DFWT

WEIGHT INDICATORS
TECHNICAL MANUAL

INDEX

1. INTRODUCTION

The purpose of this manual is to help the user get to know the weight indicator's various functioning modes, the keys' functions and the display indications. It is possible that one may incur into the phrase **"TECH.MAN.REF."**: this means that an advanced function is being described (therefore, for the technical personnel) and which is further explained in the corresponding technical manual.

We advise to carefully follow the instructions for programming the weight indicator; by taking actions not indicated this manual, one could cause the scale to not work properly.

The indicator adapts itself to normal weighing applications in either industrial settings, such as during factory production processes, or that of commerce, such as legal for trade applications, also satisfying the frequently needed ability to transmit and print the data through its two bidirectional serial ports.

This manual has been made as carefully and exactly as possible; in any case, your suggestions are always welcome.

⚠ **WARNING** ⚠

Any attempt to repair or alter the unit can expose the user to the danger of electric shock and it will void our warranty. This instrument is covered under warranty provided that **IT HAS NOT BEEN OPENED BY THE USER** for any reason. If any problem with the unit or system has been experienced please notify the manufacturer or the dealer from which the instrument was acquired.

Do not pour liquids on the indicator!

Do not use solvents to clean the indicator!

Do not expose instrument to either direct sun light or any heat sources!

Always mount the indicator and platform in a vibration free setting!

Read carefully & apply what described in the POWER SUPPLY & START-UP section!

Do not install in an environment with any risk of explosion!

All the connections of the indicator have to be made respecting the rules applicable in the zone and in the installing environment

Everything not expressly described in this manual has to be considered as improper use of the equipment.

The crossed-out wheeled bin on the product means that at the product end of life, it must be taken to separate collection or to the reseller when a new equivalent type of equipment is purchased. The adequate differentiated refuse collection in having the product recycled, helps to avoid possible negative effects on the environment and health and supports the recycling of the materials of which the equipment is made. The unlawful disposal of the product by the user will entail fines foreseen by the current regulations.

2. MAIN TECHNICAL SPECIFICATIONS

POWER SUPPLY	DFWK06PXPTCC - DFWRPXPTCC: 12Vdc trough 110-240 Vac 50-60Hz adapter and rechargeable battery (6 V – 4,5 Ah).
MAXIMUM POWER	5 VA
OPERATING TEMPERATURE	From -10 to +40 °C (14 to 104 °F) (with even temperature).
DISPLAYED DIVISIONS	10000e, 3X3000e for legal for trade use expandable to 800.000 for internal use (with **minimum** signal coming from the 1,6mV/V cell).
MAXIMUM INPUT SIGNAL	6 mV/V.
MINIMUM VOLTAGE PER DIVISION	0.3 μV (approved instrument); 0.03 μV (non approved instrument).
RESOLUTION IN CALCULATION	1'500'000 points (with signal in input equal to 3mV/V).
KEYBOARD	DFWK06PXPTCC - DFWRPXPTCC: water resistant polycarbonate membrane keys with tactile and acoustic feedback.
PROTECTIVE CASE	ABS console (IP 65 protection)
TARE FUNCTION	Available on the entire capacity.
AUTO POWER OFF	Programmable from 1 to 255 minutes, or disinserted.
LOW BATTERY WARNING	"Low Batt " will appear on the display
BATTERY RECHARGE TIME	12 hours.
LOAD CELL POWER SUPPLY	5Vdc ± 5%, 120Ma (max 8 cells of 350 Ohms)
LOAD CELL CONNECTIONS	6 wires (CELL1) with Remote Sense, 4 wires (CELL 2, 3, 4) without Remote Sense.
I/O SECTION	- 1 RS232/TTL input/output configurable for connection to PC/PLC or WEIGHT REPEATER. - 1 RS232 input/output for connection to printer. Configurable for connection to PC/PLC, WEIGHT REPEATER or PRINTER.
CLOCK	Series on EECLOCK

THE PARTS OF THE INSTRUMENT CONTAINING DANGEROUS ELECTRICAL TENSION ARE ISOLATED AND INACCESSIBLE TO THE USER UNLESS IT HAS BEEN DAMAGED, OPENED, OR ALTERED.

3. SYMBOLS

The following symbols are used both on the manual and on the instrument itself to call the attention of the user:

⚠️   WARNING! This operation must be performed only by qualified personal.

C E   Conforms to the standards of the European Union.

Ⅲ   Identifies the Class Of Precision defined by the OIML to represent 3000 divisions

"TECH.MAN.REF." means that an advanced function is being described (therefore for the technical personnel) which will be further explained in the corresponding technical manual.

4. INSTALLATION

Depending on the model, the digital weight indicator can have a stainless steel case, or in ABS whose external dimensions are represented in FIGURES.

While it is quite easy to operate on a tabletop, if a fixed support is desired, mounting on a rack, shelf or column is relatively simple.

NOTE: When the identification plate is supplied separately (therefore not attached to the front panel) it is advisable to attach it in the appropriate space on the indicator, so that it can be identified.

4.1 DFW ABS VERSION
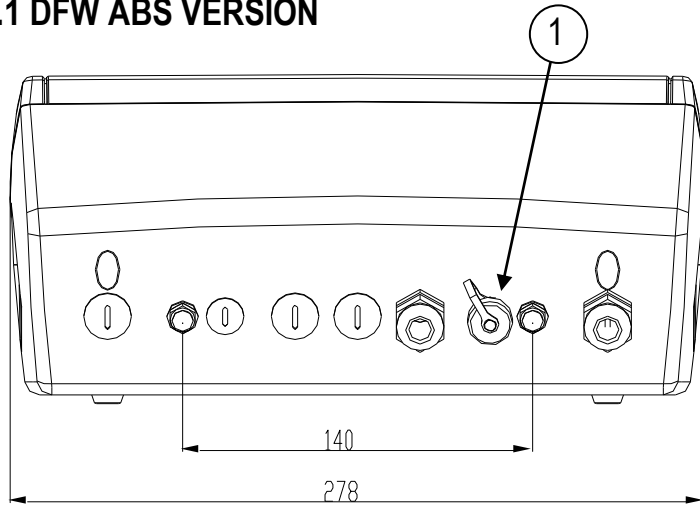
1 Power supply input

5. POWER SUPPLY & START UP

5.1 POWER SUPPLY

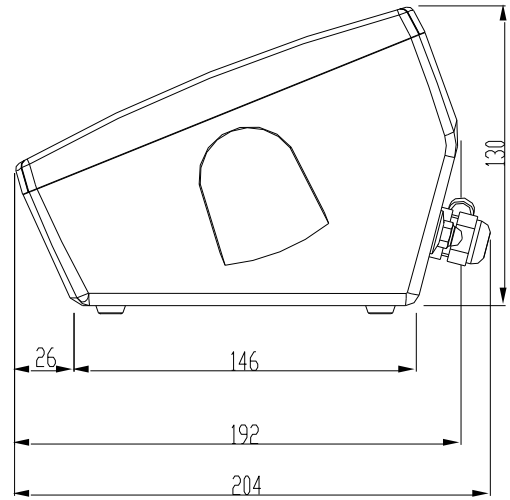The instrument can be powered with a 12 Vdc tension supplied from an AC/DC internal adapter which should be connected to the 110-240 Vac mains voltage. Safety norms must be respected for the connection to the mains voltage including the use of a line which has to be free from noise generated by other electronic equipment.
It is also possible to power through a rechargeable built-in battery.

!!WARNING!!

We recommend to completely recharge (12 Hours) the battery at the first ignition of the instrument.
In order to avoid the deterioration of the rechargeable battery:
In standard conditions:
- never leave the battery partially or completely uncharged; at least once a week recharge it completely .
In case the instrument is not used for a long period, one needs to:
- completely recharge the battery before the system is switched off for the last time.
- recharge completely every 3 months

6V RECHARGEABLE BATTERY FEATURES
    Material Lead
    Power   4,5 Ah
    Output   6 V
THE BATTERY MUST ONLY BE REPLACED WITH AN ORIGINAL FROM THE MANUFACTURER.

In order **TO POWER** the instrument through the 110-240Vac mains or TO RECHARGE the 6V battery:
- insert the power supply cable in your main current source.

If the instrument has been powered correctly, the **power-on** led on the front panel turns on.

Do not connect other equipment to the same socket as the one that the adapter is in.
Do not step on or crush the power supply cable

5.2 TURNING ON / OFF THE INSTRUMENT

TO TURN ON the instrument press the C key until the indicator turns on; then release.
The display shows:
XX.YY   is the installed software version.
bt XXX   in which XXX is a number from 0 to 100 which indicates the battery level (if present).
The indicator has an "auto zero at start-up" function: in other words it means that if at start-up a weight within +/- 10% of the capacity is detected, it will be zeroed; if the weight is not within this tolerance, with a non approved instrument the display shows the present weight after a few instants, while with an approved instrument "ZerO" is shown continuously on the display, until the weight does not re-enter within this tolerance; the auto zero function at start-up may be disabled in the set-up environment (only with non approved instrument); see **SEtuP >> ConFiG >> Param. >> Auto-0** parameter **(TECH.MAN.REF.).**

By pressing the **Fn** key for an instant while the version is shown in the display, the indicator will show the following in this order:
CLoCK   if date and time is detected.
02.01   in which 02 indicates the instrument type, 01 indicates the metrological software version.
XX.YY.ZZ   is the installed software version.
DFWT06   is the name of the installed software.
bt XXX   in which XXX is a number from 0 to 100 which indicates the battery level (if present).
-K- X.YY in which K identifies the type of keyboard: K=0 5-key keyboard, K=1 17-key keyboard.
   X.YY is the installed software version.

After this, it shows the programmed capacity and the minimum division, "hi rES" (in case of NOT approved instrument) or "LEGAL" (in case of approved instrument), the g gravity value, and finally it executes a countdown (self-check).
TO TURN OFF the instrument keep the **C** key pressed until the "-OFF-" message appears on the display; then release the key.

6. FRONT PANEL KEYS AND INDICATORS

The front panel of the indicator is designed for quick but simple weighing applications. It consists of an LCD display with 6 digits 25 mm in height, 7 LED indicators (depending on the model) and a water-proof film keyboard with 17 numeric and function keys.

If the indicator has an LCD display, while weighing various multifunction symbols indicating the functioning status will turn on (see section 7 "SYMBOLS ON THE LCD DISPLAY").
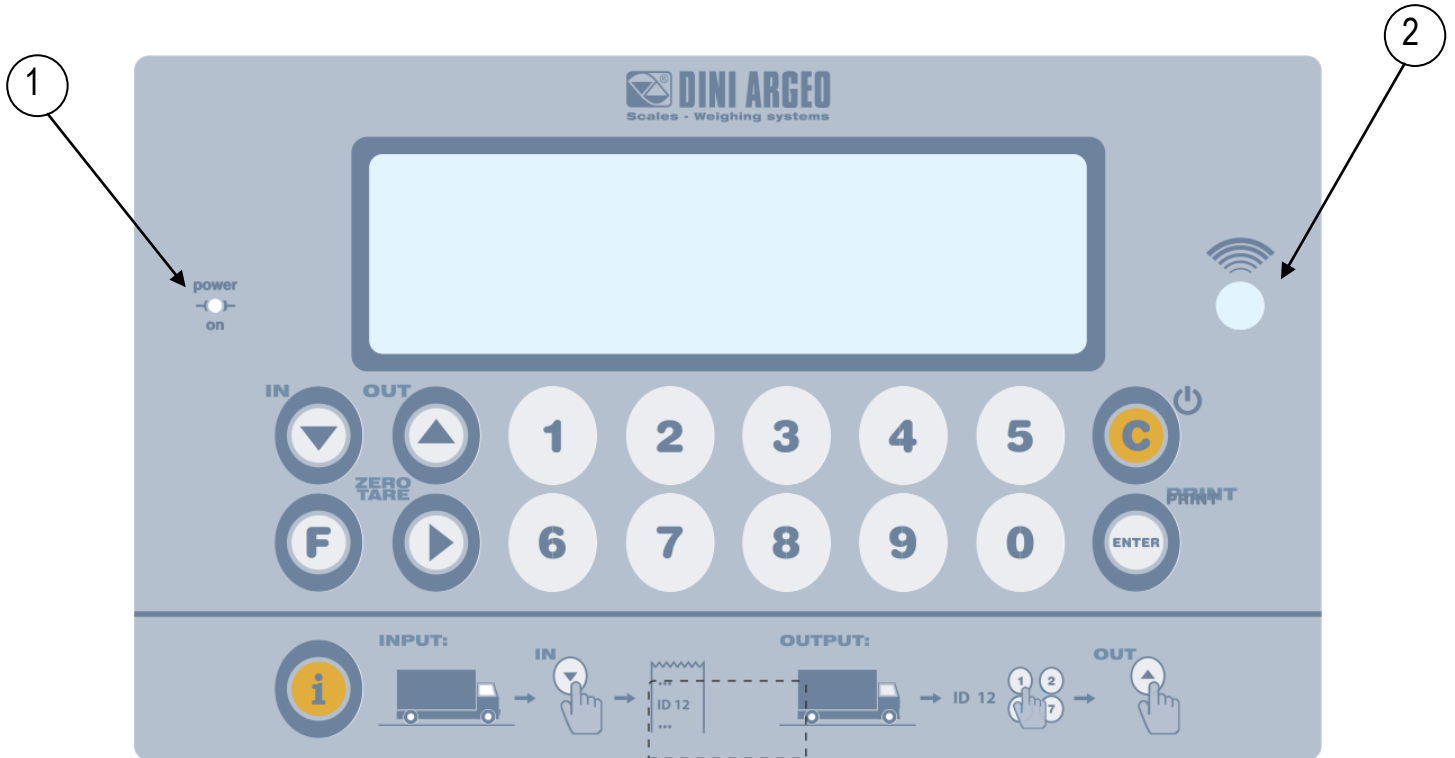
DFWK

DFWR

(1) Indicates the presence of power supply.

(2) Sensor for the reception of the remote control signal.

(3) Indicates that the weight detected by the weighing system is close to zero, within ±¼ of the division.

(4) Indicates that the weight is unstable.

(5) Indicates that the displayed value is a net weight.

(6) Indicates the unit of measure in use and that one is in the first weighing range.

(7) Indicates the unit of measure in use and that one is in the second weighing range.

(8) Indicates that a specific function of the indicator is active.

SCALE KEY		FUNCTION
IN ▼		- If pressed for an instant it allows carrying out an input weigh. - Allow to scroll forwards in the menu steps or in the parameters inside a step. - In the numeric or alphanumeric input phase, it decrements the blinking digit.
OUT ▲		- If pressed for an instant it allows carrying out an output weigh. - Allow to scroll backwards in the menu steps or in the parameters inside a step. - In the numeric or alphanumeric input phase, it increments the blinking digit.
ZERO/TARE ►		- If pressed after the insertion of a numeric value, this is stored as manual tare. - If pressed for an instant it carries out the semiautomatic tare, or cancels the value of tare if the gross weight is 0. - If pressed at length, it clears the displayed gross weight, if it is within +/- 2% of the total capacity
↵ PRINT	ENTER PRINT	- In the numeric input phase, it confirms the entry made. - In the SET-UP, it allows to enter a step or to confirm a parameter within a step. - It transmits the data from the serial port dedicated to the printer.
C/DEL		- It turns the instrument on and off. - In the numeric input phase, it quickly zeros the present value. - In the set-up environment, it allows to exit a step without confirming the change made.
Fn	F	- It allows to select the desired function. - If pressed at lenght, it enters into the USER MENU (see section 10)
i	Fn + C/DEL i	- Allows to view the scale's metric information: capacity, division, minimum weigh for each configured range.
NUMERIC KEYBOARD		- In the numeric input phase it allows to enter the desired value.

6.1 REMOTE CONTROL (OPTIONAL)

It is possible to remotely control the instrument through one of the following types of remote controls: 18-key infrared (ir) or 6-key radio (rd).

The type of remote control to be used must be selected in the Setup environment, in the **<< ir.Conf >>** step **(TECH.MAN.REF).**

6.1.1 "19-KEY" INFRARED REMOTE CONTROL

The command system is "directive", therefore the receiving measurement device must be "in view"; the maximum functioning distance is 8 m.

With this type of remote control, the functioning of the keys will be described in the following table.

NOTE: The infrared remote controls are for indoor use only.

FUNCTION OF THE KEYS

TASTIERA	TASTO (*) O FUNZIONE EMULATA
F1	IN key
F2	Out key
F3	F key
C	C/DEL key
NUMERIC KEYS	Insert numers
TARE	TARE key
ZERO	ZERO key
MODE	TARE key
PRINT↵	PRINT/ENTER key

(*) See function of the key in the previous section.

6.1.2 "18-KEY" INFRARED REMOTE CONTROL

The command system is "directive", therefore the receiving measurement device must be "in view"; the maximum functioning distance is 8 m.

With this type of remote control, the functioning of the keys will be described in the following table.

NOTE: The infrared remote controls are for indoor use only.
FUNCTION OF THE KEYS

KEYBOARD	KEY (*) OR FUNCTION EMULATED
Fn	Fn key
2nd F	ZERO/TARE key
C	C/DEL key
NUMERIC KEYS	Entry of digits
TARE / ▲	OUT key or increase a digit while entering a value
.	Display scale info or enter the decimal point while entering a value
ZERO / ▼	IN key or decrease a digit while entering a value
MODE / →	ZERO/TARE key
PRINT / ↵	PRINT/ENTER key

(*) See function of the key in the previous section.

6.1.3 "6-KEY" RADIO REMOTE CONTROL

FUNCTION OF THE KEYS
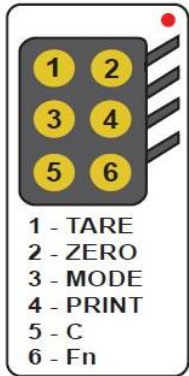
USE OF MORE REMOTE CONTROLS WITH ONLY ONE INDICATOR

If one works with only an indicator, it is possible to use any 6-key remote control, without to combine it with the indicator, therefore without limiting the number of usable remote controls.
To enable this mode one has first to select "RD 6 BR" in the << ir.Conf >> (**TECH.MAN.REF**).

USE OF MORE REMOTE CONTROLS WITH SEVERAL INDICATORS IN THE SAME AREA

If one needs to use several indicators in the same area, it is possible to combine each remote control to the desired indicator, in order to execute the function only on it and therefore to avoid emulating the function on all indicators in use.
By enabling this mode it will be possible to combine up to 3 different remote controls (e.i. for 3 different operators) for each indicator.
To enable this mode one has first to select "RD 6" in the << ir.Conf >> (**TECH.MAN.REF**) then to link a new remote control to the indicator one has to:
- press at length 1 and 2 keys together (3 seconds)
- the instrument displays "aut.rd?"
- press ENTER key of the indicator
- the new remote control is linked

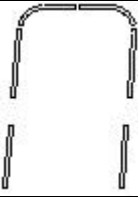To remove linking of a remote control one has to:
- press at length 1 and 2 keys together (3 seconds)
- the instrument displays "aut.rd?"
- press C key of the indicator, if the remote control was previously linked, it will be removed.

7. SYMBOLS ON THE LCD DISPLAY

The LCD display has symbols which show the indicator's functioning status; you will find the description for each symbol below.

LCD DISPLAY
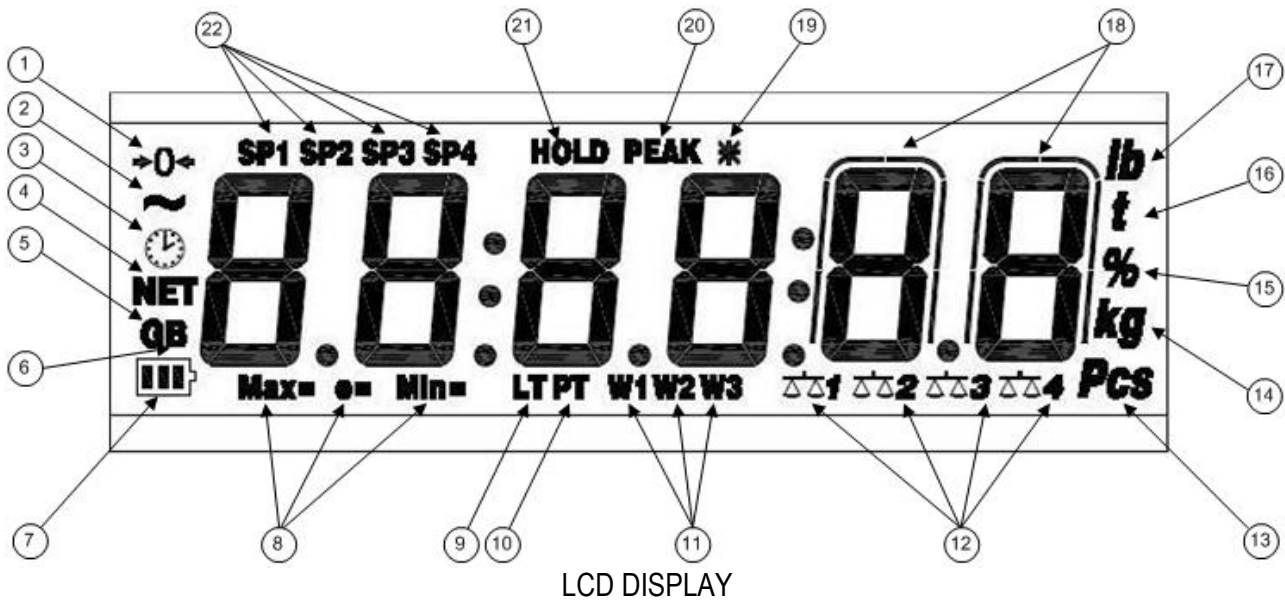
NUMBER	SYMBOL	FUNCTION
(1)	→0←	The weight detected on the weighing system is near zero, within the interval of –1/4 ÷ +1/4 of the division.
(2)	~	The weight is unstable.
(3)	🕐	The time is being shown on the display, in the "HH:MM:SS" format
(4)	NET	The displayed weight is a net weight.
(5)	G	The displayed value is a gross weight, if the Italian or English language is selected in the print configuration.
(6)	B	The displayed value is a gross weight, if the German, French or Spanish language is selected in the print configuration.
(7)	▥	Indicates the battery charge level: see section 8.6 - "LOW BATTERY WARNING".
(8)	MAX=	When viewing the metric information, it identifies the indicated capacity range.
	MIN=	When viewing the metric information, it identifies the indicated minimum weigh range.
	e=	When viewing the metric information, it identifies the indicated division range
(9)	LT	The locked tare is enabled
(10)	PT	The manual tare is active.
(11)	W1	The instrument is in the first weighing range.
	W2	The instrument is in the second weighing range.
	W3	The instrument is in the third weighing range.
(12)	⚖1⚖2⚖3⚖4	Indicates the scales that are being shown.

(13)	PCS	Not used in this application
(14)	kg	Indicates the unit of measure in use("kg" for kilogram, "g" gram).
(15)	%	Not used in this application
(16)	t	Indicates the unit of measure in use (tons).
(17)	LB	Indicates the unit of measure in use (pounds)
(18)		These are displayed around the digits with higher sensitivity, when viewing the weight x 10.
(19)	*	Indicates that a key has been pressed.
(20)	PEAK	Not used in this application
(21)	HOLD	Not used in this application
(22)	SP1 SP2 SP3 SP4	Not used in this application Not used in this application Not used in this application Not used in this application

8. BASIC FUNCTIONS

8.1 ZERO SCALE

Keep the **ZERO** key pressed; the message "Zero" appears on the display after which:
- If the gross weight value which is within +/- 2% of the capacity; after the zeroing, the display shows 0 weight and the relative pilot lights are turned on.
- If the weight is not within this range, it will not be cleared and an error sound is emitted.

8.2 TARE OPERATIONS

SEMI-AUTOMATIC TARE
By pressing the **TARE** key any weight value present on the display is tared: the display shows **"tArE"** for an instant and then 0 (net weight); the pilot lights turn on.
NOTE: The semiautomatic tare will be acquire only if the weight is AT LEAST A DIVISION, STABLE (instability **~** led off) and VALID (in other words, the OVERLOAD condition must not be created).

ENTERING THE MANUAL TARE FROM KEYBOARD OR REMOTE CONTROL
With the keyboard type the value (including the decimal point) and press **TARE**.
The **C** key quickly zeros the current value.

Note: If the entered value is not a multiple of the scale's minimum division, it will be rounded off.

CANCELLING A TARE
One can manually cancel the tare value in different ways:
- unload the scale and press the **TARE / ZERO** key**.**
- carry out the tares in deduction, partially unloading the scale and pressing **TARE** to zero the display.
- press C without unloading the scale.
- enter a manual tare equal to 0.
NOTE: it is possible to automatically cancel the tare value; see the following section.

LOCKED/UNLOCKED/DISABLED TARE SELECTION
Normally, when a tare value is entered (automatic, manual, or from storage) by unloading the scale plate, the display shows the tare value with a negative sign (LOCKED TARE). For one's convenience it is also possible to choose that the tare value cancels itself automatically each time that the scale is unloaded (UNLOCKED TARE); or disable the tare functions.
With the UNLOCKED tare:
In case of SEMIAUTOMATIC TARE the net weight, before unloading the scale, may also be 0.
In case of MANUAL TARE or FROM DATABASE the net weight before unloading the scale must be greater than 2 divisions and stable.

I is possible to carry out the selection also during the weighing if the tare has not been disabled, by pressing in sequence the **100 + F/Fn** keys: the display shows *"tA-L"* = LOCKED TARE is selected; by pressing the same keys again the display shows *"tA-U"* = UNLOCKED TARE is selected.
The indicator stores the last selection made, also after it is turned off.

8.3 LIMITATION OF THE TARE FUNCTIONS

With approved instrument, it is possible to limit the tare functions, selecting: **SEtuP >> d.SALE >> yES (TECH.MAN.REF.)**
the tare operations will have the following specifications:

SCALE CAPACITY	FUNCTIONING
< 100kg	All the tare functions are disabled
≥ 100kg	- The SEMIAUTOMATIC TARE value can not be modified with a manual tare or from database. - The manual tare or from database can be entered or modified only with an UNLOADED scale. - It's possible to cancel the tare value only with an UNLOADED scale

With approved instrument, the **d.SALE** step is read-only.

8.4 STORED TARE MEMORY VALUES

It's possible to store up to **30 tare memory values,** identified by the location numbers 1 to 30, which the user can recall when needed.
To insert or modify a tare value:
- Type the desidered tare value (including a decimal point, if present) and press at length the **ZERO/TARE** key - the display will indicate "MEM ?" and after *" nn".* in which *nn* is the storage number to be entered..
- Press ENTER/PRINT to confirm or another key for not saving.
- Repeat the sequence for the following memory positions.

If the entered value is not a multiple of the scale's minimum division, it will be rounded off.

RECALLING STORED TARE VALUES

To recall a stored value:
- Press the keys corresponding to the desired tare value location in memory (01-30) and then **F/Fn** the tare will be enabled.

8.5 AUTO POWER OFF FUNCTION

It is possible to automatically turn off the indicator (from 1 to 255 minutes), or disable it; the auto power off takes place when, **with unloaded scale,** the weight has not been moved or a key has not been pressed for the time set: the display shows the "- oFF – " blinking message and an acoustic signal is emitted; after this the indicator turns off.
For the setting, follow the procedures below:
- Turn on the scale, press the OUT key while the firmware version is displayed (the display shows the "typE" menu).
- Press IN many times (to scroll ahead through the parameters) or OUT (to scroll backwards) until one finds the "FModE" parameter.
- Press ENTER/PRINT to enter the menu.
- Press IN many times (to scroll ahead through the parameters) or OUT (to scroll backwards) until one finds the "En.SAVE" parameter.
- Press ENTER/PRINT to enter the menu
- Press IN many times (to scroll ahead through the parameters) or OUT (to scroll backwards) until one finds the "AutoFF" parameter.
- Press ENTER/PRINT to enter the parameter.
- With the IN or OUT keys select the possible options: "diSAb" (auto switch-off disabled), "EnAb" (auto switch-off enabled).
- Confirm with ENTER/PRINT; if "EnAb" has been selected, one will be asked to enter the number of minutes after which the indicator should turn off: enter a number between 1 and 255 and confirm with ENTER/PRINT.
- Press many times the C key until the display shows "SAVE?".
- Press ENTER/PRINT to confirm the changes made or another key for not saving.

8.6 LOW BATTERY WARNING

In DFWK/DFWR version, the indicator is able to recognize whether it is powered from the mains or through a battery
If the indicator has the LCD display the charge level is shown in the weighing phase by the battery symbol:

- ▮▮▮ : battery is charged.

- ▮▮ : battery is partially charged.

- ▮ : battery is discharged: connect the indicator to the mains for recharge the battery (if supplied) or replace it.
Furthermore, for a few seconds the "Low.bat " message appears on the display (minimum level voltage).

When recharging the battery (if supplied), the indicator shows the recharging phase below:

RECHARGING PHASE: ▯ → ▮ → ▮▮ → ▮▮▮ → ▯ …

RECHARGE IS COMPLETED: ▮▮▮

NOTES:
- While recharging, the instrument can be used as usual.
- The instrument automatically turns off when the voltage goes below the minimum level.
- It''s possible to view the recharge percentile of the battery by pressing the **IN** key upon start-up (see section 5 – "POWER SUPPLY AND START-UP").

8.7 MULTI RANGE FUNCTIONING (for legal for trade approved instruments)

The multi range functioning allows to subdivide the scale capacity in two or three ranges, each which is up to 3000 divisions, improving in this way the first range division in the dual range and the first two ranges in the triple range.
For example, with a 30 kg cell platform it is possible to approve the weighing system with:
- A single range: 6 kg capacity and 2 g division (3000 div.).
- Dual range: 6 / 3 kg capacity and 2/1 g division (3000 + 3000 div.).
- Triple range: 15 / 6 / 3 kg capacity and 5/2/1 g division (3000 + 3000 + 3000 div.).

NOTES:
- For the approval of the weighing system in dual and triple range the cell must have better technical features in comparison to the cell used for the approval in a single range.
  The multirange functioning is shown by the turning on of the relative LED which identifies the range in which one is operating; by passing to the second range, the second range division is enabled; by passing to the third range, the third range division is enabled. At this point the first range division is restored **only by passing by the gross zero of the scale.**
- The selection of the range number with multirange functioning is made during the indicator's calibration (**TECH.MAN.REF.).**

8.8 DATE/TIME ADJUSTMENT

To set the date/time follow the procedure below:
- Press at length the **F/Fn** key.
- Press **IN** many times (to scroll forwards through the parameters) or **OUT** (to scroll backwards) to find the **<<CLoCK>>** parameter.
- Confirm with **ENTER/PRINT**: in this order one will be asked to enter the DAY ("dAy"), MONTH ("Month"), YEAR ("yEAr"), HOUR ("hour"), MINUTES ("MinutE"). The entry of each parameter must be confirmed with **ENTER/PRINT**.
- Once finished the setting, one exits this step.

NOTES
- If the supply cable is disconnected or the battery has been replaced, the indicators can keep the date/time for 5 minutes.

8.9 "SCREEN SAVER" FUNCTION

It is possible to enable the "Screen Saver": after a programmable time (from 1 to 255 minutes) with the scale unloaded, the time is shown on the display, in the "HH:MM:SS" format and the clock symbol (LCD version, 🕐) is enabled. As soon as a weight variation is detected, or a key is pressed, the indicator returns to viewing the current weight.

To set the function:

- Turn on the scale, press the OUT key while the firmware version is displayed (the display shows the "typE" menu).
- Press IN many times (to scroll ahead through the parameters) or OUT (to scroll backwards) until one finds the "FModE" parameter.
- Press ENTER/PRINT to enter the menu.
- Press IN many times (to scroll forwards through the parameters) or OUT (to scroll backwards) to find the "SCr.SAV" parameter.
- Press ENTER/PRINT to enter the parameter.
- With the IN or OUT key select the possible options: "no" (disabled), "YES" (enabled).
- Confirm with ENTER/PRINT; if one has selected "YES", one is asked to enter the number of minutes after which the indicator should show the time: enter a number between 1 and 255 and confirm with ENTER/PRINT.
- Press the C key many times until the display shows the message "SAVE?".
- Press ENTER/PRINT to confirm the changes made or another key to not save.

8.10 DISPLAY OF METRIC DATA (inFO)

The indicator is fitted with a function named "INFO", thanks to which it is possible to view the configuration metric data:

- **With the DFWR indicator** keep the C key pressed until the display shows "inFO", and release.
- **With the DFW indicator** press the key "**i**" once.

- The capacity value of the first range will appear.
- Press the IN key to scroll the following data, in this order:
    Capacity 1° range ⇨ Minimum weigh 1° range ⇨ Division 1° range ⇨
    Capacity 2° range ⇨ Minimum weigh 2° range ⇨ Division 2° range ⇨
    Capacity 3° range ⇨ Minimum weigh 3° range ⇨ Division 3° range ⇨
    Capacity 1° range ⇨………
- Press the OUT key to scroll backwards the metric data.
- Press the ENTER/PRINT or C key to return to weighing.

NOTES:
- The minimum weigh corresponds to 20 net weight divisions.
- The data of the second and third range appear only if actually configured.

8.11 DISPLAY WITH SENSITIVITY X 10

Follow the procedure below in order to obtain the function of switching the weight for display with sensitivity increased 10 times:

- Press at length the **F/Fn** key.
- Press **IN** many times (to scroll forwards through the parameters) or **OUT** (to scroll backwards) to find the **<<VIS.X10>>** parameter.
- Confirming with **ENTER/PRINT** one switches from the weight display with normal sensitivity to a sensitivity ten times greater; in fact, one will note that the last digit on the right of the display will have a sensitivity equal to the scale's division divided by 10.
- Press many times the **C/DEL** key to return to the weight display with normal sensitivity.

This function is also possible by typing in sequence the **107** code and **F/Fn** key
NOTA: In case of an APPROVED instrument the sensitivity times 10 is displayed for five seconds.

8.12 KEYBOARD LOCK

The keyboard may be disabled by closing an input, if programmed, of the optional expansion board: refer to the "inPutS" parameter of the set-up environment (**TECH.MAN.REF.**). By pressing a key the display shows "LoCkin" for an instant.

9. WEIGHING PROCEDURE

Besides the basic standard weighing function, this version allows to keep under control the flow of goods in input and output from a warehouse or a factory, with the possibility of simultaneously managing up to 99 vehicles.

To guarantee correlation between the two operations, the system foresees one identification method through ID code.

Through the "MASTER - SLAVE" function it's possible to manage the weighing system also from a second remote indicator.

9.1 INPUT WEIGH

- Position the vehicle on the scale:
- Press the **IN** key, the display will show the "ENTRY" and the number of ID for an instant
- The indicator executes the printout (if configured), and then it displays the weight on the scale.

NOTES ON INPUT WEIGHING

- If there is a tare, a **SINGLE WEIGH** is executed, therefore **no ID code is occupied**.

- If all the 99 memory storages are occupied without executing any output weigh, upon the execution of the following input weigh, the indicator shows the message "FULL"; one must execute at least one output weigh in order to free up the memory to be used.

  To cancel all the memory storages:
  - Press at length the **F/Fn** key.
  - Press **IN** many times (to scroll forwards through the parameters) or **OUT** (to scroll backwards) to find the **<<0.I.LIST>>** parameter.
  - Confirm with **ENTER/PRINT (**this function is also possible by typing in sequence the **102** code and **F/Fn** key.)

  If one needs to execute a simple weigh without any input/output weigh, we advise to use the print key, in order to not occupy ID codes.

9.2 OUTPUT WEIGH

- Position the vehicle on the scale.
- Now it's possible to proceed in two ways:

  1) **Directly type the ID code and press the OUT key.**

  2) **Press the OUT key and:**
     - If there is only one weighing opened, it will automatically performed the output weigh of this one
     - If there are more weighing opened, the "ID ?" message is displayed for an instant and then the "i 0001" with the right-most digit blinking: type the ID number (corresponding to the input weigh) and confirm with **ENTER** or press **C/DEL** to exit.
     - In both cases, the indicator executes the printout (if configured), and then displays the weight on the scale.

NOTES ON THE OUTPUT WEIGH

- If there is a tare, a **SINGLE WEIGH** is executed.

- **By entering an ID code not yet linked to a weigh,** the indicator shows "ERR.ID?" and emits a prolonged sound; then it cancels the weigh and returns to weighing.

- If no input weigh has been made, by pressing the **OUT** key, the indicator will show "EMPTY" and will emit a prolonged sound; then it will cancel the weigh and return to weighing.

9.3 CONDITIONS FOR TOTALISATION

With APPROVED instrument:
- the INPUT or OUTPUT weigh functions with a minimum weight of 20 divisions and reactivates according to how the **F.ModE >> rEACt.** "REACTIVATIONS" parameter of the TECHNICAL SET-UP has been programmed **(RIF.MAN.T.),** in other words the weight movement or passage by zero of the weight.
- Totalization exludes simple print and vice versa

With NON APPROVED instrument:
- the INPUT or OUTPUT weigh functions with a weight greater than zero and reactivates according to how the **F.ModE >> rEACt.** "REACTIVATIONS" parameter of the TECHNICAL SET-UP **(TECH.MAN.REF.)** has been programmed.
- Totalization exludes simple print and vice versa

10. USER MENU

By pressing at lenght the **F/Fn** key, it's possible to enter in the USER MENU:

	FUNCTION	DESCRIPTION
TAR.LCK	100 + F/Fn	Lock/Unlock tare (see 8.2 section)
LIST.IN	101 + F/Fn	Print input weighed list (see 11.3 section)
0.I.LIST	102 + F/Fn	Cancella lista pesate in ingresso (vedi sezione 11.2)
PRN.TOT	103 + F/Fn	Print totals
DEL.TOT	104 + F/Fn	Delete toals
0.N.TICK	105 + F/Fn	Azzera numero scontrino
CLOCK	106 + F/Fn	Set Date/Time (see 8.9 section)
VIS.X10	107 + F/Fn	Display with sensitivity X10 (see 8.12 section)
L.INT	108 + F/Fn	Display backlight or led display intensity
NR.COP	109 + F/Fn	Number of ticket copies (see 11.4 section)

11. PRINTING FUNCTIONS
If a printer is connected, it is possible to print the programmed weight data, for example:
- 4 heading lines of 24 characters
- GROSS weight
- TARE weight
- NET weight
- ticket number
- date and time

Executing printouts with NON approved scales.
In order to print with non approved scales the following conditions must exist:
PRINT key:
- the weight must be stable;
- the gross weight must be >= 0;
- the printout is always active;

IN/OUT key:
- the weight must be stable;
- the net weight must be >= of a division with normal or fast totalisation;
- the net weight must be >= of 10 divisions with automatic totalisation;
- the printing is reactivated depending on how the "rEACT" parameter has been set in the set-up environment: passage by zero of the NET weight, weight instability, or always (see "REENABLING OF THE PRINTOUTS AND OF THE INDICATOR FUNCTIONS" section).

Legal for Trade scale printing.
In order to be able to print with a legal for trade scale the following conditions must exist:
- the weight must be stable;
- the net weight must be >= the minimum weight (minimum of 20 divisions).
- the printing is reactivated depending on how the "rEACT" parameter has been set in the set-up environment: passage by zero of the NET weight, weight instability, or always (see "REENABLING OF THE PRINTOUTS AND OF THE INDICATOR FUNCTIONS" section).

Notes:
- The printing is confirmed by the indication on the display of the "Print" message or "ENTRY" in case of input weigh.
- If the printout is not reenabled the display shows the "no.0.unS" message
- With the weight unstable the display shows the "unStAb" message.
- If the gross or net weight is less than the requested minimum weight, by pressing the ENTER/PRINT key, the display shows the "LoW" error message.
- If the indicator is in under load or over load status, by pressin the ENTER/PRINT key, the display shows the "un.oVEr" error message.
To configure the printouts, go to the "PROGRAMMING THE PRINTOUTS" section in the technical manual (**TECH.MAN.REF**.).

11.1 TURNING ON PRINTER IN ENERGY SAVING MODE
In a system where the indicator is connected to a printer, both are battery powered, the printer is normally maintained in STAND-BY and powered only when a printout is needed. This function reduces the energy absorbed by the battery when the printer is not being used.
If, in this configuration, one should power the printer to change the paper and other maintenance jobs, one needs to press in sequence the **F/Fn** and **0** keys during the weighing: the display shows **onPri,** and the printer is kept on. Press any key to exit from this condition.

11.2 REENABLING THE PRINTOUTS AND THE INDICATOR FUNCTIONS

While using the indicator, it is possible to incur into the "**no.0.unS"** error shown on the display along with an acoustic signal; this means that the printing or the function which one wants to carry out must be reenabled (in order to avoid unwanted executions).

It is possible to set the reenabling in different ways: "passage by zero of the net weight", "weight instability" or "always". Follow the procedure below:

- Turn on the scale, press the OUT key while the firmware version is displayed (the display shows the "typE" menu).
- Press IN many times (to scroll ahead through the parameters) or OUT (to scroll backwards) until one finds the "FModE" parameter.
- Press ENTER/PRINT to enter the menu.
- Press IN many times (to scroll forwards through the parameters) or OUT (to scroll backwards) until one finds the "rEACt" parameter.
- Press ENTER/PRINT to enter the parameter.
- With the IN or OUT keys select the possible options: "ZEro" (passage by zero of the net weight), "inSt" (instability), ALWAyS.
- Confirm with ENTER/PRINT.
- Press the C key many times until the message "SAVE?" is shown on the display.
- Press ENTER/PRINT to confirm the changes made or another key to not save.

11.3 PRINT INPUT WEIGHED LIST

Follow the procedure below in order to print all the input weighed:

- Press at length the **F/Fn** key.
- Press **IN** many times (to scroll forwards through the parameters) or **OUT** (to scroll backwards) to find the **<<LIST.IN>>** parameter.
- Confirm with **ENTER/PRINT**

This function is also possible by typing in sequence the **101** code and **F/Fn** key.

11.4 NUMBER OF TICKET COPIES

Follow the procedure below in order to set the number of ticket copies

- Press at length the **F/Fn** key.
- Press **IN** many times (to scroll forwards through the parameters) or **OUT** (to scroll backwards) to find the **<<NR.COP>>** parameter.
- Confirm with **ENTER/PRINT**
- Set the number of ticket copies which will be printed, valid for any type of printout. The possible values are 1…3.

This function is also possible by typing in sequence the **107** code and **F/Fn** key.

11.5 REPETITION OF THE LAST PRINTOUT MADE

Press in sequence the **F/Fn** and **PRINT** keys: the last printout made by the indicator will be repeated.

NOTE: By turning off the instrument, the information relative to the last printout made, will be lost; therefore this function is not enabled until the first printout is made.

12. INSTRUMENT MESSAGES WHILE IN USE

MESSAGE	DESCRIPTION
ZERO	The scale is zeroing the weight.
Er.i.b.X	A function has been linked to input X (from 1 to 4) and this is not present; see the "InPutS" parameter of the set-up environment (**TECH.MAN.REF.).**
BuSy	Print under way (PRN serial port is occupied) or indicator waiting to transmit a printing to a PC.
UnStAB	One is trying to print with an unstable weight.
un.oVEr	One is trying to print with the weight in underload or in overload, in other words, with a weight of 9 divisions greater than the capacity or of 20 divisions below the gross zero.
LoW	Weight less than the minimum weight provided for the printing, the totalisation or the transmission of the string, standard or extended, upon pressing of the print key.
no.0.unS	Weight not passed by net 0 or by instability.
Er.Mot	Unstable weight.
StorE	It is displayed when data is stored in the permanent storage of the instrument (tares, ticket progressive, etc.)
Err.CLK	Communication problems with the date/time of the indicator: check the **F.ModE >> CLoCK** step of the set-up (**TECH.MAN.REF.**).
SEt.CLK	Date/time not set: check the **F.ModE >> CLoCK** step of the set-up (**TECH.MAN.REF.**).
PREC.	It is displayed if one tries to calibrate a point without first having confirmed the number of calibration points
ERPNT	During the acquisition of a calibration point a null value has been read by the converter.
ERR.X10	It is displayed when one wants print during the X10 function
ERROR / EEPROM	It is displayed when there isn't detected the EEPROM board. Connect the EEPROM board.
Er – 11	Calibration error: a too small sample weight has been used; it is advisable to use a weight equal to at least half of the scale capacity.
Er – 12	Calibration error: the acquired calibration point (tP1 o tP2 o tP3) is equal to the zero point (tP0).
Er – 37	The number of converter points per scale division is less than two. Carry out again the calibration with special attention to the capacity and the division.
Er – 39	It is displayed when the instrument has not yet been calibrated and initialized. press the **TARE** key when the instrument displays "ERR – 39" to enter the technical set-up environment. Carry out the initialization of the indicator ("dEFAu" parameter) and the selection of the type of keyboard ("KEYb" parameter) and finally the programming of all the parameters of the set-up environment and the calibration.

DECLARATION OF CONFORMITY

This device conforms to the essential standards and norms relative to the applicable European regulations. The Declaration of Conformity is available in the web site www.diniargeo.com

WARRANTY

The TWO YEARS warranty period begins on the day the instrument is delivered. It includes spare parts and labour repair at no charge if the INSTRUMENT IS RETURNED prepaid to the DEALER'S PLACE OF BUSINESS. Warranty covers all defects NOT attributable to the Customer (such as improper use) and NOT caused during transport.

If on site service is requested (or necessary), for any reason, where the instrument is used, the Customer will pay for all of the service technician's costs: travel time and expenses plus room and board (if any).

the Customer pays for the transport costs (both ways), if the instrument is shipped to DEALER or manufacturer for repair.

The WARRANTY is VOIDED if any of the following occurs: repairs or attempted repairs are made by unauthorised personnel, connected to equipment installed by others, or is incorrectly connected to the power supply, or instrument has defects or damage due to carelessness or failure to follow the guidelines in this instruction manual.

This warranty DOES NOT provide for any compensation for losses or damages incurred by the Customer due to complete or partial failure of instruments, even during the warranty period.

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