



**ILR 350 Series
Installation and Operation Manual
for Tag Models
i-Q350, i-Q350T, i-Q350L, i-Q350TL**

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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, i-Q350L, i-Q350T, i-Q350TL	
Region/Country	Organization	Marking
EUROPE:	EC	CE
USA	FCC	FFC ID IQ350TL
Canada	Industry Canada	IC:3538A-IQ350TL

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.

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 models: i-Q350, i-Q350T, i-Q350L, i-Q350TL
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 Data Sheet, ID.0695.EN (English)
- i-Q350T Data Sheet, ID.0675.EN (English)
- i-Q350L Data Sheet, ID.0696.EN (English)
- i-Q350TL Data Sheet, ID.0697.EN (English)

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

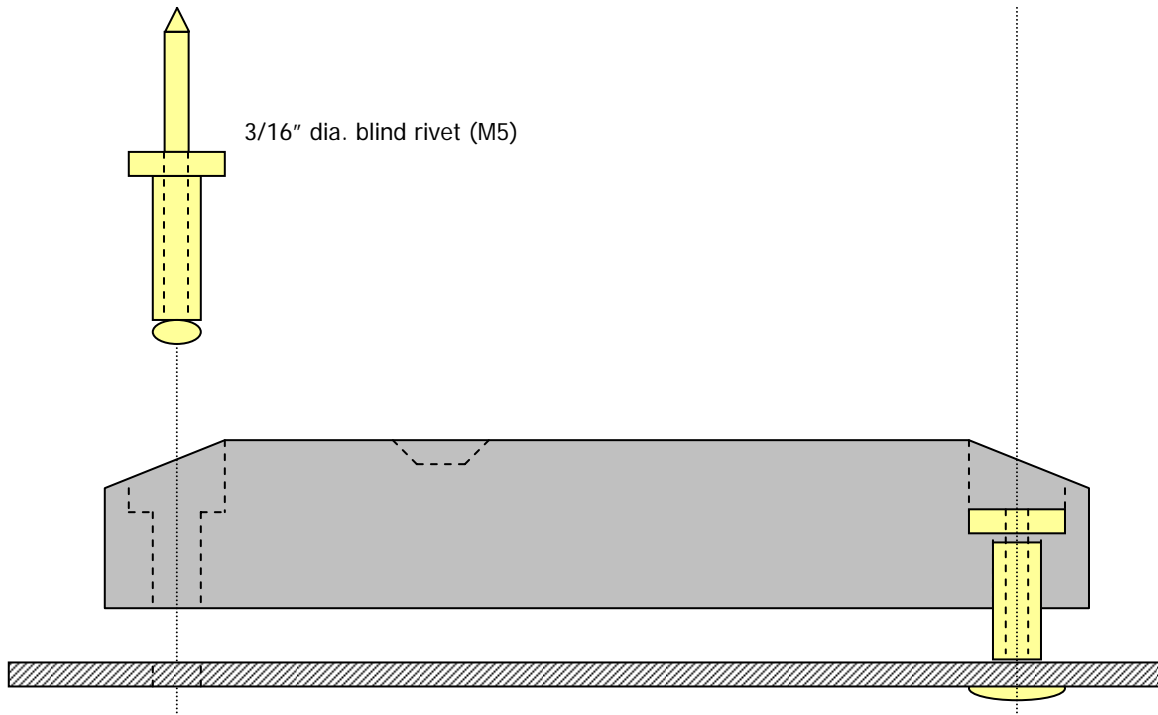
Moving the systems from a cold to a warm environment could lead to dangerous situations due to condensation. Therefore it must be ensured that the system can adjust itself to the warmer temperature.

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

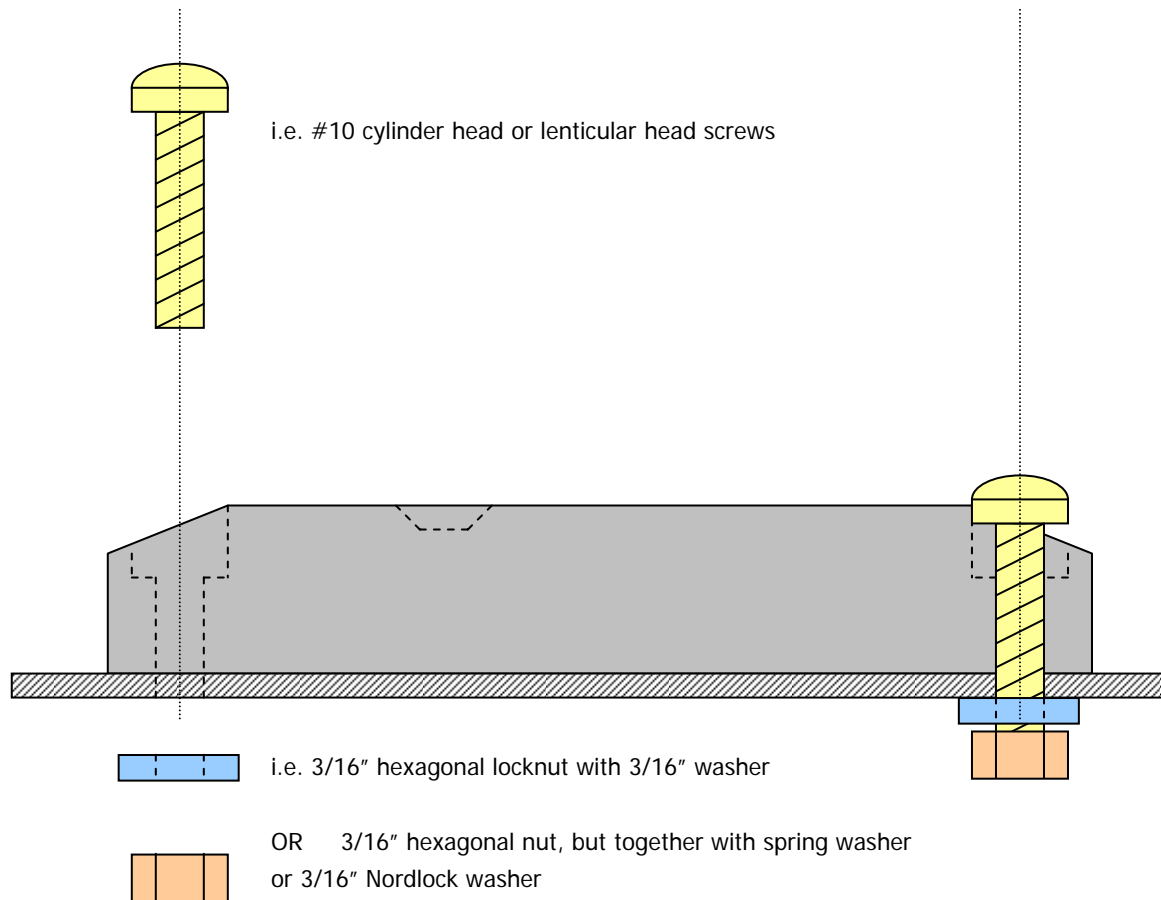
3.1 Rivets



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.

3.2 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 Maintenance

4.1 General

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

4.2 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?

4.3 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

5 Technical Data

Operating Data

Operating frequency ILR-RFID	868 MHz (EU) or 920 MHz (NA), further frequencies on request
Maximum transmission power	0.75mW (EU / NA)
Compatibility	i-PORT M 350, i-CARD CF-350
Standards/Certification	FCC Part 15 (US), ETSI EN 300 220 (EU)

Communication Data Long-Range RFID (ILR, Response Technology)

Multiple tag handling	Up to 2,000 tags in the read zone
Read/write range response mode	Up to 250 m (800 feet), free air*
Data rate response	19.2 to 115.2 kbits/s

Communication Data Long-Range RFID (ILR, Beacon Technology)

Read range broadcast	Up to 500 m (1600 feet) free air*
Operation mode	Transmits marker information in at regular intervals
Repetition rate (ping rate)	0,5 – 300 seconds, adjustable in steps of 0,5 seconds
Data rate broadcast	115.2 kbits/s

* The communication range depends on the antenna type, the antenna cable runs and the environmental conditions.

Communication 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 several times

Electrical

Power source	Lithium battery (not replaceable)
Battery monitoring	Yes

Temperature Logging

Number of samples	10,000
Logging interval	User definable in intervals from 1 to 255 min
Measuring interval	User definable in intervals from 0 s to 255 min
Metering range	-40 °C to +85 °C (-40 °F to +176 °F) with std. internal sensor -80 °C to 110 °C (-112 °F to +230 °F) with std. external sensor Other metering ranges are available on request
Resolution	0.1 °C (0.2 °F)
Accuracy	±0.5 °C (1 °F) from -20 °C up to +50 °C, ±1 °C (2 °F) in the remaining temperature range

Data

Data retention	> 10 years without power
Write cycles	100,000 writes to a tag
Memory size	10,000 Bytes user definable
Identification code	48 bit fixed ID

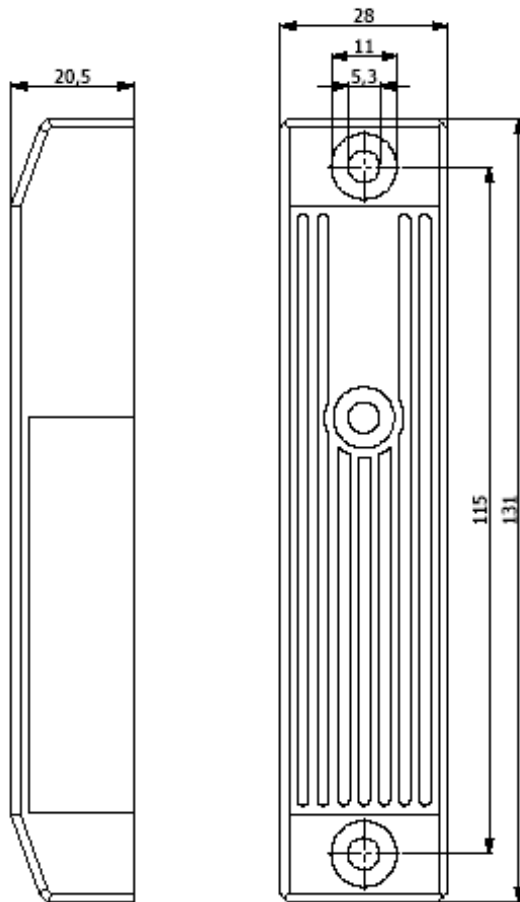
Environmental Conditions

Operating temperature	-40 °C to +85 °C (-40 °F to +185 °F)
Humidity	10 % to 95 % relative humidity @ 30 °C
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	131 mm × 28 mm × 21 mm (5.2 in. × 1.1 in. × 0.85 in.)
Enclosure	Plastic (Qinnacryl)
Weight	50 g (1.75 ounces)
Enclosure rating	IP 65

Dimensional Drawing



All dimensions in mm. External cable to temperature sensor (models i-Q350T & i-Q350TL) not shown.