New sensor range for the medical sector

A new range of high-performance air in-line and occlusion sensors have been introduced by Morgan Advanced Materials for the medical industry. The in-line sensor technology was developed in response to the variation in tube sizes and materials used for drug delivery and fluid management.

The sensors can deliver non-invasive air bubble detection and accurately measure pressure changes in tubes leading into the body. They provide a highly precise means of monitoring safety-critical events in medical products such as infusion pumps, enteral feeding pumps, dialysis equipment and other fluid-handling applications.

There are three standard designs available, accommodating a large range of tube sizes. These feature optional digital electronics, which can be programmed to detect air bubbles of different sizes depending on requirement and provide an output reading of air bubbles detected.

Morgan Advanced Materials
Enter 235
www.morganadvancedmaterials.com

Enhanced solution for monitoring helicopter loads

Sensor Technology has added a number of new capabilities to its HeliNav LoadMaster intelligent wireless helicopter load sensor, including inclinometers, a receiver and a new display.

Heavy lift helicopters have a number of load points on their underside and larger loads can be carried by using three of them to spread the weight across the aircraft. With the new sensor, pilots can monitor the strain in each individual cable in case the load is not distributed evenly, or if flight movements create asymmetric stresses.

The LoadMaster sensor is autonomous, using a wireless communications link to its own display and computer in the cockpit, and it can be used in conjunction with other electronic systems, such as navigation and tracking, to produce operational performance reports.

Compact and rugged, the new receiver requires only a DC power connection, while an SMA connector allows the fitment of an external antenna. It works on the licence-free 2.4GHz band and outputs a stream of data from the load sensor including serial number, full scale, load, temperature, RSSI (received signal strength indicator) and battery voltage. This data is updated ten times every second. Advanced features within the receiver include data whitening and forward error correction, with the output provided as RS232, RS422 or USB, and can be displayed on-screen or fed to a datalogger.

The display screen – HeliNav TrackMaster – is said to be useful in operations such as crop spraying, spreading and multi-lift materials transfer, and provides pilots with easy-to-follow and accurate line guidance, so that the whole field of operation is covered in an optimised flightpath. It also automatically records all data for post-flight performance analysis to ensure accurate billing, maintenance scheduling, etc. The software comes pre-installed on a 7" sunlight rugged tablet computer which conforms to MIL-STD-810F and IP67 standards.

According to the company, the system is highly intelligent and so can automatically manage details of the operation. HeliNav TrackMaster will also turn the spray on and off to avoid the non-spray areas and also to avoid spraying beyond the field boundaries. Alternatively, if the task involves travelling between a number of set points, say for collecting/depositing loads, these can be identified on-screen and flight-paths optimised for efficiency.

Sensor Technology **T: 01869 238400** **www.sensors.co.uk** **Enter 236**

Position sensors for drilling equipment

A company which provides products and services to the energy industry (oil and gas) is replacing potentiometers with Macro Sensors' LVDT Linear Position Sensors as a critical position feedback component on its down hole drilling equipment. High vibrations caused by the drill's impact with medium to hard surfaces caused the potentiometers, used to provide position feedback, to fail prematurely.

The sensors are being installed on a rotary steerable drilling system as part of the steering mechanism, and provide feedback on radial positions of the drill bit for proper geosteering and optimum wellbore placement for faster, more accurate and safer drilling operations.
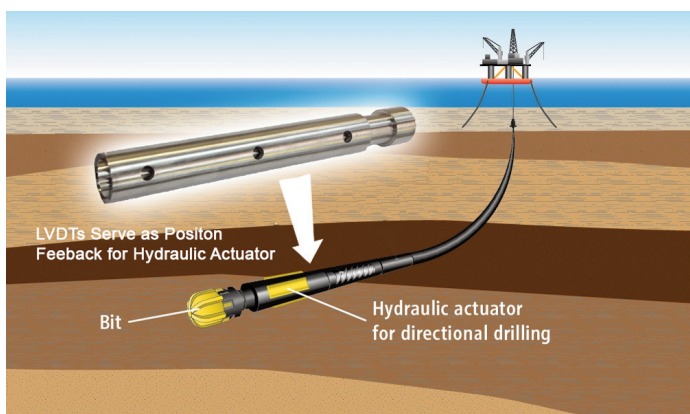
Capable of withstanding vibrations up to 20G, high temperatures and pressures up to 35,000 psi, the new sensors provide reliable position feedback under the hostile conditions and high vibrations inherent in this application.

Interfacing with a conventional differential input LVDT signal conditioner, the LVDT Position Sensors provide position feedback to operators at the surface, where drilling performance data can be continuously monitored at both the rig site and remote locations.

Macro Sensors
www.macrosensors.com Enter 237

LVDTs Serve as Positon Feeback for Hydraulic Actuator
Bit
Hydraulic actuator for directional drilling

High speed true analogue laser displacement sensor introduced

A new high speed true analogue laser sensor has been introduced by Micro-Epsilon for applications such as impact/drop/crash tests; position control of engine pistons and valves; length, angle and thickness measurements; flatness control; checking dimensional accuracy of components; and vibration measurements.

The optoNCDT 1610/1630 measurement system comprises of a sensor and separate controller and a 2m connecting cable as standard. The controller is equipped with both analogue (current and voltage) and Ethernet interfaces.

There are 14 versions available, with measuring ranges from 0.5mm up to 200mm and maximum measuring speeds due to an extremely fast, analogue PSD (position sensing detector) in the sensor head.

The optoNCDT 1610 series measures at a frequency response rate of 10kHz and is available in measuring ranges from 0.5mm up to 200mm. Dynamic resolution is 0.06% to 0.1% FSO. Maximum linearity is ±0.2%. The optoNCDT 1630 operates at a frequency of up to 100kHz and is available in measuring ranges from 0.5mm up to 50mm. Dynamic resolution is 0.1% to 0.18% FSO. Maximum linearity is ±0.3%.

According to the company, the 1610/1630 series can also be used with Micro-Epsilon's CSP2008 universal controller which can process up to six digital or analogue input signals: two internal (via the front panel), plus four external signals via plug-in Ethercat modules. Ethercat can also be used as an external interface for connecting further sensors and I/O modules.

Three types of protective enclosure are available for the sensor head if it is to be used in harsh environments: the water-resistant SGH housing with integrated window; the SGHF housing which provides optimum protection for the sensor using integrated compressed air cooling, and protection from fluids; and the SGL housing with an open slot for air purging of the measurement gap as well as sensor cooling.

Micro-Epsilon T: 0151 355 6070 www.micro-epsilon.co.uk Enter 238