



Power & Signal Quality TRABTECH

PLUGTRAB PT-IQ

Intelligent and systematic
surge protection

Why use surge protection for measurement and control technology?

Signal interfaces are at far greater risk of surge voltages than power supply systems. This is a result of a) the numerous cables laid in parallel and b) the more sensitive input and output interfaces.

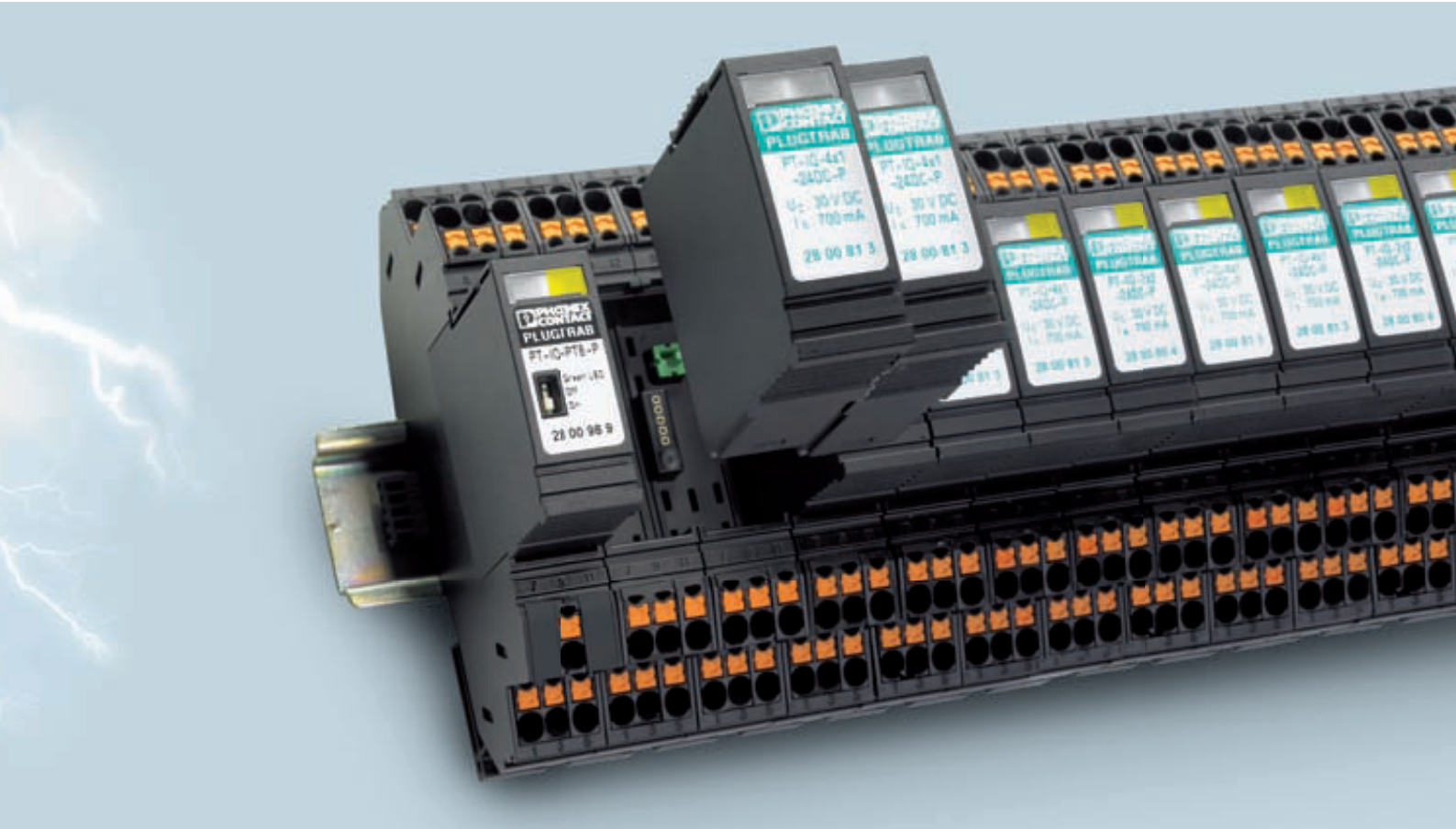
Based on the risk potential and safety level the interface claims to have, a variety of surge protective devices are used.

These are installed directly before the signal inputs to be protected. The circuits of these surge protective devices are adapted to the relevant signal types.

Hazard



Unexpected device damage or system failures in data, measurement, and control technology are often caused by surge voltages. These occur as a result of lightning effects or switching operations in the power supply network. Time-consuming troubleshooting, replacements, repairs, and downtimes can result in considerable follow-up costs.



Solution



Surge protection provides an effective method of limiting high-energy transients. This type of protective measure significantly increases the availability and operability of your devices and systems. Plug-in and self-monitoring protective systems are particularly convenient.

PLUGTRAB PT-IQ provides intelligent and systematic surge protection:

- Permanent and error-free installation
- Forward-looking monitoring
- Limitless extension
- Variable connection technology



Intelligent and systematic surge protection




PLUGTRAB PT-IQ is a new, forward-looking surge protection system with a variety of new features. Each voltage-limiting component of the protective circuit is intelligently monitored. This enables previous damage as a result of powerful surge voltages to be detected immediately. The function status is indicated and signaled remotely in multiple stages.

A controller manages the installed protective devices. At the same time, it also functions as the power supply unit and the central evaluation unit for all status signals.

As soon as each module is snapped on, the power supply and the status signal are connected. This considerably minimizes the amount of cabling required.

Forward-looking monitoring

PLUGTRAB PT-IQ performs multi-stage monitoring of the protective devices and issues group messages via the controller. A yellow status signal indicates that the performance limit has been reached as a result of frequent surge voltages. The arresters continue to function and your system is still protected. A replacement is, however, recommended in order to avoid unnecessary service operations. Remote signaling enables you to check how well your system is being protected at any time and place.

-  OK
-  Performance limit reached, replacement recommended
-  Overloaded, replacement required

Energy efficiency

The green LEDs on all protection modules can be switched off centrally via the controller.

PT-IQ-PTB-P



Vibration-resistant installation

The new latching guarantees a secure fit for installations in harsh environments. It holds the plug in place in the base element, even during extremely strong vibrations.



Error-free installation

Voltage keying and protection against polarity reversal.

Incorrect connection is not possible.



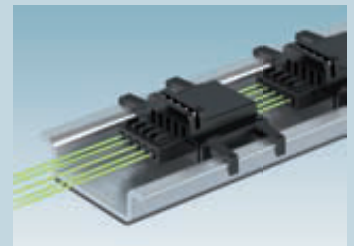
Space-saving installation

Up to five signal lines can be protected with one device. This requires a design width of just 17.5 mm on the DIN rail, meaning only 3.5 mm per signal line.



Permanent installation

Individual DIN rail connectors can be converted into a bus. This transmits the power supply and status information. Conventional wiring is not used.



Limitless extension

A controller supplies up to 28 protection modules with voltage via the DIN rail connectors. You can bridge these across DIN rails to supply additional protective devices. After 28 modules an additional controller must be installed in order to supply voltage.

Variable connection technology

Choose between the classic screw connection or push-in connection technology which is even faster to wire.



Push-in connection technology

PT push-in connection terminal blocks have been developed for direct conductor connection. This means that solid or stranded conductors with ferrules can be directly inserted into the terminal block without tools.

The special spring profile enables the easy insertion of conductors with ferrules with a cross section of 0.34 mm² or higher. The contact spring is opened automatically when the conductor is inserted and thereby always provides the required pressure force against the current bar.

When releasing conductors or connecting small cross sections from 0.14 mm², the spring is opened by means of the actuation lever – easily and without direct contact with live parts. This can be actuated with all standard screwdrivers.

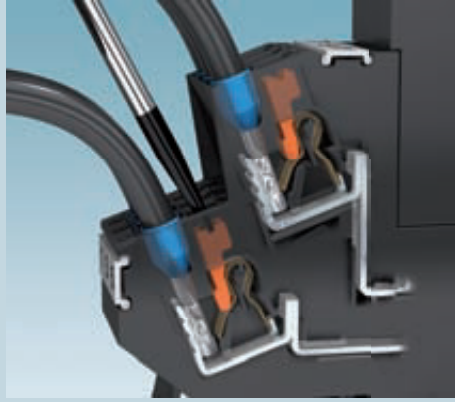
The benefits at a glance:

- Fast and wear-free “direct plugging” of solid and stranded conductors with ferrules
- Short operating paths – fast wiring times
- Conductor release without special tools
- No deformation of the contact chamber as a result of using incorrect tools
- Test connection at each terminal point (protected/unprotected)



Easy insertion

The reduction in insertion force of up to 50% offered by push-in technology enables easy, direct insertion of solid and stranded conductors with ferrules with a cross section of 0.34 mm² or higher.



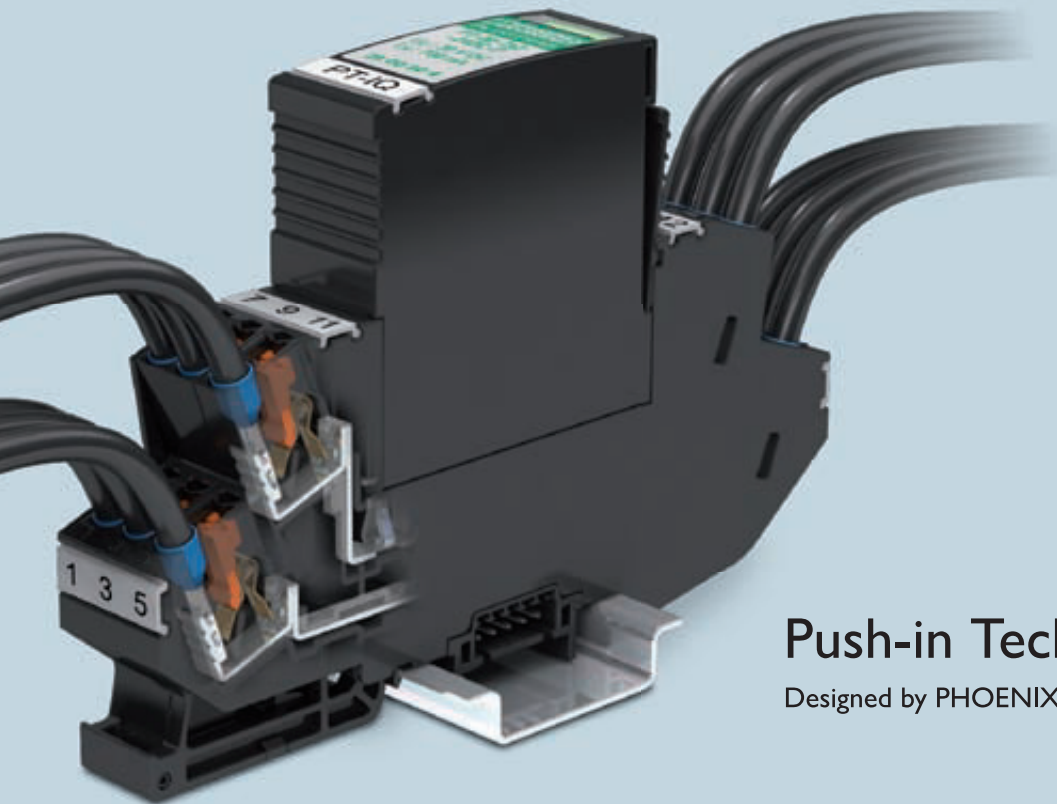
Latch function

The integrated latch enables you to release connected conductors using any standard screwdriver – easily and without direct contact with the signal wires.



All-round isolation

The plastic latch protects the sensitive signals from contact with external potentials and prevents the contact chamber from being deformed as a result of using incorrect tools.

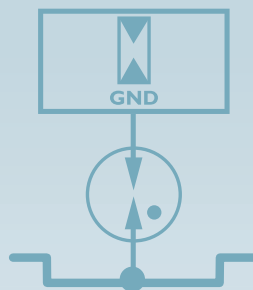


Push-in Technology

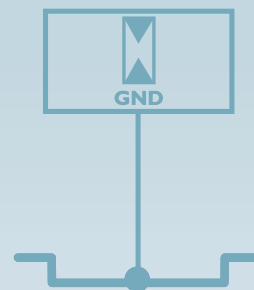
Designed by PHOENIX CONTACT

Intelligent surge protection with push-in connection technology

PLUGTRAB PT-IQ protective devices are suitable for various different applications. Protection modules are available with two different ground connections, alongside different circuit versions. The protective devices make contact when snapped onto the DIN rail in a way that is resistant to surge currents. You can choose between products with a direct or indirect ground connection with push-in connection technology that is easy to wire.











Indirect grounding
In the **PT-IQ-...+F-...PT protection modules**, the connection terminal blocks for the shield or the reference potential are indirectly connected to the metal mounting foot and therefore the DIN rail via a gas-filled surge arrester.



Direct grounding
In the **PT-IQ-...-PT protection modules**, the connection terminal blocks for the shield or the reference potential are directly connected to the DIN rail via the metal mounting foot.

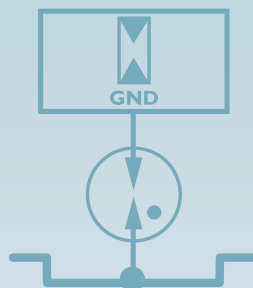
<p>Controller for power supply and remote signaling</p>		<p>2801296</p>	<p>PT-IQ-PTB-PT</p>		
		<p>Indirect grounding</p>		<p>Direct grounding</p>	
<p>Protection for two conductors</p>  <p>Binary switching signals</p>		<p>2801244 2801246 2801248 2801250</p>	<p>PT-IQ-2X1+F-5DC-PT PT-IQ-2X1+F-12DC-PT PT-IQ-2X1+F-24DC-PT PT-IQ-2X1+F-48DC-PT</p>	<p>2801243 2801245 2801247 2801249</p>	<p>PT-IQ-2X1-5DC-PT PT-IQ-2X1-12DC-PT PT-IQ-2X1-24DC-PT PT-IQ-2X1-48DC-PT</p>

		Indirect grounding		Direct grounding	
Protection for four conductors  Binary switching signals		2801272	PT-IQ-4X1+F-24DC-PT	2801271	PT-IQ-4X1-24DC-PT
Protection for one double wire  Standard signals 0...10 V 0/4...20 mA		2801252 2801254 2801256 2801258	PT-IQ-1X2+F-5DC-PT PT-IQ-1X2+F-12DC-PT PT-IQ-1X2+F-24DC-PT PT-IQ-1X2+F-48DC-PT	2801251 2801253 2801255 2801257	PT-IQ-1X2-5DC-PT PT-IQ-1X2-12DC-PT PT-IQ-1X2-24DC-PT PT-IQ-1X2-48DC-PT
Protection for two double wires  Standard signals 0...10 V 0/4...20 mA		2801264	PT-IQ-2X2+F-24DC-PT	2801263	PT-IQ-2X2-24DC-PT
Data technology 		2801292 2801295	PT-IQ-5-HF+F-5DC-PT PT-IQ-5-HF+F-12DC-PT	2801291 2801293	PT-IQ-5-HF-5DC-PT PT-IQ-5-HF-12DC-PT

Intelligent surge protection with screw connection technology

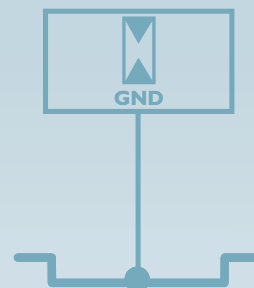
PLUGTRAB PT-IQ protective devices can be used in a wide variety of applications, with the classic screw connection, too.

The protection modules make contact when snapped onto the DIN rail in a way that is resistant to surge currents. You can choose between products with a direct or indirect ground connection.



Indirect grounding









In the **PT-IQ-...+F-...UT** protection modules, the connection terminal blocks for the shield or the reference potential are indirectly connected to the metal mounting foot and therefore the DIN rail via a gas-filled surge arrester.



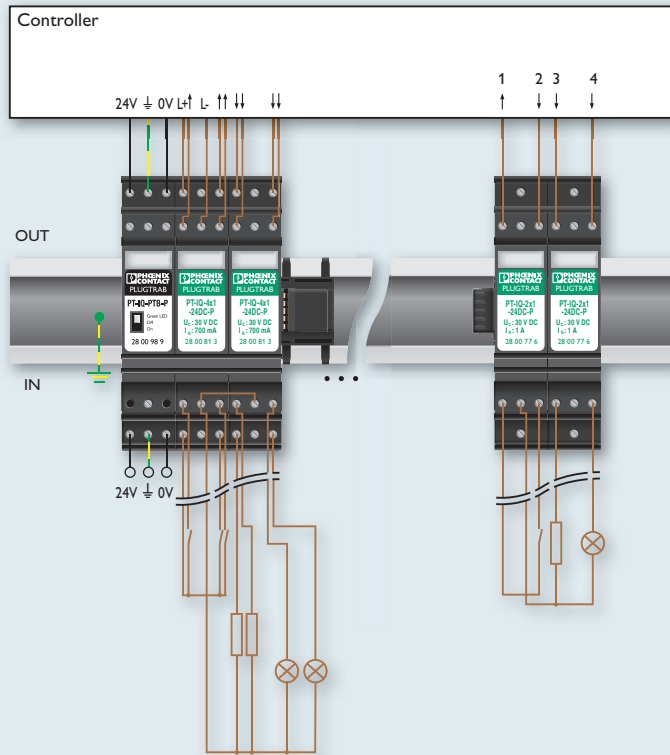
Direct grounding

In the **PT-IQ-...-UT** protection modules, the connection terminal blocks for the shield or the reference potential are directly connected to the DIN rail via the metal mounting foot.

<p>Controller for power supply and remote signaling</p>		<p>2800768</p>	<p>PT-IQ-PTB-UT</p>		
		<p>Indirect grounding</p>		<p>Direct grounding</p>	
<p>Protection for two conductors</p>  <p>Binary switching signals</p>		<p>2800779 2800781 2800788 2800790</p>	<p>PT-IQ-2X1+F-5DC-UT PT-IQ-2X1+F-12DC-UT PT-IQ-2X1+F-24DC-UT PT-IQ-2X1+F-48DC-UT</p>	<p>2800778 2800780 2800787 2800789</p>	<p>PT-IQ-2X1-5DC-UT PT-IQ-2X1-12DC-UT PT-IQ-2X1-24DC-UT PT-IQ-2X1-48DC-UT</p>

		Indirect grounding		Direct grounding	
Protection for four conductors  Binary switching signals		2800983	PT-IQ-4X1+F-24DC-UT	2800982	PT-IQ-4X1-24DC-UT
Protection for one double wire  Standard signals 0...10 V 0/4...20 mA		2800792 2800975 2800977 2800979	PT-IQ-1X2+F-5DC-UT PT-IQ-1X2+F-12DC-UT PT-IQ-1X2+F-24DC-UT PT-IQ-1X2+F-48DC-UT	2800791 2800793 2800976 2800978	PT-IQ-1X2-5DC-UT PT-IQ-1X2-12DC-UT PT-IQ-1X2-24DC-UT PT-IQ-1X2-48DC-UT
Protection for two double wires  Standard signals 0...10 V 0/4...20 mA		2800981	PT-IQ-2X2+F-24DC-UT	2800980	PT-IQ-2X2-24DC-UT
Data technology 		2800798 2800801	PT-IQ-5-HF+F-5DC-UT PT-IQ-5-HF+F-12DC-UT	2800797 2800799	PT-IQ-5-HF-5DC-UT PT-IQ-5-HF-12DC-UT

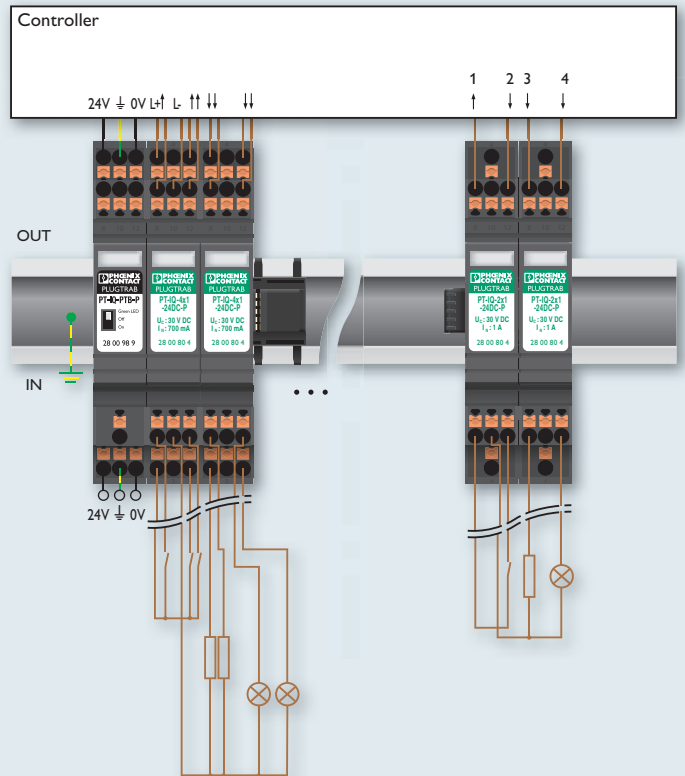
Application examples with various connection technologies



Protection of one binary signal input and actuator circuit with PLUGTRAB PT-IQ, floating reference potential (negative pole).

Material:
 1 x PT-IQ PTB-UT
 Order No. 2800989
 n x PT-IQ 4x1+F-24DC-UT
 Order No. 2800983

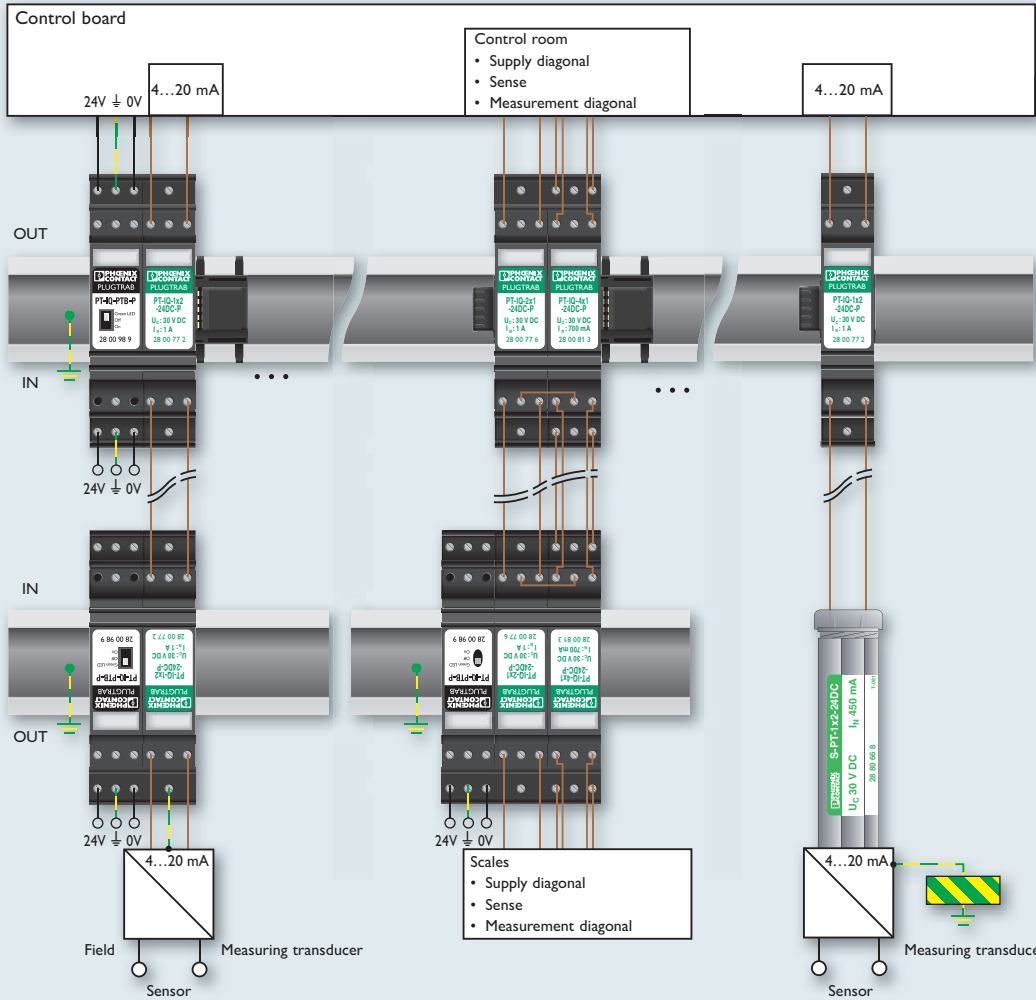
Material:
 n x PT-IQ 2x1+F-24DC-UT
 Order No. 2800788



Protection of one binary signal input and actuator circuit with PLUGTRAB PT-IQ, grounded reference potential (negative pole).

Material:
 1 x PT-IQ PTB-PT
 Order No. 2801296
 n x PT-IQ 4x1-24DC-PT
 Order No. 2801271

Material:
 n x PT-IQ 2x1-24DC-PT
 Order No. 2801247



Protection of one analog measurement with PLUGTRAB PT-IQ.

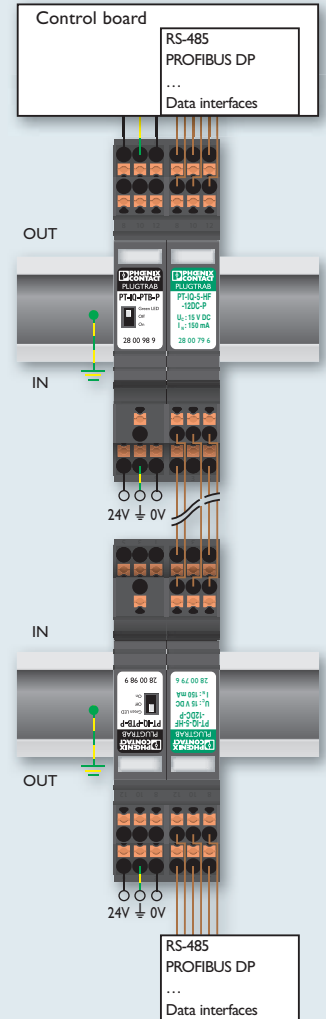
Material:
 2 x PT-IQ-PTB-UT
 Order No. 2800989
 2 x PT-IQ 1x2-24DC-UT
 Order No. 2800976

Protection of one 6-wire measurement with PLUGTRAB PT-IQ.

Material:
 1 x PT-IQ-PTB-UT
 Order No. 2800989
 2 x PT-IQ-4x1+F-24DC-UT
 Order No. 2800983
 2 x PT-IQ-2x1+F-24DCUT
 Order No. 2800788

Protection of one analog measurement with SURGETRAB and PLUGTRAB PT-IQ.

Material:
 1 x PT-IQ-1x2-24DC-UT
 Order No. 2800976
 1 x S-PT-1x2-24DC
 Order No. 2880668



Protection of data cables, e.g., an RS-485 interface with PLUGTRAB PT-IQ.

Material:
 2 x PT-IQ-PTB-PT
 Order No. 2801296
 2 x PT-IQ-5-HF-12DC-PT
 Order No. 2801293

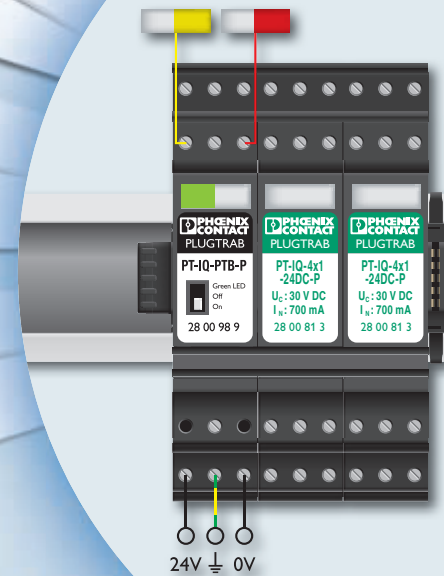
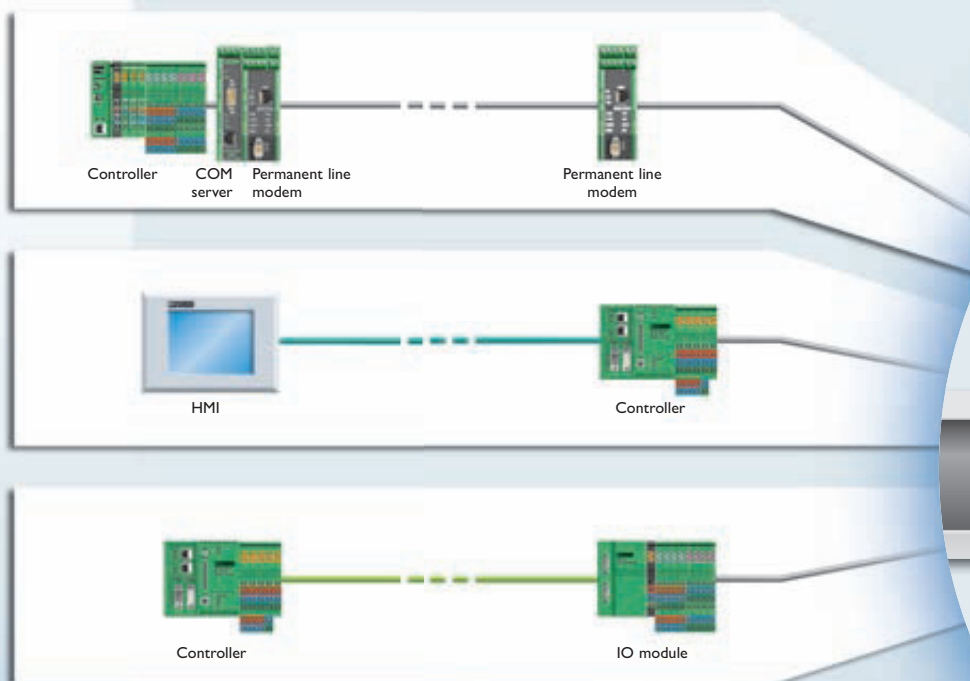
Surge protection – perfectly equipped for remote monitoring

TRABTECH surge protective devices with remote indication contacts are ideal for integration into any remote indication concept. Phoenix Contact offers solutions for this from a single source.

Everything from a single source

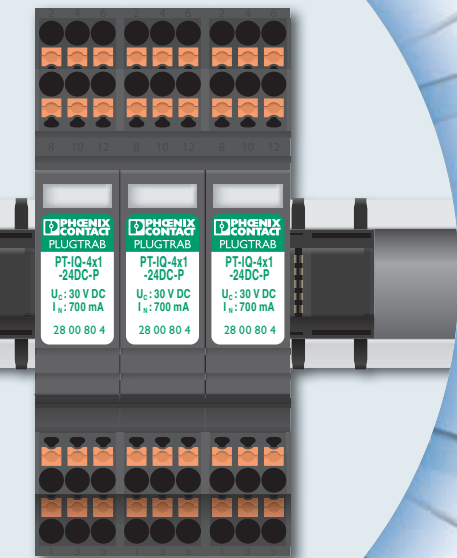
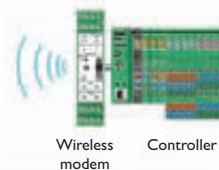
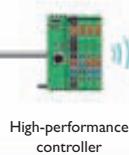
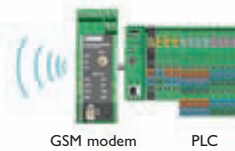
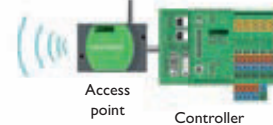
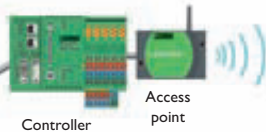
In addition to professional surge protection, Phoenix Contact also offers innovative solutions for the most diverse transmission technologies.

Wired transmission technologies





Wireless transmission technologies





Always up-to-date, always available to you. Here you'll find everything on our products, solutions and service:

www.phoenixcontact.net

Product range

- Cables and connectors
- Controllers and PLCs
- DIN rail power supplies and UPS
- Electronic reversing contactors and motor control
- Electronics housing
- Ethernet networks
- Fieldbus components and systems
- Functional safety
- HMIs and Industrial PCs
- I/O systems
- Industrial communication technology
- Industrial lighting
- Installation and mounting material
- Marking and labeling
- Measurement and control technology
- Modular terminal blocks
- Monitoring and signaling
- PCB Terminal Blocks and PCB Connectors
- Plug connectors
- Protective devices
- Relays
- Sensor cable and connectors
- Software
- Surge protection devices
- System cabling for DCS and PLC
- Tools
- Wireless data communication

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