TechniTalk

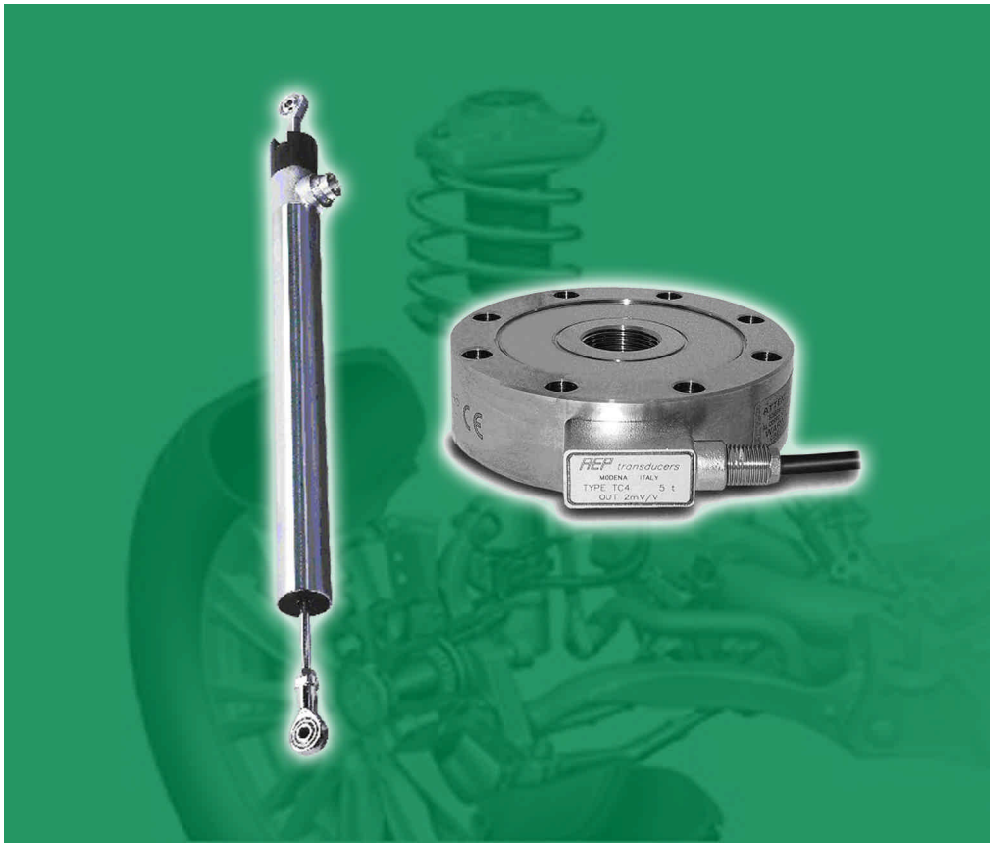
Winter 2011

Welcome to the Techni Measure Newsletter

Whether you are reading this for the first time or have been following our series of publications, we hope that our nineteenth edition of **Techni*Talk***, continues to inform readers of new products, whilst providing technical suggestions on how or where these products might be used. If you are reading this for the first time and want to be added to our contact list for future copies, or you would rather receive this publication electronically in the future, please let us know.

40 Years of Load and Displacement

Techni Measure is proud to announce that we have now been in business for 40 years. In that time we have seen a few changes, and some of these are listed on the back page for those who might like to know a bit of our history. It seems that even though we have had for most of this time, a large range of sensors for many different applications, we are still known in some quarters as a strain gauge company or vibration company.



Apart from other areas of measurement we can supply a very large range of strain gauge based load cells, now from two different suppliers, and we can also supply ranges of displacement sensors from at least five different suppliers, which utilise different measurement techniques. It is not uncommon for these types of sensors to be employed together in some applications, and we would be pleased to discuss any possible requirement for such transducers either in the experimental laboratory or the factory floor.

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Techni Measure on Show...

Exhibitions booked so far for 2012 are listed below. We would be pleased to meet with anyone to discuss possible applications for our wide range of products and if you need tickets or further information, please let us know.

15-16 February MANUFACTURING SOUTH at Farnborough

6 March EIS INSTRUMENTATION at Silverstone

17-19 April PLANT & ASSET MANAGEMENT at Birmingham

5-6 September INSTRUMENTATION at Aberdeen

25-26 September SENSING TECHNOLOGY at Birmingham

Please remember that if it is not possible to attend any of these shows and you need a demonstration or explanation of any of our products, we will always be pleased to visit you instead.

Techni Measure
Alexandra Buildings, 59 Alcester Road,
Studley, Warks. B80 7NJ

Issue No.19

Product News

Extended Range V-Link

The 8 channel V-Link has now been added to the new mXRS range of wireless nodes from MicroStrain, that offer a much longer transmission range (up to 1km), as well as excellent synchronisation between multiple nodes, with control from just one of the new WSDA base stations.
At the heart of MicroStrain's extended range synchronized (mXRS) system is the WSDA-Base, which uses exclusive beaconing protocols to synch precision timekeepers embedded within each sensor node in the network. The WSDA-Base also coordinates data collection from all sensor nodes, including now the V-LINK-mXRS. On-board sensor excitation, bridge completion, programmable gains & offsets, and differential & single ended inputs provide an extremely versatile sensor interface. Users can easily programme each node on the network for simultaneous, periodic, or burst mode sampling with the Node Commander software, which then automatically configures network radio communications to maximize the aggregate sample rate. Support for hundreds of simultaneous sampling wireless sensor nodes is possible with node to node synchronization of +/- 32 microseconds and an ultra-stable on-board precision timing reference of +/- 3 ppm over a typical industrial temperature range. Extended wireless communication range is possible up to 1 km. Applications include condition-based monitoring of machines, health monitoring of structures and vehicles, and experimental test and measurement.
For additional information on this new multi channel wireless node, or any other wireless systems available from MicroStrain, please let us know details of any possible application.

DC Triaxial Vibration

Dytran Instruments has introduced the 7503A series, a family of high precision triaxial MEMS DC accelerometers designed for use in both commercial and military applications. The 7503A series accelerometers combine a micro-machined MEMS capacitive sensing element housed in a hermetically sealed titanium case to deliver reliable performance in harsh conditions.
Tailored for zero-to-medium frequency applications, the Dytran 7503A series combine an integrated variable capacitance accelerometer chip with a high drive, low impedance buffer for low-level acceleration measurements. Offered with a choice of seven different sensitivities and available in measurement ranges between 2g and 200g, these highly accurate accelerometers offer a low-end frequency response down to DC (0 Hz), with an upper frequency range between 400 and 2,500 Hz, with differential output. Units are rugged to 5,000g shock and operate from +9 to +32 VDC power. The module contains three separate variable capacitance accelerometers configured orthogonally for X, Y, Z outputs and low noise electronics, with a 5/16-32 radial connector and easy mounting via two 6-32 or M3 screws.
Recommended accessories for the 7503A series include the model 6956A eight-conductor cable assembly, 9-pin plug to (3) D-SUB connectors and model 4010 signal conditioner. The Dytran model 4010 is a microprocessor controlled, 3-channel DC signal conditioner amplifier designed for use with bridge-type or differential output accelerometers and pressure sensors.
Please ask for further details on this new series of DC accelerometers, or for any advice you may need on any suitable applications.

Conax Brochures

Conax Technologies offer a wide range of pressure sealing glands and temperature sensors, and apart from their two major catalogues that describe their product range, they also publish a range of brochures that show some of their more specialised products in more detail.
Among these brochures are details on the range of miniature bearing temperature sensors designed to provide a warning of rising temperature in bearings, so that early signs of breakdown of the lubricating oil film can be recognised. There are several brochures giving details on special high temperature thermocouple assemblies and exhaust gas sensors. In particular are the sensors designed for highly reliable retrofit for exhaust gas sensors in turbine frames, that have a separate cable and thermocouple so that fitted thermocouple cables do not need replacing. Another brochure describes the sample probe assembly that offers the means to take samples from a pressurised process by hot tapping a probe into the process via a process isolation valve. The basic system comprises a sample probe assembly with a welded stop collar that passes through an existing stop valve assembly, and is then sealed with a Conax packing gland. Another brochure shows a range of high performance electrode glands able to carry 8000VDC to 200 Amps. Conax have many solutions that are not necessarily included in their main catalogues, so if you have a special temperature application, or require a solution to seal wires or tubes inside a pressure or vacuum vessel, at high pressure or temperature, then we may well have a solution.
Please ask for a copy of any of these brochures, and if you have any questions regarding the measurement of temperature or sealing pressure in general, we would be pleased to visit you to discuss any possible application.

Inertial Module for Position

MicroStrain have released the third in their new series of GX3 Inertial Measurement Systems. The 3DM-GX3-45 high-performance, miniature system combines MEMS inertial sensors, a highly-sensitive GPS receiver, and a complex Extended Kalman Filter to generate optimal position, velocity, and attitude (PVA) estimates.
This combination of technologies creates better short-term GPS-out performance, sustained-G attitude performance, and provides higher rate PVA data than typical GPS and AHRS Sensors. Raw GPS data, IMU data, and filtered INS data are time-aligned and available as custom, user-defined packets (either by polling or continuous stream). The 3DM-GX3-45 offers a range of navigation-related output quantities, including: estimated position, velocity, and attitude; position, velocity, and attitude uncertainties; bias- compensated angular rate, linear acceleration, local gravity magnitude and vector, and local magnetic field declination. Fully-calibrated inertial quantities include: total acceleration, angular rate, magnetic field, delta theta and delta velocity. The ease and flexibility of managing these different data quantities at different sampling rates is made possible by the powerful Microstrain Inertial Packet Protocol (MIP). The 3DM-GX3-45 has a dual communication interface, which supports USB and RS-232. Starter kits include choice of USB or RS-232 interface cables. Applications include marine, automotive, communications, camera pointing, platform stabilisation and robotics.
We would be please to discuss any application where this module could be used.

Strain Checker

TML have introduced another new design of holder for their frictional strain gauges. The new FGMH-1B and FGMH-2A are designed for metallic targets, since a magnet holds the Strain Checker to the structure whilst a spring holds down the integral frictional gauge to the surface.
Whilst ordinary strain gauges measure strain generated in a structure through adhesive mounting, the frictional strain gauge measures the strain by the friction produced at the interface. Strain is easily and immediately measured by directly attaching the strain checker to a position of interest, using the arm at the top for aligning the gauge. The FGMH-1B is a standard type strain checker, being small and light, whereas the FGMH-2A, which uses a smaller 3mm gauge, is designed for applications in a narrow space. Whilst not as accurate as bonding a standard strain gauge, these gauges can easily be used several times by simply repositioning. It can therefore be used as a tool for quickly locating the highest strain levels on a beam for instance, and once fitted in place, the user can operate recording instruments with hands free. Strain measurements can also be taken without special surface preparation, and even on a painted surface. In this case however care should be taken that loose layers are removed, and that measurements are repeated with standard bonded strain gauges if accurate results are required. Measurements on large on-site structures such as bridges or cranes are obvious application examples.
Please ask for further details on these new devices or for any advice you may need for any strain gauge measurements.

The first 40 years of Techni Measure

1971 Techni Measure was founded by Frank Ramage. Trading officially started on November 1st with a postal address at 3, The Green, Chalfont St. Giles - thus green became the company colour. The office was actually based at the family home nearby, with Betty Ramage as joint partner and acting as secretary, and Stanley Parsonage as a consultant representative. TML strain gauges and Sakae potentiometers were amongst the first orders.

1972 An agency agreement was signed with PCB Piezotronics in July to market their range of dynamic piezo-electric sensors, and a relationship with Varac Industries, soon to become Micro Engineering II and then Stresscoat, began.

1974 The office was moved to Dell House, Hazlemere, with a separate area for the business adjacent to the family home.

1975 A relationship with Okaya to market their LED's was agreed.

1976 A relationship with CIL (Creative Instrumentation Ltd.) was agreed to market low cost strain gauge instrumentation.

1977 Susan Pratt became the first official long term employee as secretary, working for 8 years until the office was moved again.

1978 A relationship with Megatron began to market their range of motorised potentiometers.

1979 The first formal agreement with Setra Systems was made to market their range of pressure sensors.

1980 Ian Ramage joined the company as a representative in October and later became a partner.

1982 The first Techni Measure short form catalogue was printed.

1984 Betty Ramage passed away in September.

1985 Peter Ramage joined the company in January as a partner to help with sales and administration. Frank Ramage passed away in July. In September the office was officially moved to new separate premises at Alexandra Buildings, Studley. Shelley Collett was appointed principal secretary and stayed for 5 years.

1986 Felicity Ramage started working for the company as a part-time secretarial assistant. Keyence proximity and optical sensors were introduced to the UK in October.

1987 Ron Saunders joined the company as a representative to help cover the eastern side of the country.

1988 Stanley Parsonage passed away in November.

1989 Evelyn Flanagan was appointed as principal secretary and stayed for 5 years.

1990 Patricia Newton (nee Ramage) joined the company in February as a partner and to help cover the London and South East area of the country.

1993 John Darley joined the company in March to help cover the South West of the country and to help in the office. The offices were extended into the adjacent premises to make more room for stock and testing areas in order to achieve BS5750/IS09002 accreditation.

1994 Peter Freeman joined the company in October initially to help with quality accreditation, but joined full time after 3 months to help in the office. A relationship with Huba Control to market their range of pressure transmitters and switches was agreed.

1995 Susan Davis was appointed as principal secretary and stayed for 16 years.

1997 A relationship with JR Dynamics began to promote their miniature amplifiers and telemetry systems.

1999 Steve Whitaker joined the company to cover the North of England and Scotland and Ron Saunders retired after 12 years. A relationship to market their range of load cells and pressure sensors was agreed with AEP.

2001 The first Techni*Talk* biannual Newsletter was published.

2003 A relationship with Schreiber Messtechnik began, to market their range of displacement sensors in the UK.

2005 An agreement with MicroStrain was signed, to market their range of displacement, orientation and wireless systems.

2007 An agreement with Dytran was signed to market their range of piezoelectric sensors, and a relationship with Hansford Sensors began, to help with sales of their industrial vibration sensors. Also an agreement with Capacitec was signed in order to represent their Capacitance sensors in the UK.

2009 John Darley retired after 16 years and an agreement with Conax was signed to market their range of pressure seals and temperature sensors.

2010 Sue Davis retired after 16 years and Sam Brown was appointed as principal secretary.