Worldwide Remote Access
to machines and systems
PHOENIX CONTACT – Communicating with customers and partners worldwide

Phoenix Contact is a leading manufacturer of electrical connection and industrial automation technology. Founded more than 80 years ago, the company now has 9,900 employees, of which more than 5,500 are located in Germany. A sales network of over 46 subsidiaries and more than 30 sales representatives guarantees proximity to the customer.

The product range includes high-grade components, systems and services across a wide variety of applications. The selection ranges from modular terminal blocks to interface technology, PCB connection technology and solutions for surge protection to hardware and software solutions for the automation of industrial systems.

Global Player within close reach of the customer

Phoenix Contact values in-house expertise. The design and development departments continuously implement innovative product ideas and deliver special solutions to meet customer requirements. Numerous patents have resulted from products developed at Phoenix Contact.
Remote maintenance or remote control?

In industrial data communication, a distinction is made between remote maintenance and remote control with remote connections. Remote maintenance provides temporary access to a system or machine. Remote control usually involves a permanent connection to a remote station.

Although identical technologies are normally used, the characteristics of these very different applications must be discussed.

In this brochure, Phoenix Contact provides you with an overview so that you can find the perfect solution for your application.

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Remote maintenance
Access your machines: Anytime – Anywhere

Remote maintenance means accessing controllers or machines for diagnostic and maintenance purposes. Program and parameterize your machines at a distance and maintain mobile systems yourself without any traveling time.

Phoenix Contact offers a manufacturer-independent remote control solution for all controllers, Industrial PC and Ethernet networks. Access your system and use it, for example:

• Analog telephone connections
• The GSM network
• A GPRS/EDGE connection
Remote control
Always keep an eye on your system: Monitor everything – Targeted control

The term remote control describes the monitoring and controlling of physically separated system parts. Stay informed about all measured values generated at your external stations with a remote control solution and transmit control commands directly from a central control center.

Thanks to special protocols, you can reliably transmit process data in wide-range networks, even with low bandwidth and poor transmission quality. Phoenix Contact offers remote control solutions for almost all telecommunication networks, such as:

- Analog permanent lines
- Wireless networks
- Public telephone or mobile networks
Remote maintenance
Use the right solution for every application

You can efficiently convert your remote maintenance concept using industrial modem and router solutions. Regardless of whether you wish to access machine controllers or monitor entire system networks remotely: Phoenix Contact offers the right solution for every application. Use, for example, analog modems for easy dial-up connections and reading error codes. Or use GSM modems, in order to connect remote or mobile system parts globally and wirelessly.

Remote service software
The free PSI-MODEM-DIAL-TOOL software makes it easy to dial up and manage dial-up line connections in remote systems and machines. Irrespective of the controller type used, remote service software tailored to the Industrial Modem Line creates the right connection quickly and easily.

Remote maintenance via telephone and Internet connection
With MGUARD routers, you can remotely monitor your machines and systems via a safe VPN tunnel. All devices offer extensive functions, for example, an integrated firewall or NAT1:1 routing.

Remote maintenance via wireless communication in close proximity
Thanks to our wireless products for industrial applications, you can avoid the complicated installation of cables or data lines in your extended systems. With Bluetooth and WLAN modules, you can quickly and easily implement reliable and safe wireless connections to your distributed stations. And this is possible up to several kilometers outdoors.
Remote maintenance via GSM/GPRS/EDGE

The GSM Ethernet modem allows remote maintenance of machines and systems over safe VPN connections via GPRS/EDGE. A system-wide remote maintenance of all components connected in the network, such as drives, controllers, operator panels or visualization PCs, is implemented via the integrated Ethernet connection. Data is transmitted via a VPN tunnel and is encrypted on the basis of the IPSec safety protocol.

Remote maintenance via mobile network

Simply implement a safe point-to-point connection with the GPRS Quad band modem. You receive permanent IP addresses and communicate directly to your machine controller via RS-232 interface.

Remote maintenance via SMS alarm messaging

You can monitor all temperatures and fill levels with the SMS relay and can easily switch on and off your system parts, such as pumps. Simply send freely defined and password protected SMS for each incoming signal or inform a selected recipient about all status changes.

Remote maintenance with compact controllers

In addition to the proven functions, the ILC 150 GSM/GPRS compact controller offers additional features for remote maintenance and alarm messaging. For example, SMS can be sent and received via the integrated GSM/GPRS modem. Programming, diagnostics and communication can also be implemented via the GSM/GPRS network.
Remote control
Create your individual system

Remote control means long term use of expensive and self-contained systems. In particular, small external stations were often not monitored. With the flexible remote control system from Phoenix Contact, you can now create your solution individually and cost-effectively also for small stations.

Decide yourself which functions are required: In addition to controllers in various performance classes, I/O modules, industrial modems and power supply units, Phoenix Contact also provides you with devices for operating and monitoring your application.

Remote controller
Remote controller of Phoenix Contact acquires data, buffers, sends alarms and controls the connected process. The optimum hardware solution for your remote control technology tasks can be found in various performance classes and at modular level through digital and analog inputs and outputs.

Operation and monitoring in the substation
Also, keep an eye on the process in the substation using text and touch panels with a screen size up to 15".

Resy+ remote control software
Extend our standard control systems into remote control station with Resy+. Independently parameterize the remote control communication in the programming environment or operate the remote control station using a wizard with only a few clicks of the mouse. Resy+ offers different interfaces, such as IEC 60870-5-101/104, ODP or Modbus RTU/TCP.
Industrial power supply unit and UPS
The requirements for a power supply unit vary depending on the location. Whether 1000 W strong power supply units or small, low-cost modules, our wide portfolio allows you to select optimally. In order to increase system availability, extend your station to an uninterruptible power supply (UPS). This provides power even when the mains supply fails.

The illustrated MINI DC-UPS combines the power supply unit and the electronic switchover unit in one housing. It secures the operation in the case of both an error-free power supply network and in the event of mains interferences.

Industrial modems
A large range of analog, radio, DSL, GSM and GPRS/EDGE modems is available for remote control stations.
To ensure interference-free operation even in harsh EMC conditions, the devices are equipped with high-quality electrical isolation and integrated surge protection. The sleep function ensures a battery-saving modem operation.
Selection guide
Ideal transmission mode for your application

Various types of communication are available for data communication in remote and large networks as well as for worldwide machine monitoring. Transmission modes are also created individually for a wide range of applications.

With this overview, we want to help you in selecting the optimum form of communication for your application. You should weigh up the advantages and costs of various systems and opt for a solution that best suits your requirements.

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**What is GPRS/EDGE?**
GPRS (General Packet Radio Service) is a service in GSM networks to exchange data in a packet. GPRS is TCP/IP-based; there is no need to dial a telephone number to establish the connection. In practice, max. 54 kbps is achieved depending on the network load. Higher transmission speeds of up to 210 kbps are possible with EDGE (Enhanced Data Rates for GSM Evolution).

**What is SMS?**
SMS (Short Message Service) is used to transmit text messages in GSM networks. The text messages may contain up to 160 characters and can be used for alarm generation and transmitting status information.

**What is GSM?**
GSM (Global System for Mobile Communications) is a standard for digital mobile networks in more than 200 countries. The four frequencies 850 MHz, 900 MHz, 1800 MHz and 1900 MHz are used worldwide. For fast GSM data connection, up to 14,400 bps, a telephone number is billed as per the connection period.
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| Mobile network coverage      | Monthly base fee and invoicing based on the data volumes transmitted | Up to 210,000 bps | – Remote data acquisition  
– Connecting Ethernet networks  
– Connecting substations |
| Mobile network coverage      | Monthly base fee and invoicing depending on the SMS message | … | – Worldwide alarm generation  
– I/O information transmission |
| Mobile network coverage      | Monthly base fee and usage-based invoicing as per the time | Serial data up to 9,600 bps | Worldwide remote programming connection |
| Analog telephone connection  | Monthly base fee and usage-based invoicing as per the time | Serial data up to 33,600 bps | Worldwide remote programming connection |
| Existing two/four-wire line for optimum transmission range | – Installation and maintenance costs two/four-wire line  
– No monthly costs | Ethernet data up to 30 Mbps | – Remote data acquisition  
– Connecting Ethernet networks  
– Connecting substations |
| Existing two-wire line for optimum transmission range | – Installation and maintenance costs of two-wire line  
– No monthly costs | Serial data up to 33,600 bps | – Remote data acquisition  
– Point-to-point connection of controllers  
– Connecting substations |
| Line of sight for optimum transmission range | Free of charge and without a license in 2.4 GHz ISM band | – Serial data up to 115,200 bps  
– I/O data bidirectional and unidirectional | Wireless networking of sensors and actuators |
| Line of sight for optimum transmission range | in 2.4 GHz and 5 GHz ISM band, free of charge and without the need for a license | Ethernet data up to 54 Mbps | Wireless networking of controllers |
| Line of sight for optimum transmission range | Free of charge and without a license in 2.4 GHz ISM band | Serial data up to 187,500 bps | – Wireless programming connection  
– Cable replacement for Profibus, Profinet, Modbus RTU/TCP and serial and TCP/IP data for moving or mobile system parts |

4. **What is analog fixed-line network?**
Worldwide data connections can be realized using the public telephone network. A dial-up data connection is established in accordance with international standards. Here, carrier frequencies synchronize the two modems. The maximum performance of such a full duplex point-to-point connection is 33.6 kbps.

5. **What is SHDSL?**
SHDSL (Symmetric Digital Subscriber-Line) is a DSL access technology over a two-wire line. Data can be transmitted in both directions with speeds up to 30 Mbps. Distances of up to 10 km are possible.

6. **What is permanent line?**
A permanent line is a permanently existing connection between two communication partners over a separate two-wire line. Unlike a dial-up line, the complete transmission path is always available. Distances of up to 20 km are possible in permanent line operation.

7. **What is Trusted Wireless?**
Trusted Wireless is a specially designed wireless technology for industrial applications. The FHSS method is used for brand spread, which guarantees a high immunity to interference. Trusted Wireless is characterized by wide ranges (typically up to 3 km), cyclic transmission of small, time-uncritical signal packets and good diagnostics.

8. **What is WLAN?**
WLAN (Wireless Local Area Network) designates a local wireless network with a data rate of up to 54 Mbps. Since WLAN systems integrate well in IT networks, they are ideal for mobile operating and monitoring, as well as collecting data. Protocol transparent transmission allows communication with mobile controllers.

9. **What is Bluetooth?**
Bluetooth is a standard for wireless communication over short distances with up to seven devices. Bluetooth uses the 2.4 GHz ISM band as a transmission medium. This frequency band is free of charge and does not require a license. In order to achieve robustness to interference, a frequency hopping procedure is used.
Mobile network systems
Communicate worldwide via GPRS and EDGE

The GSM mobile network provides the GPRS service (General Packet Radio Service) for the process data acquisition that requires permanent communication. GPRS connections are billed, not according to the connection time, but as per the resulting data volume. In this way, for example, traffic signs or even pumping stations can be connected to the control center via IP connection cost-effectively.

Advantages of these mobile network systems
• No telephone connections or lines required
• GSM networks are globally available
• Use of the global Internet infrastructure
• Up to 250 modems can communicate simultaneously through a safe IPsec connection via the Internet with the security router of Factoryline MGuard type
**GPRS – based remote control technology**
Scalable solutions consisting of communication, safety technology and remote control controller can be combined depending on the mobile phone contract and safety requirements.

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**Compact controller with two Ethernet interfaces**

**ILC 170 ETH 2TX**
Order No. 2916532
- 256 MB flash memory (pluggable SD card)
- Processing speed of 90 µs per 1000 instructions (bit data types)
- 1 Interbus and 2 Ethernet interfaces
- 512 kbyte program/data memory each
- 48 kbyte retentive data memory
- 8 direct inputs and 4 direct outputs
- Max. 4096 I/O points
- Integrated web/FTP server
- OPC functionality

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**GPRS/EDGE modem with VPN router**

**PSI-MODEM-GSM/ETH**
Order No. 2313355
- Quad band (850 MHz/900 MHz/1800 MHz/1900 MHz)
- GPRS and EDGE for up to 210 kbps
- Remote stations can be integrated into an IP network easily and without much difficulty via GPRS/EDGE connection
- Firewall and the VPN protect your application against unauthorized access
- Simple configuration via web-based management

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**Security router with firewall and VPN support**

**FL MGUARD RS VPN**
Order No. 2989611
- Transmission speed 10/100 Mbps
- VPN up to 10 parallel tunnels (optional up to 250), safe encryption of VPN release button and VPN status LED as per IPsec standard, central management solution
- VPN throughput ≤ 70 Mbps
- High-performance encryption for safe transfer of sensitive data
- Optional with integrated analog or ISDN modem (fall-back solution)
- No additional software required
Mobile network systems
Worldwide alarm generation via SMS and E-mail

Ensure that you are always duly informed about fault conditions in your machines and systems and avoid expensive mechanical damage. Phoenix Contact provides assistance through various alarm solutions. Industrial modems with configurable warning or alarm inputs are suitable for monitoring small applications; for instance, the SMS relay. The freely programmable ILC 150 GSM/GPRS compact controller is available for an increased number of messages. You can send text messages as fax, SMS or E-mail with both solutions and set one or more outputs of the device at the opposite end.

Advantages of these mobile network systems
- No telephone connections or lines required
- GSM networks are globally available
- Often reaches remote station with a standard mobile phone
- All applications are very easy to handle
**SMS network**
An SMS alarm message will often be sent not only to a mobile phone, but will also be integrated into the alarm management of a control system. This is possible with a controller and a GSM modem from Phoenix Contact. SMS messages can be received and are also forwarded, for example, to a control system via OPC interface.

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**Compact controller with an integrated modem**
- Integrated GSM/GPRS modem
- Processing speed of 90 µs per 1000 instructions (bit data types)
- 512 kbyte program/data memory each
- 48 kbyte retentive data memory
- 16 direct inputs and 4 direct outputs
- Max. 4096 I/O points
- Integrated web/FTP server
- OPC functionality

**SMS relay**
- Compact remote control and signaling system for mounting on EN DIN rail
- 6 digital/analog inputs and 4 relay outputs
- SMS remote control of the outputs
- Notification via SMS in the case of status change at the input
- Alarm generation through SMS in the event of a voltage failure
- Easy configuration on PC without programming knowledge

**Remote control licenses**
- License for remote systems (Resy+)
- Ideal for use in infrastructure applications
- Integrates remote system parts easily into the control system
- Easy to integrate in existing systems
- Communication according to remote control standard (IEC 60870-5-101/104)
Mobile machines or remote systems often do not offer the possibility of a connection to the fixed-line network. With the Global System for Mobile Communications (GSM), a global alternative is available. GSM networks in four frequency bands 850, 900, 1800 and 1900 MHz are available in over 200 countries. The connection is established by dialing a telephone number directly. Due to its simple handling and constant signal runtime, the CSD dial-up connection is a common method for global remote maintenance of machines and systems. Analog and GSM modems can be randomly combined for communication via dial-up connections.

**Advantages of GSM communication**
- No telephone connections or lines required
- GSM networks are globally available
- All applications are easy to configure

**Controllers of performance class 300**
ILC 370 ETH 2TX-IB
Order No. 2876999
- 2 switched Ethernet interfaces
- Processing speed of 0.3 ms per 1000 instructions
- Pluggable parameterization memory, CF card
- 2 MByte program memory
- 4 Mbyte data memory
- 96 kbyte retentive data memory
- 12 direct inputs and 4 direct outputs

**GSM extension module for programmable relays**
NLC-COM-GSM
Order No. 2701344
- Communication module for expanding the Nanoline product family
- Sending SMS
- Reading and writing register contents
- Switching outputs on and off
- Reading inputs
- Diagnostics
- Supply voltage: 12 V DC … 24 V DC
Mobile remote maintenance via GSM

Devices with serial, Ethernet or MPI interface are accessible via the suitable modem over the GSM network worldwide. Even with ILC 150 GSM/GPRS, access to the PC Worx programming environment is possible via the integrated modem.

GSM/GPRS modem with RS-232 interface

- **PSI-GPRS/GSM-MODEM/RS-232-QB**
  - Order No. 2313106
  - GSM and GPRS (General Packet Radio Service)
  - Can be used worldwide thanks to Quad band (850 MHz/900 MHz/1800 MHz/1900 MHz)
  - Password-protected access/call-back function/selective call acceptance
  - Integrated TCP/IP stack
  - Virtual permanent line via GPRS
  - Alarm sent directly by SMS, E-mail or fax via integrated switching input

Analog modem with RS-232 interface

- **PSI-DATA/BASIC-MODEM/RS-232**
  - Order No. 2313067
  - Can be used worldwide for remote control/remote system diagnostics/production data acquisition
  - Password-protected access and call-back function
  - Power-saving sleep mode
  - Slim design width of 22.5 mm
  - High-quality electrical isolation
  - Slim design width of 22.5 mm
  - Easy startup using plug and play

MPI programming adapter

- **PSI-MPI/RS-232-PC**
  - Order No. 2313148
  - Converting a serial RS-232 interface to the MPI bus
  - Coupling modems, Bluetooth converters and COM servers to the programming interface of a Siemens SIMATIC® S7 300/400 controller
  - Power supply through the MPI interface
Cable-based systems
Communicate via permanent lines, SHDSL and the analog telephone network

Use your own cable routes for your data transmission or establish connections via the public telephone network. Dial-up line connections are ideal for remote maintenance, for instance. Temporarily access your machines or systems via the worldwide public telephone network. Dial-up lines are also used for remote applications, which require no permanent data connection. Easily communicate via permanent lines using our analog modems and SHDSL modems. Transmit your data quickly and particularly without interference even over long distances using fiber optic cables.

Benefits of cable-based systems
- Analog dial-up connections via modem functioning worldwide
- Very high transmission speeds possible via fiber optics and SHDSL
- Easily configurable applications
- Highly interference-free connections

Module for remote control without software configuration
IB IL 24 MUX MA PAC
Order No. 2861205
- Data transmission up to 12 km via permanent lines
- Max. 512 digital or 32 analog I/Os
- Transmission times less than 1 second
- Transmission also possible via fiber optics

Web panel with touch screen
WP 06 T
Order No. 2913645
- Brilliant 6” TFT touch display
- Max. 65,536 colors can be displayed with 320 x 240 pixels
- Proven 200 MHz RISC ARM9 processor
- High-quality IP65 aluminum housing
- 0°C – 50°C and 10% – 95% humidity
- Versatile communication through 10/100 Mbit Ethernet
- Windows CE and MicroBrowser incl.
**Smart Managed Compact Switch**

**FL Switch SMCS 6GT/2 SFP**
Order No. 2891479
- Switch with gigabit Ethernet support on all ports
- 6 RJ45 ports
- Easily configurable using connectors when replacing a device
- Comprehensive approval package
- Optional with two fiber optic ports
- Max. transmission length via FO: 80 km

**SHDSL modem with Ethernet connection**

**PSI-MODEM- SHDSL/ETH**
Order No. 2313643
- Quick startup due to automatic configuration of point-to-point and multipoint networks.
- High safety through SHDSL devices that are invisible to Ethernet data traffic.
- Log book for recording important events
- Two digital switching outputs
- Transmission speed from 32 kbps to 15.3 Mbps (2-wire) or 30 Mbps (4-wire)

**Analog modem with USB connection**

**PSI-MODEM-BASIC/USB**
Order No. 2313436
- Can be used worldwide for remote maintenance of industrial PCs
- No power supply unit required, power supply via USB interface
- Power-saving sleep mode
- Slim design width of 22.5 mm
- High-quality electrical isolation
- Easy startup using plug and play

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**Seamless IP communication**

A seamless IP communication from the control system to the remote control station enables, besides data communication (e.g. IEC 60870-5-104), programming of controllers, operator panels and infrastructure components. The connection is established with gigabit via fiber optics or with the SHDSL modem via copper cables.
Using wireless modules, measured data and system information can be easily recorded from remote or less accessible areas and transmitted to central points. This means a reliable and cost effective alternative to new cable paths for remote control technology, particularly when installing new system parts or replacing defective communication cables. The RAD-Line wireless modules are characterized by different interfaces and act as a gateway between local sensors and actuators of the process station and control center.

Advantages of this wireless system
- Rugged and reliable communication in a harsh industrial environment
- Easy startup
- Good diagnostic options
- High degree of modularity depending on the requirement
- High local system density possible
- Problem-free parallel operation with WLAN 802.11 and Bluetooth systems

Compact controller of performance class 100
ILC 150 ETH
Order No. 2985330
- Processing speed of 90 µs per 1000 instructions (bit data types)
- 1 Interbus and 1 Ethernet interface
- 256 kbyte program/data memory each
- 8 kbyte retentive data memory
- 8 direct inputs and 4 direct outputs
- Max. 4096 I/O points
- 24 V DC supply voltage
- Integrated web/FTP server
- OPC functionality
Flexible wireless systems
RAD-line wireless modules can be used to connect controllers or I/O modules wirelessly with a central PLC. The higher-level control system is then connected, for example, using OPC, Modbus TCP or via IEC 60870-5-104 protocol.

Also available:
Profibus gateway for direct integration of I/O signals into the Profibus level.

Wireless module
RAD-ISM-2400-DATA-BD
Order No. 2867869
- Configurable using software as master, slave or repeater slave
- Transmission speed of up to 250 kbps gross (115 kbps net)
- Supply voltage: 12 V DC ... 30 V DC
- Typical current consumption 50 mA at 24 V DC

Expandable wireless module
RAD-ISM-2400-DATA-BD-BUS
Order No. 2867872
- Configurable using software as master, slave or repeater slave
- Transmission speed of up to 250 kbps gross (57.6 kbps net)
- Supply voltage: 12 V DC ... 30 V DC
- Typical current consumption 70 mA at 24 V DC
- Up to 8 digital/analog extension modules can be connected

Bidirectional wireless set
RAD-ISM-2400-SET-BD-BUS-ANT
Order No. 2867733
- Consisting of two transceivers and two omnidirectional antennas with connecting cable
- 2/2 digital in/out signals each 5 V AC/DC ... 30 V AC/DC
- 1/1 analog in/out current signal each 4 ... 20 mA
- Supply voltage: 12 V DC ... 30 V DC
- Typical current consumption: 150 mA at 24 V DC
Wireless systems
Communicate in close proximity via Bluetooth and WLAN

International and license-free Bluetooth and WLAN wireless standards are suitable for wireless applications in industrial environments. Depending on the system concept, it can be bridged across distances of up to 150 m or more. The choice of wireless technology is based either on the existing components or on the individual application requirements. Phoenix Contact offers the right solution for every application with access points and converters.

Advantages of these wireless systems
- Global use, license-free, open wireless standards
- Safe and fast data transmission even in difficult industrial environment
- Can be used for accessing controllers wirelessly, integration of automation components or cable replacement of fieldbus cables

Advantages of Bluetooth
- Problem-free parallel operation with other wireless systems
- Bluetooth application with a high number of parallel systems

Advantages of WLAN
- Ideal when a high mobility of application requires roaming between different wireless cells

Module for remote control without software configuration
ILB BT ADIO-MUX-OMNI
Order No. 2884208
- Two fixed pair modules
- 16 digital inputs and outputs each
- 2 digital inputs and outputs each
- Plug & Play

WLAN access point
FL WLAN 24 AP 802-11
Order No. 2884075
Wireless LAN access point for wireless standards b, g, a and h
- Access point, multipoint bridge, client adapter
- Rugged and compact design
- Connection monitoring
- Power over Ethernet in accordance with IEEE 802.3af
Bluetooth and WLAN communication
Communication from a programming or maintenance station to different PLCs as well as communication between PLC and I/O station can be established via Bluetooth and WLAN.

Bluetooth access point

**FL BLUETOOTH AP**
Order No. 2737999

Bluetooth access point, wireless Ethernet access point
- For up to seven Bluetooth devices with PAN or SPP profile
- For serial devices by the integrated COM server
- Diagnosis of transmission quality using web interface

**FL COMSERVER WLAN 232/422/485**
Order No. 2313559

- Wireless, serial device server
- For wireless transmission of RS-232, RS-422, RS-485 and USB interfaces
- Ad-hoc and infrastructure mode
- WLAN up to 54 Mbps, TCP and UDP
- Diagnosis of transmission quality using bar graph and 2 digital outputs on the device

**PSI-WL-RS-232-RS-485/BT**
Order No. 2708517

- For wireless transmission of RS-232, RS-422, RS-485 and USB interfaces
- Point-to-point and multipoint connections (up to seven slaves)
- Serial up to 187.5 kbps, e.g. Modbus, Profibus, etc.
- Diagnosis of transmission quality using bar graph and 2 digital outputs on the device
Selected products at a glance – Create your individual solution

### Compact controllers of performance class 100

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<th>Features</th>
<th>Model Number</th>
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<td>192 kB program and data memory, 8 kB retain memory, 8 digital inputs and 4 digital outputs, Ethernet interface, web/FTP server</td>
<td>ILC 130 ETH</td>
<td>2988803</td>
<td></td>
</tr>
<tr>
<td>256 kB program and data memory, 8 kB retain memory, 8 digital inputs and 4 digital outputs, Ethernet interface, web/FTP server</td>
<td>ILC 150 ETH</td>
<td>2985330</td>
<td></td>
</tr>
<tr>
<td>512 kB program and data memory, 48 kB retain memory, pluggable parameterization memory (SD Flash with 256 MB), 8 digital inputs and 4 digital outputs, 2 x Ethernet interface, web/FTP server</td>
<td>ILC 170 ETH 2TX</td>
<td>2916532</td>
<td></td>
</tr>
<tr>
<td>512 kB program and data memory, 48 kB retain memory, 16 digital inputs and 4 digital outputs, integrated GSM/GPRS modem, Ethernet interface, web/FTP server</td>
<td>ILC 150 GSM/GPRS</td>
<td>2916545</td>
<td></td>
</tr>
</tbody>
</table>

### Controllers of performance class 300

<table>
<thead>
<tr>
<th>Memory Size</th>
<th>Features</th>
<th>Model Number</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>750 kB program memory, 1.5 MB data memory, 64 kB retain memory, CF card as parameterization memory, 12 digital inputs and 4 digital outputs, Ethernet interface, web/FTP server, Profinet version (PN) with Profinet controller and device function</td>
<td>ILC 330 ETH</td>
<td>2737193</td>
<td></td>
</tr>
<tr>
<td>1 MB program memory, 2 MB data memory, 64 kB retain memory, CF card as parameterization memory, 12 digital inputs and 4 digital outputs, Ethernet interface, web/FTP server, Profinet version (PN) with Profinet controller and device function</td>
<td>ILC 330 PN</td>
<td>2988191</td>
<td></td>
</tr>
<tr>
<td>2 MB program memory, 4 MB data memory, 96 kB retain memory, CF card as parameterization memory, 12 digital inputs and 4 digital outputs, 2 x switched Ethernet interface, Interbus slave interface, web/FTP server, Profinet version (PN) with Profinet controller and device function</td>
<td>ILC 370 ETH 2TX-IB</td>
<td>2876999</td>
<td></td>
</tr>
<tr>
<td>2 MB program memory, 4 MB data memory, 96 kB retain memory, CF card as parameterization memory, 12 digital inputs and 4 digital outputs, 2 x switched Ethernet interface, Profinet version (PN) with Profinet controller and device function</td>
<td>ILC 390 PN 2TX-IB</td>
<td>2985314</td>
<td></td>
</tr>
</tbody>
</table>

### High-performance controllers of performance class 400

<table>
<thead>
<tr>
<th>Memory Size</th>
<th>Features</th>
<th>Model Number</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 MB program memory, 4 MB data memory, 96 kB retain memory, MC FLASH parameterization memory, 5 digital inputs and 3 digital outputs, Ethernet interface</td>
<td>RFC 430 ETH-IB</td>
<td>2730190</td>
<td></td>
</tr>
<tr>
<td>8 MB program memory, 16 MB data memory, 96 kB retain memory, MC FLASH parameterization memory, 5 digital inputs and 3 digital outputs, Ethernet interface</td>
<td>RFC 450 ETH-IB</td>
<td>2730200</td>
<td></td>
</tr>
<tr>
<td>8 MB program memory, 16 MB data memory, 240 kB retain memory, CF card, 5 digital inputs and 3 digital outputs, 2 x switched Ethernet interface, Ethernet interface, web/FTP server, Profinet version (PN) with Profinet controller and device function</td>
<td>RFC 470 PN 3TX</td>
<td>2916600</td>
<td></td>
</tr>
</tbody>
</table>
# The complete modem range

## Analog modems

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI-MODEM-ETH</td>
<td>Analog Ethernet modem for dial-up operation, supply voltage 10 – 30 V DC</td>
<td>2313300</td>
</tr>
<tr>
<td>PSI-DATA/FAX-MODEM/RS-232</td>
<td>Analog modem with RS-232 interface for dial-up and permanent line operation, supply voltage 10 – 60 V DC / 16 – 40 V AC</td>
<td>2708203</td>
</tr>
<tr>
<td>PSI-DATA/BASIC-MODEM/RS-232</td>
<td>Analog modem with RS-232 interface for dial-up operation (up to 56 kbps), supply voltage 10 – 30 V DC</td>
<td>2313067</td>
</tr>
<tr>
<td>PSI-MODEM-BASIC/USB</td>
<td>Analog modem with USB interface for dial-up operation (up to 56 kbps), supply voltage via USB connection</td>
<td>2313436</td>
</tr>
</tbody>
</table>

## GSM/GPRS modems

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI-MODEM-GSM/ETH</td>
<td>Quad band modem for GPRS/EDGE and GSM with security and router functions, supply voltage 10 – 30 V DC</td>
<td>2313355</td>
</tr>
<tr>
<td>PSI-GPRS/GSM-MODEM</td>
<td>Quad band modem for GPRS and GSM, supply voltage 10 – 30 V DC</td>
<td>2313106</td>
</tr>
<tr>
<td>PSI-MODEM-SMS-REL/6DI/4DO/AC</td>
<td>Compact SMS remote control and signaling system, supply voltage 110 – 240 V AC</td>
<td>2313513</td>
</tr>
<tr>
<td>PSI-MODEM-SMS-REL/6ADI/4DO/DC</td>
<td>Compact SMS remote control and signaling system, digital and analog alarm inputs, supply voltage 12 – 48 V DC</td>
<td>2313520</td>
</tr>
</tbody>
</table>

## DSL modems

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI-MODEM-SHDSSL/ETH</td>
<td>SHDSL permanent line modem with Ethernet interface, supply voltage 18 – 32 V DC</td>
<td>2313643</td>
</tr>
<tr>
<td>PSI-MODEM-SHDSSL/PB</td>
<td>SHDSL permanent line modem with Profibus interface, supply voltage 18 – 32 V DC</td>
<td>2313656</td>
</tr>
<tr>
<td>PSI-MODEM-SHDSSL/SERIAL</td>
<td>SHDSL permanent line modem with serial interface, supply voltage 18 – 32 V DC</td>
<td>2313669</td>
</tr>
</tbody>
</table>
No current in remote stations? Using the solar power system, you can receive all signals from external stations – independent of the power supply!

Software

<table>
<thead>
<tr>
<th>Software</th>
<th>Antennas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PC Worx</strong></td>
<td><strong>Omnidirectional antennas</strong></td>
</tr>
<tr>
<td>Software for programming in accordance with IEC 61131</td>
<td>For use in mobile applications or for multipoint connections</td>
</tr>
<tr>
<td><strong>AX ODP server</strong></td>
<td><strong>Gain and directional antennas</strong></td>
</tr>
<tr>
<td>OPC server for GPRS communication with controllers from Phoenix Contact</td>
<td>For optimizing the wireless path, e.g. range gain and signal amplification</td>
</tr>
<tr>
<td><strong>Resy+</strong></td>
<td><strong>Vandal protected antennas</strong></td>
</tr>
<tr>
<td>Function block libraries for remote control technology (IEC 60870-5, ODP, Modbus, SMS)</td>
<td>Distinguished by inconspicuous design and impact strength</td>
</tr>
</tbody>
</table>

Converter for industrial interfaces

<table>
<thead>
<tr>
<th>Converter for industrial interfaces</th>
<th>Products for surge protection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COM server</strong></td>
<td><strong>Surge protection devices secure and increase the availability of systems or installations in the fields:</strong></td>
</tr>
<tr>
<td>Serial device server from RS-232/RS-422/RS-485 on Ethernet</td>
<td>• Power supply unit</td>
</tr>
<tr>
<td><strong>Interface converter</strong></td>
<td>• MCR technology</td>
</tr>
<tr>
<td>Converter for fieldbus systems and serial interfaces</td>
<td>• Information technology</td>
</tr>
<tr>
<td><strong>Fiber optic converter</strong></td>
<td><strong>Industrial power supply units</strong></td>
</tr>
<tr>
<td>Interference-free transmission for fieldbus systems, Ethernet and serial interfaces</td>
<td><strong>QUINT POWER</strong></td>
</tr>
<tr>
<td></td>
<td>For maximum system availability</td>
</tr>
<tr>
<td></td>
<td><strong>MINI POWER</strong></td>
</tr>
<tr>
<td></td>
<td>Power supply in electronic housing for MCR technology</td>
</tr>
<tr>
<td></td>
<td><strong>UPS</strong></td>
</tr>
<tr>
<td></td>
<td>Uninterruptible power supply units supply current even when mains is down</td>
</tr>
</tbody>
</table>

Solar systems for autonomous energy supply

<table>
<thead>
<tr>
<th>Solar systems for autonomous energy supply</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RAD-SOL-SET-24-200</strong></td>
</tr>
<tr>
<td>Power 200 Wp; battery capacity 100 Ah, max. connected load 3W ... 23 W *)</td>
</tr>
<tr>
<td><strong>RAD-SOL-SET-24-100</strong></td>
</tr>
<tr>
<td>Power 100 Wp; battery capacity 40 Ah, max. connected load 1W ... 11 W *)</td>
</tr>
<tr>
<td><strong>RAD-SOL-SET-12-10</strong></td>
</tr>
<tr>
<td>Power 100 Wp; battery capacity 6.6 Ah, max. connected load 0.1 W ... 1.2 W *)</td>
</tr>
</tbody>
</table>

*) depending on the local solar insolation
We are always at your side –
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Regardless of whether a solution is needed for remote maintenance or remote control: Our specialists are available during the planning, project planning and implementation of your desired solution at any time.

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PHOENIX CONTACT GmbH & Co. KG
32823 Blomberg, Germany
Phone: +49/52 35/3-00
Fax: +49/52 35/3-4 12 00
www.phoenixcontact.com