

Flow Meter Transmitter

LSP-FMT



Brief description

The LSP-FMT is a flow rate transmitter which works by counting the pulses coming from the flow meter sensor. It has analog and modbus outputs too.

Functioning

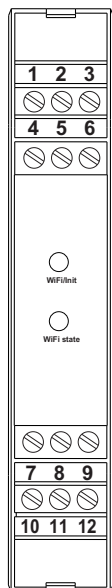
This is a pulse transmitter that counts pulses from a flow sensor on its signal input from 1Hz up to 100kHz. This device converts the pulses into liter or gallon, depending on the settings. By turning on the wifi connection on the module, we can reach the web user interface where all settings can be changed, and the actual values can be read. On this interface we can give the calibration values too. It has two analog signal outputs: Totalizer output and the actual Flow rate output. Both has 0-10V signal. The Modbus output transmits the actual flow rate, the resettable totalizer and the non resettable totalizer values. The module is supplied from 18-30VDC. It has a 15V / 500mA output for supplying the flow meter sensor and/or the reset button.

Features

- WiFi connectivity
- High range pulse rate input
- Standard 0-10V outputs
- Modbus output
- Overvoltage protection
- Reverse polarity protection
- Status LED
- DIN TS-35 rail mountable



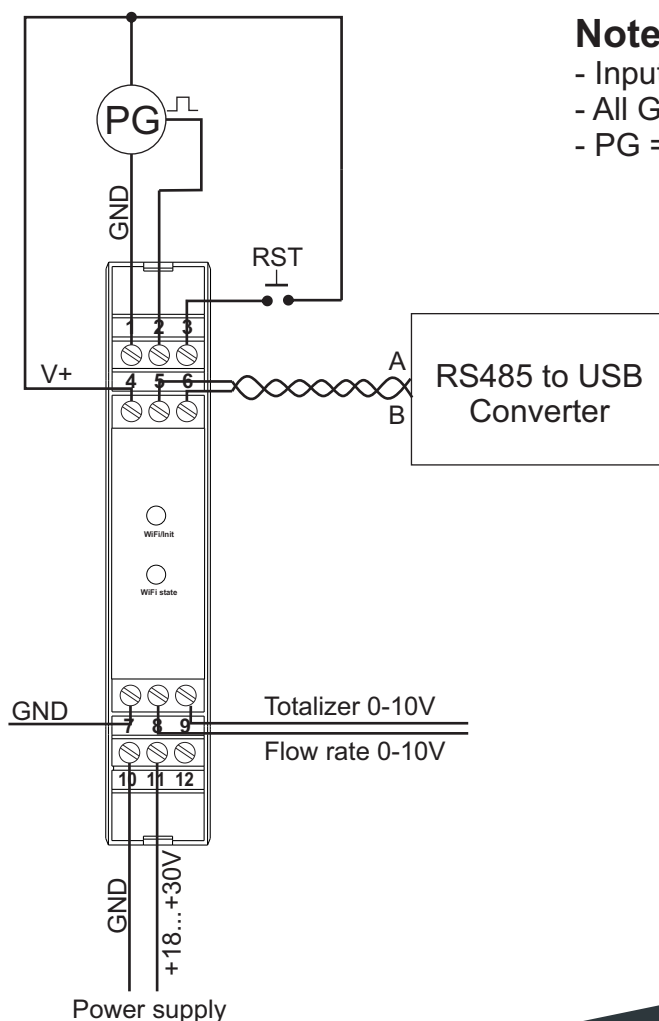
Connector description



Pin nr.	Signal
1	GND
2	Pulse IN
3	Reset IN
4	15V/500mA OUT
5	RS485 B
6	RS485 A
7	GND
8	Totalizer OUT, 0-10V analog signal
9	Flow rate OUT, 0-10V analog signal
10	GND
11	Power supply from +18 to +30 VDC
12	Not used

Connector description

Wiring diagram



Notes

- Inputs are active high
- All GND internally connected
- PG = Pulse Generator



Calibration via WiFi

After wiring the transmitter and powering it up, we can setup it by accessing the user interface. The settings easily can be modified by following the steps below.

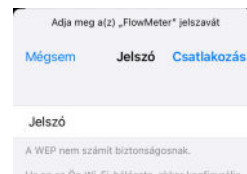
Step 1

Turn on the WiFi access on the transmitter by pushing the **WiFi/Init** button.



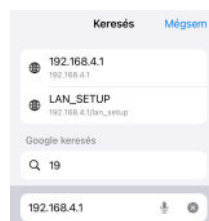
Step 2

After the **WiFi state** LED turns from red to blue, we can find the device in our connection list. Connect to the **FlowMeter** network. The password is: **123456789**. In the case of 2 minutes of inactivity, the WiFi turns off automatically.



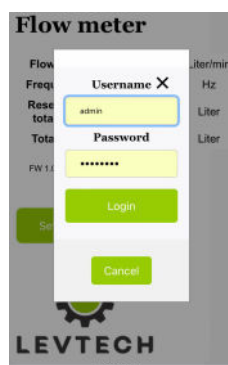
Step 3

If the connection was successful, let's open a browser and type in your searching line the **192.168.4.1** IP address. There will appear the first page.



Step 4

In order to access the setup page, we need to log in. After clicking on the **Setup** button, we need to give the username and the password.



Username: **admin**
Password: **password**

Calibration via WiFi

As we logged in the setup page, we can modify on **Measuring parameters** and **Modbus parameters**.

SETUP PAGE

Measuring parameters:

Unit (Changing this parameter reset all totalizers)	<input type="text" value="Liter"/>
Flow display	<input type="text" value="Unit/Min"/>
Pulse/Unit	<input type="text" value="100.00"/>
Totalizer Precision (Changing this parameter reset all totalizers)	<input type="text" value="0"/>
Full scale flow	<input type="text" value="20"/>
Full scale Totalizer	<input type="text" value="20"/>

Pulse/Unit calculation
new pulse/unit = (old pulse/unit * delivered quantity)/displayed quantity

Unit (Changing this parameter reset all totalizers): we can choose how the measured value going to appear, liter or gallon.

Note: Changing the unit will cause resetting all totalizers!

Flow display: we can choose how the actual flow rate will be displayed.

- Unit/Sec
- Unit/Min
- Unit/Hour
- Unit/Day

Pulse/Unit: this parameter means that how many pulses need to 1 liter/gallon (depends on the setting).

Totalizer Precision: it means how precisely we want the totalizer to shows the value. It can be: **0; 0,0; 0,00.**

Calibration via WiFi

Full scale flow: it refers to the 0-10V scale. It means that which flow rate will be equal with 10 volts on the analog output. It can be max. 90000.

Full scale Totalizer: it also refers to the 0-10V scale, but in this case we can define the value that will mean 10 volts. The upper limit is 900000.

Pulse/Unit calculation

new pulse/unit=(old pulse/unit * delivered quantity) / displayed quantity

Modbus parameters:

Address	<input type="text" value="2"/>
Baudrate	<input type="text" value="19200"/>
Parity	<input type="text" value="NONE"/>
Stop bit	<input type="text" value="1"/>

Modbus type RTU
 Register structure:
 1 flow rate = holding register 10-11 float ABCD
 2 totalizer resetable = holding register 12-13 uint32 DCBA
 3 totalizer unresetable = holding register 14-15 uint32 DCBA

Address: we can choose the address of our transmitter. It can be between 1-65.

Baudrate: it may vary from 9600 to 115200.

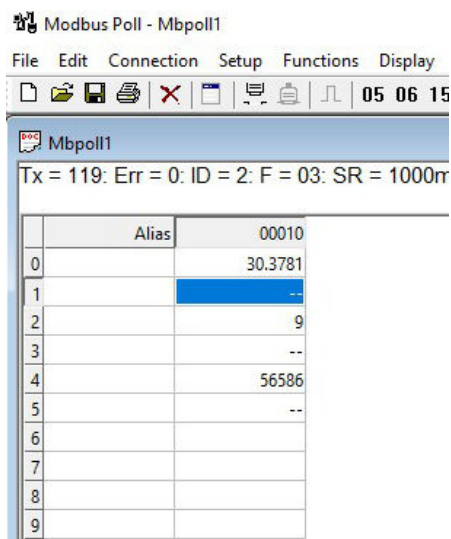
Parity: NONE / EVEN / ODD

Stop bit: 1 or 2



Modbus type RTU Register structure

Below we can see a Modbus polling with a 1000ms refresh rate.



Nr	Name	Register	Type	Bit order
1	Actual flow rate	Holding register 10-11	Float	LSB first
2	Totalizer resettable	Holding register 12-13	Uint 32	MSB first
3	Totalizer non-resettable	Holding register 14-15	Uint 32	MSB first

Technical data

Power supply voltage	18-30VDC
Consumption	<1W
Number of inputs	1
Input voltage	15V-24VDC
Input signal frequency	1Hz-100kHz
Communication protocol	Modbus RTU
Function mode	Slave only
Possible address	1-65
Baud rate	up to 115200
Number of analog outputs	2
Analog outputs signal	Flow rate, Totalizer
Analog outputs type	0-10V
Dimensions	114 x 99 x 18 mm
Weight	100 g

