



MultiFlow HMI

USER MANUAL

Version 1.3

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1. IMPORTANT INFORMATION

Read these instructions carefully before using the appliance.

1. Keep this manual for future use.
2. Follow all recommendations and instructions on the device.
3. Unplug the appliance from the wall outlet before cleaning. Wipe exterior surfaces only with a damp cloth.
4. Do not use the appliance near a water supply.
5. Do not place the appliance on an unstable cart, rack or table.
6. Operate the appliance only with the power source indicated on the label.
7. Do not place anything on the power cord. Do not step on the power cord.
8. If you are using an extension cord, check that the total amperage of the connected appliance(s) does not exceed the maximum allowable amperage of the extension cord.
9. Do not attempt to repair the product yourself. Opening or removing the panels can expose you to the danger of high voltage.
10. Unplug the appliance from the electrical outlet and refer the repair to qualified maintenance personnel if:
 - When the power cord or electrical plug is damaged or frayed.
 - If liquid has been spilled into the device.
 - If the product has been exposed to rain or splashing water.
11. Place the appliance and its accessories in a dry environment.
12. Do not use a sharp object to click on the touchscreen.

Application

The MultiFlow HMI is an interface allowing a real-time reading of the solids flow measurement. It allows multiple SF METER sensors to be connected and work together for an accurate and reliable flow measurement.

Required Electrical Characteristics:

- Power: 100 W
- Voltage: 120 V
- Amperage: 500 mA
- Frequency: 60 Hz
- Phase: Single-phase

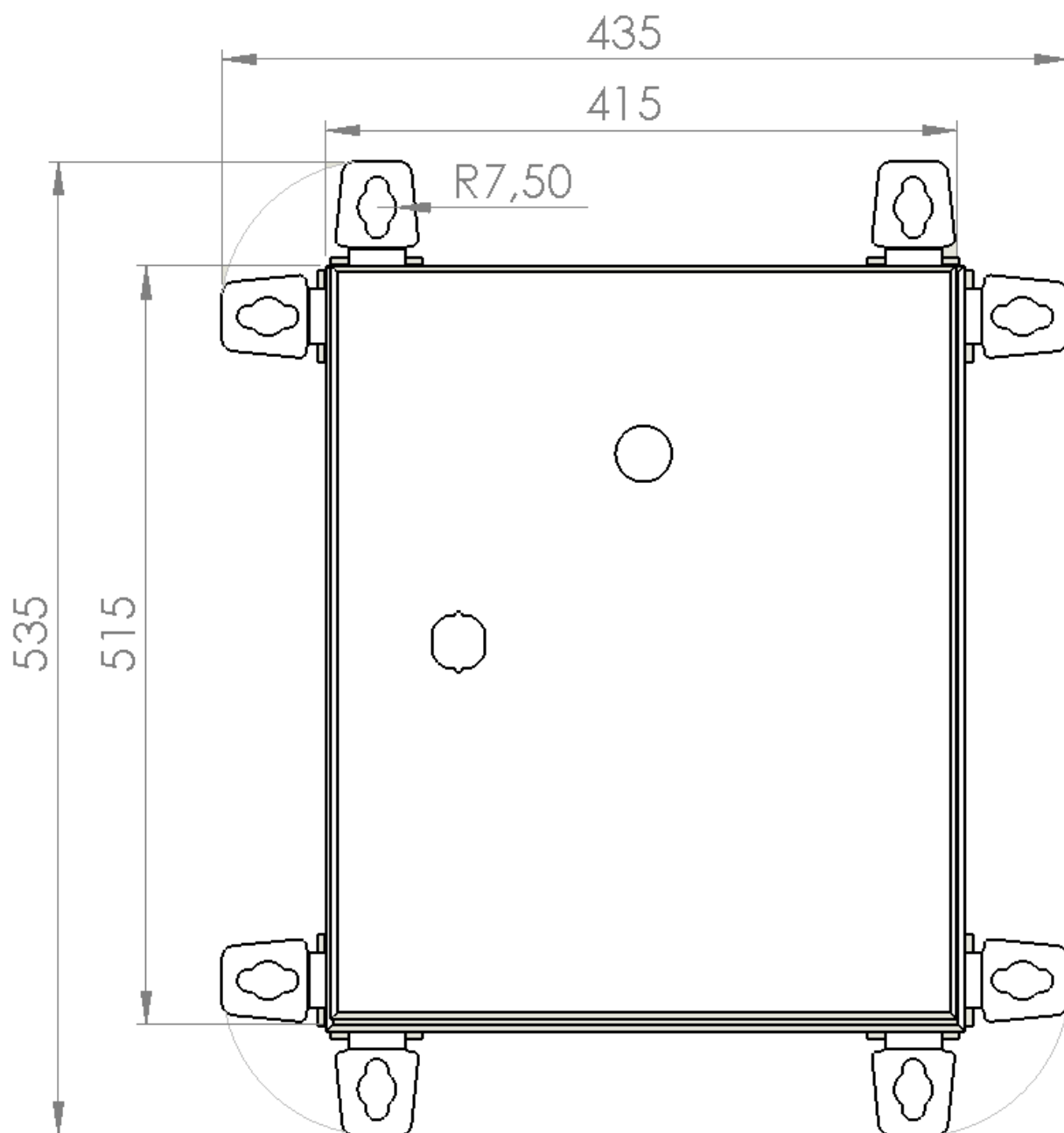
Weight and Exterior Dimensions

- Case Dimension: 415mm×515mm ×230mm (16.3x20.3x9.1 inch)
- Overall footprint: 435mmx535mmx230mm (17.1x21.1x9.1 inch)
- Weight net: 10kg (22 lbs)

1. INSTALLATION

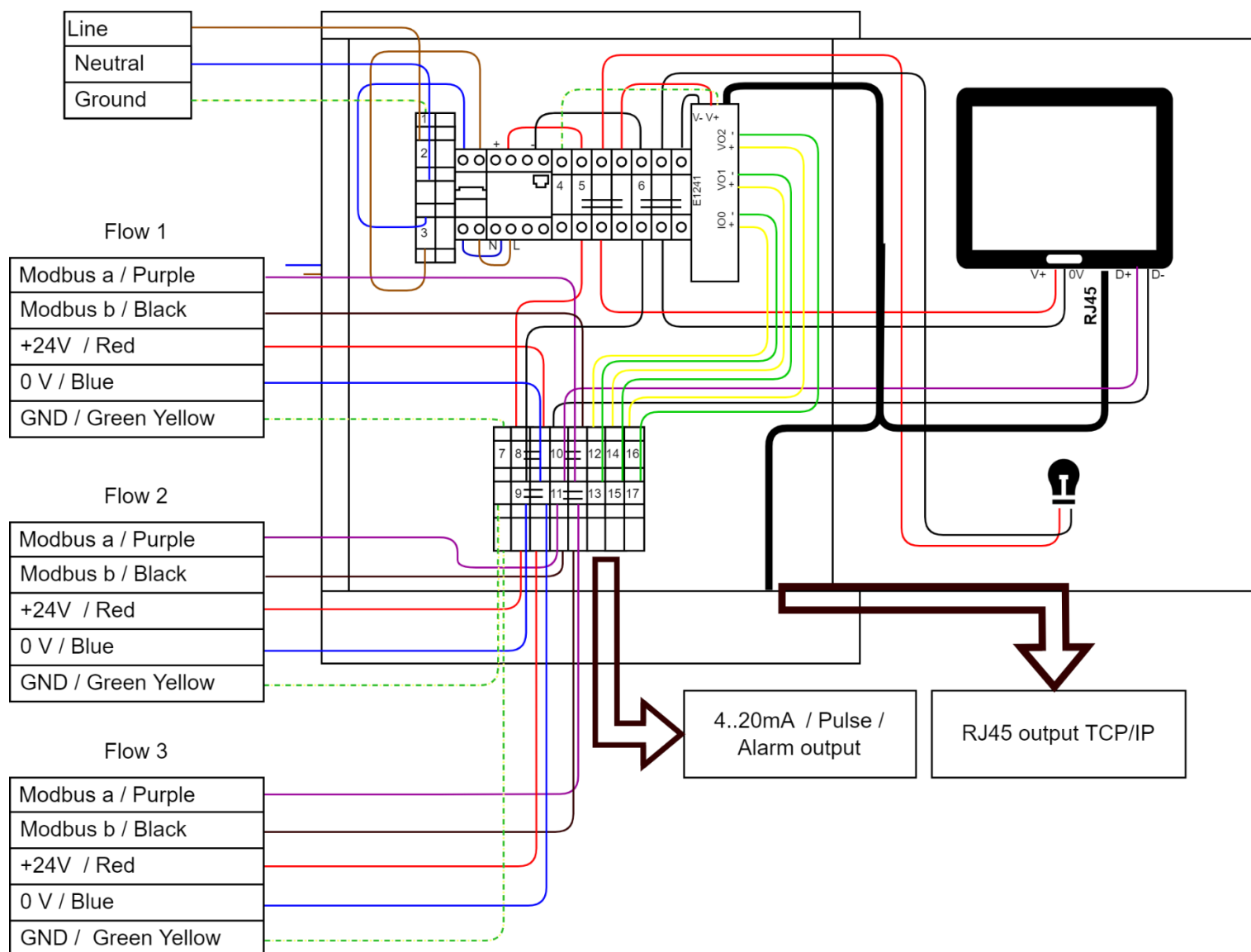
Mechanical assembly

The enclosure must be mounted on a surface that can support its weight.



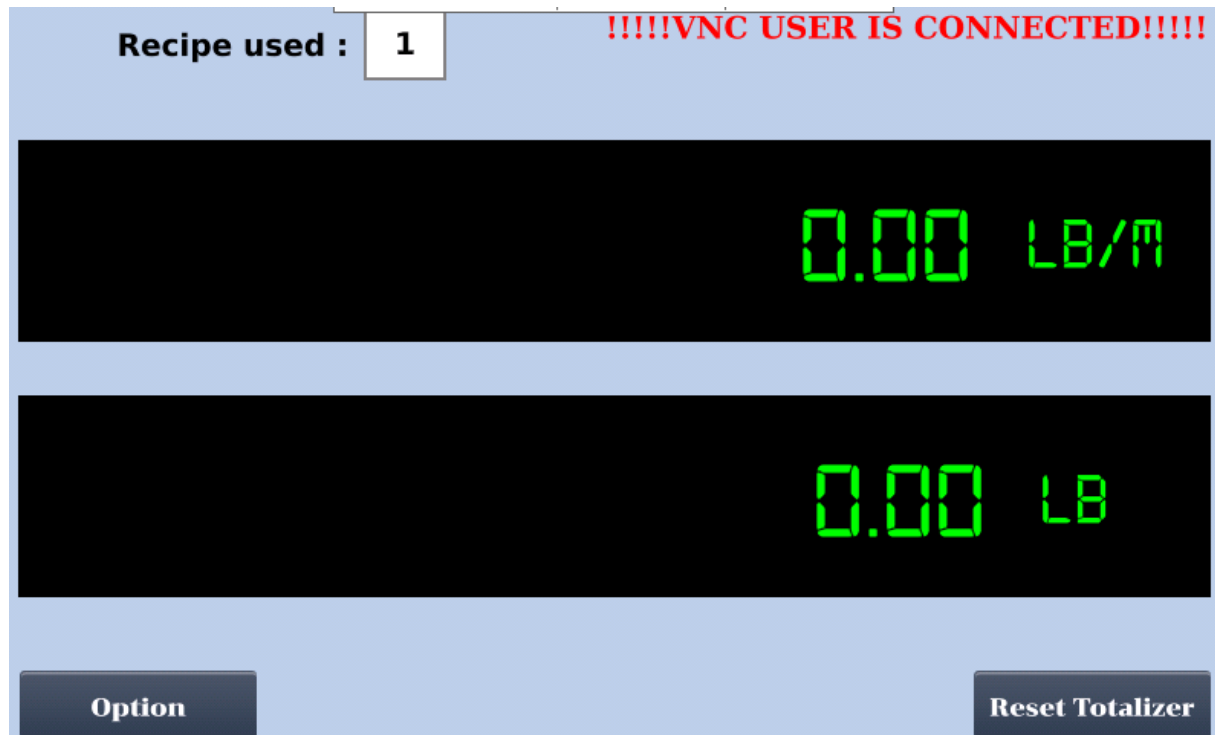
Electrical assembly

The enclosure should be installed at a reasonable height.
Provide 120VAC.



2. INTERFACE HMI

Measurement Screen



Displayed values:

- 1: Current Flowrate
- 2: Totalized Flow

Buttons:

Option: Displays the options screen for programming

Reset Totalizer: Resets the totalizer to Zero (allow for 3-5 second delay)

Alert Messages

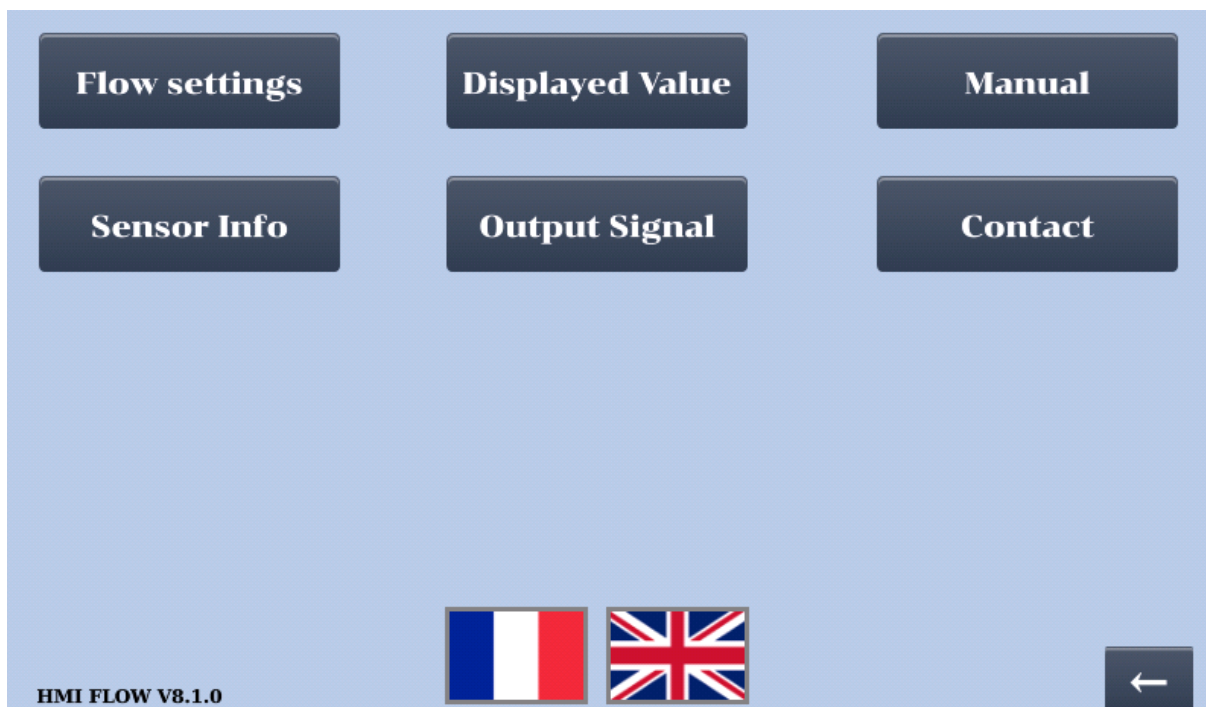


This message is displayed if the HMI is no longer communicating with a sensor.



This message is displayed if the flow sensor is saturated (call the factory).

Option Screen



Buttons:

Flow Setting: Displays the parameter screen

Sensor Info: Displays the real-time temperature and voltage for each sensor

Displayed Value: Allows you to customize the values displayed on the Main page

Output Signal: Allows you to configure the analog and digital outputs (Multiflow mode)

Contact: Information to contact GTS



: Back to the Main screen

Other

Flag: Allows you to change the language

Flow Settings

Password

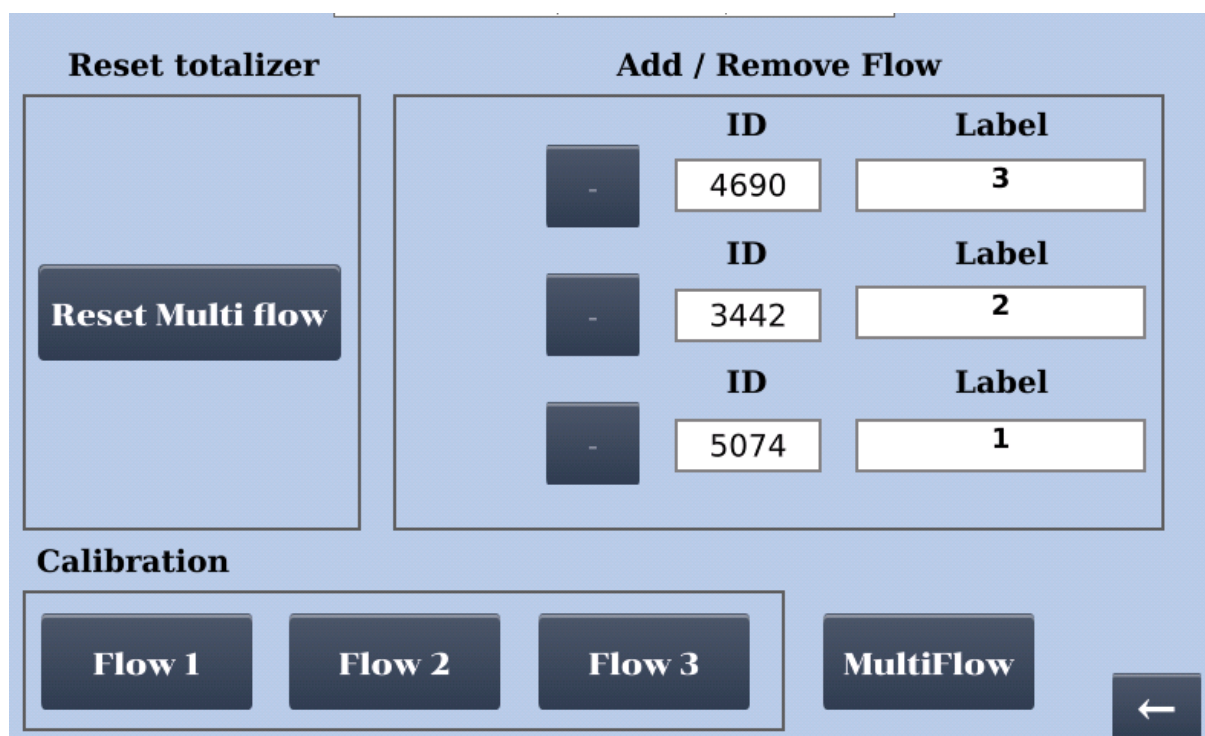


To access the flow adjustment screen, a password is required.

The password is **Flow** (Capital “F” and lowercase “l o w”)

This allows back and forth between run/ programming mode for 30 minutes.
Afterwards, the password must be entered again.

Flow Adjustment Display



The HMI interface is divided into three main sections: 'Reset totalizer', 'Add / Remove Flow', and 'Calibration'. The 'Reset totalizer' section contains a single button labeled 'Reset Multi flow'. The 'Add / Remove Flow' section contains a table with three rows, each representing a flow sensor. Each row has a small square icon with a minus sign, followed by an 'ID' field and a 'Label' field. The 'Calibration' section contains four buttons labeled 'Flow 1', 'Flow 2', 'Flow 3', and 'MultiFlow', followed by a back arrow button.

Reset totalizer		Add / Remove Flow	
Reset Multi flow		ID	Label
		4690	3
		ID	Label
		3442	2
		ID	Label
		5074	1

Calibration

Flow 1 Flow 2 Flow 3 MultiFlow ←

Reset Totalizer: Allows you to reset the totalizer of the selected flow

Add/Remove Flow: Allows you to add and remove flow sensors to be detected.
(must be properly wired (see 3.2) and energized)

Multiflow: Allows you to modify the calibration/ enable the Multiflow mode

← : Back to the previous screen

Calibration Screen

Button:

Enable Multiflow ☒

Recipe 1 Recipe 2

Start # Avg Points 20

Units: Imperial
Pound / Min

		Raw Average			
		Flow 1	Flow 2	Flow 3	
		0	0	0	

Value Read		Flow1	Flow 2	Flow 3	AVG
0	→	668	521	539	576
147	→	6434	4428	4904	5255
379	→	11039	6020	6670	7909

N.Points 3 K factor 1.00 Apply Save ←

Start/Stop: Starts or stops measuring raw values for Flow calibration.

Recipe One/Two: Select which recipe to save the calibration.

Avg Points: Number of rolling average values.

For Example: 10 "# Avg Points" would be averaged like this:

Real-time values: (1, 2, 3,9,10)/10 = "Raw Average" value for the given sensor

Real-time values: (2, 3, 4,10,11)/10

Real-time values: (3, 4, 5,11,12)/10

Real-time values: (4, 5, 6,12,13)/10

and so on...

The higher the value, smoother the reading. However, reacts slower to large changes.

N.Points: Adjust the number of calibration points "Value Read".
(Minimum 2, Maximum 6)

Units: Adjust the Unit of Measurement

IMPORTANT: Do Not Use TONS because the Raw Values are rounded up to a whole number or integer in the software code. G, KG, OZ or LBS is more accurate.

K Factor A built in multiplier that adjusts the "Value Read" to affect the output signal. Default value is 1. We recommend to do 3 material tests and average the Actual vs. True Weights, then divide them to produce the optimum K Factor for best accuracy.

The screenshot shows the HMI interface for Flow 2, Recipe 1. At the top, there are four buttons: 'Flow 2', 'Recipe 1' (highlighted in green), 'Recipe 2', and 'Pulse'. To the right is an 'Upload' button. Below these, the 'Calibration Type' is set to 'Method 1'. On the right side, there are three input fields: 'Raw Average' (0), 'Gain' (2.0), and '% of Zero' (3.0). Below these is a 'Filtering' field set to 5. A 'Start' button is located between the 'Calibration Type' and 'Raw Average' fields. A back arrow button is in the bottom right corner.

Field	Value
Flow 2	Flow 2
Recipe	Recipe 1
Calibration Type	Method 1
Raw Average	0
Gain	2.0
% of Zero	3.0
Filtering	5

Other fields:

Calibration Type: Allows you to choose between the different methods of calibration (at this time, only use Method 1)

Raw Value: The "raw" (unit less) value of the sensor

Value Read: The "real" value of the process as provided by the user

Gain: Allows you to change the gain of the Flow

% of Zero: This sets the % of Flow to automatically display Zero Flow (Recommend 3% to ignore dust)

Filtering: Allows you to smooth the measurement (Recommend 5)

Calibrate with HMI

☒ Enable Multiflow

Recipe 1 **Recipe 2**

Start # Avg Points

Units: Imperial
Pound / Min

Value Read	Flow1	Flow 2	Flow 3	AVG
0	668	521	539	576
147	6434	4428	4904	5255
379	11039	6020	6670	7909

N.Points K factor **Apply** **Save**

With the HMI in Multiflow Mode you can calibrate all the flow sensors at the same time. This is highly recommended.

- Select N.Points (number of points in the calibration curve, we recommend 3 for zero, normal and high flow rates)
- Select # Avg Points (rolling average, we recommend 20)
- Press “Start” button and start measuring raw values
- Press “Stop” button and stop measuring raw values
- Press “→” to copy average raw values in the table
- Weigh your product and divide by the material test time to determine the real flow (Value Read)
 - Write the real flow “Value Read” on the same line of the arrow you choose
 - Redo steps based on N.Points (quantity 2 is the minimum)
 - When finished press “Save” button to save the calibration

Sensor Info

	Flow 1	Flow 2	Flow 3
+24V	23.718	23.187	23.779
+5V	5.610	5.632	5.628
Temp Consigne (°C)	60	60	60
Temp Capteur (°C)	60	59	59



This screen allows you to monitor the constants of the sensors.

4..20 mA Output

4..20mA settings		Flow	
		0.00	
4mA	0.00	☐ Simulation 4..20mA	4 mA
20mA	500.00	Real time value	4.00 mA

Pulse output settings	Alert threshold settings
Relay pulse every 1000 lb/m	Relay is on when Flow
	Higher than 10 lb/m

←

4 mA : Flow value for 4 mA

20 mA : Flow value for 20 mA

Alert threshold: choose the value to monitor (Flow / Total) and the relay value

Simulation: allows for a simulation of 4, 12 or 20mA output

Flow: Shows a real-time flowrate to assist in setting the 4-20mA span

Real time value: Shows the real-time mA output

Contact Page



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Flowhmi V8

