Piezo Ceramic Fluid Management Sensors for Medical Ultrasound Devices

Morgan Technical Ceramics (MTC) announced that it produces sensors for medical ultrasound devices using its advanced piezo ceramic materials. Medical sensors for infusion pumps, enteral feeding pumps and dialysis equipment are manufactured to ISO 13485 standards at MTC's new medical sensor manufacturing facility, located in Southampton, UK. "Our application engineers have been extremely successful in designing a standard range of sensors using our PZT (lead zirconate titanate) and composite piezo materials," said Tony Beswick, general manager at the Southampton facility. "We can also tailor our designs to meet customer-specific performance specifications, housing geometry, material or tubing configuration."

Among the sensors manufactured are air-in-line, occlusion and Doppler flow sensors, as well as clamp-on flow and ultrasonic sensors.

MTC's piezo ceramic air-in-line sensors include a standard bubble detector for a 4-5 millimeter (mm) tube, whose housing geometry has been designed to minimize the foot print with a short flexi circuit for easy connection via a standard ZIF (zero insertion force) connector. Air-in-line sensors can also be customized to meet specific housing geometry, color, adaptation to specific tubing and inclusion of any special functional features. They are available in a variety of forms, from bare-tuned piezo ceramic discs or plates, to a fully functional packaged sensor.

Custom and standard pressure sensors based on piezo resistivity are also available in both standard and customized versions. MTC's standard tube contact pressure sensor is designed to detect blockages in infusion lines, detecting both negative and positive pressure changes. MTC's new standard tube contact sensors offer non-

invasive detection of pressure changes in a flexible tube without the requirement for a disposable cassette. They are quick to clip on and easy to remove. Suitable for use with soft thin walled tubing, the tube contact sensors are ideal where blocked tube detection is required.

MTC can adapt its designs to suit tube diameter, tube holding and clamping method, additional sensing features, mounting arrangement or interface with a disposable cassette.

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