

LIMITED LIFETIME  
**WARRANTY**

BUILD WITH CONFIDENCE

# Power reliability

Protection, conversion, monitoring, and distribution



# Cabinet Confidence

## Your trusted partner for the control cabinet

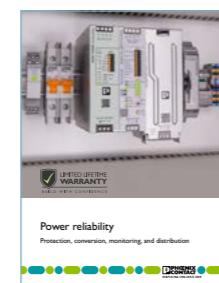
### Build with confidence

Phoenix Contact offers you the confidence you need in your production systems. Breaking down our products into seven areas of functional design gives customers a brief overview of how Phoenix Contact gives you peace of mind and a competitive edge to succeed in today's highly complex manufacturing world.



### The seven areas of functional design

Each area of functional design is organized and illustrated in an individual brochure to explain the basic concepts and product offerings of Phoenix Contact, your trusted control cabinet partner.

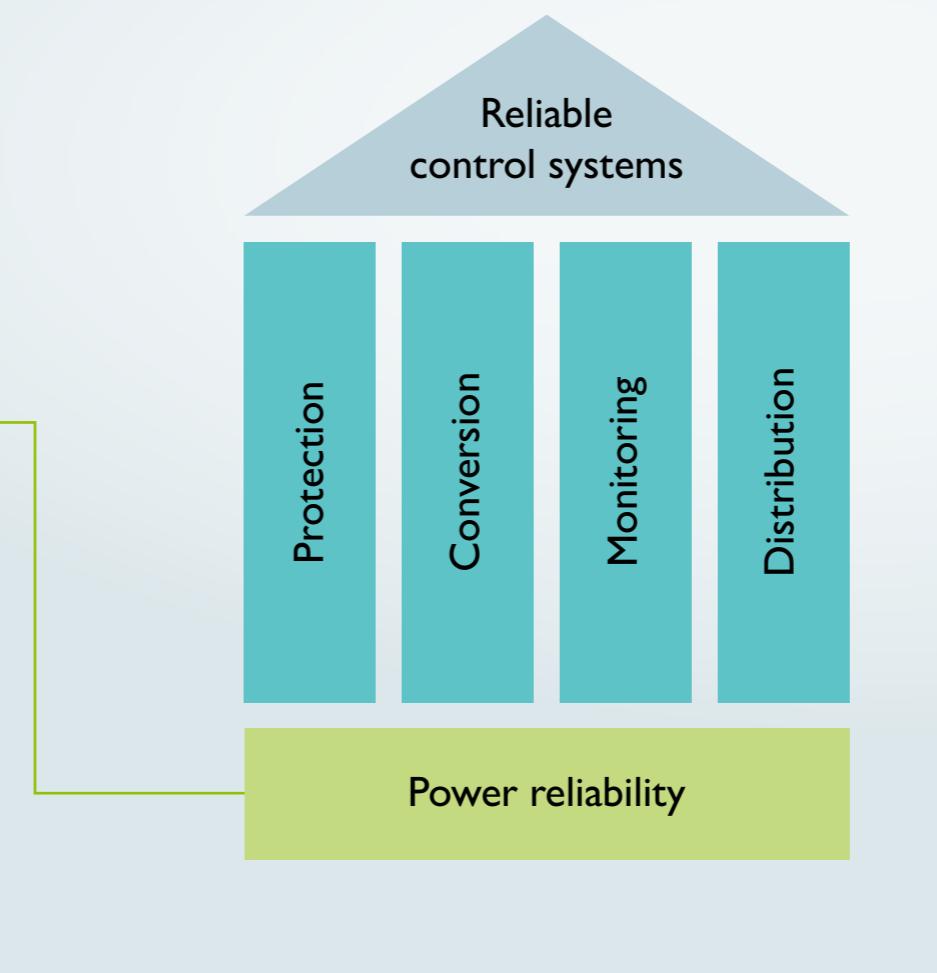


Power reliability

### Power reliability

Don't overlook the basics. Power touches every aspect of a control system – logic platforms are dependent on being properly powered and protected. No matter how sophisticated your control system, a "line down" situation is only one power disturbance away.

True power reliability involves protecting against surges and overcurrents, conversion of AC to DC while providing redundancy and battery back-up, monitoring for faults, and distributing power to the end-devices. Combined, these four elements provide the foundation on which reliable control systems should be built.



Connectivity



Safety



Networking and remote connectivity  
EtherNet/IP and PROFINET solutions



Control



Shop floor productivity

### Contents

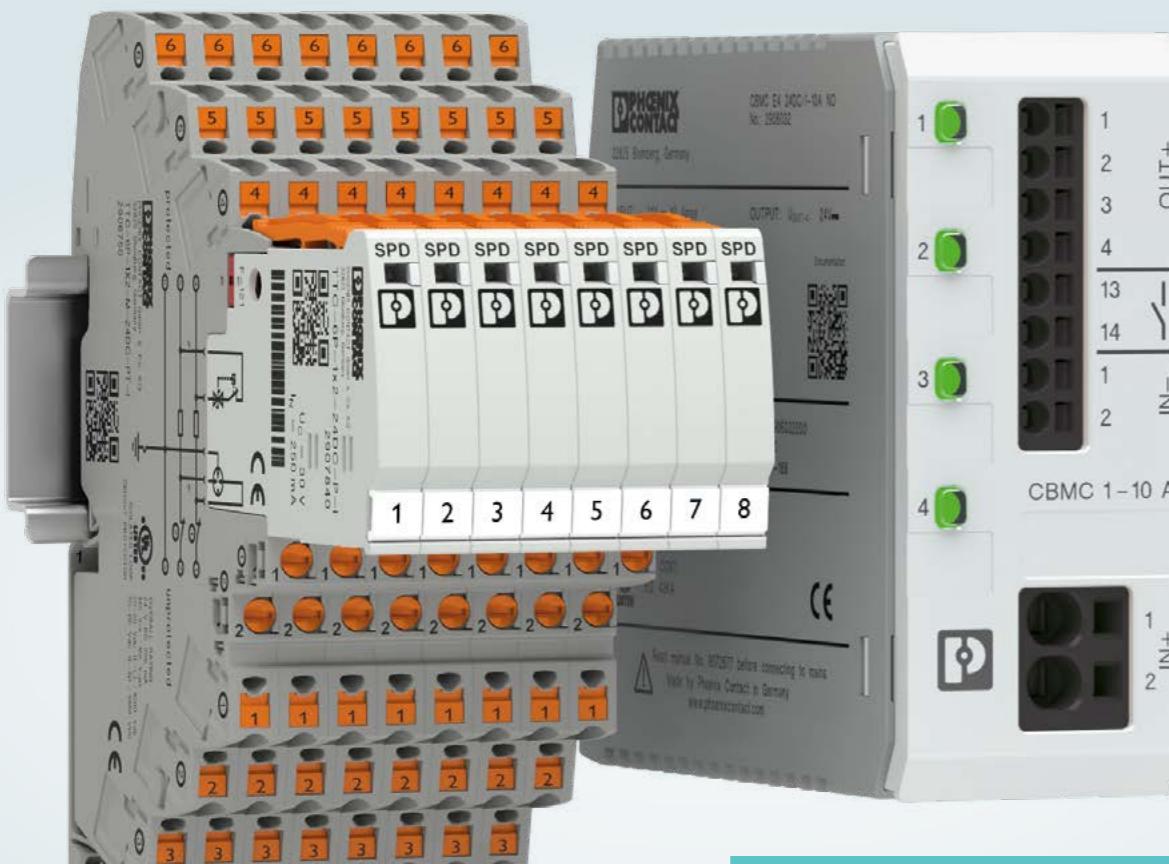
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# Protection

## Surge and overcurrent protection for increased system reliability

Maximizing the reliability of systems to maintain uptime is more imperative than ever before. Applications that generate revenue and involve human safety demand operational integrity, and require protection from transient surges and overcurrent conditions that can interrupt such processes.

Surge protective devices and circuit breakers from Phoenix Contact address these critical needs through a wide range of products with industry-leading features to enable data-driven decisions.



These products go beyond providing your applications with the most reliable protection available, as they enable real-time feedback of the system status. With Phoenix Contact surge and overcurrent protection you can trust in the reliability of your systems.

## Surge protection devices

Offering a wide range of world-class circuit protection, Phoenix Contact can ensure we have the right product for any application. From first-in-class, spark-gap technology to innovative 3-stage status indication, we can protect everything from data and signals to entire power systems.



## Circuit breakers

Having the ability to remove a faulty circuit quickly is imperative to maintaining the uptime of your system. Phoenix Contact offers a wide variety of circuit protection products for short circuits and thermal overloads. Circuit breakers easily integrate protection into your control system, improving overall operational efficiency and system reliability.

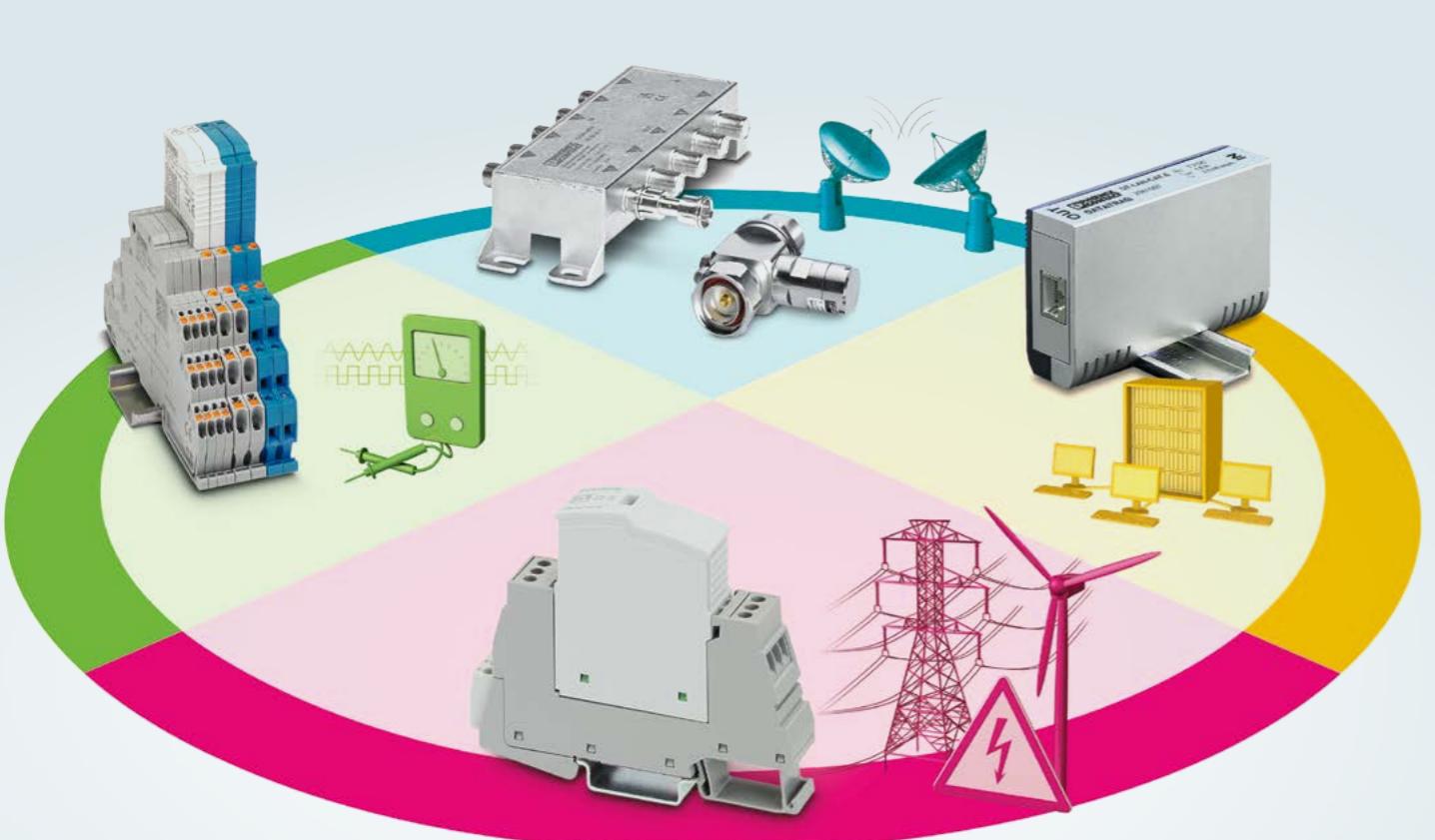


## Protection

# Surge protection devices

When identifying the necessary surge protection for your application, it is important to consider the Circle of Protection (CoP). This concept allows you to define the application you want to protect, evaluate threats from each conductor, and decide on the appropriate types of surge protection. Threats from transients can be mitigated with the following four types of Surge Protection Devices (SPDs):

- Power SPDs – high performance surge protection for power systems
- Data SPDs – loss-less surge protection for data and communication lines
- Signal SPDs – surge protection for analog and digital signals
- Coaxial SPDs – surge protection for wireless antennas and coaxial systems



## Power SPDs

- ✓ UL Listed for easy integration into your systems
- ✓ Hot-swappable, pluggable design for easy maintenance
- ✓ Local and remote status indication to monitor the protection status
- ✓ 200 kA SCCR enables use in virtually any system
- ✓ Available for all standard U.S. voltage systems



## Data SPDs

- ✓ Up to 10 Gbit/s without signal degradation
- ✓ PoE++ applications up to 72 W for high power applications
- ✓ Multiple connection styles to suit a variety of applications
- ✓ Protection on all modes to ensure protection on both data and power conductors



## Signal SPDs

- ✓ World's thinnest SPD at 3.5 mm for high density requirements
- ✓ Unique 3-stage SPD health status indication
- ✓ Hot-swappable, pluggable design for easy maintenance
- ✓ Local and remote status indication to monitor the protection status



## Coaxial SPDs

- ✓ Multiple frequency ranges to suit the application
- ✓ Fine protection levels for the most sensitive equipment
- ✓ Variety of connection types to address different termination needs
- ✓ Maintenance-free with LAMDA/4 technology or replaceable GDT versions



# Protection Circuit breakers

Having the ability to remove a faulty circuit quickly is imperative to maintaining the uptime of your systems. Phoenix Contact offers a wide variety of circuit protection products designed to mitigate the effects of short circuit and thermal overload conditions.

These products are based on one of four different tripping technologies.

- Electronic – highly robust DC overcurrent protection
- Thermal – cost-effective thermal overload technology
- Thermal-magnetic – traditional breaker technology for general purpose applications
- Hydraulic-magnetic – rugged design for hazardous locations and harsh environments



## Electronic

- UL 508 Listed for easy integration into your systems
- Programmable versions reduce inventory requirements
- Remote reset and on/off control enables easy automation of systems
- Power-dense, multi-channel versions save cabinet space
- NEC Class 2 and hazardous location (Class I, Division 2) approvals for demanding environments



## Thermal

- Highly compact design saves valuable cabinet space
- For use with a wide variety of terminal blocks
- Pluggable design enables easy modifications of breaker amperages
- Eliminates need for replaceable fuses
- Makes troubleshooting circuits easier
- Available for up to 250 V AC/65 V DC



## Thermal-magnetic

- UL 489 Listed for branch circuit protection
- UL 508 Listed cuttable busbars for maximum flexibility
- Snap-action technology increases the lifespan of the product
- Trip-free design ensures safe operation of the breakers
- Accessory modules for auxiliary contacts, remote shunting and alarm contacts



## Hydraulic-magnetic

- UL approved for 120 V AC Class I, Division 2 applications
- Available up to 15 A
- T-bus power distribution bus reduces wiring time
- Durable housing and wide temperature range allow for use in harsh environments



## Common products for protection

Surge protection								
A. What type of protection do you need; power (24 V), loop (4/20 mA, 0-10 V), or discrete (binary 12 V, 24 V)?								
B. Do you require a push-in, screw, RJ45, N-type, or D-SUB connection?								
C. What is the voltage required?								
D. Will you use direct or indirect signal ground?								
E. Which design, pluggable or non-pluggable?								
F. With or without status monitoring?								
G. Resulting Phoenix Contact part number								
A. Protection	B. Connection	C. Voltage	D. Grounding	E. Design	F. Monitoring	Type Description	G. Order #	
Power SPDs (PLT-SEC series)								
Power	Screw	24 V AC/DC	Direct	Pluggable	With	PLT-SEC-T3-24-FM-UT	2907916	
	Screw	120 V AC/150 V DC	Direct	Pluggable	With	PLT-SEC-T3-120-FM-UT	2907918	
	Screw	240 V AC/DC	Direct	Pluggable	With	PLT-SEC-T3-230-FM-UT	2907919	
Power SPDs (VAL-US series)								
Power	Screw	48 V DC	Direct	Pluggable	With	VAL-US-48/65/1+1V-FM	2910346	
	Screw	120 V AC	Direct	Pluggable	With	VAL-US-120/65/1+1-FM	2910356	
	Screw	120/240 V AC	Direct	Pluggable	With	VAL-US-120/65/2+1-FM	2910358	
	Screw	120/208 V AC	Direct	Pluggable	With	VAL-US-120/40/3+1-FM	2910354	
	Screw	120/208 V AC	Direct	Pluggable	With	VAL-US-120/65/3+1-FM	2910360	
	Screw	277/480 V AC	Direct	Pluggable	With	VAL-US-277/40/3+1-FM	2910374	
	Screw	277/480 V AC	Direct	Pluggable	With	VAL-US-277/80/3+1V-FM	2910379	
	Screw	480 V AC	Direct	Pluggable	With	VAL-US-480D/30/3+0-FM	2910386	
	Screw	600 V AC	Direct	Pluggable	With	VAL-US-600D/30/3+0-FM	2910391	
Data SPDs (DT series)								
Discrete	RJ45	<3.3 V DC	Direct	Non-pluggable	Without	DT-LAN-CAT.6+	2881007	
		12 V DC	Direct	Non-pluggable	Without	DT-UFB-485/BS	2920612	
		185 V DC/130V AC	Direct	Non-pluggable	Without	DT-TELE-SHDSL	2801593	
		185 V DC/130V AC	Direct	Non-pluggable	Without	DT-TELE-RJ45	2882925	
	D-SUB	15 V DC/10V AC	Direct	Non-pluggable	Without	DT-UFB-V24/S-9-SB	2803069	
		5.8 V DC	Direct	Non-pluggable	Without	DT-UFB-IB-RB0	2800056	
Signal SPDs (PT-IQ series)								
Discrete	-	Screw	24V DC	-	Pluggable	With	PT-IQ-PTB-UT	2800768
	-	Push-in	24V DC	-	Pluggable	With	PT-IQ-PTB-PT	2801296
	Screw	24V DC	Direct	Pluggable	With	PT-IQ-2X2-24DC-UT	2800980	
			Indirect	Pluggable	With	PT-IQ-2X2+F-24DC-UT	2800981	
	Push-In	24V DC	Direct	Pluggable	With	PT-IQ-2X2-24DC-PT	2801263	
			Indirect	Pluggable	With	PT-IQ-2X2+F-24DC-PT	2801264	
Analog Loop	Screw	24V DC	Direct	Pluggable	With	PT-IQ-4X1-24DC-UT	2800982	
	Push-in	24V DC	Direct	Pluggable	With	PT-IQ-4X1-24DC-PT	2801271	
			Direct	Pluggable	With	PT-IQ-4X1+F-24DC-PT	2801272	
Signal SPDs (TTC series)								
Discrete	Screw	24 V DC	Indirect	Pluggable	With	TTC-6P-2X1-F-M-24DC-UT-I	2906784	
		24 V DC	Direct	Non-pluggable	With	TTC-6-2X1-24DC-UT	2906799	
	Push-In	24 V DC	Indirect	Pluggable	With	TTC-6P-2X1-F-M-24DC-PT-I	2906794	
	Push-In	24 V DC	Direct	Non-pluggable	With	TTC-6-2X1-24DC-PT	2906805	
Analog Loop	Screw	24 V DC	Indirect	Pluggable	With	TTC-6P-1X2-F-M-24DC-UT-I	2906781	
	Screw	24 V DC	Direct	Non-pluggable	With	TTC-6-1X2-24DC-UT	2906798	
	Push-in	24 V DC	Indirect	Pluggable	With	TTC-6P-1X2-F-M-24DC-PT-I	2906790	
	Push-in	24 V DC	Direct	Non-pluggable	With	TTC-6-1X2-24DC-PT	2906804	
Coaxial SPDs (CN series)								
Discrete	N-type	<55 Vp Core-ground	Direct	Non-pluggable	Without	CN-LAMBDA/4-0.47-BB	2800021	
		<18 Vp Core-ground	Direct	Non-pluggable	Without	CN-LAMBDA/4-2.25-BB	2801057	
		<11 Vp Core-ground	Direct	Non-pluggable	Without	CN-LAMBDA/4-5.9-BB	2838490	
		280 DC	Direct	Non-pluggable	Without	CN-UB-280DC-3-BB	2801050	



Power SPDs



Data and signal SPDs



Electronic CBs



Thermal-magnetic CBs

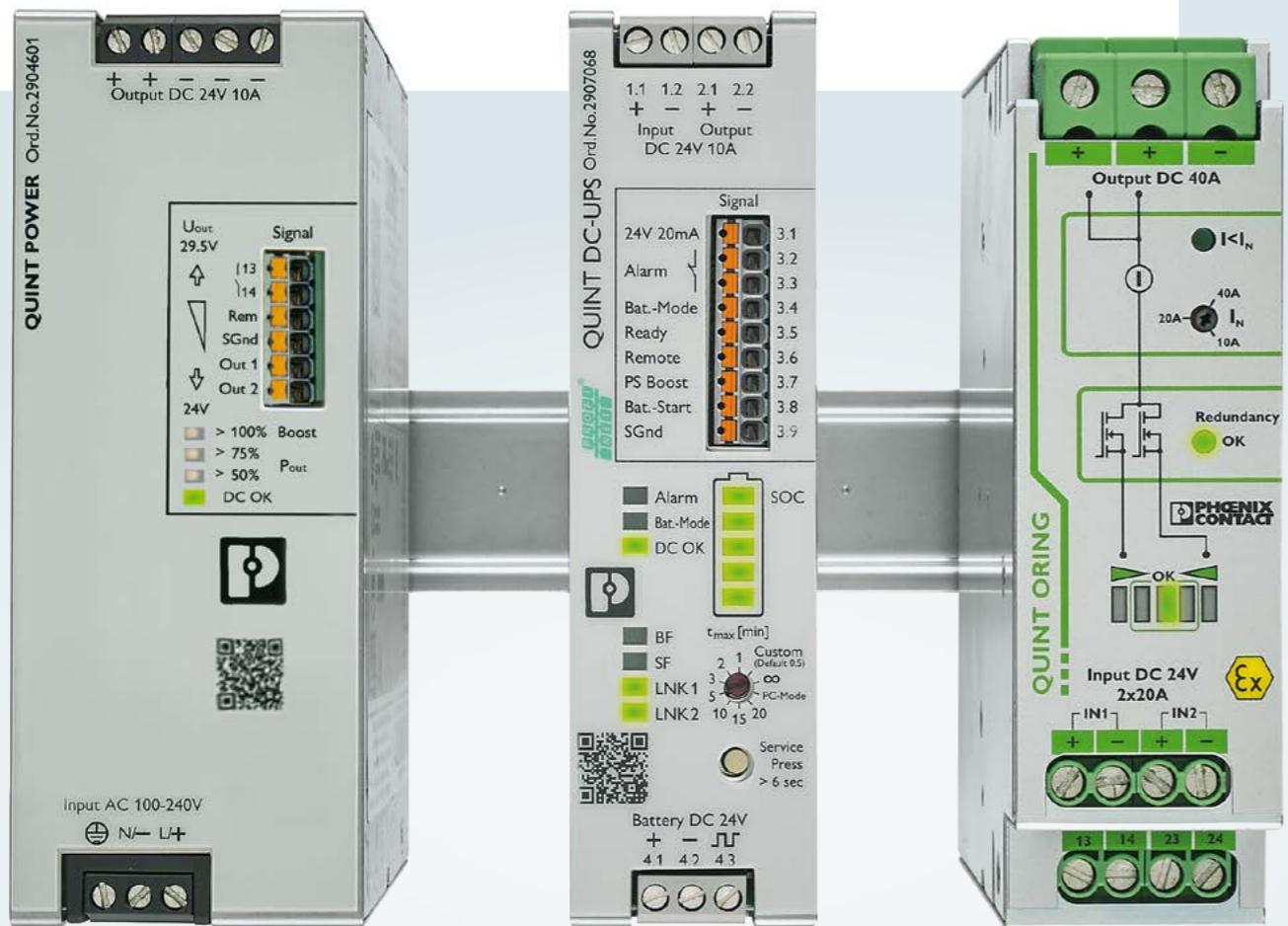
Circuit breakers							
A. UL approval?		B. How many poles are required?		D. What voltage rating is required?			
C. What trip curve characteristic is required?		E. What ampere rating is required?				F. Resulting Phoenix Contact part number	
A. UL	B. # of poles	C. Trip curve		D. Voltage rating	E. Ampere rating	Type description	
Electronic (CBM, CBMC, and PTCB series)							
UL 2367 and UL 508	1 (x8)	Electronic	24V DC	0.5-10	CBM E8 24DC/0.5-10A NO-R	2905744	
	1 (x4)		24V DC	1-10	CBMC E4 24DC/1-10A NO	2906032	
	1 (x4)		24V DC	1-10	CBMC E4 24DC/1-10A IOL	2910411	
	1 (x4)		24V DC	1-4	CBMC E4 24DC/1-4A NO	2906031	
	1 (x4)		24V DC	1-4	CBMC E4 24DC/1-4A+ IOL	2910410	
	1		24V DC	1-3	PTCB E1 24DC/1-3A NO	2909909	
	1		24V DC	1-8	PTCB E1 24DC/1-8A NO	2908262	
	1		24V DC	3	PTCB E1 24DC/3A NO	2909904	
	1		24V DC	6	PTCB E1 24DC/6A NO	2909908	
	1		24V DC				
Thermal (TCP Series)							
UL 1077	1	Thermal	250V AC/ 72V DC	0.5	TCP 0,5A	0712152	
			250V AC/ 72V DC	1	TCP 1A	0712194	
			250V AC/ 72V DC	2	TCP 2A	0712217	
			250V AC/ 72V DC	3	TCP 3A	0712233	
			250V AC/ 72V DC	4	TCP 4A	0712259	
			250V AC/ 72V DC	6	TCP 6A	0712275	
			250V AC/ 72V DC	10	TCP 10A	0712314	
			250V AC/ 72V DC				
Thermal-magnetic (TMC 7 and TMC 8 Series)							
UL 1077	1	B	277V AC/ 60V DC	5	TMC 71B 05A	1019912	
			277V AC/ 60V DC	10	TMC 71B 10A	1019916	

# Conversion

## Power for superior system availability

Phoenix Contact's POWER products supply your applications with leading technology and high quality. Power supplies, DC/DC converters, redundancy modules, and uninterruptible power supplies are optimally tailored in design and functionality to the requirements of various industries.

With our QUINT, TRIO, and UNO product ranges, you are equipped to choose a basic, standard, or critical device for your application. These products have attributes and price points to fit any application.



AC/DC power supplies, DC/DC converters, redundancy modules, and uninterruptible power supplies are the heart of the control cabinet and must be reliably maintained. Phoenix Contact designs these power solutions to meet all levels of form, feature, and functionality an application may require.

## AC/DC power supplies

Our power supplies can be used in the widest range of areas and industries. With various functionalities, performance classes, and designs, they are the perfect partner for your application.



## DC/DC converters

DC/DC converters prevent faults in your application. Even in the case of long cable lengths, the load is always supplied with a controlled DC voltage. DC/DC converters not only convert voltage, but also isolate, amplify, and regulate voltage within the control cabinet.



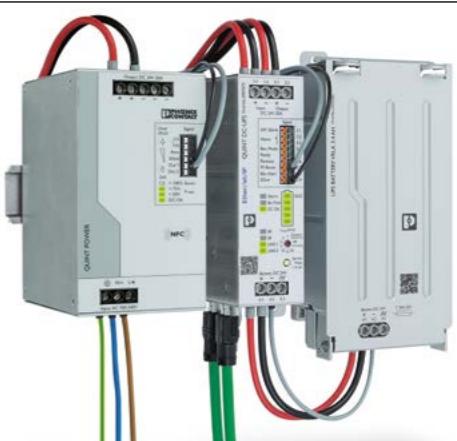
## Redundancy modules

In applications with the highest demands regarding operational reliability, redundant power supply solutions are needed. They prevent failure of a power supply unit leading to a loss of redundancy.



## Uninterruptible power supplies and battery backup

Mains interruptions can have serious consequences. You can rely on our uninterruptible power supplies for power security. We offer both DC and AC uninterruptible power supplies (UPS) and various battery backup solutions that can be used in the event of mains failures.



# Conversion Power supplies

## A comparison of the advantages

The product ranges differ with regard to their design, power, and functionality. Select the ideal solution based on your requirements. Our goal is to ensure the maximum availability of your system.

- **QUINT POWER** – powerful with critical functionality
- **TRIO POWER** – robust with standard functionality
- **UNO POWER** – compact with basic functionality



## QUINT POWER – Powerful with critical functionality

- ✓ Rugged design for critical applications
- ✓ Permanent power boost of up to 125 percent
- ✓ Dynamic power boost to start heavy loads
- ✓ Advanced monitoring capabilities
- ✓ Breaker tripping pulse to avoid oversizing
- ✓ Coordinated surge protection on the input



## TRIO POWER – Robust with standard functionality

- ✓ Slim design for space savings
- ✓ Dynamic power boost to start heavy loads
- ✓ Tool-free push-in connection for easy installation
- ✓ Relay contacts and voltage potentiometer
- ✓ Robust design for standard applications
- ✓ High vibration and shock resistance



## UNO POWER – Compact with basic functionality

- ✓ Compact form factor for space savings
- ✓ Cost-effective options
- ✓ Ideal for basic applications up to 240 W
- ✓ Wide range of products from 5 V DC to 48 V DC
- ✓ High energy efficiency to reduce power dissipation
- ✓ Wide temperature range for use in most environments



## Conversion

### DC/DC converters

DC/DC converters alter the voltage level. They regenerate the voltage at the end of long cables or create electrically isolated independent supply systems.

DC/DC converters are the control cabinet problem solvers. They can convert voltage from one level to another. DC/DC converters can also amplify, regulate, and isolate voltage to eliminate noise and other unexpected complications within an application.

- DC/DC converters with selective fuse breaking technology
- DC/DC converters with conformal coating with additional hazardous location approvals
- DC/DC converters for low power applications
- DC/DC converters for solar applications



### QUINT POWER – DC/DC converters

- ✓ Uses galvanic isolation to increase reliability
- ✓ Permanent power boost of up to 125 percent
- ✓ Breaker tripping pulse to avoid oversizing
- ✓ Remote monitoring for critical applications
- ✓ Monitors the input voltage for battery applications



### QUINT POWER DC/DC converters with protective coating

- ✓ Conformally-coated PCB for extreme environments
- ✓ Resistant to corrosive gases, debris, and moisture
- ✓ Equivalent benefits of the QUINT DC/DC converters
- ✓ Meets ATEX, IEC Ex, and Class I Division 2 approvals
- ✓ Meets medical standard IEC 60601, 2 x MOOP



### Low power and specialized DC/DC converters

#### Low-power DC/DC converters

- ✓ Suitable for low power applications with current options up to 2 A
- ✓ Lower voltage conversion and isolation

#### UNO DC/DC converter

- ✓ Converts high voltage to low voltage for solar applications
- ✓ Wide input voltage ranging from 300 V DC ... 1000 V DC
- ✓ UL 1741 certified for simplified system approval

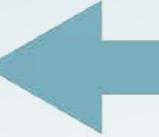
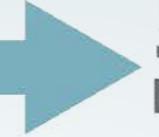


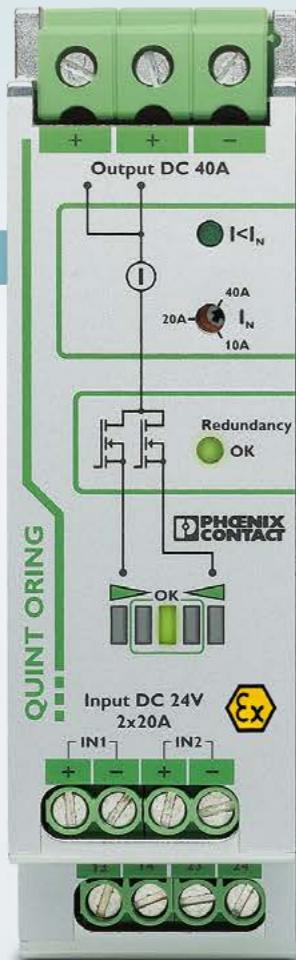
## Conversion

### Redundancy modules

A dependable redundant system decouples a parallel connection of two power supplies with an active redundancy module. Decoupling the power supplies ensures that a fault on one power supply will not affect the other power supply. Phoenix Contact provides many options for a reliable redundant power system including:

- QUINT ORING – decouples, monitors, and controls
- QUINT S-ORING – decouples and monitors
- Basic diode modules – decouples

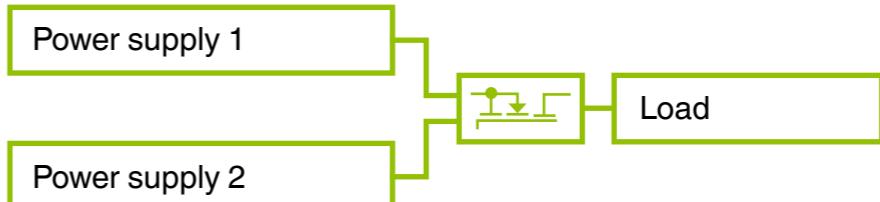
50 % Power   50 % Power



**ACB**  
TECHNOLOGY

### QUINT ORING

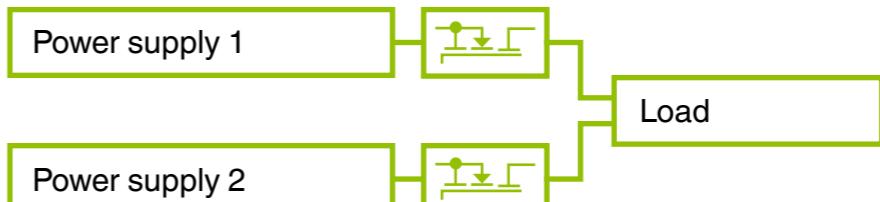
- ✓ Active decoupling with MOSFETs ensuring low energy losses
- ✓ Monitors the voltage, wiring, and load current
- ✓ Uses Auto Current Balancing to maintain load sharing



### QUINT S-ORING

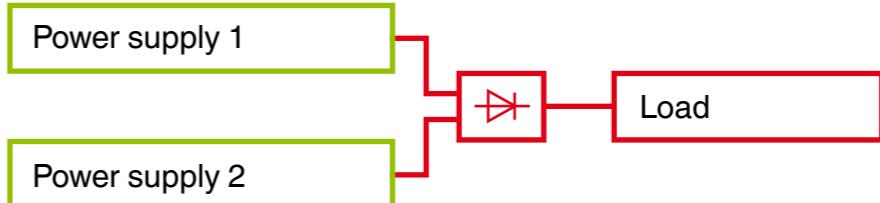
- ✓ Single-channel redundancy to maintain a redundant system
- ✓ Active decoupling with MOSFETs ensuring low energy losses
- ✓ Facilitates a design for SIL3 requirements



### Diodes

- ✓ Simple decoupling with diodes
- ✓ QUINT, TRIO, and UNO options available for easy selection
- ✓ QUINT options are approved for hazardous locations



## Conversion

# Uninterruptible power supplies

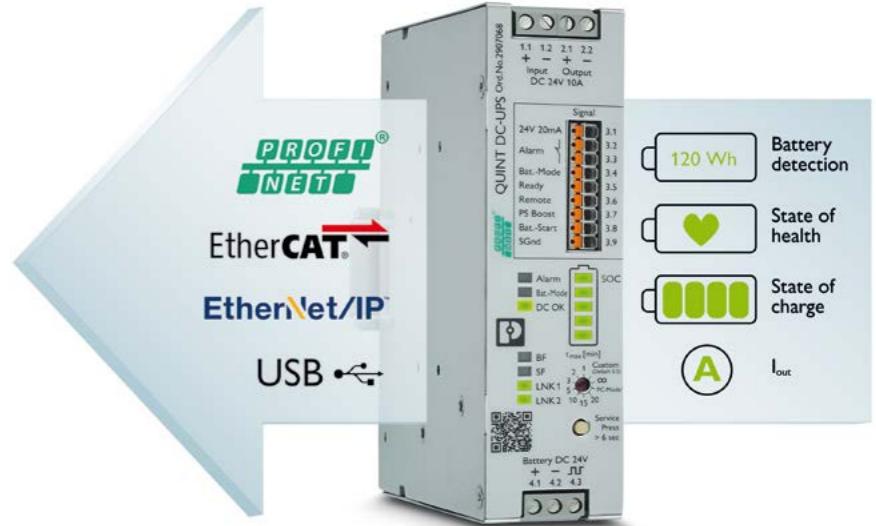
Mains interruptions can have serious consequences. Don't take any risks. Rely on our uninterrupted power supplies. Phoenix Contact provides the DC and AC UPS solutions for optimum system availability, even in the event of a mains failure.

- DC battery backup options
- AC battery backup options



## QUINT UPS for DC applications

- ✓ IQ technology providing the state of health and charge of the battery
- ✓ Permanent power boost of up to 125 percent
- ✓ Remote battery start function
- ✓ Powerful battery charging circuit allowing for fast battery charging
- ✓ Easy monitoring, configuring, and remote shutdown



## Integrated industrial Ethernet protocols

- PROFINET
- EtherNet/IP™
- EtherCAT®

## QUINT UPS for AC applications

- ✓ Delivers a pure sine wave
- ✓ Offline and online options available
- ✓ Fan-free heat dissipation via convection cooling
- ✓ Multiple diagnostic outputs for system monitoring
- ✓ Remote battery start function
- ✓ USB interface for connection to industrial PCs and controllers



## Conversion Energy storage

Energy storage devices provide quality and reliability. With a variety of energy storage options for our modular system of uninterruptible power supplies, you will always have the ideal solution for your system. When connected with our intelligent UPS, the energy storage devices will be automatically detected, allowing for fast and easy installation. The energy storage system communicates with the UPS allowing for continuous monitoring and predictive maintenance. Our various energy storage alternatives offer a wide range of different features and benefits.

- VRLA batteries for maximum buffer times
- VRLA-WTR batteries for the use in extreme temperatures
- LI-ION batteries for a long service life
- CAP modules for maximum service life and minimal maintenance



### VRLA batteries

- ✓ Cost-effective valve regulated lead acid (VRLA) storage modules
- ✓ Tool-free battery replacement
- ✓ Batteries can be hot-swappable
- ✓ Options ranging from 1.3 Ah to 38 Ah



### VRLA-WTR

- ✓ Valve regulated lead acid storage modules with a wide temperature range
- ✓ Operating temperature ranging from -25°C ... 60°C
- ✓ Industrial mounting bracket available
- ✓ Options ranging from 13 Ah to 26 Ah



### LI-ION

- ✓ Lithium iron phosphate technology
- ✓ Operating temperature ranging from -20 °C ... 58 °C
- ✓ Provides a long service life with long buffer times
- ✓ Options ranging from 120 Wh to 924 Wh



### CAP modules

- ✓ Maintenance-free electrolytic capacitors
- ✓ Operating temperature ranging from -40 °C ... 60 °C
- ✓ High MTBF and short recharging times
- ✓ QUINT CAP modules are ideal for buffering sensitive devices during a short duration power loss



## Common products for conversion

### AC/DC power supplies

A. Do you need a single-phase or a three-phase power supply?		D. Does the power supply need Class I, Division 2 rating?			
B. What is the output DC voltage?		E. Type description			
C. What is your output current? (amps)		F. Resulting Phoenix Contact part number			
A. Phase	B. Output voltage	C. Output current	D. Class I, Div. 2	E. Type description	F. Order #
Single phase	5V DC	5A	Yes	UNO-PS/1AC/5DC/25W	2904374
		8A	Yes	UNO-PS/1AC/5DC/40W	2904375
		2.5A	Yes	UNO-PS/1AC/12DC/30W	2902998
		4.6A	Yes	UNO-PS/1AC/12DC/55W	2902999
		8.3A	Yes	UNO-PS/1AC/12DC/100W	2902997
	12 V DC	10A	Yes	TRIO-PS-2G/1AC/12DC/10	2903158
		20A	Yes	QUINT-PS/1AC/12DC/20	2866721
		2A	Yes	UNO-PS/1AC/15DC/30W	2903000
		3.67A	Yes	UNO-PS/1AC/15DC/55W	2903001
		6.67A	Yes	UNO-PS/1AC/15DC/100W	2903002
24 V DC	15 V DC	1.25A	Yes	UNO-PS/1AC/24DC/30W	2902991
		1.3A	Yes	QUINT4-PS/1AC/24DC/1.3/PT	2909575
		1.3A	Yes	QUINT4-PS/1AC/24DC/1.3/SC	2904597
		2.5A	Yes	UNO-PS/1AC/24DC/60W	2902992
		2.5A	Yes	TRIO-PS/1AC/24DC/2.5	2866268
		2.5A	Yes	QUINT4-PS/1AC/24DC/2.5/PT	2909576
		2.5A	Yes	QUINT4-PS/1AC/24DC/2.5/SC	2904598
		3.5A	Yes	QUINT-PS/1AC/24DC/3.5	2866747
		3.75A	Yes	UNO-PS/1AC/24DC/90W/C2LPS	2902994
		3.8A	Yes	QUINT4-PS/1AC/24DC/3.8/PT	2909577
	48 V DC	3.8A	Yes	QUINT4-PS/1AC/24DC/3.8/SC	2904599
		4.2A	Yes	UNO-PS/1AC/24DC/100W	2902993
		5A	Yes	QUINT4-PS/1AC/24DC/5	2904600
		5A	Yes	TRIO-PS-2G/1AC/24DC/5	2903148
		10A	Yes	QUINT4-PS/1AC/24DC/10	2904601
		10A	Yes	TRIO-PS-2G/1AC/24DC/10	2903149
		20A	Yes	QUINT4-PS/1AC/24DC/20	2904602
		1.25A	Yes	UNO-PS/1AC/48DC/60W	2902995
		5A	Yes	QUINT-PS/1AC/48DC/5	2866679
		5A	Yes	TRIO-PS-2G/1AC/48DC/5	2903159
Three phase	24 V DC	10A	Yes	QUINT4-PS/1AC/48DC/10	2904611
		10A	Yes	TRIO-PS-2G/1AC/48DC/10	2903160
		20A	Yes	QUINT-PS/1AC/48DC/20	2866695
		5A	Yes	QUINT4-PS/3AC/24DC/5	2904620
		5A	Yes	TRIO-PS-2G/3AC/24DC/5	2903153
	48 V DC	10A	Yes	QUINT4-PS/3AC/24DC/10	2904621
	10A	Yes	TRIO-PS-2G/3AC/24DC/10	2903154	
	20A	Yes	QUINT4-PS/3AC/24DC/20	2904622	
	20A	Yes	QUINT-PS/3AC/48DC/20	2320827	

### DC/DC converters

A. What is the input DC voltage?		D. Does the power supply need Class I, Division 2 rating?			
B. What is the output DC voltage?		E. Type description			
C. What is your output current? (amps)		F. Resulting Phoenix Contact part number			
A. Input voltage	B. Output voltage	C. Output current	D. Class I, Div. 2	E. Type description	F. Order #
12 V DC	12 V DC	8A	Yes	QUINT-PS/12DC/12DC/8	2905007
12 V DC	24 V DC	5A	Yes	QUINT-PS/12DC/24DC/5	2320131
24 V DC	12 V DC	8A	Yes	QUINT-PS/24DC/12DC/8	2320115
24 V DC	24 V DC	5A	Yes	QUINT-PS/24DC/24DC/5	2320034
		5A	Yes	QUINT-PS/24DC/24DC/5/CO	2320542
		10A	Yes	QUINT-PS/24DC/24DC/10	2320092
		10A	Yes	QUINT-PS/24DC/24DC/10/CO	2320555
		20A	Yes	QUINT-PS/24DC/24DC/20	2320102
24 V DC	48 V DC	5A	Yes	QUINT-PS/24DC/48DC/5	2320128
48 V DC	24 V DC	5A	Yes	QUINT-PS/48DC/24DC/5	2320144
48 V DC	48 V DC	5A	Yes	QUINT-PS/48DC/48DC/5	2905008
60 ... 72 V DC	24 V DC	10A	Yes	QUINT-PS/60-72DC/24DC/10	2905009
		10A	Yes	QUINT-PS/60-72DC/24DC/10/CO	2905011

### Redundancy modules

A. What is the input DC voltage?		D. Does the power supply need Class I, Division 2 rating?			
B. What is the output DC voltage?		E. Type description			
C. What is your output current? (amps)		F. Resulting Phoenix Contact part number			
A. Input voltage	B. Output voltage	C. Output current	D. Class I, Div. 2	E. Type description	F. Order #
12...24 V DC	12...24 V DC	2 x 20 A/1 x 40 A	Yes	QUINT4-DIODE/12-24DC/2x20/1x40	2907719
48 V DC	48 V DC	2 x 10 A/1 x 20 A	Yes	QUINT4-DIODE/48DC/2x20/1x40	2907720
24 V DC	24 V DC	2 x 20 A/1 x 40 A	Yes	QUINT-ORING/24DC/2x20/1x20	2320173
		2 x 40 A/1 x 80 A	Yes	QUINT-ORING/24DC/2x20/1x40	2320186
		2 x 40 A/1 x 80 A	Yes	QUINT-ORING/24DC/2X40/1X80	2902879

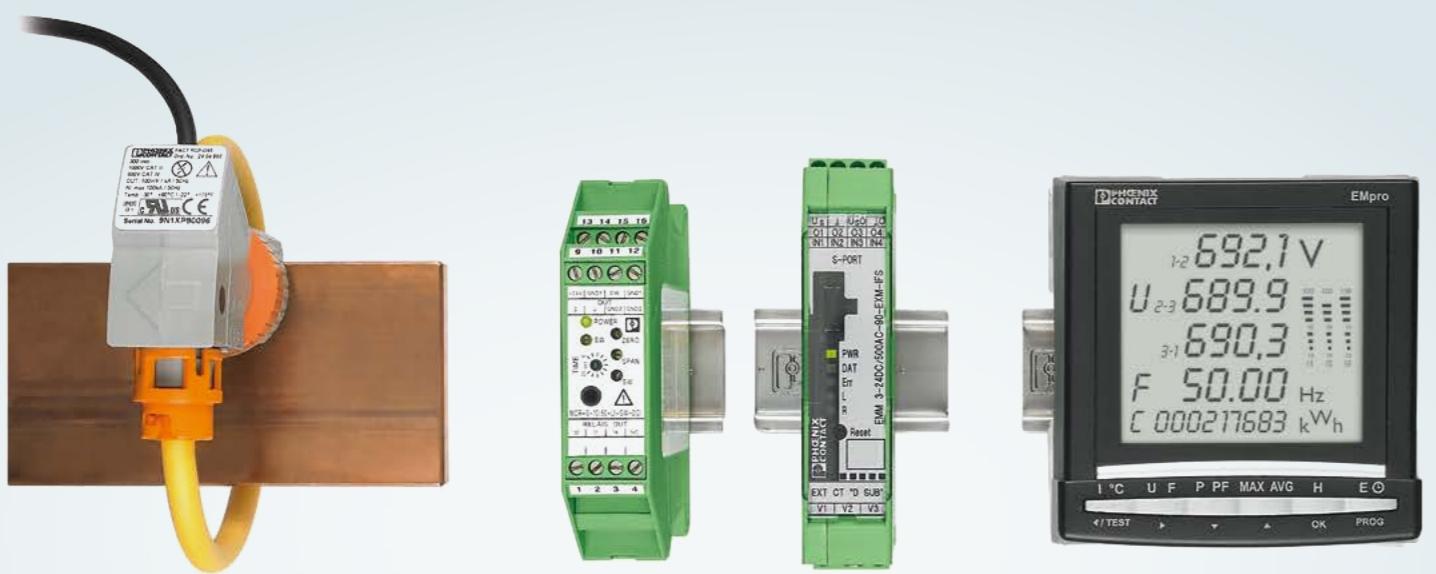
### DC UPS

A. What is the input DC voltage?		D. Does the power supply need Class I, Division 2 rating?			
B. What is the output DC voltage and output current?		E. Type description			
C. What industrial network are you working with?		F. Resulting Phoenix Contact part number			
A. Input voltage	B. Output voltage and current	C. Industrial network	D. Class I, Div. 2	E. Type description	F. Order #
24 V DC	24V DC/5 A	PROFINET	Yes	QUINT4-UPS/24DC/24DC/5/PN	2906993
	24V DC/10 A	PROFINET	Yes	QUINT4-UPS/ 24DC/ 24DC/10/PN	2907068
	24V DC/20 A	PROFINET	Yes	QUINT4-UPS/ 24DC/ 24DC/20/PN	2907073
	24V DC/5 A	Ethernet/IP	Yes	QUINT4-UPS/ 24DC/ 24DC/5/EIP	2906994
	24V DC/10 A	Ethernet/IP	Yes	QUINT4-UPS/ 24DC/ 24DC/10/EIP	2907069
	24V DC/20 A	Ethernet/IP	Yes	QUINT4-UPS/ 24DC/ 24DC/20/EIP	2907074
	24V DC/5 A	EtherCAT	Yes	QUINT4-UPS/ 24DC/ 24DC/5/EC	2906996
	24V DC/10 A	EtherCAT	Yes	QUINT4-UPS/ 24DC/ 24DC/10/EC	2907070
	24V DC/20 A	EtherCAT	Yes	QUINT4-UPS/ 24DC/ 24DC/20/EC	2907076
	24V DC/5 A	USB	Yes	QUINT4-UPS/ 24DC/ 24DC/5/USB	2906991
	24V DC/10 A	USB	Yes	QUINT4-UPS/ 24DC/ 24DC/10/USB	2907067
	24V DC/20 A	USB	Yes	QUINT4-UPS/ 24DC/ 24DC/20/USB	2907072
	24V DC/5 A	No interface	Yes	QUINT4-UPS/ 24DC/ 24DC/5	

# Monitoring

## System reliability. User accountability. Process efficiency.

Just-in-time maintenance starts with machine health data. Energy efficiency improvement relies on identifying waste. However, it is impossible to know what is happening or what can be improved within a machine if it is not being monitored. Basic monitoring provides a greater edge in maintaining an efficient, reliable system with minimal downtime.



Goodbye reactive maintenance, hello just-in-time services! Phoenix Contact's energy monitoring products provide insights into your equipment's state of health and power consumption trends, empowering you to make informed maintenance and operational decisions.

## Voltage transducers

Voltage is a good indicator of overall power system health. Voltage touches every component in a system – applying the incorrect voltage can result in severe equipment damage, improperly charged batteries, or even burned up electrical motors. Easily convert up to 660 V AC to standard analog signals.



## Current transducers

Current can be used to readily detect the state of health of processes or individual pieces of equipment. Each end-device is designed to consume a nominal amount of current. Device failure can be detected preeminently by observing changes in current draw over time.



## Energy meters

Within industrial systems, power consumption gives granular details that can be missed by monitoring voltage or current alone. Monitoring power has several benefits in addition to helping to predict failures; power thresholds can detect clogged filters, overloaded motors, and more.



## Monitoring relays

Monitoring relays offer a unique packaged solution to protect against undesirable conditions. Sometimes, a simple threshold switch is all that is needed to protect against or detect an undesirable condition. Spot heater and lighting failures, prevent brown-out voltage damage, ensure proper three-phase motor rotation, all with self-contained monitoring relays.

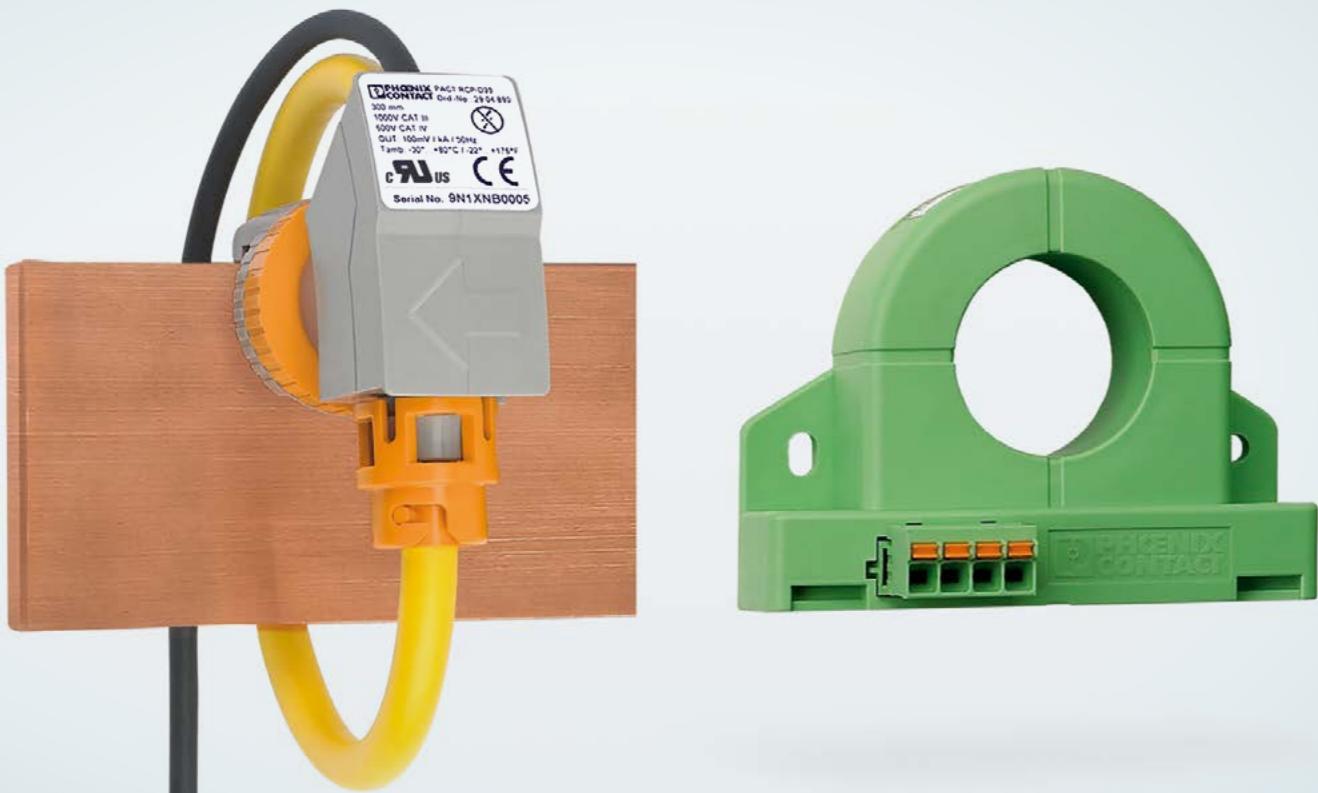


## Monitoring

### Voltage and current transducers

Transducers tackle the difficult task of measuring high currents and voltages, allowing you to incorporate these measurements into a control system using standard analog signals. By building up a network of voltage and current sensors, system and machine health can be continuously monitored for fault conditions.

- Voltage transducers – analog measurement of AC and DC voltages
- Current transducers – analog measurement of AC, DC, and distorted currents
- Fixed and programmable range modules – solutions for both precise and universal applications



### AC/DC voltage transducers

- AC and DC solutions
- Bidirectional output signals for DC applications
- Multiple input ranges for higher precision
- ZERO/SPAN adjustment +/-20 percent
- Up to 660 V measuring capability



### AC/DC current transducers

- Customizable input/output ranges
- Available alarm contacts
- Can be ordered pre-configured
- Compact devices up to 55 A
- DIN rail- or direct-mount devices up to 600 A



### AC current transducers

- Measure sinusoidal and distorted currents
- Easily retrofit existing conductors
- Convert 0-1 A/0-5 A AC current transformers to analog outputs
- Compact devices up to 16 A
- DIN rail- or direct-mount devices up to 400 A



### Retrofit solutions for AC current

- Touch-safe Rogowski principle of operation
- Flexible and compact coil allows for easy retrofitting
- Choice of 0-1 A AC output or analog output
- Tool-free installation with unique bus bar clamp
- One part covers ranges from 0-100 A to 0-4000 A AC



## Monitoring

# Energy meters and monitoring relays

Energy meters combine the measurement of current and voltage to offer more complex insights into system operations. Monitoring relays offer prepackaged solutions to protect against undesirable conditions within systems.

- Energy meters – measure, communicate, and display AC energy data
- Electronic motor managers – turns energy data into actionable, just-in-time maintenance events
- Voltage and current monitoring relays – monitor DC, single phase, and three phase systems
- Additional monitoring relays – detection of tank levels, power factor, and energy usage thresholds



## Energy meters

- ✓ DIN rail-mount and panel-mount options
- ✓ Modbus communications
- ✓ Expandable platform with wide-range inputs
- ✓ Value-oriented for machine monitoring
- ✓ Measure AC parameters such as voltage, current, power, energy, harmonics, and more



## Electronic motor managers

- ✓ Turn motors into sensors – avoid additional costs
- ✓ Power consumption can predict maintenance needs
- ✓ Instantly detect overloads, underloads, and failures
- ✓ Freely-configurable warning and alarm thresholds
- ✓ Schedule maintenance events only when needed



## Compact monitoring relays

- ✓ Compact housings with available PT connection
- ✓ Implementation of essential functions
- ✓ Monitor voltage, current, and phases
- ✓ Line-powered modules
- ✓ Cost-effective solutions for serial production



## Multi-function monitoring relays

- ✓ Wide-range power supplies for global applications
- ✓ Multi-function modules reduces inventory needs
- ✓ Customizable thresholds and delay times
- ✓ Protect a variety of systems
- ✓ Monitor voltage, current, phases, temperature, level, power, and power-factor



## Common products for monitoring

Transducers						
A. What is being measured?						
B. Is it AC or DC?						
C. What is the measuring range?						
D. What is the desired output?						
E. Resulting Phoenix Contact part number						
Have you considered surge protection?						
A. Voltage	B. AC or DC	C. Measuring range	D. Output	Type-description	E. Order #	
A. Current	AC	0 ... 24/36/54/80/120/170/250/370/550 V AC	0-10 V/4-20 mA	MACX MCR-VAC	2906239	
	DC	± 0 ... 24/36/54/80/120/170/250/370/550 V DC	0-10V/4-20 mA (unipolar mode)	MACX MCR-VDC	2906242	
	DC	0 ... 1500 V DC	2-10 V	SCK-M-U-1500V	2903591	
	AC/DC	0 ... 1/5/10 A AC/DC	0-10 V/4-20 mA	MCR-S-1-5-UI-DCI-NC	2814715	
		0 ... 12.5/20/55 A AC/DC	0-10 V/4-20 mA	MCR-S10-50-UI-DCI-NC	2814728	
		0 ... 100 A AC/DC	0-10 V	MCR-SL-CUC-100-U	2308108	
		0 ... 100 A AC/DC	4-20 mA	MCR-SL-CUC-100-I	2308027	
		0 ... 200 A AC/DC	0-10 V	MCR-SL-CUC-200-U	2308205	
		0 ... 200 A AC/DC	4-20 mA	MCR-SL-CUC-200-I	2308030	
		0 ... 300 A AC/DC	0-10 V	MCR-SL-CUC-300-U	2308302	
		0 ... 300 A AC/DC	4-20 mA	MCR-SL-CUC-300-I	2308043	
		0 ... 400 A AC/DC	4-20 mA	MCR-SL-CUC-400-I	2308072	
		0 ... 500 A AC/DC	4-20 mA	MCR-SL-CUC-500-I	2308085	
		0 ... 600 A AC/DC	4-20 mA	MCR-SL-CUC-600-I	2308098	
	AC	0 ... 1/5 AC	4-20 mA	MACX MCR-SL-CAC 5-I	2810612	
		0 ... 5/12 A AC	4-20 mA	MACX MCR-SL-CAC 12-I-UP	2810638	
		0 ... 50/75/100 A AC	0-10 V	MCR-SL-S-100-U	2813457	
		0 ... 50/75/100 A AC	4-20 mA	MCR-SL-S-100-I-LP	2813486	
		0 ... 100/150/200 A AC	0-10 V	MCR-SL-S-200-U	2813460	
		0 ... 100/150/200 A AC	4-20 mA	MCR-SL-S-200-I-LP	2813499	
Monitoring relays						
A. What is being monitored?						
B. Is it AC or DC?						
C. What is the desired function?						
D. What is the measuring range?						
E. Resulting Phoenix Contact part number						
A. Application	B. AC or DC	C. Function	D. Measuring range	Type-description	E. Order #	
Voltage	AC/DC	Undervoltage, window	0 ... 24 V AC/DC, 0 ... 230 V AC	EMD-BL-V-230	2903523	
		Undervoltage	0 ... 30/60/300 V AC/DC	EMD-SL-V-UV-300	2866035	
		Undervoltage, overvoltage, window	0 ... 30/60/300 V AC/DC	EMD-FL-V-300	2866048	
3 Φ voltage	AC	Window, phase sequence	280 ... 519 V AC	EMD-BL-3V-400	2903525	
		Undervoltage, phase monitoring	161 ... 299 V AC	EMD-FL-3V-230	2885773	
		Undervoltage, phase monitoring	280 ... 520 V AC	EMD-FL-3V-400	2866064	
		Phase sequence, phase failure, asymmetry	187 ... 519 V AC	EMD-BL-PH-480	2903527	
		Undervoltage, phase sequence, phase failure	177 ... 794 V AC	EMD-SL-PH-690	2905597	
Current	AC/DC	Undercurrent	0 ... 100 mA/ 0 ... 1 A/0 ... 10A	EMD-SL-C-UC-10	2867937	
		Overcurrent	0 ... 100 mA/ 0 ... 1 A/0 ... 10A	EMD-SL-C-OC-10	2866019	
		Overcurrent, undercurrent, window	0 ... 100 mA/ 0 ... 1 A/0 ... 10A	EMD-FL-C-10	2866022	
3 Φ power	AC	Underload, overload, window	0 ... 12 A/0 ... 480 V AC	EMD-FL-RP-480	2900177	
3 Φ powerfactor	AC	Underload, overload, window	0 ... 10 A/0 ... 415 V AC	EMD-FL-PF-400	2885809	
Motor temperature	-	Winding temperature threshold	Up to 6 PTCs	EMD-SL-PTC	2866093	

Rogowski Coil solutions					
A. Range					
B. What is the desired output?					
C. What is the desired coil diameter?					
D. What is the desired signal lead length					
E. Resulting Phoenix Contact part number					
A. Range	B. Output	C. Coil diameter	D> Signal lead length	Type-description	E. Order #
DIP-Selectable: 0 ... 100 A AC 0 ... 250 A AC 0 ... 400 A AC 0 ... 630 A AC 0 ... 1000 A AC 0 ... 1500 A AC 0 ... 2000 A AC 0 ... 4000 A AC	0 ... 10 V/4 ... 20 mA	3.75"	3 meters	PACT RCP-4000A-UIRO-D95	2906231
		5.5"		PACT RCP-4000A-UIRO-D140	2906232
		7"		PACT RCP-4000A-UIRO-D190	2906233
0 ... 1 A AC (True CT output)	0 ... 1 A AC (True CT output)	3.75"	3 meters	PACT RCP-4000A-1A-D95	2904921
		5.5"		PACT RCP-4000A-1A-D140	2904922
		7"		PACT RCP-4000A-1A-D190	2904923
0 ... 1 A AC (True CT output)	0 ... 1 A AC (True CT output)	3.75"	5 meters	PACT RCP-4000A-1A-D95-5M	2910325
		3.75"		PACT RCP-4000A-1A-D95-10M	2910326
		7"		PACT RCP-4000A-1A-D190-10M	2910327

Energy meters							
A. What is the measured voltage?							
B. Will the meter be DIN-mounted or panel-mounted?							
C. What is the desired communications interface?							
D. What is the meter power supply voltage?							
E. Resulting Phoenix Contact part number							
F. Required accessories							
A. Measured voltage	B. Mounting	C. Communications	D. Power supply voltage	Type-description	E. Order #	F. Accessories	
50 ... 519 V AC	DIN rail	None	100 ... 277 V AC	EEM-MA200	2901362	-	
50 ... 519 V AC	DIN rail	Modbus RS-485	100 ... 277 V AC	EEM-MA250	2901363	-	
50 ... 519 V AC	Panel	None	100 ... 400 V AC	EEM-MA400	2901364	-	
50 ... 519 V AC	Panel	Modbus RS-485	100 ... 400 V AC	EEM-MA400	2901364	2901365	
18 ... 700 V AC	Panel	None	100 ... 400 V AC	EEM-MA600	2901366	2901367	
		Modbus RS-485				2901373	
		Modbus TCP/IP				-	
18 ... 700 V AC	Panel	None	12 ... 48 V DC	EEM-MA600-24DC	2902352	2901367	
		Modbus RS-485				2901373	
		Modbus TCP/IP				-	
-	DIN rail mounting adapter	Fits EEM-MA400 and EEM-MA600	-	-	EEM-MKT-DRA	2902078	-



Voltage transducers



Current transducers



Energy meters



Monitoring relays

# Distribution

## Fundamental reliability starts with quality connections

It is often said that one should never overlook the basics. When it comes to electrical connections, it couldn't be more true. Every wire in a control system has a purpose – every connection counts. Phoenix Contact is proud to offer a wide variety of high quality power distribution solutions, all built around the industry's most robust connection technologies.



Founded in 1923, Phoenix Contact developed the first terminal block in 1928, which became fully patented in 1935. This was definitively the world's first modular, rail-mounted terminal block. Since that time, our expertise and innovation have continued to grow into the industry's broadest range of connectivity solutions offered today.

## Terminal blocks

Streamline inventory and simplify assembly with the CLIPLINE Complete modular terminal block system. No matter which of the five connection technologies is utilized, accessories are universal and can be used on any and every terminal block that is a member of the CLIPLINE Complete family.



## Modular power distribution

Power distribution with no bridging required. Prepackaged power distribution blocks with modular designs allow for a wide range of customization. PTFIX distribution blocks are offered in multiple sizes and configurations for DIN rail- and direct-mounting.



## Power distribution modules

Single part number solutions for fast and easy distribution of two potentials. Save time, DIN rail space, and inventory hassle with VIP power distribution modules. Offered in 8-, 12-, 16-, and 24-circuit varieties.



## DIN rail outlets

Convenience outlets provide power where it's needed. Whether it's powering a laptop, cellular devices, or tools, machine service is simplified and safer when an outlet is furnished. Available single and duplex outlets offer a range of options and plug configurations for domestic and global applications.

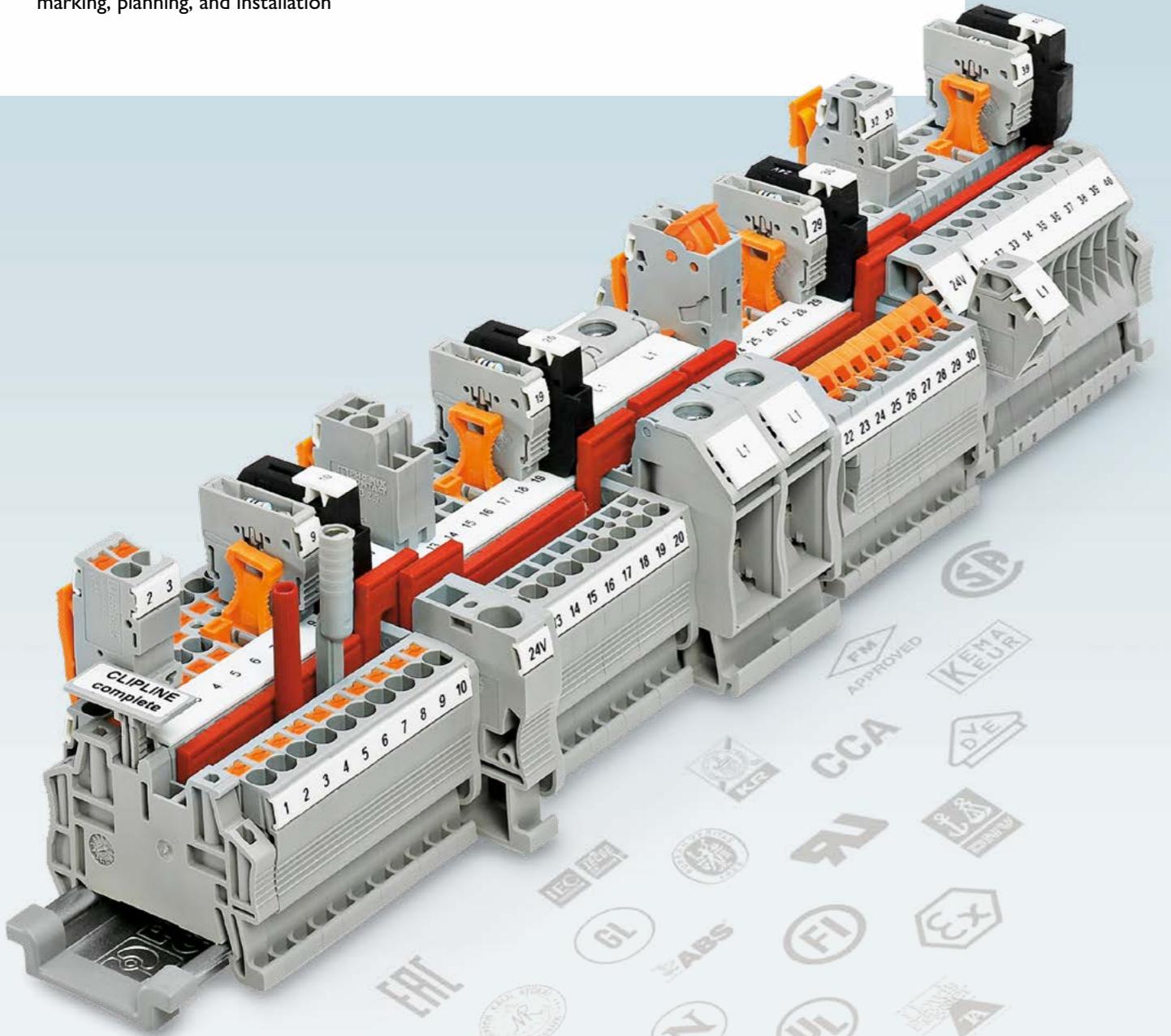


## Distribution

### Terminal block solutions

For nearly 100 years, Phoenix Contact has been a leading global innovator and manufacturer of terminal block solutions. We are proud to offer a complete terminal block portfolio with virtually endless opportunities for customization. Thanks to 5 available connection technologies, universal accessories, and a wide variety of sizes and terminal arrangements, the right terminal block is always available.

- Modular terminal blocks – inventor and market leader of terminal block solutions
- Push-in terminal (PT) – innovative technology now available in over 10,000 parts
- High productivity – full line of marking solutions and simplified accessories for streamlined marking, planning, and installation



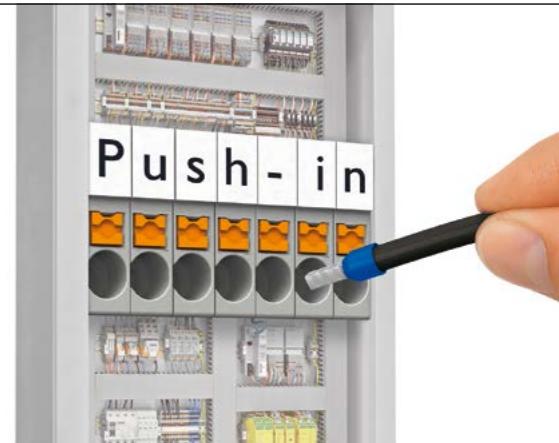
### CLIPLINE Complete

- ✓ Universal accessories
- ✓ Modular design
- ✓ Wide variety of configurations and colors
- ✓ 5 available connection technologies:
  - Screw (UT)
  - Push-in (PT)
  - Spring (ST)
  - Bolt (RT)
  - Insulation displacement (QTC)



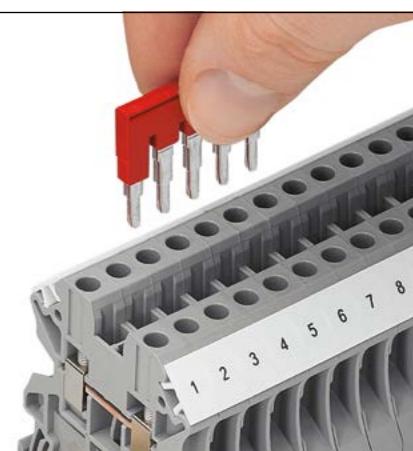
### PT Push-in Technology

- ✓ Push-in Technology, designed by Phoenix Contact
- ✓ Tool-free installation
- ✓ 50% less insertion force, 50% faster to wire
- ✓ Consistent torque-free and vibration-proof connections
- ✓ Wire retention like no other: performs at 5 times the required IEC pull-out rating



### FBS insertion bridging

- ✓ Tool-free installation
- ✓ Dual-bridging channels
- ✓ Skip bridges for distributing two potentials
- ✓ Step bridges for feed-in and distribution blocks
- ✓ Compatible with all CLIPLINE Complete terminal blocks



### Fuse terminal blocks

- ✓ Fixed and removable fuse holders
- ✓ Available blown-fuse indicator LED
- ✓ Wide range of sizes and styles
- ✓ Simple power distribution using FBS bridging
- ✓ Optional plug-in circuit breaker modules
- ✓ Multi-level blocks reduce required space

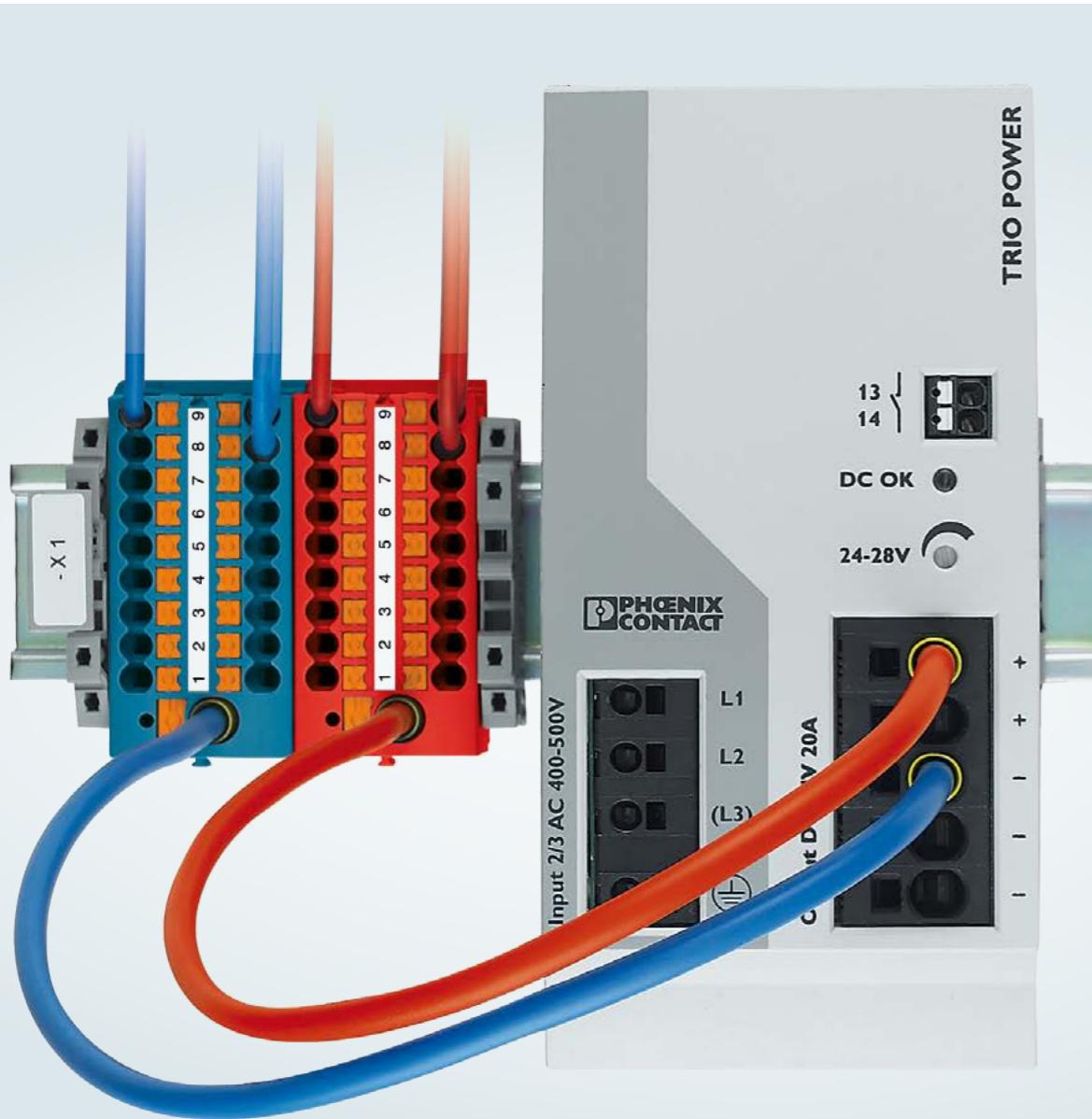


## Distribution

### Power distribution modules and solutions

Time is money – multiple part numbers are a hassle. Simplify power distribution with power distribution modules. Power distribution modules are pre-packaged solutions that are designed to save space, time, and part number requirements, all while allowing you to be more productive and your connections to be more reliable.

- Simplified power distribution – reduced component counts and installation times
- Wide range of products – solutions for systems of all sizes and power requirements
- Installation flexibility – multiple mounting options, including DIN rail, direct-mount, and adhesive-mount



#### PTFIX

- ✓ Ready-to-use blocks require no bridging
- ✓ Available with or without feed-in terminal
- ✓ Supports up to 8 AWG wire
- ✓ DIN rail, direct, or adhesive mounting
- ✓ Space savings up to 50 percent
- ✓ Available in 11 colors



#### PTFIX Modular

- ✓ Fully-customizable solution
- ✓ Mix and match feed-thru blocks with power distribution blocks
- ✓ Available in 11 colors
- ✓ Replaces standard terminal block solutions with a smaller footprint and fewer required parts



#### VIP power distribution modules

- ✓ Single part number solution
- ✓ Distribute 2 potentials
- ✓ 8-, 12-, 16-, and 24-circuit varieties
- ✓ Compact footprint
- ✓ Reduces installation time up to 47 percent



#### DIN rail outlets

- ✓ Single and duplex outlets
- ✓ Available GFCI outlets
- ✓ Domestic and global plug types
- ✓ DIN rail-mounting provides simple installation
- ✓ Easily distribute 120 V AC for plug-connected loads
- ✓ Provides convenience for service and maintenance



## Common products for distribution

### PTFIX

- A. What mounting method is preferred?
- B. What wire size(s) and ratings are needed?
- C. How many connection points?
- D. Resulting Phoenix Contact part number

A. Mounting method	B. Wire range of terminals		B. UL ratings	C. # of terminal points	Description	D. Order #
	Taps	Feed-in				
Direct mounting w/flange	26-14 AWG	-	15 A/300 V	6	PTFIX 6X1.5 GY	3002757
Direct mounting w/flange	26-14 AWG	-	15 A/300 V	12	PTFIX 12X1.5 GY	3002758
Direct mounting w/flange	26-14 AWG	-	15 A/300 V	18	PTFIX 18X1.5 GY	3002760
35mm DIN rail	26-12 AWG	-	20 A/300 V	6	PTFIX 6X2.5-NS35A GY	3273132
35mm DIN rail	26-12 AWG	-	20 A/300 V	12	PTFIX 12X2.5-NS35A GY	3273154
35mm DIN rail	26-12 AWG	-	20 A/300 V	18	PTFIX 18X2.5-NS35A GY	3273176
35mm DIN rail, vertical	26-12 AWG	-	20 A/300 V	6	PTFIX 6X2.5-NS35 GY	3273000
35mm DIN rail, vertical	26-12 AWG	-	20 A/300 V	12	PTFIX 12X2.5-NS35 GY	3273022
35mm DIN rail, vertical	26-12 AWG	-	20 A/300 V	18	PTFIX 18X2.5-NS35 GY	3273044
35mm DIN rail	26-12 AWG	20-8 AWG	20 A (Taps), 50 A (Feed-in)/ 300 V	6	PTFIX 6/6X2.5-NS35A GY	3273198
35mm DIN rail	26-12 AWG	20-8 AWG	20 A (Taps), 50 A (Feed-in)/ 300 V	12	PTFIX 6/12X2.5-NS35A GY	3273220
35mm DIN rail	26-12 AWG	20-8 AWG	20 A (Taps), 50 A (Feed-in)/ 300 V	18	PTFIX 6/18X2.5-NS35A GY	3273242
35mm DIN rail, vertical	26-12 AWG	20-8 AWG	20 A (Taps), 50 A (Feed-in)/ 300 V	6	PTFIX 6/6X2.5-NS35 GY	3273066
35mm DIN rail, vertical	26-12 AWG	20-8 AWG	20 A (Taps), 50 A (Feed-in)/ 300 V	12	PTFIX 6/12X2.5-NS35 GY	3273088
35mm DIN rail, vertical	26-12 AWG	20-8 AWG	20 A (Taps), 50 A (Feed-in)/ 300 V	18	PTFIX 6/18X2.5-NS35 GY	3273110

Note: PTFIX is available in 11 colors and multiple mounting options. For a full overview of PTFIX, visit [www.phoenixcontact.com/PTFIX](http://www.phoenixcontact.com/PTFIX)

### DIN-mounted receptacles

- A. Single or duplex outlet?
- B. Standard or GFCI protection?
- C. Feed-thru or stand-alone?
- D. Resulting Phoenix Contact part number

A. Single or duplex	B. Standard or GFCI	C. Feed-thru or stand-alone	Type-description	D. Order #
15 A Single	Standard	Stand-alone	SD-US/SC/LA/GY	2963860
		Feed-thru	EMG 30-SD/US/15A	5604253
15 A Duplex	GFCI	Stand-alone	EM-DUO 120/15	5600461
		Feed-thru	EM-DUO 120/15/GFI/AUX	5600462
20 A Duplex	GFCI	Stand-alone	EM-DUO 120/20	5600525
		Stand-alone	EM-DUO 120/20/GFI	5602519
		Feed-thru	EM-DUO 120/20/GFI/AUX	5603049

### VIP power distribution modules (PDMs)

- A. PT or screw?
- B. Number of circuits?
- C. Fusing required?
- D. Resulting Phoenix Contact part number

A. Termination Type	B. Number of Circuits	C. Fusing	Type-Description	D. Order #
Screw Terminal	8	No	VIP-2/SC/PDM-2/16	2315256
	12	No	VIP-2/SC/PDM-2/24	2315269
	16	No	VIP-2/SC/PDM-2/32	2315272
PT Push-in Terminal	32	No	VIP-2/SC/PDM-2/48	2903717
	8	No	VIP-3/PT/PDM-2/16	2903797
	8	Yes	VIP-2/PT/PDM-2/16/FU 6.3A	2903603
PT Push-in Terminal	12	No	VIP-3/PT/PDM-2/24	2903798
	16	No	VIP-3/PT/PDM-2/32	2903799
	24	No	VIP-3/PT/PDM-2/48	2903800



Terminal blocks



PTFIX



PDMs



DIN rail outlets

### Modular terminal blocks

A. What connection style best fits your application?	E. Resulting Phoenix Contact part number
B. What wire size are you using?	F. End-cover accessory
C. What is your current (amps) requirement?	G. Will you be bridging terminals?
D. How many connection points?	H. What accessories are needed?

### A. Push-in Technology (PT)

B. AWG	C. I_max	D. Connections	Description	E. Order #	F. Cover	G. Bridge (2-pos.)	H. Screwdriver	H. Terminal marking
26-14	15	2	PT 1.5/S*	3208100	3208142	3213014	1204504	0829486
	-	2	PT 1.5/S PE*	3208139				
	15	3	PT 1.5/S-TWIN*	3208155				
	15	4	PT 1.5/S-QUATTRO*	3208197				
26-12	20	2	PT 2.5	3209510	3030417	3030161	1204517	0828744
	-	2	PT 2.5-PE	3209536				
	20	3	PT 2.5-TWIN	3209549				
	20	4	PT 2.5-QUATTRO	3209578				
	20	4	PTTB 2.5	3210567				
24-10	20	2	PTTB 2.5-PE	3210596	3030420	3030336	1204517	0828746
	30	2	PT 4	3211757				
	-	2	PT 4-PE	3211766				
	6.3	2	PT 4-HESI (5X20 FUSE)	3211861				
	6.3	3	PT 4-HESILED 24 (5X20 FUSE)	3211903				
	30	3	PT 4-TWIN	3211771				
	30	4	PT 4-QUATTRO	3211797				
	28	4	PTTB 4	3211786				
	-	4	PTTB 4-PE	3211854				

\* 18 AWG max, using plastic insulated ferrule. See UL file for use group rating

### A. Screw clamp (UT)

26-12	20	2	UT 2.5	3044076	3047028	3030161	1212587	0828734
	-	2	UT 2.5-PE	3044092				
	20	3	UT 2.5-TWIN	3044513				
	20	4	UT 2.5-QUATTRO	3044542				
26-10	20	2	UTTB 2.5	3044636	3047293	3030336		

# The Cabinet Confidence Limited Lifetime Warranty (LLW)

Phoenix Contact offers the industry's most comprehensive warranty program

Phoenix Contact USA customers have access to the industry's most extensive limited lifetime warranty policy. Phoenix Contact's Cabinet Confidence Limited Lifetime Warranty (LLW) applies to a wide range of Phoenix Contact products. LLW coverage is exclusive to U.S. customers who register and use Phoenix Contact power supplies and surge protection to protect electronics in their applications.

"For almost 100 years, engineers and automation professionals have relied on Phoenix Contact," said Jack Nehlig, President of Phoenix Contact USA. "With this exciting new Cabinet Confidence initiative, we are elevating our customer commitment to the next level — our goal is to be our customers' most trusted partner by improving the long-term reliability of their systems and applications."

Phoenix Contact is a world leader in industrial connection and automation technologies, electronic interface systems, and low-voltage power products. This LLW commitment is an extension of the trust customers have come to rely on.

## How to register

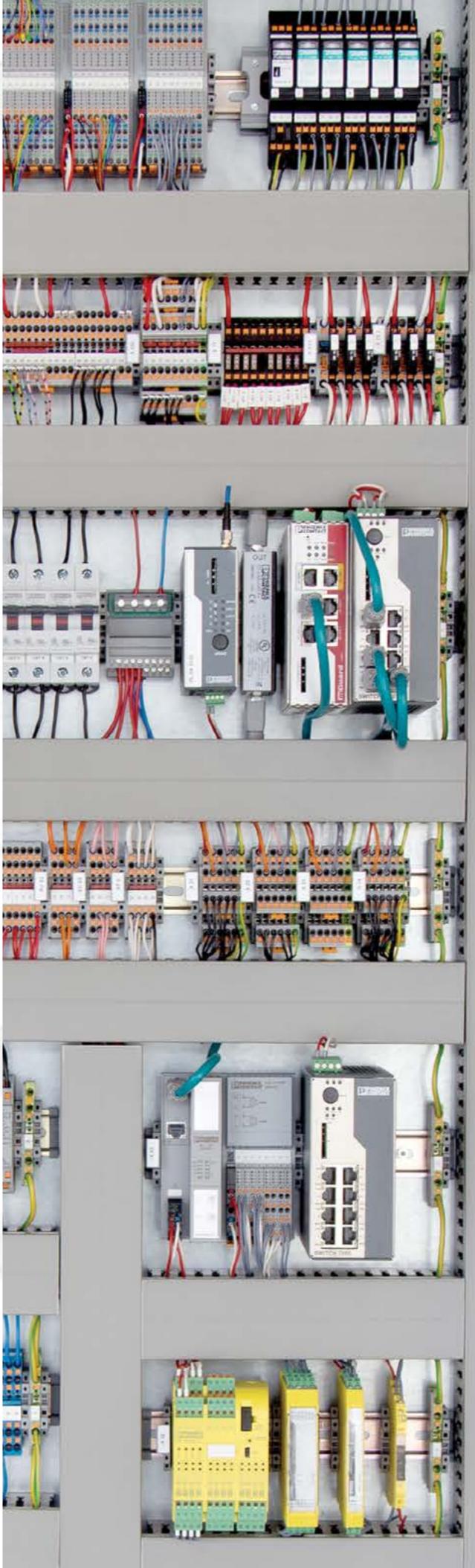
The following link will step you through the simple Limited Lifetime Warranty registration process. Register at: [www.phoenixcontact.com/LLW](http://www.phoenixcontact.com/LLW)

LLW coverage\* requires registration and appropriately powering and protecting all Phoenix Contact electronic products with Phoenix Contact power supplies and surge protection at all times.

\*Certain restrictions apply. Coverage is limited to Phoenix Contact products sold in the USA. See complete Terms and Conditions for full details.

## Common power supplies and surge protection suggested for LLW

System Type	Product	Input Voltage	Power supply nominal output	Description	Order #
Single phase	Power Supply	85VAC - 264 VAC	10 A/24 V DC	QUINT4-PS/1AC/24DC/10	2904601
	Surge Protection	120VAC	-	PLT-SEC-T3-120-FM-UT	2907918
	Surge Protection	240VAC	-	PLT-SEC-T3-230-FM-UT	2907919
Three phase	Power Supply	320VAC - 550VAC	10 A/24 V DC	QUINT4-PS/3AC/24DC/10	2904621
	Surge Protection	120/208VAC	-	VAL-US-120/40/3+1-FM	2910354
	Surge Protection	277/480VAC	-	VAL-US-277/40/3+1-FM	2910374



## Ongoing communication with customers and partners worldwide

Phoenix Contact is a global, market leader based in Germany. Our group is known for its 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 and 14,500 employees, we can stay in close contact with our customers, something we believe is essential to success. The wide variety of our innovative products makes it easy for our customers to find future-oriented solutions for multiple applications and industries. We especially focus on the fields of energy, infrastructure, process, and factory automation.



You will find our complete product range at:  
[www.phoenixcontact.com](http://www.phoenixcontact.com)

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