

impulse

Murrelektronik Customer Magazine

EVERYTHING FOR AUTOMATION

Installation Concepts Made Easier and More Efficient



more on page 04

EMPARRO PREMIUM POWER

The Perfect Power Supply System Line Up



more on page 06

SOLID67

Protocol Change in the Blink of an Eye



more on page 08

EDITORIAL

Dear Customer,

When designing and producing products and solutions, we focus on how to **make our customers' lives easier**. We ask ourselves: How can we reduce installation time and effort? How can we continuously improve communication? How can we ensure easy maintenance?

If you look at our current product portfolio, you will find the right answers. For example, when it comes to **decentralized installation technology**, we offer our customers several solutions and concepts. We will work together with you to figure out which concept is best for you. To meet the increasing demand for networking machines and plant equipment, we supply powerful switches and a comprehensive selection of connectors for Profinet **network technology**. To make it easy to parameterize sensors and actuators, we equip our products with **IO-Link**. Transparency is a key focus when it comes to questions regarding **Industry 4.0**. We offer solutions that enable you to forward your data using interfaces. We are a system supplier for **power supply concepts**. Our portfolio guarantees reliable power supply. And of course, we are also well equipped when it comes to **safety**. We offer both passive solutions with proven concepts as well as active solutions for meeting the highest possible safety standards.



To learn more about how innovative solutions from Murrelektronik can make your life easier, why not take some time to read our customer magazine. Enjoy!

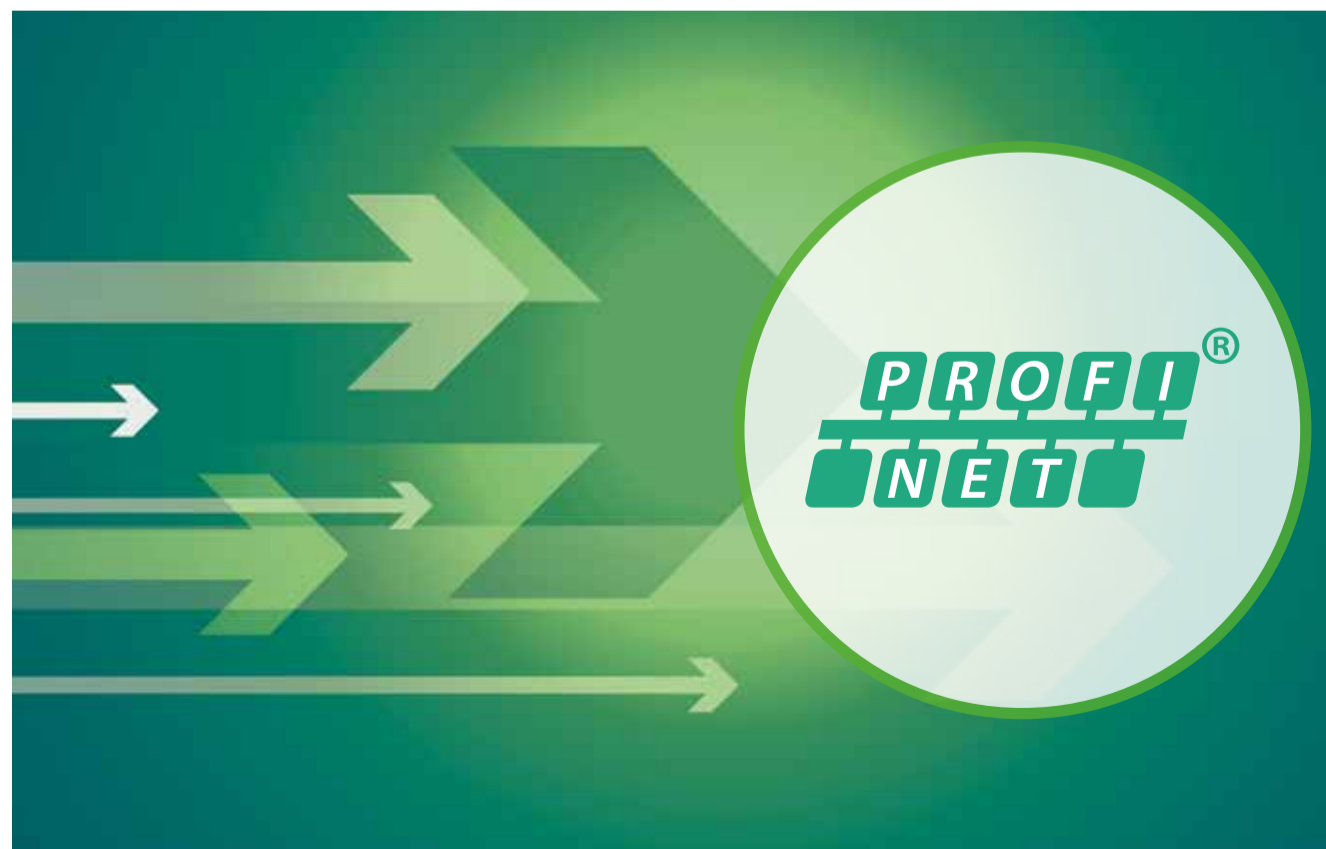
Stay connected!


Jürgen Zeltwanger
CTO

COVER STORY

SWITCH TO PROFINET MADE EASY!

Murrelektronik is the ideal partner to get your machines and plants ready for the future by switching over from PROFIBUS to PROFINET



SWITCH TO PROFINET MADE EASY!

Murrelektronik is the ideal partner to get your machines and plants ready for the future by switching over from PROFIBUS to PROFINET



At the center: Powerful switches from Murrelektronik play an important central role in PROFINET installations. In addition to linear configurations, they also enable star, tree and ring configurations



In modern production networks, machines and plants need to be connected to one another. Processes can be aligned down to the smallest detail to allow for high automation levels and short lead times. At the same time, our products enable network structures that often undergo frequent maintenance, due to new robots with frequent tool changes or add-ons during operation.

These are a few reasons installation concepts based on PROFIBUS inevitably hit a wall. However, this can be resolved with with PROFINET. This established, proven and readily available technology enables effective and efficient installation concepts to be incorporated into complex machine networks.

The benefits of PROFINET are obvious:

- The number of subscribers for the entire network is unlimited (unlike PROFIBUS, which is limited to 126 subscribers). With a PROFINET configuration, one control unit alone can accommodate 256 subscribers.
- PROFINET allows IT extensions to be easily integrated into the topology (which was not possible with PROFIBUS).

BUS). Incorporating IT with PROFINET allows uncomplicated networking up to the office level.

- For PROFIBUS, all data has the same priority; with PROFINET, on the other hand, important information such as alarms or diagnostic data can be prioritized and moved to the "priority lane."
- In PROFINET installations, addressing is done by simply allocating a name to the project (not via a DIP switch or a telegram like with PROFIBUS).
- The topology becomes more flexible (not only linear configurations are allowed like in PROFIBUS). In PROFINET installations, the use of switches makes star, tree and ring configurations possible. This increases flexibility and reduces the wiring time and effort.
- The PROFIBUS DP programs can be simply applied in PROFINET installations. The proven programs do not have to be rewritten and tested, this saves time and effort.

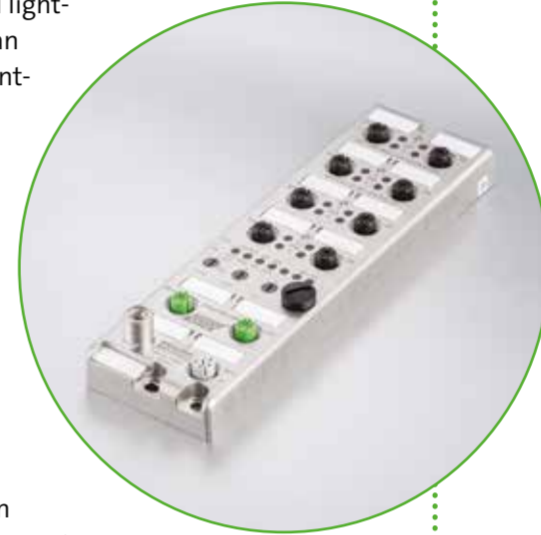
By switching over to PROFINET, you benefit from these additional features:

- PROFINET/PROFIsafe makes it possible to integrate safety components into installation concepts to protect both man and machine, and yet still enable efficient operation despite the highest safety levels.
 - PROFINET/PROFIenergy supports energy management in production facilities. It controls energy consumption when certain systems are not being used for production, whether for scheduled and unscheduled downtimes.
- Murrelektronik is the right partner for PROFINET installations**
- Murrelektronik offers powerful devices for first-class PROFINET networks that accommodate plug & play concepts. The IODD On-Board technology also makes it particularly easy and convenient to integrate IO-Link devices.



Not only that, the Cube system makes it easy to switch over to PROFINET. Its compact and modular installation is distinctly flexible and has a large variety of modules on the sensor/actuator level which makes it easy to switch out the bus nodes. That's all it takes to integrate the topology into the PROFINET system. It couldn't be easier! The entire installation below the bus nodes remains unchanged.

SOLID67, a compact and light-weight fieldbus module, can switch over to PROFINET instantly because it is a multi-protocol module. It is equipped with the newest PROFINET version 2.3. The modules make eight IO-Link ports available in directly on the machine, and also make it easy to integrate traditional IOs into the system.



One feature of the Impact67 fieldbus module is its flexibility: the ports are designed with adjustable parameters. Depending on what the demand is, the ports can be used as inputs or outputs. The same port can even be used as an IO-Link master.

And of course, the modules offer the maximum PROFINET performance and functions of version 2.3.

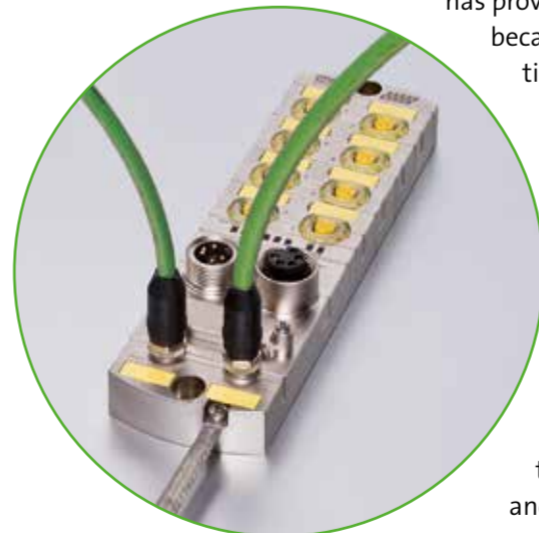


A further advantage of the compact MVK Metal fieldbus module is that its robust design makes it perfectly suitable for the roughest industrial environments. Many customers like to use them in applications where they are exposed to welding sparks. The modules feature all PROFINET functions and offer maximum network load reliability (Netload Test Class III).

The MVK Metal Safety module supports safe and reliable inputs and outputs up to a safety level of SIL 3 or PL e. In addition, the inputs and outputs support real-time applications because they correspond to Conformance Class C.



In time-critical applications, such as tool changers, the fast startup functionality on our Impact67 and MVK Metal modules has proven to be very useful because it can restart production within a very short period of time.



To connect PROFINET subscribers, Murrelektronik offers powerful PROFINET switches, both for the control cabinet as well as the field. Pre-wired cordsets tested and engineered to our highest standards complete our product portfolio. When it comes to single wire cross-sections and shielding, the cables and connectors meet the PROFINET wiring guidelines and make reliable data transmission possible – they are the life line of each and every PROFINET installation.



KATEGORIESIEGER



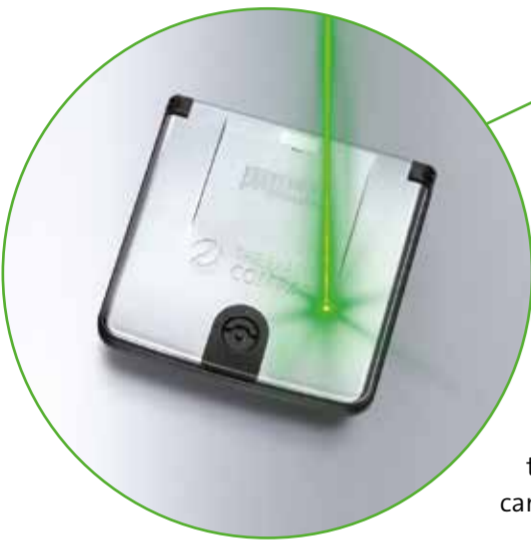
The industry award is given out every year by the Huber Verlag for New Media (publishing house). Advanced industrial products with high economic, social, technological and ecological benefits are honored in this competition. An independent jury made up of industry experts, professors and trade journalists judge the award process.

Murrelektronik's Cube67 Diagnostic-Gateway with OPC UA introduced during this competition makes accessing data from Cube fieldbus systems very easy. Using the standardized Industry 4.0 interface OPC UA, process data and diagnostic information are transmitted to primary cloud or ERP systems (such as SAP). And it's platform independent. This makes it easy to analyze data in order to streamline production or reduce downtimes and increase the competitiveness of the machines and plants.



EVERYTHING FOR AUTOMATION

The clever products, ideas and solutions from Murrelektronik make installation concepts easier and more economic...



Modlink MSDD: Customized lids

Murrelektronik offers added-value services: We will customize the lid at no charge.

The Modlink MSDD service interfaces are situated in an easily visible location on the switch cabinet. They are perfect for attaching system labels, barcodes, and warnings. It is no longer necessary to install additional signs. Dealers and rack cabinet manufacturers can advertise by using the area as a prominent position for their logo.

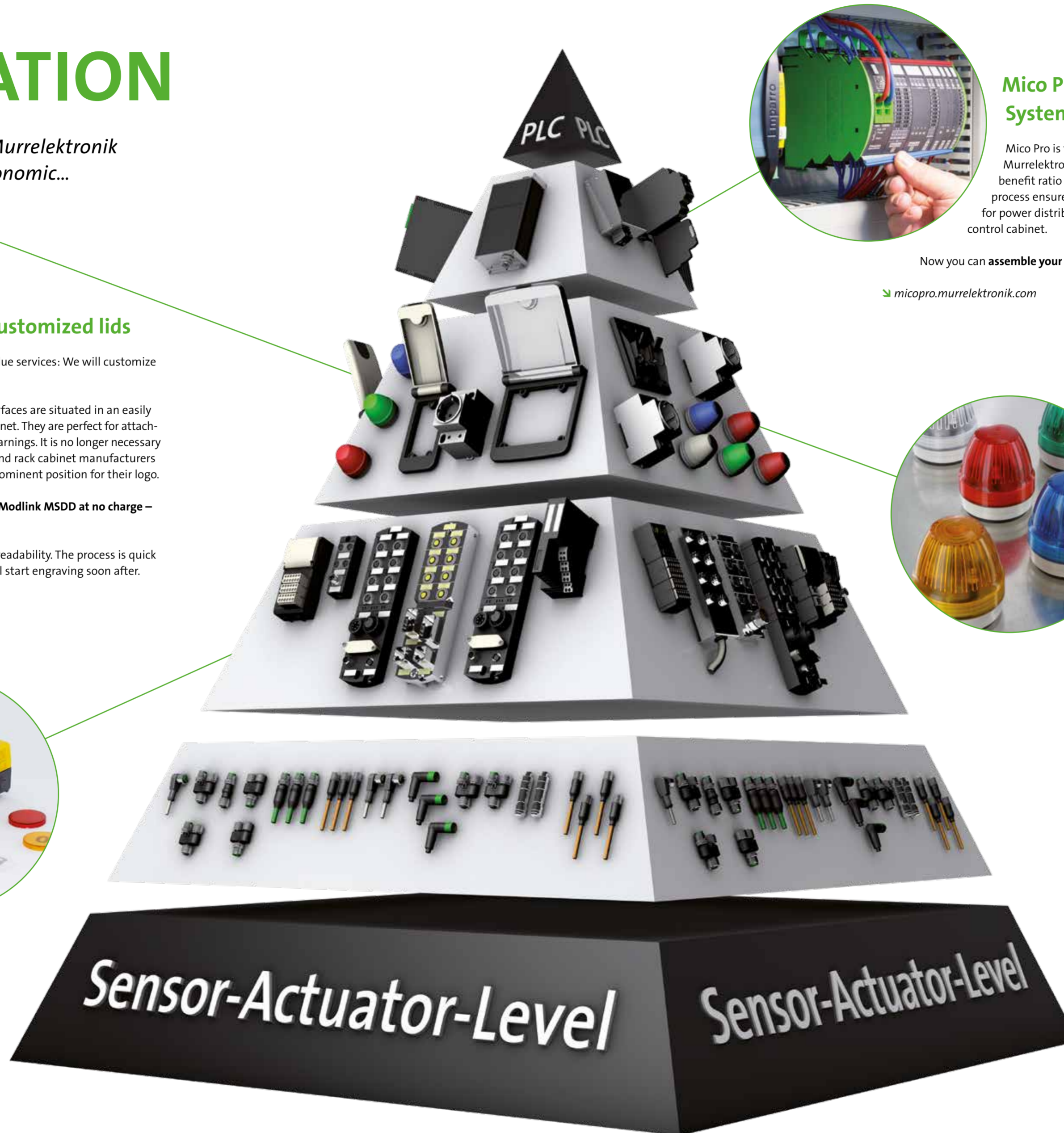
We will laser engrave your text or logo on the Modlink MSDD at no charge – for any number of parts.

The newest laser technology ensures good, long-lasting readability. The process is quick and easy: simply send the logo by email and the laser will start engraving soon after.

Multi-Colored Light Effects

The EMERGENCY STOP and RESET buttons from Murrelektronik are integrated in electronic installations using preconfigured M12 standard cables. A time-saving solution that reduces the risk of faulty wirings. The "Plug & Play" feature makes integrating the command devices in machines and systems faster.

They are used whenever individual command and signaling devices are included in decentralized systems, for example on protective fences or at production stations. The versions with an ultra-compact width of 42 mm are perfect to connect to standard aluminum profiles.



Mico Pro: The Current Monitoring System Modularized to the Max

Mico Pro is the innovative current monitoring system from Murrelektronik. Its modular design offers an inexpensive cost-benefit ratio and saves on installation space. The patented tripping process ensures optimum machine availability. An integrated concept for power distribution significantly disentangles wiring problems in the control cabinet.

Now you can assemble your Mico Pro station online yourself using our configurator...

micopro.murrelektronik.com



Clear and easy-to-see signals in daylight quality

Murrelektronik's signal towers and lights ensure clear signaling in machines and plant equipment. The machine lights allow for perfect illumination in daylight quality. The Murrelektronik solutions for these applications offer high-quality advantages:

- LED technology ensures a **high light yield** and guarantees a **long life** with simultaneously low energy consumption.
- Murrelektronik offers **pluggable solutions**, such as M8 or M12, on the entire product range so that installation goes as quickly as possible.
- The compact design of the lights and signal towers means they can be used in **narrow or limited spaces**. After all, space in machine or plant equipment is usually a rare commodity.

EMPARRO PREMIUM POWER

The perfect power supply system line up from Murrelektronik

Murrelektronik's Emparro product range offers a high-quality solution for supplying power to machines and plants efficiently and reliably. The universal power supply system consisting of high-performance switch-mode power supplies, reliable buffer modules and efficient filters is

perfectly aligned. Members of the Emparro family work well together not only in the control cabinet, but also directly on the machine. Switch-mode power supplies in protection class IP67 allow on-machine power solutions.



On-Machine Power Supply

Emparro67 is used in the field on the machine. The robust and fully molded switch-mode power supplies with a protection class of IP67 can resist even the most extreme environmental conditions. The voltage is converted from 230 VAC to 24 VDC directly on the machine. This keeps power losses to a minimum and reduces energy costs. Since hardly any energy is converted to heat, the devices can be touched even when operating at full capacity. They function reliably up to ambient temperatures of 85° C. Relocating the power supply to the machine creates space in the control cabinet. The Emparro67 is also resistant to dirt, moisture as well as coolants and lubricants.



FILTERS

SUPPLIES

BRIDGING

SUPPLYING POWER IN A ROUGH ENVIRONMENT

SUPPLYING POWER IN THE FIELD

Emparro MEF

Emparro 3~ AS-Interface

Emparro 1~ 10 A

Emparro 3~ 40 A

Emparro Cap

Emparro ACCUcontrol

Emparro HD

Emparro67 4 A

Emparro67 Hybrid

Emparro67 Hybrid Supplying Power, Protection and Communication On the Machine!

Two integrated channels for 24-VDC load circuit monitoring ensure high operational reliability. An IO-Link interface supports communication, for example, during device parameter changes or when reading diagnostic data for predictive maintenance.

Filters for Maximum Interference Immunity

The single-stage Emparro MEF filters protect power supply systems from electromagnetic interferences and optimize electromagnetic compatibility in machines and plants.

The Emparro MEF filters are bidirectional, running from an external grid to the power supply system and back.

The Impulse Generator for Machines and Plants

The Emparro switch-mode power supplies for single and three-phases are remarkably reliable. Thanks to a broad portfolio with different power outputs, Murrelektronik has solutions for almost all applications.

During the production process for Emparro products, only the highest quality components are used. The MTBF value can reach up to 1,000,000 hours. The switch-mode power supply efficiently converts energy and has a 95% efficiency level guaranteeing a long life.

Built-in power reserve: for a smooth transition between large loads, the Emparro has Power Boost functions. The Power Boost function provides up to 150 percent power for up to five seconds, the Hyper Boost function up to as much as 400 percent for 20 ms.

Limited space requirements: designed to be compact, the switch-mode power supplies do not take up a lot of space in the control cabinet. Integrated protection devices not only save more space, but also

minimize planning and installation time and effort.

Switch-mode power supplies for AS-Interface Integrated decoupling configuration

The Emparro module for AS-Interface applications is used for traditional operating voltage up 30.5 V. Using this device requires no separate decoupling module because it automatically separates the data and power currents from one another.

40-A Emparro 3-phase modules Predictive Maintenance

The switch-mode power supply unit features predictive maintenance diagnostics. It notifies the user the best time to perform maintenance on the power supply unit. This ensures a long life without having to deal with expensive downtime.

Keeping Machines Alive

The Emparro ACCUcontrol UPS module is an uninterrupted power supply that provides a back-up power supply for power outages. Failures and downtimes in production are avoided because the module supplies back-up power, keeping the power flowing for several hours thanks to its externally connected lead battery.

The Emparro Cap buffer module is perfect for structuring a shutdown of machines and control systems. It works based on ultra-condensers, is maintenance-free for its entire life and provides the necessary voltage to purposefully stabilize processes.



Perfect for Outdoor Control Cabinets

Emparro HD is a switch-mode power supply module designed for applications where the control cabinets are exposed to outside influences, for example, on movable parts on spreaders, construction cranes or materials handling machinery.

- High vibration and shock resistance
- Maximum overvoltage resistance protects against voltage peaks or lightning strikes nearby
- High level of efficiency even at extreme temperatures ranging from -40 to +80 °C

Why Murrelektronik Truly Values Solutions for the Industrial Environment...



When following our zero cabinet concept and relocating functions from the control cabinet directly onto the machine, our customers can make control cabinets smaller and, in some installations, even eliminate them entirely. One benefit of moving a switch-mode power supply out of the cabinet and onto the machine is that it eliminates a heat source which means the cooling system can be smaller. It also reduces wiring time and effort. The voltage is converted directly where the power is being consumed, which has a positive impact on the energy balance. The idea of offering switch-mode power supplies for on-machine use is forward-looking but also logical because we are taking decentralization to the next level. We have a complete portfolio of field components, ranging from the sensor/actuator level to the control unit level. The expertise required to produce a switch-mode power supply for on-machine use in a harsh industrial environment has been a major development in the world of switch-mode power supplies."

Dennis Braun and Florian Holzmann
Power supply experts and product managers at Murrelektronik

SOLID67

PROTOCOL CHANGE IN THE BLINK OF AN EYE

SOLID67 is the new Murrelektronik line of compact I/O modules. They simplify installations in the field and are especially attractive for applications with IO-Link sensors and actuators. The modules provide eight IO-Link slots close to the process itself and can easily incorporate classic IOs into the system as well.

Thanks to the fully encapsulated metal housing, and impressive vibration and shock resistance (15 and 5 G); the modules are ready for use in rough industrial environments, even in a temperature ranging from -20 to +70 °C. This opens the way for numerous applications. The extensive diagnostic functions of the module, available via the control system or an integrated web server, make troubleshooting a simple matter.



Simplified inventory management



Michael Greiner
Product manager at
Murrelektronik



Our SOLID67 fieldbus modules have multiple protocols. This means they support PROFINET and Ethernet/IP in one module. This is an excellent solution and allows our customers to enjoy concrete advantages: to change from one protocol to another, all they have to do is simply turn a rotary switch on the device. And because fewer modules have to be kept in stock, it also simplifies inventory. This will also reduce costs.

Using all slots



The slots (pin 4) of the IO-Link master modules feature a multi-functional design that allows them to be used for IO-Link sensors and actuators or to be parameterized as classic inputs or outputs. Signals of all kinds can be read with just a single module.

Shorter installation times



The compact M12 power lines (L-coded) can withstand especially high current loads of up to 16 A. Daisy chains of multiple modules can be assembled to supply power where needed. This simplifies the installation work and shortens the cable paths. PI, the user organization for Profibus and ProfiNet, views the L-coded M12 as the future standard for power connectors.

Minimizing space requirements



With a unit width of only 30 millimeters, the thin IO-Link variants of SOLID67 are ideal for installations with limited available space. Modules can be installed extremely close to the process, and sensors and actuators can be connected with the shortest lines possible.

CONGRATULATIONS



Customer proximity is a decisive factor in Murrelektronik's success. And our branch offices around the world bring us closer to our customers! Several of them are celebrating important anniversaries in 2018. Murrelektronik's branch office in Italy has been looking after customers there for 25 years. It is located in the Lombardy region, very close to Milan. Murrelektronik has operated a branch office in Austria for 10 years. From its central location in Schwechat near Vienna, it serves not only Austrian customers, but customers throughout the entire CEE region (Central and Eastern Europe).

