



WAGO INNOVATIVE

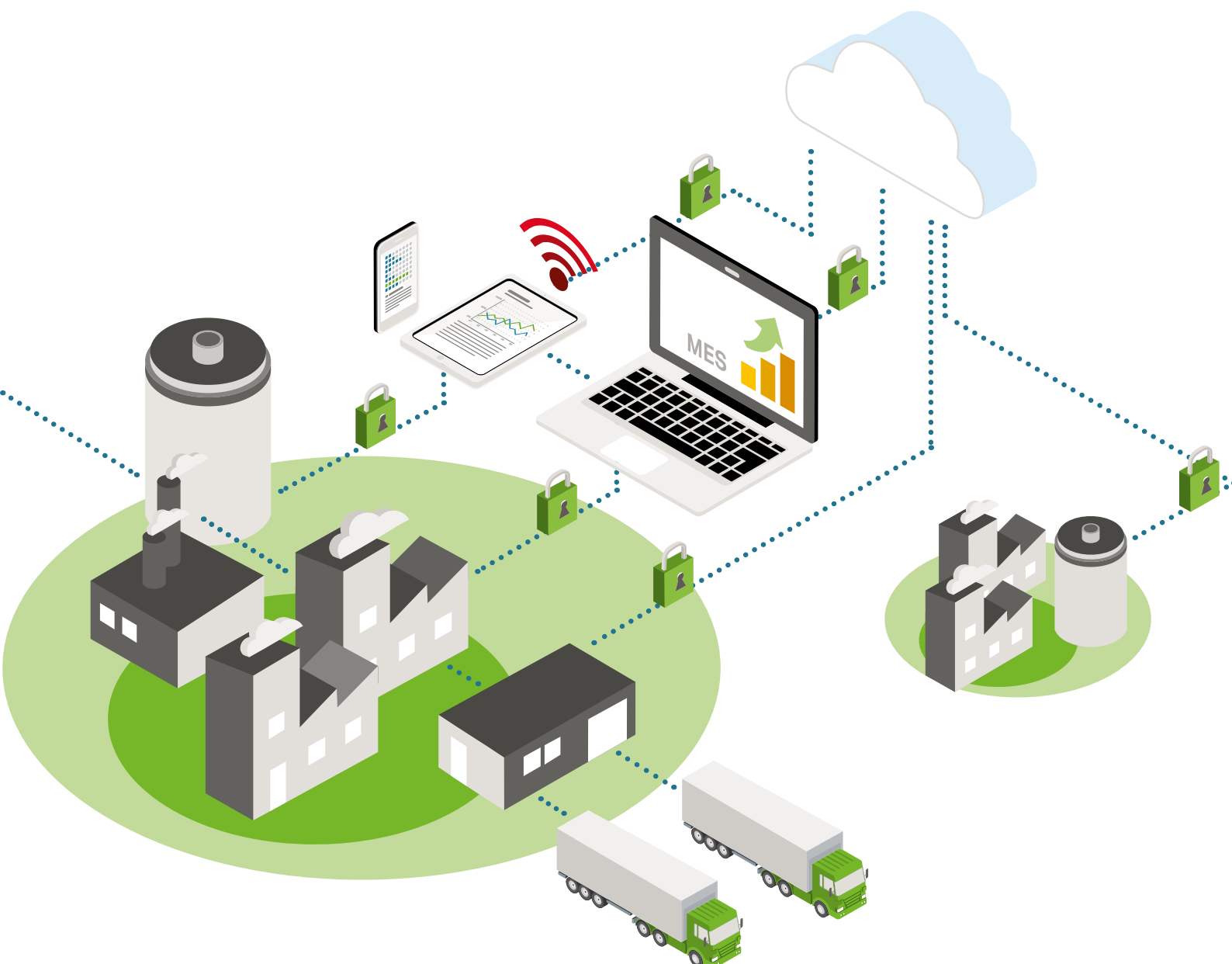
New Product Highlights – Issue 2/2016



ON THE ROAD TO THE SMART FACTORY

Digitalization and Networking Allow Optimization of Manufacturing Processes

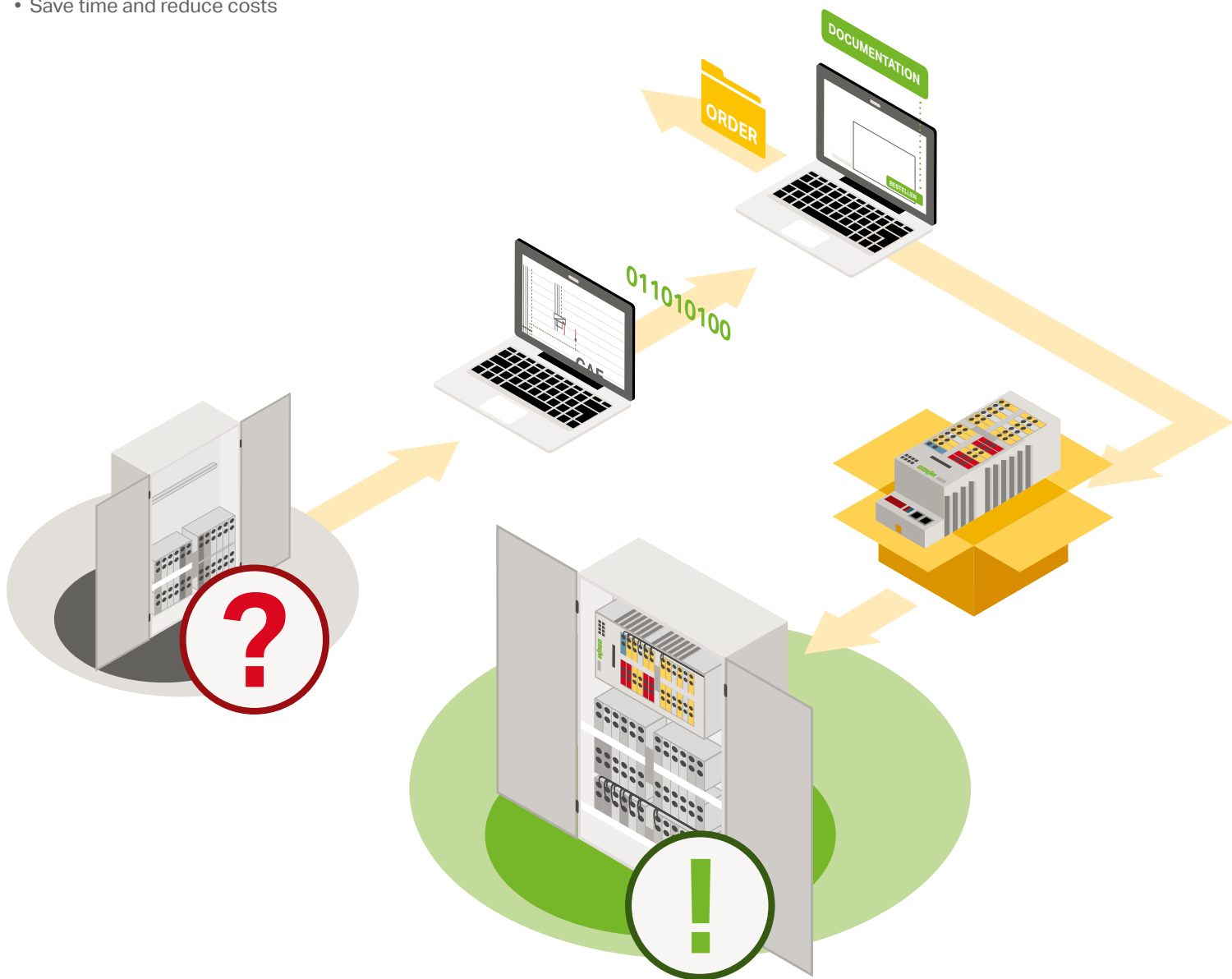
- Horizontal integration: **smartDATA**: consistent data storage from design to the finished project
- Adaptable production: fast and flexible retrofits
- Vertical integration: automation with WAGO's powerful PFC200 Controller
- "IT Security by Design" for maximum security of sensitive production data



Support from Design to the Finished Product

smartDATA ENGINEERING

- Create consistency along the value added chain
- Avoid system failures and additional expense
- Save time and reduce costs



CONNECT THE WORLD OF AUTOMATION TO THE INTERNET OF THINGS

The WAGO PFC200 – Move Securely Beyond the Field Level

- High-performance controller with integrated 3G modem and standard mini-SIM card
- Wireless data transmission over great distances
- GPRS Internet connectivity and bidirectional SMS communication
- Highest security standards via IPsec and OpenVPN



ADAPTABLE PRODUCTION PROCESSES

Engineering in Record Time

- Standardized plug-and-produce solutions
- Manufacturer-independent interface
- Essential Industry 4.0 component



NEW FUNCTIONS FOR THE PFC200 CONTROLLER

Use as PROFIBUS Master in Industrial Environments

- Expand the application scope with the WAGO I/O-SYSTEM
- Fast sensor and actuator control via central PFC200 Controller



750-8208

- PROFIBUS master functionality provides new application areas in various data logger applications
- Programmable with WAGO-I/O-PRO based on CODESYS 2.3
- Easily read GSD files via PROFIBUS Configurator
- Linux® real-time operating system
- Comprehensive security packages: SSL/TLS 1.2, SSH, VPN and a firewall

IT SECURITY BY WAGO

Progressive digitization and networking have resulted in production data being transferred along a variety of paths to locations outside the factory rather than remaining where it is produced. Consequently, greater and greater security concerns arise, because security mechanisms that were once established according to defense-in-depth standards have long since ceased to suffice.

The risk: During connection to higher-level systems or clouds, information can be tapped from outside.

THE SOLUTION FOR SECURE DATA TRANSPORT: "IT SECURITY BY DESIGN"

WAGO is one critical step ahead with the PFC200 and PFC100 Controllers: These encrypt information right in the controller and provide secure, advanced data transport with comprehensive on-board security mechanisms such as SSL/TLS 1.2, SSH, VPN and a firewall.

01 PREVIOUSLY: DATA REMAINED IN THE MANUFACTURING HALL

- Low risk of undesired data access
- Machine data sufficiently protected by defense in depth measures

02 DIGITALIZATION: POSSIBLE RISKS OF DEFENSE IN DEPTH

- Constant availability of data at various locations required for the purpose of continuing digitalization
- Encryption of machine data required
- High risk of undesired data access due to detour through external encryption components, such as routers and firewalls

03 THE SOLUTION: DATA ENCRYPTION IN THE CONTROLLER

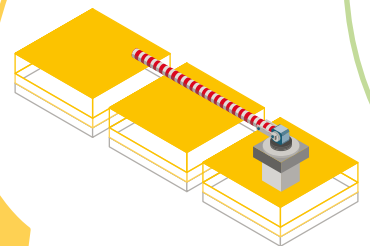
- Encrypt information directly in the controller with the WAGO PFC100 and PFC200 Controllers
- Secure data transport into the cloud via IPsec or OpenVPN connection
- Optimal protection of machine data against undesired access



Closed letter (encrypted information) and sealed letter (encrypted channel)

Open letter (information "not" encrypted); information is secure since it never leaves the factory.

Open letter (information "not" encrypted)

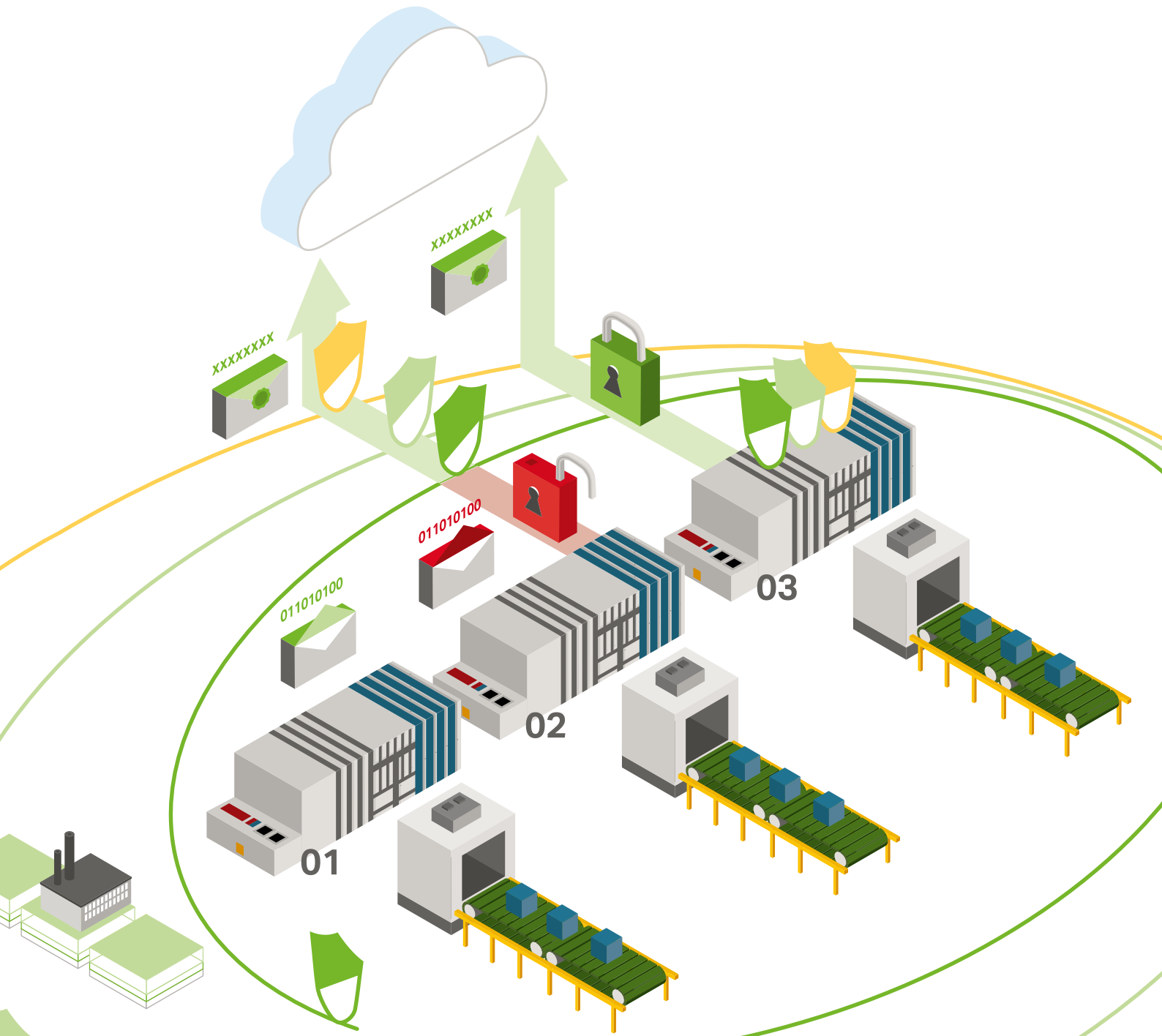


ORGANIZATION

- Turnstile
- Facility identification
- Fence/wall

IT

- Router
- Firewall



ORGANIZATION

- Access control systems
- USB drives forbidden
- Password regulations

IT

- Physical network segmentation/VLAN
- Switches/router/firewall
- WLAN, WPA encryption

ORGANIZATION

- Role-based accesses
- Personal machine accesses

IT

- Segmentation using VLANs
- Switches/router/firewall
- RADIUS server

NEW, SPACE-SAVING GENERATION OF ROGOWSKI COILS

No Calibration During Replacement

- More installation possibilities thanks to direct mounting on current bars up to 1000 V
- EN 61869-2 classification and maximized space-savings with a high degree of accuracy
- Quick and cost-efficient installation
- Versatile applications thanks to wide operating temperature range

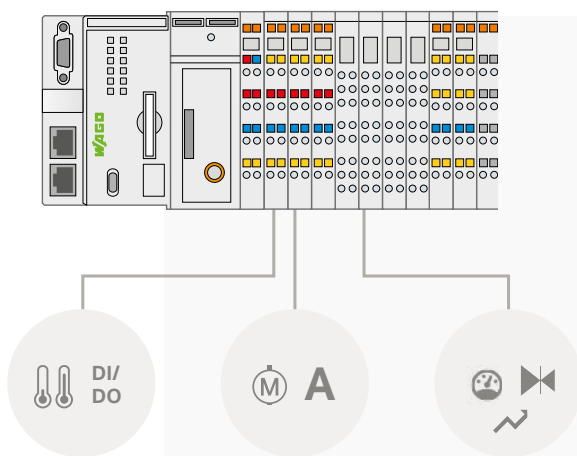
- Connect to WAGO's 3-Phase Power Measurement Module (750-495/000-002) and Signal Conditioners for RC coils (857-552)
- Rated insulation voltage: 1000 V Cat. III / 600 V Cat. IV
- Accuracy class: 1
- Cable tie mounts
- Ambient temperature: -40 ... +80 °C
- IP67 protection class



Manage and Measure Energy and Process Data

TAKING ENERGY DATA MANAGEMENT TO THE NEXT LEVEL

- Conveniently record and manage energy data
- Configuring instead of programming
- Establish indicators to achieve DIN EN ISO 50001
- Energy data evaluation and derivation of efficiency measures



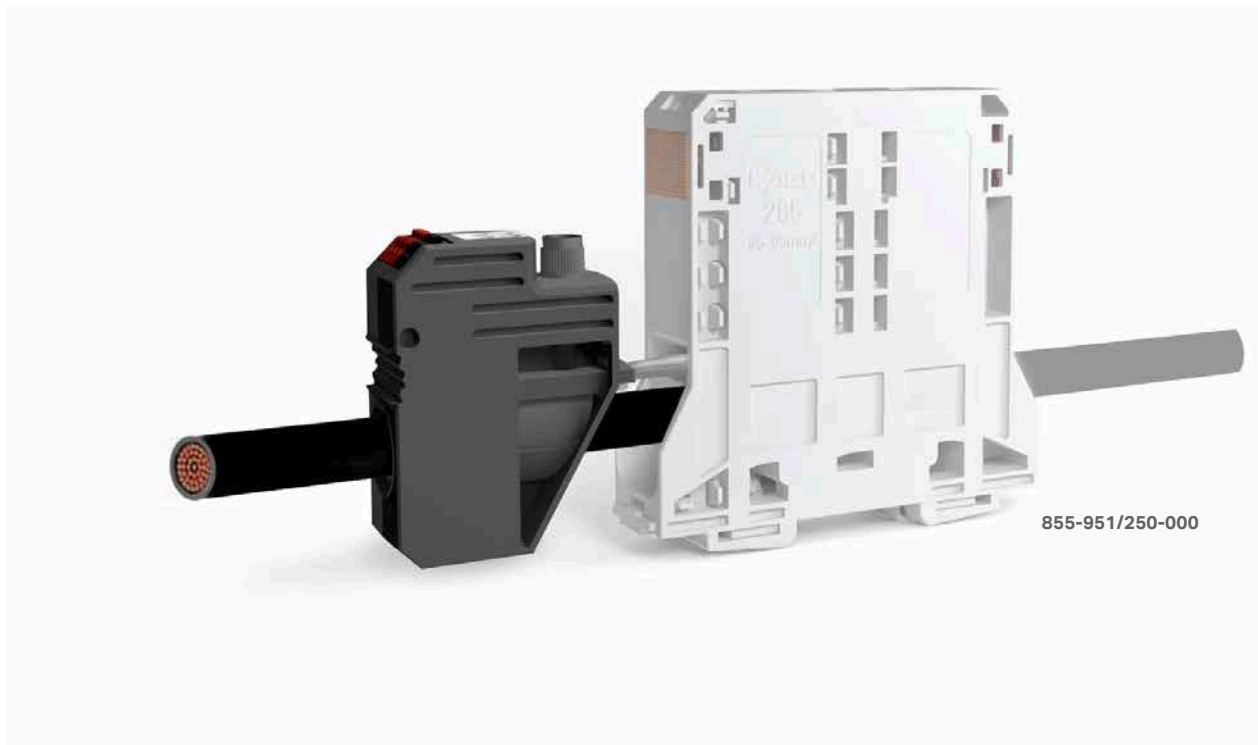
- Modular recording of energy and process data
- Easy parameterization of inputs using web visualization – no programming needed
- Connect existing sensors to the WAGO-I/O-SYSTEM
- Integrated visualization



THE 2-IN-1 SOLUTION

Power and Voltage Taps

- Integrated 250 A/1 A current transformer
- Accuracy class 0.5 acc. to EN 61869-2
- Power data can be directly tapped into the power supply



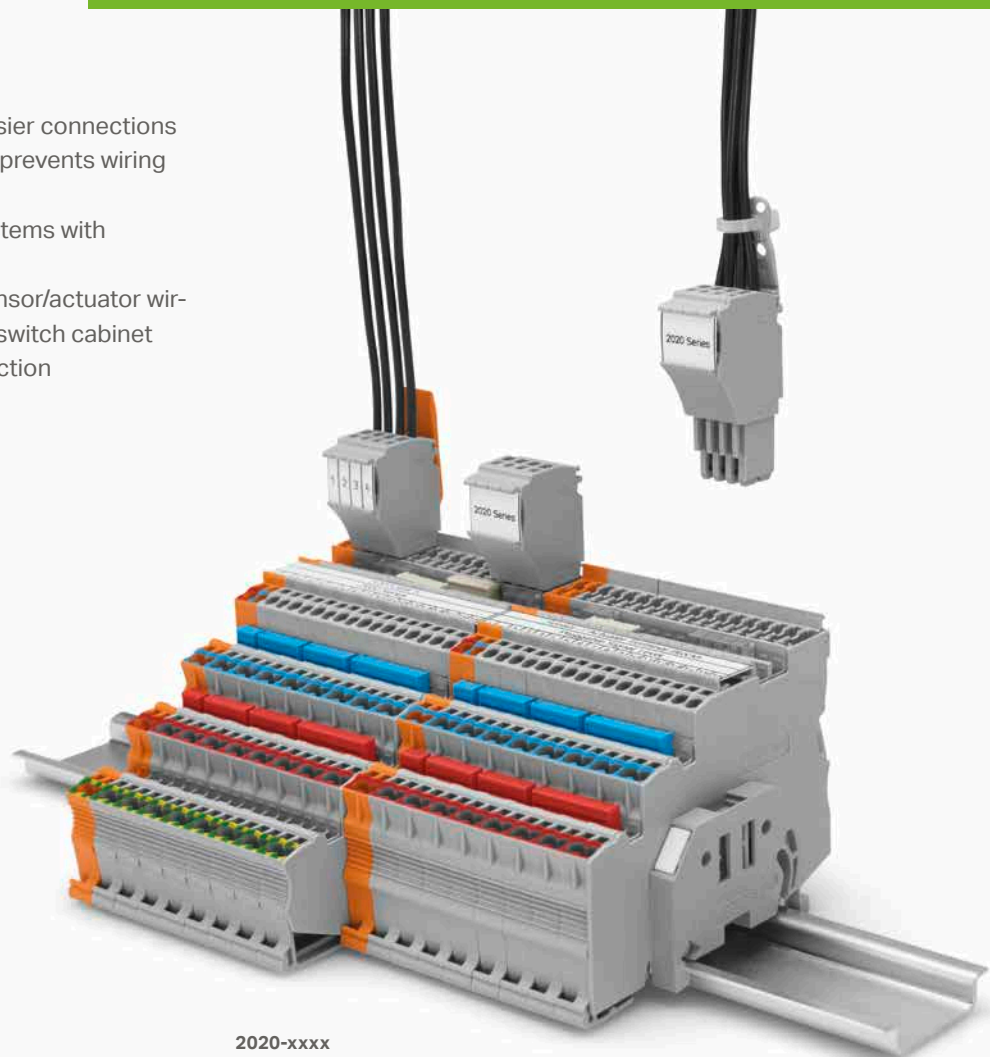
- Fused voltage path protects downstream measurement devices
- Transformer short circuit and neutral point commoning possible
- Easy installation – simply insert the tap into the jumper slot of the 95 mm² high-current, rail-mounted terminal block

TOPJOB® S SENSOR/ACTUATOR TERMINAL BLOCKS WITH A PLUGGABLE SIGNAL LEVEL

Send the Right Signals

- For maximum signal density: Pack several sensors into the smallest possible space using only 3.5 mm per sensor
- With multifunctional commoning program: Commoning with standard jumpers – no pole number limitation
- With the fastest marking system: Clear identification thanks to multi-line marking strips that don't cover the jumper slot
- For easy assignment: LEDs, commoning and markers are always visible – even when wired

- Preassembly for faster and easier connections
- Coding pluggable connectors prevents wiring errors
- Possible modularization of systems with pre-assembled connectors
- Pluggable for the first time: sensor/actuator wiring between terminal box and switch cabinet
- Push-in CAGE CLAMP® connection



2020-xxxx

DISCOVER NEW POSSIBILITIES

e!COCKPIT, *e!DISPLAY* and PFC Controllers Are the Optimal Combination for Your Application

- *e!COCKPIT* software offers integrated engineering for every task
- *e!DISPLAY* combines design and technology, presenting your CODESYS-3 web visualization in the best light
- The compact and powerful PFC Controllers also simplify entry into the CODESYS-3 world



750-8101/0025-000

762-3002

- Benefit from regularly updated new functions for the *e!COCKPIT* Engineering Software
- Maximize performance in the field with the *e!DISPLAY* and PFC Controllers



THE NEW 8-PORT INDUSTRIAL SWITCHES

Compact and Efficient for Greater Industrial and Building Networking

- High data throughput thanks to 1 Gbit transfer rate
- Energy saving due to "Energy-Efficient Ethernet"
- Greater safety in the event of high electrical voltages thanks to overvoltage protection
- For extreme environments (852-1102)



8-Port Industrial Switch
852-1102



8-Port Industrial ECO Switch
852-1112

- ECO version of the 852-1102
- 8-port Gbit ETHERNET switch
- Supports PROFINET conformance class A (IEEE 802.1p)
- Supports up to 8,000 absolute MAC addresses

- 8-port Gbit ETHERNET switch
- Redundant power supply: 9 ... 57 V
- Alarm relays for malfunction indication
- Extended temperature range: -40 ... + 70 °C
- Supports PROFINET conformance class A (IEEE 802.1p)
- Supports up to 8,000 absolute MAC addresses

EPSITRON® – Electronic Circuit Breaker in a 6 mm Housing

MAXIMUM SECURITY AT THE HIGHEST SPEED

- Slimmest one-channel circuit breaker on the market (6 mm module width)
- Triggering within just 4 ms in the event of a hard short-circuit
- Switch-on capacity: >50,000 μF
- One-channel electronic circuit breakers for 24 VDC

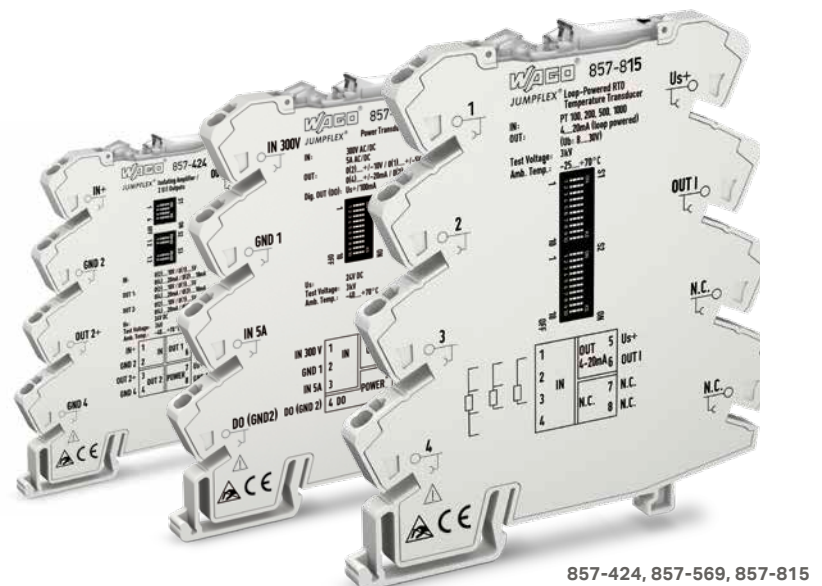
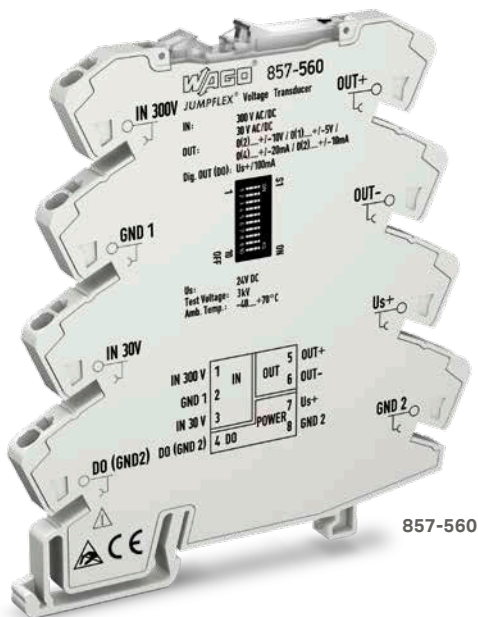


- 24 VDC / in 5 versions with rated current 1/2/4/6/8 A with devices color coded according to nominal current
- Resetting, on/off switching directly on the module or remotely via digital input signal
- Triggered signal output can also be combined as a group signal for up to 30 devices
- Wide operating temperature range: $-25 \dots 70 \text{ }^\circ\text{C}$

FOUR NEW PRODUCTS FOR YOUR MEASUREMENT TASKS

JUMPFLEX® – The Standard for Signal Conditioners

- Signal Splitter (857-424) – variable signal splitting via configurable current/voltage outputs
- Voltage Signal Conditioner (857-560) – detects DC and AC voltage up to 300 VAC/DC
- Power Signal Conditioner (857-569) – parallel current and voltage measurement, conversion into power and output as analog standard signal
- Loop-Powered RTD Temperature Signal Conditioner (857-815) – records Pt sensors and resistance up to 4.5 kOhm without additional supply voltage



- Multiple, easy-to-use configuration options
- Wide operating temperature range: -25 ... 70 °C
- Safe three-way isolation with 3 kV test voltage per EN 61010-1
- “True” 6 mm width

PCB TERMINAL BLOCKS FOR POWER ELECTRONICS

PCB Terminal Blocks with Push-in CAGE CLAMP®, 2624, 2626, 2636 Series

- Compact device connection
- Ideal for panel feedthrough and space-restricted applications
- Operation parallel to conductor entry
- Compatibility with existing industrial solutions
- For applications complying with EN and UL 61800-5-1 (details upon request)

- PCB terminal blocks 4 mm² / 6 mm² / 16 mm² with Push-in CAGE CLAMP®
- Up to 1000 V IEC
- Up to 76 A IEC
- Straight or angled type
- Testing can be performed both parallel and perpendicular to conductor entry



PCB Terminal Blocks with Push-in CAGE CLAMP® and Lever, 2604, 2606, 2616 Series

- Faster and easier wiring
- Tool-free, intuitive lever operation
- Secure connection via easy and effortless lever actuation into closed position
- Operating lever clearly locks in position (open/close)

- PCB terminal blocks 4 mm² / 6 mm² / 16 mm² with Push-in CAGE CLAMP® and operating lever
- 100 % tool-free operation
- Up to 1,000 V IEC
- Up to 76 A IEC
- Straight or angled type
- Testing can be performed both parallel and perpendicular to conductor entry



SMD PCB TERMINAL BLOCK

2065 Series – Reduced to the Essentials

- Maximum cross section, minimum installation space
- Compact design minimizes on-board LED shadowing
- Push-in termination of solid conductors
- Easily terminate/remove all conductor types via operating tool
- A reliable alternative to wire soldering



2065-100/998-403

- Push-in CAGE CLAMP® connection for solid and fine-stranded conductors 0.2 ... 0.75 mm² (24 ... 18 AWG)
- Installation height: just 2.7 mm
- Operating tool with integrated insertion funnels for convenient connection of fine-stranded conductors
- Packaged in tape-and-reel for automated assembly

THROUGH-BOARD SMD PCB TERMINAL BLOCK

297 Series – for Vertical Wiring

- Wiring performed on the back of the LED board simplifies lighting manufacturing
- Low installation height minimizes on-board LED shadowing
- Larger surface provides uniform light distribution



297-381/997-404

- PUSH WIRE® connection for solid conductors 0.5 ... 0.75 mm² (20 AWG)
- Pick-and-place surface for automated PCB assembly
- Back-side wiring – vertical to the PCB
- An economical alternative to wire soldering
- For manual and automated wiring systems

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