

### This manual describes the installation of the UFM-70 FS

The suitcase contains a quick start guide and a detailed manual.

#### Equipment

- UFM-70 FS flowmeter
- Pair of sensors
- Contact fluid (Is in the suitcase)
- 230 V plug connection

#### Step 1

Determine the location of the flow meter.

There must be 3x DN straight pipe before the sensor and 1.5x DN straight pipe after the sensor.

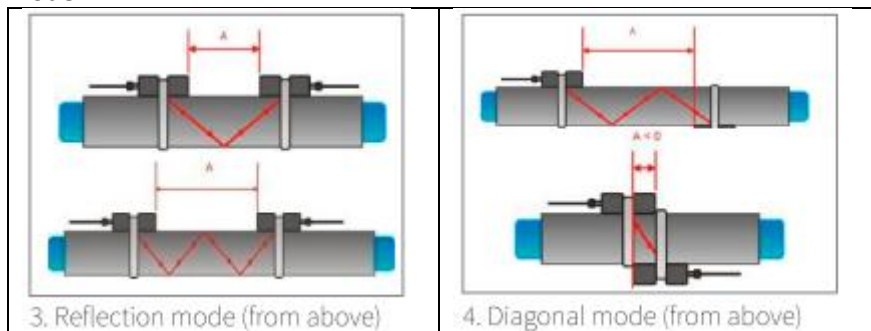
#### Step 2

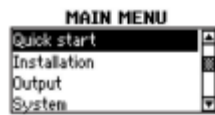
Use the Setup Wizard to prepare the flow meter. This can be found in the main menu > quick start.

The data for Van Van Heck's measurements are:

- Middle unit: m<sup>3</sup>/h
- Pipe material: ductile steel/staal
- Outside diameter: depending on the type of pipe
- Wall Thickness: depending on the type of pipe
- Fluid: Water
- Temperature: 15°C
- Liner Material: None
- Passes:
  - For piping larger than DN800: 1
  - For piping smaller than or equal to DN800: 2

The number of passes determines the positioning of the sensors. If the number is even, the sensors must be placed in “reflection mode”. If the number is odd, the sensors must be placed in “diagonal mode”.

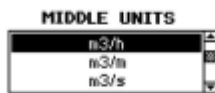




At first power on and the boot sequence, the **Main Menu** is displayed. Use the **UP** and **DOWN** cursor keys to select **Quick Start** and confirm by pressing **ENTER**.



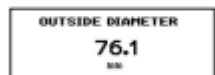
Select **Setup Wizard CH1** to set up the measurement channel 1, or **CH2** for channel 2. Confirm selection by pressing **ENTER**. If the sensors are recognised, the serial number will be shown. If not, the type can be selected.



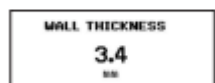
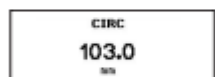
Select the main measurement unit using the cursor keys and confirm with **ENTER**. This unit will be displayed in the middle of the measurement screen. Selecting **OFF** deactivates the measurement channel.



Select the pipe material using the cursor keys and confirm with **ENTER**.



Enter the outer pipe diameter using the keypad and confirm with **ENTER**. Use **UP** key as backspace to correct for entry errors. If "0" is entered and confirmed, an additional screen appears that allows entry of the circumference. Press **ENTER** to confirm. The flowmeter will then confirm the **Inner Diameter**, values can be changed if needed.



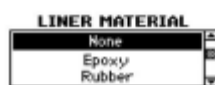
Enter pipe wall thickness using the keypad and confirm with **ENTER**. Use **UP** key as a backspace to correct for entry errors.



Select fluid using cursor keys. Confirm by pressing **ENTER**.



Enter the fluid temperature using the keypad. Confirm by pressing **ENTER**. Use **UP** key as a backspace to correct for entry errors.



Select pipe liner material using cursor keys and confirm by pressing **ENTER**. If a liner material is chosen, an additional screen appears that allows entry of liner thickness.

## Manual – UFM-70 FS

- Select number of sound passes (sound paths) using cursor keys.
- **Auto:** Selection by flowmeter according to entered parameters (number of passes shown later on *Sensor Positioning Screen*).

PASSES	
Auto	
1	
2	

- 1: 1 pass (diagonal mode)
- 2: 2 passes (reflection mode)
- 3: 3 passes (diagonal mode)
- 4: 4 passes (reflection mode) etc.

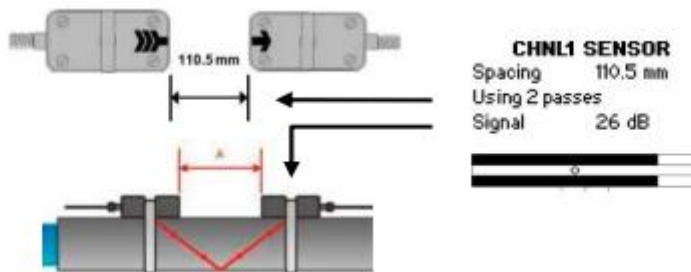
- Even number of passes: Both sensors on same side of pipe (see pic. 3).
- Odd number of passes: Sensors on opposite sides (see pic. 4). Confirm with **ENTER**. The second channel can now be prepared by selecting **Setup Wizard CH2**.

QUICK START	
Setup Wizard	
Stored Setup	
Start Measurement	

Select **Start Measurement** and confirm with **ENTER** to start the sensor positioning procedure. When both channels have been activated, the procedure for **CH2** follows the one of **CH1**.

### Step 3

The flow meter displays the distance between the sensors. Ensure that sufficient contact fluid is placed between the sensor and the pipe. The sensors must be positioned in the correct direction.



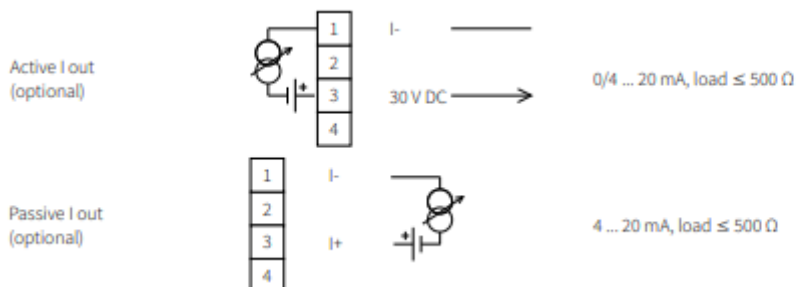
The upper bar shows the signal to noise ratio and the lower bar shows the signal quality. These should be both filled to about the same level with a filling level of around 1/3 or more desired.

Use the cursor between the two signal bars for fine adjustment of the sensor position. If the mark is to the left-hand side of the central indication line, the sensors are too close to each other. If the mark is to the right, the sensors are too far apart.

Press **Enter** to start the measurement.

### Step 4

The flow meter is equipped with two active and two passive outputs. In most cases, the passive outputs must be used.



The outputs can be set in the “in/output menu”.



Figure 1: Output menu

Select the output. The first output is in slot 1. De second one in slot 2 etc.  
Select the source



Figure 2: Source selection

Then select the units ( $m^3/h$ ) and the minimum and maximum flow values.  
Ensure that this scale is the same as the device receiving the value.

The damping should be 5 seconds.



Figure 3: Damping

The range should be 4-20 mA and the error value should be 3.8 mA. The hold value should be 30 seconds.