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Technical Data&Documentation RF250R – Short Form

Index

1 Introduction

Remarks: The RF250R manual does not yet exist, even in German language. The RF250R manual, once completed, will contain detailed information about field-data, range for certain tags, and information about how to implement the RF250R in a production site with communication modules. This detailed information may not be much relevant for RF250R FCC/IC approval.
Below given are short system overview and technical data which are required in order to run the RF250R for testing and to check the reader's function.

2 RF200 System overview

SIMATIC RF200 is an inductive identification system, based on the standard ISO 15693, which was specially designed for industrial production for controlling and optimization material flow.
Contrary to SIMATIC RF300, SIMATIC RF200 is designed for RFID applications for lower demands on performance (data volume, data transfer speed, diagnostics).
SIMATIC RF200 is an entry-level RFID system.

Component	Description
Communication Modules	Integration of an RFID Identification system into a PLC (e. g. SIMATIC S7) is achieved by a communications module.
Reader	The reader achieves the communication with the tag and provides the tag with energy by the reader's magnetic field. The reader also interfaces to various modules (i.e. SIMATIC S7 via ASM 475).
Tag	The RFID-tag stores all data relevant for production and is used as a substitute for optical barcode-tags.

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3 Overview of System Components compatible with RF250R

System components	
Communication modules	• ASM 456 • ASM 475 (S7 300/ ET 200M) • RF160C • RF170C • RF180C • RF182C • RF120C
antennas	• ANT8 • ANT12 • ANT18 • ANT30
Tags	• MDS D117 • MDS D127 • MDS D124 • MDS D126 • MDS D160 • MDS D324 • MDS D421 • MDS D422 • MDS D423 • MDS D424 • MDS D425 • MDS D426 • MDS D428 • MDS D460

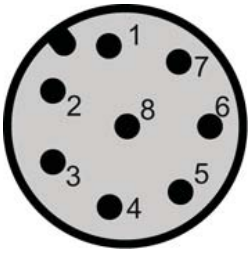
4 Technical Data RF250R (short form)

Inductive interface (magnetic field) to transponder (tag). Carrier frequency for energy / data	13.56 MHz
Antenna	Integrated loop
Interface to communications module	RS422, RS232
Baud rate	19200, 57600, 115200 Baud
Functions	read tag, write on tag, get status data, antenna on/off, read tag serial number
DC-Voltage (nominal)	24 V DC

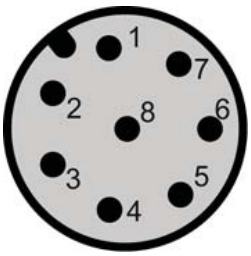
Display elements	2-color-LED (operating voltage, presence, error)
Connector	M12 (8-pin.)
Housing	
• Dimensions (in mm)	• 50 x 50 x 31 (without M12 device connector)
• Color	• anthracite
• Material	• PA6.6-GF35 (Ultramid A3WG7)
Fixing	2 Screws, M5 type
Degree of protection to EN 60529	IP67
Weight	200 g
Current consumption	40mA

5 Interface

Pin assignment RF250R (RS422 interface)

M12 connector (male)	Pin No. M12 plug	Pin
	1	+24V
	2	-TX
	3	0V (GND)
	4	+TX
	5	+RX
	6	-RX
	7	reserved
	8	PE / shield

Pin assignment RF250R (RS232 interface)

M12 connector (male)	Pin No. M12 plug	Pin
	1	+24V
	2	RXD
	3	0V
	4	TXD
	5	reserved
	6	reserved
	7	reserved
	8	PE / shield

6 LED indicator (display elements) RF250R

LED colour		Meaning
green	flashing	Operating voltage available, reader NOT initialized
	Permanently on	Operating voltage available. Reader initialized.
yellow		Tag in field (tag presence)
red (flashing)		Errors according to error code table.
red (permanently on)		Fatal error

7 FCC/IC Information

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio
exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne
doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage
radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Warning
Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

If the antenna is detachable, require the following two conditions:
(1) To reduce potential radio interference to other users, the antenna type should be chosen that the radiated power is not more than that permitted for successful communication.

(2) This device has been designed to operate with the antennas listed below. Antennas not included in this list are strictly prohibited for use with this device. The required antenna impedance is 50 Ω.

Si l'antenne est amovible, demandez les deux conditions suivantes :
(1) Afin de réduire le risque d'interférence aux autres utilisateurs, il faut choisir le type d'antenne et son gain de façon à ce que la puissance rayonnée ne soit pas supérieure au niveau requis pour l'obtention d'une communication satisfaisante.
(2) Ce dispositif a été conçu pour fonctionner avec les antennes énumérées ci-dessous. Les antennes non incluses dans cette liste sont strictement interdites pour l'exploitation de ce dispositif. L'impédance d'antenne requise est 50 Ω.

§ 15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

8 RF250R housing and dimensions (not to scale)