

## DESCRIPTION

The PVC4000 evaluation kit provides a platform for quick and easy assessment of the PVC4000, Posifa's digital MEMS pirani vacuum transducer for high-volume OEMs.

The evaluation kit consists of a PVC4001 PCBA packaged in a brass main housing that can be paired with different fittings. Two standard fittings are available off-the-shelf: ¼ SAE Male Flare, and KF16. Other standard fittings are available via custom order. The fittings are equipped with a removable and cleanable filter that protects the sensing element from contamination.

The PVC4001 included in the evaluation kit is calibrated for the vacuum range between 1 micron and 760,000 microns. Through the PVC4001's digital I<sup>2</sup>C interface, the user can access the sensor's raw output as well as the calibrated vacuum reading. The user can also examine the calibration data stored in the sensor.

Posifa's I<sup>2</sup>C Evaluation Kit can be used for programming-free access to the sensor's I<sup>2</sup>C data. The third-party I<sup>2</sup>C-USB adapter can be purchased [here](#), while the free Sensor Diagnostic PC software can be downloaded [here](#). The evaluation kit includes a custom wire harness that connects the sensor and the adapter board, allowing the user to read sensor data from a PC in minutes.

**Sold in North America by:**  
**Servoflo Corporation**  
75 Allen Street  
Lexington, MA 02421  
781-862-9572  
[www.servoflo.com/](http://www.servoflo.com/)  
[info@servoflo.com](mailto:info@servoflo.com)



## FEATURES

- Range: 1 micron to 760,000 microns (0.13 Pa to 101 KPa)
- Fast response time of < 1.5 s
- Low power consumption for battery-powered instruments
- Calibrated, temperature-compensated, digital output
- High accuracy
- Pulsed sensor excitation to prevent signal drift in high vacuums
- Protection from contamination
- Removable, washable, and replaceable filter

## ABSOLUTE MAXIMUM RATINGS

- Operating temperature: -25 °C to 85 °C
- Storage temperature: -40 °C to 90 °C
- Shock: 100 g peak (5 drops, 3 axis)
- Overpressure: 450 psi

## SPECIFICATIONS

Test Conditions:  $V_{in} = 3.3 \pm 0.01$  VDC,  $T_a = 25$  °C. Relative Humidity:  $40\% < RH < 60\%$

SPECIFICATIONS	MIN	TYP	MAX	UNIT	CONDITIONS
Range	1		760,000	micron	
Resolution	1			micron	1 micron - 10,000 microns
	100			micron	10,000 microns - 760,000 microns
Accuracy		$\pm 10$		micron	1 micron - 100 microns
		$\pm 10\%$		reading	100 microns - 10,000 microns
Digital Output	1		65535	count	
Supply Voltage	2.7		5	VDC	
Operating Current		5.3		mA	
Operating Temperature	-25		85	°C	
Proof Pressure		450		psi	
Storage Temperature	-40		90	°C	

## OUTPUT DESCRIPTION

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**IF count  $\leq$  10,000**

Micron reading = count

**IF count  $>$  10,000**

Micron reading =  $13.5 * (\text{count} - 10,000) + 10,000$

\*Contact Posifa for I<sup>2</sup>C Communication app note.

## SENSOR DIAGNOSTIC SOFTWARE

### Main Window

**Raw**  
Packets: 0x1E 0x4B 0x7B 0xFF 0x97 0x86

**Calibrated**  
Packets: 0x44 0xFF 0x4B 0x73 0x00

**Version**  
Sensor: PVC  
Firmware: 2-1-FN

**Sensor raw data**

Raw: 19320	ATM & Temp Comp Raw: 19323	Temp Comp Raw: 19315
Max: 19342 Min: 19320	Max: 19345 Min: 19322	Max: 19337 Min: 19315

**Calibrated vacuum reading**

Comp Calibrated: 65535	Temperature: 38790
Max: 65535 Min: 65535	Max: 38790 Min: 38785

Micron: 760000	Pa: 101325.00	mbar: 1013.25
Max: 760000 Min: 760000	Max: 101325.00 Min: 101325.00	Max: 1013.25 Min: 1013.25

**Set default to 2 seconds**

**Access to Settings parameters**

**Access to calibration Table**

**Click on Get Data/Stop button to start data collection**

Filter: Unfiltered

Settings:  Generic Display  Sensor Specific Display

Sampling Period in Second: 0.5

Logging: Auto Save: Every 1 hour

On Demand save: Save Data

Stop

### Settings Parameter Window

ATMPcoeff [ ] [Get] [Set]

Room Temp REF [ ] [Get] [Set]

Sensor internal parameters. Do NOT modify

Reference temperature (usually the temperature at which calibration is conducted)

### Calibration Window

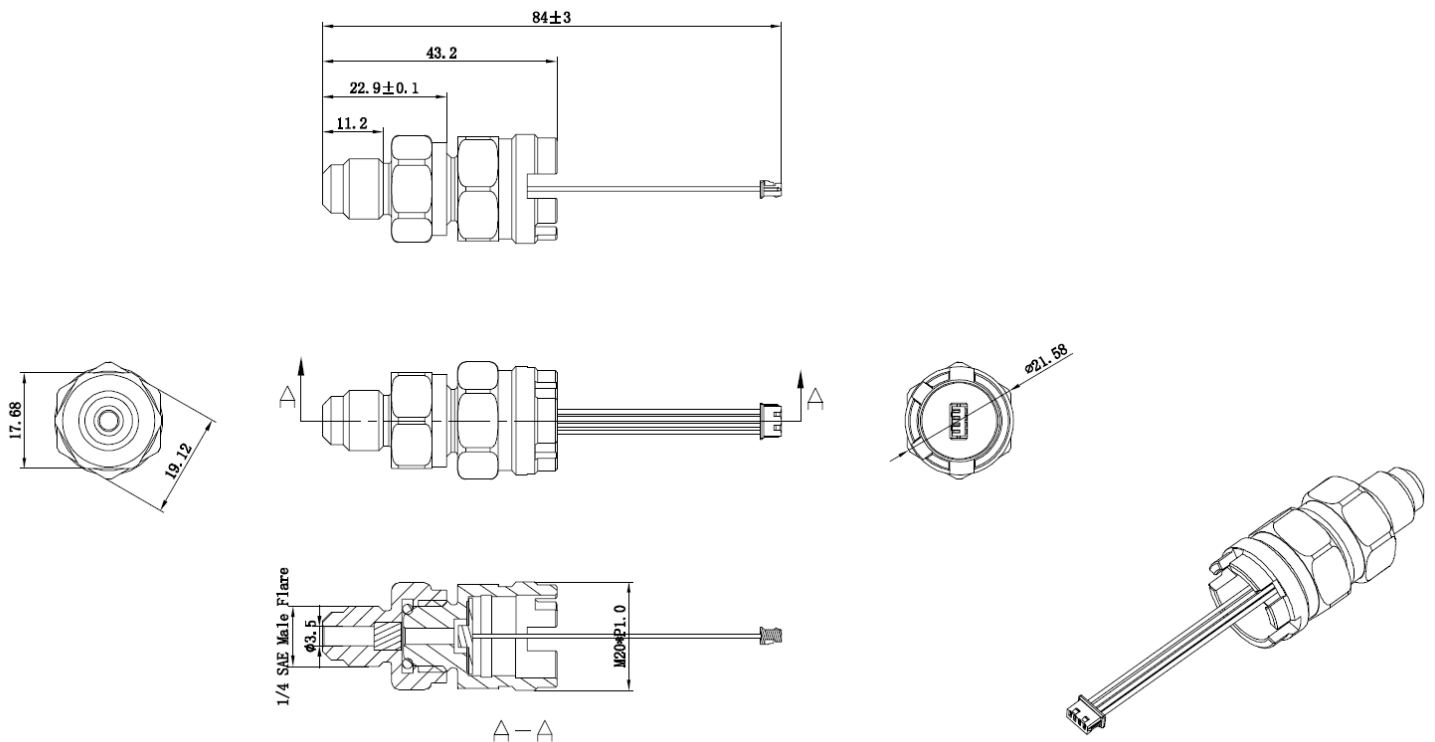
Index	Raw(X)	Calibrated(Y)	Note
0	19784	65535	
1	23348	19011	
2	28498	4961	
3	32284	1014	
4	35584	1087	
5	36270	195	
6	37681	499	
7	40218	197	
8	41439	99	
9	43333	142	
10	44978	11	
11	5111	1000	(Y1) = Cooling Time (ms)
12	18	15	Temp Comp Constant
13	15	15	Temp Comp Constant
14	7541	7432	Temp Comp Constant

Calibration data: X column contains the raw sensor output and Y column the corresponding micron reading

Sensor internal parameters. Do NOT modify

## PACKAGE DIMENSIONS

### PVC4000EVK WITH 1/4 SAE MALE MALE FLARE FITTING



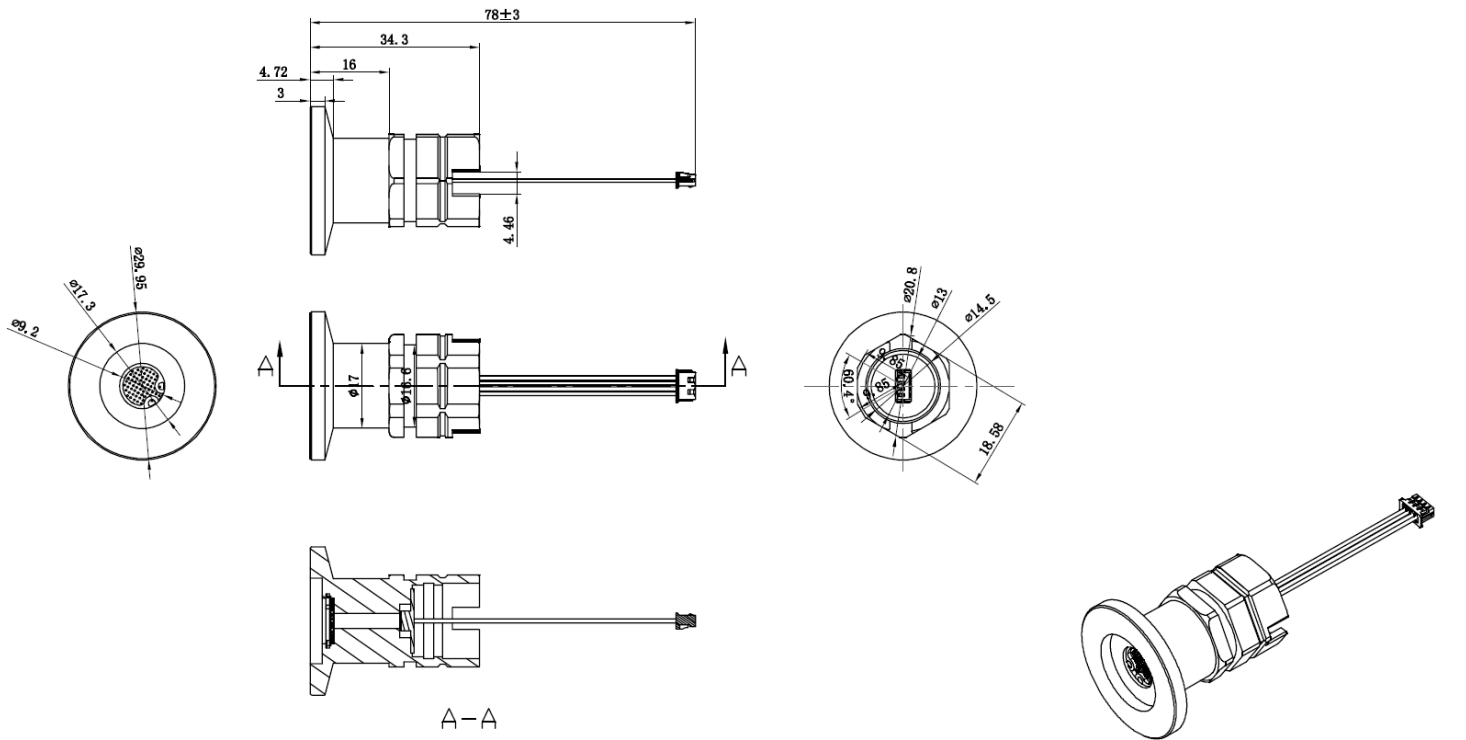
Unit: mm

Pin#	Description
1	Vdd (Red)
2	GND (Black)
3	SDA (Yellow)
4	SCL (Green)
5	N/C
6	N/C

The wire harness is terminated with a Molex connector P/N51021-0600.

## PACKAGE DIMENSIONS

### PVC4000EVK WITH KF16 FITTING



## ORDERING INFORMATION

<b>PART NUMBER</b>	<b>SPECIFICATIONS</b>
PVC4000EVK-SAE	1/4 SAE Male Flare Fitting
PVC4000EVK-KF16	KF16 Fitting

Please contact Posifa or your local distributor to place an order.

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