SIMATIC NET – Industrial Communication from Siemens

Industrial communication is of central importance for high-performance automation applications. Its diversity is mirrored in the broad range of industrial communication solutions from SIMATIC NET that extends beyond Industrial Remote Communication and Industrial Wireless Communication: With PROFINET/Industrial Ethernet, PROFIBUS, AS-Interface and IO-Link, it covers all areas of industrial communication. This ensures that the optimum solution is available for every application and every industry.

Success factor industrial remote access – New solutions for changed requirements
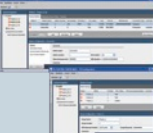
Urbanization, globalization, population growth and climatic change demand new solutions from industry that extend far beyond conventional remote control and maintenance. The extended product range from Siemens supports a wide range of new applications alongside telecontrol and teleservice. Industrial Remote Communication offers the perfect solution for widely differing requirements with regard to availability, flexibility and bandwidth. These may be in factory automation, the process industry or in public infrastructures, but also in areas such as mobility and energy supply – Industrial Remote Communication provides access to widely distributed machines, plants and applications of different sizes, both securely and economically.

Plants in water, wastewater or environmental sectors	Centrally controlled facility management	Control and monitoring of traffic control systems	Consumption recording and cost control in power networks	Remote monitoring of machines and automation equipment	Monitoring of mobile stations	Other application options
For example, ■ Hydro-electric power plants ■ Irrigation ■ Drinking water supply ■ Sewage systems ■ Level monitoring	For example, ■ Lighting ■ Heater ■ Consumption optimization	For example, ■ Traffic lights ■ Tunnel projects ■ Lighthouses ■ Traffic control systems	For example, ■ District heating networks ■ Wind power generation ■ Transformer stations ■ Biogas plants ■ Solar	For example, ■ Air-conditioning systems ■ Drink dispensers	For example, ■ Local public transport ■ Transportation ■ Ships on rivers and in coastal areas	For example, ■ Greenhouses ■ Level measurement in silos

Ordering overview for Industrial Remote Communication – Telecontrol

Telecontrol for the control center

TeleControl Basic

Application	Product	Comments	Article No.*
For the control center	TeleControl Server Basic V3 Runtime software for monitoring and control of 8 to 5.000 Remote Terminal Units (RTUs); OPC (UA) server for operating modular RTUs e.g. on the basis of SIMATIC S7-1200 or compact RTUs via mobile wireless network or Ethernet/Internet; Connection management for RTUs; routing for connections between S7 stations; Windows 7 + SP1; 32-bit/64-bit Windows Server 2008 R2 Standard + SP1, 64-bit Windows 7 Embedded, 32-bit from version V3 SP3: Windows 8.1 Pro, 64-bit Windows 10 (Pro, Enterprise), 64-bit Windows Server 2012 R2 Standard, 64-bit	Standard licenses for TeleControl Server Basic V3	
		for 8 RTUs	6NH9910-0AA21-0AA0
		for 32 RTUs	6NH9910-0AA21-0AF0
		for 64 RTUs	6NH9910-0AA21-0AB0
		for 256 RTUs	6NH9910-0AA21-0AC0
		for 1000 RTUs	6NH9910-0AA21-0AD0
		for 5000 RTUs	6NH9910-0AA21-0AE0
		Power packs for the expansion of licenses	
		8 RTUs => 32 RTUs	6NH9910-0AA21-0AB1
		32 RTUs => 64 RTUs	6NH9910-0AA21-0AF1
		64 RTUs => 256 RTUs	6NH9910-0AA21-0AC1
		256 RTUs => 1000 RTUs	6NH9910-0AA21-0AD1
		1000 RTUs => 5000 RTUs	6NH9910-0AA21-0AE1
		Upgrade packages	
		Upgrade TCSB from V2.x to V3	6NH9910-0AA21-0GA0

TeleControl Professional

Application	Product	Comments	Article No.*
For the control center	SINAUT ST7cc V3.1 SP2 Software for connecting SINAUT stations to WinCC; single license for 1 installation of the runtime software; configuration software and electronic manual on CD-ROM, 2 languages (German, English); operating systems: Windows 7 SP1 (32-bit / 64-bit), Windows 10 (64-bit), Windows Server 2008 SP2 (32-bit), R2 SP1 (64-bit) Windows Server 2012 R2 (64-bit); license key on USB stick	ST7cc S, for max. 6 RTUs	6NH7997-7CA31-0AA1
		ST7cc M, for max. 12 RTUs	6NH7997-7CA31-0AA2
		ST7cc L, for > 12 RTUs	6NH7997-7CA31-0AA3
		ST7cc R, redundancy license for ST7cc; 2 single licenses ST7cc S, M or L are additionally required	6NH7997-8CA31-0AA0
	SINAUT ST7sc V2.1 SP1 Software for connecting SINAUT stations to a control center via OPC; single license for 1 installation of the runtime software; configuration software and electronic manual on CD-ROM; operating systems: Windows 7 SP1 (32-bit / 64-bit), Windows 10 (64-bit), Windows Server 2008 SP2 (32-bit), R2 SP1 (64-bit) Windows Server 2012 R2 (64-bit); license key on USB stick	ST7sc S, for max. 6 RTUs	6NH7997-5CA21-0AA1
		ST7sc M, for max. 12 RTUs	6NH7997-5CA21-0AA2
		ST7sc L, for > 12 RTUs	6NH7997-5CA21-0AA3
	WinCC TeleControl WinCC add-on for connection of RTUs via telecontrol protocols	For detailed information, ordering information and technical specifications for the individual SIMATIC WinCC TeleControl products, please refer to the ST 80 / ST PC catalog and the Internet at: **www.siemens.com/wincc**	
	PCS 7 TeleControl Software packages for PCS 7 V8.1 for connection of RTUs via telecontrol protocols	For detailed information, ordering inf. and technical specifications for the individual SIMATIC PCS 7 TeleControl products, refer to the ST PCS 7.1 catalog and the Internet at: **www.siemens.com/simatic-pcs7/telecontrol**	
	WinCC OA Process control system for connection of RTUs via telecontrol protocols	For detailed information, ordering information and technical specifications for the individual WinCC OA products, please refer to the ST 80 / ST PC catalog and the Internet at: **siemens.com/wincc-open-architecture**	

www.siemens.com/telecontrol

SIEMENS

Industrial Remote Communication

Telecontrol-components

Ordering overview – Edition 11/2016

siemens.com/telecontrol

Remote Terminal Units (RTUs)

Compact Remote Terminal Unit – SIMATIC RTU3030C

Product	Comments	Article No.*
SIMATIC RTU3030C	Compact RTU with variable power supply using batteries, accumulator battery, solar power or 10.8 V DC to 28.8 V DC with integrated UMTS modem; connection to control center via TeleControl Basic, DNP3 or IEC60870-5-104 protocols, on-board I/O (8 DI, 4 DO, 4 AI), configuration and diagnostics per web interface; please note national approvals!	6NH3112-3BA00-0XX0
Battery case for SIMATIC RTU3030C	Battery housing for mounting of two D cell batteries; suitable for SIMATIC RTU3030C; batteries must be procured externally and are not included in the scope of supply! Please observe the notes regarding battery types given in the manual!	6NH3112-3BA00-1XX2
Aluminum enclosure for SIMATIC RTU3030C	Aluminum enclosure with IP68 degree of protection, temperature range -40 °C to + 70 °C, cover with pin torx screws, 7 cable outlets prepared	6NH3112-3BA00-1XX3
Stainless steel enclosure for SIMATIC RTU3030C	Stainless enclosure with IP68 degree of protection, temperature range -60 °C to + 135 °C, cover with pin torx screws and padlock device, 7 cable outlets prepared	6NH3112-3BA00-1XX1
Cable gland for IP68 enclosure	Cable gland; PG16; IP68; -40 °C to +100 °C; nickel-plated brass; suitable for enclosure with article numbers 6NH3112-3BA00-1XX1/1XX3	6NH3112-3BA00-1XX4 Packaging unit = 2
Sealing plugs for IP68 enclosure	Sealing plugs; M16; IP68; -40 °C to +100 °C; nickel-plated brass; suitable for enclosure with article numbers 6NH3112-3BA00-1XX1/1XX3	6NH3112-3BA00-1XX5 Packaging unit = 2
SIMATIC S7 MEMORY CARD	SIMATIC S7, MEMORY CARD for S7-1200 CPU/ SINAMICS/ SIMATIC RTU3030C, 3.3 V FLASH	
	Memory capacity 4 MB	6ES7954-8LC02-0AA0
	Memory capacity 12 MB	6ES7954-8LE02-0AA0
	Memory capacity 24 MB	6ES7954-8LF02-0AA0
	Memory capacity 256 MB	6ES7954-8LL02-0AA0
	Memory capacity 2 GB	6ES7954-8LP02-0AA0

CP versions	CP 1242-7 GPRS	CP 1243-1 LTE	CP 1243-1	CP 1243-1 DNP3	CP 1243-1 IEC	CP 1243-8 IRC
* Antenna not included in scope of supply						
Interfaces	1 x radio, SMA socket GSM mobile wireless network (supports GPRS data services)	1 x radio, SMA socket LTE mobile wireless network	Industrial Ethernet, 1 x RJ45	Industrial Ethernet, 1 x RJ45	Industrial Ethernet, 1 x RJ45	Industrial Ethernet, 1 x RJ45, 1 x 18-pin socket left of the connection for TS modules (serial RS232, analog modem, ISDN modem or GSM modem)
Telecontrol protocol	TeleControl Basic	TeleControl Basic	TeleControl Basic	DNP3	IEC 60870-5-104	SINAUT ST7
PLC	S7-1200	S7-1200	S7-1200	S7-1200	S7-1200	S7-1200
Performance data for telecontrol						
Node station	■	■	■	■	■	■
Substation	■	■	■	■	■	■
Central station			■			■
Data buffer	Up to 64.000 data points	Up to 64.000 data points	Up to 64.000 data points	Up to 64.000 data points	Up to 64.000 data points	Up to 16.000 data telegrams
Type of control center	TeleControl Server Basic	TeleControl Server Basic	TeleControl Server Basic	DNP3-capable control center	IEC 60870-capable control center	SINAUT ST7 control center
Performance data for other communication						
S7 communication	■	■	■	■	■	■
PG/OP communication	■	■	■	■	■	■

Remote Terminal Units (RTUs)

RTUs based on the SIMATIC S7-1200 Basic Controller

	Application	Product	Communication protocol	Comments	Article No. *
	For remote stations (RTUs)	SIMATIC STEP 7 Basic V14 (TIA Portal) for the configuration and programming of the S7-1200 RTU; floating license Software for TIA Portal and documentation on DVD; 6 languages (de, en, it, fr, sp, ch); Operating systems: Windows 7 (32/64-bit), Windows 8 SP1 (64-bit), license key on USB stick; configuration of SIMATIC S7-1200 and SIMATIC Basic Panels		Engineering software	6ES7822-0AA04-0YA5
		Communication processor CP 1242-7 for connecting SIMATIC S7-1200 to the 2G mobile wireless network (GSM/GPRS); please note national approvals	TeleControl Basic	GPRS operation with fixed IP addresses and dynamic IP addresses with standard mobile phone contract	6GK7242-7KX31-0XE0
		Communication processor CP 1243-7 for connecting SIMATIC S7-1200 to the 4G mobile wireless network (LTE); please note national approvals		Operation with fixed IP addresses and dynamic IP addresses with standard mobile phone contract (EU versions)	6GK7243-7KX30-0XE0
				(US version)	6GK7243-7SX30-0XE0
		Communication processor CP 1243-1 for connecting SIMATIC S7-1200 to TeleControl Server Basic or security applications according to Industrial Security concept (Firewall and VPN)			6GK7243-1BX30-0XE0
		Communication processor CP 1243-1 DNP3 for connecting SIMATIC S7-1200 to a control center via the DNP3 protocol	DNP3	Connection to remote networks via external industrial router, e.g. SCALANCE M (see Remote Networks below)	6GK7243-1JX30-0XE0
		Communication processor CP 1243-1 IEC for connecting SIMATIC S7-1200 to a control center via the IEC 60870-5-104 protocol	IEC 60870-5-104		6GK7243-1PX30-0XE0
		Communication processor CP 1243-8 IRC for operating a SIMATIC S7-1200 in the TeleControl Professional system for SINAUT ST7; station type: RTU; WAN connections: 1) Ethernet, 2) Additionally expandable with TS module RS232 or TS module MODEM or TS module GSM or TS module ISDN; operation with TIM modules possible	SINAUT ST7		6GK7243-8RX30-0XE0
		TS modules; SIMATIC S7, TS modules for SIMATIC TeleService. Power supply via TS ADAPTER IE Basic/Adv or CP 1243-8 IRC.			
		TS module RS232		Connection to TS Adapter IE Basic/Advanced or CP 1243-8 IRC	6ES7972-0MS00-0XA0
		TS module MODEM			6ES7972-0MM00-0XA0
		TS module ISDN			6ES7972-0MD00-0XA0
		TS module GSM, please note national approvals			6GK7972-0MG00-0XA0

RTUs based on the SIMATIC ET 200SP Distributed Controller

	Application	Product				Comments	Article No. *
	For remote stations (RTUs)	Communication processor CP 1542SP-1 IRC for connection of a SIMATIC ET 200SP Distributed Controller as a Remote Terminal Unit (RTU) to a control center system with the DNP3, IEC 60870-5-104 or TeleControl Basic protocols.		DNP3, IEC 60870-5-104, TeleControl Basic		Connection to remote networks via external industrial routers e.g. SCALANCE M (see under Remote Networks)	6GK7542-6VX00-0XE0

RTUs based on the SIMATIC S7-300 and S7-400 Advanced Controllers

	Application	Product	Communication protocol	Comments	Article No. *
	For the remote stations (RTUs)	With interfaces for telecontrol protocols via a conventional WAN or an IP-based network (WAN or LAN)			
		SINAUT Engineering Software V5.5 for ST7 and DNP3 TIM modules, consisting of SINAUT ST7/DNP3 configuration and diagnostics software for STEP7 V5.5, SINAUT TD7 block library	SINAUT ST7 DNP3	Engineering software	6NH7997-0CA55-0AA0
		SINAUT Engineering software V5.5 upgrade			6NH7997-0CA55-0GA0
		TIM 3V-IE; Interfaces: 1 x RS232, 1 x RJ45	SINAUT ST7	Can be used as RTU	6NH7800-3BA00
		TIM 3V-IE Advanced; Interfaces: 1 x RS232, 1 x RJ45		Can be used as RTU, node station and central or route redundancy	6NH7800-3CA00
		TIM 4R-IE; Interfaces: 2 x combined RS232/RS485, 2 x RJ45			6NH7800-4BA00
		TIM 3V-IE DNP3; Interfaces: 1 x RS232, 1 x RJ45	DNP3		6NH7803-3BA00-0AA0
		TIM 4R-IE DNP3; Interfaces: 2 x combined RS232/RS485, 2 x RJ45			6NH7803-4BA00-0AA0
		GPRS/GPRS modem MD720 for IP-based data transmission over GSM networks, quad band, AT command interface, automatic establishment of GPRS connection, switchable to CSD mode, RS232, including gender changer for RS232/PPI adapter	TeleControl Basic	GSM/GPRS mobile radio modem with RS 232 interface	6NH9720-3AA01-0XX0

* You will find up-to-date ordering data on the Internet at: **www.siemens.com/industrymall**
Conditions of sale and delivery can be found at: **www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf**

Remote networks – components for remote communication over private or public, heterogeneous networks

	Application	Product	Network type 1	Network type 2	Interfaces	Comments	Article no. *
	Management platform for secured connections and simple remote access	SINEMA Remote Connect Virtual Appliance				Basic software package for 4 VPN connections; SINEMA Remote Connect Client, license key on USB stick	6GK1720-1AH01-0BV0
		SINEMA Remote Connect upgrade 64				Upgrade of additional 64 VPN connections	6GK1722-1JH01-0BV0
		SINEMA Remote Connect upgrade 256				Upgrade of additional 256 VPN connections	6GK1722-1MH01-0BV0
		SINEMA Remote Connect upgrade 1024				Upgrade of additional 1024 VPN connections	6GK1722-1QH01-0BV0
		SINEMA Remote Connect Client				OpenVPN client for connecting to SINEMA Remote Connect, license key on USB stick	6GK1721-1XG01-0AA0
		KEY-PLUG SINEMA RC				KEY-PLUG for activating the connection of SCALANCE M87x/ S615 to SINEMA Remote Connect	6GK5908-0PB00
		GPRS modem MD720	Serial ports	Mobile wireless GSM (GPRS)	1 x RS232 1 x SMA antenna connection	Connection to S7-200 and TIM modules as serial port	6NH9720-3AA01-0XX0
		Connection of GSM/GPRS modem MD720 to PPI interface of the S7-200			RS232/PPI		6NH9701-0AD
		Plug-in cable (2.5 m) for connecting a TIM to a MD720 modem			RS232		6NH7701-5AN
		SCALANCE M812-1	Internet (DSL)		1 x RJ45 1 x RJ12	ADSL2T ANNEX A	6GK5812-1AA00-2AA2
						ADSL2+ ANNEX B	6GK5812-1BA00-2AA2
		SCALANCE M816-1			4 x RJ45 1 x RJ12	ADSL2T ANNEX A	6GK5816-1AA00-2AA2
						ADSL2+ ANNEX B	6GK5816-1BA00-2AA2
		SCALANCE M826-2	2-wire (SHDSL)		4 x RJ45 2 x terminal block (2-pin)	SHDSL	6GK5826-2AB00-2AB2
		SCALANCE M874-2	Mobile wireless GSM (2G)		2 x RJ45 1 x SMA antenna connection	IP router for transparent data transmission between Ind. Ethernet and 2G mobile networks (VPN with IPsec/OpenVPN**)	6GK5874-2AA00-2AA2
		SCALANCE M874-3	Mobile wireless GSM (2G), UMTS (3G)			IP router for transparent data transmission between Ind. Ethernet and 3G mobile networks (VPN with IPsec/ OpenVPN**)	6GK5874-3AA00-2AA2
		SCALANCE M876-3	Mobile wireless GSM (2G), UMTS (3G) CDMA2000 (EV-DO)		4 x RJ45 2 x SMA antenna connection	IP router for transparent data transmission between Ind. Ethernet and 3G mobile networks (VPN with IPsec/ OpenVPN**)	6GK5876-3AA02-2BA2
		SCALANCE M876-4 (EU)	Industrial Ethernet			IP router for transparent data transmission between Ind. Ethernet and 4G mobile network (VPN with IPsec/Open-VPN**)	6GK5876-4AA00-2BA2
		SCALANCE M876-4 (NAM)		Mobile wireless GSM (2G), UMTS (3G), LTE (4G)	4 x RJ45 2 x SMA Antenna connection	IP router for transparent data transmission between Ind. Ethernet and 4G mobile networks (VPN with IPsec/ OpenVPN**); for use in North America	6GK5876-4AA00-2DA2
		RUGGEDCOM RM1224 (EU)				IP router for transparent data transmission between Ind. Ethernet and 4G mobile networks (VPN with IPsec/ OpenVPN**)	6GK6108-4AM00-2BA2
		RUGGEDCOM RM1224 (NAM)				IP router for transparent data transmission between Ind. Ethernet and 4G mobile networks (VPN with IPsec/ OpenVPN**); for use in North America	6GK6108-4AM00-2DA2
	Accessories	Mobile wireless antenna ANT794-3M, flat antenna, 1.2 m connecting cable connected permanently to the antenna				For use in GSM networks	6NH9870-1AA00
		Mobile wireless antenna ANT794-4MR, flat antenna, 5 m connecting cable connected permanently to the antenna					6NH9860-1AA00
		Mobile wireless antenna ANT896-4MA, direct installation with SMA connection method				For use in GSM-/UMTS and LTE networks	6GK5896-4MA00-0AA3
		Mobile wireless antenna ANT896-4ME, compact design IP66, without connecting cable					6GK5896-4ME00-0AA0
		Mobile wireless antenna ANT896-6MH, suitable for railway applications, installation on vehicle roof possible, without connecting cable					6GK5896-6MH00-0AA0
		Mobile wireless antenna ANT896-6MM, incl. 3 x pigtail with QMA connector, incl. GPS and WLAN connection, installation on vehicle roof					6GK5896-6MM00-0AA0
		Lightning protector LP798-1N				2 N-Connect female connector, 0 ... 6 GHz, IP 68	6GK5798-2LP00-2AA6
		Cabinet feedthroughs N/N female/female				2 N-Connect female connector, 0 ... 11 GHz, IP 68	6GK5798-2PP00-2AA6
		Elbow adapter				SMA/SMA male/female	6GK5898-1CV00-4AA0
		SIMATIC NET N-Connect/SMA male/male Flexible connection cable			Length 0.3 m		6XV1875-5LE30
					Length 1 m		6XV1875-5LH10
					Length 2 m		6XV1875-5LH20
					Length 5 m		6XV1875-5LH50
		SIMATIC NET N-Connect Male/Male Flexible Connection cable			Length 1 m		6XV1875-5AH10
					Length 2 m		6XV1875-5AH20
					Length 5 m		6XV1875-5AH50
					Length 10 m		6XV1875-5AN10

* You will find up-to-date ordering data on the Internet at: **www.siemens.com/industrymall**
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** For connection to SINEMA Remote Connect and/or as OpenVPN client

TIM versions	TIM 3V-IE	TIM 3V-IE Advanced	TIM 3V-IE DNP3	TIM 4R-IE	TIM 4R-IE DNP3
TIM for the control room		■	■	■	■
TIM for the outstations	■	■	■	■	■
Data buffer	Up to 16,000 telegrams	Up to 32,000 telegrams	Up to 64,000 data points	Up to 54,000 telegrams	Up to 200,000 data points
PLC	S7-300 S7-300F	S7-300 S7-300F	S7-300 S7-300F	S7-300 / S7-300F S7-400 / S7-400F PC	S7-300 S7-400 / S7-400F S7-400H
Interfaces	RS232 / Ind. Ethernet (RJ45)	RS232 / Ind. Ethernet (RJ45)	RS232 / Ind. Ethernet (RJ45)	2 x serial (RS232, RS485) / 2 x Ind. Ethernet (RJ45)	2 x serial (RS232, RS485) / 2 x Ind. Ethernet (RJ45)
SIPLUS extreme	■			■	

You can find additional information in the Industry Mall under Industrial Remote Communication and on the Internet
http://www.siemens.com/industrial-remote-communication