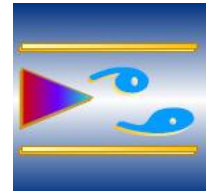


## Vortex Flow Meter

DVH / DVE

### Quick Trouble Shooting Guide



#### Warning!

Before attempting any flow meter repair, verify that the line is not pressurized. Always remove main power before disassembling any part of the mass flow meter. Use hazardous area precautions if applicable. Static sensitive electronics - use electro-static discharge precautions.

#### First Check Items:

- Installation Direction Correct
- Installation Depth Correct (Insertion style meter)
- Power and Wiring Correct
- Application Fluid Correct

**Please record what the fluid is** \_\_\_\_\_

- Meter Range Correct for the Application
- Meter Configuration Correct
- Describe Installation Geometry i.e. upstream diameters, valve position, downstream diameters, etc

#### Record Values:

Record the following values from the Run Menu with the meter installed in order to determine the operating state of the flow meter:

	With Flow	With No Flow(if possible)
Flow =		
Temperature =		
Pressure =		
Density =		
Error Messages? =		

Record the following values from the Hidden Diagnostics Menu with the meter installed:

(Use password 16363 to access.)

	With Flow	With No Flow(if possible)
f =		
fi =		
A =		
A1 =		
A2 =		
A3 =		
A4 =		
V =		

**Record values - Hidden Diagnostics Menu continued:**

	<b>With Flow</b>	<b>With No Flow (if possible)</b>
Ck =		
Lvl =		
Adj. Filter =		
Iso. Power Volts =		

**Record the following values from the Calibration Menu.**

Meter Size / Pipe ID =	
Meter Factor =	
Vortex Coef Ck =	
Low Flow Cutoff =	
Serial Number =	

**Determine Fault:**

Please confirm there are no issues with First Check Items above before continuing.

**Symptom: Output at no Flow**

If Low Flow Cutoff is less than Lvl and there is an output at no flow, then it is set too low. Increase Low Flow Cutoff until the meter no longer gives an output at no flow.

**Symptom: Erratic Output**

The flow rate may be too low. It may be possible to reduce Low Flow Cutoff to increase the range of the meter but do not reduce it to the point of creating an output at no flow condition.

The meter may be reacting to actual changes in the flow. Damping may be added to the display and/or analog output. Please consult the IOM manual for additional information.

**Symptom: No Output**

If Low Flow Cutoff is greater than Lvl, it is set too high. Reduce it until it is below Lvl and a steady flow reading is observed but do not reduce it to the point of creating an output at no flow condition.

Compare the Vortex Coef Ck value to the Hidden Diagnostics Ck value. If the Vortex Coef Ck value is significantly lower this may cause the vortex signal to be rejected resulting in zero flow rate being displayed. Increase the Vortex Coef Ck value until it is close to the Hidden Diagnostics Ck value and a steady flow reading is observed.

If the recorded values for f through V are low or erratic, the vortex sensor may have failed. It may be checked as described in the Check Sensors section below.

**Symptom: Temperature Fault**

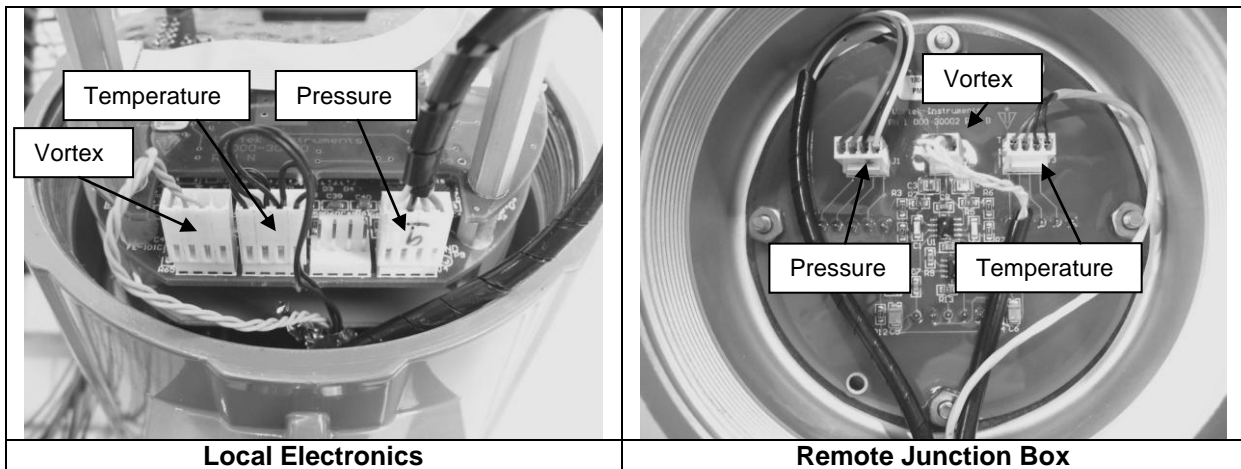
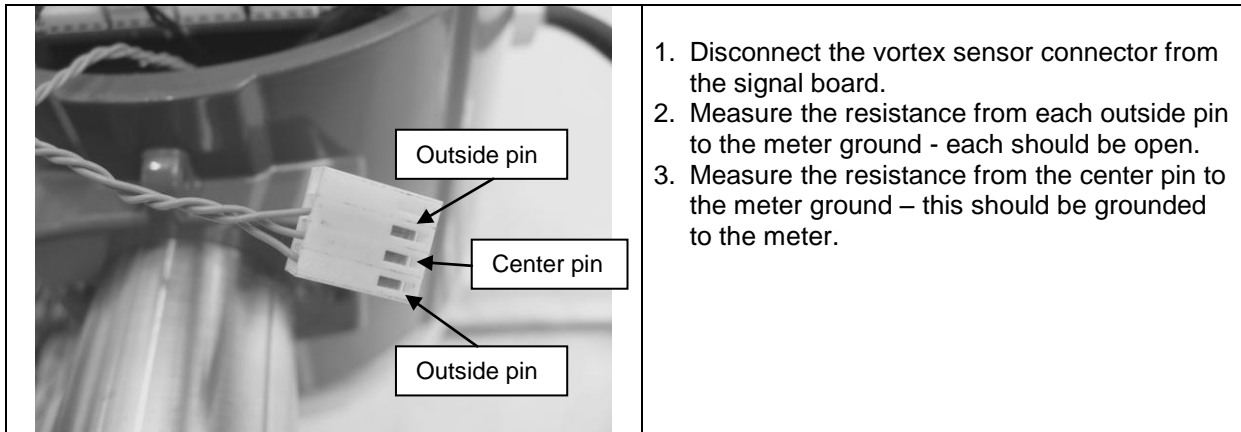
The recorded RTD values above are resistance values that should correspond to the process temperature. 1000 ohm platinum RTD's are used. Please consult a resistance versus temperature table to check the temperature value. They are approximately 1080 ohms at room temperature. If temperature is in error, the RTD may be checked as described in the Check Sensors section below. RTD2 is used for energy flow meter models.

**Symptom: Pressure Fault**

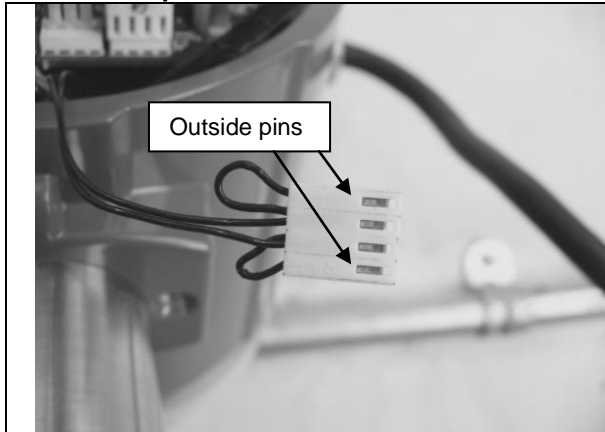
If the recorded value for pressure, Pe(V), or Pv(V) are in error or the meter displays a pressure fault the pressure sensor may be checked as described in the Check Sensors section below.

**Check Sensors:**

Remove power from the flow meter then remove the electronics enclosure cover opposite the wiring side.

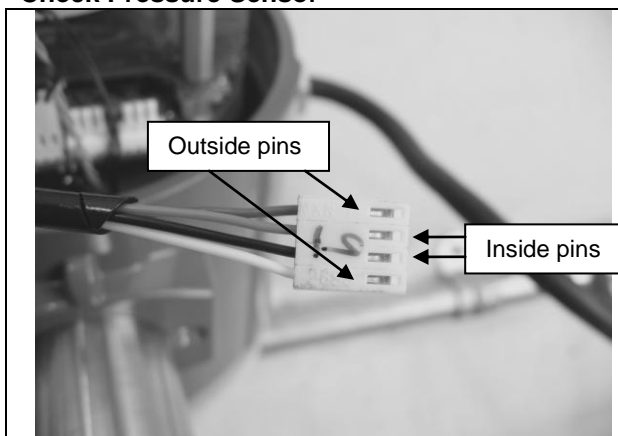
**Check Vortex Sensor**

### Check Temperature Sensor



1. Disconnect the temperature sensor connector from the signal board.
2. Measure the resistance across the outside pins of the temperature sensor connector. It should read approximately 1080 ohms at room temperature (higher resistance at higher temperatures).

### Check Pressure Sensor



1. Disconnect the pressure sensor from the signal board.
2. Measure the resistance across the outside pins of the pressure sensor connector, then across the inside pins. Both readings should be approximately 4000 ohms.

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Robert-Perthel- Straße 9

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Technical assistance may be obtained by contacting Customer Service at:  
+49 (221) 49707 0 Germany

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