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EXTENDED CUBE67 SYSTEM

DECENTRALIZATION
AT ITS FINEST

- Flexible
- Modular
- Multiple protocols
- IO Link & Safety
- Gateway using OPC UA



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The Murrelektronik Cube67 system advances the trend toward greater flexibility and modularity

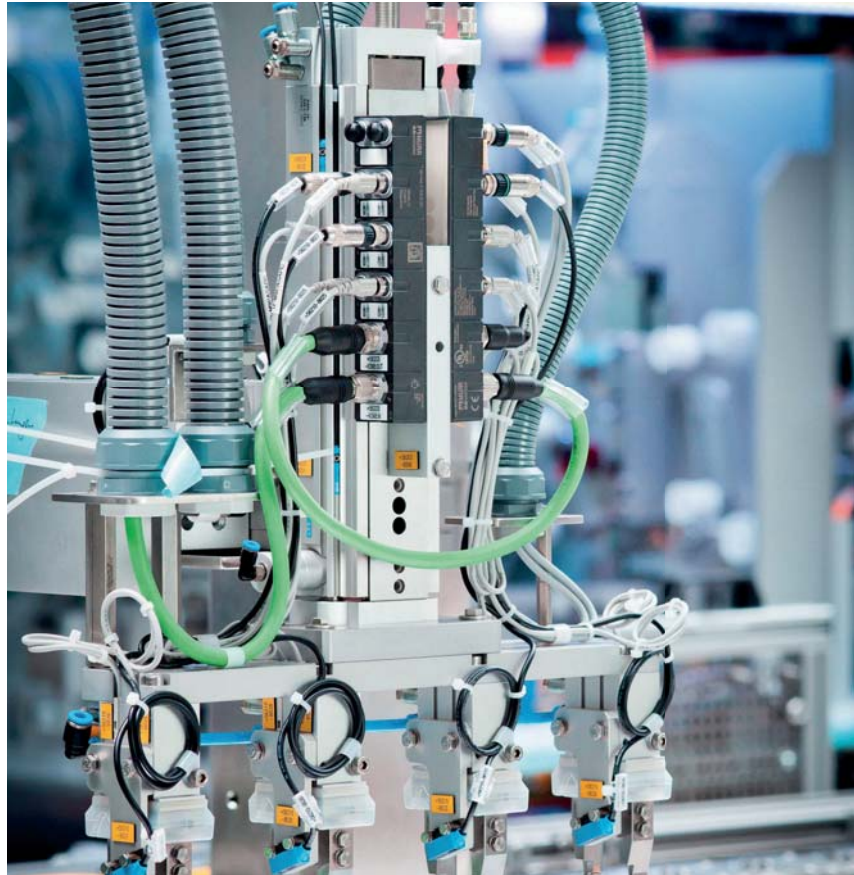
Decentralization at its finest

Greater flexibility and modularity are major trends in machine and plant engineering. It is increasingly common for standard machines and optional additional units to be manufactured as separate mechanical and electronic units that are joined together only shortly before commissioning the full system. The installation hardware must live up to the modularity of the machine. The Murrelektronik Cube67 field bus system is exactly the right solution. With the combination of a Cube67 Diagnostics Gateway and the straightforward integration of IO-Link, Cube67 paves the way toward decentralization and digitalization in the cloud using OPC UA.

The Murrelektronik Cube67 system advances the trend toward flexibility and is designed for modularity – including even the finest details. Already used in well over 100,000 machines and plants in diverse industries and applications worldwide, the system can boast an impressively large number of different products.

Many of these are equipped with multifunctional ports that can be configured as inputs or outputs, enabling flexible installation concepts that are customized for number of IOs at the sensor/actuator level in order to meet the customer's precise needs. This cost-efficient solution leaves practically no port unused to achieve decentralization at its finest.

One major advantage of the Cube system is the "one cable strategy:" both communication and power are carried over just one system cable. This leaves cable channels and energy chains available meaning that they can be designed smaller from the start, or even eliminated entirely. The six-pole M12 connector also eliminates the possibility of wiring errors.



The one cable system (green cordset) carries communication data and supply voltages

Up to 32 modules can be connected to each bus node, using four lines within an installation radius of 60 m, making the Cube system perfectly suited for even extensive installations. The lines are protected by integrated electronic fuses (MICO), the proven Murrelektronik current monitoring system. This saves space in the control cabinet by removing the need for circuit breakers.

A complete portfolio of modules ranging from protection level IP20 to IP67 and even IP69K is available for installations. Meanwhile, the communication only ever runs through a single bus node, which can also be swapped out depending

on the protocol in use. As a result, it is also possible to "change the protocol without changing the system." In other words, an identical installation concept (Profibus, ProfiNet, Ethernet/IP, EtherCAT) can be designed for different protocols by simply choosing the appropriate bus node. The streamlining potential of this concept is unbelievable.

Machine option management – one concept for all versions

To prevent difficulties when getting different machine modules to work together, the Cube system offers machine option management (MOM).



With the Cube67 field bus system, no port goes unused

The related hardware and software planning is carried out virtually based on a standardized full configuration. The components actually present in the real machine are activated automatically, making configuration for all the different parts of the machine a breeze. This simplification streamlines everything for the user. Optional additions can be configured easily with the press of a button. No need for time-consuming software modifications.

Direct integration of safety signals
The idea of streamlined machine installations poses a particular challenge when it comes to integrating safety aspects. The Cube system offers an extremely appealing solution to this problem: combining Cube67 K3 modules with the MVK Metal Safety block module is an affordable way to duplicate safety outputs.

The safety outputs of the MVK Metal Safety module will securely switch off up to 12 standard outputs, controlled by a ProfiNet/PROFIsafe control system (K3 functionality). They are divided between two safety circuits, each with



The network topology and any errors are clearly visualized in a user-friendly, multilingual web interface

three ports suitable for double connections. This multiplication of the safety outputs is a simple but effective way to reduce both costs and labor. Safety sensors are integrated directly into the installation concept with this approach, and eliminating the need for a safety relay significantly reduces the wiring workload while saving considerable space in the rack cabinet.

Highly detailed diagnosis of the entire installation

One of the core advantages of the Cube system is its impressive range of informative diagnostic capabilities, which extend from the bus node across the entire installation down to the individual modules and channels. The extensive information saves time during commissioning and is of particular advantage during troubleshooting taking into consideration the immense costs that can result from even short downtimes.

Cube offers easily identifiable diagnostics with red LEDs that show maintenance at a glance which port is affected by an error. This diagnostic functionality can be used in detail via programming on the relevant control system.

The Cube67 Diagnostics Gateway certainly offers a more efficient, time-saving, and highly integrated method of diagnosis as it allows troubleshooting without any programming at all. The module is unique in the market and is suitable for both new and existing installations.

The Cube67 Diagnostics Gateway precisely evaluates all signals and

diagnostic messages from the entire installation, independently of the control system. The network topology and any errors that arise are clearly visualized in a user-friendly, multilingual web interface.

The data is also available over a standard OPC UA interface for further analysis in any cloud system. This all takes place entirely independently of the control system, making it an integral aspect of the installation that need not be changed even if the control system is changed.

52 smart IO-Link devices in a single node

Thanks to specially designed modules, Cube67 is also excellently suited for the integration of smart IO-Link sensors. Up to 52 IO-Link devices can be connected to a single node – an impressive number compared to the competition! Murrelektronik makes installation even easier with a wide selection of accessories for IO-Link integration, including analog/IO-Link converters, inductive couplers, and hubs.



Sensors and actuators can be connected with the shortest possible cables

Anyone looking to realize flexible and modular installation concepts and increase the modularity of existing machines and systems will find the Cube67 to be a versatile and powerful solution. The system opens the door to Industry 4.0, but not only for new installations. The Cube67 Diagnostics Gateway also makes it possible to optimally upgrade existing solutions with new standards.

**For more information, please visit www.murrelektronik.uk
To speak to a Murrelektronik adviser today, call +44 (0)161 728 3133 or email sales@murrelektronik.co.uk**