



OWNER'S MANUAL

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210ZZ0-MAN-EN

ROTOR FLOWMETER



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Introduction

Thank you for choosing the rotor flowmeter from CDL Sugaring Equipment.

We are proud to offer you high-quality products designed to meet the demanding needs of the maple sugaring industry. This user manual has been created to help you get the most out of your equipment by providing clear and detailed instructions for installation, use, maintenance, and troubleshooting.

At CDL, we are committed to continuous innovation and improvement to provide you with the most effective and reliable solutions. We encourage you to read this manual carefully and keep it for future reference. If you have any questions or concerns, please do not hesitate to contact our technical support team, who will be happy to assist you.

Thank you for trusting CDL for your maple sugaring equipment needs.

Safety Instructions

Safety is a top priority when installing and using your equipment. This section provides essential information to ensure safe operation.

Please read all safety instructions carefully before beginning any operation. The following pictograms are used throughout this manual to draw your attention to specific hazards and necessary precautions. Understanding and following these instructions will help prevent accidents and ensure a safe working environment.

General Hazard



This symbol indicates a potential risk of serious injury or property damage. Please take all necessary precautions to avoid accidents.

Electrical Hazard



This symbol indicates a risk of electric shock that could cause serious injury or death. Always disconnect power before performing any work and follow all electrical safety guidelines.

Product Description

Technical Specifications	
Power Supply	24V DC
Material	PVC
Precision	± 5%
Maximum pressure	150 PSI
Minimum temperature	2°C (36 °F)
Maximum temperature	30°C (86 °F)
Protection	IP66

Stock Code	Diameter (inches)	Minimum Flow for Optimal Accuracy ±5% (GPM)*	Maximum Flow for Optimal Accuracy ±5% (GPM)*
210100	1 in	4.15	17.20
210150	1 ½ in	9.35	49.5
210200	2 in	16.5	68.5
210300	3 in	37	153

*Outside the optimal reading ranges, the accuracy of the flowmeter may decrease.

Installation

Please read these instructions carefully to ensure maximum accuracy of the flowmeter.

Installation Principles

- The flowmeter must be installed **vertically**, with the liquid flowing **from bottom to top**.
- This type of flowmeter continues to totalize even if the liquid flows in the reverse direction. A **check valve can be installed at the outlet (above the flowmeter)** to prevent backflow.
- The pipe must remain **full at all times** to obtain optimal readings.
- The installation should **minimize internal turbulence** in order to maximize accuracy (see table below).
- The **Mesh communication module** can be mounted with screws at the desired location.

Minimum Straight Lengths Required

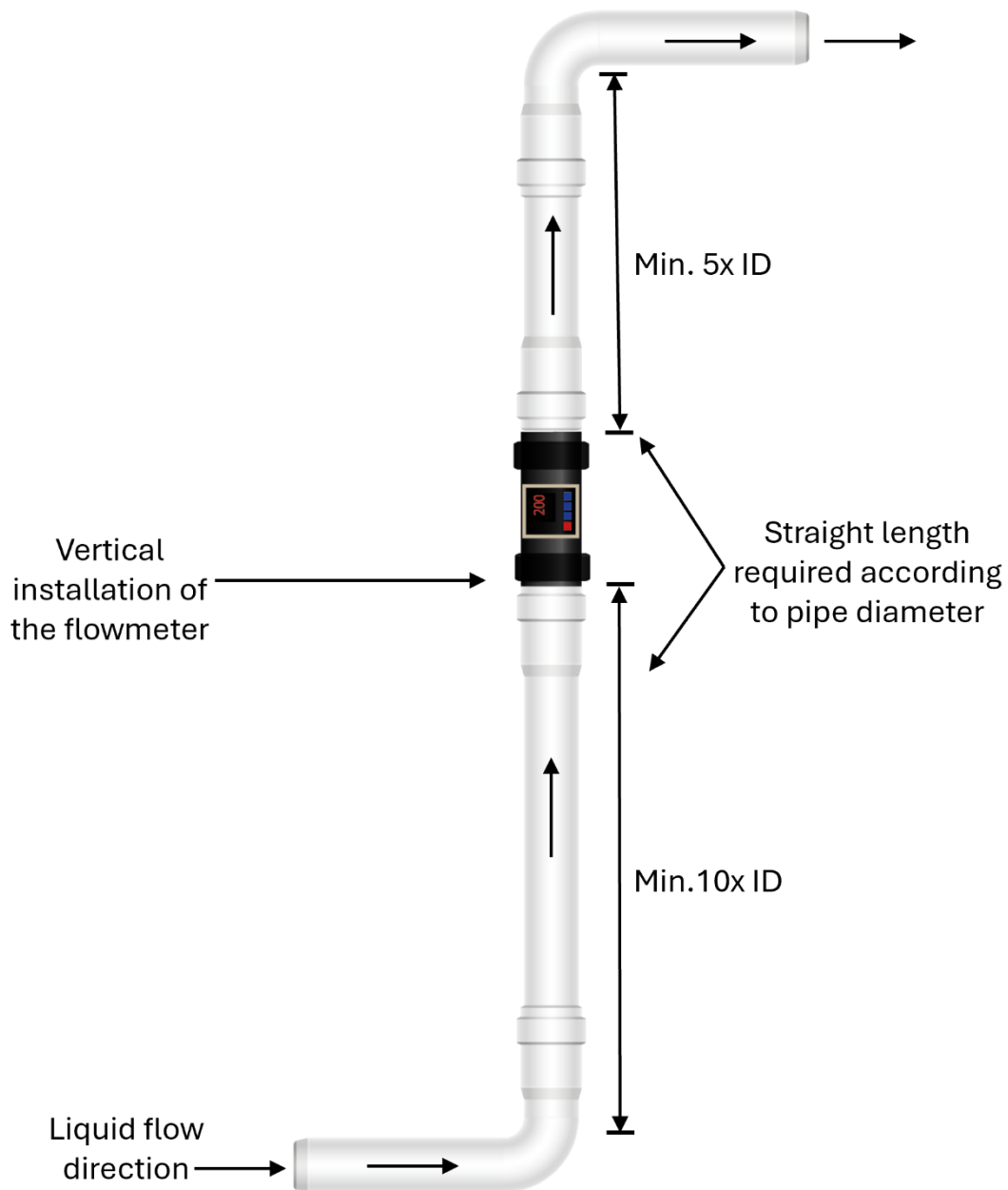
To reduce turbulence and ensure optimal accuracy, respect the minimum straight pipe lengths before and after the flowmeter:

Model	Inside Diameter (ID)	Straight Length Before Inlet (10 × ID)	Straight Length After Outlet (5 × ID)
210100	1 in	10 in	5 in
210150	1 ½ in	15 in	7 ½ in
210200	2 in	20 in	10 in
210300	3 in	30 in	15 in

Programming and Connection to CDL Intelligence

- Flowmeters are **factory pre-programmed**: no adjustment is required.
 - By default, the display is in **gallons**.
 - The unit can be changed to **liters** via the CDL Intelligence interface.
- Once powered, the flowmeter will **automatically connect** to the CDL Intelligence system (if present).

Installation Diagram



Operation

Operation without CDL Intelligence

Identification of values on the screen



Total gallons display

Flow display in gallons per minute (**GPM**)

Resetting the values on the screen



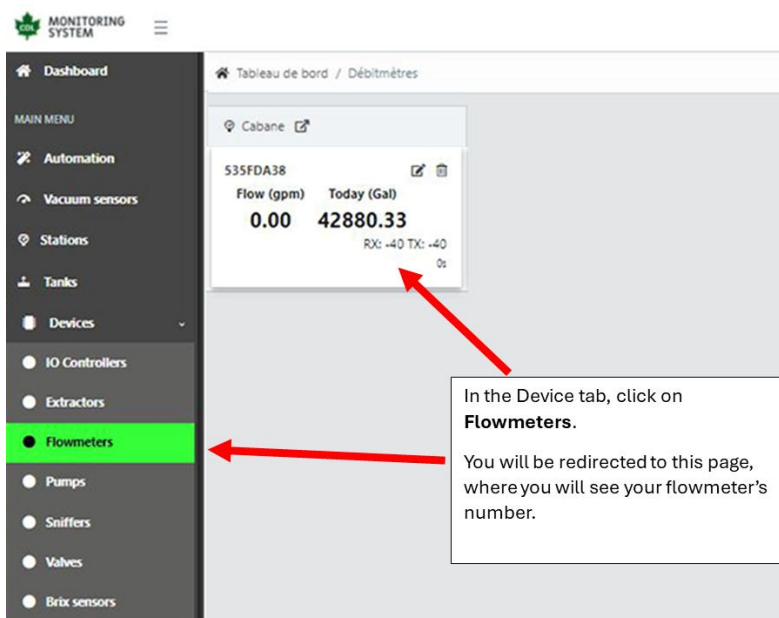
Important

To reset the accumulated gallons to zero, press and hold these two buttons for 3 seconds.

Operation with CDL Intelligence

Flowmeters Tab

1. Find your flowmeter connected to your CDL Intelligence system in the interface.



In the Device tab, click on **Flowmeters**.

You will be redirected to this page, where you will see your flowmeter's number.

2. Rename your flowmeter as desired.

Click here

535FDA38

Flow (gpm) Today (Gal)

0.00 42880.33

RX: -40 TX: -40

● Edit flowmeter

Fields marked with * are required.

Name * Flowmeter name

Station* Cabane

Save Cancel

3. To view the flowmeter data, simply click on the tab of the selected flowmeter.

Cabane

Flowmeter #1

Flow (gpm) Today (Gal)

0.00 42880.33

RX: -40 TX: -40

0s

Click here

After that, you will have access to the specific and advanced information of your flowmeter in the interface, such as:

- Flowmeter name
- Station name
- Last communication with CDL monitoring
- Communication delay with CDL monitoring
- Current flow rate
- Daily accumulated total
- Overall accumulated total
- Communication signal quality
- Software versions
- Daily volume graph
- Volume graph by desired period (week, month, or year)

Maintenance and Storage

Cleaning and Maintenance

- Clean the flowmeter only with warm, unsweetened water.
- If the flow reading remains at zero during operation:
 - Check that the internal rotor is not obstructed.
 - Make sure it rotates freely without friction.
 - If necessary, rinse thoroughly with warm water to free the rotor.
- Regularly check the flowmeter calibration:
 - Run a precise volume of water (e.g., 5 gallons).
 - Compare the displayed value with the actual quantity.
 - The flowmeter should display the exact value within the specified margin of error.



Important: CDL is not responsible for monetary losses related to inaccurate flowmeter readings. Regular verification is strongly recommended to ensure accuracy.

Storage Procedure (End of Season)

1. Rinse the flowmeter thoroughly with unsweetened water.
2. Disconnect the power supply for any extended period of non-use.

Note: The flowmeter retains in memory the data displayed at the time the power was turned off.

Start-Up Procedure (Beginning of Season)

1. Restore power to the flowmeter.
2. Using your interface, verify proper communication with the CDL monitoring system.
3. Ensure that communication delays are within normal limits before resuming operation.

Warranty

Your flowmeter is covered by a 1-year (one sugaring season) warranty on parts and labor repair in CDL service center against manufacturing defects. For one year from the date of original purchase, CDL Sugaring Equipment Inc. will repair or replace parts of this flowmeter that are defective in material or workmanship provided that the flowmeter is installed, operated, and maintained according to the instructions provided in the user manual.

Exclusions

This warranty does not cover:

1. Products whose original serial number has been removed or modified or is not easily readable.
2. Equipment that has changed owners or is located outside of North America.
3. Breakage caused by poor drainage if the system has been stored below freezing.
4. Failure to follow CDL's maintenance procedure.
5. Production losses caused by problems with the flowmeter.
6. Loss of income caused by the quality of the syrup.
7. Service calls that do not involve malfunctions, manufacturing or material defects, or products that were not used according to the instructions provided.
8. Service calls to check installation or receive instruction on using the flowmeter.
9. Service calls after one year.
10. Damage caused by: repairs made by unauthorized technicians; use of parts other than original CDL parts or parts that were not obtained from an authorized technician; or external causes like abuse, misuse, accidents, fires, or natural disasters.
11. Damage caused by misuse, negligence, modifications made by the customer, or electrical problems.
12. Damage caused by the use of products not intended for use with the flowmeter or misuse of cleaning products.



Disclaimer of warranties; limitation of remedies

The customer's sole remedy under this limited warranty is the repair or replacement of the product as described above. Claims based on implied warranties, including implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period permitted by law, which shall not be less than one year. CDL Sugaring Equipment Inc. shall not be held responsible for incidental or indirect damages or for material and implicit damages. Some states and provinces do not allow limitations or exemptions on incidental or indirect damages or limitations on implied warranties. In this case, these restrictions or exemptions may not apply. This written warranty gives you specific legal rights. Depending on the state or province, you may have other rights.

If you need service

Keep your receipt, delivery note, or other valid proof of payment to establish the warranty period in case you need to call for repairs. If a repair is made, it is in your best interest to obtain and keep all receipts. The service to which you are entitled under this warranty must be obtained by contacting CDL at the addresses or telephone numbers below.

Your flowmeter will be serviced by CDL in Canada. Any features and specifications described or illustrated are subject to change without notice.

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