

# MicroPulser™ 1000

**Precision 2 Channel Volume Pulsar  
Provides 1000 Pulses Per Revolution**

*Provides 1000 pulses per revolution - 10 times the resolution of a 100 pulse system*

*Clockwise & counter-clockwise outputs, automatically detects reverse flow*

*Approved for hazardous locations, Class I, Division 1 Groups C and D*

*Designed to fit most industrial and commercial gas meters*

*True Absolute Rate algorithm removes error pulses caused by vibration*

*Open collector outputs simplify interfacing*

*Standard 1/2" NPT electrical connection*

*Environmentally sealed electronics*

*Hard Anodized aluminum housing for maximum protection*

*Lubrication free bearings reduce friction to a minimum and eliminate bearing corrosion - failure*

**MicroPulser** is a precision micro-processor based dual channel flow rate transmitter designed to be installed between the meter and the vertical index, or instrument on most industrial/commercial gas meters. MicroPulser provides high resolution flow rate information to RTU's, flow computers or any other device requiring accurate flow rate information. Flow rates can be calculated more frequently using MicroPulser due to the 1000 pulses per revolution output. Pulsers with only 100 pulses per revolution take 10 times longer to produce the same flow rate information as MicroPulser. In some cases, such as sampling systems or flow rate telemetry, quick updates can significantly improve overall performance and accuracy. High speed flow computers with quick sample rates can be significantly improved with the MicroPulser's high resolution. A primary cause of pulser failure is corrosion of the index shaft and bearings. MicroPulser uses maintenance free engineered plastic bearings and a 316 stainless steel index shaft to minimize added torque to the meter movement.

**True Absolute Rate™** is determined using direction and position tracking algorithms. At 1000 pulses per revolution even the slightest vibration (*0.36 degrees of rotation per pulse*) in the index shaft can add significant errors to other pulsers. Only MicroPulser uses a dual channel optics system and a micro-processor to remove false rotation pulses and transfer only precision information to the correct output. If vibration or index bounce causes the index shaft to move in the opposite or wrong direction, the error rotation distance is measured. The index must then move in the



forward direction by the same amount before pulses are again produced. Rotating 36 degrees (*100 pulses*) in the same direction reverses the absolute rate rotation direction. This allows for a plus or minus 36 degree window to strip off false pulses caused by vibration or index bounce.

Dual Outputs allows for volume calculations in reverse flow directions. Clockwise pulses are only produced when the index shaft is rotating in the clockwise direction. The True Absolute Rate filter requires that the index shaft rotate a 36 degrees in the same direction before output direction is reversed. If you need pulses supplied to two devices from the same meter, consider the 1000M with matched outputs.

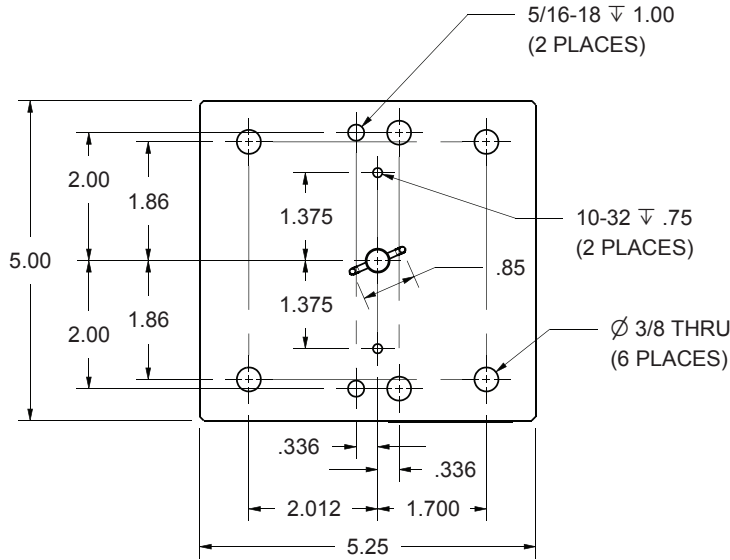
Specifications include a hard anodized aluminum housing, machined from a solid block. The NEMA 3R enclosure provides various mounting configurations to fit most meters.



2202 Red Bird Lane  
Brookshire, Texas 77423  
281-855-9639 Fax 832-422-4391  
[www.microflex.com](http://www.microflex.com)

# MicroPulser 1000 Specifications

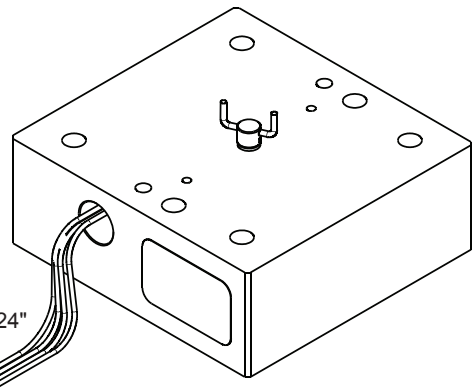
Operating Temperature Range .....	-40 to 65C
Power Supply .....	10 to 30Vdc, 15ma Typical
Outputs .....	Open Collector, 50V @ 50ma MAX
Output Rise Time .....	200ns Typ
Output Fall Time .....	200ns Typ
Shaft Speed .....	0 to 50 RPM
Shaft Axial Play .....	+/-0.010 in
Rotation Reverse Output Lag .....	100 pulses (1/10 turn)
Resolution .....	1000 Pulses/Revolution
Humidity Limits .....	0 to 100% Relative Humidity
Enclosure Rating .....	NEMA 3R



Designed for  
Class I, Division 1  
Groups C and D Hazardous Locations

### Entity Parameters

- Voc or Vt ≤ 30V
- Isc or It ≤ 100mA
- Ca ≥ Ccable + 0μF
- La ≥ Lcable + 0mH



18 GAUGE 24"

- RED - 10 to 30Vdc
- BLACK - GROUND
- BLUE - CW PULES (OUTPUT A)
- PURPLE - CCW PULSES (OUTPUT B)

