



INDUSTRIAL REMOTE COMMUNICATION

Telecontrol

Efficient Telecontrol Solutions

Brochure

Edition
10/2021

SIEMENS

INDUSTRIAL REMOTE ACCESS – A FACTOR FOR SUCCESS

Industrial Remote Communication



Remote access to distant plants, machines, and mobile applications from anywhere in the world is becoming increasingly important and represents a key competitive advantage in the industry and in industry-related areas. Our portfolio for Industrial Remote Communication offers products, systems, and solutions for telecontrol, teleservice, and their respective communication networks (Remote Networks). This enables a secure and economical remote access to plants in the process industry, in automated manufacturing, or in public infrastructures – regardless of their scale.

Telecontrol

Telecontrol is the monitoring and control of distant process stations via one or more central control systems. While the data connection to the stations is typically permanent, data transmission preferably takes place on an event-driven basis or cyclically.

Teleservice (remote maintenance/diagnostics)

Teleservice is data exchange between remote technical systems (machines, computers, etc.) and the control center. The connection is usually only established when required for the purpose of error detection, diagnostics, maintenance, repair, or optimization of the plant.

Communication via Remote Networks

For telecontrol and teleservice applications, communication is essential. Our portfolio for Remote Networks includes network components for wired and wireless communication. As security is a must for remote access, our communication components provide comprehensive security measures, such as firewall and VPN.

EFFICIENT TELECONTROL SOLUTIONS

Telecontrol



Industrial process plants often extend over large areas – sometimes even crossing national borders. Therefore, operators require secure and cost-effective access to their remote plants. We offer tailor-made and efficient telecontrol solutions for a wide variety of applications. The telecontrol portfolio includes solutions for the control center as well as for remote terminal units (RTUs). Our products are based on SIMATIC, the world's leading automation system and are therefore a part of Totally Integrated Automation (TIA), our open system architecture for plant-wide, uniform automation. With our comprehensive product, service, and support offering, security requirements for critical infrastructures in accordance with IEC 62443 can be fulfilled.

Solutions for the control center

Different solutions are available for the control center, depending on the scale and requirements of the application.

The transmission protocol TeleControl Basic is designed for simple control tasks. It supports a very large number of outstations and is used for transmitting small amounts of data via mobile wireless and the Internet.

For extensive applications with sophisticated control tasks, telecontrol solutions based on IEC 60870, DNP3 (IEEE 1815), or SINAUT ST7 telecontrol protocols are recommended. These systems support numerous network topologies and communication media and are therefore suitable for transmitting large amounts of data via all available communication media (private and public networks, mobile wireless, Internet).

Solutions for remote terminal units

RTUs constitute the outstations of telecontrol systems by monitoring and controlling local processes. We offer components for the creation of modular RTUs based on SIMATIC controllers. In addition, our portfolio includes compact RTUs for special operating conditions, for example, when no local power grid is available.

Networking solutions (Remote Networks)

We offer a broad portfolio of industrial modems and routers for connecting the RTUs to the control center.

For more information on this topic, please refer to: [siemens.com/remoted-networks](https://www.siemens.com/remoted-networks)

SOLUTIONS FOR THE CONTROL CENTER

TeleControl Basic



Plants in water, wastewater, or environmental sectors

e.g.,

- Hydroelectric power plants
- Irrigation
- Drinking water supply
- Sewage systems
- Level monitoring



Centrally controlled facility management

e.g.,

- Lighting
- Heating
- Consumption optimization



Control and monitoring of traffic systems

e.g.,

- Traffic lights
- Tunnel projects
- Lighthouses
- Traffic control systems



Consumption recording and cost control in power networks

e.g.,

- District heating networks
- Wind power generation
- Transformer stations
- Biogas
- Solar



Remote monitoring of machines and automation equipment

e.g.,

- Air-conditioning systems



Monitoring of mobile stations

e.g.,

- Local public transport
- Transport
- Ships on rivers and in coastal areas



Other application options

e.g.,

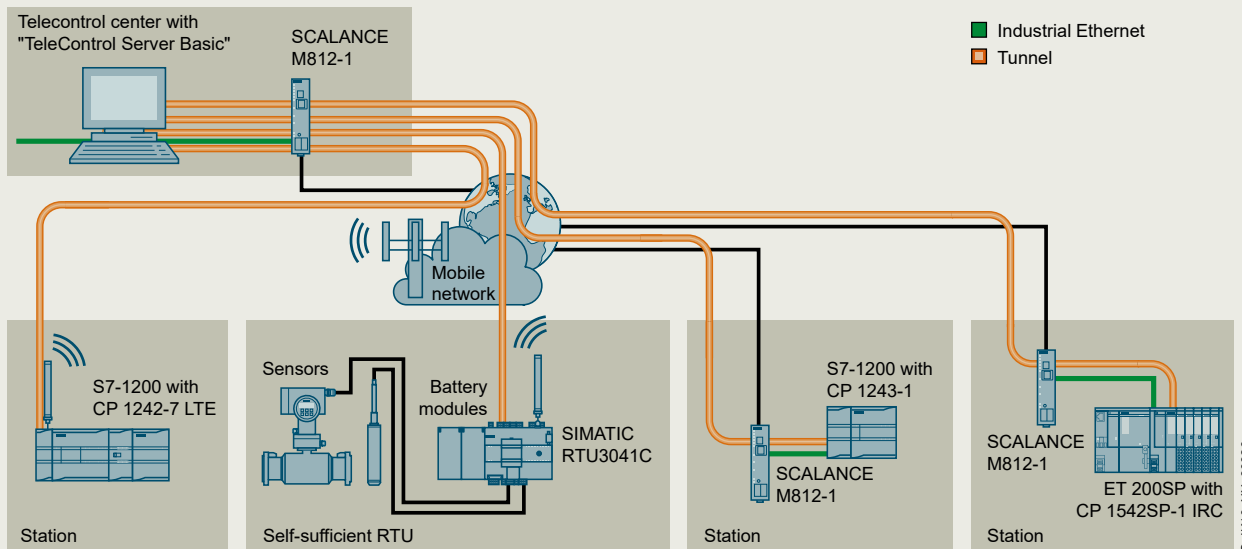
- Greenhouses
- Level measurement in silos



Reduced to the essentials

TeleControl Basic is the solution for cost-effective monitoring and control of remote plants as well as for connecting mobile stations using mobile wireless. It is ideal for applications with a low degree of automation, for example, for transmitting process data or for remote diagnostics and maintenance. Typical areas of application are found in the control of process plants, the optimization of public facilities for water/wastewater treatment, energy distribution, traffic monitoring, as well as in facility management.

The TeleControl Basic system uses TeleControl Server Basic as the control center software. As an OPC UA server, it connects the HMI system (e.g., WinCC, PCS 7, or WinCC OA) to the RTUs. TeleControl Server Basic allows the management of up to 5,000 outstations. It supports the connection of both modular RTUs based on SIMATIC S7-1200 and SIMATIC ET 200SP as well as the compact remote terminal units of the SIMATIC RTU3000C family. The system enables both remote communication with a control center as well as direct communication between the SIMATIC remote terminal units. Stationary or mobile RTUs at remote locations can be conveniently configured with SIMATIC STEP 7 in the TIA Portal.



Connection of RTUs to TeleControl Server Basic via mobile wireless or Internet

Advantages of the TeleControl Basic system

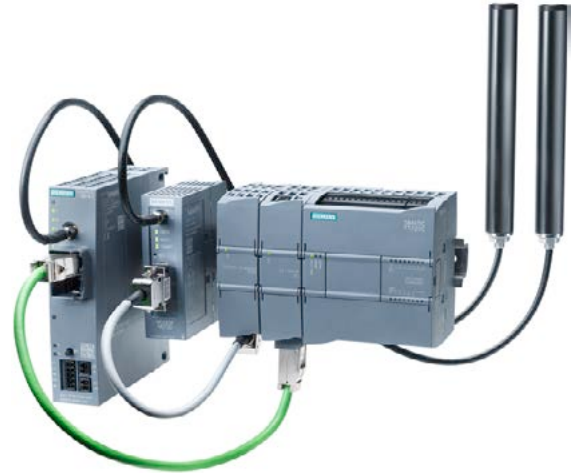
- Scalable from a few to up to 5,000 outstations
- Use of the Internet and existing mobile wireless networks – even from different providers – in a single communication system
 - Low communication costs for permanent or on-demand mobile wireless connections due to economical volume tariffs
 - Permanent communication connection via mobile wireless for immediate data transmission and station failure detection
 - Text message alert for service personnel
 - Monitoring of temporary mobile connections and linking of intermittently accessible units, e.g., SIMATIC RTU3000C, to the control center
- Easy configuration of modular SIMATIC RTUs with STEP 7 in the TIA Portal
 - Full "data point configuration" for the entire application
 - Selection of control center relevant RTU data via user-friendly "Item Browsing" in STEP 7
 - Cyclical or event-driven transmission of measured values, setpoints, or alarms in only a few steps and without programming effort
- Easy, simultaneous and convenient RTU configuration by multiple users with TeleControl Server Basic (multi-user capability)
- "Wake-up" function for stations (from standby mode to online mode) via text message or call
 - Secure authentication before using the wake-up function, e.g., with the CLIP function
- Maximum security
 - Secured communication with RTUs via secured TeleControl Server Basic tunnel or SINEMA Remote Connect VPN tunnel
- Integrated Teleservice function
 - Remote maintenance and programming of the RTUs, even during operation
- Redundancy
 - TeleControl Server Basic can be operated redundantly to increase the availability of the automation data
 - No additional cabling for synchronizing redundant software packages if both PCs are located in the same LAN
 - Redundancy mode possible with Windows operating systems

SOLUTIONS FOR THE CONTROL CENTER

IEC 60870, DNP3, and SINAUT ST7

Keeping extensive process plants under control from a distance

Telecontrol systems based on IEC 60870, DNP3 (IEEE 1815), or SINAUT ST7 enable fully automated, efficient monitoring and control of extensive, remote process plants. The systems connect modular RTUs based on SIMATIC controllers (S7-1200 Basic Controllers, ET 200SP Distributed Controllers or S7-300/400 and S7-1500 Advanced Controllers) and compact RTUs to one or more process control centers. These can be built with single or redundant configurations based on WinCC, PCS 7, WinCC OA (Open Architecture), or SCADA systems from other vendors.

**Water**

e.g.,

- Drinking water supply
- Water pipelines
- Wastewater treatment plants
- Sewage systems
- Storm water overflow tanks

**Oil**

e.g.,

- Drilling fields
- Offshore/onshore
- Oil pipelines
- Production pipelines

**Gas**

e.g.,

- Pipelines
- Gas preparation
- Supply networks

**Energy**

e.g.,

- District heating
- Wind energy production
- Substations
- Biogas plants
- Solar

Depending on the type of control center (SCADA software), different software packages are used:

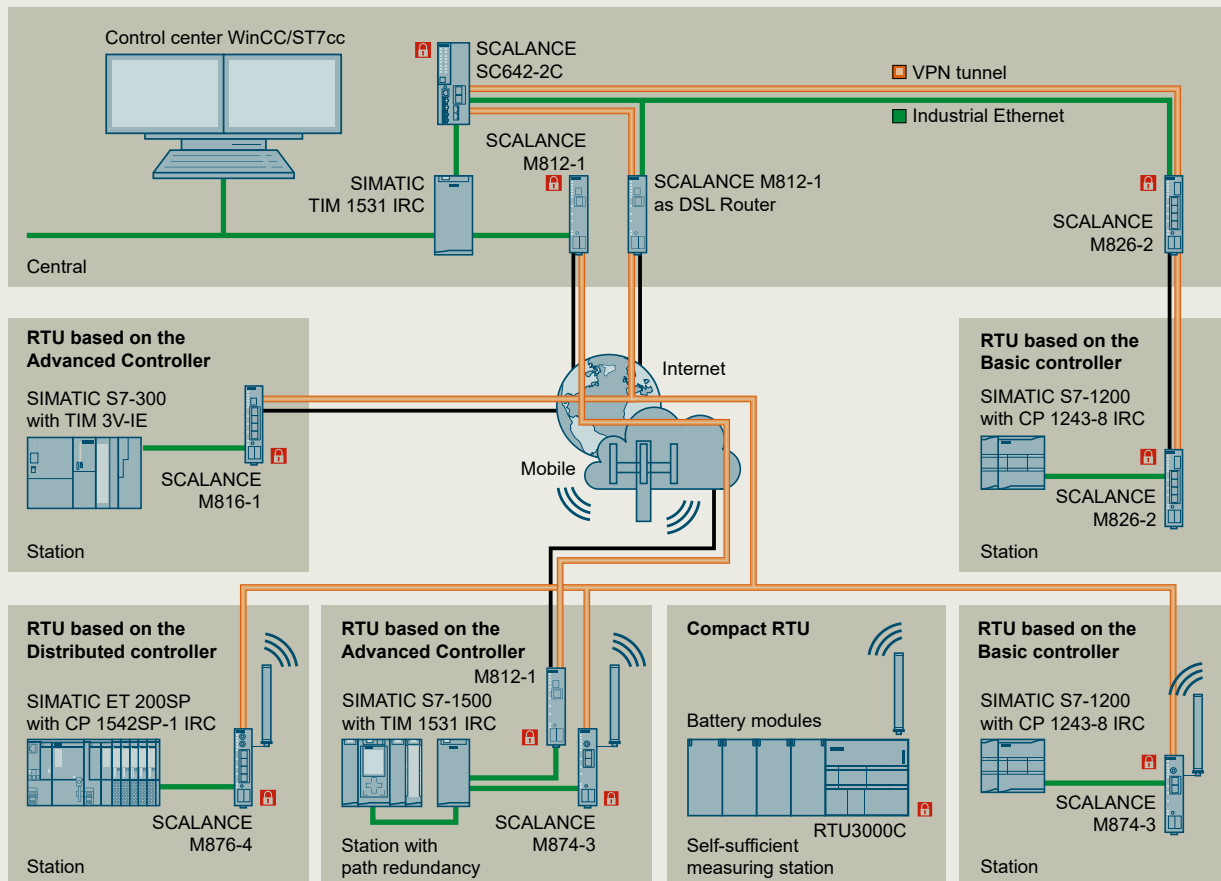
- SINAUT ST7cc für WinCC V7
- WinCC OA
- SIMATIC PCS 7 TeleControl
- SIMATIC WinCC TeleControl
- SINAUT ST7sc for OPC clients, e.g., WinCC Unified

SINAUT ST7cc for WinCC V7

- RTU connection via SINAUT ST7 telecontrol protocol to a control center based on WinCC
- Transmission of RTU process data according to time stamp to archives provided by WinCC
- Object communication (e.g., SEND, RECEIVE) with subordinate RTUs via identical partner blocks
- Time and cost savings through homogeneous and continuous communication engineering between process and control system

WinCC OA

WinCC OA is a SCADA system for visualizing and operating processes. Single or redundant multi-user systems can be coupled as a distributed system, thus enabling complex control system structures to be built. It features protocol interfaces for SINAUT ST7, DNP3, and IEC 60870-5.



Wide range of transmission networks for connecting substations (RTUs) to the control center

SIMATIC PCS 7 TeleControl and SIMATIC WinCC TeleControl

- Based on PCS 7 or WinCC
- Supplemented with telecontrol connections using various telecontrol protocols, such as SINAUT ST7, DNP3 or IEC 60870-5
- Engineering system based on DBA technology (Data Base Automation)
- Comprehensive block library
- Connection of third party RTUs

Connection to control systems from other vendors

Using the SINAUT ST7sc program package with OPC interface, the remote terminal units can also be linked to control systems from other vendors with SINAUT ST7. Complex buffer mechanisms prevent data loss even if the OPC client fails, while all process data is delivered with a time stamp. The configuration of the OPC interface presents itself as highly user-friendly.

Remote terminal units with standard protocols, such as DNP3 or IEC 60870-5, can be connected

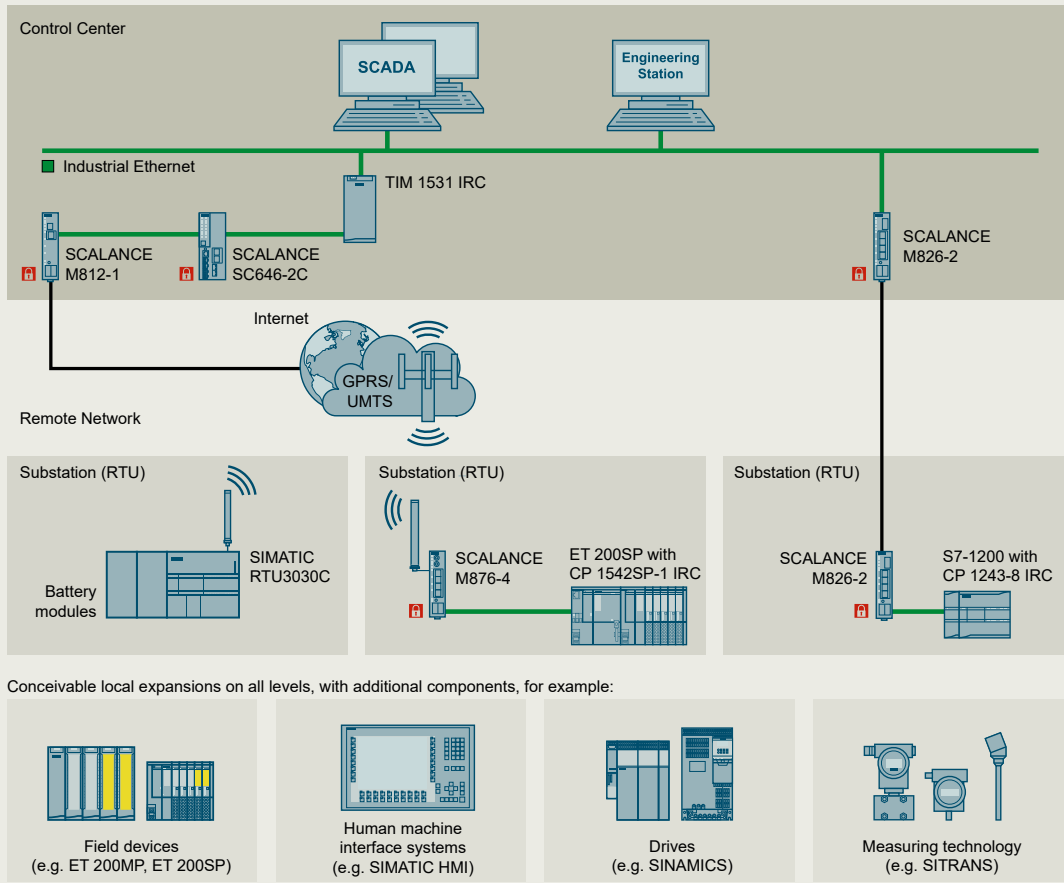
directly to any control system, provided it has an appropriate master interface.

Transmission networks to match requirements

The control center is connected to the remote terminal units via WAN (Wide Area Network). The telecontrol protocols offer enormous versatility in the choice of the transmission network:

- Connection to public networks, such as Internet and mobile wireless (2G, 3G, 4G, and 5G)
- Private 5G networks
- Dedicated lines (copper and fiber optic cables)
- Private wireless networks
- Ethernet wireless
- Wireless via Industrial Wireless LAN
- Long distances via fiber optic cable

The networks can be optimally adapted to prevailing local conditions. Redundant transmission paths can also be implemented, meaning a remote terminal unit can be connected to the control center via two networks.



Wide range of communication options via WAN using the example of a PCS 7 TeleControl control center

Advantages

High data security

Measures to prevent data corruption or loss are essential components of telecontrol solutions based on IEC 60870, DNP3 (IEEE 1815), and SINAUT ST7. Telecontrol protocols ensure data reaches the partner uncorrupted. Downtimes are bridged by data buffers in the RTUs, while IP-based networks are protected by dedicated VPN solutions and firewalls.

Fully automatic time stamp

All data telegrams are assigned a time stamp at their place of origin for subsequent and correct archiving of process data in the control system. The entire network is synchronized automatically – including periodic time changeovers.

Fast and flexible data communication

Communication is event-controlled, meaning operators are quickly alerted through alarms, states, and values from the process. They can then take action at any time by entering commands or setpoints.

Furthermore, staff can be notified about new events via text messages, while direct data exchange between the remote terminal units is also possible.

Simple and cost-effective engineering

Telecontrol systems facilitate integrated communication concepts and full integration into the SIMATIC environment. The STEP 7 engineering system is based on SIMATIC tools and permits graphic configuration of complete communication networks, multiple addressing of process data, validity checks, and address comparisons.

Remote programming, remote diagnostics

Program modifications or remote diagnostics can easily be carried out at any time via the communication network – even without interrupting ongoing process data communication. This saves on-site maintenance costs and the associated traveling times.

INVESTMENT IN THE FUTURE

Migration strategy

Systems and plants constantly need to be expanded and modernized by plant operators to meet customer requirements over the long-term. Since the installed base of hardware, communication networks, application software, and know-how of the operating and maintenance personnel represents enormous value, investment security is always of great importance.

To ensure a successful migration, the new solution must be future-oriented, optimally adapted to the respective plant, and devised in close cooperation with the plant operators and their system integrators. The foundation is formed by current telecontrol components for compact and modular RTUs based on the current SIMATIC controllers as well as control center software for HMI and SCADA systems. Due to their modular design, they can be flexibly adapted to the realities of the plant and the process requirements, enabling step-by-step system innovation.

A variety of migration scenarios is possible, depending on the specific technical and economical factors of the migration project.

Scenario 1

Replacing existing operator control and monitoring (HMI) systems with a WinCC SIMATIC PCS 7 control center

A technically outdated HMI system or its operating system no longer complies with the latest workplace guidelines and standards or needs functional enhancements. It can easily be replaced with a new SIMATIC WinCC, PCS 7, or WinCC OA system and adapted to the latest requirements without having to change subordinate systems. Remote terminal units, process I/O, communication networks, and application software are unchanged.

Advantages

- Minimization of costs and risks
- Extension of complete plant lifecycle and opening for new applications or the IT world

Scenario 2

Expansion of an existing plant

The existing plant is supplemented and modernized by further process stations, subnets, or communication media. A SINAUT ST7 system with SIMATIC S7-300/400 stations, for example, can be expanded with SIMATIC S7-1200, ET 200SP, or S7-1500 stations.

Advantages

- Simple, step-by-step expansion of plant capacity
- Manageable risk
- Introduction of new technologies (e.g., HMI, Industrial Ethernet, DSL, mobile wireless, etc.)

Scenario 3

Comprehensive modernization

Bottlenecks in the supply of spare parts, decreasing support, or the need for functional extensions can make extensive modernization of an old plant with future-oriented telecontrol systems in combination with SIMATIC control systems necessary. The conversion is usually possible during normal operation.

Advantages

- Increase in performance
- Introduction of new technologies (e.g., HMI, Industrial Ethernet, DSL, mobile wireless, etc.)
- Extension of complete plant lifecycle and opening for new applications or the IT world
- Elimination of bottlenecks and dependencies

SOLUTIONS FOR REMOTE TERMINAL UNITS

Compact, self-sufficient RTUs

The compact SIMATIC RTU3000C remote terminal units can monitor measuring points even in locations where no power grid is available. The RTUs are powered by up to six battery modules or an accumulator combined with a solar panel. Typical applications are leak detection, monitoring of pumping stations and water reservoirs, remote monitoring of liquid levels in tanks and silos, monitoring of agricultural irrigation systems, level monitoring of standing and flowing waters, flood protection, and position detection, e.g., of buoys.

The RTUs record measurement data from connected sensors and transmit it to individual users or a control center via mobile wireless. The RTU3031C and the RTU3041C also offer GPS positioning. If defined threshold values are exceeded, the RTUs immediately notify the service personnel via an e-mail or text message alert, enabling them to respond quickly to extraordinary events. The devices feature integrated inputs and outputs. With an extension board, an additional eight sensors can be connected via Modbus RTU or HART Multidrop.



SIMATIC RTU3010C



SIMATIC RTU3030C

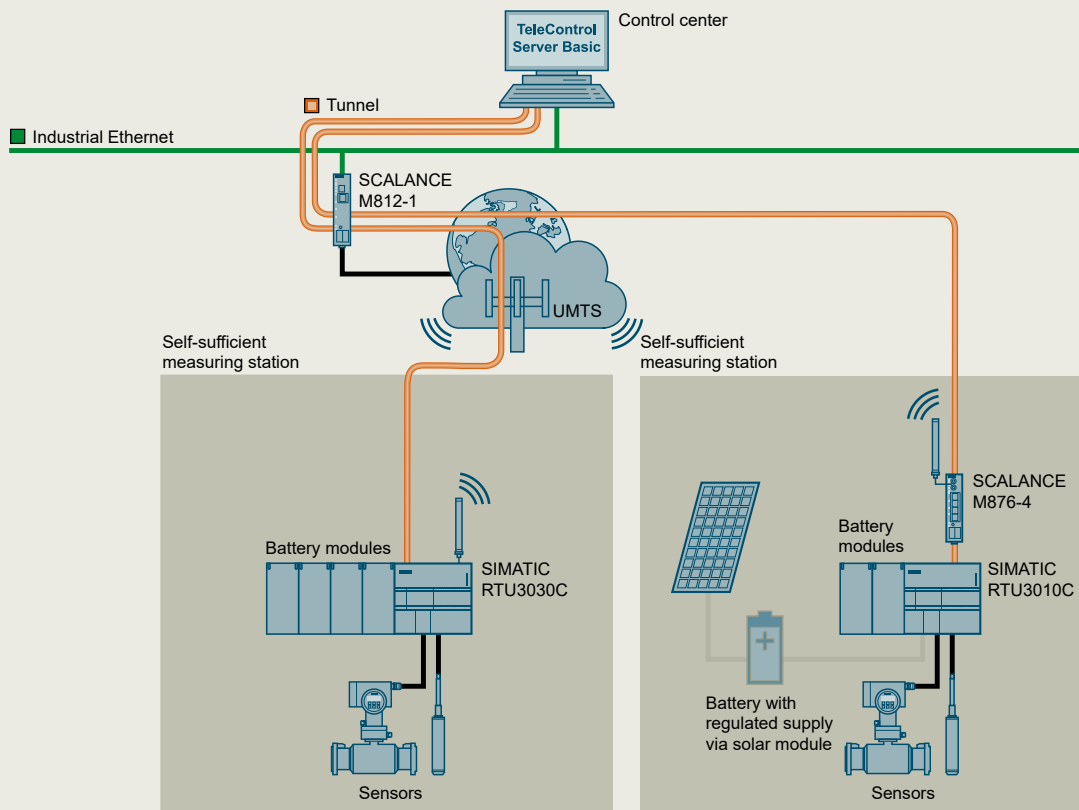


SIMATIC RTU3031C



SIMATIC RTU3041C

	SIMATIC RTU3010C	SIMATIC RTU3030C	SIMATIC RTU3031C	SIMATIC RTU3041C
Telecontrol protocols	IEC 60870-5-104, DNP3, SINAUT ST7, TeleControl Basic			
Communication	Any IP-based network via external router, such as SCALANCE M	2G, 3G via integrated modem or external router	2G, 3G via integrated modem or external router; GPS reception	2G, 4G (LTE-M/NB-IoT) via integrated modem or external router; GPS reception
Inputs/outputs	<ul style="list-style-type: none"> • 8 digital inputs (DI), including 2 frequency counters • 4 digital outputs (DO) • 4 analog inputs (AI) (8 additional DI for Modbus RTU or HART Multidrop with extension board) 		<ul style="list-style-type: none"> • 8 digital inputs (DI), including 2 frequency counters • 8 digital outputs (DO) • 4 analog inputs (AI) (8 additional DI for Modbus RTU or HART Multidrop with extension board) 	
Power supply	Freely combinable: 12 ... 24 V DC <ul style="list-style-type: none"> • 2 x 3 redundant battery modules • Accumulator with solar panel 			
Temperature range	-40 ... +70 °C			
Degree of protection	IP20 (IP68 with external enclosure)			
Security	Encrypted e-mail connection, TeleControl Server Basic tunnel, OpenVPN, VPN connection to SINEMA Remote Connect via auto configuration			
Alarm messages	Text message/e-mail alerts			
Configuration	Local and remote via web-based management			



Connection of measuring points with RTU3000C to TeleControl Server Basic

G_IK10_XX_10392

Operating modes

The compact SIMATIC RTUs support four operating modes. This means they only consume power when the application demands it:

Sleep mode

- Power consumption below 2 milliwatts (mW), operation over several years possible
- Immediate alarm notification via e-mail or text message in case of threshold exceedance
- RTU counts pulses

Update mode

- Retrieval and processing of current values from connected sensors
- Enabling and disabling of connected devices to save energy

Communication mode

- Establishes communication link to the control center independently
- Transmission of last buffered process values including time stamp

Service mode

- Allows battery replacement without data loss

Advantages

- Flexible power supply concept: battery, accumulator with solar panel, or 12–24 volt power connection – freely combinable
- Consumption-optimized low-power operation enables battery operation over several years
- Extended temperature range from -40 to +70 °C
- Secure communication
- Communication can be individually configured (time- or event-driven)
- Web server on board: convenient configuration via web browser, also remotely
- Remote diagnostics and maintenance via SIMATIC PDM
- Data buffering of process values with time stamps ensures a consistent database even in case of temporary connection failures
- Use as a data logger
- Support of various protocols: TeleControl Basic, SINAUT ST7, DNP3, and IEC 60870-5-104
- HART or Modbus connections with an additional HART/RS485 extension board
- External enclosure provides additional protection in accordance with IP68 degree of protection

SOLUTIONS FOR REMOTE TERMINAL UNITS (RTUS)

Modular RTUs based on SIMATIC controllers

Modular RTUs with SIMATIC S7-1200 basic controller

Modular remote terminal units based on SIMATIC S7-1200 are suited for applications with a low degree of automation. These inexpensive devices are characterized by their small, compact hardware design. They communicate with telecontrol centers via various telecontrol protocols using communication processors (CPs). These enable cyclical and event-driven transmission of measured values, count values and setpoints, as well as commands and alarms between the RTU and the control center. The CPs not only enable smooth data transfer, they also offer comprehensive diagnostic options for quick and informed analysis of the station status.

Advantages of SIMATIC S7-1200 RTUs

- Buffer for several thousand data values with time stamps to bridge transmission link downtimes
- Quick alerts via e-mail or text message
- Simple and cost-effective engineering: configuration in a few steps without programming effort
- Less on-site maintenance and travel costs due to cost-effective remote programming, diagnostics, control, and monitoring via the Internet



CP 1242-7 GPRS



CP 1243-7 LTE



CP 1243-1



CP 1243-8 IRC

	CP 1242-7 GPRS	CP 1243-7 LTE	CP 1243-1	CP 1243-8 IRC
Telecontrol protocols	TeleControl Basic	TeleControl Basic, DNP3, and IEC 60870-5-104	TeleControl Basic, DNP3, and IEC 60870-5-104	SINAUT ST7, DNP3, and IEC 60870-5-104
X1 interface	GSM (850 MHz, 900 MHz, 1800 MHz, 1900 MHz)	LTE (800 MHz, 1800 MHz, 2600 MHz)	Industrial Ethernet (1 x RJ45)	Industrial Ethernet (1 x RJ45) ¹⁾
Temperature range	-20 ... +70 °C			
Data buffering for temporary connection failures	Up to 64,000 events	Up to 64,000 events (TeleControl Basic, DNP3, or IEC 60870-5-104)	Up to 64,000 events (TeleControl Basic, DNP3, or IEC 60870-5-104)	Up to 64,000 events (DNP3 or IEC 60870-5-104), up to 16,000 telegrams (ST7)
Alarm messages	Text message/e-mail alerts			
Security	–	Firewall/VPN	Firewall/VPN	Firewall/VPN
Configuration	STEP 7 Basic (TIA Portal)			
Connection to SINEMA Remote Connect	–	Yes	Yes	Yes

¹⁾ Can be extended with an additional interface by a teleservice module (RS-232)

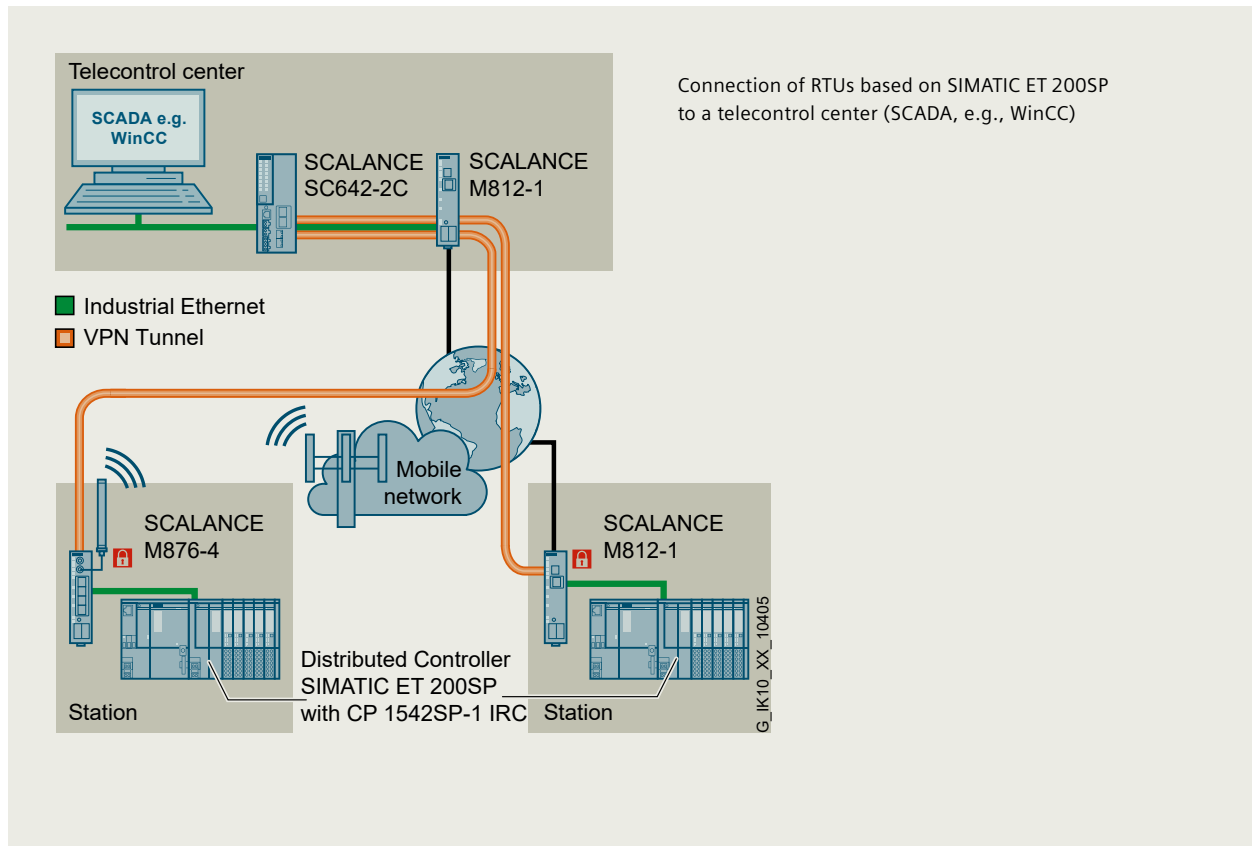
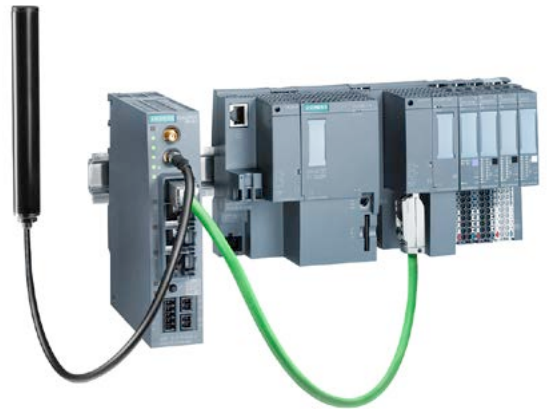
Modular RTUs with SIMATIC ET 200SP distributed controller

Modular RTUs based on the SIMATIC ET 200SP distributed controller deliver convincing results thanks to their particularly compact design and impressive performance. They can communicate with a telecontrol center using a range of different telecontrol protocols by means of a CP 1542SP-1 IRC communication processor, thus allowing the benefits of the SIMATIC ET 200SP system to also be used in telecontrol applications.

Advantages of SIMATIC ET 200SP RTUs

- Compact, modular system allows flexible configuration of application-specific RTUs
- Interface to control center via a range of different telecontrol protocols: TeleControl Basic, DNP3, IEC 60870-5-104, or SINAUT ST7
- Quick commissioning thanks to simple configuration in TIA Portal
- Cyclic and/or event-driven transmission of data
- Alerts for pre-defined events via e-mail or text message
- Complete storage of all measured values with time stamp to prevent data loss

- Comprehensive diagnostic options: either locally via LED error messages, in the TIA Portal engineering tool, or via a web server
- Cost savings due to remote programming, diagnostics, control, and monitoring via the Internet



Modular RTUs with SIMATIC S7-1500 advanced controller

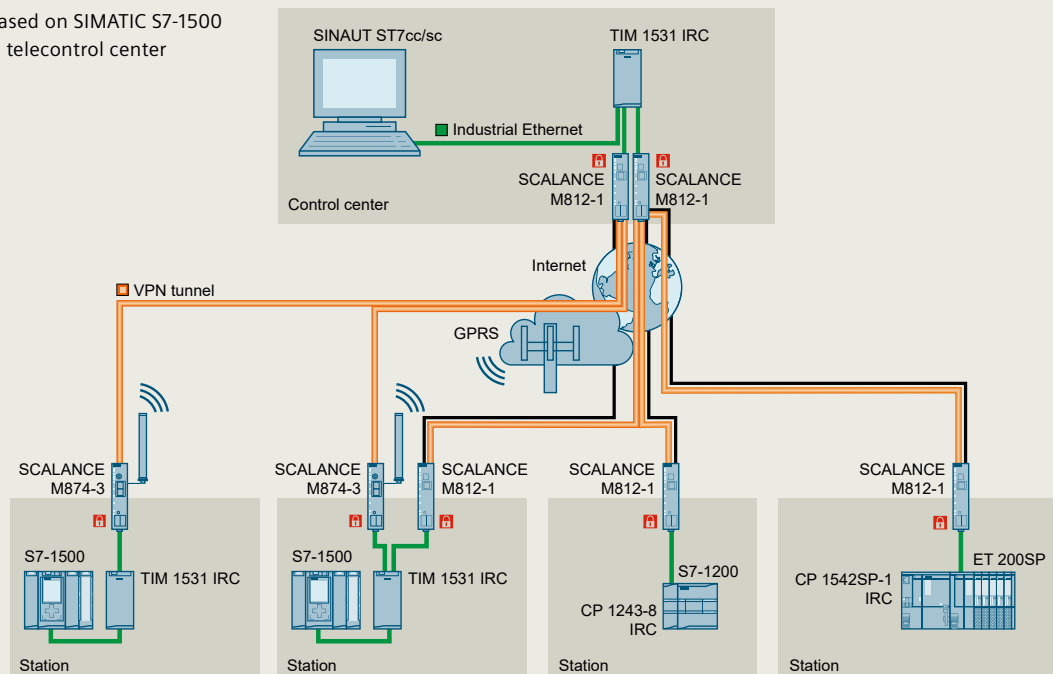
RTUs based on the SIMATIC S7-1500 advanced controller deliver convincing results as well as the highest levels of performance and flexibility. They can be connected to a control center via the Telecontrol Interface Module TIM 1531 IRC using the SINAUT ST7, DNP3, or IEC 60870-5 telecontrol protocols. The TIM module can also be used both as node and as master station. RTUs based on SIMATIC S7-1500 are particularly suited for complex telecontrol applications, such as in widely dispersed sewage systems, drinking water supplies, or district heating systems as well as in oil extraction and gas supply, power distribution, and traffic engineering.

Advantages of SIMATIC S7-1500 RTUs

- Expansion of existing telecontrol systems with SIMATIC S7-1500 stations
- Use as master station or node station possible
- Path redundancy for high availability when primary connection fails
- Central and convenient engineering of the telecontrol network in the TIA Portal
- Extensive diagnostic functions, including logging of data
- Setup of a redundant and highly available RTU based on SIMATIC S7-1500R/H CPUs for special requirements at specific process stations



Connection of RTUs based on SIMATIC S7-1500 with TIM 1531 IRC to a telecontrol center



G_IJK10_XX_10430

Modular RTUs with SIMATIC S7-400

Modular RTUs based on SIMATIC S7-400 are particularly suitable for complex process plants. Telecontrol Interface Modules (TIMs) are used for the connection to the control center and enable a reliable transmission of control and process data. SINAUT ST7, DNP3, or IEC 60870-5 can be used as communication protocols. TIMs also offer flexible connection options for external modems.

Advantages of SIMATIC S7-400 RTUs

- Telegram buffer for continuous recording of data, including time stamp, on the TIM in case of a faulty communication path or missing communication partner
- Reduce connection costs for the dial-up network
- Simple configuration and operation without specialist IT knowledge
- IP communication via encrypted connections
- Node station setup with TIM modules for structuring of the telecontrol application
- Flexible connection options to any IP-based or conventional WAN



- Independent operation of various transmission paths via TIM 1531 IRC and TIM 4R-IE in any redundant combination



TIM 1531 IRC



TIM 4R-IE



TIM 4R-IE DNP3

	TIM 1531 IRC	TIM 4R-IE	TIM 4R-IE DNP3
Telecontrol protocols	SINAUT ST7, DNP3, IEC 60870	SINAUT ST7	DNP3
Interfaces	1 x serial (RS-232, RS-485) 3 x Industrial Ethernet (RJ45)	2 x serial (RS-232, RS-485) 2 x Industrial Ethernet (RJ45)	2 x serial (RS-232, RS-485) 2 x Industrial Ethernet (RJ45)
Temperature range	0 °C ... +60 °C		
Data buffer for temporary connection failures	Up to 100,000 telegrams (ST7) Up to 250,000 events (DNP3, IEC)	Up to 56,000 telegrams	Up to 200,000 events
Application	As outstation, node station, or control center		
RTU station type	SIMATIC S7-1500, S7-300, S7-400	SIMATIC S7-300, S7-400	SIMATIC S7-300, S7-400
Alarm messages	E-mail	–	–
Configuration	TIA Portal	STEP 7 V5.x plus SINAUT ES or TIA Portal	STEP 7 V5.x plus SINAUT ES or TIA Portal

Get more information

Everything you need to know about Industrial Remote Communication/Telecontrol:

www.siemens.com/industrial-remote-communication

www.siemens.com/telecontrol

www.siemens.com/compact-rtu

www.siemens.com/pcs7

Siemens AG

Digital Industries

Process Automation

Östliche Rheinbrückenstr. 50

76187 Karlsruhe, Germany

Article no. 6ZB5530-1SA02-0BB0

Dispo 26000

BR 0921 0 PoD 16 En

Produced in Germany

© Siemens 2021

Subject to changes and errors. The information given in this brochure only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

All product designations may be trademarks or product names of Siemens AG or other companies whose use by third parties for their own purposes could violate the rights of the owners.

Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to the enterprise network or the Internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit:

<https://www.siemens.com/industrialsecurity>.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under:

<https://www.siemens.com/industrialsecurity>.