

## IAQ020X AIR MEASURING STATION CONTROLLER

### APPLICATION

The IAQ020X Control Package comes standard with the IAQ50X Air Measuring Station. Combined, the IAQ020X and IAQ50X offer a complete turnkey solution for measuring and controlling the minimum outside air to ASHRAE Standard 62. The complete assembly (including IAQ50X air measurement damper, 24 VAC MS75XXIAQ actuator and IAQ020X control panel) is factory commissioned and calibrated to insure overall compatibility. The actuator is calibrated at multiple points along the 90° cycle. The control module utilizes the actuator feedback to confirm damper position and calculate the CFM (l/s) output based on both pressure and damper blade position. CFM (l/s) setpoint control with a 0-10 VDC input from the BAS. Provides a 0-0 VDC output that is proportional to the CFM (l/s) and modulates the damper position to maintain setpoint CFM (l/s) value.

### CONTROLLER SPECIFICATIONS

#### CONTROLLER ENCLOSURE

Plenum-rated enclosure meets UL94-5V

#### ELECTRICAL ENCLOSURE

18" x 18" x 6" (457 x 457 x 152) NEMA 1 (painted finish)

#### SUPPLY VOLTAGE

120 Vac, 50/60 Hz, 85VA Max

Controller: 18VA

Transducer: 10VA

(1) Actuator: 16VA driving, 5VA Holding

#### INPUT SIGNAL

0-10 VDC from BAS or other source

#### OUTPUT SIGNAL

0-10 VDC proportional to CFM (l/s)

#### PRESSURE TRANSDUCER

AMS800.

#### AGENCY LISTINGS

Controller: - UL916 & cUL916 (E14480)

Class 2 device; FCC Part 15 Subpart J, Class A

Transducer: CE, Conforms to EMC standards

EN50082-1/EN55014/EN60730-1

Transformer: None

#### OPERATING RANGE

Operating Temperature: 0° F to +150° F (-17.8° C to +65.6° C)

Relative Humidity: 10% to 90% non-condensing

#### PROGRAM MEMORY

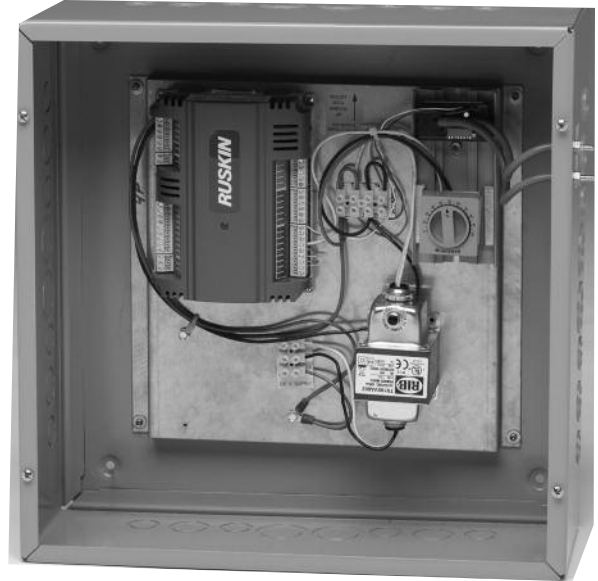
Program logic & calibration in nonvolatile EPROM

#### VELOCITY PRESSURE INPUT

0.0 to 1.0 inches water column (0.0 to 249 Pa) (operating)

0.01 to 1.0 inches water column (2.49 to 249 Pa) (control)

±5% accuracy @ 1 inch water column (249 Pa) and 77°F (25°C).



#### FACTORY CONNECTIONS (see wiring diagram)

24 VAC leads to control panel

Line voltage leads to terminal strip

High and Low taps to pressure transducer

#### FIELD CONNECTIONS (see wiring diagram)

120VAC Supply to terminal strip

Low voltage actuator wires (power, input and output)

High and Low pressure tubing to damper sensing blades

#### COMPATIBLE ELECTRIC ACTUATOR(S)

MS7510IAQ or MS7520IAQ (reference MS75IAQ-906 Spec)

24 Vac, 50/60 Hz, controlled through panel

Maximum 3 actuators per control Panel (75 SF (7 m<sup>2</sup>) face area)

#### CONTROL PANEL

Model IAQ020X Digital Controller

Application specific set points factory calibrated

Program logic & calibration in nonvolatile EPROM

#### POWER TRANSFORMER

Model IAQ080 120 VAC / 24 VAC power transformer (100VA)

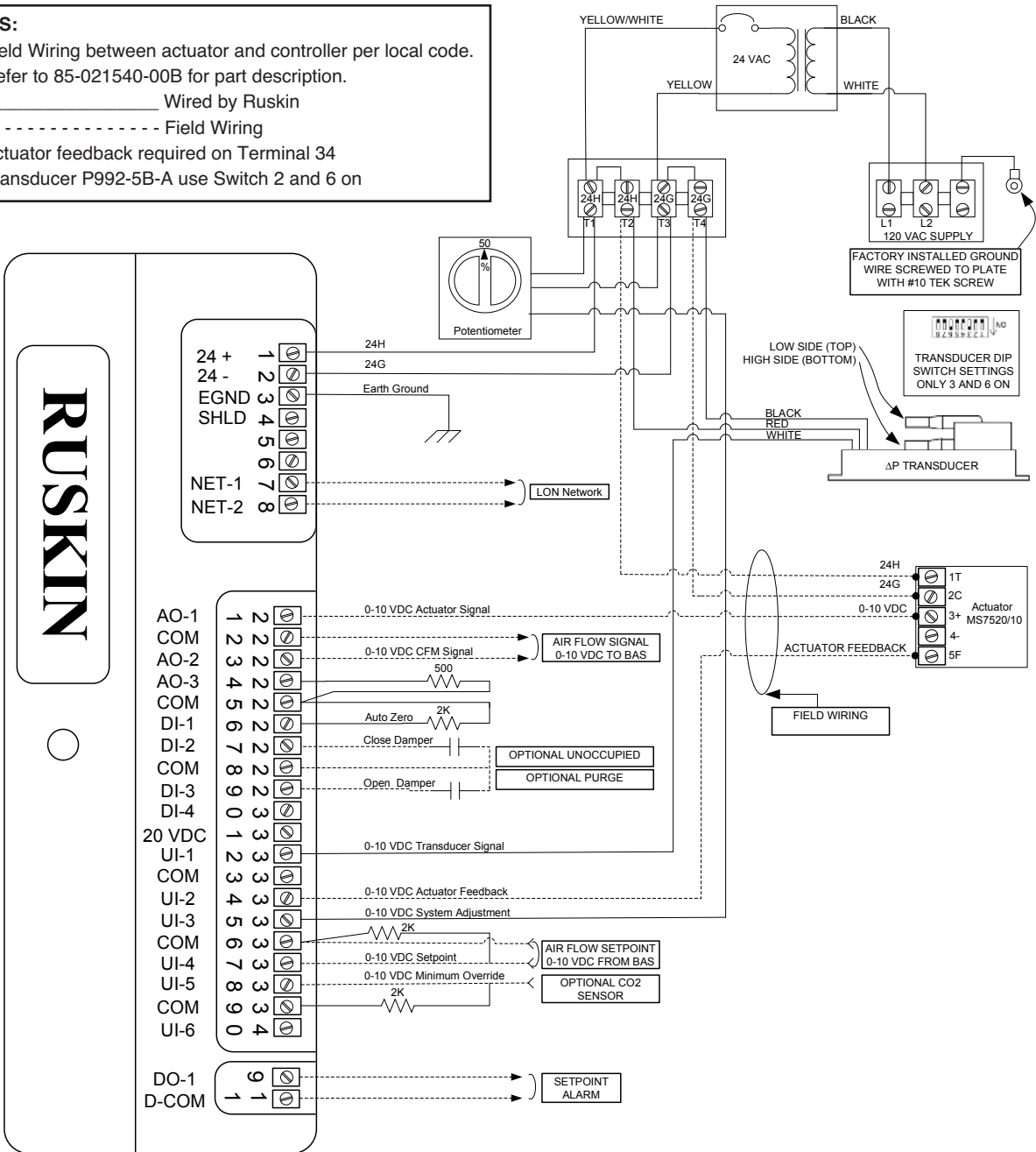
#### SENSOR PORT FITTINGS

Barbed Brass

# WIRING DIAGRAM (ELECTRICAL SCHEMATIC)

## NOTES:

1. Field Wiring between actuator and controller per local code.
2. Refer to 85-021540-00B for part description.
3. \_\_\_\_\_ Wired by Ruskin
4. - - - - - Field Wiring
5. Actuator feedback required on Terminal 34
6. Transducer P992-5B-A use Switch 2 and 6 on



## SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or as in accordance with schedules, an air measuring station control panel that is factory programmed and specifically calibrated for use with the specified airflow measuring station. All panel and measuring station components, including actuator, shall be furnished and commissioned by the same manufacturer to ensure compatibility. Complete assembly shall be constructed, wired, programmed, piped and calibrated in an ISO9001 certified facility. Control panel shall include a 100% solid state micro-machined glass-on silicon (GI-Si) capacitance sensor that is capable of measuring pressure directly from the airflow measuring station and collaborating with the controller. Controller, blade position, actuator feedback and pressure

sensor output shall all be a part of the air flow equation to ensure the most accurate results at low flow. Sensor shall conform to EMC standards EN 50082-1/EN55014/ EN60730-1 and be fully temperature compensating. All sensor tubing shall terminate in solid brass barbed fittings. The controller assembly, in conjunction with the airflow measuring station, shall be capable of measuring a range between 150 to 2000 FPM (0.76 to 10.2 m/s) to within  $\pm 5\%$ . Actuator and airflow measuring station shall work together to measure and control to the desired CFM (l/s). The controller shall receive a 0-10 VDC input from the BAS and report a 0-20 mA output that is proportional to the CFM (l/s). Air Measuring Station Controller shall be, in all respects, equivalent to Ruskin Model IAQ20X.

# RUSKIN®

3900 Dr. Greaves Rd.  
 Kansas City, MO 64030  
 (816) 761-7476  
 FAX (816) 765-8955  
 www.ruskin.com