DINI ARGEO
Scales - Weighing systems
A RICE LAKE WEIGHING SYSTEMS COMPANY

6116EVO-BOX

Interactive kiosk with industrial touchscreen PC

USER MANUAL **ENGLISH**

www.diniargeo.com

Contents

Optimized layout for A4 print.

Introduction

Dear Customer,
Thank you for purchasing a DINI ARGEO product.

This manual contains all the instructions for the correct installation and commissioning of the 6116EVO-BOX product.
While thanking you for purchasing this product, we would like to draw your attention to some aspects of this manual.

This booklet provides useful information for the correct operation and maintenance of the product to which it refers; it is, therefore, essential to pay the greatest attention to all those paragraphs that illustrate the simplest and safest way to operate.

The utmost care has been taken in compiling this manual, but reports of any inaccuracies are always welcome.

The instrument is covered by warranty and MUST NOT BE TAMPERED WITH BY THE USER under any circumstances.
Any attempt at repair or modification may expose the user to the danger of electric shock and voids any warranty conditions, relieving the Manufacturer from all liability.

Any problem with the product must be reported to the manufacturer or to the retailer where it was purchased.
In any case, always TURN OFF THE POWER SUPPLY before any installation or repair operation.

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Installation requirements

Observe the following conditions for correct installation of the industrial PC and of the load receiver:

- Flat, level support surface.
- Stability and absence of vibrations.
- Absence of aggressive dusts and vapours.
- Make sure that the platform is levelled or that the load cells are evenly supported.
- Moderate temperature and humidity (-10 °C / 60 °C and 40% - 70%).
- Do not install in an environment where there is a risk of explosion.
- All transmitter connections must be made in accordance with applicable regulations in the area and environment of installation. Observe the electrical precautions listed in the "**Electrical precautions**" section.
- Ensure that it is correctly earthed, see the relevant section "**Earthing of the system**".
- Do not perform welding when the load cells have already been installed.
- If necessary, use watertight sheaths and fittings to protect the load cell cables.
- Any junction boxes must be watertight.
- Anything not expressly described in this manual constitutes improper use of the equipment.

To ensure that the required temperature and humidity conditions are maintained within the cabinet, the instrument must be kept powered at all times.

Electrical precautions

- Use a regulated mains supply within ± 10% of the rated voltage.
- The electrical protections *(fuses, etc.)* are the responsibility of the installer.
- Observe the recommended minimum distances between cables of different categories **(see table on page 6)**.
- The following cables must comply with the maximum permissible lengths **(see table on page 6)**, they must be shielded and must be inserted alone in metal conduits or pipes:
  - the load cell extension cables;
  - the signal amplifier cables;

  The entrance of the cell cables into the electrical panel must be autonomous. The cables must be connected directly to the transmitter terminal block.
- Fit the "RC" filters on all devices that produce electrical noise.
- Connections to load cells and any external device must be as short as possible.
- The cable ends (connectors, leads, terminals, etc.) must be installed correctly; the cable shielding must be kept intact until close to the connection point.

The sticker shown by the side is applied to the product to warn the user of the electrical hazard:

- - RISK OF ELECTRIC SHOCK
- - DO NOT DISASSEMBLE THE APPLIANCE
- - COMPLETELY DISCONNECT THE POWER SUPPLY TO THE APPLIANCE BEFORE PERFORMING ANY MAINTENANCE.

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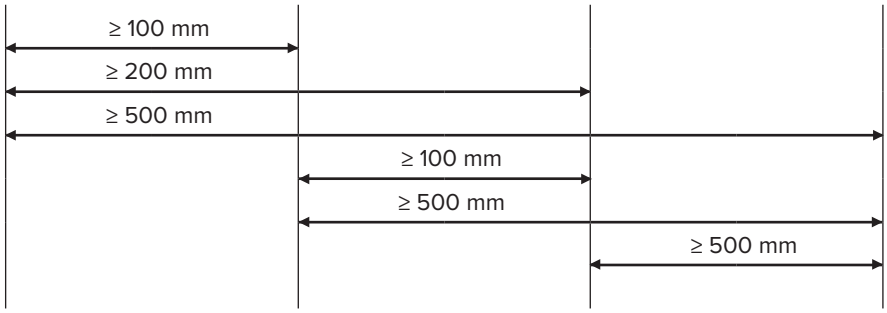
RECOMMENDED DISTANCES AND CABLE CLASSIFICATION

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

MAXIMUM ALLOWED LENGTHS

Load cell	RS232	RS485	Analog output
50 metres with 6 x 0.25 mm^2 cable; 100 metres with 6 x 0.5 mm^2 cable.	15 m with baud rate up to 19200.	1200 m with shielded 2 x 24 AWG twisted pair with outer braid + aluminium strip.	**CURRENT**: 100 metres with 2 x 0.25 mm^2 cable; 150 metres with 2 x 0.5 mm^2 cable; 300 metres with 2 x 1 mm^2 cable. **VOLTAGE:** 50 metres with 2 x 0.25 mm^2 cable; 75 metres with 2 x 0.5 mm^2 cable; 150 metres with 2 x 1 mm^2 cable.

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Earthing of the panel

For correct connection to earth and optimal system operation, the panel, load cells (if any), junction box and weighing structure must be earthed.

LOAD CELLS AND JUNCTION BOX
The connection must be made by connecting the earth wires to the earth bar (cables that must have a cross-section of at least 16 mm^2); finally, connect the earth bar to the earth post with a cable having a cross-section of at least 50 mm^2.

EXAMPLES:

- If the load cells are connected to the board through a junction box, the cable shield from the board and the cell cable shields must be connected to the earth socket of the junction box (refer to the junction box manual) and the junction box must be earthed using a copper cable with a cross-section of not less than 16 mm^2.
- If the load cells are connected directly to the board (without using the junction box), the cell cable shields must be connected to the earthing point (or earth bar).
- If the weighing system involves large and/or outdoor structures (weighbridges, silos, etc.) and the distance between the junction box and the weight board is greater than 10 m, connect the cell cable shields to the earth socket in the junction box.

WEIGHING STRUCTURE
Connect the weighing structure and/or any unconnected structures (e.g. silos that release material onto the weighing structure) to earth using cables with a cross-section of not less than 16 mm^2.
Also connect the upper part with the lower part of each cell by means of a copper braid with a cross-section not less than 16 mm^2.

SERIAL CABLES AND CONNECTED INSTRUMENTS
Connect the serial cable shield to the earthing point (or earth bar) inside the panel. To avoid any undesired effects, the earth reference of the connection cable, power supply and transmitter must be at the same potential.

PC
The 6116EVO-BOX is connected to earth by means of a specific screw.

WARNING: Check that the power supply socket to which the panel will be connected has an earth line.

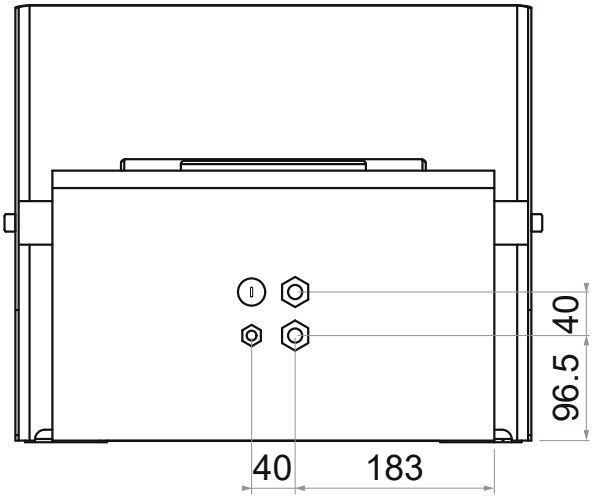
GENERAL NOTES:

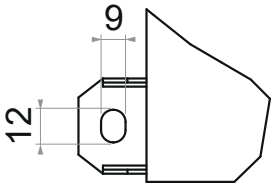
- All earth wires must be of suitable length, so as to obtain an overall resistance of the earthing system of less than 1 Ω.

- If the weighing system involves large and/or outdoor structures (weighbridges, silos, etc.):
  - the earth connection must be made by connecting the earth wires to an earth bar and the earth bar to the earth post with a cable having a cross-section of not less than 50 mm^2;
  - the thickness of the cables must be greater (50 mm^2 instead of 16 mm^2 and 100 mm^2 instead of 50 mm^2), because the voltages at stake are greater (e.g. lightning);
  - the earth post must be placed at a distance of at least 10 m from the structure.

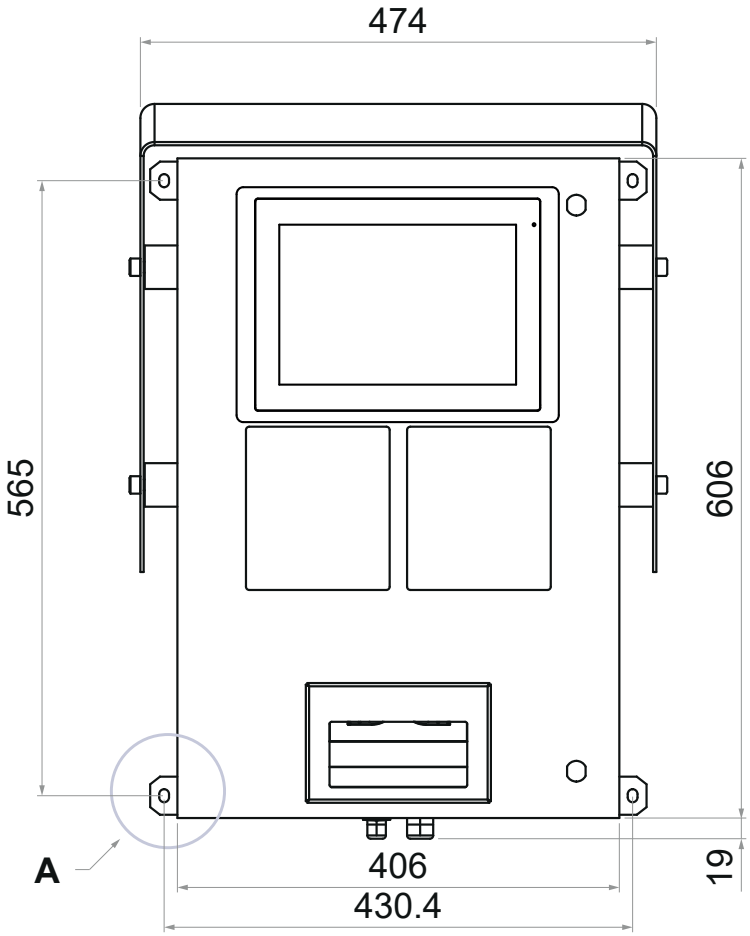
- If the load receiver is more than 10 m from the transmitter, we recommend using the SENSE line and load cells equipped with a (SENSE) compensation circuit.

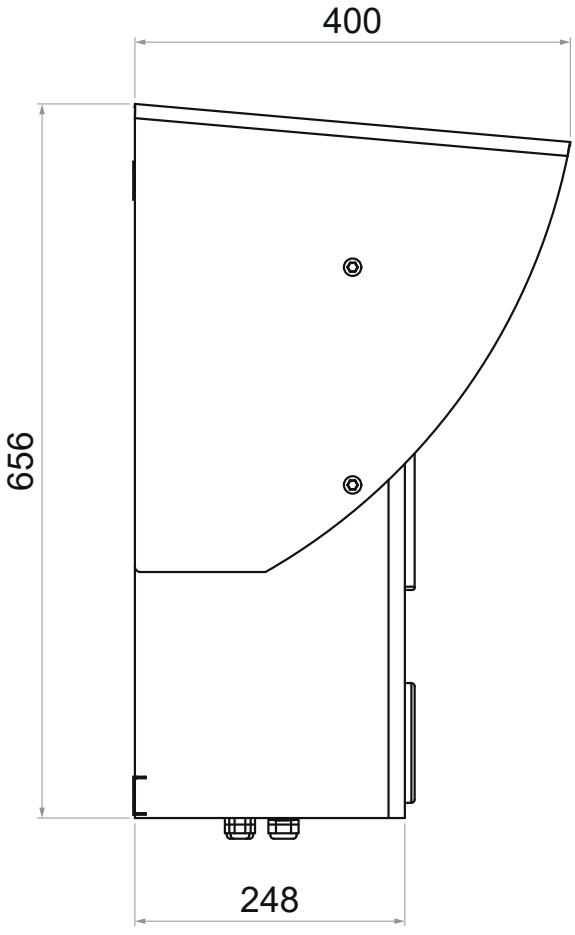
Dimensional technical drawings





A (1:2)





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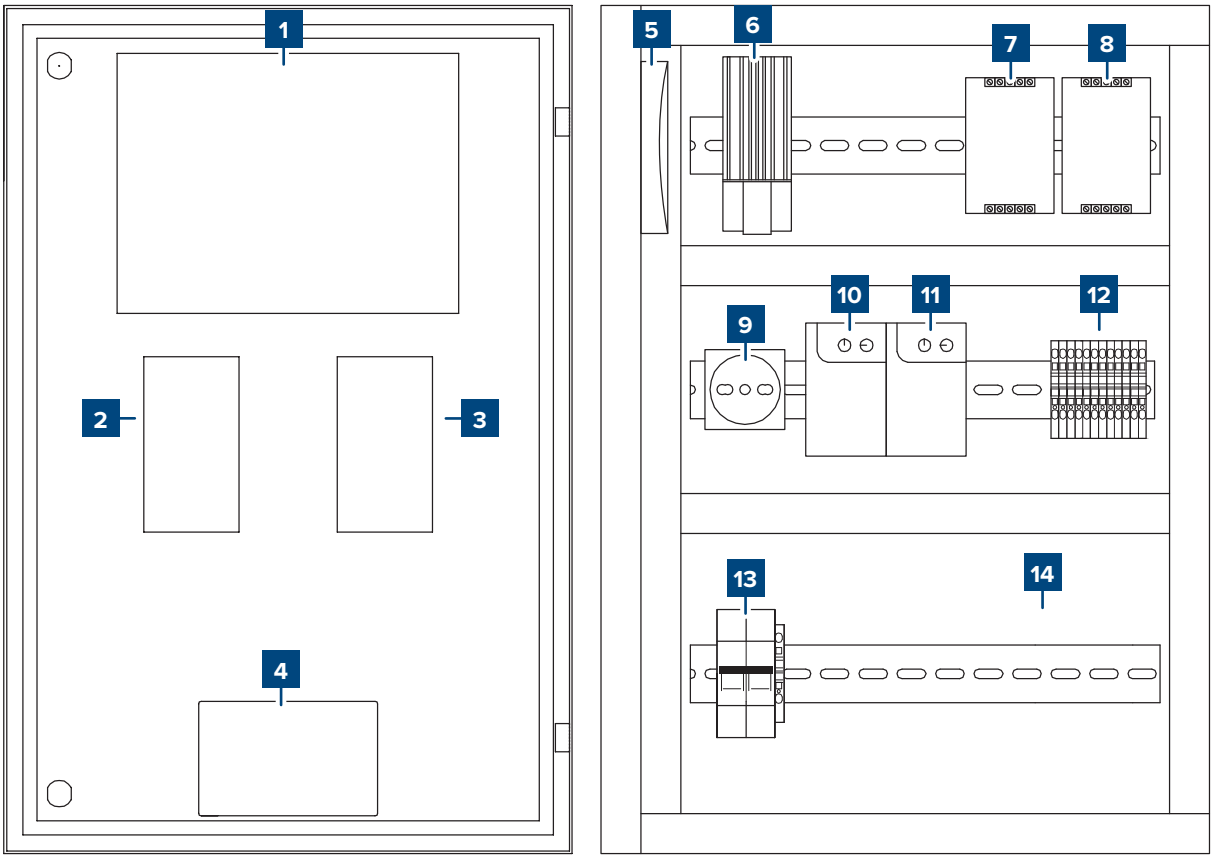
Internal components



Inside the panel

1	Industrial PC
2	Coin box (according to the model)
3	RFID reader
4	Thermal printer
5	Cooling fan
6	Heating pad
7	24 Vdc power supply
8	Shuko socket 110/240 Vac
9	Heating pad regulator thermostat
10	Fan regulator thermostat
11	Terminal block
12	Slot for installation of Dini Argeo weight transmitter
13	Master switch
14	5 Vdc power supply

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Technical features

MATERIAL	Brushed stainless steel frame Plastic protective visor
DIMENSIONS	See technical dimensional drawing on page 8
POWER SUPPLY	110/240 Vac
COOLING	Thermostat and ventilation fan
HEATING	Thermostat and timer
WORKING TEMPERATURE	-10 / 60°C, 0 / 40°C for type-approved applications
RELATIVE HUMIDITY	10 to 95% @ 40°C, non-condensing
CERTIFICATIONS	CE Marking

PROCESSOR	Intel Celeron N2930 QuadCore 64 bit, 2 Mb cache, up to 2.16 GHz.
GRAPHICS	Intel HD Graphics
OPERATING SYSTEM	Windows 10 IoT Enterprise LTSC in English. (other languages optional)
TOUCHSCREEN	Capacitive with 10-point multi-touch technology
SCREEN	Dimensions 10.1" Resolution 1280x800 px 16.7 M colours Brightness 350 cd/m2 Viewing angle 170/170 Contrast 800:1
RAM	DDR3L 4 GB 1600 MHz
STORAGE	Internal Memory SSD Sata III, 128 Gb SD card slot up to 32 Gb
PERIPHERAL DEVICES	• USB: 2 x USB 3.0 type A • Serial: COM1: 1 x RS-232/422/485 DE9P (default RS-232) COM2: 1 x RS-232 DE9P • Audio: 3.5 mm line out • LAN: 2 x GbE RJ-45 • 2-pin remote power switch

PRINTING SPEED	>150 mm/sec
RESOLUTION	200 dpi, 24/40 columns
PAPER SPECIFICATIONS	• Type: thermal paper, thermal side on the outside of the roll • Width: 76 ± 0.5 mm to 80 ± 0.5 mm • Grammage: 55 g/m^2 to 80 g/m^2 • Thickness: 60 ± 0.5 µm (for 55 g/m^2 paper) 85 ± 0.6 µm (for 80 g/m^2 paper) • Recommended types of paper: Kanzan KF50 / KP460 or Mitsubishi PF5067 / TL4000
MAXIMUM PRINT LENGTH (*)	20 cm
CUTTER	Yes, integrated.

(*) Prints longer than the indicated length may cause the printer to jam.

RFID FREQUENCY	13.56 MHz
CARD READING DISTANCE	Up to 30 mm
COMPATIBLE CARD TYPES	I-Code SLIX, I-Code SLIS, Mifare Ultralight, Mifare Classic 1K, Mifare Classic 4K, Mifare Plus X 4K, Mifare Desfire 4K, STM LRi2k and Ntag203

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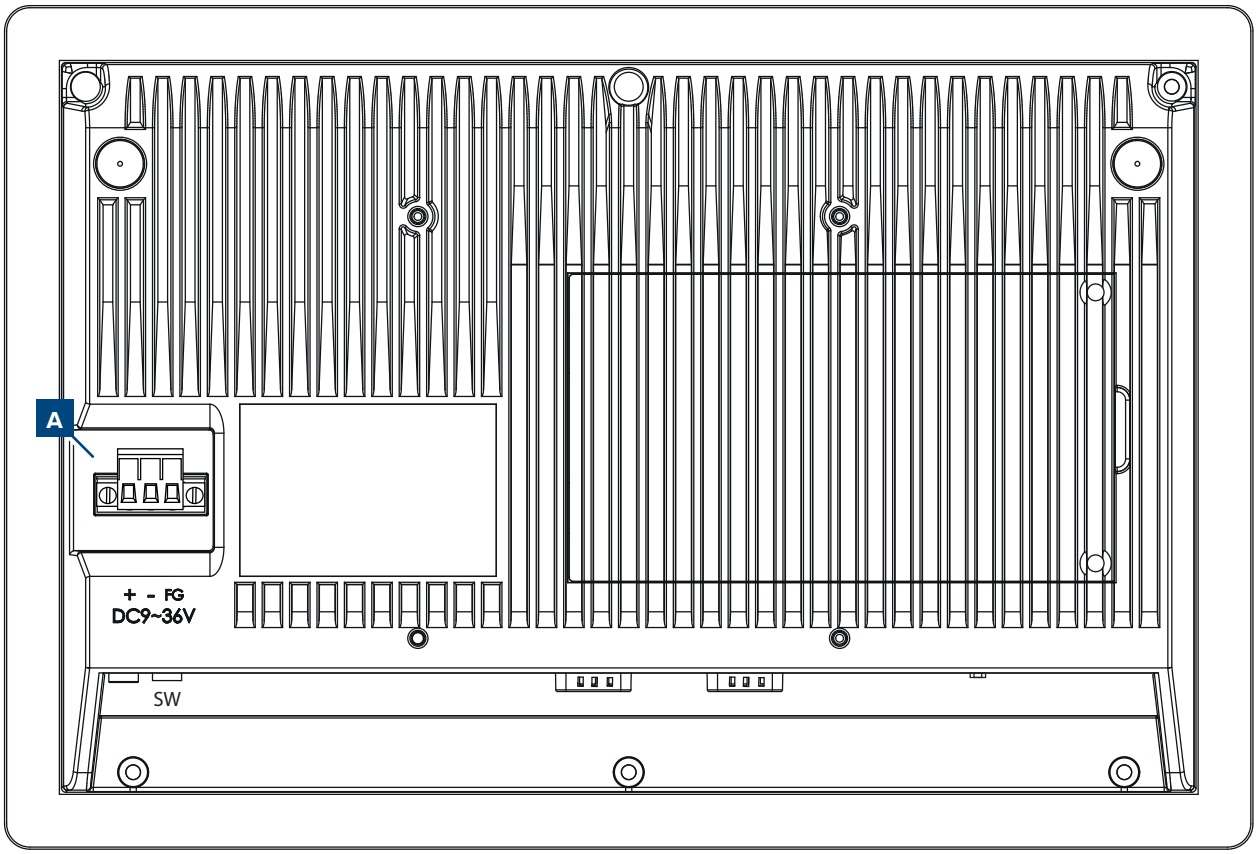
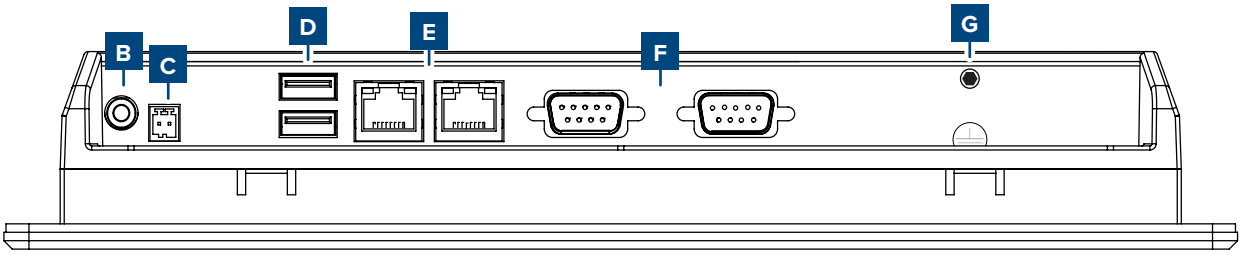
Industrial PC (inner view)





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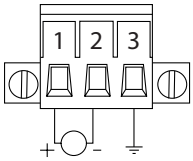
A Power supply terminal

The PC power supply range is 9-36 Vdc.



1. White | Vdc (9 / 36 Vdc)
2. Black | GND
3. Earth

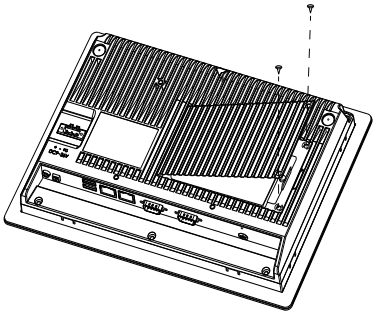
B AUX output

The Line Out port can be connected to loudspeakers via a 3.5mm jack connector

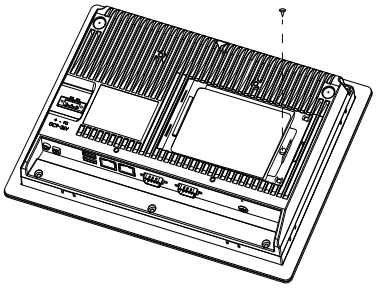
C Remote power button

The 6116EVO-BOX is configured by default to switch on automatically when it is powered. In case of power failure, the device will turn on again when power is restored.
If the device is forcibly switched off, it will be necessary to switch the power off and back on using the main switch 13 (figure on page 9).

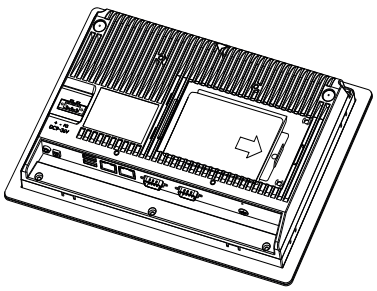
To disable the automatic power on function, configure the function using the DIP switch under the removable door.
In this case, a manual power button must be connected to the terminal C (figure on page 8):



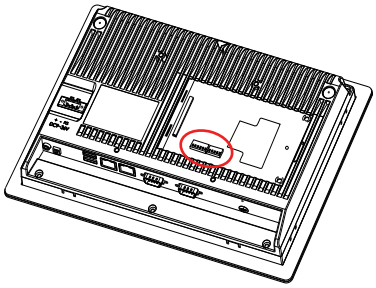
1. Remove the two screws on the rear panel and lift off the protective cover.



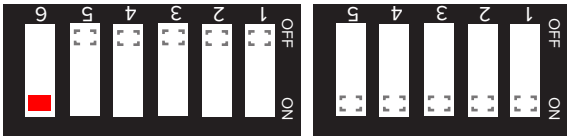
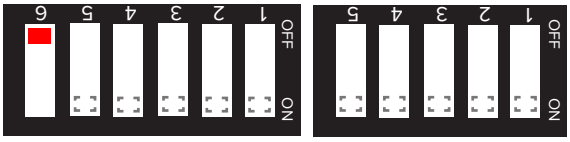
2. Remove the fixing screw on the SSD tray.



3. Gently pull the SSD tray out of its slot.



4. Set the operation using the DIP switches under the SSD slot, according to the following table:

Function	Configuration
Automatic power on (Default)	
Power on using a button	

5. Reinstall the SSD tray and close the rear panel.

Before switching off the power supply, shut down Windows and wait at least 5 seconds before switching off the power supply to the instrument.

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D USB

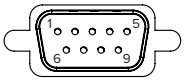
Two USB 3.0 type A ports are available. The communication speed of the port is up to 5000Mb/s and the maximum deliverable current is 2.0A

E LAN 1 and LAN 2

The two 10/100/1000M Gigabit Ethernet ports on RJ45 connector are independently managed and allow connection to two different LAN networks.

F COM 1 and COM 2

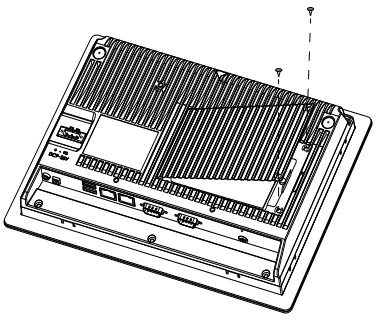
Connector type: DE9P male serial



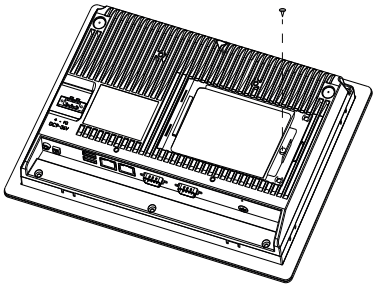
PIN	COM1*			COM2
	RS232(DEFAULT)	RS485	RS422	RS232
1	DCD	**422_RX+**	NC	DCD
2	**RX**	**422_RX-**	NC	**RXD**
3	**TX**	**422_TX-**	**485-**	**TXD**
4	DTR	**422_TX+**	**485+**	DTR
5	**GND**	**GND**	**GND**	**GND**
6	DSR	NC	NC	DSR
7	RTS	NC	NC	RTS
8	CTS	NC	NC	CTS
9	RI	NC	NC	RI

* The COM1 serial port can be configured to operate as RS232, RS422 or RS485. The configuration of the serial port is managed in 2 steps. The configuration of the DIP switches located under the SSD slot is changed in the first step and the serial port settings are changed from the BIOS in the second step.
The COM2 port can only be used as RS232.
Proceed as follows to configure COM1 port operation:

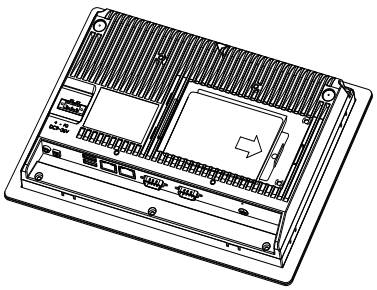
DIP switch configuration (step 1 of 2)



1. Remove the two screws on the rear panel and lift off the protective cover.



2. Remove the fixing screw on the SSD tray.



3. Gently pull the SSD tray out of its slot.

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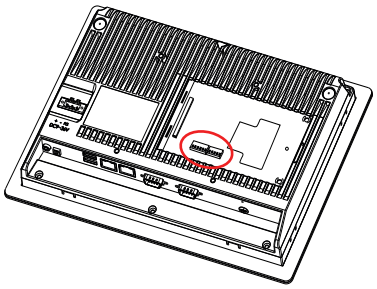
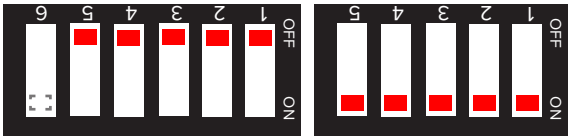
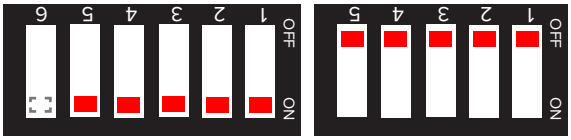


4. Set the operation using the DIP switches under the SSD slot, according to the following table:

Function	Configuration
RS232 (Default)	
RS485/422	

5. Reinstall the SSD tray and close the rear panel.

BIOS configuration (step 2 of 2)

Connect a keyboard to the USB port and power the PC.
Press the [Del] button during start-up to access BIOS settings.

Set the operation mode to:
- ▶ Advanced
  - ▶ F81216SEC Super IO Configuration
    - ▶ Serial Port 1 Configuration
      - ▶ UART1 Mode Selection
        - **RS-232 (Default)**
        - RS-485
        - RS-422

Save the configuration:
- ▶ Save & Exit
  - ▶ Save Changes and Exit
    - **Yes**

⚠ Changing BIOS settings outside of the settings described in this manual may cause irreversible damage to the device.
Dini Argeo is not responsible for any damage caused by changing settings or items other than those explicitly described in this manual.

G Earth connection

Screw for connecting to PC case. The device is supplied as standard with an earth wire with a cross-section area of 16 mm^2.
Do not remove the connection under any circumstances during use.

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3 RFID reader

Integrated RFID reader for reading cards with 13.56MHz frequency.
Compatible cards are I-Code SLIX, I-Code SLIS, Mifare Ultralight, Mifare Classic 1K, Mifare Classic 4K, Mifare Plus X 4K, Mifare Desfire 4K, STM LRi2k and Ntag203.

It is possible to communicate with the printer through the USB port of the PC, as a virtual COM serial port, using the baud rate 38400-n-8-1.
Refer to the RFID module manual for maintenance, programming and operation.

9 Shuko socket

A Shuko panel-mounted socket with 110/240 Vac, 2A max output is available

6 Slot for weight transmitter installation

A Dini Argeo weight transmitter can be installed inside the electrical panel to read the weight from the scales. Install the weight transmitter in a free slot, and power it using the 24V power source in the cabinet. Connect the weight transmitter to COM1 of the PC and configure the COM1 communication port of the PC to RS232 or RS485 according to the type of connection used.
Refer to the weight transmitter manual for programming and operation.

13 Master switch

The master switch allows power to be removed from the electrical panel for maintenance purposes.
It has protection against short circuits and overloads.

5 6 10 11 Temperature control

The instrument is designed to keep the temperature of the electrical panel constant throughout the day and prevent condensation.
The constant temperature is maintained by a fan cooling system and a heating pad. Set the activation temperature of the cooling fan by adjusting the red thermostat to approx. 25°C and the blue thermostat for the heating pad to approx. 22°C.
Note: In order to keep the temperature control active, the switch cabinet must be powered at all times.

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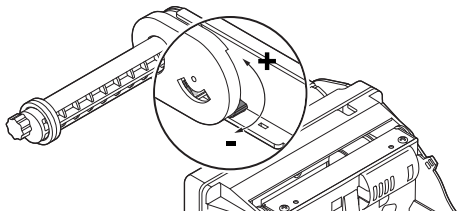
4 Thermal printer

The thermal printer with integrated cutter allows printing of receipts.
It is possible to communicate with the printer through the USB port of the PC, as a virtual COM serial port, using the baud rate 9600-n-8-1.

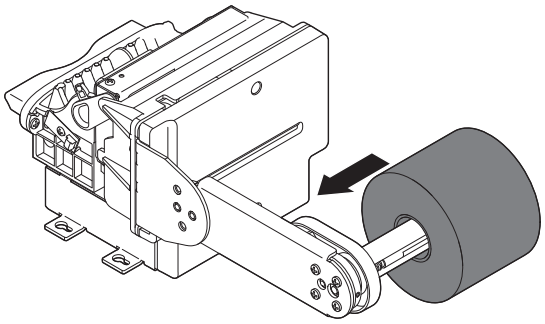
Do not move the box with the paper roll installed.
Take special care not to get the printer roll paper wet.

PAPER ROLL LOADING / REPLACEMENT

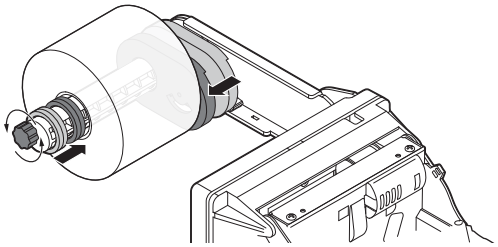
1. ADJUST THE PAPER STOCK
Threshold under which the printer reports the low paper. Use the lever shown in igure to move the low paper sensor: move the lever up to increase the paper stock, move the lever down to decrease the paper stock.



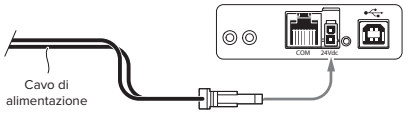
2. INSER THE PAPER ROLL ON THE PIN OF THE ROLL HOLDER



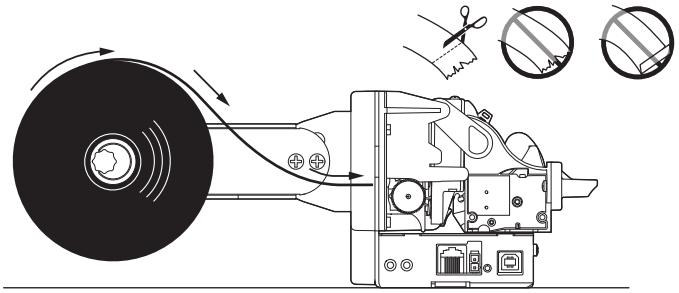
3. ADJUST THE PAPER WIDTH



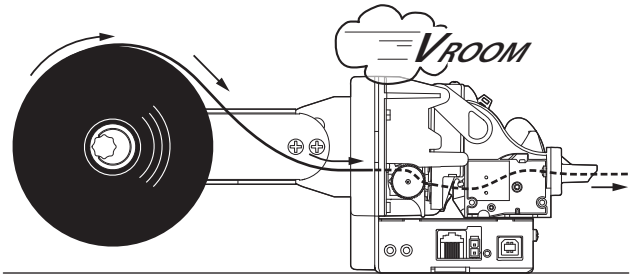
4. SWITCH ON THE PRINTER



5. INSERT THE PAPER INTO THE THE INPUT MOUTH SO THAT IT UNROLLS CORRECTLY, AS SHOWN IN FIGURE



6. WAIT UNTIL THE PAPER IS AUTOMATICALLY LOADED

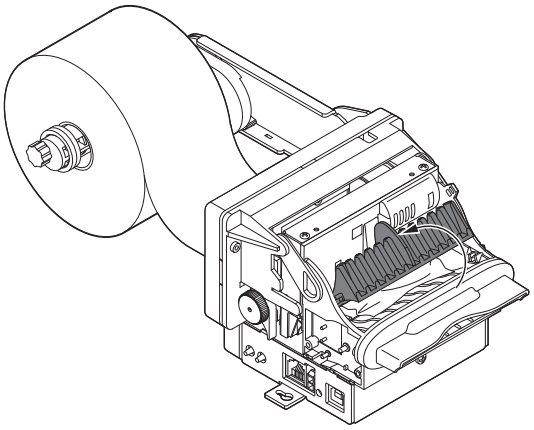


At every change of paper roll, check inside the device and remove any scraps of paper and accumulated dust.
Use compressed air for cleaning of internal mechanisms of the printer.

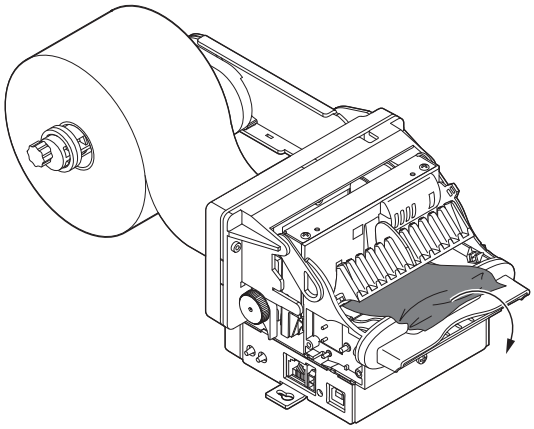
Optimized layout for A4 print.

PAPER JAM

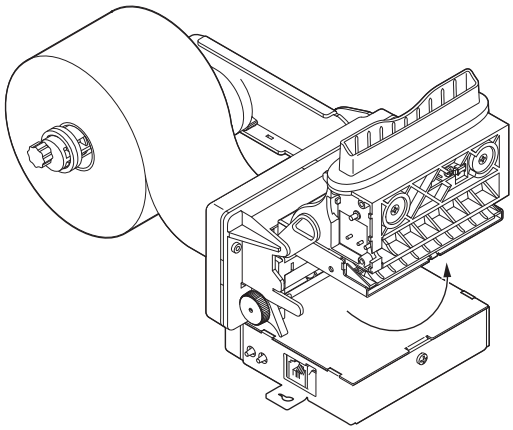
1. LIFT THE INSPECTION DOOR



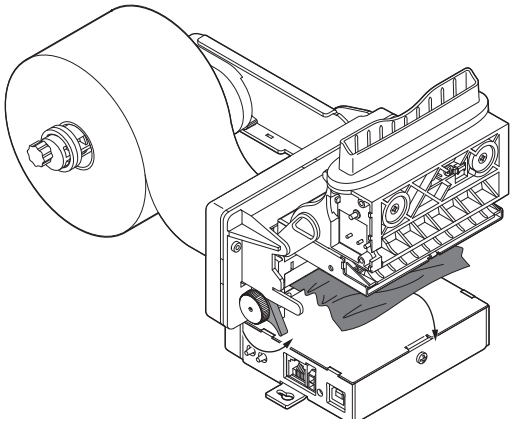
2. REMOVE ANY SCRAPS OF PAPER FROM THE FRONT SIDE OF THE PRINTER



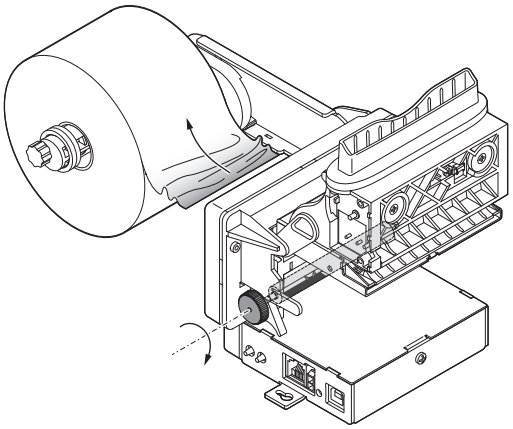
3. OPEN THE PRINTER
(see paragraph "Printer opening / closing")



4. LIFT THE UNLOCKING LEVER FOR THE PLATEN ROLLER AND REMOVE ANY SCRAPS OF PAPER FROM THE PRINTING MECHANISM



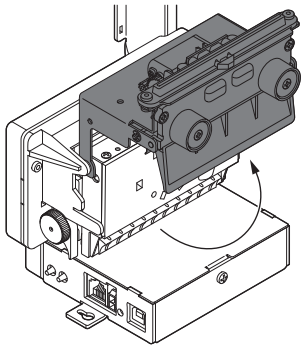
5. ROTATE CLOCKWISE THE PLATEN ROLLER TO EJECT THE PAPER FROM THE REAR SIDE OF THE DEVICE



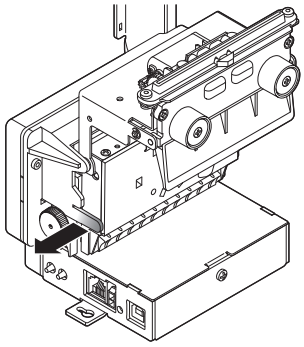
Optimized layout for A4 print.

PRINTER OPENING / CLOSING

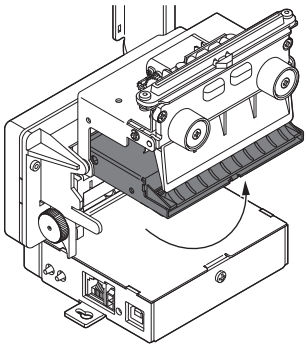
1. LIFT THE EJECTOR GROUP BY UNHOOKING THE MAGNETS ON THE BOTTOM SIDE AND BY ROTATING THE GROUP UPWARDS



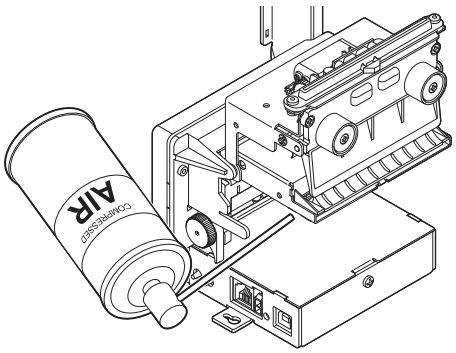
2. WIDEN THE UNLOCKING HOOK FOR THE CUTTER GROUP



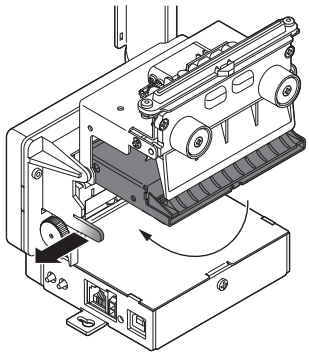
3. ROTATE UPWARDS THE CUTTER GROUP TO LIFT IT



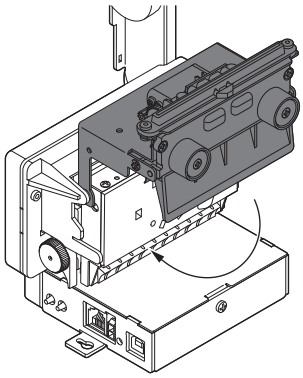
1. CHECK THE PRESENCE OF PAPER SCRAPS AND REMOVE THEM (see paragraph "PAPER JAM")



2. WIDEN THE UNLOCKING HOOK AND CLOSE THE CUTTER GROUP



3. LOWER THE EJECTOR GROUP AND HOOK THE TWO MAGNETS TO THE DEVICE CHASSIS



Optimized layout for A4 print.

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Stamp of the authorised service centre

The information in this document is approximate and can be subject to variations without prior notice by Dini Argeo, in compliance with the norms in force.
The official technical data are available in the updated version on the following website www.diniargeo.com or by contacting Dini Argeo Customer Service.

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