

# 6116PRO

Industrial touch screen PC with integrated scale input

USE INSTRUCTIONS

ENGLISH





# Introduction

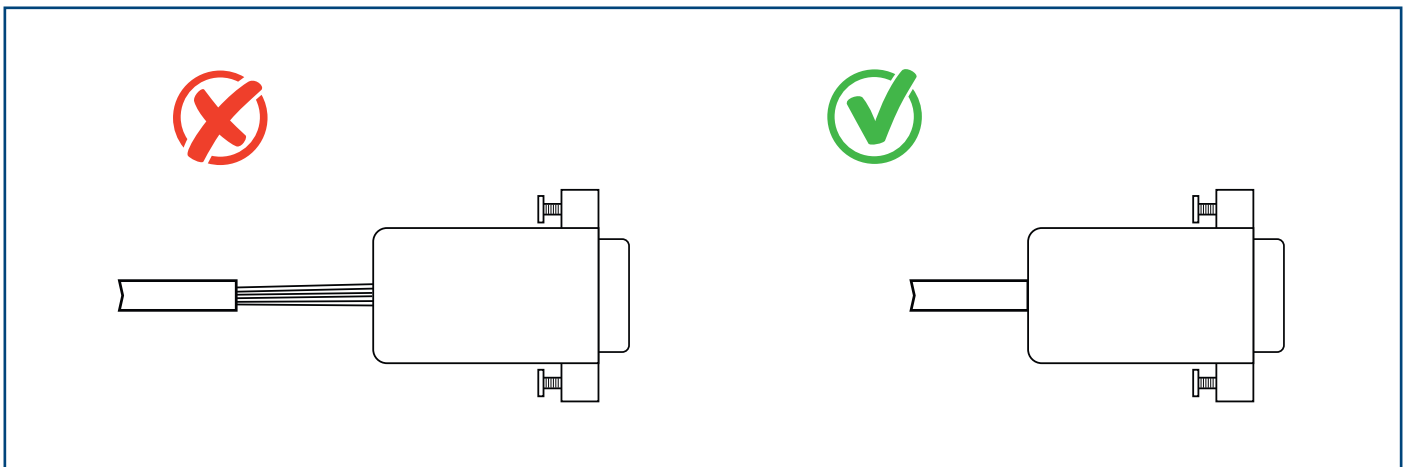
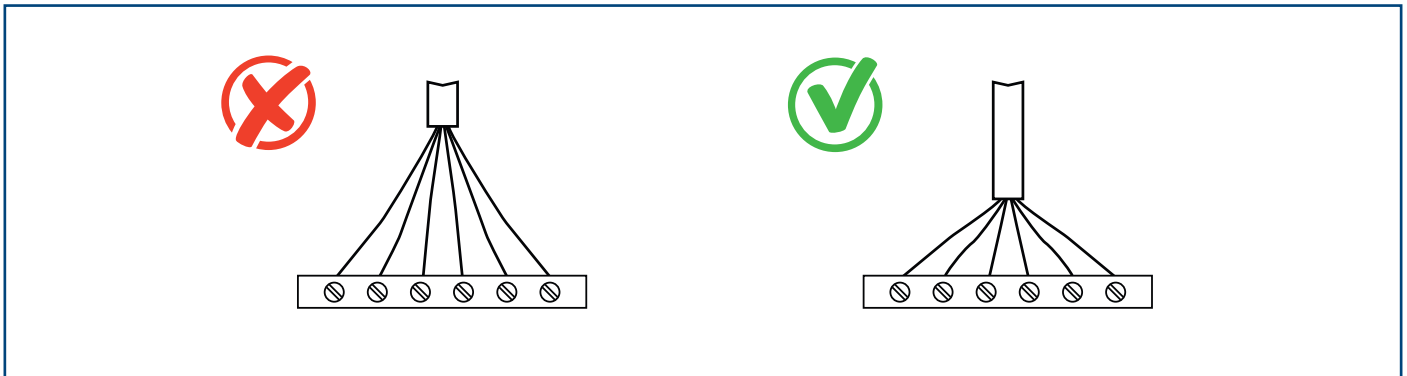
Dear Customer,

Thank you for choosing a DINI ARGEO product.

6116PRO is the new high performance PC made in stainless steel, designed to meet the most advanced weighing needs. Intel computing power, together with Dini Argeo electronics and weighing programs, allow integrated weighing in the IoT and industrial automation world with one compact solution.

## Electrical precautionary measures

- Comply with the power supply rated value shown on page 10. Voltages different from those indicated may damage the product irreversibly.
- Electric protections (fuses etc.) are provided by the technician installing the instrument.
- Observe the recommended minimum distances between cables of different classes.
- Cables connecting load cells and those connecting serial ports and analogue output (optional) must be within the allowed maximum lengths shown in the table on page 5.
- It is recommended to use shielded cables, laid in dedicated raceways or metal pipes.
- Cables connecting load cells and any external device must be as short as possible.
- Cable ends (connectors, conductors, terminals etc.) must be installed up to standard; the cable shielding must be kept up to the connection point.



- Turn the product on/off complying with the instructions shown in this manual.



### WARNING!

Turning 6116PRO off by disconnecting power supply may cause data loss or corruption of the operating system image. After Windows shuts off, always wait at least 5 seconds before pressing the power button to turn off. Then, before turning on again, allow 5 seconds in order for the DGT to have time to turn off.

The label aside is placed on the product to warn the operator about electrical hazard:

- SHOCK HAZARD
- DO NOT DISASSEMBLE THE UNIT
- DISCONNECT ALL POWER TO THIS UNIT BEFORE SERVICING.



# Cable classification, maximum allowed distances among cables

- When cables are laid next to each other, they must be at the distances shown in the table below.
- These distances are valid if in the air; these are reduced if the raceways are separated by grounded metallic shields.
- Cables belonging to different categories can cross each other (90°).

	Category I	Category II	Category III	Category IV
<b>Distance</b>				
<b>Classification</b>	Field bus, LAN network (PROFIBUS, Ethernet, Devicenet). Shielded data cables (RS232). Shielded cables for analogue/digital signals <25V (sensors, load cells). Low tension power supply cables (<60V). Coaxial cables.	DC power supply cables with voltage >60V and <400V. AC power supply cables with voltage >25V and <400V.	Power supply cables with voltage >400V. Telephone cables.	Any cable subject to lightning.

MAXIMUM LENGTHS			
Load Cell	RS232	RS485	Analog Output
50 m with cable 6 x 0,25 mm <sup>2</sup> . 100 m with cable 6 x 0,5 mm <sup>2</sup> .	15 m with baud rate up to 19200.	1200 m with twisted pair 2 x 24 AWG with external shield + aluminium bus bar.	<p><b>CURRENT</b></p> 100 m with cable 2 x 0,25 mm <sup>2</sup> 150 m with cable 2 x 0,5 mm <sup>2</sup> 300 m with cable 2 x 1 mm <sup>2</sup> .
			<p><b>VOLTAGE</b></p> 50 m with cable 2 x 0,25 mm <sup>2</sup> 75 m with cable 2 x 0,5 mm <sup>2</sup> 150 m with cable 2 x 1 mm <sup>2</sup> .

# Earthing system

For the optimal functioning of the system, it is necessary to connect the indicator, the load cells, the possible junction box and the weighing structure to the earth.

## PC

6116PRO is earthed through the power supply cable.



### WARNING!

Make sure the supply outlet to be connected to the industrial PC 6116PRO is provided with earth line.

## LOAD CELLS AND JUNCTION BOX

The earthing must be done by connecting the earthing cables to a ground bar with cables having a cross-section of at least 16 mm<sup>2</sup> and by connecting the ground bar to a ground pole with a cable having a cross-section of at least 50 mm<sup>2</sup>.

### EXAMPLES:

- In the case the load cells are connected to the indicator through a junction box, it is necessary to connect the sheathing both of cells cables and of indicator cable to the earthing of the junction box (refer to the junction box manual) and connect the latter to the earth through copper cables having at least a 16 mm<sup>2</sup> cross-section.
- If the load cells are connected directly to the indicator (without the use of the junction box), one should connect the shieldings of the load cell cables to the grounding point (or earthing bar) inside the container.
- If the weighing system concerns large and/or outdoor structures, like weighbridges, and the junction box is connected to the indicator in a distance that is greater than 10 m, or in the presence of noise, the cable shield must be earthed both in the junction box and in the indicator, and the two ground leads must be connected with an earth cable having a cross-section of at least 16 mm<sup>2</sup>.

## WEIGHING STRUCTURE

Connect the weighing structure and the possible connected structures (for example silos that release material on the weighing structure) to the earth through cables having at least a 16 mm<sup>2</sup> cross-section.

Furthermore it is necessary that for each cell, one connects the upper part with the lower part of the load cell through a copper braid section not less than 16 mm<sup>2</sup>; the upper part must be short-circuited with the surface of the weighing structure and the lower part must be grounded through a copper braid section not less than 16 mm<sup>2</sup>.

## CONNECTED SERIAL CABLES AND INSTRUMENTS

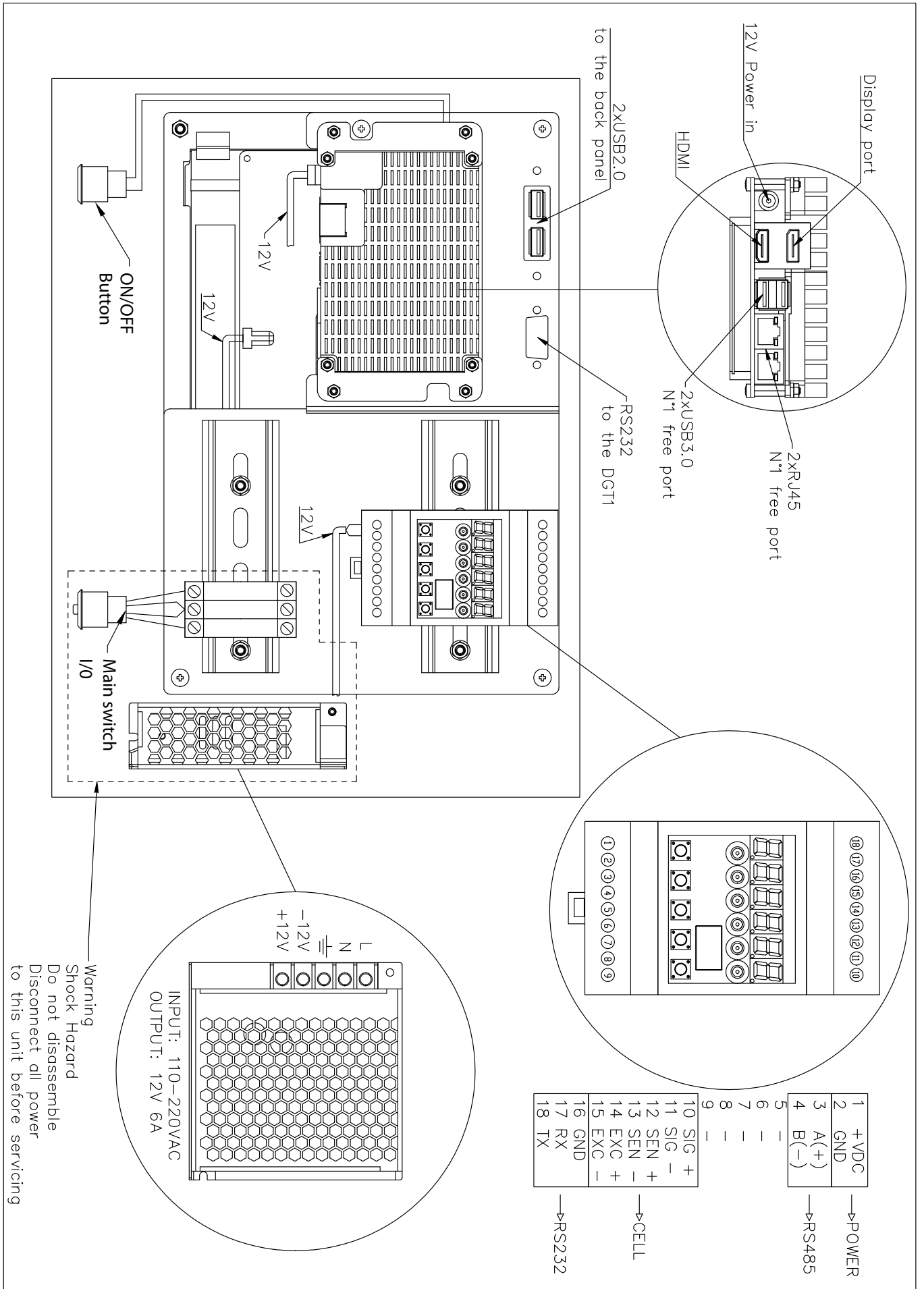
Ground the cable's shield both to the grounding point (or earthing bar) inside the container (at the cable termination on the indicator side) and to the earthing of the connected instrument (at the cable termination on the connected instrument side) and ground the earth connection of the connected instrument using the copper cables having at least a 16 mm<sup>2</sup> cross-section. To avoid possible side effects, the earth references of the connection and power supply cable of the indicator and of the connected instrument must be at the same potential.



### GENERAL NOTES:

- All the grounding cables must have an adequate length, in order to obtain **an overall resistance of grounding system less than 1Ω**.
- In the case the weighing system regards great and/or outdoor structures, like weighbridges:
  - The grounding connection is to be made by connecting the grounding cables to a grounding bar and the grounding bar to the grounding pole with a cable section not less than 50 mm<sup>2</sup>;
  - the cable cross-section must be greater (for example 50 mm<sup>2</sup> instead of 16 mm<sup>2</sup> and 100 mm<sup>2</sup> instead of 50 mm<sup>2</sup>), because the voltage into play is greater (for example thunderbolts);
  - the ground pole must be positioned at a distance of at least 10 metres from the weighbridge structure.
- One should check and remove, if necessary, the connection between the earth and the neutral wire of the electrical installation.
- If the weigh receptor is more than 10 m far from the industrial PC 6116PRO, it is recommended using the SENSE line and load cells equipped with compensation circuit (SENSE).

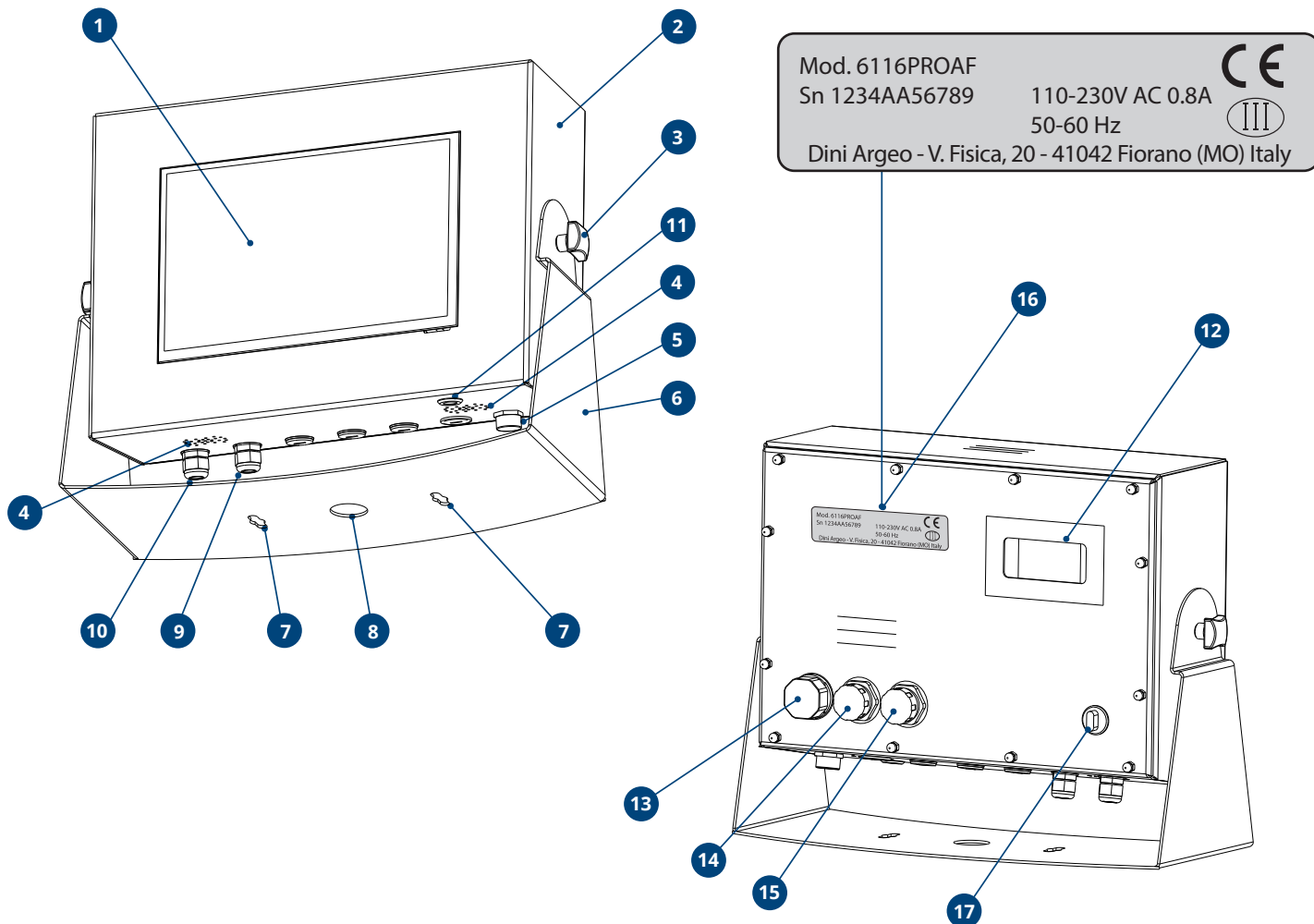
# Wiring diagram



# Description

The PC 6116PRO allows creating specific high level applications to meet the requirements of modern companies. It is designed for those who need hardware for industrial environments.

The following table describes the main parts of the industrial PC:



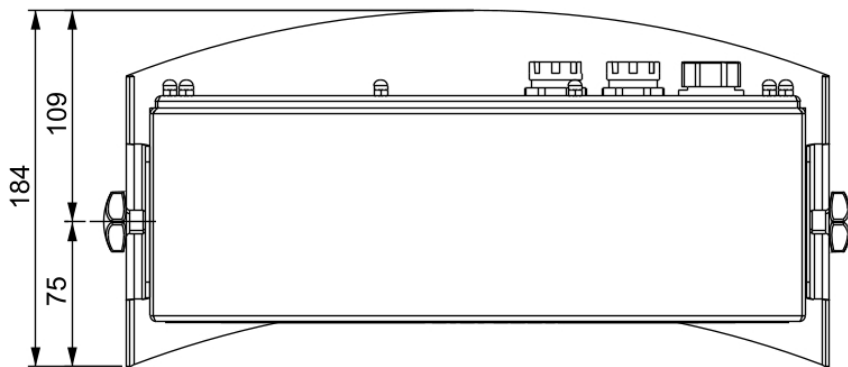
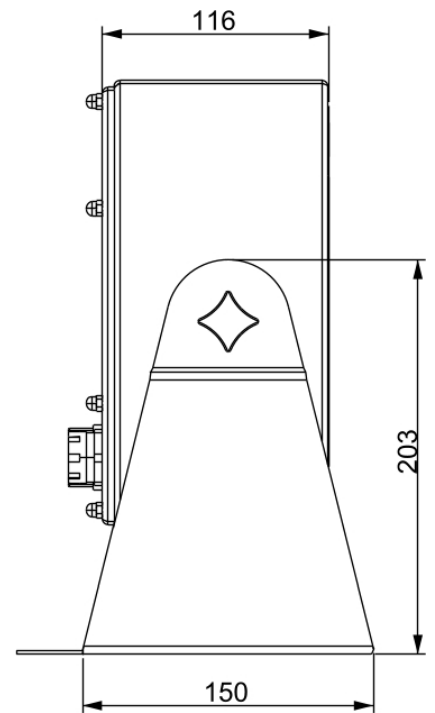
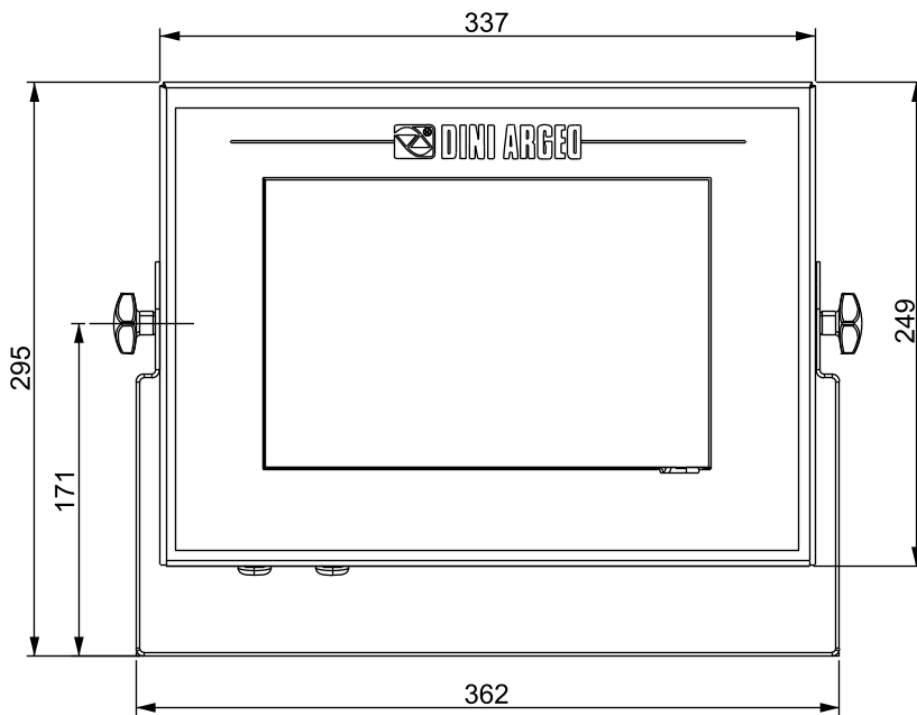
POS.	DESCRIPTION
1	Touch screen monitor.
2	Industrial PC with integrated scale input.
3	Knob for regulating PC inclination.
4	Speakers.
5	Valve adjusting humidity and pressure.
6	PC support structure.
7	Fastening slots.
8	Hole for cable passage.

POS.	DESCRIPTION
9	Connection to load cell cable.
10	Connection to power cable.
11	ON/OFF switch.
12	Slot for DGT weight indicator.
13	Ethernet port.
14	USB 2.0 port.
15	USB 2.0 port.
16	Nameplate with CE marking.
17	General switch.



# Dimensional technical drawing

The following dimensions are shown in mm.



## HARDWARE:

- High performance INTEL processor, 4 GB RAM and 64 GB data storage SSD M.2.
- Display: TFT resistive touch screen, dimension 10,1" resolution 1280 x 800, high brightness.
- Integrated Alibi Memory (more than 130.000 weighings).
- 2 Ethernet ports, one panel port and one internal port.
- 1 internal USB 2.0 port.
- 2 external USB (2.0 and 3.0) ports.
- Valve adjusting humidity and pressure.
- Scale input.
  - Max. 10.000e or multi-range 2 x 3000e @ 0.3  $\mu$ V/d in CE-M approved version for legal trade use.
  - Max. 1.000.000d displayable with an internal resolution up to 3.000.000 points.
  - Up to 8 signal linearization points with DINITOOLS (3 from keyboard).
  - 1 channel A/D 24 bit sigma-delta conversion, max. 3.200 conv./sec. with automatic selection.
  - Connectable with up to 8 analogue load cells with 350Ohm input resistance.
  - Connection to 4 or 6 cables with compensation circuit (SENSE).
- Up to 3W stereo speakers.
- Schuko plug.
- 240 VAC power supply, 5 A maximum consumption.
- 5 holes for cable gland PG9, 1 hole for cable gland PG11.
- Stainless steel body AISI 304 IP67.

**SOFTWARE:**

- Operating system Windows 10 Enterprise.
  - NET Framework 3.5.
  - Program for touch screen calibration (see paragraph on page 12).
  
- **6116PROAF**
  - Dinitools
  - Weighconsole
  - Comtester
  - Dini display tool
  - Db manager
  - **5** selectable **weighing softwares**:

NAME	DESCRIPTION
AF01	Software for systems of weight totalization and formulation.
AF02	Software for piece counting systems.
AF03	Software particularly suitable for vehicle weighing and weighbridge management, with control of entry and exit of goods.
AF04	Software for advanced statistical checking applications of prepacked goods.
AF05	Software for industrial labelling and price computing.

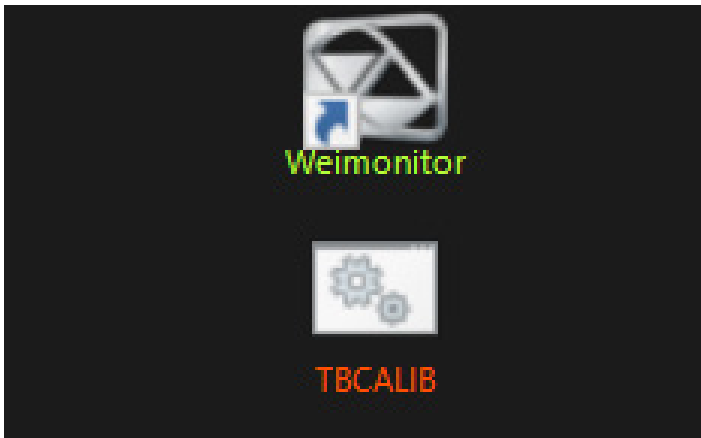
- **Extended database**, each supplied with up to 10.000 memories, as shown in the following table:

PROGRAM NAME	DATABASE TYPE	NUMBER OF ELEMENTS
AF01	Articles database	10.000
	Clients database	10.000
	Tares database	10.000
	Input texts	100
AF02	Articles database	10.000
	Clients database	10.000
	Tares database	10.000
	Input texts	100
AF03	Clients database	10.000
	Suppliers database	10.000
	Materials database	10.000
	Vehicles database	10.000
	Badges database	10.000
	Input texts	100
AF04	Articles database	10.000
	Operators database	10.000
	Input texts	100
AF05	Articles database	10.000
	Ingredients database	10.000
	Clients database	10.000
	Tares database	10.000
	Input texts	100

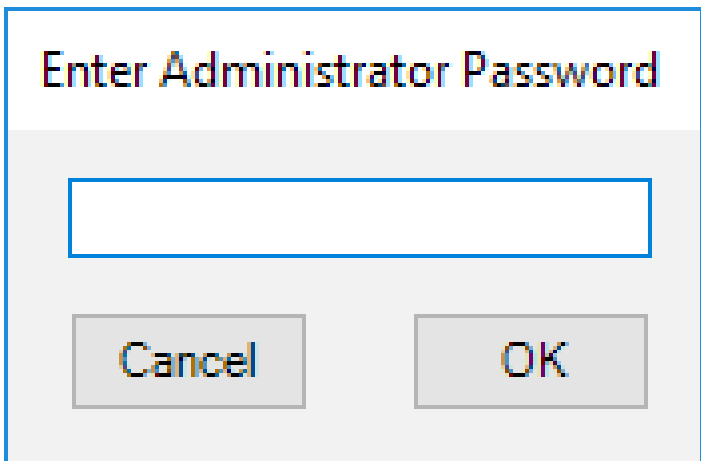
- Management of analog output or digital I/O modules (on request).
- Complete traceability of weighings and transactions, which are exportable on USB flash drive or network folders.

# Touch screen calibration

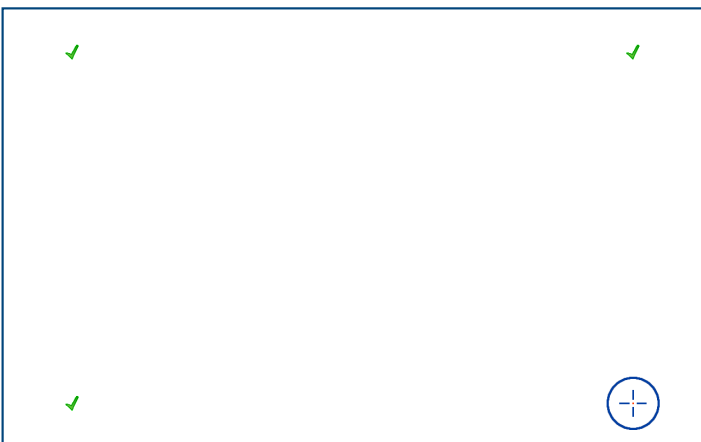
1. Run the application "TBCALIB" from the toolbar:



2. Insert Password:



3. Press and hold the centre of the crosses until the circle becomes blue.



## Access to control panel

In order to access the control panel, from which it is possible to modify computer settings such as date, time, network, etc., follow the procedure below:

1. Open File Explorer from Launcher home screen.
2. Right-click on Computer and select Properties.
3. Select the initial page of the control panel on the left side of the window.

## Windows restore

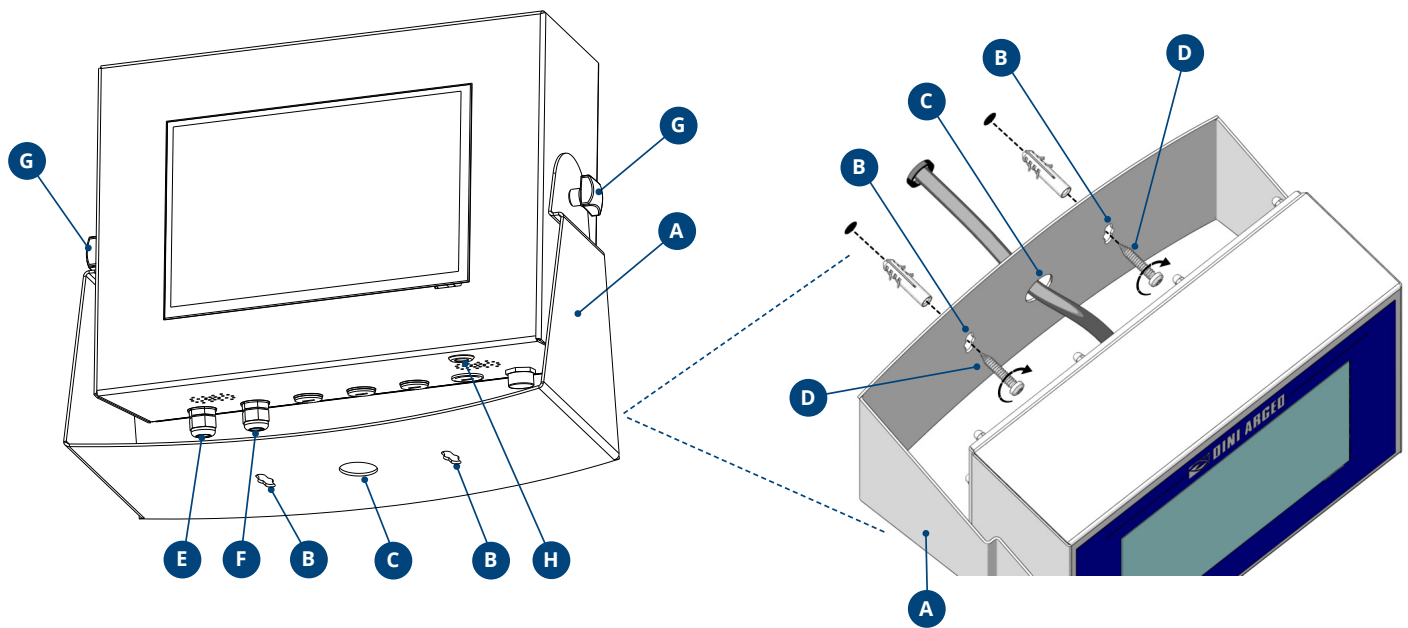
In order not to start automatically Launcher while turning on the PC, and therefore in order not to display the standard screen of Windows, follow the procedure below:

1. Launch file Autorun-Explorer, which can be accessed by following the file path `C:\DiniArgeo\Dini Simulator\Configuration\scripts`.



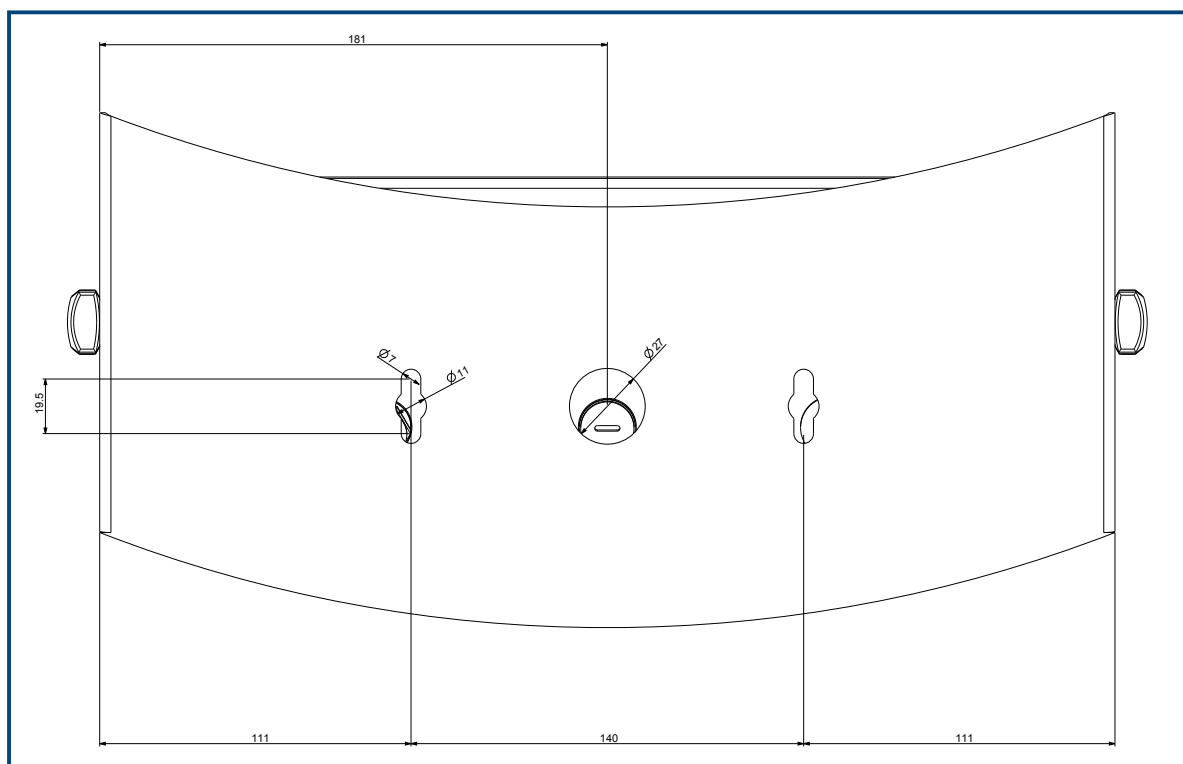
**ATTENTION! This procedure is not reversible!**

The software Launcher will be started by means of the link on the desktop.



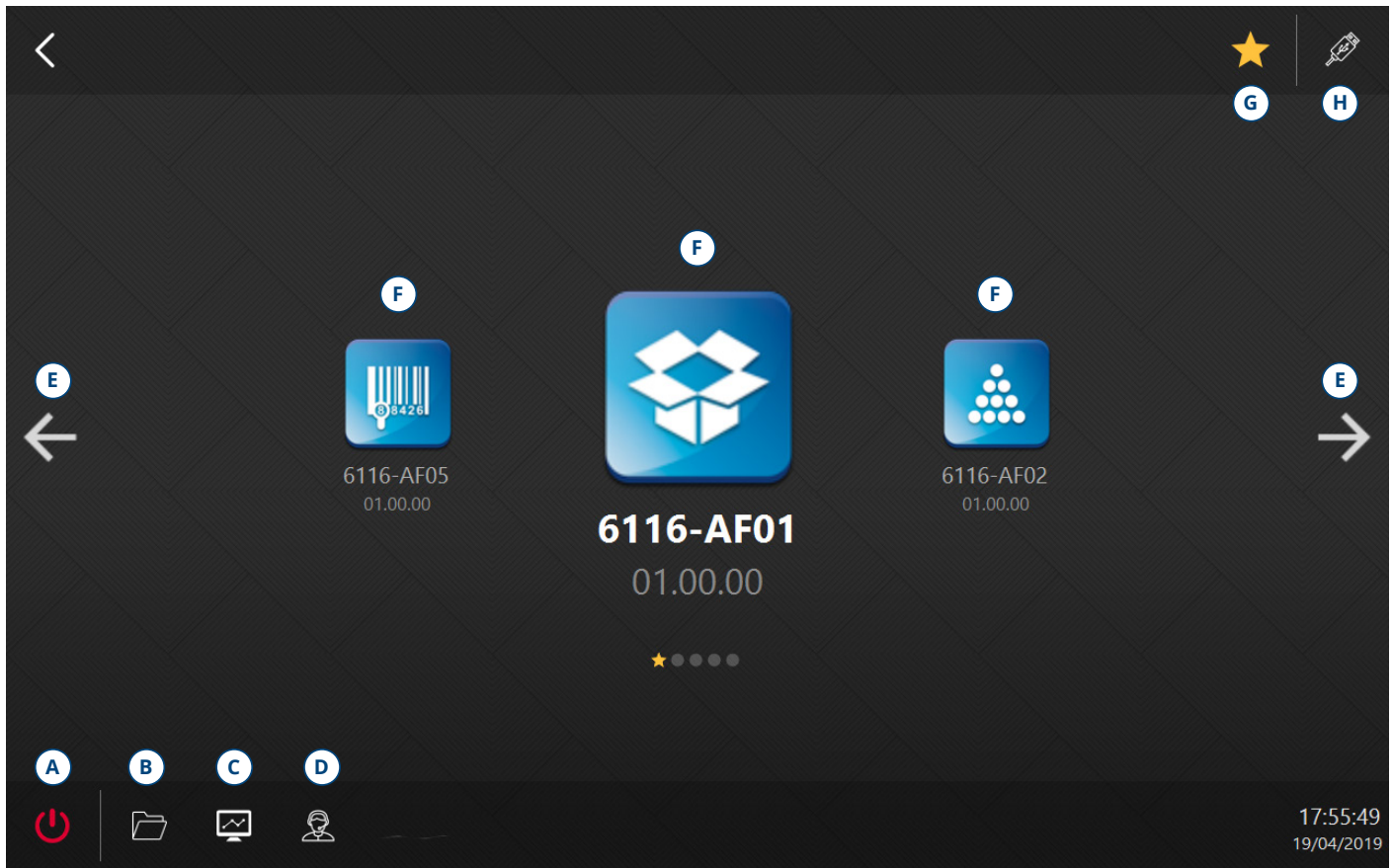
## Assembly of industrial PC

1. Decide the installation spot for the industrial touch screen PC with integrated scale input.
2. Drill the wall in order to fix the PC support structure "A" by means of the fastening slots "B" (refer to the drawing below for detailed dimensions, which are shown in mm).
3. Let the cable pass through the related hole "C".
4. Wall mount the industrial PC by means of screws "D" (screw and dowel sizes, which are at the customer's option, must be suitable to support the weight of the device).
5. Connect the power supply cable to port "E" and the load cell cable to port "F".
6. Loosen the two knobs "G" for regulating the inclination of the PC. Once the right angle is found, fasten knobs "G".
7. Press button "H" for turning on the device.



## Main screen

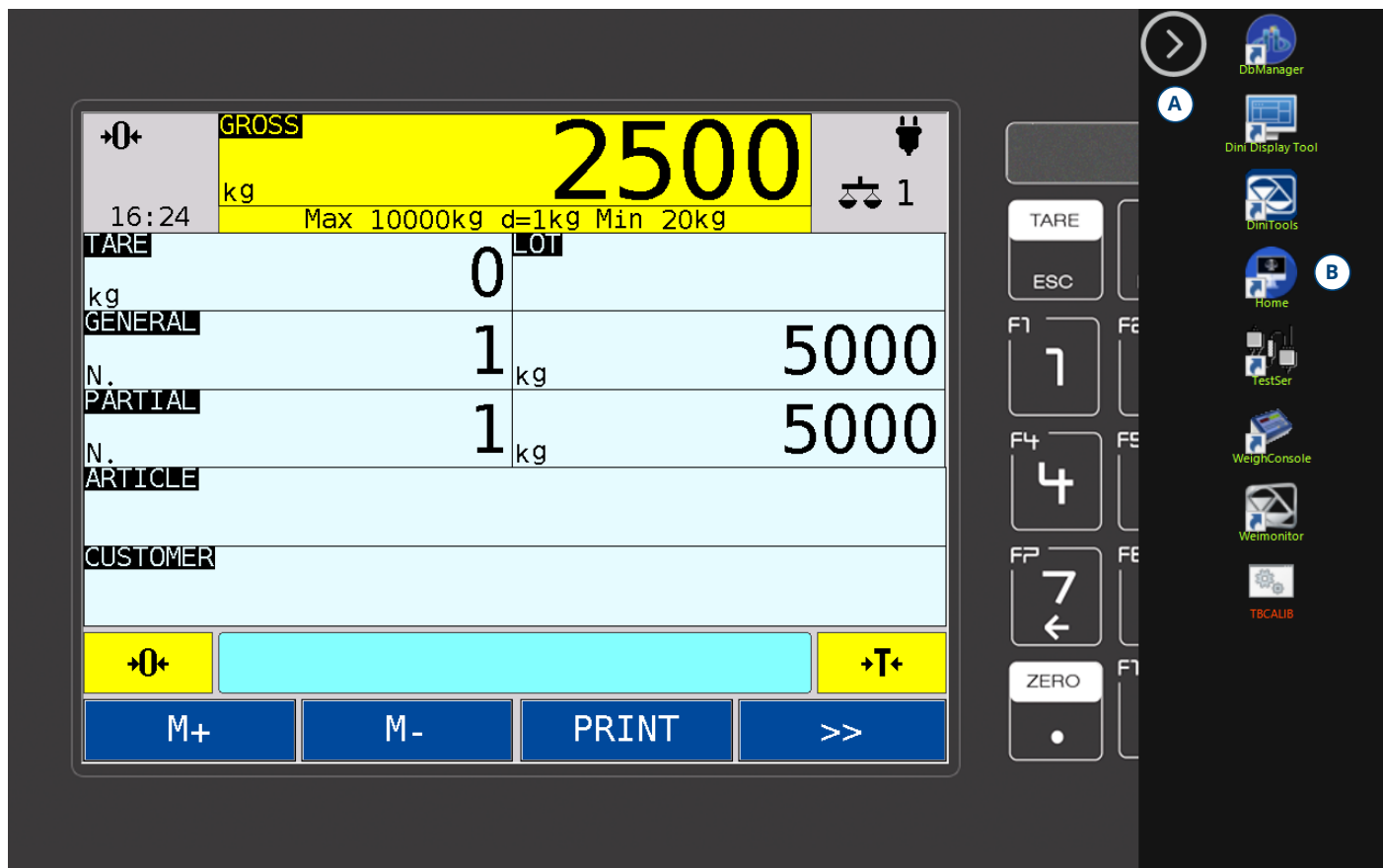
The following picture shows the screen which is displayed by turning on the system (**LAUNCHER MAIN SCREEN**).



POS.	NAME	DESCRIPTION
A	OFF button	It turns off the system.
B	File Explorer	It opens the Windows software "File Explorer".
C	Task manager	It opens the Windows software "Task manager".
D	Remote assistance	It opens the software "Teamviewer" for remote assistance.
E	Arrows	They scroll the applications.
F	Application icons	They open the related application.
G	Favorites	It allows setting up the selected program as favorite. It will be displayed at power-up.
H	Update button	It allows updating the applications, Launcher and DGT (see paragraph Updating AF Firmwares on page 20).

## TOOLBAR and TOOLS PRO

By pressing arrow "A" in the upper right corner, **TOOLBAR** and **TOOLS PRO** are displayed. This bar displays the links to the softwares installed on the PC. In order to add an unprotected software to the bar, just create a link to the EXE file in the folder *C:\Dini Argeo\Dini Simulator\Firmwares\Tools*. In order to add a software protected by a password to the bar, it is necessary to create a connection to the EXE file in the folder *C:\Dini Argeo\Dini Simulator\Firmwares\ToolsPro*.



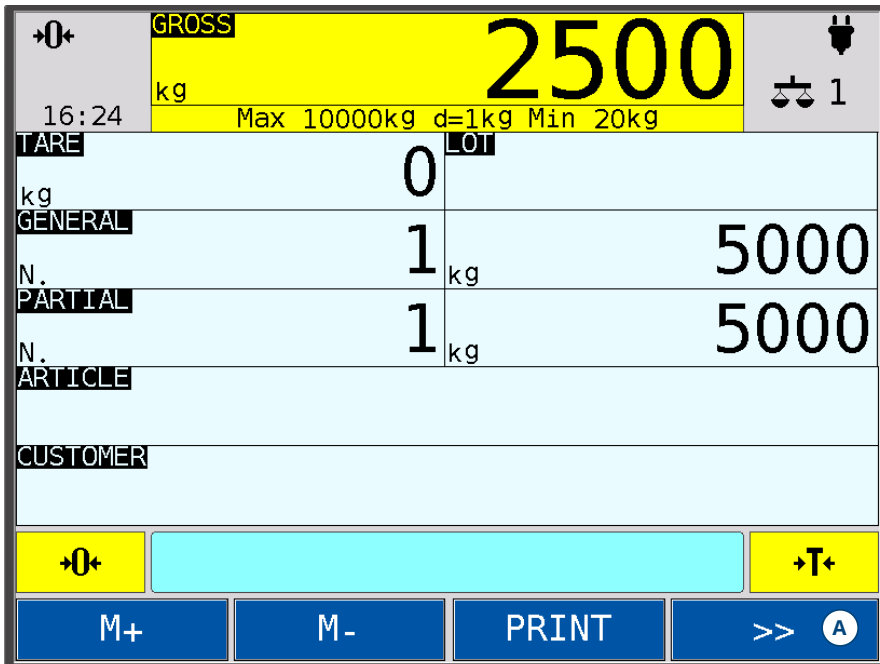
POS.	NAME	DESCRIPTION
A	Toolbar arrow	It opens the toolbar. The name of the unprotected tools is green coloured, while the name of the ones protected by a password is red coloured.
B	Home button	It enables going back to the Launcher main screen.



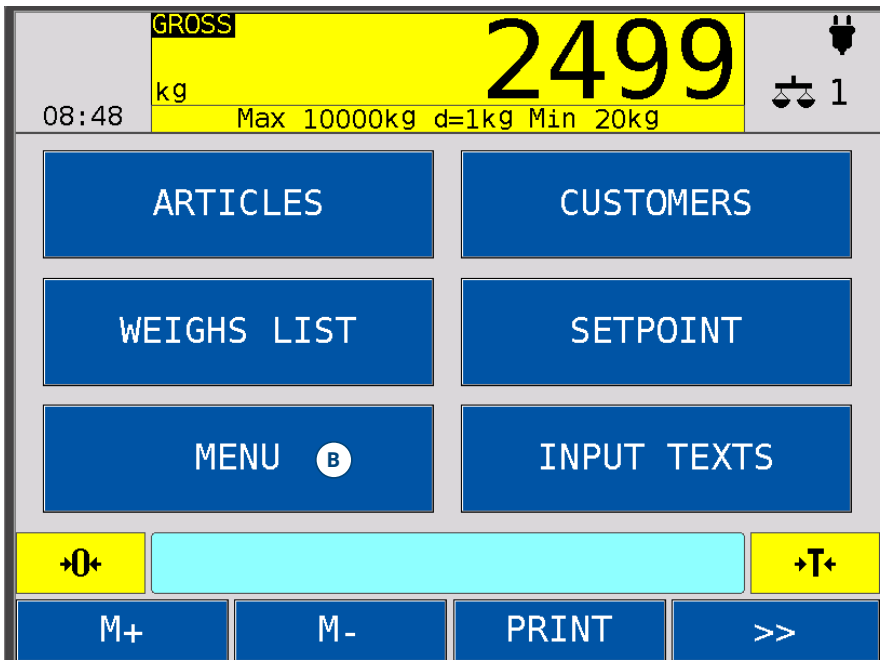
## Exporting from Memory1 and Memory2

In the industrial PC there are two virtual memories (Memory1 and Memory2) in the form of .csv file, in which all the weighings are saved on USB and SD card. They can be accessed by following the file path: C:\Dini Argeo\Shared\6116. It is possible to export these files to external folders and supports by using the procedure below:

1. Press arrows "A" for changing the screen.

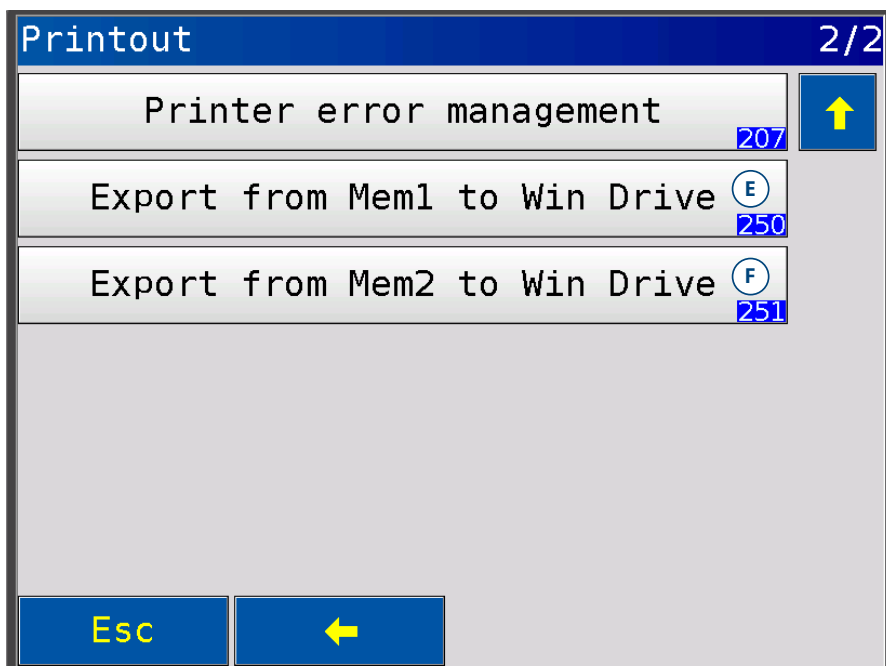
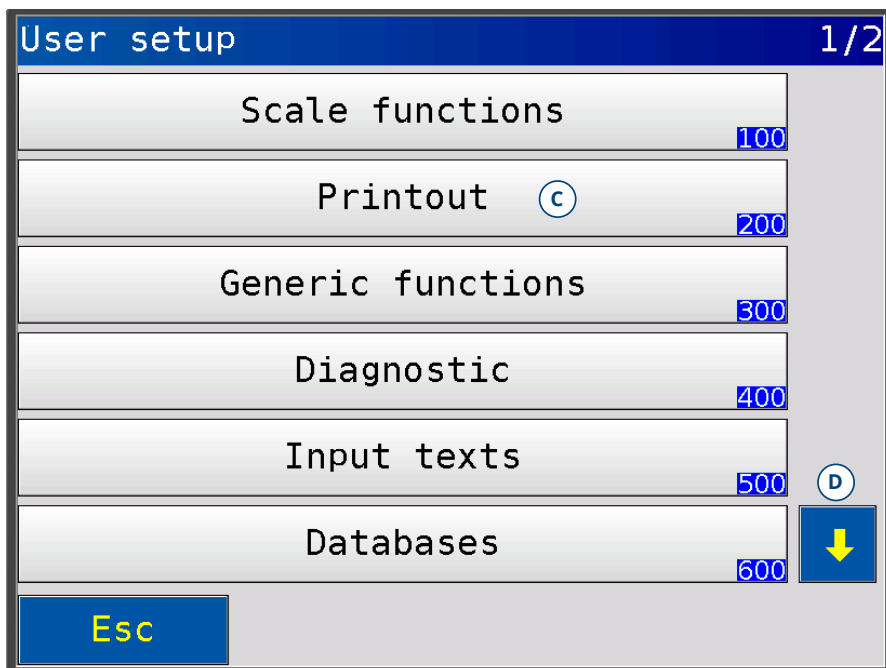


2. Press menu button "B" for accessing the user Setup.



3. Press Printout button "C" for accessing the print functions.

4. Press arrow "D" for accessing the second page (2/2) and select the export function "E" or "F".



## Turning off and restart

The following picture illustrates the dialog box which appears while pressing the OFF button on the structure of the industrial PC (on the lower left side).

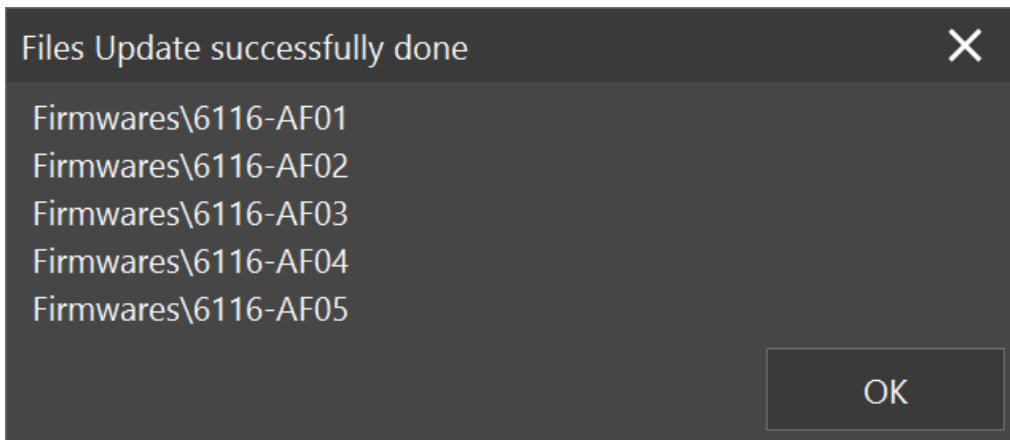


POS.	DESCRIPTION
A	It cancels the turning off operation.
B	It restarts the device.
C	It turns off the PC.

## Updating AF Firmwares

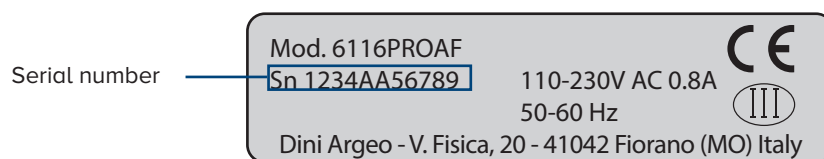
In order to update the AF Firmwares loaded on the indicator, save the files provided by the reseller/supplier on a USB key and press the updating button (see "H" button in the main screen, described on page 15).

On the display, a screen with a list of updated firmwares will be shown:



## Declaration of conformity

The declaration of conformity can be downloaded from the link <http://www.diniargeo.it/download.aspx> by inserting the serial number of the industrial PC 6116PRO.









**HEAD OFFICE**

Via Della Fisica, 20  
41042 Spezzano di Fiorano, Modena - Italy  
Tel. +39 0536 843418 - Fax +39 0536 843521

**SERVICE ASSISTANCE**

Via Dell'Elettronica, 15  
41042 Spezzano di Fiorano, Modena - Italy  
Tel. +39 0536 921784 - Fax +39 0536 926654

[www.diniargeo.com](http://www.diniargeo.com)

Stamp of the authorised assistance centre

