

### **FCC WARNING**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications. This equipment has been tested and found to comply with Part 15 of the FCC rules:

### **FCC ID: Q3L-ADS100**

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.

Unauthorized modifications may void the authority granted under Federal Communications Commission Rules permitting the operation of this device

## 1.0 Sensor Gate

The sensor gate was developed to read information from RFID-labels and cards, which are carried through a passageway. The area that is covered by this function is between the antennas from knee to shoulder height of an average height person.



**Fig. 2 Library Gate**



**Fig. 1 Sensor Gate (Winterthur, Switzerland)**

## 2.0 Function and technical specifications

Through the scanning of data, an alarm (acoustic or optical) or the initiation of other equipment can be triggered. By using a Gate-Tracking-Software, the number and kind of misappropriated media will be registered and can be used for other statistical purposes or to order new items.

Basically, certain guidelines must be followed during the installation and usage phases. Usually a site inspection takes place prior to installation, where the positioning and cabling logistics are determined. Despite this, certain preparatory steps can be taken in advance to better facilitate installation and start-up.

NOTE: It is important that the gate sensor is positioned in the vicinity of a well-observed area (such as the librarian's desk) to facilitate a better view over those persons who have triggered an alarm.

## **2.1 Technical specifications**

The gate width between the two antennas, center to center is 90 cm. The antennas of the gate sensor are connected to a separate reader module. Please refer to the reader module manual for further details.

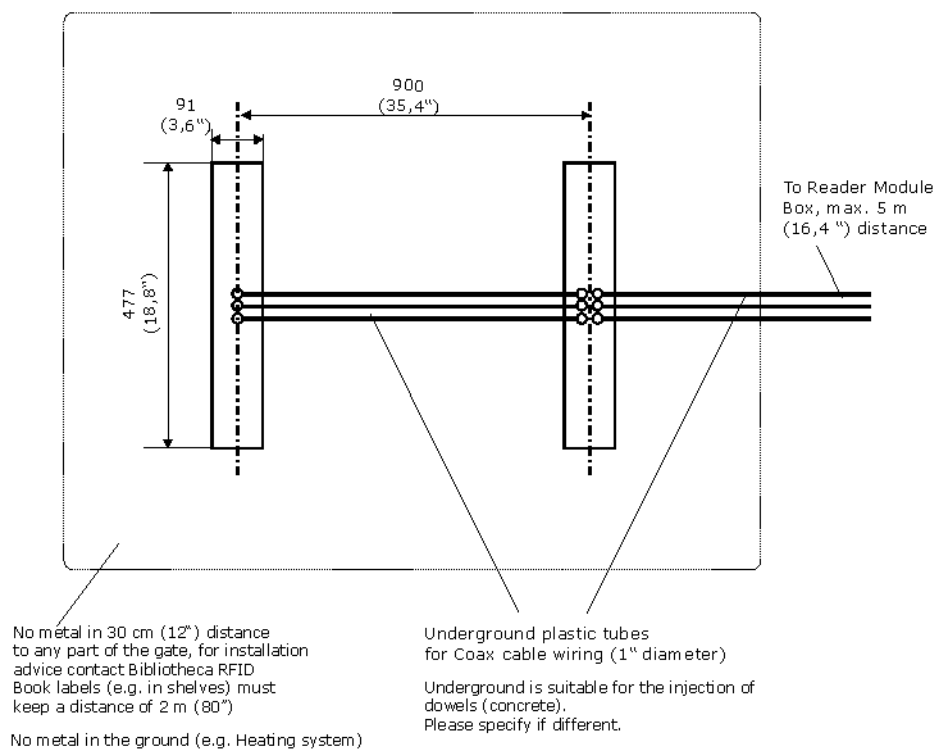
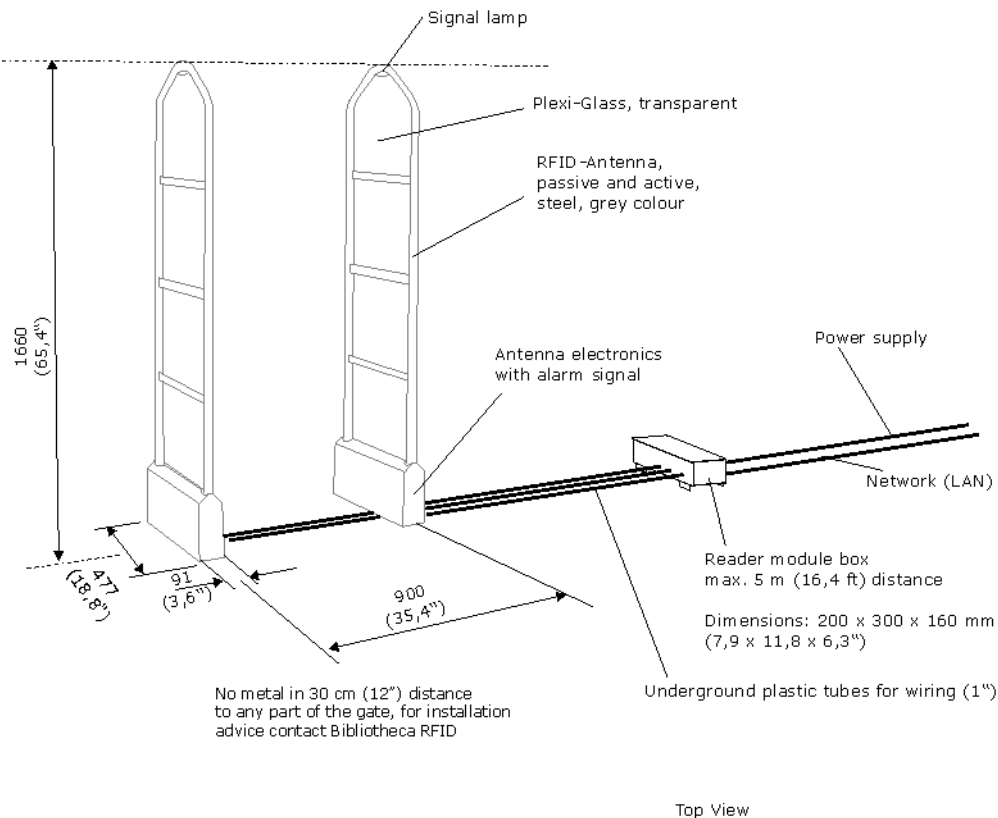
The reader module is equipped with a binary input/output signal used for the optical and acoustic signals. Each active antenna is equipped with a light and a buzzer/horn to emit these signals.

## **3.0 Installation Recommendations**

Consideration of the following construction tips can assist in achieving optimal functionality of the gate sensor. There are a few illustrations attached with regard to the installation:

1. The equipment should be installed in a "freestanding" way; i.e. there should not be large metal objects within a radius of 3 ½ feet. In order to achieve the desired mechanical stability of the equipment, a firm anchoring method should be chosen. Care should be taken not to damage existing infrastructure under the floor such as pipes, cables and reinforcements. Electrical connections to existing infrastructure under the floor should be avoided. If the antennas are delivered with a base structure, then the base should be screwed to the antennae. In this case, drilling into the floor is not necessary.
2. Construction of the equipment on surfaces where heating systems are located under the floor must be cleared with Bibliotheca first.

3. Connections, such as data communication cables, etc. should be perpendicular to the gate sensor direction. The cables have to lead directly away from the antennas without loops or angles.
4. If there are heavy industrial power-lines/systems located in the same building, an equipment test should be performed in the planned installation area prior to installation.
5. Walls with metal structures can affect the antennas. Steel girders, structural steel, metallic water pipes, metallic heater pipes and lightning protection systems are, depending upon their location, surrounded by high frequency electromagnetic fields, which can lead to disturbances. A spatial distance of 7 feet from such elements is therefore necessary.
6. Television sets personal computers and accessories, as well as short wave receivers should not be operated within 7 feet of the gate sensor.
7. A distance of 7 feet from fluorescent lamps and 15 feet from fluorescent tubes should be maintained as they may also lead to disturbances.
8. Mechanical devices such as household appliances, electric power tools and electric toys can also cause interference. The distance from such devices must be at least 7 feet.
9. Other RFID-systems, which operate using the same frequency range, can cause interference. To avoid this, a distance of 10 feet should be observed.



### Fig. 3 Top View for installing and cabling the antennas

NOTE: If two gate sensors are set up within 8 m of one another, the respective antennas must be synchronized. To facilitate this, a cable (2x2x0,22 mm<sup>2</sup> shielded and paired, such as Unitronic (LiYCY (TP) Æ ca. 7,0 mm) needs to be installed.

### **Data transfer**

If data stored from the gate sensor process needs to be analyzed the standard and present interface of the scanner module can be used. In order to transfer the data, a PC with the appropriate software is required. The data transfer is done through an RS 232 /RS 485 interface. This requires a cable between the basis-antenna and the respective PC to be installed prior to system delivery and installation. The PC requires a free COM port. With respect to the PC, the cable should be connected to a LAN interface in direct proximity to the PC. The cable connected to the basis-antenna is connected during installation. The cable 2x2x022 mm<sup>2</sup> shielded and paired such, such as Unitronic (LiYCY (TP) Æ ca. 7,0 mm), cannot be longer than 30 m and should be installed prior to system delivery and installation.

NOTE: When more than one gate sensor port is connected to a central PC each basis antenna will require a free COM port.