



## Frequently Asked Questions

### *How Does It Work:*

#### **How are the flows determined? How is the sensor scaling determined?**

Every NJK-02 Flow Monitoring Sensor Probe is calibrated on a NIST (National Institute of Standards and Technology) certified laboratory testing station and verified for accuracy of flows from the maximum to the minimum flows that can be read with this air flow station.

#### **How does the NJK-02 actually measure air?**

Inlet air from all inlet apertures is channeled through the inlet chamber and then through the Mass Air Flow Sensing Probe. Air leaves the Sensing Probe and is drawn into the outlet chamber where it is brought back into the duct system through the outlet apertures.

#### **Can the NJK sensors have a temperature signal as well as an air flow signal so that they could be used as an outside air, return air, or exhaust air temperature sensor?**

A temperature sensor is available and could be added as an extra item to the NJK-02 Flow Monitoring Station.

### *Temperature and Humidity Questions:*

#### **Does temperature affect the thin film reading?**

Yes! The Mass Air Flow measurement utilizes the temperature of the air to measure the true flow of air through the sensing probe.

#### **What happens above 95% humidity? Is it just not accurate – or does it need to be repaired or replaced?**

Above 95% humidity the sensing probes may lose accuracy. These sensing probes can also be used in water flow measurement applications so they are not damaged by moisture at all, they are just not calibrated to read air flow when they are wet.

#### **With a temperature range of -25F to 230F, what happens below/above that temp?**

The accuracy of these sensors are guaranteed if operated within the range given. Outside of these guidelines we cannot depend on their accuracy.



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### ***Structural Questions:***

#### **What is covered during the warranty period?**

The NJK-02 Flow Monitoring Station Assembly, Mass Air Flow Sensor Probe, Transmitter, and Display Module.

#### **Will the flow station still read accurately if there is slight damage to the housing?**

If the inner air flow chambers and the outer shell remain intact the flow station should still be usable. If the damage is great enough that the inlet and outlet chambers are exposed to each other (unit housing is broken) then the flow station will not read correctly.

### ***Installation Questions:***

#### **The installation looks like it might be a little more challenging than for individual probes where space is tight.**

For the extruded models that can be field assembled there should be no problems with being able to assemble the sensor at the point of use and slide the assembled unit into place. For installations where there is a lack of available clearance beside the ductwork we have available extrusion coupling pieces that can be utilized to join smaller sections of the extrusion pieces together to form the longer extrusion sides of the NJK Sensor Flow Frame.

#### **Who will install your flow stations / sensor?**

It is the recommendation of NJK Precision that the flow stations are installed by a Sheet Metal Contractor and that they are wired by a Licensed Electrical Contractor. On some jobsites the field assembled models may be installed by a controls electrician or a mechanical contractor.

#### **What is the advantage of having a single sensor?**

The NJK-02 operates by averaging air flow samples around the entire ductwork and measures that averaged flow through one single Mass Air Flow probe. Multiple readings across a duct area only represents a snapshot of the air flowing at that one point in the duct. Their idea is that if multiple measurements of air flow in the duct are averaged then total air flow can be determined.

#### **At what point would the exterior edge duct sampling of the NJK-02 Monitoring Station become unreliable?**

The NJK-02 Flow Monitoring Station will remain accurate down to its lowest measurable air velocity which represents the low end of the scale on the NJK-02. Installations where there is an extremely small duct feeding into a short transition piece directly ahead of the NJK-02 will not allow the NJK-01 Flow Monitoring Station to read accurately. Also if the NJK Sensor is mounted on the face of a coil or filter banks in an air handler the NJK Sensor reading can be adversely effected as the coil or filters become clogged with dirt or debris. NJK Precision does not recommended installation of the NJK Sensor on the face of any coil or filter bank.



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### **Can the NJK-02 be field calibrated?**

In installations where the larger side of the NJK-02 is greater than 24" the sensor will have to be verified by a test and balance contractor and the correction factor can either be calibrated in the Operators Display or directly in the BAS system. With sensors less than 24" in size factory calibration is optional.

### **What is the pressure drop increase when adding the flow station to a system?**

The pressure drop is minimal across the flow station due to the small profile of the sensor and it's airfoil design.

### **With the NJK Precision signal update timing of less than a second what can be done to reduce signal traffic and noise in installations where wind gusts are prevalent such as rooftop installations?**

The NJK-02 Flow Monitoring Station will be delivered with a user adjustable output flow signal that offers a time averaging sensor output voltage over longer intervals (15 to 120 seconds) and offers a user adjustable digital signal processing function that smooths out rougher air flow signals.

### **What will happen if there is a small air gap around the outer edge of the NJK-02 Sensor Flow Frame such as ductwork inaccuracies and Pittsburg connections?**

The Sensor flow frame can be moved out inside of ductwork to best adapt to the ductwork. The inherent design of the NJK-02 Flow Frame allows for a slight negative pressure on the leaving side of the extrusion which creates a slight draw through the flow frame and generally will pull air away from small edge gaps such as mentioned. In the event that there is doubt with any edge gaps it is NJK Precisions recommendation that these gaps be filled with a foam tape.

### **Can a single Outside Air Sensor be used to measure both a minimum outside air and maximum outside air simultaneously?**

This is not recommended. The outer edges of both dampers will be sampled only, and the damper area where the minimum and maximum dampers connect with have no flow sensing. This will only provide a portion of air being sampled for both sets of dampers.

### **What will happen if the sensor flow frame or sensor module get filled with water?**

The NJK Sensor Flow Frame by design will never actually fill with water. Both the inlet and outlet apertures are located down in the extrusion so that even the bottom extrusion will never completely fill with water. The NJK Sensor Module should never be mounted on the exterior of the flow frame on the bottom side extrusion as that could lead to the sensor module and sensing probe to fill with water.

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