

RFID Communication modules

SIMATIC RF180C / RF182C

Overview



SIMATIC RF180C and SIMATIC RF182C are communication modules for direct connection of SIMATIC identification systems to PROFINET IO/Ethernet. The readers (SLGs) of the RFID systems MOBY D/U, SIMATIC RF300/RF600 as well as MV400 (RF180C only) can be operated on the SIMATIC RF180C/RF182C.

Due to the high degree of protection and its ruggedness, SIMATIC RF180C/RF182C is ideally suited to use at the machine level. The uniform plug-in connection system ensures rapid commissioning.

Benefits

- Two parallel reader channels ensure real-time mode at dynamic read points.
- Reader connection with an 8-pole M12 connector for rapid assembly 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
- 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 built up quickly and inexpensively
- Powerful hardware ensures rapid data communication with the reader (SLG). So that the data are available to the application more quickly
- 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 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 increases the quality

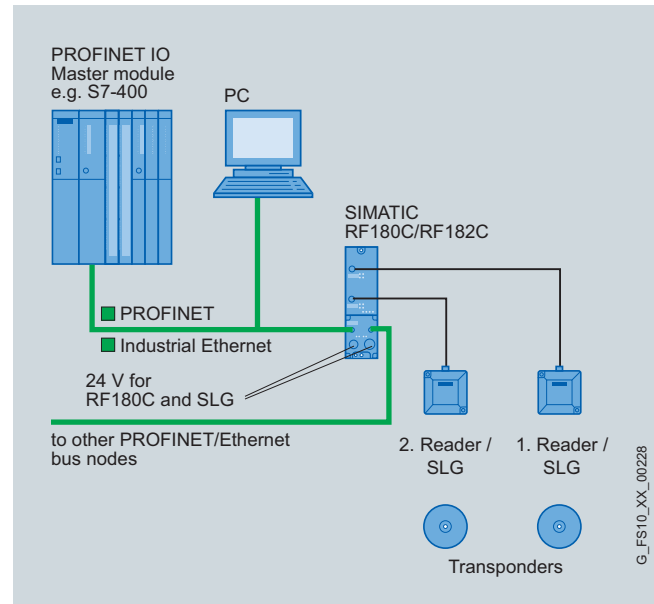
Applications

The PROFINET SIMATIC RF180C/RF182C communication module has been specially designed for a wide range of applications in industrial automation and logistics. Due to its high degree of protection IP67, SIMATIC RF180C/RF182C can be installed in the process outside the control cabinet.

Main applications for SIMATIC RF180C/RF182C:

- Machine manufacturing, automation systems, conveyor systems
- Ancilliary assembly lines in the automotive industry / suppliers
- Small assembly lines

Design



Functions

The SIMATIC RF180C/RF182C comprises 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 the 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; only RF182C):
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 is used to connect one or two readers to the communication module. The standard cable length is 2 m. If other reader cable lengths are required, an extension cable from 2 to 50 m in length can be used. The cable can also be assembled by the customer as required.

The data in the transponder can be accessed in the following manner: Direct addressing via absolute addresses.

Error messages and operating states (tag in field, transfer, etc.) are also displayed on LEDs and support commissioning and service.

SIMATIC RF180C/RF182C has two reader interfaces from which the readers are also supplied with voltage. There is an electronic fuse in SIMATIC RF180C/RF182C for the readers' power supply. The maximum current permitted for the readers per SIMATIC RF180C/RF182C is 1 A. It is not important here whether the current is drawn by one 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. SIMATIC RF180C can then be configured via the SW tool HW Config of SIMATIC Manager or another PROFINET tool.

The application accesses the tag via FB45. FB45 accesses the tag/Data Matrix Code via absolute addresses. For large volumes of data and complex tag operations, the FB45 can process chained commands.

Data is exchanged between SIMATIC RF180C and the application by means of acyclic data records. This ensures that a large quantity of data can be transferred from/to SIMATIC RF180C without loading the bus cycle. This is advantageous when large volumes of data are being transferred. SIMATIC RF180C can also process chained tag commands in this mode extremely quickly.

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 at <http://support.automation.siemens.com/WW/view/com/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 command set of the RF182C can also be programmed easily in any Ethernet-capable controller.

Technical specifications

Communication modules	SIMATIC RF180C	SIMATIC RF182C
Ethernet connection		
Protocol	PROFINET IO	Ethernet TCP/IP
Data rate	10 / 100 Mbit/s	
Connection versions	M12, 7/8" (5-pole) Push-pull	M12, 7/8" (5-pole) Push-pull M12, 7/8" (4-pole)
Programming	FB 45	XML-structured data
Supply voltage		
• Rated value	24 V DC	
• Permissible range	20 ... 30 V DC	
Current consumption		
• Without reader, typ.	100 mA	
• With two readers, max.	1 000 mA	
Serial reader interface (gross transmission rate)		
• MOBY U/D, RF200, RF300, RF600	19 200, 57 600, 115 200 bit/s	
Cable connector for reader	2 x connector plug M12, 8-pin	
Cable length to reader		
• Standard length	2 m	
• Optional preassembled cables	5 m, 10 m, 20 m, 50 m	
Self-assembled cables	Reader-dependent, up to 1 000 m	

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Communication modules	SIMATIC RF180C	SIMATIC RF182C
Supply voltage to reader	24 V	
Max. current per reader	0.5 A	
• 2 readers connected	1.0 A	
• 1 reader connected		
Ambient temperature	-0 ... 60 °C	
• During operation	-40 ... +70 °C, 20 K/h	
• During storage		
Shock load during operation acc. to IEC 61131-2	30 g	
Vibratory load during operation acc. to IEC 61131-2	0.75 mm (10 Hz to 58 Hz) 10 g (58 Hz to 150 Hz)	
Enclosure	Thermoplastic (fiberglass reinforced)	
• Material	IP Basic 714	
• Color	IP67	
• Degree of protection		
Dimensions W x H x D (mm)	60 x 210 x 30	
• without connection block	60 x 210 x 54	
• with M12, 7/8" connection block	60 x 216 x 100	
• with push pull connection block		
Weight	210 g	
• Base module only	230 g	
• M12, 7/8" connection block only	120 g	
• Push pull connection block only		

Selection and ordering data

	Order No.		Order No.
SIMATIC RF180C communication module ▶ B	6GT2 002-0JD00	Reader cable for SIMATIC RF200 / RF300 / RF600 / MV420 / MV440	
For PROFINET, for connecting 2 readers; without a connection block		Or extension cable MOBY U/D and SIMATIC RF200 / RF300 / RF600 / MV400, PUR material, CMG approval, suitable for cable carriers, straight connector	
SIMATIC RF182C communication module ▶ B	6GT2 002-0JD10	2 m ▶	6GT2 891-4FH20
For Ethernet for connecting 2 readers, without connection block		5 m ▶	6GT2 891-4FH50
PROFINET connection block ▶ B	6GT2 002-1JD00	10 m ▶	6GT2 891-4FN10
for SIMATIC RF180C/RF182C, M12 d-coded, 7/8" (5-pole)		20 m ▶	6GT2 891-4FN20
PROFINET connection block ▶ B	6GT2 002-2JD00	50 m ▶	6GT2 891-4FN50
for SIMATIC RF180C/RF182C, push pull RJ45		2 m, plug angled at reader ▶	6GT2 891-4JH20
PROFINET connection block ▶ B	6GT2 002-4JD00	M12 sealing caps for unused reader connections ▶	3RX9 802-0AA00
for SIMATIC RF182C, M12 d-coded, 7/8" (4-pole)		10 units minimum order quantity, price per 100 units	
Accessories for RFID		Accessories for network connection M12, 7/8" (5-pole)	
Reader cable for MOBY U		PROFINET cable with M12 plugs	6XV1 870-8A■■■■¹⁾
PUR material, CMG approved, suitable for cable carriers		preassembled; suitable for cable carriers	
2 m ▶	6GT2 091-4FH20	Cable for supply voltage with 7/8" connectors	6XV1 822-5B■■■■¹⁾
5 m ▶	6GT2 091-4FH50	preassembled	
Reader cable for MOBY D ▶	6GT2 691-4FH20	7/8" connector for voltage	
PUR material, CMG approved, suitable for cable carriers, 2 m		Pack of 5, 1 pack minimum order quantity, price per pack	
		• With male insert ▶	6GK1 905-0FA00
		• With female insert ▶	6GK1 905-0FB00