



**ILR 350 Series
Installation and Operation Manual
for Tag i-Q350 RTLS**

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Radio Frequency Compliance Statement

IDEN TEC SOLUTIONS is the responsible party for the compliance of the following devices:

MODELS:	i-Q350 RTLS	
Region/Country	Organization	Marking
EUROPE:	EC	CE
USA	FCC	FFC ID OO4-ILR-IQ350RT
Canada	Industry Canada	IC:3538A-IQ350RT

The user(s) of these products are cautioned to only use accessories and peripherals approved, in advance, by IDEN TEC SOLUTIONS. The use of accessories and peripherals, other than those approved by IDEN TEC SOLUTIONS, or any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Warning: This product requires professional installation. Any frequency and RF-power setting not expressly authorized by Identec Solutions is prohibited and will void the users authority to operate the equipment.

European Notification according R&TTE Directive

This equipment complies to Art. 6.4 of R&TTE Directive (1999/5/EC). It is tested for compliance with the following standards: ETSI EN 300 220, ETSI EN 301 489, EN 60950

USA Notification

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.

The user(s) of these products are cautioned to only use accessories and peripherals approved, in advance, by IDEN TEC SOLUTIONS. The use of accessories and peripherals, other than those approved by IDEN TEC SOLUTIONS, or any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



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1 Introduction

1.1 Preparations

This installation manual must be read carefully prior to starting the installation. The described installation works assume that installation materials like cable, antenna and tag holder etc are available.

1.2 Recommended Procedure

1. Check the Scope of Delivery according to the Bill of Delivery
2. Read this manual completely
3. Mount the tags
4. An additional performance check of the tags and a system test can now be done

1.3 Scope of this Document

This document is the user's manual of this tag model: i-Q350 RTLS
This document is intended only for mechanical installation resp. everyday use.

1.4 Responsibility

IDEN TEC SOLUTIONS is not responsible for any errors occurring in this document.

1.5 Associated Documents

- i-Q350 RTLS Data Sheet

1.6 Scope of Delivery—Visual Inspection

Check delivery whether it is complete and for any damages. If the delivery is not complete or damaged immediately inform the carrier. The dispatch and service organization of IDEN TEC SOLUTIONS should also be informed to facilitate the repair or exchange of the system.

2 Safety Precautions

Important Safety Note

The devices described in this manual is for exclusive operation by trained employees. Only qualified personnel that know the potential dangers involved should perform the installation, settings, maintenance and repair of the units used.

Operational Safety

The correct and safe use of these systems assumes that operating and service personnel follow the safety measures described in the manual alongside the generally acceptable safety procedures.

If there is a possibility that safe operation cannot be guaranteed the system must be switched off and secured against accidental use. Then the service unit responsible must be informed.

Do not open the housing

There is no need to open the housing. There are no user serviceable parts inside. Set-up and configuration during initial operation is done wireless with the built-in air interface.

Handling Safety

On account of high operating temperature of 80 °C (+176 °F) care must be taken, if the tags are heated. To avoid burn wait a while until the tags have cooled down or use gloves. At temperatures below 0 °C (+32 °F) tags can be iced. In this case, wait a while until tags are warmed up or use gloves.

Battery Inside

All tags contain a battery. That is the reason for the following instructions:

Warning

Fire, explosion and burn hazard

Risk of explosion if battery is replaced by an incorrect type

Do not recharge, short circuit, crush, disassemble, heat above 100 °C (212 °F)

Do not incinerate, or expose contents to water

Electrostatic Discharge



This product contains components that are sensitive to electrostatic discharges. Please observe the special instructions for their protection. Incorrect handling can damage the unit and cause the invalidation of the warranty.

Safety Documents

This ILR system was designed, tested and supplied in perfect condition according to document test report EN60950.

Condensation/Change of Temperature

Moving the systems from a cold to a warm environment could lead to dangerous situations due to condensation. Therefore it must be ensured that the system can adjust itself to the warmer temperature.

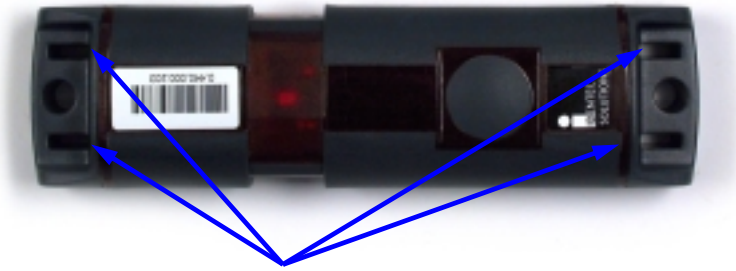
Spare Parts

We recommend that only original products, spare and replacement parts authorized by IDENTEC SOLUTIONS be used for installation, service and repair. Otherwise IDENTEC SOLUTIONS does not accept any responsibility for materials used, work carried out or possible consequences.

3 Tag Mounting Techniques

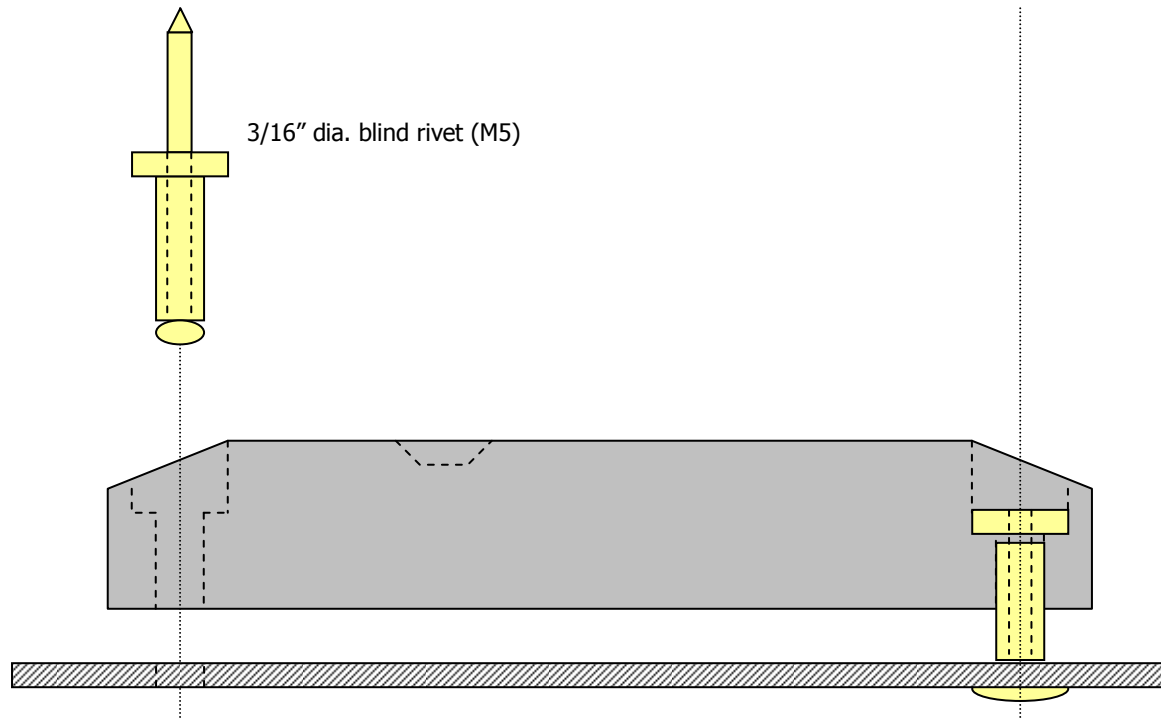
3.1 Cable Straps

The Tag can be mounted either with cable straps using the 2 slits at each end or using rivets or screws as described in the following 2 subchapters.



Slits for mounting with cable straps

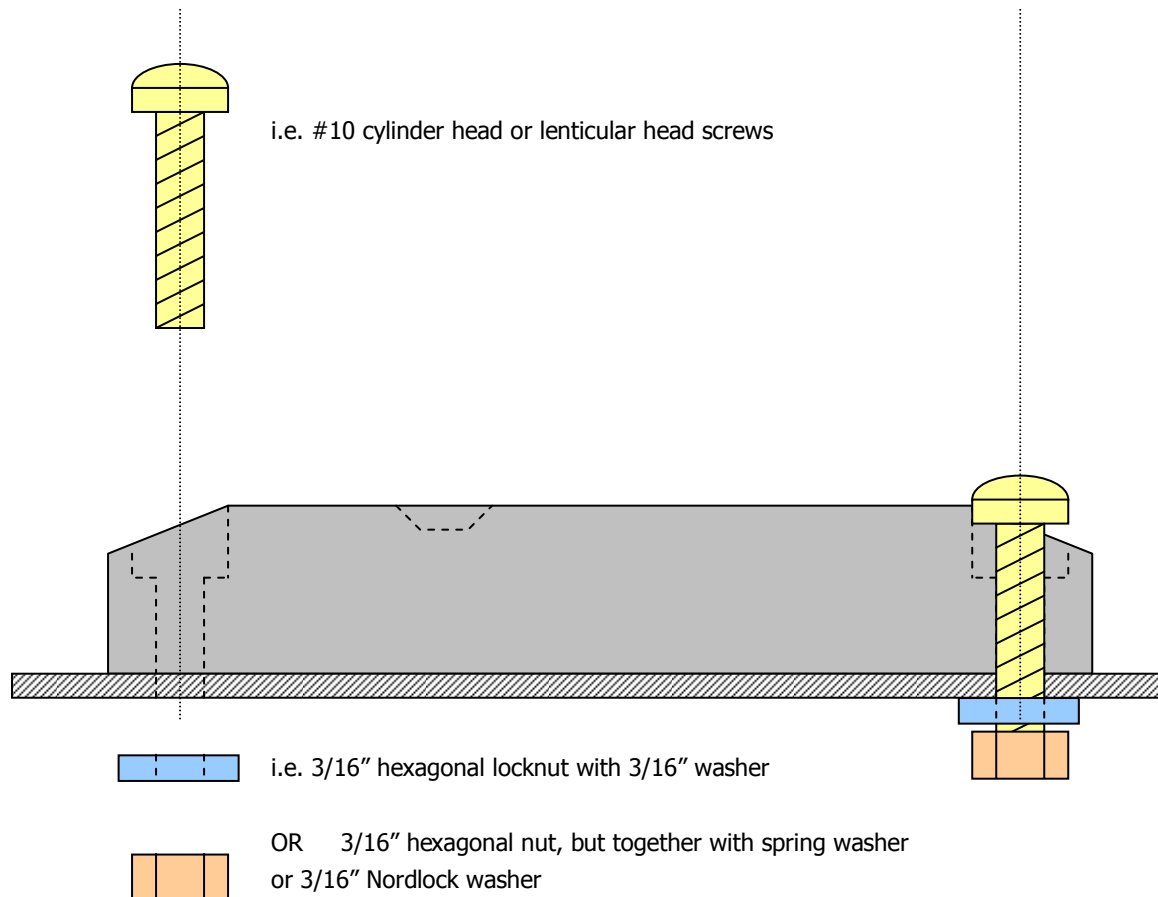
3.2 Rivets



Important Information

1. A temperature of at least +10 °C (+50 °F) must be maintained during riveting to prevent the casing from cracking.
2. Always position the blind-rivet gun straight down on the rivet site and all the way to the rivet socket.
3. On occasion, a tag casing has been damaged through improper handling of the blind-rivet gun (slanted positioning of the gun to access the rivet socket). If there is a chance this might occur, it is better to use a blind rivet with a large head (Refer to UN9924) or insert a 3/16" washer. This has the effect of distributing the pressure over a larger surface area during riveting. The use of the washer has the added effect of positioning the rivet slightly higher in the depression, so that one can better access the rivet socket with the rivet gun.
4. Metal surfaces in direct proximity to the tag can reduce the tag's range of function. Tags should therefore not be mounted in metal recesses or corners.
5. After mounting, the tag's function should be tested, i.e. with a handheld device and the „ILR Pocket Demo“ software.

3.3 Screws



Important Information

1. Only screws with cylindrical heads are suitable for mounting the tag. We do not advise using counter-sunk screws. If for some reason this should be necessary, then only together with a suitable counter-sunk cushioning disc (refer to UN 1277).
2. Secure the screws so they cannot work themselves loose i.e. by using self-locking nuts or spring washers or Nordlock washers (refer to UN 7014).
3. If the tag is mounted out-of-doors or in a damp environment, all mounting parts need to be made of stainless steel or other non-rusting material.
4. A temperature of at least +10 °C (+50 °F) must be maintained during mounting to prevent the casing from cracking.
5. Depending on the type and strength category of the #10 screw used, the maximum tightening torque must be between 2 and 10 Nm. If the torque is any greater, the screw may overtighten, or the casing might break.
6. Metal surfaces in direct proximity to the tag can reduce the tag's range of function. Tags should therefore not be mounted in metal recesses or corners.
7. After mounting, the tag's function should be tested, i.e. with a handheld device and the „ILR Pocket Demo" software.

Variations

Mounting with self-tapping screws. Disadvantage: the screws may loosen in time.



4 Initial Operation

4.1 Configuration of The Tag

Important Note

Do not open the housing! Configuration is done using the built-in air interface of the i-Q350 RTLS.

Configuration

The i-Q350 RTLS is configured according to the specific application by the custom-specific host software.

Things to be configured

- The ping rate: from 0.5 to 300 seconds in steps of 0.5 seconds
- The number of bursts: from 0 to 15 (factory default setting: 5)

5 Maintenance

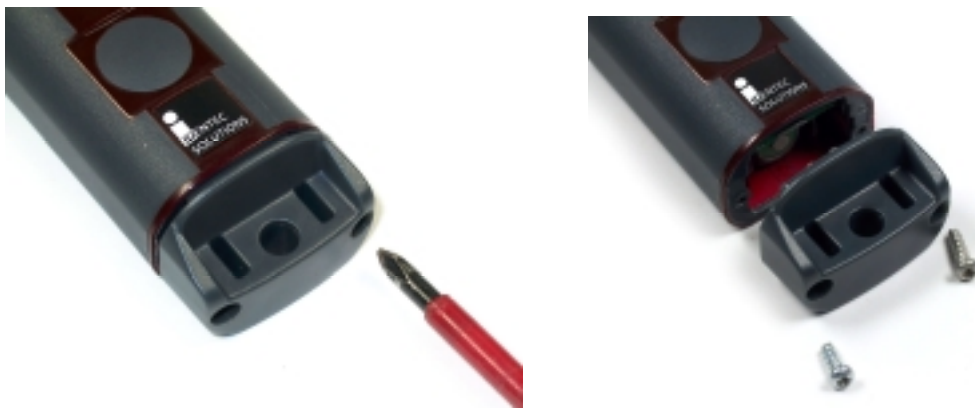
5.1 General

In principle, the ILR system is maintenance-free. When correctly installed it operates for many years without any problems.

5.2 Battery Exchange

Important Note

Replace battery only with the same type SL-760 S.



Remove the lower end cap with a Phillips screw driver .

The lower end cap/battery lid is on the side close to the push button. Furthermore there is a battery symbol on the rear side of the tag housing.

Be careful not to lose the screws.



Now replace the battery with a new type SL-760 S.

After this procedure the age counter needs to be reset with the service software or via a function in your custom application.

5.3 Precautionary Maintenance

Regular checking of all ports and cables belonging to the system is recommended. Unstable connections could lead to damage and malfunctions of the system and therefore should be repaired as soon as possible.

A Brief Checklist

- Are all housings intact?
- Are all cables intact?
- Are all connectors intact?
- Are all connectors securely fastened?
- Are all screws still tight?
- Is there suddenly a malfunction at a specific unit?

5.4 Returns

Parts or main components returned for repair or exchange must be handled with great care. PC cards must be returned in the appropriate ESD-protecting packaging material.

All returns should include a completed returns form (see appendix) and be sent to the local distributor or to:

IDENTEC SOLUTIONS AG
Service Department
Millenium Park 2
6890 Lustenau
AUSTRIA / AUTRICHE

6 Technical Data

Operating Data Long-Range RFID (ILR, 2400 – 2485 MHz ISM Band)

Read/write/localization range	Up to 180 m (590 ft) in free air with line of sight
Channels	3 Non-Overlapping channels (for EU and US) or 7 Overlapping channels
Data rate	250 Kbits/s and 1 Mbits/s
Maximum transmission power	100 mW EIRP or local regulation
Standards/Certification	ISO 24730 part 5 (upcoming standard), FCC part 15, EN 300 328 (EU)
Compatibility	i-PORT M-350 RTLS, i-SAT 300

Operating Data Long-Range RFID (ILR, UHF Band)

Read/write range	Up to 300 m (900 ft) in free air with line of sight
Frequency	868 MHz band (EU) and 902 - 928 MHz (NA)
Data rate (read and write)	19.2 up to 115.2 kbits/s
Maximum transmission power	0.75 mW ERP
Standards/Certification	FCC Part 15 (US), Industry Canada, EN 300 220 (EU)
Compatibility	i-PORT M-350, i-PORT M-350 RTLS, i-CARD CF-350

Operating Data Inductive Loop (Marker)

Read range	Up to several meters
Operating frequency	125 kHz (world-wide approved)
Operation mode	Receives marker ID number and transmits marker information on request
Compatibility	i-MARK 2, i-MARK 3

Electrical

Power source	Lithium battery
Expected battery life	3 Years @ 1 localization every minute

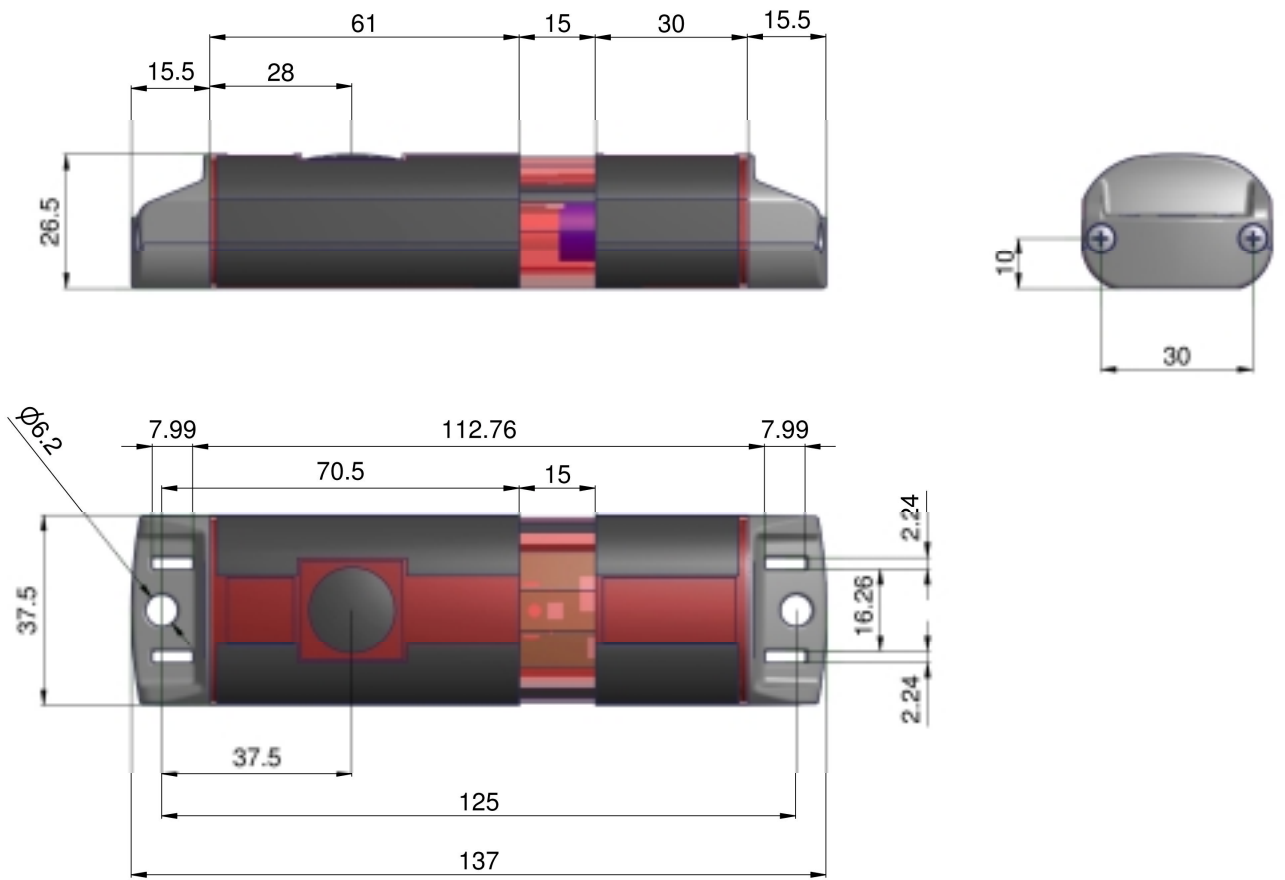
Environmental

Operating temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Shock	50 G, 3 times DIN IEC 68-2-27 Multiple drops to concrete from 1 m (3 ft)
Vibration	3 G, 20 sine wave cycles, 5 Hz to 150 Hz, DIN IEC 68-2-6 5 G, noise 5 Hz to 1000 Hz, 30 minutes DIN IEC 68-2-64

Physical

Dimensions	137 × 37.5 × 26.5 mm (5.4 × 1.48 × 1.04 in.)
Case Material	Plastic
Mass	50 grams (1.76 ounces)

Dimensional Drawing



All dimensions in mm.