HIGHLIGHTS 2020
Creative solutions for a smart world
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Phoenix Contact will support you on your journey to a smart world with creative solutions as well as innovative products and systems tailored to your applications.

You will find our highlights of the year in this brochure and, of course, online: phoenixcontact.com/highlights
Shaping digitalization together

With our future-oriented innovations, we are paving the road to the networked world for you. Our intelligent components are the basis for your future-oriented concepts:

Intelligent buildings, created through solutions using our IoT-based Emalytics building management system. Intelligent automation, based on the open PLCnext Technology ecosystem. Our expertise and range of services optimize your control cabinet manufacturing systems with integrated production concepts.

Be inspired by new products that create real added value in your application.

Roland Bent, CTO Phoenix Contact

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phoenixcontact.com/new-products
phoenixcontact.com/update
Building IoT
Digitalizing building automation

The digital transformation is taking hold in the building industry. Take advantage of our Industrie 4.0 expertise and design your Building 4.0. With the IoT-based Emalytics management platform, Phoenix Contact will support you in breaking away from the classical structures of building automation and in creating added value for your intelligent building. Throughout all of the planning and life cycles of your building, we will provide innovative concepts, solutions, and products for efficient operation with a high level of user comfort.
Specialists – in Building IoT as well

Combine our broad product range to create a tailor-made solution for building automation.

Managing buildings digitally

IoT-based Emalytics building management system: The direct route from conventional building technology to digitalization.

phoenixcontact.com/Building_Intelligence

Surge protection for measurement technology

Pluggable surge protection in even the smallest of spaces: TERMIRAB complete for MCR technology, see page 18.

Mobile equipment identification

Controlled via a smart device, this robust printer creates markings directly on-site; see page 20.

Protecting networks easily

Entry-level FL MGUARD 1100 security products simplify cybersecurity with Plug-and-Learn functions, see page 29.
Intelligent automation
Ecosystem for limitless possibilities

PLCnext Technology is the ecosystem for industrial automation. The combination of open control platform, modular engineering software, and digital software market place enables easy adaptation to changing demands and the efficient utilization of existing and future software services. Thanks to cloud integration, the ability to also integrate open-source software and to take advantage of the expertise of the ever-growing community, PLCnext Technology is able to meet all of the challenges of the IoT world.

plcnextstore.com
plcnext-community.net
New possibilities in the ecosystem

With PLCnext Control, you can make automation projects a reality without the limitations of proprietary systems. The advantages include direct connection to PROFICLOUD and the use of software from the PLCnext Store, parallel programming, and the ability to combine programming languages.

Greater scalability

The AXC F 1152 is a cost-effective introduction. The new high-performance AXC F 3152 controller enables you to realize applications with high demands on performance.

Greater flexibility

Extend the functional scope of your PLCnext Control devices with an Ethernet or INTERBUS module which can be added to the left of the controllers.

User collaboration and expertise

You will find information, support, and helpful knowledge in the PLCnext Community, for example in the forum, in the tutorials, and also in our GitHub presence.
Shaping smart production together
The comprehensive solution for the control cabinet

Take advantage of the opportunities presented by digitalization for your control cabinet manufacturing and view processes in a new light. The comprehensive COMPLETE line system will support you in the process.

Our product range is perfectly matched in terms of design, handling, and function. Simplify your processes with scalable production solutions, from engineering right through to control cabinet assembly. With our wealth of experience, we will optimize your processes together. Start with innovative concepts that are tailored precisely to your needs.

Web code: #2247
Individual consultancy services

Our experts will provide advice when you're designing innovative production solutions. Together, we will develop an efficient and sustainable concept for your individual process.

Smart production support

Assistance systems support all processes in control cabinet manufacturing with ergonomic design and intuitive guidance for employees. Increase the efficiency and quality of your assembly.

Complete data flow

COMPLETE line provides you with consistent digitally described products. The digital twin supports the entire production process, including engineering, installation, and maintenance.
Minimize wiring effort
Quick installation of modular solutions

We have developed a solution for 400 V distribution to simplify the wiring effort in machine and control cabinet manufacturing. The open CrossPowerSystem platform enables power supplies to be snapped on to the power supply all the way to the hybrid motor starter without tools or cables. As a result, modular and functional control cabinet solutions can be configured quickly and flexibly.
Safe supply
The 24 V supply with additional protection thanks to eight independent channels ensures disconnection in the event of errors caused by overload or short circuit, and enables the current to be configured easily via IO-Link.

Easy connection
The adapter rail with integrated DIN rail is used to accommodate distributor terminal blocks up to 35 mm² and PTFIX distribution blocks to distribute 24 V (N, PE) and for data transmission.

Modular and functional
The modular and functional system with a more compact design compared to classic power distribution systems can be easily reconfigured or extended whenever necessary.

CrossPowerSystem
CrossPowerSystem is an open platform for modular and functional control cabinets. Three-phase devices are mounted onto the power distributor via Plug and Play. The 20 A power supply with integrated electronic circuit breakers (8-channel) supplies a safe 24 V supply which can be distributed easily via additional adapter rails.

Web code: #1857
Cost-effective automation
Compact I/O modules

In control boxes where space is at a premium, automation solutions need a flexible and needs-oriented I/O concept. In addition, many machines require high flexibility in terms of station design, and therefore, a broad range of function modules. We developed Axioline Smart Elements specifically to meet these demands. They enable the highest I/O packing density and flexibility in an Axioline station, for example together with PLCnext Control, when they are plugged into two rows with different functions on one backplane module of the Axioline F I/O system.
**Axioline Smart Elements**

The Axioline Smart Elements are compact, pluggable, and system-independent I/O elements. The modules do not have a local bus interface; they just have I/O functionality. Communication with the respective I/O module is implemented in combination with a backplane. The portfolio includes an IO-Link master, digital and analog input and output modules, and additional function modules.

**Compact and easy**

Eight or 16 terminal points over a surface area of just 15 x 62 mm enable a compact housing design. The modules are particularly easy to handle during configuration, installation, and commissioning.

**For Axioline F stations**

Backplanes are available here with four or six slots. You can plug the I/Os into any position. This means that up to 32 channels and two different I/O functions can be realized over 15 mm.

**Compatibility in the system**

Within an I/O station, Axioline F modules and Axioline Smart Elements can be combined together in any way. You can therefore select from more than 80 I/Os, bus couplers, and control components in just one product range.

**Web code:** #2551

**Benefit from the comprehensive solution for your control cabinet.**

**PLCnext Technology**

Designed by PHOENIX CONTACT
Control processes
I/O systems for the process industry

Two complimentary I/O systems enable you to automate both the production process and the analysis of data in the field of process technology.

Operate applications with HART communication, rely on intrinsic safety and PROFINET system redundancy, and take advantage of the hot-swap capability of the Axioline P products. In combination with PLCnext Technology, the modules of the Axioline F I/O system are ideally suited for NAMUR Open Architecture applications for impact-free automation.
Axioline P – high availability with hot-swap
The high-availability I/O system is comprised of redundant PROFINET bus couplers and both digital and analog I/O modules. Axioline P meets the demands of the process industry for extended temperature ranges and hot-swap-capable, intrinsically safe I/O modules. The system can be connected as a subordinate to DCS systems.

Web code: #2273

Axioline F – monitoring and optimization
Benefit from the advantages of PLCnext Technology, cloud connection, and the new I/Os, which have been optimized for the process industry, to access and process data from existing systems. Optimize processes in process-technology systems with existing data. This robust system features a broad range of modules for the connection of sensors and actuators right through to zone 0.

Web code: #1147

COMPLETE line
Benefit from the comprehensive solution for your control cabinet.
Intelligent energy management
IoT-capable energy measuring devices

Integrate the EMpro energy measuring devices into your local network from any browser via the integrated REST interface. “REpresentional State Transfer” is a user-friendly software architecture that uses all common Internet protocols. Special knowledge of the industrial communications protocols is not necessary.

As an alternative, you can connect the EMpro directly to the cloud: Benefit from global data access as well as additional smart services in the Internet of Things.
Multi-functional energy measuring devices

EMpro energy measuring devices can be configured and integrated into your network in minutes. Benefit from the simple, direct connection of manufacturer-independent Rogowski coils, and from the many practice-oriented web server and device functions. An integrated REST interface and direct connection to the cloud pave the way to the digital world. 24 V versions complete the product range.

Web code: #1267

Fast system integration
The widely-used REST architecture enables the easy development of system integration and individual data access through configurable querying.

Directly to the cloud
Versions with a direct connection to the cloud enable interaction with the devices from anywhere, and at any time. Access your measurement and component data anywhere in the world, without an additional gateway.

Smart services
The measurement and device data is stored, processed and visualized in the cloud. The platform features additional services, such as device management and monitoring the state of health of your energy measuring device.
Reliable measuring
Surge protection for measurement technology

Sensitive temperature or weight measurements and very little space in the control box? If this is the case, you can rely on the extremely slender surge protective devices with 4-conductor technology. With a direct connection between input and output terminals, the sensitive measurements are not affected by the protective device.
Save space
With an overall width of 6 mm, this protective device is particularly compact and enables a higher packing density in the control cabinet. Offering significant space savings, it fully protects your measurement and control technology signals.

Status at a glance
Functions can be monitored easily on-site or, optionally, by remote signaling with optical monitoring, without additional effort.

Impedance-free plugging
The measurement signal is not affected during maintenance work or when a surge protection module is replaced.

Pluggable surge protection for four conductors
The TTC-6P-4 – a member of the TERMITRAB complete product family – is the narrowest pluggable surge protection solution for 4-conductor applications in the world. With an overall width of just 6 mm, it protects your applications in the field of measurement and control technology reliably against overvoltages, while taking up a minimum amount of space.

Web code: #2422
Professional marking on-site
Mobile label printer

A consistent industrial identification system involves a great deal of effort in extensive systems. The THERMOMARK GO label printer enables markings to be created on-site whenever needed, and saves long trips.

Control the robust printing system intuitively via your smartphone or tablet. With state-of-the-art interfaces, a host of applications, and automatic material detection, the printer creates high-quality marking solutions – easily and without errors.
Mobile marking
With the THERMOMARK GO label printer and the MARKING system app, you can create markings directly on-site. You can design the labels and control the thermal transfer printer easily via the app on your smartphone or tablet. This enables you to create markings whenever and wherever you need them.

Web code: #1562

Easy connection
State-of-the-art interfaces for reliable connectivity: Establish a connection between the printer and your smart device quickly and easily via Bluetooth 5.0 or NFC.

Flexible design
Intuitive label configuration: The MARKING system app guides you through the entire marking process and features ideally-tuned solutions for every application.

On-site marking
Create markings exactly where they are needed: Control the printer easily using your smartphone or tablet and configure labels for all applications directly in the app.
Connecting power easily
Connectors with Push-Lock connection
Ever-smaller electronic devices and motors require compact and powerful connections. Confined spaces and customized cable lengths are becoming ever-more common when wiring machines and systems.

For the first time, the compact M12 POWER connectors with Push-Lock connection enable easy and reliable conductor connections in AC and DC applications without tools. You can select the cable lengths freely on-site.
M12 POWER connectors

With our compact M12 connectors for assembly for power applications, you can transmit power ratings of up to 16 A and 690 V. Thanks to the Push-Lock connection system, the user has both hands free to insert the conductor, and installation is simplified significantly. The proven spring-force technology guarantees a secure and reliable connection.

Web code: #0024

Easy assembly

A lever is used to open and close the clamping chambers. It is therefore also possible to connect flexible conductors with or without ferrules conveniently and without tools.

Intuitive connection

Litz wires can be assigned precisely thanks to the color and numerical coding in the connection area. This prevents connection errors.

Optional shielding

The long-term stability and vibration-resistance of the PE connection and optional shielding ensure increased safety and the reliable operation of your system.
Planning optimum device cooling
Thermal management for electronics housings

Miniaturization leads to an increasingly high packing density in the electronics, which requires efficient cooling.

We have created an intuitive, easy-to-use web-based platform for assessing the thermal behavior of electronic devices, even in the very early stages of development. On request, this digital service can be extended to include individual consultations. You will receive a detailed, application-specific simulation and a recommendation for the ideal housing selection, heatsink design and arrangement.
Rapid development
The comprehensive range of services for electronics housings simplifies and accelerates the development process.

Individual components
Heatsinks tailored to customer-specific requirements ensure reliable heat dissipation.

Optimized devices
Heatsinks enable the finished devices to be used in thermally demanding applications.

Our service for your applications in the ICS housing
Through the timely online simulation of the thermal conditions in electronic devices, printed circuit board layouts can be optimized. The prefabricated system of ICS housings and ICS heatsinks then enables efficient heat dissipation, even with high packing densities.

Web code: #1635
Fast and convenient charging
At home, at the restaurant, or at the store

In contrast to conventional AC charging, DC charging saves on expensive electronics in the e-vehicle, and is also faster and more efficient.

Therefore, the advantages of this charging technology will also be utilized in homes in the future, as well as in front of restaurants, supermarkets, and in parking lots, where customers often park their e-vehicles from anywhere between 30 minutes to several hours. Charging power in the lower range, from 20 to 80 kilowatts, is enough to charge the e-vehicle battery during this time frame. Our compact DC charging cables are the ideal and economic solution here.
Intelligent with photovoltaic energy

With a PV system, you can charge your vehicle using the self-generated DC electricity, which is exactly what your e-vehicle battery needs, saving both costs and the environment. In smart homes, the stored energy can also be used for a number of other applications.

Safe and robust in use

The intelligent sealing concept prevents moisture from penetrating into the connector or the cable. High-quality materials ensure the necessary robustness. Therefore, there is nothing preventing constant outdoor use.

Easy handling

The design of the charging connector features a contemporary style and is also functionally well-developed. The ergonomic shape of the gripping zone ensures easy handling and a comfortable feel.

Compact CCS charging cables for DC charging up to 80 kW

Sophisticated design and compact dimensions: The charging connectors are consistently designed for modern DC home charging stations in garages and carports as well as small DC charging stations in the public and commercial sector. Conforming with the established Combined Charging System (CCS), the charging cables can be used practically anywhere in the world.

Web code: #2475
Communicative and secure Products for intelligent networking

Digitalization and Industrie 4.0 are providing solutions for complex processes, but also require enormous amounts of data. Intelligent communication structures are a key prerequisite to being able to extract information with added value, for example for preventive maintenance or machine learning, from this data. Connection technology, cybersecurity, or new communication technologies – whatever is involved, we can network your application and prepare it for the future.

FO data connectors for intelligent power grids
Fiberglass in accordance with IEC 61850 has been the standard in intelligent substations for a long time. Robust connectivity with a high level of EMC protection is necessary to operate them reliably. M17 MPO connectors are used for real-time data transmission. phoenixcontact.com/m17mpo

Unmanaged Switches
Ethernet networks are growing and placing new demands on components. The new Unmanaged Switch 1000 range meets them ideally thanks to gigabit support and a prioritization of the data traffic. Furthermore, they are particularly slim and flexible to mount.

Web code: #2528
Security routers for simple network safeguarding

Protect your networks against cyber attacks with our entry-level FL MGUARD 1100 security products. Intelligent functions such as Easy Protect Mode and automatic Plug-and-Learn firewall-rule creation help to protect your network, without the need for expert knowledge.

*iWeb code: #1270*

### Gateway for PROFICLOUD

The Cloud IoT Gateway integrates new and existing systems without additional engineering effort. Thanks to simple process integration, sensor and process data is collected, processed, and monitored securely in the Proficloud.

*iWeb code: #0949*

### Single Pair Ethernet (SPE)

With easy wiring and space-saving connection technology, the new standard ensures consistent Ethernet-based communication, right down to the field level. This network technology for intelligent device communication supports complex industrial applications and IIoT solutions, see page 30.

*iWeb code: #1270*
Communicative and secure
SPE: Ethernet down to the field level

Ethernet is the leading communication standard for data networks at the corporate and operational level. With the advent of Single Pair Ethernet (SPE), this established technology is now also moving down to the field level.

The evolution of 4- and 8-wire cabling systems into simple and secure two-wire cabling has begun. Phoenix Contact will accompany you on the journey into the future of the Industrial Internet of Things (IIoT).

Intelli-gently networked down to the last component

For IIoT processes and intelligent networks, a large amount of data is required from the integrated end devices, for example for predictive maintenance. With the advent of Single Pair Ethernet, the established Ethernet protocol is now also moving down to the field level. One wire pair integrates the end devices into the Ethernet network and supplies them with both data and power at the same time.

The new standard satisfies various requirements on communication in factory, process, and building automation. You can rely on Phoenix Contact as your innovation partner in this field. Take advantage of this new technology, from the device interface, through cabling, right through to active network components.

Integrating sensor data

With SPE, it is possible to integrate simple sensors, actuators, and end devices into networks. This satisfies the prerequisite for future-proof, consistent Ethernet communication, therefore creating the basis, for example, for self-optimizing processes.
Device and cable connectors for IP20 degree of protection
Single and multi-ports without additional screw thread and with a consistent pin connector pattern from IP20 to IP67.

Device and cable connectors with IP67 degree of protection
Single and multi-ports with a standardized M8/M12 thread for consistent cabling solutions with IP67 protection.

Two-wire technology
SPE enables Ethernet communication at speeds of up to 1 Gbps with just two wires. This simplifies wiring in the field, and enables the cost-effective and compact integration of intelligent end devices. With the “Advanced Physical Layer” version (APL), this is also possible in potentially explosive areas up to zone 0.

PCB terminal blocks and connectors
PCB terminal blocks with screw or Push-in spring connection, as well as PCB connectors and headers support APL (Advanced Physical Layer) for device connections in the process industry.
Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation. With a global network reaching across more than 100 countries with over 17,600 employees, we maintain close relationships with our customers, something we believe is essential for our common success.

Our wide variety of innovative products makes it easy for our customers to implement the latest technology in a variety of applications and industries. We focus on developing the fields of energy, infrastructure, process, and factory automation.

You can find your local partner at

phoenixcontact.com