Intelligent wiring system
SmartWire-DT

MOELLER
SERIES

Intelligent wiring in machine and system building

EATON
Powering Business Worldwide

Reduced complexity for more compact and cost-optimized machines

Customers nowadays expect machines and systems to deliver increasing performance in the most compact design possible, along with short delivery times and the right price. To meet these expectations, control cabinets have to be equipped with as few intelligent components as possible, which can then also be interconnected in a way that saves space to form a smaller installation area than conventional components.

SmartWire-DT is a unique connection technology that streamlines the connections and communication between controllers and switchgear, sensors and actuators inside and outside the control cabinet.

A growing number of machine and system manufacturers are opting to use SmartWire-DT in their systems and machines, allowing them to reduce the costs for wiring machines and systems by up to 85 %, while increasing functionality and reducing the size of the control cabinet.

Simplify wiring. Reduce costs.

Until now, control cables were commonly used to connect machine components to the I/O modules of a PLC. Using SmartWire-DT renders these modules and control cables a thing of the past. All devices are connected to an intelligent wiring system, which reduces installation costs for the machine manufacturer.

Less complexity means more compact machines

The elimination of PLC I/O modules and associated control cables results in more compact control cabinets and machines while simplifying the design and configuration of automation structures.

Simplified wiring technology

SmartWire-DT does away with the traditional, time-consuming wiring of control cables by replacing it with a single cable, allowing for the simple connection of switchgear, signaling and control units in the control cabinet, as well as the connection of sensors and actuators outside the control cabinet. This ensures that switchgear can be installed safely and without any problems, and greatly reduces commissioning times.

Greater flexibility

SmartWire-DT can be connected to controllers (PLCs) using industrial fieldbus gateways, regardless of manufacturer, granting the machine manufacturer greater flexibility and enabling them to meet customer requirements more efficiently.

Using Eaton PLCs to implement more compact machines

For small and medium-sized machines, Eaton offers HMI/PLC, compact PLCs with integrated SmartWire-DT communication interface, and control relays with SmartWire-DT communication module. This enables machine manufacturers to develop simple and more compact automation solutions.

Advanced communications for improved system efficiency.

The planning, installation and control of industrial systems requires multiple drives, controllers and pilot devices, alongside local sensors and actuators. System automation comes with many challenges, especially when continuous availability is required. SmartWire-DT is an intelligent wiring system that can supply additional information about the installed devices, and is a key criterion for higher availability and preventive maintenance.

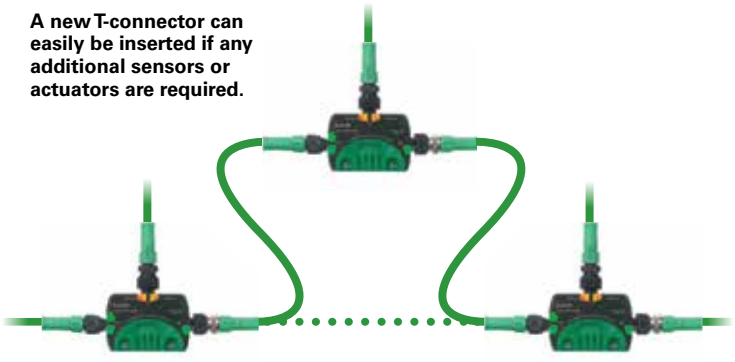
More data leads to greater availability

More detailed information ensures better process control, more detailed diagnostics, reduced downtime, and higher availability. SmartWire-DT switchgear provides continuous real-time data on motor load, allowing operators to intervene before an overload occurs and the system fails. The monitoring of motor current values supports preventive maintenance, which translates into improved system availability and significant efficiency gains.

Easy expansion

With SmartWire-DT, adding expansions during operation is easy. New devices can easily be connected to the communication cable inside and outside the control cabinet. With a total length of up to 600 m, distributed control architectures can also be simplified.

A new T-connector can easily be inserted if any additional sensors or actuators are required.



Optimized availability for increased profitability

Complies with all industrial fieldbus standards

Up to 99 installed devices over a length of 600 m

Smart devices at the heart of Industry 4.0

Industry 4.0 solutions are based on smart devices and open communication standards. Here, "smart" refers to the provision of advanced, even preprocessed data, which is then used from various points to optimize process control, create advanced diagnostic concepts, or to analyze specific application requirements.

Eaton supports the Industry 4.0 approach with its SmartWire- DT platform and associated smart devices. Already today, smart devices that supply information through the provision of advanced process and diagnostic data are available; this data is transmitted via modern industrial fieldbus systems and forms the basis for implementing the requirements in place for Industry 4.0 solutions.

Smart motor control center with SmartWire-DT

The use of SmartWire-DT completely replaces the control current wiring in the modules and in the control cabinet, which in turn simplifies installation, shortens the time required for wiring work, and saves much-needed space. Smart switchgear for motor protection also transmits the necessary data underlying preventive maintenance and the minimization of plant downtimes.

One system, countless possibilities.

The distributed intelligence of SmartWire-DT is changing the automation industry, with actuation modules on standard switchgear replacing the digital and analog I/O level of the controller. Gateways to all standard industrial fieldbus systems facilitate easy access to SmartWire-DT networks, regardless of the control system. At the same time, it is also possible to have SmartWire-DT technology integrated into our controllers. This results in easy-to-configure, linear automation structures with fewer components.

Powerful technology

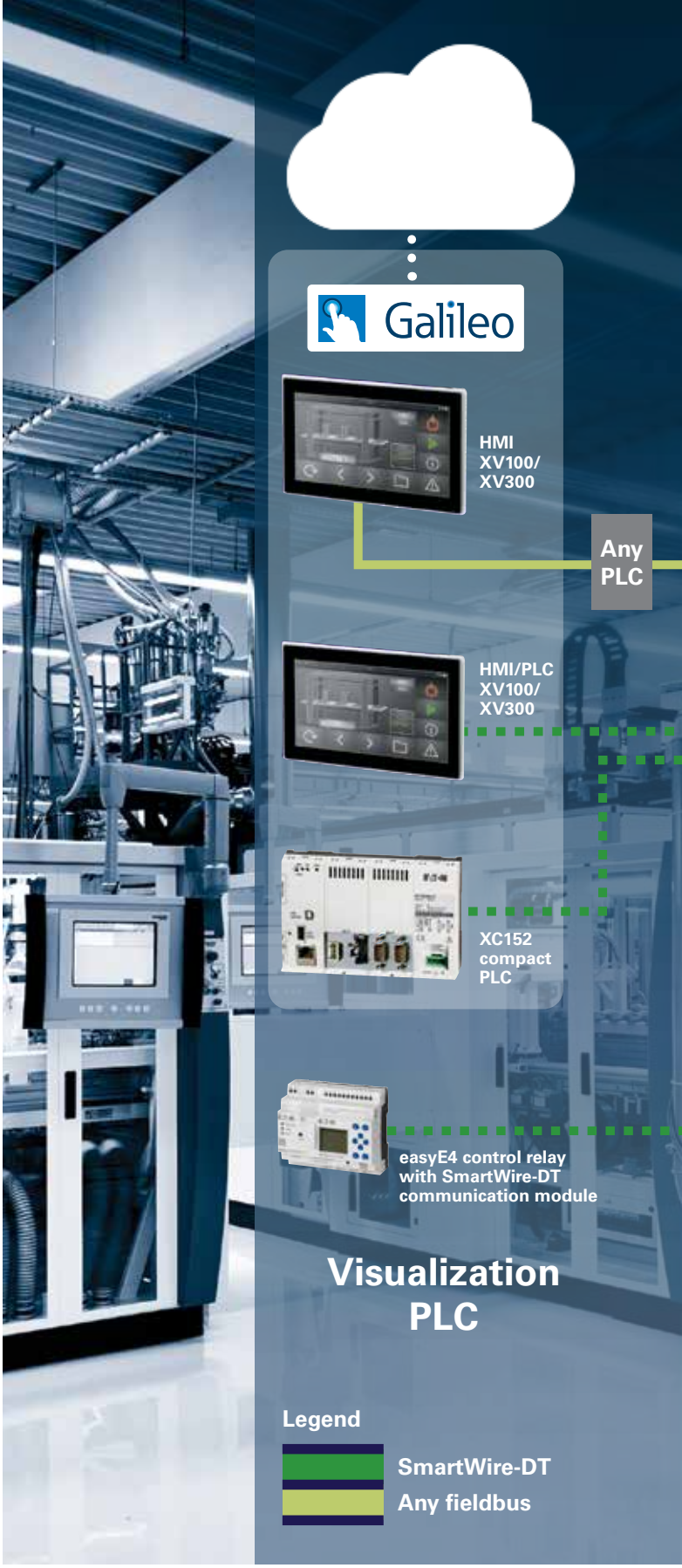
Up to 99 devices can be connected to one SmartWire-DT cable. The maximum permissible cable length is 600 m, while the maximum data throughput for cyclic process data is 1,000 bytes. The SmartWire-DT cables also include the power supply needed for the SmartWire-DT modules and for the installed switchgear (e.g. contactors).

Flexible integration into any automation environment

The SmartWire-DT communication system can be connected to the controller you are using via fieldbus gateways. SmartWire-DT uses industrial fieldbus systems to communicate and relies on the relevant standardized configuration mechanisms.

SmartWire-DT modules

Different SmartWire-DT modules are available. Special function modules replace the electrical interfaces to contactors, pushbuttons, pilot devices and auxiliary contacts. Smart devices such as electronic motor-protective circuit breakers, soft starters, and drives transmit digital and analog information (e.g. current, overload, etc.) directly to the SmartWire-DT network.



Inside and outside the control cabinet

SmartWire-DT can also be used to directly connect sensors and actuators in the field. This involves the use of T-connectors, which are available as digital and analog I/O modules with protection type IP67.

Operation

Start motor

Input/Output

SmartWire-DT Gateway

CANopen, PROFIBUS, PROFINET, EtherNet/IP, Modbus, ETHERNET POWERLINK, EtherCAT

SL signal tower

Pilot devices RMQ-Titan

Pilot devices in the installation housing

NZM circuit breaker

SmartWire-DT module for NZM

PKE 65 motor-protective circuit breaker

FAZ circuit breaker

FRC residual current device

DC1, DA1 variable frequency drives

DE1/DE11 variable speed starter

DS7 soft starter

EMS2 electronic motor starter

Motor-starter combination with PKE/PKZ

Inside the control cabinet

Modules IP20, EU5E-SWD-...

Digital

Analog

Temperature

Modules IP67, EU1E-SWD-... / EU2E-SWD-...

10V; 20mA

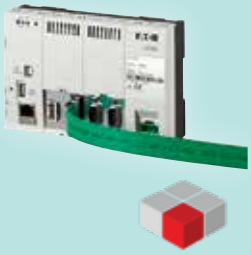
°C

°C

Circuit protection

Our products

Control and visualization

Product	XC150, XV300 HMI/PLC	XC150 Compact PLC	easyE4 Control relays	Fieldbus gateways
				
Product description	XV100/300 is a range of operating devices with integrated PLC (HMI/PLC), available in various sizes and with various features. High system performance and high-performance graphics processors provide a modern user interface, fast refresh rates, and the integration of multimedia elements such as video, PDF, and web content.	The XC-152 compact PLC combines computing power with a wide range of communication interfaces, making the device particularly suitable for use in standardized, modular machine building automation solutions.	The easy communication module for SmartWire-DT (SWD) provides information about the status of all devices, e.g. current readings, motor frequencies, and switching states via the easyE4 control relay, and simplifies diagnostics and troubleshooting. Parameters such as set values of the motor frequency for variable frequency drives can be conveniently adapted via the control relay.	SmartWire-DT modules are connected to the existing industrial fieldbus system via fieldbus gateways. Permanently established mechanisms such as fieldbus description files are used to configure the SmartWire-DT modules in the programming system of the control configurator.
Technical data and characteristics	• Brilliant, high-resolution TFT displays measuring 3.5"– 10.4" with 64k colors in plastic or metal housing • 7"–15.6" multi-touch devices with tempered and anti-reflective glass display • Interfaces: Ethernet, USB Host 2.0, USB device, RS232, RS485, CAN, Profibus, SmartWire-DT • Programming with CODESYS/GALILEO	• Compact PLC with Windows CE 5.0 operating system • Interfaces: Ethernet, USB Host 2.0, USB device, RS232, RS485, CANopen/ easyNet, PROFIBUS-DP, SmartWire-DT • Embedded web server • Programmable with CODESYS • GALILEO remote visualization	• Communication module for connecting the easyE4 control relay to SmartWire-DT • Screw terminal connection • Configuration of SmartWire-DT devices via easySoft 7	• Gateways for connection to industrial fieldbus protocols: • Profibus-DP • CANopen • Modbus-TCP • EthernetIP • Profinet • Powerlink • Ethercat • Automatic addressing of connected SmartWire-DT devices • Separate diagnostic interface
Function via SmartWire-DT	• Connection of up to 99 SmartWire-DT modules • Up to 1 kB of cyclic process data	• Connection of up to 99 SmartWire-DT modules • Up to 1 kB of cyclic process data	• Connection of up to 99 SmartWire-DT modules • Up to 244 digital and/ or 88 analog inputs/ outputs can be connected via SmartWire-DT line	• Connection of up to 99 SmartWire-DT modules* • Up to 1 kB of cyclic process data* * Depending on fieldbus protocol used
More information	Eaton.com/hmi	Eaton.com/xc152	Eaton.com/easy	Eaton.com/swd

Operate

RMQ-Titan pilot devices, SL signal tower

RMQ-Titan consists of an extensive range of pilot devices. The use of the SmartWire-DT communication modules eliminates the previous need for controller wiring. This also applies to the SL signal tower.

RMQ-Titan pilot devices
- Switches, buttons, indicator lights in different colors, illuminated pushbuttons, selector switches, potentiometers, encoders
- Protection type IP67

Signal tower:
- 2 sizes: 40, 70 mm
- Up to five modules can be combined
- Light modules (LED, incandescent lamp) in six colors
- Acoustic detector module
- Protection type IP66

- Status of buttons/switches
- Monitoring of contacts
- Activation of indicator lights
- Activation of light modules with SL signal tower
- Analog value for potentiometer

Eaton.com/rmq

Switch, protect,

Contactors, PKZ motor starter

The two-component motor starter, consisting of a DILM contactor and a PKZ motor-protective circuit breaker, is suitable for simple component replacement using plug-in connection technology up to a rated current of 15 A. Furthermore, the motor starters up to 32 A with mounting connectors can be installed quickly and without any problems.

- Performance range: 0.06–15 kW at 400 V
- Voltage range 220–690 V
- Two separate contact systems in motor starter

- Contactor activation and feedback
- Connection for auxiliary contact of trip unit
- On-site operation (automatic/manual mode)
- Power supply to the contactor

Eaton.com/pkz

PKE motor starter, PKE circuit breaker

The PKE is a motor-protective and system circuit breaker with modular trip blocks; its overload protection is implemented electronically. The two-component motor starter, consisting of a DILM contactor and a PKE motor-protective circuit breaker, is suitable for simple component replacement using plug-in connection technology up to a rated current of 15 A.

- 0.06–15 kW at 400 V
- Wide-range overload protection
- Variable CLASS setting 5 to 20
- Plug-in trip blocks for motor and system protection
- Overload relay function (optional)

- Reporting of load currents
- Status of tripping unit
- Advanced tripping reasons (e.g. phase failure)
- Readback of overload current settings
- On-site operation (automatic/manual mode)

Eaton.com/pke

EMS2 electronic motor starter

The electronic hybrid motor starter for two directions of rotation with integrated motor protection is suitable for threephase motors up to a rated power of 3 kW and is used as a universal motor starter for smaller drives in standard and safety applications.

- Performance range 0.06–3 kW at 400 V
- Voltage range 42–500 V
- Space-saving: 22.5 mm width
- Hybrid switching technology with 30 million switching cycles
- Push-in connection technology
- Integrated reversing starter function
- Integrated emergency stop function up to SIL3
- Wide-range overload protection

- Activation of motor
- Signal of motor current, load status, advanced tripping reasons (e.g. phase failure)
- Readback of overload current settings

Eaton.com/ems2

drive motors

DS7 soft starter

The DS7 soft starter is ideal for applications on pumps, fans, and smaller conveyor belts. It is a fully integrated component of the xStart system. The DS7 replaces the mechanical contactor and adds the function "Soft start motors". Longer service intervals and lower operating costs.

- Gentle and careful motor/ pump start up to 110 kW
- Contactless switching, fast and silent control
- Perfect overload protection with the PKE motorprotective circuit breaker
- Version up to -40 °C

- Activation of motor
- Specification of parameters such as ramp times
- Detailed status information and error statuses
- Soft starter power supply

Eaton.com/ems2

PowerXL DE1 speed starters

The PowerXL™ DE1 speed starter closes the gap between conventional motor starters and the variable frequency drive by utilizing the advantages of both types of devices—the simple handling of the motor starter and the variable motor speed of the variable frequency drive in one device.

- Speed control up to 7.5 kW
- Commissioning without parameterization
- No specialist knowledge of drive technology needed
- Replacement of contactors, motor starters, reversing starters, and soft starters for applications with a constant frequency below and above the mains frequency, variable motor speed, and a starting current equal to the rated current of the motor

- Activation of motor
- Specification of parameters such as speed, ramp times, max. motor current, motor voltage, etc.
- Detailed status information and error statuses

Eaton.com/ds7

PowerXL DC1, DA1 variable frequency drives

The compact PowerXL DC1 variable frequency drive for standard applications can be quickly and easily parameterized and commissioned.
The PowerXL DA1 variable frequency drive for machine building offers a wide range of communication protocols. Thanks to the integrated function block editor and its powerful vector mode, it is suitable for highly dynamic applications.

- Speed control up to 250 kW
- VFC and vector control (SLV, CLV)
- DA1 with 200% torque at 0 rpm
- Integrated EMC filter
- DA1 with integrated function block editor and STO (Safe Torque Off)
- On-board CANopen and Modbus RTU
- Protection types: IP20, IP55 (DA1) and IP66

- Activation of motor
- Specification of parameters such as speed, ramp times, max. motor current, motor voltage, etc.
- Detailed status information and error statuses

Eaton.com/de1

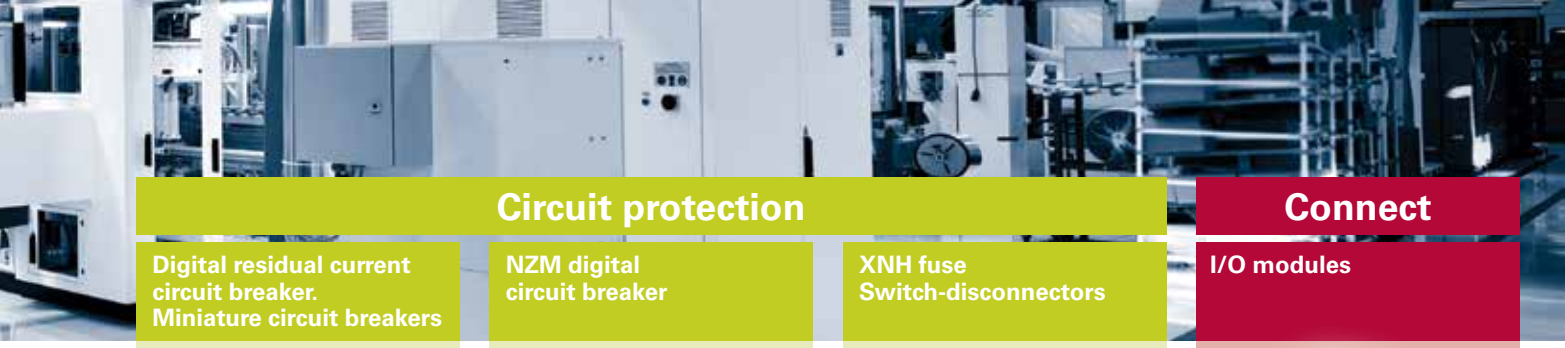
PowerXL DC1, DA1 variable frequency drives

The DM1 variable frequency drive combines the advantages of the DG1 in more compact housing with a reduced installation depth. The DM1 is ideal for demanding speedand torque-dependent applications. The control functions focus on fans, conveyor belts, and pumps or multipump applications. The DG1 variable frequency drive with patented energy-saving algorithm, high short-circuit strength, and robust design offers increased efficiency, safety, and reliability. The control, communication and installation options are highly versatile, making the series particularly suitable for use in demanding applications.

- DM1: Performance range up to 22 kW
- DG1: Performance range up to 630 KW
- DM1 and DG1 with 200% torque
- Integrated EMC filter and STO
- VFC and vector control (SLV)
- On-board Modbus RTU/TCP, Ethernet IP, BACnet MSTP
- Protection types: IP20, IP21 (DG1), IP54 (DG1)

- Activation of motor
- Specification of parameters such as speed, ramp times, max. motor current, motor voltage, etc.
- Detailed status information and error statuses

Eaton.com/powerxl



Circuit protection

Connect

Digital residual current circuit breaker. Miniature circuit breakers

Miniature circuit breakers and residual current circuit breakers for faults and additional protection with digital functions to increase system availability. The digital functions offer a warning system to detect creeping errors at an early stage. The digital devices are available as type A, B and B+.

xEffect miniature circuit breakers
- Rated operational current: up to 125 A Rated operational voltage: up to 277/480 V.
- Braking performance: up to 25 kVA

Digital residual current circuit breaker xEffect
- Rated operational current: up to 80 A
- Rated operational voltage: up to 240/415 VAC
- Rated frequency: 50 Hz
- Rated trip current: up to 300 mA
- Sensitivity: available in types A, B and B+

- Status of circuit breaker
- Trip indicator

Eaton.com/circuit-breakers

NZM digital circuit breaker

The NZM line of circuit breakers provides reliable overload and short circuit protection for plants, generators, transformers, and motors. The extensive accessories, worldwide approvals, listings and their global availability make them the ideal choice for the demanding protection requirements in machine and system engineering.

- 4 sizes up to 1600 A
- Voltages up to 1000 VAC and 1500 VDC
- Switching capacity from 25 kA to 150 kA
- Thermo-magnetic and electronic tripping units
- Can be used as switch disconnector, main and EMERGENCY STOP switches

- Display of load currents, overload warning, advanced tripping reasons (e.g. ground fault)
- Readback of overload current settings, etc.
- Energy meter
- Connection of a remote drive

Eaton.com/digitalnzm

XNH fuse Switch-disconnectors

The XNH fuse switch disconnectors offer far more safety functions than required by the IEC/EN 60947-3 standard. Many device variants plus extensive accessories open up a wide range of applications. Thanks to this performance profile and high ease of assembly, projects are implemented safely and cost-effectively.

- Basic device with flat connection or box terminal
- FCL fuse monitoring with LED
- Electronic FCE fuse monitoring
- Assembly: 60 mm busbars, mounting plates, DIN rails
- Power anti-theft system
- Lockable with padlock
- Switching cover in safe parking position during maintenance work
- 1, 2, 3 and 4-pin up to 630 A
- Can be used with NH000, NH00, NH1, NH2, and NH3 fuse links.

- Disconnector status (open, closed)
- Backup tripped
- Specification of current load currents

Eaton.com/xnh

I/O modules

Input/output modules in digital and analog versions for integrating conventional actuators or sensors in the control cabinet with protection type IP20 and for direct installation on the sensor/actuator on the machine with protection type IP67.

Module variants with
- digital inputs, digital outputs, digital inputs/outputs
- Analog inputs (0–10 V, 0–20 mA, temperature), analog outputs (0–10 V, 0–20 mA)
- Counter input

- Read and write digital and analog values
- Set parameters
- Diagnostic information

Eaton.com/swd

SmartWire-DT in system applications.

Prepare vegetables efficiently

SmartWire-DT helps to avoid complex troubleshooting, quickly eliminate causes of standstill, and greatly reduce wiring costs.

Background: At the Renner Vegetable Farm in Fußgönheim, Pfalz (Germany), carrots, spring onions, radishes, turnips or celery are washed, packaged, and sent to the customer within one hour after harvesting. Renner operates six washing lines for cleaning fresh vegetables: Here, any soil on the vegetables is removed, and the roots and excess leaves are cut off. Renner has to keep failures and downtimes to a minimum—because any interruption to work puts the freshness of the vegetables at risk.

Challenge: The manufacturer of the washing lines, König Sondermaschinen GmbH (König) in Dannstadt-Schauernheim (Germany), focuses on the reliability of the systems. König designs and builds crop and vegetable processing systems that are individually tailored to each farm. Each machine is designed and constructed to meet the requirements of each customer. Both aspects-reduced downtimes and possible customizations-were the reason behind König's decision to implement an integrated automation solution using Eaton's SmartWire-DT intelligent connection and communication system in combination with motor contactors, soft and speed starters, and residual current circuit breakers.

Solution: "In order to minimize the effort needed for wiring, we decided to use SmartWire-DT," says Stritzinger. Using the intelligent connection technology, the individual switchgear and drives are not connected to the control system via point-to-point wiring, but rather, all devices are connected via an eight-pin cable harness over simple connectors. This involves the SmartWire-DT line supplying current to the connected devices and simultaneously handling data communication."In this system, the wiring effort through SmartWire-DT was able to be reduced by around 40% than with classic wiring," says Stritzinger.

Results

Christian Stritzinger from König has to fine-tune many parts to continuously reduce standstills on his washing and cutting plants. Eaton solutions help him in the process: "At Eaton, everything just fits together—the entire interaction between the components makes both the development and commissioning of the plant much easier." This results in increased plant reliability—and will ensure that the vegetables continue to arrive fresh and crisp at the customer's premises in the future.

Increased water supply efficiency

Background: Acque del Basso Livenza S.p.A. (Italy) operates one of the largest water treatment plants in Italy, providing drinking water to 140,000 households in 19 municipalities. Providing customers with excellent service and quality has always been one of the company's defining features. Recently, the water supply market opened up, meaning a response was needed to the challenges brought with it, along with rising competition.

Challenge: The plant is fully automated and operated on a continuous basis. If a motor or one of the pumps in the system fails, an external technician needs to be notified and on site within 24 hours. Problems have therefore reduced the efficiency of the plant and involved considerable personnel expenditure.

Solution: Thanks to SmartWire-DT, the company is now able to monitor every machine within the plant remotely. The remote connection is made via VNC, which enables technicians to monitor the current consumption of each motor and in the event of an overload or technical shutdown, to immediately restart the respective motor by touching a button on a tablet or smartphone.

Results

The new solution has radically improved facility management for the company in terms of efficiency, productivity, and personnel costs.

Fast turntable commissioning

Background: Maschinen- und Stahlbau Dresden (MSD) in Germany, a subsidiary of Herrenknecht AG in Schwanau, specializes in building and modernizing tailored turntable systems. The MSD project involved a 100-ton turntable built for Bombardier Transportation at the Bautzen plant. It was part of an investment of €30 million made by the world's leading provider of rail technology to expand the Bautzen site.

Challenge: The various control options along with the sensors required for operation (for example, limit switches), indicator lights, and illuminated buttons, emergency stop switches, residual current circuit breakers, motor-protective circuit breakers, and many other automation components mean that a large number of components need to be networked and supplied with energy. Since the turntable is located outdoors, some of the components are exposed to the elements, with cable lengths of up to 100 meters between the control cabinet and the outdoor devices.

Solution: SmartWire-DT enables all switchgear, sensors, and drives to quickly and easily be connected via a "green" eight-pin cable with simple connectors. The SmartWire-DT cable supplies the connected devices with power and simultaneously handles the communication of data. Up to 99 devices can thus be connected, and the maximum permissible cable length is 1,000 meters—in other words, more than enough for the wiring of the turntable. The individual sensors, switching devices, and signaling devices can be integrated directly into the SmartWire-DT network via M12 connectors through what are known as T-connectors.

Results

The SmartWire-DT system and connection of the different devices via M12 connectors simplify the wiring of the plant and significantly reduce the commissioning and maintenance time of the turntable. "The M12 technology also makes it very easy to replace the sensors in the field," adds Niels Kremtz. This means that faults due to defective devices can be very quickly rectified.

SmartWire-DT® in machine applications.

Improved reliability and diagnostic capabilities for tunnel boring machines

SmartWire-DT is able to reduce installation costs by up to 85 % and increase commercial flexibility and machine availability. At the same time, MOEMs and customers benefit from the extensive data provided by their machines. This enables smarter decisionmaking processes and maximizes the potential of Industry 4.0.

Background: German company mts Perforator develops and builds tunnel boring machines for the trenchless pipe jacking of waste and supply tunnels with a depth of up to 40 m.

Challenge: Reliability and precision are key in remote underground environments. Conventional point-to-point wiring of the control cables of the components, such as switchgear, sensors, and actuators, runs a high risk of malfunctions and failures.

Solution: By using SmartWire-DT, mts Perforator benefits from much faster assembly times, fewer errors, and a reduced risk of manipulation, as well as more detailed remote diagnostic functions. The combination of PKE and SmartWire-DT enables more the drives to be controlled more comprehensively with the continuous monitoring and analysis of all processrelevant data without costly analog I/O technology.

Results

The company is now able to query and monitor the current status of the 50 tunnel boring machines currently in operation around the world. In the event of a fault, remote diagnostics can now be carried out at short notice and a solution can be developed. The plant availability for the end customer has increased. "Thanks to Eaton's intelligent devices, we are now able to provide detailed, global access that extends to the field level," says Norbert Simdon, technical customer support representative for mts Perforator.

Tidy wiring solutions

Background: Renegade Parts Washers is a US-based company that manufactures high-performance washing systems for industrial parts in many areas of application. After the company was founded in 1996, it initially had only one product version, but today offers solutions that are adapted to the individual requirements of each customer.

Challenge: Customers want solutions that clean a large number of parts quickly and efficiently, and expect a short lead time between production and installation at the customer's premises. Due to rising complexity, Renegade needed a solution that would streamline the manufacturing process.

Solution: A control system based on the SmartWire-DT communication system can reduce wiring time, improve flexibility, and support the integration of advanced diagnostic functions. The result is simpler machines, at lower costs, with extended functionality. A total cable length of 600 m allows sensors and other devices mounted on the machine to be connected well outside the control cabinet.

Results

"SmartWire-DT has revolutionized our control system," says Dave Barney, owner of Renegade Parts Washers. "We have been able to reduce the time required to wire the switchgear and also improve the flexibility of our systems. At the same time, we have been able to introduce more extensive diagnostic capabilities, which is a huge selling point in our conversations with customers. We will certainly be using SmartWire-DT on all the automated machines we build in the future."

Packed with benefits

Background: Macchi SpA is a leading Italian manufacturer of plastic processing equipment. The company produces plastic stretch films used in virtually every industry for packaging, typically for wrapping product pallets.

Challenge: Macchi needed a control system for its extrusion, winding, and cutting lines, intended for use in a new state-of-the-art film production system. This new film production system is aimed at reducing the costs for the end customer and making a key contribution to environmental protection through the reduced use of plastic film.

Solution: SmartWire-DT wiring technology comes with important benefits, including more compact cabinets, reduced wiring complexity, and simpler testing. This has resulted in significant savings in the production, testing, and commissioning of the system. The flexibility of the SmartWire-DT system used enables easy integration of future modifications and improvements.

Results

"The project was a great success," says Mauro Andreoli, Sales Manager at Macchi SpA. "We will certainly be using SmartWire-DT technology again in the near future. For us, this would be a major and important step forward in terms of our control system technology."

Better solutions for machine builders worldwide

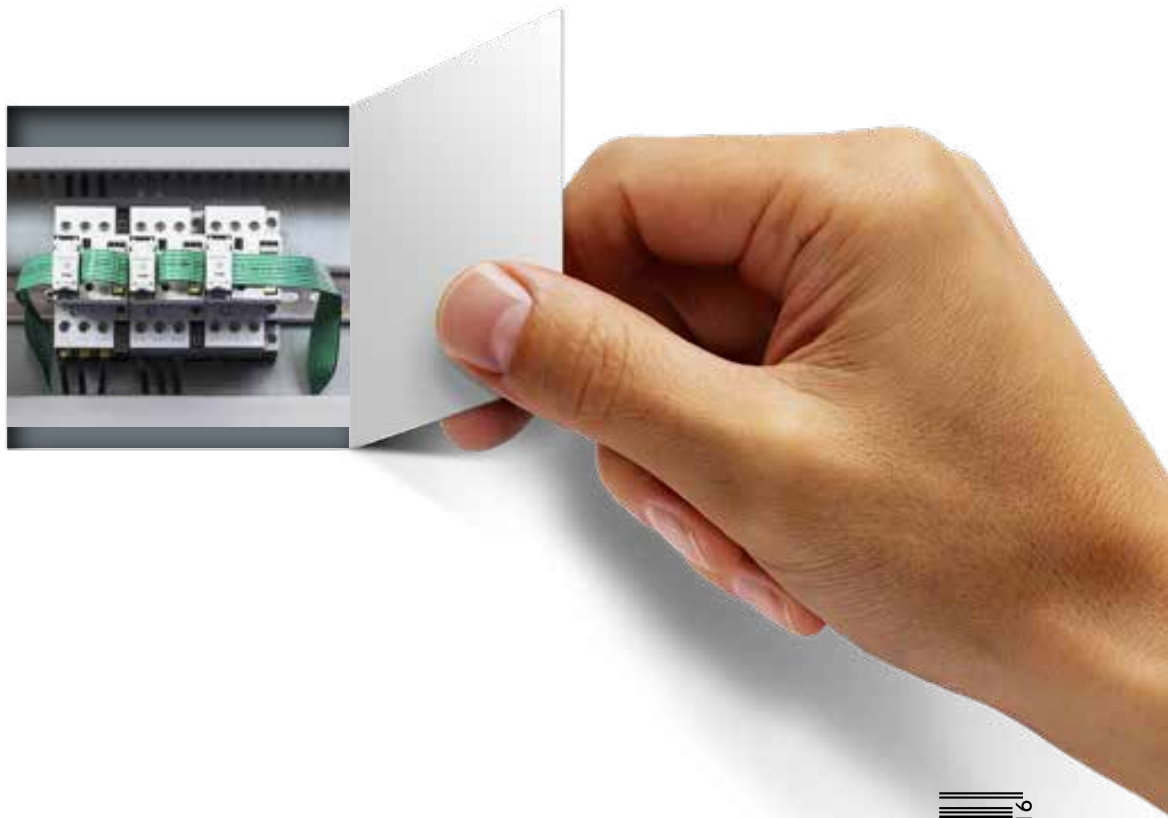
At Eaton, we offer compact and complex solutions for machines and systems for the global market.

These solutions help our customers to achieve substantial improvements in the productivity and profitability of their machines and systems, including:

- Simpler, more compact design and lower costs
- Increased reliability
- Improved energy efficiency
- Increased security

We supply electrical components for all machine parts. Our circuit protection solutions help to protect people and systems. Our SmartWire-DT intelligent wiring system enables users to connect electrical and hydraulic devices, from controllers to sensors, while saving costs and increasing availability. We offer industry-leading solutions for the ergonomic operation and control of machines, from simple buttons to our innovative multi-touch HMI/PLC. Our modern motor starters and drive systems complete our portfolio of products for safer, more reliable and more energy-efficient operation.

For more information, visit **www.eaton.com**



4015081789016

Eaton Industries GmbH
Hein-Moeller-Str. 7-11
D-53115 Bonn/Germany

Publication no.: BR120001EN
May 2022

Follow us on social media to get the latest product and support information.

Powering Business Worldwide