



## Combustion Air and K-BAR 24, a Good Fit

For over 22 years, Kurz Thermal Mass Flow sensors have been used for all types of dirty, tough air flow applications with great success. One of the most important mass flow applications is the measurement of combustion air flow in large ducts in the coal-fired power utility industry. Coal-fired power plant applications challenge flow measurement with large ducts, limited metering runs having poor velocity and temperature profiles, air temperatures up to 700° F, and “Fly Ash” laden air. The keys to handling these applications is our Metal Clad™ sensor having demonstrated high repeatability, great system reliability and excellent availability. The Kurz thermal



mass flow sensors use reference grade platinum RTD's that have 0.25% repeatability. This coupled with the extremely high signal-to-flow ratio of the constant temperature anemometer electronic circuitry produces the most repeatable flow signal available in the industry. Multi-point K-BAR sensors are placed at equal area locations to average the flow readings over the duct flow area, thereby correcting for the flow and temperature profiles. Our rugged and reliable FD “Dual Sting” flow sensor has repeatedly proven to work with little maintenance even in very dirty flow applications.

AmerenUE (Formerly known as Union Electric), at the Rush Island Power Plant in Missouri recently completed the installation of Kurz K-BAR 24 Multi-Point Insertion Mass Flow Elements on all of the primary air ducts on Units 1 & 2. Each Unit uses a CE boiler with six CE coal mills to make 621 MW. Measuring the primary air flow into the mills is important for controlling the amount and size of coal that is transported into the boiler during operation and extremely important during start-up and shut-down. Unit 2 was instrumented with 12 point (3 x 4) sensor arrays on each of the primary air ducts and was put into service in March of 1998. Unit 1 was put into service in March of 1999. Previously, the plant had used Pitot tubes for the combustion air measurement, which experienced fly ash plugging and pressure transmitter drift affecting the reliability of the signal. The “Jam Tubes” required unusually high maintenance efforts to manually clean the Pitot tube ports during plant shutdowns. AmerenUE first installed Kurz the Series 450 Single-Point Insertion Mass Flow Elements in the primary air ducts in 1992



and decided to upgrade to the K-BAR multipoint systems in 1997, based upon their long-term success.

Other important gas flow measurements required in a coal-fired power boiler include secondary and tertiary air flow, flue gas recirculation, and tempering air flow. The Kurz technical support team is ready to discuss these and other flow applications such as stack gas flow measurement for environmental monitoring, and process gas flow applications such as plant air, ammonia and hydrogen gas flow to the generator. Please contact your local Factory trained representative or call Kurz direct for more information. For fast technical data, visit our Web Site!