

# USER GUIDE

Version 01/02



## Antenna module and air coil

for RF reader



### **Important! Read by all means!**

To maintain the perfect shipping conditions and to ensure safe operation please observe the instructions in this Operation Manual. Damages caused by non-observance of these instructions will invalidate any guarantee. We further cannot take liability for any consequential damages.

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## 1. Introduction

Dear Customer,

We want to thank you for purchasing this antenna module

With this unit you have acquired a product built to the latest state of engineering. Its operation is simple and easily understood. Nevertheless please read this Operation Manual carefully for optimum utilization of all of its features.

## 2. Intended Use

The intended use of this antenna module 2002 ANT is to read data from transponders into RF reader modules according to the technical notes in this user guide.

Any use other than the one pointed out above is not admissible.

Design and construction of this Module correspond to all European and national requirements for Electro Magnetic Compatibility (EMC). The unit carries the CE-Sign, the conformity has been proven. All appropriate commentaries and records are in the possession of the manufacturer.

## 3. Safety Instructions

### Important Informations on the Reader Module:

- In conjunction with the Reader Module the Antenna builds a tank circuit creating high voltage at the antenna terminals. Please avoid any contact to these antenna terminals during operation of the Reader and especially keep children at a safe distance from the device.
- The RF Reader Family has not been designed to safely lock or secure doors. During prolonged absence from any room made accessible by a Reader the door must therefore further be locked by means of the original key.
- In order to guarantee sabotage safe operation do in any case mount the Reader's electronic circuit - unreachable for non-authorized persons - inside of the building.
- We cannot take liability for damages caused by improper and/or careless handling of RF Reader products.

For use with the RF Readers specific Transponders suitable for these Readers are necessary.
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### **Notes on Installation of the Reader Modules:**

- The Modules are considered Reading and Controlling Devices of Mode of Operation Typ 1 according to EN 60730 (VDE 0631).
- When installing the Reader and Antenna Modules ensure a clean and dry environment.
- The individual Modules must be dry and free of dust.
- For protection of the power supply line use a slow-acting 2.5 A fuse.
- In case a bell transformer is used to provide the necessary power to the Reader Modules of the RF Reader it has to correspond with the requirements according to EN 61558-2-8 (DIN VDE 0570 Part 2-8: Special requirements for bell and ringer transformers).
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### **Notes on Placing and Mounting the Reader Modules:**

When mounting Reader and Antenna the following guidelines have to be observed:

- Metallic objects must not be placed between Antenna and Transponder.
- The Antenna should be mounted on non-metallic material (wood, concrete) at a minimum distance of 3 cm from any metallic object.
- The connecting line of the Antenna must not be of any length in excess of 1.5 m. Otherwise the reading distance stated for the Reader Modules in Section 12. **Technical Specifications** cannot be guaranteed.
- The connecting line of the Antenna must not be mounted in the immediate proximity of any other line carrying electric current.
- Two or more connecting lines of any Antennas must not be mounted side by side.
- **When mounting several RF Readers inferences of Modules among each other can be avoided if a minimum distance of approximately 1 m is kept between Reading devices.**

## 4. Device Description

The antenna module 2002 ANT is a module which is exclusively designed to be used as antenna for RF readers. It comprises a coil embedded into a molded plastic part and a two wire connection cable with 1,5 m length.

## 5. Functional Description

### Important Note:

**The antenna builds in conjunction with the Reader Module a tank circuit creating high voltage at the antenna terminals. Please avoid any contact to these antenna terminals during operation of the Reader and especially keep children at a safe distance from the device.**

The antenna activates through its high resonance voltage a transponder which is held close enough to the antenna, receives data from the transponder and provides the information to the RF reader module, which is able to decode the information.

Any electrical noise (electric wires, motors, switching power supplies, fluorescent lamps, monitors, laptops, etc.) nearby the antenna or the antenna cable may interfere with the used frequencies and disturb the proper reading of transponders. Please avoid any of above mentioned noise sources close to the antenna module.

## 6. Connections

For proper connection of the two antenna wires to the RF reader module or the power module please follow the instructions in the corresponding user guide.

The antenna module can be mounted both on a wall or flush-fitting in a 60mm switch box.

Mounting on a wall can be done with two screws M3 or with the attached double sided self adhesive tape.

Please take into care that no metal parts are close by the antenna (distance > 5 cm).

If the antenna module is mounted as a sandwich assembly together with the RF reader boards, please keep a distance of min. 2 cm between the module and the reader pcb.

The cable is fixed at the antenna module. For proper mounting on a wall one can remove the thinner part of the side wall of the antenna. This allows to route the cable on the side of the module.

The cable (LiYY) has a length of 1,5 m with a twisted pair of 0,14 mm<sup>2</sup> wires. The length should not exceed 1,5 m as this could reduce the reading capability of the RF reader.

Please take care of not bending the antenna module during assembly. This might break the coil or cable wires inside the antenna module.

## 7. Putting into Operation

If the RF reader (with power module) and the antenna are connected properly, the reader can be put into operation..

## 8. Care, Maintenance and Disposal

Besides providing the specified voltage and its intended use as an antenna module for the RF reader modules the antenna module does not require any special care or maintenance.

An antenna module that highly unexpected has become unusable must be disposed of observing all relevant legal regulations.

## 9. Debugging

If all notes and regulations of this and other relevant Operation Manuals are observed correctly there should be no unexpected malfunctions. If this nevertheless happens to be the case, please do not attempt to make any own repairs. Return the device to your point of purchase and have it checked and possibly repaired by a qualified engineer. Opening or improper handling of the devices will invalidate any guarantee.

## 10. Technical Specifications

Voltage on the antenna module	:	max. 250 V
Coil inductivity	:	1,04 mH ± 1%
DC resistance of the coil	:	Typ. 16 Ohm
Measurements ANT module (LxBxT)	:	50 x 40 x 5 mm
Measurements coil	:	Outer diameter: max 28 mm, inner: 23 mm, height: 2,2 mm
Cable length	:	max. 1,5 m
Operating temperature	:	0°C bis 45°C

## 11. Notes on Manufacturer

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