

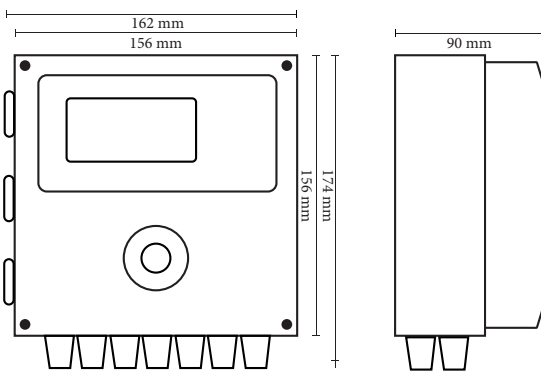


#### Compliance to:

2014/34/UE (Atex)  
2014/30/UE (Electromagnetic compatibility)  
2014/53/UE (RED)  
2014/35/EU (Low Voltage )  
2011/65/CE (RoHS directive)  
2012/19/CE (RAEE directive)

#### Normative:

EN 62368-1  
EN 301 489-1  
EN 301 489-7  
EN 301 511  
EN 60079-0  
EN 60079-11



## IT

RAD.1 è un'unità di controllo progettata per la gestione remota di serbatoi di GASOLIO, OLIO, GPL, ADBLUE, ACQUA, SISTEMI TECNOLOGICI, LINEE DI TRASPORTO, SKID e VAPORIZZATORI.

Il dispositivo è dotato di ingressi digitali e analogici configurabili, che permettono il controllo e la misurazione di diverse grandezze fisiche: livello, pressione, temperatura, peso o soglia, nonché allarmi digitali e/o contatori di impulsi. Il display LCD e i 6 tasti sul pannello frontale consentono una navigazione comoda attraverso i menu, visualizzando la valutazione dei dati e gestendo lo stato degli ingressi e delle uscite.

RAD.1 è dotato di un'interfaccia modem GSM 4G, come: LTE Cat 1 bis + fallback su 2G o LTE Cat M1 + NB-IoT, che consente al dispositivo di adattarsi agli standard di comunicazione più comunemente utilizzati per la connessione globale. RAD.1 è certificato ATEX, rendendolo la soluzione ideale per il monitoraggio remoto di serbatoi di carburante, impianti di stoccaggio o qualsiasi altro materiale a rischio di incendio o esplosione.

## EN

*RAD.1 is a control unit designed for the remote management of OIL, LUBRICANT, LPG, ADBLUE TANKS, TECHNOLOGICAL SYSTEMS, PIPELINES, LEVEL CONTROL, SKID, VAPORIZER, and FLOW CONTROL.*

*The device is equipped with configurable digital and analogue inputs, allowing the control and measurement of different physical quantities: level, pressure, temperature, weight, or threshold, as well as digital and/or pulse counter alarms. The LCD display and the 6 keys on the front panel allow a comfortable navigation through the menus, displaying data evaluation and managing the status of the inputs and outputs.*

*RAD.1 is equipped with a 4G GSM modem interface, such as: LTE Cat 1 bis + fallback to 2G or LTE Cat M1 + NB-IoT, which allows the device to adapt to the most commonly used communication standards for worldwide connection. RAD.1 is ATEX certified, making it the ideal solution for remote monitoring of fuel tanks, storage facilities, or any other materials at risk of fire or explosion.*

**IT / EN**  
**Caratteristiche meccaniche**  
**Mechanical features**

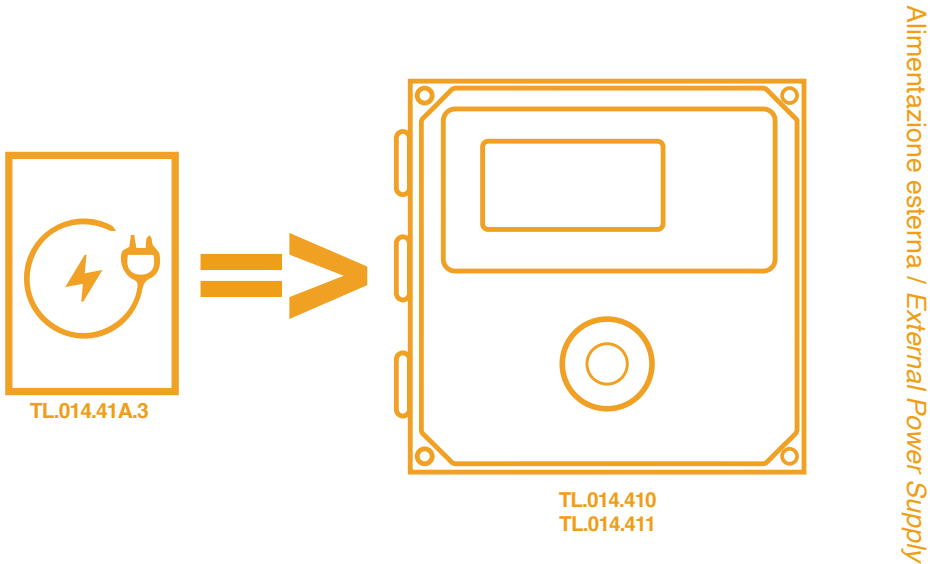
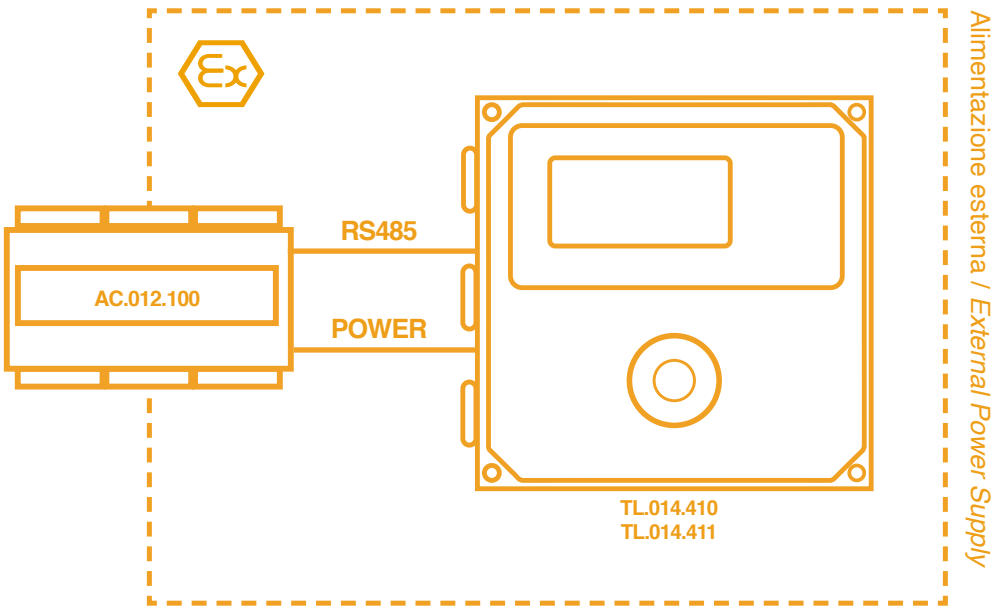
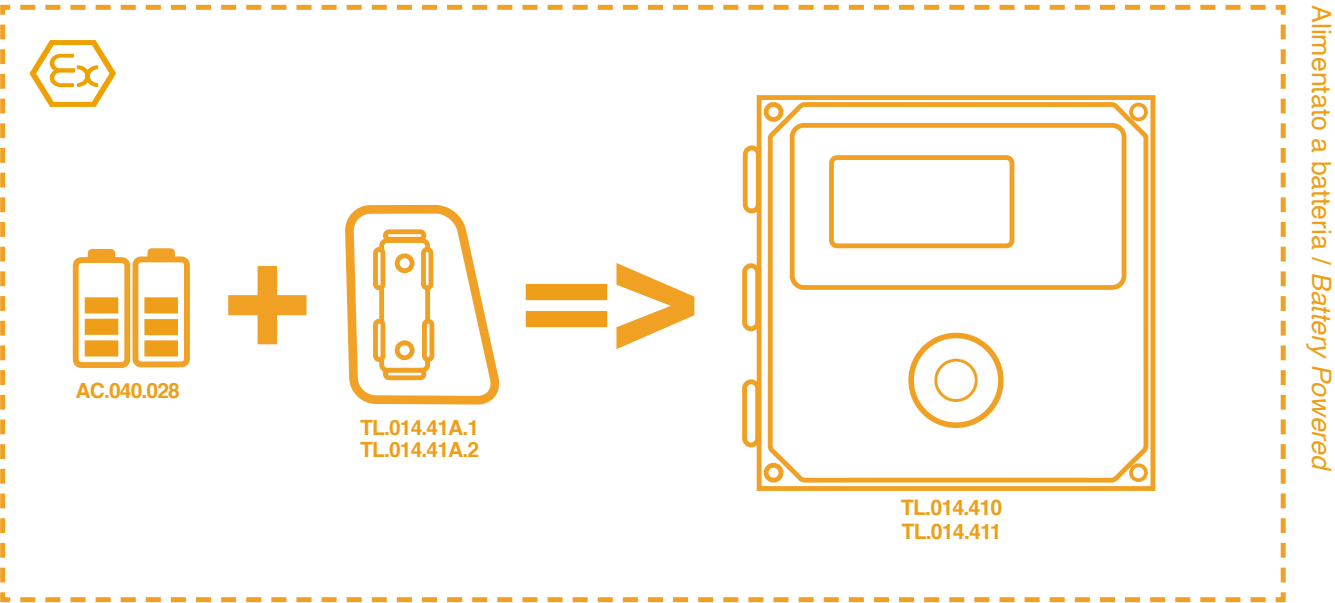
| Codice d'ordine<br>Order code                                          |                                                                                                                |                                                                                                                        | TL.014.410 | TL.014.411 |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------|------------|
| Opzioni di Alimentazione<br>Power Supply Options                       | Batteria interna<br>Internal battery                                                                           | Alimentazione esterna<br>External power supply                                                                         | ✓          |            |
| Connettività tramite tecnologia GSM<br>GSM technology connectivity     | LTE CAT 1 Bis                                                                                                  | B2, B3, B4, B5, B7, B8, B28, B66                                                                                       | ✓          |            |
|                                                                        | GPRS                                                                                                           | GSM850, EGSM900, DCS1800, PCS1900                                                                                      |            |            |
|                                                                        | LTE CAT M1                                                                                                     | B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B85                                          |            | ✓          |
|                                                                        | NB-IoT                                                                                                         | B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B28, B66, B71, B85                                               |            |            |
| Interfaccia utente<br>User interface                                   | LCD Display 6 tasti/keys                                                                                       |                                                                                                                        | ✓          |            |
| Sim Card                                                               | Mini SIM 2FF standard                                                                                          |                                                                                                                        | ✓          |            |
| Ingressi analogici<br>Analog inputs                                    | 3x PT1000 or RTD<br>3x 4-20mA or 0-5V                                                                          |                                                                                                                        | ✓          |            |
| Alimentazione per sensori analogici<br>Power supply for analog sensors | 1x 12V 30mA<br>1x 3,6V 100mA<br>1x 3V 50mA<br>1x 3V pull up 10kΩ                                               |                                                                                                                        | ✓          |            |
| Ingressi digitali<br>Digital inputs                                    | 4x ingressi digitali configurabili come allarme o contatore<br>digital inputs configurable as alarm or counter |                                                                                                                        | ✓          |            |
| Uscite<br>Outputs                                                      | 2x uscita a transistor open collector<br>open collector transistor output                                      |                                                                                                                        | ✓          |            |
| Interfaccia seriale RS485<br>Serial interface RS485                    | MODBUS RTU slave                                                                                               | Misuratore di livello magnetostrativo per stazione di rifornimento<br>Magnetostrictive level gauge for filling station | ✓          |            |
| Memoria interna<br>Internal memory                                     | 90 giorni/days - 15 minuti/minutes<br>campionamento/sampling                                                   |                                                                                                                        | ✓          |            |
| Interfaccia locale<br>Local interface                                  | ZVEI IEC1170 (EN62056-21)                                                                                      |                                                                                                                        | ✓          |            |
| Fissaggio<br>Fixing                                                    | Montaggio a parete con viti e tasselli<br>Wall mount with screw and dowels                                     |                                                                                                                        | ✓          |            |
| Dimensioni<br>Dimensions                                               | 162x174x90 mm                                                                                                  |                                                                                                                        | ✓          |            |
| Peso<br>Weight                                                         | 500gr (senza batteria / without battery)                                                                       |                                                                                                                        | ✓          |            |
| Contenitore e grado di protezione<br>Enclosure type & rating           | PC+ABS V0 UV resistant IP68 IK08                                                                               |                                                                                                                        | ✓          |            |
| Temperatura di funzionamento<br>Operating temperature                  | -20°C → +70°C                                                                                                  |                                                                                                                        | ✓          |            |
| Certificazione in ambienti pericolosi<br>Hazardous certification       | ⚡ ATEX II 1G Ex ia Ga IIB T2 X                                                                                 |                                                                                                                        | ✓          |            |

**Componenti e Opzioni / Spare parts and Options:**

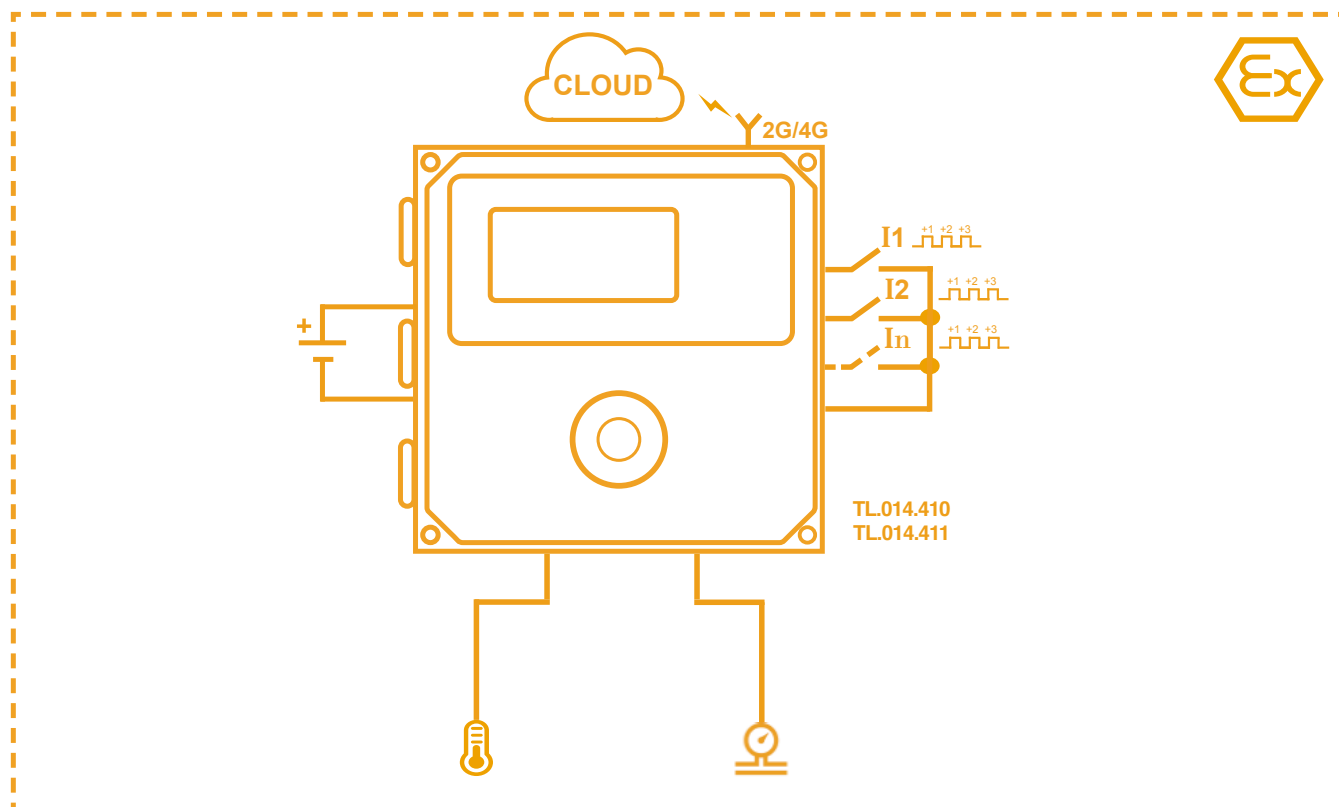
|                                                                                                                                           |              |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| BATTERY SUPPLY BOARD FOR RAD.1 (ONLY FOR TL.014.410). SUITABLE FOR UP TO 2x D-CELL BATTERIES (NOT INCLUDED). ATEX II 1G EX IA GA IIB T2 X | TL.014.41A.1 |
| BATTERY SUPPLY BOARD FOR RAD.1 (ONLY TL.014.411). SUITABLE FOR UP TO 2x D-CELL BATTERIES (NOT INCLUDED). ATEX II 1G EX IA GA IIB T2 X     | TL.014.41A.2 |
| POWER SUPPLY BOARD FOR RAD.1 EXTERNAL SUPPLY INPUT 12Vdc OUTPUT 3.6Vdc                                                                    | TL.014.41A.3 |
| LITHIUM METAL BATTERY 3.6V D CELL - 18Ah (SPARE ONLY FOR TL.014.41X)                                                                      | AC.040.028   |

# CONFIGURAZIONE / SETUP

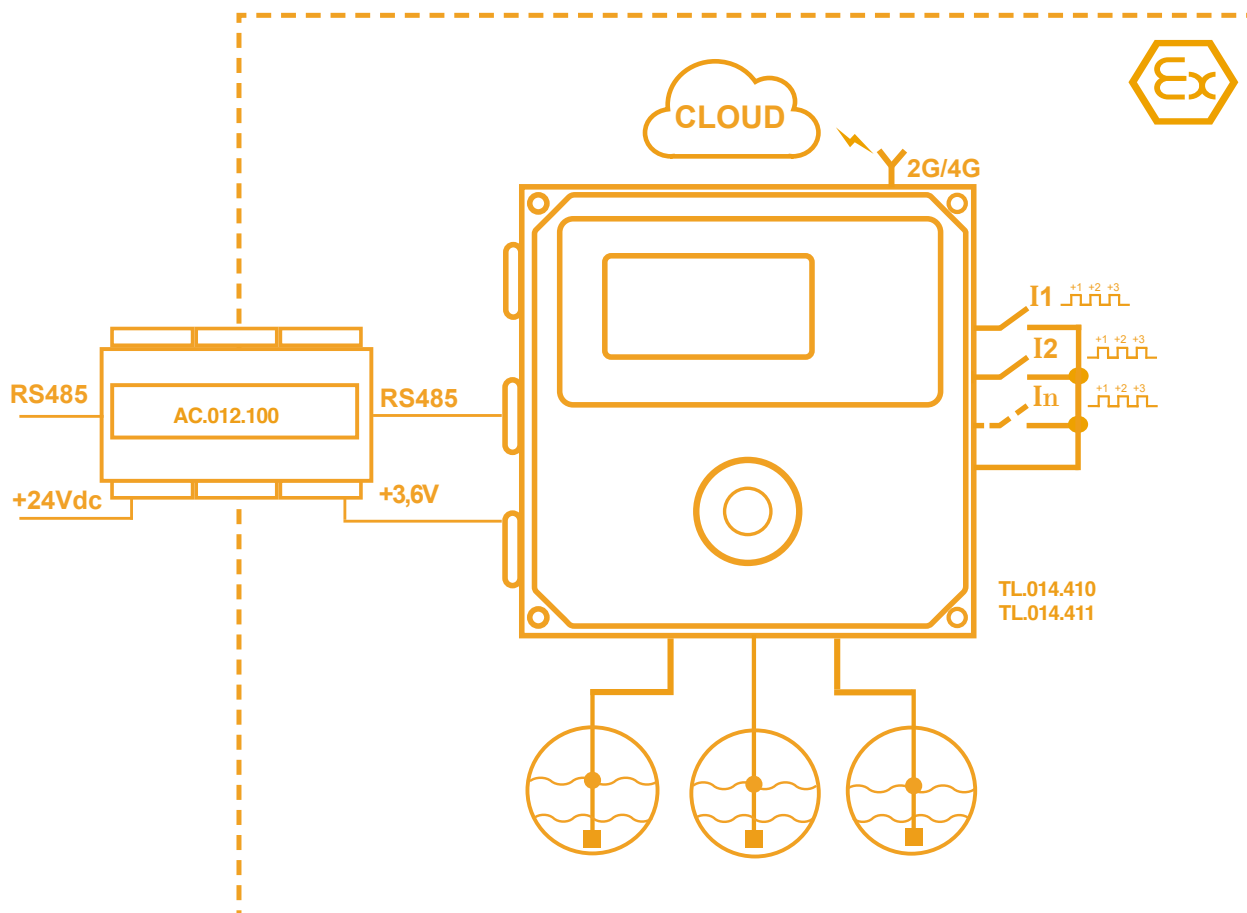
Controllo livello serbatoi carburanti o altri liquidi  
Level tank monitor or other liquid levels



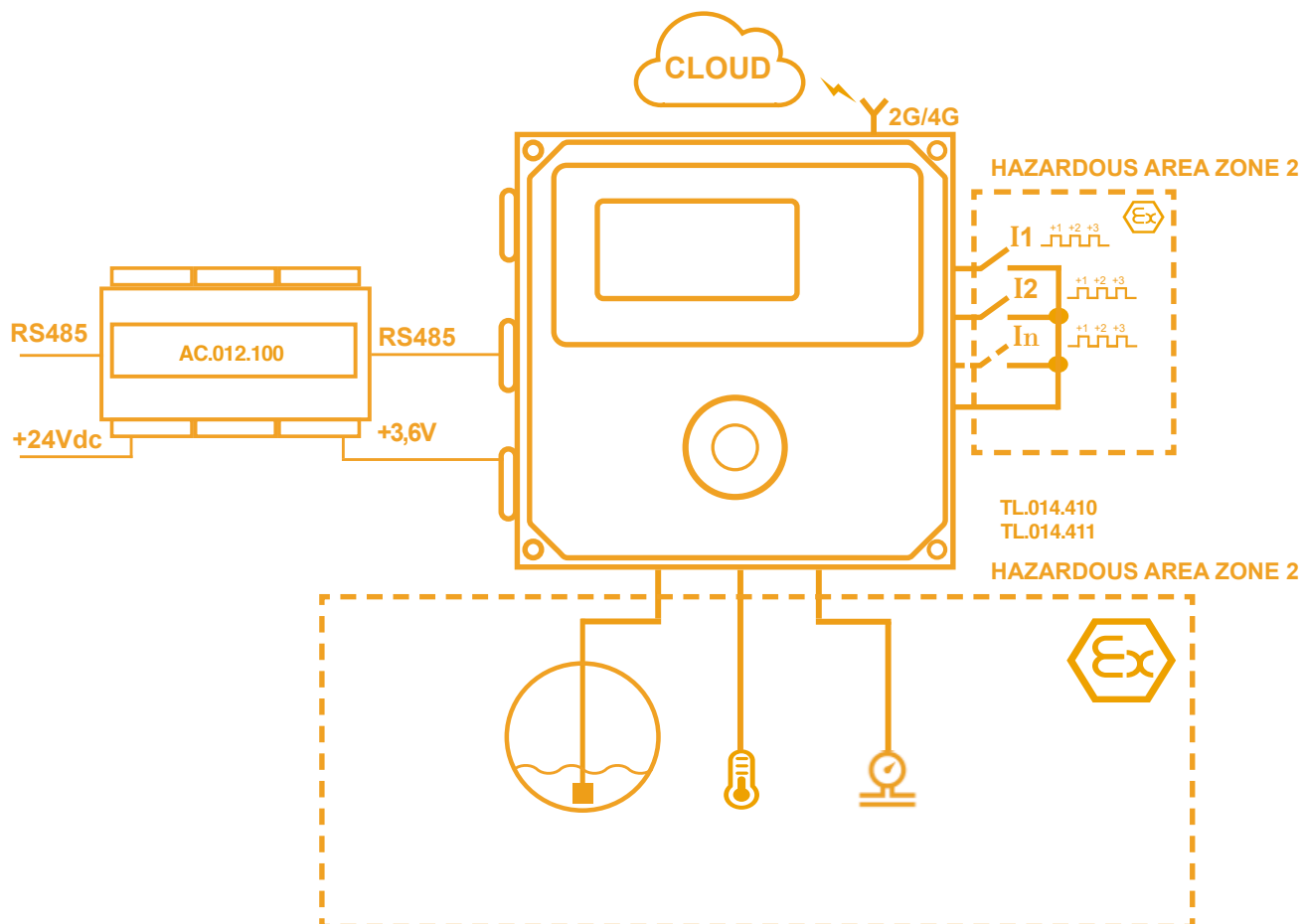
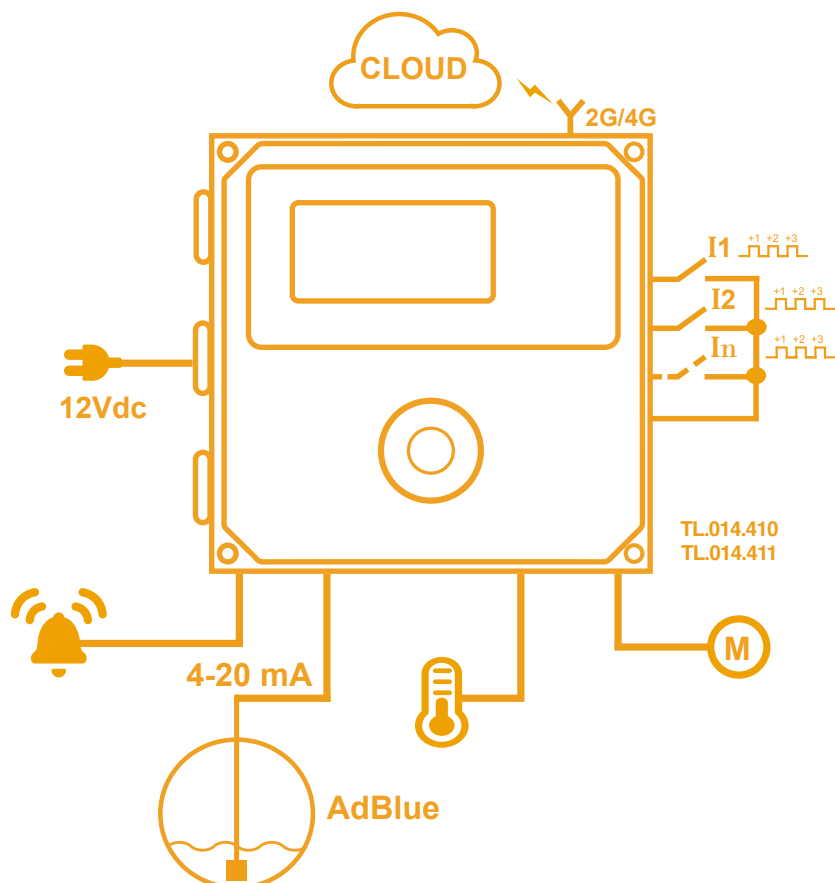
Controllo pipeline con sensori di pressione e temperatura  
*Pipeline monitoring with pressure and temperature sensors*



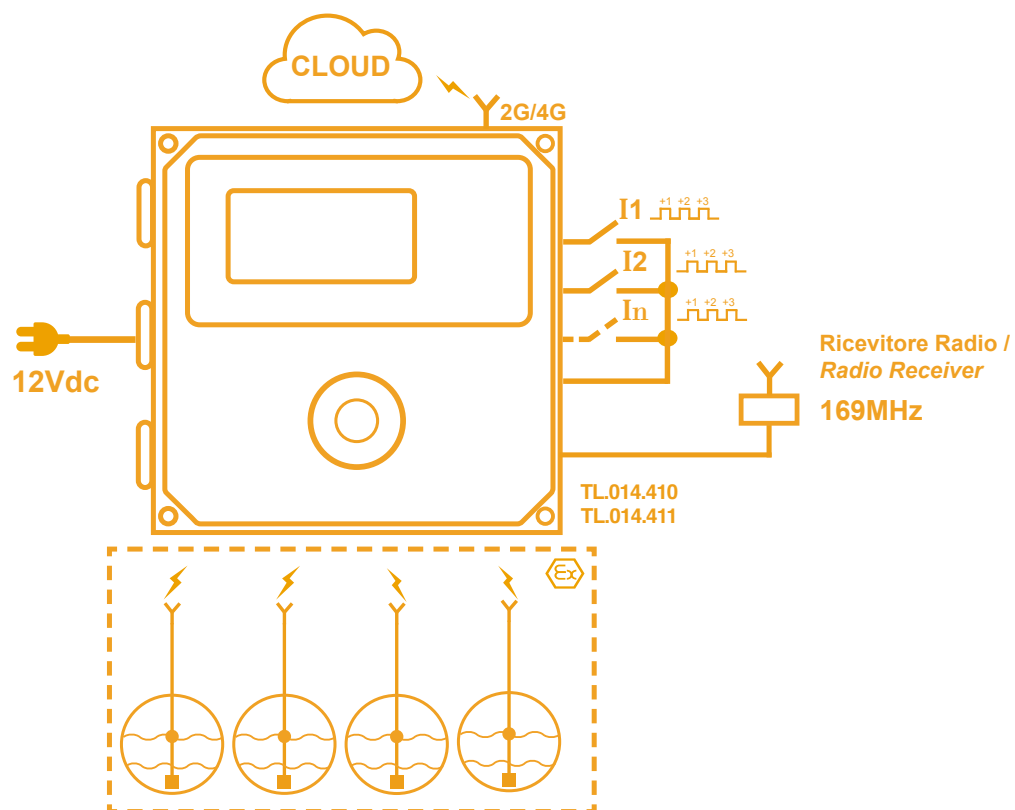
Controllo livello con interfaccia sensori livello con seriale RS485  
*Level control with RS485 interface*



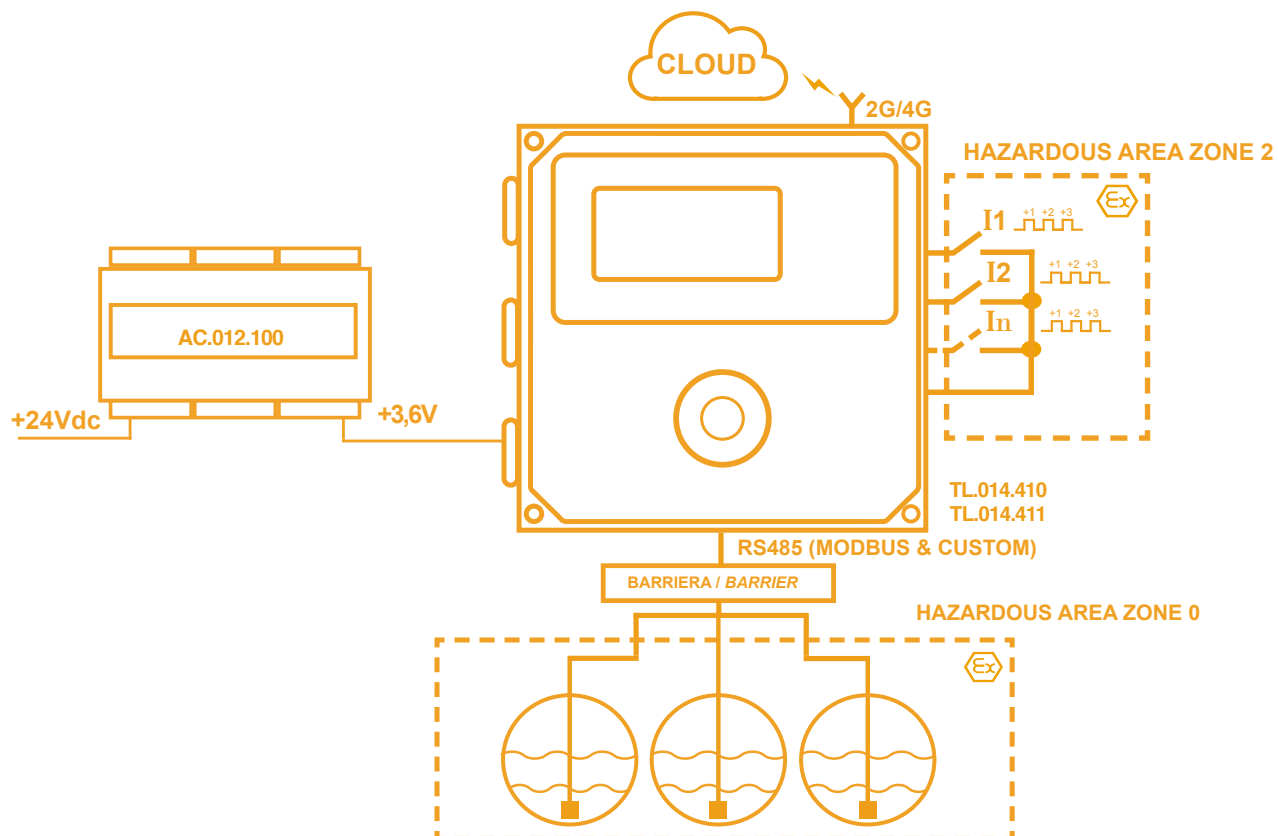
Controllo livello serbatoio, pressione e temperatura (alimentato da rete)  
 Level tank monitor, pressure and temperature (mains powered)



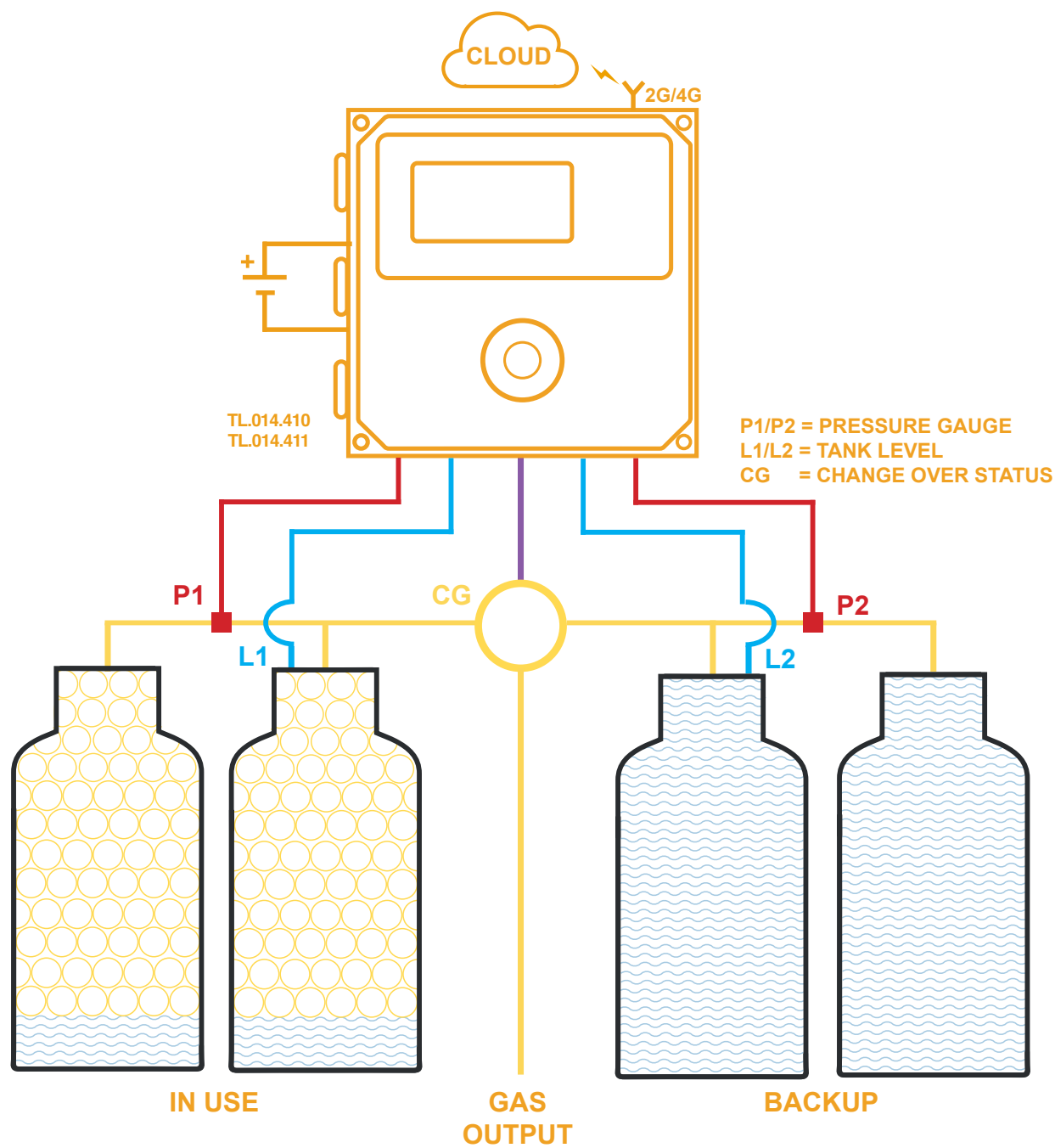
Controllo livello con interfaccia sonde magnetostrittive con modem radio  
*Level control with magnetostrictive probe with modem radio*



Controllo livello con interfaccia sonde magnetostrittive seriale RS485  
*Level control with magnetostrictive probe with RS485 interface*



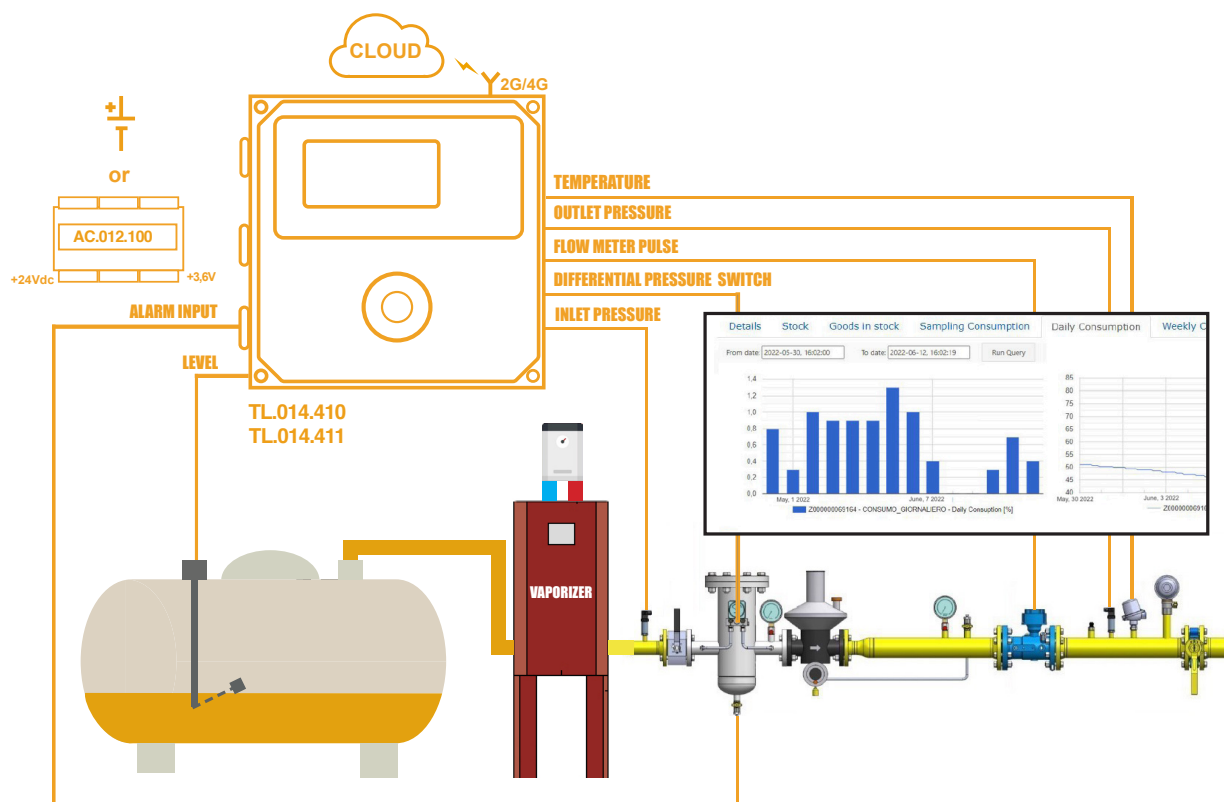
Controllo livello serbatoio, pressione e change over per bombole  
Level tank monitor, pressure and temperature and cylinders change over



|       | PRESSURE RANGE* |               |
|-------|-----------------|---------------|
| P1/P2 | AC.070.011.01   | AC.070.011.02 |
|       | 0-2,5 bar       | 0-25 bar      |

\*Other pressure ranges available on request

## Controllo serbatoio, vaporizzatore e gruppo di riduzione Level tank monitor, vaporizers and reduction unit



## CNG controllo flotte (Posizione su mappa, pressione e temperatura) CNG fleet managent (Map positioning, pressure and temperature)

