reseatech
more than dosing!

Quickstart guide

OEM-C flow sensor

differential pressure flow sensor

Version 1.3

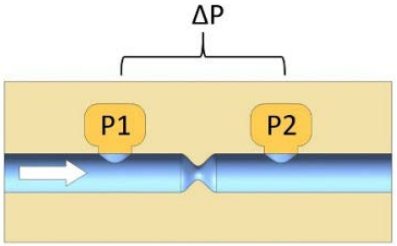
Thank you for choosing the OEM-C flow sensor. The OEM-C is an easy to set up volume flow sensor for liquids, based on the differential pressure principle. The present sensor version is an OEM version, designed for integration into a system.

This document helps you getting started with the functionality of the sensor. For further documentation and safety information read the user manual.

Functionality

The volume flow is calculated from the pressure drop across a restriction in the fluid channel. The diameter of the restrictor depends on the flow range of the sensor.

Due to the restrictor, the sensor is not suited for fluids containing particles bigger as 50 µm.

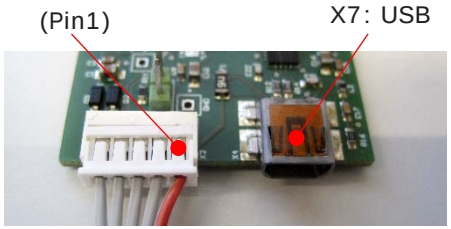


Fluidical installation

Inlet and outlet can be connected by ¼-28 UNF flat bottom connectors.

Reversing the polarity of the connections will result in negative flow rates.

Electrical installation



Connector/ Pin	Description/Function
X7	**USB device (VCP)**
	Socket for USB 2.0 Mini-B
X2	**Supply/RS232**
1	VIN + (5 VDC)
2	VIN – (GND)
3	RS232 RX
4	RS232 TX
5	GND

USB interface

USB is the standard interface of the OEM-C. Just connect the sensor with a USB Mini-B cable to your computer. When the USB- voltage is present, the green LED D1 will light up.
The communication chip uses the standard Windows VCP driver for virtual COM Ports.

If you encounter a problem with the standard driver, you can also find the latest version of the driver on the manufacturer's homepage:

http://www.ftdichip.com/Drivers/VCP.htm

USB and RS232 communication

Port settings:

- Baud: 115200, Data: 8, Stop: 1, Parity: None, Handshake: off
- All commands are transmitted in ASCII characters
- Each command is terminated with LF (Hex 0x0A)
- Commands and parameters are separated by a space (Hex 0x20)

For the first tests we recommend using a simple serial terminal program such as HTerm or Termite.

HTerm: http://www.der-hammer.info

RS-232 interface

Connect both communication lines (RX, TX) and the Ground connection to your RS-232 Interface. Make sure both lines are crossed.

RX Sensor ------- TX Customer
TX Sensor ------- RX Customer

The Communication lines are ±15kV ESD-protected.

Mating connector:
Molex Micro-Latch, 51065-0500

Serial commands

Command	Description
`M_Cont n`	Continuous flow value output n = 1 -> start n = 0 -> stop
`M_Single`	Single flow measurement
`M_Press`	Single pressure measurement
`M_Temp`	Single temperature measurement
`S_SetZero`	Set the delta pressure to zero
`S_GetZero`	Returns the pressure zero point
`S_ClearZero`	Clears the zero point
`S_GetFluidCal`	Load current fluid calibration data
`S_SetFluidCal a b`	Write new fluid calibration data a=fluid density [mPas] b=fluid viscosity [kg/m3]
`S_GetFlowCorr`	Load current correction factor
`S_SetFlowCorr a`	Set correction factor a = Multiplier for flow rate value
`S_Interval n`	Setting the readout interval for continuous output in ms: 10 – 100000 ms -> 100 – 0.01 Hz **Only adjustable in 10 ms steps!**
`S_GetSerial`	Read serial Number
`S_SetThreshold`	Set minimum flow rate [ul/s]
`S_GetThreshold`	Read minimum flow rate setting [ul/s]
`Everything else`	Wrong command

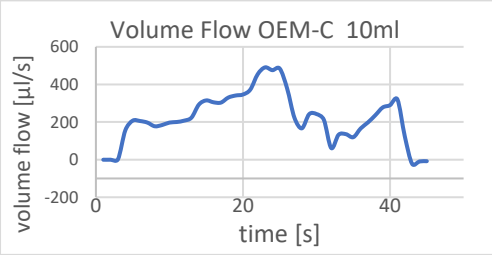
Application examples

Continuous measurement

To monitor a continuous flow, you can select a longer interval time for the measurement.

SetupCommand: **S_Interval 1000**

The following measurement shows a 10 ml syringe, which was squeezed by hand at varying flow rates. By integrating the flowrate over time, you get the total volume of 9898.1 µl.

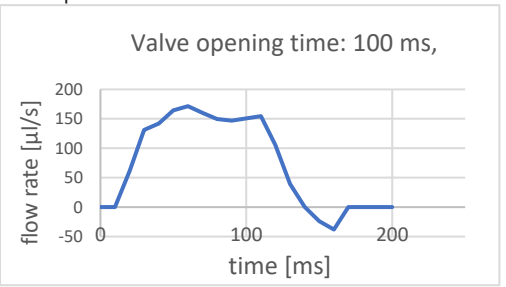


Dosing pulse measurement

To capture a short event, such as a short valve dosing pulse, it is recommended to set the shortest interval time for maximal visibility of what is going on.

Setup Command: **S_Interval 10**

The following measurement shows a dosing pulse of 100 ms at 0.5 bar (absolute) pressure. The medium is water. The sensor reports the flowrate every 10 ms. By integrating the flowrate over time, you get the total volume of 15.16 µl.



Limitations

Property	Value	Unit
Maximum supply pressure[1]	1800	mbar (absolute)
Temperature range	10 .. 50	°C
Viscosity range [2]	1 .. 100	mPas
Flow range[2]	B0: 1-15	ml/min
	B1: 3-30	
	B2: 10-100	
Sampling rate	100	Hz (fixed)
Readout interval	0.001-100	S (in 0.01 s steps)

Technical data

Ordering Nr.	OEM-C-B0/B1/B2
Connectors	¼-28 UNF flat bottom
Materials in contact with media	PEEK, FPM stainless steel, fluorosilicone
Dimensions	72x40x15 mm
Weight	20 g
Supply voltage	5 VDC
Standby current consumption	< 50 mA
Accuracy of volume flow [ml/min]	± 2 % full scale
Communication	RS-232, USB
Conformity	CE RoHS 2011/65/EU

Contact information

In case of difficulties with the OEM-C sensor or if you have any questions, do not hesitate to contact us:

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