PROFINEWS

PROFINET and PROFIBUS News

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PROFINET: High Value for Machine Builders

“It just works; no problems”, was the immediate response of an SPS/IPC/Drives fair visitor in front of our new paper airplane machine. I had asked about his experiences with PROFINET.

Paper Airplane Builder

Because I did not have to carry on a "general conversation," we talked specifically about his concrete benefits during the integration of PROFINET in his new machine:

First, the communication technology supports the innovations currently underway in advanced machinery. Namely, it enables quicker production through exact and high-performance communication. Today with the communication faster than typical fieldbus systems, PROFINET offers present-day and future-proof performance.

For the machine manufacturer, innovation means not just fast communications but also the integration of higher-valued sensors and actuators. These deliver quality data for supervision and optimization. Because standard Ethernet inherently allows multiple applications (and protocols) to run in parallel, TCP/IP, large volumes of PROFINET acyclic data, and PROFINET real-time data can all use the same infrastructure.

Two points were important during the commissioning. On the one hand, small units or modules could be tested independently of a running controller. Then during assembly, the location and diagnosis of the devices was quickly possible thanks to the naming concept of PROFINET. Costs were reduced due to PROFINET features that simplify commissioning. At the same time, the features in PROFINET allowed the machine builder to make a more valuable machine.

This conversation and other experiences encouraged the team here at PI to take new action to further share the value of PROFINET in the machine builder market. The visible success in the rising numbers of devices attests to the valuable advantage that PROFINET technology can offer to a machine builder’s users.

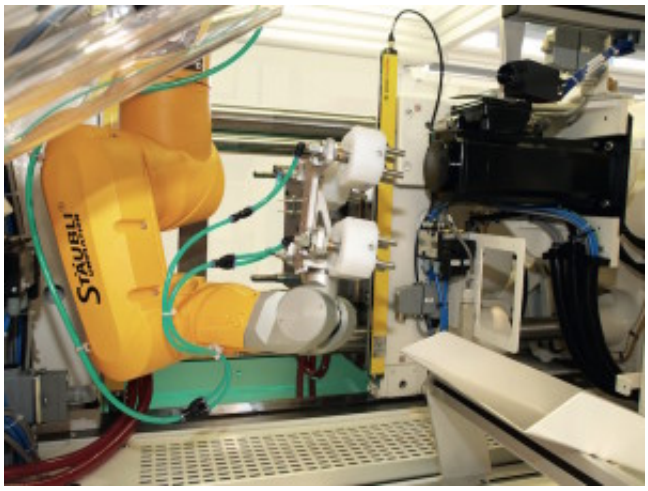
Innovate your machines with the new possibilities of PROFINET. We are always glad to receive your feedback, in any amount of detail: editor@profinews.com

Xaver Schmidt
Chair, PROFINET Marketing Working Group

Application Story: Stäubli Robots

Industrial robots are increasingly taking over tasks that were previously reserved for machine tools or special-purpose processing machines. For this reason, users are calling more and more for the consistent integration of robot systems in machines with respect to handling systems, function, and communication technology. This can be achieved with the help of PROFINET.

Consistent Integration



Robot connected to PROFINET and integrated in a system. PROFINET solutions with fully integrated robot solution.

The more frequently robots become standard components of a larger machine, the more they will have to be adapted, together with their control and handling systems, to the machine concept and be fully integrated in this concept. System integrators avoid the additional effort for this type of adaptation. End users are also no longer willing to deal with two different systems for the machine and robot. The solution would be to integrate the robot(s) and related control system in the machine as a stand-alone functioning subsystem and to utilize only the familiar operator interface of the machine for all functions. The objective is for the robot to effectively become an invisible component of the machine as far as the operator is concerned. The more consistently and easily this type of integration can be carried out, the greater the participation of robots in the machine building market will become.

The most important requirement for this is the integration of a uniform communication system within a machine or system. This means: minimal or no interfaces in the field and to the corporate level. Moreover, the communication technology must meet the stringent speed and clock accuracy requirements for motion control tasks while maintaining a high level of acceptance as a standard for all other manufacturing and process automation tasks. PROFINET offers the solution for this. Thanks to its scalable performance classes and its application profiles, this Industrial Ethernet bus system has become the leading universal bus of automation technology, including drive applications, and not just for motion control applications.

Flexible Concept

Machine builders want support from their suppliers in the form of pre-configured subsystems for a requested application that can be integrated in the machine without significant effort. This is a significant departure from their earlier preferred practice of purchasing and installing the robot components themselves. The uniVAL concept developed by the robot manufacturer Stäubli allows flexible and easy integration of a robot system into a higher-level control system. The key to this is a special operating mode of the Stäubli CS8C robot controller in which the axes of the connected robots are handled by the higher-level control as separate network nodes. The controller is connected to the PROFINET with IRT communication network of the machine via a configurable PCI card and then forms an open interface to the real-time communication systems. A robot, together with its controller, is thus fully integrated in the machine.

Consequently, there is only one operator interface and only one programming language and environment, namely those of the machine or the machine controller. The higher-level machine controller takes over the functions of the application, route planning, set-point positions, and travel commands, while the uniVAL-Drive, as a sub-controller, concentrates on the closed-loop control algorithms of the axes, such as synchronization algorithms and logical axis decoupling algorithms, as well as on the motor control and drives.

Everybody Wins

The concept was developed with intensive support of PROFIBUS & PROFINET International and its member companies. The NetX technology from Hilscher was relied on for development of the interface to PROFINET with IRT and for implementation of the PROFIdrive drive profile (Application Class 4).

Conclusion: Machine builders and system integrators can implement increasingly more universal machine concepts, thereby lowering costs and winning new customers. At the same time, robot manufacturers will be increasingly seen as attractive suppliers of machine builders and can generate growth from this. In the end, plant owners receive machines that combine the latest control technology, Industrial Ethernet communication (PROFINET), and advanced robot expertise in a single unit.

Application Story: Rijnland Water Control

For the Rijnland District Water Control Board it is all about keeping dry feet and having clean water. In the more than thirty waste water purification plants, Rijnland purifies waste water so that it can be discharged back into nature in a responsible way. An important task that leaves no room for malfunction. In order to keep these waste water purification plants going, Rijnland uses the PROCENTEC ComBricks modules on a PROFIBUS network. This way, direct action can be taken when suddenly something is about to go wrong.

Rijnland District Water Control Board keeps waste water purification plant going with ComBricks

According to Paul Schipper, project automation assistant, this is a large responsibility to carry that does not allow downtime at all. Paul explains: “In the past we experienced several PROFIBUS malfunctions in the aeration tank of one of our waste water purification systems. The controls of the valves stopped working. The entire system came to a halt, meaning the water could no longer be aerated. We consider sustainability to be very important. Therefore, we purify waste water in a natural way: by means of bacteria and oxygen. The aeration tank contains various bacteria growing and feeding on the waste in the water, which they convert into harmless matter. To help the bacteria we add oxygen to the water. When the system is down we can no longer aerate the tank and the bacteria will die. So, failure of the system puts us under a lot of pressure.” Downtime is simply unacceptable in this line of work.

Reliable solution

To get the PROFIBUS network in this modern waste water purification plant up and running again as quickly as possible, Rijnland called in PROCENTEC to assist. Paul Schipper: “In this type of situation, it is of vital importance that the malfunction is solved as quickly as possible. That is why we contacted PROCENTEC. One of their engineers came right away and tested the system’s continuity with ProfiTrace 2. From the scope images it soon became clear that the defect was between two valve controls. When we arrived at the spot, a broken PROFIBUS cable appeared to be part of the cause. From the ComBricks scope images we could also identify an EMC problem. The PROFIBUS cable had not been installed separately from the main power cable. The fact that both cables were close to each other, caused interference that resulted in a system failure. After the inspection we received an extensive report with concrete recommendations.”

Results

Rijnland immediately started looking for a solution to prevent future malfunctions. Paul Schipper: “We thought: better safe than sorry. That is why we bought PROCENTEC ComBricks modules. These modules have now been included in our specifications, so that we can permanently monitor the PROFIBUS system. ComBricks has been connected to the section that manages the controls of the blower and the power in the aeration tank. Fortunately, we did not have any other malfunctions since then. The PROFIBUS system is now much more stable and totally free of malfunctions. For any future malfunctions, we will now be able to take action at once. Furthermore, we nowadays use the ComBricks modules in new construction projects too.” Paul Schipper is also very pleased with the service PROCENTEC provides: “PROCENTEC is a good partner, because they are always available to us. They actively think along with us regarding the most appropriate solution. We think it is very important that an independent third party is there to help us, so that we are sure that the problem is considered objectively. Through the expert advice and the supply of products, our system is up and running again.”

IO-Link: Did You Know?

Did you know that every device has a manufacturer's declaration?

In addition to the IO-Link specification itself, a test specification is available. Anyone can download these specifications from www.IO-Link.com. In addition, easy-to-operate test systems with comprehensive functions are offered for IO-Link masters as well as IO-Link devices. These test systems perform the test cases defined in the test specification in a highly automated fashion. The test systems are approved by the IO-Link Community. Even the device description that exists for every IO-Link device is checked by a test program and marked accordingly.

Every manufacturer of IO-Link devices is obligated to use the specifications and tools and issues a manufacturer's declaration following successful completion of the test. In the case of IO-Link devices, in particular, it is possible to check the behavior without special training and expertise, so that any disregarding of the rules can be easily identified and thus avoided.

Furthermore, interoperability workshops are held to test the interaction of IO-Link masters and IO-Link devices and the use of test systems. The findings are then incorporated into the specification, test specifications, and test systems.

This ensures the quality and interoperability of IO-Link devices without the need for expensive third-party certification. Users can and should put the manufacturer to the test and demand the manufacturer's declaration.

IO-Link

Tech Tip: Why Does PROFINET Need an IP Address?

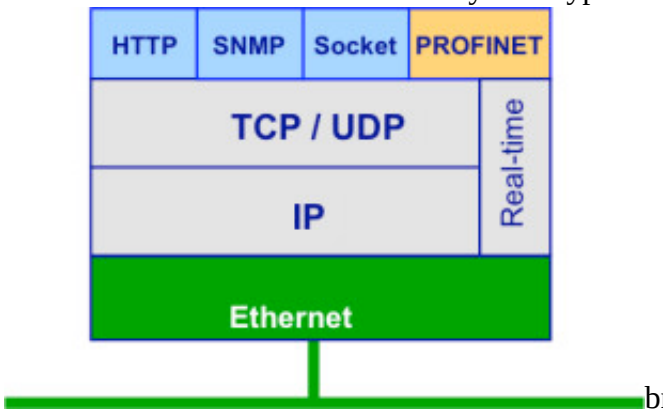
An oft-heard question: “Why does a PROFINET device need an IP address? PROFINET uses names.” You may have heard the misinformation that PROFINET does not use TCP/IP. The correct information is that PROFINET does use TCP/IP and devices do have IP addresses!

So, the short answer to that oft-heard question: PROFINET uses TCP/IP and therefore needs an IP address.

The long answer is pretty simple: PROFINET uses TCP/IP where it makes sense (that is, where the data is not time critical). For example:

- Configuration
- Parametrization
- Diagnostics

Therefore, an IP address is needed for these functions. There are also other benefits. Many devices have embedded web servers. This allows you to type in their IP address into a web



browser and access them like a webpage. One of the biggest reasons people are moving to PROFINET is DATA ACCESS. By using IP addresses, it helps integrate device-level information vertically into higher level MES systems.

Now PROFINET does not use the IP address for real-time data; it just uses the physical address, the MAC address. This means it can skip TCP/IP for faster, more deterministic performance.

To dig deeper, read out white paper “PROFINET for network geeks (and those who want to be).”

Want to learn more about device naming? A past Tech Tip came from Hunter Harrington, PROFINET Consulting Engineer, at the PROFI Interface Center. He answers the question: “What’s in a (PROFINET device) name?” Give it a read.

Training and Events

Register now for one of the many events fast approaching in the upcoming months. First is embedded world 2015 in Nuremberg, DE. Next up is the PI Conference in Speyer, DE in early March. Also in March are a PROFIsafe Certified Designer Course and the first of three PROFINET Workshops.

Be Our Guest!

Invitation to embedded world 2015

The *embedded world Exhibition & Conference*, the world's biggest and most important gathering of the international embedded community, opens its doors again **February 24-26, 2015**. A good 900 exhibitors from more than 35 countries are waiting for you with their clearly focused spectrum of technical developments, optimized applications, and innovative products and services – and we're there too!

Be our guest – use the following online registration code **B300749** at www.embedded-world.de/voucher for your free entrance ticket and visit us on **our stand 411 in hall 5.**

We look forward to showing you our products and services around PROFINET!

PI-Conference 2015

The 4th PI-Conference on **March 11-12, 2015** takes place at the Technik Museum in Speyer (Germany), a place where you can experience technical history. In this 25th anniversary year of the founding of PROFIBUS Nutzerorganisation e.V. (PI Germany), the program, whose motto is "Network of the Future – Partner of Users for 25 years", will feature expert workshops on different technologies as well as presentations.

Presentations at the event will focus on application reports on the technologies of industrial communication with PROFIBUS, PROFINET, and IO-Link. These will be supplemented by use scenarios of application profiles such as PROFIsafe, PROFIenergy, and PROFIdrive. Facets such as the network, architectures, data exchange, devices, and systems will be examined against the backdrop of the complete life cycle of a production plant – from the planning, configuration, and engineering phases to active operation.

For the first time, the PI Conference will offer technology-specific workshops in addition to presentations. On the basis of real-world examples and demo models, these workshops will provide users with in-depth insight into the benefits, handling, and use of the technologies.

Detailed program and registration information can be found at: www.pi-konferenz.de

PROFIsafe Certified Designer Training in March

A PROFIsafe Certified Designer Course will be held from **March 17-19, 2015**, in Karlsruhe.

The required quality of PROFIsafe products and systems highly depends on the know-how of the development teams and on the deployed methods and procedures. An adequate range of training courses can assure the necessary level. Thus, the responsible PI working groups, in cooperation with TÜV, developed a training scheme which is available to all interested companies for their employees in charge of PROFIsafe and safety.

This three day session comprises a written test at the end of each day. Experts having passed all tests will receive a TÜV certificate “Certified PROFIsafe Designer”. The training course will be in English language.

You can find more information and the registration link here: www.profibus.com/profisafedesigner

Please note that this conference will be held in German. There are still seats available.

Register Now: New PROFINET Workshop Dates 2015

PROFINET means networking the world with the leading industrial Ethernet standard. More and more products for all industries are coming on the market. If you are interested in detailed information on this versatile technology, our PROFINET Technology Workshops are the best training for you.

This training is aimed at developers and product managers who would like to inform themselves in detail about the existing possibilities of the development of PROFINET products.

The workshops are free of charge and held in German language. For 2015 the PROFIBUS Nutzerorganisation (PNO) has scheduled three new training dates:

- March 24, 2015 in Frankfurt www.profibus.com/profinetfrankfurt
- June 30, 2015 in Stuttgart www.profibus.com/profinetstuttgart
- October 20, 2015 in Würzburg www.profibus.com/profinetwürzburg

For more information and online registration, please follow the above mentioned hyperlinks. We are looking forward to welcoming you!

ISA and Beamex to Co-Host Second of Two-Part Web Seminar Series

The International Society of Automation (ISA) and its Premier Strategic Partner for calibration, Beamex, will co-host a free web seminar on 19 February 2015 that will discuss advanced pressure measurement techniques and calibration using best practices. The web seminar, the second in a two-part series on pressure measurement calibration, will be held from noon to 1:30 p.m., Eastern Standard Time.

During the first segment of the series, pressure instrument experts discussed the basic concepts that drive pressure instrumentation and demonstrated how to calibrate pressure basic applications.

- FOR TRAINING AND EVENTS AROUND THE WORLD, CLICK HERE -

PI Update

Updates from PI in this issue include new documents, the ten best blog posts from 2014, and the top tweet. The guidelines for designing, installing, and commissioning PROFINET networks have received important updates. The PROFINET System Description has also received a significant overhaul.

New Documents

PROFINET Checklist for Acceptance Tests

For several years, PI (PROFIBUS & PROFINET International) has been providing guidelines for planning, installation, and commissioning of PROFINET networks. These were used in day-to-day activities of many plant and machine builders as well as end users. Experts from end user groups, especially from the automotive industry, were actively involved in the development of these guideline documents right from the beginning. This had a very positive effect on the quality of the documents.

Now, these commissioning guidelines have been expanded on some points to include experiences gained through active collaboration with acceptance test service providers, as well. Accordingly, the new edition includes a detailed checklist that additionally specifies easy to use criteria for acceptance tests of PROFINET networks. These criteria can be easily verified with commonly used tools. Of course, support for such acceptance tests is provided for this by the PI Competence Centers, established worldwide, as well.

All in all, PI offers integrated and coherent communication solution packages from the basic specification to system maintenance. This is achieved through the active and continuous collaboration of its members.

The new guidelines are available in English and German and can be downloaded free of charge by all interested parties at:
http://www.profibus.com/nc/download/installation-guide/downloads/profinet-installation-guide/display/

PROFINET System Description

PROFINET is a modern concept for distributed automation standards; it is based on Ethernet and integrates existing fieldbus systems in particular PROFIBUS) simply and without change. This is an important aspect for meeting the demand for consistency from the corporate management level to the field level. Furthermore, it represents a key contribution to providing the user with security for his investment in that existing parts of a system can be incorporated in PROFINET without needing to be changed.

The PROFINET Technology and Application - System Description gives you a fast overview on the PROFINET Technology. It is the definitive source for beginners and experts alike. It is made freely available to the public here:
http://www.profibus.com/nc/download/technical-descriptions-books/downloads/profinet-technology-and-application-system-description/display/

Best Blog Posts of 2014

It’s a time to look back at 2014 and the ten most popular posts from last year. Here are the PROFIblog Top Ten:

10. Managed or Unmanaged Switch for PROFINET
9. PROFINET Uses TCP/IP?
8. Dueling Views of PROFINET’s Place in System Architecture
7. PROFINET can use a Best Buy Ethernet Switch, really?
6. Ethernet is not a protocol
5. PROFINET and IT Protocols
4. So Is Ethernet Deterministic or Not?
3. Is PROFINET routable? (Report from Vancouver)
2. What are the differences between PROFIBUS V0, V1, and V2?
1. How many devices on a PROFIBUS DP network in Grand Rapids?

This list is a summary of a PROFIblog post of the same name... (*Does it get any more **meta** than that?)*

Top Tweet

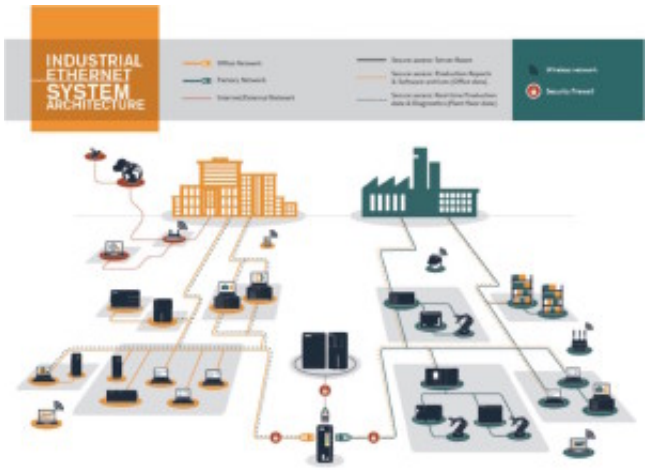
The most popular Tweet came more recently. It's about an Application Story at Audi using Phoenix Contact, PROFINET, and PROFIsafe:

> Phoenix Contact #Profinet/Profisafe system met Audi's system needs: flexibility, performance, & diagnostics: http://t.co/eM98ZRdSF9
>
> — PROFINET & PROFIBUS (@AllThingsPROFI) January 20, 2015

IT Professional's Guide to Industrial Ethernet

There are numerous advantages to using Ethernet on the plant floor and some critical issues to consider for a successful implementation: migration strategies, communications differences, security needs, and the need for industrially hardened devices. Here are the five critical things an IT Professional needs to know about bringing Ethernet to the plant floor.

CLICK HERE TO READ THE WHITE PAPER



Major manufacturers like automotive are moving exclusively to Ethernet. Why? For one reason, it allows an entire assembly line to be on one physical network, and enables the ability to plug in anywhere and access any node on the network. This is a huge step forward from days past, when companies had a collection of isolated fieldbus networks, one at each machine. With Ethernet they get a unified network that is far easier to manage.

From an architectural perspective, the design is simpler and cleaner, making troubleshooting easier and giving users the ability to log on from anywhere. Once connected, tools can be used to see if a node is responsive, and to harvest detailed data for better decision making. Bottom line: bringing Ethernet onto the plant floor opens the door to engineering capabilities that current fieldbus networks can’t handle, from the free flow of production data to simplified device monitoring and maintenance. There are a few issues, however, that IT staff should keep in mind as they make the move.

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8 Go-To Resources for PROFINET

One of PI's major goals is to provide resources for users, system integrators, OEMs, and device makers. Here are eight resources (and a few bonuses) in a logical order to pursue:

1. Marketing Flyer: PROFINET.

A brief, high-level overview of PROFINET. Yes it has “marketing” in the title, but it does provide a high-level introduction.

2. System Description: PROFINET Technology and Application.

PROFINET System Description

Twenty eight pages of detailed introduction to PROFINET: models and engineering, basic functions, optional functions, legacy fieldbus integration, topologies, product development (for automation device makers), and the PI organization.

Alternatively, do the long scroll through the technology section of us.profinet.com.

3. MinutePROFINET.

An ever-increasing number of minute-long videos introducing PROFINET from the basics to the esoteric. Start with the oldest one on the playlist linked above and work your way through time and detail.

4. Whitepapers.

You can find more detail in our series of whitepapers, including “Time to migrate to Industrial Ethernet” and the very-popular “The 7 Step Industrial Ethernet Checklist.” Need to understand which switch for PROFINET? We have a whitepaper for that too.

5. Guidelines.

When you are ready to start that PROFINET automation project, you will find guidelines offering detailed assistance. There are about 500 pages of documentation here. Not all of it will apply to your project, but you will be glad to explore the detail for the parts that are part of your project:

Planning: PROFINET Design Guideline.

This 192-page guideline covers plant design, topology, selection of components, selection of transmission medium, selection of connectors, communication relations, and estimate of data volumes to be transmitted. Also included is the PROFINET Load Calculation Tool.

Security: PROFINET Security Guideline.

The security guideline has been recently updated to reflect the latest methodologies for creating a secure network.

Installation: PROFINET Guideline for Cabling and Assembly.

Routing cables, installing connectors, using fiber optic cable, grounding, and more are covered.

Commissioning: PROFINET Guideline for Commissioning.

This includes a thorough checklist you can “check off” as you commission your project. Detailed instructions are in guideline.

6. Webinars.

I suggest proceeding through these two webinars in order:

An Introduction to Ethernet for Control Engineers

Completing a PROFINET Project

There are many others that provide additional detail - here; Especially recommended Diagnostics for PROFINET and Industrial Ethernet.

7. Free one-day training class.

There is no substitute for in-person instruction. So if you are lucky enough to live in a city in North America on the schedule, please register. Watch the site for updates. For international classes, visit the big schedule.

8. Certified Network Engineer class.

There is no substitute for in-person instruction with hands-on training. We offer fee-based, week-long

Certified Network Engineer classes in Johnson City, TN. This comprehensive class will get you into the bits and bytes of PROFINET. We are sometimes able to offer these at a user site if the number of students warrants. For international classes, visit the big schedule.

And here are a couple bonus resources: the PROFIblog and here in our PROFINEWS newsletter.

New Products

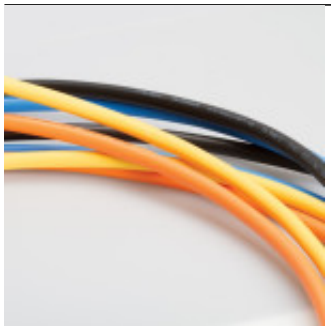
New products this month include smart lights with IO-Link, secure servos with PROFIBUS DP, cables and modules for PROFIBUS PA, and new connectors and diagnostics tools for PROFINET.

Smart Light Instead of Stack Light

The popular IO-Link Smart Light from **Balluff** is now available in three versions. In addition to the current version with a maximum of five segments, there are now two additional versions with one and three segments respectively and optional acoustic signaling. The new IO-Link Smart Light from Balluff is equipped with all features for fundamentally revolutionizing the signal light sector.

Servo Inverter with Secure Remote Maintenance

With the POSIDYN® SDS 5000 servo inverter, **STÖBER** provides remote maintenance in a technically and legally secure form. Here all data and processes can be accessed as if an on-site service. With this cost-effective system, personal and system safety have a high significance. Optional fieldbus interfaces, e.g. PROFIBUS, are available for communication with a higher-level controller.



PROFIBUS PA Cables Now Certified for Heavy Duty

TURCK updated and upgraded its PROFIBUS PA cables, designing in ruggedness for use in extreme environments. UL listings include Exposed Run (ER) and Direct Burial (DB), providing excellent crush and impact resistance. In addition, the cables are UV resistant, oil resistant to UL Oil Res 1, and FT4 flame retardant. Added Marine Shipboard listings and certifications streamline inventory for OEMS who build for both onshore and offshore applications

[PROFINET Diagnostic and Engineering Tool]

Visualize and troubleshoot any PROFINET network with the powerful Netilities diagnostic and engineering tool from **PROCENTEC**. Netilities is the most compact and efficient graphical software tool useful for engineering, monitoring, and troubleshooting PROFINET installations. Thanks to unique features such as a live list, statistics, and PROFINET alarm messages, engineers can be informed directly about the reliability of the PROFINET network.

[Easy Integration of PROFIBUS PA Field Devices]

At the embedded world trade show 2015 in Nuremberg, **Softing** presents the latest version of FFeasy and PAeasy – the proven combined hardware and software solutions for the direct and rapid implementation of FOUNDATION Fieldbus H1 and PROFIBUS PA field devices. Users benefit from a smooth certification process for their field devices and a short time-to-market.

[RJ45 and Fiber Optic Connectors]

The new push-pull Advance data connectors from **Phoenix Contact** bring future-proof high-speed cabling directly to the field. Designed for data rates of up to ten Gbps, the connectors are protected against dirt, dust, or humidity by means of IP65/IP67 protection. Due to their 360° shielding, they are also immune to electromagnetic interference. The push-pull technology means that users can insert and remove the connectors easily.

Balluff Smart Light Instead of Stack Light with IO-Link

The popular IO-Link Smart Light from Balluff is now available in three versions. In addition to the current version with a maximum of five segments, there are now two additional versions with one and three segments respectively and optional acoustic signaling.

The new IO-Link Smart Light from Balluff is equipped with all features for fundamentally

revolutionizing the signal light sector. It is the first light that can be flexibly adapted to nearly every requirement without complex configuration via hardware. The otherwise typical costly combination of different-colored modules to form a light is no longer needed as this device can also be adapted to its new task ad hoc on-the fly via the controller. Even solutions that can be set by means of DIP switches are not much of an alternative as they cannot be changed during running operation.

The Balluff Smart Light is a true multi-talent, as it can do much more than signal the system operator certain predefined operating states with just three colors. Even tendencies, developments and trends of physical values can be represented. Temperature states, fill levels of systems or even the position of a carriage via a position sensor sys-tem can be visualized on the column, which may be up to 20 LEDs tall.

For connection and installation, just one simple, unshielded, three-wire sensor cable – as is typical for IO-Link – is needed, and already the LED signal column offers maximum functionality and previously un-imagined possibilities with its three operating modes "Stacklight", "Level" and "Run".

Balluff

STÖBER Servo Inverter with Secure Remote Maintenance

With the POSIDYN® SDS 5000 servo inverter, STÖBER provides remote maintenance in a technically and legally secure form. Here all data and processes can be accessed as if an

on-site service. With this cost-effective system, personal and system safety have a high significance. The complex and safety-related opening of ports is not required as only the responsible employee can enable remote maintenance on the inverter or the PLC directly on site. After completion of maintenance work, it is no longer possible to access the system. No security vulnerabilities occur in the system of the operator.

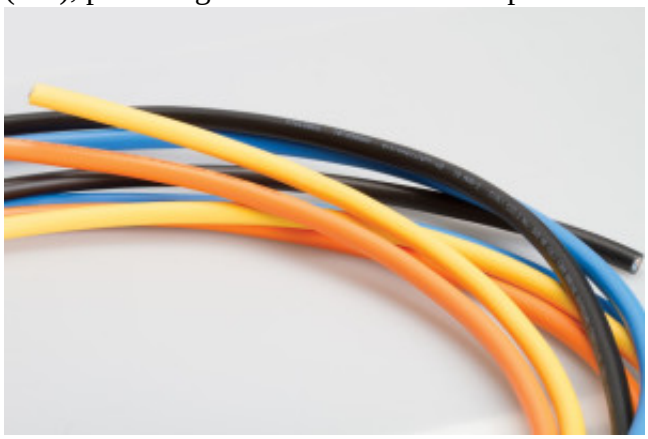
The self-configuring Integrated Bus (IGB) is included with the basic equipment of the POSIDYN®SDS 5000. It can be used to control diverse communication and functional concepts even between several servo inverters and interfaces in real-time. Optional fieldbus interfaces, e.g. PROFIBUS, CAN, or EtherCAT, are available for communication with a higher-level controller. A plain text display with a keyboard simplifies diagnostics if a fault is present and enables fast access to all relevant parameters.

STÖBER

TURCK PROFIBUS PA Cables Now Certified for Heavy Duty and Extreme Environments

Upgrades streamline part numbers for OEMs who build for onshore and offshore applications

TURCK updated and upgraded its PROFIBUS PA (and FOUNDATION™ fieldbus) cables, designing in ruggedness for use in extreme environments. UL listings include Exposed Run (ER) and Direct Burial (DB), providing excellent crush and impact resistance. In



addition, the cables are UV resistant, oil resistant to UL Oil Res 1, and FT4 flame retardant. Added Marine Shipboard listings and certifications streamline inventory for OEMS who build for both onshore and offshore applications, because one cordset or cable can now be specified for both applications.

UL 13 PLTC ER DB and UL 2250 ITC ER DB listings make these cables compliant with NEC 725 and NEC 727 and suitable for use in Class 1 Division 2 Hazardous Locations. These cables are listed 105 degrees Celsius and pass UL Cold Bend tests at -40 degrees Celsius. With CSA 600V listings, they are also suitable for use in Class 1 Zone 2 Hazardous Locations per the Canadian Electrical Code.

As part of TURCK’s extremelife-40 cable platform, these PROFIBUS PA and FOUNDATION™ fieldbus cables are also Marine Shipboard listed C(UL)US 245/1309 90C 600V and IEEE 1580-2010. They are American Bureau of Shipping (ABS) certified and compliant with FOUNDATION™ fieldbus FF-844 Cable Specification for Type A and IEC 61158-2 and ISA/SP50.

TURCK

PROCENTEC’s Netilities - PROFINET Diagnostic and Engineering Tool

Visualize and troubleshoot any PROFINET network with the powerful Netilities diagnostic and engineering tool. Netilities is the most compact and efficient graphical software tool useful for engineering, monitoring, and troubleshooting PROFINET installations. Thanks to unique features such as a live list, statistics, and PROFINET alarm messages, engineers can be informed directly about the reliability of the PROFINET network. This allows users to take immediate action when a critical situation occurs. Troubleshooting has never been so easy.

Netilities generates a real time live list of the PROFINET network and detects devices in Data Exchange. The live list is color-coded and provides detailed configuration and status information. The user can directly see what the condition of the network is. The list of detectable PROFINET faults identified by Netilities includes general communication faults, configuration faults, and diagnostics of devices, lost/missing device, wrong device name, duplicate device name, and duplicate IP address. Network statistics (cycle times, error counts, alarms, traffic levels, etc.) can be viewed to monitor system operations and current conditions. This provides a complete overview of the network condition.

Alarm messages

Netilities offers another unique feature that is more than worth mentioning: PROFINET alarm messages. Netilities receives alarm messages when a critical situation occurs. These messages are decoded and displayed in Netilities. Thanks to this feature users can intervene directly and prevent downtime. Detailed reports about the reliability of the PROFINET network can be easily generated and saved in PDF format. The PROFINET alarm messages are also added to this report. This makes the report even more comprehensive and detailed.

The best performance of Netilities is achieved when the laptop is directly connected to the mirror port of a switch which is installed directly behind the PLC or other controller.

The licensing and software storage is handled by a USB dongle. The dongle can be used on multiple PCs. The latest version of Netilities is available and can be downloaded from the website of PROCENTEC: procentec.com/netilities

Easy Integration of PROFIBUS PA Field Devices by Softing

At the embedded world trade show 2015 in Nuremberg, Softing presents the latest version of FFeasy and PAeasy – the proven combined hardware and software solutions for the direct and rapid implementation of FOUNDATION Fieldbus H1 and PROFIBUS PA field devices.

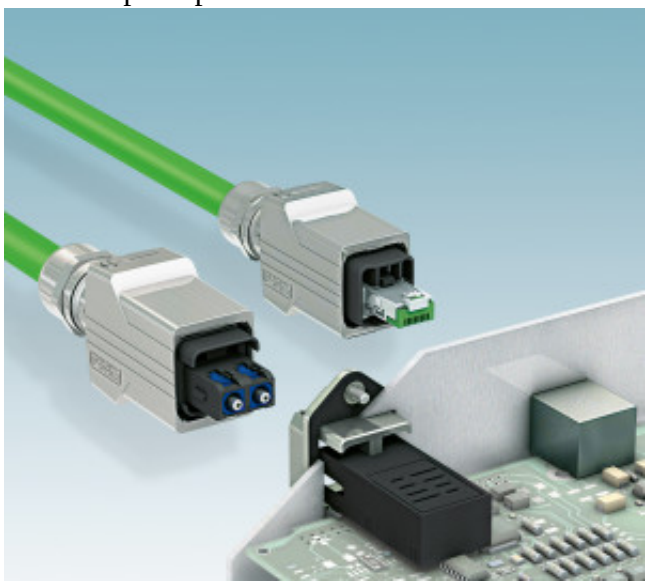
FFeasy has been certified to ITK 6.1.2 (Fieldbus Foundation Interoperability Test), PAeasy now has the PROFIBUS PA Profile 3.02. These features allow diagnostics in line with the Namur recommendations NE 107. The two software solutions are based on the same hardware – Softing's Embedded Communication Kit FBK-2 – and use a standard function block application. In this configuration they have already successfully completed all required certification steps and enable fast field device implementation without programming. Users benefit from a smooth certification process for their field devices and a short time-to-market.

More information about Softing’s embedded communication modules: Softing

Phoenix Contact RJ45 and Fiber Optic Connectors

Reliable data transmission in the field with RJ45 and fiber optic connectors

The new push-pull Advance data connectors from Phoenix Contact bring future-proof



high-speed cabling directly to the field. Designed for data rates of up to ten Gbps, the connectors are protected against dirt, dust, or humidity by means of IP65/IP67 protection. Due to their 360° shielding, they are also immune to electromagnetic interference. The push-pull technology means that users can insert and remove the connectors easily. Nevertheless, a mechanical locking mechanism reliably prevents unintentional release of the connection.

The series includes versions for Profinet and Ethernet as well as fiber optic versions for POF, GOF, and PCF fibers. All connectors are designed for conductor cross sections from 26 to 22 AWG. Both the straight and 45° angled versions are suitable for cable diameters up to 9.5 mm.

Phoenix Contact