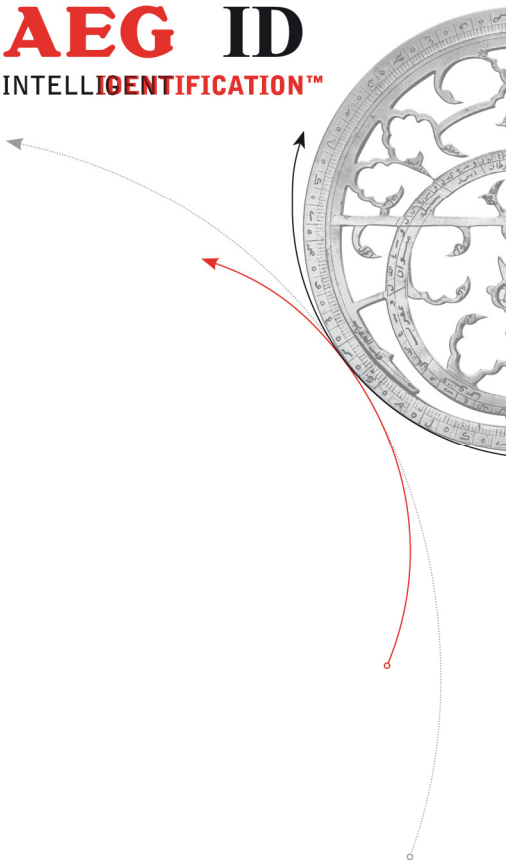
AEG ID
INTELLIGENT IDENTIFICATION™



Installation manual
AAN FK6

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1 Introduction

The antenna AAN FK6 is a highly sensitive transmission and reception antenna for the AEG ID reader family ARE K1.

The transponder is inductively supplied with energy over a 124 kHz signal by the antenna and responses isochronical with a frequency half of the transmission frequency (62 kHz).

The antenna is exactly adjusted to numerous parameters, in order to receive a large reading range with good interference suppression due to external interference sources. In order to obtain these positive features a prescribed installation is absolutely necessary.

1.1 Definition of coordinates

For following specification is the following system of coordinates defined:

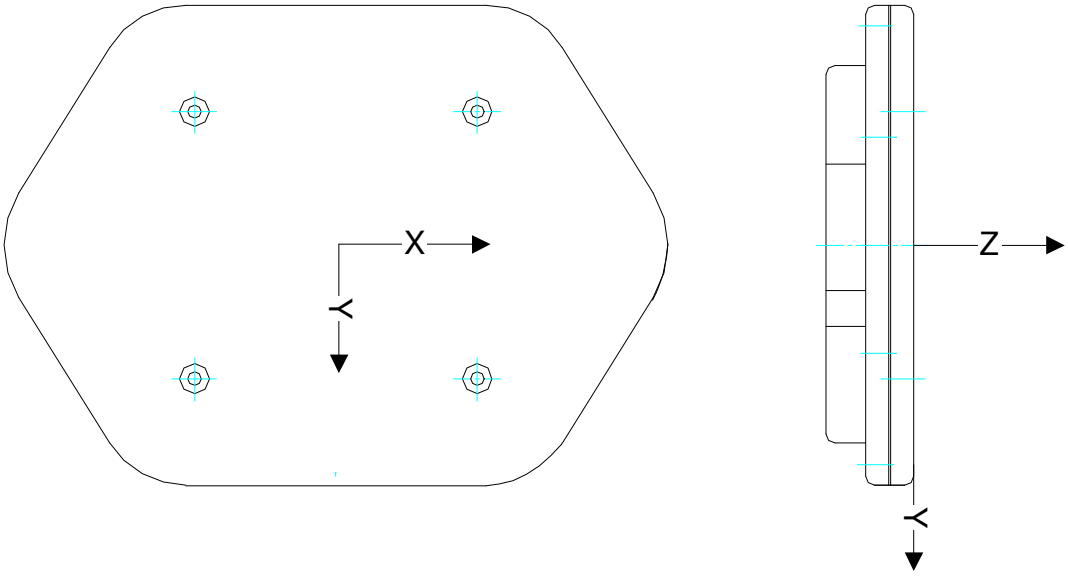

Figure 1.1: Definition of the coordinates

2 Mounting of the antenna

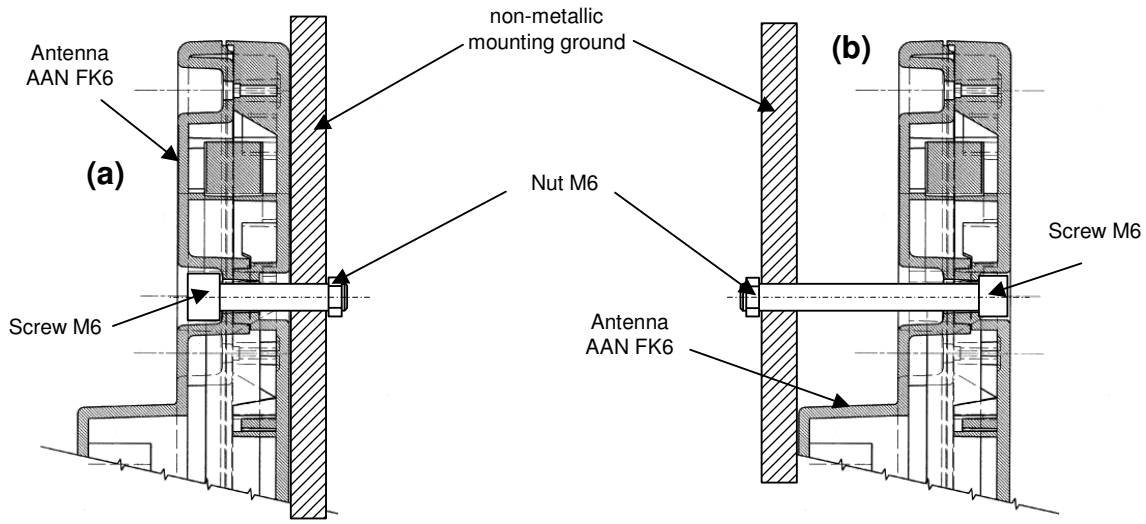

Figure 2.1: Mounting of the antenna at the front (a) and rear (b)

The antenna can be fixed at a proper mounting support. The holding down bolts may be tightened maximally with 2 [N/m].

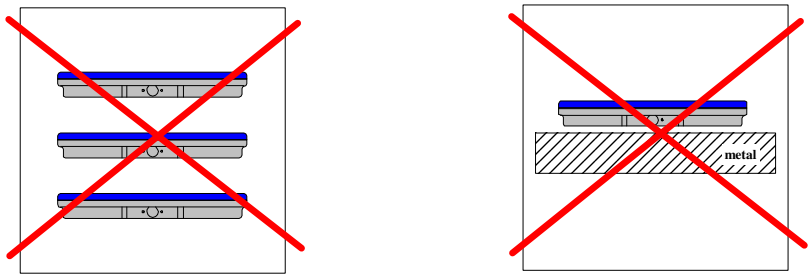

Figure 2.2: False handling of the antenna

Because of the functional principle it must be taken care that the antenna is not inductively short-circuited by the mounting construction. Especially the direct mounting on a frame or a plate of metal provoke such a short-circuit and can lead to a destruction of the antenna. When mounting on a concrete wall it is to notice that this wall may contain reinforcing iron in an unfavourable geometry. In this case only a power dissipation occurs because of the distance of the iron-structure, but not a complete short-circuit. In this configuration the reading range is lower than specified and the current consumption is higher than normal.

When operating an antenna in laboratory it must be paid attention that the antenna in operation must not be laid on another antenna. In such a case also an inductively short-circuit takes place which may lead to a destruction of the antenna.

Two adjacent antennas should have a distance of at least 50 cm to each other.

3 Metal free zone in immediate environment of the antenna

It must be followed to the minimum distances shown in Figure 3.1 and Figure 3.2!

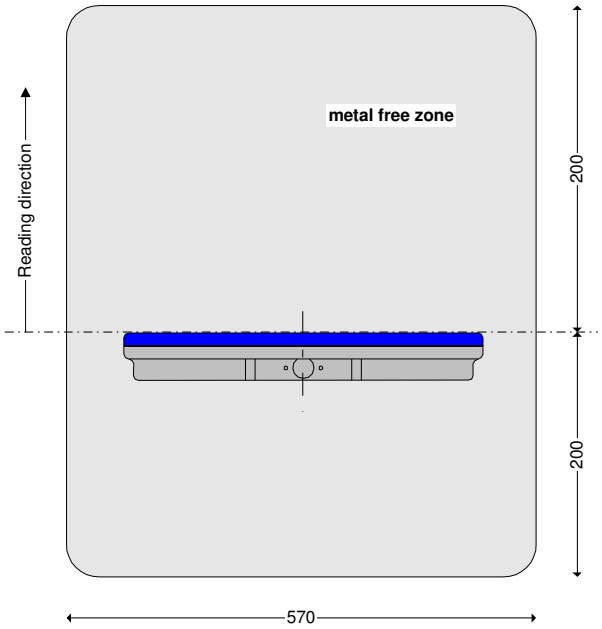

Figure 3.1: Minimum distance of the antenna to structures of metal – drawing in plane x-z

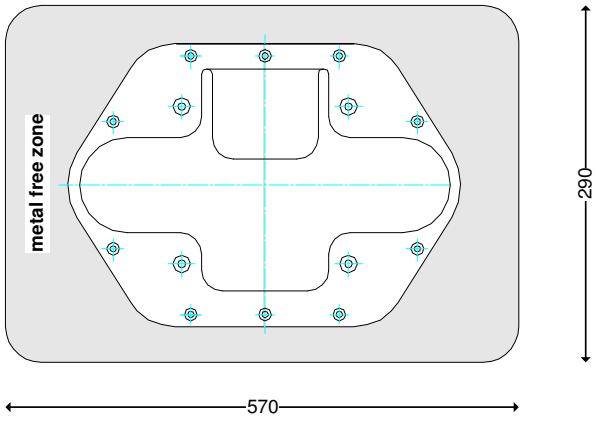

Figure 3.2: Minimum distance of the antenna to structures of metal – drawing in plane x-y

4 Optimal orientation of the antenna to the moving direction of the transponder

The antenna should be mounted as close as possible at the site of the transponder. As a rule a paralleI orientation of the antenna to the transponder is favourable in regard of the reading range.

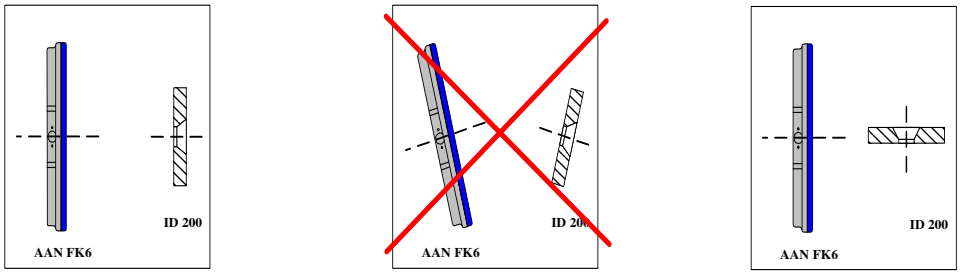

Figure 4.1: Optimal orientation transponder - antenna

The reading field is a complex three-dimensional function which is relevantly influenced by the orientation of the transponder. With parallel orientation (see Figure 4.1) and low interference the reading field in front of the antenna (shown in Figure 4.2) results.

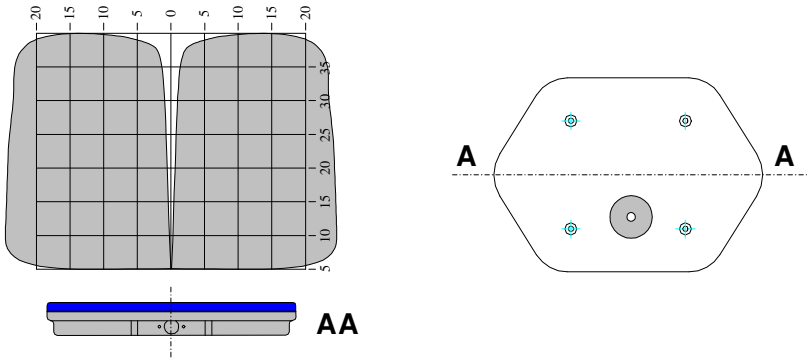

Figure 4.2: Reading field above the longitudinal axis (AA) and transverse axis (AA)

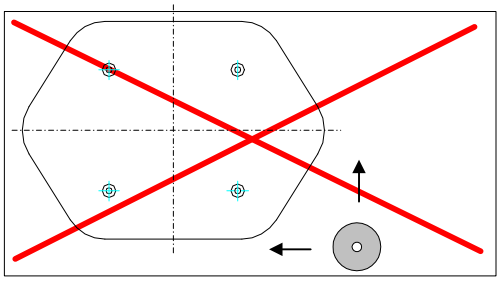

Figure 4.3: Disadvantageous motion paths of the transponder over the antenna

Because a transponder has to be long enough in the active reading area to achieve a reliable reading result. The maximum reading distance will be achieved only in stationary operation. The reading range is reduced with a transponder in motion. Therefore the transponder has to be passed closer at the antenna.

5 Electrical supply of the antenna

The antenna is mounted perpendicular to the transfer direction of the keg's. It is important that the distance between the antenna housing and the feed rollers is about 1 cm. The antenna fixture must not be made of metal.

The electrical interferences measured with the Mipos in laboratory are between 35mV and 50mV. At the conveyor the electrical interferences are around 150mV under laboratory conditions.

Mounting position as shown in Figure 5.4.1 for conveyors with chains or rollers

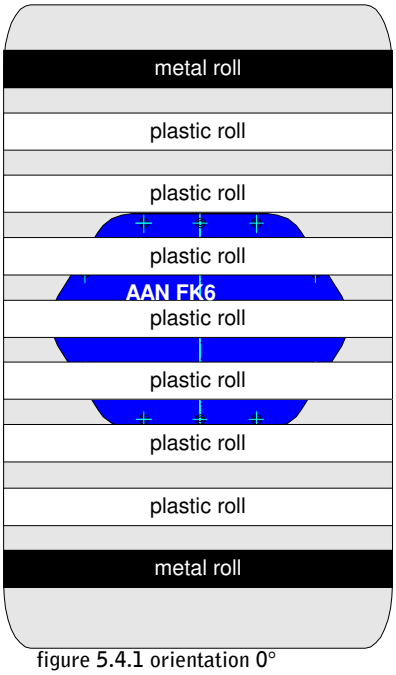

figure 5.4.1 orientation 0°

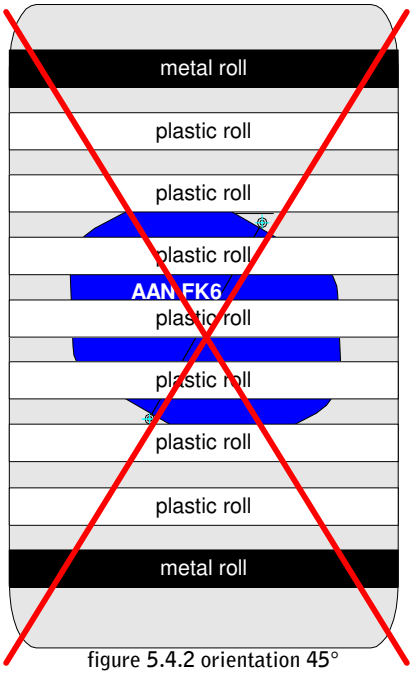

figure 5.4.2 orientation 45°

Figure 5.4.1 antenna under roller conveyors orientation 0°

Figura 5.4.2 antenna under roller conveyors orientation 45°

To get the best reading performance be sure to use at least 7 plastic rollers (without metal core) located above the antenna. If you use less than 7 plastic rollers you will get shorter reading distance.

No metal can be present above or below the antenna (!)

6 Electrical connectors of the antenna

The antenna is connected with the decoder by the antenna-cable. Very low signals are conducted in the cable. Special attention should be paid at the cable routing that unnecessary external signals are not conducted. That is why the antenna-cable should be laid separately, particularly not in cable tunnels. Optimal reading performance is achieved using the original AEG ID antenna-cable. This antenna-cable is delivered premanufactured at the side of the antenna and fits to the reading system regarding shielding and cable capacity. The standard cable length is 5 m. The cable may not be shortened!

Special cables with length of 1m to 10m are available on enquiry.

7 Revisions

19.12.01	Revision 00:	Initial edition
05.16.08	Revision 01:	Orientation 0°
02.08.10	Ausgabe 02:	Format