



FLOW



TEMPERATURE



HUMIDITY



CONDUCTIVITY

Out of Liquid Evaluation Kit

Thermal Mass Flow Evaluation Kit

Only for evaluation purposes

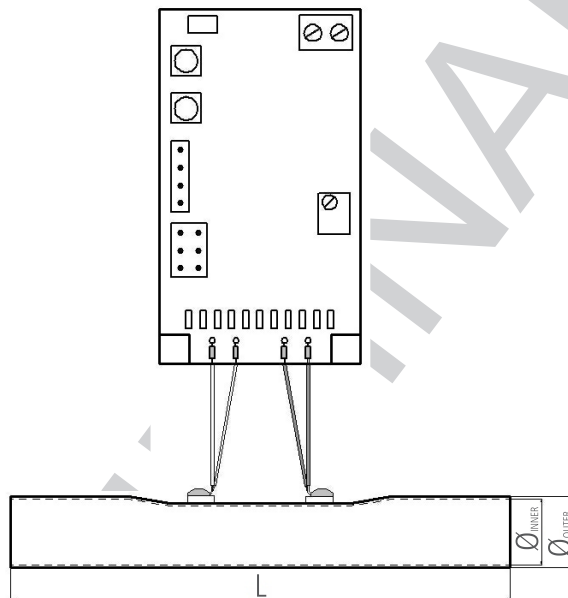


INNOVATIVE SENSOR TECHNOLOGY

Benefits & Characteristics

- Single supply 5 V_{DC}
- Suitable for aggressive liquids
- No contact between sensor and liquid
- Adjustable by customer

Illustration¹⁾



1) For actual size, see dimensions

Technical Data

Tube dimensions (L x Ø _{OUTER} x Ø _{INNER}) in mm):	40 x 4 x (3.8)
PCB dimensions (L x W x H in mm):	25 x 58 x 12
Operating measuring range:	0 ml/min to 3000 ml/min (4 m/s)
Response time (t ₉₀):	< 300 ms (at step from 0 to 1000 ml/min)
Warm up time:	< 30 s
Connection (PCB to tube):	Cu/Ag-wire, PTFE insulated, AWG 30/19, 50 mm
Heater:	R _H (0 °C) = 50 Ω ± 1 %
Temperature sensor:	R _S (0 °C) = 1000 Ω ± 1 %
Connection (module):	Screw terminal
Supply voltage:	5 V _{DC} ± 5 %
Current consumption:	1.5 A (maximal)
Analogue output, non linear	0 V _{DC} to < 5.0 V _{DC}
Tube material:	Stainless steel



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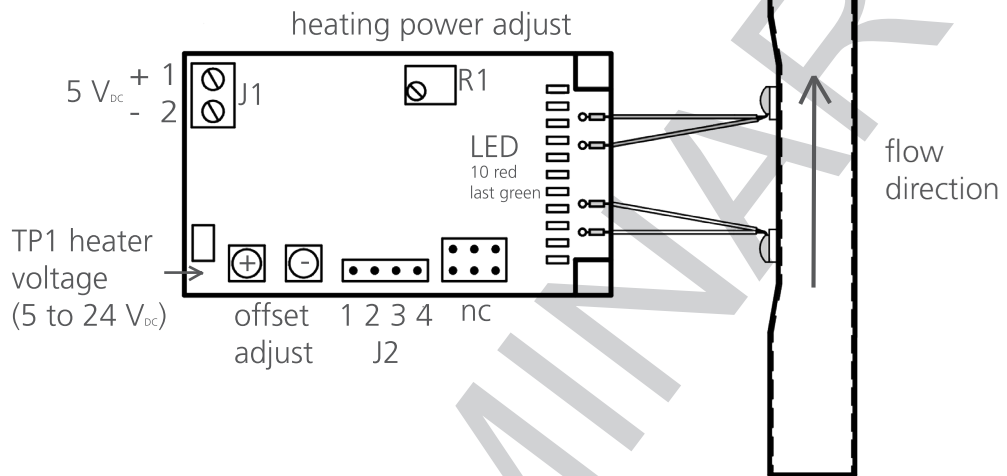
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Adjustement Procedure (if necessary)



J1

Pin 1	Pin 2
$V_{DD} = 5.0 V_{DC}$ (regulated) minimum 1.5 A	GND

J2

Pin 1	Pin 2	Pin 3	Pin 4
GND	analog out (non-linear flow signal 0 to $< 5 V_{DC}$)		

1. power up the module
2. start pump to fill up the system (tube) with liquid
3. wait until output signal is stable (about 30 s)
4. adjust potentiometer R1 to a heater voltage of about 8 to 10 V_{DC} at TP1
5. apply a known flow (for example 200 ml/min)
6. measure analog output voltage at J2 Pin2 (should be in the range of 2.0 to 2.5 V_{DC} at 200 ml/min)
7. adjust R1 for desired output voltage
8. stop flow
9. check if analog output voltage at J2 Pin2 is $< 0.1 V_{DC}$
10. if not, push the offset buttons repeatedly to adjust output voltage and LED's so only the green LED is ON and voltage is below 0.1 V_{DC}
11. apply flow again and check output voltage
12. this output signal is the non-linearized flow signal



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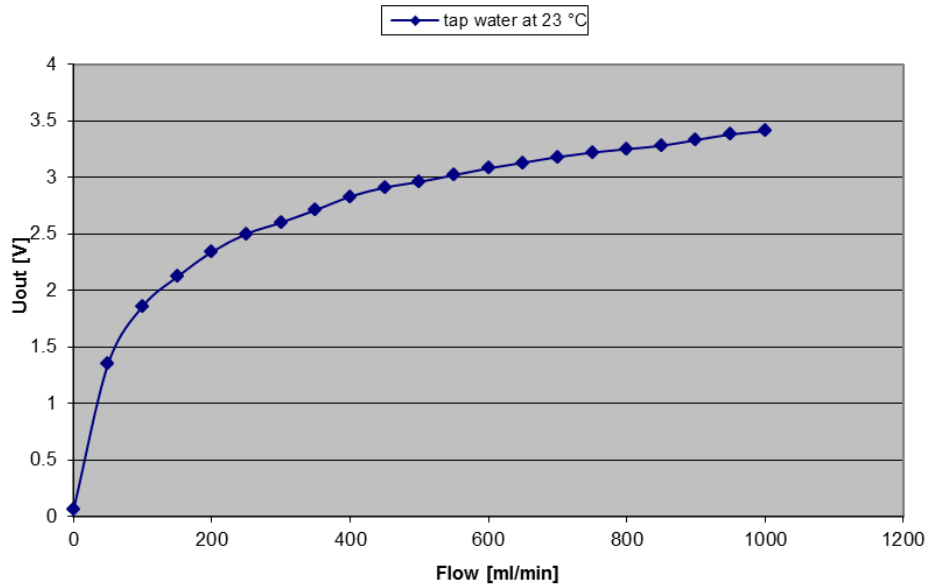
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INNOVATIVE SENSOR TECHNOLOGY

Typical Flow Curve (water)



Order Information

Order code	OOL Demo Unit V2.0 160.00005
Order code	P1K0/050.232.2K.C.050.M.U.S 310.00819

Additional Documents

Datasheet:	Document name: DFOOL_E
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INNOVATIVE SENSOR TECHNOLOGY

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