

Overview



6GT2002-0JD00



6GT2002-0JD10



6GT2002-0JD20

SIMATIC RF180C/RF182C and RFID 181EIP are communication modules for direct connection of SIMATIC identification systems to PROFINET IO/Ethernet and Ethernet/IP. The readers (SLG) of the RFID systems MOBY D, SIMATIC RF200 / RF300 / RF600 as well as the MV400 optical reader devices (RF180C and RFID 181EIP only) can be operated on the communication modules.

Due to the high degree of protection and ruggedness, SIMATIC RF180C / RF182C and RFID 181EIP are particularly suitable for machine level use. The uniform plug-in connection system ensures rapid commissioning.

Benefits

get Designed for Industry

- Two parallel reader channels ensure real-time mode at dynamic read points.
- Reader connection using an 8-pin M12 connector for fast installation of all components.
- Different connection systems to suit any application:
 - M12, 7/8", the well-proven round connectors.
 - Push-pull connectors for quick assembly with RJ45 data connectors and 24 V connectors.
- Easy changeover from PROFIBUS applications to PROFINET with SIMATIC RF180C thanks to software compatibility.
- The integrated switch allows several PROFINET/Ethernet modules to be installed in a star or bus topology. Each application can then be set up quickly and inexpensively.
- Powerful hardware ensures rapid data communication with the reader (SLG). Consequently, data is available for the application even faster.
- Simple firmware downloading in the case of function expansions and error rectification ensures high availability of the identification system.
- Adjustable and parameterizable identification-system-specific diagnostics facilitate easy commissioning and troubleshooting.
- A broad selection of pre-assembled connecting cables can be ordered for connecting PROFINET/Ethernet and readers to SIMATIC RF180C/RF182C. This saves time and money during installation and assures better quality.

Application

The Ethernet-based communication modules have been specially designed for a wide range of applications in industrial automation and logistics. Due to their high IP67 degree of protection, SIMATIC RF180C/RF182C and RFID 181EIP can be installed in the process outside the control cabinet.

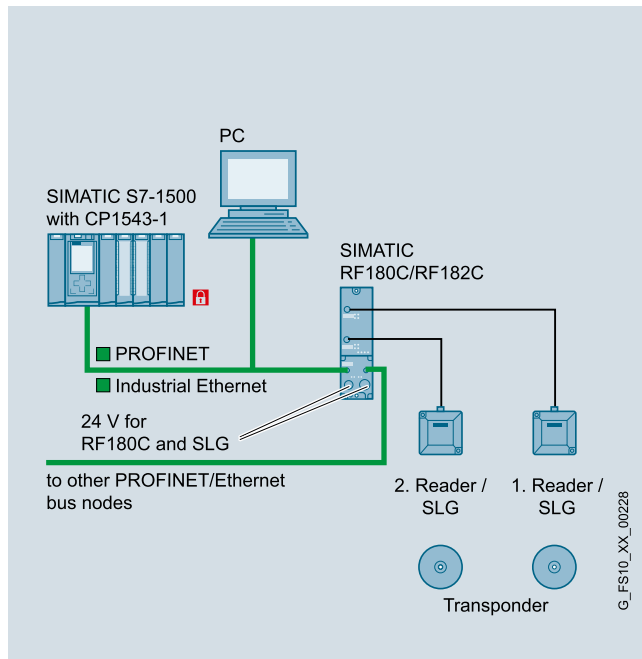
Main applications for SIMATIC RF180C/RF182C and RFID 181EIP:

- Mechanical engineering, automation systems, conveyor systems
- Ancillary assembly lines in the automotive industry / suppliers
- Small assembly lines

Communication modules

SIMATIC RF180C / RF182C / RFID 181EIP

Design



The data in the transponder can in principle be accessed by direct addressing using absolute addresses.

Error messages and operating states (transponder in the field, transmission, etc.) are indicated additionally by means of LEDs and simplify commissioning and service.

The SIMATIC RF180C/RF182C and RFID 181EIP communication modules have two reader interfaces from which the readers are also supplied with voltage. In the communication module, the power supply of the readers has an electronic fuse. The maximum permissible current per communication module for the readers is 1 A. It is of no importance here whether the current is drawn by 1 or 2 readers.

SIMATIC RF180C

The SIMATIC RF180C is designed for use in PROFINET networks. SIMATIC RF180C is integrated in SIMATIC STEP 7 via the GSDML file. The SIMATIC RF180C can then be configured using the device manager of the TIA Portal or another PROFINET tool.

The application accesses the transponder via the FB 45 or via blocks from the Ident Library. The transponder is addressed using absolute addresses. For large volumes of data and complex tag operations, the FB 45 can process chained commands. The Ident Library is already integrated in the TIA Portal and offers functions that are very easy to parameterize.

Data is exchanged between SIMATIC RF180C and the application by means of acyclic data records. This ensures that large quantities of data can be transferred from/to SIMATIC RF180C without loading the bus cycle.

Using the "RFID standard profile" setting, the RF180C can be operated directly in a SIMOTION.

SIMATIC RF182C

The SIMATIC RF182C is designed for use in Ethernet networks based on TCP/IP. The IP address of the SIMATIC RF182C is set using the "Primary Setup Tool". The RF182C is then ready for operation. This tool can be downloaded from

<http://support.automation.siemens.com/WW/view/en/19440762>

Communication with the SIMATIC RF182C is implemented using XML commands. XML commands have a very simple structure. This makes programming of the RF182C under any operating system very easy. The simple command set of the RF182C can also be programmed easily in any Ethernet-capable controller.

RFID 181EIP

The communication module RFID 181EIP is designed for use in Ethernet/IP networks. A DHCP server automatically assigns an IP address to the RFID 181EIP. Alternatively, the user can assign static IP addresses on the DHCP server. The standard tool for assigning IP addresses is called the BOOTP/DHCP server and is included in the RSLinx software package.

The RFID 181EIP communicates with the reader by means of implicit and explicit messages. Commands and results are transferred with explicit messages. The user sets up the commands directly in the application program. Application examples are available to make getting started easier.

Function

The SIMATIC RF180C/RF182C and RFID 181EIP communication modules consist of a basic module and a connection block that must be ordered separately.

The connection block is available in three versions:

- M12, 7/8" (5-pole):
PROFINET/Ethernet is connected by means of an M12 connector, the power supply is connected by means of a 5-pole 7/8" connector. There are 2 connections each for PROFINET/Ethernet as well as for the power supply. This ensures that the SIMATIC RF180C/RF182C can be connected to additional bus nodes without the need for external distributors. The removable connection block allows a base module to be replaced without interrupting the supply voltage to other bus stations.
- Push-pull connector (according to IEC 61918):
PROFINET/Ethernet and the power supply are connected by means of a push-pull connector. There are 2 connections each for PROFINET/Ethernet as well as for the power supply. This ensures that SIMATIC RF180C/RF182C can be connected to additional bus nodes without the need for external distributors. The supply voltage connectors can conduct currents of up to 12 A (1L+ and 2L+). The removable connection block allows a base module to be replaced without interrupting the supply voltage to other bus stations.
- M12, 7/8" (4-pole; not recommended for RF180C):
Ethernet is connected by means of an M12 connector, the power supply is connected by means of a 4-pole 7/8" connector. There are 2 connections for Ethernet and one connection is available for the power supply. This connection block can be used in applications where the 5-pole 7/8" connector is already being used for other functions and therefore cannot be used for the power supply.

A pre-assembled reader cable, available in lengths from 2 m to 50 m, is used to connect one or two readers to the communication module. The cable can also be assembled by the customer as required.

Technical specifications

Article number	6GT2002-0JD00	6GT2002-0JD10	6GT2002-0JD20
Product type designation	RF180C communication module	RF182C communication module	RFID 181EIP communication module
Suitability for operation	PROFINET network together with RF200/300/600, MV400, MOBY D/E/I/U	Industrial Ethernet network together with RF200/300/600, MOBY D/U	Ethernet/IP network together with RF200/300/600, MV400, MOBY D/E/I/U
Transmission rate			
Transfer rate for Industrial Ethernet	10 ... 100 Mbit/s	10 ... 100 Mbit/s	10 ... 100 Mbit/s
Transfer rate at the point-to-point connection serial maximum	115.2 kbit/s	115.2 kbit/s	115.2 kbit/s
Interfaces			
Design of the interface for point-to-point connection	RS422	RS422	RS422
Number of readers connectable	2	2	2
Type of electrical connection			
• of Industrial Ethernet interface	(according to the connection block)	(according to the connection block)	(according to the connection block)
• for supply voltage	(according to the connection block)	(according to the connection block)	(according to the connection block)
Design of the interface to the reader for communication	M12, 8-pin	M12, 8-pin	M12, 8-pin
Mechanical data			
Material	Thermoplastic (Valox 467, fiberglass reinforced)	Thermoplastic (Valox 467, fiberglass reinforced)	Thermoplastic (Valox 467, fiberglass reinforced)
Color	IP Basic 714	IP Basic 714	IP Basic 714
Tightening torque of the screw for securing the equipment maximum	3 Nm	3 Nm	3 Nm
Supply voltage, current consumption, power loss			
Supply voltage			
• at DC Rated value	24 V	24 V	24 V
• at DC	20 ... 30 V	20 ... 30 V	20 ... 30 V
Consumed current at DC at 24 V			
• without connected devices typical	0.1 A	0.1 A	0.1 A
• with connected devices maximum	1.1 A	1.1 A	1.1 A
Permitted ambient conditions			
Ambient temperature			
• during operation	0 ... 60 °C	0 ... 60 °C	0 ... 60 °C
• during storage	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C
• during transport	-40 ... +70 °C	-40 ... +70 °C	-40 ... +70 °C
Protection class IP	IP67	IP67	IP67
Shock resistance	According to IEC 61131-2	According to IEC 61131-2	According to IEC 61131-2
Shock acceleration	300 m/s ²	300 m/s ²	300 m/s ²
Vibrational acceleration	100 m/s ²	100 m/s ²	100 m/s ²
Design, dimensions and weight			
Width	60 mm	60 mm	60 mm
Height	30 mm	30 mm	30 mm
Depth	210 mm	210 mm	210 mm
Net weight	0.21 kg	0.21 kg	0.21 kg
Mounting type	2 x M5 screws	2 x M5 screws	2 x M5 screws
Cable length for RS422 interface maximum	1 000 m	1 000 m	1 000 m

Communication modules

SIMATIC RF180C / RF182C / RFID 181EIP

Article number	6GT2002-0JD00	6GT2002-0JD10	6GT2002-0JD20
Product type designation	RF180C communication module	RF182C communication module	RFID 181EIP communication module
Product properties, functions, components general			
Display version	4 LEDs per reader connection, 4 LEDs for device status	4 LEDs per reader connection, 4 LEDs for device status	4 LEDs per reader connection, 4 LEDs for device status
Protocol is supported Media Redundancy Protocol (MRP)	No	No	No
Product function transponder file handler can be addressed	Yes	No	Yes
Protocol is supported			
• LLDP	Yes	No	No
• PROFINET IO protocol	Yes	No	No
• TCP/IP	No	Yes	No
• EtherNet/IP protocol	No	No	Yes
Type of parameterization	GSDML	XML	EDS file
Type of programming	FB 45, FB 55, Ident profile (PIB)	XML commands	Data records via implicit/explicit mes- sages
Type of computer-mediated communication	acyclic communication	XML	Implicit/explicit messaging
Standards, specifications, approvals			
Certificate of suitability	CE, FCC, cULus, PNO: Conformance Class B	CE, FCC, cULus	CE, FCC, cULus
MTBF	121 y	121 y	121 y
Accessories			
Accessories	Connection block M12 d-coded, 7/8" 5-pin or push-pull	Connection block M12 d-coded, 7/8" 5-pin or push-pull or M12 d-coded, 7/8" 4-pin	Connection block M12 d-coded, 7/8" 5-pin or push-pull or M12 d-coded, 7/8" 4-pin

Selection and ordering data

	Article No.		Article No.
SIMATIC RF180C communication module For PROFINET, for connecting 2 readers, without a connection block.	6GT2002-0JD00	Accessories for network connection M12, 7/8" (5-pole)	
SIMATIC RF182C communication module For Ethernet, for connecting 2 readers, without a connection block.	6GT2002-0JD10	IE connecting cable M12-180/M12-180 Pre-assembled IE FC TP trailing cable GP 2x2 (PROFINET Type C), with two 4-pin M12 plugs (D-coded), maximum length 85 m, IP65/IP67 degree of protection.	
RFID 181EIP communication module For Ethernet/IP, for connecting 2 readers, without a connection block.	6GT2002-0JD20		
Connection block For SIMATIC RF180C/RF182C, M12 d-coded, 7/8" (5-pole).	6GT2002-1JD00	0.3 m 0.5 m 1 m 1.5 m 2 m 3 m 5 m 10 m 15 m	6XV1870-8AE30 6XV1870-8AE50 6XV1870-8AH10 6XV1870-8AH15 6XV1870-8AH20 6XV1870-8AH30 6XV1870-8AH50 6XV1870-8AN10 6XV1870-8AN15
		7/8" connecting cable to power supply Pre-assembled with two 5-pin 7/8" male and female connectors.	
Connection block For SIMATIC RF180C/RF182C, push-pull RJ45.	6GT2002-2JD00		
		0.3 m 0.5 m 1 m 1.5 m 2 m 3 m 5 m 10 m 15 m	6XV1822-5BE30 6XV1822-5BE50 6XV1822-5BH10 6XV1822-5BH15 6XV1822-5BH20 6XV1822-5BH30 6XV1822-5BH50 6XV1822-5BN10 6XV1822-5BN15
Connection block For SIMATIC RF182C, RFID 181EIP, M12 d-coded, 7/8" (4-pole).	6GT2002-4JD00	Other special lengths with 90° or 120° cable connection, see http://support.automation.siemens.com/WW/view/en/26999294	
			