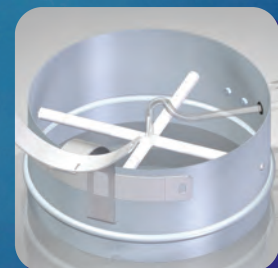
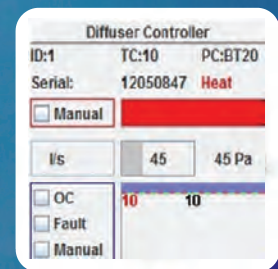
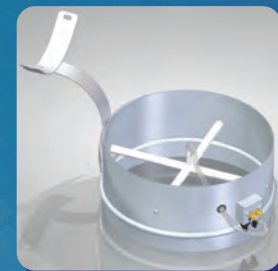
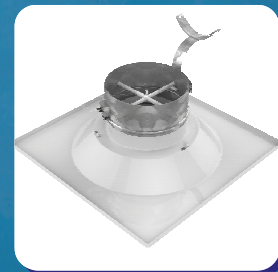


MLM AIRFLOW MEASUREMENT

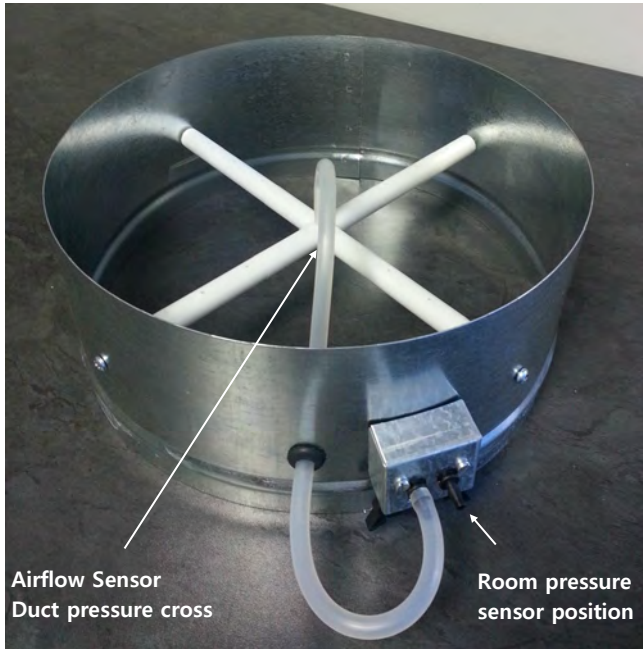
-  ELECTRONIC COMMISSIONING
-  SAVE ON COMMISSIONING COSTS
-  MIN & MAX AIRFLOW LIMITS
-  ACCURATE TO WITHIN 10% FLOW
-  BMS INTEGRATION
-  SIMPLIFY TROUBLE SHOOTING
-  MILL GALVANISED CONSTRUCTION



GENERAL

Rickard is proud to offer airflow sensing at the diffuser level. This technology measures total pressure and air volume allowing easy commissioning, the limiting of maximum diffuser volumes to meet a building's design, integration with the building BMS, calculation of HVAC energy consumption per zone and aids troubleshooting of problem zones that are out of temperature control.

AIRFLOW SENSOR MODULE



FUNCTIONALITY

ELECTRONIC COMMISSIONING MODES:

It is now possible to commission the entire building electronically. Two modes namely a static and adaptive commissioning mode is available depending on preference. The static commissioning mode allows the user to set the diffuser to a fixed minimum and maximum damper position, based on the airflow delivered at a pressure that will be maintained during system operation. The adaptive commissioning mode allows the user to set the diffuser to a minimum and maximum airflow value. The diffuser will work to limit the minimum and maximum airflow delivered despite some fluctuations in diffuser neck total pressure. Both modes require a MCU to be connected to the diffuser network. When pressures rise too high, the diffuser will reduce the flow to the designed maximum flow therefore reducing energy consumption and preventing over-cooling or heating. The minimum flow position ensures that sufficient air is always delivered.

AIRFLOW AND PRESSURE MONITORING:

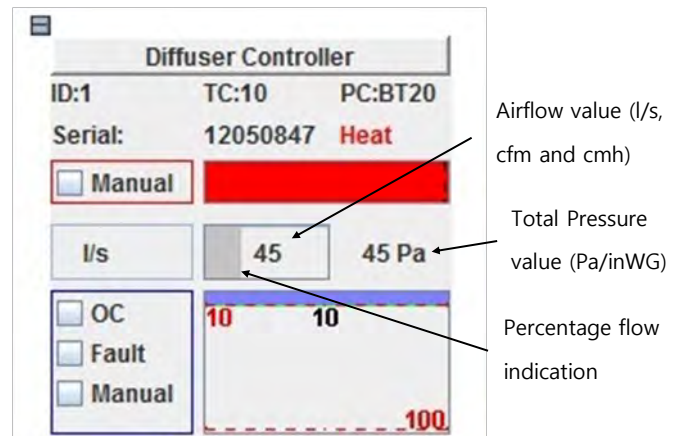
Airflow and Total Pressure can be viewed and monitored through the Rickard MLM software and BMS. Airflow measurement makes it easy to troubleshoot problem zones that are out of temperature control.

FORM FACTOR

The MLM Airflow Sensor is a module that has been developed to fit into the spigot of a diffuser.

The Airflow Sensor Neck option houses the airflow cross in a typical spigot configuration. This option requires a flex bend support to ensure the entry conditions to the neck are correct.

DISPLAY OF AIRFLOW & PRESSURE ON THE MLM APPLICATION



Airflow value (l/s, cfm and cmh)
Total Pressure value (Pa/inWG)
Percentage flow indication

ACCURACY

Each Airflow Device measures the flow through a Diffuser, accurate to within +/-10% of actual flow, when measuring total pressures between 10 and 100Pa. Please see recommended installation instructions to ensure sensing accuracy and repeatability.

Rickard airflow sensors are designed to be used in a typical field installation i.e. with flexible a duct entering the diffuser from the side.

Since the angle and shape of the flex can effect the Airflow Sensor accuracy, every airflow sensor comes with a flex bend to ensure the shape of the flex entering the diffuser is always the same.

TO ENSURE ACCURACY

1. The flex bend should be rotated on the diffuser neck so that it runs parallel to the entry orientation of the flex.
2. The flex should lie squarely in the bracket of the flex bend.
3. The flex should be extended as much as possible and not compressed in the bend. Use the fixing tie (not shown) included to ensure the flex remains in this position.
4. Use the jubilee clip included to secure the flex to the Airflow Sensor neck to prevent leaks.



ROOM/CEILING PRESSURE OFFSET

To calculate airflow Rickards airflow sensors measure the difference between pressure in the diffuser and pressure in the room. If pressure in the ceiling (room pressure sensor position) and pressure in the room is different, it is possible to offset this difference using the MLM software.

DIFFUSER AIRFLOW CALCULATION

Rickard Airflow Sensors can be fitted to each diffuser for accurate airflow calculation (more than 90%) or to one diffuser per zone to calculate an indication of airflow at each diffuser in that zone (results will vary according to the variation in pressure between the master and slaves in that zone).

ALTITUDE CORRECTION

Rickard airflow sensors are affected by altitude. Please enter the correct altitude in the altitude field in the MLM application. Default altitude is set to sea level.

OUTPUT

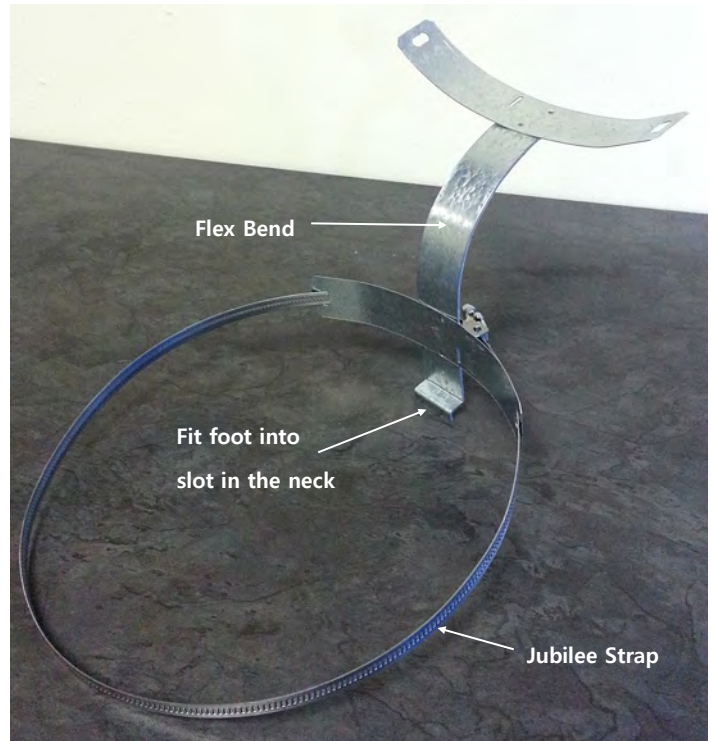
Neck total pressure in Pa or inWG

Airflow in l/s, cfm and cmh

Outputs are displayed on Rickards MLM Software and can also be communicated to the BacNet BMS.

INSTALLATION

1. Position the diffuser in the ceiling grid so that the slot in the Airflow Sensor neck faces the entry direction of the flex.
2. Slide the flex over the airflow sensor neck.
3. Detach the loose end of the jubilee strap from Flex Bend.
4. Thread the loose end of the jubilee strap around the flex, into the jubilee strap clip.
5. Rotate the flex bend support that it faces the entry direction of the flex. Slide the flex over the Airflow Sensor neck.
6. Close the jubilee strap clip and tighten the strap so that the flex is securely and squarely attached to the neck.
7. Untie the ends of the fixing tie that is attached to the other Flex Bend support.
8. Pull the flex tight to limit the concertina effect of the flex in the bend.
9. Tighten the fixing tie around the flex to secure it in position.



SYSTEM REQUIREMENTS

A Rickard Master Communications Unit (MCU) and Free MLM Software are required to calculate each diffusers Pressure and Flow. A BacNet MCU allows these parameters to be communicated to the BacNet BMS.

AIRFLOW SENSOR COMPATIBILITY

Compatible with Rickard VCD1, VSD1, VSW1 and VLN1 products.

Compatible with Rickards MLM Software and can also be communicated to the BMS.