SECTION 15980 - "FLOW MEASURING DEVICES"

1.0 *Airflow Measuring Stations*:

A. Design airflow measuring stations in all VAV systems to control fan speed via DDC system and variable frequency drives.

B. Each air handling/return air fan shall be designed with three (3) measuring stations; one (1) each in the supply, return and outdoor air ductwork.

C. Stations shall measure supply duct pressure and volume of supply, return and outdoor air.

D. The stations shall interface with the DDC system, which will index the supply and return air fans as required.

E. The metering devices shall be located to read flows from a minimum of 15% to 110% of design airflow with an accuracy of +/-5% or better. The manufacturer shall be consulted regarding device locations and anticipated air velocity profiles at the inlets to the stations. The measuring devices should use hermetically sealed “bead-in glass” thermistors technology as manufactured by EBTRON Model GTA116-P.

2.0 Metering Devices, Fluids and Steam:

A. Metering devices shall be vortex flow meters type as manufactured by YOKOGAWA Model DYN Remote Type Detector or Veris, Accelabar 316SS. Flows should be compensated for temperature and pressure and computed by a microprocessor in engineering units, it should indicated at a least a total flow, instantaneous and peak demand. The microprocessor should be a SUPERtrol II multifunction flow computer as manufactured by Kessler-Ellis Products.

B. The metering device shall meet the following specifications:

1. Process - Liquid, gas, steam
2. Accuracy - +/- 1% of Reading
3. Repeatability - +/- .25% of Reading
4. Max Operating Pressure - 3,000 PSIG
5. Power Supply - 12-36 VDC, 110 VAC, 220 VAC
6. Output Signal - 5 Volt Pulse Per Unit Volume Analog 4/20 Ma Two Wire
7. Operating Temperature - -400 to +650 Deg. F.
8. Local Display - Eight Digit LCD Totalization Six Digit LCD Rate Indicator

9. Electronic Housing - FM & CSA Approved for Hazardous Locations Class I, Groups B,C,D Class II, Groups E,F,G Class III, NEMA 4 3/4 NPT Conduit Connection.
10. Electronics and Housing can be remote from Meter - 1000 Feet
11. Same Unit can measure Gas, Steam, and Liquid.
12. Flow and Temperature can be measured in two separate 4/20 Ma Loops.
13. Flow Meter shall be equipped with Local Rate and Totalization Simultaneously.

END OF SECTION