



DULCOLEVEL

Market Information
October 2023

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Product Overview



PRODUCT OVERVIEW

ProMinent Radar Level Sensor: DULCOLEVEL

■ Overview

- The DULCOLEVEL is an accurate, reliable and easy-to-use level indicating instrument that measures the amount of liquid chemical within a tank, container or IBC tote utilizing radio detection and ranging (radar) waves.

■ Purpose

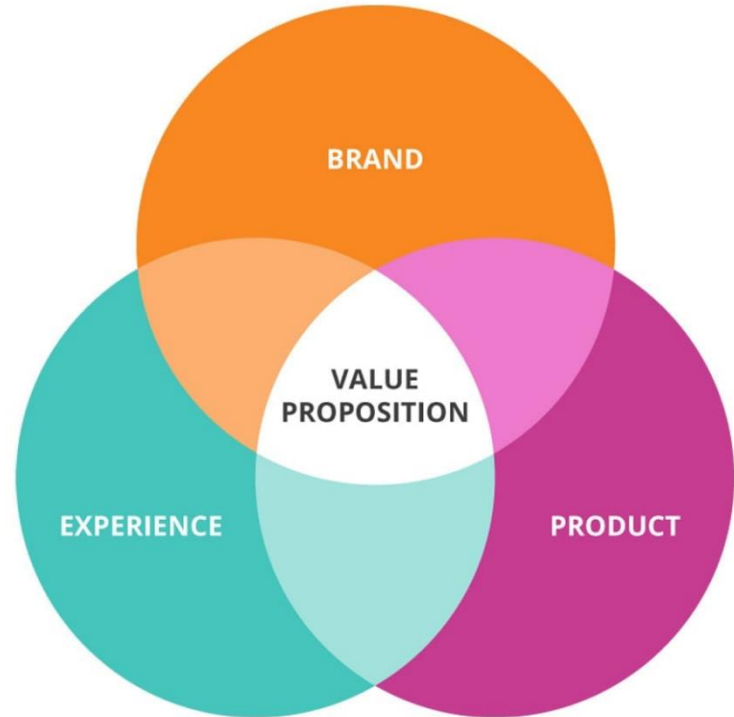
- The DULCOLEVEL adds value by communicating chemical level readings to the user for facilitating inventory management.

■ How it Works

- Through non-contact radar technology, the DULCOLEVEL continuously transmits radio waves into the tank to measure liquid levels in real-time. This signal can be transmitted through plastic thus allowing the instrument to be mounted on top of the container/tank. The DULCOLEVEL then digitally transfers the reading to the pump, PLC and/or phone app depending on the desired connection.



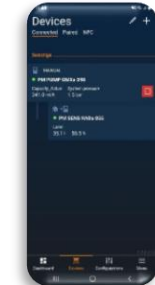
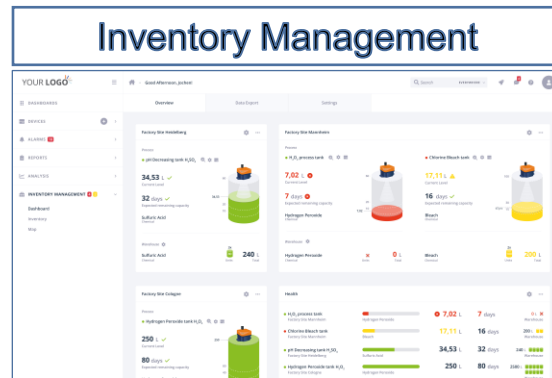
Value Creation



THE OFFERING'S VALUE

Feature	Benefit	Why (the Customer Cares)
Radar Technology	High accuracy (+/- 5mm) Reliable Works in extreme conditions	Confidence that the values being displayed are correct indications of remaining inventory level, no matter what type of chemical is being monitored
Non-Contact Measurement	Easy retrofit in existing systems Not affected by chemical properties	Improves safety by not being in direct contact with hazardous media, including installation of new units
Four Connectivity Options (4-20 mA, Bluetooth, Fieldbus, DULCONNEX Cloud)	Flexibility to integrate into any system configuration and the only radar sensor on market to connect directly to a metering pump	Reduces installation costs when installing onto existing systems and simplifies setup time with remote configuration
User Set Level Alert Indicators	Receive an alert when level gets too high during filling or too low in use	Improves efficiency of inventory management
Integration with ProMinent Pumps	Tanks levels and usage rates displayed on pump	Increased visibility on when media will run out to improve inventory management
Preset Configurations for ProMinent Tanks	Simple mounting (with bracket) and setup	Minimizes installation time
Mobile App	Easy configuration Conveniently available information	Minimal training needed to setup and manage inventory levels from within Bluetooth range

PROMINENT'S COMPLETE SYSTEM OFFERING



FLEXIBILITY TO MEET CUSTOMER NEEDS

System Components

DULCOLEVEL

Metering Pump

Mounting Plate

Dosing Tank

IBC and Wall Mount Bracket

Connectivity Options

4-20 mA Wired Output

- Direct to PLC
- Direct to ProMinent pump
- Direct to 3rd party pump

Bluetooth Connection

- Wireless Bluetooth to gamma/ X
- Wireless to mobile device

Fieldbus Communication

- DULCOLEVEL to pump via Bluetooth or wire
- Direct from pump to PLC

DULCONNEX Cloud

- DULCOLEVEL to pump via Bluetooth or wire
- Pump to DULCONNEX
- IIOT Module to Cloud

Monitoring

Pump Display

- Measurements directly displayed on pump screen

DULCONNEX Blue App

- Level indicator
- Configuration capabilities
- Alarms

DULCONNEX Inventory Mgmt.

- 24/7 internet monitoring access
- Keep track of all chemicals
- Alarms

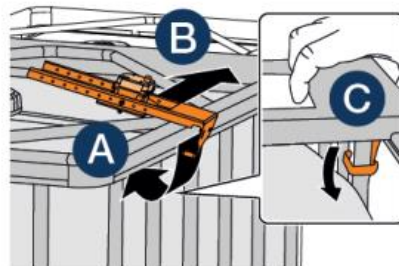
MOUNTING FLEXIBILITY

With Pump and Container Bracket

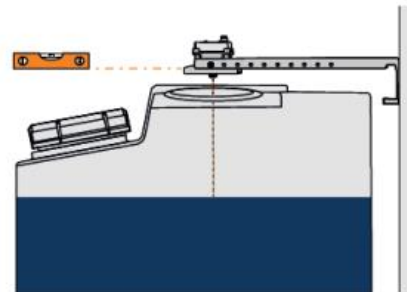


With IBC / Wall Mount Bracket

IBC mounting



Wall mounting



Direct to Tank

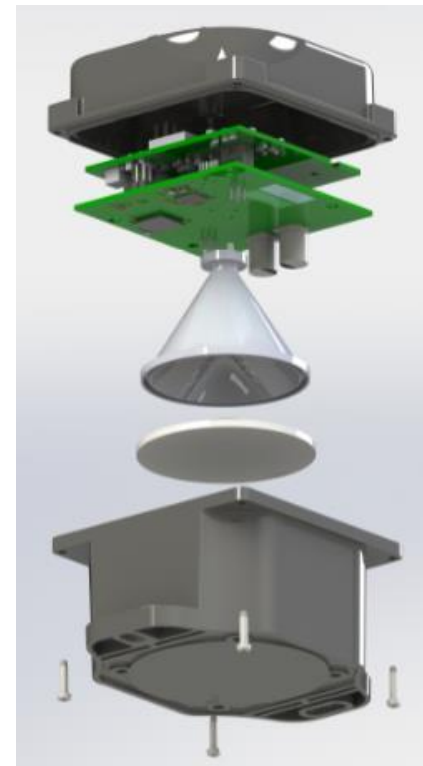


Standard on
SAFE-IBC

Technical drawing of the Dulcotelevel MESSING 40605678, showing three views: top, front, and side. The top view shows a square base with rounded corners, a central circular feature, and four mounting holes. Dimensions include 71.1 mm for the side width, 71.1 mm for the top width, and 95.8 mm for the front width. The front view shows a height of 60.5 mm and a base width of 65.2 mm. The side view shows a height of 71.9 mm and a base width of 65.2 mm. A detail view of the top corner shows a 1:2 scale and a 12x12 mm hole. The drawing is labeled with 'Dulcotelevel MESSING 40605678' and 'Dulcotelevel measuring'.

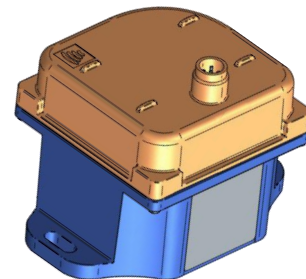
TECHNICAL FEATURES

- Contactless measurement via 80 GHz radar technology
- Can mount outside of tank, measuring through plastic of up to 2" (5cm) thick
- Fits ProMinent tanks with volumes between 8-400 gallons (30-1,500 liters)
- Tank mounting via:
 - Mounting plate, clamp, direct screw to tank, or with strap for IBCs
- Can measure tanks up to 15m height, with an accuracy of +/- 5 mm
- Bluetooth pairing and data transfer from sensor to pump
- Configuration and commissioning via mobile DULCONNEX Blue app
- Preset tank configurations in the app when used with ProMinent tanks
- Over-the-air update of sensor – eliminates USB wired connection
- Connectivity to all common PLC standards
 - Profibus, Profinet, Modbus, CANopen
- Integration into IIoT-based fluid management DULCONNEX
- Status and sensor readout via near-field communications (NFC)



TECHNICAL SPECIFICATIONS

Topic	Specification
Maximum angle	+/- 4°
Measuring range	0.3-49 ft (0.1-15 m)
Measurement accuracy	+/- 0.2 in. (5 mm)
Electrical connection	18-30 VDC 1.8 W _{max} 0.1 A Note: Power is supplied via a 100-240 V plug-in power supply unit (24 V supply voltage) or via the PLC (24 V DC voltage SELV)
Degree of protection	Protection against contact and moisture in accordance with IP 66 (EN 60529) and NEMA-4X/indoor (NEMA 250)
Degree of pollution	2
Height	max. 6,562 ft (2,000 m (NN))
Ambient humidity	max. 95 %
Storage temperature	14 °F to 122 °F (-10 °C to +50 °C)
Environmental temperature	14 °F to 113 °F (-10 °C to +45 °C) Note: The sensor is not intended for outdoor use.
Operational temperature	34 °F to 113 °F (+1 °C to +45 °C)



Applications






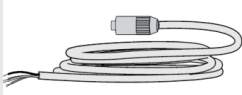
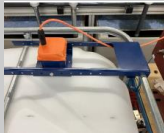

APPLICATIONS

Application	Market	Considerations
Chemical Management (in conjunction with DULCONNEX)	Chem Vendors	Enable new business model to manage customer inventory levels Monitor levels from remote location Review usage rate(s) to better plan next shipment(s) Ensure customer does not run out
Inventory Management (in conjunction with DULCONNEX)	Any	Remotely keep track of tank levels and usage rates Pump can alert user when low inventory level Can eliminate manual checks in multiple locations
Corrosive and Hazardous Chemicals	Chemical Oil & Gas Industrial Aquatics	Radar technology not affected by hazardous chemicals Can mount on top of tank without having to expose worker to chemicals
Sanitary and Hygienic Situations	Food & Beverage	No moving parts, lubricants or exposed components that could contaminate Non-intrusive measurement through plastic tanks thus not exposing sensitive materials
Hydrocarbons	Chemical Oil & Gas	Better choice over ultrasonic technology
High Viscous Media	Food & Beverage Chemical Oil & Gas	For example: applications range from the creation of lubricants, high viscosity food products, paints, coatings, adhesives, and sealants to high viscosity oils, polymer solutions, and materials with a honey-like consistency such as molasses and glycerin, and chocolate and ice cream
Pressure/Vacuum Situations	Any	Radar technology not affected by these atmospheric variations and since they can be mounted outside of tank, this eliminates need for additional hole in tank

Production & Ordering



ORDERING INFORMATION

Part Number	Description	Image
1124074	DULCOLEVEL w. Power & 4/20mA cable EN/DE/FR	
1119041	DULCOLEVEL mounting plate	
1132822	Power supply for DULCOLEVEL NA plug 6ft	
1022537	5m Power & 4/20mA cable for DULCOLEVEL	
1130661	DULCOLEVEL IBC and wall mounting bracket	
1127325	Demo Unit: DULCOLEVEL + GMXa (with CAN), + DULCONNEX	

Marketing Resources



QUESTIONS TO ASK – TO OFFER RIGHT SOLUTION

Probing Questions to Understand Customer Needs

- How do you manage the inventory level of your chemicals?
- How do you know when the dosing chemical(s) is running low?
- Have you ever run out of a chemical or placed a rush delivery?
- Do you have to check inventory levels for multiple chemicals in multiple locations?
- Could it make your job easier if you could monitor chemical levels from your phone or computer?
- Has your process ever been stopped due to running out of a dosing chemical? If so, has this cost the company money?
- Could you better manage inventory if the chemical usage rates were known?


Questions to Offer the Right Solution

- What type of chemical(s) do you need to measure?
- What type of tank(s) are they stored in?
- How many tanks/chemicals do you intend to monitor?
- What model(s) of dosing pump(s) are you using?
- How do you plan to get power to the sensor?
- How do you plan to obtain the data from the sensor (pump, mobile device, online, PLC)?
- How will you use the information received from the sensor?
- What is your end goal with digital measuring of your chemicals?

AVAILABLE MARKETING CONTENT

- Website link:
 - [DULCOLEVEL Radar Liquid Level Sensor – ProMinent](#)
- Marketing Brochure
- Technical Data Sheet
- External training presentation





THANK YOU FOR YOUR ATTENTION