **[Print/M+]**,
3. Instrument displays **APWE** (auto unit weight enhancement), followed by the parameter.
4. At this point: -
    - To enable the auto unit weight auto enhancement function, press **[Unit]** until **on** is displayed, then press [**Print/M+]** to confirm.
    - To disable the auto unit weight auto enhancement function, press **[Unit]** until **Off** is displayed, then press **[Print/M+]** to confirm.
5. Instrument goes to the next F11 setting.
6. Proceed other F11 settings or press **[Zero]** twice to return to operation status.
7. To change Auto Unit Piece Weight Enhancement enable/disable setting, repeat **1 ~ 6** of above.

---

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

8.1.2 When Auto Unit Piece Weight Enhancement Function is enabled

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

1.   Press **[Unit]** to shift among quantity, average piece weight and weight info.
2.   Quantity Display format = numeric numbers & PCS (e.g1000 PCS). Average piece weight display format = numeric numbers & weight unit &/PCS (e.g. 499.960g/PCS).
3.   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

1.   Refer to **6.6** on how to select the desired weight unit.
2.   Enter ATM mode.
3.   Press **[Set]** to select Auto Accumulation target then press **[Print/M+]**.

    Gross = Gross weight will be accumulated.

    Net = Net weight will be accumulated.

4.   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.

5.   Enter delay time through numeric keys then press **[Print/M+]** to enter.
6.   At this point, ATM mode is ready for use.

9.3 Start Using ATM[33]

1.   Apply container on platform. Instrument will tare off the weight of the container.
2.   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.

3.   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.
4.   Repeat point 3 until all weighing sequence is completed.

---

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

5. To recall current total accumulated weight, press **[MR]**.
6. At this point: -

Press **[Zero]** to quit, or

Press **[Print/M+]** to print the current accumulated weight.
7. 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.

a. Set F26 (near zero value) according to application requirement or 00000 to disable near zero value control.
b. Refer to **5.5.4** on comport settings and set Check Control = On.
c. 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.

a. Set both Comport 1 and Comport 2 to Off.
b. Set F26 (near zero value) according to application requirement or 00000 to disable near zero value control.
c. At this point, ATM comport setup is completed for this mode.

10. Peak Hold Mode[34]

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.

10.2 Comport Settings for Peak Hold Mode[35]

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

---

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

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

10.3 Start Using Peak Hold

1. Refer to **6.6** on how to select the desired weight unit.

2. Refer to **6.5** on how to enter Peak Hold mode.

3. Complete all necessary test setup. If mounting/support accessories are used, apply all of them.

4. Press **[Tare]** to cancel the effect of any extra loads.

5. Start measuring process, the peak value detected will be held and flashing.

6. To print the peak value, press **[Print/M+]**.

8. To display actual current value (e.g. after a tension force has been decreased), press **[CE/x10]**.

11. Animal Weighing Mode[36]

11.1 Description of Animal Weighing Mode

Animal weighing mode is used to weigh live animals.

11.2 Basic Animal Weighing Settings

1. Refer to **6.6** on how to select the desired weight unit.

2. Enter Animal Weighing mode.

3. Press **[Set]** to select the preferred filter speed by pressing **[Func]** or **[Unit]** key, 5 filter speeds 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).

4. Press **[Print/M+]** to save and then select weight release variation value.

5. 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 0.5 = auto release when weight varies ≥0.5% of rate capacity or W1 for dual weighing range/interval mode).

   ....

   rE 20 = auto release when weight varies ≥20% of rate capacity (or W1 for dual weighing range/interval mode).

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

7. Instrument is now ready for animal weighing application.

11.3 Start Using Animal Weighing

1. Get an animal on platform.

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

3. 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[37] as above step **2**.

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

---

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

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

12. Static Check Function[38] [39] [40] [41] [42]

Check 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 in different backlight colors with or without buzzer[43]. Check results are also sent to Control Output Port[44].

Targets of Check mode are: -

   Weighing mode = weight value.

   Piece Count mode = piece value.

   Auto Tare Accumulation mode = weight value.

12.1 Set Lo & Hi Limits

Follow the below steps to set Lo and Hi Limit.

1.   During desired operation mode, press **[Check]**.
2.   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.
3.   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.
4.   Check Mode is now enabled. The check result is shown by one of the backlight colors[45]. Check results are also sent to Control Output Port.

12.2 Hints for Entering Lo and Hi Limits: -

a.   For normal comparison, set both Lo and Hi limits.
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 **2** and **3** of **12.1**.

13. Other Static/Dynamic Check and Control Modes

This instrument is equipped with the below dynamic check and control modes: -

1.   Static Check mode (Appendix G).
2.   Inflow/outflow mode (Appendix H).
3.   Constant feeding mode (Appendix I).
4.   Constant dispensing mode (Appendix J).
5.   Delayed Relay Action Mode (Appendix K).

Refer to the bracketed Appendix for detailed information about these modes.

---

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

39   Set also F15 for desired Check buzzer output.

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

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

42   Set F26 to zero.

43   Set F15 for preferred buzzer output configuration.

44   Refer to **4.6** for details.

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

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 **5.5.3.3** (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.

14.6 PC Software (Rathohan 19 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.

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[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.

14.7 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 to download.
- Android App is named **a19**. Visit Google Play and search for a19.

These 2 Apps support both Bluetooth and WIFI connection.

14.7.1 Using App via WIFI Connection

If WIFI module is used for App connection, the WIFI module should be connected to Comport 2. 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 WIFI module settings. Baud rate 115200 or higher is recommended.

14.7.2 Using App via Bluetooth Connection

This instrument comes (if ordered) with a Bluetooth module/kit for either iOS or Android. This module/kit is TTL based.

- Connect Bluetooth module/kit with instrument.
- If iOS device is used, go to F16, select bt, then iOS. Refer to **14.7.3** for more information.
- If Android device is used, go to F16, select bt, then Androi. Refer to **14.7.4** for other information.

Before setting, make use that all Bluetooth connection is disconnected and the App is not activated.

14.7.3 Bluetooth Default Settings when iOS is selected

1. Instrument displays name of the Bluetooth module used. If necessary, change the name through keyboard on instrument. If English letters and symbols are needed, set F30 to **Yes** first.
2. Press **[Print/M+]** to save and go to next parameter.
3. Instrument displays Pin of the Bluetooth module used. If necessary, change the pin name through keyboard on instrument. Pin number of Bluetooth for iOS must be 6-digit. If English letters and symbols are needed, set F30 to **Yes** first.
4. Press **[Print/M+]** to save and return to F16.

Notes: -
- In case Bluetooth name and/or password is/are changed, instrument will display reset before returning to F16.
- Reset means new Bluetooth name and/or pin has/have been successfully changed.

14.7.4 Bluetooth Default Settings when Android is selected

Instrument does not support name or pin checking/setting under the Android mode.

14.7.5 Using App via Bluetooth Module by Third Party

Third party Bluetooth module may be used with instrument. Preferred Bluetooth type as below.

14.7.5.1 Bluetooth Module for iOS device: -
- Serial based Bluetooth 4.0 BLE is recommended. If TTL based Bluetooth 4.0 BLE module is used, Comport 1 has to be set for TTL output. Contact your dealer for assistance.
- Baud rate of this module should be set to 115200
- Working mode of this module should be set to Slave
- Refer to **14.7.2** for settings on instrument.

14.7.5.2 Bluetooth Module for Android device: -

- Serial based Bluetooth 2.0 is recommended. If TTL based Bluetooth 2.0 module is used, Comport 1 has to be set for TTL output. Contact your dealer for assistance.
- Baud rate of this module should be set to 38400
- Working mode of this module should be set to Slave
- Refer to **14.7.2** for settings on instrument.

14.7.6 Running App on a Smart Device

1. Complete all connection according to paragraph **14.7 ~ 14.7.5.2**.
2. Download App from App Store or Google Play. Refer to **14.7** for more information.
3. Power on instrument.
4. Start running App on Smart device.

14.7.6.1 Connection via WIFI

1. On the App starting page, select WIFI Connection.
2. Enter IP and Port number of the WIFI module.
3. Click Connect. Connection should start automatically. If not, click the Start icon on App.

14.7.6.2 Connection via Bluetooth
14.7.6.2.1 Connection via iOS Bluetooth Module/Kit

1. Make sure Bluetooth is enabled on iOS device.
2. It is not necessary to do Bluetooth pairing on iOS device. The App will do pairing automatically.
3. Start App.
4. On the App starting page, select Bluetooth Connection.
5. Scroll and select the correct Bluetooth Module/Kit name.
6. Click Connect. Connection should start automatically. If not, click the Start icon on App.

14.7.6.2.2 Connection via Android Bluetooth Module/Kit

1. Make sure Bluetooth is enabled on Android device.
2. For first time use, complete pairing with the Bluetooth module/Kit. Default password of the Bluetooth Module/Kit is 12345.
3. Start App.
4. On the App starting page, select Bluetooth Connection.
5. Click on the correct Bluetooth Module name.
6. Click Connect. Connection should start automatically. If not, click the Start icon on App.

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.

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

---

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

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*

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*

---

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

15.2.3 Standard Lab 2 print format for Peak Hold mode

Refer to below diagram for printout content.

Data Explanation

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

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.

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.

---

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

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.

Data Explanation

```
Name ANDHFYROLSJFHEIOMC
Pcode 562188261631321879
Opr  8888
Mac  1234
MacGp 56

Date 2016-09-09
Time 13:54:08

Seq  Gross  Net
001  2.499  2.499 kg
002  2.499  2.499 kg
003  5.001  5.001 kg
004  5.002  5.002 kg
005  7.502  7.502 kg
006  2.499  2.499 kg
-----------------------
006         25.002 kg
```

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
Time of 1st Printout

Accumulation No., Gross Weight and Net Weight or Pieces

Total Accumulation No. and Total Net Weight or Pieces

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.

Data Explanation

```
Name ANDHFYROLSJFHEIOMC
Pcode 562188261631321879
Opr  8888
Mac  1234
MacGp 56

Date 2016-09-09

Seq  Time      Net
001 14:08:51   2.499 kg
002 14:08:55   5.002 kg
003 14:08:59   5.002 kg
004 14:09:02   7.502 kg
005 14:09:06  10.004 kg
006 14:09:09   7.502 kg
-----------------------
006  Total   37.511 kg
```

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

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.

---

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

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

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
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
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

---

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.

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.

16.2.2 Label programming sample
16.2.2.1 Label Illustration for LP50 & TSC

Prompt Command

Individual Transaction
Label Sample

Totalized Label Sample
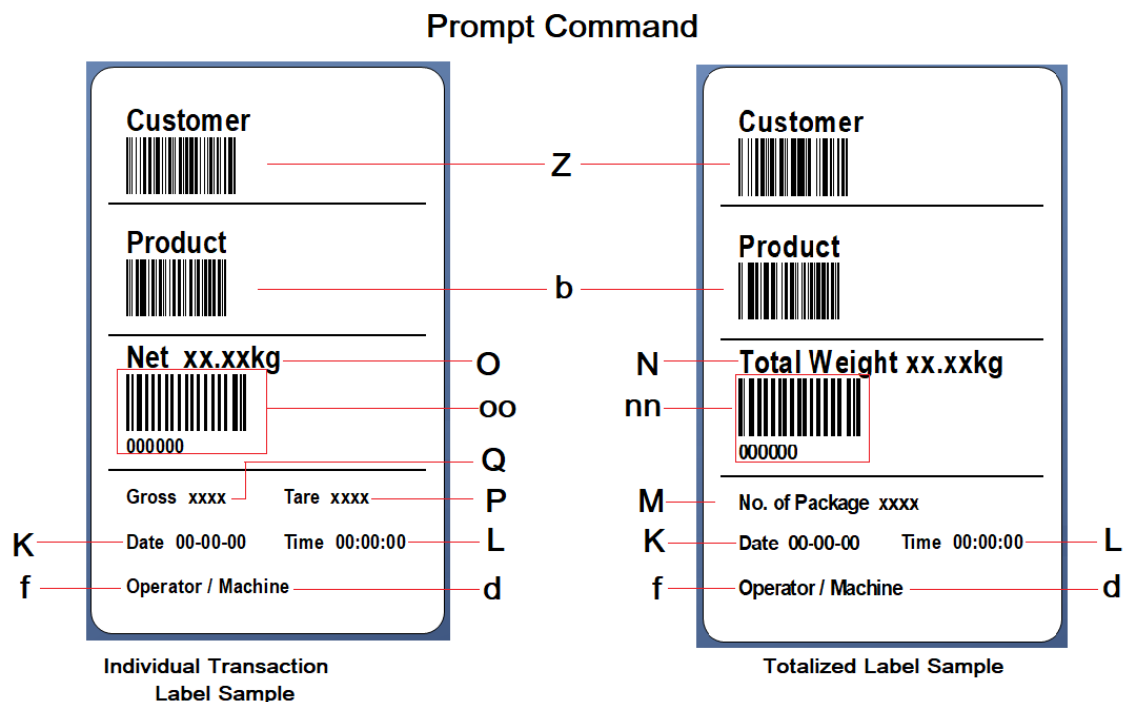
16.2.2.2 Label Illustration for Sbarco

Prompt Command

Individual Transaction
Label Sample

Totalized Label Sample
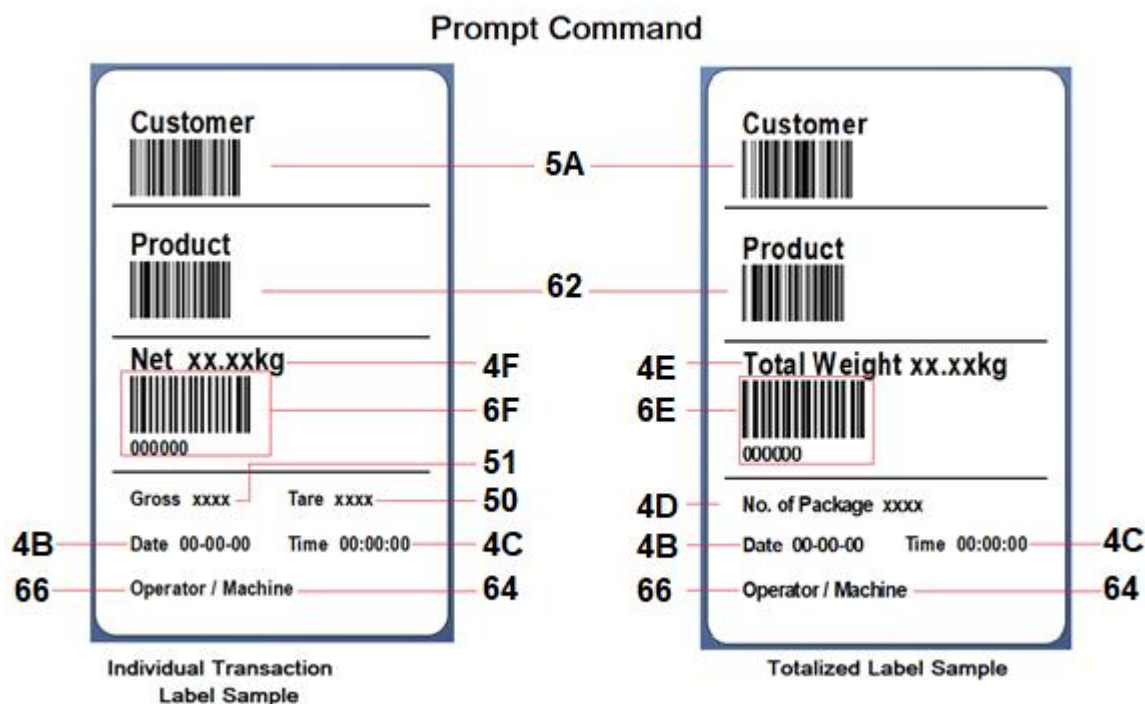
16.2.3 Sample Labels

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.

1. Press **[Set]**.
2. Instrument displays F1.
3. 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.
4. 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.
5. 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.
6. 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

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

17.2 Symbols & Remaining Power

Full Battery: ≥ 6.3V.
2 Blocks: ≥6.0V (Battery level~75%).
1 Block: ≥5.7V (Battery level~20%).
Frame only: <5.7V (Battery level is less than 15%).

17.3 Battery Recharge

When appears, it means that the built-in rechargeable battery is at low voltage status. It is recommended to recharge as soon as possible.

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.

Battery charging status is shown by the Battery Power/Level Indicator: -

Progressing: - Recharging in process.

Flashing   : Recharge completed.

Battery recharge is possible while operating. Overcharge protection circuit is inside to prevent battery damages from overcharge.

Note: - This instrument will auto power on when the power adaptor when an energized power adaptor is plugged in.

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	• 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 43	Cannot communicate Bluetooth Module
--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

1. Clean the instrument with a soft, damp cloth. If necessary, use a mild detergent in water.
2. Do not use any harsh, abrasive material, acetone, volatile solvent, thinner or alcohol for cleaning.
3. 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.
4. Store this instrument in a dry and clean place,
5. Recharge battery before and every 4 months during long time storage.

Appendix A: - Keyboard Commands[57]

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).

---

57   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	Tare Value
Net	c	SWA	SWB	SP	Field 1 (Net Weight)							Field 2 (Tare Weight)					CR	
-0.015kg	STX	5	7		0	0	0	0	1	5	0	0	2	0	0	0	CR	2.000kg
220.450lb	STX	5	5		0	2	2	0	4	5	0	1	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
	c	c	SP	+,-	w	w	w	w	w	w	w	SP	u	u			CR
1.000kg	SOH	STX					1	.	0	0	0		k	g			CR
-0.015kg	SOH	STX		-			0	.	0	1	5		k	g			CR
220.450lb	SOH	STX			2	2	0	.	4	5	0		l	b			CR

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	0
-0.015kg	=	-	0	0	0	.	0	1	5
220.450lb	=	0	2	2	0	.	4	5	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	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[58]

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[59]	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
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

---

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

59   Prompt commands are case sensitive.

Appendix D: - System Parameter Inquiry Commands[60]

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; 1 = comma • **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
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

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

		• **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, color ratio, 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 ~ 99). 01 = lowest, 99 = highest. • **d3** = color ratio (01 ~ 99). 01 = least red output, 99 = highest red output • **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 limit for weighing, high limit for counting, low limit for counting	• **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) • **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.
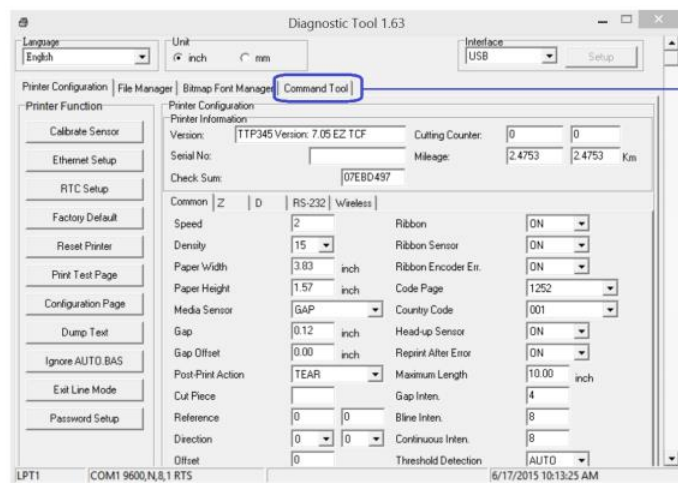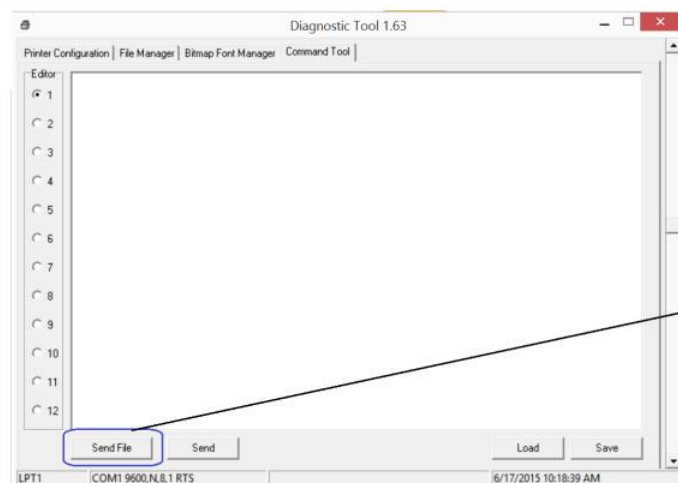
E.4 Create & Upload Label to TSC Printer

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. (a) Click Copies, check KDU and (b) input asterisk (*) on Prompt box.

Below procedures explain how to edit information to be obtained from instrument.

9. 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.
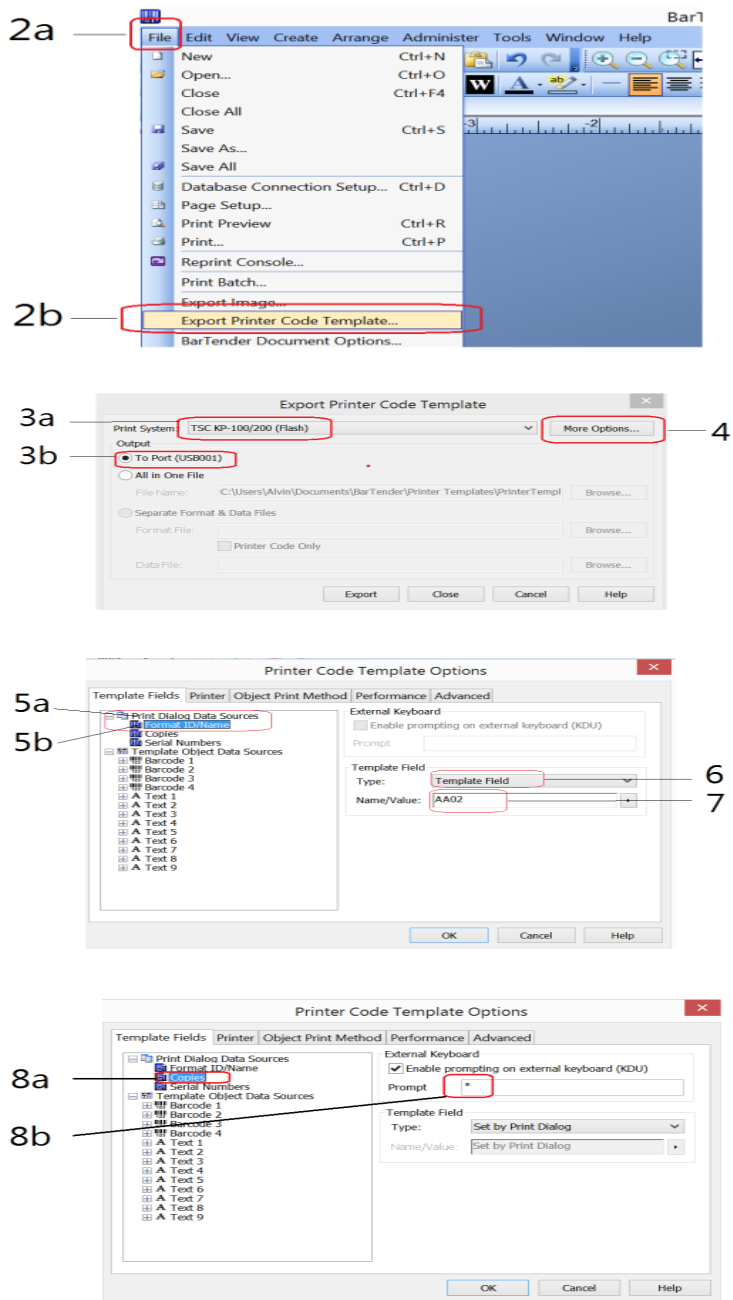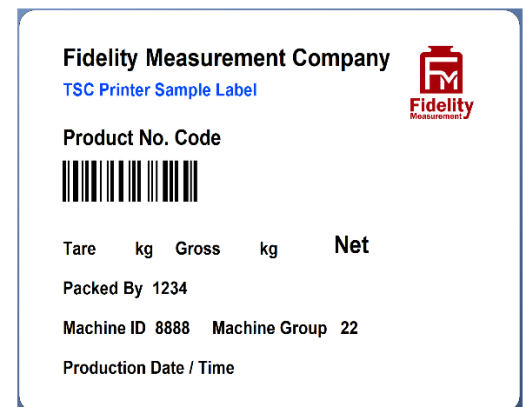
10. Double click on the preferred data source to which variant(s) has/have to add.
11. a. check the box below External Keyboard, then, b. enter the appropriate command on the Prompt Box (refer to **16.2.1** for command detail).
12. Select Auto on the Source box under Template Field
13. Repeat point 11 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.
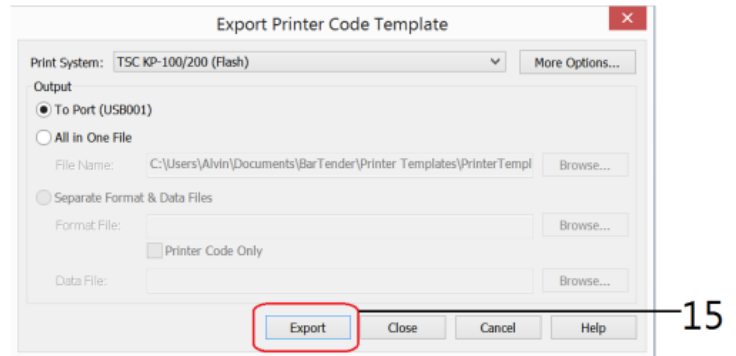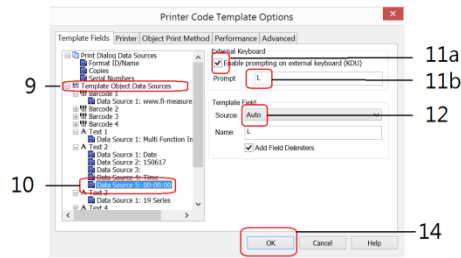
E.5 Sample Label

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

Fidelity Measurement Company
TSC Printer Sample Label

Product No. Code

Tare   kg   Gross   kg   **Net**

Packed By   1234

Machine ID   8888   Machine Group   22

Production Date / Time

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.
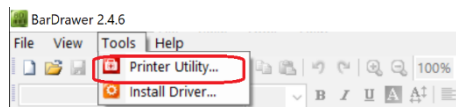11. Click Program (figure 4 below) to start FW update.
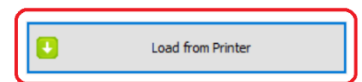12. Click OK after FW update is completed.
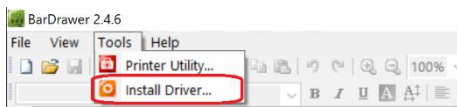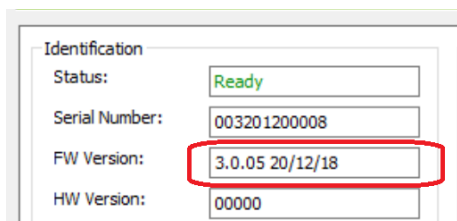

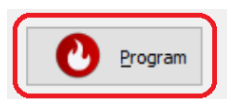Figure 1

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.
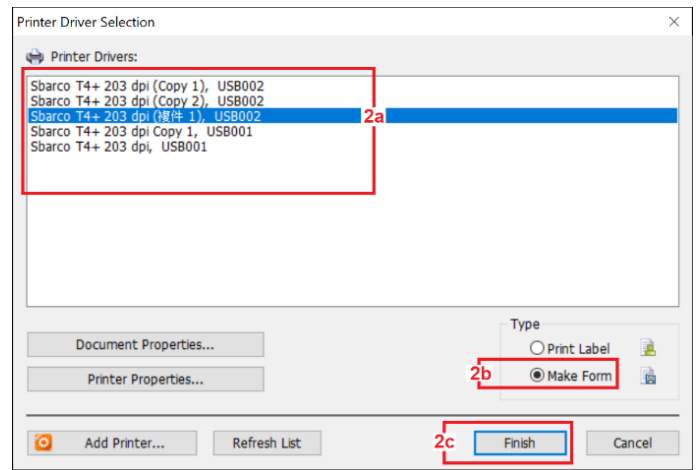
5. To program variables, double click on the variable to program. On Content page: -

    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.
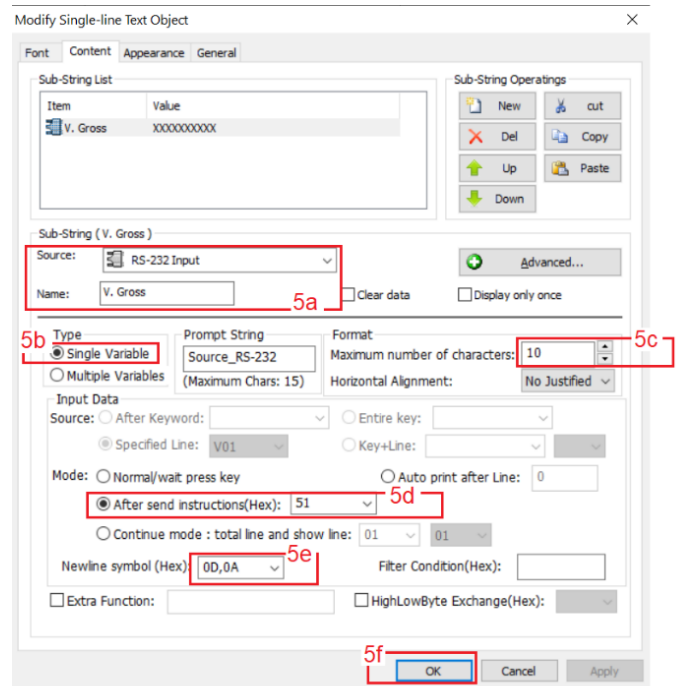
6. Once the label foundation has been completed, then click on File then click on Print. On Download Form page: -

    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.
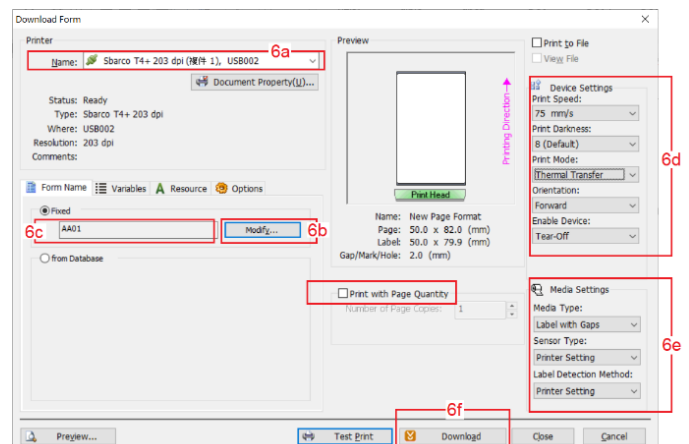
7. On Save Form page: -

    a. make sure that the Form name is correct, then

    b. Click Save

8. On Select Store Media page: -

    a. select Printer, then

    b. select Printer's Flash ROM, then

    c. click OK

Appendix G: - Dynamic Check Mode[61]

This mode is used to compare the result (of a dynamic application) obtained with the preset Lo and Hi Limit set to this instrument. The comparison result (HI, OK or LO) will then be displayed with or without buzzer[62]. Check results are also sent to Control Output Port[63] for other external control devices/proposes.

G.1 Operation Specifications
a. Maximum belt speed: - 30 meter per minute.
b. Maximum accuracy: - 3000d.
c. Maximum speed: - 30 pack per minutes.

G.2 Before Starting Dynamic Check Mode: -
1. Enter Both Hi and Lo limits. Refer to **12.1** on how to set Hi and Lo limits.
2. Enter near zero value in F26. It is recommended that this value is = 70% of the target weight value.

Notes: -
a. Nero 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.
b. HI/OK/LO comparison will only start when weight reading exceeds the pre-set near zero value. Refer to below diagram for more illustration.

G.3 Near Zero Value Illustration Diagram
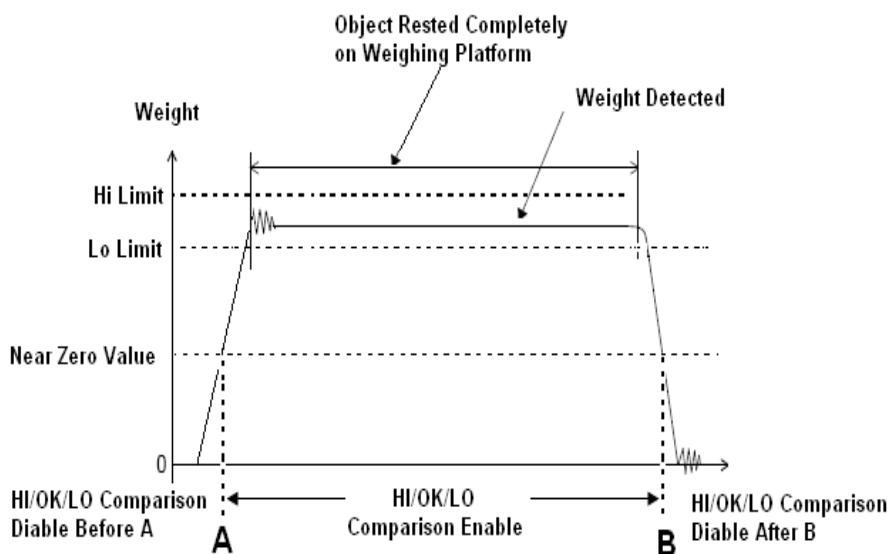
After Hi, Lo limits and near zero value have been entered, this instrument is ready for dynamic checking.

G.4 To Quit Dynamic Check Mode
Refer to **6.5** on how to quit to other function mode.

---

61   To utilize this mode, set F25 to Mode 1. Set also 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.

62   Set F15 to obtain the preferred buzzer output configuration.

63   Refer to **4.6** for details.

Appendix H: - Inflow/Outflow Control Mode[64]

Inflow/outflow logic is built-in to trigger external control devices. This mode is used to maintain the content level inside a tank or container or reservoir.

- Lo limit is used to define the minimum weight level before an alarm or refilling device is triggered.
- Hi limit is used to define the maximum weight level before an alarm or outflow device is triggered.

H.1 Control Logic of Inflow/Outflow Control Mode

When weight detected

is lower than the LO Limit set, a LO signal is sent to the control output port. This signal can be used to trigger an alarm or filling device. If filling device is the case, LO signal is maintained and stopped automatically until the weight reaches the HI limit set.

is higher than the HI limit set, a HI signal is sent to the control output port. This signal can be used to trigger an alarm/to stop the filling device/to start outflow device. HI signal stops automatically when weight detected is lower than the HI limit set.

H.2 Inflow/Outflow Illustration Diagram
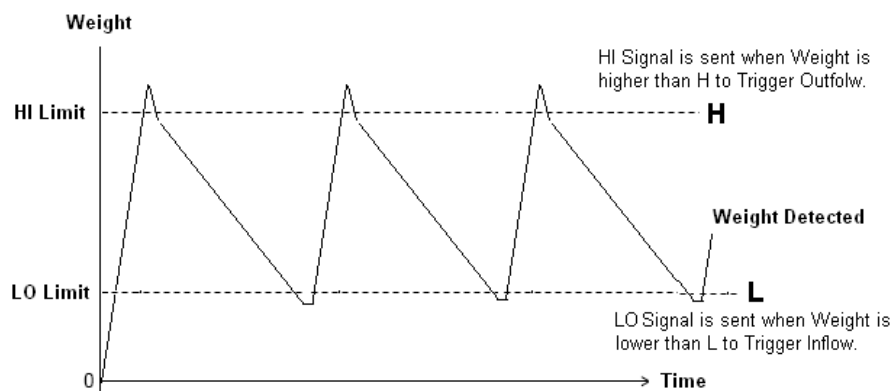
Note: -
a. No OK signal will be sent during uploading process (from L to H)
b. OK signal will be sent during unloading process (from H to L)

H.3 Control Output Pin Assignment Table

| Control Output No.	Control Proposes
#1	Nil
#2	Start Inflow/Stop Outflow
#3	Show level is within Lo and Hi Limit (No inflow or outflow is in process)
#4	Content Level Too High/System Alarm/Start Outflow

---

64   To utilize this mode, set F25 to Mode 2.

Appendix I: - Constant Feeding Mode[65]

Constant feeding logic is built-in to trigger external control devices so that a pre-defined weight is filled in a container/packing automatically.

- SP1 is weight value which fast feeding should stop.
- SP2 is the weight value at which slow feeding should stop.
- SP3 is the weight value at or exceed which an alarm signal will be generated / triggered.

I.1 Constant Feeding Illustration System Block Diagram
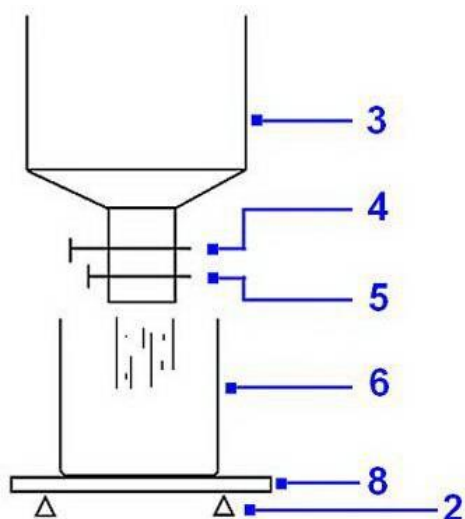
Marking	Description
2	Load Cell
3	Reservoir
4	Solenoid Valve/Gate 1
5	Solenoid Valve/Gate 2
6	Container
8	Weighing Platform

I.2 Constant Feeding Control Parameters

Control parameters are available to achieve various applications functions and targets, Refer below table for more details.

To enter control and application parameters: -
  a. Select Mode 3 in internal function number F25,
  b. During normal operation status, press **[Check]**,
  c. Instrument displays one of the parameters listed on below table.
  d. Input value for each of the parameters. Refer to **I.3** for key function during parameter setting,
  e. Press **[Zero]** to quit to operation status.

Constant Feeding Control Parameters Table

Parameter	Description
Tare H	• The highest weight value of an empty container which can be automatically tare off. • Condition: Tare H > = Tare L • To disable Tare H checking, press **[CE/x10]**.
Tare L	• This is the lowest weight value of an empty container which can be automatically tare off. • Condition: Tare L < =Tare H • To disable Tare L checking, press **[CE/x10]**.
SP1 (Set Point 1)	• Set Point 1. • This is the weight value at or above which fast feeding comes to end. • Condition: < = SP3
SP2	Set Point 2.

---

65   To utilize this mode, set F25 to Mode 3.

(Set Point 2)	It is usually used for slow feeding comes to end. • This is the weight value at or above which slow feeding comes to end. • Condition: SP1 < = SP2 < = SP3
SP3 (Set Point 3)	Set Point 3. It is usually used as alarm when the preset value is exceeded. • This is the weight value at or above which (if such weight value is achieved within the time delay duration set in Delay 3) control output 1 starts action. • Condition: SP1 <= SP2 <= SP3
dELAy1 (Delay Time 1)	Time duration (1~99 sec). This is the time duration in between: - • When **[Func]** key (Start) key is pressed, and • SP1 (Control output 2) starts action.
dELAy2 (Delay Time 2)	Time duration (1~99 sec) This is the time duration in between: - • When weight value of SP1 is reached or exceeded (Control output 2 stops action), and • SP2 (Control output 3) starts action.
dELAy3 (Delay Time 3)	Time duration (1~99 sec). This is the time duration in between: - • (Normal case) When weight value of SP2 is reached or exceeded (Control output 3 stops action) and before feeding sequence stops, or • (Alarm case) When weight value of SP2 is reached or exceeded and before weight value set in SP3 is/will be reached (Control output 1 starts action). SP3 is the preset alarm weight value ***SP3, Delay 3 and Control output 1 together are used for fail safe proposes.***

I.3 Key Functions during Operation & Parameters Setting

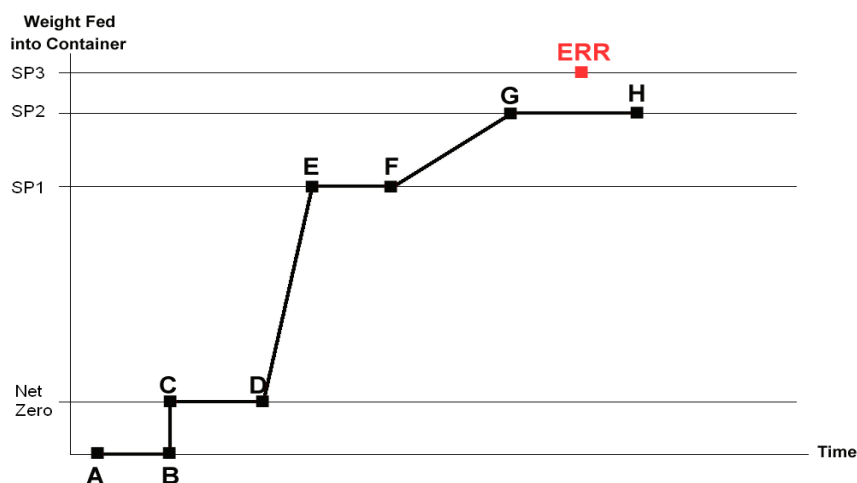Refer to below table for key functions during feeding operation and parameters setting.

Key	Function Description
[Zero]	• Before feeding process starts: - To set weight displayed to zero manually. • During feeding process: - No function. • During parameter setting: - Quit Setting.
[Tare]	• Before feeding process starts: - To tare off the weight of a container manually. • During feeding process: - No function.
[Func]	• During feeding process: - To start/stop feeding process • During parameter setting: - Go next.
[Check]	• To start parameter setting menu.
[CE/x10]	• During feeding process: - No function. • During parameter setting: - To clear value entered.
[Unit]	• Before feeding process starts: - Trigger Relay 1. • During operation: - No function. • During parameter setting: - Go previous.
[Print/M+]	• During feeding process: - Send current weight result to printer/ Accumulate current weight to memory (if a net weight = zero or negative has been previously attained). • During parameter setting: - Enter, save and go to next parameter.
[MR]	• During feeding process: - To recall total number of stored transactions and total accumulated gross weight. • During parameter setting: - No function
[0~9]	• During feeding process: - No function. • During parameter setting: - Numeric keys.

I.4 Start/Stop Constant Feeding Process

a. During normal operation status, press **[Func]** to start.
b. During feeding/dispensing sequence, press **[Func]** to stop.

I.5 Constant Feeding Sequence Illustration Diagram

Refer to below illustration diagram for feeding sequence.

I.6 Constant Feeding Sequence Description

Seq.	Point	Description
1	A	a. In case **[Unit]** key is pressed, or automatically triggered by Seq. 11 automatically) b. Control output 4 starts action.
2	B	a. **[Func]** key is pressed. b. Control output 4 stops action. (If Control output 4 has been triggered)
3	C	a. Instrument displays **Start**. b. Feeding sequence starts.
4	C ➜ D	Time delay as set forth in Delay 1.
5	D	a. Weight of container is tare off automatically[66]. b. Control output 2 (SP1) starts action. c. Fast feeding starts.
6	E	a. Weight value of SP1 is reached. b. Control output 2 stops action. c. Fast feeding stops.
7	E ➜ F	a. Time delay as set forth in Delay 2. This is the stabilization waiting time before SP2 (slow feeding) starts. b. If a weight value **less** than SP1 is detected in this period, Seq. **5** and **6** will be repeated automatically.
8	F	a. Control output 3 (SP2) starts action. b. Slow feeding starts.
9	G	a. Weight value of SP2 is reached. b. Control output 3 stops action. c. Slow feeding stops.
10	G ➜ H	a. Time delay as set forth in Delay 2. This is the stabilization waiting time before the feeding process is completed and automatically stopped. b. If a weight value **less** than SP2 is detected in this period, Seq. **8** and **9** will be

---

66   Tare L<= weight of container <=Tare H

		repeated automatically. Note: - if any weight (e.g. a value = point **ERR**) >= SP3 is detected in this period: - • Control output 1 (error) will be triggered. • Feeding sequence come to a halt. • Manual intervention is required set
11	H	a. Instrument displays **Stop**. b. Feeding sequence completed. c. Instrument displays gross weight (Tare weight + weight of material filled) d. Depends of comport setting, printout and data accumulation can be generated automatically or manually. A signal is sent to trigger control output 4.

I.7 Constant Feeding Control Logic Outputs

The control logic output of this mode should always be achieved through the control output port. Refer to below table for relay output assignment.

I.8 Constant Feeding Relay Output Assignment Table

Output Control of Instrument	Mode 3
Output Control #1	SP3 Output. To be connected with system alarm/system halt devices.
Output Control #2	SP1 Output. To be connected with fast feeding valve/gate.
Output Control #3	SP2 Output. To be connected with slow feeding valve/gate
Output Control #4	Manual Output (by **UNIT** Key)

I.9 Constant Feeding Auto Printout

After each successful feeding transaction, a printout of that transaction may be generated automatically/manually depends on comport setting. Refer to below for printout content and description.

```
TIME     23:04:56
DATE   25.10.2010
NO.        1          (Note 1)
NET       234kg      (Note 2)
TARE      97kg       (Note 3)
GROSS     331kg      (Note 4)
TOTAL     234kg      (Note 5)
```

```
TIME     23:06:16
DATE   25.10.2010
NO.        2          (Note 1)
NET       236kg      (Note 2)
TARE      56kg       (Note 3)
GROSS     292kg      (Note 4)
TOTAL     470kg      (Note 5)
```

1. (In case auto accumulation is set to on) Sequence number (also = total number) of current transaction accumulated to memory. 1 = 1st, 2 = 2nd …etc.
2. Weight of material fed of current transaction.
3. Weight of value (of the container) of current transaction has been tare off.
4. Gross weight of the container (after material has been filled in).
5. Total accumulated net weight of material fed.

Appendix J: - Constant Dispensing Mode[67]

Constant dispense logic is built-in to trigger external control devices so that a pre-defined weight is dispensed automatically.

- SP1 is weight value which fast dispensing should stop.
- SP2 is the weight value at which slow dispensing should stop.
- SP3 is the weight value at or exceed which an alarm signal will be generated / triggered.
- rEF L is the weight at or below which a signal is generated to start auto re-fill device.
- rEF H is the weight at or above which a signal is generated to stop auto re-fill device.

J.1 Constant Dispensing Illustration System Block Diagram
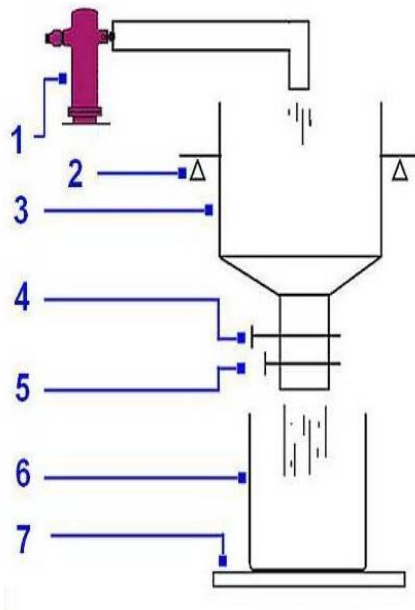
Marking	Description
1	Reservoir Refill Devices
2	Load Cell
3	Reservoir
4	Solenoid Valve/Gate 1
5	Solenoid Valve/Gate 2
6	Container
7	Working Platform

---

67   To utilize this mode, set F25 to Mode 4.

J.2 Constant Dispensing Control Parameters

Control parameters are available to achieve various applications functions and targets, Refer below table for more details.

To enter control and application parameters: -
   a. Select Mode 4 in internal function number F25,
   b. During normal operation status, press **[Check]**,
   c. Instrument displays one of the parameters listed on below table.
   d. Input value for each of the parameters. Refer to **J.3** for key function during parameter setting,
   e. Press **[Zero]** to quit to operation status.

Constant Dispensing Control Parameters Table

Parameter	Description
rEF H (Refill Hi)	• This is the weight value of the reservoir at or above which auto refill stops. • Condition: H > = rEF L > = SP2 > = SP1 (SP3 is not considered)
rEF L (Refill Lo)	• This is the weight value of the reservoir at or below which auto refill starts. • Condition: rEFl L < = rEF H
SP1 (Set Point 1)	• Set Point 1. • This is the weight value at or above which fast dispensing comes to end. • Condition: < = SP3
SP2 (Set Point 2)	Set Point 2. It is usually used for slow dispensing comes to end. • This is the weight value at or above which slow dispensing comes to end. • Condition: SP1 < = SP2 < = SP3
SP3 (Set Point 3)	Set Point 3. It is usually used as alarm when the preset value is reached/exceeded. • This is the weight value at or above which (if such weight value is achieved within the time delay duration set in Delay 3) and control output 1 starts action. • Condition: SP1 <= SP2 <= SP3
dELAy1 (Delay Time 1)	Time duration (00~99 sec). This is the time duration in between: - • When **[Func]** key (Start) key is pressed, and • SP1 (Control output 2) starts action.
dELAy2 (Delay Time 2)	Time duration (00~99 sec) This is the time duration in between: - • When weight value of SP1 is reached or exceeded (Control output 2 stops action), and • SP2 (Control output 3) starts action.
dELAy3 (Delay Time 3)	Time duration (00~99 sec). This is the time duration in between: - • (Normal case) When weight value of SP2 is reached or exceeded (Control output 3 stops action) and before dispensing sequence stops, or • (Alarm case) When weight value of SP2 is reached or exceeded and before weight value set in SP3 is/will be reached (Control output 1 starts action). SP3 is the preset alarm weight value

SP3, Delay 3 and Control output 1 together are used for fail safe proposes.

J.3 Key Functions during Operation & Parameters Setting

Refer to below table for key functions during dispensing operation and parameters setting.

| Key	Function Description
[Zero]	• Before dispensing process starts: - To set weight displayed to zero manually. • During auto dispensing process: - No function.
[Tare]	• Before dispensing process starts: - To tare off the weight of a container manually. • During auto dispensing process: - No function.

[Func]	• During dispensing process: - To start/stop dispensing operation process • During parameter setting: - Go next.
[Check]	• To start parameter setting menu.
[CE/x10]	• During dispensing process: - No function. • During parameter setting: - To clear value entered.
[Unit]	• Before dispensing process starts: - Trigger Relay 1. • During dispensing process: - Select weight unit. • During parameter setting: - Go previous.
[Print/M+]	• During operation: - Send current weight result to printer/ Accumulate current weight to memory (if a net weight = zero or negative has been previously attained). • During parameter setting: - Enter, save and return.
[MR]	• During dispensing process: - To recall total number of stored transactions and total accumulated gross weight. • During parameter setting: - No function
[0~9]	• During dispensing process: - No function. • During parameter setting: - Numeric keys.

J.4 Start/Stop Constant Dispensing Process

a. During normal operation status, press **[Func]** to start.
b. During feeding/dispensing sequence, press **[Func]** to stop.

J.5 Constant Dispensing Sequence Illustration Diagram

Refer to below illustration diagram for dispensing sequence.
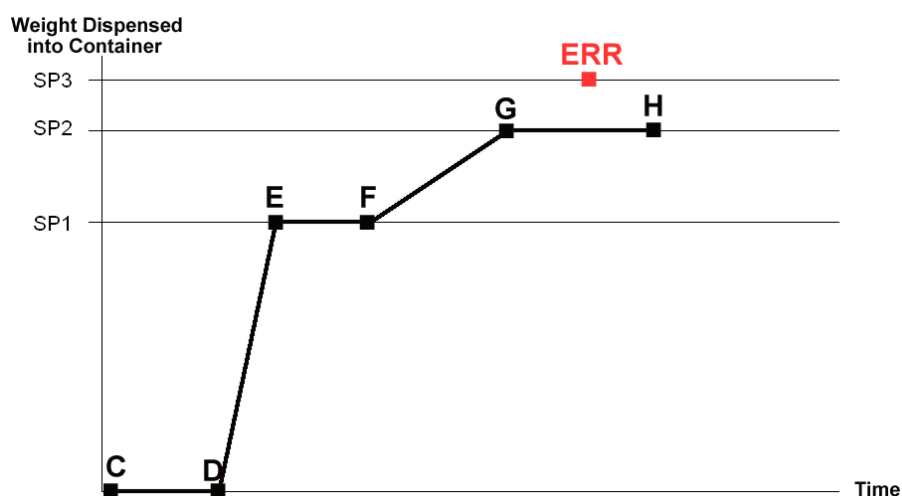
J.6 Constant Dispensing Sequence Description

Seq.	Point	Description
1	C	a. **[Func]** key is pressed. b. Instrument displays **Start**.
2	C ➜ D	Time delay as set forth in Delay 1.
3	D	a. Dispensing sequence starts. b. Control output 2 (SP1) starts action. c. Fast dispensing starts.
4	E	a. Weight value of SP1 is reached. b. Control output 2 stops action.

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		c. Fast dispensing stops.
5	E ➜ F	a. Time delay as set forth in Delay 2. This is the stabilization/waiting time before SP2 (slow dispensing) starts. b. If a weight value **less** than SP1 is detected in this period, Seq. **3** and **4** will be repeated automatically.
6	F	a. Control output 3 (SP2) starts action. b. Slow dispensing starts.
7	G	a. Weight value of SP2 is reached. b. Control output 3 stops action. c. Slow dispensing stops.
8	G ➜ H	a. Time delay as set forth in Delay 3. This is the stabilization/waiting time before the dispensing process is completed and automatically stopped. b. If a weight value **less** than SP2 is detected in this period, Seq. **6** and **7** will be repeated automatically. Note: - if any weight (e.g. a value = point **ERR**) >= SP3 is detected in this period: - • Control output 1 (error) will be triggered. • Dispensing sequence comes to a halt. • Manual intervention is required set
9	H	a. Instrument displays **Stop**. b. Dispensing sequence completed. c. A printout[68] [69] is generated automatically.

J.7 Constant Dispensing Control Logic Outputs

The control logic output of this mode should always be achieved through the control output port. Refer to below table for relay output assignment.

## J.8 Constant Dispensing Relay Output Assignment Table

Output Control of Instrument	Mode 4
Output Control #1	SP3 Output. To be connected with system alarm/system halt devices.
Output Control #2	SP1 Output. To be connected with fast dispensing valve/gate.
Output Control #3	SP2 Output. To be connected with slow dispensing valve/gate
Output Control #4	rEF L (Connected with reservoir refill start/stop)

---

68   Number of printout copy depends on F18 Mode 3.

69   Whether the current transaction will be automatically accumulated to memory depends on comport setting.

J.9 Auto Refill Function

The constant dispensing control logic comes with auto reservoir refill logic & output. Refer to below diagram illustration diagram for auto reservoir refill sequence.
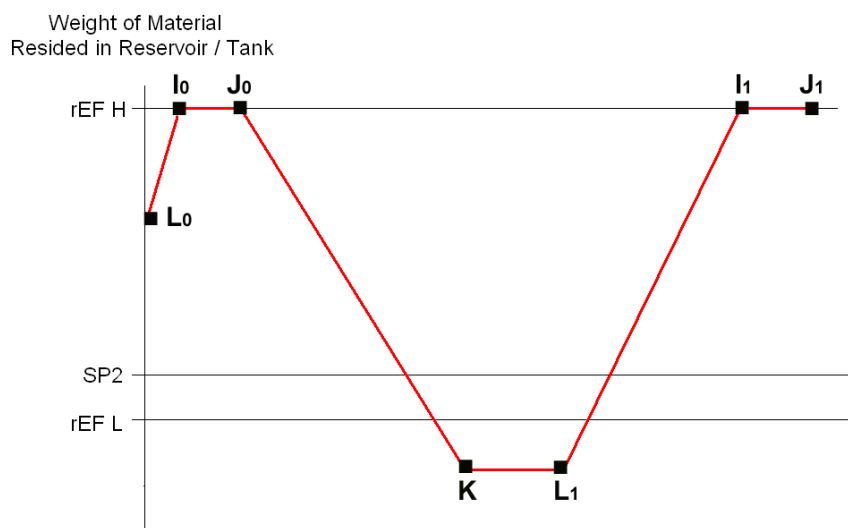
J.10 Auto Reservoir Refill Sequence Description

Seq.	Point	Description
1	$L_0 \rightarrow I_0$	Reservoir refill in process. Control output 4 in action.
2	I_0	a. Reservoir refill completed. b. Control output 4 stops action.
3	$I_0 \rightarrow J_0$	a. In case **[Func]** key is pressed or had been previously pressed (at reservoir weight value less than rEF L). b. Time delay as set forth in Delay 1.
4	J_0	Dispensing sequence starts.
5	$J_0 \rightarrow K$	Weight of material in reservoir decreased after one or more dispensing sequence.
6	K	a. Weight of material in reservoir drops below SP2 after the last dispensing sequence completed. b. **[Func]** key is pressed to start another dispensing sequence.
7	$K \rightarrow L_1$	Time delay as set forth in Delay 1.
8	L_1	a. Control output 4 starts action. b. Reservoir refill starts.
9	$L_1 \rightarrow I_1$	Reservoir refill in process.
10	I_1	a. Reservoir refill completed. Control output 4 stops action. b. In case **[Func]** key is pressed or had been previously pressed (at reservoir weight value less than rEF L), then = point C of **7.11.3.**
11	$I_1 \rightarrow J_1$	Time delay as set forth in Delay 1.
12	J_1	= point D of **7.11.3**

J.11 Constant Dispensing Auto Printout[70]

After each successful dispensing transaction, a printout of that transaction will be generated. Refer to below for printout content and description.

```
TIME     06:59:53
DATE    27.10.2010
NO.          1          (Note 1)
NET       213kg       (Note 2)
TARE       0kg
GROSS     816kg       (Note 3)
TOTAL     213kg       (Note 4)
```

```
TIME     07:01:00
DATE    27.10.2010
NO.          2          (Note 1)
NET       201kg       (Note 2)
TARE       0kg
GROSS     615kg       (Note 3)
TOTAL     414kg       (Note 4)
```

Notes: -
1. (In case internal function F17 auto accumulation is set to on) sequence number (also = total number) of current dispensing transaction accumulated to memory. 1 = 1st, 2 = 2nd …etc. 0 = auto accumulation function disables.
2. Weight of material dispensed if this dispensing transaction.
3. Weight value of material resided in reservoir after the current transaction.
4. Total accumulated weight of material dispensed.

---

70   When F18 is set to Mode 3

Appendix K: Static Check Function[71] [72] [73] [74] [75]

Static Check function is used to compare a _stabilized_ weight/piece result with the preset Lo and Hi Limit.

Targets of Check mode are: -

Weighing mode = weight value.

Piece Count mode = piece value.

Auto Tare Accumulation mode = weight value.

User configurable delay time (0.0 ~ 9.9 seconds) is available between a stabilized result is obtained and before relay output is triggered. Follow the below steps to set delay time.

1. Go to F25, then press **[Print/M+],**
2. Select **Mode 0**, then press **[Print/M+]**
3. Instrument displays delay time.
4. Enter preferred delay time through numeric keys, then press **[Print/M+].**
5. Instrument displays **F25**. Delayed time is set and in effect now.
6. Press **[Zero]** to quit setting and return to normal operation status.

K.1 Set Lo & Hi Limits

Follow the below steps to set Lo and Hi Limit.

1. During desired operation mode, press **[Check]**.
2. 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.
3. 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.
4. Check Mode is now enabled. The check result is shown by one of the backlight colors[76]. Check results are also sent to Control Output Port.

K.2 Hints for Entering Lo and Hi Limits: -

a. For normal comparison, set both Lo and Hi limits.
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.

K.3 To Cancel Static Check Function

To cancel check function, press **[CE/x10]** on point **2** and **3** of **12.1**.

---

71   To utilize this function, set F25 to Mode 0.

72   Set also F15 for desired Check buzzer output.

73   Static check function will not operate when weight is less than 20d (or 20d1 for dual weighing range/interval mode).

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

75   Set also F26 (Near Zero weight value) if necessary.

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