



## INSTALLATION GUIDE



### PRODIGI INSTALLATION, OPERATION AND MAINTENANCE MANUAL



#### Instruction manual

- ⚠ WARNING:** Improper use of the system and its components can cause damage to property or persons.
- ⚠ WARNING:** before use, carefully read the following user manual.
- ⚠ WARNING:** through the interface devices available to the user it is possible to carry out only data consultation activities, and it is not possible to carry out any configuration.



## INSTALLATION GUIDE



Since 1949, the Cavagna Group has supplied the worldwide gas control industry with products of superior quality and value.

Our new comprehensive catalog features a complete line of products and accessories for the LPG gas containers.

Cavagna is a registered trademark.  
© Copyright 2019 Cavagna North America, Inc.

The Cavagna Group began operation in 1949 in Northern Italy and continues to grow today. Since its origin, the Group has become a world leader in the forging and machining of brass and stainless steel.

For over seventy years the Group has supplied safe products of superior quality and value. Technological advancement and sophisticated working procedures have allowed us to rapidly create new products and solutions for the gas control industry.

The Cavagna Group produces a wide range of products meeting international standards including:

- LPG Valves, Equipment and Regulators
- Engineering and Services dedicated to the LPG industry
- Natural Gas regulators for domestic, commercial and industrial use and metering
- ASME, Fork Lift, and Motor Fuel Tank Valves
- Compressed Gases Cylinder Valves
- Refrigeration Cylinder Valves
- Regulation Equipment for Industrial Gases
- Regulation Equipment for Medical Gases
- Comprehensive Range of Welding and Cutting Equipment
- CNG - AUTOGAS cylinder and filling valves
- CNG - AUTOGAS systems
- LPG Powered Equipment
- Gas Meters

The Group's design engineers and laboratory technicians closely cooperate with worldwide regulatory institutions, both in the writing of international performance standards and in the creation of new products. In North America our products are recognized by AGA, ASME, CGA, IAS, and UL as conforming to ANSI, NFPA and other recognized standards.

The Cavagna Group of companies has invested heavily in personnel, individual training, and robotic technology to meet the quality standards required by our customers and the 145 countries we serve. With the establishment of Cavagna North America in 1996 and our North American Distribution Center on the West Coast, we have further expanded our service network to meet the demands of the global marketplace.

Our philosophy is to provide all of our customers with quality products, continuous innovation and superior service in a competitive environment.



**▲ DANGER**  
• Leaking gas can cause deadly fires or explosions  
• Only trained people should work on gas systems  
• Inspect gas systems regularly  
• Replace sealers or valves as required  
• Failure to follow these directions can result in bodily injury or death

### WARNING

The Cavagna Group, Cavagna North America, and its affiliates give notice that all products contained in this catalog must only be used with LPG (liquefied petroleum gas). The products contained within this catalog must be installed in accordance with NFPA 54, NFPA 58, all D.O.T., federal, state, and local codes where applicable and only handled by trained experienced personnel. Periodic maintenance and inspection are necessary for all products contained within this catalog. If there are any questions or doubts concerning the use or handling of any products contained within this catalog, call:

**cavagna north america inc. 732-469-2100**



### Contents

IMPORTANT SAFETY AND COMPLIANCE INFORMATION .....	4
USA, FCC, Part 15 spectrum compliance .....	4
Canada, ISED spectrum compliance .....	5
RF Exposure (FCC/ISED) .....	5
Electromagnetic compatibility.....	6
Intrinsic safety .....	6
Lithium battery .....	6
Transportation classification .....	6
Electrostatic discharge .....	6
Electrostatic ignition hazard .....	7
Device cleaning.....	7
Do not drop .....	7
Safety.....	7
Product notification.....	7
INTRODUCTION .....	9
SEALING AND ANTI-FRAUD.....	10
OPERATION.....	12
SAFETY .....	14
INSTALLATION AND ACTIVATION (only utility).....	15
BUTTONS AND DISPLAY USE (utility and user) .....	19
BATTERY MAINTENANCE (utility only).....	24
SHUT-OFF VALVE .....	27
MARKING AND TECHNICAL CHARACTERISTICS .....	29
DECLARATION OF CONFORMITY AND HARMONISED STANDARDS.....	31



## IMPORTANT SAFETY AND COMPLIANCE INFORMATION

This section provides important information for your safety and product compliance.

**Comentado [GA1]:** The part of compliance to american Standards has to be verified by CNA

### USA, FCC, Part 15 spectrum compliance

This device complies with Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference that may cause undesirable operation.

This device must be installed to provide a separation distance of at least 7.9 inches (20 centimeters) from all persons to be compliant with regulatory RF exposure.

### USA, FCC Class B-Part 15

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

### Modifications and Repairs

To ensure system performance, this device and antenna shall not be changed or modified without the express approval of Mesura Metering. Per FCC rules, unapproved modifications or operation beyond or in conflict with these instructions for use could void the user's authority to operate the equipment.



### Canada, ISED spectrum compliance

#### Compliance Statement Canada

This device complies with Innovation, Science and Economic Development Canada (ISED) license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Under Innovation, Science and Economic Development Canada (ISED) regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

#### RF Exposure (FCC/ISED)

This equipment complies with radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

#### Déclaration de Conformité

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Cet équipement est conforme aux limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps. Cet émetteur ne doit pas être co-localisées ou opérant en conjonction avec tout autre antenne ou transmetteur.



### Electromagnetic compatibility



**Caution:** Use only approved accessories with this equipment. All cables must be high quality, shielded, and correctly terminated. Unapproved modifications or operation beyond or in conflict with these use instructions may void the authority's authorization to operate the equipment.

### Intrinsic safety



**Warning:** Substitution of components may impair intrinsic safety.

### Lithium battery



**Warning:** Follow these procedures to avoid injury to yourself or others.

- The lithium battery may cause a fire or chemical burn if it is not disposed of properly.
- Do not recharge, disassemble, heat above 212°Fahrenheit (100°C Celsius), crush, expose to water, or incinerate the lithium battery. Fire, explosion, and severe burn hazard.
- The battery used in this device may present a risk of fire or chemical burn if mistreated.
- Keep the lithium battery away from children.

### Transportation classification

The Federal Aviation Administration prohibits operating transmitters and receivers on all commercial aircraft. When powered and not in Factory ship mode, the Mesura Metering device is considered an operating transmitter and receiver and cannot be shipped by air. All product returns must be shipped by ground transportation.


### Electrostatic discharge




**Warning:** Internal circuit components can be sensitive to electrostatic discharge. Before installation, discharge electrostatic buildup by touching a metal pipe or other earth-grounded metal object prior to touching the meter body, register housing, or Mesura device.




### Electrostatic ignition hazard

 **Warning:** Verify the area is not hazardous when installing, servicing, cleaning, or touching the device.

### Device cleaning

 **Warning:** Clean only with a damp cloth.

### Do not drop

 **Warning:** While Mesura Metering meters are designed to withstand a drop, dropping the meter may damage the device, impact the meter accuracy, and void the warranty.

### Safety

The PRODIGI is an intrinsically safe object suitable for use in hazardous areas ..... The minimum installation category is ..... The relevant UL standards for compliance with the EHSR (Essential Health and Safety Requirement) requirements of the .....

**Comentado [GA2]:** This paragraph can be completed only after UL certification

### Electrostatic discharges

This device is approved for installations in areas with a low risk of explosion (risk only for short periods). In these areas, sparks produced by electrostatic discharges could still in extreme cases produce explosions. Even if during normal operations there are no dangerous potentials on the apparatus, the use of dissipative socks and a damp cloth (> 65%) is required during installation/maintenance operations. Further information can be found in [ULxxxxxx](#).

Mesura Metering SRL declines all responsibility for the risks and consequences arising from non-compliance with these requirements.

### Product notification

Warning: These instructions are not intended to replace any utility or company- established meter installation procedures. These instructions are provided for additional information when the Mesura meter is installed. The meter installation must comply with all country, state, and local building and safety regulations as well as federal regulations including the National Fire Protection Association (NFPA) Phamplets 54 and 58, including pertinent paragraphs of the codes are:

- Each meter and service regulator, whatever inside or outside of a building must be in a readily accessible location and be protected from corrosion and other damage.



- Each meter installed within a building must be located in a ventilated place and not less than 3 feet from any source of ignition or any source of heat which might damage the meter.

The Gas Meter is rated for the following operating and storage temperature ranges. Use of the meter outside of the listed temperature ranges is not recommended.

- Operating ranges:
  - Measurement -22° F (-30° C) to +131° F (55° C)
  - Valve -13° F (-25° C) to +131° F (55° C)
- Storage range:
  - -40° F (-40° C) to +158° F (70° C)

**Comentado [GA3]:** To be verified with UL

Direct customer inquiries as to the selection and application of gas meters to your local Cavagna Group sales representative or Cavagna Group Support.

- Cavagna Group does not endorse or warrant the completeness or accuracy of any third-party meter installation procedures or practices, unless otherwise provided in writing by Cavagna Group.
- Follow your company's standard operating procedures regarding the use of personal protection equipment (PPE).
- Adhere to guidelines issued by your company in addition to those given in this document when installing or providing maintenance to the meters.
- This product, as of the date of manufacture, is designed and tested to conform to all governmental and industry safety standards as they may apply to the manufacturer.
- The purchaser and user of this product must comply with all fire control, building codes, and other safety regulations governing the application, installation, operation, and general use of this meter to avoid leaking gas hazards resulting from improper installation, start-up, or use of this product.
- To ensure safe and efficient operation of this product, Cavagna Group strongly recommends installation by a qualified professional.





## INTRODUCTION

The PRODIGI family of products is designed to measure the volume of gas of the second or third family (UNI EN 437) at a maximum working pressure of 7.2 psi, and a maximum flow rate of up to 211.8 ft<sup>3</sup>/h. The meter is equipped with an ultrasonic measuring sensor, the performance is ensured by two lithium batteries (described in the chapter "BATTERY MAINTENANCE"). The device, besides the volume measurement, allows the remote reading and the remote control of the gas flow without the aid of external devices, but by means of different transmission technologies that are indicated below. This document provides information on the characteristics and use of the device, and is valid for all members of the family of PRODIGI products.

It is specified that the models listed below are identical from the point of view of construction, what varies is the calibration procedure to which they have been subjected. Specifically, all four models PRODIGI, PRODIGI 16, PRODIGI 25, PRODIGI 40 are intended exclusively for the measurement of natural gas (methane), and differ only for the calibrated flow range.

While the PRODIGI LPG model is calibrated exclusively for the measurement of all types of LPG mixtures.

The different models differ in the following characteristics:

- Measured flow range
- Measured gas family

And they are classified according to the following scheme:

FORMAT -> PRODIGI XX

Here are the different models available:

XX -> identifies the measured flow range:

- PRODIGI16 -> 0,016 ÷ 2,5 m<sup>3</sup>/h (ex G16), NATURAL GAS  
(Calibrated to measure from 0,016 m<sup>3</sup>/h to 2,5 m<sup>3</sup>/h, intended for natural gas measurement)
- PRODIGI 25 -> 0,025 ÷ 4 m<sup>3</sup>/h (ex G25), NATURAL GAS  
(Calibrated to measure from 0,025 m<sup>3</sup>/h to 4 m<sup>3</sup>/h, intended for natural gas measurement)
- PRODIGI 40 -> 0,04 ÷ 6 m<sup>3</sup>/h (ex G40), NATURAL GAS  
(Calibrated to measure from 0,04 m<sup>3</sup>/h to 6 m<sup>3</sup>/h, intended for natural gas measurement)
- PRODIGI -> 0,016 ÷ 6 m<sup>3</sup>/h, NATURAL GAS  
(Calibrated to measure from 0,016 m<sup>3</sup>/h to 6 m<sup>3</sup>/h, intended for natural gas measurement)
- PRODIGI LPG -> 0,016 ÷ 6 m<sup>3</sup>/h, LPG  
(Calibrated to measure from 0,016 m<sup>3</sup>/h to 6 m<sup>3</sup>/h, intended for the measurement of any type of LPG mixture)

These models can be supplied with one of the following transmission technologies:

- NBloT / LTE
- LoRa 915 MHz

**Comentado [GA4]:** 7.2 psi or 5 psi? To be defined with UL

**Comentado [GA5]:** 211 ft<sup>3</sup>/h or 254 ft<sup>3</sup>/h? to be defined with UL



### SEALING AND ANTI-FRAUD

**⚠ WARNING:** Access to the electronics is not possible without the removal of a mechanical seal (manufacturer seal).

**⚠ WARNING:** Do not damage or remove any type of seal/adhesive. In case of removal or damage, the meter will lose its warranty and will have to undergo a new verification.

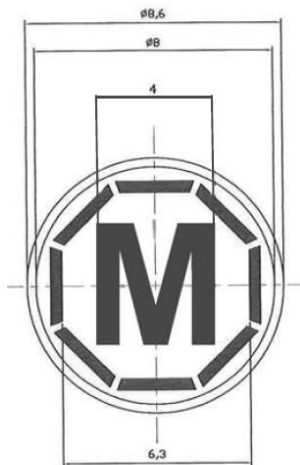
**⚠ WARNING:** Access to the battery will be intercepted and recorded in the gas meter register

**⚠ WARNING:** Attempts to tamper, the correct operation of the meter, it will be intercepted and recorded in the gas meter register.

**⚠ WARNING:** Attempts to access the meter through the communication channels, by unauthorized personnel are intercepted and recorded in the gas meter register.

**⚠ WARNING:** Attempts to access the meter through communication channels made with incorrect passwords or encryption keys are intercepted, listed and made available to the control center.

The seal is represented by the figure below:



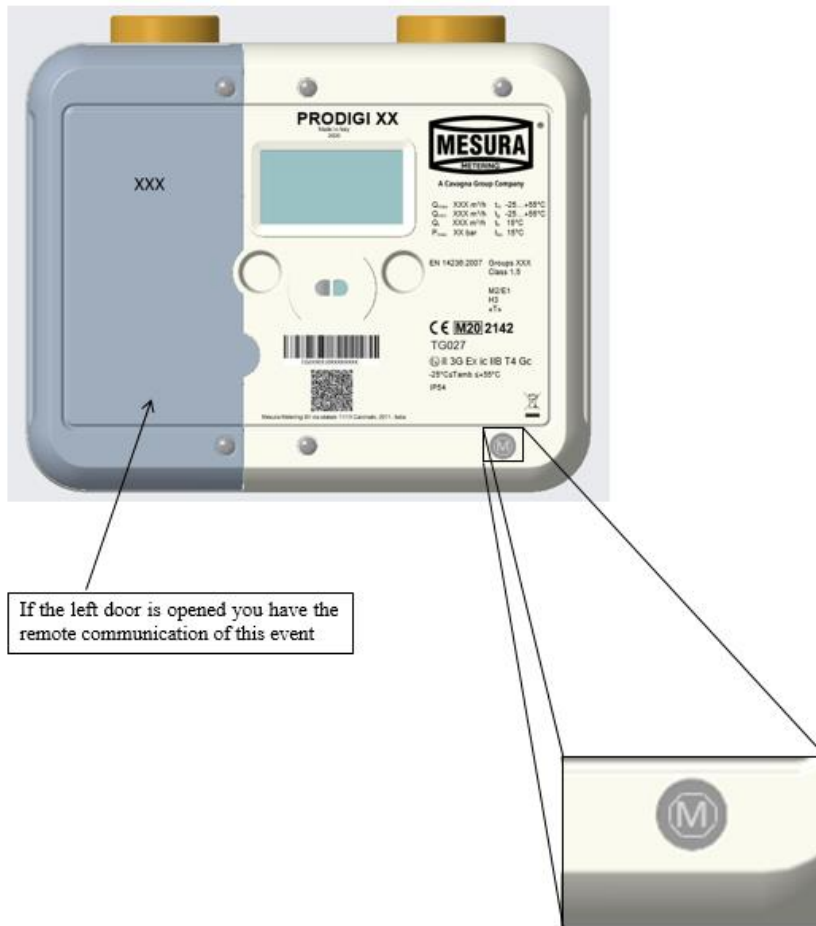


## INSTALLATION GUIDE



### SEALING PLAN

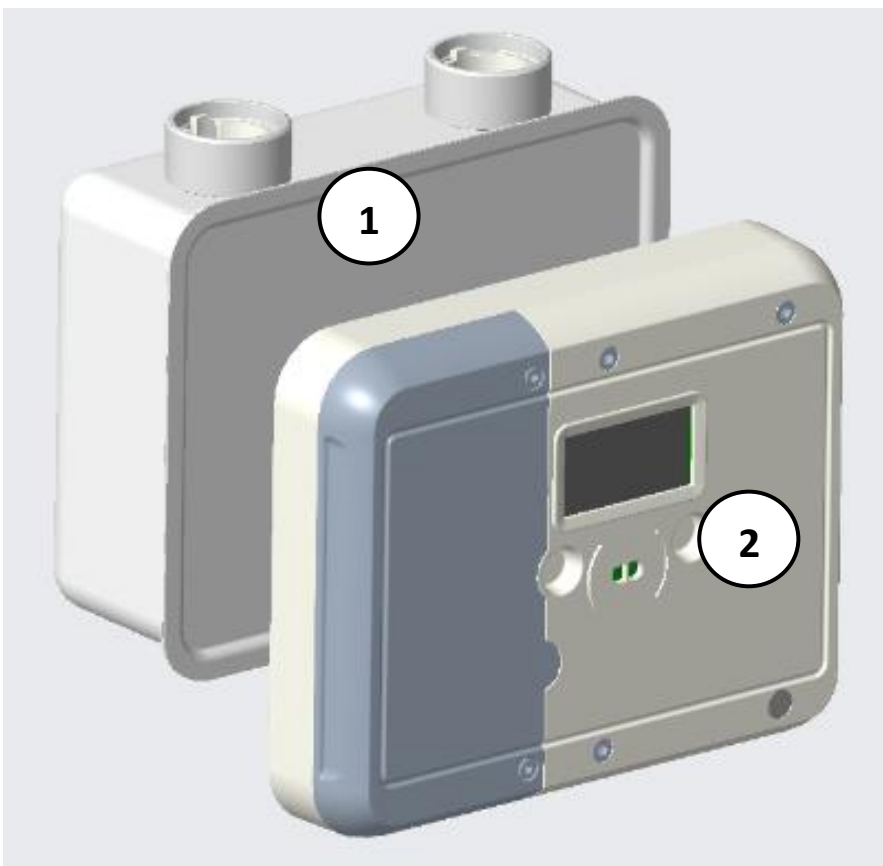
Sealing with safety cap (not removable after insertion):



## OPERATION

The meters of the PRODIGI family are composed of:

- 1) A metal casing (stainless steel), which contains the following elements:
  - Measuring sensor
  - Flow shut-off valve
  - Temperature sensor
- 2) A plastic casing:
  - Management electronics and interface
  - Data transmission module
  - Power supply batteries ( 1 replaceable for communication, and 1 not replaceable for metrology)





### DATA MEASUREMENT AND RECORDING

The measurement is acquired through an ultrasonic sensor (static sensor), this is then processed by the control electronics, saved in the volatile memory of the meter and sent to the gas company via the transmission protocol.

The meters of the PRODIGI family are also equipped with a non-volatile memory on which the data is recorded at a regular interval of 60 minutes.

PRODIGI meters implement the following services:

- Dynamic multi-tariff capacity
- Measurement and load profiles
- Data collection and recording

As far as data recording is concerned, the PRODIGI meters implement the following services:

- Detection and reporting of faults
- Functional requirements - Event logging
- Functional requirements - Diagnostics and alarms

### DATA TRANSMISSION

The meters of the PRODIGI family are equipped with two communication interfaces, one local and one remote.

**LOCAL:** The meter is equipped with an optical port according to EN 62056-21, and requires an external device (Probe Zvei). The optical port is normally switched off, for activation follow the instructions in the chapter "INSTALLATION AND ACTIVATION".

**REMOTE:** One of the following three types of communication aids can be mounted on the meter:

- NBIoT / LTE
- LoRa 915 MHz

### BATTERIES

(Read chapter "BATTERY MAINTENANCE")

### FLOW SHUT-OFF VALVE

(Read chapter "INTERCEPTING VALVE")



## SAFETY

- The PRODIGI is an intrinsically safe object suitable for use in hazardous areas **ULxxxx**. The minimum installation category is **ULxxxx**. The relevant UL standards for compliance with the EHSR (Essential Health and Safety Requirement) requirements of the **ULxxxx**. This equipment is designed to comply with the requirements of the type of protection **ULxxxx**, ambient temperature range **-22° F (-30° C) to +131° F (55° C)** and UL category **xxxx**.


**Comentado [GA6]:** To be completed after UL certification

**Comentado [GA7]:** To be verified with UL

## ELECTROSTATIC DISCHARGES

This device is approved for installations in areas with a low risk of explosion (risk only for short periods). In these areas, sparks produced by electrostatic discharges could still in extreme cases produce explosions. Even if during normal operations there are no dangerous potentials on the apparatus, the use of dissipative socks and a damp cloth (% > 65%) is required during installation/maintenance operations. Further information can be found in **ULxxxx**.

**Comentado [GA8]:** Must be compliant to UL standard

	During the installation or use of this instrument, it is advisable to implement protective measures against electrostatic discharges.
--	---

Mesura Metering SRL declines all responsibility for the risks and consequences arising from non-compliance with these requirements.

### INSTALLATION AND ACTIVATION (only utility)

#### CONNECTION TO THE PLANT

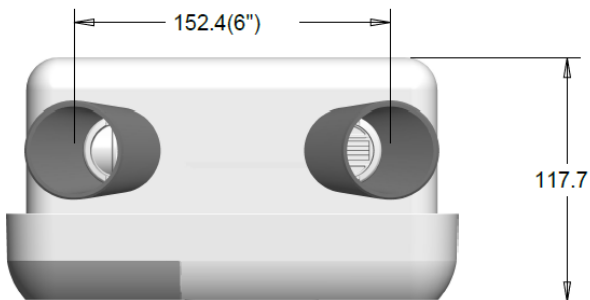
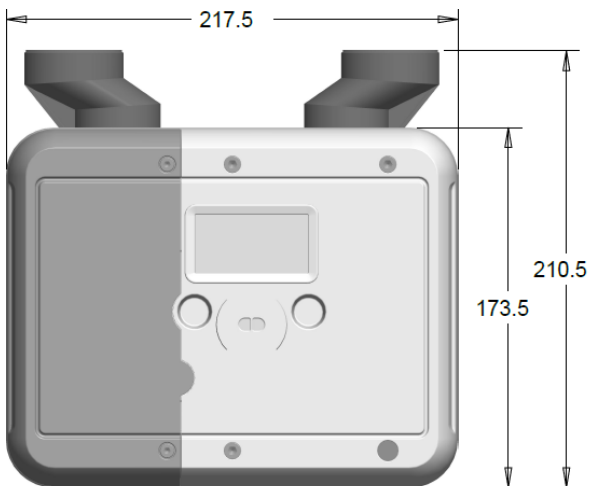
The meters of the PRODIGI family is suitable for installation in hazardous area classified ULxxx:

**Comentado [GA9]:** To be completed after UL certification

#### ⚠ WARNING: POTENTIAL RISK OF ELECTROSTATIC CHARGES

The meters of the PRODIGI family answer to the requests of protection type: **ULxxx classification**.: For use in zone **?** atmospheres therefore safe in case of interference-free operation.

Here are the dimensions of the meters of the PRODIGI family:





### MECHANICAL INSTALLATION

⚠ Warning: This product, as of the date of its manufacture, is designed and tested to conform to all governmental or industry safety standards then existing as they may apply to the manufacturer. The purchaser and user of this product are warned that compliance with all country, state, and local codes required in order to avoid the hazards of leaking gas resulting from improper installation, start-up, or use of this product, and further, that all fire control, building codes, or other safety regulations established under public laws which regulate or govern the application, installation, operation, or general use of this product, should be complied with. In order to ensure the safe and proper operation of this product, the manufacturer recommends that a qualified technician following NFPA 54 standards to install this product such as:

- Where they are not subjected to damage, such as adjacent to a driveway, under a fire escape, in public passages, in coal bins, or where they will be subject to excessive corrosion or vibration.
- Where they are not subjected to extreme temperatures, sudden extreme temperature changes, or temperatures beyond those recommended by the manufacturer.
- In ventilated spaces readily accessible for examination, reading, replacement, or maintenance.

⚠ **WARNING:** For proper use and safe operation, pay close attention to and follow the following instructions when installing the device:

- The PRODIGI device must be connected to the system. Before connecting, make sure that at least the section of the system upstream of the meter has been intercepted and therefore there is no gas supply during the installation phase;
- Before connection, make sure that the maximum pressure of the system is lower than the maximum pressure foreseen by the meter, which is fixed and equal to 7.2 psi;
- If necessary, use fittings to connect PRODUCTS to the pipeline (not supplied).
- When tightening the fittings, do not exceed a torque of 110Nm;
- PRODIGI only operates in a vertical position;
- PRODIGI is supplied with the shut-off valve in the "open" state for which it is ready to dispense and measure the gas.
- Check that the customer's utilities are closed.
- Slowly load the PRODUCT with the pressure.
- After checking the tightness, slowly remove pressure from the PRODIGI meter.

**Comentado [GA10]:** 7.2 psi or 5 psi? To be defined with UL

Once the leak test has been successfully completed, the meter is ready for use.





### ACTIVATION AND CONFIGURATION

#### 1-ACTIVATION PORT OPTICS METER

Use the right button to move to the D screen of the display.



Press and hold the left button for 5 seconds until the icon appears.

#### 2 - COMPILATION OF CONFIGURATION FIELDS

Optionally, the utility that installs the meter, has the ability to set the following parameters:

- Time zone
- Date of commencement of daylight saving time
- Date of end of daylight saving time
- Deviation applied to daylight saving time
- Enabling daylight saving time
- Date/Time

#### 3- STATUS CONFIGURATION

Once you have entered the information listed in the previous point, you can confirm what you have entered by means of a special command.

Confirmation of the configuration data generates an automatic change in status from NOT CONFIGURED to NORMAL.

#### 4- AFFILIATION

the Operation through a special command will send a dedicated data packet (data packet pre-set in the software) to the concentrator, this will send the response to the meter, which once received will be affiliated.

#### 5- DEACTIVATION OF THE OPTICAL PORT

The optical port is automatically deactivated.



## INSTALLATION GUIDE





## BUTTONS AND DISPLAY USE (utility and user)

PRODIGI has a user interface composed as follows:

- 2 Capacitive buttons (Key A, Key B)
- One LCD display

### Keyboard

For simplicity, we indicate with A, the left button and with B, the right button.

Button A: Enter

Button B:

- Pressure maintained for 3 seconds: Power on Display
- Single pressure: Screen feed



### Display

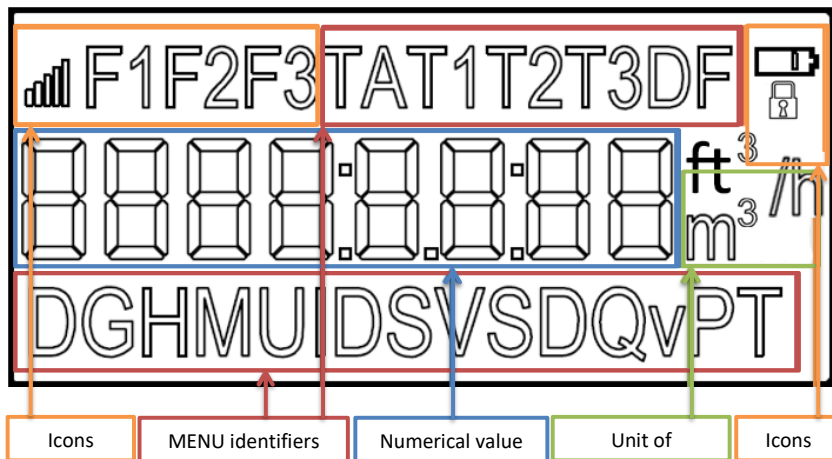
The display is a custom black and white LCD.

The display is switched on by pressing the right button (B) for 3 seconds. The display switches off automatically after 20 seconds of inactivity.

Each screen is identified by a letter or a combination of letters among those identified by a red box in the figure (Menu identifiers).

On each screen, if any, numerical values are displayed using 8 digits with 7 segments identified by a blue frame in the figure. The unit of measurement of the displayed value is indicated by the symbols highlighted in the green box.

There are also icons for signals and alarms identified by the orange box in the figure.



The symbols on the display for each group described above are detailed below

MENU identifier	Description	Format	Unit of measurement	Notes
<b>T</b>	Totalizer of volumes	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>ID</b>	Identification of measuring point	14 numeric characters (displayed with 7 scrolling digits)		



## INSTALLATION GUIDE



<b>PT</b>	Tariff program identification	2 full digits and 3 decimal places		Indication by icon of the current tariff range (F1,F2,F3)
<b>T1</b>	Totalizer band 1	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>T2</b>	Totalizer band 2	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>T3</b>	Totalizer band 3	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>TA</b>	Totalizer of volumes in alarm	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>SD</b>	Device status	1 whole digit		0 = normal 1 = not configured 2 = maintenance
<b>SV</b>	Status of the shut-off valve	2 full digits		00 = valve open 20 = valve closed 40 = enabled for reopening If in state 40 the enter pressure causes the valve to open
<b>DG</b>	Diagnostics	2 full digits for error coding 1 integer digit for error status 0: not active 1: active		Empty screen: no error present. Compiled screen: Switching to the next error encoding via enter E.g. 05: 1 => error coding 05 active
<b>T H</b>	Volume totaliser (previous period)	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>T1 H</b>	Totalizer band 1 (previous period)	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>T2 H</b>	Totalizer band 2 (previous period)	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>T3 H</b>	Totalizer band 3 (previous period)	5 full digits and 3 decimals	ft <sup>3</sup>	
<b>TA H</b>	Totalizer of volumes in alarm	5 full digits and 3 decimals	ft <sup>3</sup>	









## INSTALLATION GUIDE



	(previous period)			
<b>Qv</b>	Maximum conventional flow rate	5 full digits and 3 decimals	ft <sup>3</sup> /h	
<b>PT H</b>	Tariff program identification (previous period)	2 full digits and 3 decimal places		
<b>DF</b>	Closing date of billing period	dd:mm:aa		
<b>Qv</b>	Maximum conventional flow rate (previous period)	5 full digits and 3 decimals	ft <sup>3</sup> /h	
<b>H</b>	Hour	hh:mm		
<b>D</b>	Date and time	dd:mm:aa		Enter pressure maintained for 5 sec: Optical port activation
<b>MU</b>	User Message	Max 100 byte		
<b>MUID</b>	FW version identifier	5 full digits: metrological fw identifier 3 decimal places: nonmetrological fw identifier E.g.: xxxxx.yyy		

Error encoding in diagnostic page	Meaning of error coding
<b>01</b>	Clock synchronization failed
<b>02</b>	Complete Metrological Event Log
<b>03</b>	Metrological Event Log ≥ 90%
<b>04</b>	Error measurement algorithm
<b>05</b>	Generic error
<b>06</b>	Flow rate error
<b>07</b>	Memory error
<b>08</b>	Copying the least significant UNI/TS Device Status register bit
<b>09</b>	Battery level ≤ 10%
<b>10</b>	Critical battery level
<b>11</b>	Tamper detection (tamper)
<b>12</b>	Active Daylight Saving Time
<b>13</b>	Valve fault
<b>14</b>	Synchronization in progress

Icon	Description	State
	Signaling that the optical port has been activated (shown on page D)	ON: Optical port communication active OFF: Optical port communication deactivated
	Fare range 1	ON on page PT indicates that the current tariff range is 1
	Fare range 2	ON on page PT indicates that the current tariff range is 2
	Fare range 3	ON on page PT indicates that the current tariff range is 3
	Battery status indicator	Blinking: Battery level below threshold
	Valve status indicator (displayed on page SV)	ON: valve closed OFF: Valve open

### BATTERY MAINTENANCE (utility only)

**WARNING – DO NOT REPLACE BATTERY WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT**

**WARNING – ONLY VITZROCELL SBD0200196 BATTERIES**

#### BATTERY REPLACEMENT OPERATION

- Low battery detection
- Authorization to the technical intervention through the writing (through optical port or Data Management Platform) of the object "Battery Change Authorization" specifying as foreseen by the object the duration of the temporal window.
- Open the battery door by unscrewing the three screws shown in the figure



- Intervene in the battery change after opening the window.





## INSTALLATION GUIDE



- Close and screw the door back on.

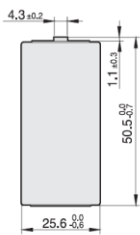
Once the replacement has been completed, the icon will disappear on its own (subject to authorization for replacement).

### DISPOSAL

At the time of disposal, the batteries must be removed from the device, as indicated in ULxxxx. The device is equipped with two non-rechargeable batteries, Lithium- Thionyl chloride technology (Li-SOCI<sub>2</sub>) described below:

**Comentado [GA11]:** The correct UL standard reference must be indicated

**Secondary battery:** The secondary battery Size C in Bobbin technology, nominal voltage 3.6 Vdc. nominal capacity 8.5 Ah, is located in the compartment containing the electronic card, under it. This battery is not removable because it is connected to the board and is protected by a meter seal.



※ Available Terminals :  
TC ST AX Other type  
available by request

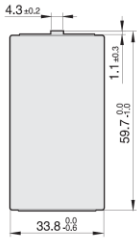
Model	SB-C02
Nominal voltage	3.6V
Nominal capacity [at 4mA, 20°C, 2.0V cut off]	8.5Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitzrocell)	80mA
Max. pulse discharge current	180mA
Weight	51.0g
Operating temperature range	-55 ~ 85° C

※ Max. pulse current/0.1 second pulses, drained every 2 min at +20 °C from undischarged cells with 10 μA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.  
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitzrocell.

**Primary battery:** The primary battery Size D, nominal voltage 3.6 Vdc. nominal capacity 19 Ah, is located in the compartment on the left side of the meter. To remove, simply remove the three fixing screws, open the battery cover and disconnect the battery connector from the board. The battery is marked with the symbol for separate collection for batteries and accumulators, represented by a crossed-out wheeled bin.



## INSTALLATION GUIDE



※ Available Terminals :  
TC ST AX Other type  
available by request

Model	SB-D02
Nominal voltage	3.6V
Nominal capacity [at 6mA, 20°C, 2.0V cut off]	19.0Ah
Maximum recommended continuous current (Higher currents are possible, consult Vitrocell)	100mA
Max. pulse discharge current	250mA (*)
Weight	100.0g
Operating temperature range	-55 - 85° C

※ Max. pulse current/0.1 second pulses, drained every 2 min at + 20 ° C from undischarged cells with 10 μA base current, yield voltage readings above 3.0V. The readings may vary according to the pulse characteristics, the temperature, and the cell's previous history.  
Fitting the cell with a capacitor may be recommended in severe conditions. Consult Vitrocell.

(\*) The value indicated refers to the single battery without capacitors, being equipped with capacitors the battery is able to provide a **maximum current pulse**:

- **Max pulse discharge current: 0.75 A**

The minimum value required by PRODIGO is: 380 mA per 600 ms.



## SHUT-OFF VALVE

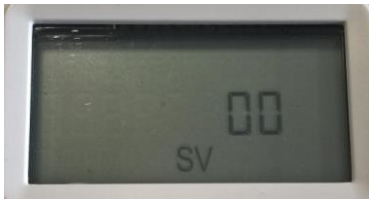
The flow shut-off valve is located inside the metal body of the meter in the inlet connection, and is not accessible without causing permanent damage to the meter.

The purpose of the valve is to intercept the flow of gas to the user for commercial purposes only. **In no way or condition should the valve be intended and used as a useful device to place the user's system in safety against possible or confirmed gas leaks.** The valve is specially designed to guarantee its performance and operation for at least 15 years and is able to provide the steering microprocessor with the real state of the valve (closed/open) and indications about the correct operation.

The shut-off valve is configured to be closed by a command sent from the Data Management Platform to the PRODIGI gas meter.

Only the Account manager is entitled to send the closing command.

Once the PRODIGI receives the closing command, the operator could check the effective closure on the following screen of the display:



The "SV" screen shows the valve status:

- 00 – Open valve
- 20 – Closed valve
- 40 – Valve opening enabled



The valve status is also indicated with a lock symbol located at the top right of the display. The symbol is indicated only with the status "20" or "40" to indicate that the valve is closed.

## REOPENING VALVE

The opening of the valve, previously closed, must be previously authorized by the Data Management Platform. The status of the valve can be displayed in the menu on the display. To reactivate a previously closed valve, PRODIGI must first have received "opening authorization" from the Control Centre.



## INSTALLATION GUIDE



After enabling the valve reopening (valve status "40"), in order to actually open the valve, it is necessary to press the left button on the valve status screen. This will open the valve and set the valve status to "00".



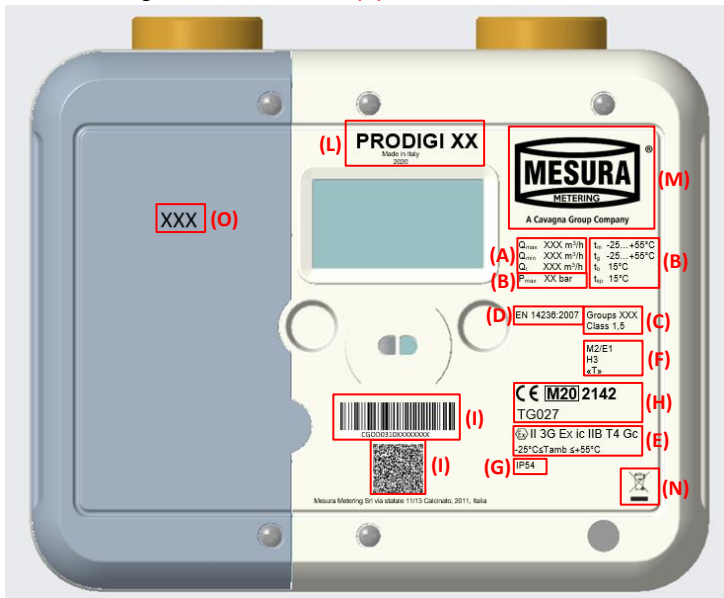
## MARKING AND TECHNICAL CHARACTERISTICS

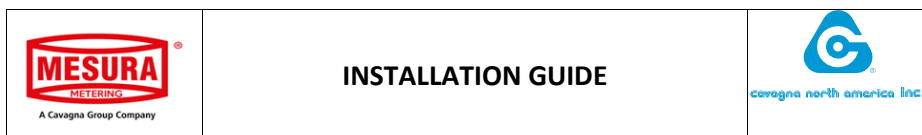
### MARKING

The device is easily identifiable by means of the marking on the front parts, on which the following data are indicated:

- Flow rates  $Q_{min}$  (minimum flow rate),  $Q_{max}$  (maximum flow rate) and  $Q_t$  (A)
- Maximum operating pressure, ambient operating temperature  $t_m$ , gas temperature  $t_g$ , base temperature  $T_b$  and compensation  $T_{sp}$  (B)
- Group of gases and accuracy class (H.L.E., Class 1.5) (C)
- Harmonised standards (D)
- ATEX marking (E)
- Environmental class M2/E1 M2/E1/ H3/ "T" (F)
- Degree of protection IP (G)
- "CE [MXX] 2142 = supplementary metrology marking (MXX identifies the decade of the year of TXXX" the application of the supplementary marking, 2142 is the identifier of the notified body that certifies the conformity of the production process, TXXX is il Numero del certificato di approvazione del tipo) (H)
- Numero di serie (BAR code e QR code) (I)
- Nome prodotto, luogo ed anno di produzione (L)
- Logo costruttore (M)
- Simbolo RAEE (N)
- Riferimento tecnologia di trasmissione dato (O)

**Comentado [GA12]:** This paragraph will be updated after UL certification because we need to approve the red UL label with the right meter parameters. On the meter the parameters will be indicated with both US and EU units





### TECHNICAL CHARACTERISTICS

PARAMETERS	UNIT OF MEASURE	VALUE
Gas connections	US	20LT
Distance between gas connection	mm	6 inches
Accuracy class	-	1,5
Gas application	PRODIGI- PRODIGI 16- PRODIGI 25- PRODIGI 40	EN 437
	PRODIGI GPL	H.L.E.
Qmin	PRODIGI	P/B
	PRODIGI GPL	ft <sup>3</sup> /h
Qt	PRODIGI	0,57
	PRODIGI GPL	0,57
Qmax	PRODIGI	21,19
	PRODIGI GPL	21,19
Trasmission Technology	-	211,8
	-	211,8
Pmax	psi	NB-IoT / LTE
Operating temperature (tg)	°F	LoRa 915 Mhz
Ambient temperature (tm)	°F	7,2
Compensation temperature (tsp)	°F	-22...+131
Gas temperature (tb)	°F	+59
IP grade protection	-	+59
Mechanical class	-	65
Electromagnetic class	-	M2
Power supply	mA	E1
Optical port	EN 62056-21	19000
Electrovalve	UNI TS 11291-11	EN 62056-21
materials	Metal case	UNI TS 11291-11
	Plastic case	AISI 304
Weight	Kg	PC 10%GF
Dimensions (lxhxd)	mm	2,2
		217,50x210,50x117,70

**Comentado [GA13]:** Accuracy 1.5 or 1%? To be defined with american standards

**Comentado [GA14]:** To be defined

**Comentado [GA15]:** To be defined



### DECLARATION OF CONFORMITY AND HARMONISED STANDARDS

Mesura Metering SpA

Via Statale, 11/13

25011 Ponte S. Marco di Calcinato BS

We declare under our responsibility that the product: **PRODIGI**

Described in this declaration it complies with the essential requirements and other relevant provisions of the following harmonised standards:

**TO BE COMPLETED**