

## Thermal Flow Meter Optimizes Control of Large Onion Dryers for Food Processing Plants

*Ideal for the Measurement of Air and Natural Gas for Industrial Blowers and Dryers In Food/Beverage, Pharmaceutical, Powder/Bulk Solids, Tobacco and More*

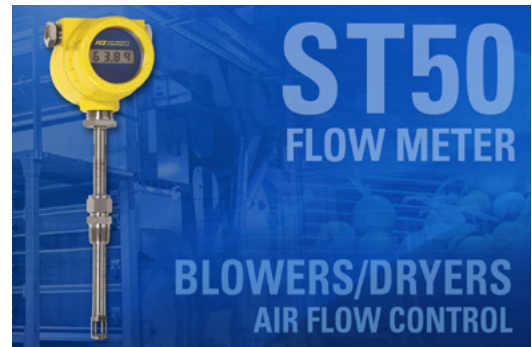
**San Marcos, CA** — Process and plant engineers frustrated over the high electrical and natural gas costs of operating large industrial air blowers and heated dryers will find that the [ST50 Series air/gas flow meter](#) from [Fluid Components International \(FCI\)](#) provides them precise, highly reliable measurement of both air flow and natural gas to operate batch systems more efficiently while improving end-product quality and reducing energy costs.

The engineers at a large food industry vegetable drying plant processing onions recently needed better humidity control to avoid batch recycling due to the variable moisture content of the onions and other vegetables. FCI's ST50 Series thermal air/gas flow meters were placed in multiple locations (inlet pre-heated air, re-circulation air, outlet), allowing the plant team to adjust air flow rates throughout the process depending on onion humidity levels, which ensured drying of the onions by the end of the process — with minimal batch recycling.

Industrial air blowers and dryers are necessary in a wide range of materials process control applications. They are used extensively in the production of foods, flavors, fillers, granules, powders, particles, bulk catalysts, polymers — generally anytime that raw materials must be dried to remove excess moisture content that would interfere with production or quality.

The installation of ST50 Series flow meters in the process control loop for air blower and dryer systems provides highly accurate hot air flow rate monitoring. The use of mass flow meters ensures precise rate of flow measurement and totalized flow measurement for zone control and overall system operational efficiency. In addition, they can accurately measure and control and/or sub-meter natural gas flow to heaters and burners, which cuts plant energy operating costs while reducing a plant's carbon energy footprint and increasing competitiveness.

Relying on FCI's highly accurate thermal dispersion mass flow sensing technology, the ST50 flow meters provide accurate and repeatable direct mass flow measurement at a lower cost. With the ST50 meter, there is no need for the temperature sensors, flow computers or the other devices required with



orifice plates, Venturis, Vortex shedding and other flow meters. The ST50's unique design also provides built-in temperature compensation for reliable measurement over a wide temperature range with almost no pressure-drop.

Offering a wide flow range, the ST50 flow meter measures air, compressed air, natural gas or nitrogen from 0.75 SFPS to 400 SFPS [0.23 MPS to 122 MPS] in line sizes from 2 inches to 24 inches [51 mm to 610 mm]. Flow meter accuracy is up to +1% of reading, +0.5% of full scale, with repeatability of +0.5% of reading. The meter operates at temperatures from up to 0 °F to 250 °F [-18 °C to 121 °C]. Turndown ratio is up to 100: 1

The flow range of the ST50 Series can be field-configured in either standard mass flow or volumetric engineering units. It features dual analog outputs: two 4-20 mA outputs, which are field assignable to flow rate or temperature and an RS232C I/O port. A 0-500 Hz pulse output for totalized flow is also available as an option. All configurations are easily user set in the field with any standard laptop to the RS232C port and/or via the wireless IR link/PDA.

The ST50 meter's rugged stainless steel sensing element with Hastelloy-C tips is designed for endurance in heavy duty plant, outdoor and field installation conditions. Its electronics are housed in an all-aluminum, epoxy-coated enclosure that is NEMA 4X (IP66) rated. The entire ST50 instrument features FM/CSA agency approvals for Class 1, Div 2, Groups A, B, C and D; ATEX, GOST-R, CPA, BelGIM (Belrus), CE Marking, CRN and PED.

There are two process connections options available for the ST50 meter: 1/2-inch MNPT or 3/4-inch MNPT with a stainless steel or Teflon ferrule. It is available in three field adjustable U-length probes: 1 inch to 6 inches [25 mm to 152 mm], 1 inch to 12 inches [25 mm to 305 mm] and 1 inch to 18 inches [25 mm to 457 mm] for pipe sizes 2 inches to 24 inches [51 mm to 610 mm]. Instrument powering options include both DC (18-36 Vdc) and AC (85-265 Vac). The ST50 comes with a 1-year standard warranty.

FCI solves flow and level measurement applications with advanced thermal dispersion technologies. With 50+ years' experience and the largest installed base of thermal flow meters, flow switches and level switches, count on FCI to know your application and have the solutions.