
RFID

➔ RFID

RFID in general

→ RFID system

The Schlegel RFID systems are based on the principle of contactless communication via radio waves. The data is exchanged via a transponder which contains the data and a reading/writing unit that reads the data from the transponder or writes it onto the transponder. The application options for RFID systems are quite diverse and they require also different system requirements. That is why Schlegel offers various RFID systems so that the customer can have the best possible benefit with the respective system.

→ Advantages of RFID

→ Simple

simple and fast integration into processes and systems

→ Flexible

extensive fields of application in industrial environments and many industries

→ Safe

safe and contactless communication via a globally unique transponder UID

→ Reliable

wear-free, very robust and insensitive to environmental influences

→ Application fields of RFID

- time recording
- driver identification
- ticket registration
- access control
- machine control
- object detection/management
- charging stations
- leisure/sports equipment
- customer/product identification
- product protection
- data collection
- alternative to key switches

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➔ Schlegel RFID Systems - Decision Making Tool

Overview on the characteristics and possibilities of the different systems.

	RFID System				
Features	**Standard**	**SKS**		**TMS**	
Variant	-	**TRA**	**TCA**	**TRA**	**TCA**
Individual programming	✓	✗	✗	✗	✗
Own evaluation electronics	✗	✓	✓	✓	✓
Required interface	USB / RS232	none	none	none	none
Outputs	via PLC/industrial PC	3 relays	5 open collectors	3 relays	8 open collectors
Number of transponders*	unlimited	25	25	unlimited	unlimited
Number of authorisations*	unlimited	7	25	7	255
Group authorisations	✓	✓	✗	✓	✓
Operating modes (reading mode)	cyclic / single	cyclic / single	cyclic	cyclic	cyclic
Integration into fieldbus systems**	via PLC/industrial PC	✗	✓	✗	✓
Management software	✗	✗	✗	✓	✓
Field of application	individually for special requirements	plug & work, less administrative effort, basic requirements		high administrative effort, customisation, complex requirements	

* in theory, an unlimited number is possible

** via the modular operating concept of Schlegel for the following fieldbus systems: Profibus, Profinet, CANopen, Ethernet IP, EtherCAT, Powerlink, IO-Link and AS-Interface

➔Accessories for RFID reader

Holder for RFID reader with LED status indication

LED light ring for status indication

Card holder with LED status indication

RFID Standard

Ø 22.3 mm

MADE IN GERMANY

SCHLEGEL ELEKTROKONTAKT

What is RFID Standard?

The RFID Standard is a flexible, freely configurable system. With the help of commands the reading/writing unit can be programmed via an external control (PLC or industrial PC) with USB or RS232 connection according to one's own needs. The user can freely define the data structure on the transponder and evaluate it via the external control according to the requirements. Thanks to the flexible system, theoretically any number of transponders can be managed with RFID Standard.
RFID Standard supports two operating modes: cyclic and single reading. Cyclic reading means that the presence of the transponder is permanently being checked at regular intervals. As long as the transponder is registered, the function activated with the transponder remains active. Single reading means that each new registration of a transponder is being evaluated and that the assigned action is being activated.

→ USB
→ RS232

How is the RFID Standard used?

Depending on the operating mode the transponder is either permanently fixed to the tag holder of the reading/writing unit (cyclic reading) or is held on the reading/writing unit for a moment (single reading). The data content of the transponder is transmitted contactlessly to the reading/writing unit and is redirected to the external control (PLC or industrial PC) for further processing from there. Thus it is e.g. possible to assign authorisations to persons, to identify persons, to control processes or to record and evaluate data.

Product features

- individual programming
- any number of transponders can be managed
- simple connection to an external control (PLC/industrial PC)
- reading and writing function
- 2 operating modes (cyclic, single reading)
- LED status indication
- high-quality and appealing design
- black or silver-coloured

Technical features

- USB or RS232 connection
- +5 V DC supply voltage
- 22.3 mm panel cut-out (30.5 mm with LED ring)
- degree of protection IP65/IP69K
- 13.56 MHz frequency (license free worldwide)
- baud rate from 9.600 to115.200 baud
- operating temperature from -20°C to +70°C
- mean operation of 200.000 h
- supports transponders of the standards: ISO 14443A, ISO 14443B, ISO 15693

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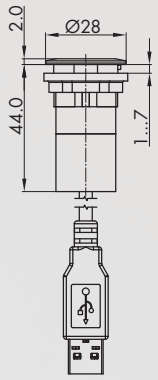
RFID Standard

Ø 22.3 mm

RFID

Illustration	Dimensions	Description	Type

IP65 IP69K

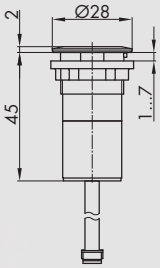


RFID reading/writing unit with USB interface

- panel cut-out Ø 22.3 mm
- frequency range 13.56 MHz
- read and write function
- LED status indication
- USB drivers for Windows, Linux, Android 4.2 and Macintosh OSX
- 2 operating modes: cyclic reading (continuous operation) or manual reading (on/off)
- supply voltage from USB port (5V)
- cable length: 80 cm (other lengths on request)
- transponder standards ISO 14443A/B (MIFARE-Classic/-DESFire), ISO 15693 and compatibles like EM4135, EM4043

colour	silver-coloured		**RRJ_RFID_USB**
	black		**RRJSW_RFID_USB**

IP65 IP69K

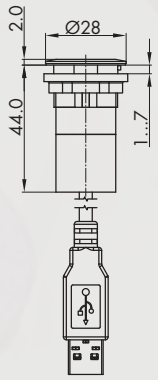


RFID reading/writing unit with RS232 interface

- panel cut-out Ø 22.3 mm
- frequency range 13.56 MHz
- baud rate 9600 up to 115200 bit/s
- read and write function
- LED status indication
- USB drivers for Windows, Linux, Android 4.2 and Macintosh OSX
- 2 operating modes: cyclic reading (continuous operation) or manual reading (on/off)
- supply voltage of 5V is necessary
- cable length: 80 cm (other lengths on request)
- transponder standards ISO 14443A/B (MIFARE-Classic/-DESFire), ISO 15693 and compatibles like EM4135, EM4043

colour	silver-coloured		**RRJ_RFID_RS2**
	black		**RRJSW_RFID_RS2**

IP65 IP69K



RFID/HID keyboard interface

Simulation of a keyboard input.
The transponder UID is being read via the RFID reader and outputed and terminated at the actual cursor position of the operating system via the simulated HID keyboard interface. This allows e.g. to implement an automatic password entry and login to an application in case the password corresponds to the transponder UID.

- panel cut-out Ø 22.3 mm
- frequency range 13.56 MHz
- LED status indication
- supply voltage from USB port (5V)
- cable length: 80 cm
- supports the standards ISO 14443A/B (MIFARE-Classic/-DESFire), ISO 15693 and compatibles like EM4135, EM4043

colour	silver-coloured		**RRJ_RFID_HID**
	black		**RRJSW_RFID_HID**

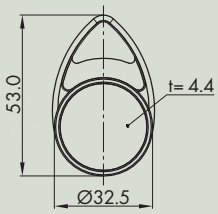
RFID

Illustration	Dimensions	Description	Type

Zubehör

RS232 interface connector — **RFID_ST_24V**

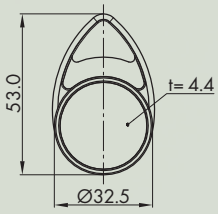
The RS232 interface connector is equipped with an internal 5V/DC voltage converter to operate the RFID reader in an electrical system of 10 to 24V/DC. The connector is directly screwed to the RS232 interface with the 9-pole Sub-D socket. A 2-pole screw terminal is included. The connection cable of the RFID reader is being plugged inside.



RFID tag drop-shaped 1 KB

NXP Mifare Classic EV1
inscription on request

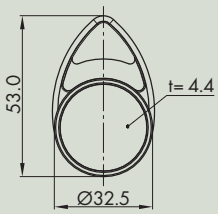
colour		
	blue	ESRT1_B
	red	ESRT1_R
	yellow	ESRT1_Y
	green	ESRT1_G
	black	ESRT1_S



RFID tag drop-shaped 2 KB

NXP Mifare DESFire EV1
inscription on request

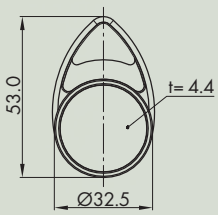
colour		
	blue	ESRT2_B
	red	ESRT2_R
	yellow	ESRT2_Y
	green	ESRT2_G
	black	ESRT2_S



RFID tag drop-shaped 4 KB

NXP Mifare Classic
inscription on request

colour		
	blue	ESRT4_B
	red	ESRT4_R
	yellow	ESRT4_Y
	green	ESRT4_G
	black	ESRT4_S



RFID tag drop-shaped 8 KB

NXP Mifare DESFire EV1
inscription on request

colour		
	blue	ESRT8_B
	red	ESRT8_R
	yellow	ESRT8_Y
	green	ESRT8_G
	black	ESRT8_S

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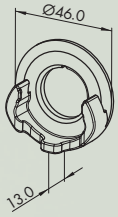
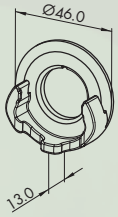
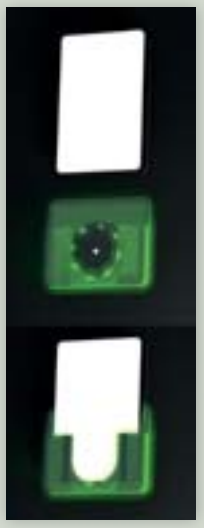
RFID Standard

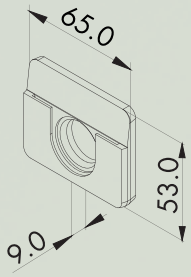
RFID

Illustration	Dimensions	Description	Type
		**RFID chip card 1 KB** NXP Mifare Classic EV1 - length: 85 mm, width: 54 mm, height: 0.9 mm	**ESRC1**
		**LED light ring for status indication** LED light ring for an optical amplification of the status indication - system connection to the RFID reader - colouring via the RFID reader (SKS, TMS) or an external control (RFID Standard) - panel cut-out Ø 30.5 mm delivery without RFID reader colour blue/green	**LR22K5DUO_GB_619**
		**RFID tag holder** for fixing the transponder from the top or from the front, e.g. combined with a bunch of key - panel cut-out Ø 30.5 mm Only suitable for the use of Schlegel RFID tags! colour white black	**RRJ_RFID_HR_WS** **RRJ_RFID_HR_SW**
		**RFID tag holder with LED status indication** for fixing the transponder from the top or from the front, e.g. combined with a bunch of key, with LED illuminated ring for an optical amplification of the status indication - system connection to the RFID reader - colouring via the RFID reader (SKS, TMS) or an external control (RFID Standard) - panel cut-out Ø 30.5 mm Only suitable for the use of Schlegel RFID tags! Delivery without RFID reader. colour blue/green	**RRJ_RFID_HR_LBG**

RFID

Illustration	Dimensions	Description	Type





RFID card holder with LED status indication

for fixing the chip card,
with LED illuminated ring for an optical amplification of the status indication
- system connection to the RFID reader
- colouring via the RFID reader (SKS, TMS) or an external control (RFID Standard)
- panel cut-out Ø 30.5 mm

Only suitable for the use of Schlegel RFID chip cards!
Delivery without RFID reader.

colour blue/green **RRJ_RFID_KH_LBG**

Empty enclosure with LED illuminated ring **RFID_SL**

aluminium enclosure with LED illuminated ring for the installation of an RFID interface
- Ø 100 mm, height: 70 mm

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