The perfect combination
10 years of Memosens technology and Liquiline transmitters

Hannover Messe 2016
This training trip is a once off opportunity not to be missed!
4 The future is coming

How does a company like Endress+Hauser operate in an often unpredictable world? There certainly is no cure-all, but one thing is for sure: you can stick to the plan if the plan is flexible.

13 10 years of Memosens technology

Just as the “Internet of things” seems future orientated, so too did Memosens technology from Endress+Hauser.

18 Hannover Messe 2016

According to one of our previous participants this training tour is a “once off opportunity not to be missed!”

5 Experienced Manager
Michael Ziesemer (64) is Chief Operating Officer of Endress+Hauser and the CEO’s deputy.

6 Talk of the town
Industry 4.0 - Internet of Things

7 Always well connected
Communication between measurement instrument and control system is a hot topic. Deep device integration opens up efficiency and optimisation potentials.

8 Connected Enterprise
A summary of an in-depth article by Theresa Houck, Executive Editor of Rockwell Automation’s ‘The Journal’.

9 Industrial Ethernet offers great opportunities
Endress+Hauser’s Ethernet Strategy

10 B2B integration with Tronox: The Perfect Process
Endress+Hauser and Tronox takes procurement to the next level with first B2B integration.

12 The new mobile helper
The Operations App provides all important device information.

13 The perfect combination - 10 years of Memosens technology and Liquiline transmitters
Just as the “Internet of things” seems future orientated, so too did Memosens technology from Endress+Hauser.

16 Training looking back...
The last week of May Endress+Hauser held the first Process Measurement & Instrumentation training course utilising the new training concept format

18 Join Endress+Hauser on a comprehensive training tour culminating at Hannover Messe 2016
According to one of our previous participants this training tour is a “once off opportunity not to be missed!”

22 Africa Automation Fair
The largest, most comprehensive showcase of Industrial Control Technologies of its kind in the Southern Hemisphere.

19 Mandela day at Itlhomeleng
“Make everyday a Mandela day”

19 Future Events
I recently had an interview for one of the local technical press magazines and was asked a few very interesting questions which coincidentally are also the main features of our own magazine. The questions dealt with the Internet of Things (IoT) and training, and correspondingly the future of process automation. These things relating to communication and skills development have been very close to my heart since I started working for Siemens back in 1986 when my very first project was working with my colleague Poobie Naidoo to develop an implementation manual (in English) for the 3964R communication protocol of the old S5 PLC technology. It became clear to me at that time that the future of efficient control systems depended on effective communications between systems – up to that time it was common to use digital and analog IO were linked between PLCs to create control interlocking.

It is amazing to me still today that so many of us still want to use 4-20mA to communicate with intelligent instruments. That we think that our engineering students who live in a digital world somehow will not understand how Profinet works, or Ethernet IP. Process Control has a very bright future – the world need for clean water, food and beverage, energy, health care and so on will continue to demand process control; but the requirement to increase efficiency, reduce energy and resource consumption, reduce wastage and increase return on investment demands an holistic approach to the implementation of a process control solution.

An instrument is no longer an instrument – it is part of a composite solution. Intelligent communication, efficient procurement, asset management, planned maintenance all become critical components of a coordinated drive to meet these new demands. In this magazine you will learn about our understanding of and implementation of modern communication technology, plus the training concepts which are needed to support this.

I hope you will enjoy this read and perhaps also join us on our Hanover Messe training tour in 2016, spaces are limited.

With regards

Rob MacKenzie
The future is coming

How does a company like Endress+Hauser operate in an often unpredictable world? There certainly is no cure-all, but one thing is for sure: you can stick to the plan if the plan is flexible.

Are we completely in the dark about the future? Not exactly! “We have a clear enough vision of forthcoming developments to operate the company,” says Michael Ziesemer, Chief Operating Officer of the Endress+Hauser Group. For the CEO’s deputy, this includes megatrends such as on-going industrialisation and population growth in certain regions, urbanisation and the creation of megacities, and an increasingly connected and networked world. Still, no one can predict how dynamically these developments will change our world, or when and how fast they will force companies like Endress+Hauser to face new challenges. But they are certainly long-term developments. Megatrends are not phenomena that occur within a few years. They evolve over decades. These developments will also undoubtedly impact utility and industry infrastructures and measurement and automation technologies will always play a key role.

Paths to the future

Providing a constantly growing world population with goods and food, while using scarce resources more efficiently, are the challenges that measurement and automation technologies help address. Utility companies also face a growing number of challenges, such as supplying clean drinking water, treating and processing wastewater, recycling waste and providing electricity and heat. “Users and manufacturers of automation technology obviously see paths that lead to the future. They are also sketching these paths out via roadmaps that are sometimes bunched under the heading of Industry 4.0 - the fourth industrial revolution closely linked to the Internet of things,” says Dr Ulrich Kaiser, who is responsible for innovation management at Endress+Hauser. Some roadmaps even attempt to deliberately illustrate individual trends, such as the
Looking at tomorrow

Part of the Endress+Hauser research budget is set aside for mapping out future plans, a responsibility that also belongs to the strategic and innovation management area. The aim is to not only identify trends, innovation demand and innovation opportunities, but to also analyse and integrate them into the company’s R&D activities. Over the past few years, ‘technology intelligence’ has become the latest catchphrase for this approach. Industry and technology roadmaps can be viewed as variations on this theme. Discovering where innovation has the potential to bring about effective change, understanding where the best market and technologies opportunities lie and following developments in other fields is all part of the daily grind for Ulrich Kaiser. “Precisely in areas that at first glance seem to present little opportunity for your own business is where exciting things frequently occur. Look at automotive engineering, medical technology or telecommunications for instance. Of course, not everything is directly applicable, but over the long term some developments are. New combinations of materials, special data transmission methods and ‘the use of micro systems technology’ are just a few examples.” The engineers at Endress+Hauser are not the only people with their eyes on the future. Within the Endress+Hauser world, marketing also looks after conventional market research - also known as market intelligence. We use a wide selection of methods to find out what our customers would like to have today, and what they are certain to need tomorrow. This includes the whole range from big data analysis to one-on-one discussions.

Plan for change

Is all of this enough to create a reliable plan for the future? “It’s during times of uncertainty that you really have to look very closely and plan very precisely,” says Ulrich Kaiser. “And when you realise that something does not add up, modify the plan.” Adding his two cents’ worth, Michael Ziesemer says: “Of course you have to develop a picture of the future. But what’s even more important is having on-going discussions about it within the company.” For the COO, communication is one of the keys to the manoeuvrability a company must have to be able to constantly react to change. Employees, projects and products all need goals, even if the goals sometimes become moving targets. Getting our heads around the future is therefore not so much a question of knowledge, but rather a mind-set: keep an open mind, be willing to discuss and get ready to move.

Experienced manager

Michael Ziesemer (64) is Chief Operating Officer of Endress+Hauser and the CEO’s deputy. The electronics engineer has been with the company since 1981 and joined the Group’s Executive Board in 2002. In the ZVEI he held the post of vice president before being appointed president in June 2014. Michael Ziesemer is the public face of the organisation and is responsible for internal cooperation and the pooling of members’ interests.

Powerful voice

The German Electrical and Electronic Manufacturers’ Association (ZVEI) has 1,600 members who generated sales of approximately 166 billion euros in 2013 and who represent about ten percent of the country’s industrial production. The member companies, mostly medium-sized firms, employ 1.5 million people at home and abroad.
Industry 4.0 - Internet of Things

The terms “Industry 4.0” and “Internet of Things” appear frequently in the media and are the subject of intensive discussions. What exactly do they mean and how did they come to be? Above all, what influence could they have on customer requirements and as a consequence, on our products, services and solutions?

The term “Industry 4.0” alludes to the fourth industrial revolution and stands for the development of the so-called smart factory. The first industrial revolution was based on water and steam power, the second ushered in mass production using assembly lines and electricity. The third industrial revolution was digital and led to the widespread use of electronics and IT to further automated production.

First public attention
The term “Industry 4.0” was first brought to public attention at the Hannover Industrial Fair in 2011. The ensuing discussion on how manufacturing would be affected by an increasingly dominant Ethernet technology resulted in an official government report, which was presented at the 2013 Hannover Fair. As a result the German trade organizations BITKOM, VDMA and ZVEI started work to coordinate measures for its development and implementation. Actually, Industry 4.0 encapsulates much that was already existent before 2011 and for instance IEC TC65, in particular IEC TC65E, has long been working on some of the necessary standards.

Microprocessors and wearables
The term “Internet of Things” finds its origin in North America and describes how a central computer system is replaced by “intelligent objects” or “things”. To this end, ever smaller, inconspicuous microprocessors are used. These could be woven into clothing and provided with sensors that e.g. measure body temperature. This kind of high-tech clothing, so-called wearables, will find increasing use in the future, particularly in medicine. There are, of course, many other possibilities for using such miniature, intelligent sensors.

Identification of objects
“Internet of Things” also describes the linking of uniquely identifiable physical objects (things) with a virtual representation in an Internet-like structure. Automatic recognition using RFID is often seen as the basis for the “Internet of Things”, however, this is also possible with a bar code or 2D code.

Industry 4.0 aids modularisation
The possibility of identifying and addressing every plant asset will aid modularisation in industrial production, which has been looming on the horizon for a number of years now. This will be associated with wide-reaching technological and economic consequences that will also affect instrumentation and system manufacturers. New competitors may enter the market, new device types may be required, for example, more compact devices, and new business models will become increasingly important. The driving forces will be shorter setup times, faster times to market and far more flexible production. The replication rather than the extension of plant could lead to devices that are ever more similar in size and construction. From the user’s point of view, and depending on industry, conventional plants will be more or less replaced by modular plants. This trend is particularly noticeable in Pharmaceuticals, Fine Chemicals and Food & Beverages.

Data Management in Process Automation
Industry 4.0 opens up the possibility of installing WirelessHART and Plant Asset Management. Similar to the consumer world, it is to be expected that in the “Internet of Things” considerably more data will be transmitted by wireless. This will often be in addition to hard-wired real-time transmission of process data via, for example, Industrial Ethernet. Technical solutions already exist in Endress+Hauser’s Plant Asset Management (PAM) Suite, such as retrieving and storage of data, this could provide the basis for additional customer value, whereby valuable information is gained from evaluating and linking the data.
The world of process automation is colourful, with a wealth of manufacturers competing in the market. The variety creates choice; even the smallest of niches is being filled. Process plants often use measuring instruments from many different suppliers which must also be capable of communicating with the control system of another maker. "The users in process industry welcome this variety because it ensures their freedom of choice. They are able to use the products delivering the best benefit in a specific application," says Michael Ziesemer, Chief Operating Officer of the Endress+Hauser Group. "But this variety also causes complexity when it comes to the interaction between measurement technology and control engineering - especially if the best possible use is to be made of the opportunities offered by modern instrumentation."

Above and beyond
Compatibility is therefore the order of the day. Endress+Hauser’s instruments are available with all current communication protocols and interoperate with the most important control systems. Since the year 2000, Endress+Hauser’s own centre of competence has taken care of device configuration, digital communication and fieldbus engineering. The COO underlines: “We’re trying to make our customers’ lives easier.” "There is still plenty of mileage in device integration,” admits Michael Ziesemer. What counts is to avoid errors and so keep time and effort to a minimum - when planning and designing plants and fieldbus networks or when configuring and commissioning the instruments. Ultimately, the integration of the instruments into the control system opens up new chances to make operation and maintenance safer, more reliable -and more efficient. Modern measuring instruments supply a wealth of parameters. Digital fieldbuses such as HART, Profibus or Foundation Fieldbus often allow several measurement values to be read out at the same time, plus sums, averages or trends, status and diagnosis information. This data gives a profound insight into the on-going process as well as details on the status of the sensor and statements on the properties of the product. Businesses in the process industry are increasingly becoming aware of the efficiency gains from optimised processes and how new communication technologies allow for product and process quality enhancements.

Integration made easy
How far device integration can go is demonstrated by the collaboration with Rockwell Automation, manufacturers of control systems and control engineering. Rockwell Automation and Endress+Hauser have been in a strategic alliance for almost ten years. This joint collaboration partnership is how we add value for our customers. The devices and components from both companies are thoroughly tested and as a result can optimise the smooth interaction between them - labelled ‘Preferred Integration’, users can draw on plenty of help from these tests. Devices are pre-configured to such an extent that all the additional information the instruments provide can be utilised; we also generate documents specific to certain devices, which bundle important information in a compact form, and we supply software modules which make programming the control system easier. Evolving from the collaboration with Rockwell Automation, Endress+Hauser developed measuring instruments with Ethernet/IP. For instance, a Coriolis instrument can be commissioned with just a few clicks of the mouse, with all process variables and diagnostic information available. This approach guarantees efficiency, safety and quality.

Double-benefit alliance
The strength of this alliance lies in both partners focusing on their core competencies. Both sides complement each other perfectly. Rockwell Automation is deeply rooted in the world of systems, Endress+Hauser in process measurement engineering. No other manufacturer offers this double focus.
The Connected Enterprise can bring greater productivity, better asset utilisation, faster problem solving, and improved decision-making to industrial companies. It offers ease of use, lower total cost of ownership and improved operations.

Internet-enabled technology, industrial Ethernet, the cloud, big data and the Internet of Things (IoT) are supporting the Connected Enterprise that offers so much potential for your operations. As a result, it’s crucial to protect the industrial control and information systems that comprise your infrastructure.

The proliferation of Internet-enabled devices and deployment of standard EtherNet/IP across control systems have the potential for delivering tremendous benefits to those taking advantage, and great competitive risks for those not preparing a strategic response. Enter the Connected Enterprise. It allows tremendous collaboration among people, plant-floor systems and enterprise applications to improve productivity and sustainability.

A Connected Enterprise means having access to real-time and historical data, wherever it’s being produced, and all of the business and transactional data that will affect different plants and their operations. It involves seamlessly and securely connecting all control and information levels of an organisation.

“When we speak to our customers about moving a Connected Enterprise forward, it’s not unusual for them to raise two concerns: cost and security,” explains John Nesi, vice president, global market development, Rockwell Automation.

“By letting people know what’s really happening in the enterprise, the Connected Enterprise creates real customer value by turning data into information into knowledge and ultimately into wisdom,” says Keith Nosbusch, chairman and CEO, Rockwell Automation. This requires a common, secure Ethernet infrastructure to integrate and control information.

“What makes IoT security different? One reason is the ‘attack surface’, the place an attack can be initiated. The attack surface of a factory is large and complex. Remediation also is different. What do you do if you’re under attack in the process industry? Shutting down is not a practical or easy response,” says Soderbery.

He offers some ideas for IoT security. “Access control is more than a firewall. You have to be aware of the content on the network through tools like deep-packet-inspection engines. A second thing is the context. What’s the device, what data does it produce, is it where it says it is? You can draw some conclusions through the combination of content and context.”

“Companies such as equipment and machine builders themselves want access to the equipment they sold you, and want to better understand the operating envelopes of those machines to help optimise them and help them perform more safely,” says Mike Assante, advisor and director for the National Board of Information Security Examiners. “It’s time to adapt. We’re at an inflection point in the effectiveness of traditional defenses.”

He says we have to secure our people first. “Automation engineers have to work with cyber-security personnel, and vice-versa, to cross-educate their strengths and needs. This can lead to new approaches to better security. We’re setting up guidelines to help do that.”

The cloud, big data and the IoT are real, and they’re already working in industrial settings. “We help users connect to their information, organise it, put it into the right context, set up dashboards and distribute it,” says Keith McPherson, market development director, Rockwell Software.

For example, a company makes use of a Rockwell Cloud-based solution and a Microsoft platform for its fracking trucks. Sensors and other field-based devices provide data...
via real-time production models to preconfigured software, which builds reports and displays. In some instances users can use iPads and Gmail to log in to their trucks, check actual data dashboards with real-time parameters and even initiate immediate orders for service or supplies. Rockwell Software offers a mobile app, which provides any KPIs users’ needs at their fingertips. Rockwell Automation offers a pre-engineered, scalable infrastructure that lets users run multiple operating systems and applications on virtualised servers. It has the ability to run a virtualised PlantPAx™ system (Rockwell Automation’s process automation system) and a variety of third-party software packages on a user’s private cloud.

“We believe that we are at an inflection point drawn by the integration of the Internet of Things and the Connected Enterprise,” Nosbusch concludes.

*For the full article visit EMEA2951 What is the Connected Enterprise. doc, as posted in Rockwell Automation’s The Journal, March 2014.

Enquiries:
Christo Buys
Business Manager – Control Systems (Sub-Sahara Africa)
Rockwell Automation
cbuys@ra.rockwell.com

Industrial Ethernet offers great opportunities
Endress+Hauser’s Ethernet Strategy

In the “Industrial Internet of Things”, information technology is integrated directly into the field level of process plants. In the long term, internet-based technology will replace classic industrial communication technology, in particular fieldbuses. This development will result in open, transparent network architectures that allow seamless horizontal and vertical communication. In this scenario, Industrial Ethernet and all types of wireless technologies will play a decisive role. They are easy to integrate and allow the operators real-time access to all relevant data and thus valuable insight into their process automation systems.

Additional advantages of Industrial Ethernet

- Simple engineering
- Quick commissioning of field devices
- Large range of services that can be executed in parallel due to the “data highway”
- Flexible, modular installation of the field infrastructure

Product portfolio

Endress+Hauser has already developed a product portfolio that is based on Industrial Ethernet and is targeted at the various sectors in the industries. In accordance with sector requirements, Ethernet-capable four-wire devices are offered, such as flowmeters and liquid analysers as well as recorders and gateways. Loop/bus-powered devices for pressure, temperature and level measurement can also be easily integrated into Ethernet networks by means of remote I/Os and gateways.

EtherNet/IP and PROFINET

Endress+Hauser is already very successful with EtherNet/IP in the various markets, especially with alliance partner Rockwell. PROFINET is also included in Endress+Hauser’s Ethernet Strategy and new PROFINET devices and integration interfaces will be available in the near future. In the last few years there has been a large demand for this technology in Europe and Industrial Ethernet offers great opportunities in the hybrid industries.

Classical fieldbuses and protocols

The greatest opportunities for Industrial Ethernet are to be found in the hybrid industries. Endress+Hauser’s other key industries are Mining, Metals, Chemicals, Power Plants and Oil & Gas. While the classical fieldbuses such as PROFIBUS PA and FOUNDATION fieldbus as well as digital communication protocols such as WirelessHART, HART and even Modbus are widely used, in the long term, the use of Industrial Ethernet will increase. There are a number of requirements associated with specific applications that need to be addressed. For example, those applications for explosion hazardous areas, for bridging long distances with copper cables or for the simultaneous transmission of data and power on the bus. In view of the long plant life cycles, Industrial Ethernet and classical fieldbuses will also have to coexist with one another.
B2B integration with Tronox: The Perfect Process

Endress+Hauser and Tronox takes procurement to the next level with first B2B integration.

The mining company Tronox set itself the target to replace manual, error-prone, paper-based procurement processes with quick, easy and uncomplicated electronic data exchange with their suppliers.

Known as the “perfect process”, this approach is already running successfully with partner Endress+Hauser. The introduction of electronic data interchange (EDI) for communicating with suppliers is part of the electronic business (e-Business) process at Tronox.

The objective is to move from the traditional, primarily paper-based business processes used to date, to electronic data exchange with all Tronox’s suppliers. According to Mr Shalin Naidoo, Head of Business Applications Tronox - South Africa, Tronox is “trying to better and optimise our supply chain and value chain processes to best suit our cost and profit models at Tronox. Having as few administration tasks as well as manual inputs as possible, removes potential errors and corrective actions needed which makes the process faster and less arduous. B2B brings about this trend and change we are looking for in Tronox as a whole.”

Mr Naidoo continued by saying “the integration will make the procurement and transactional processes between Endress+Hauser and Tronox simpler and faster. Our systems talk directly to each other to generate financial documents that will now hold up to the most rigorous audit as well as any financial/inventory reconciliations that need to be conducted. Resources at Tronox now have the extra capacity removed from the procurement process to focus their time and skill on other more operationally important tasks”.

The Perfect Process
The perfect process, i.e. order processing via EDI, was initiated by both Mr Shalin Naidoo (Tronox, South Africa) and Mr Deon Myburgh (Area Sales Manager - Endress+Hauser Cape Town) at the beginning of 2014. Launched as a joint initiative between both companies, this involves the direct transfer of the various documents such as purchase orders, order confirmation and delivery notes required, in the procurement process, as electronic data records between the ERP systems of Tronox and Endress+Hauser. There are no longer any manual interfaces.

Initiated locally as a pilot project for both Endress+Hauser and Tronox, this entailed a lot of planning and testing before implementation was done. Pre and post consultation was done to ensure the smooth transition from traditional procurement to electronic data exchanges.

The procurement process is now simplified and both parties now enjoy a procurement process that is of a much higher quality and is considerably faster. The manual effort required in operational processing has been reduced significantly and the rate of error greatly decreased in comparison to data recording by hand.

How does it work!
For each order, Endress+Hauser receives the required data set for the products to be purchased. The relevant data stored in each system must be completely aligned and synced to ensure that the order is processed correctly and automatically. This means that processes must be fully harmonised in advance, master data must be up-to-date and consistent, and the systems must have the flexibility to deal with new methods and procedures.

“This is a definite must have or goal for any company that goes the procurement process and are looking for any kind of inorganic, even organic growth. So that’s basically everyone. This has a fundamental effect on the way business is conducted and a significant shift towards digitisation and e-commerce. Multi-million and billion rand system’s value cannot be fully appreciated without automated mechanisms such as these”.

Mr Shalin Naidoo

The B2B integration via the secure EDI link covers electronic purchase orders as well as electronic order confirmations based on Master Quotations, called an e-catalogue in Tronox system. The e-catalogue as a sourcing solution, was chosen according to Tronox’s business model. The major part of Tronox’s business is based on “standard” products clearly identified with customer material numbers. The e-catalogue includes all these standards and allows the customer to pick-up the needed material and order it directly through their ERP system. Both Tronox and Endress+Hauser uses SAP has their ERP system.
The perfect process

Purchase orders sourced and referenced, from the e-catalogue hosted in Tronox’s ERP system, is sent directly via the secure EDI link to Endress+Hauser’s ERP system. Tronox’s purchase order is automatically converted into an order confirmation in Endress+Hauser SAP system. The entire process is facilitated by the secure EDI link and the process is seamless and effortless.

**IT Partner**

With the assistance of our IT partner, Endress+Hauser InfoServe, the integration and synchronisation of the 2 ERP systems were made possible. Endress+Hauser InfoServe was able to guarantee reliable, quick and professional implementation of the IT technical framework.

With over 200 employees and certified as an SAP Customer Competence Centre and SAP Hosting and Business Partner, InfoServe offers all of the services of a modern data centre. The many years of experience in integration projects meant that the first implementation of the “perfect process” was possible at Tronox in July of 2015.

“From my perspective this was the open and regular communication between the Tronox and Endress+Hauser teams, a perfect practical example of Business Technology and Adaptive IT at work. Initially we needed to iron out a few kinks through defining our Rules of Engagement. From then on it was communicate and execute. Keeping to our timelines and tasks for the week ahead was critical in ensuring success. Closer to the time of roll-out, our once-a-week meeting became twice and even 3 times a week. Our business stakeholders at our operations as well as our outsource partner in TCS, had complete buy-in to the goal of this integration which played a major part in its success. The project team at Endress+Hauser were also superb in their execution and guidance”, commented Shalin Naidoo on both parties expertise throughout the integration project.

By implementing B2B integration, increases purchasing process quality and strengthen our relationship with Tronox, which is a win-win situation for both companies.

In this way, B2B integration enables Tronox to “buy better” and Endress+Hauser to “serve better” procurement offerings. All Endress+Hauser procurement solutions are offered free of charge to all our customers. Procurement solutions are tailored to fit your organisational requirements and needs. Investing in an ERP system is a costly cap-ex. Make your existing ERP system work for you by optimising its full potential and saving costs in the process. At Endress+Hauser we offer the technical capabilities as well as the necessary expertise to achieve this.

Technology is constantly changing and electronic procurement is the way forward.

For more information on E-business solutions, please contact:
Deshini Govender
E-business Specialist
Tel: 011 262 8021 | Cell: 071 350 4991
deshini.govender@za.endress.com

Tronox Limited is a global leader in the mining, production and marketing of inorganic minerals and chemicals. The company operates in more than 20 locations around the world, with corporate offices in Stamford, Connecticut (USA), Bentley, Australia, Philadelphia, Pennsylvania (USA)and Sandton, South Africa. It has a research and development center in Oklahoma City, Oklahoma (USA). Tronox’s diverse global workforce of 4,400 employees is committed to safe and sustainable business practices that bring value to its shareholders, customers, employees, and the communities where it works and live.
The Operations App

You can find out quickly and easily everything you’ve always wanted to know about your devices - anytime and anywhere. Simply enter the serial number or scan in the data matrix code, and information such as order number, availability, spare parts, replacement models, general product information, operating instructions and technical details, is immediately available. The app is the mobile equivalent of the well-known online serial number search using the W@M Device Viewer and has exactly the same functions.

The functions at a glance
- Detailed and up-to-date product information.
- Device list: history of last search.
- Document download: e.g. manuals, certificates, etc.
- Spare parts lists for your measuring device.
- Share information and documentation with colleagues.

More information available at: www.za.endress.com
Just as the “Internet of things” seems future orientated, so too did Memosens technology from Endress+Hauser. The market launch of Memosens by Endress+Hauser in the spring of 2004 saw the beginning of a success story that has since become an industry standard. More than 1 million sensors used speak for themselves. Memosens stands for the digitisation of the measured values directly in the sensor head, the contactless digital signal transmission and the storage of all data relevant to the sensor directly in the sensor.

Memosens sensors are available for the following measuring parameters:
- pH/Redox
- Conductivity, inductive and conductive
- Dissolved oxygen, amperometric and optic
- Turbidity
- Chlorine
- Ultrasonic sludge level
- Ion-sensitive sensors for ammonium and nitrate

Of course, Memosens sensors are also available for use in hazardous areas.

With all the sensors now speaking the same language thanks to Memosens technology, we have been able to develop a completely new transmitter platform with the Liquiline devices, optimised for the use of digital Memosens sensors.

Liquiline measuring transmitters simplify operation
The stand-out features of the Liquiline devices include their intuitive operation and their ability to automatically detect and connect sensors that are connected. The measurement parameter is detected by the device and the corresponding software is activated. Within half a minute, the system is ready to measure with the relevant parameter. The sensor parameters are also copied automatically, thus preventing parameterisation errors. This means that, regardless of the measuring parameter, only one transmitter type is still required. Storage costs are reduced and the ordering process is simplified.

What are the benefits for the customer
- Reliable signal transmission: No moisture or EMC problems thanks to the inductive, digital signal transmission
- Intelligent safety: An active indication is given in the event that there is no connection between the sensor and measuring transmitter
- Simplified installation thanks to the sensor and measuring transmitter being spaced further apart - 100 m guaranteed
- Field calibration no longer necessary - Easy, reliable calibration in the laboratory is possible because the relevant data is stored in the sensor head
- Reliable operation through increased availability of the measuring point
- Quick commissioning and simple maintenance make your measuring point profitable

More information available at:
www.za.endress.com
Learning versus Training

The Power of know how – Process engineering is anything but simple. How can we impart information that is hard to digest in an easily accessible manner?

South Africa jobless rate increased to 26.4 percent in the first three months of 2015 from 24.3 percent in the precedent quarter. For the Process Automation sector, the unemployment figures may not be as high, but this sector demands high technology specialisation and with high technical competence as a main requirement of the instrumentation personnel.

For the process automation sector it is not only hard to get new fully qualified staff, but the ones who are available are probably not the most experienced having just completed their studies at the universities or technology centres. Even in other parts of the world where it is much easier to find new staff, the requested qualification combined with required process experience remains an issue.

But what happens to the existing staff? The life cycle of technology is getting shorter and shorter. How does a technical person stay up to date? As for the process plants and factories, how can they be sure that they exploit the options of the technology and field instruments you are using today? In today’s cost cutting efficiency requirements; plant availability, product quality and safety are becoming key – with the instrumentation technician or engineer needing to understand the complete life cycle of a plant in ensuring that these changes in technology are introduced to maximise the sustainability of a process plant. This change is no longer merely just a question of maintenance.

Apart from hiring of new staff and on-boarding these members, another aspect that needs attention is the ensuring further education for the staff. This becomes questions of the financial implications of further training. How much does a company invest in further education and do they have any idea if the money is well invested? It is no longer a matter of ‘just attending’ training, but to learn and comprehend while being able to utilise these skills the very next week in plant conditions.

In the past the focus was on: The delivery of training that means we made a check mark after a person attended a course and we assumed that he now has the knowledge and skills to perform better in his job.

Endress+Hauser stands for a shift in paradigm. Our focus is not on delivering a training course, our focus is on the learner, that he really acquires new knowledge and skills he can apply in his job. To ensure the success of such a program we use an instructional system design model, which has been developed by the American Society for Training and Development, which recently renamed to ATD which stands for Association for Talent Development. The model is called “The Training Cycle” and consists of 5 steps:

1. Assess & Analyse Needs
2. Develop Learning Objectives
3. Design Program
4. Implement Design
5. Evaluate Performance
First: Analyse the training needs: here we will do a Gap–Analysis, and clarify questions about target group, necessary and existing preconditions, and other frame conditions.

Second: develop learning objectives: a learning objective is a specific performance statement about knowledge or skills which should be gained during the program. They are essential because based on the learning objectives the content will be developed and also the success of the program will be assessed.

Third: Design the program: In the past most training courses were content centred with an “expert” sharing his experience making use of only slide shows, rushing through a 90 slide presentation in 60 minutes. At Endress+Hauser we do not call this training, we believe in more interaction with our clients. We believe that we first need to analyse what it is that our clients would like to hear, what they would like to learn. Based on the needs analysis we then develop the necessary content which will then be transmitted in an interactive style. We also base our learning style on the latest findings about adult-learning. Finally steps four and five are implemented to address implementation and complete the final evaluation.

Endress+Hauser South Africa has addressed these needs and launched training in Process Measurement and Instrumentation, utilising the Universal Training Rig (UTR), at the Africa Automation Fair in May 2015. Purpose built for Endress+Hauser South Africa at the company’s Application Training Centre (ATC), in Reinach Switzerland, the UTR utilises 20 devices from the company’s extensive range of flow, level, pressure and pH measuring instruments in a variety of flow and control loop configurations.

The integrated oil, water, acid and alkaline reservoir tanks combined with mixing and separation chambers allow a huge range of flow, level and pH conditions to be created through the utilisation of different control loop strategies bases on pressure, temperature, level, density and pump speed primary values.

Whilst not emulating a production process of any specific industry, the UTR presents the application frame conditions in a way to offer a variety of training possibilities. An agitator (level disturbance), heater element (temperature changes) and injected compressed air (entrained gas) allow the process conditions to be interrupted in a controlled manner giving the trainee a practical perspective of the sensitivities of each instrumentation type operating under varying field conditions.

All operational parameters including instrument selection and sizing software tool ‘Applicator’ plus hands on instrument configuration and troubleshooting using the device keyboard and display as well as the service software tool “FieldCare”.

As well as “real life” instrument and control operation, the UTR also allows different field communication strategies to be presented via its use of Wireless HART, Profinbus as well as standard 4–20 mA connections. Supplementary topics such as reading and understanding P&ID diagrams and Plant Asset Management are also included. The courses are interactive with all theory accompanied by extensive practical assignments on the UTR itself followed by written assessments thus maximising the learning experience.

On request, a training brochure is available outlining the Process Measurement and Instrumentation training course modules in more detail including pricing and schedules. An open day is planned for later in the year where you will be able to have an in-depth look at the UTR and the training program and discuss what it has to offer your company.
The last week of May Endress+Hauser held the first Process Measurement & Instrumentation training course utilising the new training concept format introduced in the last edition of wazzup and launched at the Africa Automation Fair on May 6th. It included brand new course material centred around the Universal Training Rig (UTR) and was planned and executed as an evaluation “dry run”. Over the full ten days, we exposed six members of staff comprising three experienced and three trainees from the sales and service departments of varying degrees of technical and process expertise and experience to the full contents of what was a brand new training method to both the trainees and the trainers themselves.

The target was to evaluate all aspects of the training package from the basic time schedule and agenda right through to the relevancy and effectiveness of the theoretical and practical training content.

“What interested me the most was the different effects of each individual measurement technology, on the rig, when used as part of the PID control loop”

Benjamin Mlangeni, Product Manager Temperature System Components & Registration

A 10 day training course is a challenge at the best of times but more so when every aspect and detail of the content and organisation is under the critical microscope. The feedback received was excellent and very reassuring that we had essentially got things right and a rather uncommon
“The theoretical training combined with the extensive hands on learning was extremely useful in the learning situation and to gain valuable process experience. I thoroughly enjoyed the course and learnt a great deal”

Timothy Couper, Service Trainee

response was that the course was “fun” because of the ability to “play” with installed instruments and “mess them up” by creating situations commonly found in the field that are not possible to recreate on a training bench.

Although the course as presented got a positive vote, the honest and open feedback received allowed us to tweak the format and content in places and I am truly confident that the final course presented to the marketplace does exactly what it was intended to do and presents excellent value for both employers and employees like.

Looking forward...

We are now open for bookings for the next Process Measurement & Instrumentation courses planned for the remainder of the year. The course content is designed for Project, Factory and Quality engineers and Instrument technicians alike with a medium to low familiarity of working instrumentation and process installations. More experienced technicians, engineers and managers could also benefit from attending as a refresher course with a different approach to teaching.

TCI001 - 26th - 30th October
TCI002 - 2nd - 5th September
TCI001 - 11th - 15th January 2016
TCI002 - 18th - 22nd January 2016

“Being a trainer, involved in technical training is both challenging and rewarding at the same time. You have a responsibility to impart your expertise to the candidates in a way that is stimulating, understandable, and easily absorbed”

Preston Reddy, Field Service Technician and Trainer

The cost per person is **9,000 ZAR** per course (TCI001 or TCI002) if booked separately and **15,000 ZAR** if booked together (TCI001 and TCI002).

**Note:**
1. Successful completion of TCI001 is a requirement for entry to TCI002.
2. Places are strictly limited to 6 persons per course to ensure maximum benefit to the trainee so early booking is recommended.

**Please contact:**
Chris Gimson (chris.gimson@za.endress.com) or Cezanne Gonsior (cezanne.gonsior@za.endress.com, 011 262 8097) to book for any of the above courses and/or for more details including a copy of the booklet ‘Process control & automation training solutions’, the latter contains more indepth details of the UTR and the training module contents.
According to one of our previous participants this training tour is a “once off opportunity not to be missed!” The training tour provides a balance between refreshing one’s current knowledge while learning about the latest developments in the process industry. A visit to Basel University, several Endress+Hauser factories in Germany, Switzerland and France and culminating at the Hannover Messe 2016 are some of the highlights. Topics of discussion will include nanotechnology, development in liquid and solid level measurement, new flow measurement solutions, field networking technology as well as the latest advances in temperature sensors and transmitters.

**Basel University 19 April (Basel, Switzerland)**

Renowned for its work in nanotechnology, Basel University will share their experiences in this fascinating area and end with a tour of their facilities.

**Endress+Hauser Maulburg 20 April (Maulburg, Germany)**

Maulburg is home to Endress+Hauser’s production and competence centre for level and pressure measurement. Constant product quality, plant safety and economic efficiency are essential for any pressure or level measuring point. With more than 60 years of experience, Endress+Hauser has developed a broad range of products. Unfortunately due to time constraints only a few will be highlighted during your visit to Maulburg such as:

- Soliphant and Liquiphant
- ToF using Radar, Ultrasonic and TDR
- Pressure ‘Evolution line’
- Tank Gauging

A tour of the level production facility will include microwave test rig, Micropilot Levelflex and electronic...
production. While the tour of the pressure production facility will highlight EMC lab and test centre.

Endress+Hauser Flowtec 21 April (Cernay, France and Reinach, Switzerland)
Endress+Hauser is a global leader in flow measurement offering one of the broadest product portfolios. Participants will have the opportunity of visiting two flow production centres Cernay and Reinach.

The production facility in Cernay manufactures the electromagnetic flowmeters. This facility has contributed significantly to the Group’s success by celebrating the production of 1 million electromagnetic flowmeters in 2008. Today the majority of electromagnetic flowmeters are manufactured here, making it the world’s largest production facility for electromagnetic flowmeters. Here participants will have the opportunity to view the test and calibration facilities for magnetic flowmeters up to 2400mm in diameter.

Reinach production facility is one of the largest manufacturers of modern industrial flowmeters for liquids, gases and steam in the world. Demonstrations of flow principles such as coriolis and ultrasonic will be given by top engineers in their respective field including presentation of the gas and liquid flow research facilities.

Endress+Hauser Solutions 22 April (Reinach, Switzerland)
At our Process Solution Product Centre, an overview of the application of various field networking solutions will be highlighted. Furthermore an introduction to Plant Asset Management as well as a demonstration of Condition Monitoring will be presented.

Application Training Centre 22 April (Reinach, Switzerland)
The Application Training Centre (ATC) is the next step: The main task of the ATC is to offer industry specific application training, which looks at the complete system and production process and not just specific field instruments. In order to genuinely fulfill the promise of our company motto “People for Process Automation” we have to understand industry specific requirements, our customers’ production processes and really speak and understand their “language”.

While at the ATC you will be able to view the process rigs that are utilised during the training and teachware that have been specifically created for Endress+Hauser’s training. The core part of each training module is practical experience while experience gained in hands-on part depends on the target group and the trainee’s interaction and experience. Brief lectures alternate with work assignments, which will be completed in small groups or alone. Some work assignments are theoretical but most of them require practical work with hardware equipment. A final assessment will assure the quality of the training module.

“Time flies and our Inboxes do pile up quite quickly while out of the office... once again it has been a great tour with E+H. Every detail has been organised to suit everybody in the group. I am pleased to see that E+H maintains and improves the on-going excellence in Product Manufacturing which benefits us all in the world of Field Instrumentation and Automation”

Bernd Izko - CEO: ECOGROUP of Companies
“From my side, I am very grateful for the opportunity that E+H has given us. I was once again very impressed with the incredible mark that E+H has made in the global instrumentation field and market, their sheer commitment towards their own employees and the extraordinary atmosphere one experiences in their factories. Thanks to everyone who contributed in making it a great experience! Hope to see you again soon!”

Rudi De Beer - Senior C&I Engineer Lesedi Nuclear Services

Depart for Kempten in Bavaria 23 April (Bavaria, Germany)
Check-out of the hotel in Weil-Am-Rhein and transfer to Munich (+/- 5 hrs) by bus via Lake Constance and Munich and the possibility of individual sight-seeing and/or shopping in Munich

Sight Seeing in Bavaria 24 April (Bavaria, Germany)
Departure for Bavarian sight-seeing tour to castle Neuschwanstein (http://www.neuschwanstein.de) followed by possibility of souvenir shopping. Then depart to castle Linderhof (http://www.schlosslinderhof.de) for a guided tour.

Endress+Hauser Wetzer 25 April (Nesselwang, Germany)
Endress+Hauser Wetzer is one of the leading producers of temperature measurement, temperature engineered solutions, recorders, indicators, paperless recorders and system products worldwide.

The following world class manufacturing activities will be show cased during your visit:
- Factory tour of the production of temperature/transmitters/recorders/displays and components.
- Introduction to recorder and data acquisition technology featuring paperless recorders, tamper-proof recorders and industrial energy monitoring and calculations for water, steam, gas and liquid.

- Introduction to temperature transmitters technology featuring Integrated Intelligence, SIL and additional process features and an introduction to the selection and sizing of temperature sensors using the Applicator software.
- View the automated circuit board assembly plant where fully automated SMD automation machines pick and place more than 60 million components onto 750,000 printed circuit boards per year.
- Witness the automated manufacturing process with computer controlled robot technology where in one year Endress+Hauser produces more than 30,000 protection tubes and process connections for our thermometers and more than 2 million temperature transmitters produced.
- View the manufacturing of the sensor elements, the heart of temperature measurement, with thin-film sensors based on silicon and embedded in ceramic potting creating the one of the world’s most accurate temperature sensors.
- Visit the world-wide accredited calibration laboratories where you will find the latest technology and test equipment in the test centers.

Process Automation at Hannover Messe 2016
27 -28 April (Hannover, Germany)
In 2010 the well-known “Interkama” was rebranded “Process Automation” at the Hannover Messe, however it has remained the leading technology event for the process automation industry in Europe.

Process Automation provides the ideal platform for visitors to network with leading global exhibitors who are showcasing their innovative ideas and latest products. Focusing on
“Thank you very much for the opportunity that you afforded Chaleen and I to accompany E+H on the 2014 Hannover Training Tour. We made some new friends and enjoyed the time with you tremendously. Thanks again to Ariane and Claudia for being such good touring hosts. I think the programme was very well put together I cannot think about anything that could have been done any different. Well done”

Alan Strydom - Lead EC&I Engineer DRAGlobal

“The organisation was incredible and this has been one of the greatest Company Tours with E+H. All the meals, sightseeing, events, factory visits, hotels and the Hannover Messe was really organised to perfection. The visits to the Product Manufacturing factories proved that E+H is one of the world leaders when it comes to quality, excellence, training and ongoing improvement in C & I products. The Tour Group was also unbelievable as we socialised very easily, and had a great time. One of the positives is that new friends and business colleagues were made.”

Danie Giliomee - Senior Design Engineer (C & I) Lesedi Nuclear Services

interdisciplinary synergy effects will create some truly unique interfaces between business and technology.

As well as complete solutions, visitors to Process Automation will also find engineering, maintenance services and a vast array of components and field devices. The Centre of Expertise Wireless offers visitors in-depth information on wireless industrial communications. This Centre is located right next to Process Automation creating the perfect context for exploring Wireless HART, a technology with increasing relevance for process automation.

Endress+Hauser at Hannover Messe

In today’s economic climate, achieving efficient plant operation has never been so important. Effective planning, state-of-the-art technology and a thorough maintenance regime all contribute to keeping you one step ahead of your competition. By visiting the Endress+Hauser stand (Hall 11 Stand 39), our knowledgeable staff will take the time to work with you to discover your options for improved process control.

Book Today!

Date: 18 to 30 April inclusive
Price: Approximately R41 500 excluding VAT (includes all travel, accommodation and most meals)
Contact: Cezanne Gonsior on Tel: 011 262 8097 or cezanne.gonsior@za.endress.com

Additional: Partners are most welcome to join as a separate partner’s program is available. The additional cost is R28 500 or R70 000 per couple excluding VAT. Prices subject to exchange rate fluctuation.
Africa Automation Fair 2015 was held from the 5 - 7 May 2015 at the Coca Cola Dome in North Riding, Johannesburg, and ultimately lived up to its reputation of being the largest, most comprehensive showcase of Industrial Control Technologies of its kind in the Southern Hemisphere.

With a strong world-wide focus on Africa and its economic growth within the industrial sector, AFRICA AUTOMATION FAIR 2015 was the number one meeting place for visitors from throughout Southern Africa.

“With record-breaking exhibitor and visitor numbers at Africa Automation Fair this year, final tally was 4154 people, we as organisers are extremely proud to have managed an event such as AAF. The enormous effort and enthusiasm shown by the entire industry resulted in exactly what we set out to achieve: to host the largest and most comprehensive showcase of automation and control technologies in the southern hemisphere! We are already looking forward to the next event, possibly to be held elsewhere in Africa in 2016! Watch this space for more details . . .” Event organiser, Hanli Kritzinger

The FIRST Robotics Open African Championships competition added another dimension to AAF as peals of excitement echoed through the exhibition hall over the three days of the show. At the grand award ceremony the FIRST Lego League (FLL) winners from 23 international and 11 South African teams were announced. These were the Brazilian team, Sesi Robonautics with a maximum score of 731; Sesi Megasnakes from Brazil with a score of 715; and Robosuns with a maximum score of 699. There was no doubt that holding it here was a major coup and all credit should go to event manager, Johannes de Vries for his vision and superb management. “This was the biggest and best competition we have ever hosted and we have received very positive feedback, especially from our international teams and FLL partners in Denmark and the USA,” said Johannes de Vries.
Mandela day at Itlhokomeleng

Ithokomeleng Association for the aged and disabled persons was conceived in 1978 by a group of concerned women from Alexandra community, who were alarmed about the plight of pensioners in their area. Spearheaded by Ms Morjorie Manganye, she initiated the committee Ithokomeleng which means help yourselves, which than gave birth to the welfare organisation which was officially registered in 1984.

In 1991 a permanent home was built to replace the temporary home and increase the number of residence to 90 elders with 60% frail care unit. In terms of the non-profit organisation act, 1997, the home is allowed to admit disabled people regardless of their age.

Endress+Hauser took time to visit the age home for Mandela day ensuring that 218 people had a nutritious meal to start their exciting day off. This was a great feat as the volunteers and events committee members were kept on their toes serving the soup, rolls, tea, biscuits and a quick chat.

With R870 contributions from staff which was spent on food parcels as well as other food items that staff donated will assist immensely with the feeding of those that are part of their outreach program. A very special thank you to all of you who took the time and those that couldn’t be there that made a contribution. Without you this success would not have been possible.

Despite the great appreciation from Ithokomeleng for Endress+Hauser’s contribution, time and efforts. There is still a growing need to for finances, volunteers, wheel chairs, laptops, generators, food parcels and anything you can assist with in order to continuously care for the for the elders and disabled people.

“Make everyday a Mandela day “

To make a difference please contact our events committee chair person:
Violet Mthombeni:
Direct line: 011 262 8043
Email: violet.mthombeni@za.endress.com

Future Events

**Electra Mining Botswana**
1-3 September 2015
Electra Mining Botswana is the biggest mining, industrial and power generation trade show in Botswana and officially endorsed by the Ministry of Minerals, Energy and Water Resources and the Botswana Chamber of Mines. Visit Endress+Hauser on Stand C14, where we will be showcasing flow, level, pressure, analytics, temperature and solution capabilities for the mining industry. Our Global Industry Manager, Andrew Reese will also be there to discuss global trends

**MTE Exhibition Rustenburg**
10 September 2015
MTE Exhibition focuses on the mining industry in the different regions. Visit Endress+Hauser, where we will be showcasing flow, level, pressure, analytics, temperature and solution capabilities for the mining industry from 13:00 – 17:30 at the Impala Rugby Club, Rustenburg

**IFAT Environmental Technology Forum Africa Co-located with BAUMA CONEXPO AFRICA**
September 15 – 18, 2015 at Johannesburg Expo Centre (JEC) in Johannesburg, South Africa.
IFAT is a top showcase for strategies and new solutions in water, waste water, sewage, waste and raw materials management in primarily the water/waste water, industrial waste water and mining industries. The focus will be on careful use of resources in intelligent cycles in order to preserve them for the long term. Visit Endress+Hauser on Stand F12 in Hall 7, where we will be showcasing the following products:
- New analytical technologies including, CA80 Ammonia Analyser
- Latest flow technology including new flow verification
- Level technology
- Web enabled asset management