

DD700 WEIGHING TERMINAL

USE AND MAINTENANCE MANUAL



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CONTENTS

1	INTRODUCTION	5
1.1	Foreword.....	5
1.2	Documentation.....	6
1.3	Symbols.....	6
1.4	Description of the terminal	7
1.5	Key	7
1.6	Technical features of the terminal.....	8
1.7	Declaration of conformity	9
1.8	Overall dimensions and weight of terminal	10
1.8.1	Plastic version	10
1.8.2	Tabletop stainless steel version	10
1.8.3	Wall-mounted stainless steel version	11
1.8.4	Panel mount version.....	11
1.9	Instructions for the disposal of electric or electronic waste	12
1.10	Instructions for requesting technical assistance.....	12
1.11	Warranty	12
2	SAFETY PRESCRIPTIONS.....	13
2.1	Prohibited use.....	13
2.2	Standards	13
2.3	Instructions for use	13
3	DELIVERY AND INSTALLATION	14
3.1	Installation.....	17
3.1.1	Tabletop installation.....	17
3.2	Connecting terminal to electric mains	17
3.2.1	Verifications.....	17
3.2.2	Connection diagram (version with connectors and ABS).....	18
3.2.3	Connection diagram (DD700 version with cable gland).....	19
3.3	Connecting terminal to weighing platform.....	21
3.3.1	Connection diagram (with platform).....	22
3.3.2	Equipotential between terminal and weighing platform.....	22
3.3.3	Digital Scale serial connection.....	23
3.3.4	Analogue Scale serial connection	23
3.4	Serial connections	24
3.4.1	Serial output connection COM1.....	24
3.4.2	Serial output connection COM2 in RS422 configuration.....	25
3.4.3	RS232 connections	26
3.4.4	RS422 connections	26
3.4.5	Serial output connection COM2 in RS485 configuration.....	27
3.4.6	RS485 connections	27
3.4.7	USB Connections	28
3.5	Input/Output Connection.....	29
3.5.2	Input connection	30
3.5.3	Output connection	30
4	COMMANDS, SWITCH ON AND OFF	31
4.1	On-off key	31
4.1.1	Selection display signals to display	34
4.2	Metrologic keys.....	35
4.3	Alphanumerical keys.....	36
4.4	On-off key	36
5.	USING THE TERMINAL	37
5.1	General information	37
5.1.1	Using the keys for browsing the menus.....	37
5.1.2	Entering numerical data (Editor).....	38
5.1.3	Entering alphanumerical data.....	38
5.1.4	Hotkeys	39
5.1.5	DD700 with external USB keyboard.....	40

5.2	Functioning of Single weighing operation, Double weighing, Sum weighing, Load extraction, Unload extraction, CPE functioning, Manual Selector, Weight Check and Multi-Operator	41
5.2.1	Single Weighing Operation (*) (***)	41
5.2.2	Double Weighing Operation (*)	41
	Operation with input and output weighing	41
	Input/output operation with Data Recall	41
	Input operations	41
	Output operations	42
	Recovering unused RcD codes	43
	Input/output operation with Plate Data Recall	44
	Delete RCPD code	44
5.2.2.2	Operation with preset weights	44
	Preparing the list of preset weights	45
	Weighing operations with preset weights	45
5.2.2.3	Operation with the first weight being entered manually	45
5.2.2.4	Totals management	45
5.2.3	Sum Weighing operation	45
5.2.4	Load Extraction operation (*) (***)	46
5.2.5	Unload Extraction operation (*) (***)	46
5.2.6	Manual selection mode operation (**)	46
5.2.6.1	Classification display	46
5.2.6.2	Range setting	46
5.2.6.3	Totalling by classification	47
5.2.6.4	Automatic print/transmission	47
5.2.7	Piece counter mode operation (**)	47
5.2.7.1	AUW Management	47
5.2.7.2	Product code archive	48
5.2.7.3	Product code totals archive	48
5.2.8	Multi-operator Operation (**)	48
5.2.8.1	Operator Archive	48
5.2.8.2	Operator Total Archive	49
5.2.8.3	Print Archive	49
5.2.8.4	Stop working (receipt closure)	50
5.2.8.5	Cancellation of weighing operation	50
5.2.8.6	Single weighing print	51
5.2.9	Weight Check Operation (**)	52
5.2.9.1	Display of Range and default values to process the limits (in divisions)	52
5.2.9.2	Weighing limit entry	54
5.2.10	MPP accessory operation	54
5.3	User menu	55
5.3.1	User menu tree	55
5.3.2	Modify date and time	60
5.3.3	Weight display	60
5.3.4	Memory status	61
5.3.5	Reprint	62
5.3.6	Diagnostics (only for digital scale)	62
5.3.7	Digital Cells (only if present)	62
5.3.8	Contrast adjustment	62
5.3.9	Setting output as set-point (if enabled)	62
5.3.10	Setting output as Range (if enabled)	63
5.3.11	Generic code	63
5.3.12	Product code	63
5.3.13	Product codes list	64
5.3.14	Preset tares	64
5.3.15	Preset tares list	65
5.3.16	Progressive number	65
5.3.17	Coefficient Management	65
5.3.18	Totals Management	66
5.3.19	Scale Selection (**) (***)	67
5.3.20	Lighting	68
5.3.21	Auto switch off	68
5.3.22	Change unit of measurement (if enabled)	68
5.3.23	Menu access-Modif.Arch./Password	68
5.3.24	Weighing operation	68
5.3.25	Printer Cut	69
5.3.26	External battery voltage	69
5.3.27	Archives <-->PC/USB	69

5.3.28	Printing weighing data	72
5.3.28.1	Reprinting weighing data	73
5.3.29	Activate Buzzer.....	73
5.3.30	Product Code Archive.....	73
5.3.31	Product Code totals Archive (*)(***).....	73
5.3.32	Product Code totals Archive (**).....	74
5.3.33	Printing operation (*) (***).....	74
5.3.34	Printing operation (**).....	74
5.3.35	Automatic print/transmission (**).....	75
5.3.36	High Resolution	75
6.	OPTIONS.....	76
6.1	MPP memory expansion boards.....	76
6.1.1	Memory capacity	76
6.1.2	Operation.....	76
6.1.3	MPP deactivation.....	77
6.1.4	Checking stored weight data	77
6.2	Analogue output board	78
6.3	Serial expansion board	78
6.4	Optional 4 Input/ 4Output board.....	80
6.5	Ethernet Board 10/100 Mbit.....	81
6.6	Profibus DP Board	81
6.7	Ethernet/IP Board	81
6.8	Level (**).....	81
7	TROUBLESHOOTING.....	82
7.1	Malfunctions.....	82
7.2	Error Messages	83

1 INTRODUCTION

1.1 Foreword

- The purpose of this manual is to instruct the operator on the prescriptions and essential criteria for the installation, safe use and methodical maintenance of the weighing system, using texts and figures supporting the explanations.
- Always keep this manual at hand! Always respect the instructions found in this document!
- The operating safety of the system is first of all entrusted to the operator, who must have an in-depth knowledge of it.
- The user is responsible for making sure that installation complies with relevant standards in force.
- The appliance must only be installed by specialist personnel after having read and understood this manual.
- By "specialist personnel" we mean personnel who, following training and professional experience, are expressly authorised by the "Safety manager of the system" to perform its installation, operation and maintenance.
- Contact the closest Assistance Centre when you encounter any fault.
- The user or unauthorised personnel are prohibited from attempting any disassembly, modifications or tampering with this system; this would make the warranty immediately null and void and the Manufacturer would not be held liable for any personal harm or property damage it may have caused.
- Alterations or removal of the data on the terminal's nameplates, seals or legalisation stamps is also prohibited; therefore make sure that all the nameplates are in place and legible, or else contact the After-Sales Service.
- The Manufacturer will not be held liable for damage resulting from careless handling of the terminal.
- The following information and illustrations are updated to the date of issue.
The Manufacturer is committed to constantly improving its products, thus possibly modifying some components of the system or parts of the software.
- All the technical information contained in this manual is the exclusive property of the Manufacturer and must be considered as being of a reserved nature.
- The reproduction and disclosure, even partial, of this manual on paper, digital support or on the WEB without written consent from the Manufacturer is prohibited.
- Use of this manual for purposes other than those strictly linked to the installation, use and maintenance of the terminal is also prohibited.
- Some illustrations could represent the weighing system without safety guards in order to more clearly and effectively detail operation, adjustments etc. Do not use the system in these conditions. Only remove these safety guards for the time strictly necessary to perform the required repairs or maintenance, then restore them immediately.

1.2 Documentation

The DD700 terminal is supplied with the following standard documentation:

- **QUICK START**
Multi-language, printed on paper, brief instructions for immediate use, declaration of conformity and main danger warnings.
- **USE, MAINTENANCE AND INSTALLATION MANUAL**
Multi-language, in PDF format, may be printed on demand.
- **MANUAL OF THE APPLICATION AND PARAMETERS**
Multi-language, in PDF format, may be printed on demand.

Contact the After Sales service of our Sales and Support network

1.3 Symbols

The following symbols are used in the manual to call the reader's attention to the different danger levels in the "Use and maintenance" of the instrument.



DANGER

Information or procedure which, if not carried out exactly, can cause death or severe personal harm.



ATTENTION

Information or procedure which, if not carried out exactly, could cause minor personal injuries or damage to the instrument.



WARNING

Information or procedure advising the operator on the ideal use of the system to extend its life time, to avoid damage or loss of programming and to optimise work in compliance with metric standards.



TECHNICAL ASSISTANCE

The sections bearing the following pictogram on the side are of the exclusive competence of a qualified technician made available by the manufacturer for complex operations in particular situations. Depending on the cases, these competences are mechanical and/or electrical and/or electronic and/or regarding software. **IT IS STRICTLY FORBIDDEN TO PERFORM THESE OPERATIONS! RISK OF INJURY OR OF DAMAGING THE MACHINE!**

1.4 Description of the terminal

The DD700 terminal performs extremely accurate and reliable weighing operations.

- Designed for industrial applications.
- Supplied as per standard with weighing management metrologic software.
- Body in ABS and stainless steel; available both in tabletop and wall-mounted versions.
- Versatile and customisable functions and graphical appearance.
- Advanced network connectivity and communication.
- Programming and customisation by networked PC.

1.5 Key

This manual refers to operations found in different models defined at time of purchase. The symbols used in this manual are found hereunder.

*	Model "1" operating in: single weighing, sum weighing, extraction during loading, extraction during unloading and double weighing.
**	Model "2" operating in: standard, piece count, sum weighing, manual selector, weight check and extraction during unloading and multi-operator.
***	Model "3", see model "1" with selection management of scale "A" or "B" by exclusion.

Unless specified, it is found in all models.

1.6 Technical features of the terminal

Power supply

Direct	12 VDC/4 A
Through mains adaptor	L+N+R 110 - 240 Vac (-15% ... +10%) 1.8 A 50 - 60 Hz 60W Max
Earth socket	Equipotential for weighbridge

Scales

Total	1 analogue, 2 analogue multiplexing or 1 digital
Repeater operation	Repeater function

Analogue scale

Connectable load cells	Up to 12 x 350 ohm analogue load cells per analogue converter
Minimum impedance	29 ohm per scale
Load cell power supply	5 VDC
Internal resolution	1000000 dots at 10 Hz
Resolution in type-approved version	Two 4000 ranges, three 3000 ranges
Maximum input signal	30 mV
Sensitivity	0.5 μ V/division
Full scale stability	< 5 ppm/°C
Zero stability	< 5 ppm/°C

Digital scale

Connectable load cells	Up to one 12 digital load cells per digital converter
Minimum impedance	80 ohm
Load cell power supply	10 ÷ 15 Vdc
Internal resolution	200000 dots @ 25 conv/sec
Resolution in type-approved version	Two 4000 ranges, three 3000 ranges

Environmental features

Compensated temperature range	From -10 to +40°C
Operating range	From -10 to +40°C
Maximum humidity	85% @ 40 °C
Protection rate IP	Plastic version and stainless steel version with connectors: direct outputs IP 20 and front panel IP 65. Stainless steel version with cable glands IP 69K

User interface

Monitor	White LED backlit display
Keyboard	

Communication ports

USB Device	1
USB Host	1
Serial ports	1 RS232 - 1 RS232/ RS422 /RS485
Inputs - Outputs	2+2

Memories

Optional MPP board	1
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Expansions

Slot for optional boards	2
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Optional boards

Optional opto-isolated RS232, RS422/RS485 serial board	
PROFIBUS DP expansion board	
EtherNet/IP expansion board	
0-10V / 4-20mA analogue output board	
WiFi 10/100 Mbit/sec board	
Ethernet 10/100 Mbit/sec board	
MPP memory expansion board	
LED BAR board (only for IP69K)	

1.7 Declaration of conformity

See QUICK START manual.

1.8 Overall dimensions and weight of terminal

1.8.1 Plastic version

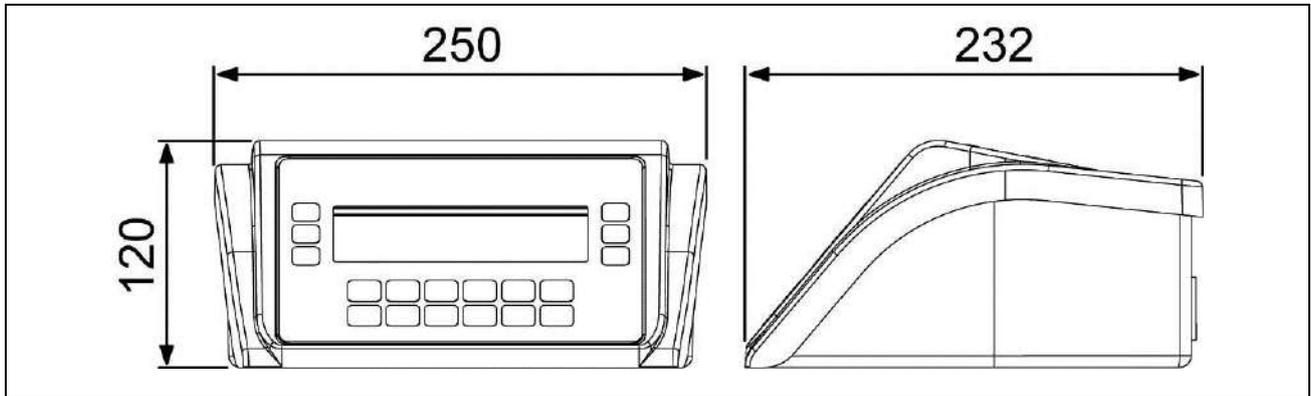


Figure 1.8-1 - Dimensions of plastic weighing terminal

- Dimensions (expressed in mm): see figure 1.7.1.
- Weight: 1.5 Kg

1.8.2 Tabletop stainless steel version

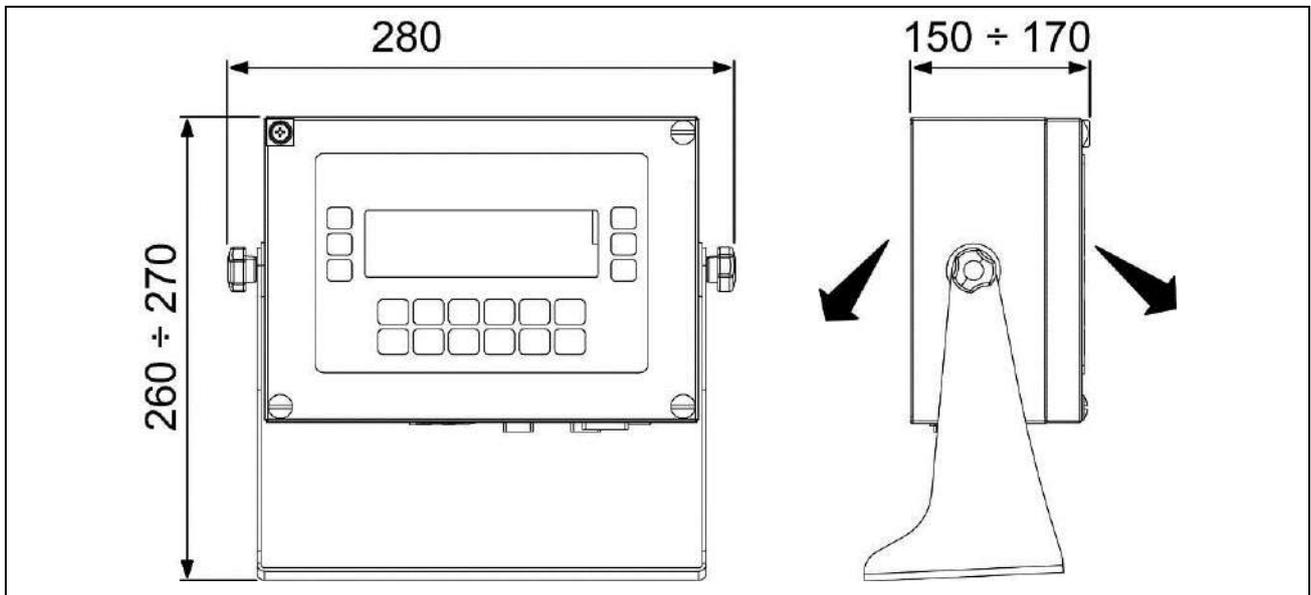


Figure 1.8-2 - Dimensions of tabletop stainless steel weighing terminal

- Dimensions (expressed in mm): see figure 1.7.2.
- Weight: 4 Kg

1.8.3 Wall-mounted stainless steel version

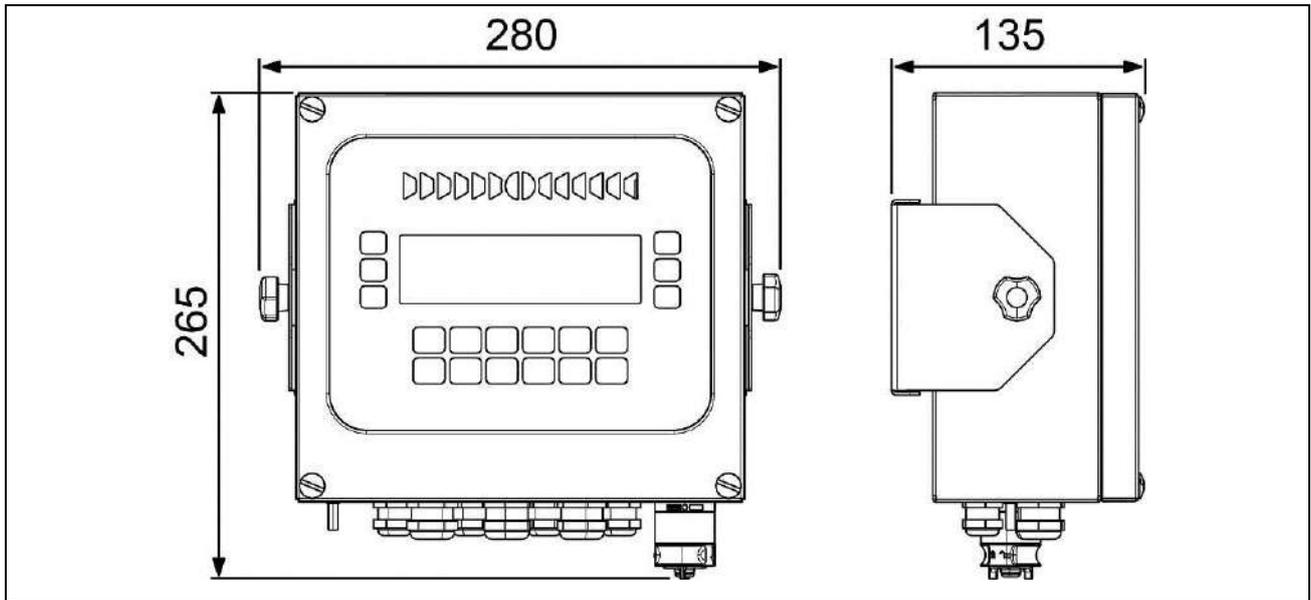


Figure 1.8-2 - Dimensions of wall-mounted stainless steel weighing terminal

- Dimensions (expressed in mm): see figure 1.7.3.
- Weight: 4 Kg

1.8.4 Panel mount version

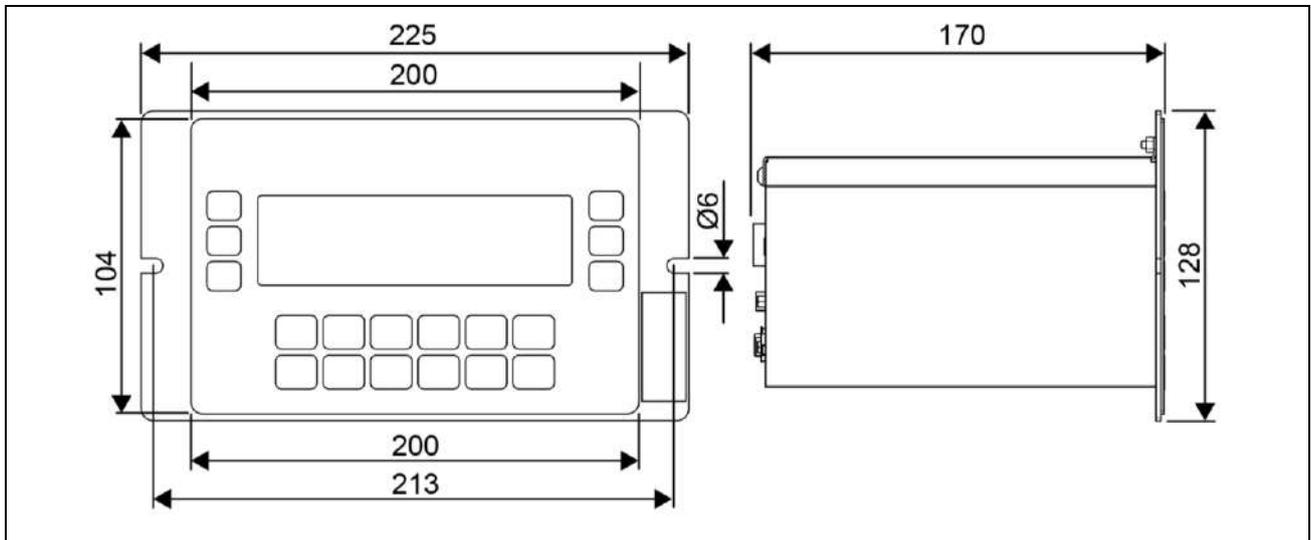


Figure 1.8-4 - Dimensions of the weighing terminal panel mount

- Dimensions (expressed in mm): see figure 1.8.4.
- Weight: 2,5 Kg

1.9 Instructions for the disposal of electric or electronic waste



This symbol on the purchased weighing instrument indicates that:

- This electric or electronic appliance cannot be disposed of as municipal solid waste.
- It must be disposed of separately.
- It can be returned to the distributor when purchasing a new one.
- Improper use or disposal of this appliance can cause environmental pollution or damage to health.
- Failure to comply with the indications above is sanctioned according to standards in force.

In particular:

- The outer enclosure and the mechanical components are made up of plastic and/or metal materials.
- There are printed circuit boards with electronic components inside the enclosure.
- The electrical connections are implemented with insulated copper conductors.



ATTENTION

Dispose of this appliance via separate waste collection either handing it over to the distributor or to separate waste collection centres.

1.10 Instructions for requesting technical assistance

In the event of an operating fault or failure requiring intervention of specialist technicians, contact your closest assistant centre or directly contact the manufacturer.

To speed up problem solving, communicate the serial number of the instrument found on the stamped plate.

Also communicate the features of the system in which the terminal is installed.

1.11 Warranty

The clauses of the warranty are specified in the sales contract.

2 SAFETY PRESCRIPTIONS

2.1 Prohibited use

The purchased instrument is a weighing system and has been designed and manufactured as such. It is intended primarily for weighing goods.

- it is prohibited to use the terminal without taking the necessary precautions for its safe operation.
- it is prohibited to use the terminal in a potentially explosive atmosphere or in places with a risk of fire.

Any other use is only allowed if expressly authorised by the Manufacturer.

2.2 Standards

The operating conditions of the electronic terminal for weighing instruments are regulated by the standards in force in the country of use.

Any use which does not comply with these standards is prohibited.

2.3 Instructions for use

- While using the appliance, strictly follow the instructions in this manual.
- Should there be differences between the contents of this manual and your appliance, ask your Dealer or the Manufacturer's After-Sales Assistance for clarifications
- Carefully follow the indications provided on the warning and danger plates applied to the terminal.
- Make sure that the terminal has all the covers and protective casings. Check the integrity of the cables and their connection.
- Check that the terminal is always plugged into a socket with an efficient earth conductor, making sure that the line complies with standards in force. Ensure that there is no potential difference between earth and neutral.
- If the terminal needs to be connected to other devices such as computers, disconnect them from the mains before making the connections.
- Maintenance and/or repairs must only be carried out by authorised personnel.
- Always unplug the terminal and wait a few minutes before accessing its internal parts.

3 DELIVERY AND INSTALLATION

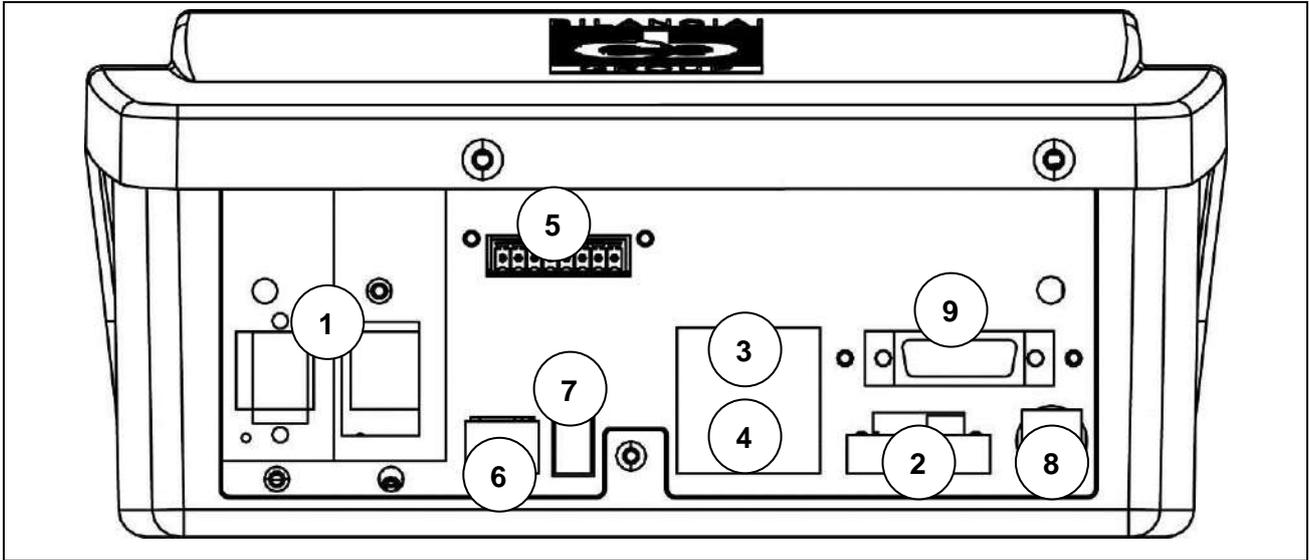


Figure 3-1 – Bottom of terminal with connectors

Key:

1. Slots for optional boards
2. Analogue scale 1
3. COM2 Port
4. COM1 Port
5. I/O terminal block
6. USB DEVICE port
7. USB HOST ports
8. 12 V power supply (via external 110÷240 VAC power supply)
9. DGT scale (opt) or 2nd analogue scale in multiplexing (opt)

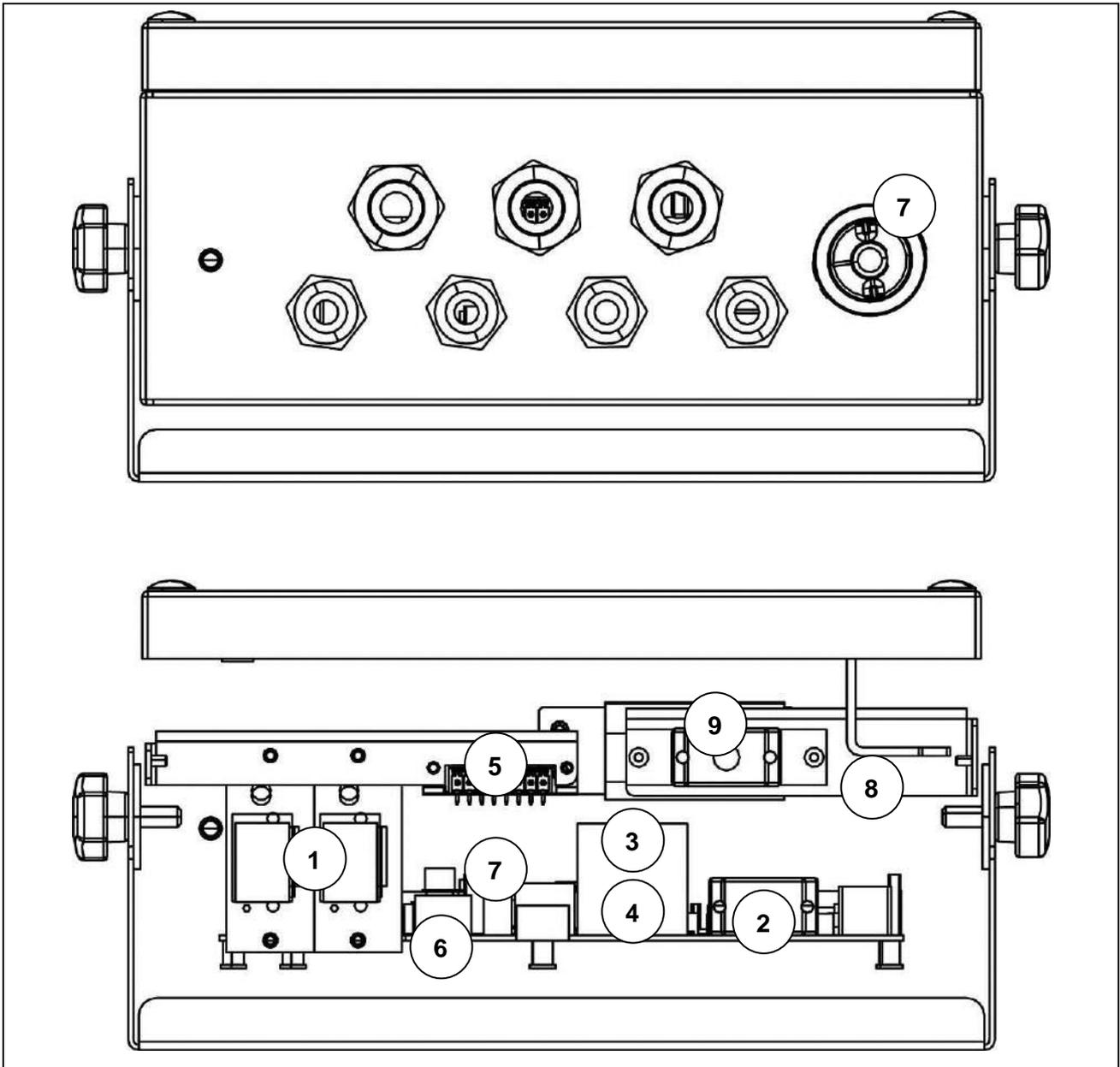


Figure 3-2 –Bottom of terminal with cable glands seen from outside (fig. above) and inside (fig. below)

Key:

1. Slots for optional cards
2. Scale 1
3. COM2 Port
4. COM1 Port
5. I/O terminal block
6. USB DEVICE port
7. USB HOST Ports
8. 110/240 Vac power supply
9. DGT scale (opt) or 2nd analogue scale in multiplexing (opt)

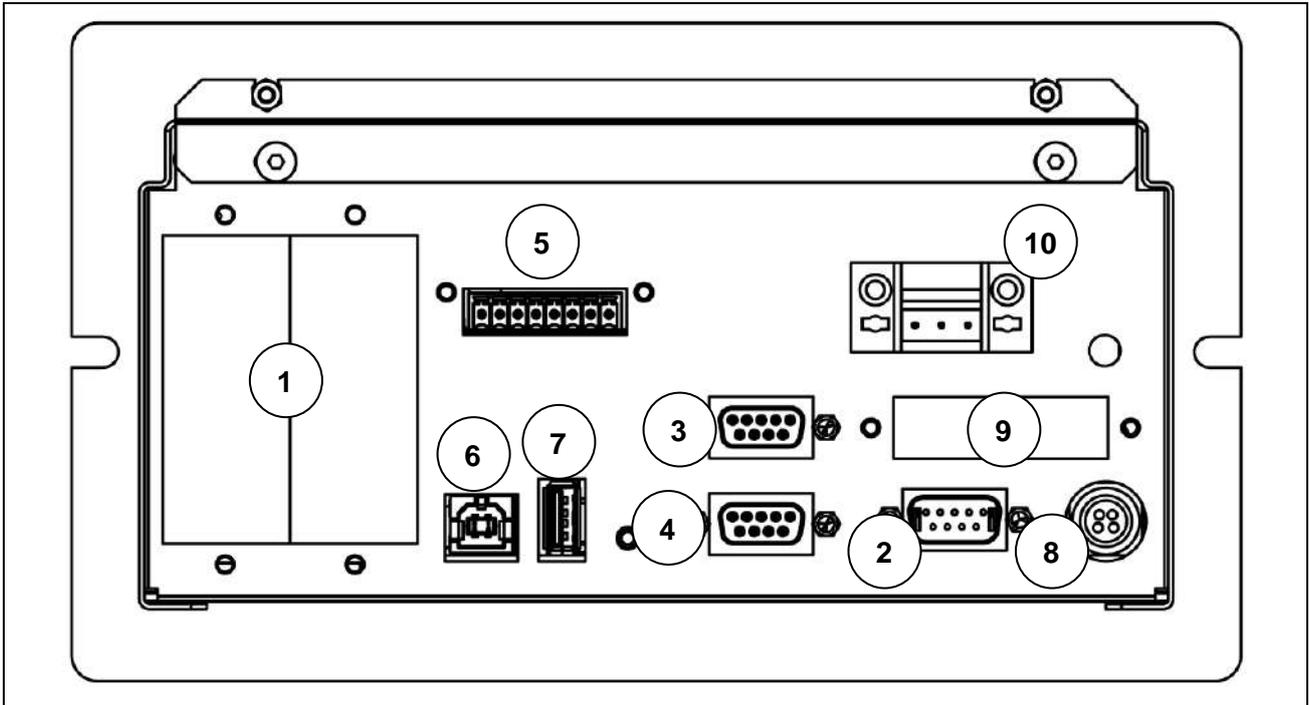


Figura 3-3 – Bottom of terminal with connectors . Panel mount version

Key:

1. Slots for optional cards
2. Scale 1
3. COM2 Port
4. COM1 Port
5. I/O terminal block
6. USB DEVICE port
7. USB HOST Ports
8. 12 V power supply (via external 110÷240 VAC power supply)
9. DGT scale (opt) or 2nd analogue scale in multiplexing (opt)
10. Terminal block 12V power supply (alternative to external power supply)

3.1 Installation



ATTENTION

This terminal must be installed indoors, sheltered against atmospheric agents as it was not designed to withstand foul weather.

3.1.1 Tabletop installation

Place the terminal on a stable surface (table or desk without wheels) so that the monitor is not exposed to direct light to avoid reflections, making sure it is stable and firmly resting on anti-slip feet.

3.2 Connecting terminal to electric mains

3.2.1 Verifications



DANGER

Check that:

- The voltage and frequency of the terminal's electric power line are as indicated on the warning plate located on the power supply.
- The socket the terminal is plugged into is earthed.
- The warning and danger plates are applied to the casing of the terminal.
- If not, notify the maintenance personnel or directly notify our Assistance Service.

The power plug has a protection rating of IP20. Make sure that the connection to the electric mains is appropriately protected according to the environmental conditions.



WARNING

The terminal respects the European Directive regarding electromagnetic compatibility. However it is recommended to separate the electric power supply from the power drives.



WARNING

Do not place the connection cables of the terminal alongside power lines which could interfere with the operation of the instrument. Connect the terminal using the supplied cable. If the cable is too short, do not use extensions, but contact the Manufacturer.



DANGER

Plug in and switch on the terminal only after having performed all the other connections to the peripheral devices present (scale, printer, serial ports, ethernet, I/O, etc...).

3.2.2 Connection diagram (version with connectors and ABS)

To correctly connect the terminal to the electric mains, proceed as follows:

- Connect the terminal to the power supply;
- Plug in the terminal using the specific cable.

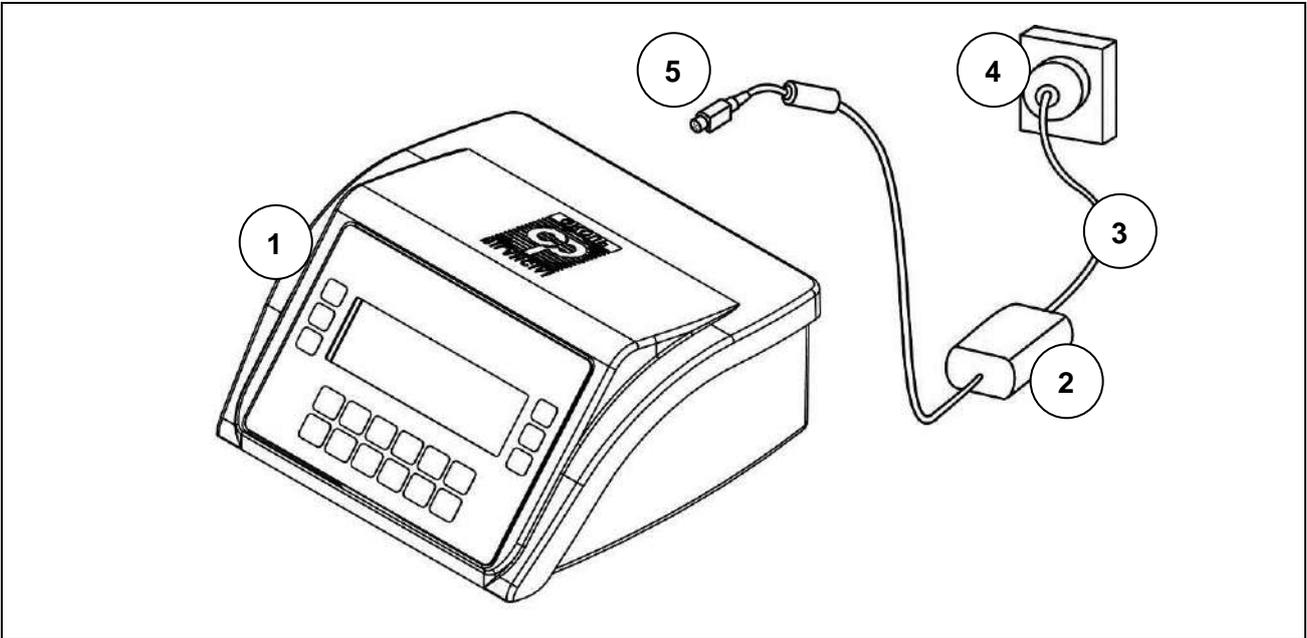


Figure 3.2-1 – Connection of the terminal to the electric mains

Key:

1. Terminal with weight display.
2. Power supply.
3. Power cable.
4. Mains socket.
5. 12V/4A power socket.

Power cable

The power cable is generally supplied with IEC 320 socket and 10 A plug (L+N+E).

12V DC power supply

The DD700 weighing terminal can also be powered by a DC source with rated voltage of 12V.

- It can be powered by a lead battery or stabilised power supply.
- The source must supply 4A.
- It must have an external disconnector switch.

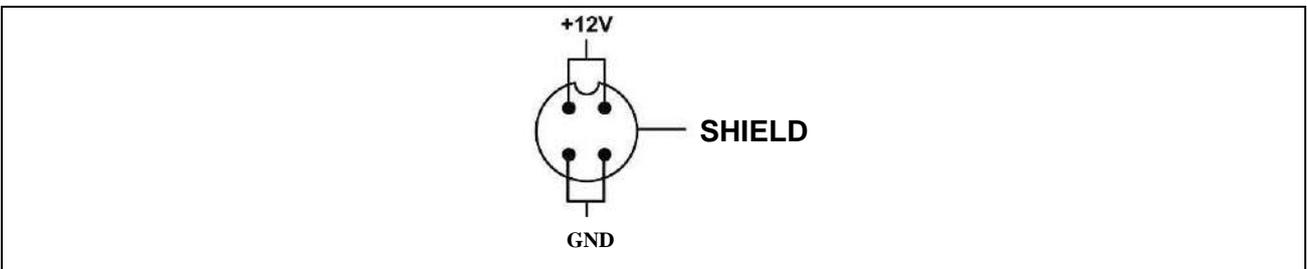


Figure 3.2-2– Socket

Only for Panel Mounting is available a 12V power supply terminal block. Follow the diagram for proper connection. **Connect one 12V power supply.**

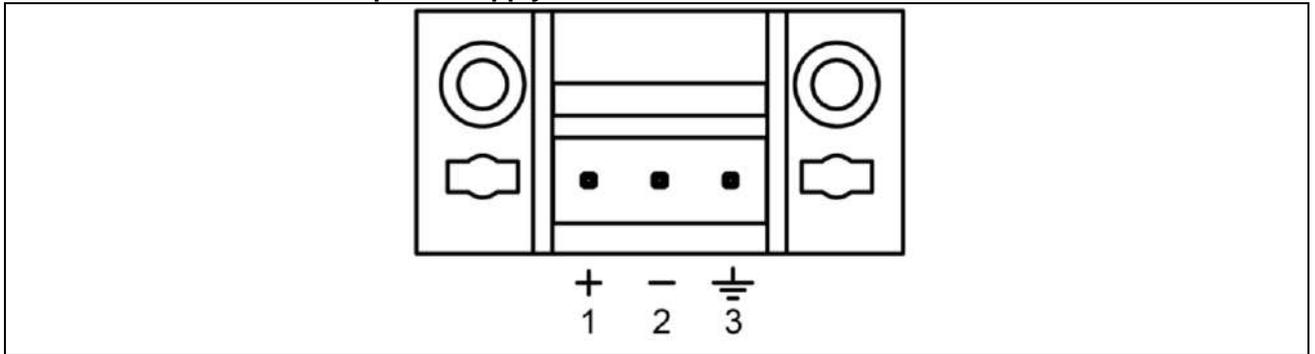


Figura 3.2-3 – Vista Power Supply 12V Panel Mount Version

3.2.3 Connection diagram (DD700 version with cable gland)

The installer is in charge of connecting the appliance to the electric power line. The customer must have specialist personnel install the protective conductor and the power cable.

Earth connection

Connect the terminal to the protective earthing of the system with a yellow-green cable at least 6mm². Use the earth screw underneath the terminal.

The equipotential conductor coming from the weigher must also be connected to the same earth point.

Install a three-pole cable with a cross-section suited to the type of system. See the technical power supply features to choose the cable.

Also provide a disconnecting switch upstream of the power line. The disconnecting switch must be accessible while performing maintenance on the system.

Essential features of the power cable:

- double insulation cable with 3 coloured internal conductors (line=brown, neutral=blue, earth=yellow-green)
- internal conductors with 1.5mm²-2.5mm² cross-section
- external cable diameter 5-10mm



Key

1. L = Line, brown conductor
2. N = Neutral, blue conductor
3. E = Earth, yellow-green conductor

Figure 3.2-4 – Terminal block



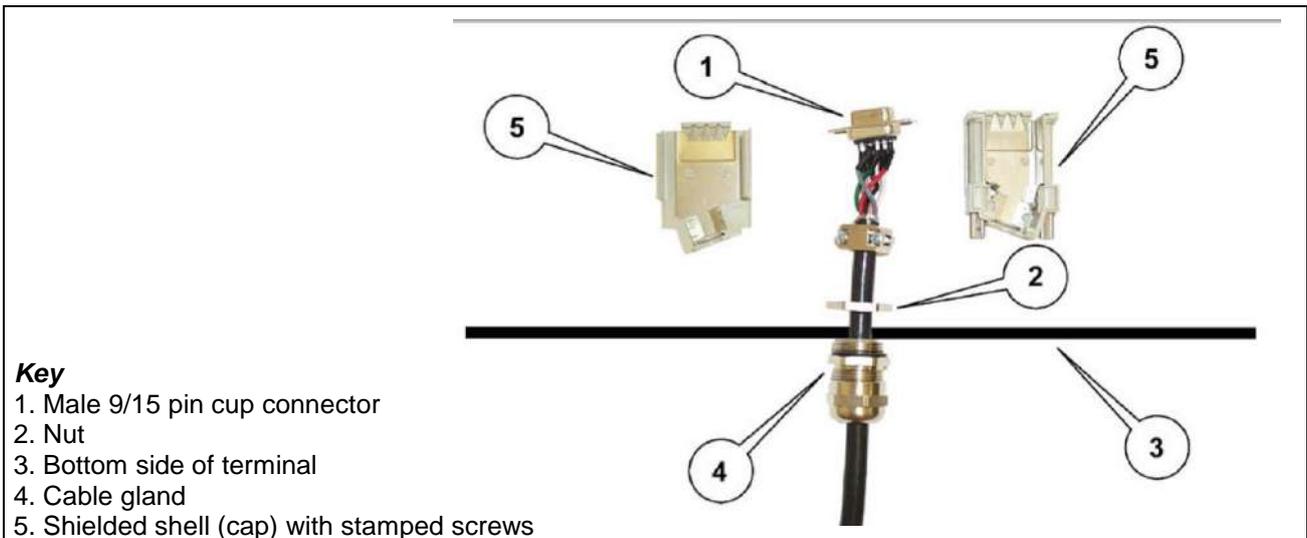
DANGER

Check that:

- the voltage and frequency of the terminal's electric power line are as indicated on the stamped plate at the bottom of the terminal;
- the socket the terminal is plugged into is earthed;
- the warning and danger plates are applied to the casing of the terminal;
- if not, notify maintenance personnel or directly notify our Assistance Service.

Wiring scale cable

To connect the terminal to the weighing platform, it is normally supplied with a pre-wired cable.



Key

1. Male 9/15 pin cup connector
2. Nut
3. Bottom side of terminal
4. Cable gland
5. Shielded shell (cap) with stamped screws

Figure 3.2-5 – Load cell connection

- Insert the 9/15 pin connector into the specific scale inlet
- Secure the cable gland with the nut.
- Refit the shell with the perforated stamped screws.
- Insert the connector at the bottom of the CPU container.

The connection could be different depending on the type of load cell mounted on the weighing platform: analogue or digital. In the event of a duplex scale, scale A must be connected to connector JBIL1 and scale B to connector JBIL2.



WARNING

The cable shield must always be connected to the metal protective cap of the 9/15 pin connector. Do not insert the connection cable to the weighing platform on paths together with direct power driven cables.

3.3 Connecting terminal to weighing platform

To connect the terminal to the weighing platform, a pre-wired cable is normally supplied. Its female connector must be inserted all the way into the male 9/15 pin (JBIL) connector at the bottom of the indicator. The connection could be different depending on the type of transducer mounted on the weighing platform: analogue or digital.



WARNING

The cable shield must always be connected to the metal protective cap of the 9/15 pin connector. Do not insert the connection cable to the weighing platform on paths together with direct power driven cables.

3.3.1 Connection diagram (with platform)

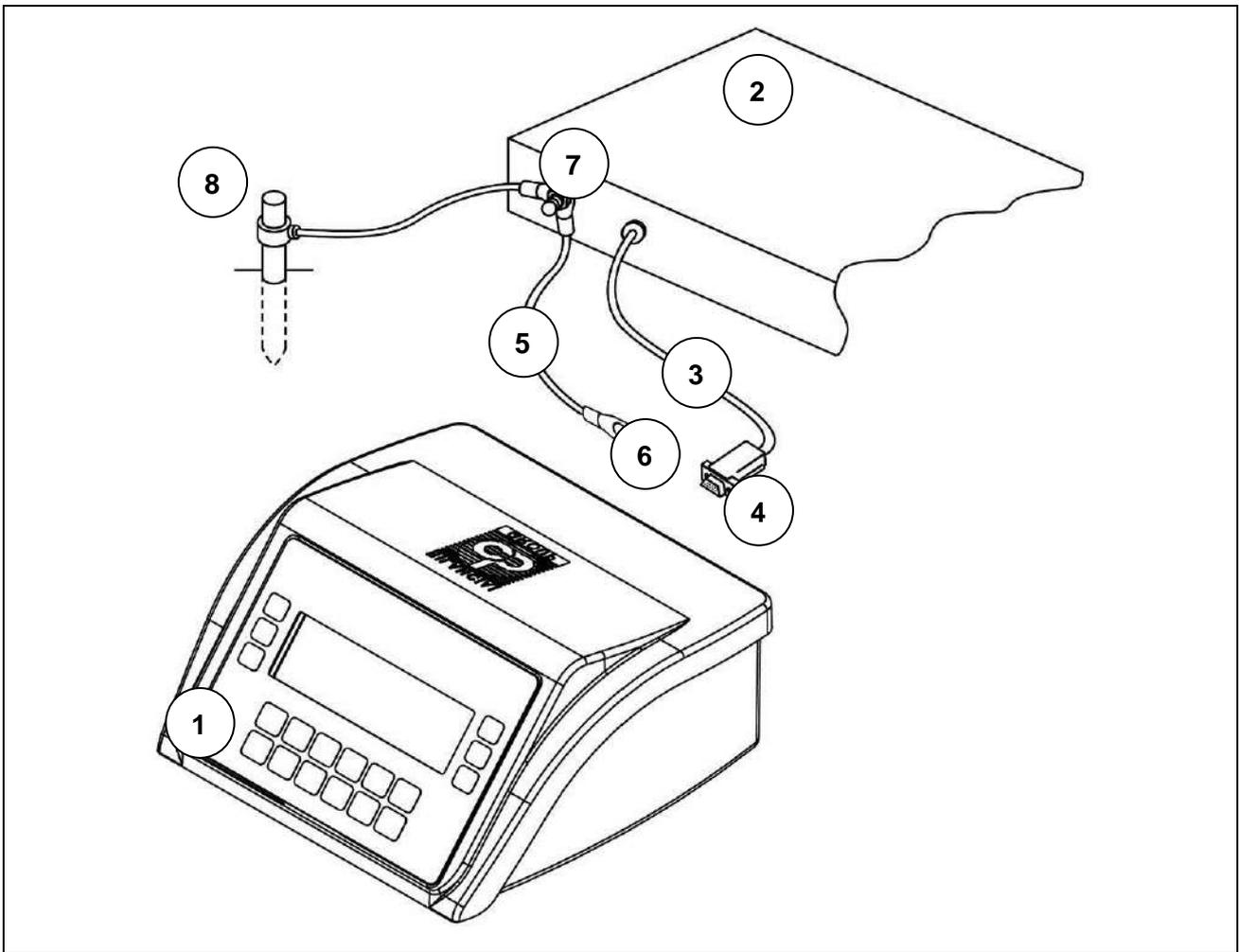


Figure 3.4-1 – Connection of the terminal to the scale

Key:

1. Terminal with weight display.
2. Weighing platform or weighbridge.
3. Scale cable with 9/15 pin connector.
4. Scale inlet.
5. Equipotential cable with eyelet terminal.
6. Earth screw.
7. Earth screw on platform.
8. Earth rod (only for weighbridge).

3.3.2 Equipotential between terminal and weighing platform

Check the equipotential between the metal parts of the terminal and the weighing platform. In case of doubt, connect the terminal and platform with an earth cable of at least 6mm², using the earth screw at the bottom of the terminal. The cables and accessories of this connection are not included in the supply but must be provided by the customer.

3.3.3 Digital Scale serial connection

Female 15 pin cup connector.

PIN	DESCRIPTION
1	485-
2	EX +
3	EX +
4	EX -
5	EX -
6	485+
7	NC
8	NC
9	EX -
10	NC
11	NC
12	NC
13	NC
14	NC
15	NC

NC = Reserved not to connect

The digital cells are connected by an RS485 serial transmission using a 6-conductor shielded cable. Pins with the same signal can be parallelised.

3.3.4 Analogue Scale serial connection

Male 9 pin cup connector.

PIN	DESCRIPTION
1	SIG-
2	SIG+
3	EXC+
4	EXC-
5	SENSE+
6	NC
7	NC
8	SENSE-
9	NC

NC = Reserved not to connect

3.4 Serial connections

3.4.1 Serial output connection COM1

Female 9 pin cup connector.

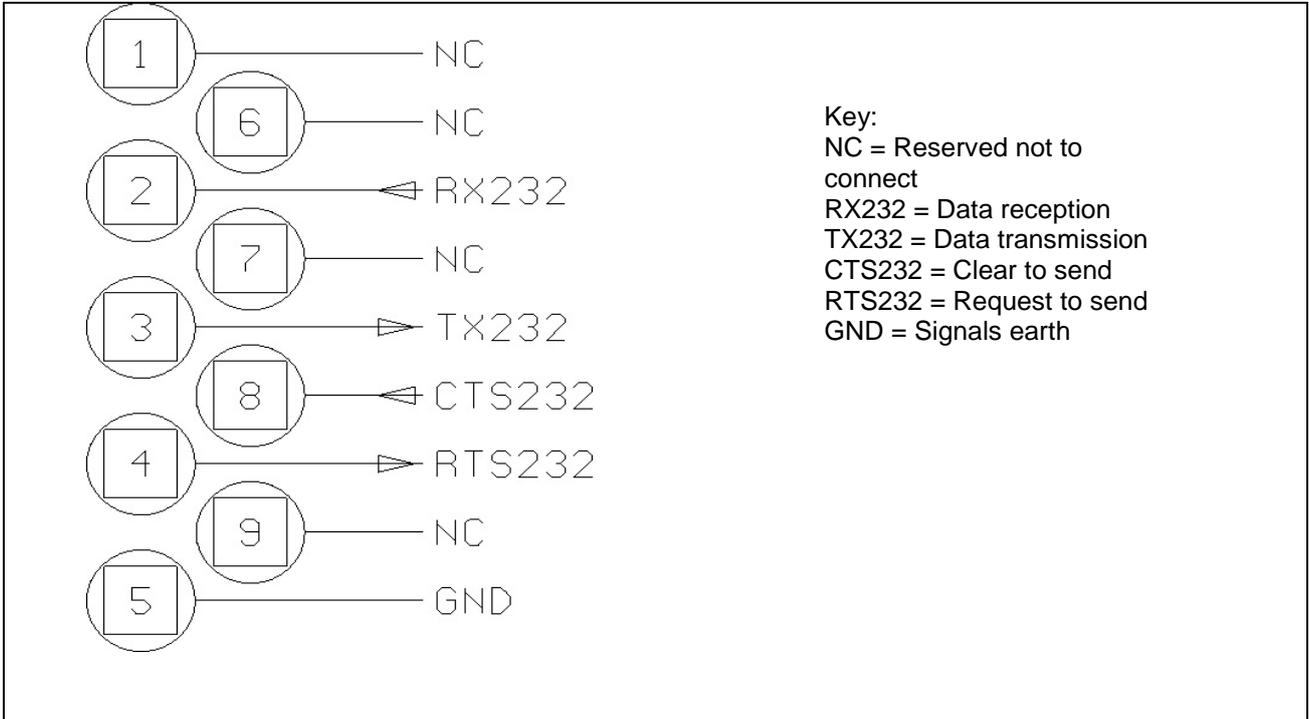


Figure 3.4-2 – Standard serial output link connector (female 9 pin cup connector)

3.4.2 Serial output connection COM2 in RS422 configuration

Female 9 pin cup connector.

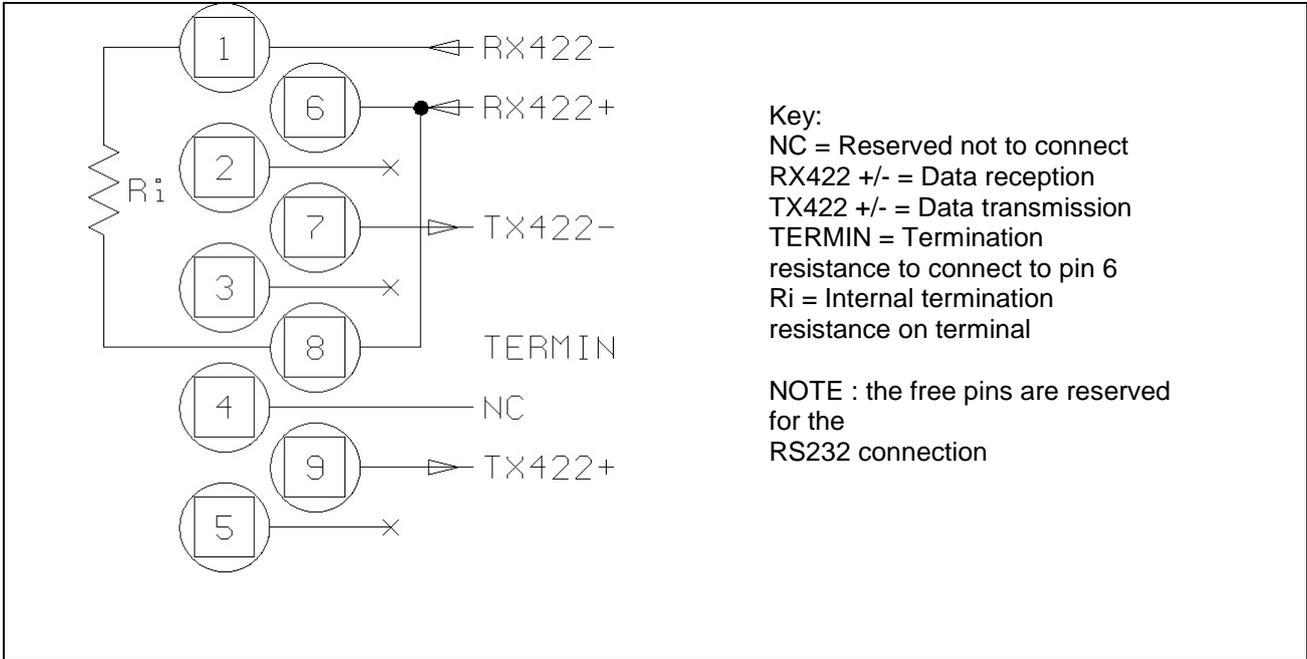


Figure 3.4-2 – Example of RS422 serial output connection

3.4.3 RS232 connections



ATTENTION

Maximum operating conditions foreseen by standard RS232:

Maximum transmission distance: 15 m

Maximum voltage at ends: ± 12 Vdc

For the connection towards external devices, it is recommended to use a shielded cable making sure to connect the shield to the metal part of the shell of the 9 pin connector.

3.4.4 RS422 connections

- If the serial port COM2 is configured as standard RS422, you must:
- Make a jumper between pin 6 and pin 8 to connect the termination resistance.



ATTENTION

Maximum operating conditions foreseen by standard RS422:

Maximum transmission distance: 1200 m

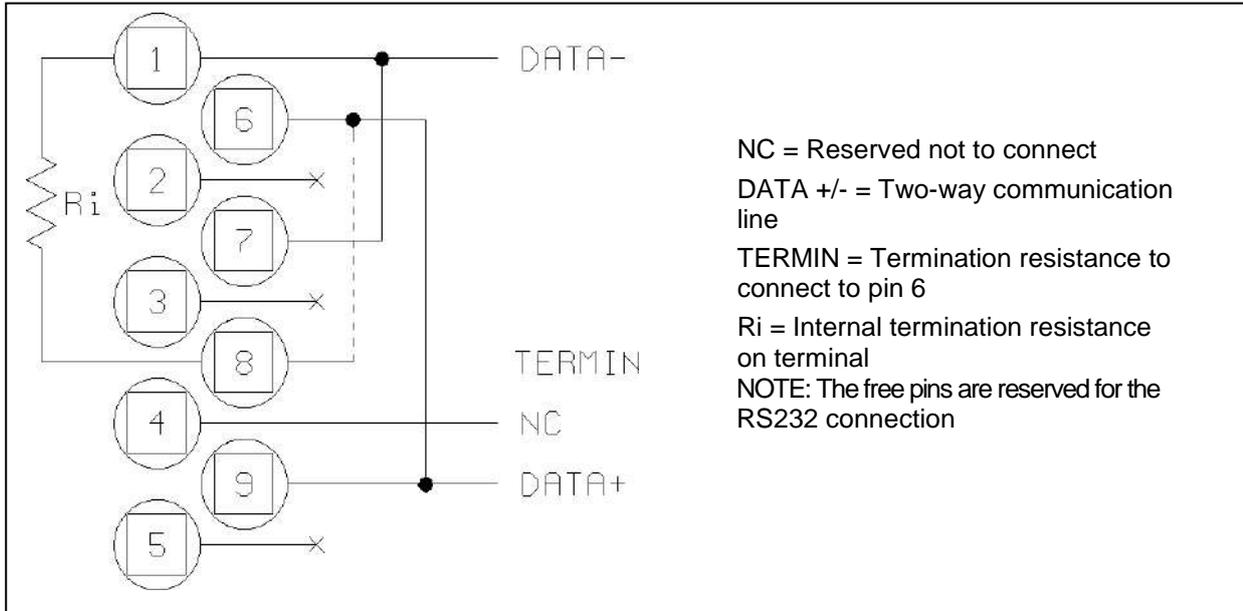
Maximum voltage at ends: +/- 7V

For the connection towards external devices, it is recommended to use a “twisted pair” shielded cable making sure to connect the shield to the metal part of the shell of the 9 pin connector.

3.4.5 Serial output connection COM2 in RS485 configuration

Female 9 pin cup connector.

make the jumper between pin 6 and pin 8 to connect the termination resistance; this is performed on the first and last device connected one to another



3.4.6 RS485 connections



ATTENTION

Maximum operating conditions foreseen by standard RS485:

Maximum transmission distance = 1200 m

Maximum voltage at ends = +/- 7V

For the connection towards external devices it is recommended to use a "twisted pair" shielded cable making sure to connect the shield to the metal part of the shell of the 9 pin connector.

3.4.7 USB Connections

The terminal has 2 USB connections, in particular:

- USB HOST: the terminal has the "A" type connector (See figure 3.1 point 7), in which a USB key or memory stick can be connected or external keyboard.
- USB Device: the terminal has the "B" type connector (see figure 3.1 point 6). A DD700 device driver must be installed for them to be used.
See the notes in the 09880079 folder in README for the installation instructions (the optional programme is provided by Società Cooperativa Bilanciai)

3.5 Input/Output Connection

Input/output contacts are available on the back of the indicator on the I/O terminal block.

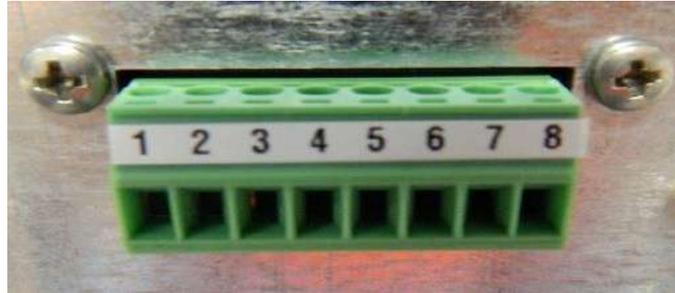


Figure 3.51 – Terminal block pinouts

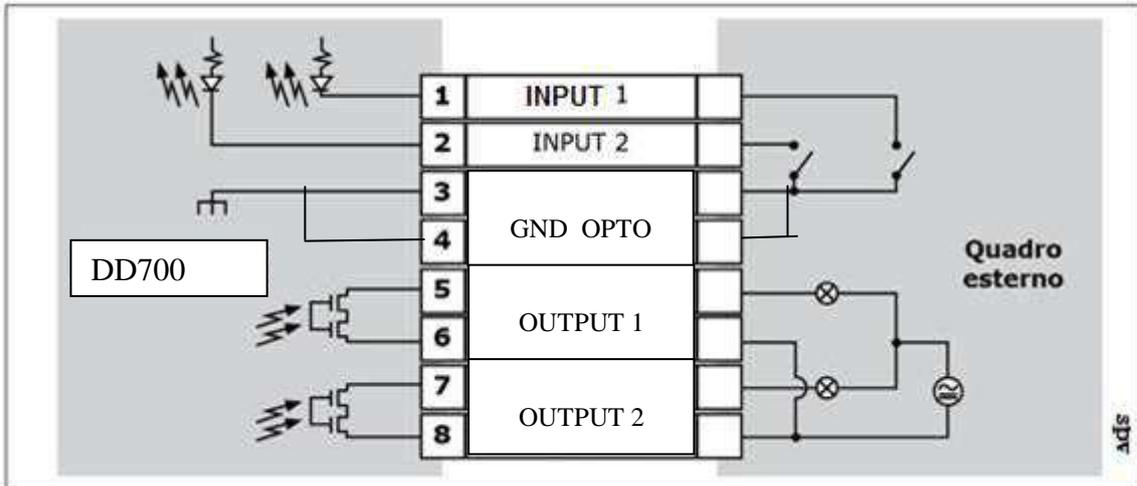


Figure 3.5.2 – I/O terminal block connection diagram for Input/Output connection

3.5.2 Input connection



ATTENTION

Electrical features

Input: maximum voltage ≤ 5 Vdc

maximum current ≤ 5 mA

The inputs can be controlled by voltage-free contacts or by NPN transistors (common negative).

3.5.3 Output connection



ATTENTION

Electrical features

Output: commutable voltage ≤ 24 V (AC/DC)

commutable current ≤ 190 mA (AC/DC)

solid state contact (OPTOMOS).



DANGER

When the weighing system is inserted in complex systems which pose a hazard for system operators, perform several empty manoeuvres assisted by specialist personnel to acquire the necessary familiarity to operate in safety.

4 COMMANDS, SWITCH ON AND OFF

4.1 On-off key

To switch the terminal on when properly powered (connected to the electric mains by means of power supply), press the key on the front.

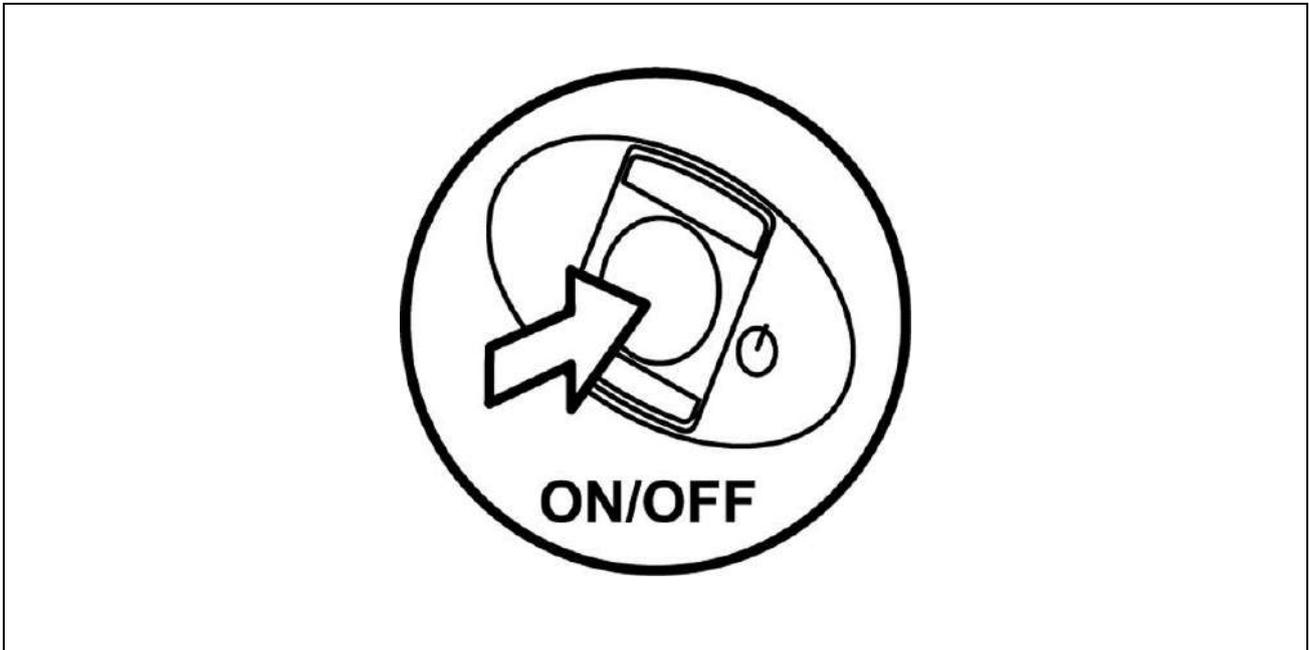


Figure 4.1-1 – Switch-on

Pressing the key again switches the terminal off.

In this situation the terminal functions will be interrupted. It however remains powered but consuming almost nothing.

This status is indicated by the green LED on the external power supply lighting up.

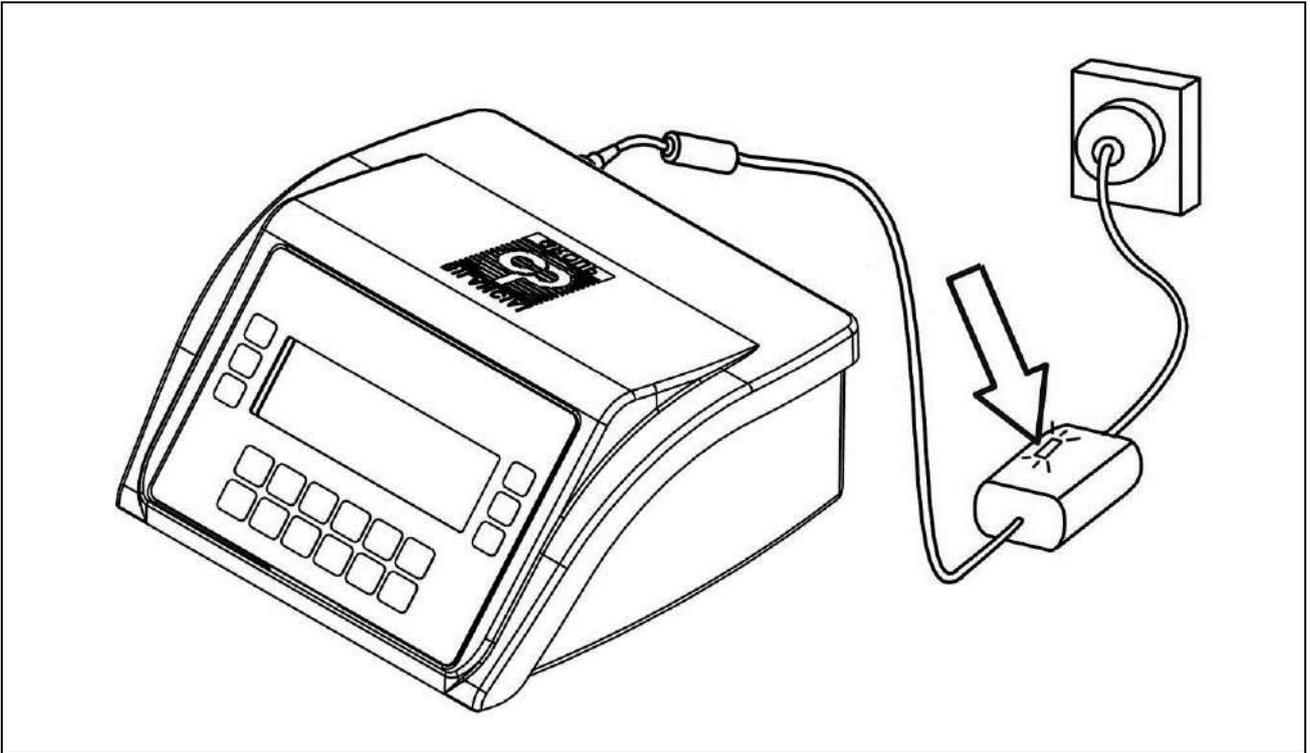


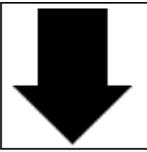
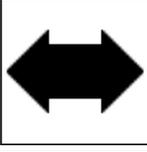
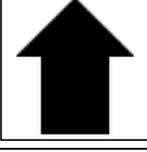
Figure 4.1-2 – Green LED on power supply

Unplug the appliance to switch the system off completely.

The following is a list of the weighing symbols with their meaning:

	<p>Stable weight signal Indicates that the weight displayed is stable and can be printed and/or transmitted.</p>
	<p>"Center zero" signal Indicates that the weight detected by the platform is near zero, ranging within $-1/4 + 1/4$ of the division.</p>
	<p>Tare signal Indicates the presence of a tare stored by acquisition.</p>
	<p>Tare entered by keyboard signal Indicates acquisition of the tare value typed on the keyboard.</p>
	<p>Gross weight signal</p>
	<p>Gross weight with unit of measurement in lb (in alternative to B) This character only lights up when the unit of measurement is expressed in "lb".</p>
	<p>Minimum weighing operation</p>
	<p>Net weight signal</p>
	<p>Indication of weighing range for multi-extension instruments (ME)</p>
	<p>Battery charge (**)</p>

4.1.1 Selection display signals to display

	<p>Weight indication Below minimum set limit.</p>
	<p>Weight indication Within minimum and maximum set limits.</p>
	<p>Weight indication Above maximum set limit</p>

4.2 Metrologic keys

	<p>Weight reset key</p> <p>Pressing this key resets the weight indication to zero only if the following conditions are met:</p> <ul style="list-style-type: none"> • The weight value must be within the $-1\% \div +3\%$ range of the capacity for terminals with obligation of metric verification and $\pm 50\%$ of the capacity of different terminals; • the weight must be stable; • no tare must be inserted.
	<p>Tare insertion and deletion key</p> <p>Pressing this key allows you to acquire the weight displayed on the weighing platform as the tare value only if the following conditions are met:</p> <ul style="list-style-type: none"> • the weight must be stable; • the weight must have a positive value; • the weight must not exceed the maximum capacity. <p>The indications NET and  light up on the display. On MD terminals, the indication of the weight will go back to using the division of the lower field. On ME terminals, the net weight is displayed with the division relative to its own field.</p> <p>Pressing  again deletes the tare and goes back to displaying the gross weight.</p>
	<p>Tare insertion and display key</p> <p>Pressing this key allows you to set a tare value by typing it on the keyboard using the specific numerical keys. To modify any preset tares. To complete the operation, the net weight with tare is displayed and</p> <p>the indications NET and  switch on. The value of the set tare is rounded automatically to the scale division of the scale. For MD terminals, the net weight uses the division of the field in which to place the net weight value, while for ME terminals, the division of the net weight is that relative to the field the gross weight belongs to. For MD terminals, the maximum value of the preset tare is limited to the maximum capacity of the first weighing extension (value indicated on the nameplates bearing the metrologic features of the instrument).</p>
	<p>Print and/or transmission start key</p> <p>Allows you to request a weighing operation. This leads to printing of the weighing data and/or serial transmission of a data string on the configured port.</p>
	<p>Customisable keys</p> <p>The function associated to these keys is indicated on the display.</p>

4.3 Alphanumerical keys

	<p>Keys for entering numerical values and alphanumerical characters</p>
	<p>Decimals setting key Use this key to enter decimal values.</p>
	<p>Enter or confirmation key Press to confirm the operation.</p>



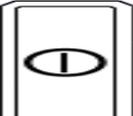
WARNING

The function of the keys



can change and be signalled by the specific indications on the display.

4.4 On-off key

	<p>On-off key Press alternately to switch on or off.</p>
---	---

5. USING THE TERMINAL

5.1 General information

5.1.1 Using the keys for browsing the menus

The numerical keys     described in par. 5.1.3 and the customisable keys  and  allow you to browse the programming menus.

The menu can be entered from the normal display condition by selected item 2°F by pressing



Use the other keys to select the next item of interest. A maximum of 6 functions are available on the hotkey bar. By pressing the key corresponding to the indication MENU/OTHER, you may pass to other functions managed by the terminal. The ↑, ↓, → and ← arrows on the menu allow you to go up, down, to the right and to the left respectively.

The SELECT key allows you to select the item in question or to enter a submenu.

The keys # and \ allow you to change the display of the path in the menu: # the whole path, \ path expressed in numbers. By pressing ESC you go back to the previous menu level.

Pressing ESC several times allows you to go back in the menu until you exit it completely and return to the standard weight display.

From here on, these operating instructions will only indicate the path to be followed without referring to the keys to be pressed. E.g., to modify contrast, the following will be displayed:

2°F>CONTR>+ or ->SAVE >ESC

5.1.2 Entering numerical data (Editor)

Numerical values can be entered as follows:

- select the function associated to the value you wish to set (preset tare, setups, range...); the selected function with the value currently stored will appear on the display;
- use the numerical keys to set the value
- press  to confirm the value and to go back to the previous menu.

5.1.3 Entering alphanumerical data

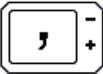
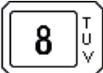
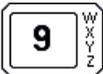
Alphanumerical data can be entered as follows:

- select a function requiring an alphanumerical setting (for example the generic code);
- press the keys corresponding to the letters you wish to set;
- press  to confirm.

Keep in mind that:

- subsequently pressing the same key scans the letters, the number and special characters of various languages;
- to confirm the entered letter just shift to another alphanumerical key;
- to set two letters on the same key, wait a second and press the key again: the correct position is indicated by the cursor;
- keeping a key pressed allows you to view the characters linked to that key. Shifting to the right and left with the keys allows you to select the character you wish to set. The selected character is highlighted with writing in reverse. Press OK to confirm. To switch from lowercase to uppercase letters and vice versa, press the key corresponding CAPIT / SMALL indication.

The following is the list of characters associated to each key:

Alphanumerical keys	Characters
	, - + ; * / = % > <
	0 . : ? ! () ` ~ ' ^
	(blank) 1 £ \$ @ & ^ °
	A B C 2 â ä à á Ä Å ç Ç
	D E F 3 è ê ë è Ë æ Æ
	G H I 4 ï ï ï ï
	J K L 5
	M N O 6 ô ö ò ó Ö ñ Ñ
	P Q R S 7 ß
	T U V 8 ü û ù ú Ü
	W X Y Z 9 ÿ

5.1.4 Hotkeys

During installation, hotkeys can be assigned to functions in the User Menu. This allows the user to reach the desired function by pressing fewer keys. For example to reach the Product Code function, you must press

...MENU>Data Management>Code Management>Product Code

whereas you only need to press PROCOD.

During installation, the abbreviations which appear on the display can be customised. This is why the installer can modify the abbreviations relative to the hotkeys shown in brackets next to or underneath the paths explained in the following paragraphs. Ask the installer for a decoding table.

The paths can also be changed depending on the number of archives and relative hotkeys set the during installation. In that case, the MENU key can be reached by pressing 2F and SELECT.

5.1.5 DD700 with external USB keyboard

DD700 is able to manage an external keyboard connected to the USB Host connector (type A) in the rear.

Features

- The keyboard type (country specific configuration) is selected in relation to the dd700 selected language.
- Implementation of usb keyboard usage during editing phase, menu navigation and weighing management pages
- External keyboard is not or partially supported in setup mode.
- Characters available in PC437 code page can be typed on the keyboard (PC437 is the standard code page of all Dialogic indicators)
- Upper/lower case selection using shift and caps lock keys, as usual.
- Numeric/punctuation characters selection with shift key, as usual.
- NumLock management for numerical pad.
- Functional keys F13 to F24 are obtained pressing shift and F1 to F12 keys.
- Functional keys are connected directly to short cut keys list, when display is in default weighing page; unlike internal keyboard short cut keys, that use 2°F to scroll over, all of them are single press.

For this reason, shortcut keys are associated to Fn keys skipping 2°F, OTHER, EXIT and MENU keys on display; 1ST page shortcut keys are associated to F1-F5, 2nd page shortcut keys to F6-F9, 3rd page shortcut keys to F10-F13 and so on.



- Direct access & exit to user menu through  key, movements through menu using up arrow, down arrow, enter and esc keys.
- When the soft key bar in the lower part of the display is present, Functional key F1 through F6 should be used, except for short cut key list as mentioned before.
- Print screen key, usually on the right of f12 key, operates as the internal keyboard print key
- In Yes/No question page, moreover F1-F6 keys, also letters Y/N and ESC key are available for choice; letters are related to the language selected (i.e. S/N if Italian indicator and so on)
- During editing phase (data input), functional keys enter, backspace and canc are available; anyway, backspace and canc keys perform in the same way.

Notes

- the introduction of characters by pressing "Alt" + "nnn" is not implemented.
- With the current hardware revision, the contemporary usage of a USB Host peripheral and the Ethernet optional board is not allowed.

5.2 Functioning of Single weighing operation, Double weighing, Sum weighing, Load extraction, Unload extraction, CPE functioning, Manual Selector, Weight Check and Multi-Operator

The type of terminal operation is set while being installed.
The set operating mode is displayed when the terminal is switched on.

5.2.1 Single Weighing Operation (*) (***)

The Single Weighing operation allows you to acquire the gross (or net) weight on the scale and to view it on the display together with the weighing signals. In this case the possible display formats are:

15mm Digits, 30mm Digits and Selection.

5.2.2 Double Weighing Operation (*)

The DOUBLE WEIGHING function is used to weigh vehicles, which are weighed before and after loading to determine the amount of goods transported.

The double weighing operation function can be managed with:

- input-output operations;
- operations with preset weights.

The input-output operations can be managed with:

- automatically assigned data recall (4 digits) for input-output operations (hereinafter abbreviated as RcD);
- plate type data recall (10 characters) for input-output operations with plate settings before each weighing operation (RcD plate);
- without data recall codes for input-output operations with settings of the weight present during input before each output weighing operation.

The operations with preset weights can be managed with:

- data recall (4 digits) for preset weight operations (RcP);
- plate type data recall (10 characters) for preset weight operations (RcP plate).

Operation with input and output weighing

Input-output operation requires 2 weighing operations:

- input operation during which the weight of the vehicle is acquired as a first weight and associated with the accessory data (product code, plate and client code) to a recognition code;
- output operation during which, the first weight and the accessory data are recalled using the recognition code and the weight of the vehicle is acquired as a second weight and the difference is calculated (net weight).

The recognition code used during the input-output operation can be a data recall type of code (RcD 4 digits) or plate type of code (10 characters RcD plate).

The two types of codes distinguish two different ways of performing the input operations.

Input/output operation with Data Recall

This type of operation is enabled during installation.

The input and output operation phases do not have to be consecutive, and the difference between the two input and output weights can be calculated on the second.

Input operations

With every incoming print, the terminal attributes and prints a code (Rcd code) which, if set before

the second weighing operation, it recalls the initial data from the first weighing operation (weight, product code, client code and vehicle license plate). For an input weighing operation or the first weighing operation to be printed, proceed as follows:

- set the required accessory data: product code, client code and vehicle license plate (if you wish to manage these data);

It is recommended to use the PROCOD, CLIENT and PLATE hotkeys and refer to par. 5.1.2 and 5.1.3 to enter the numeric and alphanumeric data.

Otherwise follow the paths:

...>MENU>Data Management>Codes Management>Product Code

...>MENU>Data Management>Codes Management>Client Code

...>MENU>Data Management>Codes Management>Plates

- verify that the printer is connected, switched on and with the printing module inserted;
- press the  key to print the first weighing operation.

Printing only takes place if:

- the weight is stabilised within 10 seconds;
- the weight is not negative or exceeds the maximum capacity.

The printed data are:

- date
- time
- progressive number
- product code with the relative description
- client code with the relative description
- plate
- RcD code
- first weight

The data of the first weighing operation are saved until the second weighing operation is printed and then they are deleted together with the data recall code.

The RcD archive can take up to 300 elements (the number of elements can be modified during installation).

If the maximum limit of saved RcD codes is approached, the terminal displayed a message asking you to resize the archive.

Output operations

The terminal is only enabled to print the second weighing operation after the operator has recalled the RcD code of the first weighing operation. Proceed as follows:

- Press *RCD*.

The last RCD code used and the relative associated input weight are displayed.

- Set the value of the RCD code after having read it on the print module relative to the input operation and confirm by pressing 

If the displayed code is that desired simply confirm the present value by pressing .

The product code, plate and client code are displayed below with their descriptions that appear during the input operation and the operator can modify them by setting the desired value; confirm each setting by pressing the

key 

- Press *ESC*.

The weight on the platform, the recalled RcD and the input weight are displayed.

Press the  key to activate the output operation.

If necessary, cancel the operation by pressing 2°F before 

Also remember that once the RcD code is recalled, the product code and the plate and client code can also be modified using the PRODC, CLIENT and PLATE keys. These changes are only shown in the print of the second weighing operation and do not modify the data associated with the first weighing operation.

Printing only takes place if:

- the weight is stabilised within 10 seconds;
- the weight is not negative or exceeds the maximum capacity.

The printed data depends on the connected printer and the selected configuration for the first weighing operation.

- If a multi-copy card printer is used, the printed data are the: date, time, progressive number, product code with the relative description, client code with the relative description, RcD code, first weight, second weight and net weight.
- If a continuous module printer is used, the data of the first weighing operation are printed together with the: date, time, progressive number, product code with the relative description, client code with the relative description, RcD code, first weight, second weight and net weight.

If the weighing operation ends successfully, the enabled totals are implemented, the progressive number is increased and the RcD code used is deleted with its associated data.

Recovering unused RcD codes

The procedure to re-enable the input operations, when the second weighing operations cannot be performed, is as follows:

- access the list of RcD codes by following the path
...>MENU>Data Management>Codes Management>RcD List
- press *COD.N°* to verify how many RcD codes are present in the archive. Remember that the RCD codes for which only the input weighing operation has been carried out are found in the archive.
- print the list of RcD codes and the data associated to it by pressing SUMMAR and set the interval of the relevant codes.

To cancel the outstanding RCD codes for which it is impossible to perform the relative weighing operation in the future, proceed as follows:

- 1) to reset the RCD codes individually, press the "DELCOD / SELECT" keys.
- 2) to reset a range of RCD codes, press the DELCOD / SUMM." keys.
- 3) to reset all the RCD codes, press the "DELCOD / ALL" keys and answer "YES" to the question "Delete all RCD input?"

It is recommended to periodically check the number of unused RcD and possibly delete one from the list of RcD.

Input/output operation with Plate Data Recall

The Rcd Plate code has a maximum of 10 alphanumeric characters that the operator manually assigns and which must be set before any input operation.

Refer to the two previous points for input/output operation.

In this case the reference key is not RCD but PLATE.

Please note that in the case of Rcd Plate, the information on the first weighing operation is associated with the input vehicle license plate.

In this case the card may not be printed since the data of the first weighing operation can be recalled by setting the vehicle license plate when this reaches the exit.

In any case, the operation can be configured in two ways during installation:

- by printing the data;
- by saving the data.

The indication of the preset operation appears on the display when the instrument is switched on.

WARNING

Each explanation given in par. "Input/output operation with data recall"

With regards to the print, the size of the archive, the recovery of unused weighing operations, etc., this also applies to the Rcd Plate.

In this case the associated key is PLATE and not RCD.

Delete RCPD code

Access the list of RcdPD codes by following the path

...>MENU>Data Management>Codes Management>RCPD List

- press *COD.N°* to verify how many RcdPD codes are present in the archive. Remember that the RCD codes for which only the input weighing operation has been carried out are found in the archive.
- print the list of RcdPD codes and the data associated to it by pressing SUMMAR and set the interval of the relevant codes.
- Delete RCPD code:
 - a) reset the CPR codes individually by pressing the "DEL COD / SELECT" keys.
 - b) reset a range of CPR codes by pressing the "DEL COD / INTERV" keys.
 - c) to reset all the CPR codes, press "DEL COD / ALL" and answer "YES" to the question "Delete all RCPD"

N.B. If enabled the RCPD PLATE code archive, the same considerations regarding the print, the archive size, the deletion of codes, etc. are valid. In this case, however, the associated key is PPLATE and not RCPD

5.2.2.2 Operation with preset weights

Operation with preset weights is used when the first weight (or tare) of a vehicle is known and therefore does not require a weighing operation for it to be determined.

The preset weights are associated to a code that allows for recall.

In addition to the preset weight, accessory data can be associated to each code, such as the product code and client code.

Remember that these data can also be entered later on the printing module using the PRODC and CLIENT commands; in this case, however, they are not saved with the code and are only valid for the current operation.

The recognition code used can be a data recall type of code (RcP 4 digits) or plate type of code (10 alphanumeric characters RcP plate) and is set during installation.

Preparing the list of preset weights

As indicated previously, the preset weights can be associated with an RcP or RcP Plate code. The list must be prepared before carrying out any weighing operations.

Proceed as follows:

- press RCP (or PPLATE);
- set the desired code;
- set the value of the weight to be saved;
- set the product code;
- set the client code;
- press ESC to exit;
- repeat the procedure to enter a new code.

If you do not wish to enter the product code and the client code press *ESC* after having confirmed only the value of the weight.

Weighing operations with preset weights

When the vehicle is on the scale press RCP (or PPLATE) and enter the desired code to recall the first preset weight from the list.

The weight on the scale, the code of the preset weight and its value are displayed.

Press the key to print the weighing operation. The data printed on the printing module are the following:

- date and time
- product code and description (if entered)
- client code and description (if entered)
- RcP code (or RcP Plate) and the relative weight 1st associate weight
- 2nd weight
- net weight

5.2.2.3 Operation with the first weight being entered manually

The operation that enables the manual entry of the first weight can be selected during installation. In this case the operations with automatically assigned data recall or license plate data recall are disabled, therefore the data of the first weighing operation are not saved.

The latter is only printed and the related data, including the first weight, must be re-entered manually at the time of the second weighing operation.

The command that allows the first weight to be entered is *R.WEIGHT*.

The value of the weight entered must range between 0 and the maximum capacity.

5.2.2.4 Totals management

In addition to the standard totals, the following general totals are operated during the double weighing operation(*):

- Totals by Client Code
- Totals by Plate

The values of the net weight and number of weighing operations associated to a given client code or plate code are saved.

The data are available by recalling the following functions:

...>MENU>Totals Management>Client Total (hotkey CLTOT)

...>MENU>Totals Management>Plate Total (hotkey TPLATE)

- *PRINT* produces the print of the selected total
- *SUMMAR* produces the print of all codes
- *RESET* resets the total
- *CLIENT* allows you to shift to another client code
- *PLATE* allows you to shift to another plate code

5.2.3 Sum Weighing operation

The sum weighing function allows you to perform several weighing operations in sequence without discharging the scale, resetting the net weight after each operation. Going from one weighing



operation to another is performed by pressing the button with the weight stable.

At the end of this operation:

- the net weight is reset turning the weight currently on the scale into tare;
- a string is sent to the serial output or is printed (if there is a printer available).

The possible display formats with this type of operation are: 15mm Digits, 30mm Digits and Selection.

15mm Digits, 30mm Digits and Selection.

5.2.4 Load Extraction operation (*) (***)

This operation allows you to perform simple batching with several components once selected and associated to the I/O devices.

The inputs/outputs are selected during installation.

By following the indications "Setting output as set-point", the Set Point 01 and Set Point 02 values are set. Set Point 01 defines the quantity of final weight to extract, Set Point 02 the quantity of weight which, subtracted from the Set Point 01 value, signals the passage from fast extraction mode to slow extraction mode.

Pressing START resets the extracted weight value and enables scale loading. The gross weight (namely the weight on the scale) and the extracted weight (namely the weight loaded bit by bit on the scale) are viewed on the display.

The Extraction display format is used.

The extraction operation can be terminated by pressing STOP.

From parameter can limit the request for START only extractable underway

5.2.5 Unload Extraction operation (*) (***)

This mode is identical to the prior one, the difference being that it starts from the scale already loaded and extracts material.

Set Point 01 and Set Point 02 values are set "Setting output as set-point"

Pressing *START* resets the extracted weight value and enables scale unloading. The gross weight (namely the weight on the scale) and the extracted weight (namely the weight unloaded from the scale) are viewed on the display.

The **Extraction** display format is used.

The extraction operation can be terminated by pressing *STOP*.

From parameter can limit the request for START only extractable underway

5.2.6 Manual selection mode operation (**)

When set to operate in this mode, the terminal can manage up to 15 weight classes in order to classify the weighed product.

5.2.6.1 Classification display

The classification appears on the display together with the weight. The time that the number range, to which the weight acquired during the weighing operation belongs, remains on the display, can be set as indicated in the advanced user manual.

A minimum time of 3 seconds can be set, which is also the standard setting.

5.2.6.2 Range setting

A minimum and maximum limit is managed for each class.

These values are set by following the path:

...>MENU>Codes Management> Range c.List or by pressing the hotkey RANGC.

5.2.6.3 Totalling by classification

Totals are available divided by the class they belong to. The net weight and the number of weighing operations are supplied for each class. These totals are accessible following the path: ...>MENU> Totals management > Range Code Total or pressing the hotkey TRANGC. Once you have entered the classification totals page, the total of the current code is displayed:

-  prints the selected total
- SUMMAR prints total of an interval of codes
- RESET key resets the selected total at zero
- CRANG selects the code
- LIST displays the totals list

In the LIST menu, you may select SUMM, RESET (with the same functions explained above) and ENTER which views the single total selected.

5.2.6.4 Automatic print/transmission

When set to operate as manual selector, the terminal can print or transmit the weighing data in automatic mode when the weight on the scale exceeds a certain threshold and the stable weight condition is detected.

The standard enabling threshold is set at 20 divisions (namely a weight equal to 20 times the minimum increment viewable by the instrument) and can be modified as indicated in the advanced user manual.

To enable a new weighing operation, the weight on the scale must drop below a value equal or lower than that of the threshold.

The following data are printed:

- Date and time
- Progressive
- Product code (if used)
- Generic code (if used)
- Tare (if used)
- Net
- Classification

The terminal performs the controls on ranges always starting from the first and, once found, interrupts the search. In the event of ranges with equal values, the weight is only totalled on the first range found. If you wish to use a range as a discard range, you must use the last range available (15). By setting the minimum limit at 0 and the maximum limit as the capacity of the instrument, all the weights not included in the previous ranges will be associated.

The weighing ranges are stored, viewed and printed with the unit of measurement present at the time of setting.

5.2.7 Piece counter mode operation (**)

When configured in piece counting mode, the terminal has the following functions available:

- simultaneous display of weight, number of pieces and average unit weight (from here on AUW);
- calculation of number of pieces by net weight or weight difference;
- setting or automatic calculation of AUW.

5.2.7.1 AUW Management

If the AUW is set by the operator, during the setting operation, it is possible to choose the unit of measurement.

If an AUW is calculated, two calculation methods can be chosen:

- **Net weight in high resolution**
- Set the number of samples to be loaded.
- Load the samples on the scale.
- At a stable weight, the weight is acquired with an internal resolution 1/10 the display resolution.
- **Difference of gross weights in high resolution**
- In this mode you can also start with the scale loaded. Set the number of samples.
- If the weight is stable, the current weight on the scale is acquired as the initial reference.
- Add or remove samples. Once the stable weight condition is detected, the weight is acquired again as the final value. The difference between the final value and the initial value is the weight of the samples.

The calculated AUW can be expressed with a number of decimals higher than those of the scale and even have a different unit of measurement.

The type of calculation is selected by entering the setup menu; consult the advanced user manual.

After calculating the AUW, the value obtained can be associated to the product code. This way when the product code is recalled, the AUW of the desired product is also recalled.

5.2.7.2 Product code archive

The product archive consists of:

- Code: 6 numerical characters
- Description: 20 alphanumerical characters
- Tare
- AUW

When setting the product CODE, a DESCRIPTION, TARE and AUW can also be set. Upon installation, you can select to use the tare associated to the product code. When a code of the product archive is displayed/printed, the tare is expressed in the unit of measurement present when it was set. When the terminal is switched on, the last product code used before switching it off is active and the tare associated to that code is loaded on both scales.

5.2.7.3 Product code totals archive

The totals archive for the product code consists of:

- Code
- Net Total
- Heavy Total
- Pieces Total

5.2.8 Multi-operator Operation (**)

This is a shop scale operation.

Several operators can perform weighing operation cycles simultaneously. For each operation, all the weighing data are stored and the total kept by operator code.

When configured multi-operator mode, the terminal has the following functions available:

5.2.8.1 Operator Archive

The operator archive consists of:

- Code (search key)
- Description
- Print Archive

To set the operator CODE (maximum 6 numerical characters), press the hotkey OPERC, and then enter the code as explained in par. 5.1.2. A DESCRIPTION (maximum 20 alphanumerical characters) associated to the operator code can also be set. Follow the indications shown in par. 5.1.3.

An operator starts working when he carries out the first weighing



operation. During the work phase, pressing  stores the weighing data of the current operator in the PRINT ARCHIVE (5.2.7.3). The Print Archive contains the name of the archive containing the operations which the operator is carrying out. If the operator is not working, the field is empty. If the zero operator code is enabled, the weighing operation is carried out (printing) without storing and totalling.

When the operator is working, he cannot be eliminated from the operator archive.

There are two ways to change an operator:

- pressing the hotkey CHANGE, displaying only the operators working. In this case only the operators working are displayed.
- pressing the hotkey OPERC, displaying the archive with all the operator codes.

An operator code in the archive can only be selected and enabled if:

- it is an operator already working;
- he is not working and there are fewer than 4 operators with an operating cycle open.

If there are already 4 operators working and another is selected, the terminal displays the following message:

Err.4 Operat. in proc.

If an operator code is typed in which does not exist in the archive, the terminal displays the following message:

Err. Operat.not in list

Changing the active operator enables the codes (product and generic) which the operator used during the last weighing operation.

5.2.8.2 Operator Total Archive

The operator archive consists of:

- Code (search key)
- Net
- Number of Weighing Operations

5.2.8.3 Print Archive

The operator archive consists of:

- Print Number (search key)
- Product code
- Generic code
- Date
- Time
- Gross
- Tare1
- Tare2
- N. of packs
- Net

The archive is associated to an operator as soon as the operator starts working. It stores all the



operations carried out by the operator (press ). There can be a maximum of 4 archives of this type simultaneously (one per operator working). After the report print requested by the operator, the archive is eliminated (par. 5.2.7.4).

The search key is progressive: from 1 to n° corresponding to current weighing operation. The date and time fields of the first element of the archive correspond to the date and time of the start of work.

The weight data is stored and displayed with the unit of measurement present at the time of the weighing operation.

The print archive list is for viewing only.

5.2.8.4 Stop working (receipt closure)

The processing cycle can only be closed by the active operator who had previously opened a receipt. The hotkey CLOSE must be pressed. A summary of all the operations carried out is printed and if successful, the print archive associated to the operator is cancelled. If the print finishes in failure, the print archive is retained and the operator remains working: he must request the closure.

When the operator terminates the work, the current operator still remains.

The progressive receipt number is managed. Every time a receipt is closed, it is increased by one unit. If set at zero, it is no longer increased and managed.

The print cannot be customised.

Weighing data are expressed in the unit of measurement present at the moment of the print.

The following data are printed:

Header

- Logo
- Head texts
- Date in time (work start up)
- Cons. Ticket
- Operator Code
- Operative description
-

For each individual weighing operation:

- Product code
- Generic code
- Gross
- Tare
- Tare1
- Tare2
- N. of packs
- Net

Closure

- Gross Total
- Tare Total
- Net Total
- N° Weighing operations
- Text at foot of page
- Manufacturer row

5.2.8.5 Cancellation of weighing operation

The current operator can cancel the last weighing operation stored in the archive by pressing the hotkey REVERSE. The entire archive could also be reset by eliminating the operations one by one.

The weight data relative to the cancelled weighing operation are subtracted from the totals and the progressive number decreases.

5.2.8.6 Single weighing print

From the "PR-MOP" quick key or from the menu it is possible to enable printing of every single weighing, which shows the data:

Date - time - Progressive (*) - Goods Code (*) - Description (*) - Generic Code (*) - Operator Code - Gross (*) - Tare (*) and Net.

(*) Printed only if set or enabled.

The summary print is still enabled at the time of the end of processing / closure receipt request.

5.2.9 Weight Check Operation (**)

This function allows you to verify whether the weight of the product on the scale is within, higher or lower than a preset range of values.

A coloured LED bar displays its range.

It is possible to associate the weighing range to a product code.

5.2.9.1 Display of Range and default values to process the limits (in divisions)

Displays the values, in divisions, used to calculate the limits.

The values for the calculation of the limits can be modified and can be expressed in divisions or in percentage. Every time division/percentage is changed, all the values for calculating the limits are reset.

If the LED bar is present, these light up in relation to the limits.



The bar is made up of 14 leds ; the red ones represent far below/over range weights , the yellow leds are for below/over range weights and the green ones for in-range weights. Leds light up from the left to the right and each one is one third of the processed range.

The green ones are both on in the interval center.

Colour and position of the led (left to right) :

Far below range (weight lower than or equal to the lower limit 2)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	GIALLO3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	---------	-------	-------	-------

Slightly below range (lower limit 2)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Below range (lower limit 2)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Far below range (weights lower than or equal to the lower limit 1)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Slightly below range (lower limit 1)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Below range (lower limit 1)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

In range (between lower limit and upper limit)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

In range (between lower limit and upper limit)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

In range (between lower limit and upper limit)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Slightly above range (upper limit 1)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Above range (upper limit 1)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Far above range (upper limit 1)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Slightly above range (upper limit 2)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Above range (upper limit 2)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

Far above range (upper limit 2)

RED 1	RED 2	RED 3	YELLOW 1	YELLOW 2	YELLOW 3	GREEN 1	GREEN 2	YELLOW 1	YELLOW 2	YELLOW 3	RED 1	RED 2	RED 3
-------	-------	-------	----------	----------	----------	---------	---------	----------	----------	----------	-------	-------	-------

5.2.9.2 Weighing limit entry

To enter the weighing limits, press the shortcut key CHECK and select one of the following modes:

...>ACQUISITION>TARGET

Place a sample piece on the scale. Press the TARGET button and the acquired weight will become the central value of the weighing range: the

lower limit will set to 20 divisions less than the target while the upper limit will set to 20 divisions more than the target. The other limits are calculated automatically and can also be modified in the manual mode if necessary. On termination, press MEMOR to memorise the limits.

...>ACQUISITION>UNDER/OVER

Place the minimum acceptable weight on the scale. Press the UNDER button and the acquired weight will become the lower limit of the weighing range.

Place the maximum acceptable weight on the scale. Press the OVER button and the acquired weight will become the upper limit of the weighing range. The other limits will be calculated automatically and can also be modified in the manual mode if necessary.

...>SETUP>UNDER/OVER

Press the UNDER key and enter the lower limit of the weighing range.

Press the OVER key and enter the upper limit of the weighing range. The other limits will be calculated automatically and can also be modified in the manual mode if necessary.

When they are memorised, the limits can also be associated with a product code. Only the "LOWER LIMIT" and "UPPER LIMIT" values are memorised and the scale activates the actual limits at the time the calculation is made. The limits are memorised in the current unit of measurement. The product code to which they have been associated becomes the activated product code.

...>MODIFY LIMITS

Allows all the limits to be modified or entered in the manual mode.

In order to be memorised, the limits must comply with the following rules:

4 well below < below

4 below < slightly below

4 lower limit < upper limit

4 upper limit < slightly above

4 slightly above < above

4 above < well above

4 well above <= weight capacity

...>LOWER LIMIT

Allows you to modify the lower weighing limit or enter it in the manual mode.

...>UPPER LIMIT

Allows you to modify the upper weighing limit or enter it in the manual mode.

...>VALUES FOR CALCULATING THE LIMITS

Displays the values, in divisions, used to calculate the limits.

The values for calculating the limits can be modified and can be expressed in divisions or percentages. All the values for calculating the limits are reset whenever the divisions/percentage mode is changed.

5.2.10 MPP accessory operation

The MPP accessory operation can also be associated to the previous operations.

5.3 User menu

Below is the user menu tree illustrated to the 3rd level. For details see the paragraphs below.

5.3.1 User menu tree

MANAGEMENT OF COMMON FUNCTIONS IN OPERATIONS (SINGLE WEIGHING OPERATION, DOUBLE WEIGHING, LOAD AND UNLOAD EXTRACTION (*) (*)**

Data management

Code Management

Product Code

Generic Code

Product Code List

Range

Range 01

Range 02

Range 11 (If optional board present)

Range 12 (If optional board present)

Range 13 (If optional board present)

Range 14 (If optional board present)

Range 21 (If optional board present)

Range 22 (If optional board present)

Range 23 (If optional board present)

Range 24 (If optional board present)

Setpoint

Setpoint 01

Setpoint 02

Setpoint 11 (If optional board present)

Setpoint 12 (If optional board present)

Setpoint 13 (If optional board present)

Setpoint 14 (If optional board present)

Setpoint 21 (If optional board present)

Setpoint 22 (If optional board present)

Setpoint 23 (If optional board present)

Setpoint 24 (If optional board present)

Display MPP data (if MPP board with memory present)

Preset tare (tare device activated, tare archive present)

Entering

Tare code

Tare1 code

Tare2 code

N. of packs

Preset tare list (At least one element in archive)

Progressive

Coefficient Management

Coefficient

Operation

Multiplication

Division

Rounding

Totals management

General Total

Partial Total

Product Code Total (product code total archive present)
Generic Code Total (generic code total archive present)

MPP operation (MPP if device enabled)

De-activated
With memory

Display

Contrast

Memory status

Reprint

Date Time

Printer cut

Weighing range (Multi-division /Multi-extension with weighing fields management)

Automatic
Extension w1
Extension w2
Extension w3

Weighing operation (default printer)

Archives <->PC/USB

Digital cells (only for digital scale)

Diagnostic (only for digital scale)

Scale selected(*)(multi scale)**

Change unit of measurement

Auto-switch off (OPT)

No
Yes

External battery voltage

Lighting

High intensity
Low intensity
Temporary high intensity

Activate buzzer

No
Yes

Menu access-Modif.Arch.

High Resolution

MANAGEMENT OF COMMON FUNCTIONS IN OPERATIONS (CPE, MANUAL SELECTOR, WEIGHT CHECK, MULTI-OPERATOR) ()**

Data management

Code Management

Product Code

Generic Code

Product Code List

Range

Range 01

Range 02

Range 11 (If optional board present)

Range 12 (If optional board present)

Range 13 (If optional board present)

Range 14 (If optional board present)

Range 21 (If optional board present)

Range 22 (If optional board present)

Range 23 (If optional board present)

Range 24 (If optional board present)

Setpoint

Setpoint 01

Setpoint 02

Setpoint 11 (If optional board present)

Setpoint 12 (If optional board present)

Setpoint 13 (If optional board present)

Setpoint 14 (If optional board present)

Setpoint 21 (If optional board present)

Setpoint 22 (If optional board present)

Setpoint 23 (If optional board present)

Setpoint 24 (If optional board present)

Display MPP data (MPP with memory)

Preset tare (tare device activated, tare archive present)

Entering

Tare code

Tare1 code

Tare2 code

N. of packs

Preset tare list (At least one element in archive)

Progressive

Coefficient Management

Coefficient

Operation

Multiplication

Division

Rounding

Totals management

General Total

Partial Total

Product Code Total (product code total archive present)

Generic Code Total (generic code total archive present)

Product-Tare Code Total (product code total archive present and product-tare association enabled)

MPP operation (MPP if device enabled)

De-activated

With memory

Display

Contrast

Memory status

Reprint
Date Time
Scale selected (Multi-scale)
Printer cut
Weighing range (Multi-division /Multi-extension with weighing fields management)
Automatic
Extension w1
Extension w2
Extension w3
Auto-switch off (OPT)
No
Yes
External battery voltage
Battery charge time
Battery charge
Lighting
High intensity
Low intensity
Temporary high intensity
Activate buzzer
No
Yes
Change unit of measurement
Menu access-Modif.Arch.
Weighing operation (default printer)
Enable/Disable the print
Archives <->PC/USB
High Resolution
Digital cells (only for digital scale)
Diagnostic (only for digital scale)

MANAGEMENT OF SPECIFIC DATA FOR OPERATION

SINGLE WEIGHING OPERATION

Generic
Code
Generic Code Total (total archive)

Display

15mm digits
30mm digits
Selection
Display tare (Tare device not disabled)
Customised (if customisation of the view exists)

SUM WEIGHING

Display

15mm digits
30mm digits
Selection
Display tare (Tare device not disabled)
Customised (if customisation of the view exists)

DOUBLE WEIGHING OPERATION (*)

Client
Code
Client Code Total (generic code total archive present)
Client Code List

Plate Code (only present if RCD/RCP numerical)
Plate total
RCD code or RCD PLATE Code
RCD code list or RCD PLATE Code
RCP code or RCP PLATE Code
RCP code list or RCP PLATE Code

Display

Double Weighing operation

LOAD/UNLOAD EXTRACTION (*) (*)**

Display

Extraction

MANUAL SELECTOR ()**

Display range
Range list
Range Code Total

PIECE COUNT / CPE ()**

Indication of displayed weight or piece range
AUW
Number of samples

WEIGHT CHECK ()**

Weighing range

Acquisition
Setting
Modify
Values for calculating limits
Standard deviation

Display

15mm digits
30mm digits
Displayed Tare
Customised (if customisation of the view exists)
Graphic

MULTI-OPERATOR ()**

Code Management
Operator code
Operator List
Operator change
Cancellation
Progr. Receipt
Operator code total

Display

15mm digits
30mm digits
Selection
Displayed Tare
General data
Customised (if customisation of the view exists)

N.B. Product code messages differ by type of operation to facilitate any customisation of the hotkeys.

5.3.2 Modify date and time

Follow the path:

...>MENU>Date Time
(DATIME hotkey).

To quickly change summer time, use + or - 1 hour, otherwise use the entry CHANGE.

5.3.3 Weight display

This can be customised depending on how you wish the weight on the scale to be displayed. It depends on the type of operation set during installation.

To select the display type, follow the path:

...>MENU> Display
(VISUAL hotkey).

The possible display formats are:

- 15mm digits
The gross (or net) weight and the weighing symbols are shown on the display.
- 30mm digits
The weight with the 30 mm high characters and the weighing symbols are displayed
- Selection



Aside from the weight and the usual weighing signals, one of the signals is displayed.

The interval is set by pressing DRANGE, selecting the values with SELECT and entering the numerical values using the specific keys.



WARNING

The displayed range described is independent from the range associated to the outputs.

- Display tare
Aside from the usual weighing signals, it simultaneously displays the net weight and any tares inserted.

The following indications are displayed:

- If the tare was entered by pressing  and multiple tares were not set during installation:

Tare: tare value + unit of measurement

The indications **NET** and PT will light up as well.

- If the tare was entered by pressing  and multiple tares were not set during installation:

Tare: tare value + unit of measurement
 The indications **NET** and will light up.

- If the tare is preset and multiple tares were not set:

Tare C: preset tare value + unit of measurement

The indications **NET** and PT will light up.



WARNING

The wording C Tare which is the tare viewed on the display is an "encoded" tare to which a numerical code was attributed.

- If multiple tares were set during installation:

Tare T:	acquired tare val.	+ unit of measurement
Tare 1 PT measurement:	preset tare val.	+ unit of measurement 1
Tare 2 PT measurement:	preset tare val.	+ unit of measurement 2

Or

Tare C PT measurement:	preset tare val.	+ unit of measurement
Tare 1 PT measurement:	preset tare val.	+ unit of measurement 1
Tare 2 PT measurement:	preset tare val.	+ unit of measurement 2

Or

Tare PT:	non-encoded tare val.	+ unit of measurement
Tare 1 PT:	preset tare val.	+ unit of measurement 1
Tare 2 PT:	preset tare val.	+ unit of measurement 2

The indications and PT will light up.



WARNING

Tare 1 and Tare 2 are also tares recalled by a numerical code.

- Extraction (*)

This type of operation is possible if load extraction or unload extraction mode has been set. The gross weight, the extract weight and the weighing symbols are shown on the display.

- General data

Aside from the weight and the usual weighing signals, the current operator code and description are also displayed.

- Personalized

Can be enabled when the display is customised from the set up

A maximum of 10 general values can be entered. The values are displayed one after another, separated by a space. 1 to 3 rows on the display are used to view the data according to the length of the entered data. When all rows are completely engaged, no more data can be entered. The size of the weight display depends on the space occupied by general data.

5.3.4 Memory status

If there is a low percentage of memory left free, recover memory by following this path:

...>MENU>Memory status



ATTENTION

The terminal could need a few minutes to recover the memory. Do not switch the terminal off during this operation to avoid losing stored data.

5.3.5 Reprint

See par. 5.3.28.1

5.3.6 Diagnostics (only for digital scale)

This item in the user menu is only available when the digital cells have errors and makes it possible to find the cause that generated the error. Follow this path:

...>MENU>Diagnostics

Only with an instrument not subject to the metric check, pressing CONT displays the measured weight, despite the error. Keep in mind that this is only possible for serial number errors or errors due to non-configured digital cells.

If the cause of the error is not eliminated, the error message will appear once again when the terminal is switched back on.

5.3.7 Digital Cells (only if present)

Prints the report of the cell data (program, dots, temperature, etc.).

5.3.8 Contrast adjustment

To improve the display contrast, follow the path:

...>MENU>Contrast
(CONTR hotkey).

Press + and - to adjust contrast. Press SAVE to store the adjustment.

5.3.9 Setting output as set-point (if enabled)

The outputs available in set-point mode can be used. In this mode, the output is enabled when the weight or number of pieces (CPE) (**) reaches the set value.

...>MENU>Data Management>Set Point
(SETPNT hotkey).

Set the desired values.

5.3.10 Setting output as Range (if enabled)

The outputs available in Range mode can be used. The output is activated when the weight or number of pieces (CPE) (**) is within the range; this interval is set by following the path:

...>MENU>Data Management>Range
(RANGE hotkey).

5.3.11 Generic code

This is an alphanumerical code consisting of a maximum of 8 characters which can be printed and/or transmitted. The maximum number of codes which can be set is variable and depends on which other data you wish to manage. To set the generic code, follow the path:

...MENU>Data Management>Codes Management>Generic Code
(GCCOD hotkey).

Enter the alphanumerical code as explained in par. 5.1.3 Setting the value of the generic code = empty space, this is no longer provided in the print and is no longer used for totalling.

5.3.12 Product code

The terminal manages product codes, each of which can have an alphanumerical description associated to it which can be printed and/or transmitted together with the weight. The product code is numerical and can consist of a maximum of 6 digits; the alphanumerical description can have a maximum of 20 characters. The maximum number of codes which can be set is determined during installation. It is variable and depends on which other data you wish to manage.

To set the product code, follow the path:

...>MENU>Data Management>Codes Management>Product Code
(PROCOD hotkey).

Enter the product code and the matching alphanumerical description as explained respectively in par. 5.1.2 and par. 5.1.3. Setting the product code at 0 (zero) during weighing operations excludes any totalling operation.

5.3.13 Product codes list

Following the path:

...>MENU>Data Management>Codes Management>Product Code List

allows you to view the description of the code by recalling the product code in question. To recall the product code, press PRODC, type in the numerical code and press  to confirm.

If there is a printer connected, pressing the SUMM (*)(***)key allows you to print the data of the single product code or to have a report print of the product codes included in the interval preset by the operator.

5.3.14 Preset tares

The instrument not only manages the tare acquired by the weight present on the weighing platform and the tare entered through the keyboard, but also a preset tare archive containing a number of values determined during installation. Each value can be recalled by means of a 4-digit numerical code. Once the relative code has been recalled, the preset tares are automatically subtracted from the weight value present on the scale. The preset tare code can be entered following the path:

...>MENU>Data Management>Preset tares> Enter

(Hotkeys TAREC and TARnC where n= 1,2 if multiple tares were set during installation)

Choose the type of tare, type in the code number with the specific

numerical keys and press  to confirm. If necessary, type in the tare value.

The value TARE 2 can be multiplied by a number, called Packs Number, which can be set on the keyboard in order to have an overall tare value (for example the sum of the tares of n containers having the same weight). The Packs Number can be set directly from the hotkeys bar by pressing PACKSN. The TARE 1 and TARE 2 functions, together with the Packs Number, allow products with primary packaging (e.g. pallets) and secondary packaging (e.g. boxes) to be weighed.

5.3.15 Preset tares list

Following the path:

...>MENU>Data Management>Preset tares>Preset Tares List

displays the value of the corresponding tare by recalling the tare code in question. To recall the tare

code, press TAREC, type in the numerical code and press  to confirm.

If there is a printer connected, pressing the SUMM(*)(***) key allows you to print the data of the single tare code or to have a report print of the tare codes included in the interval preset by the operator.

5.3.16 Progressive number

The terminal manages a progressive number with a maximum of 6 digits to count the weighing operations carried out. The value starts from 1 and increases automatically by one unit after each print and/or operation (indicating therefore the value of the next print or operation). To change the progressive number, follow the path:

...>MENU>Data Management>Progressive
(PROG.N hotkey).

By setting the progressive number = 0 (zero) it is no longer increased or printed.

5.3.17 Coefficient Management

This function is useful to convert the unit of measurement. For example, if the specific weight and the overall weight of the liquid are known, it is possible to find the amount of litres the liquid consists of.

To access this menu, follow the path:

...>MENU>Data Management>Coefficient Management
(COEF hotkey).

Proceed by setting the desired coefficients and then choosing the type of operation to perform (multiplication or division) and round off the result. The latter can only be proposed as a numerical value without the unit of measurement.

5.3.18 Totals Management

The terminal allows you to total the weighing data associated to the different codes managed. Totalling consists of adding the weight value to the sum of the previous weight values, increasing the number of weighing operations by one. To access the list of available Totals, follow the path:

...>MENU>Totals Management
(TOTALS hotkey).

- Generic totals

These totals are generic and total the gross weight (if enabled during installation), net weight, tare and number of weighing operations regardless of the associated codes. The data are available by recalling the following functions:

...>MENU>Totals Management>General Total
(GENTOT hotkey).

...>MENU>Totals Management>Partial Total
(PARTOT hotkey).

- PRINT produces the print of the selected value
- RESET resets the total at zero

- Totals by code

Saves the net weight values and number of weighing associated with the product code, generic code or client code (double weighing)The data are available by recalling the following functions:

...>MENU>Totals Management>Product Code Total
(PROTOT hotkey)

- PRINT (*) (***) produces the print of the selected total
- SUMM produces the print of all codes
- RESET resets the total at zero
- PROCOD (*) (***) allows you to shift to another product code
- CODE(**) allows you to shift to another product code
- LIST (**) allows you to display the totals in list format



(**)to print the code shown

...>MENU>Totals Management>Generic Code Total
(GCTOT hotkey)

- PRINT (*) (***) produces the print of the selected total
- SUMM produces the print of all codes
- RESET resets the total at zero
- CODE(**) allows you to shift to another generic code
- GENC (*) (***) allows you to shift to another generic code
- LIST (**) allows you to display the totals in list format



(**)to print the code shown

...>MENU>Totals Management>Client Total
(CLTOT hotkey)

- PRINT produces the print of the selected total
- SUMM produces the print of all codes
- RESET resets the total at zero
- CLIENT allows you to shift to another client code

5.3.19 Scale Selection () (***)**

When there are two scales connected, this allows you to select which must work. All of the following operations are relative to the selected scale.

5.3.20 Lighting

...>MENU>Lighting or ILLUM hotkey

Allows you to manage the display lighting mode:

- **HIGH INTENSITY** The display works at maximum light intensity
- **LOW INTENSITY** The display works at minimum light intensity
- **TEMPORARY HIGH INTENSITY** The display is lit at maximum intensity

For 10 seconds if:

- A key is pressed,
- The weight indication undergoes a variation of at least 4 divisions.

The weight variation in the user menu does not affect lighting.

The " TEMPORARY HIGH INTENSITY " configuration is not active in the setup menu, on the remote block command.

5.3.21 Auto switch off

To optimise consumption, the terminal can be configured in AUTO SHUTDOWN mode: if the weight remains stable and no key is pressed for 5 minutes, the terminal switches off automatically. A minute before it switches off, the display starts to flash indicating that it is about to shutdown.

To enable a remove the option, access the manual:

...>MENU> Auto switch off

5.3.22 Change unit of measurement (if enabled)

It is possible to choose a secondary unit of measurement for each scale. During the work phase, the operator can change the unit of measurement by choosing among the two set. The terminal converts the weight automatically when the unit of measurement is switched.

See the advanced user menu for the setting modes.

...>MENU> Change unit of measurement or kg/lb hotkey

(if kg main unit of measurement and lb secondary unit of measurement).

If the terminal manages different units of measurement, the values associated to the set points or ranges are always expressed (setting, display) in the main unit of measurement of scale 1.

5.3.23 Menu access-Modif.Arch./Password

This function allows you to set a password to protect access to the user menu.

There are two possibilities:

- the protective password has been set and therefore the protection device is active. To access the user menu, you must press the MENU hotkey and type in the password equal to the set protective password.
- the protective password has not been set (initial situation =0). The protection device is not active.

The password can be set by following the path:

...>MENU>Menu Access-Modif.Arch. (to user menu)

Once the password has been set, the protection device is active and any ensuing access to the user manual will require typing in the password.

5.3.24 Weighing operation

This function disables-enables printing during the weighing operation. It could be useful if the operator only wants to use the printer to print the totals.

To access this menu, follow the path:
...>MENU>Weighing operation
(PRINT hotkey).

5.3.25 Printer Cut

This function is only available if a printer managing the cut is enabled (STB80/Q3/Q3X/STB112/TMU220) and cuts the paper.

To access this menu, follow the path:
...>MENU>Printer cut
(CUTPAP hotkey).

5.3.26 External battery voltage

This function is only available if the "BATTERY" parameter is enabled from the setup menu. It allows you to check the battery charge.

5.3.27 Archives <-->PC/USB

This submenu grants access to the transfer archives, save archives and recover archives functions, also called Backup and Restore.

It also allows you to save the configuration and restore configurations of free management.

The Backup/Restore can be implemented by:

- on the COMs present on the terminal, COM1, COM2, COM11 and COM12.
- USB DEVICE ("B" type USB)
- USB HOST/MEMORY STCK ("A" type USB)
- ETHERNET

Upon accessing the menu only the options available will be displayed.

If you use the USB HOST key (to be inserted before accessing the menu), simply choose the type of operation:

- Save archives(Backup) and the file to be transferred
- Recover archives(Restore) and the file to be transferred
- Save Configuration
- Recover Configuration

Archive "Printed data" are managed either version ".txt" and the "CSV" if you did not select the operation "stores weighed CSV disk with each weigh" or if selected USB HOST but not inserted,

Selecting the backed up data "printed" when you are finished you are asked whether to delete the files transferred.

Selecting "**Save Configuration**" possible files are:

- "PARAM.LOG"
- "MESSAGE.CFG"
- "SHORTKEY.CFG"
- "PRINTOUT.CFG"
- "DATI.CFG"
- "STAM.TXT"
- "MESS.TXT"
- "TRAP.TXT"
- "LOGO.BMP"
- "REPORT.TXT"

- "FDB_MAP.TXT"

Some are optional

if you use an other serial:

- Save archives (Backup) and the file to be trasferred
- Recover archives (Restore) and the file to be transferred

Selecting "**Recover configuration**", the terminal check if there are any files on the USB stick; selecting them you can upload them to the terminal.

Files that can be recharged can be:

- "STAM.TXT"
- "MESS.TXT"
- "TRAP.TXT"
- "LOGO.BMP"

If you use the COMs or USB DEVICE or ETHERNET the transfer is implemented via a program on the Personal Computer (e.g. hyperterminal, teraterm, etc.), which allows you to save the archives in the memory of the terminal to files. Then these files can be transferred back to the terminal or to another terminal as long as it is the same model.

Communication is made on a port to be selected:

- USB memory
- on the COMs present on the terminal, COM1, COM2, COM11 and COM12.
- USB DEVICE ("B" type USB)
- USB HOST ("A" type USB)
- ETHERNET

Upon accessing the menu only the options available will be displayed.

NOTE: For COM1-2-21, the terminal uses the communication parameters set in the set-up; once the port has been selected, the baud rate, bit number, stop and parity bit number are displayed at the top right.

ATTENTION: If you use the USB DEVICE, the Driver of the DD700 device must have also been installed on the PC (see user manual par. 3.4.7).

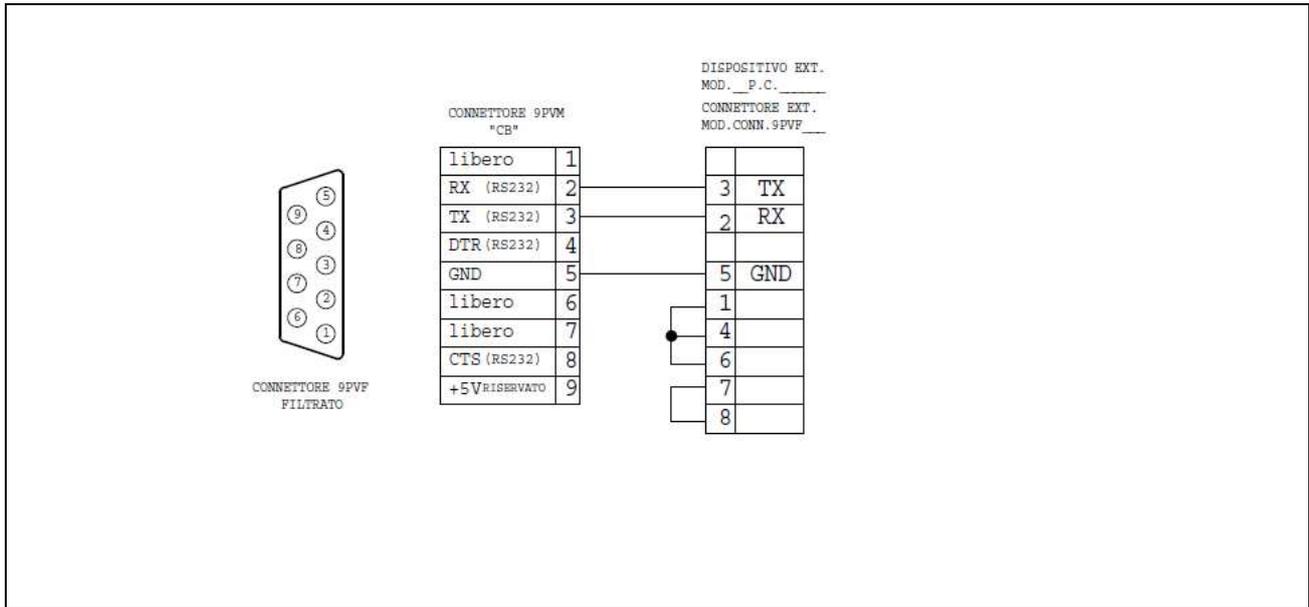


Figure 5.3.27 –Connection between PC and terminal for Backup-Restore

The archives that can be exported (Backup) are:

- Product Code
- Client Code
- Tare Code
- Rcp/Rcp Plate (*) (***)
- Product Code Total
- Client Code Total (*) (***)
- General Code Total
- Plate Total (*) (***)
- Printed data string
- Printed data string.csv

The archives that can be imported (Restore) are:

- Product Code
- Client Code
- Tare Code
- Rcp/Rcp Plate (*) (***)

Some files may be present depending on how certain parameters have been set during installation.

To **transfer archives from terminal to Personal Computer**, proceed as follows:

- use a communication program that contains the **KERMIT** file transfer mode (such as Windows Hyperterminal), configuring it with the same communication parameters as the terminal;
- connect terminal to PC using the designated serial cable
- if you wish to transfer one archive at a time, use the **Backup**, function, then select the archive you wish to transfer and confirm with **EN**.

If you wish to transfer all of the archives, choose the **Back all** function.

- The transfer will now start. Place the PC in KERMIT mode reception.

- The name of the archive will appear on the terminal as well as the PC as it is being transferred, as well as the percentage of transferred data.
- On the terminal, when the transfer is complete, and if you have selected the **Back all** function, press **ESC** to go back to normal weight viewing conditions; if you have selected the **Backup** function, select any other archive that needs to be transferred and repeat the procedure.

At the end of these operations, the binary files of the archives will be in the designated directory on the PC, for example **PRODARC** for the commodities archive.

If the directory already contains this file, it will not overwrite it, rather, the new file will have the name followed by a number, for example **PRODARC1**.

To **transfer archives from Personal Computer to terminal**, proceed as follows:

- go to the directory containing the previously transferred files;
- connect the terminal to the PC by the serial cable, as described above in the Backup procedure;
- select the **Restore** function on the terminal, to transfer one archive at a time from PC to terminal;
- run the sending procedure Kermit mode on the PC for the archive file that you wish to transfer to the terminal;
- a message on the display tells you whether transmission was successful or not.



ATTENTION

The name of the file being transferred must be the same as the previously received archive. Any files ending with digits must be re-named.

For example, do not transfer PRODARC1, rather, change the name to PRODARC and transfer it.

Archive files management on the PC is under complete user-control.

- go back to the **Restore** sub-menu to transfer other archives and repeat the procedure.

5.3.28 Printing weighing data

The printer and terminal are normally connected via serial port COM1.



Printing is performed by pressing , as long as:

- the weight is valid, not less than zero or higher than the maximum capacity of the scale;
- the weight is stable;
- the printer is connected, switched on, not engaged in other printing operations and with paper inserted.

The following data are printed:

- Date and time (if enabled)
- Progressive number
- Product code (if selected) with relative alphanumerical description
- Generic code (if selected)
- Gross weight (if enabled)
- Tare/s (if available)
- Net weight
- Coefficient and result (if enabled)

If enabled, some data can be printed as a barcode, such as: product code and net weight, net weight only, generic code + net weight, etc...

Printing can be customised by using a PC and a specific composition program: contact the supplier for further information.

For printing features, maintenance and paper formats, etc., see the instruction manuals attached to the various printers.

5.3.28.1 Reprinting weighing data

Pressing the Reprint item on the user menu allows you to repeat the last print carried out without modifying the progressive number and the calculated totals.

If the terminal is type-approved, "REPRIN" will appear on the reprint to tell it apart from the original.

5.3.29 Activate Buzzer

...>MENU>Activate Buzzer

Is indicated by an acoustic signal :

- 1) Pressing each single button
- 2) During weighing operations
- 3) When the weight passes from "out of range" to "within range" and vice versa
 - continuous signal = weight in range
 - three signals = weight out of range

5.3.30 Product Code Archive

The product archive consists of:

- code
- description
- tare (**)
- lower limit (**)
- upper limit (**)
- scale (**)

When setting the product CODE, an alphanumerical description of 20 characters can be set and a tare can be associated to it. Upon installation, you can select to use the tare associated to the product code.

Lower and upper limits and the scale can only be consulted, as they are defined and entered as explained in the chapter "entering weighing limits". When a code is selected with weighing limits, the scale and unit of measurement active are selected automatically when associating "limits - product code". Furthermore any associated tare is loaded on both scales. When a code of the product archive is displayed and/or printed, the associated tare and limits are expressed in the unit of measurement available when they were acquired/modified.

When the terminal is switched on, the last product code used before switching it off is active and the tare associated to that code is loaded on both scales.

Selecting the product code 0, excludes the product code archive from the weighing operations.

5.3.31 Product Code totals Archive (*)(***)

- The totals archive for the product code consists of
- Code
- Description
- T.Net
- Weighing

5.3.32 Product Code totals Archive (**)

The totals archive for the product code consists of:

- code
- net total in tare tolerance
- weighing operations total in tolerance
- net total under tolerance
- weighing operations total under tolerance
- net total above tolerance
- weighing operations total above tolerance
- standard deviation

The standard deviation is calculated using the following formula:

$$\sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{X})^2}$$

Where:

\bar{X} = average of the measurements

X_i = i-th measurement

n = number of measurements

The totals archive is for consultation only. The totals can be displayed in percentage and, during installation, you may decide whether to print the totals in percentage as well and to print the standard deviation.

5.3.33 Printing operation (*) (***)

Data printing and/or transmission is activated by



5.3.34 Printing operation (**)

Data printing and/or transmission is activated by pressing



The printing modes can be configured during setup (see advanced user manual).

- **Weight within tolerance**
Printing is carried out if the weight is within the acceptance range and a stable weight condition is detected, once the key is pressed.
- **Always**
Printing is carried out if a stable weight condition is detected, once the key is pressed.
- **With Timeout**
The printing request is stored, waiting a few seconds for the weight to be stable.
- **Without Timeout**
The request is stored until a stable weight condition is reached.

5.3.35 Automatic print/transmission (**)

The terminal can be configured in the setup menu for automatic printing/transmission in 3 different modes (see advanced user manual).

- **Print stable weight(in range)**
Printing is carried out automatically if the weight is within the acceptance range and a stable weight condition is detected.
- **Print last stable weight (in range)**
The last stable weight detected within the acceptance range is printed automatically.
- **Store/Trasmit last stable weight (in range)**
The last stable weight detected within the acceptance range is stored. It is transmitted upon PC request (ENQ character).

Printing the last stable weight is not allowed in the event of type-approved instruments for commercial transactions.

Furthermore in this case customised prints/transmissions **cannot** be performed and the MPP option **cannot** be used.

5.3.36 High Resolution

Allows the weights of the scales to be displayed for 5 seconds in high resolution mode, i.e. in tenths of a division.

6. OPTIONS

6.1 MPP memory expansion boards

Terminals equipped with the MPP option (permanent weight memory) are characterised by the possibility of storing the weight data of each individual weighing operation in a permanent memory and of transmitted the value to an external peripheral device together with an ID code automatically assigned by the terminal.

Setting the ID code on the weighing terminal makes it possible to make sure the value is correct. The ID number consists of 7 digits, and therefore the same number can repeat itself after 10,000,000 weighing operations.

6.1.1 Memory capacity

The memory capacity in the MPP memory expansion board allows you to store approximately 500,000 weighing operations (meaning weight + tare), corresponding to approximately 30 months of continuous use of the terminal, carrying out 500 weighing operations a day.

When used last frequently, the above time values increase.



ATTENTION

When the maximum capacity of the memory is reached, older data are cancelled and replaced by more recent data.

6.1.2 Operation

The weighing operation memorisation mode (more simply MPP operating mode) is defined during installation.

Operating modes are divided into two groups (for further details, see the advanced user manual):

- in the first, the user acts on the terminal, by pressing  to store and transfer the weighing operation data.
- in the second, the user acts on the PC keyboard according to the specific software.

In both operating modes, the progressive number associated to the weighing operation can be viewed on the display after it has been stored.

The MPP identification code also appears on the display only if storage is requested by pressing the key.

Both the weighing terminal and the PC can signal malfunctioning caused by the impossibility of transferring or storing the data correctly. In that case follow the specified instructions.

6.1.3 MPP deactivation

When using the weighing system, it could be necessary not to transfer or store the weighing data in the MPP memory. In that case, to deactivate it, type:

...>MENU>MPP Operation> De-activated

To re-enable MPP:

...>MENU>MPP Operation> With memory



WARNING

Deactivation could jeopardise the operation of the devices connected to the weighing system as data cannot be transferred to them.

The MPP Operation Menu can also be accessed by pressing the MPP hotkey.

6.1.4 Checking stored weight data

To check stored weight data, press the *COD MPP* hotkey.

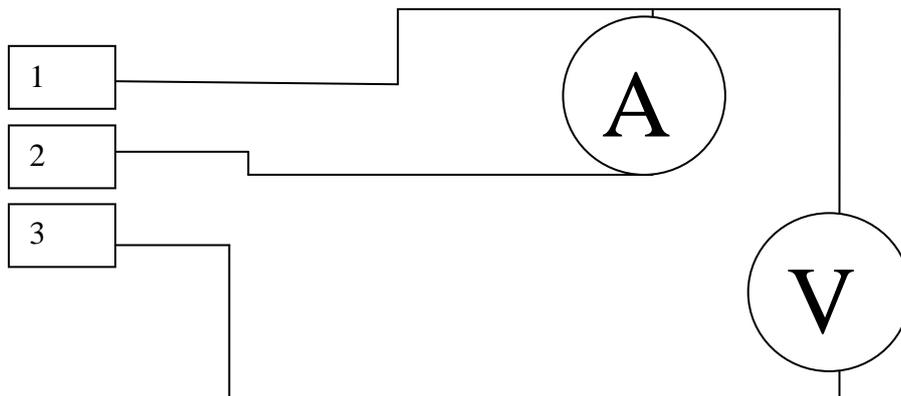
The terminal displays the net weight and the tare associated to the MPP identification code of the last weighing operation carried out.

Pressing *SETCOD* allows you to recall previous weighing operations by setting the number.

6.2 Analogue output board

The connector has an analogue alternative output in 0-10 V and 4-20 mA formats separated galvanically. The connection diagram is displayed in the table below.

<i>Pin n°</i>	<i>Signal</i>
1	Common
2	4-20 mA output
3	0-10 V output



ATTENTION

Technical features:

Resolution = 10000 dots

Precision = 0.05 % FS

Minimum output load in voltage = 100 kohm

Maximum output load in current = 250 ohm

6.3 Serial expansion board

The board has one 9 pin female connector.

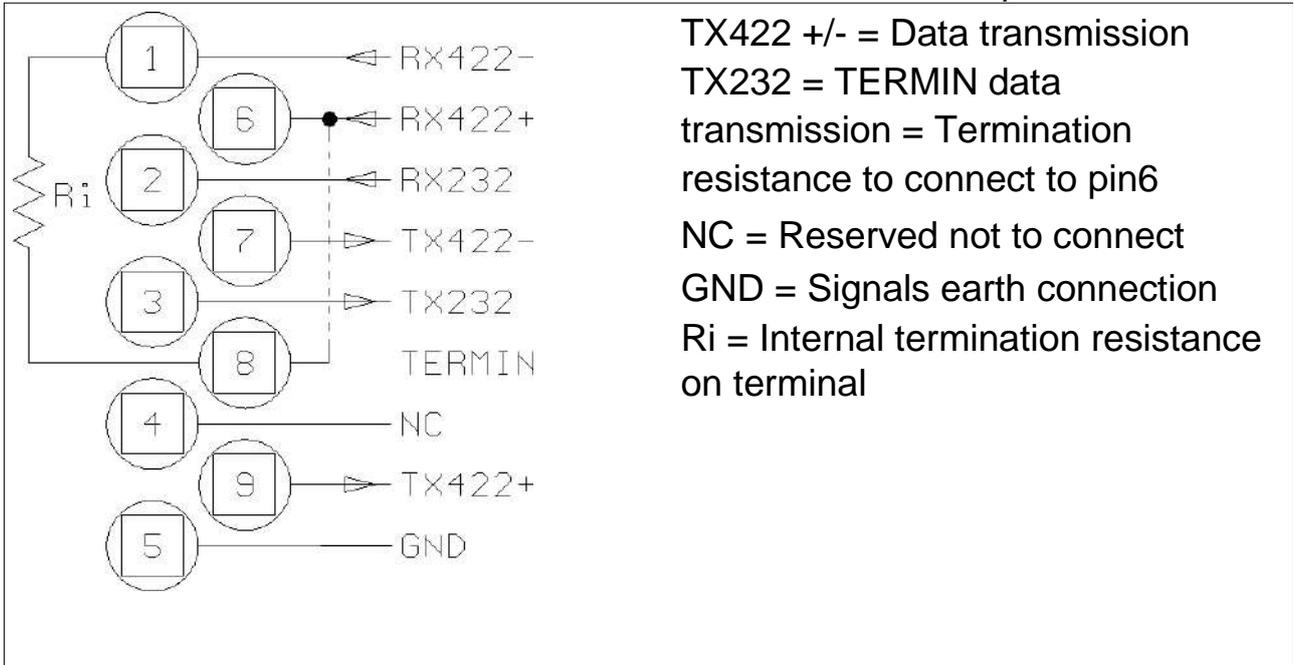


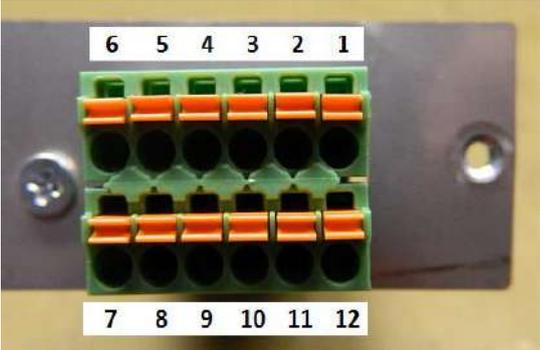
Figure 6.3.1 – Additional serial output link connector (female 9 pin cup connector)



ATTENTION

The maximum operating conditions foreseen by standard RS232/422/485 were already specified RS232 Connections and RS422 Connections

6.4 Optional 4 Input/ 4Output board

	<p>OUTPUT OptoMOS voltage-free contacts Vmax 24 Vac/Vdc Imax 190mA .</p> <p>They have separate common connections: - COMOUT1:pin1, common for OUT from 1 to 2; - COMOUT2:pin6, common for OUT from 3 to 4;</p> <p>INPUT Galvanic insulation input Vmax 24Vdc. They require a voltage-free contact closing the voltage generated inside on the Input.</p>
---	---

IN/OUT	Connector pin num.	FUNCTION DESCRIPTION
COMOUT1	1	Common for OUT from 1 to 2
OUT1	2	Output n°1
OUT2	3	Output n°2
OUT3	4	Output n°3
OUT4	5	Output n°4
COMOUT2	6	Common for OUT from 3 to 4
+12V_OPTO	7	Insulated voltage to activate inputs
IN1	8	Input n°1
IN2	9	Input n°2
IN3	10	Input n°3
IN4	11	Input n°4
	12	Internal use

6.5 Ethernet Board 10/100 Mbit

Consult the specific expansion board manual.

6.6 Profibus DP Board

Consult the specific expansion board manual.

6.7 Ethernet/IP Board

Consult the specific expansion board manual.

6.8 Level ()**

Inclination sensor used with PTE/PTM.

7 TROUBLESHOOTING

If the suggested remedy does not solve the problem, contact Assistance Service.

7.1 Malfunctions

PROBLEM	CAUSE	REMEDY
The terminal does not switch on	No power	Check that power arrives at the mains outlet socket. Check that the mains lead is correctly plugged in. Par. 3.2.2
The display backlighting is on, but no data are displayed	Adjust contrast (set to minimum)	Switch on the terminal while holding pressed  . After a few seconds, the display will show the "CB" logo with the contrast set to maximum, after which the contrast will gradually be reduced. Release  and then press it again to set the contrast at the required level.
- -	Zeroing off-range on powering	Switch off the terminal, unload the scale then power the terminal again.

7.2 Error Messages

PROBLEM	CAUSE	REMEDY
Overload	The scale is overloaded.	Reduce the weight to a value below the maximum scale capacity.
Underload	The balance is negative at least 20 divisions.	If on completion of the operation the display shows a value other than zero, press  to zero-set the reading. If the display is not zero-set on pressing the key: 1) switch off the terminal and then switch it on again; 2) If the problem persists, contact your Service Centre.
-01-	Converter fault.	Contact Assistance Service.
	Scale connector disconnected or broken.	Switch off the terminal and check that the connector is properly connected. If necessary, disconnect and then re-connect the connector. Switch the terminal back on.
	Digital cells fail to respond	Switch the terminal off and then on again.
-06-	Serial number error on digital cell	Switch the terminal off and then on again.
-07-	Digital cell serial number error in system with several load cells	Switch the terminal off and then on again.
-08-	Digital cell serial number error	Switch the terminal off and then on again.
-09-	Digital cell serial number and configuration error	Switch the terminal off and then on again.
-10-	At least one cell not configured	Switch the terminal off and then on again.
-11-	Digital cell powering error	Switch the terminal off and then on again.
-12-	Powering error in one digital cell	Switch the terminal off and then on again.
-13-	Cell with internal temperature off-limits (-40 - 100) °C	Switch the terminal off and then on again.
-21-	occasional disconnection	temporary error
Change the battery	Internal lithium battery discharged	Contact Assistance Service.

Weight not valid	The scale is in negative weight or overload condition and the printer does not print	See conditions for correct printing in <i>par. 5.3.28</i>
Printer error	Printer switched off or disconnected	Check printer is connected and switched on
The last line at the bottom of the display of the terminal may show an error message in the following format: If the error persists, contact the Assistance Service and give them the exact message that appears on the display. <i>excep n.nn in task xx.x</i> where <i>n.nn</i> and <i>xx.x</i> are numbers or letters that encode the type of error.	Depends on <i>n.nn</i> and <i>xx.x</i>	Switch the terminal off and then on again. The last line at the bottom of the display of the terminal may show an error message in the following format: If the error persists, contact the Assistance Service and give them the exact message that appears on the display.

The *Diagnostics* item of the user menu will allow you to establish the cause of errors concerning the digital cells. Consult *par. 5.3.6*



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