



impulse

Murrelektronik Customer Magazine

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A Simple Way to Measure Distance and Rotation Angles

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EDITORIAL



Dear Customer,

Your loyalty is very important to Murrelektronik. We are always working to strengthen our relationship to you. Recently, we have introduced a number of things to support this goal:

The first one is our new training center at our Oppenweiler headquarters. The modern training rooms are perfect for short workshops and longer product training classes where ideas and product knowledge are shared with our internal and external clients. This flow of information extends from our product managers to our salespeople to you so you have the most up to date technical knowledge when making purchasing decisions. The training rooms are also available for user meetings and discussion groups.

Our relationships are further strengthened when we visit your site with our new Solution Van. Step onto the van to experience first hand our products, systems and solutions. This summer the van will be making numerous stops throughout Europe.

The third way we work to strengthen relationships is by developing and producing beneficial products. In this edition of Impulse, we are introducing our Emparro 3-phase power supply. With this unit, and its hyper boost and power boost functions, you can create premium power management systems.

To learn more about each of these items, simply turn the page!

Stay connected!

Jürgen Zeltwanger

Jürgen Zeltwanger
Chief Marketing Officer

THE NEXT GENERATION

Power Supply

EMPARRO[®] 3[~]
PREMIUM POWER



EMPARRO® 3~

EXTREMELY RELIABLE, EXTRAORDINARILY EFFICIENT

THE NEWEST ADDITION TO THE EMPARRO FAMILY, EMPARRO 3-PHASE, ENABLES THE CREATION OF OPTIMUM POWER MANAGEMENT SYSTEMS

EMPARRO® 3~ PREMIUM POWER



“Expensive downtime caused by defective power supplies is something to be avoided. This is why technicians take care to select durable, long lasting components. With Emparro 3-phase, we have developed a power supply that meets all aspects of their needs.”



Manuel Senk
Product Manager

Murrelektronik's Emparro family has a new member. The newly developed Emparro 3-phase power supplies for 24 V applications are important components in quality power management systems. These units are not only extremely reliable but also extraordinarily efficient as a result of their integrated reserved power. However, they don't require much space in the cabinet. This is premium power from Murrelektronik!

Extremely Reliable

Reliable power supplies are an essential component to ensure maximum availability of machines and systems. Therefore, reliability was a high priority during development of these new 3-phase units. Their remarkably high MTBF value of about 1,000,000 hours shows this clearly. Achieving this MTBF is possible because of our high-quality components, the modern and slim circuit board design and the processor-controlled electronics. An integrated gas discharge valve protects the power supply from interfering pulses up to 6 kV. Therefore, overvoltage coming from the mains, EMC interference (as caused by frequency converters) or contact bounces cannot cause any damage.

The up to 95 % efficiency rating is another reason the Emparro 3-phase unit has such a long life span. The resulting power loss is very low which exposes the components to less thermal stress. The Emparro 3-phase efficiency rating is the same whether it is operating at full power or at any point along the load range including when it is operating at low capacity. This is an important benefit especially when compared to other power supplies.

Integrated Reserved Power

Emparro 3-phase power supply units have a special feature: they have reserved power integrated. They are designed in such a way that they can be operated with up to 20 % overload in ambient temperatures of up to 45° C. The 5 A models continuously supply 6 A, 10 A models 12 A and 20 A units 24 A.

This offers two essential benefits. The first is that if additional loads have to be connected to a machine or a system, Emparro 3-phase offers the necessary reserve. The second is if the demand is close to the maximum of a power supply a larger power supply does not have to be used. Instead, the reserve can be used to meet the demand thus saving cabinet space and money that would have been spent on a larger power supply.

Emparro 3-phase also features 2 different boost functions: power boost and hyper boost. The Power Boost supplies 50 % more power for up to 5 seconds while the Hyper Boost provides up to 400 % more power for up to 20 ms.

Free Up Valuable Cabinet Space

Emparro 3-phase power supplies are very compact: the 20 A model fits in a 65 mm wide housing.

The vibration resistant push-in terminals make installation tool free so connection maintenance becomes a thing of the past. While the integrated fuses help to reduce planning and wiring efforts.

PRACTICAL FEATURES UP TO THE DETAIL

Emparro 3-phase power supplies have many practical features up to the detail:

- Continuous 2-phase operation
- Parallel operation (Connect up to five Emparro 3-phase units to each other)
- Alarm contact for over voltage, short circuit and temperature
- Excellent EMC characteristics
- LED indicators
- Derating from 60° C
- QR code for direct access to technical documentation

In the initial product launch, Emparro 3-phase will be available in 5, 10 and 20 A models. By the end of the year, a 40 A model will round out the product line.



THE EMPARRO FAMILY

The single phase Emparro power supplies have an efficiency rating of 95 % so resulting power loss is very low. With seven models to choose from, there is a solution for a range of applications.

Emparro Cap, the maintenance-free buffer module, is a perfect complement to the single- and three-phase power supplies. It bridges voltage drops of up to one second while operating with full load (20 A).

This ensures safe industrial processes and it pays for itself when downtime, as a result of a drop, is avoided.

Emparro MEF, the single-phase filter, suppresses interference emissions in a system from the beginning exceeding the strictest requirements regarding EMC characteristics. A main feature of this filter is its integrated overvoltage protection.

Emparro67 is the IP67 power supply for applications outside the cabinet, directly in the field. This makes it a good choice for decentralized installations. With Emparro67 power loss is kept to a minimum because the voltage is converted from 230 V AC to 24 V DC directly at the load.



UP TO 100 METERS

THE LONGEST CORDSET IN THE WORLD

Murrelektronik's M8, M12, and RJ45 cordsets are now available in cable lengths of up to 100 meters. This is useful for applications in which long distances have to be covered. The first batch of these long cordsets is currently being used on a brewery retrofit in Mexico. In this project, valves and sensors are being integrated into an existing installation. Since the cabinet locations can't be moved, longer cables are needed to make the connections in the field.

Like with all other Murrelektronik cordsets, the longer lengths are available in your choice of cable material and color, as well as in shielded or unshielded versions. Minimum order quantities for these longer cables are just like our shorter ones – a single piece.



M8 AND M12 CONNECTORS FOR THE AMERICAN MARKET

When doing business overseas, it is important to understand, and keep current with, the necessary requirements and approvals. For machines and systems that are headed for the United States that means understanding UL. The updated UL 2238 standard is concerned with electrical safety and also sets requirements regarding material heating, strain relief and molding. **Murrelektronik is pleased to announce that its cordsets meet these new requirements.** Our rugged PVC (type 1) cables and our high performance PUR (type 3) cables are suitable for all applications that need to meet UL 2238.

MODLINK VARIO

IN THE FLOW

Modlink Vario is Murrelektronik's modular media connector. With only one system, pneumatics, fluid and electronic signals can easily be coupled and decoupled. This is a practical solution for applications in cabinets, tools or at machine parts.

Modlink Vario's unique feature is: electrical connections and media can be coupled simultaneously, under pressure and drip-free.

All connectors can be freely configured which allows highest flexibility – up to 1,000 different options are possible. For transferring electronic signals, Murrelektronik offers suitable M12 cordsets with different pin configurations and codings. Its full metal housing makes Modlink Vario suitable for applications in harsh industrial environments.

PRACTICAL MEDIA CONNECTOR



48 V SYSTEM SOLUTIONS FROM A SINGLE SUPPLIER

HIGH PERFORMANCE POWER MANAGEMENT SYSTEMS FOR 48 V DC APPLICATIONS

48VDC power management systems are becoming more popular because are an economic solution for applications that transmit power over long distances. Not only because twice the power can be transmitted with the same current but also because smaller cross section cables can be used for that power.

Murrelektronik offers an integrated power management system (power supplies, buffer modules and electronic current monitoring) for 48 VDC applications. Its primary focus is on maximum machine uptime. Murrelektronik is currently the only company that offers a 48 VDC integrated power management system.

Power Supplies are the core of the system. Evolution+ power supply units are designed for 3-phase applications with output currents of 5, 10, and 20 A. Emparro 48V is the right solution for single-phase applications with output currents of 2.5, 5, and 10 A.

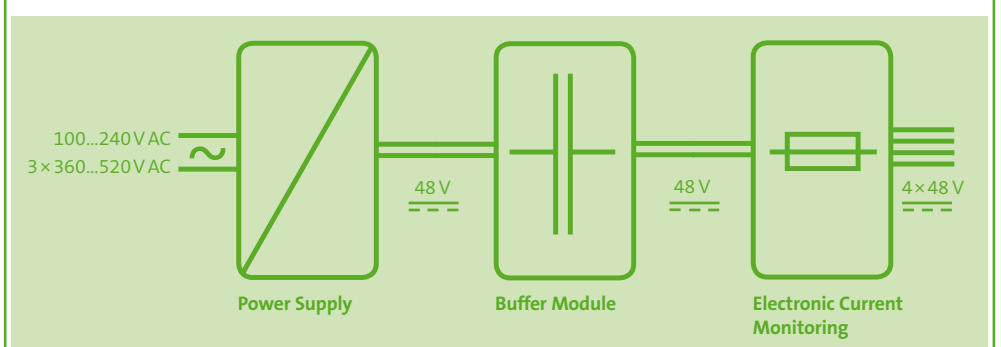
Emparro Cap 20/48 bridges voltage drops and complements the system. This buffer module ensures stable, industrial processes.

MICO+ 48V is the final piece of the system. This 4 channel electronic current monitoring module makes sure that only the affected channels are switched off in the event of short circuits or overloads regardless of cable length.

ON THE RISE!

48 V DC power management systems are on the rise. They are being used in a growing number of industries including renewable energy, lighting systems for office buildings and in Food & Beverage.

A 48 V POWER MANAGEMENT SYSTEM INCLUDES:



A SIMPLE WAY TO MEASURE DISTANCE AND ROTATION ANGLES

Cube67, Murrelektronik's modular fieldbus system has many function and expansion modules that allow installation concepts to be adapted to meet specific requirements.

The new Cube67 encoder module is one of those modules. It is designed to measure distance and rotation angles of moving axles.

The encoder module is designed for incremental encoders. Two moving axles can be connected per module. The module features two programmable set-points that enable comparison with the actual count value. This makes it possible to enable an output when the preset comparison value is reached – independent of the PLC program.

The Cube67 encoder module is suitable for axles that are driven by frequency converter motors like those found in conveyor belts and lifting devices.

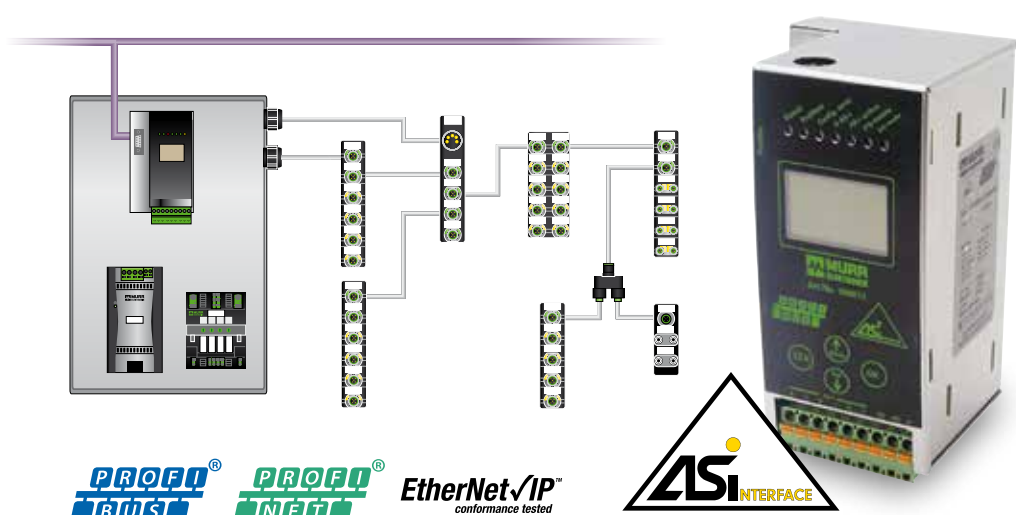
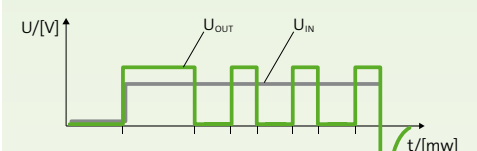
DECENTRALIZED SOLUTIONS



MINIMUM ENERGY CONSUMPTION

Energy efficiency in machine tools is a big issue. Murrelektronik's energy saving valve plugs help to lower the energy consumption – while ensuring maximum performance. The principle of pulse width modulation (PWM) makes this possible: The circuit supplies full power to energize the solenoid and shift the valve, then reduces the power when maintaining its position. Murrelektronik offers capacity reducers for contactors, to integrate into Cube20S fieldbus stations and as integral component of valve connectors.

Functional diagram



THE NEW MASI GATEWAYS

Murrelektronik has expanded its MASI Gateway line for AS Interface installations with PROFIBUS, PROFINET and Ethernet/IP fieldbus system components. These gateways are the bridge between higher-level fieldbus systems and MASI installations in the machines. The new MASI gateways come with comprehensive diagnostic tools including an Ethernet interface for direct access to the gateways' webserver.

RJ45 CONNECTORS



NEW COLOR, NEW DESIGN

Our redesigned 4-pole RJ45 connectors are now shipping. The redesigned connectors have slightly smaller dimensions and they also have an improved green clasp that makes locking and unlocking easier. Even with this design change, the connectors remain compatible with all controls and switches.



MVP12 STEEL

100% CLEAN – 100% SIMPLE

IP69K STAINLESS STEEL DISTRIBUTION BOXES OPEN THE DOOR FOR DECENTRALIZATION OF APPLICATIONS IN THE FOOD AND BEVERAGE INDUSTRY

Machine components and installations in the F&B industry have to be easy to clean. As a result, Murrelektronik's new MVP12 Steel distribution box is made of high-quality stainless steel. It is an ideal solution to implement a decentralized approach in F&B machines and installations.

The F&B industry doesn't make any compromises where cleanliness and corrosion protection are concerned. Dirt must be easy to remove. Parts are exposed to high pressure wash downs with aggressive cleaning agents.

This makes stainless steel the preferred material. Murrelektronik's MVP12 Steel distribution boxes feature a closed stainless steel housing and threaded sleeves made of V4A stainless steel ensuring an IP69K rating. No matter if you are cleaning, rinsing or disinfecting MVP12 Steel will always operate reliably.

One Homerun Cable Instead of Eight Single Cables

Prior to the introduction of MVP Steel, individual cables had to be routed through a system – a very complex task in the F&B industry because of the cleanliness requirements. Now a single homerun cable replaces the individual ones. This reduces material costs, the amount of wiring and space required. Moreover, terminal boxes are no longer required in the field. MVP12 Metal is installed close to the process so sensors and actuators can be connected to one of its eight ports with the shortest possible cables.

A STRONG TEAM!

To complement the MVP12 Steel distributors, Murrelektronik offers M12 Steel connectors that are fully potted and made of corrosion resistant stainless steel. Together the distribution box and cordset form a closed and rugged unit for F&B applications.

CUBE20S

SMALL, FAST AND SAFE

Safety is a major topic in the automation industry. The goal is to provide the best protection possible for man and machine. To help with that goal, Murrelektronik is offering safety expansion modules for our Cube20S modular fieldbus station. This allows for reliable transfer of safety-related data.

Because these new modules work within an existing system there are no additional safety functions to be implemented and safety requirements are easily met.

Cube20S is a compact, cabinet mount, adaptable fieldbus system. Its digital and analog modules (available with two, four or eight channels) as well as its function modules are connected to a basic module with an integrated bus node.

The newly developed safety expansion modules help to create functional safety in machines and systems. By using the PROFINET/PROFIsafe and PROFIBUS/PROFIsafe safe fieldbus protocols, data is transferred in a way that allows the Performance Level e (PLe) safety category to be reached.



The output module ensures that outputs are switched off safely, if necessary, and the affected machine components are shut down safely. The safety input module transfers signals from safety equipment (light barriers and light curtains, position switches or emergency stop buttons) to the safety control.

CELEBRATING 40 YEARS OF GROWTH

In 2014, the Murrelektronik group reported the highest annual revenue in our company's history. For 2015, our 40th Anniversary year, we want to continue our growth and write a new chapter in our success story. Our solution van and our new training center new in Oppenweiler are the first steps in that process.

SOLUTION VAN CUSTOMER VISITS IN A WHOLE NEW WAY

This summer, Murrelektronik's new solution van will embark on its first European tour. After making a few stops in Germany, the solution van will hit the road for destinations in Austria, Switzerland, Denmark and Sweden.

The solution van brings an exhibition quality display straight to our customers. Rather than boarding a plane or train to go to a trade show, they simply walk outside to their parking lot. Walking through



the van, customers are able to experience Murrelektronik's products and systems. Displays on both sides of the van, along with its highly trained staff, make it easy to understand how the products work together to create customized application solutions.



NEW BUILDING IN OPPENWEILER CUSTOMER SERVICE BY DESIGN

Our new office building and training center is now open at Oppenweiler headquarters. The employees have moved into their new offices and are enjoying the new workspaces. The training rooms have hosted their first meetings and workshops.

Murrelektronik's primary focus is on you, our customer, and your needs. This requires a high degree of flexibility and short response times. Therefore, Murrelektronik's new office building is designed around an open concept that promotes communication and cooperation between departments.

The variety of spaces in the building provides room for all different types of gatherings. Bar tables and alcoves are available for spontaneous meetings while standard sized meeting rooms are available for bigger groups. This means space is always available for both departmental brainstorming sessions and quick meetings between colleagues.

The open plan does not mean that there is not a quiet place to work. On the contrary, quiet spaces are created through the use of acoustic baffle panels. In addition, sound absorbing ceiling panels, partitions, and a special floor covering help to create a tranquil work environment for each team.

Modular Training Room Concept

The new training center on the ground floor is furnished with state-of-the-art equipment that helps make training fun. The rooms can be configured for not only smaller workshops but also for bigger conferences while the large foyer provides an open and friendly entry and lounge area.



IS THIS A FAMILIAR FEELING? MURRELEKTRONIK SYSTEM CONSULTANTS CAN HELP.



Need to understand more about:
Fieldbus Systems: AS Interface, Profibus, DeviceNet, Interbus
Industrial Ethernet: EtherCAT, Ethernet IP, ProfiNet



INDUSTRIAL COMMUNICATION SYSTEMS WORKSHOP

We'll guide you through most established industrial communication systems via a friendly, informal workshop. We can even tailor the session to make recommendations for your application.

- Available on your premise or at our head office in Manchester
- Maximum of 8 attendees per workshop
- Completely free for existing customers
- Approximately 3 hour session with refreshment break
- Full workshop details available on request. We can adapt the agenda to suit your requirements

Call Customer Support on 0161 728 3133 or email korina.parker@murrelektronik.co.uk to arrange your workshop.

	4	1						
9	7	5		6		8		
6		2						4
	1	6						7
				5				
					3			2
1						9		
			9	4		1		
5	9			1	8	7	6	

ISSUE 26

MURRPHY



SUDOKU FUN WITH MURRPHY

A Sudoku puzzle is always fun to solve. It can be tricky to place the first numbers but, once you get going, it almost solves itself.

I hope you enjoy the puzzle...
Murrphy

Solution:

3	9	2	8	1	7	4	6	5
8	7	1	5	4	6	3	9	2
5	4	6	9	3	2	8	7	1
2	1	4	3	6	9	5	8	7
6	8	9	7	5	1	2	3	4
7	5	3	6	2	8	9	1	4
4	2	5	1	6	3	7	8	9
1	3	8	2	9	4	5	7	6
9	6	7	2	8	5	1	4	3

