

The Choice for High Speed Flows



In conjunction with a Pitot Static probe, the FKT2DP1A-C can measure velocity even at high speed when the flow is considered compressible. The instrument also interfaces with a PC using the FlowScan software suite allowing data logging and flow survey functions and can be configured as a component of a data acquisition system.

The FKT 2DP1A allows for the simultaneous measurement and display of two independent differential pressures as well as concurrent measurement and display of atmospheric pressure, target gas temperature, relative humidity (RH) and density. Density is determined from the temperature and humidity readings. Accurate measurements can also be made in gases other than air by the user inputting the molecular weight and ratio of specific heats of the target gas.

Pressure Display

```
P1=2.46inH2O   P1
P2=43.4       T=79.0F
γ1.40 M29     P=1.18kg/m³
P4=29.92inHg  RH=10%
```

Velocity Display

```
U1=105.7ft/s  P1
U2=502.1      T=79.0F
γ1.40 M29     P=1.18kg/m³
P4=29.92inHg  RH=10%
```

Features

- ◆ Measures extremely high velocities (up to 780 ft/s) accurately.
- ◆ The industry leader – unmatched for value, ease of use, flexibility and measurement ability
- ◆ No menus – exceptionally intuitive prompt driven operation
- ◆ Extraordinary accuracy and reliability – automatically eliminates pressure and velocity drift with built-in electronic valve system. The valves eliminate the need to disconnect the meter from the applied pressures during zeroing, saving you considerable time and effort
- ◆ Over-range protection -- instrument automatically vents pressure lines when exceeding the differential transducer's rated maximum range
- ◆ Large variable contrast 4 line LCD display
- ◆ Averaging function for unsteady or turbulent flows
- ◆ English and Metric units
- ◆ Full data logging capability with software. Allows extended monitoring and real time data export to Microsoft® Excel®. Stand-alone FlowScan application performs logging; plotting, prompt driven duct Pitot probe surveys and even creates instant reports.
- ◆ Measures differential, gauge, static, and absolute pressure, velocity, temperature, humidity and calculates air density.
- ◆ Portable with neck strap for hands free operation; great for mobility in the work place
- ◆ Rugged water resistant case
- ◆ Ideal for HVAC, IAQ, windtunnel measurements, process control, research, calibration, etc

Specifications

Model

FKT 2DP1A-C

Conformity

CSA C22.2 No. 1010-1 and UL 3111-1

Measures and calculates

- Differential pressure
- Absolute pressure
- Relative Humidity
- Temperature
- Velocity (including high-speed compressible flows)
- Density

Working Temperatures

- Operating: 32°F to 158°F (0°C to 60°C)
- Storage: 14°F to 140°F (-10°C to 60°C)

Enclosure

- UV protected, water resistant and virtually unbreakable.
- Length: 8.7 in (220.9 mm)
- Width: 7.5 in (190.5 mm)
- Height: 3.9 in (99.1 mm)
- Weight: 2.93 lb (1.33 kg)

Differential Pressure Transducers

- Can have up to two independent transducers.
- Ranges available:
±0.4, ±1, ±5, ±12, +20, ±60, +100, ±180 and ±360 inH₂O.
- Temperature compensated
- Automatic zero using internal electronic valve
- Overload protection using internal electronic valve
- Repeatability: ±0.2% of Full Scale typical (after 1 million full span pressure cycles)
- Span temp. coeff.: ±0.2% of Full Scale typical, (max. shift over 0°C - 70°C relative to 25°C reading)
- Linearity and Hyst.: ±0.1% of Full Scale typical
- Accuracy at 25°C: ±0.22% of Full Scale using RSS
- Media: Clean, dry, non-corrosive gases.
- Barb accepts 1/8 in ID flexible tubing

Absolute Pressure Transducer

- Range: 2.2 -16.7 psi (15 – 115 kPa)
- Temperature compensated
- Accuracy: 0 to 85°C: ±0.5% of Full Scale typical, includes effects of linearity, temperature and pressure hysteresis, zero temperature shift and span temperature shift.
- Media: Clean, dry, non-corrosive gases
- Barb accepts 1/8 in ID flexible tubing

Temperature Sensor

- Flexible K-type wire thermocouple
- Thermocouple has a range from -73°C to 482°C (-100°F to 900°F).
- The FKT instrument can work with other K-type thermocouples and can display temperatures from -200°C to 777°C (-328°F to 1430°F)
- Accuracy: ±1.8°F (±1°C)
- Quick disconnect miniature size connector
- Cable length: 60 in (150 cm)

Relative Humidity Sensor

- Detachable probe
- Range: 0% to 99% RH, non-condensing
- Accuracy: ±2% typical at 25°C, non-condensing
- Hyst. and Repeat.: ±1.3% typical
- Stability: ±1% typical
- Resp. time (1/e): 15 sec in slow moving air at 25°C
- Working temperature: 0°F to 185°F (-17.8°C to 85°C)
- Cable length: 60 in (150 cm)
- Probe size: Cylinder 4 in (100mm) long with a diameter of 0.5 in (13mm).

Velocity

- Using Pitot-static probe with user selectable flow coefficient
- Corrected for gas density, humidity, molecular weight and ratio of specific heats.
- Measure velocities up to 47252 ft/min (240 m/sec).

Damping

User selectable from 1 to 64 data averages.

Display

- 4 line large character variable contrast alphanumeric LCD
- Viewing area: 4.02 in (102 mm) by 1.63 in (41.5 mm)

Units

- Pressure: kPa, inH₂O, mmHg and psi.
- Velocity: m/s, ft/s and ft/min
- Temperature: degrees C and degrees F
- Density: kg/m³ and lb/ft³
- Humidity: percent

Output

RS232 serial port interface, 9 pin connector. USB adapter available.

Power

- Eight 1.5V AA Alkaline batteries, field replaceable
- Auto-switching power supply (100V-240V AC 50-60Hz)
- Battery life: 30 hrs approx.

Included accessories

- Neck/shoulder strap
- Auto-switching power supply
- Carrying case
- Printed manual
- Tubing
- NIST traceable calibration with data

Optional accessories

- FlowScan™ software suite and cable to easily access the instrument readings from a computer
- Velocity probes. Several sizes and shapes available.

Typical Applications:

- Process Monitoring / Data logging
- Research
- Environmental Engineering
- Calibration
- Laboratory & Field Measurement
- Any application requiring high accuracy pressure, temperature, RH, density, velocity and flow measurement

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