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Laboratory, and field process monitoring

Instrument service team expands

Hach Lange, the market leading manufacturer of laboratory, field and process monitoring instruments has gradually invested in a local service capability so that the company is now able to provide on-site maintenance and calibration across Ireland.

Éamonn Rellis Sales Manager Hach Lange

The Dublin based service team is comprised of three engineers, all of whom have been trained at the company's European headquarters in Germany. Emphasising the importance of a local service and calibration facility, Sales Manager **Éamonn Rellis** says, *"Customers in the Local Authority, power, food and beverage, environmental contracting, pharmaceutical and manufacturing sectors rightly expect fast efficient calibration services that do not interrupt the ongoing operation of their Hach Lange instruments, so it was a logical step for us to create this resource."*

To page 4

Another win for Munster

The recent meeting of the DeltaV user group held at Emerson's Ireland HQ in Cork was addressed by guest speaker, former Ireland and Munster captain and Lions player **Mick Galwey**. During the course of the event it emerged that **Emmet Martin** of GSK had become a grandfather for the first time. Mick was delighted to be able to present him with the Munster Kit in the confident expectation that many caps will be added to it in about twenty years as Munster continue their triumphant onslaught on Europe!

More people news on page 14

Inside Front

Trainers Please Note!

Top Ten Tips for the Industrial Trainer from John Saysell , Senior Trainer, MCP

Whether you are a team leader, a manager or a trainer, you have an interest in ensuring that training delivered to employees is effective. So often, employees return from the latest training course and it's back to "business as usual". In many cases, the training is either irrelevant to the organisation's real needs or there is too little connection made between the training and the workplace or even workstation!

In these instances, it does not matter whether the training is superbly and professionally presented. The disparity between the training and the workplace just wastes resources (certainly not Lean!), resulting in mounting frustration and a growing cynicism about the benefits of training. You can turn around the wastage and worsening morale by following these Top Ten Tips on getting maximum impact from your training.

1. Make sure that the initial training needs analysis focuses first on what the learners will be required to do differently back in the workplace, and base the training content and exercises on this end objective. Many training programs concentrate solely on telling learners what they need to know, trying vainly to fill their heads with unimportant and irrelevant theory.

2. Integrate the training with workplace practice by getting managers and supervisors to brief learners before the program starts and to debrief each learner at the conclusion of the program. The debriefing session should include a discussion about how the learner plans to use the learning in their day-to-day work and what resources the learner requires to be able to do this.

MCP's technical training specialises in practical learning programmes for upskilling technicians and operators. British businesses now require a more flexible, multi-skilled workforce. In the past a mechanical fitter would need an electrician to disconnect a motor from a pump. Now with basic electrical skills, the fitter can recommission the motor and get the plant up and running quicker. MCP focuses on high frequency low risk tasks to make the most impact on the bottom line.

www.mcpeurope.com/

3. Ensure that the start of each training session lets learners know the behavioural objectives of the programme. i.e. what the learners are expected to be able to do at the end of the training. Many session objectives that trainers write simply state what the session will cover or what the learner is expected to know. Knowing or being able to describe how someone should safely isolate an electrical supply is not the same as being able to safely isolate an electrical supply.

4. Make the training very practical. Remember, the objective is for learners to behave differently in the workplace. With possibly years spent working the old way, the new way will not come easily. Learners will need generous amounts of time to discuss and practice the new skills and will need lots of encouragement. Many actual training programs concentrate solely on cramming the maximum amount of information into the shortest possible class time, creating programs that are "nine miles long and one inch deep". The training environment is also a great place to embed the attitudes needed in the workplace. However, this requires time for the learners to raise and thrash out their concerns before the new skills are required. Give your learners the time to make the journey from the old way of thinking to the new.

5. With the pressure to have employees spend less time away from their workplace in training, it is just not possible to turn out fully equipped learners at the end of one hour or one day or one week, except for the most basic of skills. In some cases, work quality and efficiency will drop following training as learners stumble in their first applications of the newly learned skills. Ensure that you build back-in-the-workplace coaching into the training program and give employees the workplace support they need to practice the new skills. A cost-effective means of doing this is to resource and train internal employees as trainers/coaches/assessors. You can also encourage peer networking through, for example, setting up user groups and organising "tool box" talks.

6. Bring the training room into the workplace through developing and installing on-the-job aids. These include checklists, reminder cards, process and diagnostic flow charts, training rigs and software templates.

7. If you are serious about imparting new skills and not just planning a "talking shop", assess your participants during or at the end of the program. Make sure your assessments are realistic and genuinely test for the skills being taught. Nothing concentrates participant's minds more than them knowing that there are definite expectations around their level of performance following the training.

8. To avoid the back to "business as usual" syndrome, align the organisation's reward systems with the expected behaviours. Planning to give positive encouragement is much more effective than planning sanctions if they don't use the new skills back in the work place.

9. Conduct a post-course evaluation some time after the training to determine the extent to which participants are using the skills. This is typically done three to six months after the training has finished. You can have a vocationally qualified assessor observe the participants or survey participants' managers on the application of each new skill. Let everyone know that you will be performing this evaluation from the start. This helps to engage team leaders and managers and avoids surprises later on.

10. Lastly, celebrate the success of the programme by getting senior managers to present certificates and awards for the initial training and later on for demonstration of skills back in the workplace. For people who actually use the new skills back on the job, give them a gift voucher, crate of beer, bonus or an employee of the month award. Or you could reward them with interesting and challenging projects or make sure they are next in line for a promotion.

Organisations waste a lot of scarce resources in conducting ineffective training programs. Employee morale also suffers when employees see managers not really serious about instilling the new behaviours. By following the ten pointers above, you will have actively engaged managers in the training process and provided those all-important links between the training and the participant's workplace. You can then sit back and enjoy the results; happy and effective employees.

160 Megawatts of Green Engineering

MEASURE IT – FIX IT

Since 2001, engineers at Siliken Renewable Energy have used the National Instruments graphical system design platform to produce solar panels generating 160 MW of renewable solar energy.

MEASURE IT

Acquire
Acquire and measure data from any industrial sensor

Analyse
Analyse and extract information with signal processing

Present
Present data with HMIs, Web interfaces and reports

FIX IT

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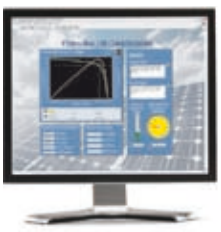
Design optimised monitoring and control systems

Prototype
Prototype designs on ready-to-run hardware

Deploy
Deploy to the hardware platform you choose



Siliken Renewable Energy, one of the world's fastest-growing manufacturers of solar panels, trusts NI LabVIEW software for applications ranging from research and development to automated test. Like Siliken, companies around the world implement the NI graphical system design platform to create environmentally friendly products, technologies and processes. Using modular hardware and flexible software, they're not only testing and measuring existing systems but also creating innovative ways to fix the problems they find.

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February | 5 locations | ni.com/uk/techsym

NATIONAL INSTRUMENTS

Company News from page 1

The engineers are trained to provide maintenance and calibration services for a broad spectrum of Hach Lange instruments covering: process monitoring for parameters such as dissolved oxygen, chlorine, turbidity, fluoride, ammonia, pH and conductivity; laboratory analysis with photometers, spectrophotometers and heating blocks; and portable instruments such as the highly popular Pocket II Chlorine colorimeter.

The three engineers provide services for the full spectrum of Hach Lange brands, including *Dr Lange, Hach, Bühler, GLI, Lachat, Polymetron, Radiometer Analytical, Evita, Orbisphere, Anatel, HYT, HIAC, MET ONE and SIGMA*. These services are often ordered for short periods by individual sites, but Éamonn Rellis is keen to promote service contracts with his key customers. He says, *"In many other countries, service contracts are proving very popular because they provide customers, particularly those with multiple sites, with a number of significant advantages, not least of which is lower costs."*

He believes that Hach Lange engineers are able to provide faster, more efficient calibration services for a number of reasons:

1. Training and on-the-job experience means that they have a deep understanding of every Hach Lange instrument.
2. Hach Lange engineers have access to flight cases containing circuit boards and commonly required tools and parts for every specific instrument.
3. Engineers have access to technical support from the people that designed the instruments.
4. Training and experience enables Hach Lange engineers to identify many problems before they occur so that prompt remedial action can be taken before failure.
5. Each engineer is equipped with a laptop and software that is able to quickly investigate service status for most instruments.
6. A service agreement ensures that calibration work takes place at the correct intervals, so that monitors are maintained in optimum working condition.

From Éamonn's perspective, service contracts are also advantageous because they enable his team to plan their visits more efficiently and to ensure that their stock of spares matches the customers' likely requirements. In many cases it is also possible for the engineers to carry complete spare instruments so that monitoring can continue in the event of an instrument needing to be removed for repair.

Instruments have developed considerably in recent years to improve accuracy, reliability and ease of use. These improvements have often resulted in longer service and calibration intervals which, in turn, have helped to reduce operational costs. However, the benefits of modern instrumentation can only be realised fully when instruments are properly maintained and calibrated.

The tools of a service engineer have also changed significantly; electronic circuit boards are no longer populated with potentiometers that require regular adjustment. Software now adjusts the circuits digitally and also informs users when there has been a failure so that the offending circuit can be quickly and easily replaced.

Laptops with internet communications have displaced screwdrivers as the most essential piece of equipment for service and calibration. Menu driven software ensures that identical procedures are undertaken every time, no matter which engineer is following them, and remote communications mean that engineers can order spares from anywhere at any time.

Looking forward, he believes that the role of the manufacturer's calibration and service engineer will become even more important as instruments become more intelligent and better connected. He says, *"We are already seeing instruments that report their 'health status' in addition to measured readings. Couple this with remote communications and it becomes possible for a manufacturer to take a much greater role in protecting the accuracy, reliability and service status of customers' instruments, only visiting sites when necessary and thereby helping to reduce costs."*

www.hach-lange.ie

Precision Digital

P.J. Boner & Co have announced they have formed a partnership with *Precision Digital* to market and supply their products in Ireland.

They are a quality manufacturer based in the US who have a wide variety of Digital Pressure gauges, Temperature and Process Controllers, Process Meters, Large Display Process Meters, Loop powered meters and alarm annunciators. Their recognisable lines include the ProVu, Trident, Fluidwell, Sabre & Nova Series.

www.pjboner.com

ISA Membership

To support loyal ISA Members during these difficult economic times, ISA is once again granting an extension of membership benefits to unemployed Members. This extension was created in 2009 and has been renewed for 2010. It will last for a period of up to 12 months from membership renewal date.

During the extension, all Member benefits will continue, including Division memberships, except that delivery of InTech and any Division newsletters will be in digital form.

www.isa.ie

EXd pilot valve

ASCO Numatics has a new (WS)LPKF low power pilot with Ex d certification for the compact 551, 552 and 553 series pilot valves. The valve is available with either an aluminium or stainless steel enclosure, and with a power consumption of just 0.5W at 24V DC, has the lowest consumption of any Ex d certified valve for the process industry. The low wattage coil reduces battery drain and heat rise, minimises wiring costs and provides energy savings. The savings in power usage over the installed life of the solenoid valve lower the total cost of ownership.

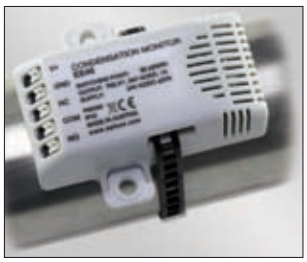
Compatible with their 551-553 ranges in aluminium, brass (551 range only) and stainless steel, the valves have a large flow range of up to 860 l/min for the 551 valve and 3800 l/min for the 553 valve. Certified according to ATEX, IEC Ex and FM, the new range is ideally suited to applications in the offshore market where high levels of safety and superior resistance to aggressive operating environments are required.

The housing and cover of the enclosure are in 316L stainless steel or painted aluminium and the operator can be rotated 360° to select the best position for cable entry. Electrical connection is via either a shielded or unshielded cable gland (NPT) to easy access screw terminals.

The enclosure is supplied with a plastic exhaust protector fitted as standard and a metal exhaust protector is available as an option.

www.asconumatics.com/

Condensation



Cooling ceilings, critical areas in HVAC and technical installations, which are operating close to the dewpoint temperature, need an early alarm system against the forming of moisture, because of the potential danger of condensation.

The new condensation monitor EE46 from E+E Elektronik is specially designed for such applications and can be installed in a few seconds on pipelines, walls, and ceilings.

The early detection of "danger of condensation" and as a result the immediate start of counter measures renders this product as very significant.

A special coating protects the sensor and electronics against dirt and dust – a guarantee for a long standing, stable and above all maintenance free operation.

The fast response, high accurate E+E humidity sensor is exposed to the temperature of the surface of the object by means of a thermal conducting foil. Therefore, the humidity sensor measures the same relative humidity as is present at the surface of the object to be monitored.

If the preset set point of 90 %RH is exceeded the EE46 switches a potential free contact and provides a signal enabling to take early counter measures, e.g. to increase the temperature of the water in the pipe, to decrease the cooling power or to turn on the heat. In addition, a LED on the enclosure indicates the actual status.

The condensation monitor of the Series EE46 is designed to be powered by 24 V ac/dc and is the ideal solution for the early detection of condensation – another innovative member of the E+E HVAC assortment!

www.itl.ie/

Not so hot!

In view of the unusually frigid weather conditions lately we could not but include this instrument and picture.

MadgeTech has released ULT90, an ultra-low temperature freezer validation system. It can be used for validation, mapping, stabilisation studies and temperature surveys.

The unit provides a complete temperature mapping and validation solution for freezers of all sizes and configurations. It includes Cryo-Temp data loggers, a USB docking station, MadgeTech's

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- 09 Public Services (incl Govt Depts, Unions, Hospitals) ☐
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Yes ☐ No ☐

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- 06 Quality ☐
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Secure FDA 21 CFR Part 11 software and IQ/OQ/PQ validation protocols. The ULT90 can be fully customised to include user-specified quantities of each item in the system to accommodate specific applications.

The Cryo-Temp data logger can measure and record temperatures as low as -86°C and is splash resistant. To provide data integrity, and meet the requirements of FDA 21 CFR Part 11, the secure software includes electronic signatures, access codes, a secure data file and an audit trail.

For large freezers the software can graph datasets from multiple loggers to show variances in different parts of the freezer. This can reveal air stratification, hot spots and anomalies in chilling systems.

The ULT90 is available with 9 Cryo-Temps (ULT90-9), 15 Cryo-Temps (ULT90-15) or the system can be completely customised to meet the validation needs of a specific freezer (ULT90-Custom).

www.madgetechlifesciences.com

Stand alone Oscilloscope

From the point of view of innovation, Metrix, marketed here by **PEMA**, has not just contented itself with launching the first portable, stand-alone oscilloscope with four 600 V / Cat. III isolated channels on the market. Indeed, everything about the OX 7000 models, including their ergonomics, versatility, safety and various communication features, has been designed to offer the best possible trade-off between safety, service and comfortable use. In performance terms, they are at the top of their category with their 12 bit / 1 GS/s converter, a sampling rate of 50 GS/s on periodic signals and capture of transients lasting 2 ns or more. Because modern means more efficient, these models can be controlled using either the "Windows-like" menus on the touch screen or 33 dedicated keys offering direct access to the most frequently-used functions. For even better performance in the field, the OX 7000 models offer a new patented system of "plug and play" accessories, individual insulation of each of the measurement channels, the extensive remote management possibilities offered by the Ethernet link with a WEB server and a variety of built-in instruments, including a 200 kHz multi-channelmultimeter.

www.pema.com

A growing family

For more than 40 years, **Endress+Hauser** has been the leading provider in the area of continuous level measurement by ultrasonics.

In the new Prosonic T FMU30, a compact sensor enters the market which provides, apart

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Products from Page 5

Speakers and Organisers at ProfiBus Ireland Seminar: From left: Joost Van der Nat, Hassan Kaghazchi, Conal O'Reilly, Steve Dickinson, David Maher, Joachim Lauer, Nigel DeHaas, Eric Gory, Jorg Freitag.

Seminar in Limerick

In what is hoped to be a biennial affair the first **ProfiBus Ireland** seminar was hosted by Limerick University's **Automation Research Centre (ARC)** in January. **Hassan Kaghazchi** of ProfiBus Ireland and the Limerick University was responsible for the organisation of this very successful event.

It was very well attended with over 50 people present. The programme comprised of a morning with eight short presentations from a truly international group of speakers including *Profibus International (PI)* Chairman **Jörg Freitag**. There were many opportunities for hands-on action. The demonstrations panels constructed by ProfiBus Ireland members under **David Maher** of **Elmar Engineering**, The afternoon was an optional tour of the Bulmers, state of the art cider making facility in Clonmel where many of the ProfiBus techniques, discussed in the morning were seen in an actual plant.

Part of the attendance at Limerick

www.profibus.ie

Another ProfiBus event

The application of ProfiBus, ProfiNet, ProfiEnergy and ProfiSafe technology will be discussed in the annual ProfiBus User Conference, scheduled for 29-30 June 2010 at Stratford-on-Avon. This major convention for existing and potential users of modern automation technologies offers the choice of three presentation streams, for each delegate to create the most effective and relevant learning experience.

A series of technical presentations offers shared user experience from actual industrial applications, including how to approach implementation of the technology on existing plant, plus other outlines of technical developments and new capabilities. Included in the presentations will be a session specifically devoted to the uses and limitations of wireless communication in automation systems, and other papers will discuss how these systems can be integrated into energy management programmes, particularly in relation to energy efficient drives. Most of the lecturers will be available during the conference for separate discussions on topics that are of particular interest.

www.profibus.co.uk

Seminar in Belfast

Back in November Mitsubishi held two seminars in Dublin & Belfast to launch their MES IT & Datalogger Modules for the Q-Series PLC Platform. Both seminars were very successful and had attendees in excess of 80 persons across both venues.

www.mitsubishi-automation.ie

Easy Analogue Seminars

Linear Technology has announced a series of free half-day seminars on the use of its family of high performance DC/DC µModule regulators.

Designers today are challenged with increased complexity of power design and a growing number of system voltage rails. These seminars will help designers solve their power design challenges with efficient, compact µModule power solutions.

23rd March 2010: Cork,

25th March 2010: Belfast,

www.linear.com

Advanced Manufacturing

"seven co-located shows that deliver Britain's advanced manufacturing marketplace"

Advanced Manufacturing UK 2010Advanced Manufacturing UK will incorporate: Mtec Sensors, Measurement & Instrumentation; Machine Building & Automation; VTX Vision Technology Exhibition; 3C Contamination Control & Cleanroom Products; Practical Vacuum & Surfacts UK; and the Green Manufacturing Zone and Conference and MEDTEC UK medical device manufacturing.

Birmingham 27-28 April'10.

read-out.net/mtec

Call for Papers

The Technical Program Committee of ISA Automation Week 2010: Technology and Solutions Event has issued a Call for Papers inviting authors, experts, innovators, and automation professionals to submit abstracts for presentation consideration at the conference to be held in Houston, TX, USA, 4-7 October 2010.

www.isa.org/automationweek

Products from page 7

from an attractive price, also numerous new features. It replaces their older FMU230/FMU231 series and stands out with convincing functionalities. The menu-driven operation via a graphic display in national languages makes commissioning easy and safe. Warning and alarm messages in plain text safeguard the swift rectification of problems. Seeing what the sensor sees – the envelop curve is an important instrument for measured value analysis in time-of-flight measuring methods. It can be displayed directly on site and permits immediate fault tracking. The simplicity in commissioning, operation and maintenance saves time and thus money.

The new Prosonic T uses the extremely stable and tried and tested software algorithms which are also employed in the already established Prosonic M. This software permits the optimum adaptation of the measuring performance of the sensor to the respective application – from medium properties through to the type of tank – and this provides an additional benefit in terms of process safety. In addition, the new software facilitates the suppression of interfering reflectors like agitators, ladders and nozzles. This so-called mapping prevents the reaction of the sensor to such obstacles and permits non-contact measurement also in tight installation conditions.

Prosonic T covers a maximum measuring range of 8m in liquids and 3.5m in bulk solids. It is available with a 1"and 2"process connection and designed for temperatures from -20 to +60°C.

Prosonic T FMU30 is the cost-effective all-rounder for numerous applications in liquids and bulk solids. The range covers from level monitoring in sewage plants and process water tanks

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New Product Showcase

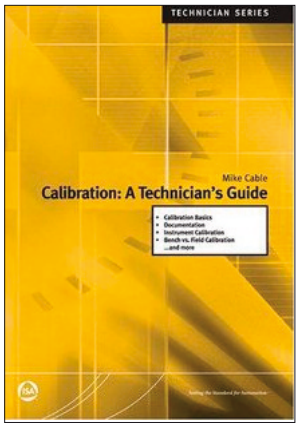
Omega Engineering has published a New Product Showcase using the latest "page turning" software. This allows simple online product browsing and navigation, with viewing of the complete brochure in an easy to view format giving the user an interactive feel of a real book on screen!

There are over 50 New products manufactured by Omega, including sensors for temperature, pressure, load, force, level and flow measurement as well as instrumentation including controllers, data loggers, hand held meters and transmitters.

The publication details equipment for hygienic and automation applications, custom design pressure transducers and the latest technology in wireless measurement along with a technical reference article on strain gauge fundamentals.

All 16 pages have direct links online to full product specifications and pricing.

www.omega.co.uk/ebook



Calibration is the most performed and most critical task of a technician. This comprehensive book, *Calibration: A Technician's Guide* by **Mike Cable** provides an excellent foundation for understanding the principles and applications of calibration.

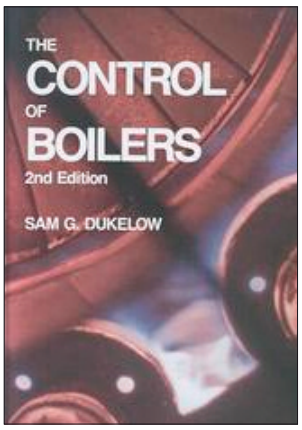
If you calibrate instruments or supervise someone who does, this book has a place in your library!

It is an excellent reference for control system technicians who perform maintenance and calibrations. It also serves as a study guide for the Calibration Domain in ISA's Certified Control System Technician (CCST) program and for students pursuing studies related to instrumentation.

The topics addressed include:

- terminology
- bench vs. field calibration
- loop vs. individual instrument calibration
- instrument classification systems
- documentation
- specific calibration techniques for temperature, pressure, level, flow, final control, and analytical instrumention

An extensive appendix containing sample P&IDs, loop diagrams, spec sheets, sample calibration procedures, and conversion and reference tables serves as a very useful reference.



Sam Dukelow visited Ireland in the eighties and gave training sessions in Dublin and Cork on how to reduce boiler costs and maximise operation. His classic, *Control of Boilers, 2nd Edition,* which offers a detailed, comprehensive, and applicable explanation of all aspects of boiler processes is still a best seller for publishers the International Society of Automation.

If you're a professional with a good understanding of boiler jargon, thermodynamics, control concepts, and math fundamentals, this book is designed for you!

It presents the basics of boiler control, the interrelationships of the process characteristics, and the dynamics involved, with significant emphasis on start-up, shut-down, flame monitoring, and safety interlock measures.

Showcasing so many applications of theory that it ranks among the great books of process control, this book is an excellent guide to those who follow in Dukelow's footsteps and seek to control fire to produce steam.

Greg McMillan's *Good Tuning: A Pocket Guide, 2nd Edition* includes step-by-step descriptions of the three best field-proven tuning procedures, a table of typical tuning settings, a summary of valve performance problems, logic diagrams for troubleshooting. Wherever you have data and tuning access, you can estimate the settings for configuring new loops to review and improve the tuning of existing loops. The guide covers the key points and provides more than 70 rules of thumb for tuning PID controllers, while pointing out and blowing away some common myths about process control. Every individual involved in Instrumentation, Automation and Process Control will find this handy reference useful.

www.isa.org/books

Products from page 9

through to measurements in loading, storage and buffer tanks as well as conveyor belt monitoring.

As they say themselves, *"Simple, reliable and universal – that is the new Prosonic T generation!"*

www.ie.endress.com

Ethernet line extenders

Westermo Data Communications marketed through **Hanley Automation Networks** has expanded and improved its Wolverine range of industrial Ethernet line extenders with the addition of the new DDW-225 and an enhanced version of the existing DDW-120. These rugged industrial products are part of Westermo's extensive range of Ethernet SHDSL extenders that are used to establish reliable long distance, high-speed remote connections between simple and complex Ethernet networks using any existing twisted pair copper cables.

The DDW-225 is the first Westermo line extender to include the WeOS operating system, which is already employed in Westermo's high performance RedFox Industrial Routing Switches. WeOS provides advanced switching and routing functionality that enable the management of complex industrial networks.

The enhanced DDW-120 is aimed at simple point-to-point applications, or as a start or termination unit, together with any of the DDW-220/221/222/225 products, in daisy-chain applications. The latest version of the extender enables data transmission

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rates as high as 15.3 Mbit/s in both directions, and transmission distances of over 10km, depending on cable quality. This increased data transmission rate will help meet the ever increasing demands for bandwidth from applications such as transmitting high definition video from remote sites.

The DDW-225 supports two SHDSL interfaces and has a built in four port managed Ethernet switch, enabling users to build complete Ethernet networks with daisy chains and ring topologies. Suitable for use in extremely harsh industrial environments, the device offers a data transfer rate of 5.7 Mbit/s in both directions, and transmission distances of up to 15km. This makes it especially useful for applications such as railway trackside, tunnels, highways, harbours, power stations and extended industrial plants.

The DDW-225 also includes Westermo's unique FRNT (Fast Recovery of Network Topology) technology, the fastest protocol on the market to re-configure a network in the event of any failure of a link or hardware, which provides support for redundant rings. The DDW-225 can also support multiple rings, with a FRNT ring running from the SHDSL interface and a RSTP ring from the switch port. Device functionality, including VLAN, Static Routing, Layer 3 switching, IGMP Snooping Firewall, SNMP V3 and VPN support all help improve bandwidth support and network security.

www.hanleyautomation.ie/

Remote Control and Monitoring of your equipment using your mobile phone

Ever wondered the status of some equipment after you've left the office? Worried about a power outage or brown out? Wished you could turn on the heating or a pump?

Cottner Technologies of Limerick have released the Power Executive – a low cost solution to monitoring and controlling electrical equipment remotely.

The unit has the capability to monitor the power consumed by an appliance and generate alarms if the power consumed is not within acceptable limits. It can automatically notify you via SMS in the event of a power outage or when power is restored. The system allows you send alarms to up to 5 authorised mobile numbers and has an escalation protocol in the event that an alarm is not acknowledged.

Two digital inputs can be connected to peripheral devices and be configured to send alarm messages or turn on/off the appliances connected to the digital outputs. Two digital outputs allow you activate secondary devices and can be controlled via SMS text message or in response to events on the digital inputs or appliance.

***Martin Walley** of **PSL** says "The unit is self contained, is very easy to install and can be up and running within minutes. It's ideal for monitoring and controlling out-stations or remote stand alone equipment. You can program it as a 7 day timer, modify your settings using your mobile and check equipment status via text."*

www.psl.eu.com

Power Meters

A range of current sensors is now available that allows the **Yokogawa** family of precision power meters to be used for measuring very high currents. Developed and manufactured by *Hitec Power Protection* the new Zero-Flux™ current sensors allow the precise measurement of currents up to several thousands of amperes - including simultaneous measurement of AC and DC currents - while also providing accurate phase-shift information.

Other key features of these sensors include isolation from the primary circuits, very high stability and accuracy, high bandwidth, saturation detection with automatic reset after overcurrent, and the ability to switch on the devices with current already present when connected.

There are three types of current sensor in this range: the MACC Plus external current sensor; the SC1000 split-core sensor; and the CURACC current-measuring system.

The MACC Plus external current sensor offers a 1000:1 current transfer ratio for maximum 850 A peak current (600 A RMS). For DC currents, a maximum of 600 A DC can be measured continuously. Versions with voltage outputs are also available. With an overload capacity of 20%, sinusoidal currents of 85 A RMS, 170 A RMS and 430 A RMS can be measured. Maximum continuous DC currents are the same as the AC peak limits.

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Automated audio amplifier manufacturing test system

Ahmed Issa and Patrick O'Halloran of Benetel decribe an application

The Challenge

To design and build an automated Manufacturing Test System (MTS) for testing Audio Amplifier PCB's with the aim to reduce test times and maximise throughput. Customer's test time requirement was 99 seconds per Unit Under Test (UUT).

The Solution

Use of National Instruments' LabVIEW and TestStand with PrismSound dScope Series III and audio test equipment to develop the MTS.

Test System Function and Equipment

Benetel Ltd. Ireland was founded by a team of engineers with many years of experience in automation and wireless product development, gained at companies including Motorola, Lucent Technologies and Kenwood. Our experienced team combined with our extensively equipped laboratories enables us to offer customers rapid, innovative, high quality automated test solutions and wireless design.

The company. was chartered to design an automated Manufacturing Test System (MTS) for testing a multi-purpose Audio Amplifier PCB. The Audio Amplifier, i.e. the Unit Under Test (UUT) had several stereo and mono audio input and output ports. The customer required 15 different tests to be performed on each UUT during 99 seconds. Testing a UUT manually would involve plugging cables in and out in difference combinations. Furthermore, testing over a wide range of frequencies would waste valuable time. For maximum testing throughput and minimum test times, an automated test system with minimal operator interference was sought. To this end, they designed a custom bed-of-nails fixture to house the UUT during test time. An industrial PC was used to control the MTS equipment. A DC power supply unit (PSU) was used to power up the UUT. The PSU was controlled using a USB interface. UUT test points were grouped into standard 3 way XLR, Stereo, Mono and USB connectors and fed back to the audio test equipment. PrismSound dScope Series III was used to generate multi-tone sound signals that were fed to the fixture ports. Sound signals were probed from UUT test points and fed to/from the dScope for analysis through PrismSound dSNet-I/O-Switchers. Sound signal analysis was done by performing FFT on the measured sound signal traces and the assessment factors were signal Amplitude, Noise and Distortion. Resistor loads were applied on the UUT's output signals to simulate speaker loads. The PrismSound equipment was interconnected using a RS232 daisy-chain, and controlled by a USB interface. The UUT had an onboard digital sound card I/O. The digital sound signals to/from the sound card were connected directly to the PC using a USB interface and analysed using PrismSound software. The equipment of this MTS was stacked in a 19" rackmount.

Software Development

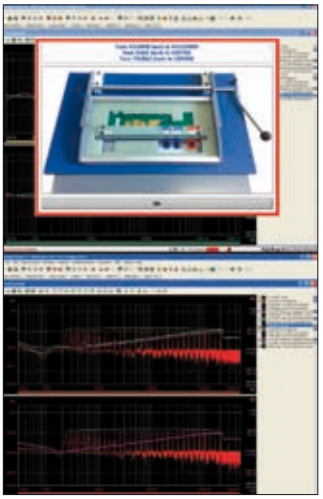
National Instruments software was used to automate the entire Audio Amplifier MTS. ActiveX controls, provided by PrismSound, were used in LabVIEW VI shells to automate the required functionality of the audio test equipment. VIs were also used to control the PSU using USB serial communication. All VIs were arranged and sequenced using TestStand with proper inputs, preconditions and post-actions to put together a sequence of tests that conformed to the UUTs' manufacturer specifications.

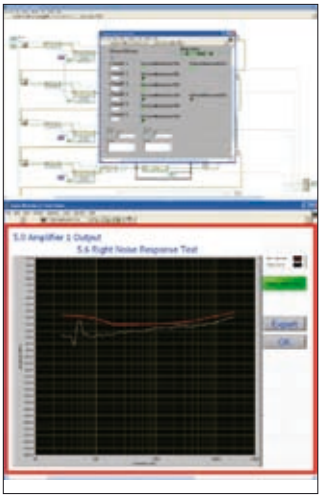
The tests performed on the UUT comprised DC supply voltage levels, Sound Card Input/Output, Amplifier Output Level, Bass and Treble Combination Outputs, Auxiliary and PC Stereo Input/Output. Reports of the test results were generated in HTML and CSV formats. Database logging was added to the system for test yield studies.

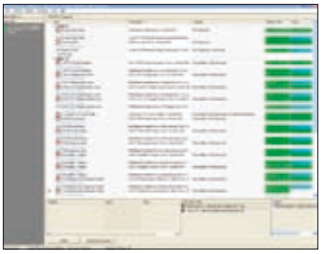
Many automation and test code changes were required throughout MTS development stages. Naturally, the use of TestStand to sequence LabVIEW VIs was the optimum solution. Using TestStand and LabVIEW allowed fast development times, ease in creating and editing sequences, and flexibility to re-arrange test structure and sequences. The simplicity of integrating LabVIEW VIs into the sequences was also a major factor. Above all, LabVIEW VIs made it very easy to control the PrismSound equipment using ActiveX controls. The latter advantage facilitated a fast protocol for controlling the PrismSound equipment and resulted in the reduction of the test time from the targeted 99 seconds to 70 seconds per UUT. This project took 3 months to complete, from the proposal stage to deployment.

Test System Performance

The automated Audio Amplifier MTS performed reliably offering the main benefits of speed and







repeatability. The modular nature of TestStand and LabVIEW programming added great flexibility and ease of accommodating UUT updates with no or little code changes. By using TestStand and LabVIEW, no extra development time was devoted to creating standard objects such as graph displays or user interface buttons. With slight modifications on the default TestStand interface, running the MTS required minimum operator skill due the user-friendly TestExecutive interface.

With improved testing efficiency, the UUTs' manufacturer was able to decrease test time (by 29 seconds per UUT). Reports generated automatically with each test, provided a good reference of the results and future analysis. With database logging and yield studies, they we able to make better decisions about UUT failures, and thereby increase product reliability, quality and profitability.

www.ni.com

www.benetel.com

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The SC1000 split-core Zero-Flux™ current measuring system is designed for applications where it is not possible (or allowed) to switch off a motor in a production facility or in a critical safety environment like a nuclear power plant. It can also be used in situations where it is inconvenient or costly to remove and replace the glands on thick power cables in order to run them through the sensor hole. The SC1000 measures primary currents up to 1000 A peak (700 A RMS), with a transfer ratio of 1000 A peak/0.5 A peak or 1000 A peak/10 V peak for a voltage output.

If 1000 A peak (700 A RMS) is not enough, the CURACC series offers up to 6000 A peak (4240 A RMS) for 'current-in/current-out' applications. For currents up to and including 2000 A peak (1400 A RMS), a robust resin-encapsulated head is available. For DC currents, a maximum of 6000 A DC (model E) can be measured continuously.

A range of junction units is available to minimise wiring.

Yokogawa products with which these current sensors can be used include the WT3000 precision power analyser, WT500 compact power analyser, WT210 (single-phase) and WT320 (2/3-phase) power meters, WT1600 and WT1600S digital power meters, and PZ4000 single-shot power analyser.

tmi.yokogawa.com/ea

LCR Meters

Features of test instruments need to grow in line with the increasing operating frequencies of the applications.

StanTronic Instruments has

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therefore included the new LCR Meter LCR-8110G in its product range which has a ten times higher test frequency than its predecessor. Therefore it can much better simulate the operating conditions of the devices tested.

Basic accuracy for all RLC measurements is 0.1% with test frequencies of 20 Hz up to 10 MHz. In Multi- Step Mode, the unit provides the ability to perform up to 30 different measurements on one component and it has a Pass/Fail function with an acoustic alarm and many parameter options to set. Up to 64 test programs can be stored in non-volatile memory.

The characteristics of the component under test can be displayed on an LCD graphics screen (320x240 pixels), with either the voltage range or the frequency sweep on the horizontal axis.

The unit comes with RS-232 and GPIB interfaces for remote control and transfer of test data to a remote computer for further analysis. Various optional test leads and fixtures are available for different component types and 2/4 wire measurements.

For reduced frequency requirements, a 5 MHz version (LCR-8105G) is available. Further information including data sheets can be found on

www.stantronic.co.uk

Peri pump

The New FLEX-PRO® A4 is ***Blue-White's*** Highest Volume Peristaltic Pump. A4 benefits include: Peristaltic Pump Design does not have valves that can clog; Outputs to 171 GPH/648 LPH; 2500:1 turndown ratio and continuous feed; Output Pressure ratings to 125 psi/8.6 Bar; Pump Tubes in Norprene or Tygothane meet FDA criteria for food; Meets 3A Sanitary Standards. Automated PPM Dosing; Operator friendly digital touch pad with menu driven software; No maintenance brushless variable speed motor; Patented Tube Failure Detection System; Heavy duty single piece rotor; LCD displays motor speed, input signal values, service and alarm status;

Inputs include: 4-20mA, 0-10Vdc, and Pulse Signal inputs for external speed control,

30 VDC contact closure for remote start/stop, equipped with multiple analog and digital I/Os for SCADA system connections;

Self priming even against maximum line pressure,

Bypass valves are NOT required.

Won't vapour lock or lose prime.

www.bluwhite.com/

Alternative energy and high efficiency is focus of new products

Farnell has selected the alternative energy sector as its latest focus market. The emphasis in this area of high importance has seen the leading multi-channel distributor add over 1,000 new products targeted at applications in alternative energy and high efficiency product design. Suppliers include leading industry names such as Microchip, ST Microelectronics and Tyco plus niche suppliers such as Advanced Linear Devices. The new additions take Farnell's total number of products in this sector to over 5,000.

The latest issue of the company's informative Technology First Journal looks in detail at alternative energy through a range of topical articles and features. Additionally, the element14 technology portal and e-community will feature a dedicated discussion and information group covering the topic to provide support and information for design engineers working on new projects.

See: www.element-14.com/community/community/industries/alternativeenergy

Alternative energy encompasses areas such as wind power generation, hydro power and solar energy as well as less publicised techniques such as harnessing vibration and thermal energy to produce electricity. High efficiency is crucially important in the electronic circuitry that supports alternative energy systems to ensure that a minimal amount of the power generated is wasted in the form of electrical losses. Farnell also recognises that when considering the wider electronics market, components that have low power consumption or support energy efficient design, are crucial in helping engineers in the development of end products that have low total cost of ownership and deliver environmental benefits.

Lynn Ma, *Technical Marketing Manager-Europe, Farnell said: "The development of alternative energy sources and the efficiency of both industrial and consumer electronics equipment remains under the spotlight as globally we seek to address the unsustainable rate at which the world's natural resources are being consumed. The electronics industry has a key role to play in the development of effective systems to support alternative energy generation and energy efficient design as a whole. Through our focus in this area we are seeking to simplify component selection and sourcing and speed the design process for our design engineering customer base."* www.farnell.com/ie

Social media works!

Andrew Bond in Industrial Automation Insider (February Issue) writes:

Can automation vendors afford to ignore the marketing potential of the ever burgeoning range of social networking tools now available? Almost certainly not, as Readout editor Eoin Ó Riain's recent experience demonstrates. He, along with INSIDER, was recently contacted by a mutual acquaintance – he'd better remain anonymous, at least for the time being – who had been asked to develop a small SCADA package for a wind turbine and wanted to pick our respective brains for suggestions. We responded in the normal way with a few pointers but Eoin put out a call to the Automation Linked In Group as well as flagging up the request on Twitter and on his own blog.

The result, in less than a week, was approaching a dozen replies suggesting a range of potential solutions. Impressive in itself but what is perhaps most significant is that very few were either from or suggested any of the major vendors, despite the fact that Eoin had mentioned that our enquirer was minded to use one of them.

You can't help feeling that people are missing out here or, as Eoin put it when we mentioned it, "Maybe they are not social media aware!"

www.iainsider.co.uk

Pat J Boner, Managing Director of P.J. Boner & Company has announced his retirement and has assumed the role of Chairman of the Company. Pat's Son Patrick has taken over from Pat Senior as Managing Director.

He is the founder of P J Boner & Company and has been Managing Director since 1978. The company has gone from strength to strength since that time and what started as a small calibration company working from his own living room is now one of Ireland's largest and most respected instrumentation & weighing companies.

He started the company after successful periods working for some of the largest instrument companies such as **Honeywell** & **GEC Elliot** moving from various roles such as instrument technician to area manager to eventually senior instrument technician for Ireland for GEC Elliot. His total dedication to the success of the company from the early days has been brought through to the continued running of the business today and that dedication has been instilled in all the team who have worked for him over the years.

The tireless effort put in when the company was founded is shown in the fact that P J Boner & Company currently still retain contracts that Pat himself won in his first year of business, some 32 years and continuing! Pat's knowledge of the instrumentation & weighing field is second to none in Ireland and he has continuously had an incredible ability to problem solve any instrumentation problems effortlessly.

Pat should now have more time to spend in his native Donegal with his wife Eileen and spend more time with their 9 grandchildren, some of whom currently work with the company.

Automation Events
listed
on the

Read-out Instrumentation Signpost

read-out.net/signpost/expo.html

AEG Power Solutions, the global supplier of UPS products and complete power solutions, announces the appointment of Gary Browning to the role of EMEA Channel Development Director. Gary has a BA (Hons) degree in Business Studies, specialising in International Marketing Pathways and 10 years practical experience of the IT industry with a proven track record in developing IT channel business for market leader APC.

A tour Bulmers Clonmel plant completed the ProfiBus Seminar (see page 8) This plant manufactures the traditional Bulmers range for Ireland and Magners Irish Cider for the export market. As part of the C&C Group it also produces Carolan's Irish Cream, Tullamore Dew and other products at the site. The tour was fascinating as it concentrated on the technical aspects of control especially in the very impressive bottling plant and then in the manufacturing of the cider itself from the simple apple to the finished refreshing brew. The tour also emphasised the complete use of the raw materials and its minimum impact on the environment. For instance the pulp left after the extraction of the apple juice is used for animal feed – primarily for deer.

This part of the day was organised by **Matt Wilhite** of **molex** with the cooperation of the Bulmers plant engineers.

Process automation just got easier. Again.

Introducing the DeltaV S-series. A fresh look on usability down to the smallest detail – from the new, patent-pending hardware that minimises installation complexity and maximises plant availability, to the more intuitive operator displays, to built-for-purpose smart security switches that minimise your lifecycle costs. The re-designed DeltaV system embeds knowledge, reduces complexity, and eliminates work – bringing a new level to the now-familiar DeltaV standard: Easy. **www.EmersonProcess.com/DeltaV** or call **021 480 7500**.

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