

PRESS REPORTS HANOVER FAIR 2010

Pepperl+Fuchs GmbH, Business Unit Process Automation
You can find in hall 7, stand C14

Encloses you will find the following press reports:

- ❑ Company profile
- ❑ Research and Reality – Technologies Turn into Products
- ❑ *WirelessHART™*: From Technology to Products
- ❑ DART Is Becoming Reality
Pepperl+Fuchs introduces first real-life applications
- ❑ Components That Make up Customized Solutions
Integration pf Walsall product expands portfolio
- ❑ Spotlight on Solution Manufacturing
Folding stainless steel is like Origami
- ❑ PS3500 – Unrelenting Current
- ❑ Bebcu EPS® 5000Q Series Is Simple to Implement and Operate
New Purge+Pressurization System for Zone 2, Zone 22 hazardous areas
- ❑ Partial Stroke Test with new SIL 3 Solenoid Driver
- ❑ GMP Operator Workstation for Zone 2
- ❑ Remote I/O Sports New Design
- ❑ ETHERNET Remote I/O Brings All Kinds of Process Signals to the Industrial Ethernet
- ❑ Giant Step with a Small Footprint
Pepperl+Fuchs presents an ultra compact power hub
- ❑ Fieldbus Diagnostics – The Easy Way
Pepperl+Fuchs introduces plug and play diagnostics module

We would be very pleased if you would continue publishing our press reports in your magazine. Should you have any question or if you are interested in a special subject, please do not hesitate to contact us.

Editorial contact:

Christa Blas
Pepperl+Fuchs GmbH
Division Process Automation
Phone: +49 621 776-1420
Fax: +49 621 776-1108
Mail: cblas@de.pepperl-fuchs.com

Mannheim, April 2010

Company profile

Company name:	Pepperl+Fuchs GmbH
Postal address:	68301 Mannheim
Address for visitors:	Lilienthalstrasse 200, 68307 Mannheim, Germany
Phone:	+49 621 776-0
Fax:	+49 621 776-1000
Internet:	www.pepperl-fuchs.com
E-Mail:	info@de.pepperl-fuchs.com
Managing Directors:	Dr.-Ing. Gunther Kegel (CEO), Dr.-Ing. Peter Adolphs, Werner Guthier, Mehmet Hatiboglu
Year of foundation:	1945
Reporting year 2009:	
Turnover:	300 Mill. Euro (consolidated external sales)
Employees:	3.700 worldwide
Divisions:	Factory Automation, Process Automation
Manufacturing plants:	Germany, USA, Singapore, Hungary, India, Indonesia, Vietnam
Subsidiaries:	more than 30 companies worldwide
Main target markets:	Factory Automation: machine building industry, automotive industry, material handling and logistics, printing and paper industry, packaging machinery, process equipment, door/gate/elevator construction, textile industry, renewable energies Process Automation: chemical and pharmaceutical industry, oil and gas industry including offshore and marine, power industries, water and waste water
Core products and services:	Components for the Factory Automation: the sensor types inductive, capacitive, ultrasonic, photoelectric, rotary encoders, identifications systems, barcodes, data-matrix-codes, vision sensors Components for the Process Automation: interface modules, remote I/O systems, fieldbus infrastructure techniques completed by based around enclosures in the increased safety, intrinsic safety and flameproof protecting classes with approvals for the integration of a wide range of electrical apparatus, level control devices, Ex-operating terminal systems, Ex-IPCs, seminars teachware

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Research and Reality – Technologies Turn into Products

At the 2008 Hanover Fair, DART was nominated for the Hermes Award as a technology with the potential to revolutionize intrinsic safety. At the 2010 Hanover Fair, Pepperl+Fuchs is presenting the first DART-products to provide a completely intrinsically safe fieldbus with a performance level previously inconceivable. DART has been developed into an open technology and has grown from a highly regarded research project into a range of real products. Within the “power-i” project initiated by the “Physikalisch Technische Bundesanstalt” (PTB) in Germany, all major manufacturers support the international work of defining the respective standards. At Pepperl+Fuchs’ stand at the 2010 Hanover Fair, this will be demonstrated with a cross-manufacturer connection between a DART analysis system and a DART power source.

WirelessHART is another technology that was first presented at the 2008 Hanover Fair and has made it from the R&D labs to a range of available products. WirelessHART is the first open standard for wireless communication between field devices in the process industry. Many manufacturers offer WirelessHART products, and the technology has shown positive results in user field tests. This means that *WirelessHART* is ready to become a widely accepted industry standard.

At the 2010 Hanover Fair, Pepperl+Fuchs will present WirelessHART infrastructure components that enable the easy setup of a wireless network.

More product innovations will be introduced in the field of electromechanical products for explosion hazardous areas. At the end of 2009, Pepperl+Fuchs acquired the British company Walsall Ltd., which considerably widens its portfolio particularly for the integration of a wide variety of equipment in the protection methods "increased safety", "intrinsic safety" and "explosion proof".

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: DART, power-i, DART analysis device, DART power source, WirlessHART, wireless communication, intrinsic safety, pressure resistant encapsulation, electro-mechanical industrial resources

Author: Dipl.-Ing. Michael Kessler
Director Business Unit Components and Technology
Division Process Automation

Characters: 1,593, without space characters

March 2010

For royalty free use for publications.

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

***WirelessHART™*: From Technology to Products**

During the final months of 2009, NAMUR and the HART Communication Foundation conducted a field test at the BASF plant in Ludwigshafen, which has been actively supported by Pepperl+Fuchs. The result: *WirelessHART* was proven to be a sustainable technology that can be used in mobile and flexible applications.

Pepperl+Fuchs will show the first available products at the HANNOVER MESSE.

Field test clears the way

The NAMUR recommendation NE124 defines the requirement for wireless communication in process automation. One of the stipulations is an open and interoperable standard that is supported by many vendors. The only available standard today is *WirelessHART*. In order to operate the network seamlessly, all *WirelessHART* devices must be compatible and interoperable with each other. To ensure this, the HART Communication Foundation (HCF), NAMUR, and BASF teamed up with the leading manufacturers of *WirelessHART* products, including Pepperl+Fuchs, for a field test. With the help of BASF, NAMUR examined *WirelessHART* in terms of NE124. Pepperl+Fuchs took advantage of the test to determine how well our products conformed to the specification.

Pepperl+Fuchs took part in the field test with the *WirelessHART* Gateway and the *WirelessHART* Temperature Converter. The *WirelessHART* Adapter, which also will be offered by Pepperl+Fuchs, was provided by the cooperation partner Endress+Hauser.

Strengths and weaknesses

The results of the field test were positive, but they also revealed areas for improvement. The wireless communication and the security mechanisms proved to be extremely robust. However, there was some negative feedback regarding complete field device integration and plurality of battery solutions. As an improvement, BASF and NAMUR proposed a reduction in the amount of key performance indicators to enable easy network diagnostics instead of relying on vast amounts of statistics. Furthermore, the progress to eliminate all negative aspects is moving ahead at full speed.

Conclusion

Pepperl+Fuchs sees the result quite positively: the core technology can be considered as mature, and the wireless communication between devices of different vendors works well. Therefore, there is no fundamental obstacle that would hinder the use of *WirelessHART*. HOST integration has to be improved, but can be realized already today as Pepperl+Fuchs offers all necessary DTM and DD versions.

As a specialist in communication infrastructure, Pepperl+Fuchs will promote this technology. At the Hanover fair, Pepperl+Fuchs will present the *WirelessHART* Gateway, the *WirelessHART* Adapter and the *WirelessHART* Temperature Converter as the first products available.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it's inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: wirelesshart, field test, standard, standardization, wireless communication, wirelesshart gateway, wirelesshart adapter, wirelesshart temperature converter

Author: Dipl.-Ing. Gerrit Lohmann, Product Manager
Division Process Automation

Characters: 2,312, without space characters

Characters short text: 363 without space characters

Pictures: No. MC7522_090216_02, MC7522_090213_01,
MC7522_091109_01

March 2010

For royalty free use for publications.



Fig. 1: Eye catcher



Fig. 2: *WirelessHART* product line from Pepperl+Fuchs



Fig. 3: *WirelessHART* applications: level measurement

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

DART Is Becoming Reality

Pepperl+Fuchs introduces first real-life applications

DART is on its best way to becoming an accepted standard technology in the process industry. Dynamic Arc Recognition and Termination (DART) is a totally new approach to intrinsic safety, offering major benefits for system architects and plant operators alike. Not only is it much easier to certify the intrinsic safety of a circuit. DART also provides considerable more power to drive field devices within explosion hazardous areas and allows longer cable distances. This greatly increases installation options and opens a completely new range of applications. At the Hanover Fair 2010, Pepperl+Fuchs demonstrate a number of practical applications for DART and presents first products for this future technology.

DART was certainly one of the loudest buzzwords at industry events during the past year. For good reason, since this technology definitely carries all the genes to become the next revolution in process automation. It not only puts away with most of the limitations that have troubled system engineers when they were faced with the challenge to place high-power actors and sensors within explosion hazardous areas. Since DART does not limit the available effective power, but uses intelligent detection circuits to monitor the entire electric circuit. As soon as the formation of a dangerous spark is detected, the power supply is shut off within microseconds to prevent the spark from becoming incentive.

DART Fieldbus – Protecting your investment

DART-Fieldbus represents a truly smart solution, which beautifully blends into any existing trunk-and-spur topology and matches any existing Entity class field device. Trunk and spur has become the standard topology for most fieldbus based communication infrastructures. It combines a clearly structured system layout with utmost scalability and adaptability. When it comes to explosion protection, the recent past was characterized by two concepts: FISCO and Entity. Both have developed into de facto industry standards. They are considered to be

reliable solutions for process automation, although they have considerable shortcomings, such as limited cable distances, limited number of devices and limited usable power to operate these devices. The reason is the associated technical concept. It basically works with power limitation by keeping the current and voltage at a level which will prevent the development of a spark hot enough to cause an ignition.

Intrinsic safety right from the start

DART for the first time enables an intrinsically safe high-power trunk. It is driven by a DART power supply and is equipped with DART segment protectors, offering up to 20 outputs per segment, leading to the required field devices. The DART power supply is located in Zone 2, while trunk, segment protectors, spur lines and field devices may be located in the “danger” Zone 1.

In other words: DART allows for the entire segment to be installed intrinsically safe. It allows a high number of devices and considerably longer cable distances compared to FISCO or Entity.

For a DART-protected fieldbus infrastructure, the FieldConnex product range from Pepperl+Fuchs essentially provides two types of DART components. They are certified as a system: Only in combination they provide the DART protection for the trunk. The DART Power Hub provides a rated power of 22.5 volts at 360 mA to the trunk. The highly compact DART Power Hub comes in redundant configuration and with an (optional) Advanced Diagnostic Module (ADM), which continuously monitors the fieldbus physical layer to detect any signs of deteriorating signal quality that might need the attention of a service technician. The individual power modules are hot swappable to allow exchanging a defective device without interfering with plant operation.

The DART Segment Protector is the safety link between the high-power trunk and the field devices. It allows the connection of up to 12 spur lines with a length of up to 120 m each. These segment protectors provide short-circuit protection and intrinsically safe outputs according to Entity for easy connection of existing field instrumentation.

More power for the field device

DART allows the use of field instruments with higher power consumption than was previously possible in Zone 1: One of the first DART field instruments is called Protos 3400 Power-i. It is provided by the German process instrumentation specialist Knick and represents the very first process analysis device for operation within an electric circuit with intrinsic safety according to DART. The unit offers up to four channels to obtain measurements at different locations. It features a highly compact design with illuminated LCD display and is designed for easy on-site servicing.

The easy way of intrinsic safety

For system designers in the process automation world, DART is like the fulfillment of a dream. They do not have to switch to a completely new technical concept, but can build on their existing expertise to realize intrinsically safe solutions with dramatically increased functionality. For plant operators, DART Fieldbus is more an evolutionary than a revolutionary technology. It does not require completely new hardware, but protects their investments in their process automation infrastructure. Existing trunk-and-spur high-power trunk networks only need minor modifications, while all Entity field devices can remain in place.

After the reliability and intrinsic safety of the DART concept was verified by the Physikalisch Technische Bundesanstalt in Germany, the technology is finding its way into the respective IEC standards. Pepperl+Fuchs is a major driving force behind the development of DART. Together with 15 other manufacturers they are paving the ground work in a cooperative effort to make DART an easy to use technology adaptable to develop many solutions for the hazardous area. At this year's Hanover Fair, the company presents first products providing intrinsic safety with DART and demonstrates first applications that are only possible due to Dynamic Arc Recognition and Termination. Pepperl+Fuchs are interested in joint efforts to increase the application range of DART with suppliers interested in becoming DART system partners.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection components. We offer comprehensive, application oriented system solutions, including customer specific control cabinet solutions for the process industry. A large selection of components are available from our various product lines: isolation barriers, fieldbus infrastructure, remote I/O systems, HART interface solutions, fill level technology, pressure encapsulation systems, operating and observation, corrosion monitoring, power supply and alarm systems for oil and grease separators, signaling equipment, lighting, and emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: FieldConnex, DART, FOUNDATION Fieldbus, PROFIBUS PA, Segment Protector, Power Hub, Fieldbus

Author: Dipl.-Ing./MBA Andreas Hennecke
Product Marketing Manager
Division Process Automation

Characters: 5,329 without space characters

Characters short text: 675 without space characters

Picture: No. EC_AH_20100312_006

April 2010

For royalty free use for publications.



Fig. 1: DART Protection for the intrinsically-safe High-Power Trunk. Investment protection for all existing fieldbus instruments - connectable to the outputs of DART Segment Protectors.

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Components That Make Up Customized Solutions

Integration of Walsall products expands portfolio



One of the main objectives of the systems and solutions group from Pepperl+Fuchs is to respond quickly to their customers' requirements for automation solutions in hazardous areas. The acquisition of Walsall Ltd. has moved Pepperl+Fuchs one step closer to achieving this goal.

Pepperl+Fuchs' established interface, Remote I/O, and fieldbus components form the basis for customer-specific product solutions, from control cabinets to fieldbus distribution stations. A solution engineering team will oversee the project throughout its duration, from the initial offer through engineering, assembly and customer acceptance test.

In December 2009, Pepperl+Fuchs GmbH acquired Walsall Ltd. to extend its range of available solutions. The company develops and manufactures electromechanical products for use in hazardous areas. Their main products include enclosures for increased safety, intrinsic safety and flameproof protection classes with approvals for a wide range of electrical apparatus. Several products can be combined to create more complex system solutions. Enclosures are available in a wide variety of materials certified for use in hazardous areas. Walsall also manufactures lighting, signaling and emergency shutdown equipment as well as installation accessories for use in hazardous areas.

Being able to offer a wider selection of products enables Pepperl+Fuchs to offer comprehensive, customized solutions that more effectively meet the project requirements of their customers. For more information on all the new options please contact Pepperl+Fuchs' sales representatives.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it's inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: Walsall Limited, electromechanical equipment, explosive area, hazardous area, explosion protection, increased safety, intrinsic safety, flameproof enclosure, terminal enclosures, junction box, local control station, panel, system, fluorescence lighting, HID lamps, emergency lighting, complex control system, installation accessories, thread adaptation accessories, entry devices, emergency shutdown equipment, emergency shutdown accessories, systems and solutions, process automation, Pepperl+Fuchs

Author: Dipl.-Ing. Hermann Best
Director Business Unit Systems+Solutions
Division Process Automation

Characters: 1,450, without space characters

Characters short text: 318, without space characters

Picture: No. MC7522_100114_14

March 2010

For royalty free use for publications.



Fig. 1: Walsall Ltd. develops and manufactures electromechanical products for use in hazardous areas.

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Spotlight on Solution Manufacturing

Folding stainless steel is like Origami



For many years the Walsall brand has been synonymous with stainless steel enclosure fabrication. All steel enclosures are designed, punched, folded, welded and assembled on one site, allowing us to provide standard or completely bespoke solutions, while still remaining competitive in the market.

Different styles and sizes of enclosures provide solutions for almost all Ex e and Ex ia hazardous area applications, with the largest standard size box being 1,177 mm x 777 mm x 315 mm. However, our manufacturing capabilities allow production of any sized enclosure up to 2,000 mm x 1,250 mm x 600 mm. Currently, all Walsall branded enclosures carry ATEX, IEC Ex and GOST-R certification with INMETRO certification to be completed by the end of 2010. As well as carrying terminal box and control panel certification, all boxes are available as empty component approved enclosures, allowing system builders to incorporate Walsall enclosures into their own projects.

A 3D design service that is guaranteed to win the order

Traditionally, CAD drawings are provided in 2D, but sometimes projects need that little extra. If required, we can produce all of your drawings in 2D, backed up by a fully interactive 3D model of your design which is guaranteed to impress.

Providing complete solutions

Need more than a simple terminal box? All Walsall enclosures can be customized into more complex control stations. The LCS range offers single, double or triple local control units in fabricated 1.5 mm stainless steel enclosures, whilst the XLCP range provides the customer with the opportunity to specify and customize a control panel to their exact requirements. All of the functions used in Walsall control units have been designed and are manufactured in-house.

All entry devices used in Walsall solutions are made in-house on state of the art Mazak lathes. ThreadEx hazardous area entry devices are made from the same high quality raw materials as all enclosures. Currently the ThreadEx brand includes Ex e and Ex d stopping plugs in nylon (Ex e only), brass, stainless steel and aluminium. Also available are adaptors and reducers in brass and stainless steel, and 2 designs of breather drain also made from brass and stainless steel. ThreadEx armored cable glands are currently undergoing certification and will be available from Autumn 2010.

Other Products in the Walsall portfolio include:

- Ex d enclosures and control panels
- Ex d fluorescent lighting
- HID lighting
- GRP Ex e / Ex ia terminal enclosures
- GRP Ex de local control and control panels
- Emergency signaling equipment
- Ex d motor starters and control

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: Walsall, Enclosures, Terminal Boxes, Solutions, Control Station, Local Control, Control Panels, Lighting, Emergency signaling

Author: Chris Houghton
Product Marketing and IT support
Division Process Automation

Characters: 2,259, without space characters

Characters short text: 320, without space characters

Picture: No. MC7522_100315_01

March 2010

For royalty free use for publications.



Fig. 1: It is like Origami: Walsalls enclosures are designed, punched, folded, welded and assembled on one site

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

PS3500 — Unrelenting Current

Powering Availability: N+1 power supplies from Pepperl+Fuchs deliver high integrity power to mission critical and continuous process applications

Pepperl+Fuchs introduces PS3500 N+1 High Integrity Power Supply. Designed for maximum efficiency and reliability in mission critical and continuous process applications, PS3500 power supplies are up to 91% efficient and feature a modular design with selectable wiring configurations, enabling them to be configured in N+1 redundant mode. N+1 redundancy guarantees system integrity and performance, even during module failure and replacement.

“Engineers responsible for continuous running processes, and critical applications where shutdowns need to be avoided at all cost, know too well that an unexpected power loss can bring operations to a halt resulting in a tremendous amount of lost revenue. The PS3500 is engineered to be an affordable but robust power supply system that guarantees continued system functionality by providing N+1 redundancy, high immunity to noise and industry leading efficiency in even the most demanding environments,” says Kristen Barbour, Product Marketing Manager.

These 24 VDC, 15 A power modules plug directly into a 3- or 6-position chassis/backplane for maximum capacity of 45 A or 90 A, respectively. The system is designed with external field connectors for easy cabinet layout, LEDs and alarm outputs for quick diagnostic evaluation, and natural convection cooling eliminates the need for external cooling systems.

They are certified for Class I Div 2/Zone 2 ATEX Zone 2 mounting. PS3500 modules are user-adjustable from 22.5 VDC to 30 VDC for precise voltage regulation. Universal supply voltage of 90-250 VAC / 90-300 VDC makes them easy to integrate into an application, even with battery backups. They feature configurable load sharing and alarm functions, and provide configuration-free replacement. The PS3500 series is backwards compatible with Pepperl+Fuchs PS2500 series power supplies. N+1 wiring configurations provide economic reliability and redundancy to a power system. With an N+1 redundant power supply configuration, multiple power supply modules (N) have a backup power supply module (+1)

where all modules within the configuration share the load. Should one module in the system fail, the working modules share the load without degrading the integrity of the system.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: Power Supply, PS3500, High Integrity Power Supply, N+1 redundancy, process automation, Pepperl+Fuchs

Author: Kristen Barbour, Product Marketing Manager
Division Process Automation

Characters: 2,048, without space characters

Characters short text: 153 without space characters

Picture: No. MC7522_100311_02

March 2010

For royalty free use for publications.



Fig. 1: Like the uncompromising power of Mother Nature, the PS3500 power supplies provides a steady stream of reliable unrelenting current.

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Bebco EPS® 5000Q Series Is Simple to Implement and Operate

New Purge+Pressurization System for Zone 2, Zone 22 hazardous areas

Pepperl+Fuchs introduces the Bebco EPS® 5000Q Purge+Pressurization System. With a robust display screen and intuitive menus, the field-configurable 5000Q system facilitates simple installation and safe, seamless operation of general purpose equipment, mounted in certified enclosures, within Zone 2, Zone 22 hazardous areas.

“The 5000Q is a Zone 2, Ex pz certified purge and pressurization system available today. In practice this enables the 5000Q to be a uniquely compact, low cost and efficient purge and pressurization system that allows users to save money and space with a solution specifically engineered for Zone 2 and 22 installations,” says Kristen Barbour, Product Marketing Manager.

The 5000Q system is one of Pepperl+Fuchs’ simplest, most flexible, and easiest to use purge and pressurization systems to date. With user-selectable programming, the 5000Q makes it easy for the user to select the specific program to satisfy their application needs. Easy-to-mount components make it easy for users to quickly mount the 5000Q onto an existing enclosure modified for purge and pressurisation. Finally, an integral pressure sensor facilitates automatic purging and pressurization and allows automatic leakage compensation through the digital solenoid valve.

The 5000Q purge and pressurization system also allows the direct connection of multiple PT100 RTD temperature sensors, which provide alarm contact outputs for user configurable set points. Should the temperature exceed these set points, the digital valve will activate to automatically cool the enclosure’s interior.

Suitable for a wide range of applications, purge and pressurization protection is one of the most flexible explosion protection solutions available today. Bebco EPS purge and

pressurization systems from Pepperl+Fuchs, including the company's new 5000Q system, provides a means of operating general purpose equipment in classified areas, or in environments that are highly corrosive or dusty.

The principal behind a purge and pressurization system is to ensure that the inside of the enclosure is safe by keeping the corrosive, dusty, and potentially explosive atmosphere from penetrating the enclosure, by virtue of an overpressure within the enclosure. With a complete range of solutions for both Zone and Division applications, Pepper+Fuchs has the expertise and product range to satisfy the safety and operational requirements of today's process automation environments.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto "Sensing your needs", customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it's inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: 5000Q, purge, pressurization, Zone 2, Zone 22, hazardous area, explosion protection, Process Automation, Pepperl+Fuchs

Author: Kristen Barbour, Product Marketing Manager
Division Process Automation

Characters: 2,209 without space characters

Characters short text: 389 without space characters

Pictures: No. MC7522_100317_01

March 2010

For royalty free use for publications.



Fig. 1: New purge and pressurization system for Zone 2/22 from Pepperl+Fuchs: Bebcos EPS® 5000Q Series

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Partial Stroke Test with new SIL 3 Solenoid Driver

Safety circuits in continuous operation process plants usually have fittings that remain in their end position during normal operation. According to the regulations IEC 61 508 and IEC 61511, partial stroke tests must be performed frequently to ensure that they are functioning properly. The diagnosis data generated by these tests can be transmitted via HART, provided the system is in operational mode or is equipped with separate wiring between control system and device. The new KFD2-RCI-Ex1 Solenoid Driver from Pepperl+Fuchs allows communicating with the fitting via the very same two-wire connection, even while the system is in off mode. For this purpose, the switching signal is transferred into a supply current, while communication with the field device takes place via a second parallel HART transparent input independent from the position of the valve. If the control system turns off the valve, the HART switching function of the KFD2-RCI-Ex1 will deliver a small current in order to maintain communication even without valve activation. All diagnostic information is available at any time via the same wiring pair while fully conforming to SIL3 requirements.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power

supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: K-System, interface technology, solenoid driver, process control, SIL, Partial Stroke Test

Author: Dipl.-Ing. Stefan Pflüger
Product Marketing Manager Interface technology
Division Process Automation

Characters: 1,033, without space characters

Picture: No. MC7522_100310_17

March 2010

For royalty free use for publications.

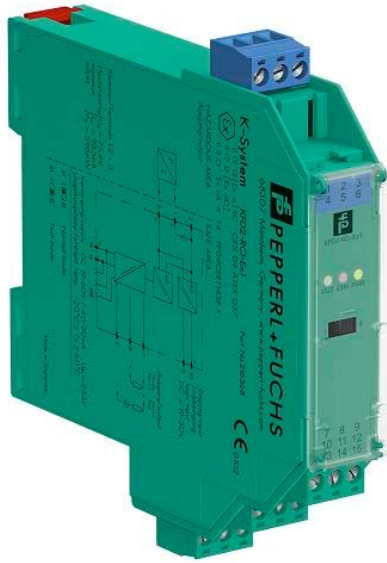


Fig. 1: Solenoid Driver KFD2-RCI-Ex1 in Sil 3

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

GMP Operator Workstation for Zone 2

VisuNet Ex2 GMP now provides a solution for an industrial operator workstation for Zone 2/22 applications in the pharmaceutical and food & beverage industries where GMP requirements are necessary. This is especially beneficial for customers who have the flexibility to move their hazardous equipment from Zone 1 to Zone 2. These customers can save money using the VisuNet Ex2 GMP instead of a device for Zone 1. Even if they don't have GMP requirements, the use of VisuNet Ex2 GMP is more economical than using a Zone 1 product. GMP (Good Manufacturing Practice) is part of a quality system that describes the requirements for the quality control of production processes that are issued from institutions such as the European Commission and the US American FDA. Selected materials, surfaces, as well as the overall architecture of these systems are designed to prevent the accumulation of dirt and fluids.

The VisuNet Ex2 GMP industrial operator workstation is available as a panel PC, a remote monitor, or a simple monitor with KVM-extender. All products are designed for protection class IP65 and can be installed in Zones 2/22. The 19" displays are also offered with a touchscreen. A large number of country-specific keyboard layouts, mouse versions, and mounting options are available and can be used in any combination. The production release is scheduled for July 2010.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including

customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: GMP, Zone 2, PC, RM, KM, DM, Panel-PC, Remote Monitor, KVM Monitor, KVM, Extender, Direct Monitor

Author: Dipl.-Ing. Andreas Grimsehl
Product Marketing Manager HMI
Division Process Automation

Characters: 1,184, without space characters

Picture: No. MC7522_090305_01

March 2010

For royalty free use for publications.



Fig. 1: VisuNet GMP – now available for Zone 2/22 applications

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Remote I/O Sports New Design

Pepperl+Fuchs proven in use Remote I/O have been modernized and appear in a new design. They still ensure full compatibility with existing installations. The new benefits are explained in the following paragraphs.

LB/FB Remote I/O have been used in the process automation industry for many years. They serve as intrinsically safe interfaces for NAMUR signals or digital inputs and drive solenoid valves. Temperature inputs as well as 2 or 4 wire transmitter supplies are also available, as are analog outputs for proportional valves and positioners.

LB Remote I/O are installed in the safe area or in Zone 2 while FB Remote I/O are encapsulated for Zone 1 mounting. They both employ the same electronic boards for their plug-in modules. These have now been refurbished to the latest ATEX rules and standards. Yet full compatibility with the proven in use modules is ensured. The software remains unchanged to maintain the full integration into all well established control systems.

System integration is achieved via standard busses such as PROFIBUS, Modbus or Industrial Ethernet. The user can expect the following benefits from the redesign especially for Zone 1 applications:

- New, compact redundancy backplanes save space and reduce costs
- Extended IS parameters offer more applications for field devices
- Cost effective increased safety terminals are now directly attached to the power modules
- New power supplies permit vertical mounting in Zone 2
- Improved handling for green modules in black backplanes
- New, attractive design

This development step rises the product life cycle to new levels. Together with the new Ethernet gateways we can see the start of the next generation LB/FB Remote I/O while building on proven in use equipment.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection components. We offer comprehensive, application oriented system solutions, including customer specific control cabinet solutions for the process industry. A large selection of components are available from our various product lines: isolation barriers, fieldbus infrastructure, remote I/O systems, HART interface solutions, fill level technology, pressure encapsulation systems, operating and observation, corrosion monitoring, power supply and alarm systems for oil and grease separators, signaling equipment, lighting, and emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it's inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: Remote I/O, proven in use, modernized, compatible, cost reduction, space saving, new ATEX guidelines, Zone 1, Zone 2, Ethernet, PROFIBUS, Modbus

Author: Dipl.-Ing./D.I.C. Rainer Hillebrand
Manager Product Group Remote I/O Systems
Division Process Automation

Characters: 1,496, without space characters

Characters short text: 206 without space characters

Picture: No. MC7522_100324_02

March 2010

For royalty free use for publications.



Fig. 1: Redundant and compact Remote I/O for Zone 1

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

ETHERNET Remote I/O Brings All Kinds of Process Signals to the Industrial Ethernet

Bus technology now makes use of proven equipment by just adding an Ethernet gateway. The process industry looks to integrate production applications with business systems, so manufacturers are increasingly turning to Industrial Ethernet. It can deliver a cost-effective, flexible and future-proof network architecture.

Industrial Ethernet is widely used in the industry and is now finding its way into process instrumentation. Green field sites and even more so legacy plants make extensive use of Remote I/O. In the past, the communication path was based on the field-proven RS485 hardware using PROFIBUS or Modbus protocols. Now Industrial Ethernet is moving forward.

There was hope that HSE would become the industry standard for Remote I/O with FOUNDATION fieldbus protocols on Ethernet becoming the norm. Unfortunately, not all vendors have yet subscribed to this format so the specification for HSE Remote I/O is still under development.

Therefore, it makes sense to employ Remote I/O and the well-established Modbus TCP protocol supported by all major DCS vendors.

ETHERNET Remote I/O slaves

The ETHERNET Remote I/O can be regarded as any other Ethernet device. It uses Ex e bus connections in Zone 1 or “Ex nA” in Zone 2 for explosion protection in the same way as the traditional RS485 PROFIBUS (fig.1).

The field loops are completely isolated and segregated from the Ethernet. Therefore, any work carried out on the field loops will not have any adverse effect on neighboring devices nor the bus..

Host integration via FDT/DTM

The integration of the ETHERNET Remote I/O into suitable host DCS systems is accomplished by the well-established FDT technology (field device tool) and certified DTMs

(device type manager). Thus, it arrives as an easy-to-use configuration tool which is part of the DCS environment just as any other DTM device..

Summary

Industrial Ethernet adds a new dimension to Remote I/O interfaces that connect all kinds of intrinsically safe inputs and outputs to process control systems in the chemical, petrochemical, and pharmaceutical industries as well as the oil and gas sector. The benefits lie not only in the plant wide use of proven Ethernet technology but also in the simplicity with which the slaves can be integrated into the DCS and PLC environments.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high-quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection components. We offer comprehensive, application oriented system solutions, including customer specific control cabinet solutions for the process industry. A large selection of components are available from our various product lines: isolation barriers, fieldbus infrastructure, remote I/O systems, HART interface solutions, fill level technology, pressure encapsulation systems, operating and observation, corrosion monitoring, power supply and alarm systems for oil and grease separators, signaling equipment, lighting, and emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto "Sensing your needs," customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it's inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: industrial Ethernet, Modbus TCP, Remote I/O, HART, ATEX, Zone, hazardous area, FDT, bus, process industry, redundant,

Author: Dipl.-Ing./D.I.C. Rainer Hillebrand
Head of Remote I/O system group
Process Automation Division

Characters: 1,999, without space characters

Characters short text: 346, without space characters

Picture: No. MC7522_100324_03

March 2010

For royalty free use for publications.



Fig. 1: ETHERNET Remote I/O showing redundant gateways

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Giant Step with a Small Footprint

Pepperl+Fuchs presents an ultra compact power hub

With its FieldConnex line, Pepperl+Fuchs provides the global process industry with interface products contributing to time-saving installation processes, increased plant availability, and lower operating costs. One of the latest examples is a new, ultra compact power hub. It offers a set of unique features and was designed especially for larger projects, where cabinet space is an issue and the ability to adapt to demanding operating conditions is a must.

With the increasing acceptance of fieldbus and increasing plant size, the space inside control room cabinets becomes a valuable asset. Compact components are highly welcomed to reduce the number of cabinets and lower both installation and operating costs. With this in mind, the R&D team at Pepperl+Fuchs set out to develop a power supply that would overcome seemingly conflicting targets: more compact dimensions and higher performance.

The result is truly amazing. The new FieldConnex Compact Power Hub not only requires less cabinet space than any other comparable power supply on the market, it also offers all the features required by a versatile power supply to drive a modern communications infrastructure with high-power trunk and intrinsically safe connection of field devices within explosion hazardous areas.

The basic design concept of the FieldConnex Compact Power Hub is a compact motherboard that provides all the wiring connections and interfaces required. All connections are plug-in with retaining screws for a long lasting connection even under continuous vibration. The motherboard is available in different versions, including customized interfaces for major DCS systems, such as Yokogawa and Invensys. It can hold up to sixteen plug-in power modules to provide redundant power supply for up to eight FOUNDATION fieldbus H1 segments. Modules are simply plugged in and safely secured without requiring tools.

Being designed as a versatile power supply for larger process automation systems, the FieldConnex Compact Power Hub supports intrinsically safe fieldbus segments according to Entity Ex ic or Ex nL classification in addition to the High-Power Trunk concept.

The power modules are the result of comprehensive experience and mark the present peak of an evolutionary design process. They are available for 21...23 V / 500 mA or 28...30 V / 500 mA. With a width of only 12.5 millimeters they require about one third less space than a comparable standard power module, while offering the same performance and power. This compact size is only possible due to the use of especially selected high-performance components and an advanced passive impedance design resulting in minimum heat dissipation. Depending on the module, the typical power loss is only 1.3 or 1.6 watts, which promises a long service life and enables the highest packing density in the control room cabinet today.

Since the Compact Power Hub is designed with built-in redundancy, two power modules are assigned to each segment. This means, exchanging a failed power module does not require any interruption of the power supply and will not affect plant operation.

Fieldbus physical layer diagnostics is part of the standard design of the FieldConnex Compact Power Hub. The Advanced Diagnostic Module (ADM) is available optionally and is easily plugged into the motherboard. It serves as the link between the physical layer of the fieldbus infrastructure and the Advanced Diagnostic Manager running at the control room and detects deteriorating signal quality long before it affects plant operation.

With the new FieldConnex Compact Power Hub, Pepperl+Fuchs once again provides the global process industry with a unique solution contributing to cost reductions while increasing plant availability and reliability.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of

components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it's inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: FieldConnex, FOUNDATION Fieldbus, Power Hub, Redundancy, Intrinsic Safety, fieldbus power supply, Entity, Ex ic, Zone 2, hazardous area

Author: Dipl.-Ing./MBA Andreas Hennecke
Product Marketing Manager
Division Process Automation

Characters: 3,257, without space characters

Characters short text: 461, without space characters

Picture: No. EC_AH_20100310_031

April 2010

For royalty free use for publications.

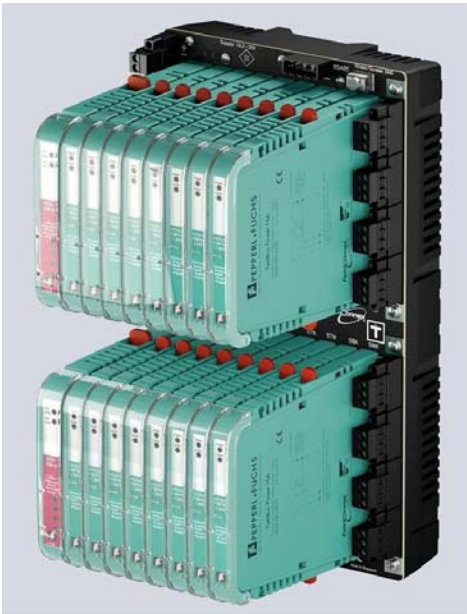


Fig. 1: Compact Power Hub – With extremely low heat dissipation and a compact footprint, it allows the highest packing density in the cabinet

Pepperl+Fuchs GmbH – Lilienthalstrasse 200 – 68307 Mannheim – Germany

Please indicate the following contact information for publication:

Tel.: +49 621 776-2222, Fax: +49 621 776-27-2222, www.pepperl-fuchs.com, pa-info@de.pepperl-fuchs.com

Editorial contact: Christa Blas (extension: -1420, fax: -1108), cblas@de.pepperl-fuchs.com

Fieldbus Diagnostics - The Easy Way

Pepperl+Fuchs introduces plug and play diagnostics module

The Advanced Diagnostic Module (ADM) from Pepperl+Fuchs is a unique technology to monitor the physical layer performance of fieldbus segments. With a new model added to its product range, the manufacturer offers advanced diagnostics with plug and play simplicity. The module easily attaches to the power hub and triggers an alarm if any of three monitored values reaches a critical value. This allows simple segment monitoring without additional engineering efforts.

Advanced Diagnostics is an established and proven technology, offering a wealth of advantages during commissioning, operation, and troubleshooting of a fieldbus communications infrastructure. The ADM from Pepperl+Fuchs not only speeds up commissioning time by about 80%, it also monitors the signal quality of individual fieldbus segments and automatically triggers an alarm as soon as signal quality falls below a pre-determined level. Critical measurements are translated into clear text messages, allowing maintenance personnel to intervene long before communication with any field device will affect plant operation. In case of an alarm condition, the ADM provides specific information about the type of failure, which considerably reduces plant outages, since time-consuming trial-and-error troubleshooting on site is replaced by targeted maintenance work.

Fundamental diagnostics with plug and play simplicity

With the new Advanced Diagnostic Module HD2-DM-A.RO with relay output, Pepperl+Fuchs introduces an entry-level solution that allows plant operators to add basic physical layer diagnostics to their fieldbus installation without requiring major system modifications or additional engineering efforts.

The new ADM module with relay output simply attaches to the power hub, and it's ready to run. There is no need for a special diagnostic bus nor does any software need to be installed and operated. The module can watch up to four fieldbus segments by continuously

monitoring three vital criteria determining signal quality: signal level, noise, and jitter. Alarm thresholds are simply set via DIP switches at the module itself. As soon as any critical operating condition is detected, the module will automatically trigger the voltage-free alarm contact of the power hub.

Mobile Advanced Diagnostics

For fast and easy commissioning and testing of an entry-level ADM, Pepperl+Fuchs recommends the Mobile Advanced Diagnostic Module DM-AM-KIT. This highly mobile unit was designed for temporary monitoring of one fieldbus segment and supports all work processes along the life cycle of a fieldbus infrastructure. For power supply and data transfer, the Mobile ADM easily connects via the USB interface of any notebook running the Pepperl+Fuchs Diagnostic Manager software.

In case of an alarm issued by a stationary ADM with relay output, the Mobile Advanced Diagnostic Module in combination with the Diagnostic Manager software will ensure fast analysis of the respective fieldbus segment for targeted troubleshooting.

The ADM with relay output together with the mobile ADM provides essential physical layer monitoring to increase plant availability by pointing to trouble spots before they affect the ongoing production process of the plant.

About Pepperl+Fuchs

Pepperl+Fuchs is a leading developer and manufacturer of electronic sensors and components for the global automation market. For more than 60 years, our continuous innovation, high quality products, and steady growth has guaranteed us continued success.

One Company – Two Divisions

Pepperl+Fuchs – PROTECTING YOUR PROCESS

The **Process Automation Division** is a market leader in intrinsically safe explosion protection. We offer comprehensive, application-oriented system solutions, including customer-specific control cabinet solutions for the process industry. A large portfolio of components is available from our various product lines: isolated barriers, fieldbus infrastructure solutions, remote I/O systems, HART interface solutions, level measurement devices, purge and pressurization systems, industrial monitors and HMI solutions, power supplies, separator alarm systems for oil and petrol separators, signaling equipment, lighting as well as emergency shutdown equipment and accessories.

Pepperl+Fuchs – SENSING YOUR NEEDS

With the invention of the inductive proximity sensor in 1958, the company set an important milestone in the development of automation technology. Under the motto “Sensing your needs”, customers benefit from tailor-made sensor solutions for **factory automation**. The main target markets of the factory automation are machine and plant construction, the automotive industry, storage and material handling, printing and paper industry, packaging technology, process equipment, door, gate and elevator construction, mobile equipment, renewable energies.

The division offers a wide product range of industrial sensors whether it’s inductive, photoelectric or ultrasonic sensors, rotary encoders, identification systems, barcodes, code readers for data-matrix-codes and vision sensors.

Key words: FieldConnex, Fieldbus, FOUNDATION fieldbus H1, PROFIBUS PA, physical layer diagnostics, continuous monitoring, advanced diagnostic module, fieldbus infrastructure

Author: Dipl.-Ing./MBA Andreas Hennecke, Product Marketing Manager
Division Process Automation

Characters: 2,833, without space characters

Characters short text: 478, without space characters

Pictures: No. MC7522_100122_04, No. MC4676_071108_11,
No. 93_1228_10

March 2010

For royalty free use for publications.



Fig. 1: Eye catcher



Fig. 2: Continuous physical layer monitoring without the engineering: Plug-in module with just a relay output HD2-DM-A.RO



Fig. 3: For automated commissioning with software support and for troubleshooting: The mobile Advanced Diagnostic Module: DM-AM-KIT