MatrixMonitor®

Fan Array Airflow Measurement Device

MatrixMonitor® is a fan monitoring device in a single cost effective package.

MatrixMonitor® is a cost-effective fan array airflow measurement and fan monitoring package that continually checks equipment operation, and improves reliability and serviceability, resulting in considerable cost savings over the equipment's life.

Benefits

MatrixMonitor® provides:

Improved Operational Performance

- Accurate airflow measurement of individual fans and the total fan array
- Capability to monitor up to 2 fan arrays per AHU, i.e. supply and return fans
- Automatically adjusts for air density changes for better accuracy
- Monitors fan array pressure rise and air temperature to assist with faster trouble-shooting of performance issues

Improved Reliability

- Reduced internal wiring due to the micro-processor-based design
- Utilization of fan's piezometric pressure ports mounted out of the direct air stream to eliminate adverse effects to system's static pressure or sound performance
- Key sensors provided to manage fan array system by detecting fan failures and power surges, and compensates for any reverse air flow condition
- Fan surge detection/reporting to protect the equipment from operating in the surge region extending the motor life

Improved Serviceability

- Fan vibration monitoring, (with operator determined vibration limits) can help predict or prevent untimely motor failures
- Fan bearing lubrication notification based on speed and operating hours
- BMS Connectivity with ability to function as a stand-alone monitoring system or integrated with a remote system, allow for displays of airflow and fan array performance parameters

ClimateCraft's fan array products allow for fans to be turned off for safety, repair, and maintenance purposes. ClimateCraft's fan array products are not designed to turn individual fans on and off for the purpose of improving fan array efficiency, and ClimateCraft does not endorse turning individual fans on and off for the purpose of improving fan array efficiency. Any statement to the contrary is not supported by ClimateCraft.

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 BR-SL-C-111313-MATRIXMONITORFLYER

ClimateCraft

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Specifications

Environmental
- Temperature: -20° F to 145°F non condensing
- Barometric Pressure: 300 to 1100 mBar
- NEMA 4/4X High Impact Polycarbonate Enclosure with Hinged Clear Cover and SS Latch

Electrical
- 100 watt power supply
- Input Voltage: 88VAC to 264VAC
- Input Frequency: 47 Hz to 63 Hz

Accuracy
- Airflow: +/- 5% of reading from design flow to 15% design air flow, 0°F to 100°F
- Array Pressure Rise: +/- 1% Reading from 1" WC to 14" WC
- Array Temperature: +/- 3°F
- Barometric Pressure: +/- 4 mBar
- Fan RPM: +/- 50 RPM

Capacity
- Number of Arrays: 2
- Maximum Fans per Array: 49
- Maximum Airflow per Array; 300,000 cfm
- Maximum Array Pressure Rise: 14" WC

Analog Outputs
- Quantity: 4 (Array 1 Flow, Array 1 Pressure, Array 2 Flow, Array 2 Pressure)
- Type: 0 to 10VDC proportional scaled outputs
- Max Load: 20mA

Relay Outputs
- Quantity: 3 (Monitor On, Fan Failure, Warning Alarm)
- Contact Ratings: 2A @ 30V

BMS Communication Port
- Protocol: Modbus RTU – Slave
- Type: EIA/TIA 485 (RS485), 2 wire, multi-point communication line
- Baud Rate: 9,600, 19,200, 38,400, 57,600 user selectable – 19,200 default setting
- Data Bits: 8
- Parity: Even, Odd, None user selectable – Even is the default setting
- Stop Bits: 1 (2 when no parity is selected)
- Modbus Address: 1 to 247 – 75 is the default setting

Control Console
- 4 line x 20 character back lift LCD display
- 7 position key pad
- 7 LED's mounted in a NEMA 4 enclosure