

HIGH TEMPERATURE ENDOSCOPE

SWIR system for blade inspection in operation



Resolve Optics supplies several high temperature Short Wavelength Infrared (SWIR) endoscopic viewing systems to enable inspection of the blades in a gas turbine while in operation. The SWIR endoscope has to operate up to 950° C at the tip with 150PSI pressure and be able to withstand severe vibration. To overcome the negative effects of high temperature and pressure - Resolve Optics created a novel design which allowed introduction of cool air at high pressure at the mid-section of the endoscope. This innovation enabled the prism at the tip of the endoscope to be cooled to < 200° C and the positive pressure to provide enough airflow to keep the prism clean. In addition, to stop the endoscope transmitting heat from its tip to the connected camera - special heat breaks were designed into the body so that the camera end of the endoscope was kept below 50° C. One of the most challenging aspects of the SWIR endoscope design was to ensure that the glass elements were securely retained. If the elements or clamp rings were to become loose the levels of vibration would quickly generate enough glass and metal powder debris to obscure the image. This problem was overcome by utilising spring retainers made from carefully selected materials with an expansion rate that would cancel out the differences in expansion.

►► 55074 at www.ien.eu

OPTICAL ROTARY TORQUE SENSORS

For low torque and high band width measurements



The new ORT 230/240 devices replace **Sensor Technology's** E200 ORT series, benefiting from all-new electronics that deliver significant gains in resolution, frequency response, reduced sensor current

consumption and faster digital data throughput. The high speed capability comes from an inherently low inertia, since the electronics are not fixed to the shaft, while non-contact operation ensures a long and reliable life with high accuracy. The optical operating principle also ensures excellent noise immunity. TorqSense ORT 230 series sensors provide fixed voltage or current analogue outputs - one for torque and one for either speed or power. The TorqSense ORT 240 provides two user selectable voltage or current analogue outputs - one for torque and the other for either speed, power or peak torque - plus digital outputs including RS232, CANbus and USB for interfacing with modern instrumentation and laptops. The ORT 240 enables users to connect up to 10 transducers via USB, and transducer configuration software for making changes to transducer variables. The absence of brush gear allows high-speed operation with a continuous rating up to 30,000rpm standard. Further increases in rpm are available depending upon shaft size. Any full scale torque can be specified within the range 10mNm to 100Nm.

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SPRING RETRACTABLE REELS

For up to 30m of hose



Reelcraft's new Series HD70000 hose reels are designed to accommodate up to 30 m of 6 mm I.D. hose or 23 m of 13 mm I.D. hose. The heavy duty base design, all steel construction and a baked-on powder coat finish combine to produce a rugged, corrosion-resistant product. A

newly re-designed latching mechanism provides longer service life of the latch components. The containerized drive spring offers safer and easier handling during maintenance. Two sealed ball bearings produce a smoother spool rotation and easier operation. The guide arm adjusts to seven positions for various mounting locations and applications. Additional features of the reels are a compact design, that makes them 25% smaller than the heavy-duty series 80000. Guide rollers in one-piece design and stainless-steel pins offer greater strength and easier serviceability. There are different models from low pressure air/water hose reels with maximum working temperature of 65 °C to high pressure grease hose reels with up to 99 °C. Low pressure reels are furnished standard with PVC hose. Medium pressure reels with S.A.E. 100 R1T one wire braid hose and high pressure reels furnished with S.A.E. 100 R2T two wire braid hose.

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FOOD COMPATIBLE FLOWMETERS

With totally non-metallic wetted components



Titan Enterprises has achieved certification under NSF/ANSI 169 as equipment for food products for their 800 Series turbine flowmeters and Beverage meter. This accreditation is especially important for manufacturers of food production and handling

machinery who can now include an 800 Series or Beverage meter secure in the knowledge that it has met NSF-standards for food production. NSF are an independent, accredited organization, that test, audit and certify products to develop public health standards and certifications that help protect food, water, consumer products and the environment. The competitively priced 800 series turbine flowmeter is designed to give high performance over 6 flow ranges from 0.05 to 15 L/min. The devices totally non-metallic wetted components make the 800-series flowmeter the ideal choice for the metering of food and beverage materials. Titan Enterprises beverage flowmeter is designed specifically as a flow measurement solution for the drink dispensing industries including beer wines and spirits. They give high performance and competitive pricing with a flow range up to 10 litres per minute. They have totally non-metallic wetted components which makes them the ideal choice for the metering of food-based products.

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