

Schlegel Control System for RFID

Operating instructions TMS version TRA



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Safety regulations!

This operating instruction must be provided to the person who installs the TMS. Please read it carefully and keep it for future reference.

Intended use!

Typical use in the machine building industry; vehicle construction; building, installation and surveillance technology; plant and control engineering; leisure facilities for application with the designated voltages and currents in the specified frequency and temperature range (see data sheet, operating instruction, catalogue) in the industrial environment.



1 Overview

General RFID basics

RFID can be used in many ways in order to map new or existing processes more effectively and more efficiently. This can be e.g. the simple login/logout on a machine or the mapping of functionality of a mode switch. Here the RFID transponder quasi serves as a key being identified and read via the RFID reader and enabling the assigned functions via the related control.

RFID offers the following advantages:

- Each transponder has a unique serial number (UID, unique identification) which guarantees a unique assignability and thus allows the realisation of an authorisation system.
- Beside reading of the UID the data on the transponder can also be changed, deleted or supplemented so that a flexible data management can be realised.
- The contactless communication is fast, reliable and wear-free.
- The technology is insensitive to environmental influences and very robust.

1.1 Components

These operating instructions refer to the TMS bundle type TMS_RRJ(XX)_TRA. The bundle includes the following components which also can be ordered separately:

- 1 TMS evaluation electronics (plug-in module) RFID_TMS_TRA
- 1 TMS reader RRJ(XX)_RFID_RS2 (standard: silver-coloured, XX: SW = black)
- 5 user keys (transponder, black) ESRT1_S



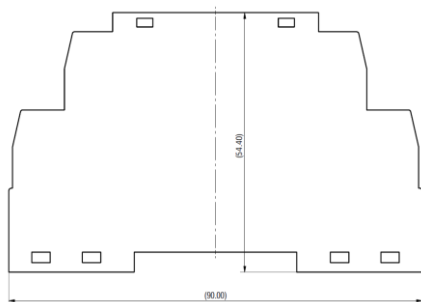
1.2 Product characteristics

The product characteristics for TMS are:

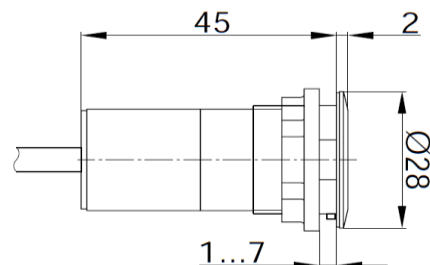
- Integrated control: No control on customer's site (PLC, industrial PC) is required.
- Quick and easy to install: No expert or programming knowledge is necessary.
- Mapping of the access authorisation via 3 potential-free relay outputs: This allows to realise 7 authorisation levels.
- Management of any number of transponders.
- Simple and fast teach-in of the transponders via a software system.
- LED status indication. Optional LED illuminated ring and tag holder.
- Panel cut-out \varnothing 22.3 mm (\varnothing 30.5 mm with LED ring/tag holder).
- Degree of protection IP65 / IP69K (TMS reading device); IP20 (TMS evaluation electronics).

1.3 Product dimensions

TMS evaluation electronics



TMS reading device



2 Functional description

The TMS TRA is an evaluation electronics with 3 potential-free relay outputs and a special housing for quick mounting on a standard top-hat rail. Terminal devices can be connected directly via the 3 relay outputs, so no external control such as e.g. a PLC or an industrial PC is necessary when using the TMS TRA. The evaluation electronics enables the relay outputs depending on the transponder information received (TRA = transponder relay assignment). The authorisation levels are mapped in binary code to the outputs of the evaluation electronics (see table 1).

TMS TRA supports the operating mode of cyclic 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.

With TMS TRA any number of user keys can be managed and up to 7 different authorisation levels can be assigned to individual persons or groups.

2.1 Additional functions

Improved status indication

With the optional LED illuminated ring LR22K5DUO_GB_619 the actual status is being indicated, even if there is a transponder on the TMS reader.

Tag holder

The RFID tag holder RRJ_RFID_HR_LBG for drop-shaped transponders or the RFID holder RRJ_RFID_KH_LBG for card-type transponders are particularly helpful when using the cyclic mode. By fixing the transponder into the holder, it remains permanently connected to the TMS reader. In addition, the tag holder is also illuminated with an LED illuminated ring.



3 Assembly and configuration

NOTE!

Risk of damage to components due to electrostatic discharge!

In order to prevent damage to components, please ensure electrostatic discharge by touching a grounded, conductive surface or by wearing a grounded wristband during all assembly operations.

Do not apply power until you have completed the installation and configuration of the TMS evaluation electronics (see start-up).

3.1 Installation

1. Fix the TMS control RFID_TMS_TRA to a suitable DIN rail.
2. Connect the TMS reader RRJ(XX)_RFID_RS2 to the TMS evaluation electronics.
3. Connect the switching contacts (relay) via the terminal connections K1 to K3.
4. Connect the power supply 24 V DC.

3.2 Configuration

The TMS evaluation electronics does not require any configuration and can be used immediately. The configuration of a customer-own control must be carried out beforehand by the customer according to the requirements.

Transponder assignment

The complete setup and administration of the TMS is done via the TMS management software. The operating instructions for the management software are supplied with the SKS TMS software bundle and can be found there.



Level	relay 1	relay 2	relay 3
1	•		
2		•	
3	•	•	
4			•
5	•		•
6		•	•
7	•	•	•

Table 1: Binary-coded assignment of the transponder to the relay outputs.

4 Start-up

Prior to the first start-up please recheck all components as to:

- correct mounting
- correct cabling

4.1 Preparation

- Switch on the power supply.
- The LED of the TMS evaluation electronics and the LED of the TMS reader light up in green.
- Prepare the user keys.

4.2 Teach in of user keys (transponders)

The complete setup and administration of the TMS is done via the TMS management software. The operating instructions for the management software are supplied with the SKS TMS software bundle and can be found there.



4.3 Pairing of the TMS reader with the TMS evaluation electronics

It is recommended to disconnect the TMS from the mains before turning the selector switch of TMS evaluation electronics.

The position 0 of the selector switch serves to connect the both components so that they can communicate with each other. This is necessary if one of the components has to be replaced.

1. Set the system free from tension.
2. Exchange the component and turn the selector switch of the TMS evaluation electronics to position 0.
3. Apply system voltage. After a short time, the LED indication on the face of the TMS evaluation electronics has to light up briefly in blue for two times in order to indicate that the pairing has been successfully completed.
4. Set the system free from tension.
5. Set the selector switch of the TMS evaluation electronics to the position 1.
6. Apply system voltage.

4.4 LED indication

LED TMS evaluation electronics	LED TMS reader	Status
green	green	ready for operation
blue	blue	transponder identified
-	cyan (light blue)	transponder not identified

5 Safety

The TMS is not suitable for safety-related applications. It is not possible to give any indications as to safety categories and performance levels.

6 Technical data

The technical data is available on our website under www.schlegel.biz.

7 Disposal

The proper disposal is to be carried out according to the national regulations and laws.

8 Support

Georg Schlegel GmbH & Co. KG

Kapellenweg 4
88525 Dürmentingen
Germany

phone: +49 (0) 73 71 / 502-0
fax: +49 (0) 73 71 / 502 49
e-mail: info@schlegel.biz

or via the Schlegel [contact form](#).

