

Figure 1 – 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



“ With a PROFINET configuration, one control unit alone can accommodate 256 subscribers. ”

Switching to PROFINET made easy

Murrelektronik

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, 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 why installation concepts based on PROFIBUS inevitably hit a wall. However, this can be resolved 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 128 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). 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 prioritised 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 or unscheduled downtimes.

Choosing the right partner for PROFINET installations

Murrelektronik offers powerful devices for first-class PROFINET networks that accommodate plug & play concepts. The IOCD On-Board technology also makes it particularly easy and convenient to integrate IO-Link devices.

Not only that, the Cube system makes it easier to switch over to PROFINET. Its compact and modular installation is flexible and has a large variety of modules on the sensor/actuator level which makes it easy to switch out the bus nodes. The entire installation below the bus nodes remains unchanged.

SOLID67, a compact and lightweight 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 directly on the machine, and also make it easy to integrate traditional I/Os 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 (Network Test Class II). 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 conduits tested and engineered to the highest standards complete the 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.

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