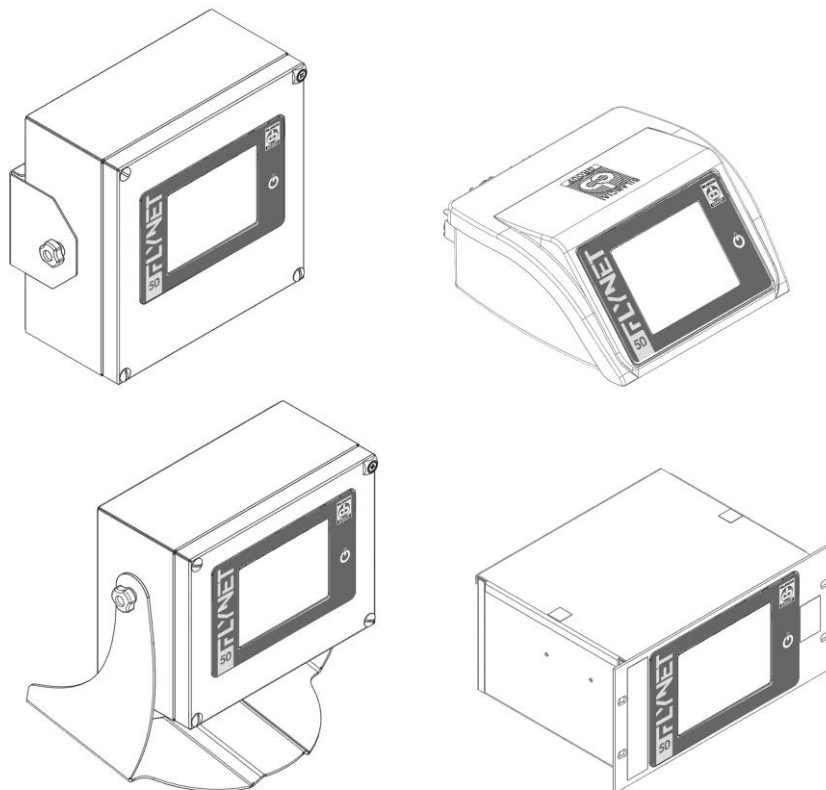




SOCIETÀ COOPERATIVA  
**BILANCAI**  
Strumenti e Tecnologie per Pesare



# Weighing Indicator DD1010 FLYNET

Use, Maintenance and Installation Manual



Code 81320560  
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## CONTENTS

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>INTRODUCTION .....</b>  | <b>5</b>  |
| 1.1      | FOREWORD .....   | 5         |
| 1.2      | DOCUMENTATION .....  | 6         |
| 1.3      | SYMBOLS .....  | 6         |
| 1.4      | GLOSSARY OF TERMS USED .....                                       | 7         |
| 1.5      | DESCRIPTION OF THE INDICATOR .....                                 | 9         |
| 1.6      | KEY .....  | 9         |
| 1.7      | TECHNICAL CHARACTERISTICS OF THE INDICATOR .....                   | 10        |
| 1.8      | DECLARATION OF CONFORMITY .....                                    | 11        |
| 1.9      | INDICATOR OVERALL DIMENSIONS AND WEIGHT .....                      | 12        |
| 1.9.1    | <i>Plastic version .....</i>                                       | <i>12</i> |
| 1.9.2    | <i>Tabletop stainless steel version .....</i>                      | <i>12</i> |
| 1.9.3    | <i>Wall-mounted stainless steel version .....</i>                  | <i>13</i> |
| 1.9.4    | <i>Stainless steel panel-mounting version .....</i>                | <i>13</i> |
| 1.10     | INSTRUCTIONS FOR DISPOSAL OF ELECTRICAL OR ELECTRONIC WASTE .....  | 14        |
| 1.11     | INSTRUCTIONS FOR TECHNICAL SERVICE REQUEST .....                   | 14        |
| 1.12     | WARRANTY .....   | 15        |
| 1.13     | SPARE PARTS .....  | 16        |
| <b>2</b> | <b>SAFETY REQUIREMENTS .....</b>                                   | <b>18</b> |
| 2.1      | NOT ALLOWED USES .....   | 18        |
| 2.2      | REGULATIONS .....  | 18        |
| 2.3      | CONDITIONS OF USE .....  | 18        |
| <b>3</b> | <b>DELIVERY AND INSTALLATION .....</b>                             | <b>19</b> |
| 3.1      | INSTALLATION .....   | 22        |
| 3.1.1    | <i>Tabletop installation .....</i>                                 | <i>22</i> |
| 3.2      | CONNECTING THE INDICATOR TO THE MAINS .....                        | 22        |
| 3.2.1    | <i>Checks .....</i>  | <i>22</i> |
| 3.2.2    | <i>Wiring diagram (version with connectors) .....</i>              | <i>23</i> |
| 3.2.3    | <i>Wiring diagram (version with cable glands) .....</i>            | <i>24</i> |
| 3.3      | CONNECTING THE INDICATOR TO THE WEIGHING PLATFORM .....            | 26        |
| 3.3.1    | <i>Wiring diagram (with platform) .....</i>                        | <i>27</i> |
| 3.3.2    | <i>Equipotential between indicator and weighing platform .....</i> | <i>27</i> |
| 3.3.3    | <i>Digital Scale serial connection .....</i>                       | <i>28</i> |
| 3.3.4    | <i>Analogue Scale serial connection .....</i>                      | <i>28</i> |
| 3.4      | SERIAL CONNECTIONS .....   | 29        |
| 3.4.1    | <i>COM4 serial connection .....</i>                                | <i>29</i> |
| 3.4.2    | <i>COM6/7 serial connection (option) .....</i>                     | <i>29</i> |
| 3.4.3    | <i>COM8/9 serial connection (option) .....</i>                     | <i>30</i> |
| 3.4.4    | <i>RS232 connections .....</i>                                     | <i>31</i> |
| 3.4.5    | <i>RS422 connections .....</i>                                     | <i>31</i> |
| 3.5      | INPUT/OUTPUT CONNECTION .....                                      | 32        |
| 3.5.1    | <i>Input connection .....</i>                                      | <i>33</i> |
| 3.5.2    | <i>Output connection .....</i>                                     | <i>33</i> |
| <b>4</b> | <b>CONTROLS, SWITCHING ON AND OFF .....</b>                        | <b>34</b> |
| 4.1      | ON/OFF KEY .....   | 34        |
| 4.2      | TOUCH SCREEN .....   | 36        |
| 4.3      | EXTERNAL KEYBOARD AND MOUSE .....                                  | 36        |
| <b>5</b> | <b>USING THE INDICATOR .....</b>                                   | <b>37</b> |
| 5.1      | INDICATOR CONFIGURATION .....                                      | 37        |
| 5.1.1    | <i>Application .....</i>   | <i>37</i> |
| 5.2      | SYSTEM .....   | 38        |

|           |  |     |
|-----------|--|-----|
| 5.2.1     | <i>Metrology Management</i> .....                                | 38  |
| 5.2.1.1   | Scale Configuration.....   | 38  |
| 5.2.1.1.1 | Internal Scale .....   | 39  |
| 5.2.1.1.2 | Serial Scale.....  | 47  |
| 5.2.1.1.3 | Network scale.....   | 50  |
| 5.2.1.1.4 | Sum Scale .....  | 51  |
| 5.2.1.1.5 | Configurable Sum Scale .....                                     | 53  |
| 5.2.1.2   | Stamping management.....   | 58  |
| 5.2.1.3   | Metrological information.....                                    | 58  |
| 5.2.1.4   | System Information .....   | 59  |
| 5.2.1.5   | Display Configuration .....                                      | 59  |
| 5.2.1.6   | Metrological Events Log.....                                     | 59  |
| 5.2.1.7   | Scale Diagnostics Configuration.....                             | 60  |
| 5.2.1.8   | Scale Diagnostics Log .....                                      | 61  |
| 5.2.2     | <i>Serial Ports</i> .....  | 62  |
| 5.2.3     | <i>Printers/Readers/IOs</i> .....                                | 62  |
| 5.2.3.1   | Axis Management .....  | 65  |
| 5.2.3.2   | System Memory.....   | 66  |
| 5.2.4     | <i>Log Management and System Errors</i> .....                    | 67  |
| 5.2.4.1   | Error notification .....   | 67  |
| 5.2.4.2   | Device log .....   | 67  |
| 5.2.5     | <i>Access levels</i> .....                                       | 68  |
| 5.2.6     | <i>Buzzer</i> .....  | 69  |
| 5.2.7     | <i>Date and time</i> .....                                       | 69  |
| 5.2.7.1   | Changing the date:.....  | 70  |
| 5.2.7.2   | Changing the time: .....   | 70  |
| 5.2.7.3   | Synchronise with the Internet: .....                             | 70  |
| 5.2.8     | <i>Email</i> .....   | 71  |
| 5.3       | CARDS.....   | 72  |
| 5.4       | PDF AND NETWORK PRINTER .....                                    | 73  |
| 5.4.1     | <i>Network printer</i> .....                                     | 73  |
| 5.4.2     | <i>PDF</i> .....   | 75  |
| 5.5       | TRANSMISSION .....   | 77  |
| 5.5.1     | <i>Mpp</i> .....   | 77  |
| 5.5.2     | <i>Network</i> .....   | 79  |
| 5.5.3     | <i>Serial</i> .....  | 80  |
| 5.5.4     | <i>Indicator parameters</i> .....                                | 81  |
| 5.5.5     | <i>Field bus</i> .....   | 82  |
| 5.5.5.1   | Profibus.....  | 82  |
| 5.5.5.2   | Modbus-RTU, Modbus-TCP .....                                     | 83  |
| 5.5.6     | <i>Printed data string</i> .....                                 | 89  |
| 5.5.6.1   | Transmission of printed data string via network .....            | 89  |
| 5.5.6.2   | Transmission of printed data string via serial transmission..... | 90  |
| 5.5.6.3   | General .....  | 91  |
| 5.5.6.4   | Delete data .....  | 91  |
| 5.5.7     | <i>Analogue output</i> .....                                     | 91  |
| 5.6       | ACTIVATING THE OPTIONAL SERVICES.....                            | 92  |
| 5.7       | THEMES.....  | 92  |
| 5.8       | SHORTCUT KEYS .....  | 93  |
| 5.9       | SWITCHING OFF.....   | 93  |
| 5.10      | ACCESS LEVELS .....  | 93  |
| 5.11      | ERROR MANAGEMENT .....   | 94  |
| 5.12      | SHARING DATA .....   | 94  |
| 5.12.1    | <i>Database</i> .....  | 95  |
| 5.13      | ADDING AN EXTERNAL PRINTER.....                                  | 96  |
| 5.14      | ADDING A READER .....  | 97  |
| 5.15      | ADDING A NETWORK OR PDF PRINTER .....                            | 97  |
| 5.16      | TESTING A SERIAL TRANSMISSION .....                              | 99  |
| 6         | <b>OPTIONS</b> .....   | 100 |

|           |   |            |
|-----------|---|------------|
| 6.1       | INSTALLING OPTIONAL BOARDS.....   | 100        |
| 6.2       | OPTIONAL BOARD OVERVIEW .....   | 101        |
| 6.2.1     | Sound board.....  | 101        |
| 6.2.2     | 8 in/12 out board.....  | 102        |
| 6.2.3     | 4 in/6 out board.....   | 105        |
| 6.2.4     | Pulse input analogue output board .....   | 107        |
| <b>7</b>  | <b>ERROR MESSAGES .....</b>   | <b>109</b> |
| 7.1       | INDICATOR ERRORS .....  | 109        |
| 7.2       | SCALE ERRORS .....  | 109        |
| <b>8</b>  | <b>PARAMETER CUSTOMISATION .....</b>  | <b>111</b> |
| <b>9</b>  | <b>ACCESS TO METROLOGICAL PARAMETERS .....</b>  | <b>112</b> |
| 9.1       | VERSION WITH CONNECTORS .....   | 112        |
| 9.2       | VERSION WITH CABLE GLANDS.....  | 114        |
| 9.3       | INTERNAL SCALE SAMPLING.....  | 115        |
| <b>10</b> | <b>DISASSEMBLING COMPONENTS .....</b>   | <b>116</b> |
| 10.1      | DISASSEMBLING SUPPORT (ONLY FOR STAINLESS STEEL VERSION).....   | 116        |
| 10.2      | OPENING THE INDICATOR .....   | 117        |
| 10.2.1    | Plastic version.....  | 117        |
| 10.2.2    | Stainless steel version.....  | 118        |
| 10.2.3    | Steel rack version .....  | 119        |
| 10.3      | DISASSEMBLING FRONT PANEL AND DISPLAY .....   | 120        |
| 10.3.1    | Plastic version.....  | 120        |
| 10.3.2    | Stainless steel version.....  | 122        |
| 10.3.3    | Stainless steel panel-mounting version.....   | 124        |
| 10.4      | DISASSEMBLING THE INDICATOR POWER SUPPLY UNIT .....   | 125        |
| 10.4.1    | Stainless steel version with cable glands.....  | 125        |
| 10.4.2    | Stainless steel panel-mounting version.....   | 126        |
| 10.5      | DISASSEMBLING POWER SUPPLY UNIT FOR SCALE.....  | 127        |
| 10.5.1    | Plastic version.....  | 127        |
| 10.5.2    | Stainless steel version.....  | 128        |
| 10.5.3    | Panel-mounting version .....  | 129        |
| 10.6      | DISASSEMBLING LITHIUM BATTERY .....   | 130        |
| 10.6.1    | Plastic version.....  | 130        |
| 10.6.2    | Stainless steel version with connectors.....  | 131        |
| 10.6.3    | Stainless steel version with cable glands.....  | 132        |
| 10.6.4    | Panel-mounting version .....  | 133        |
| 10.7      | DISASSEMBLING WEIGHING CELL UNIT AND INDICATOR POWER SUPPLY UNIT (STAINLESS STEEL VERSION WITH CABLE GLANDS ONLY) ..... | 134        |
| 10.8      | DISASSEMBLING CPU MODULE.....   | 135        |
| 10.8.1    | Plastic version.....  | 135        |
| 10.8.2    | Stainless steel version with connectors/cable glands .....  | 136        |
| 10.8.3    | Wall-mounting version .....   | 137        |
| 10.9      | DISASSEMBLING DIGITAL SCALE INPUT .....   | 138        |
| 10.9.1    | Plastic version.....  | 138        |
| 10.9.2    | Stainless steel version with connectors .....   | 139        |
| 10.9.3    | Panel-mounting version .....  | 140        |
| 10.9.4    | Stainless steel version with cable glands.....  | 141        |
| 10.10     | DISASSEMBLING ANALOGUE SCALE INPUT.....   | 142        |
| 10.10.1   | Plastic version.....  | 142        |
| 10.10.2   | Stainless steel version with connectors .....   | 143        |
| 10.10.3   | Stainless steel version with cable glands.....  | 144        |
| 10.10.4   | Panel-mounting version .....  | 145        |
| 10.11     | DISASSEMBLING SERIAL EXPANSION BOARD .....  | 146        |
| 10.11.1   | Plastic version.....  | 146        |

|         |   |     |
|---------|---|-----|
| 10.11.2 | <i>Stainless steel version with connectors</i> .....        | 147 |
| 10.11.3 | <i>Stainless steel version with cable glands</i> .....      | 148 |
| 10.11.4 | <i>Panel-mounting version</i> .....                         | 149 |
| 10.12   | ASSEMBLING / DISASSEMBLING THE HDMI PORT .....              | 150 |
| 10.12.1 | <i>Plastic version</i> .....                                | 151 |
| 10.12.2 | <i>Stainless steel version with connectors</i> .....        | 152 |
| 10.13   | DISASSEMBLING MOTHERBOARD.....                              | 153 |
| 10.13.1 | <i>Plastic version</i> .....                                | 153 |
| 10.13.2 | <i>Stainless steel version with connectors</i> .....        | 154 |
| 10.13.3 | <i>Stainless steel version with cable glands</i> .....      | 155 |
| 10.13.4 | <i>Panel-mounting version</i> .....                         | 156 |
| 10.14   | CONNECTING PERIPHERAL DEVICES TO SERIAL AND USB PORTS ..... | 156 |

# 1 INTRODUCTION

## 1.1 Foreword

- The purpose of this manual is to inform the operator on the basic requirements and criteria for installation, correct and safe use of the weighing equipment and execution of a systematic maintenance through texts and figures
- Always keep this manual easily accessible! Always follow the instructions given!
- The safe operation of the equipment is entrusted to the operator, who should have detailed knowledge of it.
- It is the responsibility of the user to make sure that the installation complies with the current applicable provisions.
- The equipment must only be installed by specialised personnel who must have read and understood this manual.
- “Specialised personnel” means personnel who, as a result of training and professional experience, have been expressly authorised by the “Equipment Safety Manager” to install, use and maintain the equipment.
- For any anomaly detected, please contact your nearest Service Centre.
- Any attempt to disassemble, modify or tamper with the equipment by the user or unauthorised personnel is forbidden; in this case, the warranty is immediately void and the Manufacturer is not liable for any damage caused to persons or property.
- It is also forbidden to alter or delete the data on nameplates, closing and legalisation stamps of the indicator; therefore, make sure that all the plates are present and readable and, if not, contact the After Sales Service.
- The Manufacturer is not liable for any damage resulting from careless handling of the indicator.
- The information and illustrations below are updated to the date of issue shown on the first page of the manual.
- The Manufacturer is committed to the continuous optimisation of its products with possible modifications to parts or components of the purchased equipment or parts of the software.
- All technical information contained in this manual are the exclusive property of the Manufacturer and must be considered confidential.
- Reproduction and dissemination, even partial, of this manual on paper, IT support and WEB without the written authorisation of the Manufacturer is forbidden.
- It is also forbidden to use this manual for purposes other than those strictly related to the installation, use and maintenance of the indicator.
- In order to detail some aspects of the equipment with greater effectiveness and clarity, some illustrations may represent the equipment without guards. It is strictly forbidden to use the equipment without guards.

## 1.2 Documentation

The standard documentation supplied with the DD1010 FLYNET indicator consists of:

- **QUICK START**  
This is a multilingual document, printed on paper, which contains brief instructions for immediate use, as well as the declaration of conformity and the main danger warnings.
- **USE, MAINTENANCE AND INSTALLATION MANUAL**  
Multilingual, PDF file, available in printed version on request.
- **APPLICATION MANUAL AND PARAMETERS**  
Multilingual, PDF file available in printed version on request.

Any additional copies of the equipment documentation can be requested from the After Sales Service of our Sales and Service network.

## 1.3 Symbols

Below are the symbols used in the manual to draw the attention of the reader to the different levels of danger in the “Use and Maintenance” operations of the instrument.



### **DANGER**

*Information or procedure which, if not carefully performed, results in death or serious personal injury.*



### **ATTENTION**

*Information or procedure which, if not carefully performed, may result in minor personal injury or damage to the instrument.*



### **WARNING**

*Information or procedure to advise the operator on the optimal use of the equipment for a longer life, avoid damage or loss of programming, optimise the work in compliance with metric standards.*



### **TECHNICAL SERVICE**

*The sections showing the following pictogram on the side are the exclusive competence of the qualified technician made available by the manufacturer to carry out complex operations in particular situations. The skills are mechanical and/or electrical and/or electronic and/or software, depending as the case may be.*



### **ATTENTION**

**IT IS STRICTLY FORBIDDEN TO CARRY OUT SUCH OPERATIONS WITHOUT THE APPROPRIATE AND ADEQUATE AUTHORISATION AS WELL AS SPECIFIC TRAINING! RISK OF INJURY TO PERSONNEL IN CHARGE OR DAMAGE TO THE PURCHASED EQUIPMENT!**



## 1.4 Glossary of terms used

The manual uses technical terminology or terminology with different meaning from the common one. The terms and abbreviations that may be used in the documentation provided are explained below.

**DANGER:** a potential source of injury or damage to health;

**DANGEROUS ZONE:** any zone inside and/or near the equipment where the presence of an exposed person poses a risk to the safety and health of that person;

**EXPOSED PERSON:** Any person who is wholly or partly in a dangerous zone;

**RISK:** a combination of the probability and severity of an injury or damage to health that may arise in a hazardous situation;

**GUARD:** component of the equipment used specifically to ensure protection by means of a physical barrier;

**PROTECTIVE DEVICE:** device (other than a guard) that reduces the risk, alone or associated with a guard;

**INTENDED USE:** the use of the equipment in accordance with the information provided in the instructions for use;

**MISUSE:** use the equipment in a different way from that indicated in the instructions for use, but which may result from easily predictable human behaviour;

**RESIDUAL DANGER:** a danger that could not be eliminated or reduced by design, against which the protections are not (partially or totally) effective;

**WEIGHING INSTRUMENT:** a measuring instrument used to determine the mass of a body using the action of gravity on that body. A weighing instrument can also be used to determine other quantities, parameters or characteristics related to the mass;

**NON-AUTOMATIC WEIGHING INSTRUMENT OR INSTRUMENT:** a weighing instrument that requires the intervention of an operator during weighing;

**MEASURING INSTRUMENT:** any device or equipment or system (the term may be used as a synonym in this manual) with measurement functions as defined by the MID Directive (2014/32/EU).

**LEGAL METROLOGICAL CONTROLS:** controls for reasons of public interest, public health, public safety, public order, protection of the environment, levying of taxes and duties and fair trading, intended to verify that a measuring instrument is capable of performing its intended function.

**AUTOMATIC WEIGHING INSTRUMENTS:** Automatic weighing instruments defined below, whose purpose is to determine the mass of a body using the action of gravity acting on that body.

**AUTOMATIC WEIGHING INSTRUMENT:** An instrument which determines the mass of a product without the intervention of an operator and which follows a predefined programme of automatic processes characteristic of this instrument.

**AUTOMATIC CATCHWEIGHER:** An automatic weighing instrument that determines the mass of pre-assembled discrete loads (for example prepackages) or single loads of loose material.

**AUTOMATIC CHECKWEIGHER:** Automatic catchweigher that subdivides articles of different mass into two or more subgroups according to the value of the difference of their mass and a nominal set-point.

**WEIGHT LABELLER:** Automatic catchweigher that labels individual articles with the weight value.

**WEIGH/PRICE LABELLER:** Automatic catchweigher that labels individual articles with the weight value, and price information.

**O.I.M.L.** – International Organization of Legal Metrology OIML RXX requirement  
Where XX is used to specify the requirement according to the category of measuring instruments

**OIML R76-1 and OIML R76-2:** (NAWI) Non-automatic weighing instruments.

**PERSONAL PROTECTIVE EQUIPMENT (PPE):** Personal protective equipment means any equipment intended to be worn and/or used by the worker for the purpose of protecting him/her against one or more risks that could endanger safety or health at work, and any element or accessory intended for this purpose.

The following is not personal protective equipment:

- Ordinary occupational clothing and uniforms not specifically designed to protect the safety and health of the worker;
- The equipment of emergency and rescue services;
- Personal protective equipment of armed forces, police forces and service personnel for maintaining law and order;
- Personal protective equipment specific to road transport vehicles;
- Sporting materials;
- Materials for self-defence or deterrence.

Portable devices to identify and report risks and harmful factors.

**USER:** The user (businessman/company) is considered to be the person using the equipment for its intended use or entrusting its use to competent and specifically trained persons.

**ADVANCED QUALIFIED TECHNICIAN:** This term refers to a technician who has specific skills in the metrology field (with reference to the provisions of metrology directives 2014/31/EU and 2014/32/EU and related metrology terminology), who can read wiring diagrams and technical documentation of the equipment and who has good electrical knowledge in order to adjust electrical parts and electrical systems for maintenance, repair, calibration and replacement. He/she can operate in the presence of voltage inside control boxes, junction boxes, control equipment etc. only if he/she is a suitable person (see EN50110-1 and EN 50110-2).



**DANGER**

*It is the responsibility of the purchaser to make sure that he/she has all necessary information before carrying out the installation, adjustment and operation of the equipment purchased.*

## 1.5 Description of the indicator

The DD1010 FLYNET indicator allows performing highly accurate and reliable weighing operations.

- Designed for industrial applications.
- Supplied as standard with metrological weighing management software.
- Body in ABS and stainless steel; available both in tabletop and wall mounting version.
- Simple and immediate use with the 5.7" touch screen colour display.
- Flexible and customizable functions and graphic layout.
- Equipped with a powerful relational SQL data base for the management of weighing data.
- Advanced connectivity and network communication.
- Programming and customisation from PC via network.

## 1.6 Key

The following manual refers to operations available in different models defined at the time of purchase. Below is the terminology used in this manual.

**PLASTIC VERSION:** applies only to the plastic version.

**STAINLESS STEEL VERSION WITH CONNECTORS:** applies only to the stainless steel version with connectors.

**STAINLESS STEEL VERSION WITH CABLE GLANDS:** applies only to the stainless steel version with cable glands.

**STAINLESS STEEL VERSION:** applies to the stainless steel version with connectors and cable glands.

**PANEL-MOUNTING VERSION:** applies to the panel-mounting version

If nothing is specified, it means present in all models.

## 1.7 Technical characteristics of the indicator

### Power supply

|                     |  |
|---------------------|--|
| Direct              | 12 Vdc/3 A (Min 11 V - Max 15 V)   |
| Via network adapter | L+N+R<br>110 - 240 Vac (-15% ... +10%)<br>1.8 A<br>50 - 60 Hz<br>60W Max |
| Ground socket       | Equipotential for weighbridge  |

### Scales

|                    |  |
|--------------------|--|
| Total              | 1/2<br>(or 1 analogue, or 1 digital, or 2 analogue or 2 digital) |
| Repeater operation |  |

### Analogue scale

|                                     |   |
|-------------------------------------|---|
| Connectable cells                   | Up to 12 x 350 ohm analogue cells per scale |
| Minimum impedance                   | 29 ohm per scale                            |
| Load cell power supply              | 4.5-5 Vdc                                   |
| Internal resolution                 | 1000000 points at 10 Hz                     |
| Resolution in type-approved version | 1 range of 6000                             |
| Maximum input signal                | 35 mV                                       |
| Sensitivity                         | 0.6 $\mu$ V/division                        |
| Full scale stability                | < 5 ppm/°C                                  |
| Zero stability                      | < 5 ppm/°C                                  |

### Digital scale

|                                     |   |
|-------------------------------------|---|
| Connectable cells                   | Up to a scale with 16 digital cells or two scales with 8 digital cells each |
| Load cell power supply              | 8 to 15 Vdc   |
| Internal resolution                 | 200000 points @ 25 conv/s   |
| Resolution in type-approved version | 1 range of 6000   |

### Environmental characteristics

|                               |  |
|-------------------------------|--|
| Compensated temperature range | -10 to + 40 °C   |
| Operating range               | -10 to + 40 °C   |
| Maximum humidity              | 85% @ 40 °C  |
| IP protection rating          | Plastic version and stainless steel version with connectors: direct outputs IP 20 and front IP 65.<br>Stainless steel version with cable glands IP 69K |

### User interface

|          |                      |
|----------|----------------------|
| Video    | 5.7" LED TFT display |
| Keyboard | Touch screen         |

**Communication ports**

|                  |  |
|------------------|--|
| USB Type A       | 4 (+1 internal)  |
| Serial ports     | 2 x RS232 (COM4 /COM6)<br>Or<br>1xRS232 + 1xRS422 (COM4/COM7)<br>Or<br>2xRS232 + 1xRS422 (with optional bifid cable)<br>1xRS232 (COM8 option)<br>1xRS232/RS422 (COM9 option) |
| Ethernet 10/100  | 1  |
| Inputs - Outputs | 2+2  |

**Expansions**

|                           |                        |
|---------------------------|------------------------|
| Slots for optional boards | 2 + dual serial option |
|---------------------------|------------------------|

## 1.8 Declaration of conformity

The declaration of conformity is available in the QUICK START manual to which you can refer for details.

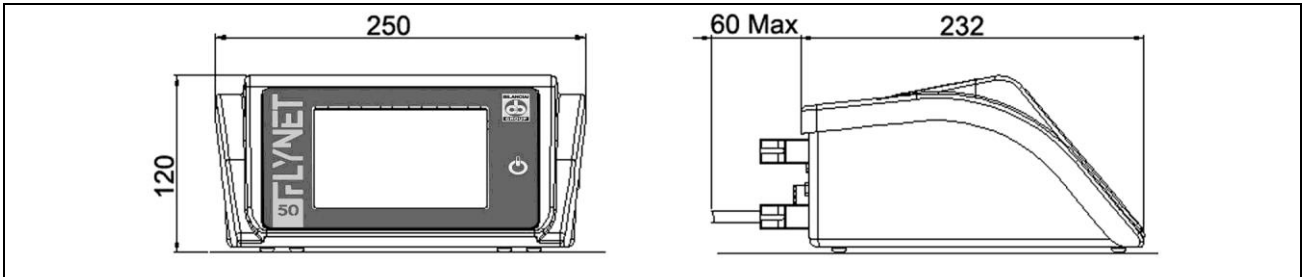
## 1.9 Indicator overall dimensions and weight

### 1.9.1 Plastic version



#### **WARNING**

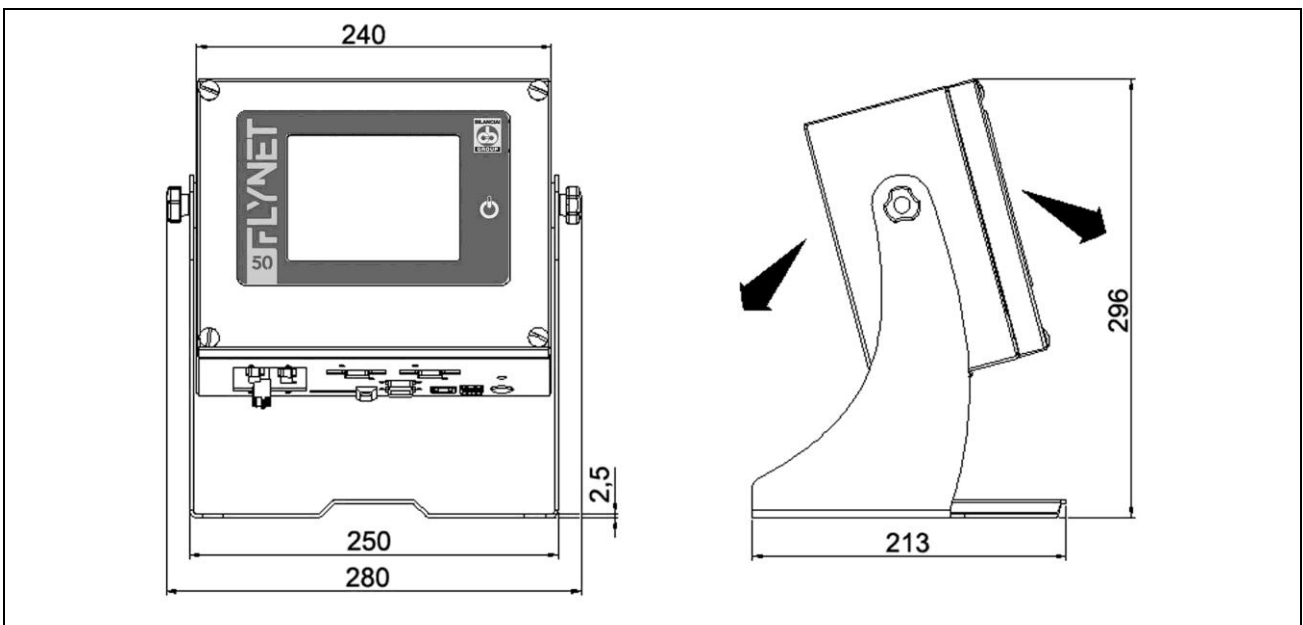
*The plastic version, whether it is placed on a table or mounted on a wall, is the same. Only the indicator direction changes.*



**Figure 1.7-1 - Weighing indicator dimensions, plastic version**

- Dimensions (in mm): see Figure 1.1.
- Weight: 2 kg

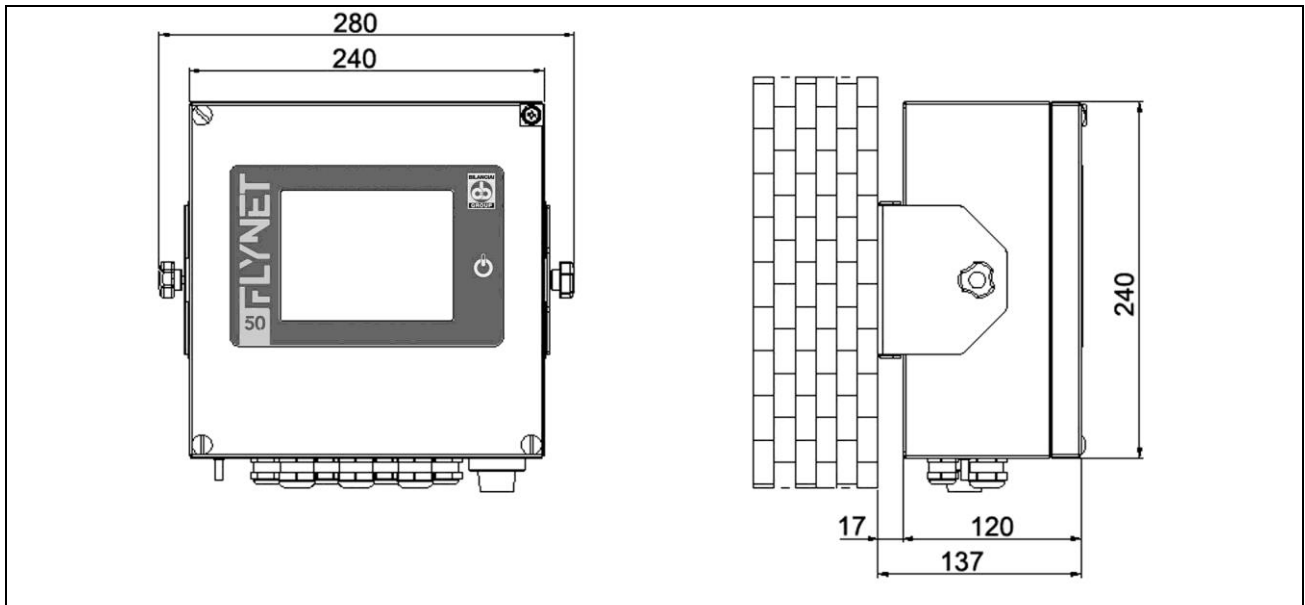
### 1.9.2 Tabletop stainless steel version



**Figure 1.7-2 - Weighing indicator dimensions, tabletop stainless steel version**

- Dimensions (in mm): see Figure 1.2.
- Weight: 5 kg

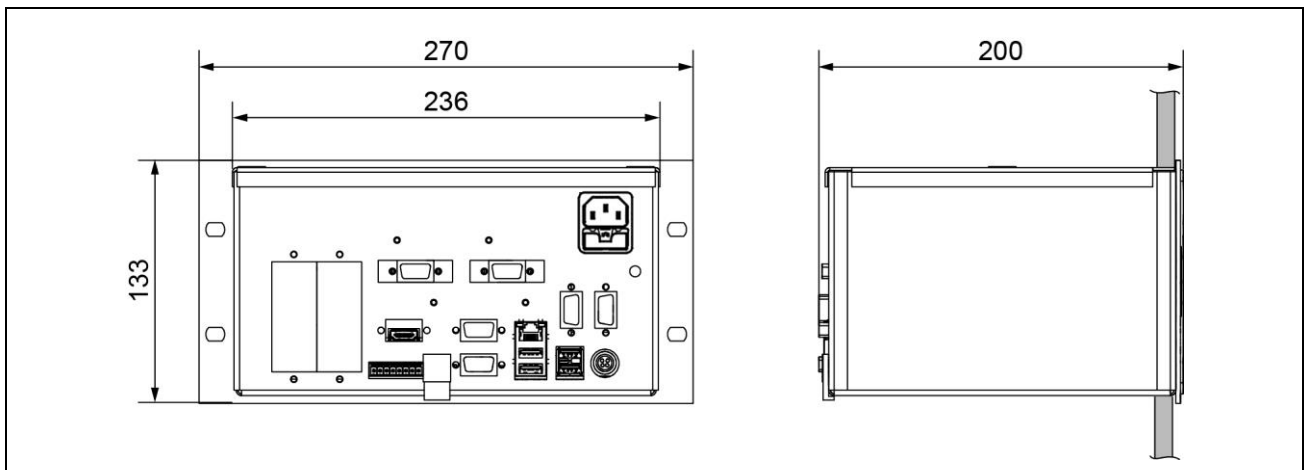
### 1.9.3 Wall-mounted stainless steel version



**Figure 1.7-3 - Weighing indicator dimensions, wall-mounted stainless steel version**

- Dimensions (in mm): see Figure 1.3.
- Weight: 5 kg

### 1.9.4 Stainless steel panel-mounting version



**Figure 1.7-4 - Weighing indicator dimensions, stainless steel panel-mounting version**

- Dimensions (in mm): see Figure 1.3.
- Weight: 3.5 kg

## 1.10 Instructions for disposal of electrical or electronic waste



This symbol on the weighing instrument purchased indicates that:

- This electrical or electronic equipment cannot be disposed of as solid urban waste.
- Separate collection is required.
- It can be returned to the distributor when purchasing new equipment.
- Improper use or disposal of such equipment may cause pollution to the environment or endanger human health.
- Failure to comply with the above indications is subject to sanctions according to the regulations in force.

In particular:

- Outer casing and mechanical components are made of plastic and/or metallic materials.
- The casing contains printed circuit boards with electronic components.
- The electrical connections are made with insulated copper conductors.



### **ATTENTION**

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

## 1.11 Instructions for technical service request

Any request for information or service intervention at the customer's premises or clarification regarding the technical aspects of the equipment or of this document must be addressed to:

### **SOCIETÀ COOPERATIVA BILANCIAI**

Headquarters and factory:

Via S.Ferrari, 16

41011 CAMPOGALLIANO (MO) ITALY

Tel. +39 059/893611 - Fax. +39 059/527079

[www.coopbilanciai.it](http://www.coopbilanciai.it)

[info@coopbilanciai.it](mailto:info@coopbilanciai.it)

In case of malfunctions or faults for which the intervention of specialised technicians is required, please contact the nearest service centre (<http://www.coopbilanciai.it/it/home/rete-vendita-e-assistenza> by selecting your country) or directly the manufacturer.

In particular, the customer must provide the manufacturer with the following data:

- type of equipment - model, identification number, year of manufacture;
- serial number of the instrument available on the stamped label;
- characteristics of the system on which the equipment is installed;



- maximum capacity "Max=" and metrology division "e="
- shortcomings detected
- exact address of the site/factory where the equipment is installed
- contact person.

## 1.12 Warranty

In the construction of the equipment/indicator, the manufacturer has used materials whose type and quality are considered to be suitable in its unquestionable judgement.

Even after commissioning, the manufacturer may make modifications considered to be an improvement in its unquestionable judgement.

The manufacturer guarantees the equipment as free from defects in material or workmanship for the period specified in the contract with the purchaser/customer.

During this period, the manufacturer undertakes to eliminate the evident defects and/or shortcomings detected by the buyer/customer within the necessary time. Defective components, excluding parts subject to wear, will be replaced free of charge during the warranty period, without prejudice to travel and shipping expenses.

Finally, transport, inspection, disassembly and reassembly costs due to the intervention of a manufacturer technician or its delegate are excluded from the warranty if the defects and/or shortcomings detected are not covered by this warranty.

This warranty is only applied to the purchaser in compliance with the contractual rules, and if the installation and use of the equipment is carried out by the purchaser in accordance with the instructions contained in this manual.

The manufacturer will not be liable for faults or malfunctions if maintenance deficiencies, lack of cleaning, replacement with non-original or unauthorised parts and use of the equipment in a manner different from that indicated in this instruction manual are found. Furthermore, this warranty does not cover any parts replaced or repaired and all parts that are subject to wear due to their specific use.

Any further obligation and/or compensation and/or indemnity by the manufacturer is expressly excluded.

The warranty excludes any and all liability for direct or indirect damage to persons and property resulting from incorrect or incomplete installation, incorrect use and inadequate maintenance of the equipment. Partial or total non-compliance with the legal requirements in force in the country of use.

The warranty excludes any and all liability for damage due to lack of production or incorrect metrological evaluation.

Returns of goods will not be accepted unless authorised by the manufacturer and carriage paid.

The full terms of the warranty are set out in the sales contract to which reference is made for full details.

The warranty is subject to the following conditions:

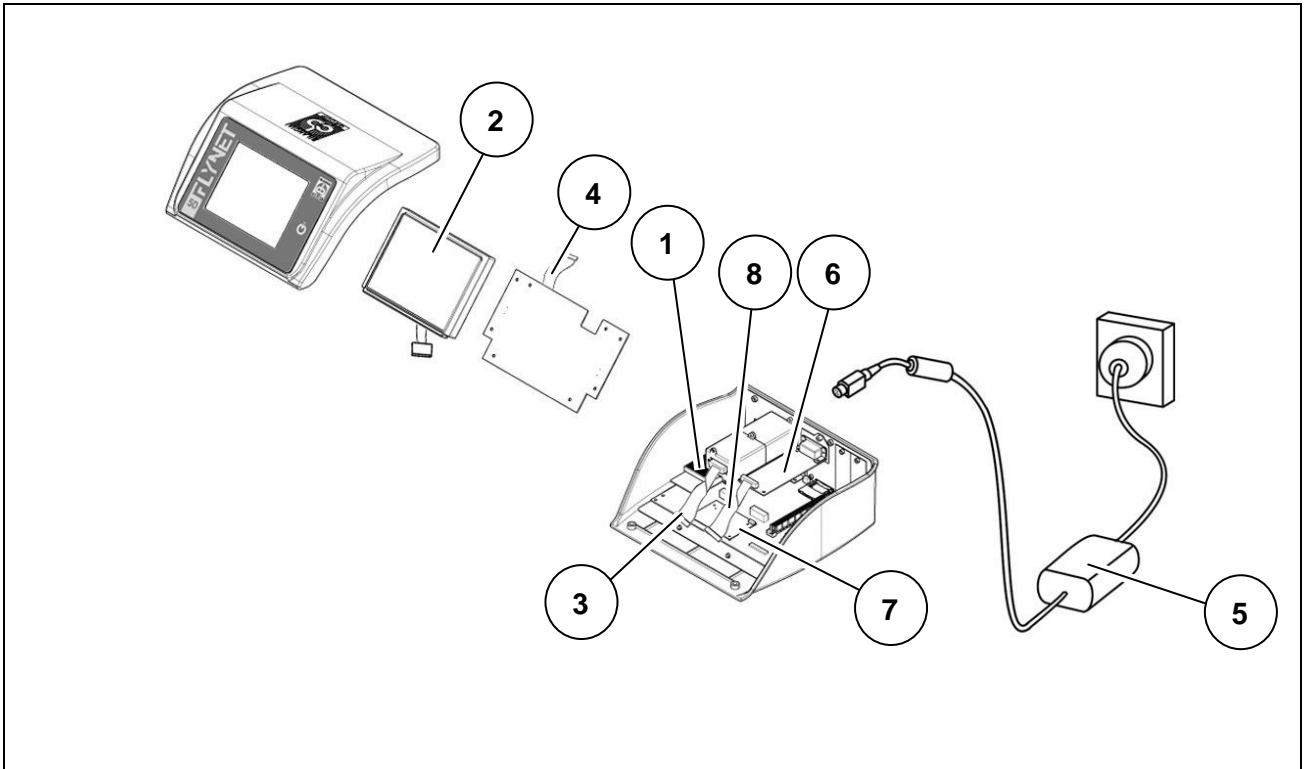
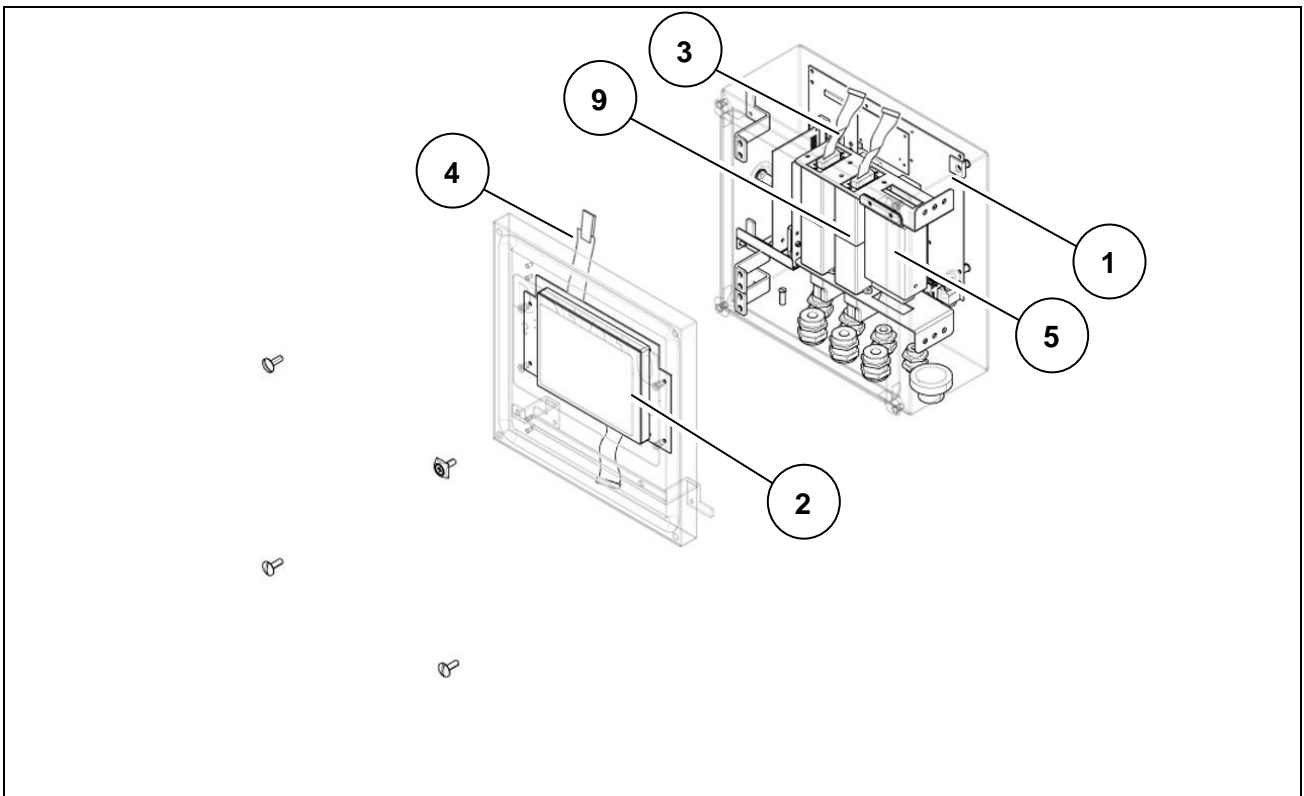
- the equipment must be used according to the limits stated in the "Technical Data" section of this manual;
- the equipment must be used according to the instructions contained in this manual;
- maintenance must be carried out according to the times and methods provided for in the manual, using original spare parts and entrusting the work to qualified personnel.

Warranty clauses are specified in the sales contract to which reference is made. Warranty clauses are specified in the sales contract.

### 1.13 Spare parts

| FIG.              | REF. | CODE     | DESCRIPTION   |
|-------------------|------|----------|---|
| 1.11-1            | 1    | 404602   | POWER SUPPLY UNIT BOARD DC-DC 9-18, +15V FOR DIGITAL SCALE  |
| 1.11-2            | 1    | 405841   | DD1010 FLYNET MOTHERBOARD FOR COLIBRI T20 CORE  |
| 1.11-1/<br>1.11-2 | 2    | 404991   | DD1010 FLYNET 5.7" SIZE LCD SUPPORT BOARD   |
| 1.11-1            | 3    | 47180119 | MOTHER BOARD-"DIADE" SERIES ANALOGUE/DIGITAL CONVERTER CONNECTION   |
| 1.11-2            | 3    | 47180230 | CONN. MOTHER BOARD-ANALOGUE/DIGITAL CONVERTER DD1010 FLYNET STAINLESS STEEL VERSION CABLE GLAND L=20 CM   |
| 1.11-1            | 4    | 54830002 | FLAT ZIF FPC 40 PIN PITCH 0.5MM TOP-TOP CONTACTS A TYPE L=15 CM   |
| 1.11-2            | 4    | 54830006 | FLAT ZIF FPC 40 PIN PITCH 0.5MM TOP-TOP CONTACTS A TYPE L=35 CM<br>DD1010 FLYNET STAINLESS STEEL VERSION CABLE GLANDS AND DIRECT OUTPUTS.         |
| 1.11-1            | 5    | 52050019 | SWITCHING POWER SUPPLY UNIT 100-240VAC/12VDC OUTPUT 12VDC/60WATT, IEC SOCKET, 2-FERRITE CABLE AND CUSTOMISED POWERDIN 4-POLE OUTPUT CONNECTOR     |
| 1.11-2            | 5    | 52050034 | SWITCHING POWER SUPPLY UNIT 88-264VAC/12VDC IOUT=2.1A 25W, INSULATED INPUT/OUTPUT TERMINALS<br>DD1010 FLYNET STAINLESS STEEL VERSION CABLE GLANDS |
| 1.11-1            | 6    | 404701   | DIGITAL CONV. BOARD FOR "DIADE" SERIES DIGITAL CELLS  |
| 1.11-1            | 7    | 57130086 | BOARD CORE COLIBRI T20 512MB  |
| 1.11-1            | 8    | 47180129 | MOTHER BOARD-"DIADE" SERIES DIGITAL CELL INTERFACE CONNECTION   |
| 1.11-2            | 9    | 46050253 | SIGMA-DELTA A/D CONV.UNIT COMPLETE WITH ZAMAK CASING FOR ANALOGUE CELL  |

For other spare parts not listed, please refer to the Service Department.

**Figure 1.11-1 – Plastic indicator spare parts****Figure 1.11-2 - Stainless steel indicator spare parts**

## 2 SAFETY REQUIREMENTS

### 2.1 Not allowed uses

The equipment purchased is a metrological instrument intended for non-automatic weighing and as such has been designed and manufactured. The primary use for which it is intended is the weighing of goods.

- It is forbidden to use the indicator without the necessary precautions for safe use.
- It is forbidden to use the indicator in places with a potentially explosive atmosphere or in places where fire hazard exists.
- It is forbidden to use the indicator outside the environmental, electrical and metrological conditions prescribed and indicated in this manual.
- Misuse of the indicator or use with functions other than those for which it was manufactured is prohibited.
- Use is forbidden if it has not been correctly and completely installed in the site or place for which it is intended.
- Use is forbidden in case of non-compliance with power supply technical specifications.

Uses other than the one for which it has been designed and manufactured relating to non-automatic weighing within the limits set by the manufacturer represent a misuse and are prohibited, unless formally authorised by the Manufacturer.

### 2.2 Regulations

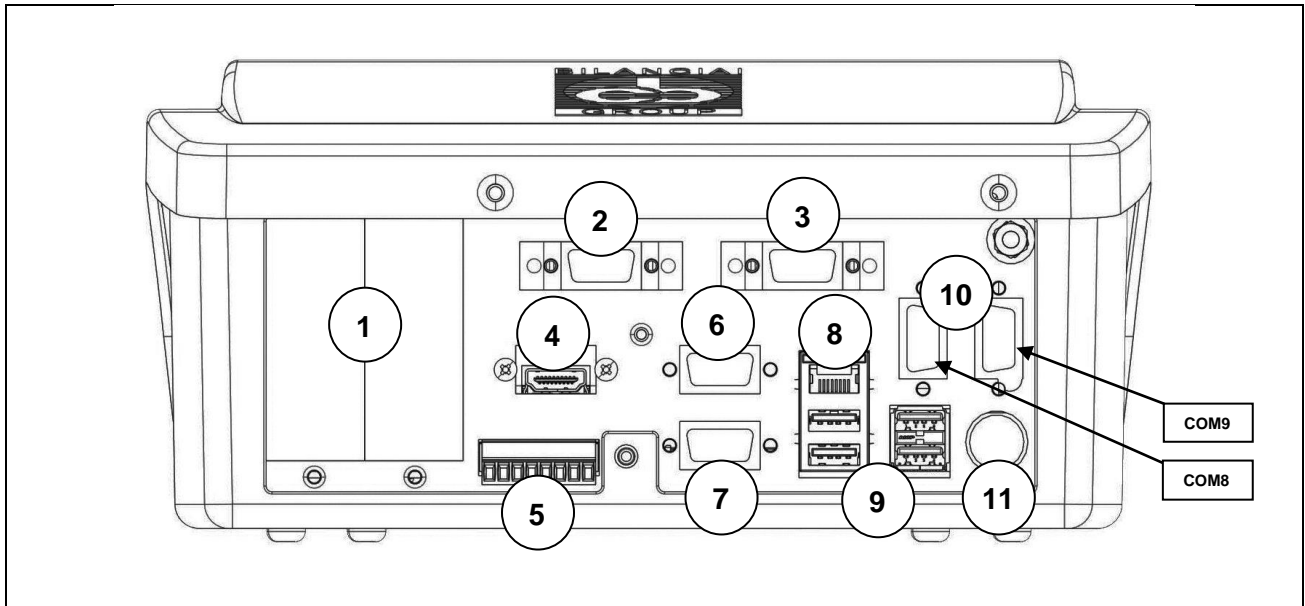
The conditions of use of the electronic indicator for weighing instruments are governed by the regulations in force in the country of use.

Use under conditions that do not comply with these regulations is prohibited.

### 2.3 Conditions of use

- Carefully follow this manual during use.
- If you find any discrepancies between the contents of this manual and the equipment in your possession, contact your Retailer or the After-Sales Service of the Manufacturer for clarification.
- Strictly respect the indications on the warning and danger plates on the indicator.
- Make sure that the indicator is complete with all the protections it has been provided for (cover and protection devices) as shown in the technical drawings in the manual; before use and on a regular basis, check also the integrity of the cables and their proper connection.
- Make sure that the indicator is always connected to a power socket equipped with an effective ground pin, checking that this line complies with the regulations in force in the country of use. Make sure there is no difference in potential between ground and neutral.
- If the indicator must be connected to other devices such as computers or other equipment, disconnect them from the power supply before making the connections.
- Any maintenance and/or repair work must only be carried out by authorised personnel.
- Before carrying out any maintenance work, always disconnect the indicator from the power supply and wait a few minutes before accessing its internal components.

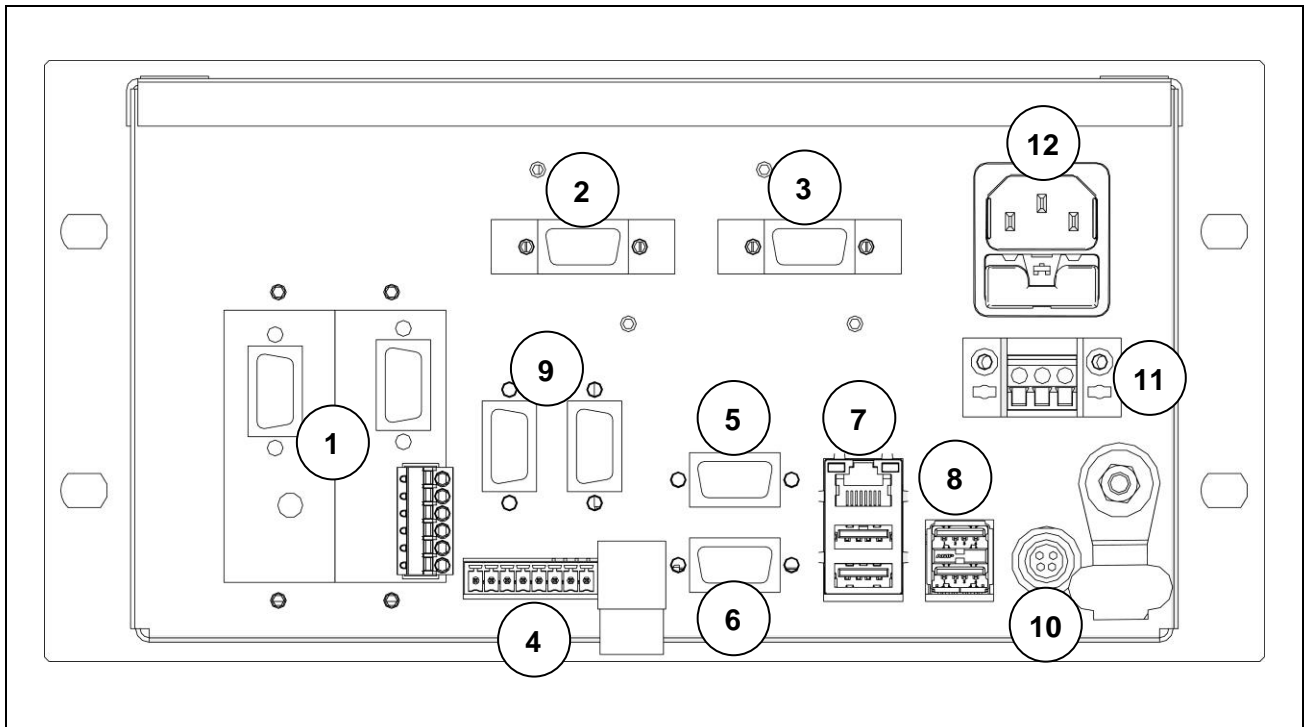
### 3 DELIVERY AND INSTALLATION



**Figure 3-1 - ABS indicator bottom**

**Key:**

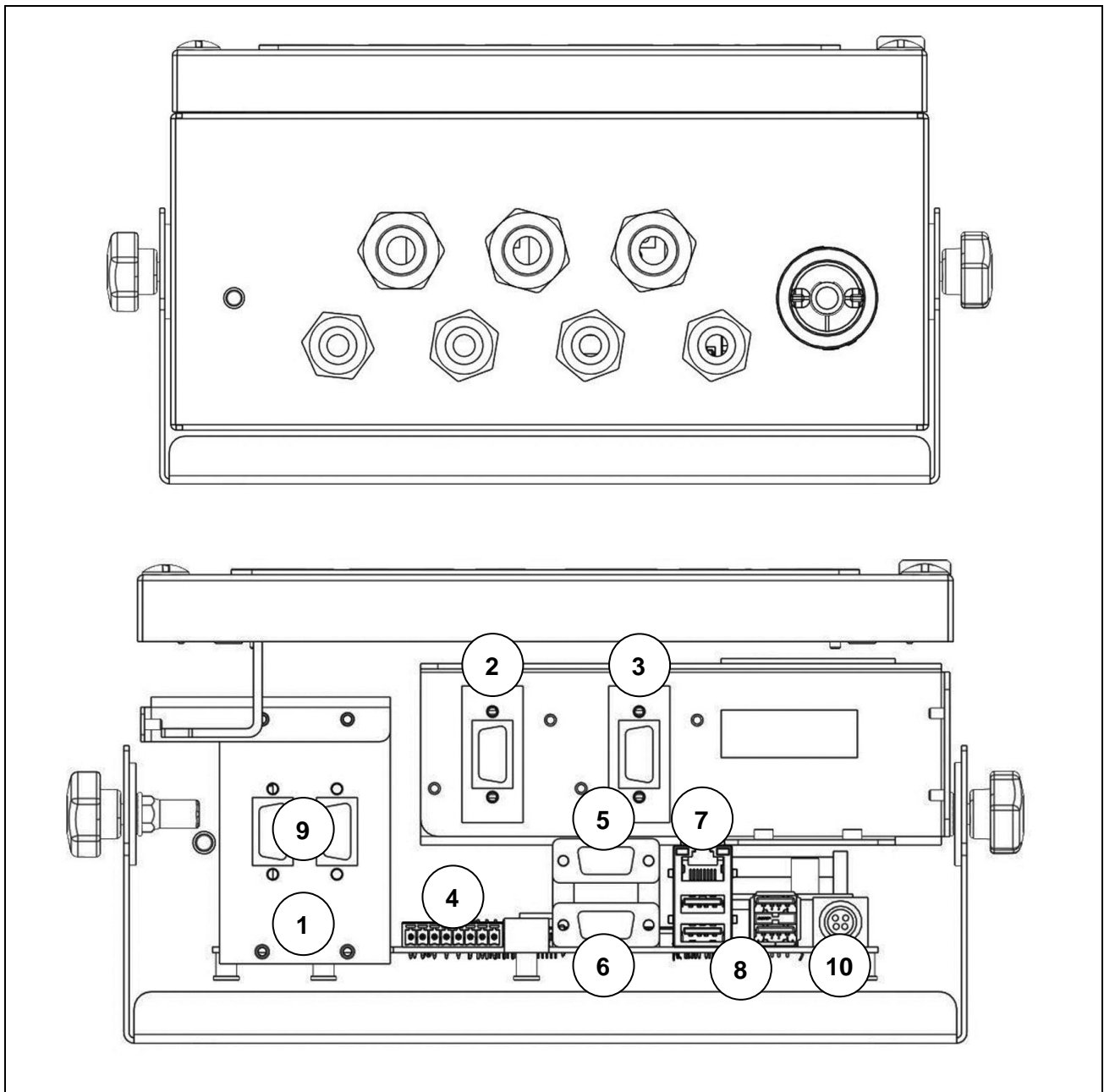
1. Slots for optional boards
2. Scale 1
3. Scale 2
4. HDMI port (optional)
5. I/O port
6. COM4 port
7. COM6/ 7 port
8. Ethernet port 10/100 Mb/s
9. USB HOST ports
10. Serial board expansion (COM8/9 option)
11. 12 V power supply (through external power supply unit)



**Figure 3-2 - Indicator bottom with connectors, panel-mounting version**

**Key:**

1. Slots for optional boards
2. Scale 1
3. Scale 2
4. I/O port
5. COM4 port
6. COM6/ 7 port
7. Ethernet port 10/100 Mb/s
8. USB HOST ports
9. Serial board expansion (COM8/9 option)
10. 12 V power supply (through external power supply unit)
11. 12V power supply connector
12. 230Vac input panel plug



**Figure 3-3 - Indicator bottom with cable glands**

**Key:**

1. Slots for optional boards
2. Scale 1
3. Scale 2
4. I/O port
5. COM4 port
6. COM6/ 7 port
7. Ethernet port 10/100 Mb/s
8. USB HOST ports
9. Serial board expansion (COM8/9 option)
10. 12 V power supply (through external power supply unit)

## 3.1 Installation



### **ATTENTION**

*This indicator must be installed indoors, protected from the weather, as it is not designed to withstand the elements.*

### 3.1.1 Tabletop installation

Place the indicator on a fixed surface (table or desk without wheels) so that the monitor is not hit by direct light to avoid reflections, making sure that it is stable and well supported on the non-slip feet.

## 3.2 Connecting the indicator to the mains

### 3.2.1 Checks



### **DANGER**

*Check that:*

- *The power supply line of the indicator has voltage and frequency as indicated on the warning plate on the power supply unit.*
- *The socket to which the indicator is connected is provided with grounding pin.*
- *Warning and danger plates are present on the hood of the instrument.*
- *If this is not the case, inform the maintenance personnel or our Service Department directly.*

*The plug of the power cable has an IP20 protection rating, provide a connection to the mains adequately protected according to environmental conditions.*



### **WARNING**

*The indicator complies with the European directive on electromagnetic compatibility, however it is good practice to provide a separate power supply from power drives.*



### **WARNING**

*Do not place power cables next to the connection cables of the indicator that could cause disturbance to the operation of the instrument. Use the supplied cable to connect to the indicator. If the cable is short, do not extend it with joints, but contact the Manufacturer.*



### **DANGER**

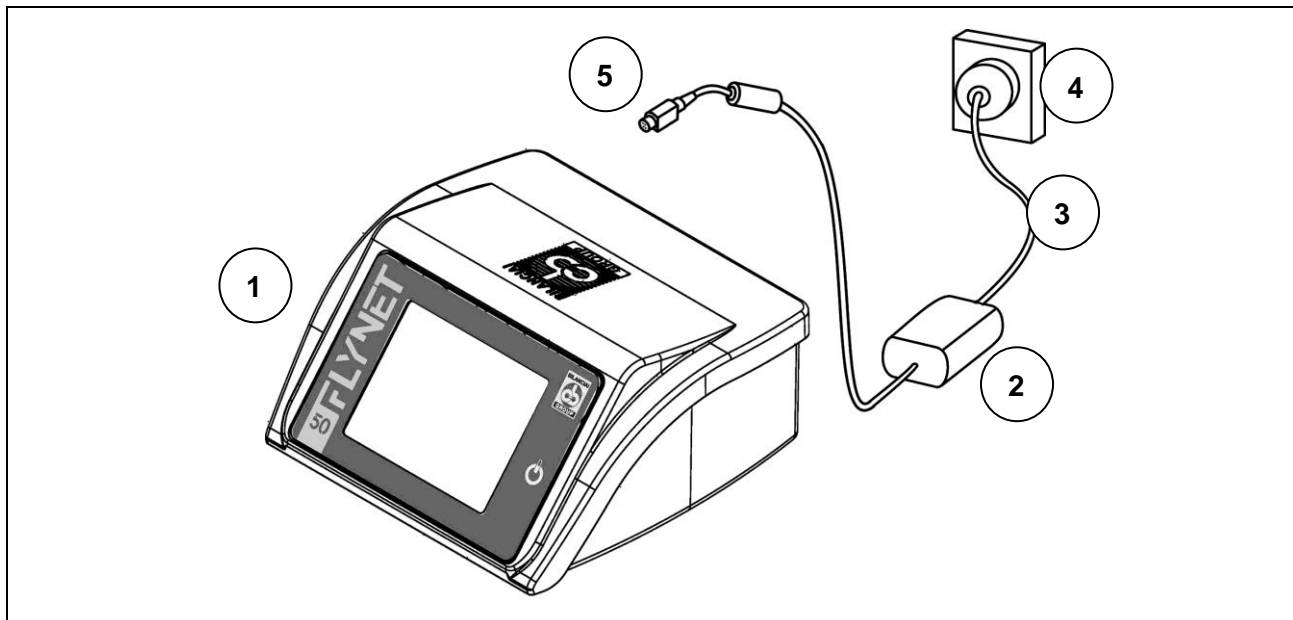
*Insert the plugs and switch the indicator on only after making all the other connections to any peripheral devices (scale, printer, serial ports, Ethernet, I/O, etc.).*



### 3.2.2 Wiring diagram (version with connectors)

For the correct connection of the indicator to the mains, proceed as follows:

- Connect the indicator to the power supply unit;
- Connect the power supply unit to the correct socket using the proper cable.



**Figure 3.2-1 - Connecting the indicator to the mains**

**Key:**

1. Weight display indicator.
2. Power supply unit.
3. Power supply unit cable.
4. Mains socket.
5. 12VDC power plug.

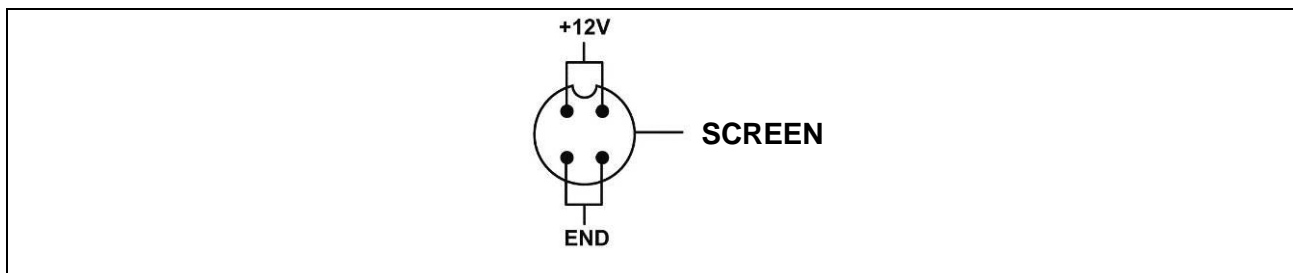
**Power supply cable**

The power supply cable is generally supplied with IEC 320 socket and 10 A Italian plug (L+N+G). It can be supplied with SCHUKO plug on request.

**12V direct current power supply**

The D1010 weighing indicator can also be powered from a direct current source with 12V rated voltage.

- Power can come from either a lead-acid battery or a stabilised power supply unit.
- The source must be able to deliver 4A.
- An external disconnect switch must be provided.



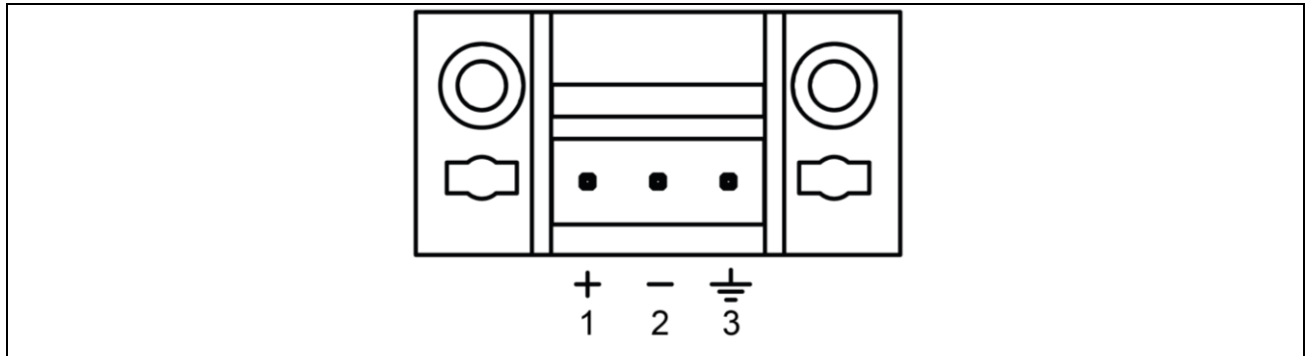
**Figure 3.2-2 - Power supply socket view**



**WARNING**

*The sizing and laying of the power cable and the external disconnect switch are the responsibility of the customer.*

For Panel-mounting version only, a terminal board for connection to 12V power supply is available. Follow the diagram for proper connection. **Connect one 12V power supply.**



**Figure 3.2-3 - 12V power supply connector view, panel-mounting version**

### 3.2.3 Wiring diagram (version with cable glands)

Connection to the power supply line is the responsibility of the installer. The customer must install the protective conductor and the power supply cable through specialised personnel.

#### Protective ground connection

Connect the system protective ground to the indicator with a yellow-green cable of at least 6mm<sup>2</sup>. Use the ground screw located under the indicator.

The equipotential conductor from the scale must also be connected to the same grounding point.

Lay a three-pin cable with a cross-section suitable for the type of system. For the choice of the cable, refer to the technical power supply characteristics.

Also provide a disconnect switch upstream of the supply line. The disconnect switch must be accessible during system maintenance operations.

Essential characteristics of the power supply cable:

- Double insulation cable with 3 coloured inner conductors (line=brown, neutral=blue, protective ground=yellow-green)
- Inner conductors with cross-section from 1.5mm<sup>2</sup> to 2.5mm<sup>2</sup>
- External sheath diameter from 5 to 10mm

#### Key

1. L = Line, brown conductor
2. N = Neutral, blue conductor
3. T = Protective ground, yellow-green conductor



**Figure 3.2-4 – Terminal board view**

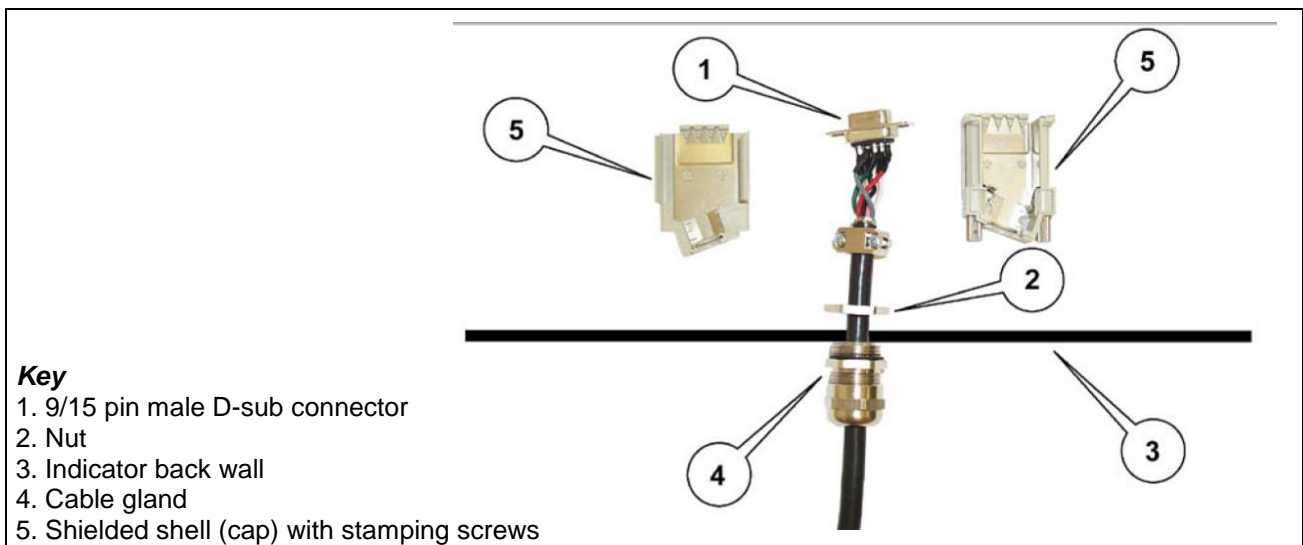
**DANGER**

Check that:

- The power supply line of the indicator has voltage and frequency as indicated on the stamped plate on the indicator bottom;
- The socket to which the indicator is connected is provided with grounding pin;
- Warning and danger plates are present on the hood of the instrument;
- If this is not the case, inform the maintenance personnel or our Service Department directly.

**Scale cable wiring**

A pre-wired cable is normally supplied for connecting the indicator to the weighing platform.



**Figure 3.2-5 - Load cell connection**

- Insert the 9/15 pin connector in the scale input hole
- Lock the cable gland with the nut.
- Refit the shell with the drilled stamping screws.
- Insert the connector on the bottom of the CPU housing.

The connection can be different depending on the type of cell that is fitted on the weighing platform: analogue or digital. In case of a duplex scale, connect scale A to connector JBIL1, and scale B to JBIL2.

**WARNING**

The cable shield must always be connected to the metal protection cap of the 9/15 pin connector. Do not insert the connection cable to the weighing platform into routes with cables directed to power drives.

### 3.3 Connecting the indicator to the weighing platform

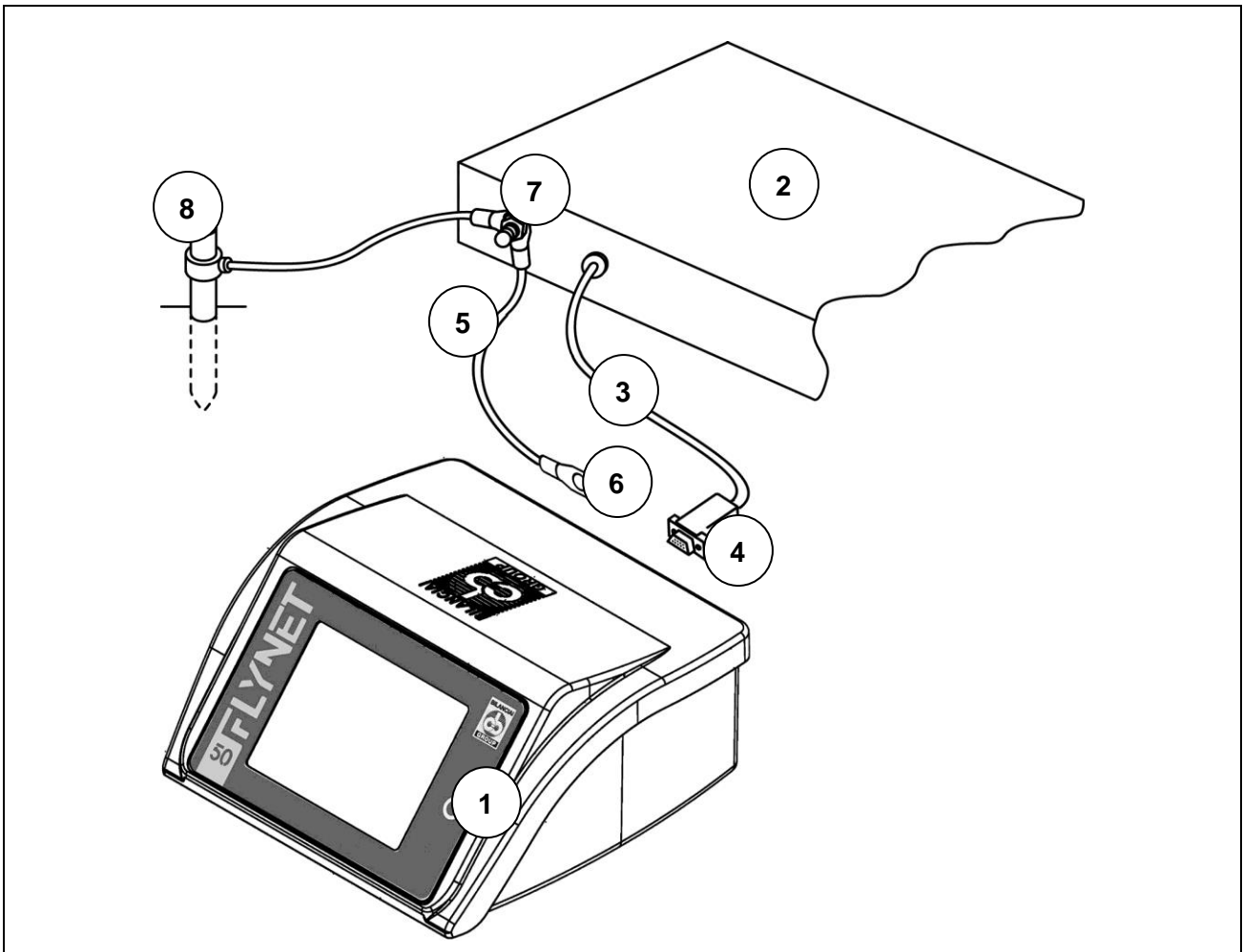
For the connection of the indicator to the weighing platform, a pre-wired cable is normally supplied whose female connector must be fully inserted into the 9/15 pin male connector (JBIL) located at the bottom of the indicator. The connection can be different depending on the type of transducer that is fitted on the weighing platform: analogue or digital.



**WARNING**

*The cable shield must always be connected to the metal protection cap of the 9/15 pin connector. Do not insert the connection cable to the weighing platform into routes with cables directed to power drives.*

### 3.3.1 Wiring diagram (with platform)



**Figure 3.3-1 - Connecting the indicator to the scale**

**Key:**

1. Weight display indicator.
2. Weighing platform or weighbridge.
3. Scale cable with 9/15 pin connector.
4. Scale input.
5. Equipotential cable with eyelet wire terminals.
6. Ground screw.
7. Ground screw on the platform.
8. Ground poles (for weighbridge only).

### 3.3.2 Equipotential between indicator and weighing platform

Check that there is equipotential between the metal parts of the indicator and the weighing platform. If in doubt, connect indicator and platform with a ground cable of at least 6mm<sup>2</sup>, using the ground screw on the bottom of the indicator.

The cables and accessories for this connection are not included in the supply but are the responsibility of the customer.

### 3.3.3 Digital Scale serial connection

15-pin female D-sub 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 do not connect

The connection to the digital cells is made with serial transmission type RS485 using a shielded 6-conductor cable.

The pins with the same signal can be connected in parallel.

### 3.3.4 Analogue Scale serial connection

9-pin male D-sub connector.

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

NC = Reserved do not connect

## 3.4 Serial connections

### 3.4.1 COM4 serial connection

9-pin female D-sub connector.

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | NC          |
| 2   | RX232       |
| 3   | TX232       |
| 4   | NC          |
| 5   | GND         |
| 6   | NC          |
| 7   | RTS         |
| 8   | CTS         |
| 9   | 5 V         |

NC = Reserved do not connect

### 3.4.2 COM6/7 serial connection (option)

9-pin female D-sub connector.

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | RX422 -     |
| 2   | RX 232      |
| 3   | TX 232      |
| 4   | NC          |
| 5   | GND         |
| 6   | RX422 +     |
| 7   | TX422 -     |
| 8   | TERMINATOR  |
| 9   | TX422 +     |

NC = Reserved do not connect



#### **WARNING**

*On this D-sub connector there are two complete serial ports COM6 RS232 and COM7 RS422.*

### 3.4.3 COM8/9 serial connection (option)

9-pin female D-sub connector.

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | RX422 -     |
| 2   | RX 232      |
| 3   | TX 232      |
| 4   | NC          |
| 5   | GND         |
| 6   | RX422 +     |
| 7   | TX422 -     |
| 8   | TERMINATOR  |
| 9   | TX422 +     |

NC = Reserved do not connect

**WARNING**

*On this D-sub connector there are two complete serial ports COM8 RS232 and COM9 RS232/RS422.*



#### 3.4.4 RS232 connections

**ATTENTION**

*Maximum use conditions provided for by standard RS232:*

*Maximum transmission distance: 15 m*

*Maximum voltage at the ends:  $\pm 12$  Vdc*

*For connection to external devices, it is recommended to use a shielded cable paying attention to connect the shield to the metal part of the 9-pin connector shell.*

#### 3.4.5 RS422 connections

- Create the jumper between pin 6 and pin 8 to connect the termination resistance.

**ATTENTION**

*Maximum use conditions provided for by standard RS422:*

*Maximum transmission distance: 1200 m*

*Maximum voltage at the ends:  $\pm 7$  V*

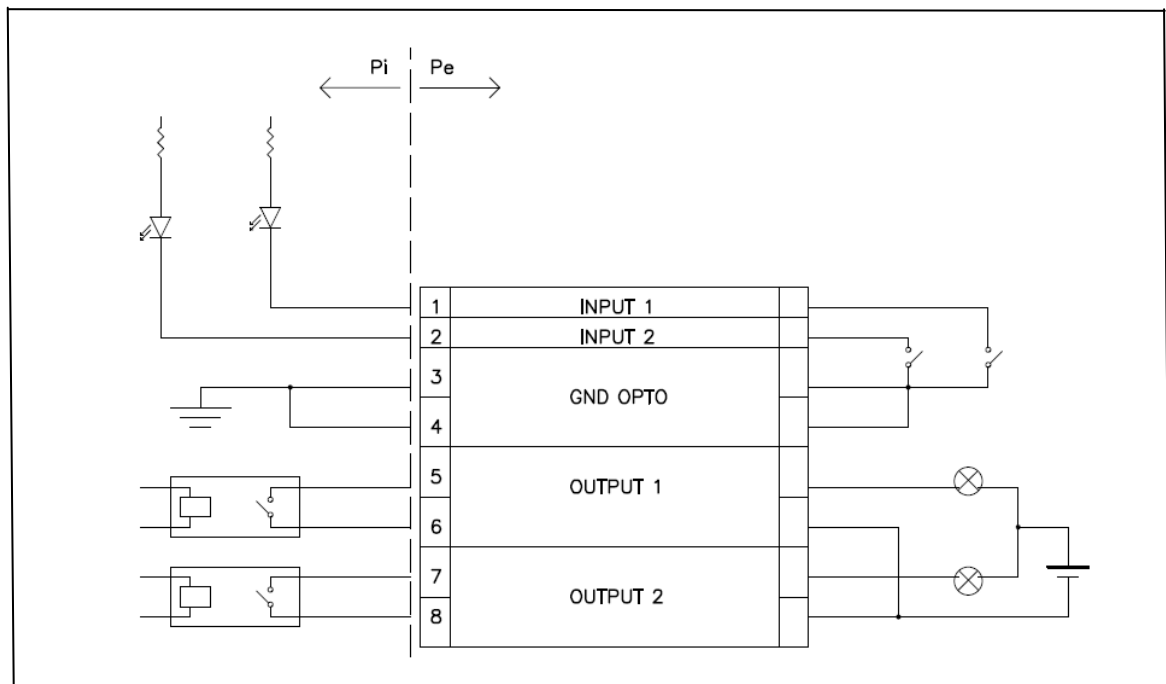
*For connection to external devices, it is recommended to use a twisted pair shielded cable paying attention to connect the shield to the metal part of the 9-pin connector shell.*

### 3.5 Input/Output connection

Input/output contacts are available on the JI/O terminal board at the rear of the indicator



**Figure 3.5.1 – Terminal board pinout**



**Figure 3.5.2 - JI/O terminal board connection diagram for Input/Output connection**

### 3.5.1 Input connection

**ATTENTION**

*Electrical characteristics*

*Input: maximum voltage  $\leq 5$  Vdc*

*maximum current  $\leq 5$  mA*

*The inputs can be controlled through dry contacts or through NPN transistors (common negative).*

### 3.5.2 Output connection

**ATTENTION**

*Electrical characteristics*

*Output: switching voltage  $\leq 24$  V (AC/DC)*

*switching current  $\leq 190$  mA (AC/DC)*

*solid state contact (RELAY).*

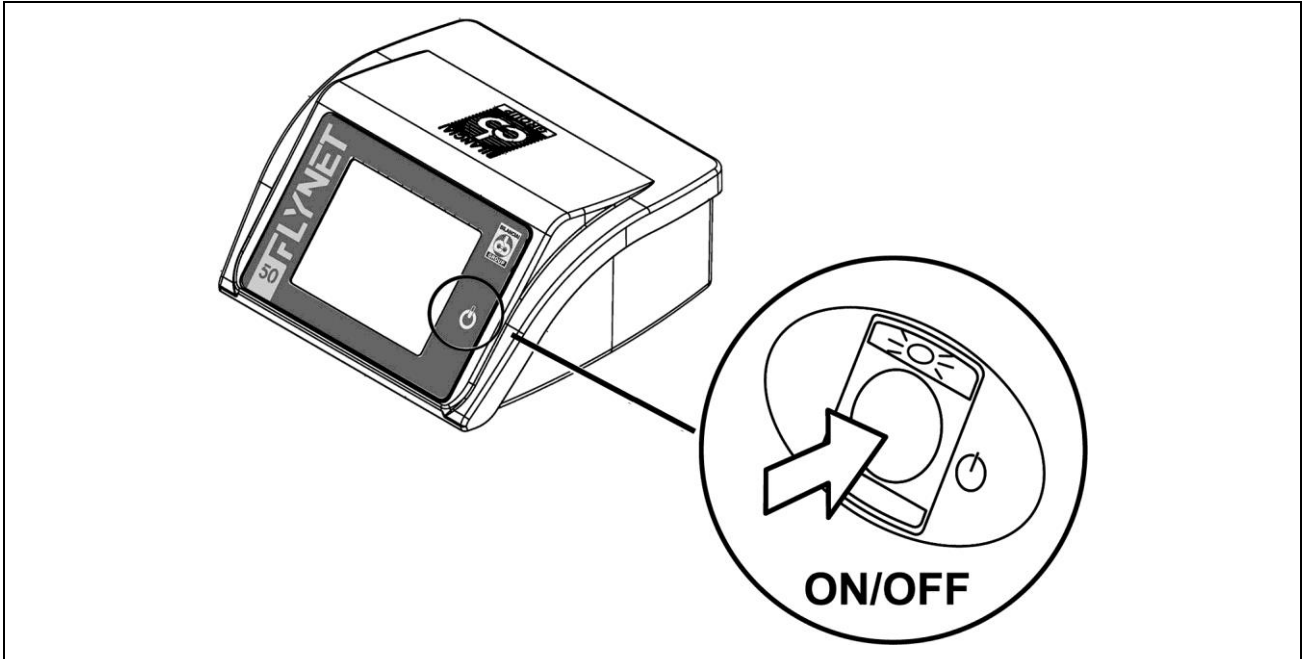
**DANGER**

*When the weighing equipment is part of complex systems that may pose a danger to the safety of the operators involved in the operation of the equipment, carry out several no-load operations assisted by specialised personnel in order to acquire the necessary skills to operate safely*

## 4 CONTROLS, SWITCHING ON AND OFF

### 4.1 On/Off key

To switch on the correctly powered indicator (connected to the mains through the power supply unit), press the key on the front part.



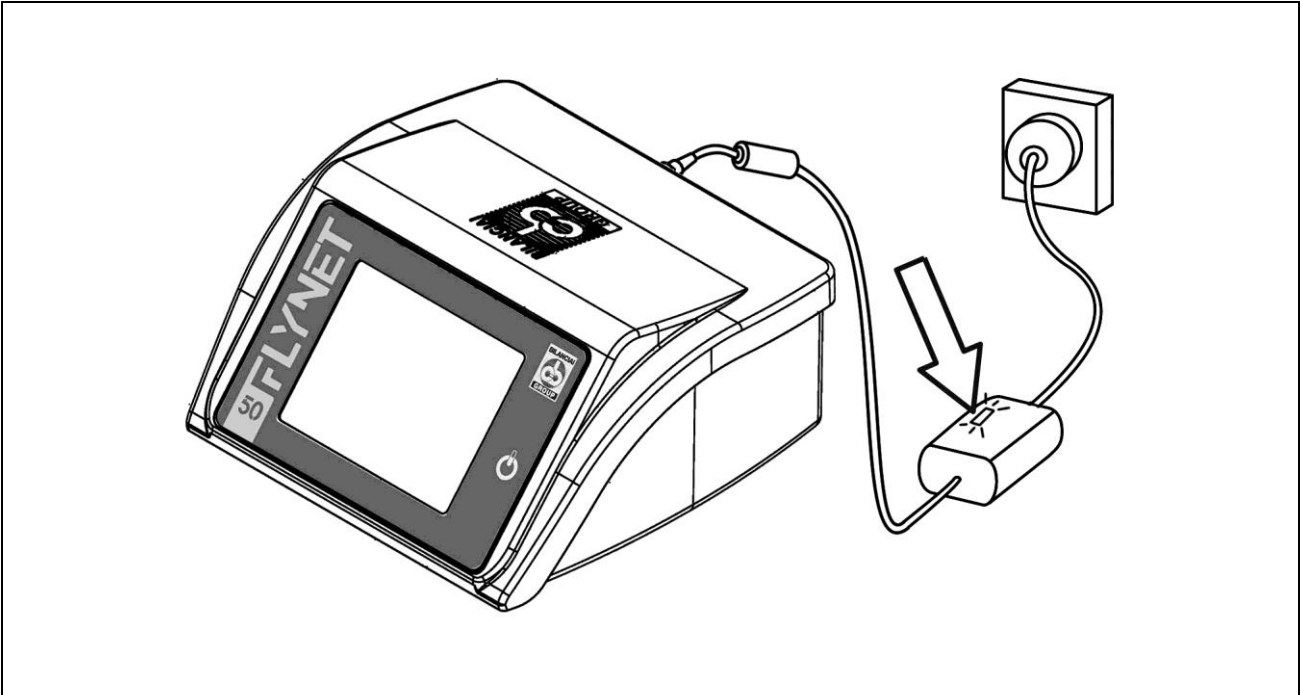
**Figure 4.1-1 – Switching on**

A progress bar on the display with messages indicates the start phase.

Press again the key, the LED and the display switch off.

In this situation the indicator interrupts its functions; in any case the indicator is powered but with almost zero consumption.

This status is indicated by the green LED that switches on on the power supply unit.



**Figure 4.1-2 - Green LED on the power supply unit**

To switch the system completely off, pull the plug out of the power outlet

## 4.2 Touch screen

The commands are sent to the indicator via the TOUCH SCREEN.

## 4.3 External keyboard and mouse

It is possible to connect a mouse and keyboard to the USB ports as control devices.  
The indicator recognizes common USB mice and USB keyboards with plug & play system.

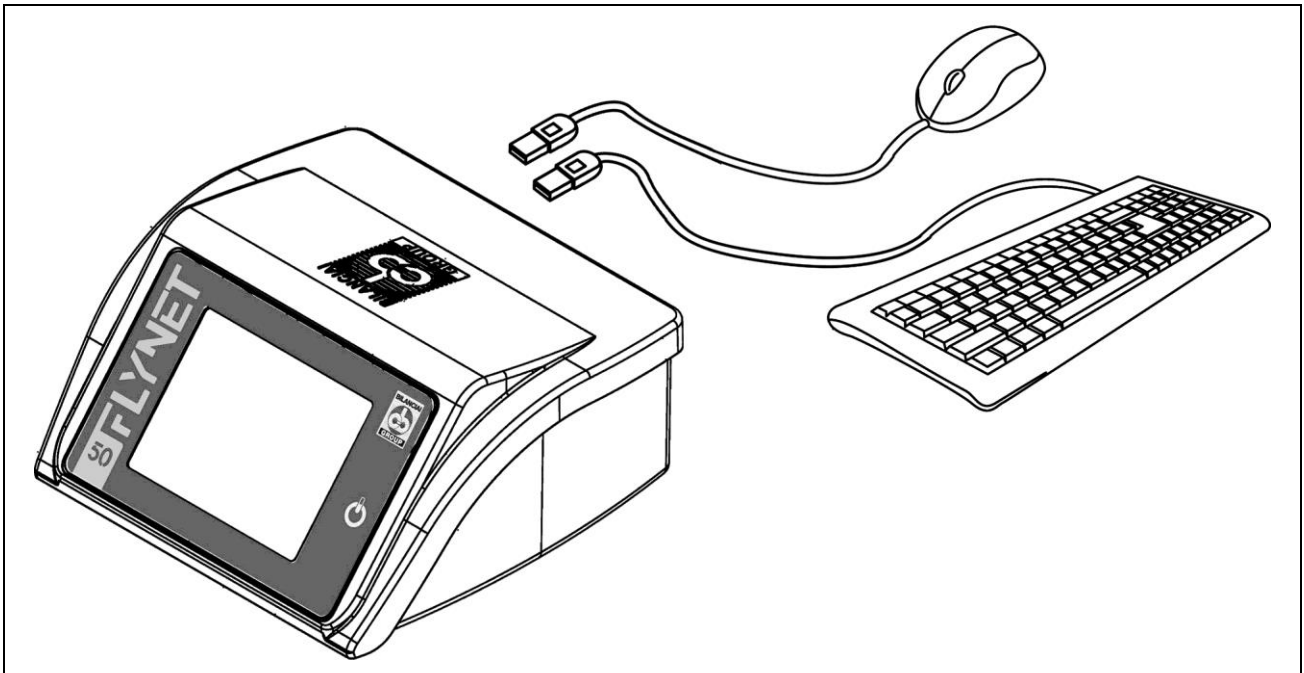


Figure 4.3-1 - USB 2.0 Socket

## 5 USING THE INDICATOR

Refer to the application manual and parameter manual.

### 5.1 Indicator configuration

It allows setting the parameters for hardware components and system services.

These parameters are divided into functional groups. To access each group, simply press on the desired icon.

|   |                     |  |
|---|---------------------|--|
| 1 | Application         | Configuration: Archives, Others, Inputs and Outputs  |
| 2 | System              | Configuration: Metrology Configuration, Axle Weighing, Serial Ports, Printers/Readers/IOs, Error Notification, Access Levels, Buzzer, Date/Time, Device Log and Email. |
| 3 | Cards               | Card type configuration (Cb, Neutral, Tax Code and Coded Tax Code), controls, automatic printing and timeout.  |
| 4 | PDF-Network printer | Configuration: Network printer and PDF printer.  |
| 5 | Transmission        | Configuration: Mpp transmission, Network transmission, Serial transmission, Indicator number, Fieldbus transmission  |
| 6 | Printed data string | Configuration: transmission via network, transmission via serial port, general   |
| 7 | Analogue output     | Configuration: analogue output   |

#### 5.1.1 Application

Within this menu it is possible, depending on the application installed, to set the operation of the weighing indicator. Each software has different operation archives, depending on their configuration it is possible to customise the device.

To know the various levels of customisation, refer to the manual of the installed software.

## 5.2 System

|     |                                     |   |
|-----|-------------------------------------|---|
| 2.1 | Metrology management                | Stamping, metrology information, parameters and scale sampling                                      |
| 2.2 | Serial ports                        | COM configuration (serial ports)  |
| 2.3 | Printers / Readers / Inputs Outputs | Axis management (when service active), System memory, setting printers, readers, inputs and outputs |
| 2.4 | Error notification / Device log     | System error management   |
| 2.5 | Access level                        | Access passwords allow limiting setting and/or deletion operations.                                 |
| 2.6 | Buzzer                              | Enable/disable Buzzer   |
| 2.7 | Date and time                       | Setting date and time   |
| 2.8 | Email                               | Allows configuring the Email service  |

### 5.2.1 Metrology Management

Press the “Metrology Management” key to display the page containing the following settings:

|       |                              |  |
|-------|------------------------------|--|
| 2.1.1 | Scale configuration          | Inserting, removing scale and customising parameters           |
| 2.1.2 | Stamping management          | Type of stamping   |
| 2.1.3 | Metrological Information     | Serial number, scale release, Plugin release and type-approval |
| 2.1.4 | System Information           | IP address, programme code, Patch programme, Bsp, Mac address. |
| 2.1.5 | Weight Display Configuration | Display and gross weight symbol/letter                         |
| 2.1.6 | Metrological Events Log      | Changes made to the metrological part are recorded.            |
| 2.1.7 | Scale Diagnostic Config.     | Setting diagnostic configuration parameters                    |
| 2.1.8 | Scale Diagnostics Log        | Scale error list   |

#### 5.2.1.1 Scale Configuration

Allows enabling and checking the scale parameters. The scales that can be selected using the add key are:

Internal, Serial, Network, EMULA S, EMULA A / EMULA D, Algebraic Sum and Configurable Sum.



### 5.2.1.1.1 Internal Scale

The internal scale is a Scale that uses the converter on board the indicator.

The type of scale is determined by the type of converter installed. When the internal scale is created, the programme checks the type of converter.

Select the internal scale to display eight buttons (if indicator approved) or ten buttons (if not approved). Access to sampling (sampling procedure) depends on the type of approval. Access to the calibration key is only possible if the self-adhesive label that seals the calibration switch access hole is removed.

To create an Internal Scale click the "ADD" key and select Internal Scale:

#### CHARACTERISTIC PARAMETERS

|                     |  |
|---------------------|--|
| Minimum weighing    | Compliance with the maximum tolerated error is only assured above this weight setting.                       |
| Capacity            | This is the maximum weight value that can be loaded on the scale or full scale of the instrument.            |
| Division            | This is the scale resolution expressed in the selected unit of measurement.                                  |
| Unit of measurement | kg, g, t, lb,oz and tn   |
| Legal scale         | Indicates whether the scale is intended to be used for legal purposes (e.g. commercial transactions) or not. |
| Regulations         | EURO, OIML, NTEP (indicates the selected standard)   |

#### SPECIFIC PARAMETERS

|                  |  |
|------------------|--|
| Reading time     | This is the reading time of the internal scale board, it is expressed in hundredths of a second.   |
| Conversion speed | It is active for both analogue and digital scale. In case of digital scale it refers to the cell reading speed per second (number of readings/second). |
| Number of cells  | This is the number of cells present in the system; this parameter is present only when the cells are digital.  |

#### TARE

|                |  |   |
|----------------|--|---|
| Tare Device    | Activated  | It is possible both to set the tare through acquisition of the weight on the scale or by entering a tare value directly from the keyboard |
|                | Self-weighing only   | It is only possible to set the tare through acquisition of the weight on the scale; tare values may not be entered from the keyboard.     |
|                | Preset only  | Tare values may be set from the keyboard only, not by acquisition of the weight on the scale  |
|                | Deactivated  | Tares may not be set either through acquisition of the weight on the scale or by entering a tare value directly from the keypad.          |
| Multiple Tares | No   | "No" indicates no additional tares.   |
|                | 1.2  | Indicates the number of additional tares relative to the acquired tare and the tare entered from the keypad.                              |
| Tare lock      | It defines the management mode of the tare when unloading the scale. |   |

|  |     |  |
|--|-----|--|
|  | OFF | Any tares set or acquired are automatically deleted when the scale returns to zero, i.e. gross weight = 0  |
|  | ON  | Any tares set or acquired remain stored even when the scale has no load and therefore the gross weight = 0 |

**ZERO**

|                 |   |  |
|-----------------|---|--|
| Forced zero (e) | 0   | Defines the division range (e) around zero within which forced zero setting will be performed on scale unloading or in the presence of a stable weight. "Scale unloading" refers to the moment when the weight falls below the minimum weighing value. On indicators subject to metrical verification, this parameter must be set to 0 (zero). |
|                 | 0.25  |  |
|                 | 0.5   |  |
|                 | 1   |  |
|                 | 2   |  |
|                 | 3   |  |
| Zero track (e)  | 0   | Defines the division range around zero within which zero tracking is performed to small gradual variations in the weight reading.<br><br>Example: snow, dust, water falling on the scale.<br>For dosing systems, set the value to 0 (zero)<br>When zero track is disabled, even forced zero is automatically disabled.                         |
|                 | 0.25  |  |
|                 | 0.5   |  |
|                 | 1   |  |
|                 | 2   |  |
|                 | 3   |  |
| Initial reset   | Defines the indicator operating mode upon switching on. |  |
|                 | Sampled zero  | Upon switching on, the instrument indicates the weight value present on the scale compared to the zero value programmed at the time of sampling.   |
|                 | Auto-zero   | Upon switching on, the indicator performs the auto-zero. In case of a legal instrument, the auto-zero occurs in a range between -5% and +15% of the full scale value around the calibrated zero. In case of a non-legal instrument this range varies from -50% to +50%.  |
|                 | Memorised Zero  | The terminal internally stores the last value of zero weight, obtained by means of any device reset: manual, automatic, zero track, forced zero.<br>Next time you turn the value of zero is restored   |
|                 | Mem.Zero+ Autozero                                      | It adds to a previous variant of the ignition; after having applied the zero stored, if the weight is within the minimum weighing is performed a self resetting, if the weight is above the reset is not altered<br>The authorities of zeroing devices remains unchanged and is always zero based sampling.                                    |
| Automatic Zero  | ON  | The indicator resets the weight if a negative weight reading remains stable for 5 seconds  |

|  |     |  |
|--|-----|--|
|  | OFF |  |
|--|-----|--|

**STABILITY**

|                               |  |  |  |
|-------------------------------|--|--|--|
| Number of Stability Divisions | 0  | Allows setting the number of divisions by which the weight may vary while the weight stable signal is maintained. On indicators subject to metrical verification, this parameter must be set to 0 (zero) or 1.   |  |
|                               | 1  |  |  |
|                               | 2  |  |  |
|                               | 4  |  |  |
| Stability Signal              | Very fast (5 e)  | Speed at which the stable weight signal is displayed. Indicates how many equal consecutive readings are necessary to obtain the stable weight signal. These consecutive readings may vary according to the number of divisions indicated in the previous field. This parameter is also related to the setting of the digital filter parameter. |  |
|                               | Fast (10 e)  |  |  |
|                               | Slow (20 e)  |  |  |
|                               | Very slow (40 e)   |  |  |
| Digital Filter                | Allows adding or not a digital filter. It actually enables the addition or not of a software processing for filtering the output values from the analogue/digital converter. The higher the number, the greater the filtering. |  |  |
|                               | No, 4, 8, 16, 32, 64, 128, Filter 2hz, Filter 2hz+ average, Filter 5hz+ average, Filter 5hz and ADVANCED.  | Selectable parameters, 4 additional parameters are available by setting “ADVANCED”.  |  |
|                               | ADVANCED   | Number of values per Average   | Size of averaged values table                  |
|                               |  | Number of fields per average skip  | Value to determine when to delete the average. |
|                               |  | FIR Filter   | no, 2Hz/60db, 5Hz/60db, 2Hz/100db              |
| High monotony filter          |  | Enables statistical processing on correct weight.<br>Do not use in case of dynamic weighing.   |  |

**SECONDARY PARAMETERS**

|                                 |                     |
|---------------------------------|---------------------|
| Capacity (Secondary)            | Capacity            |
| Range1 Capacity (Secondary)     | Range1 Capacity     |
| Range2 Capacity (Secondary)     | Range2 Capacity     |
| Division (Secondary)            | Division            |
| Unit of measurement (Secondary) | Unit of measurement |

**FIELDS**

|  |   |
|--|---|
| Fields   | <p>Defines the number of weighing ranges into which the nominal capacity of the instrument is divided.</p> <p>It is possible to select:</p> <ul style="list-style-type: none"> <li>• <b>1</b>: the indicator has a single weighing range for the entire range of the scale capacity.</li> <li>• <b>2MD</b>: the indicator has two weighing ranges with MULTI-DIVISION mode (1).</li> <li>• <b>2ME</b>: the indicator has two weighing ranges with MULTI-EXTENSION mode (2).</li> <li>• <b>3MD</b>: the indicator has three weighing ranges with MULTI-DIVISION mode.</li> <li>• <b>3ME</b>: the indicator has three weighing ranges with MULTI-EXTENSION mode.</li> </ul> |
| 1st range capacity                             | Value of the capacity corresponding to the first partial weighing range.  |
| 2nd range capacity                             | Value of the capacity corresponding to the second partial weighing range. (in case of 3 ME or 3 MD)   |
| W1 extension return delay (no. of conversions) | Number of samplings of delay on return to extension W1 for multi-extension scales.  |
| Manual range management                        | Enables the possibility of selecting the ranges manually (3).   |

**SAMPLING DATA**

In calibration/sampling data it is possible to view and/or edit the sampling data. The first column contains the real weight values and the second column contains the corresponding points.

|  |   |
|--|---|
| (Empty Scale) Zero                       | Empty scale   |
| (Maximum capacity) Full scale            | Capacity  |
| 1st weight/loading intermediate points   | Calibration of 1st ascending load of the linearised calibration.    |
| 2nd weight/loading intermediate points   | Calibration of 2nd ascending load of the linearised calibration.    |
| 2nd weight/unloading intermediate points | Calibration of 2nd descending load of the linearised calibration.   |
| 1st weight/unloading intermediate points | Calibration of 1st descending unload of the linearised calibration. |

**Note 1,2,3**

Multi-division/Multi-extension allows operating in several weighing ranges, each having its own resolution (division) and displaying the weight value by automatically selecting the resolution according to the range corresponding to the weight in question.

**Multi-division** = In case of Multi-division the scale has its reading range divided into 2 or 3 parts. Each part (range) has its own display sensitivity (division).

**Multi-extension** = Each range has its own scale reading sensitivity (division), which is always consecutive in the list of possible divisions in metrology.  
I.e. 1,2,5; if necessary multiplied or divided by 10 and multiples.  
In loading, the sensitivity (division) increases with the weight belonging to the range, in descending it remains hooked to the higher sensitivity that has been achieved.  
The lowest division is reactivated when the scale reaches Zero.

**Manual range management** = When enabled, there is a "MANUAL RANGES" shortcut key, which allows the user to select: automatic ranges, semi-automatic ranges, Range w1, Range w2 and Range w3.

By selecting the automatic ranges: the selected extension changes automatically when max1 and max2 thresholds are exceeded.

By selecting the semi-automatic ranges: it is possible to go to the higher extension without disabling automatic operation.

By selecting Range w1, Range w2, Range w3: it is possible to fix a weighing extension and disable automatic changeover.

**SAMPLING PROCEDURES**

|                 |   |
|-----------------|---|
| Zero Only       | <p>Zero sampling is necessary when the scale has already been calibrated and the zero value has moved when the unit switches on. This can happen when the preset tare is not known exactly at the moment of the first sampling, or when an unexpected weight is on the scale. No sample weight needs to be available.</p> <ul style="list-style-type: none"> <li>❖ Check that there are no weights or other materials on the scale</li> <li>❖ Check that the weight is stable</li> <li>❖ Press Sample</li> <li>❖ Wait a few seconds for data acquisition</li> <li>❖ Confirm if you want to accept the sampling or delete to refuse</li> </ul>   |
| Full Scale Zero | <p>To be used in linear weighing systems. One or several sample weights are required to sample the full scale value, or in any case a well known weight value (to perform the sampling use as much of known weight available to get as close as possible to the full scale value). It is possible to write the value of the known weight used inside the Capacity box</p> <ul style="list-style-type: none"> <li>❖ Check that there are no weights or other materials on the scale</li> <li>❖ Check that the weight is stable</li> <li>❖ Press Sample to sample the zero</li> <li>❖ Wait a few seconds</li> <li>❖ Change the "Capacity" field by entering the known weight or sample mass value you want to use to sample the scale</li> <li>❖ Place the known weight or sample mass on the scale and wait for the system to stabilise</li> <li>❖ Press the Sample button</li> <li>❖ Wait a few seconds for data acquisition</li> <li>❖ Confirm if you want to accept the sampling or delete to refuse</li> </ul> |
| Linearised 1 PT | <p>At least 2 sample or known weights are required for linearised sampling at one point, one for sampling the intermediate value and the other for sampling the full scale value.</p> <p>The sampling procedure is the same as that used by the full scale zero system, but in this case several points must be sampled.</p>  |
| Linearised 2 PT | <p>At least 3 sample or known weights are required for linearised sampling at two points, one for sampling the 1st intermediate value, the second for sampling the 2nd intermediate point and the 3rd for sampling the full scale value.</p> <p>The sampling procedure is the same as that used by the full scale zero system, but in this case several points must be sampled.</p>   |

**Hysteresis Linearisations**

To be used in systems with a hysteresis. Aside from sampling zero and the full scale value, it also samples different intermediate points for the ascent and descent of the Real weight/Measured weight curve.

|                      |   |
|----------------------|---|
| Hysteresis Linearis. | At least 2 sample weights are required for the hysteresis correction at 1 point, one for sampling the 1st intermediate point, and the other to add to the first for |
|----------------------|---|

|                                 |   |
|---------------------------------|---|
| 1 PT                            | <p>sampling the full scale value.</p> <p>Removing the weights in inverse order samples the descent.</p> <p>The sampling procedure is the same as that used by the full scale zero system, but in this case several points must be sampled.</p>  |
| Hysteresis<br>Linearis.<br>2 PT | <p>At least 3 sample weights are required for the hysteresis correction at two points, one for sampling the 1st intermediate point, the second to add to the 1st for sampling the 2nd intermediate point, the third to add to the first two for sampling the full scale value.</p> <p>Removing the weights in inverse order samples the descent.</p> <p>The sampling procedure is the same as that used by the full scale zero system, but in this case several points must be sampled.</p> |

|                         |   |                 |   |                     |   |                         |  |                   |                |
|-------------------------|---|-----------------|---|---------------------|---|-------------------------|--|-------------------|----------------|
| Inverse Sampling        | Inverse sampling can be useful in some cases when it is difficult to load and unload the known weight from the weighing device, for example in hoppers or batching systems.   |                 |   |                     |   |                         |  |                   |                |
| Correction              | It allows correcting the scale sampling, without re-sampling, knowing the error made at the maximum capacity; set the value you want to add with sign (e.g.: the weight excess is 200 kg, set -200).  |                 |   |                     |   |                         |  |                   |                |
| Estimated sampling      | <p>It allows calibrating the scale by entering characteristic data of the scale/cells. ATTENTION this is not a real calibration and the scale may not weigh correctly.</p> <table border="1"> <tr> <td>Number of cells</td><td>Number of cells</td></tr> <tr> <td>Capacity (kg)</td><td>Maximum Scale Capacity</td></tr> <tr> <td>Max. cell capacity (kg)</td><td>Nominal single cell capacity</td></tr> <tr> <td>Initial tare (kg)</td><td>Structure Tare</td></tr> </table>   | Number of cells | Number of cells   | Capacity (kg)       | Maximum Scale Capacity  | Max. cell capacity (kg) | Nominal single cell capacity   | Initial tare (kg) | Structure Tare |
| Number of cells         | Number of cells   |                 |   |                     |   |                         |  |                   |                |
| Capacity (kg)           | Maximum Scale Capacity  |                 |   |                     |   |                         |  |                   |                |
| Max. cell capacity (kg) | Nominal single cell capacity  |                 |   |                     |   |                         |  |                   |                |
| Initial tare (kg)       | Structure Tare  |                 |   |                     |   |                         |  |                   |                |
| Decentralised load      | <p>Better known as angle turn, it allows addressing and calculating the slope for every single cell through wizard. There are 2 methods to perform the angle turn:</p> <table border="1"> <tr> <td>Sort by side</td><td>The angle turn is performed first on the odd cell side and then on the even cell side</td></tr> <tr> <td>Sort by cell number</td><td>The angle turn is performed in numerical order from cell number 1 to the final cell</td></tr> <tr> <td>Procedure</td><td> <p>Unload the scale, only when the scale is unloaded press Sample;</p> <p>Select one of the 2 methods between sort by address or by side and sample to continue.</p> <p>Now check on the screen on which cell the weight is to be placed, place the weight on it (the minimum weight must be calculated in this way <math>\frac{\text{portata max pesa}}{(N^{\circ} \text{ celle} - 1)}</math>) and press Sample, wait a few seconds and proceed in the same way in the order shown by the indicator.</p> <p>At the end of the procedure the indicator prompts to continue by pressing the Calculate Coefficients button. Once the coefficients are shown on the display, it is possible to confirm and save or delete the procedure. If the coefficients are within the default ranges, the indicator shows a message indicating the correct angle calibration, otherwise</p> </td></tr> </table> | Sort by side    | The angle turn is performed first on the odd cell side and then on the even cell side | Sort by cell number | The angle turn is performed in numerical order from cell number 1 to the final cell | Procedure               | <p>Unload the scale, only when the scale is unloaded press Sample;</p> <p>Select one of the 2 methods between sort by address or by side and sample to continue.</p> <p>Now check on the screen on which cell the weight is to be placed, place the weight on it (the minimum weight must be calculated in this way <math>\frac{\text{portata max pesa}}{(N^{\circ} \text{ celle} - 1)}</math>) and press Sample, wait a few seconds and proceed in the same way in the order shown by the indicator.</p> <p>At the end of the procedure the indicator prompts to continue by pressing the Calculate Coefficients button. Once the coefficients are shown on the display, it is possible to confirm and save or delete the procedure. If the coefficients are within the default ranges, the indicator shows a message indicating the correct angle calibration, otherwise</p> |                   |                |
| Sort by side            | The angle turn is performed first on the odd cell side and then on the even cell side   |                 |   |                     |   |                         |  |                   |                |
| Sort by cell number     | The angle turn is performed in numerical order from cell number 1 to the final cell   |                 |   |                     |   |                         |  |                   |                |
| Procedure               | <p>Unload the scale, only when the scale is unloaded press Sample;</p> <p>Select one of the 2 methods between sort by address or by side and sample to continue.</p> <p>Now check on the screen on which cell the weight is to be placed, place the weight on it (the minimum weight must be calculated in this way <math>\frac{\text{portata max pesa}}{(N^{\circ} \text{ celle} - 1)}</math>) and press Sample, wait a few seconds and proceed in the same way in the order shown by the indicator.</p> <p>At the end of the procedure the indicator prompts to continue by pressing the Calculate Coefficients button. Once the coefficients are shown on the display, it is possible to confirm and save or delete the procedure. If the coefficients are within the default ranges, the indicator shows a message indicating the correct angle calibration, otherwise</p>  |                 |   |                     |   |                         |  |                   |                |

|                    |   |
|--------------------|---|
|                    | the indicator shows a message of incorrect angle calibration.   |
| Replacing the cell | <p>Procedure to replace one cell inside the plant.</p> <p>When a cell is replaced within a system consisting of more than one digital cell, the indicator detects the change and displays an error (-07-). This error can be corrected using the cell replacement procedure. It consists in recalculating, by internal operation, the coefficient of the replaced cell using the immediately opposite cell as reference. The slope for the replaced cell can be calculated without repeating the calibration for all the other cells.</p> <p>The first operation to do is data acquisition with the scale unloaded (dead load). Place the load on the replaced cell and then on the opposite cell shown by the indicator and confirm by pressing the appropriate keys. At the end of the procedure press Confirm to save the data. The data is automatically saved in the indicator and in the digital cells; just go back to the main page to view the weight again.</p> |
| Cell Coefficients  | <p>Allows viewing the data stored on the cells and in the Scale board. Using the 'Copy from Scale to Cells' button it is possible to overwrite the data inside the cells with the data on the scale board. With the 'Copy from Cells to Scale' button it is possible to overwrite the data on the Scale board with the data on the cells. Confirm to save the data.</p> <p>!!ATTENTION!! If the instrument is not approved, it is possible to manually correct the slopes on the Scale board. (consider the min and max values when using this method)</p>  |

### **SYNCHRONISE**

In an analogue system the calibration parameters and configuration data of the scale are stored on the scale board. The software on the core also creates a copy of these data and saves it in the system folders. Therefore, in case of replacement of one of the two parts, it is possible to retrieve the scale data. In case of digital system, in addition to the two parts mentioned above, data relating to sampling only are stored in the load cells. For data synchronisation, follow the instructions below:

|                                  |  |
|----------------------------------|--|
| Restore Parameters               | It allows restoring the previous parameters in case of scale board replacement. It retrieves the data from the System/scales folder and saves them inside the scale board. |
| Scale board serial number-update | It updates the serial number of the board on the indicator.<br>It aligns the serial number of the scale board on the indicator with the number on the scale board.         |
| From CELLS to SCALE              | It allows retrieving calibration parameters from the cells, and saving them in the indicator   |
| From SCALE to CELLS              | It allows transferring calibration parameters from the indicator to the cells.   |



**PROTECTION**

The created scale management page contains a protection option.

Select "PROTECTION" to activate an additional software protection to control access in the scale management page. To temporarily remove the protection, use your annual password.

**5.2.1.1.2 Serial Scale**

The serial scale (serial weight repeater) is a scale not present on board the indicator. It allows repeating the weight of a scale, which can be found several metres away, through the input string configuration.

To create a serial weight repeater, click on "ADD" and select Serial Scale:

Select the serial scale settings:

|             |   |
|-------------|---|
| Protocol    | It allows selecting in the desired scale among those available which string the indicator is waiting for input. It is possible to choose among the following: EXTENDED, CB, CMA, GIBERTINI, METTLER, SARTORIUS, FULGOR, MT8530, MTBBA462, WW-P/C100 |
| Serial port | It allows selecting the port on which the indicator will receive the string: COM4, COM6 etc.  |

When communication protocol and serial port have been defined, it is possible to set the repeater scale:

|          |                     |  |
|----------|---------------------|--|
| Extended | Dialogue            | It is possible to select Half-Duplex, i.e. the scale can be managed only from the main indicator or Full-Duplex, thus allowing to manage, for example, the reset of the scale also from repeater.  |
|          | Type of scale       | Single in case of full duplex dialogue, sends the commands, for example for reset, to the single scale present in the main indicator.<br>Duplex-A, Duplex-B etc. : If the full-duplex dialogue is selected and the main indicator has more than one scale, this parameter is essential to determine to which of the scales the reset command, for example, must be sent. |
|          | Division            | Scale Division   |
|          | Automatic Printing  | Not used   |
|          | COM                 | Repeater scale connection port   |
|          | Fields              | Number of scale fields   |
|          | Capacity            | Scale Capacity   |
| CB       | Unit of measurement | Select the unit of measurement from: kg, g, t, lb, oz, tn  |
|          | Division            | Select the unit of measurement of the scale  |

|                                   |                                       |   |
|-----------------------------------|---------------------------------------|---|
|                                   | COM                                   | Repeater scale connection port  |
| CMA                               | Number of the indicator to be queried | Set the number of the indicator from which the weight is requested  |
|                                   | Number of repeater indicator          | Set the number of the indicator on which you are working, i.e. the weight repeater  |
|                                   | Number of indicators                  | Indicates the number of indicators from which you want to use the weight to make a sum. (special application)<br>Indicate 1 as default. |
|                                   | Reading time (1/100s)                 | Reading time, expressed in hundredths of a second, of the main scale.   |
|                                   | Enable reset                          | Allows resetting the weight of the scale to zero even from the repeater.  |
|                                   | Enable self-weighted tare             | Allows acquiring a self-weighted tare from the repeater indicator   |
|                                   | Enable preset tare                    | Allows using a preset tare from the repeater indicator  |
|                                   | Automatic printing                    | This function cannot be used  |
|                                   | COM                                   | Repeater scale connection port  |
| Gibertini                         | Capacity                              | Indicate the maximum capacity of the Scale  |
|                                   | Division                              | Indicate the division used for the Scale  |
|                                   | Unit of measurement                   | Indicate the unit of measurement used by the Scale among kg, g, lb, oz, t, tn   |
|                                   | Tare activation                       | Select how the Tare is acquired from the Scale among Enabled, Self-weighing only, Preset only, Disabled                                 |
|                                   | Tare value maintenance                | Indicate whether the tare must be maintained also for subsequent weighing operations  |
|                                   | COM                                   | Repeater scale connection port  |
| Mettler/MT8530/MTBBA462/WW-P/C100 | Capacity                              | Indicate the maximum capacity of the Scale  |
|                                   | Division                              | Indicate the division used for the Scale  |
|                                   | Unit of measurement                   | Indicate the unit of measurement used by the Scale among kg, g, lb, oz, t, tn   |
|                                   | Tare activation                       | Select how the Tare is acquired from the Scale among Enabled, Self-weighing only, Preset only, Disabled                                 |

|           |                        |   |
|-----------|------------------------|---|
|           | Tare value maintenance | Indicate whether the tare must be maintained also for subsequent weighing operations                    |
|           | COM                    | Repeater scale connection port  |
| Sartorius | Capacity               | Indicate the maximum capacity of the Scale  |
|           | Division               | Indicate the division used for the Scale  |
|           | Unit of measurement    | Indicate the unit of measurement used by the Scale among kg, g, lb, oz, t, tn                           |
|           | Tare activation        | Select how the Tare is acquired from the Scale among Enabled, Self-weighing only, Preset only, Disabled |
|           | Tare value maintenance | Indicate whether the tare must be maintained also for subsequent weighing operations                    |
|           | COM                    | Repeater scale connection port  |
| Fulgor    | Capacity               | Indicate the maximum capacity of the Scale  |
|           | Division               | Indicate the division used for the Scale  |
|           | Unit of measurement    | Indicate the unit of measurement used by the Scale among kg, g, lb, oz, t, tn                           |
|           | Tare activation        | Select how the Tare is acquired from the Scale among Enabled, Self-weighing only, Preset only, Disabled |
|           | Tare value maintenance | Indicate whether the tare must be maintained also for subsequent weighing operations                    |
|           | COM                    | Repeater scale connection port  |
| PGE_EHP   | PGE_EHP Indicator No.  | Number of the indicator to be queried.  |
|           | PGE_EHP Channel No.    | Channel number  |
|           | COM                    | Repeater scale connection port  |
|           | Tare device            | Activated<br>Self-weighing only<br>Preset only<br>Deactivated   |
|           | Tare lock              | Select to enable  |
|           | Unit of measurement    | Indicate the unit of measurement used by the Scale among kg, g, t, lb, oz                               |

|  |          |  |
|--|----------|--|
|  | Fields   | 1, 2MD, 2ME, 3MD, 3ME                      |
|  | Division | Indicate the division used for the Scale   |
|  | Capacity | Indicate the maximum capacity of the Scale |

It is possible to configure the selected COM port directly from this page, simply by clicking on the relevant COM Configuration key.

### 5.2.1.1.3 Network scale

The network scale (weight repeater via Ethernet network) is a scale that is not present on board the indicator. It allows repeating the weight of a scale, among those selectable, which is within the same network through a preset communication protocol.

To create a network scale click on the "ADD" button on the scale display page.

It is possible to have up to 2 internal scales and 4 total scales (e.g. 2 in the network and 2 internal or 4 in the network)

Then select Network Scale and set the following parameters:

|                   |  |
|-------------------|--|
| IP address        | Enter here the IP address of the main indicator, i.e. whose weight you want to repeat. |
| Port              | The default port is 5001, do not change it.  |
| Remote Scale name | It is possible to choose which scale to repeat simply by writing its name in this box. |
| Protocol          | The communication protocol between indicators is XML, it cannot be changed.            |

Save and return to the weighing page to check that the network scale has been created.

**Attention:** the specific settings of each weighing instrument must be made through the instrument to which the scale is connected, they cannot be performed using network infrastructure.

### 5.2.1.1.4 Sum Scale

The sum scale allows creating a scale where the weight is given by the sum of the weighing platforms indicated.

To create a sum scale, press “ADD”, select “standard sum scale” and select which scales you want to sum up.

Attention: the system is able to create and manage one single sum scale, therefore it is not possible to create more than one sum scale (simple or configurable).

The Scale 'S' (sum) is then displayed, select it to view the following data:

#### **SPECIFICATIONS**

|  |  |
|--|--|
| Number of sums per second (if 0 is the sum at each conversion) | Default value 10, indicates how many times the sum is calculated per second. It is closely related to the reading time of the converter of the summed scales.  |
| Stability on the sum   | Indicate how you want to obtain the stable weight signal:<br>sum scales, i.e. the stability signal is indicated when both scales are stable;<br>internal, i.e. the stability signal is indicated only if the stability parameters of the sum scale are respected |
| Sum scale tare   | Indicate how the tare must be acquired by the sum scale:<br>sum scales, i.e. use the tares set by the scales used to create the sum;<br>internal, i.e. use the tare set by the sum scale   |
| Tare maintenance   | Indicate whether the tare must be maintained also for subsequent weighing operations   |

#### **STABILITY**

|                               |                  |  |
|-------------------------------|------------------|--|
| Number of Stability Divisions | 0                | Allows setting the number of divisions by which the weight may vary while the weight stable signal is maintained. On indicators subject to metrical verification, this parameter must be set to 0 (zero) or 1.   |
|                               | 1                |  |
|                               | 2                |  |
|                               | 4                |  |
| Stability Signal              | Very fast (5 e)  | Speed at which the stable weight signal is displayed. Indicates how many equal consecutive readings are necessary to obtain the stable weight signal. These consecutive readings may vary according to the number of divisions indicated in the previous field. This parameter is also related to the setting of the digital filter parameter. |
|                               | Fast (10 e)      |  |
|                               | Slow (20 e)      |  |
|                               | Very slow (40 e) |  |
| Digital Filter                | No               | Allows adding or not a digital filter. It actually enables the addition or not of a software processing for filtering the output values from the analogue/digital converter.   |
|                               | 4                |  |
|                               | 8                |  |

|  |     |   |
|--|-----|---|
|  | 16  | The higher the number, the greater the filtering. |
|  | 32  |   |
|  | 64  |   |
|  | 128 |   |

#### **SUM PARAMETERS**

|            |  |
|------------|--|
| A, B, C... | Indicates which of the scales present are used to create the sum scale |
|------------|--|

### 5.2.1.1.5 Configurable Sum Scale

In the "Configurable sum scale" version, the sum result is processed as an additional scale with its own characteristics (capacity, division, zero management, tare management, etc.).

To create a configurable sum scale, press "ADD", select the configurable sum scale and confirm.

Select which scales are used to create the sum scale by double-clicking on them.

The Scale 'S' (sum) is then displayed, select it to view the following data:

#### **CHARACTERISTICS**

|                     |   |
|---------------------|---|
| Minimum weighing    | See definition on page 31, chapter 5.2.1.1. |
| Capacity            | See definition on page 31, chapter 5.2.1.1. |
| Division            | See definition on page 31, chapter 5.2.1.1. |
| Unit of measurement | See definition on page 31, chapter 5.2.1.1. |
| Legal scale         | See definition on page 31, chapter 5.2.1.1. |
| Regulations         | See definition on page 31, chapter 5.2.1.1. |

#### **SPECIFICATIONS**

|   |  |
|---|--|
| Number of sums per second<br>(if 0 is the sum at each second) | Default value 10, indicates how many times the sum is calculated per second. It is closely related to the reading time of the converter of the summed scales.    |
| Full scale control on each scale                              | If enabled, a full scale control is performed on each scale used to make the sum scale.<br>This control is performed to avoid overloading the scales.            |
| Zero enabled on all scales                                    | If enabled, it allows zeroing the scale in addition to the sum scale itself, the scales used for the sum scale, if and only if, they are within the reset range. |

**TARE**

|                |  |   |
|----------------|--|---|
| Tare Device    | Activated  | It is possible both to set the tare through acquisition of the weight on the scale or by entering a tare value directly from the keyboard |
|                | Self-weighing only   | It is only possible to set the tare through acquisition of the weight on the scale; tare values may not be entered from the keyboard.     |
|                | Preset only  | Tare values may be set from the keyboard only, not by acquisition of the weight on the scale  |
|                | Deactivated  | Tares may not be set either through acquisition of the weight on the scale or by entering a tare value directly from the keypad.          |
| Multiple Tares | No   | "No" indicates no additional tares.   |
|                | 1.2  | Indicates the number of additional tares relative to the acquired tare and the tare entered from the keypad.                              |
| Tare lock      | It defines the management mode of the tare when unloading the scale. |   |
|                | OFF  | Any tares set or acquired are automatically deleted when the scale returns to zero, i.e. gross weight = 0                                 |
|                | ON   | Any tares set or acquired remain stored even when the scale has no load and therefore the gross weight = 0                                |



**ZERO**

|                 |   |  |
|-----------------|---|--|
| Forced zero (e) | 0   | Defines the range around zero within which forced zero setting will be performed on scale unloading or in the presence of a weight stable signal. "Scale unloading" refers to the moment when the weight falls below the minimum weighing value. On indicators subject to metrical verification, this parameter must be set to 0 (zero). |
|                 | 0.25  |  |
|                 | 0.5   |  |
|                 | 1   |  |
|                 | 2   |  |
|                 | 3   |  |
| Zero track (e)  | 0   | Defines the range around zero within which zero tracking is performed to small gradual variations in the weight reading. Example: snow, dust, water falling on the scale.<br>For dosing systems, set the value to 0 (zero)<br>When zero track is disabled, even forced zero is automatically disabled.                                   |
|                 | 0.25  |  |
|                 | 0.5   |  |
|                 | 1   |  |
|                 | 2   |  |
|                 | 3   |  |
| Initial reset   | Defines the indicator operating mode upon switching on. |  |
|                 | ZEROCAM   | Upon switching on, the instrument indicates the weight value present on the scale compared to the zero value programmed at the time of sampling.   |
|                 | AUTOZ   | Upon switching on, the indicator performs the auto-zero. In case of a legal instrument, the auto-zero occurs in a range between - 5% and +15% of the full scale value around the calibrated zero. In case of a non-legal instrument this range varies from -50% to +50%.   |
|                 |   |  |
|                 |   |  |
| Automatic Zero  | ON  | The indicator resets the weight if a negative weight reading remains stable for 5 seconds  |
|                 | OFF   |  |

**STABILITY**

|                               |  |  |     |
|-------------------------------|--|--|-----|
| Number of Stability Divisions | 0  | Allows setting the number of divisions by which the weight may vary while the weight stable signal is maintained. On indicators subject to metrical verification, this parameter must be set to 0 (zero) or 1.   |     |
|                               | 1  |  |     |
|                               | 2  |  |     |
|                               | 4  |  |     |
| Stability Signal              | Very fast (5 e)  | Speed at which the stable weight signal is displayed. Indicates how many equal consecutive readings are necessary to obtain the stable weight signal. These consecutive readings may vary according to the number of divisions indicated in the previous field. This parameter is also related to the setting of the digital filter parameter. |     |
|                               | Fast (10 e)  |  |     |
|                               | Slow (20 e)  |  |     |
|                               | Very slow (40 e)   |  |     |
| Digital Filter                | Allows adding or not a digital filter. It actually enables the addition or not of a software processing for filtering the output values from the analogue/digital converter. The higher the number, the greater the filtering. |  | No  |
|                               |  |  | 4   |
|                               |  |  | 8   |
|                               |  |  | 16  |
|                               |  |  | 32  |
|                               |  |  | 64  |
|                               |  |  | 128 |

**SECONDARY**

|                                 |                     |
|---------------------------------|---------------------|
| Capacity (Secondary)            | Capacity            |
| Range1 Capacity (Secondary)     | Range1 Capacity     |
| Range2 Capacity (Secondary)     | Range2 Capacity     |
| Division (Secondary)            | Division            |
| Unit of measurement (Secondary) | Unit of measurement |

**FIELDS**

|  |  |
|--|--|
| Fields   | <p>Defines the number of weighing ranges into which the nominal capacity of the instrument is divided.</p> <p>It is possible to select:</p> <p><b>1:</b> the indicator has a single weighing range for the entire range of the scale capacity.</p> <p><b>2MD:</b> the indicator has two weighing ranges with MULTI-DIVISION mode <sup>1</sup>.</p> <p><b>2ME:</b> the indicator has two weighing ranges with MULTI-EXTENSION mode <sup>2</sup>.</p> <p><b>3MD:</b> the indicator has three weighing ranges with MULTI-DIVISION mode.</p> <p><b>3ME:</b> the indicator has three weighing ranges with MULTI-EXTENSION mode.</p> |
| Range1 Capacity                                | Value of the capacity corresponding to the first partial weighing range.   |
| Range2 Capacity                                | Value of the capacity corresponding to the second partial weighing range. (in case of 3 ME or 3 MD)  |
| W1 extension return delay (no. of conversions) | Number of samplings of delay on return to extension W1 for multi-extension scales.   |
| Manual range management                        | Possibility of selecting the ranges manually.  |

**SUM PARAMETERS**

|            |  |
|------------|--|
| A, B, C... | Indicates which of the scales present are used to create the sum scale |
|------------|--|

<sup>1</sup> multi-division = means that to use again the smallest division it is necessary to return within the first weighing range

<sup>2</sup> multi-extension = means that to use again the division of W1 it is mandatory to pass through 0

### 5.2.1.2 Stamping management

Allows you to set the standard and the type of stamping.

| REGULATIONS      |   |
|------------------|---|
| Not Legal        | It allows deciding whether the scale is to be used for legal purposes (e.g. commercial transactions with verification by the metrological inspector in charge), or for internal purposes. When enabled, it is not possible to change sensitive data about the scale unless the hardware or software metric seal is removed. If the indicator is approved, it is possible to display the data but not change them. When one of the standards is applied, it is shown on the main scale configuration page. |
| European         | Type of compliance valid for the European Community   |
| International    | International type of compliance  |
| USA              | Type of compliance valid for the USA (NTEP)   |
| TYPE OF STAMPING |   |
| Hardware         | The calibration button temporarily disables the operation in legal mode. To temporarily disable stamping, enter the Scale Configuration page and press the calibration button. When the indicator is stamped, the page has a red background, once the seal is removed it turns white.   |
| Software         | <p>The metrological password temporarily disables the operation in legal mode. To temporarily disable stamping, enter the stamping management page and press the</p> <div data-bbox="491 1182 667 1279" data-label="Image"> </div> <p>icon, then the page for entering the metrological password will open.</p>   |

### 5.2.1.3 Metrological information

Allows consulting the metrological information.

|                      |   |
|----------------------|---|
| Serial number        | Indicator serial number (protected by metrology)                              |
| Scale firmware       | ID, Programme checksum release  |
| Metrological modules | Metrology software release and checksum                                       |
| Stamping Status      | Current status of the stamping and counter of metrological parameter accesses |

#### 5.2.1.4 System Information

|            |   |
|------------|---|
| IP address | IP address of the indicator                 |
| Software   | Programme code and release                  |
| Patch      | Patch code for BSP (if any)                 |
| BSP        | BSP code, release and date and GPIO release |
| MAC        | Physical address of the indicator           |

#### 5.2.1.5 Display Configuration

|                     |   |
|---------------------|---|
| Gross weight symbol | This parameter allows setting the Letter "B" or "G", an indication used to indicate gross weight. |
|---------------------|---|

#### 5.2.1.6 Metrological Events Log

List of changes made to metrological parameters.

### 5.2.1.7 Scale Diagnostics Configuration

|                   |   |
|-------------------|---|
| Scale Statistics  | It records the number of times the weight loaded on the scale exceeds the minimum weighing value. It is possible to view the data from Scale Diagnostics Log, and a file is also generated in the system/statistics folder that replicates the same data.   |
| Scale Diagnostics | Enables/disables a Log file (e.g. 'diagerrorlog_1_000001.txt') that records the scale events. It is saved in the default Extern folder. The report file is coded as follows:  |
|                   | Date and Time   |
|                   | Separator ' ; ' (semicolon)   |
|                   | Scale board number <b>1, 2, 3, 4</b> involved   |
|                   | Separator ' ; ' (semicolon)   |
|                   | <b>C1,C2,C3, ... , Cn</b> = Cell number<br>or <b>Bil</b> = Scale involved   |
|                   | Separator ' ; ' (semicolon)   |
|                   | ERROR TYPE<br>* Scale/Cell not connected<br><b>I</b> Scale/Cell not connected occasionally<br><b>C</b> Scale/Cell not configured<br><b>M</b> Scale/ Cell serial number error<br><b>V</b> Scale/Cell voltage error<br><b>T</b> Scale/Cell temperature error<br><b>R</b> Reset cells (if Bil)/cell (if Cn)<br><b>W</b> Warmup<br><b>O</b> Overload<br><b>I</b> I2C internal bus error |
|                   | Separator ' ; ' (semicolon)   |
|                   | Possible value  |
| Log Folder        | Allows selecting where to store the scale Diagnostics file. It is possible to choose different sources including extern, USB or SD card.  |

### 5.2.1.8 Scale Diagnostics Log

The scales on which the statistical survey is active are displayed.

|                                    |   |
|------------------------------------|---|
| Year                               | Editable field to select the reference year of the statistics to be displayed   |
| Total Number Of Loads              | Number of times the weight loaded on the scale exceeds the minimum weighing value   |
| Total Number Of Days               | Number of days in which the minimum weighing value has been exceeded at least once  |
| Number Of Days Exceeding xxx loads | Editable threshold, used to determine the number of days that exceed the specified number of loads per day. Enter the number of loads per day after which the day is signalled. |
|                                    | The result is the number of days in which the number of loads entered has been exceeded   |
| Delete Statistics                  | Delete statistics file  |
| Scale Events                       | Records abnormal scale events   |
| Detail                             | Displays date and number of respective loads  |

### 5.2.2 Serial Ports

From this page it is possible to set the serial transmission parameters of the COM ports. The COM ports that are always physically present are: COM4, COM6 and COM7. If an optional serial expansion board is installed the COM ports are: COM8 and COM9. Instead a possible USB/Serial port converter uses COM higher than 10. Always save the configuration before exiting if some parameters have been changed.

The editable features for each COM are:

|           |                                       |
|-----------|---------------------------------------|
| baud rate | 4800                                  |
|           | 9600                                  |
|           | 19200                                 |
|           | 38400                                 |
|           | 115200                                |
| Bits      | 7                                     |
|           | 8                                     |
| Stop bits | 1                                     |
|           | 2                                     |
| Parity    | No                                    |
|           | Even                                  |
|           | Odd                                   |
| Handshake | No                                    |
|           | Hardware (COM4 and COM8)              |
|           | Xon/Xoff (COM6, COM8 and COM9)        |
| Protocol  | RS232 (on: COM4, COM6, COM8 and COM9) |
|           | RS422 (on: COM7 and COM9)             |



### 5.2.3 Printers/Readers/IOs









Press the "Printers/Readers/IOs" key to access the settings area of the following components:

|               |                 |   |   |
|---------------|-----------------|---|---|
| <b>System</b> | Axis management | Strictly related to the activation of the service. It cannot be used if the axis management service has not been activated from the relevant menu. For configuration, follow the instructions in chapter 5.2.3.1 Axis Management. |   |
|               | System Memory   | Service that checks the internal memory use and signals when the set limits are exceeded.   |   |
|               |                 | Memory almost full  | Set at what percentage the memory almost full signal must be activated. |



|                         |   |  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|-------------------------|---|--|--|--|---------------|---|-------------|--|-------------------|---|-----------------|--|----------------|--|-------------|---|-----------------|--|
|                         |   | Memory full  | Set the percentage at which the memory is considered full. |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         |   | Memory check time  | Allows setting the check interval.                         |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         |   | Displays alarm messages  | Enables the display of messages.                           |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         |   |  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
| <b>Inputs / Outputs</b> | Inputs  | 2 internal inputs and, if an optional board is installed inside the Flynet indicator, it is possible to view the additional inputs available. It is possible to choose to use the normally open or normally closed input.  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Outputs   | 2 internal outputs and, if an optional board is installed inside the Flynet indicator, it is possible to view the additional outputs available. It is possible to choose to use the normally open or normally closed output.   |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Range   | <div>Select Range through the  key to add a fully customizable weight range.</div> <table><tr><td>Output number</td><td>Shows a list of available outputs.<br/>Define here which output will be activated.</td></tr><tr><td>Scale alias</td><td>Shows the list of selectable scales.<br/>Define here on which scale the range will be applied.</td></tr><tr><td>Lower threshold</td><td>Editable range expressed in the unit of measurement selected by the system.<br/>Enter a numerical value to define the minimum weight threshold after which the selected output will be activated.</td></tr><tr><td>Upper Threshold</td><td>Editable range expressed in the unit of measurement selected by the system.<br/>Enter a numerical value to define the maximum weight threshold after which the selected output will be deactivated.</td></tr><tr><td>Type of weight</td><td>It is possible select the type of weight to activate the output.<br/>Net Weight or Gross Weight only.</td></tr><tr><td>Update time</td><td>Indicates how often (ms) the weight is checked.</td></tr><tr><td>Disabling input</td><td>It is possible to select an input to deactivate the range operation.</td></tr></table> |  |  | Output number | Shows a list of available outputs.<br>Define here which output will be activated. | Scale alias | Shows the list of selectable scales.<br>Define here on which scale the range will be applied.    | Lower threshold   | Editable range expressed in the unit of measurement selected by the system.<br>Enter a numerical value to define the minimum weight threshold after which the selected output will be activated.                            | Upper Threshold | Editable range expressed in the unit of measurement selected by the system.<br>Enter a numerical value to define the maximum weight threshold after which the selected output will be deactivated. | Type of weight | It is possible select the type of weight to activate the output.<br>Net Weight or Gross Weight only. | Update time | Indicates how often (ms) the weight is checked. | Disabling input | It is possible to select an input to deactivate the range operation. |
|                         | Output number   | Shows a list of available outputs.<br>Define here which output will be activated.  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Scale alias   | Shows the list of selectable scales.<br>Define here on which scale the range will be applied.  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Lower threshold   | Editable range expressed in the unit of measurement selected by the system.<br>Enter a numerical value to define the minimum weight threshold after which the selected output will be activated.   |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Upper Threshold   | Editable range expressed in the unit of measurement selected by the system.<br>Enter a numerical value to define the maximum weight threshold after which the selected output will be deactivated.   |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Type of weight  | It is possible select the type of weight to activate the output.<br>Net Weight or Gross Weight only.   |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Update time   | Indicates how often (ms) the weight is checked.  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Disabling input   | It is possible to select an input to deactivate the range operation.   |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
|                         | Setpoint  | <div>Select Setpoint through the  key to add a fully customizable setpoint.</div> <table><tr><td>Output number</td><td>Shows a list of available outputs.<br/>Define here which output will be activated.</td></tr><tr><td>Scale alias</td><td>Shows the list of selectable scales.<br/>Define here on which scale the setpoint will be applied.</td></tr><tr><td>Type of threshold</td><td>Indicates when to activate the output, i.e. if the weight is:<ul style="list-style-type: none"><li>• Weight ≤ setpoint</li><li>• Weight &lt; setpoint</li><li>• Weight &gt; setpoint</li><li>• Weight ≥ setpoint</li></ul></td></tr></table>  |  |  | Output number | Shows a list of available outputs.<br>Define here which output will be activated. | Scale alias | Shows the list of selectable scales.<br>Define here on which scale the setpoint will be applied. | Type of threshold | Indicates when to activate the output, i.e. if the weight is: <ul style="list-style-type: none"><li>• Weight ≤ setpoint</li><li>• Weight &lt; setpoint</li><li>• Weight &gt; setpoint</li><li>• Weight ≥ setpoint</li></ul> |                 |  |                |  |             |   |                 |  |
| Output number           | Shows a list of available outputs.<br>Define here which output will be activated.   |  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
| Scale alias             | Shows the list of selectable scales.<br>Define here on which scale the setpoint will be applied.  |  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |
| Type of threshold       | Indicates when to activate the output, i.e. if the weight is: <ul style="list-style-type: none"><li>• Weight ≤ setpoint</li><li>• Weight &lt; setpoint</li><li>• Weight &gt; setpoint</li><li>• Weight ≥ setpoint</li></ul> |  |  |  |               |   |             |  |                   |   |                 |  |                |  |             |   |                 |  |

|                 |   |   |         |   |           |   |                |   |             |   |                 |   |
|-----------------|---|---|---------|---|-----------|---|----------------|---|-------------|---|-----------------|---|
|                 |   | <table><tr><td>Timeout</td><td>Time, expressed in seconds, after which the output is activated</td></tr><tr><td>Threshold</td><td>Editable field to enter the weight value. The system uses the unit of measurement adopted by the scale.</td></tr><tr><td>Type of weight</td><td>It is possible select the type of weight to activate the output. Net Weight or Gross Weight only.</td></tr><tr><td>Update time</td><td>Indicates how often (ms) the weight is checked.</td></tr><tr><td>Disabling input</td><td>It is possible to select an input to deactivate the setpoint operation.</td></tr></table>   | Timeout | Time, expressed in seconds, after which the output is activated | Threshold | Editable field to enter the weight value. The system uses the unit of measurement adopted by the scale. | Type of weight | It is possible select the type of weight to activate the output. Net Weight or Gross Weight only. | Update time | Indicates how often (ms) the weight is checked. | Disabling input | It is possible to select an input to deactivate the setpoint operation. |
| Timeout         | Time, expressed in seconds, after which the output is activated   |   |         |   |           |   |                |   |             |   |                 |   |
| Threshold       | Editable field to enter the weight value. The system uses the unit of measurement adopted by the scale. |   |         |   |           |   |                |   |             |   |                 |   |
| Type of weight  | It is possible select the type of weight to activate the output. Net Weight or Gross Weight only.       |   |         |   |           |   |                |   |             |   |                 |   |
| Update time     | Indicates how often (ms) the weight is checked.   |   |         |   |           |   |                |   |             |   |                 |   |
| Disabling input | It is possible to select an input to deactivate the setpoint operation.                                 |   |         |   |           |   |                |   |             |   |                 |   |
| Printers        | Printers  | <div></div> <p>Select Printers through the  key to add a printer to the indicator. The models currently available on the indicator are:</p> <ul style="list-style-type: none"><li>• Italora</li><li>• Epson LX300</li><li>• TM295</li><li>• TM300</li><li>• TPT60S4</li><li>• STB80</li><li>• STB60</li><li>• STB112</li><li>• VKP80II</li><li>• Zebra</li><li>• PLUS</li><li>• Qseries</li></ul> <p>After selecting the printer, its settings are loaded.</p> <div></div> <p>Press  to access the customization section specific for each printer (paper cutting, line feed, etc.).</p> <p>After setting the printer, it is possible to select the COM port on which it will interface. The COM ports available depend on the indicator and the optional boards used.</p> <p>We suggest for the following indicator to connect the printer to COM4 (if Handshake Hardware) or COM6 (if Handshake Xon/Off).</p> |         |   |           |   |                |   |             |   |                 |   |
| Readers         | Readers   | <div></div> <p>Select Readers through the  key to add a reader to the indicator. The models currently available on the indicator are:</p> <ul style="list-style-type: none"><li>• Gigatek</li><li>• Coges</li><li>• DEISTER</li><li>• DEISTERPLUS</li><li>• HF0450</li><li>• HID</li><li>• Tirfid</li><li>• Transit</li><li>• Vecos</li><li>• GenericReader (used to directly read the reader data as they are without interpreting them)</li></ul> <p>Then select a COM port to which the reader will be connected.</p>  |         |   |           |   |                |   |             |   |                 |   |

### 5.2.3.1 Axis Management

For proper axis detection operation, attention must be paid to the indicator configuration. An incorrect or superficial configuration can compromise its operation. We remind the technician and the end user that the truck, to allow a correct weighing axis detection of all axes, must proceed at a speed not exceeding 5 km/h. When axis weighing is activated, the first parameter to be set to make the operation effective is the reading time. Follow this path to find the parameter:

Menu/Tools/Configuration/System/Metrology Management/Scale Configuration/Select the scale on which you want to activate the specific Axis/Parameter weighing:

Reading time = 50 current  $\Rightarrow$  Reading time = 5

After changing this parameter, save and configure the Axis Management section.

Axis management can be found in the Printers / Readers / IOs section, to create the management



for the scale select the axis management item and press :

|                                     |   |
|-------------------------------------|---|
| Next axis detection threshold       | Set a weight value (expressed in the unit of measurement of the scale), above which the weight must vary to acquire the next axis. Example: the truck goes on the scale and the weight detection starts; the initial weight, i.e. of the first axis is 7500 kg, if the weight varies by 200 kg (value entered as threshold) the software acquires the next axis. If the weight variation is below the threshold, the axis is not acquired. There is no default parameter, this value must be determined in the field, as it also depends on the quality of the mechanical installation and mechanical application (in pit or on ramps). |
| Average                             | This parameter defines the number of weight values to average; with average 1 all the about 20 values/second are sent, to lower the noise of the readings it is possible to increase the average value. Possible values 1/2/3/4. Set as default 1.<br>If a value greater than 1 is selected, the speed of the truck must be reduced.  |
| Wheel detection limit               | Not used  |
| Wheel management                    | Not used  |
| Max axis weight                     | Set a maximum axis weight threshold (expressed in unit of measurement of the scale). If the weight of an axis exceeds this threshold value, an axis overload is signalled in the printout with an "***".<br>Default = 20000   |
| Truck end time                      | Time, expressed in seconds, indicating when the end of the truck is determined. The truck end time count starts when the axis is detected, if no other axes are detected within this time threshold the software ends the data acquisition.   |
| Loading detection start threshold   | Value expressed in divisions, above which the software starts detecting the rising axis (starting from unloaded scale).   |
| Unloading detection start threshold | Value expressed in divisions, above which the software starts detecting the lowering axis (starting from loaded scale). This application is used, for example, in cases where the truck is filled when it is on the scale.  |
| Output number                       | Currently not managed   |

|                  |  |
|------------------|--|
| Scale alias      | Indicate on which scale you want to detect the axes  |
| Axis weighing    | Enables or disables axis weighing  |
| Type of weighing | Defines how to use axis detection: <ul style="list-style-type: none"><li>• scale input</li><li>• scale output</li><li>• always</li></ul> |

### 5.2.3.2 System Memory

Service that checks the internal memory use and signals when the set limits are exceeded.

|                         |   |
|-------------------------|---|
| Memory almost full      | Set at what percentage the memory almost full signal must be activated. |
| Memory full             | Set the percentage at which the memory is considered full.              |
| Memory check time       | Allows setting the check interval.                                      |
| Displays alarm messages | Enables the display of messages.  |

## 5.2.4 Log Management and System Errors

### 5.2.4.1 Error notification

Allows managing the Managed Framework Log generated by the device.

#### **GENERAL**

|                     |   |  |
|---------------------|---|--|
| Log level per file  | Allows choosing the kind of errors to store.  |  |
|                     | TRACE = 0   | Additional information log for service |
|                     | DEBUG = 1   |  |
|                     | INFO = 2  |  |
|                     | WARNING = 3   | warning log                            |
|                     | ERROR = 4   | error log                              |
|                     | FATAL = 5   | log of system blocking errors only     |
|                     | Select the desired type of signal, by default it is "ERROR".  |  |
| Displayed log level | Allows selecting which types of errors to display, it is possible to select "ERROR", "WARNING" or "FATAL".  |  |
| Display manager     | Allows selecting on which "object" to display the errors; by default a window is selected which, in case of error, is overwritten on the work page and in which the error is displayed. |  |
| Log file path       | Allows selecting where to store the error file "Log file", by default it is in the memory of the indicator "NAND_Flash". It is also possible to select another media, e.g. a USB stick. |  |

#### **EMAIL**

|                            |   |
|----------------------------|---|
| Enables email notification | If enabled, it allows sending an e-mail from the indicator to different recipients.   |
| Email log level            | Allows choosing which error level to send by email: <ul style="list-style-type: none"> <li>• ERROR</li> <li>• WARNING</li> <li>• FATAL</li> </ul> |
| Mail to                    | Write here the addresses of the recipients  |
| Mail Cc                    | Write here the addresses of copy recipients   |
| Mail blind cc              | Write here the addresses of hidden copy recipients  |

To enable the sending of emails from the indicator, refer to the settings on page of paragraph

### 5.2.4.2 Device log

Allows selecting the saving location of the Log files generated by the Native Framework of the device. Available:

4 Hard Disks, 1 Storage Card, 1 nano flash (internal memory of the device).

### 5.2.5 Access levels

The use of access passwords allows limiting the setting and/or deletion of sensitive data by unauthorised personnel. To activate them press the enable button next to the access level wording. Then define the initial access level.

To check the functions available for each level, see the following tables:

#### Scale:

| Operation               | Level |
|-------------------------|-------|
| Weighing operation      | 1     |
| Resetting weight        | 1     |
| Acquiring\Deleting tare | 1     |

#### Archives:


| Operation                               | Level |
|---|-------|
| Selecting items for weighing operations | 1     |
| Sorting                                 | 1     |
| Searching                               | 1     |
| New item                                | 2     |
| Deleting                                | 3     |
| Modification                            | 3     |

#### CSV:

| Operation | Level |
|-----------|-------|
| Exporting | 1     |
| Importing | 3     |

#### Tools:

| Operation                | Level |
|--------------------------|-------|
| Activating utilities     | 1     |
| Selecting colour         | 1     |
| Setting up shortcut keys | 1     |
| Stand-by                 | 1     |
| Error management         | 1     |
| Setting date and time    | 3     |
| Device configuration     | 4     |

To change level, when they are active, click the 'Access Levels' icon , select the desired level and enter the password.

### 5.2.6 Buzzer

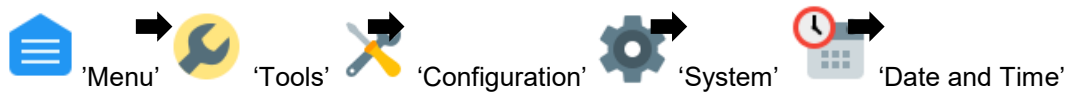
There is a buzzer inside the Flynet indicator that triggers when an icon is selected.

|               |     |   |
|---------------|-----|---|
| Enable buzzer | ON  | Enable buzzer every time you press the screen |
|               | OFF | Disable buzzer                                |

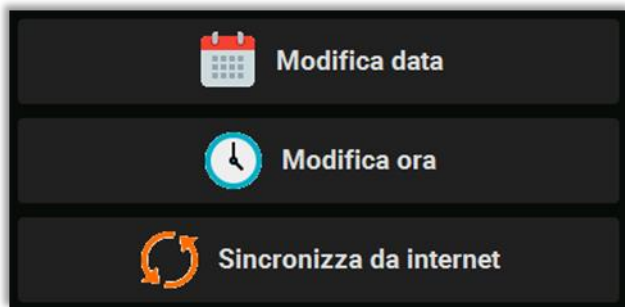
### 5.2.7 Date and time

The Flynet indicator contains a calendar clock kept active by the buffer battery installed on the motherboard. If the battery charge level falls below the minimum usage threshold, the calendar is not synchronised.

To Change Date / Time from Home select:



the general setting page is displayed, which contains 3 buttons:



➤ to change the date press:



➤ to change the time press:



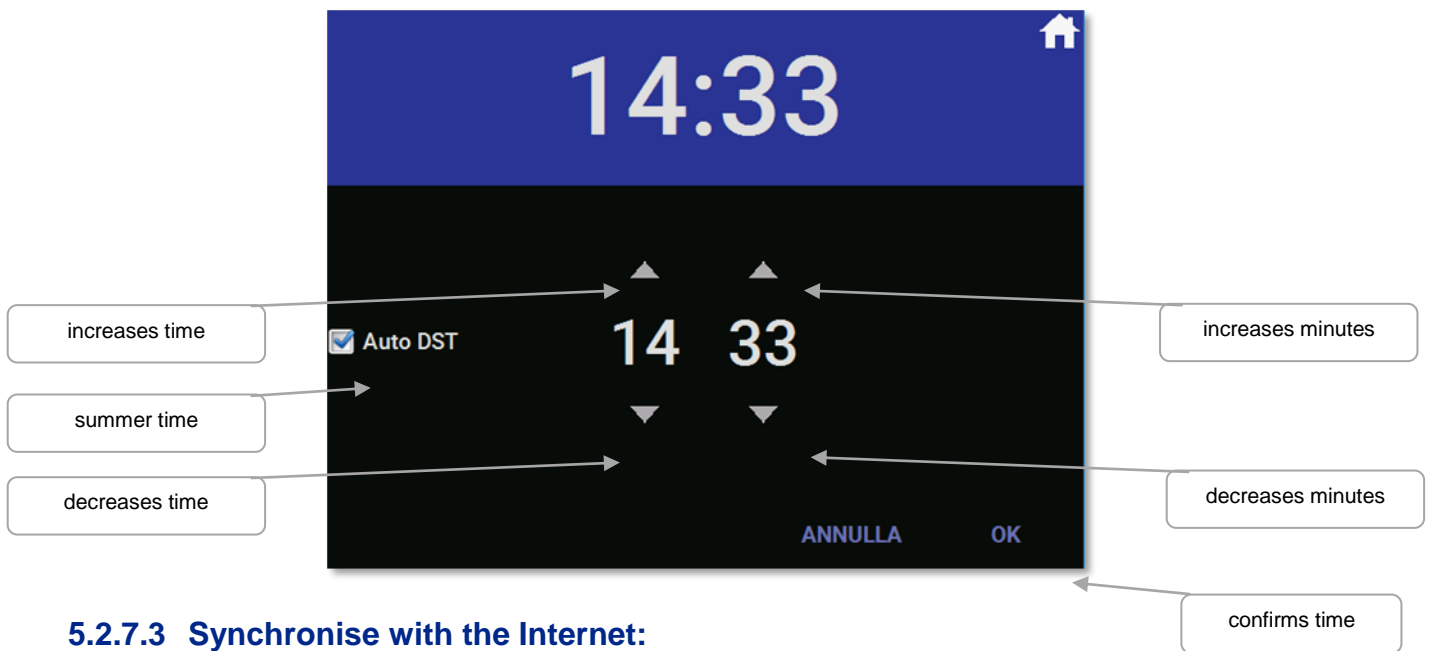
➤ to activate synchronisation with the internet press:



### 5.2.7.1 Changing the date:



### 5.2.7.2 Changing the time:



### 5.2.7.3 Synchronise with the Internet:

No dedicated page is displayed, the function immediately synchronises the internal clock with an internet server, there are no subsequent synchronisations, the function is one-shot and is activated only when requested with the key.



The servers that are reached during Internet synchronisation are the following:

| IP ADDRESS        | SERVER             |
|-------------------|--------------------|
| "206.189.118.143" | ntp.coreblock.io   |
| "37.247.53.178"   | nettuno.ntp.irh.it |
| "195.13.23.5"     | ntp1.belbone.be    |
| "195.13.1.153"    | ntp2.belbone.be    |
| "131.188.3.220"   | ntp0.fau.de        |
| "131.188.3.220"   | ntp1.fau.de        |

**The first server to respond will also perform the synchronisation.**

## 5.2.8 Email

The email service is configured in this menu. The Flynet indicator is able to send emails using an existing email address. Check the data before entering them and make sure to have the necessary permissions to allow external programmes to connect to your email server. The data to be entered are:

|                             |   |
|-----------------------------|---|
| SMTP server address or name | Server address for outgoing email (e.g smtp.xxx.com)  |
| Port                        | The default port for unprotected mail is 25, in some cases it is changed. Select the port according to the server and specifications indicated. |
| Sender address              | Enter sender's address  |
| Sender name                 | Enter the name that will be displayed as email sender.  |
| User name                   | User name used to access your email server.   |
| Password                    | Password used to access your email server.  |
| SSL                         | If required by the server, it is possible to activate the email encryption service.   |

The email service settings vary depending on the email server used, make sure to have all the necessary information before filling out this page. In case of error or failure to send the email, consult the error LOG called MF\_ErrorLOG.txt, contained in the Extern folder of the device selected for storing the logs.

## 5.3 Cards

The Flynet indicator has the possibility to interface with different readers, the available readers are listed on page 62 paragraph 5.2.3.

|   |  |   |
|---|--|---|
| Type of card                                | Cb   | The "CB" coding is used in the badge cards supplied by Cooperativa Bilanciai; these cards are composed in such a way as to have an initial check digit which allows the master indicator to prevent the weighing to all badges which do not have an initial check digit equal to that established during the card initialisation phase. |
|   | Neutral  | Neutral encoding allows the management of various cards, which is why the master indicator, in this case, allows choosing whether to accept all the characters of the card or only accept characters from - to, the terminator character must be "CR".  |
|   | Tax Code   | The "Tax Code" coding allows managing the tax codes on the health card. It uses the data read in the barcode of the card. (used in special applications)  |
|   | Encoded Tax Code (32 characters)   | The "Encoded Tax Code" coding allows managing the tax codes on the health card. It uses the data read in the band strip of the card. (used in special applications)   |
| Timeout(sec)                                | Indicates the pause time between code readings.  |   |
| Time interval                               | Tick if a part of the read code is required. This works with cards of the following types: "Neutral"/"tax".  |   |
| Length                                      | Length of the code that will be read by the reader.  |   |
| From position                               | It is possible to indicate from which digit the barcode is to be read; the first character or digit corresponds to the position 0 (zero).  |   |
| Automatic weighing operation                | Enable or disable automatic printing immediately after the card acquisition by the reader.   |   |
| Initial control code                        | It allows defining the initial code from which the transcoding will start. All badges that do not meet this characteristic are not accepted. Only used in "CB" code types. (example: initial check digit 8)  |   |
| Creating input weighing operation with card | Enable or disable the creation of an input RCD by passing a card with code not associated with an operation. Using the same card it is possible to carry out the output weighing. The RCD archive must be configured for operation with alphanumeric codes or plate. |   |

At the end of the card encoding settings, it is possible to check its operation from the test area; use the configured reader to read the card, the indicator will simply display the code read. Otherwise, check the settings of the reader and cards.

## 5.4 PDF and network printer

To enable a network printer or create a PDF file, an activation key is required, which must be requested from Cooperativa Bilanciai. Each key is unique and linked to the physical manufacturing specifications of the indicator, so it is not possible to use the code to activate several services and/or the same service on other indicators that support it. To request activation codes, always provide:

- Indicator serial number
- Receipt confirming payment for service activation
- Code provided by the indicator when you want to activate the service

To acquire the code provided by the machine, go to the "INSTRUMENTS" section and click on the following



'Activating utilities' icon, select the desired service and press the off button once. A page opens, which shows the code required to activate the service.

Once the code is saved, it is possible to resume normal operation of the indicator. To activate the service, go back to the activation section, click once on the off button and enter the code received. The activated services are linked to the indicator, they are not lost in case of indicator software update.

If Core is replaced, it is necessary to reactivate the services; contact the Cooperativa Bilanciai for information on the procedures

### 5.4.1 Network printer

This feature allows the indicator to use a network printer as indicator main or secondary printer. The Flynet indicator is able to use printers connected to the network to print the weight. To use this function, proceed as follows:

- Check that the service is active, otherwise it is not possible to create a network printer
- Go to the PDF-Network Printer section
- Select Network Printer



- Click on 'Add' and enter the printer name

The parameters to be set are:

|                 |  |   |
|-----------------|--|---|
| IP address      | Set the IP address of the printer you want to use  |   |
| Port            | Enter the printer communication port address (9100 standard)   |   |
| Type of printer | Select a driver from the list according to the printer used: <ul style="list-style-type: none"> <li>• Canon BJ 300 dpi</li> <li>• Canon BJ 360 dpi</li> <li>• Canon iP90</li> <li>• HP PCL 5e</li> <li>• HP PCL 3</li> <li>• Amtech</li> <li>• Epson ESC/P 2</li> <li>• Epson LX (9-pin)</li> <li>• Epson Stylus Color</li> <li>• M1POS</li> <li>• MP-300</li> <li>• MTE W40</li> <li>• O'Neil 3 inch</li> <li>• O'Neil 4 inch</li> <li>• PocketJet 200</li> <li>• PocketJet II</li> <li>• SP-T8</li> <li>• Zebra</li> </ul> |   |
| Colours         | Monochrome   | Black and white printing  |
|                 | 3 colours  | Print using the following colours: blue, magenta, yellow        |
|                 | 4 colours  | Print using the following colours: black, blue, magenta, yellow |
| Printer drivers | Default, non-replaceable parameter.  |   |

When the configuration is finished, save the settings and go to the APPLICATION >> OTHER>> PARAMETER CONFIGURATION>> MAIN PRINTER section to set the network printer as main or secondary printer.

Check the operation by printing a weight from the main page. If printing is not performed, check the following parameters:

- Network printer IP address
- Check the Flynet indicator network settings (to access another company sub-network it is necessary to specify the default gateway)
- Check the drivers used by the printer, if it is not present in the list of the indicator, contact the service department
- Make sure you have selected the network printer as main or secondary printer and enabled its use

### 5.4.2 PDF

This function allows the indicator to create an electronic PDF file. To use this function, proceed as follows:

- Check that the service is active, otherwise it is not possible to create a PDF file
- Go to the PDF-Network Printer section
- Select PDF



- Click on 'Add' and give the name to the PDF printer

The parameters to be set are:

|   |  |   |  |  |  |
|---|--|---|--|--|--|
| File name                                 | Name of the PDF file that will be created  |   |  |  |  |
| Storage device                            | Allows choosing where to save the PDF file   | Nand Flash (on the indicator in the \Nand_flash\Extern\ path) |  |  |  |
|   |  | Hard disk (USB stick connected to one of the indicator ports) |  |  |  |
| Overwrite                                 | If enabled, it allows the indicator to always overwrite the same PDF file with the new one using the same name; if disabled, it creates a new PDF file for each weighing. To differentiate one file from the other, date and time are added before the file name and a progressive number starting from 1 (one) is added after the file name |   |  |  |  |
| Printer drivers                           | -----  |   |  |  |  |
| Delete the PDFs sent after number of days | Delete PDFs saved on nand flash or USB after a given number of days  |   |  |  |  |
| Email notification                        | Off, the service for PDF sending via email is not active   |   |  |  |  |
|   | On, the service for PDF sending via email is active, fill in the following fields  | Mail to   | Recipient(s)   |  |  |
|   |  | Mail Cc   | Recipient(s) in copy                                   |  |  |
|   |  | Mail blind cc   | Recipient(s) in hidden copy                            |  |  |
|   |  | Subject   | Subject of the email                                   |  |  |
|   |  | Text  | Email text   |  |  |
| Send via FTP                              | Off, the service for PDF sending via FTP server is not active  |   |  |  |  |
|   | On, the service for PDF sending via FTP server is active   | Host folder   | Write here the name of the folder shared on the server |  |  |
|   |  | Configuring FTP client  | Host   | Enter the IP address of the FTP server |  |
|   |  |   | User name  | Provide user name to access the        |  |

|  |  |  |          |  |
|--|--|--|----------|--|
|  |  |  |          | server                                       |
|  |  |  | Password | Provide password to access the server        |
|  |  |  | Port     | Specify the communication port to the server |

Press Test to check that the Flynet indicator (client) is able to connect with the FTP server; if the message 'Test OK' is displayed, press Save and Exit to confirm the configuration and exit the settings page. Otherwise, check that the settings on the Flynet indicator and the FTP server configuration are correct.

## 5.5 Transmission

The indicator is equipped with external serial and Ethernet communication ports. It is therefore possible to interface and communicate with various external devices such as displays, weight repeaters, PCs, PLCs and so on.

The data that can be transmitted are linked to the indicator internal programme and therefore cannot be changed.

The transmission configurations available are:

- Mpp
- Network
- Serial
- Field bus

### 5.5.1 Mpp

The Mpp or permanent weight memory is a legal storage system for weighing operations made with the indicator. This system allows saving metrological data on the indicator and storing them for a certain period of time strictly related to metrological laws. The minimum storage period for these weighs is 180 days, after this time the indicator will allow the user to delete obsolete Mpps to have more space on the disc. The amount of Mpp data that can be stored is directly proportional to the size of the remaining memory on the internal disc. It is advisable to delete the obsolete data to avoid unnecessary waste of memory, and to run into delays due to the processing of a huge amount of data.

The Mpp is always present on the indicator, if the system is legalised, the weighing data are saved in a table that can be consulted from the indicator. The data are stored as follows:

- At each weight acquisition an identification code is generated
- The identification code is linked to the acquisition time and date and the indicator number
- The data are saved in a storage table
- To access this table simply follow the following path: menu/info/MPP
- To search for data, enter the date and click on the magnifying glass on the right side
- If data are present, a code list is displayed
- To view the data, simply click on the code displayed
- A new page opens, which provides a summary of the stored weighing

The identification code consists of 7 digits, so the same code can only be reused after 10,000,000 weighing operations.

The MPP transmission allows sending a certified and legal data to the PC, as it is linked to the indicator by an identification code. To activate the transmission of an Mpp string to a PC, the accessory service must be activated. The activation of the Mpp service on the indicator allows using the Mpp string, its remote controls and the display of Mpp data as they are acquired.

Refer to the following settings to configure the Mpp transmission:

|                   |  |
|-------------------|--|
| Weighing request  | From key   |
|                   | From serial  |
| Data transmission | At the end of the operation  |
|                   | From serial  |
| Save tare         | Enabled or disabled  |
| Type of reply     | Standard   |
|                   | Std EN45501:2015   |
|                   | Date and time + indicator number   |
|                   | Indicator number   |
|                   | Serial number  |
| Indicator number  | Up to 3 digits can be entered.   |
| Transmission      | Choose one of the previously created serial or Ethernet transmissions through which to use the Mpp |

Weighing request through key with data transmission at the end of the operation, wait for the stable weight signal and press the weight acquisition button to store the weight and transmit it directly to the PC.

Weighing request from serial command with data transmission at the end of the operation, load the weight on the platform, wait for the stable weight signal and acquire the data through MP<CR>command sent by PC. If the answer is yes, the indicator returns the string in the selected format.

Weighing request from key with data transmission from serial command, after loading the weight on the platform, wait for the stable weight signal and press the weight acquisition key; the indicator saves the data and the indicator can request the data through the MP<CR> command. If the answer is yes, the indicator returns the string in the requested format. It is possible to request the data several times by typing the same command. To allow the indicator to perform a new weighing operation, the MC<CR> command must be sent.

Weighing request and data transmission through serial command, after loading the weight on the weighing platform it is possible to send the remote command MP<CR>, when the stable weight signal is reached the indicator acquires the weight; to transmit the weight it is necessary to send again the command MP<CR>after which the indicator will return the string in the selected format. To allow the indicator to perform a new weighing operation, the MC<CR> command must be sent.



## 5.5.2 Network

This function allows creating an external transmission using the network board on the Flynet indicator. The indicator IP address, subnet mask, default gateway and DNS settings can be found in the Start menu, refer to the relevant manual to configure them.

To create a network transmission, proceed as follows:

- Follow the path Menu/Tools/Configuration/transmission/network to enter the creation page



- Click on 'Add' to create a new transmission instance
- Enter the name for the following instance and confirm

To configure the transmission correctly, check the following data:

|                         |   |  |
|-------------------------|---|--|
| Scale                   | Select one of the existing scales: A, B, C, D, S, Selected  |  |
| Port                    | 6001 is the standard port used to transmit the data string externally, it is possible to open another port if necessary   |  |
| Transmission range (ms) | 250 default, indicates the pause between the transmission of one data and the next in cyclic mode; in this way the string is transmitted 4 times per second. It is possible to reduce the interval up to 100 ms and then transmit data up to 10 times per second (10Hz) |  |
| Type of string          | The strings present in the Flynet indicator are as follows, to check their structure refer to the transmission manual   |  |
|                         | Extended  | The following protocols are available: Cyclic, On Demand, ACK NAK, Remote Commands |
|                         | CB  | The following protocols are available: Cyclic, On demand, ACK NAK                  |
|                         | Btek  | The following protocols are available: Cyclic, On request                          |
|                         | Modbus  | ModbusTCP protocol is available  |
|                         | Cardinal  | The following protocols are available: Cyclic, On request                          |
|                         | Cardinal 748P   | The following protocols are available: Cyclic, On demand, ACK NAK                  |
|                         | SASCO1  | The following protocols are available: On request, Remote commands                 |
|                         | telecontr-extended  | The following protocols are available: Cyclic, On Demand, ACK NAK, Remote Commands |
| Protocol                | Cyclic, i.e. the string is transmitted continuously immediately after the indicator is correctly switched on, the cyclic string uses the transmission interval to time the data output  |  |
|                         | On request, i.e. the selected string format is transmitted:<br>either when the weighing key is pressed;<br>or upon activation of an input related to weighing (check the list of available inputs)  |  |
|                         | On request with ACK NAK, i.e. the string is sent in the chosen format only upon the user request. The request can be made:<br>either by pressing the weighing key;  |  |

|                   |  |
|-------------------|--|
|                   | <p>or by activating a weighing input;<br/>the indicator then behaves as follows:<br/>sends the data 3 times consecutively, if the indicator receives the ACK character (06H) it waits for a new request;<br/>If it receives the NAK character (15H) it retransmits the string because the previous transmission failed;<br/>After receiving the NAK character 3 times consecutively, the indicator inserts the message "NO ACK" (transmission error) in the MF_error_LOG file</p> <p>Remote commands, i.e. the dialogue between the devices takes place only through specific commands transmitted by the external device (available only in extended string format); to check which remote commands are available, refer to the transmission manual</p> |
| Decimal separator | Comma  |
|                   | Point  |
| Checksum          | Enabled/disabled   |

### 5.5.3 Serial

This function allows creating an external transmission using the standard Rs-232, Rs-422 protocols. To create a serial transmission, proceed as follows:

- Follow the path Menu/Tools/Configuration/transmission/serial to enter the creation page



- Click on 'Add' to create a new transmission instance
- Enter the name for the following instance and confirm to create it

To configure the transmission correctly, check the following parameters:

|                         |  |  |
|-------------------------|--|--|
| Scale                   | Allows selecting a scale from those selected A, B, C, D, S or selected scale   |  |
| Port                    | Allows selecting the COM port to use (COM4, COM6, COMx depending on the optional boards or adapters fitted on the indicator)   |  |
| Transmission range (ms) | 250 default, indicates the pause between the transmission of one data and the next; in this way the string is transmitted 4 times per second. It is possible to reduce the interval up to 100 ms and then transmit data up to 10 times per second (10Hz) |  |
| Type of string          | The strings present in the Flynet indicator are as follows, to check their structure refer to the transmission manual  |  |
|                         | Extended   | The following protocols are available: Cyclic, On Demand, ACK NAK, Remote Commands |
|                         | CB   | The following protocols are available: Cyclic, On demand, ACK NAK                  |
|                         | Btek   | The following protocols are available: Cyclic, On request                          |
|                         | Modbus   | Mobus-RTU protocol is available  |
|                         | Cardinal   | The following protocols are available: Cyclic, On request                          |
|                         | Cardinal 748P  | The following protocols are available: Cyclic, On demand, ACK                      |

|                   |  |  |
|-------------------|--|--|
|                   |  | NAK  |
|                   | SASCO1   | The following protocols are available: On request, Remote commands                 |
|                   | telecontr-extended   | The following protocols are available: Cyclic, On Demand, ACK NAK, Remote Commands |
| Protocol          | Cyclic, i.e. the string is transmitted continuously immediately after the indicator is correctly switched on, the cyclic string uses the transmission interval to time the data output   |  |
|                   | On request, i.e. the selected string format is transmitted:<br>either when the weighing key is pressed;<br>or upon activation of an input related to weighing (check the list of available inputs)   |  |
|                   | On request with ACK NAK, i.e. the string is sent in the chosen format only upon the user request. The request can be made:<br>either by pressing the weighing key;<br>or by activating a weighing input;<br>the indicator then behaves as follows:<br>sends the data 3 times consecutively, if the indicator receives the ACK character (06H) it waits for a new request;<br>if it receives the NAK character (15H) it retransmits the string because the previous transmission failed;<br>after receiving the NAK character 3 times consecutively, the indicator inserts the message "NO ACK" (transmission error) in the MF_error_LOG file |  |
|                   | Remote commands, i.e. the dialogue between the devices takes place only through specific commands transmitted by the external device (available only in extended string format); to check which remote commands are available, refer to the transmission manual  |  |
| Decimal separator | Comma  |  |
|                   | point  |  |
| Checksum          | Enabled/disabled   |  |

#### 5.5.4 Indicator parameters

In this page it is possible to configure:

|                          |   |
|--------------------------|---|
| Indicator number         | Indicate the indicator number if remote commands are used followed by the indicator identification number. It works with "Extended" string "Remote commands" or "On request". |
| Sasco progressive number | Specific parameter used only by the Sasco string  |

## 5.5.5 Field bus

### 5.5.5.1 Profibus

It is possible to connect a Profibus gateway to the indicator that can interface with an external PLC system. Visit the manufacturer's website to check the gateway characteristics.

The field bus transmission configuration parameters are as follows:

|                         |   |  |
|-------------------------|---|--|
| Scale                   | Allows selecting a scale from those selected A, B, C, D, S or selected scale  |  |
| Transmission range (ms) | 250 default, indicates the pause between the transmission of one data and the next; in this way the string is transmitted 4 times per second. It is possible to reduce the interval up to 10 ms and then transmit data up to 100 times per second (100Hz)       |  |
| String                  | The strings present in the Flynet indicator are as follows, to check their structure refer to the transmission manual   |  |
|                         | Extended  | The following protocols are available: Cyclic, On Demand, ACK NAK, Remote Commands |
|                         | CB  | The following protocols are available: Cyclic, On demand, ACK NAK                  |
|                         | Btek  | The following protocols are available: Cyclic, On request                          |
|                         | Cardinal  | The following protocols are available: Cyclic, On request                          |
|                         | Cardinal 748P   | The following protocols are available: Cyclic, On demand, ACK NAK                  |
|                         | SASCO1  | The following protocols are available: On request, Remote commands                 |
|                         | Extended-traffic light  | The following protocols are available: Cyclic, On Demand, ACK NAK, Remote Commands |
| Protocol                | Cyclic, i.e. the string is transmitted continuously immediately after the indicator is correctly switched on, the cyclic string uses the transmission interval to time the data output  |  |
|                         | On request, i.e. the selected string format is transmitted:<br>either when the weighing key is pressed;<br>or upon activation of an input related to weighing (check the list of available inputs)  |  |
|                         | Remote commands, i.e. the dialogue between the devices takes place only through specific commands transmitted by the external device (available only in extended string format); to check which remote commands are available, refer to the transmission manual |  |
| Decimal separator       | Comma   |  |
|                         | point   |  |
| Checksum mode           | Enabled/disabled  |  |
| Device Name             | Select the expansion board on which you want to enable the field bus transmission; the name "OPB" is displayed, followed by the number of the expansion slot on which it is installed   |  |

|                             |   |
|-----------------------------|---|
| Waiting for stable weight   | Enabled/disabled (for SASCO1 string only)   |
| Stable weight time out (ms) | Stable weight waiting time for data string sending (valid for SASCO1 string only) |

Once the transmission on the field bus has been configured it is possible, by clicking on the TEST button, to enter the section of writing and reading tests. This section is also dedicated to changing the ProfiBus board address; with the + or - buttons it is possible to select the desired address, then the Save button allows saving the desired address.

### 5.5.5.2 Modbus-RTU, Modbus-TCP

The indicator can be connected in slave mode with Modbus protocol, via a serial port (Modbus-RTU) or via TCP (Modbus-TCP).

A number of parameters specific to the Modbus protocol are also available in addition to the standard parameters for configuring the transmission interface:

|                               |  |
|-------------------------------|--|
| Scale                         | Allows selecting a scale from those selected A, B, C, D, S or selected scale   |
| Port                          | It allows selecting the Port (e.g. 6001) or COM to use (COM4, COM6, COMx depending on the optional boards or adapters fitted on the indicator) |
| String                        | Modbus   |
| Protocol                      | Modbus-RTU, Modbus-TCP   |
| Modbus Slave ID               | 1 to 255, it sets the ID with which the slave identifies in the network  |
| Enable little endian Modbus   | It allows enabling the byte order as Little Endian   |
| Swap float bytes order Modbus | In the case of float or long variables, it allows the order of the 2 modbus registers to be changed.   |

The last two parameters (Enable little endian and Swap float bytes order) do not alter the reading of the variables, but only adapt the convention for encoding and interpreting the values.

- The big/little endian configuration parameter applies to Long and Float variables.
- The swapped registers parameter is applied to the Long and Float variables.
- Int variables are entered into the Modbus register as is.
- Boolean variables are essentially Int variables that can only take on the value 0 or 1

| Input Register (Op.code = 04) (Read-only) |         |          |  |
|---|---------|----------|--|
| Variable                                  | Type    | Register | Notes  |
| <i>Scale</i>                              |         |          |  |
| Gross weight                              | Float   | 1-2      | Scale configured on indicator  |
| Net weight                                | Float   | 3-4      | Scale configured on indicator  |
| Tare                                      | Float   | 5-6      | Scale configured on indicator  |
| Max capacity                              | Float   | 7-8      | Scale configured on indicator  |
| Division                                  | Float   | 9-10     | Scale configured on indicator  |
| Gross weight (high resolution)            | Float   | 11-12    | Scale configured on indicator - only if non-legal indicator                        |
| Net weight (high resolution)              | Float   | 13-14    | Scale configured on indicator - only if non-legal indicator                        |
| Stable weight                             | Boolean | 16       | Scale configured on indicator  |
| Zero                                      | Boolean | 17       | Scale configured on indicator  |
| Minimum weighing                          | Boolean | 18       | Scale configured on indicator  |
| Underload                                 | Boolean | 19       | Scale configured on indicator  |
| Overload                                  | Boolean | 20       | Scale configured on indicator  |
| Approved instrument                       | Boolean | 21       | Scale configured on indicator  |
| Indicator error                           | Boolean | 22       | Scale configured on indicator  |
| Weight not valid                          | Boolean | 23       | Scale configured on indicator  |
| Unit of weight measurement                | UInt    | 24       | 0=unknown; 1=kg; 2=g; 3=t; 4=lb; 5=oz; 6=TN  |
| Tare P1                                   | Float   | 25-26    | Scale configured on the terminal<br>-- if the use of multiple tares is enabled     |
| Tare P2                                   | Float   | 27-28    | Scale configured on terminal<br>-- if enabled, the use of the second multiple tare |
| Serial Number                             | ULong   | 29-30    |  |
| Gross weight                              | Float   | 101-102  | A  |
| Net weight                                | Float   | 103-104  | A  |
| Tare                                      | Float   | 105-106  | A  |
| Max capacity                              | Float   | 107-108  | A  |
| Division                                  | Float   | 109-110  | A  |
| Gross weight (high resolution)            | Float   | 111-112  | A -- only if non-legal indicator   |
| Net weight (high resolution)              | Float   | 113-114  | A -- only if non-legal indicator   |
| Stable weight                             | Boolean | 116      | A  |
| Zero                                      | Boolean | 117      | A  |
| Minimum weighing                          | Boolean | 118      | A  |
| Underload                                 | Boolean | 119      | A  |
| Overload                                  | Boolean | 120      | A  |
| Approved instrument                       | Boolean | 121      | A  |
| Indicator error                           | Boolean | 122      | A  |
| Weight not valid                          | Boolean | 123      | A  |
| Unit of weight measurement                | UInt    | 124      | A -- 0=unknown; 1=kg; 2=g; 3=t; 4=lb; 5=oz; 6=TN                                   |
| Tare P1                                   | Float   | 125-126  | A -- if the use of multiple tares is enabled                                       |
| Tare P2                                   | Float   | 127-128  | A -- if the use of the second multiple tare is enabled                             |
| Gross weight                              | Float   | 201-202  | B  |
| Net weight                                | Float   | 203-204  | B  |
| Tare                                      | Float   | 205-206  | B  |

|                                |         |         |  |
|--------------------------------|---------|---------|--|
| Max capacity                   | Float   | 207-208 | B  |
| Division                       | Float   | 209-210 | B -- only if non-legal indicator                       |
| Gross weight (high resolution) | Float   | 211-212 | B -- only if non-legal indicator                       |
| Net weight (high resolution)   | Float   | 213-214 | B  |
| Stable weight                  | Boolean | 216     | B  |
| Zero                           | Boolean | 217     | B  |
| Minimum weighing               | Boolean | 218     | B  |
| Underload                      | Boolean | 219     | B  |
| Overload                       | Boolean | 220     | B  |
| Approved instrument            | Boolean | 221     | B  |
| Indicator error                | Boolean | 222     | B  |
| Weight not valid               | Boolean | 223     | B  |
| Unit of weight measurement     | UInt    | 224     | B -- 0=unknown; 1=kg; 2=g; 3=t; 4=lb; 5=oz; 6=TN       |
| Tare P1                        | Float   | 225-226 | B -- if the use of multiple tares is enabled           |
| Tare P2                        | Float   | 227-228 | B -- if the use of the second multiple tare is enabled |
| Gross weight                   | Float   | 301-302 | C  |
| Net weight                     | Float   | 303-304 | C  |
| Tare                           | Float   | 305-306 | C  |
| Max capacity                   | Float   | 307-308 | C  |
| Division                       | Float   | 309-310 | C  |
| Gross weight (high resolution) | Float   | 311-312 | C -- only if non-legal indicator                       |
| Net weight (high resolution)   | Float   | 313-314 | C -- only if non-legal indicator                       |
| Stable weight                  | Boolean | 316     | C  |
| Zero                           | Boolean | 317     | C  |
| Minimum weighing               | Boolean | 318     | C  |
| Underload                      | Boolean | 319     | C  |
| Overload                       | Boolean | 320     | C  |
| Approved instrument            | Boolean | 321     | C  |
| Indicator error                | Boolean | 322     | C  |
| Weight not valid               | Boolean | 323     | C  |
| Unit of weight measurement     | UInt    | 324     | C -- 0=unknown; 1=kg; 2=g; 3=t; 4=lb; 5=oz; 6=TN       |
| Tare P1                        | Float   | 325-326 | C -- if the use of multiple tares is enabled           |
| Tare P2                        | Float   | 327-328 | C -- if the use of the second multiple tare is enabled |
| Gross weight                   | Float   | 401-402 | D  |
| Net weight                     | Float   | 403-404 | D  |
| Tare                           | Float   | 405-406 | D  |
| Max capacity                   | Float   | 407-408 | D  |
| Division                       | Float   | 409-410 | D  |
| Gross weight (high resolution) | Float   | 411-412 | D -- only if non-legal indicator                       |
| Net weight (high resolution)   | Float   | 413-414 | D -- only if non-legal indicator                       |
| Stable weight                  | Boolean | 416     | D  |
| Zero                           | Boolean | 417     | D  |
| Minimum weighing               | Boolean | 418     | D  |
| Underload                      | Boolean | 419     | D  |
| Overload                       | Boolean | 420     | D  |

|   |             |                 |   |
|---|-------------|-----------------|---|
| Approved instrument   | Boolean     | 421             | D   |
| Indicator error   | Boolean     | 422             | D   |
| Weight not valid  | Boolean     | 423             | D   |
| Unit of weight measurement                                    | UInt        | 424             | D -- 0=unknown; 1=kg; 2=g; 3=t; 4=lb; 5=oz; 6=TN  |
| Tare P1   | Float       | 425-426         | D -- if the use of multiple tares is enabled  |
| Tare P2   | Float       | 427-428         | D -- if the use of the second multiple tare is enabled  |
| <b>MPP area data (Only if MPP is licensed enabled)</b>        |             |                 |   |
| Alibi memory status   | Int         | 500             | <i>(not used at the moment)</i>   |
| Crc16-ccitt-xmodem<br>(polynomial 0x1021, initial=0)          | Int         | 501             | <i>Calculated from the mpp code at the P2 tare of the D scale</i>   |
| Alibi memory code   | String      | 502-505         | <i>8 characters including any leading spaces</i>  |
| Serial Number   | String      | 506-510         | <i>10 characters including any leading spaces</i>   |
| Date Hour   | String      | 511-517         | <i>14 characters in YYYYMMDDHHMMSS format</i>   |
| Scale name  | String      | 518             | <i>2 characters including any leading spaces</i>  |
| Alibi memory gross weight                                     | String      | 519-524         | <i>12 characters composed as follows:</i> <ul style="list-style-type: none"> <li><i>letter B (Brutus) or G (Gross) followed by a space</i></li> <li><i>8 weight characters including any leading spaces and decimal separator</i></li> <li><i>2 unit of measure characters</i></li> </ul>                     |
| Alibi memory net weight                                       | String      | 525-530         | <i>12 characters composed as follows:</i> <ul style="list-style-type: none"> <li><i>letter N (Net) followed by a space</i></li> <li><i>8 weight characters including any leading spaces and decimal separator</i></li> <li><i>2 unit of measure characters</i></li> </ul>                                     |
| Alibi memory tare   | String      | 531-536         | <i>12 characters composed as follows:</i> <ul style="list-style-type: none"> <li><i>letter T (Tare) followed by a space or letters PT (Predetermined Tare)</i></li> <li><i>8 weight characters including any leading spaces and decimal separator</i></li> <li><i>2 unit of measure characters</i></li> </ul> |
| Alibi memory Tare P1  | String      | 537-542         | <i>12 characters composed as follows:</i> <ul style="list-style-type: none"> <li><i>letters PT (Predetermined Tare)</i></li> <li><i>8 weight characters including any leading spaces and decimal separator</i></li> <li><i>2 unit of measure characters</i></li> </ul>  |
| Alibi memory Tare P2  | String      | 543-548         | <i>12 characters composed as follows:</i> <ul style="list-style-type: none"> <li><i>letters PT (Predetermined Tare)</i></li> <li><i>8 weight characters including any leading spaces and decimal separator</i></li> <li><i>2 unit of measure characters</i></li> </ul>  |
| <b>Holding Register (Op.code = 03 - 06 - 16) (Read-write)</b> |             |                 |   |
| <b>Variable</b>   | <b>Type</b> | <b>Register</b> | <b>Notes</b>  |
| Tare  | Float       | 1-2             | Scale configured on indicator -- <i>Only if tare enabled</i>  |
| Tare P1   | Float       | 3-4             | Scale configured on indicator -- <i>Only if tare enabled</i>  |



| Tare P2   | Float      | 5-6         | Scale configured on indicator -- <i>Only if tare enabled</i>                    |
|---|------------|-------------|---|
| Selected scale                                    | Int        | 10          |   |
| Tare  | Float      | 101-102     | <i>sc A -- Only if tare enabled</i>   |
| Tare P1   | Float      | 103-104     | <i>sc A -- Only if tare enabled</i>   |
| Tare P2   | Float      | 105-106     | <i>sc A -- Only if tare enabled</i>   |
| Tare  | Float      | 201-202     | <i>sc B -- Only if tare enabled</i>   |
| Tare P1   | Float      | 203-204     | <i>sc B -- Only if tare enabled</i>   |
| Tare P2   | Float      | 205-206     | <i>sc B -- Only if tare enabled</i>   |
| Tare  | Float      | 301-302     | <i>sc C -- Only if tare enabled</i>   |
| Tare P1   | Float      | 303-304     | <i>sc C -- Only if tare enabled</i>   |
| Tare P2   | Float      | 305-306     | <i>sc C -- Only if tare enabled</i>   |
| Tare  | Float      | 401-402     | <i>sc D -- Only if tare enabled</i>   |
| Tare P1   | Float      | 403-404     | <i>sc D -- Only if tare enabled</i>   |
| Tare P2   | Float      | 405-406     | <i>sc D -- Only if tare enabled</i>   |
| <b>Coil (Op.code = 01 - 05 - 15) (Read-write)</b> |            |             |   |
| Variable  | Type       | Register    | Notes   |
| Reset scale                                       | Command    | 1           | Scale configured on indicator   |
| Self-weighted tare                                | Command    | 2           | Scale configured on indicator   |
| Delete tare                                       | Command    | 3           | Scale configured on indicator   |
| Execute alibi memory weighing                     | Command    | 20          | Scale configured on indicator -- only if alibi memory is enabled with a licence |
| Reset scale                                       | Command    | 101         | sc A  |
| Self-weighted tare                                | Command    | 102         | sc A  |
| Delete tare                                       | Command    | 103         | sc A  |
| Execute alibi memory weighing                     | Command    | 120         | sc A -- only if alibi memory is enabled with a licence                          |
| Reset scale                                       | Command    | 201         | sc B  |
| Self-weighted tare                                | Command    | 202         | sc B  |
| Delete tare                                       | Command    | 203         | sc B  |
| Execute alibi memory weighing                     | Command    | 220         | sc B -- only if alibi memory is enabled with a licence                          |
| Reset scale                                       | Command    | 301         | sc C  |
| Self-weighted tare                                | Command    | 302         | sc C  |
| Delete tare                                       | Command    | 303         | sc C  |
| Execute alibi memory weighing                     | Command    | 320         | sc C -- only if alibi memory is enabled with a licence                          |
| Reset scale                                       | Command    | 401         | sc D  |
| Self-weighted tare                                | Command    | 402         | sc D  |
| Delete tare                                       | Command    | 403         | sc D  |
| Execute alibi memory weighing                     | Command    | 420         | sc D -- only if alibi memory is enabled with a licence                          |
| <b>Input/Output</b>                               |            |             |   |
| Output 01   | Read write | 1001        |   |
| Output 02   | Read write | 1002        |   |
| Optional outputs                                  | Read write | 1101...11xx | <i>Slot1</i>  |

| Optional outputs                                 | Read write | 1201...12xx | Slot2 |
|--|------------|-------------|-------|
|  |            |             |       |
| <b>Discrete input (Op.code = 02) (Read-only)</b> |            |             |       |
| Variable   | Type       | Register    | Notes |
| Input/Output                                     |            |             |       |
| Input 01   | Read-only  | 1001        |       |
| Input 02   | Read-only  | 1002        |       |
| Optional inputs                                  | Read-only  | 1101...11xx | Slot1 |
| Optional inputs                                  | Read-only  | 1201...12xx | Slot2 |
|  |            |             |       |

The addresses in the table are all in Base 1.

**N.B:** The data relating to the MPP are supplied in string format because, being metrological data, they must exactly comply with the values used by the terminal. Each string is 'decomposed' into pairs of ASCII characters and each pair is written in a Modbus register.

#### Example

Assume that with the MPP weighing a net weight equal to 99.810 kg has been acquired The weight is first formatted as a 12-character string composed as follows:

| type | value    | Unit of weight measurement |
|------|----------|----------------------------|
| Nb   | bb99,810 | kg                         |

The string is then broken down into pairs of characters and each of the pairs is entered in a Modbus register, therefore the Modbus registers from 525 to 530 in the Hex – ASCII format will contain the following values:

|     |        |   |    |
|-----|--------|---|----|
| 525 | 0x4e20 | → | Nb |
| 526 | 0x2020 | → | bb |
| 527 | 0x3939 | → | 99 |
| 528 | 0x2c38 | → | ,8 |
| 529 | 0x3130 | → | 10 |
| 530 | 0x6b67 | → | kg |

### 5.5.6 Printed data string

Through the printed data string it is possible to send to a PC a string containing different data such as weight, indicator IP address, operation type and so on. The composition of the printed data string varies depending on the programme installed on the indicator. To know the structure of every single string, refer to the specific manuals for the installed application.

This type of string can be sent via:

- Network
- Serial

#### 5.5.6.1 Transmission of printed data string via network

The parameters available for network transmission are as follows:

|          |   |   |
|----------|---|---|
| Port     | 6001 is the standard port used to transmit the printed data string externally, it is possible to open another port if necessary |   |
| Protocol | On request  | The weighing data are first transmitted and then printed out. With ACK NAK protocol, if the transmission fails (the ACK command is not sent) the line "ERROR PRINTED DATA TRANSMISSION ERROR" is added at the bottom of the printout<br>With this mode the strings on which this situation occurs are permanently lost.   |
|          | Spool   | The weighing data are first printed out and then, if the printout ends correctly, they are transmitted with ACK NAK protocol. If the transmission fails, the string that was to be transmitted is stored in a special archive called TxWeighing; in this archive the transmissions waiting to be transmitted are saved. The transmission of the strings in the queue is attempted every time the transmission of the weighing operation in progress must be carried out: if there are already strings in the queue, their transmission is carried out first, then when the queue has been emptied the string relevant to the current operation is transmitted (the transmission takes place in chronological order, from the oldest string to the most recent one). Each string is deleted from the queue only after it has been correctly transmitted.<br>With this mode the weighing operation in progress is slowed down proportionally to the number of strings present in the TxWeighing archive, in fact the weighing in progress is completed only at the end of its transmission. |
|          | Archive   | The weighing data are first printed out and then, if the printout ends correctly, they are stored in a special archive called TxWeighing. In order to retrieve all stored weighing operations from the indicator, the PC must send the character ENQ (05 hexadecimal or CTRL + E).<br>If the indicator accepts the transmission request received from the PC by sending the character ENQ, it extracts from the TxWeighing archive the data relating to the first weighing contained in the archive (the transmission takes place in chronological order, from the oldest string to the most recent one). Each string is deleted from the archive only after it has been correctly transmitted. After the correct transmission of the last string contained in the archive, the indicator sends the character EOT (04 hexadecimal) to the PC to inform it that the archive is now empty.<br>With this mode the PC must send its enquiry when the indicator is <u>not</u> performing weighing operations. On the contrary; the weighing operation in progress may slow down.               |

|                   |                  |
|-------------------|------------------|
| Decimal Separator | Comma            |
|                   | Point            |
| Checksum          | Enabled/disabled |
| Enabled           | Enabled/disabled |

### 5.5.6.2 Transmission of printed data string via serial transmission

The parameters available for serial transmission are as follows:

|          |   |  |
|----------|---|--|
| Port     | The COM ports available are those indicated in the drop-down menu, select one of the COM ports not used |  |
| Protocol | On request  | <p>The weighing data are first transmitted and then printed out. With ACK NAK protocol, if the transmission fails (the ACK command is not sent) the line "ERROR PRINTED DATA TRANSMISSION ERROR" is added at the bottom of the printout</p> <p>With this mode the strings on which this situation occurs are permanently lost.</p>   |
|          | Spool   | <p>The weighing data are first printed out and then, if the printout ends correctly, they are transmitted with ACK NAK protocol. If the transmission fails, the string that was to be transmitted is stored in a special archive called TxWeighing; in this archive the transmissions waiting to be transmitted are saved. The transmission of the strings in the queue is attempted every time the transmission of the weighing operation in progress must be carried out: if there are already strings in the queue, their transmission is carried out first, then when the queue has been emptied the string relevant to the current operation is transmitted (the transmission takes place in chronological order, from the oldest string to the most recent one). Each string is deleted from the queue only after it has been correctly transmitted.</p> <p>With this mode the weighing operation in progress is slowed down proportionally to the number of strings present in the TxWeighing archive, in fact the weighing in progress is completed only at the end of its transmission.</p> |
|          | Archive   | <p>The weighing data are first printed out and then, if the printout ends correctly, they are stored in a special archive called TxWeighing. In order to retrieve all stored weighing operations from the indicator, the PC must send the character ENQ (05 hexadecimal or CTRL + E).</p> <p>If the indicator accepts the transmission request received from the PC by sending the character ENQ, it extracts from the TxWeighing archive the data relating to the first weighing contained in the archive (the transmission takes place in chronological order, from the oldest string to the most recent one). Each string is deleted from the archive only after it has been correctly transmitted. After the correct transmission of the last string contained in the archive, the indicator sends the character EOT (04 hexadecimal) to the PC to inform it that the archive is now empty.</p> <p>With this mode the PC must send its enquiry when the indicator is <u>not</u> performing weighing operations. On the contrary; the weighing operation in progress may slow down.</p>           |

|                   |                  |
|-------------------|------------------|
| Decimal Separator | Comma            |
|                   | Point            |
| Checksum          | Enabled/disabled |
| Enabled           | Enabled/disabled |

### 5.5.6.3 General

From this page it is possible to choose whether or not to transmit the first weighing, this parameter is enabled for example in double weighing operation.

|                                   |        |
|-----------------------------------|--------|
| Transmit first weighing operation | Yes/No |
|-----------------------------------|--------|

### 5.5.6.4 Delete data

This function allows deleting the data contained in the TxWeighing archive, stored using the Archive or spool protocols, in case they are no longer needed.

To delete them, simply click on the relevant icon, press yes to confirm and delete or press no to go back.

### 5.5.7 Analogue output

Up to 2 optional analogue boards can be fitted on the indicator. Depending on the hardware configuration of the board it is possible to use it to manage the voltage output from 0V to 10V or the current output from 4mA to 20mA.



To enable the analogue output go to the configuration section and select 'Analogue Output'. Once inside the page, if the board is installed correctly, it is possible to see the instance named with a number corresponding to the expansion slot on which it is installed.

To configure it, double-click on the small arrow on the right side.

|                |   |
|----------------|---|
| Enable         | Enable or disable the operation of the optional board   |
| Scale          | Select the scale on which you want to use the optional board: Selected, A, B, C, D, S           |
| Weight         | Indicate with which type of weight the analogue output must vary: Net weight, Gross weight      |
| Type of output | Depending on the position of the jumper, select the correct output. Available: Voltage, Current |

Save to confirm the configuration and proceed to use.

## 5.6 Activating the optional services

The Flynet indicator contains optional services that can be activated through an activation code. The services available are:

|                 |  |
|-----------------|--|
| MPP             | Permanent weight memory, used in legal weighing. When the system is approved and legal weighing is enabled, the system automatically generates the MPP code and enters the data into the MPP archive. Enabling the service therefore allows enabling the display of data and remote controls. It is activated if the customer needs to send the weighing data to a PC.                                 |
| PDF printer     | The PDF printer is used by the customer to generate a weighing in electronic format. If activated and selected as (primary or secondary) system printer, it generates a PDF file containing the weighing data at the time of weighing. Therefore it is possible to use the spreadsheet in different ways. Available: File saving on device internal or external memory, file sending via email or FTP. |
| Network printer | The network printer is used by the customer to take advantage of one or more printers already present in the company network. This function allows printing, at the time of weighing, directly from a network printer. To check the compatibility of your printer, refer to paragraph 4.1 on page 28.  |
| Axis weighing   | Available in the Double Weighing software. The axis weighing is activated when the customer needs to measure the weight of each vehicle axis. To configure it, refer to paragraph 2.3.1 on page 22   |
| CLOUD           | This option can be activated against payment. When enabled, it allows connection through Cooperativa Bilanciai infrastructure.   |

## 5.7 Themes

From the themes section it is possible to choose a background colour for the indicator. Select your preferred theme and save to apply it.

## 5.8 Shortcut keys

The tools menu allows customising the shortcut keys. Click on the relevant icon to access the customisation page. When the application is installed, some default shortcut keys are already present. They refer to the specific functions of the software, so they may vary. The 4 shortcut keys in the first line will be positioned in the shortcut line above the metrology weighing keys. Subsequently added shortcut keys will be placed on the 'Shortcut keys' page visible from the weighing screen.

To edit, add or delete the shortcut keys, refer to the following definitions:

|              |  |
|--------------|--|
| Save         | Used to save the current configuration and exit  |
| Delete       | Select the shortcut key to be deleted then click on the Delete key to remove it  |
| Rename       | Select the shortcut key to be renamed, then click on the Rename key: a window opens, in which it is possible to type the desired name (the keyboard appears only when you touch the part of the screen on which to write), click Save to confirm the change. (the space available for the text is max 14 characters, the following will be omitted for space issues) |
| New          | It allows accessing the pages containing all the available shortcut keys, selecting the desired key to read a short description of its operation, selecting it again to add it to the shortcut keys.   |
| Move first   | This function allows moving the selected icon to the first position. To use it, select the shortcut key to be moved, then press 'Move first' to move it to the first position.   |
| Move after   | This function allows moving the selected icon to the last position. To use it, select the shortcut key to be moved, then press 'Move after' to move it to the last position.   |
| Default text | Use this function to restore the initial condition of the icon text. To use it, select the icon and press 'Default text'.  |

## 5.9 Switching off

It allows temporarily deactivation of the screen, which turns black, and the indicator seems apparently off (the blue LED on the on/off key remains on). To reactivate the screen, simply touch it anywhere.

## 5.10 Access levels

Refer to paragraph 5.2.5 on page 58.

## 5.11 Error management

In this menu it is possible to manage the errors displayed concerning Scale and Printer.

Depending on the category chosen, the error will be displayed in different ways:

| Category | Effect  |
|----------|---|
| 1        | The error is displayed inside the status bar at the top of the screen   |
| 2        | The error is displayed in a pop-up window in the centre of the screen. Wait a few seconds for closing or touch the screen to anticipate it                |
| 3        | The error is displayed in a pop-up window in the centre of the screen. It is necessary to touch the screen to close the window, otherwise it remains open |

If an optional Input/Output board has been installed, it is also possible to activate an external signal (Output) by selecting an available Output.

## 5.12 Sharing data

The Flynet indicator is able to share its archives with external sources. It is possible to share data with another indicator on which the same application is installed, or on a Windows PC with SQL software installed. It is also possible to use an external device, USB stick or SD card, as indicator database.



### 5.12.1 Database

In the Others section of the Application/Others menu it is possible to configure the database

management. Click the 'Database'  icon to access the configuration:

|            |                      |
|------------|----------------------|
| Connection | Legacy Local(SQLCE)  |
|            | Legacy Remote(SQLCE) |
|            | Microsoft SQL Server |
|            | Local(SQLite)        |
|            | Remote(SQLite)       |

#### Legacy Remote(SQLCE) or Remote(SQLite)

|                   |  |
|-------------------|--|
| Device IP address | Enter the IP address of the remote indicator from which you want to use the database |
|-------------------|--|






#### Microsoft SQL Server:

|                         |  |
|-------------------------|--|
| Server name             | Enter the name of the SQL instance on PC or the IP address of the PC<br>(example: MROSSI-SQLEXPRESS or 192.168.10.102) |
| Connect to the database | Enter the name of the database previously created on SQL server<br>(example: Flynet-DB)                                |
| Login account name      | Enter the user name used to access the SQL server database engine<br>(example: sa)                                     |
| Login account password  | Enter the user name password to access the SQL server database engine  |

To check the correct connection with the SQL server, try to access the archives on the Flynet indicator. If this is not possible, check the network settings of the indicator (IP address, subnet mask) and the configuration of your SQL server instance.

## 5.13 Adding an external printer

To connect a printer to the indicator, simply follow this procedure:

1. Navigate to the 'Printers / Readers / IOs'  menu, to reach it follow the path Menu / Tools / Configuration / System;
2. Select the Printers tag;
3. Select the Printers item so that its background turns white
4. Select the 'Add'  icon, a form will open to rename the printer, then write the desired name and confirm to proceed;
5. Now the new instance created is displayed, select model and connection COM, save and exit;
6. Select  'Serial Ports' and once in the menu move to the same COM used for the printer
7. Once inside the COM configuration menu, set the parameters according to the printer communication specifications. The Flynet indicator foresees the use of hardware Handshake only if COM4 or COM8 (option) and suitable cable are selected; at the end save and exit the COM menu
8. Exit the System menu by pressing Close, you are now in the configuration menu, press 'Application' and then 'Others'
9. select  'Printer';
10. Configuring parameters 
11. In this page set the created printer as the primary (or secondary if you have another printer) and then save and exit;
12. Before using the printer perform a test, select Info from the Tools menu and then Test;
13. Select printer;
14. A page opens that shows the possibility to set the test you want to perform

|          |   |
|----------|---|
| Printers | Select the printer to be tested   |
| Filter   | Select the layout format type, to make a simple test select the *.bpl format  |
| Layout   | To perform a complete test, select adrinput.bpl (if double weighing version) or weighing.bpl (if single weighing version) and press the "Check printer status" button |


At the end of the print tests, it is possible to exit and return to normal operation.


If the test does not work, check the connection cable between the indicator and the printer, usually a label is present to avoid reversing the connectors; also check the printer settings if necessary, to access the configuration menu refer to the specific printer manual.


If the problem persists, check the printer configuration starting from step 5 to step 13.


## 5.14 Adding a reader


To connect a Flynet indicator reader, simply follow this procedure:

Navigate to the 'Printers / Readers / IOs'  menu,  
To reach it follow the path Menu / Tools / Configuration / System;  
Select Readers tag;  
Select the Readers item so that its background turns white;


Select the  icon, a form will open to rename the reader, then write the desired name and confirm to proceed;  
Now the new instance created is displayed, select the model and the connection COM, save and exit;

Select  'Serial Ports' and once in the menu move to the same COM used for the reader;  
Once inside the COM configuration menu, set the parameters according to the reader communication specifications. The Flynet indicator does not foresee the use of hardware Handshake, at the end save and exit the COM menu;

Exit the System menu by pressing Close, you are now in the Configuration menu, then press  'Cards' and select the type of card that corresponds to the one to be used, save and exit;  
Before using the reader perform a test, select Info from the Tools menu and then Test;  
Select card reader  
A page opens where the code read by the reader is displayed, then read the card through the reader and check that the code is displayed;  
In order to associate a card code to an operator code, it is necessary to code every single card and associate it manually to the desired operator code. The operator code must be contained in an indicator operation archive. In addition, if enabled, it is also possible to generate a simple weighing

using the badge even if not coded. Then, in the 'Archives' page,  select 'Card Encoding';  
In the menu at the bottom of the screen, select New to add a new encoding;  
Enter the operator code, i.e. the code you wish to recall using the card and press Enter;  
Now select the blank section next to Card Code item and, using the reader, read the card, press Enter to confirm;  
As you can see from the screen, the card code is captured and then associated to the desired code, save and exit or save and proceed with the addition of a new code;

From the main page it is now possible, using the reader, to quickly and easily recall the data stored in the operating archives.

If the badge is not valid or associated with any code, the following image  is displayed at the top of the screen. In case no badge is read, check the correct configuration of the card type in the Configuration/Cards section.

## 5.15 Adding a network or PDF printer

To add a network or PDF printer, follow the procedure below:

Activate the service from the 'Activating utilities'



page, to activate it refer to paragraph 5.6 on page 77;

Once the service is activated, enter the configuration menu and select



'PDF-Network printer';

Depending on the activated option, select network or PDF printer;



Select 'Add' and name the new instance, confirm;

Set the parameters according to the specifications on page 73, 75 depending on the type of printer chosen and then save;

Now select the printer, go to the Configuration menu and click



'Application';

Click Others and then



'Printer';

To select the created printer, click next to the Main Printer Alias item, a window containing the name of the previously added printer is displayed;

To add it, click directly on the name;

save and exit to confirm.

To test a network or PDF printer, perform a weigh, so go back to the weight view page, load a weight on the platform and click the First Weighing button. Then wait for the correct end of the procedure and check that the sheet is printed by the network printer or the PDF file is generated by the indicator.

If printing fails, check the printer settings carefully. If there are serious errors, the system will record the error in the LOG of the managed framework, making it possible to identify the error location.

## 5.16 Testing a serial transmission

The indicator is able to send a data string to external devices. The available data strings are listed in paragraph 5 on page 30.

Once the transmission has been configured, whether serial or network, it can be tested via PC. Then connect the free end of the cable to the PC, using an adapter if necessary, and open a software capable of handling incoming data traffic (example: Hyper Terminal). In case of serial connection, set the reception data in the same way as they are set on the indicator (baud rate, stop bit). In case of Ethernet connection, set the IP address of the indicator and the communication port entered in the indicator configuration.

In case of cyclically transmitted string, when the connection to the indicator is activated, the data will start to be displayed on the monitor. If the string is transmitted via remote commands, ACK NAK or on request, send for example the string transmission start command (<SX>CR) to start the dialogue between the devices; to end the dialogue send the string end command (<EX>CR).

## 6 OPTIONS

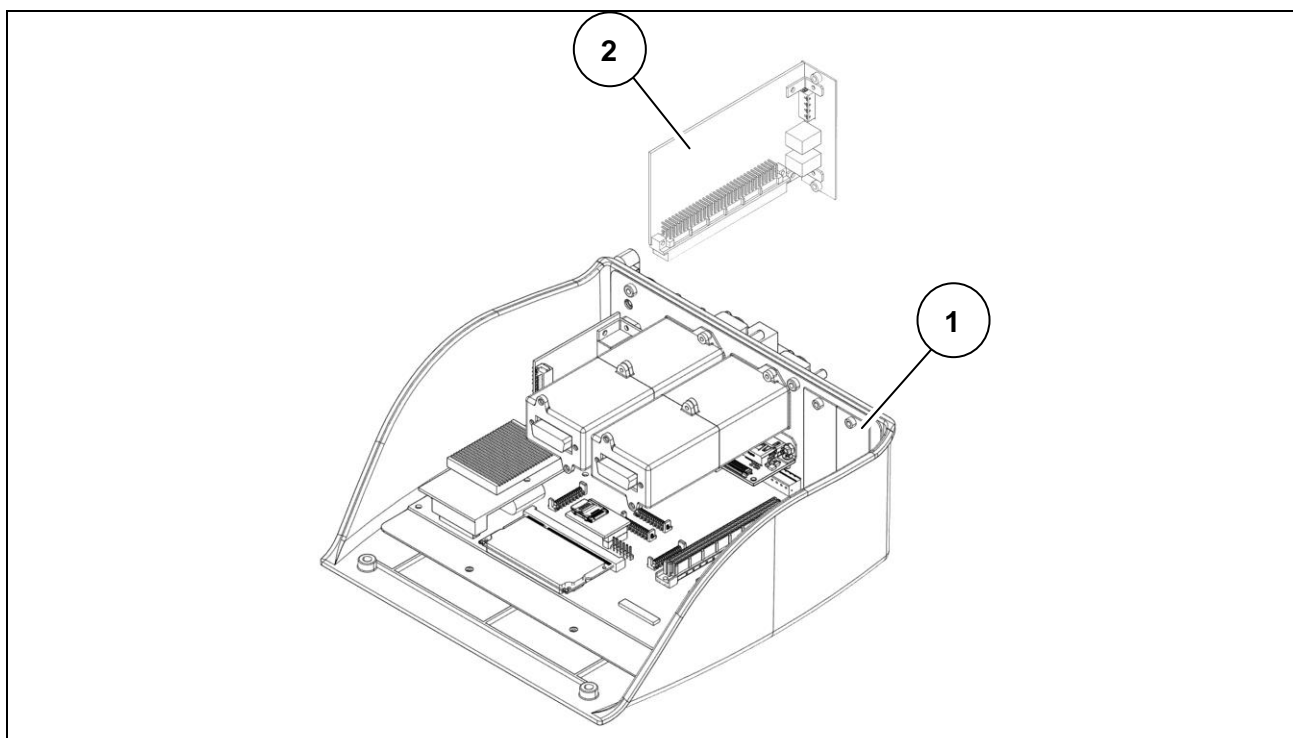
The DD1010 FLYNET weighing indicator provides for the installation of optional cards, peripherals and accessory software.

Some options also include the firmware update. Contact the After-Sales Service or the Sales Service Network.

The options currently provided (at the date of writing of this manual) are:

- Serial expansion board RS232 - RS422
- 0-10V/4-20mA analogue output board, analogue input and pulse counter (sensor interface)
- Sound board
- Printers
- WI-FI modules (external)
- HDMI optional board
- Wall-mounting brackets
- Second scale module
- Additional displays
- 8 input/12 output board

### 6.1 Installing Optional Boards



**Figure 6.1-1 - Installing Optional Board**

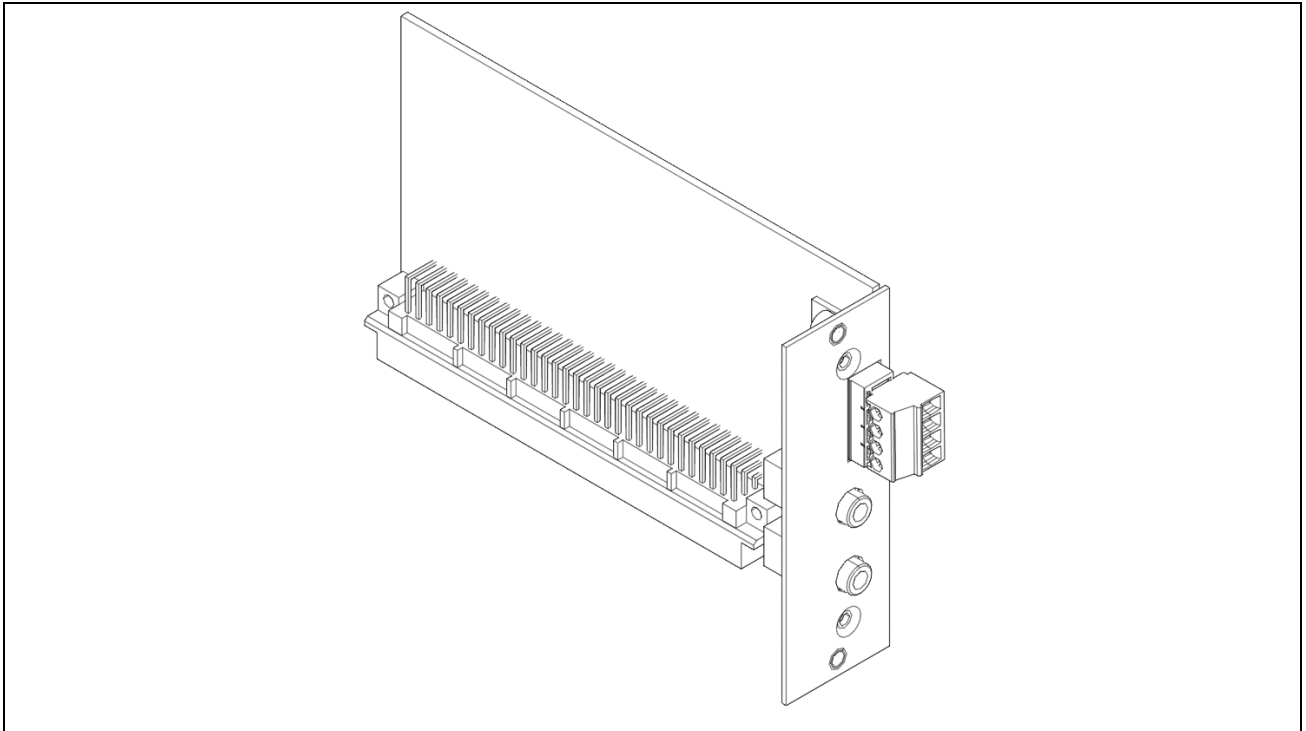
1. Remove the indicator cover.
2. Remove the closing plate (ref. 1), if any.
3. Install the optional board (ref. 2) in the slot provided.
4. Make the necessary connections.

**WARNING**

The figure is for illustrative purposes only, refer to the cover removal procedures in chapter 10.

## 6.2 Optional Board Overview

### 6.2.1 Sound board



**Figure 6.2-1 - Sound board**

The sound board consists of:

- Lower microphone input jack
- Upper headphone output jack,
- Amplified loudspeaker output top clamp

Clamp numbering from below (pin1 at the bottom):

- pin1: out + LH loudspeaker
- pin2: out - LH loudspeaker
- pin3: out + RH loudspeaker
- pin4: out - RH loudspeaker

## 6.2.2 8 in/12 out board

### Function description

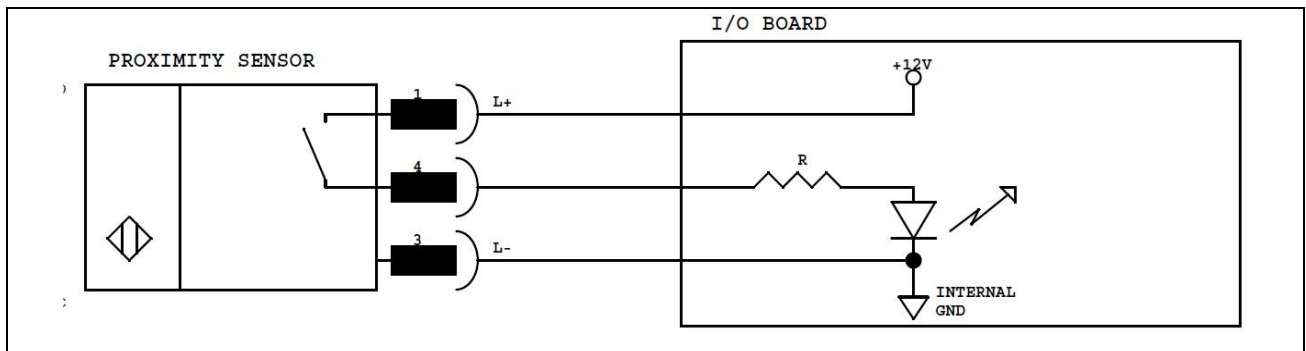
The 8 input/12 output expansion board allows the weighing indicator on which it is installed to manage 8 dry contact input signals (coming for example from a relay output) and to provide 12 digital dry contact output signals.

For use with software released from September 2023.

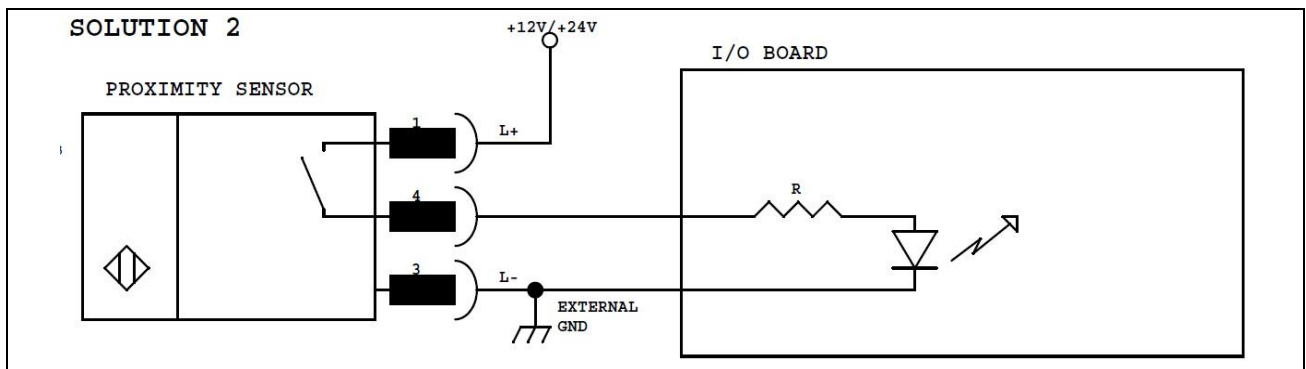
The input signals can be connected in two different ways (see fig. 6.2.2-1: proximity sensor connection example):

1. Using the opto-insulated +12V inside the board provided on the 25-pin output connector
2. Providing a +12V or +24V voltage external to the board and suitably filtered

In order to use solution 1) it is necessary to close the jumper J4; in case of solution 2) the jumper J4 must remain open (see fig. 6.2.2-2).



**Figure 6.2-2 - Possible proximity sensor connections - Solution 1**



**Figure 6.2-3 - Possible proximity sensor connections - Solution 2**

As far as the digital output signals are concerned, 3 independent output units are available, each of which refers to a different common pin.

All output signals are of dry contact type and common pins can be connected together to use a single voltage reference.

The board also has a hardware watchdog management that allows guaranteeing the almost instantaneous reset (about 1 second) of all digital outputs in case of undesired block or stop of the weighing indicator.

To enable the hardware watchdog function it is necessary to close the jumper J19 on the board, to keep this function disabled, leave the jumper J19 open.



### Technical characteristics

| Inputs                            |  |
|-----------------------------------|--|
| Maximum voltage (DC)              | +24 V  |
| Maximum current (DC)              | 40 mA  |
| Notes                             | Inputs can be controlled by dry contact outputs (e.g. relays) or NPN NO transistor outputs |
| Outputs                           |  |
| Maximum switching voltage (AC/DC) | 24 V   |
| Maximum switching current (AC/DC) | 190 mA   |
| Maximum power                     | 800 mW   |
| Notes                             | Dry contact output (solid state contact - optomos)   |

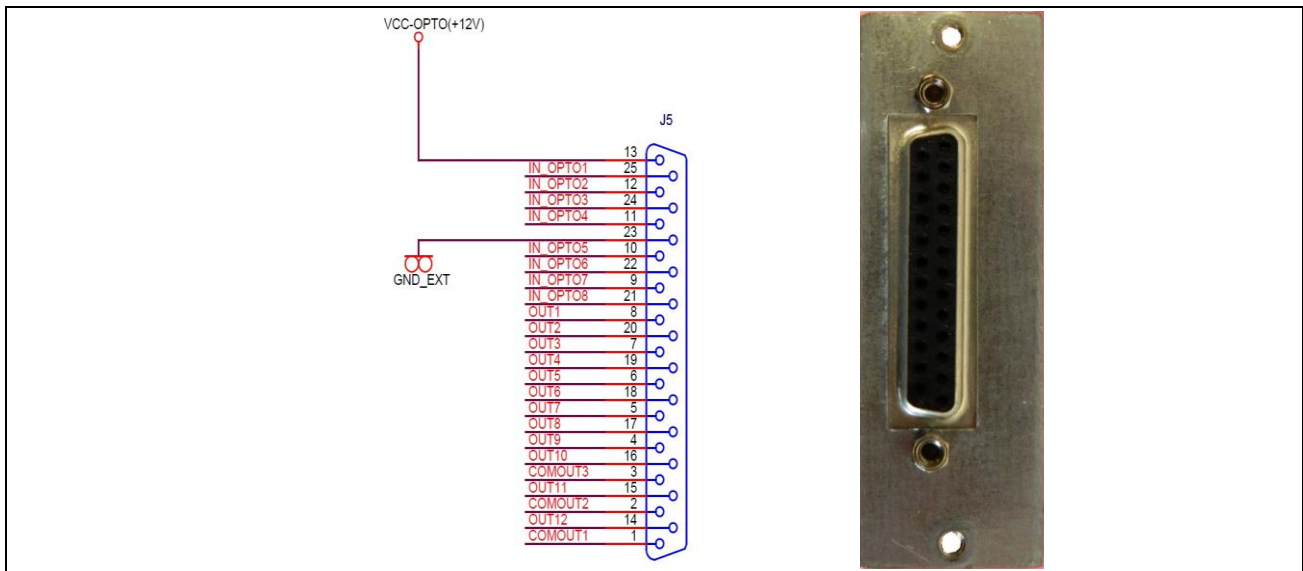


Figure 6.2-3 - 25-pin output connector



### 6.2.3 4 in/6 out board

#### Function description

The 4 input/6 output expansion board allows the weighing indicator on which it is installed to manage 4 dry contact input signals (coming for example from a relay output) and to provide 6 digital dry contact output signals.

For use with software released from January 2024.

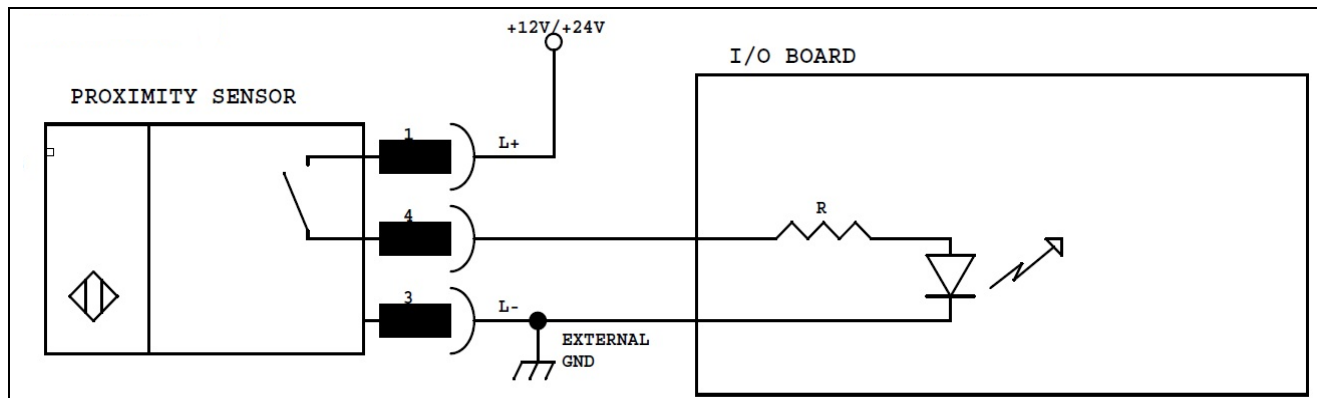
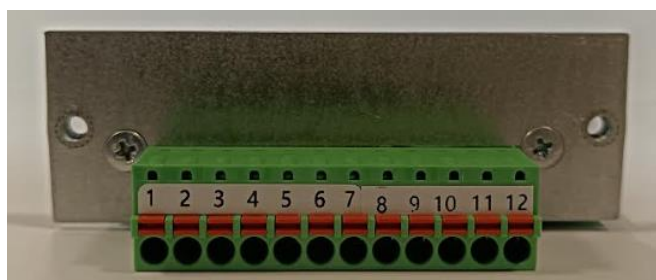


Figure 6.2-6.1 - Possible proximity sensor connections - Solution 1



| IN/OUT  | Num. pin connector | FUNCTION DESCRIPTION                |
|---------|--------------------|-------------------------------------|
| OUT1    | 1                  | Outpu1                              |
| OUT2    | 2                  | Outpu2                              |
| OUT3    | 3                  | Outpu3                              |
| OUT4    | 4                  | Outpu4                              |
| OUT5    | 5                  | Outpu5                              |
| OUT6    | 6                  | Outpu6                              |
| COMOUT  | 7                  | Common for Output                   |
| IN1     | 8                  | Input1                              |
| IN2     | 9                  | Input2                              |
| IN3     | 10                 | Input3                              |
| IN4     | 11                 | Input4                              |
| GND_EXT | 12                 | External GND to activate the Inputs |

**Technical characteristics**

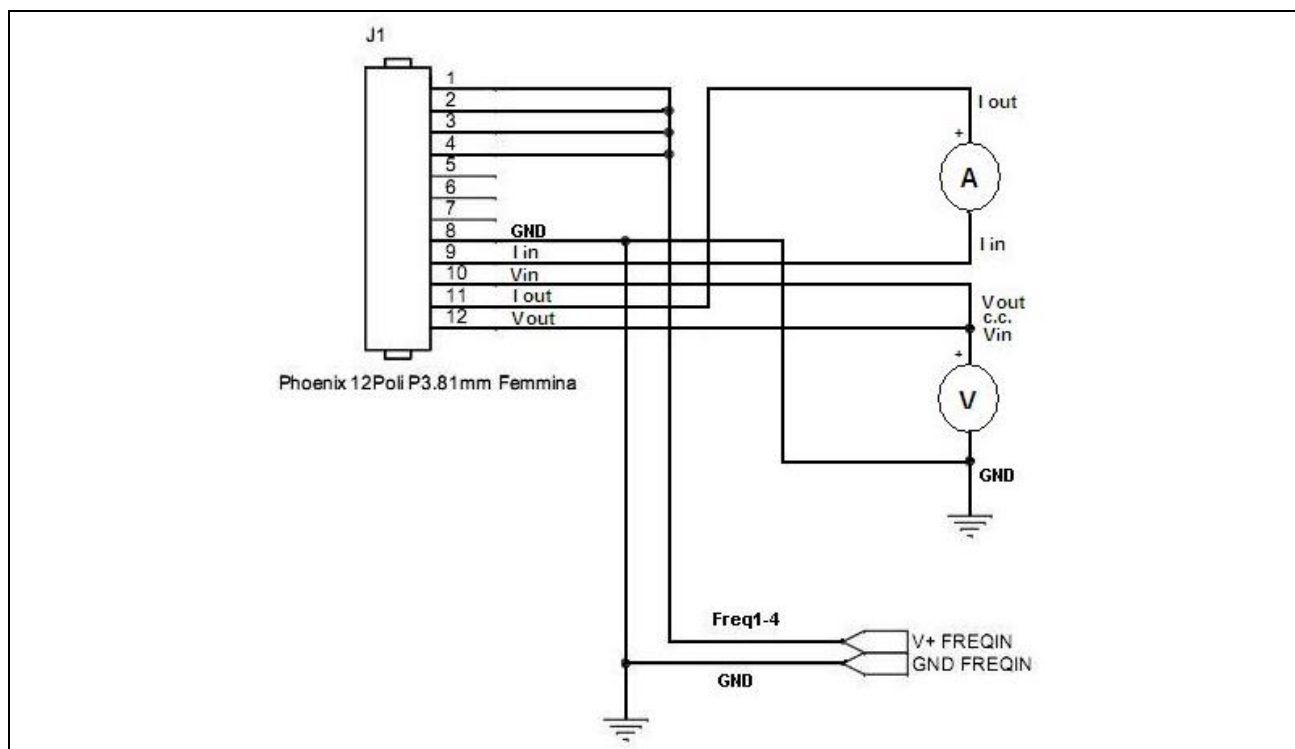
|                                    |  |
|------------------------------------|--|
| <b>Inputs</b>                      |  |
| Maximum voltage (DC)               | +24 V  |
| Maximum current (DC)               | 40 mA  |
| Notes                              | Inputs can be controlled by dry contact outputs (e.g. relays) or NPN NO transistor outputs |
| <b>Outputs</b>                     |  |
| Maximum switching voltage (AC/ DC) | 24V  |
| Maximum switching current (AC/ DC) | 190 mA   |
| Maximum power                      | 800 mW   |
| Notes                              | Dry contact output (solid state contact - optomos)   |

## 6.2.4 Pulse input analogue output board

To obtain the current output, place the jumper J14 on pins 2-3; the relevant output pins are 11 (output current), 9 (input current). The manageable current must be  $\leq 190$  mA (AC/DC).

To obtain the voltage output, place the jumper on pins 1-2; the relevant output pins are 12 (output voltage), 8 (GND). The switchable voltage must be  $\leq 24$  V (AC/DC).

If an analogue output expansion board is installed inside the indicator, the connections must follow these instructions:



**Figure 6.2-6 - Analogue Output Board Connections (0-10V, 4-20mA)**

The connector features an analogue output in 0-10 V and 0(4)-20 mA format galvanically separated; the wiring diagram is shown in the table below:

|  |
|--|
| <b>Analogue current output:</b>  |
| Place jumper J14 in position 2-3 for 4-20mA current output, between pins:<br>11 (Current Out) and 9 (Current In) |
| <b>Analogue voltage output:</b>  |
| Place jumper J14 in position 1-2 for voltage output, between pins:<br>12 Voltage Out and Pin 8 (GND)             |



### ATTENTION

*Technical characteristics:*

*Resolution = 10000 points*

*Accuracy = 0.05 % FS*

*Minimum output voltage load = 100 ohm*

*Maximum current output load = 250 ohm*




## 7 ERROR MESSAGES

### 7.1 Indicator errors

| Problem  | Cause                | Remedy   |
|--|----------------------|--|
| The indicator does not turn on by pressing the power key | The blue LED is off  | Check the status of the green LED on the power supply unit:<br>if it is on, check the correct insertion of the connector in point 9                      |
| The indicator does not turn on                           | Wrong key press      | Press on the logo in the centre of the key.<br>When pressed, you can feel the key cover being pressed  |
| Pressure on the touch screen has no effect               | Uncalibrated display | Switch the indicator off and on again.<br>Within 5 seconds of switching on press anywhere on the display.<br>Perform the display calibration operations. |

### 7.2 Scale Errors

| Problem   | Cause   | Remedy  |
|---|---|---|
| OVERLOAD  | The scale is overloaded   | Reduce the weight to a value lower than the maximum capacity so that it is suitable to the weighing area  |
| UNDERLOAD   | The scale is negative by at least 20 divisions.<br>This message is only displayed if the scale is approved, otherwise, the weight preceded by the '-' character is displayed. | Press the reset key: →0←<br>If the value does not reset to zero after pressing the key:<br>1) switch off the instrument and repeat the switching on operations;<br>2) inform the Service if the problem persists. |
|  - - | Non-resettable weight   | Unload the scale  |
| - - - - -   | Unstable weight   | Remove the cause of weight instability and try to switch the indicator on again   |
| - LOCK -  | Instrument not reset correctly  | Unload the scale  |

| Problem                             | Cause   | Remedy  |
|-------------------------------------|---|---|
| - 01 -<br>Faulty converter          | Incorrect or missing load cell connection                           | Check extension cable, junction box and load cells  |
| - 01 -<br>Faulty converter          | (*) Return signal from load cell out of range                       | Check that the load cell is efficient and that it works within its field of use   |
| - 01 -<br>Faulty converter          | (*) Board breakage  | Check the conversion board with a load cell simulator. If the test result is negative, replace the converter board                  |
| - 01 -<br>Faulty converter          | (**) Digital cells not responding                                   | Check cell connections  |
| - 02 -<br>Error in parameter memory | Data error in board parameter memory                                | Check linearised sampling parameters  |
| - 06 -                              | (**) Serial number error on digital cell                            | Check the serial numbers and, if necessary, carry out angle calibration   |
| - 07 -                              | (**) Breakage of a cell on multi-cell system                        | Replace the cell and carry out angle calibration or angle calibration for the individual cell                                       |
| - 08 -                              | (**) Scale board breakage   | Replace the scale board and carry out angle calibration or restore the indicator data (if they have been saved before the breakage) |
| - 09 -                              | (**) First system switching on                                      | Carry out angle calibration   |
| - 10 -                              | (**) At least one cell not configured                               | Carry out angle calibration   |
| - 11 -                              | (**) Digital cell power supply problems                             | Check cables and power supply voltage   |
| - 12 -                              | (**) Digital cell power supply problems                             | Replace the load cell that signals the error  |
| - 13 -                              | (**) Cell with internal temperature outside the range (-40 ÷ 100°C) | Replace the cell that signals the error.<br>Carry out angle calibration for the replaced cell.                                      |
| - 21 -                              | (**) Temporary digital cell error                                   | --  |



## 8 PARAMETER CUSTOMISATION

Access the parameter customisation by pressing the **"TOOLS"** key to view all the parameters that contribute to the instrument operation.

Not all parameters are editable.

The non-editable parameters can be distinguished by the different colour of the text: by clicking on them, the change options are not shown.



### **ATTENTION**

*Customisations do not affect the weighing functions in any way, but can compromise, if not correctly performed, the operation of the entire weighing system as a weighing plant. Use only qualified and competent technicians for the modification of the operations indicated in this section.*

## 9 ACCESS TO METROLOGICAL PARAMETERS

To access customisation of the metrological parameters (parameters more significantly linked to legal operation of the scale) you must press the calibration button.

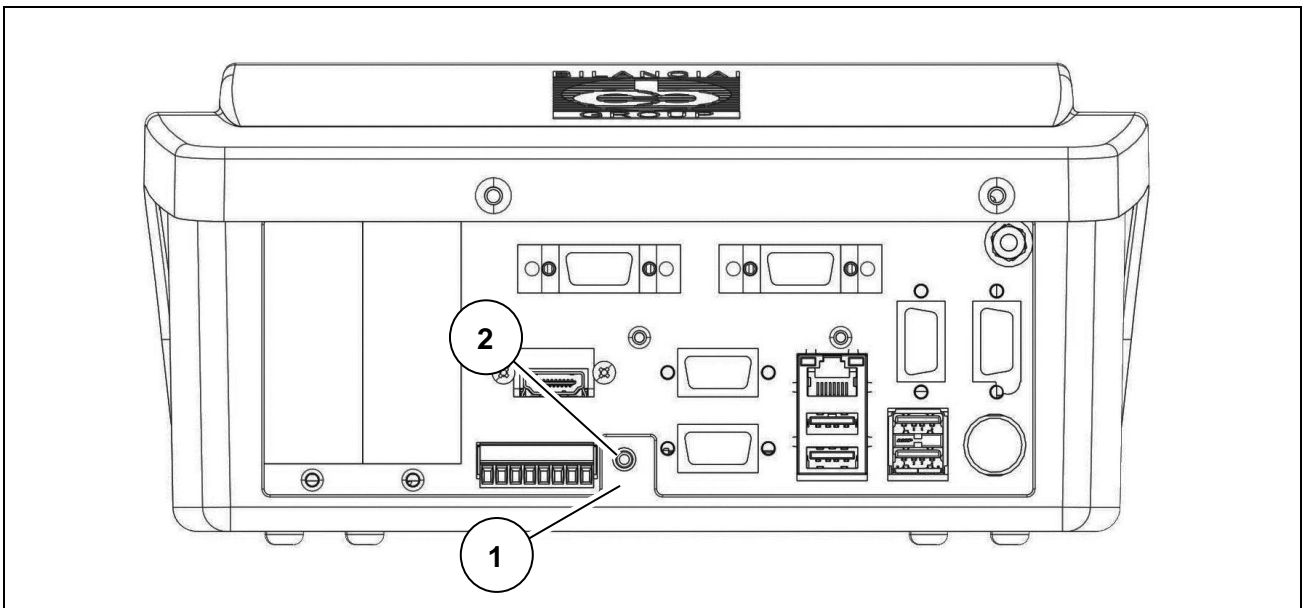


### **DANGER**

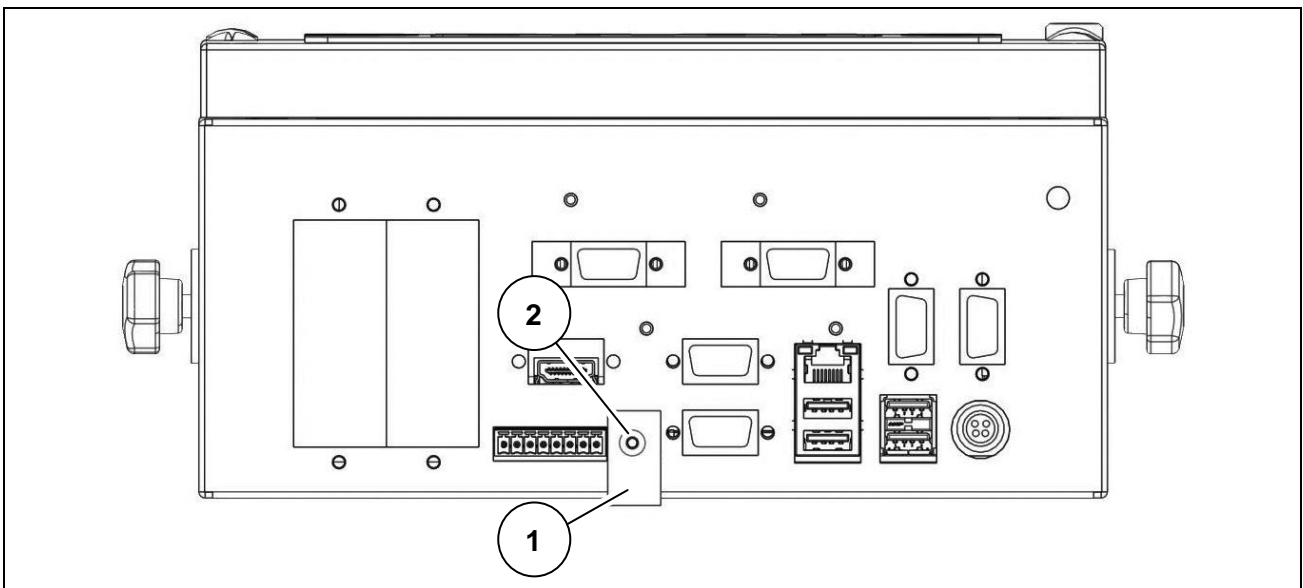
*All adjustment, installation, assembly and/or disassembly and/or scheduled or unscheduled maintenance operations must be carried out with equipment isolated from power sources in order to ensure the appropriate level of safety.*

*It is mandatory to use the Electrostatic Discharge Sensitive (EDS) cuff before performing any operation inside the indicator to avoid damaging the circuit boards or parts of the indicator*

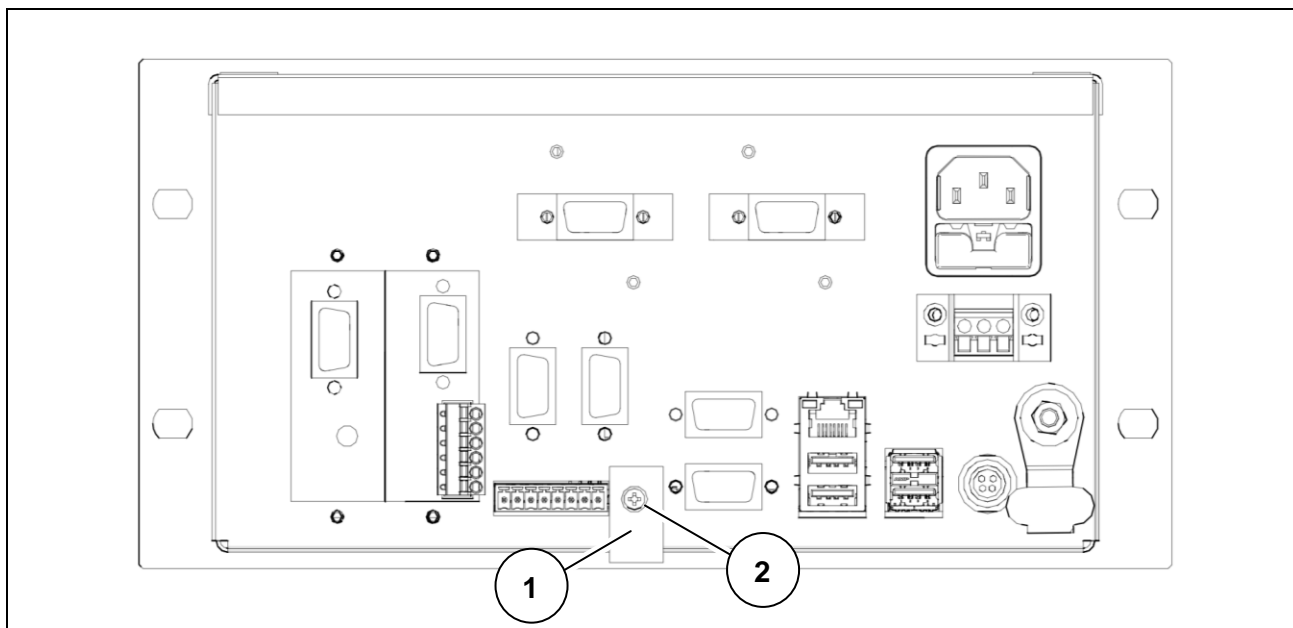
### 9.1 Version with connectors



**Figure 9.1-1 - Calibration button - Plastic indicator version**



**Figure 9.1-2 - Calibration button - Stainless steel indicator version**



**Figure 9.1-2 - Calibration button - Panel-mounting indicator version**



**DANGER**

*It is mandatory to use the Electrostatic Discharge Sensitive (EDS) cuff before performing any operation inside the indicator to avoid damaging the circuit boards or parts of the indicator. For connections and technical information, refer to the diagrams and instructions in the manuals supplied.*



**Key:**

1. Stamped self-adhesive label sealing the access hole to the calibration switch
2. Calibration switch

Referring to the previous figures, proceed as follows:

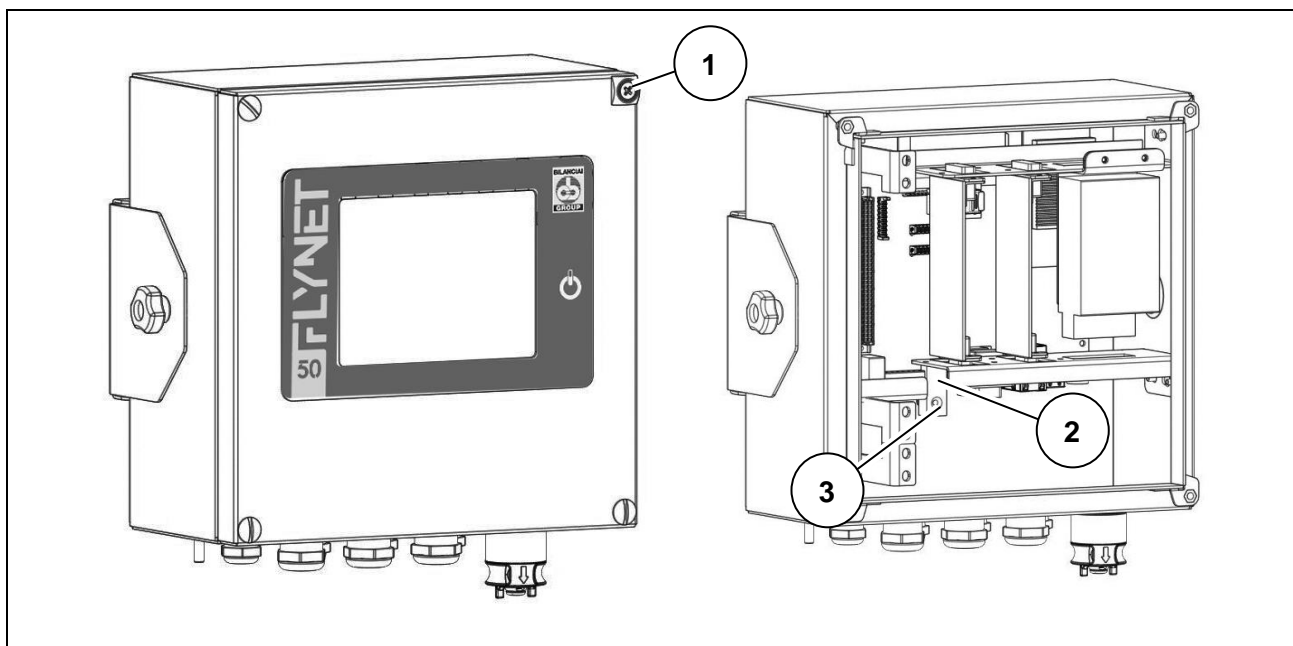
- Switch the indicator on.
- Remove the self-adhesive label (ref. 1) which seals the access hole to the calibration switch.
- Using a non-metal tool, press the calibration switch (ref. 2).



**ATTENTION**

*Removing the metrological stamps makes it impossible to use the weighing indicator for commercial transactions towards third parties. For their restoration contact the After Sales Service of the Service Network (<http://www.coopbilanciai.it/it/home/rete-vendita-e-assistenza> selecting your country).*

## 9.2 Version with cable glands



**Figure 9.2-1 - Calibration button - Stainless steel indicator version**

**Key:**

1. Indicator opening protection seal
2. Stamped self-adhesive label sealing the protective screw of the calibration switch
3. Calibration switch

Referring to the previous figure, proceed as follows:

- Switch the indicator on.
- Remove the seal (ref. 1), unscrew the four screws on the cover of the indicator and open it, being careful not to detach the display connector.
- Remove the self-adhesive label (ref. 2) which seals the access hole to the calibration switch.
- Using a non-metal tool, press the calibration switch (ref. 3).

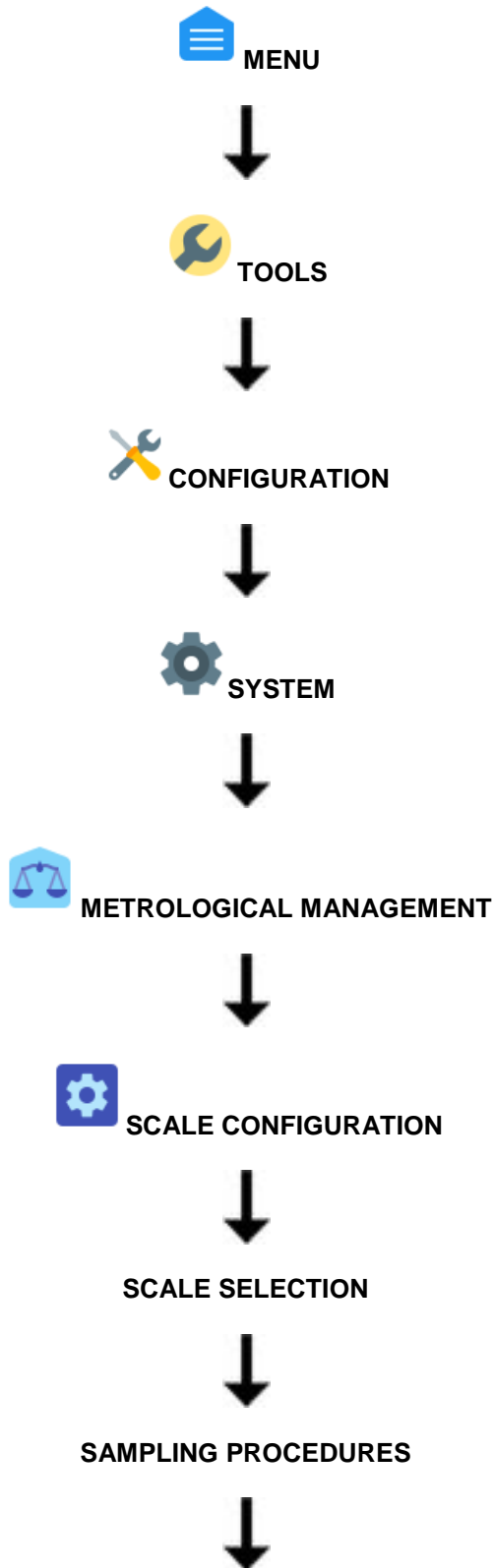


**ATTENTION**

Removing the metrological stamps makes it impossible to use the weighing indicator for commercial transactions towards third parties. For their restoration contact the After Sales Service of the Service Network (<http://www.coopbilanciai.it/it/home/rete-vendita-e-assistenza> selecting your country).

### 9.3 Internal scale sampling

Follow the following path:



Choose the type of sampling and proceed according to the instructions displayed

## 10 DISASSEMBLING COMPONENTS

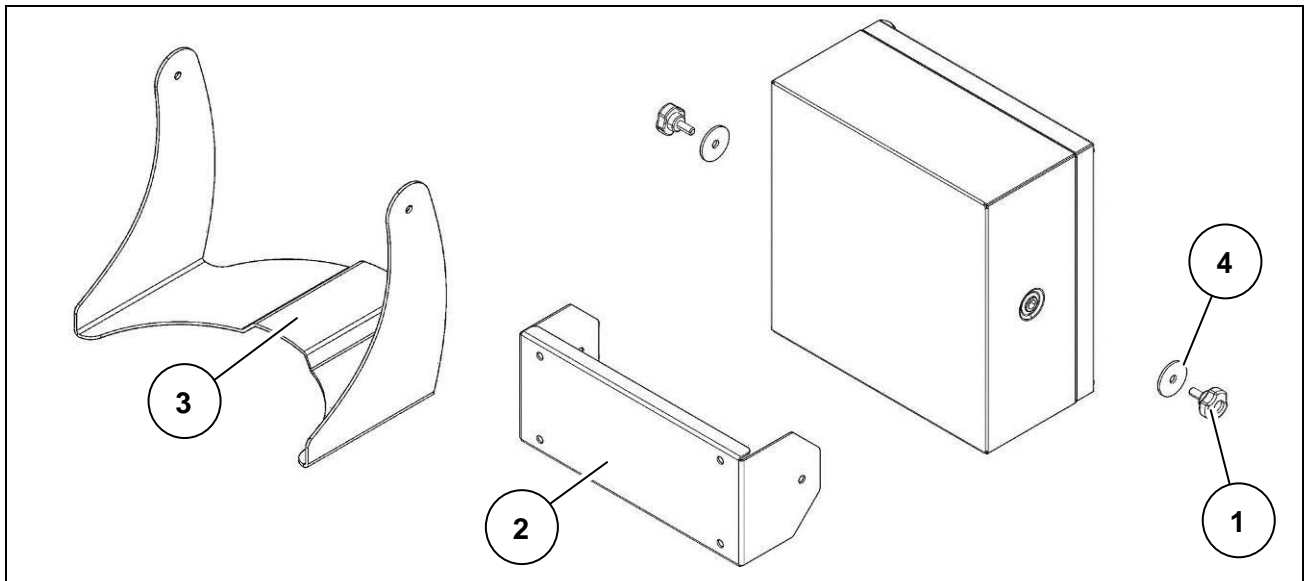


### **DANGER**

*All adjustment, installation, assembly and/or disassembly and/or scheduled or unscheduled maintenance operations must be carried out with equipment isolated from power sources in order to ensure the appropriate level of safety.*

*It is mandatory to use the Electrostatic Discharge Sensitive (EDS) cuff before performing any operation inside the indicator to avoid damaging the circuit boards or parts of the indicator*

### 10.1 Disassembling support (only for stainless steel version)



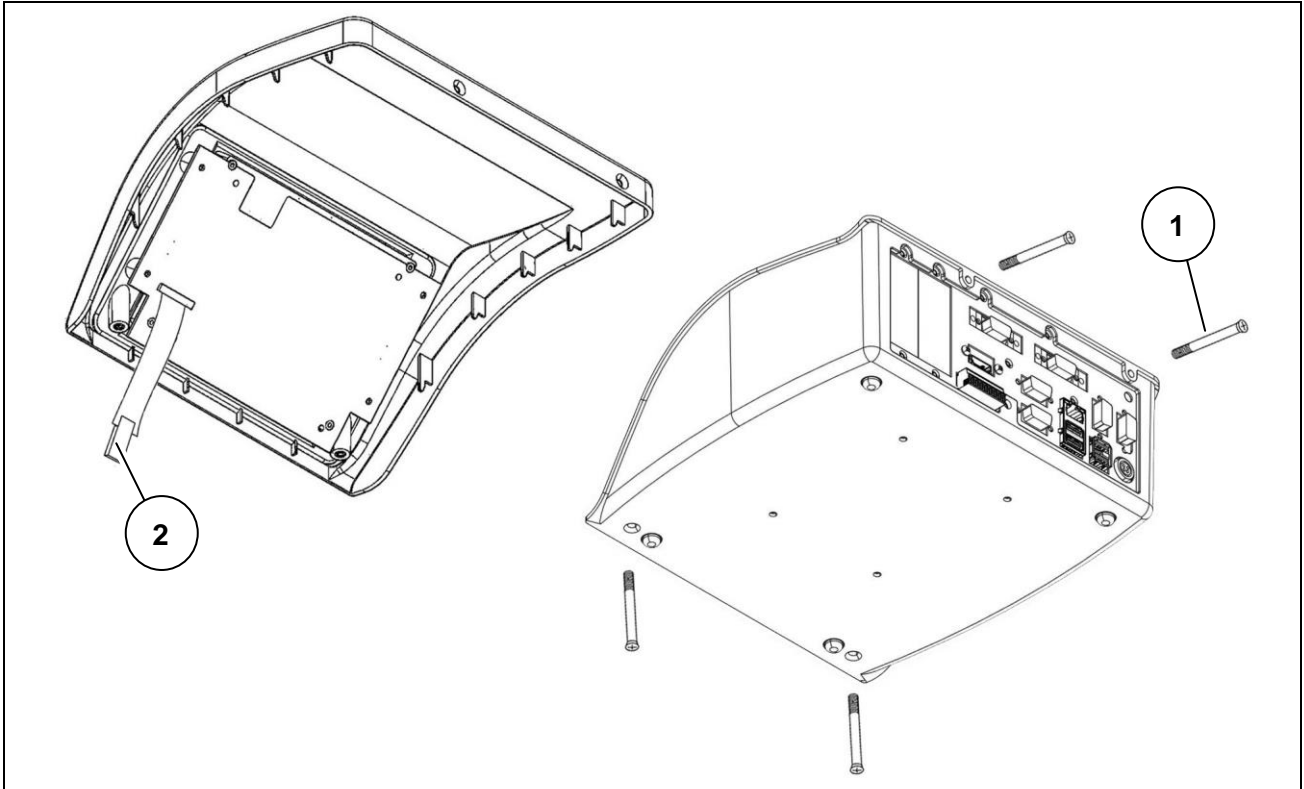
**Figure 10.1-1 – Disassembling support**

Referring to the previous figure, proceed as follows:

- Unscrew the fixing knobs (ref. 1).
- Remove the support (ref. 2 wall-mounted version) (ref. 3 tabletop version).
- Recover the washers (ref. 4) between the support and indicator.

## 10.2 Opening the indicator

### 10.2.1 Plastic version



**Figure 10.2-1 - Opening the indicator**

Referring to the previous figure, proceed as follows:

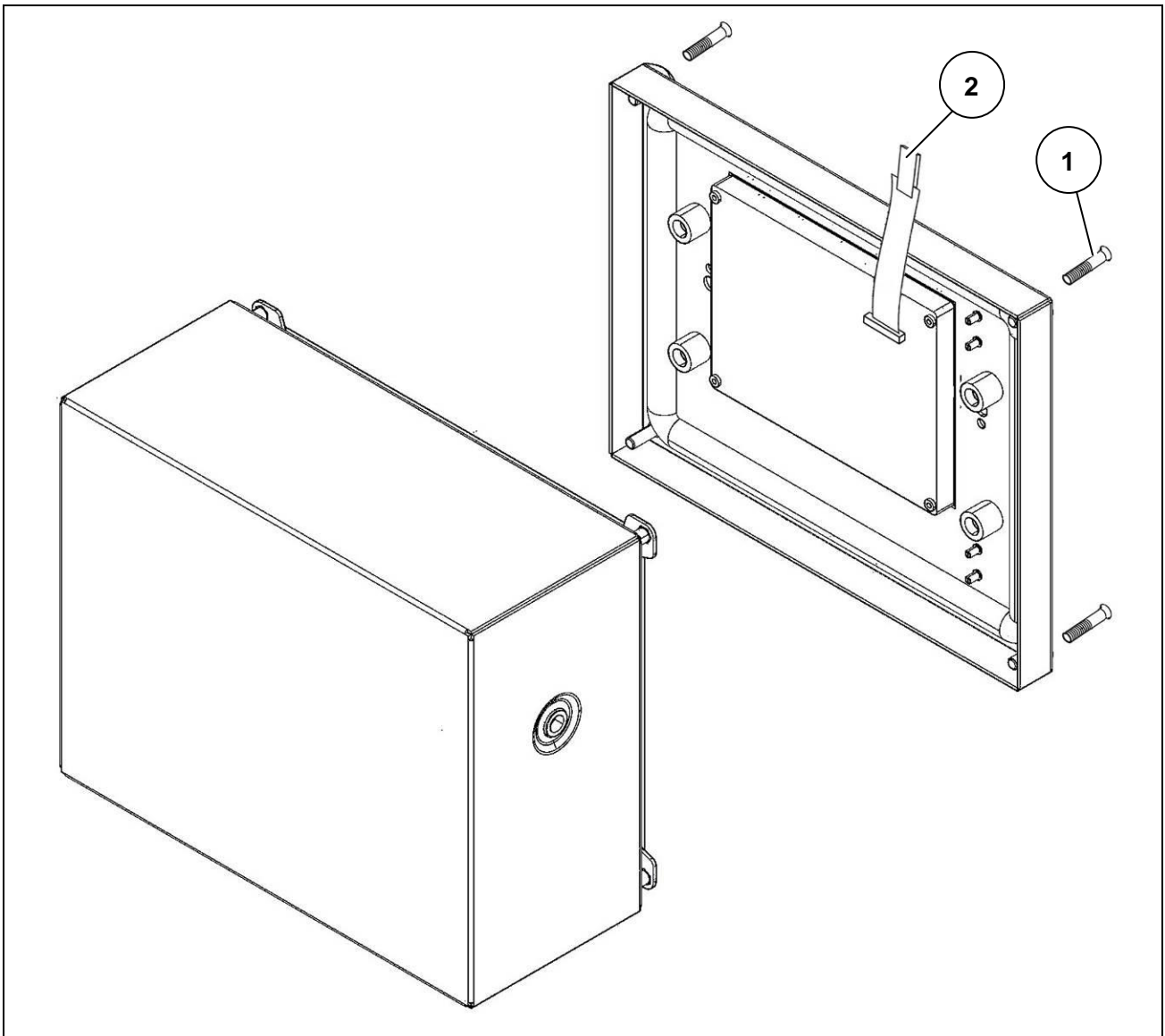
- Remove the four screws (ref. 1) and rotate the cover forward, holding it up with one hand to avoid damaging the connections.
- Disconnect the connector from the display (ref. 2).
- Place the complete display cover on a work table.



**DANGER**

*When performing installation or maintenance on components inside the indicator, always make sure that it is disconnected from the electrical mains.*

### 10.2.2 Stainless steel version



**Figure 10.2-2 - Opening the indicator**

Referring to the previous figure, proceed as follows:

- Remove the four screws (ref. 1) and rotate the side cover, holding it up with one hand to avoid damaging the connections.
- Disconnect the connector from the display (ref. 2).
- Remove the ground loop (in cable gland version)
- Place the complete display cover on a work table.

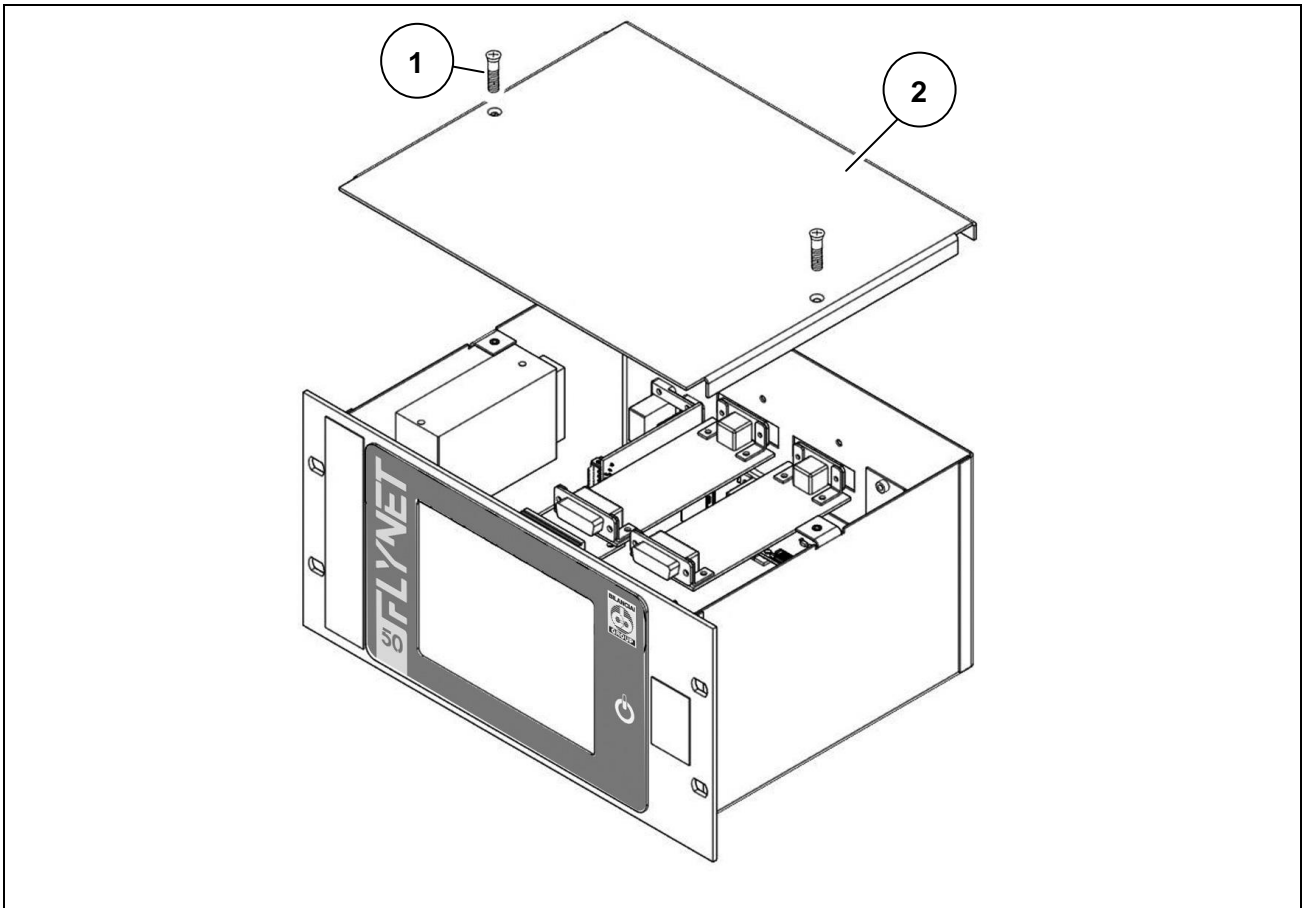


**DANGER**

*When performing installation or maintenance on components inside the indicator, always make sure that it is disconnected from the electrical mains.*



### 10.2.3 Steel rack version



**Figure 10.2-3 - Opening the indicator**

Referring to the previous figure, proceed as follows:

- Remove the two screws (ref. 1) and remove the cover (ref. 2).

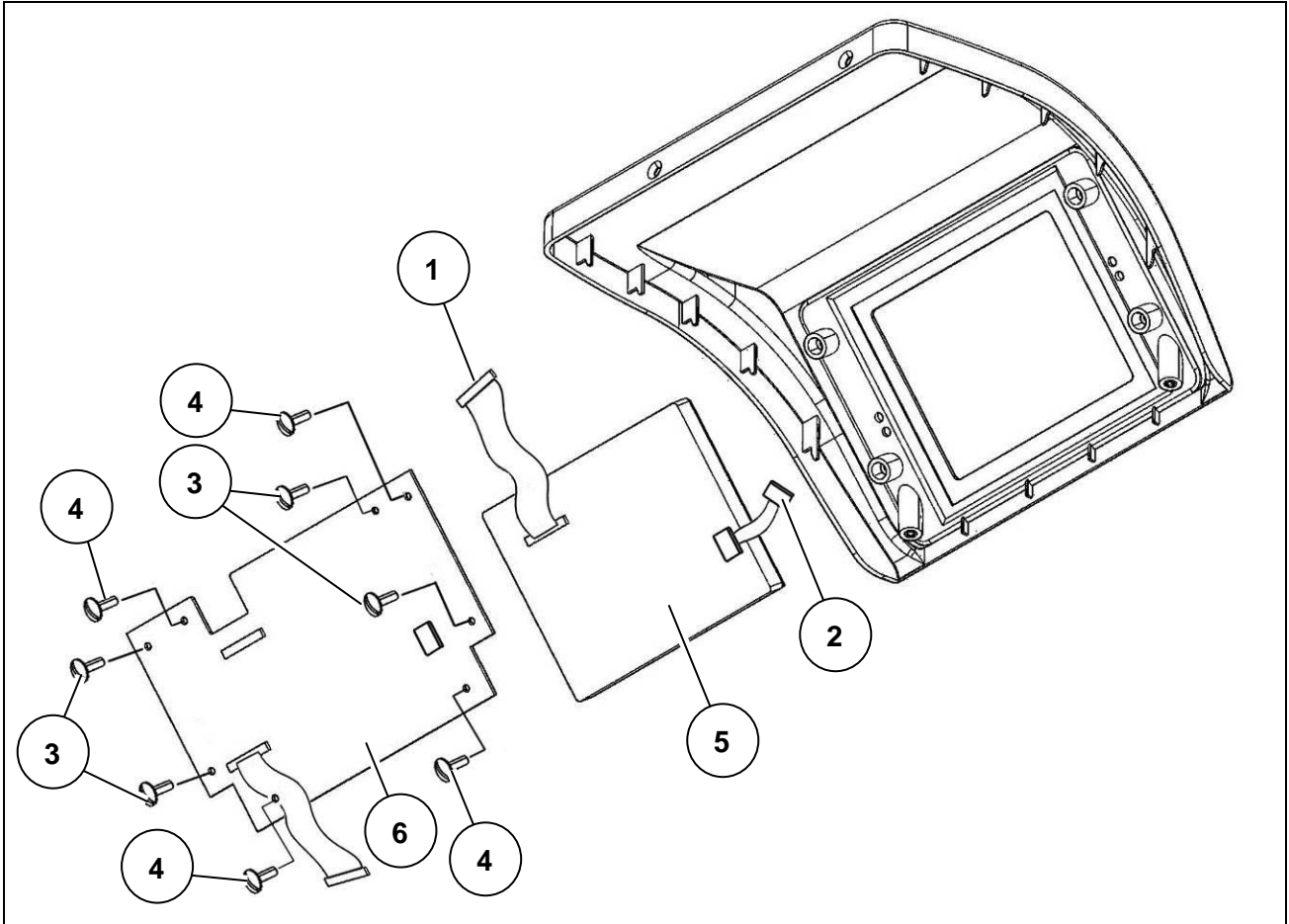


**DANGER**

*When performing installation or maintenance on components inside the indicator, always make sure that it is disconnected from the electrical mains.*

## 10.3 Disassembling front panel and display

### 10.3.1 Plastic version



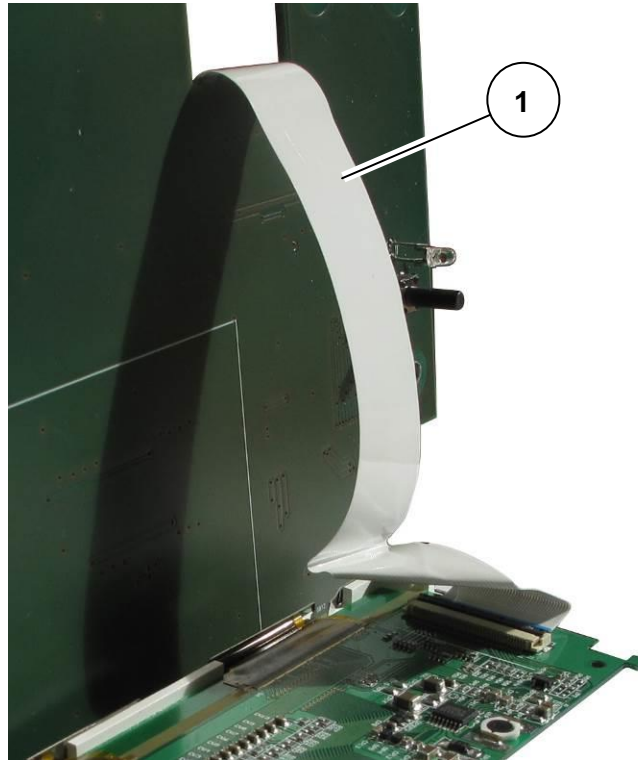
**Figure 10.3-1 – Disassembling front panel and display**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Disconnect the connectors (ref. 1 and 2)
- Unscrew the four screws (ref. 3) and remove the board complete with display from the front of the indicator
- Unscrew the four screws (ref. 4) and remove the display (ref. 5) from the card (ref. 6).

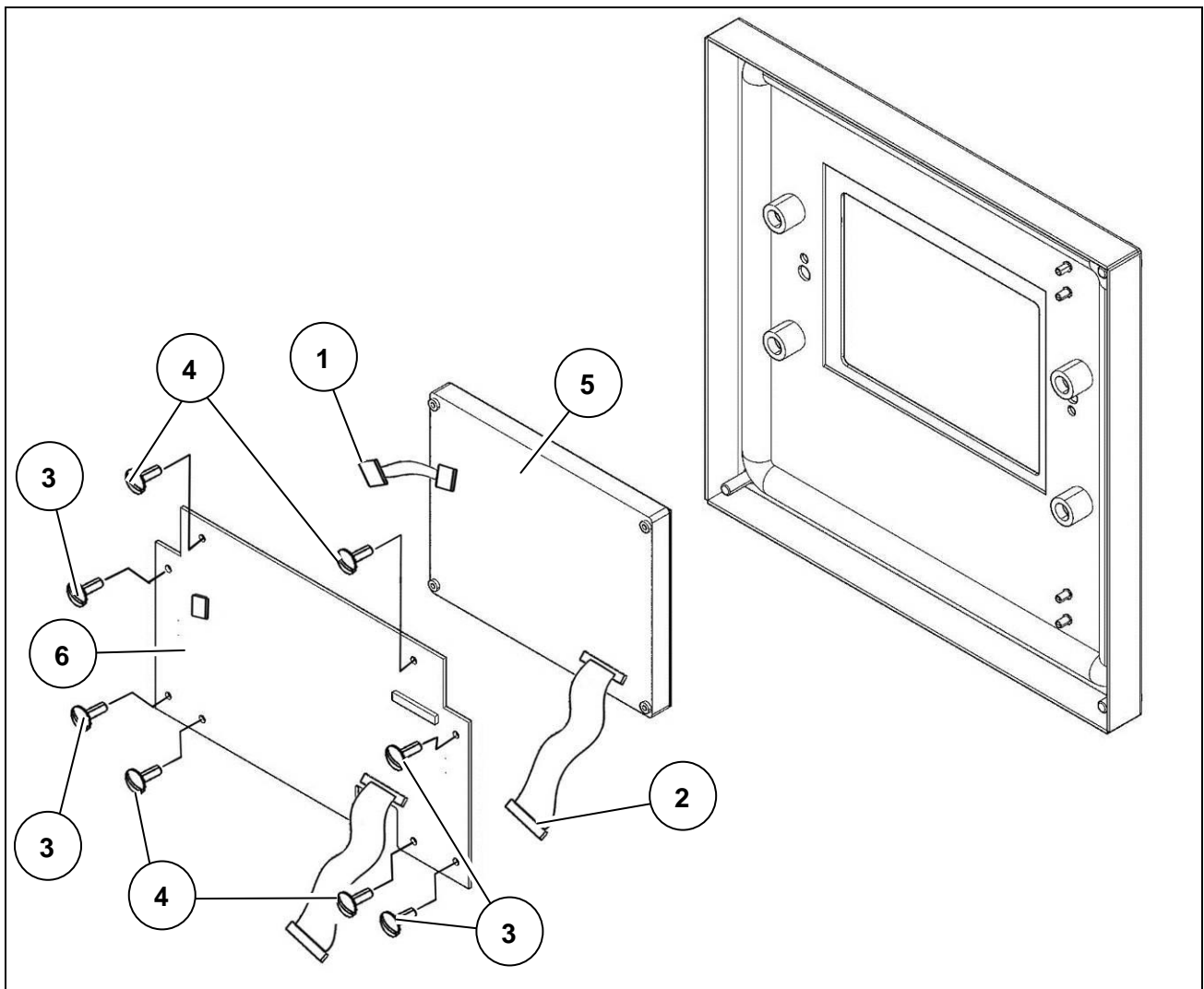
**ATTENTION**

*When reassembling, make the wiring (ref. 1) between display and board fold with Z shape, as shown in the figure.*



**Figure 10.3-2 – Reassembling front panel and display**

### 10.3.2 Stainless steel version



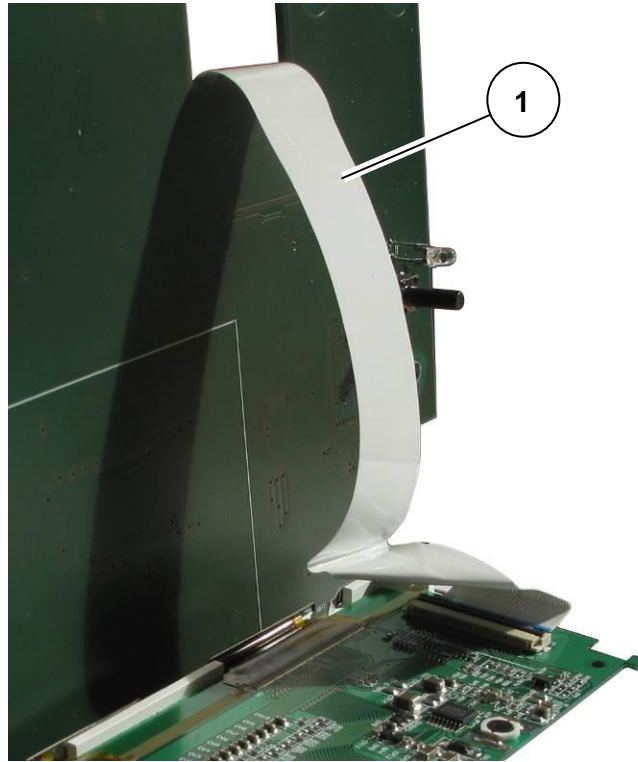
**Figure 10.3-3 – Disassembling front panel and display**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Disconnect the connectors (ref. 1 and 2)
- Unscrew the four screws (ref. 3) and remove the board complete with display from the front of the indicator
- Unscrew the four screws (ref. 4) and remove the display (ref. 5) from the card (ref. 6).

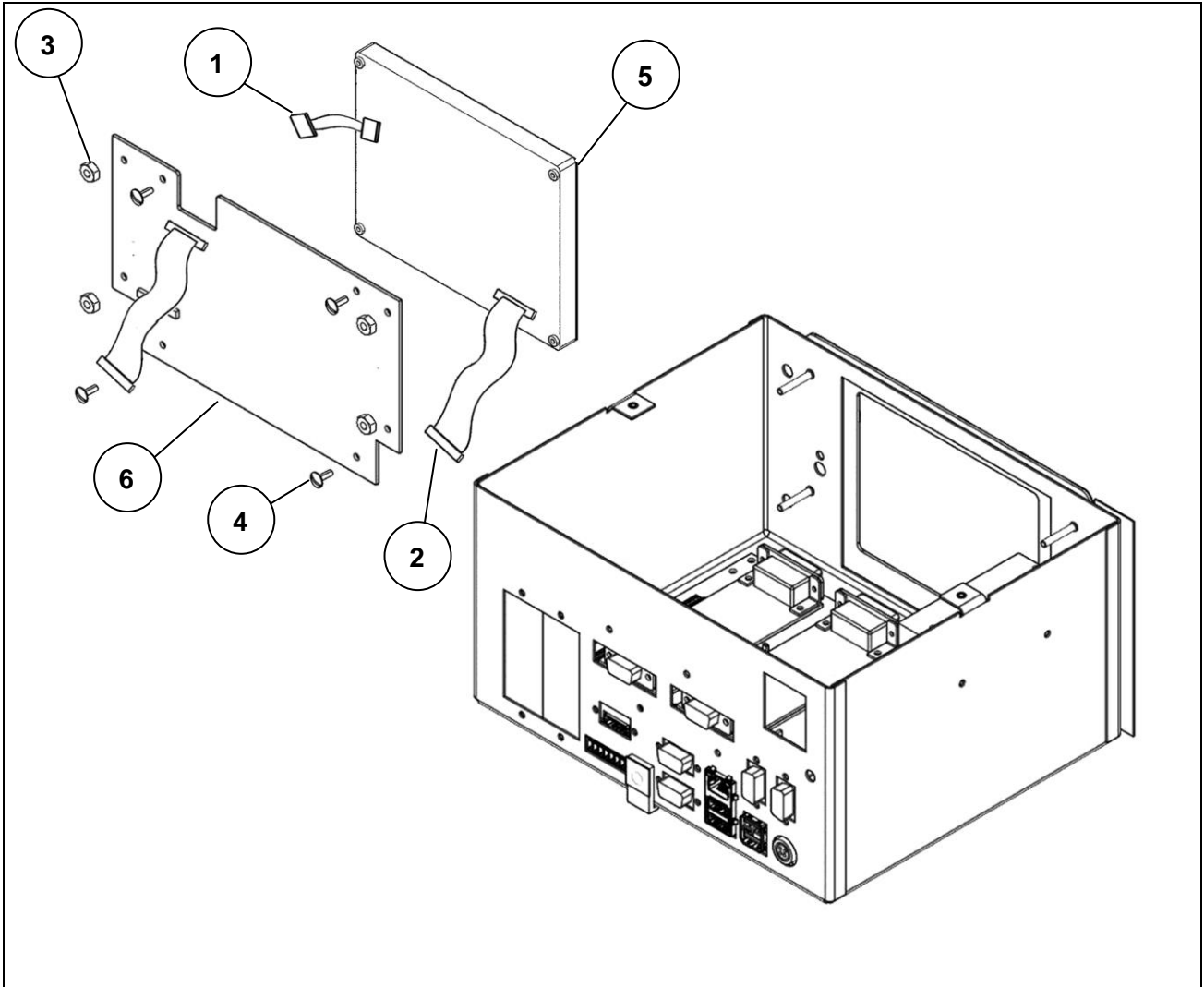
**ATTENTION**

*When reassembling, make the wiring (ref. 1) between display and board fold with Z shape, as shown in the figure.*



**Figure 10.3. -4 – Reassembling front panel and display**

### 10.3.3 Stainless steel panel-mounting version



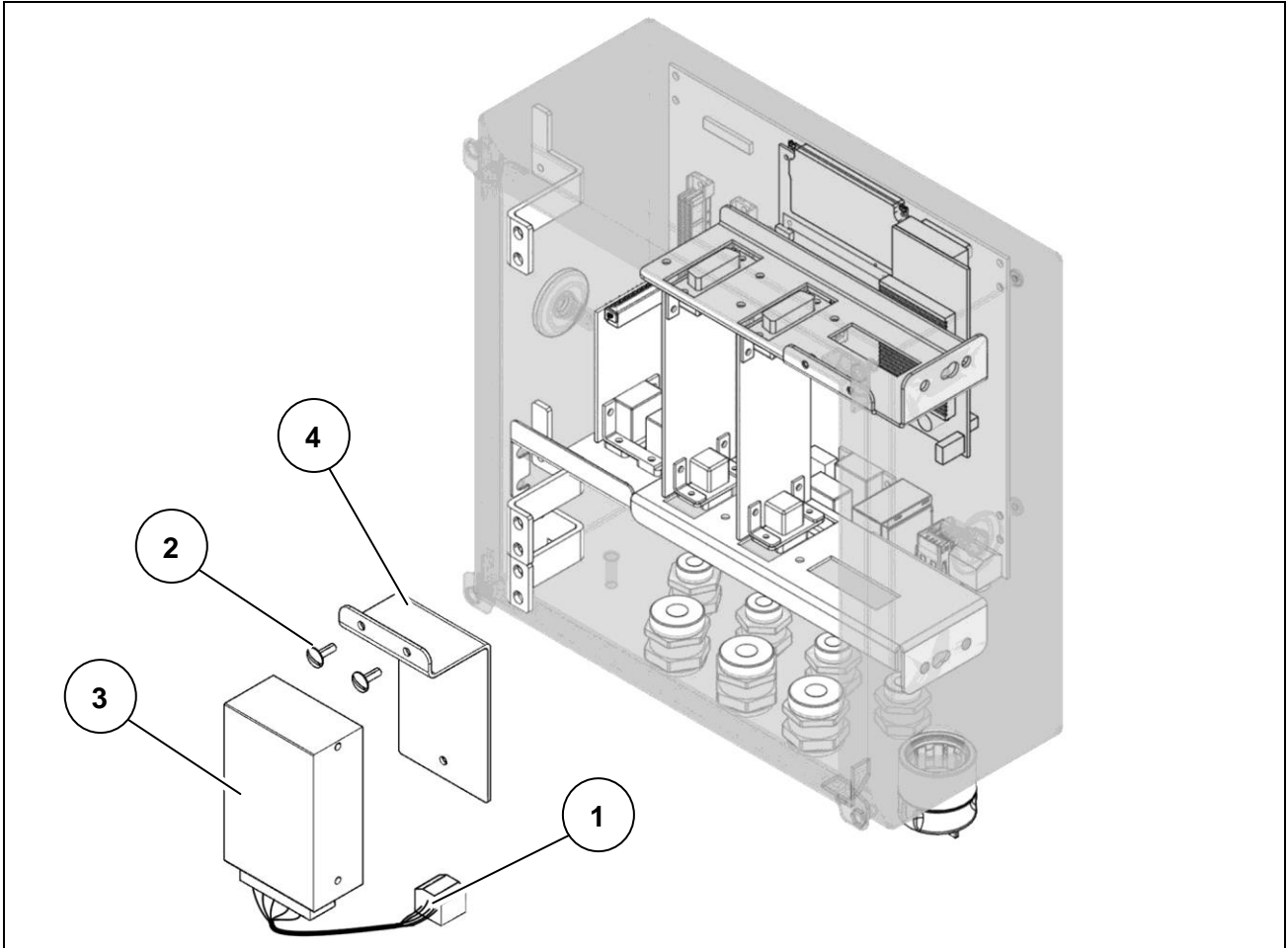
**Figure 10.3-5 – Disassembling front panel and display**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Disconnect the connectors (ref. 1 and 2)
- Unscrew the four nuts (ref. 3) and remove the board complete with display from the front of the indicator
- Unscrew the four screws (ref. 4) and remove the display (ref. 5) from the card (ref. 6).

## 10.4 Disassembling the indicator power supply unit

### 10.4.1 Stainless steel version with cable glands

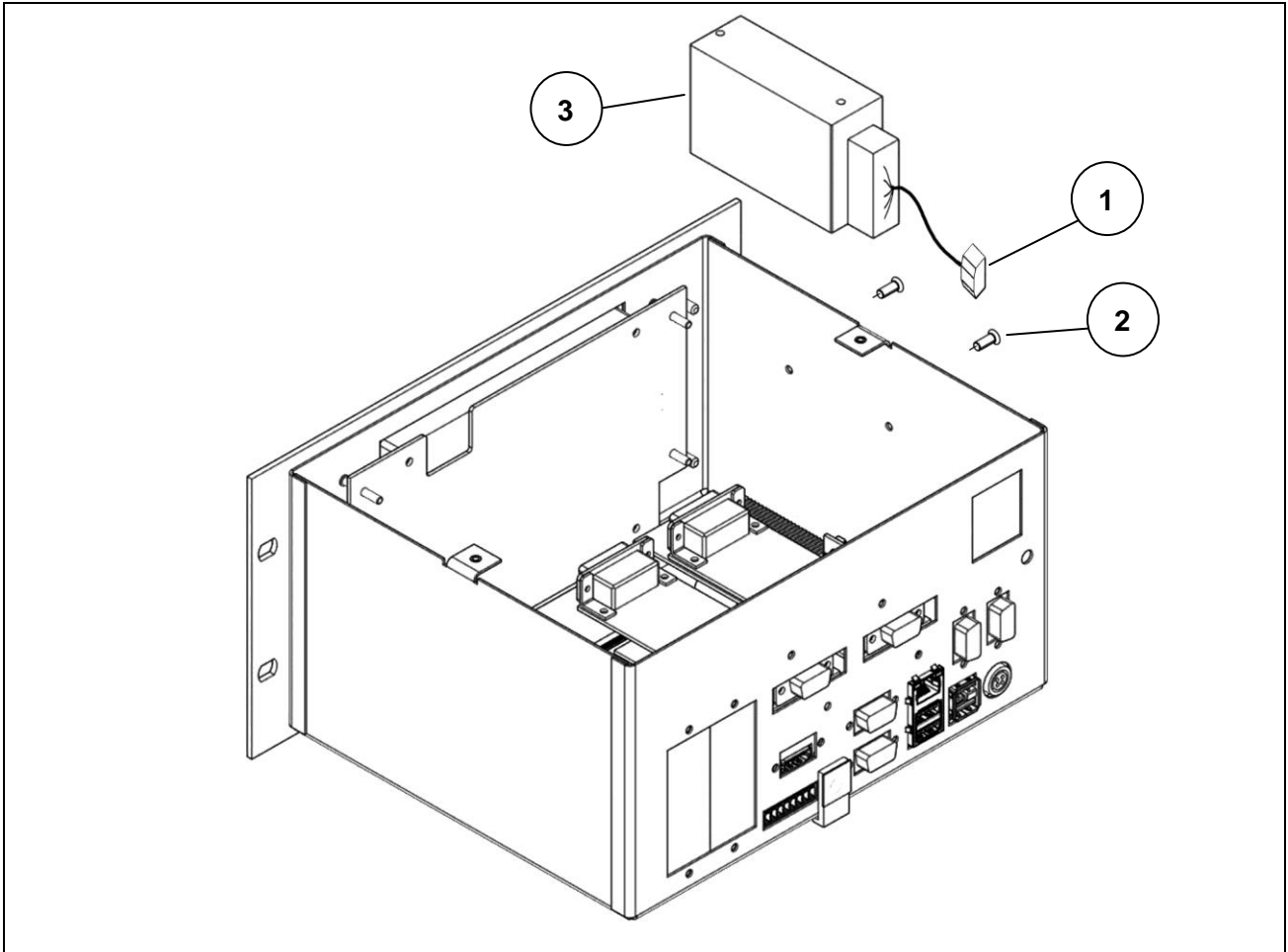


**Figure 10.4-1 - Disassembling indicator power supply unit**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Disconnect the main power supply socket and make sure that there is no voltage.
- Disconnect the connector (ref. 1) of the power supply unit from the board.
- Disconnect the main power cables from the input terminals.
- Unscrew the two screws (ref. 2) and remove the power supply unit with bracket.
- Separate the power supply (ref. 3) from the bracket (ref. 4)

### 10.4.2 Stainless steel panel-mounting version



**Figure 10.4-2 - Disassembling indicator power supply unit**

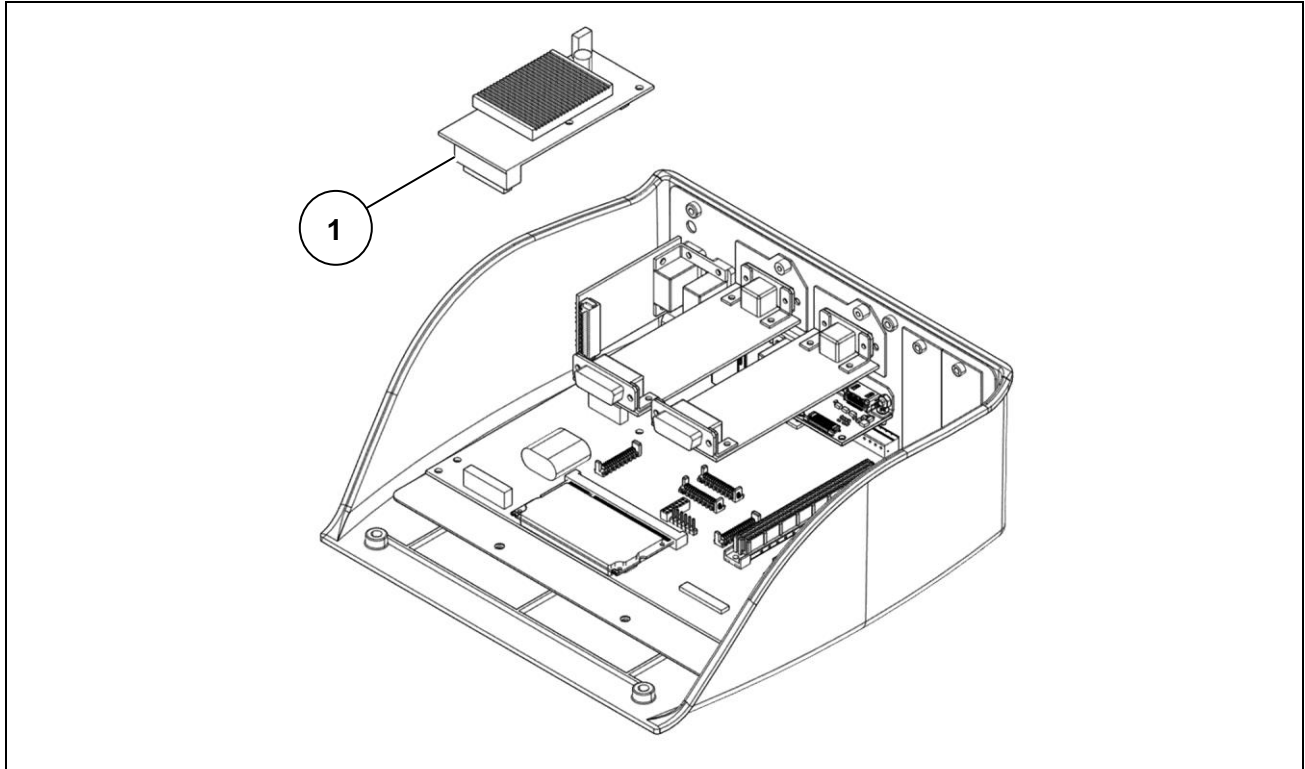
Referring to the previous figure, proceed as follows:

- Open the indicator.
- Disconnect the main power supply socket and make sure that there is no voltage.
- Disconnect the connector (ref. 1) of the power supply unit from the board.
- Disconnect the main power cables from the input terminals.
- Unscrew the two screws (ref. 2) and remove the power supply unit.



## 10.5 Disassembling power supply unit for scale

### 10.5.1 Plastic version

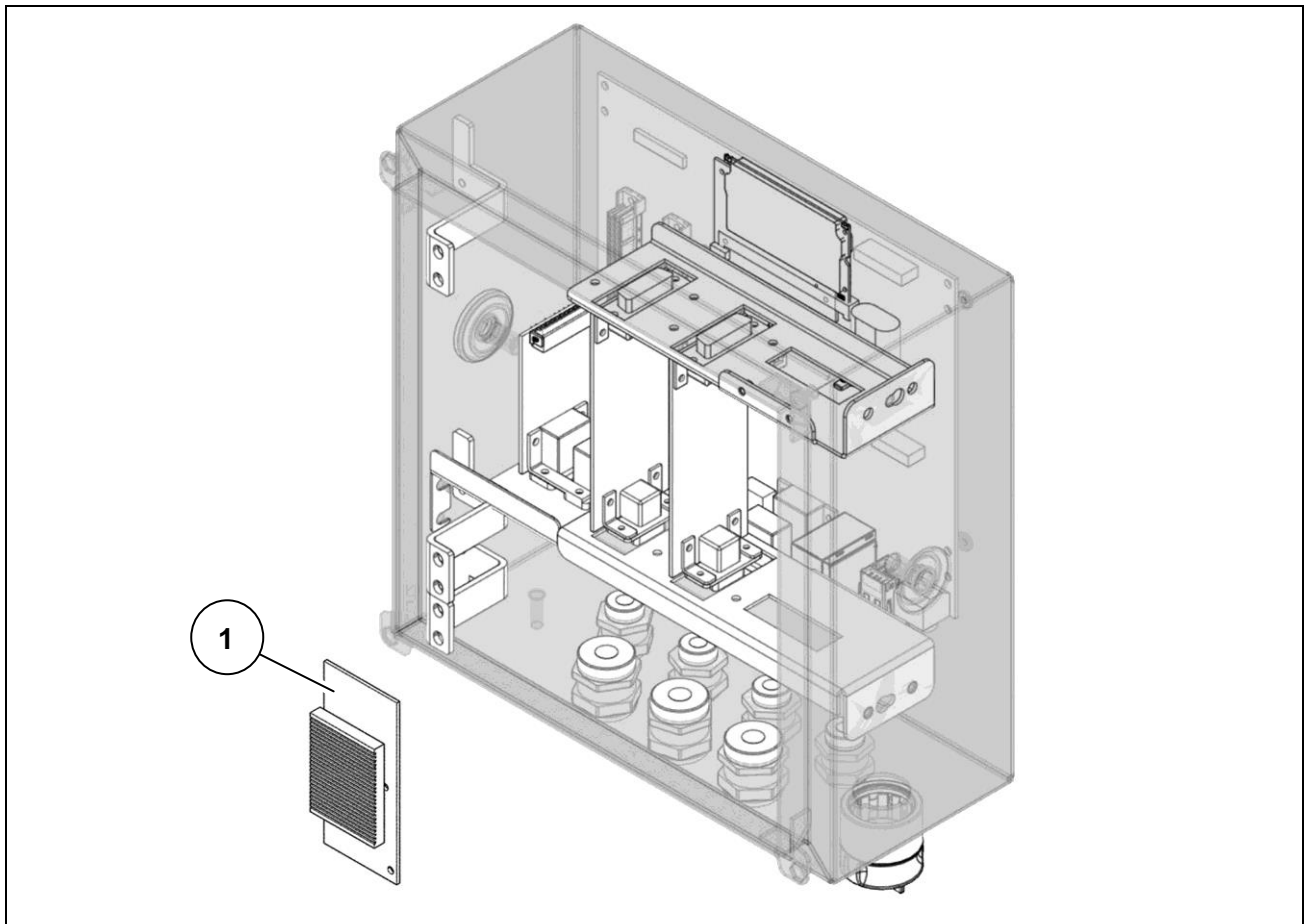


**Figure 10.5-1 -Disassembling power supply for digital scale**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the power supply unit for digital scale (ref. 1) by gently pulling and acting on the plastic fastening rivets.

### 10.5.2 Stainless steel version

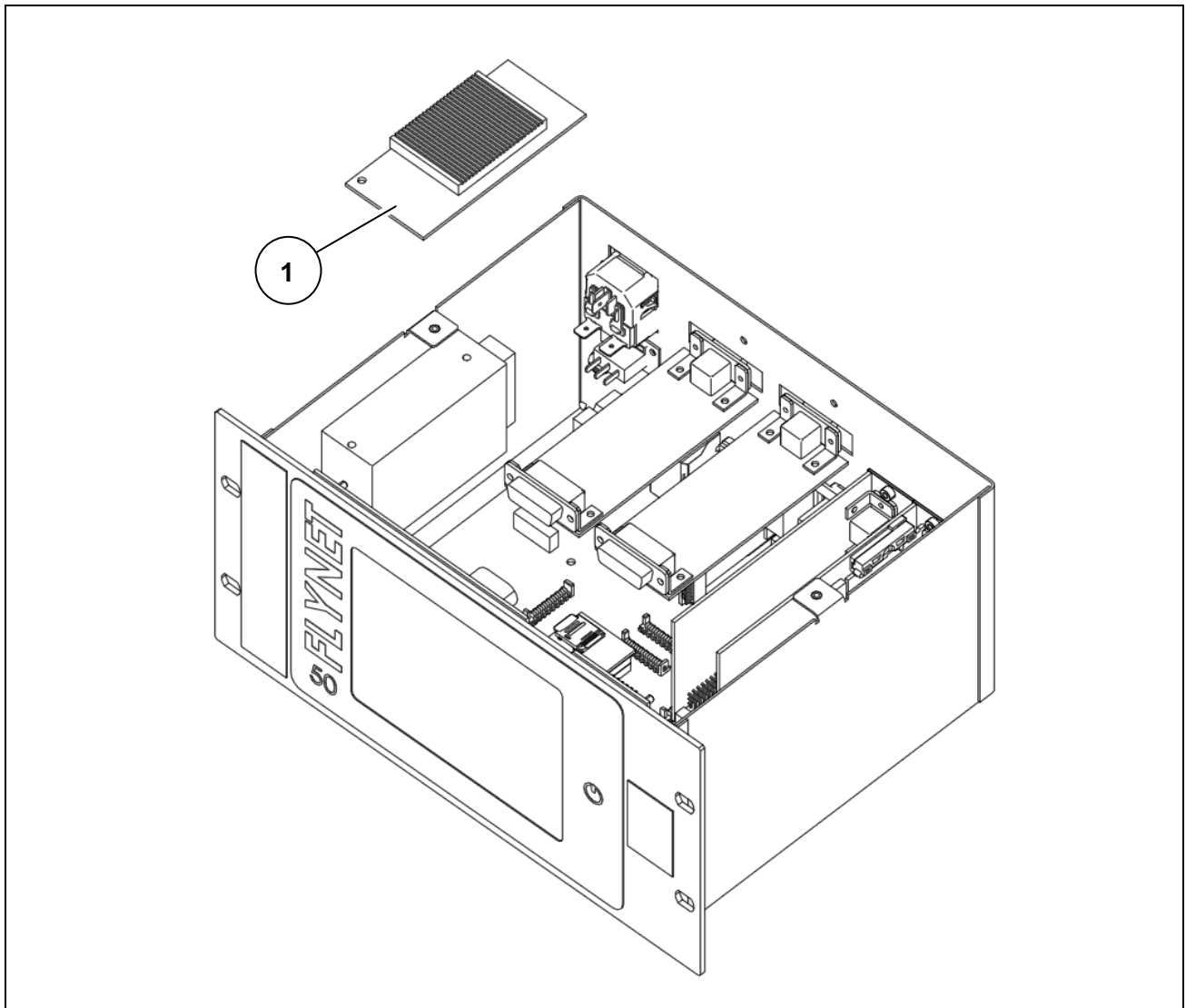


**Figure 10.5-2 -Disassembling power supply for digital scale**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the power supply unit for digital scale (ref. 1) by gently pulling and acting on the plastic fastening rivets.

### 10.5.3 Panel-mounting version



**Figure 10.5-1 -Disassembling power supply for digital scale**

Referring to the previous figure, proceed as follows:

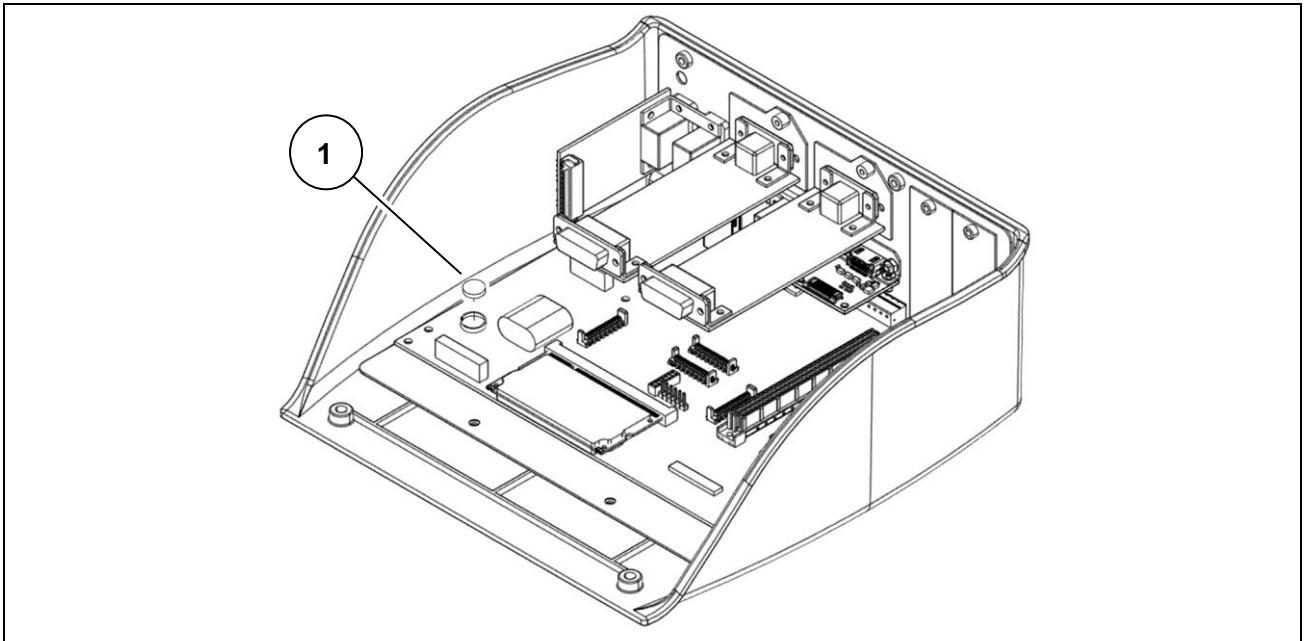
- Open the indicator.
- Remove the power supply unit for digital scale (ref. 1) by gently pulling and acting on the plastic fastening rivets.

## 10.6 Disassembling lithium battery

### 10.6.1 Plastic version

**WARNING**

*If the time and date are missing when the indicator is switched on, the lithium battery must be replaced.*



**Figure 10.6-1 - Disassembling lithium battery**

Referring to the previous figure, proceed as follows:

- Switch the indicator off and disconnect it from the electrical mains.
- Open the indicator.
- Remove the power supply unit for scale.
- Remove the lithium battery (ref. 1) being careful not to cause short circuits.

**ATTENTION**

*Take special care to avoid dropping the battery on the motherboard, as it may damage some parts of the motherboard or the entire board.*

- Replace with a battery identical to the one removed from the equipment (model CR2450).

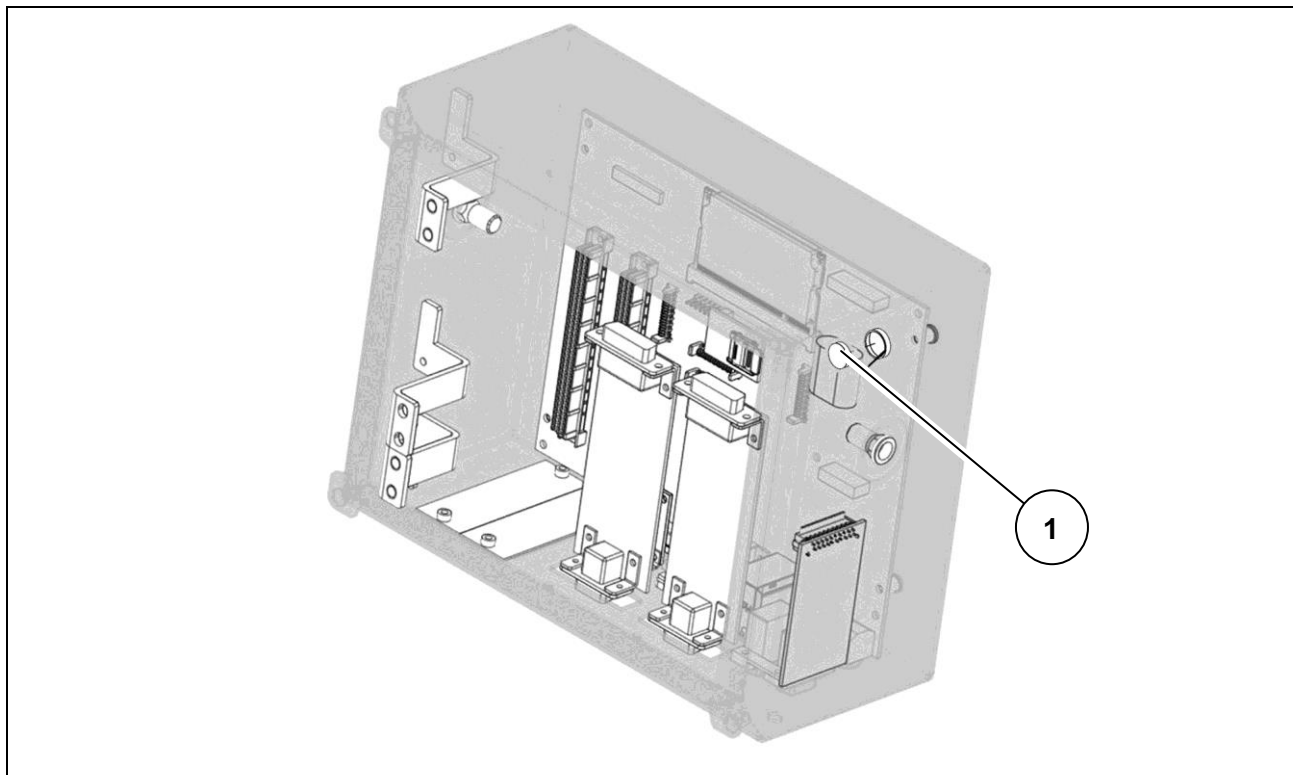
**ATTENTION**

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

### 10.6.2 Stainless steel version with connectors

**WARNING**

*If the time and date are missing when the indicator is switched on, the lithium battery must be replaced.*



**Figure 10.6-2 - Disassembling lithium battery**

Referring to the previous figure, proceed as follows:

- Switch the indicator off and disconnect it from the electrical mains.
- Open the indicator.
- Remove the power supply unit for scale.
- Remove the lithium battery (ref. 1) being careful not to cause short circuits.

**ATTENTION**

*Take special care to avoid dropping the battery on the motherboard, as it may damage some parts of the motherboard or the entire board.*

- Replace with a battery identical to the one removed from the equipment (model CR2450).

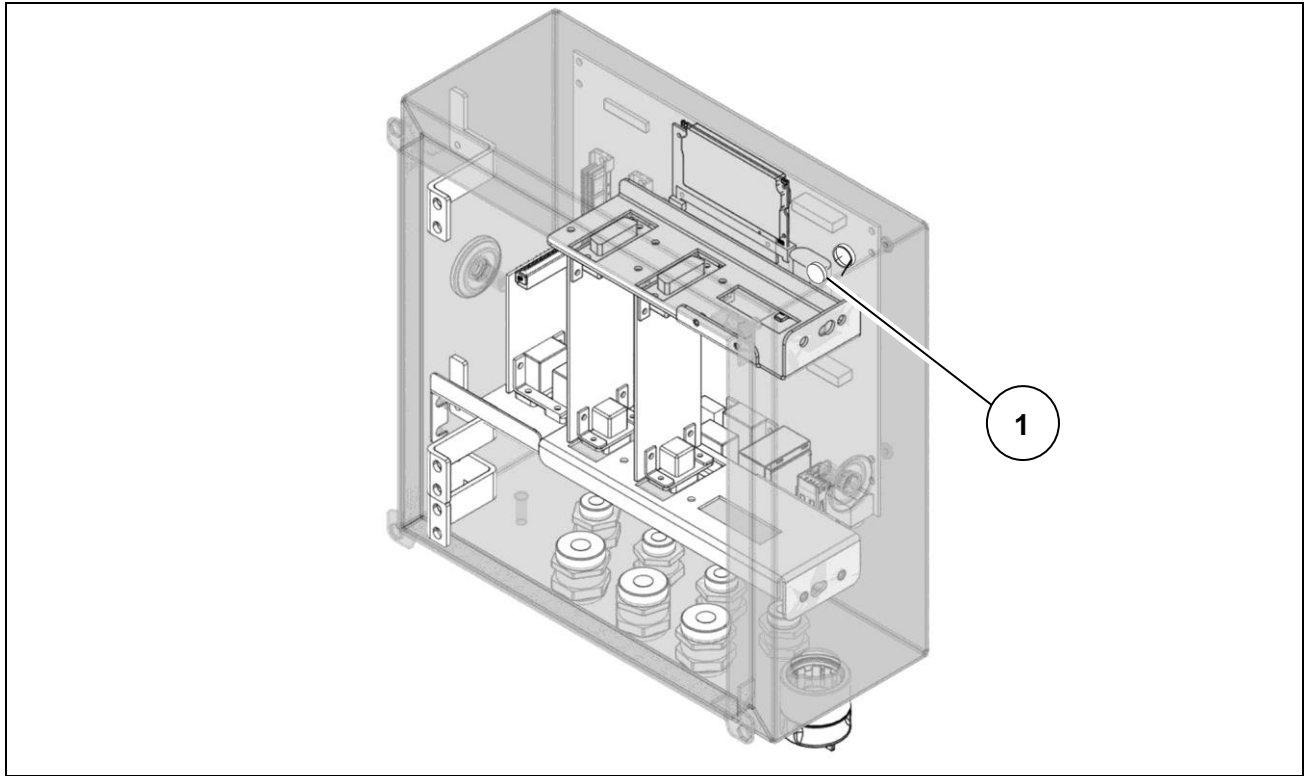
**ATTENTION**

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

### 10.6.3 Stainless steel version with cable glands


**WARNING**

*If the time and date are missing when the indicator is switched on, the lithium battery must be replaced.*



**Figure 10.6-3 - Disassembling lithium battery**

Referring to the previous figure, proceed as follows:

- Switch the indicator off and disconnect it from the electrical mains.
- Open the indicator.
- Remove the indicator power supply unit.
- Remove the power supply unit for scale.
- Remove the lithium battery (ref. 1) being careful not to cause short circuits.


**ATTENTION**

*Take special care to avoid dropping the battery on the motherboard, as it may damage some parts of the motherboard or the entire board.*

- Replace with a battery identical to the one removed from the equipment (model CR2450).

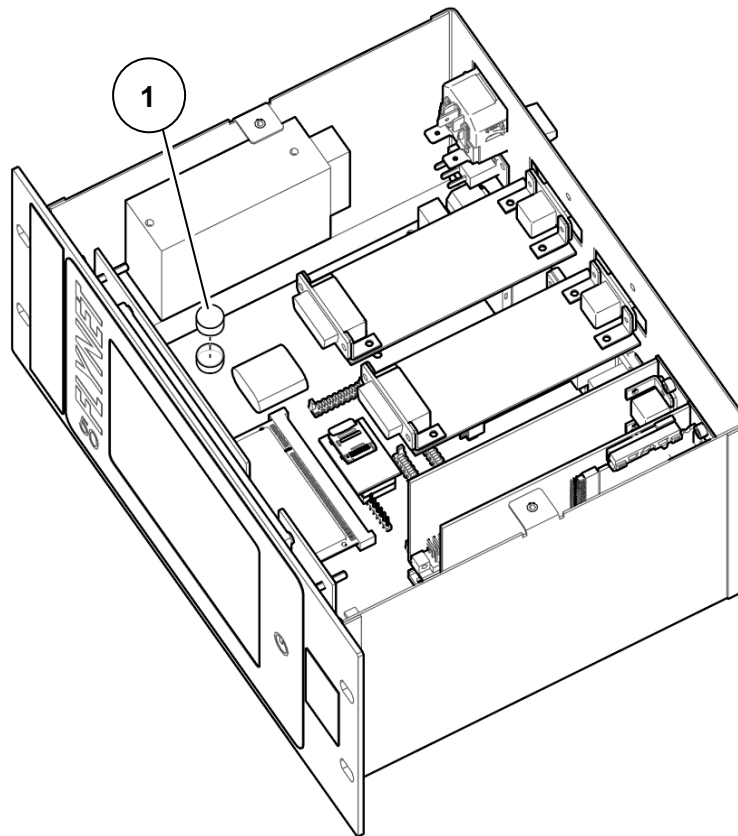

**ATTENTION**

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

### 10.6.4 Panel-mounting version

**WARNING**

*If the time and date are missing when the indicator is switched on, the lithium battery must be replaced.*



**Figure 10.6-1 - Disassembling lithium battery**

Referring to the previous figure, proceed as follows:

- Switch the indicator off and disconnect it from the electrical mains.
- Open the indicator.
- Remove the power supply unit for scale.
- Remove the lithium battery (ref. 1) being careful not to cause short circuits.

**ATTENTION**

*Take special care to avoid dropping the battery on the motherboard, as it may damage some parts of the motherboard or the entire board.*

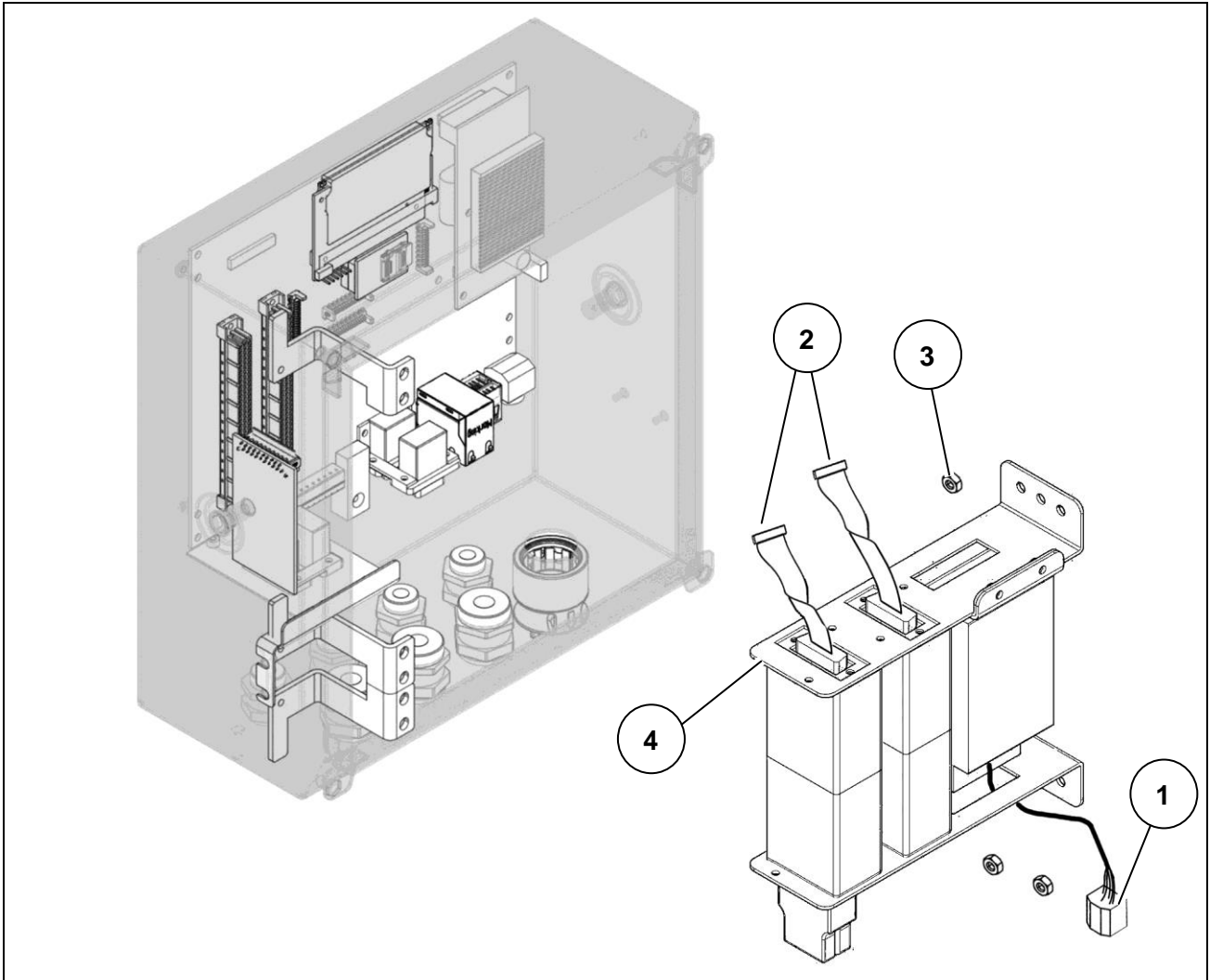
- Replace with a battery identical to the one removed from the equipment (model CR2450).

**ATTENTION**

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



## 10.7 Disassembling weighing cell unit and indicator power supply unit (stainless steel version with cable glands only)



**Figure 10.7-1 - Disassembling weighing cell unit and indicator power supply unit**

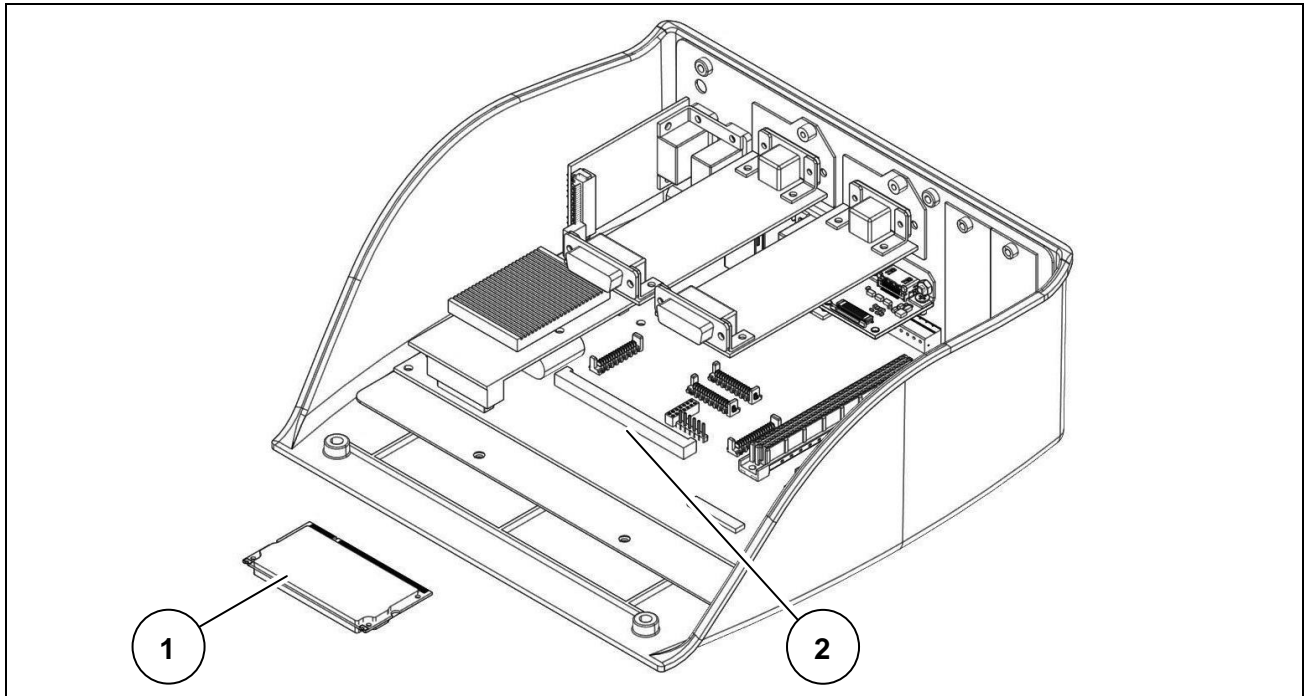
Referring to the previous figure, proceed as follows:

- Open the indicator.
- Disconnect the connector (ref. 1) of the power supply unit from the board.
- Disconnect the connectors from the weighing cells (ref. 2)
- Unscrew the four nuts (ref. 3) and remove the weighing cell and indicator power supply unit complete with brackets (ref. 4).



## 10.8 Disassembling CPU module

### 10.8.1 Plastic version

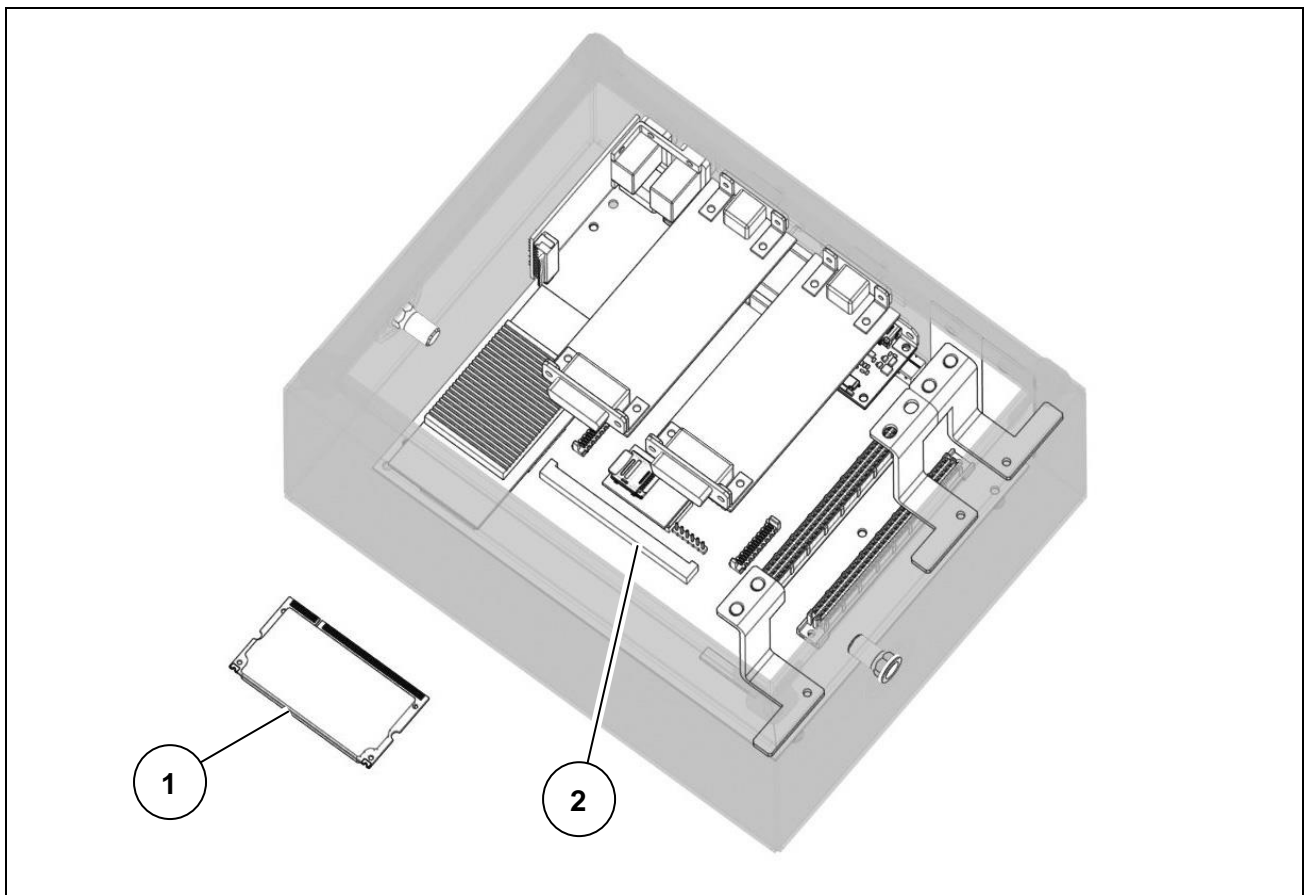


**Figure 10.13-1 – Disassembling CPU**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the CPU (ref. 1) from the motherboard (ref. 2).

### 10.8.2 Stainless steel version with connectors/cable glands

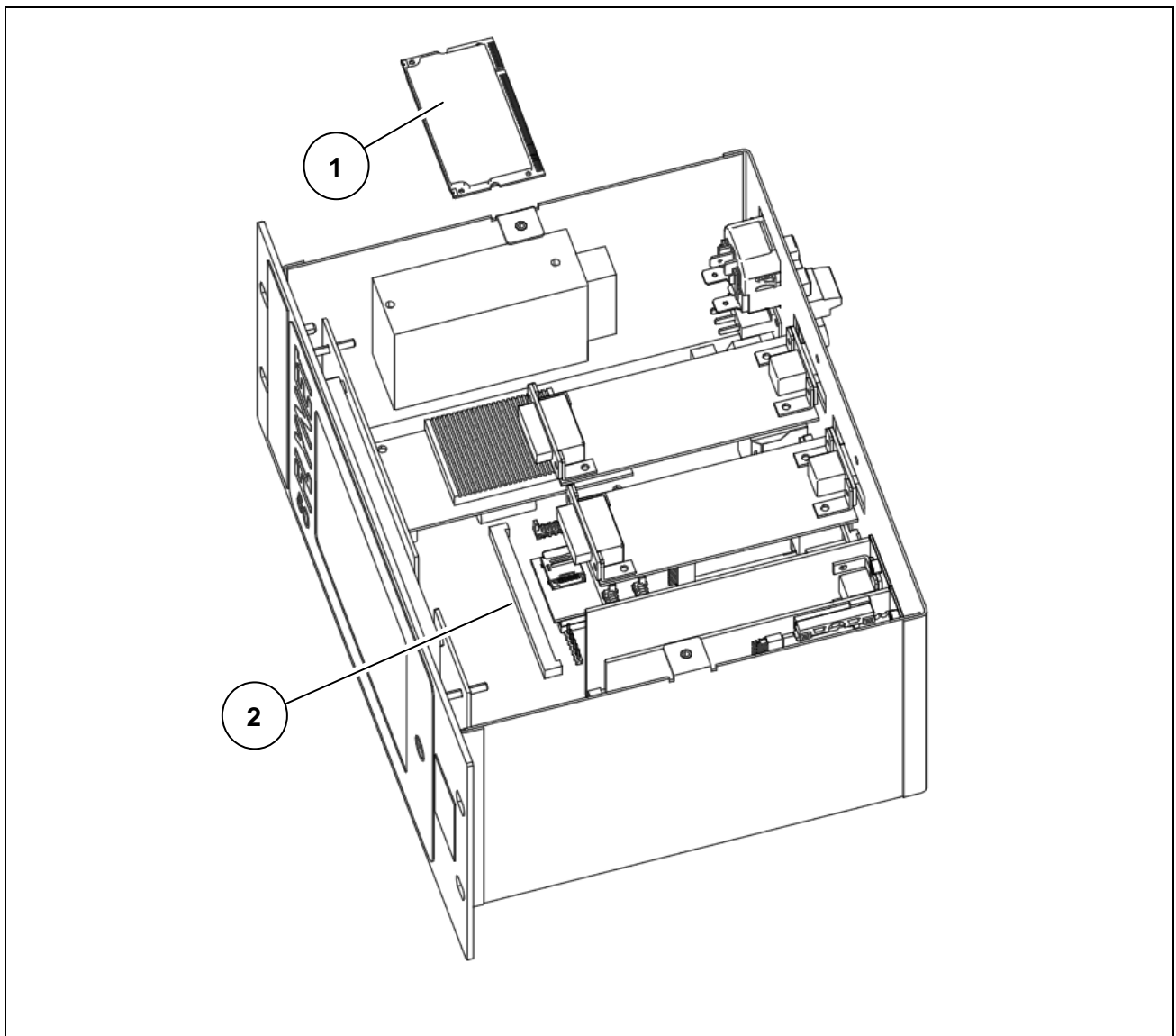


**Figure 10.13-2 – Disassembling CPU**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the CPU (ref. 1) from the motherboard (ref. 2).

### 10.8.3 Wall-mounting version



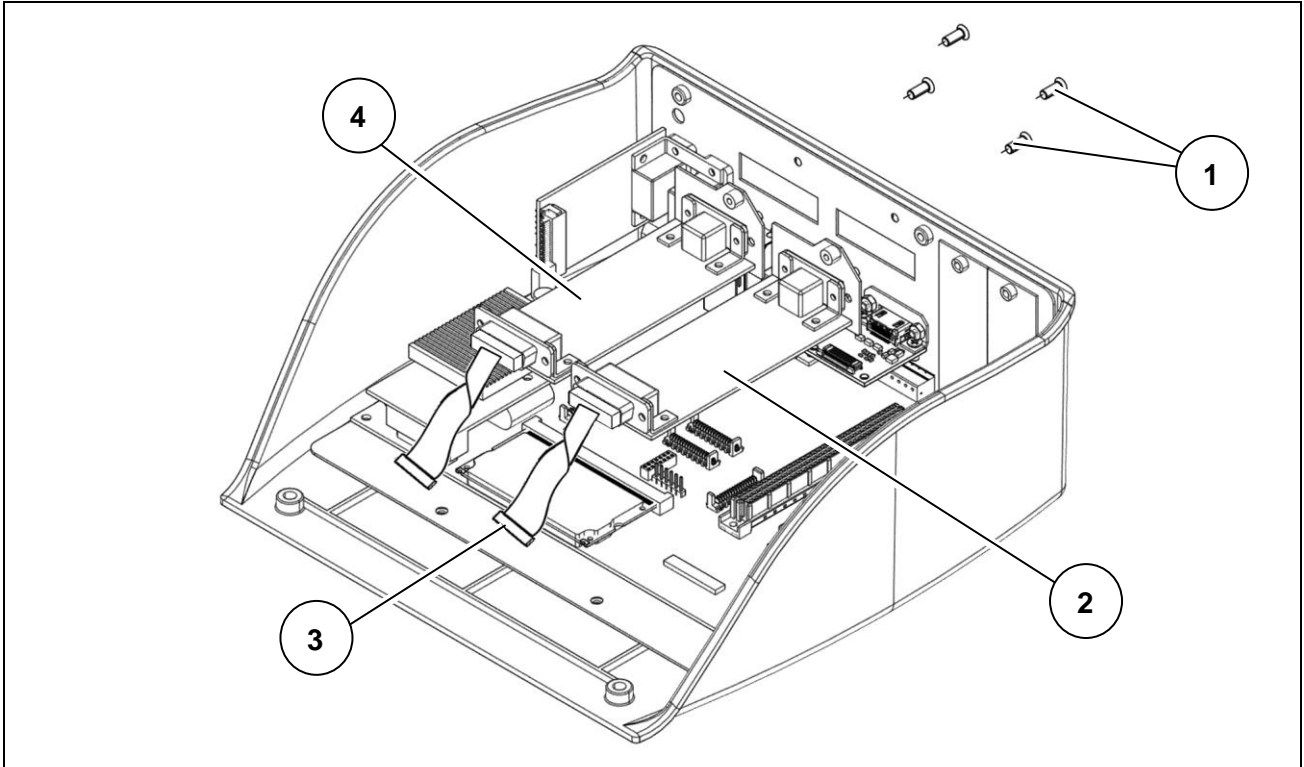
**Figure 10.13-1 – Disassembling CPU**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the CPU (ref. 1) from the motherboard (ref. 2).

## 10.9 Disassembling digital scale input

### 10.9.1 Plastic version

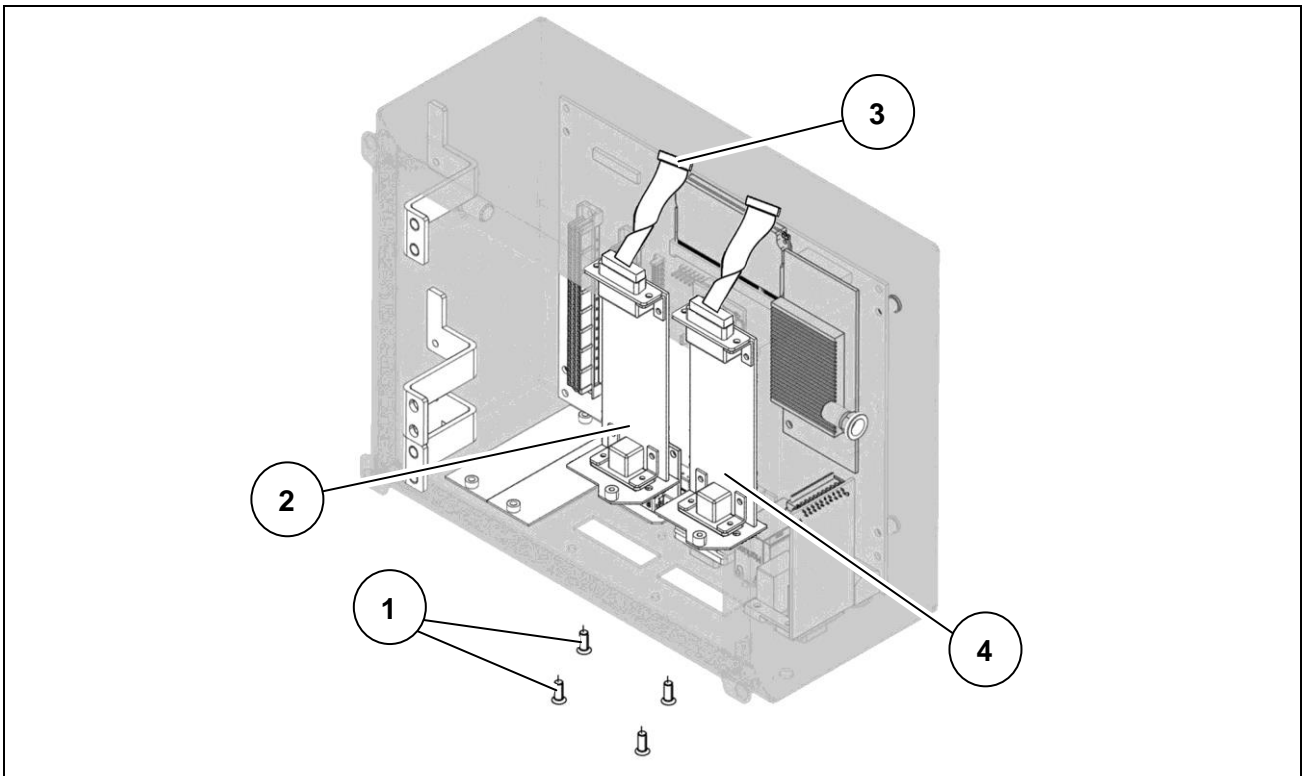


**Figure 10.9-1 - Disassembling digital scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard.
- If there is a second board (ref. 4) repeat the procedure described above.

### 10.9.2 Stainless steel version with connectors

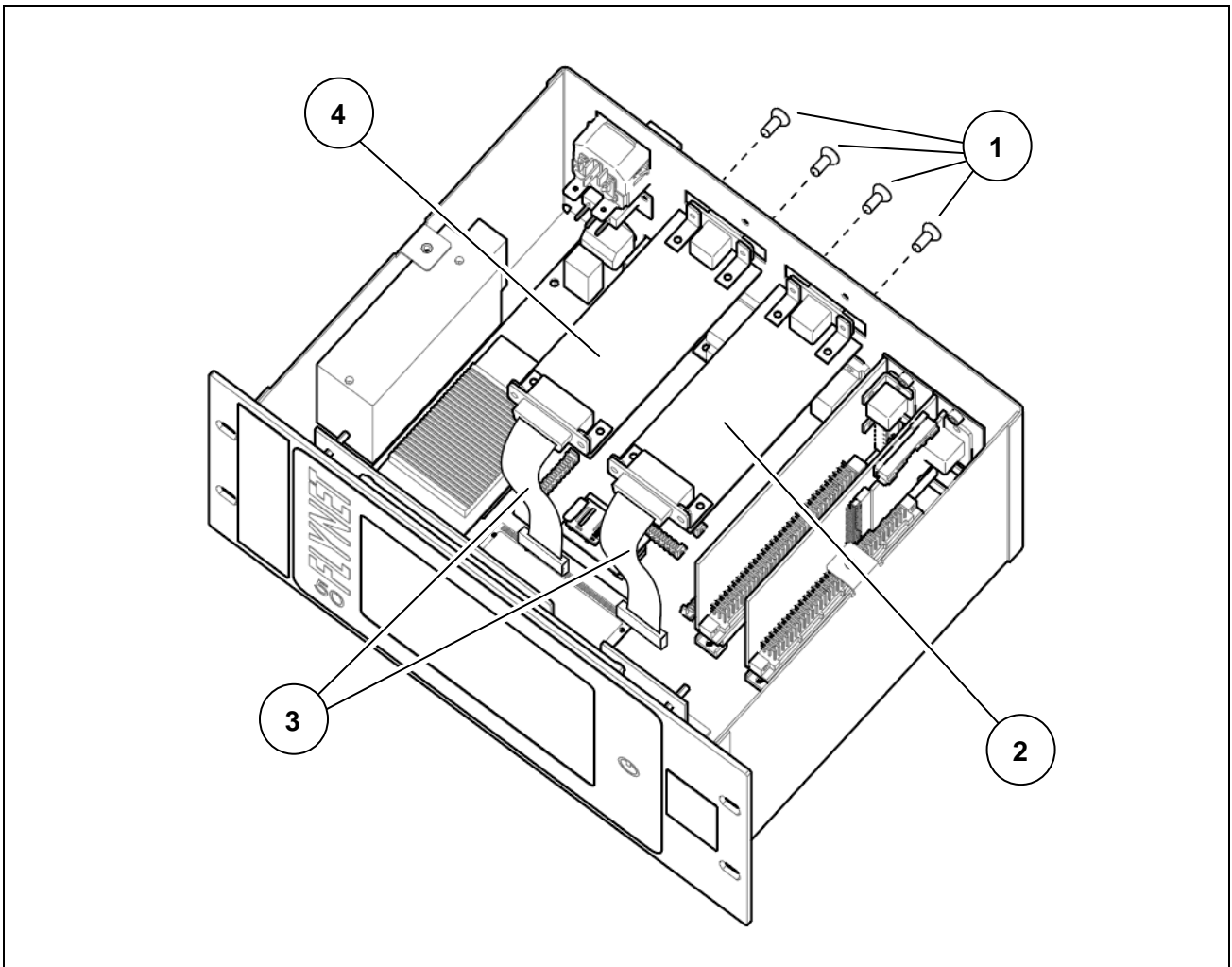


**Figure 10.9-2 - Disassembling digital scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard.
- If there is a second board (ref. 4) repeat the procedure described above.

### 10.9.3 Panel-mounting version

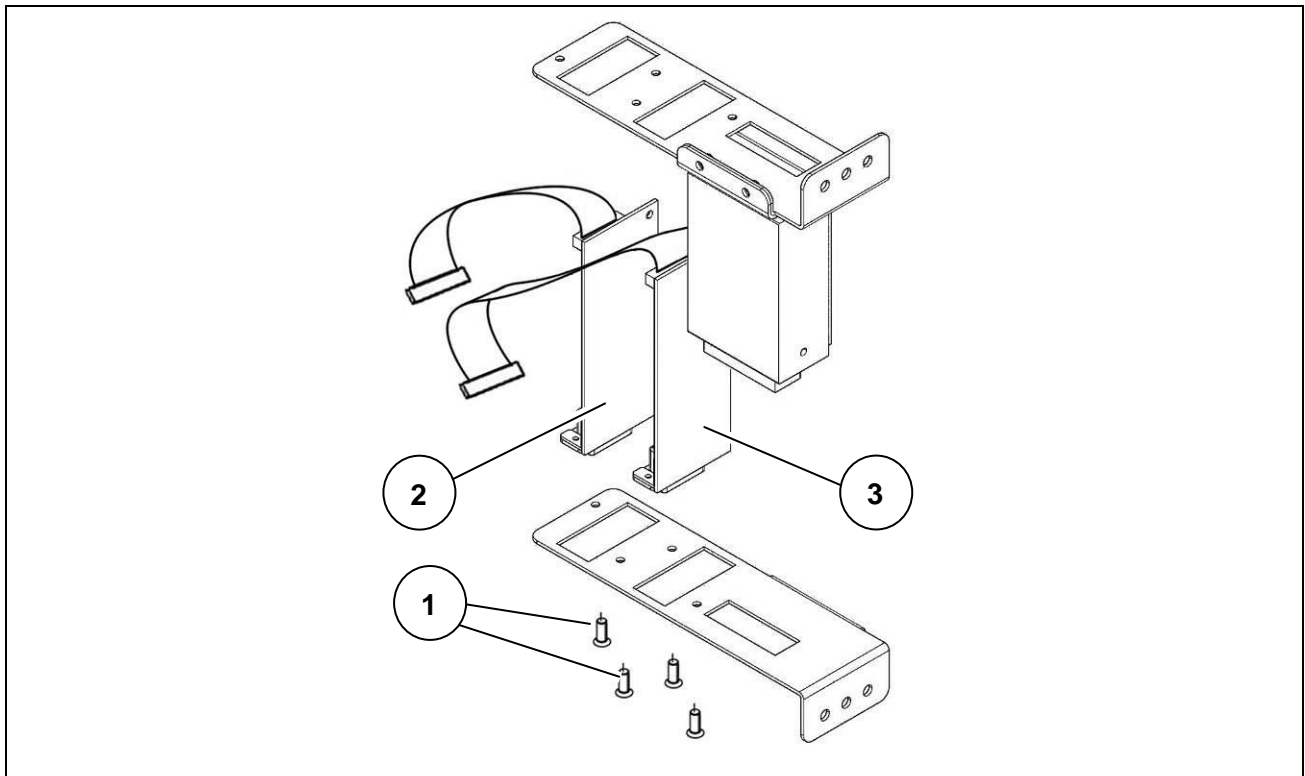


**Figure 10.9-1 - Disassembling digital scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard.
- If there is a second board (ref. 4) repeat the procedure described above.

#### 10.9.4 Stainless steel version with cable glands



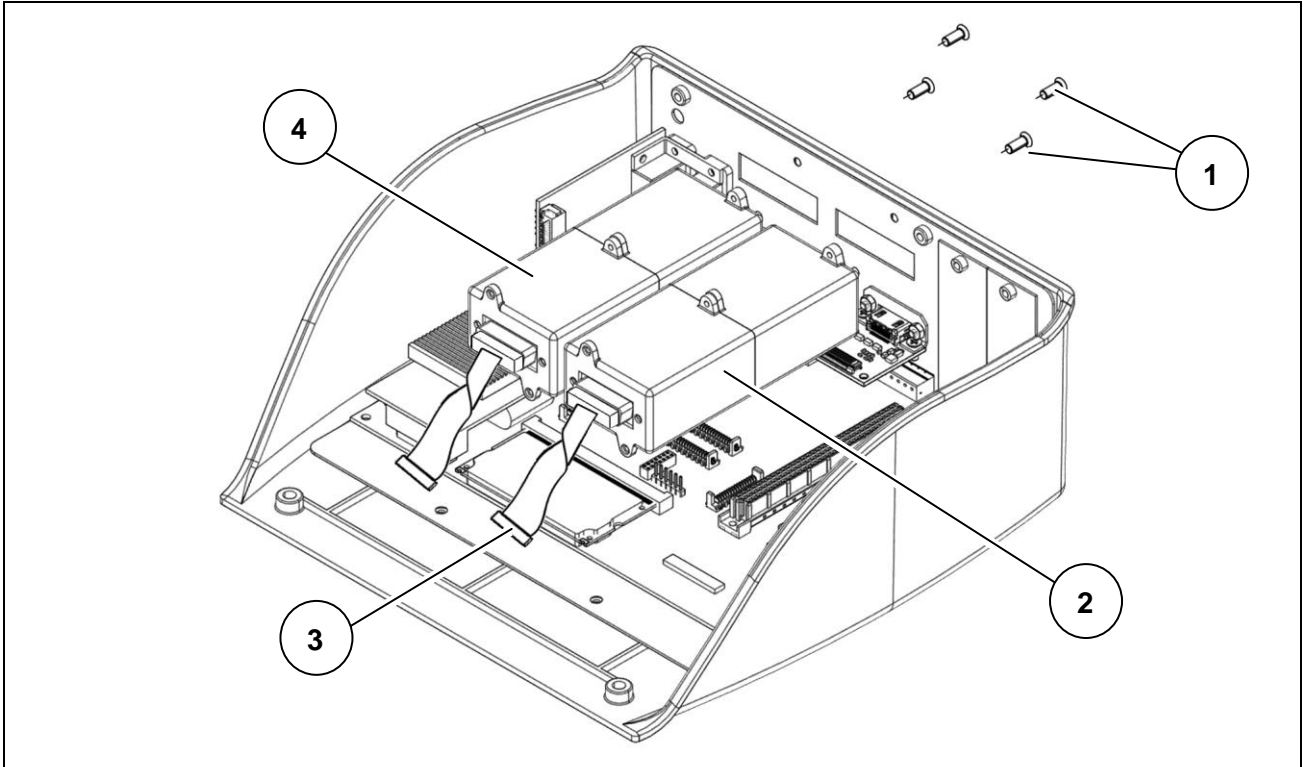
**Figure 10.9-3 - Disassembling digital scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the weighing cell and indicator power supply unit complete with brackets.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- If there is a second board (ref. 3) repeat the procedure described above.

## 10.10 Disassembling analogue scale input

### 10.10.1 Plastic version



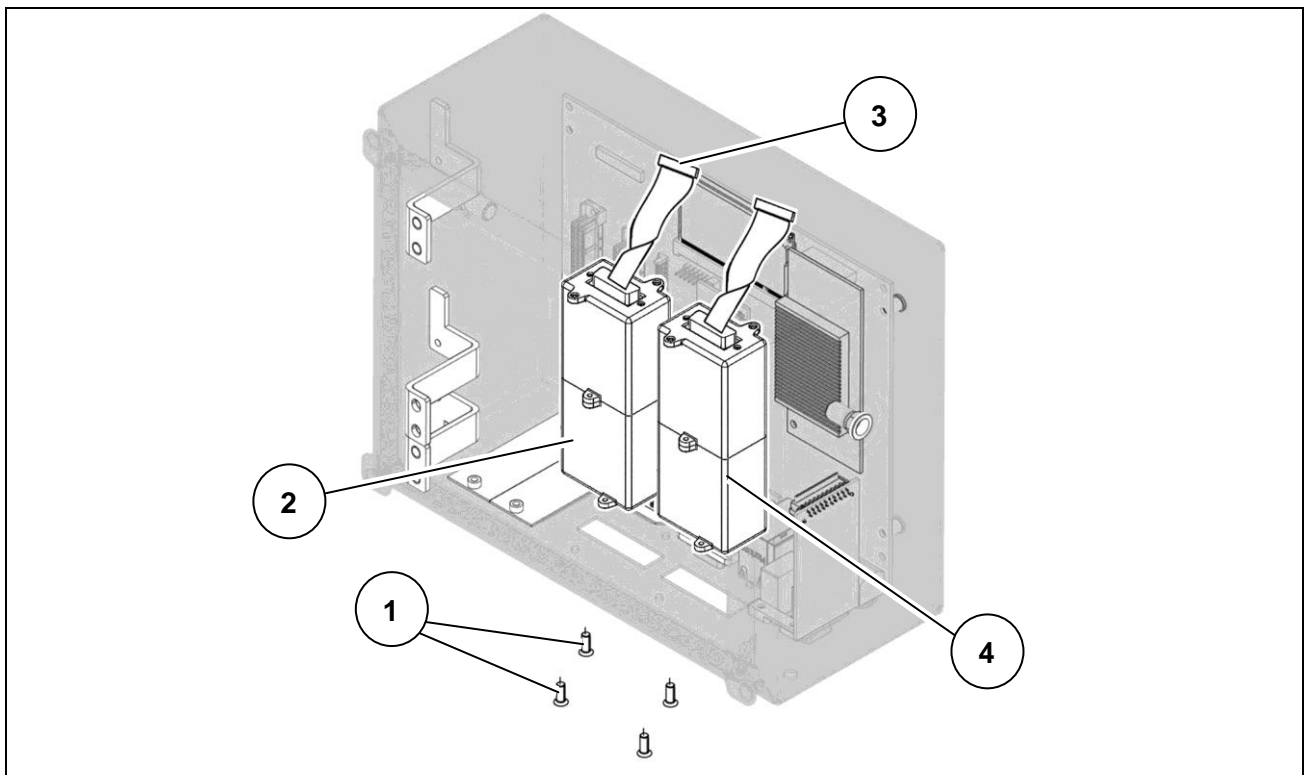
**Figure 10.10-1 - Disassembling analogue scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard.
- If there is a second board (ref. 4) repeat the procedure described above.



### 10.10.2 Stainless steel version with connectors

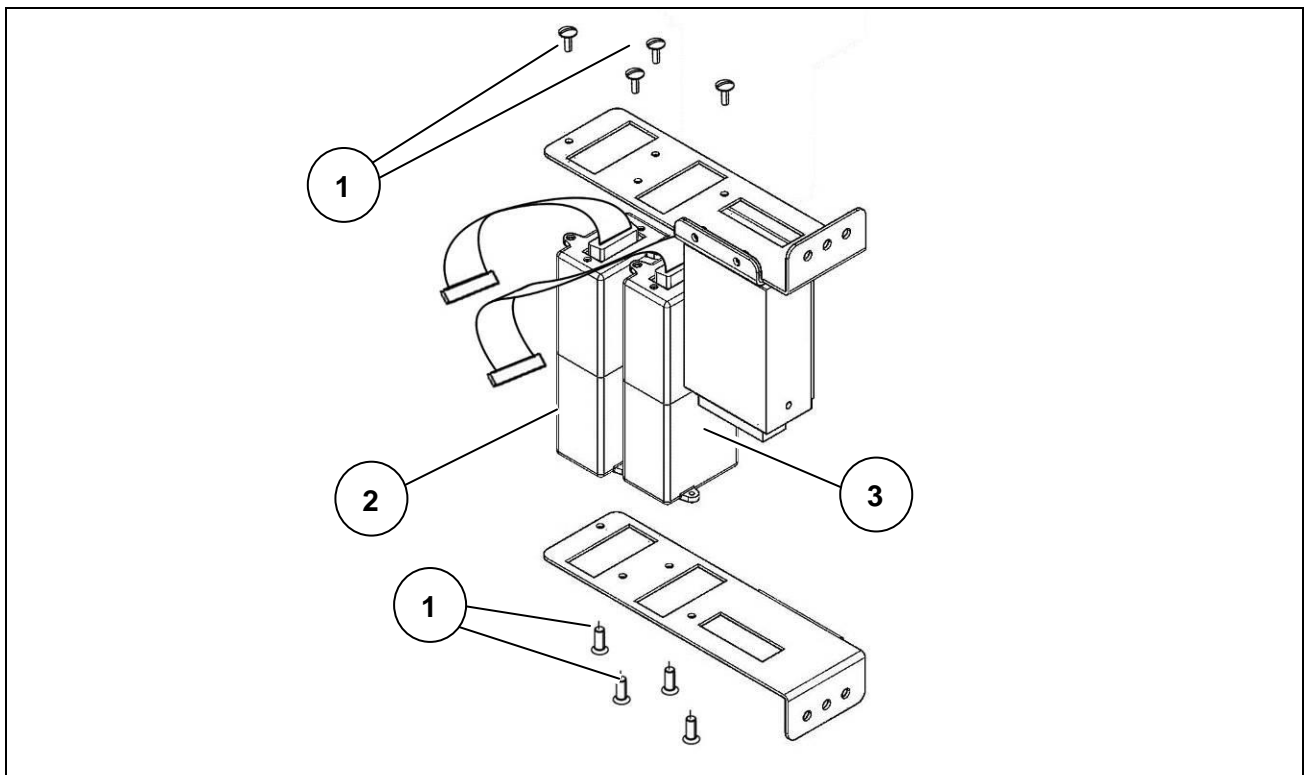


**Figure 10.10-2 - Disassembling analogue scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard.
- If there is a second board (ref. 4) repeat the procedure described above.

### 10.10.3 Stainless steel version with cable glands

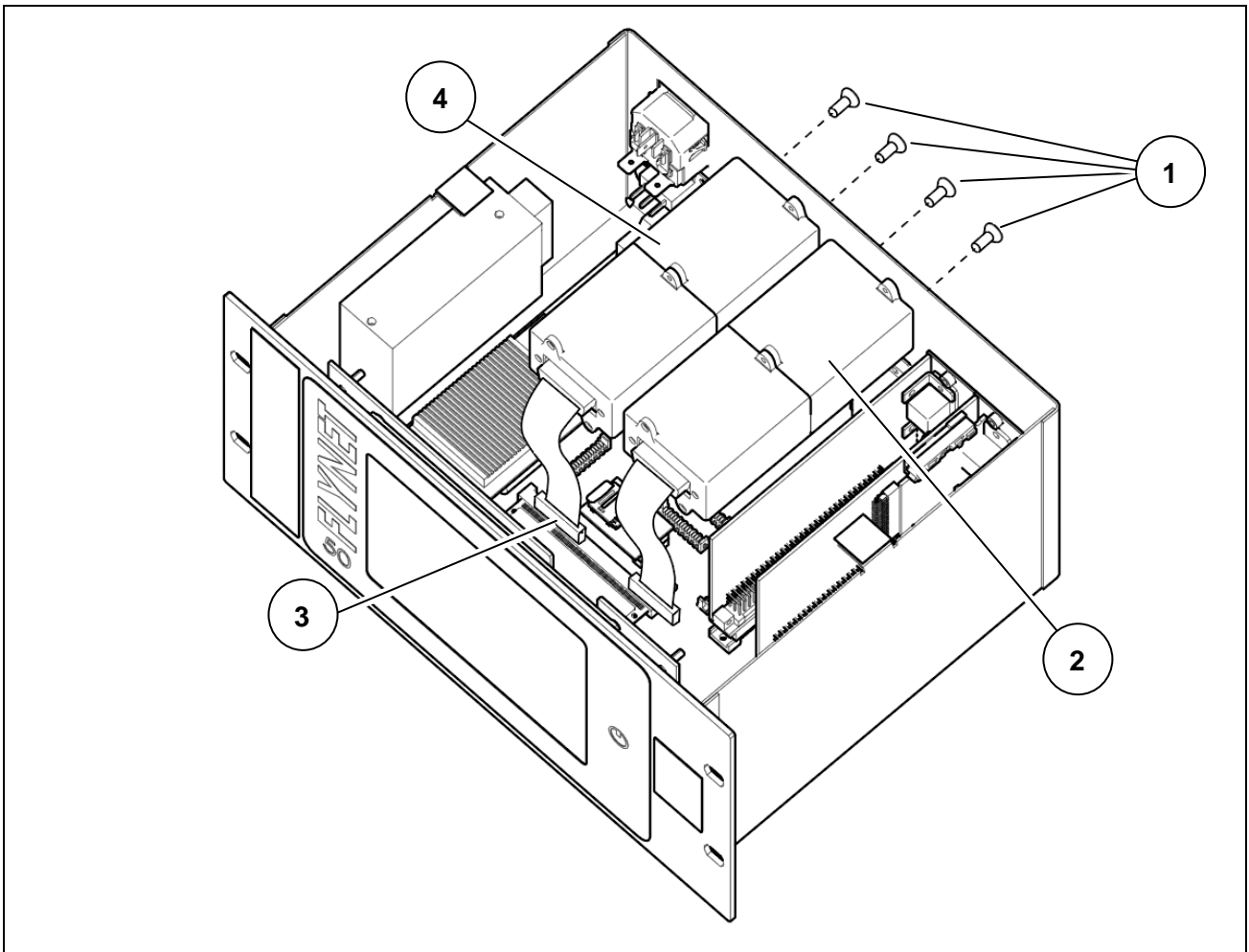


**Figure 10.10-3 - Disassembling analogue scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Remove the weighing cell and indicator power supply unit complete with brackets.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- If there is a second board (ref. 3) repeat the procedure described above.

#### 10.10.4 Panel-mounting version



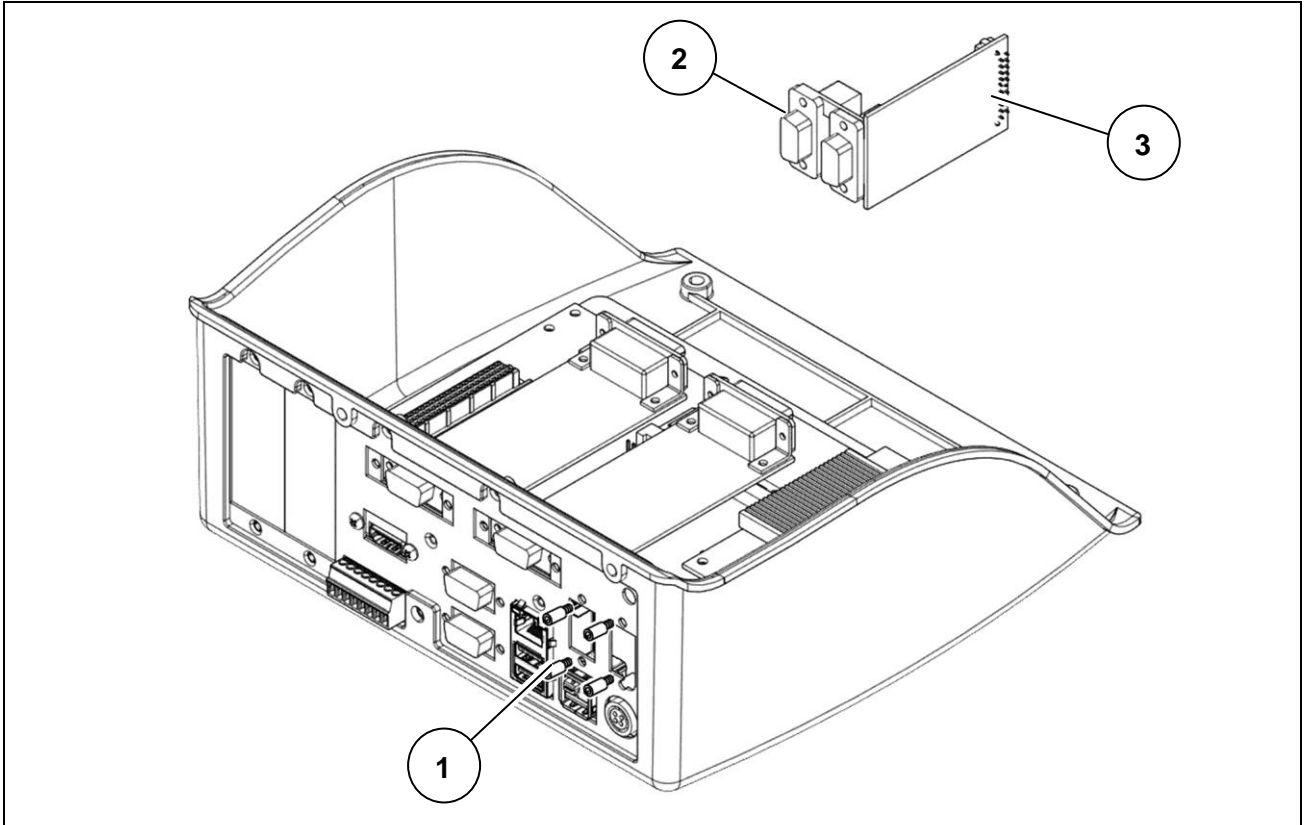
**Figure 10.10-1 - Disassembling analogue scale input**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) and release the board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard.
- If there is a second board (ref. 4) repeat the procedure described above.

## 10.11 Disassembling serial expansion board

### 10.11.1 Plastic version

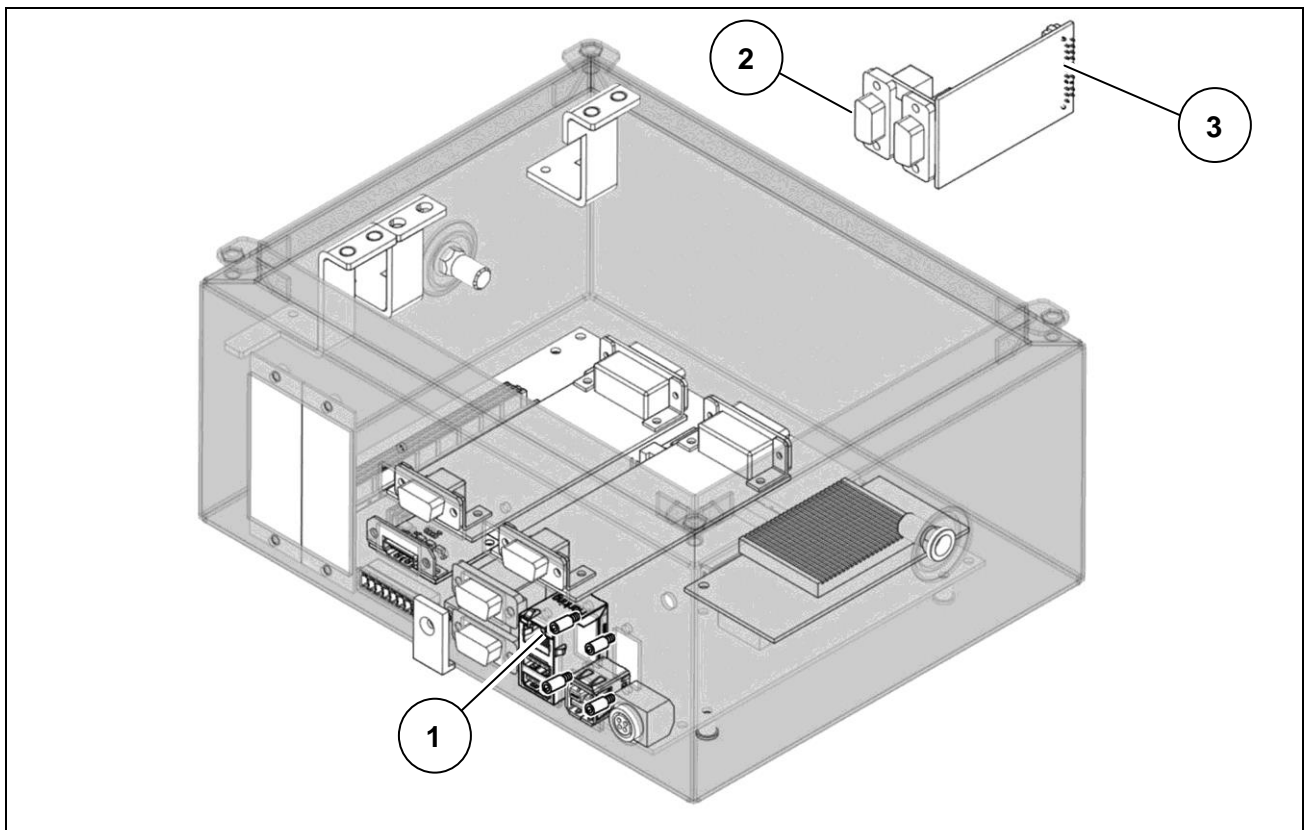


**Figure 10.11-1 – Disassembling serial expansion board**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the stud bolts (ref. 1) fastening the serial expansion board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard and remove the board.

### 10.11.2 Stainless steel version with connectors

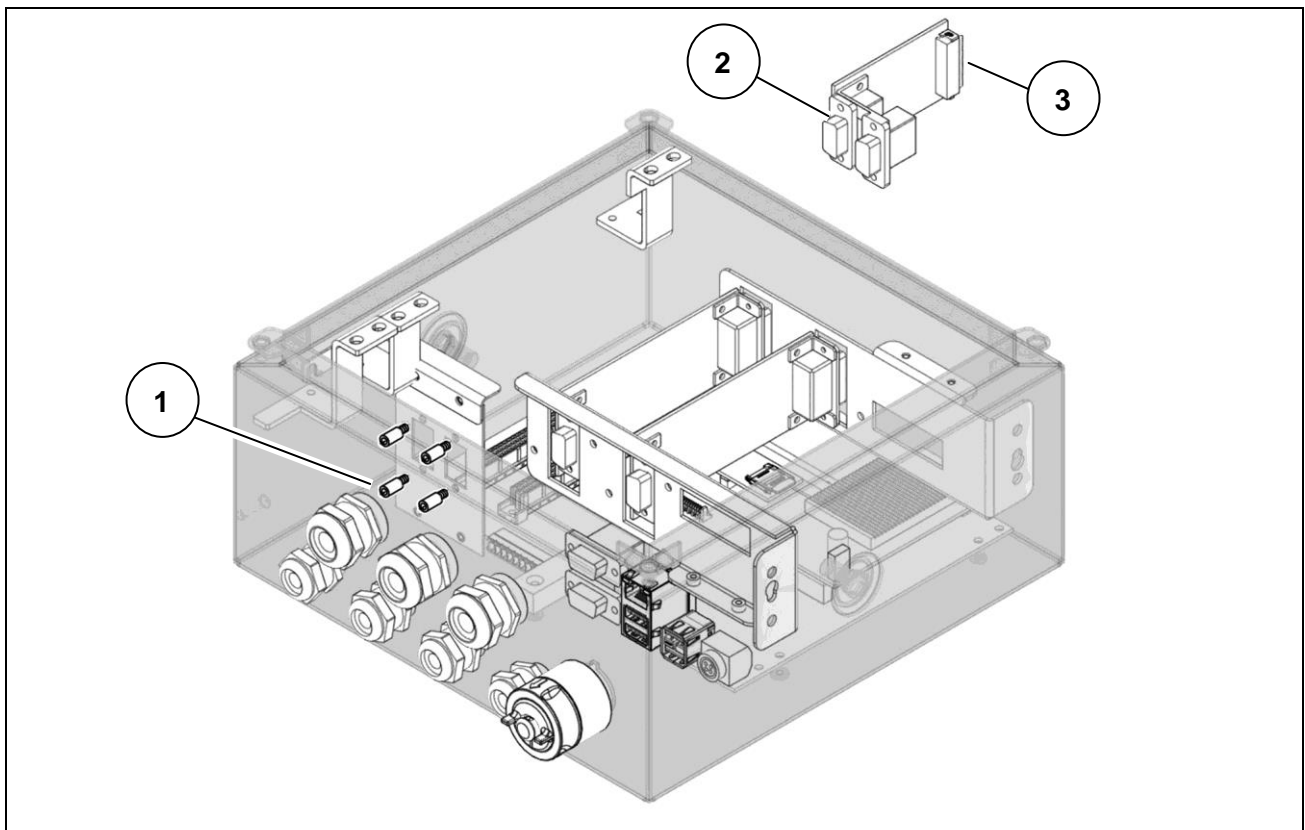


**Figure 10.11-2 – Disassembling serial expansion board**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the stud bolts (ref. 1) fastening the serial expansion board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard and remove the board.

### 10.11.3 Stainless steel version with cable glands

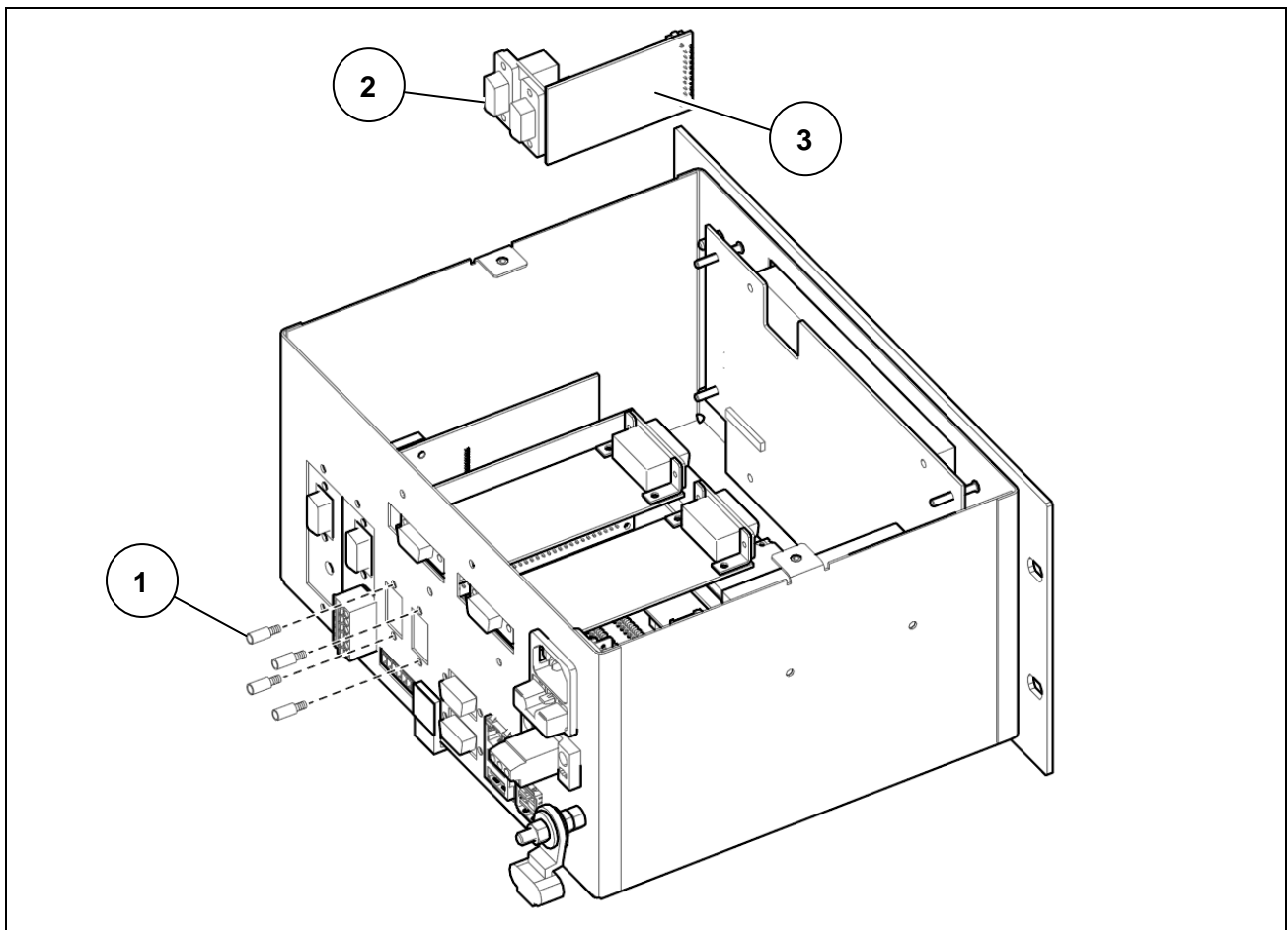


**Figure 10.11-3 – Disassembling serial expansion board**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the stud bolts (ref. 1) fastening the serial expansion board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard and remove the board.

#### 10.11.4 Panel-mounting version



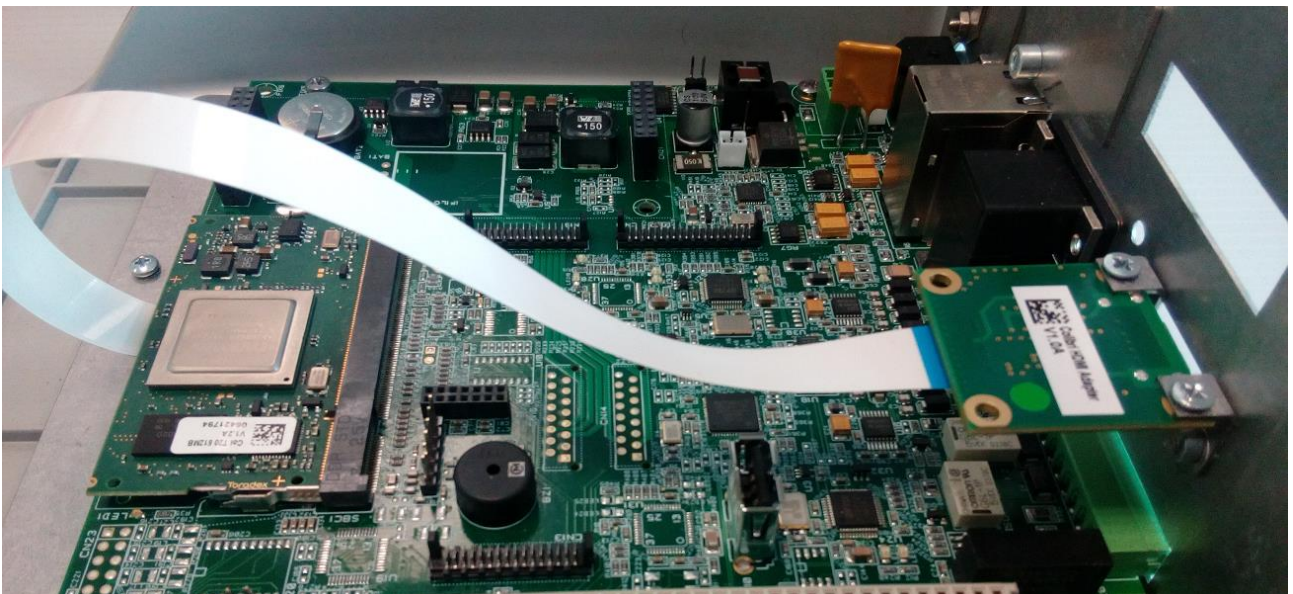
**Figure 10.11-1 – Disassembling serial expansion board**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the stud bolts (ref. 1) fastening the serial expansion board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard and remove the board.

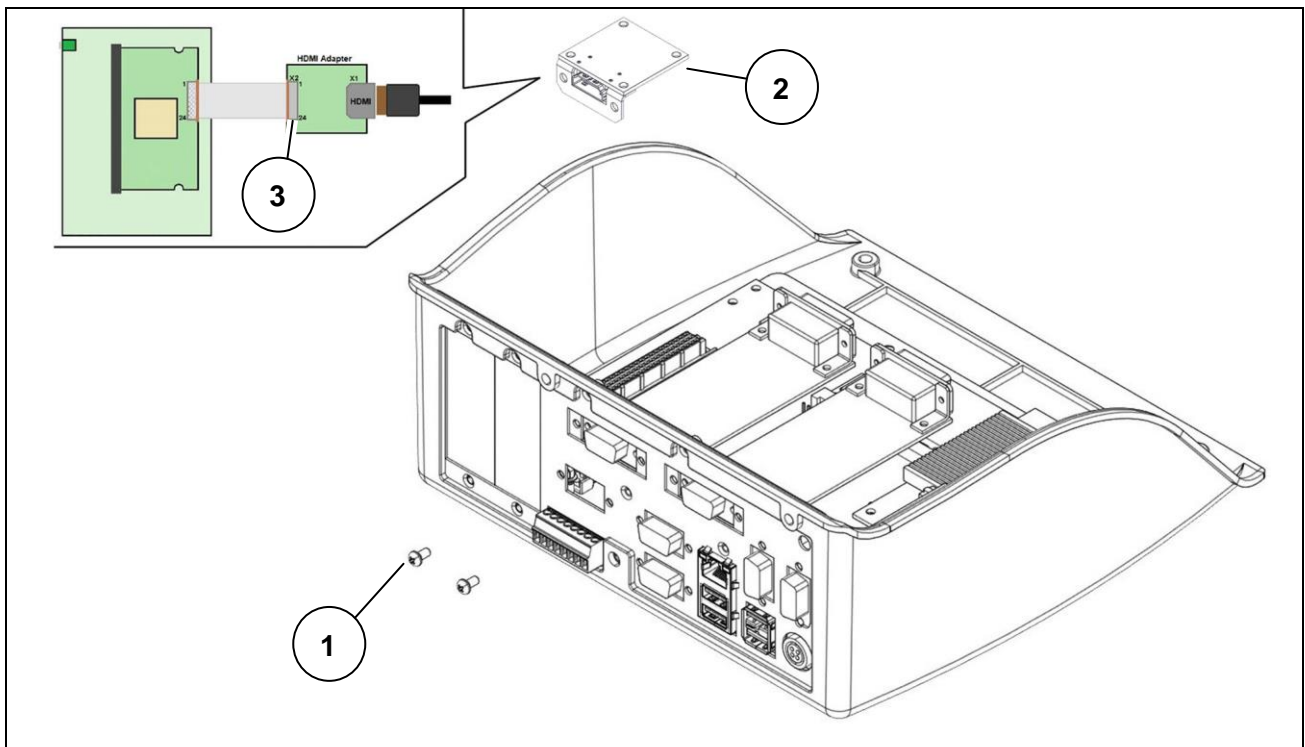


## 10.12 Assembling / disassembling the HDMI port





### 10.12.1 Plastic version

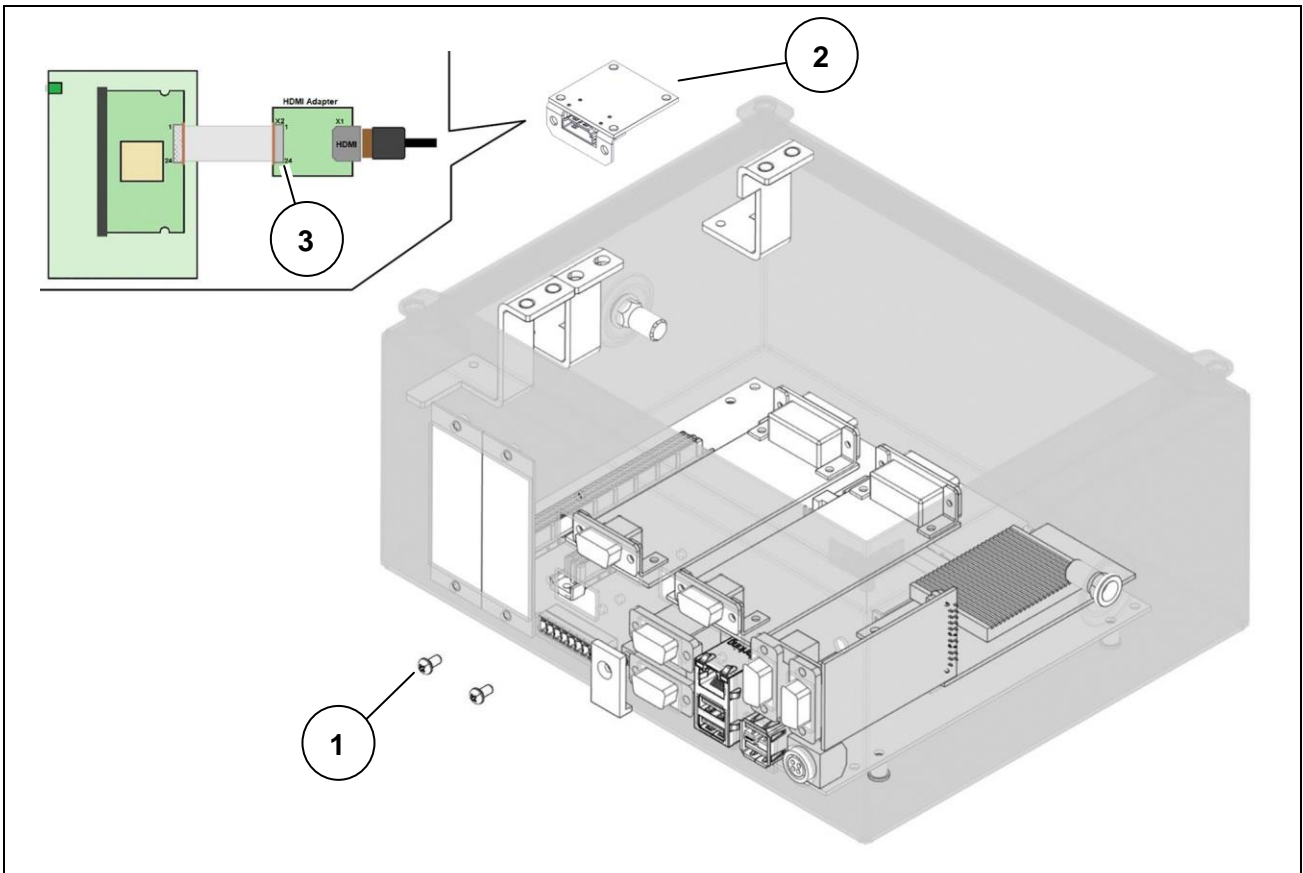


**Figure 10.12-1 - Disassembling HDMI port**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) fastening the HDMI expansion board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard and remove the board.

### 10.12.2 Stainless steel version with connectors



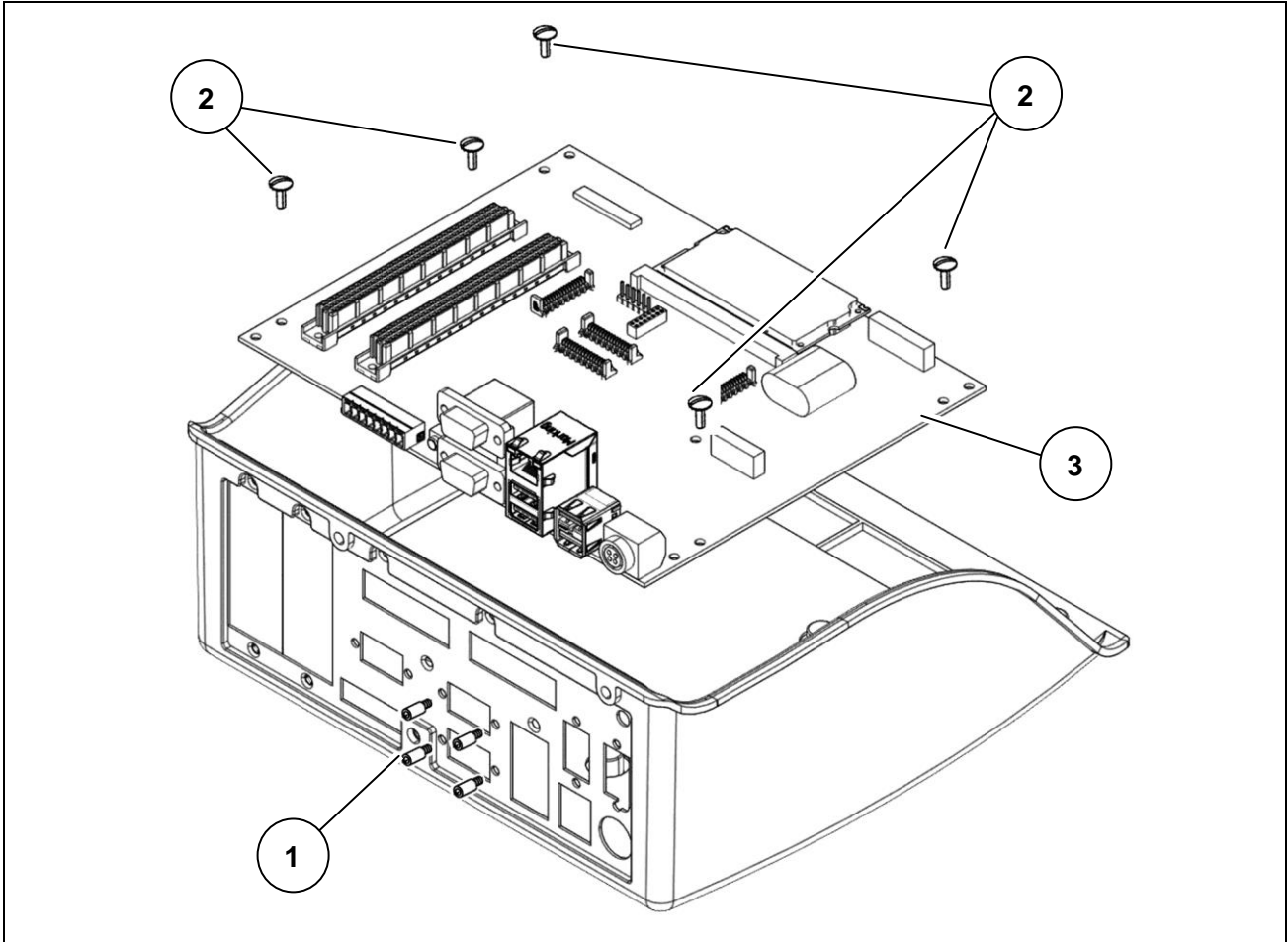
**Figure 10.12-2 - Disassembling HDMI port**

Referring to the previous figure, proceed as follows:

- Open the indicator.
- Unscrew the screws (ref. 1) fastening the HDMI expansion board (ref. 2).
- Disconnect the connector (ref. 3) from its equivalent on the motherboard and remove the board.

## 10.13 Disassembling motherboard

### 10.13.1 Plastic version

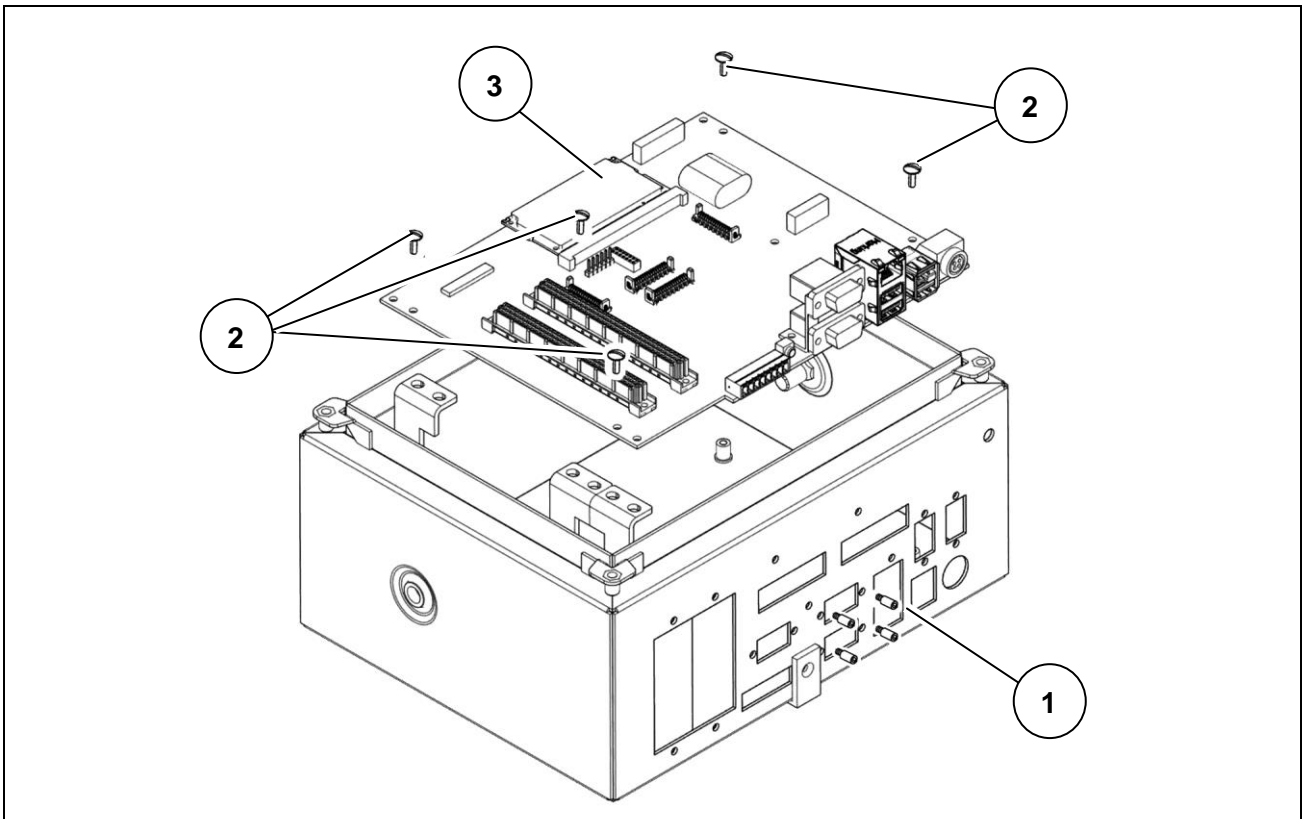


**Figure 10.14-1 - Disassembling motherboard**

Referring to the previous figure, proceed as follows:

- Disconnect the indicator from all the utilities.
- Open the indicator.
- Remove the digital scale power supply unit (if any)
- Remove the lithium battery
- Remove the core board
- Remove the analogue/digital scale input
- Remove the serial board expansion
- Remove the HDMI port
- Unscrew the stud bolts (ref. 1) fastening the serial cards.
- Unscrew the screws (ref. 2) and remove the motherboard (ref. 3).

### 10.13.2 Stainless steel version with connectors

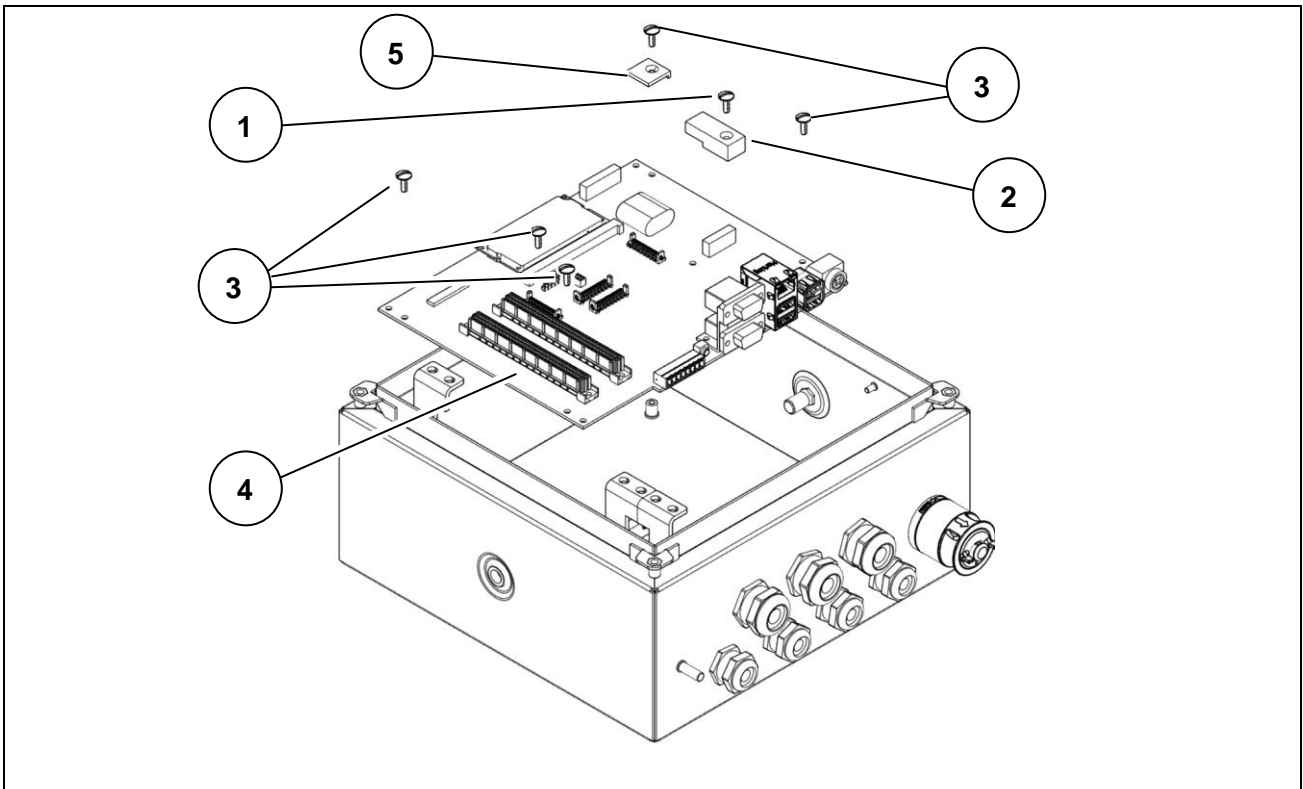


**Figure 10.14-2 - Disassembling motherboard**

Referring to the previous figure, proceed as follows:

- Disconnect the indicator from all the utilities.
- Open the indicator.
- Remove the digital scale power supply unit (if any)
- Remove the lithium battery
- Remove the core board
- Remove the analogue/digital scale input
- Remove the serial board expansion
- Remove the HDMI port
- Unscrew the stud bolts (ref. 1) fastening the serial cards.
- Unscrew the screws (ref. 2) and remove the motherboard (ref. 3).

### 10.13.3 Stainless steel version with cable glands

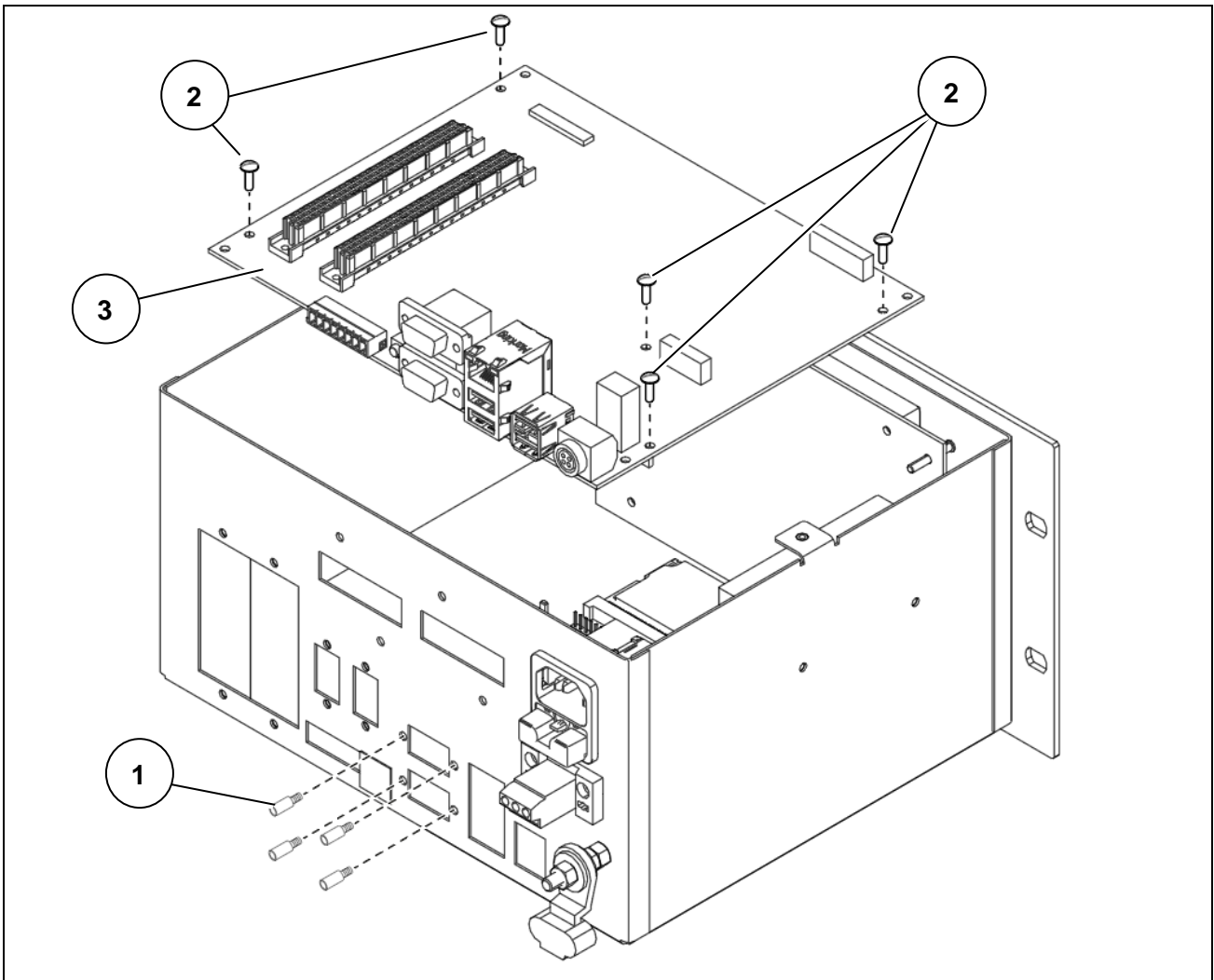


**Figure 10.14-3 - Disassembling motherboard**

Referring to the previous figure, proceed as follows:

- Disconnect the indicator from all the utilities.
- Open the indicator.
- Remove the weighing cell assembly and indicator power supply unit
- Remove the digital scale power supply unit (if any)
- Remove the lithium battery
- Remove the core board
- Remove the serial board expansion
- Unscrew the screw (ref. 1) and remove the protection (ref. 2) on the calibration button.
- Unscrew the screws (ref. 3) and remove the motherboard (ref. 4) and the protection plate (ref. 5).

### 10.13.4 Panel-mounting version



**Figure 10.14-1 - Disassembling motherboard**

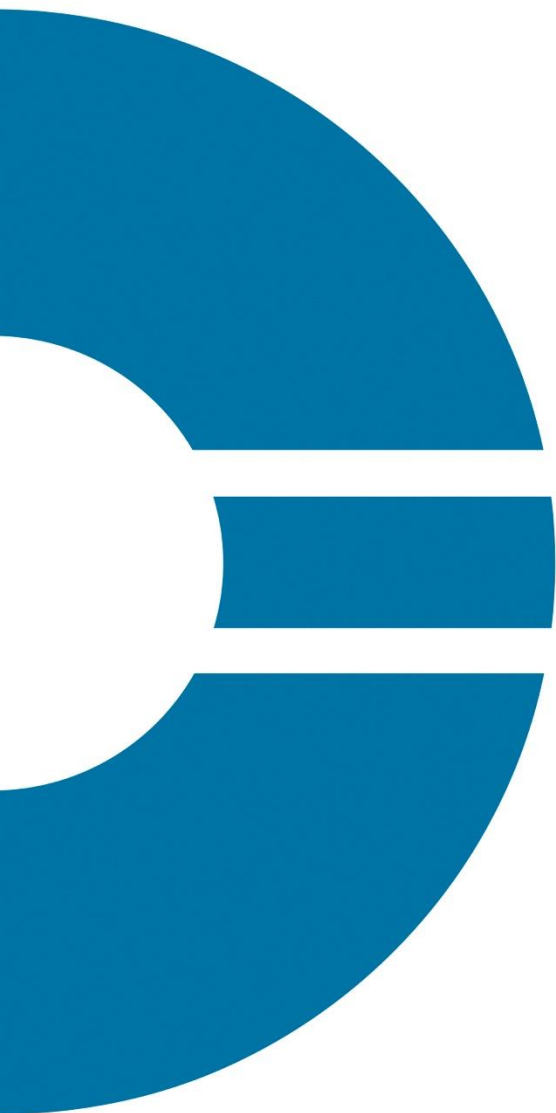
Referring to the previous figure, proceed as follows:

- Disconnect the indicator from all the utilities.
- Open the indicator.
- Remove the digital scale power supply unit (if any)
- Remove the lithium battery
- Remove the core board
- Remove the analogue/digital scale input
- Remove the serial board expansion
- Remove the HDMI port
- Unscrew the stud bolts (ref. 1) fastening the serial cards.
- Unscrew the screws (ref. 2) and remove the motherboard (ref. 3).

## 10.14 Connecting peripheral devices to serial and USB ports

Follow the technical and documentary instructions supplied with the peripheral devices.





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