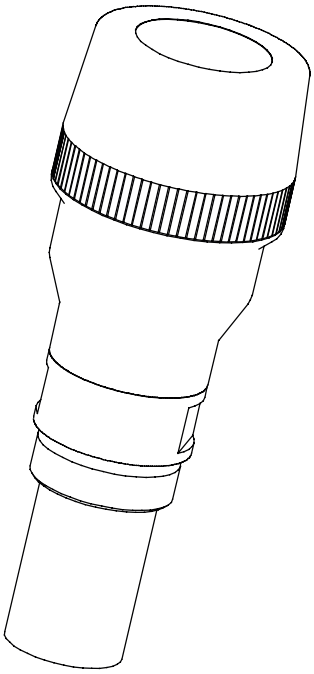
ITC
DOSING PUMPS



TLM
TANK LEVEL MANAGER

ENGLISH

CONTENTS

SAFETY INSTRUCTIONS

To avoid personal injury risks and damage to the environment, and to ensure proper equipment operation, personnel responsible for installing, commissioning and maintaining the equipment must follow the instructions in this manual, with special attention to the detailed recommendations and warnings. The specific instructions for the use of the chemicals to be dosed must also be followed.

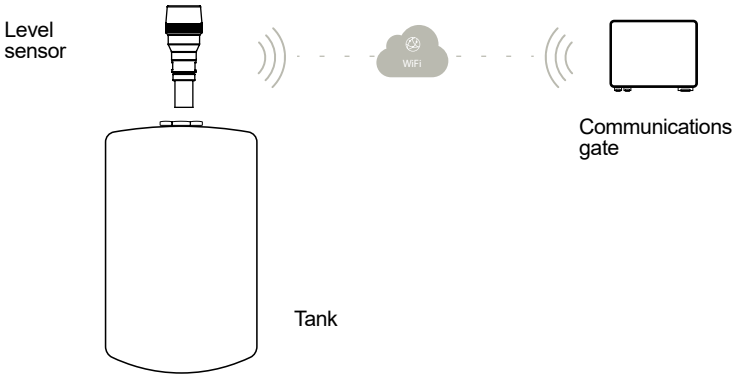
1. GENERAL DESCRIPTION

The TLM (Tank Level Manager) is a monitoring system for several tanks with remote management via an app for mobile phone and web. The level measurement system uses ultrasonic sensors located at the top of the tank, with internal battery power supply and with wireless connection, which makes installation easy.

The sensors communicate via Wi-Fi with a gate device connected in turn to the internet via Ethernet or 3G/4G.

Communication frequency between sensors and gate can be configured by the user. The equipment also has alarms for liquid level, low battery and communications faults, which can be configured to generate notifications via SMS and e-mail.

INSTALLATION DIAGRAM



2. TRANSPORT AND HANDLING

The original packaging is designed to allow the equipment to be transported and stored without damage, provided this takes place in dry, ventilated spaces away from heat sources.

Included in the packaging are:
- Communications gate
- Level sensor
- Instruction manual

3. TECHNICAL SPECIFICATIONS

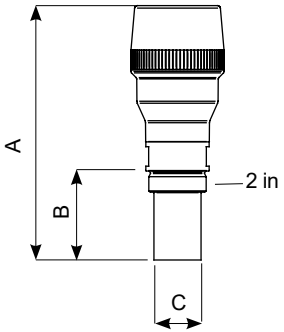
Communications gate:

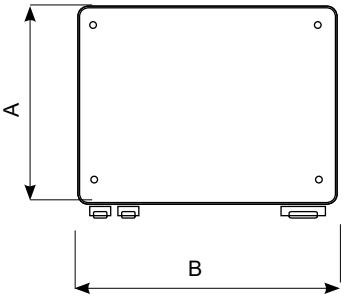
Power supply: 100-240 V 50-60 Hz
Power: 6 W
IP65 protection
Working temperature: 0 - 45 °C / 32 - 113 °F
Maximum relative humidity: 95% without condensation
Connectivity: Ethernet, USB, Wi-Fi

Level Sensor

Type: Ultrasound, 75 kHz
Power supply: Li-ion batteries, 4 x 3.6 (AA)
IP67 protection
Working temperature: -40 - +60 °C / -40 - +140 °F
Maximum relative humidity: 95% without condensation
Measurement range: 0.3 - 6 m / 1 - 20 ft
Materials: PP, epoxy-coated aluminium

Dimensions





	mm	in
A	266	10.47
B	92	3.62
C	49	1.92

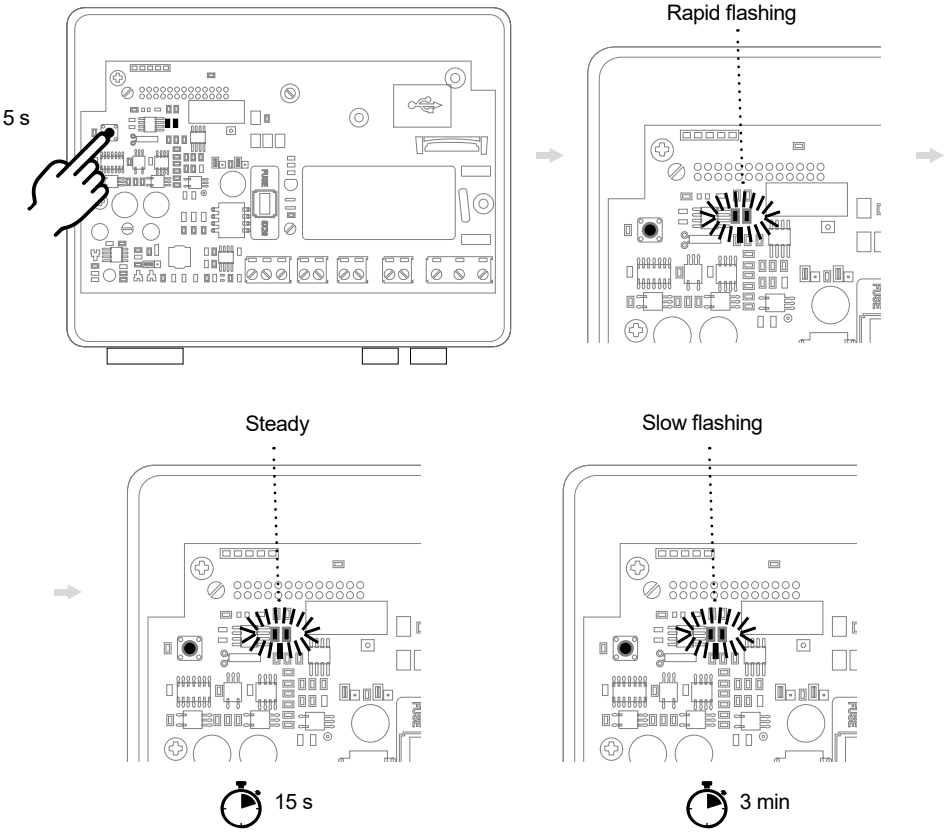
	mm	in
A	266	10.47
B	92	3.62

4. OPERATION

4.1 EQUIPMENT SET UP

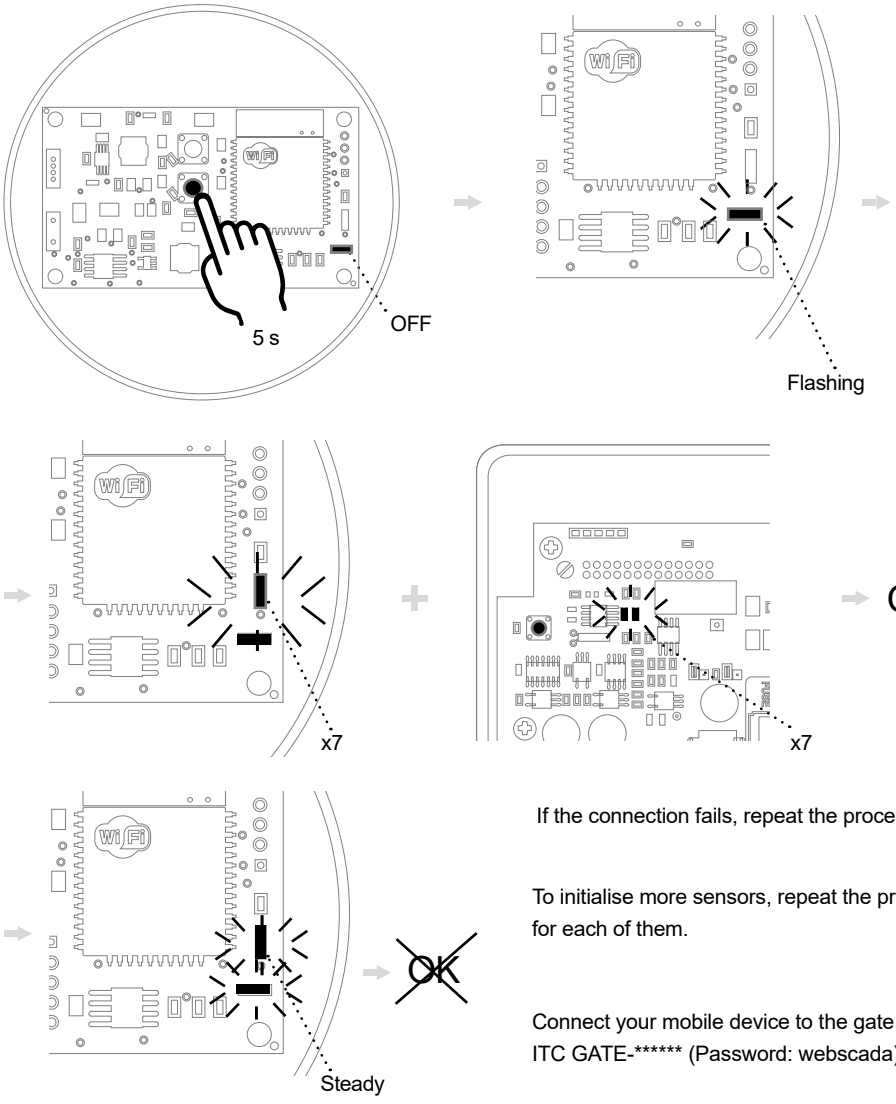
Enable the gate to log in a new sensor

To enable the gate, press the button for 5 seconds until the LEDs blink alternately. Release the button and the LEDs will remain on for 15 seconds. They will then keep flashing for 3 minutes to allow for sensor initialisation.



Sensor log in

Keep the sensor button pressed for 5 seconds until the LED starts flashing. Release the button and the LED will turn steady. The sensor establishes a connection with the gate at this time. If the process has been completed successfully, the two sensor LEDs and the two LEDs on the gate will flash 7 times. If the connection has not been established, the sensor LEDs will turn steady.



If the connection fails, repeat the process.

To initialise more sensors, repeat the process for each of them.

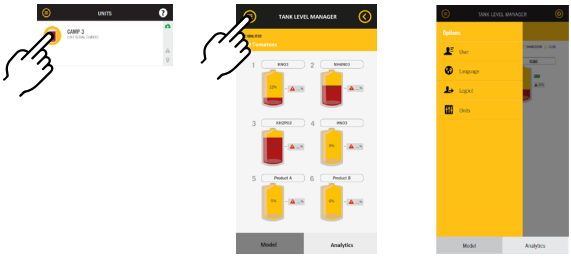
Connect your mobile device to the gate Wi-Fi: ITC GATE-****** (Password: webscada)

For a web browser, access the web application via http:1.2.3.4:7777

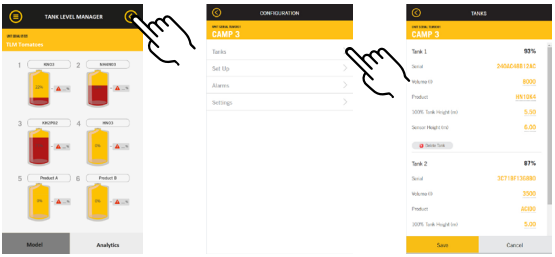
4.2 CONFIGURATION

Configuring the language and units

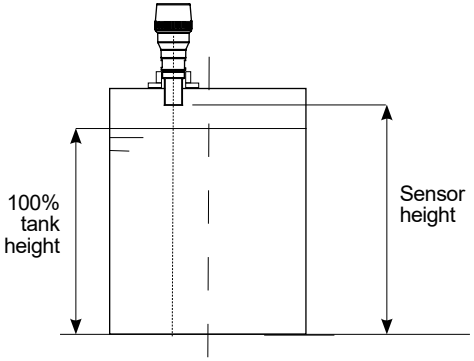
Once all the sensors have been initialised, start up the application and log in with username and password. Select the sensor unit and configure language and units



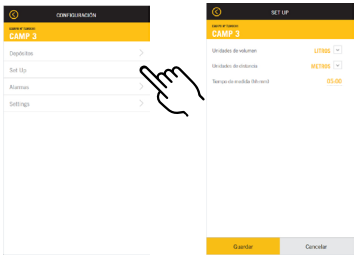
Configuring the tanks



Serial No.: sensor ID
Volume (l): tank capacity
Product tag: product name
100% tank height (m): height when 100% full
Sensor height (m): height at which the sensor is located

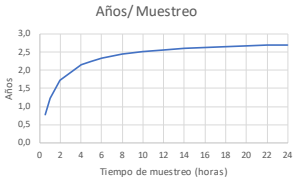


Units and sampling time

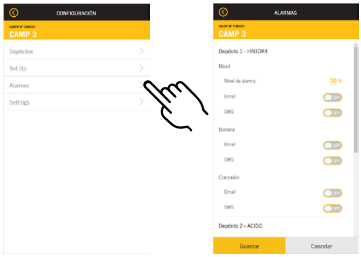


Measurement time: sampling time when the sensor sends a new level reading. A very high sampling frequency will reduce battery life.

Graph of battery life versus sampling time:

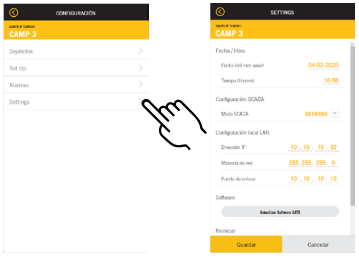


Configuring alarms



Alarm level: sets the level value (%) for activating the alarm notification.
Battery: low battery alarm
Connection: sensor connection fault alarm
Activate the desired options for sending alarm notifications: e-mail, SMS

Configuring date and communications

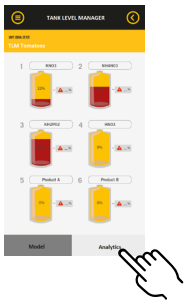


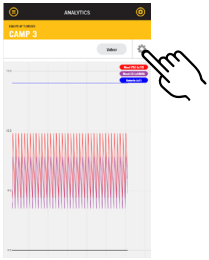
Date / Time: set the date (DD-MM-YYYY) and time
SCADA configuration:
Local: via local Wi-Fi (default)
Network: Gate connected to a router with internet connection
Remote: Gate connected to 3G/4G modem

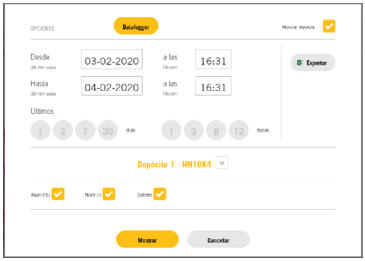
In most cases there is no need to change the LAN configuration. In Network mode the gate will automatically connect to the router which will assign it an IP address. If it does not connect, the IP address, netmask and port number will need to be modified to match the router.

4.3 ANALYTICS

This provides access to the log of stored readings, where the query interval can be configured, as can the variables to be displayed. It also provides the option of exporting the readings to Excel.



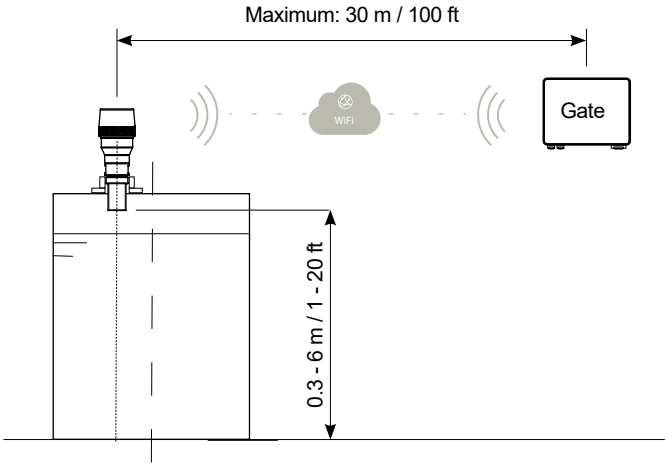




5. INSTALLATION

The maximum distance for the Wi-Fi connection between the sensor and the gate is 30 m / 100 ft, under line-of-sight conditions. The presence of objects or trees between the two devices will reduce the maximum distance.

The maximum measurement height is 6 m / 20 ft



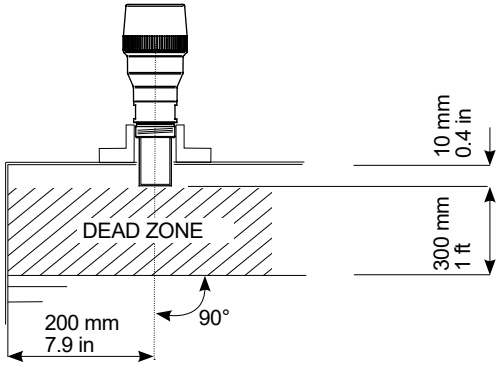
The sensor must be fitted in the vertical position

The sensor must not be fitted in the centre of the tank

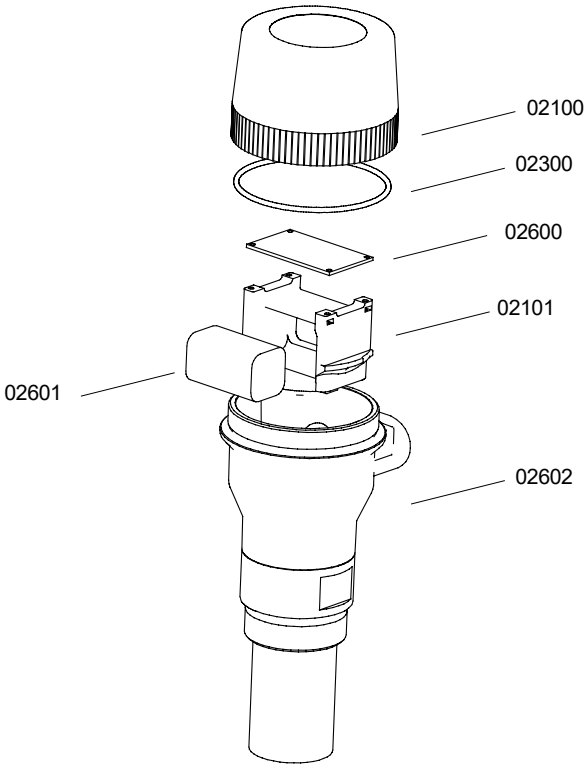
The sensor must be at least 200 mm / 0.65 ft from the tank side wall

Provide a minimum clearance of 300 mm / 1 ft between the bottom of the sensor and the surface of the liquid.

Provide a minimum clearance of 10 mm between the bottom of the sensor and the tank cover



6. MAINTENANCE



PN	DESCRIPTION	QUANTITY
02100	TLM level sensor cover	1
02101	TLM battery housing	1
02300	85x3 silicone O-ring	1
02600	TLM Wi-Fi communications board 4-20 mA	1
02601	TLM 14.4 V, 2000 mAh batteries	1
02602	TLM level sensor housing	1

PROBLEMS: TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Unable to initialise a sensor	- Insufficient Wi-Fi coverage	- Move the sensor closer to the gate
	- gate in operating mode	- Put the gate into the mode for enabling sensor initialisation
Reading error	- The sensor is not in the vertical position	- Orient the sensor according to the installation instructions
	- The bottom of the sensor is dirty	- Wipe the bottom of the sensor with a cloth
	- The liquid is too close to the sensor, in the reading dead zone	- Move the sensor away from the surface of liquid to respect the dead zone explained in the installation instructions
	- Foam on the liquid surface	- Remove the foam from the surface
Incorrect or unstable reading	- Incorrect installation	- Respect the clearance to the top of the tank
		- Respect the clearance to the side of the tank
		- Respect the dead zone – the distance between the sensor and the liquid
No logs available in Analytics	- Gate disconnected from the internet	- Check connections to the router or to the 3G/4G modem
	- Sensor does not connect to the gate	- Check the sensor battery
		- Move the sensor closer to the gate so it has Wi-Fi coverage

CE DECLARATION OF CONFORMITY

I.T.C. S.L.
Vallès, 26
Polígono Industrial Can Bernades-Subirà
08130 Santa Perpètua de Mogoda, Spain

Declares that the TLM products identified by serial number and year of manufacture meet the requirements of the Electromagnetic Compatibility Directive 2014/30/EU and the Radio Equipment Directive 2014/53/EU, provided that installation, use and maintenance are carried out in accordance with current regulations and according to the instructions in the instruction manual.

Antón Planas
Manager

WARRANTY

I.T.C. S.L. guarantees the product specified in this document, for a period of 1 year from the date of purchase, against all manufacturing or material defects, provided that installation, use and maintenance of the equipment are correct.

The equipment must be sent, free of charge, to our workshop or I.T.C. S.L.-accredited technical service and it will be returned cash on delivery.

The equipment must be accompanied by the warranty document, with the purchase date and stamp of the establishment where purchased, or a photocopy of the purchase invoice.

MODEL _____

SERIAL No. _____

Date of purchase and stamp of the establishment where purchased

DATE: _____

Original Manual Ed: 3/2/2020-ES

ITC
DOSING PUMPS

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