

Positioning and Ident. Antenna 2 dim./pos.

HG 98860ZA

Positioning and Identification Antenna for Outdoor-Applications

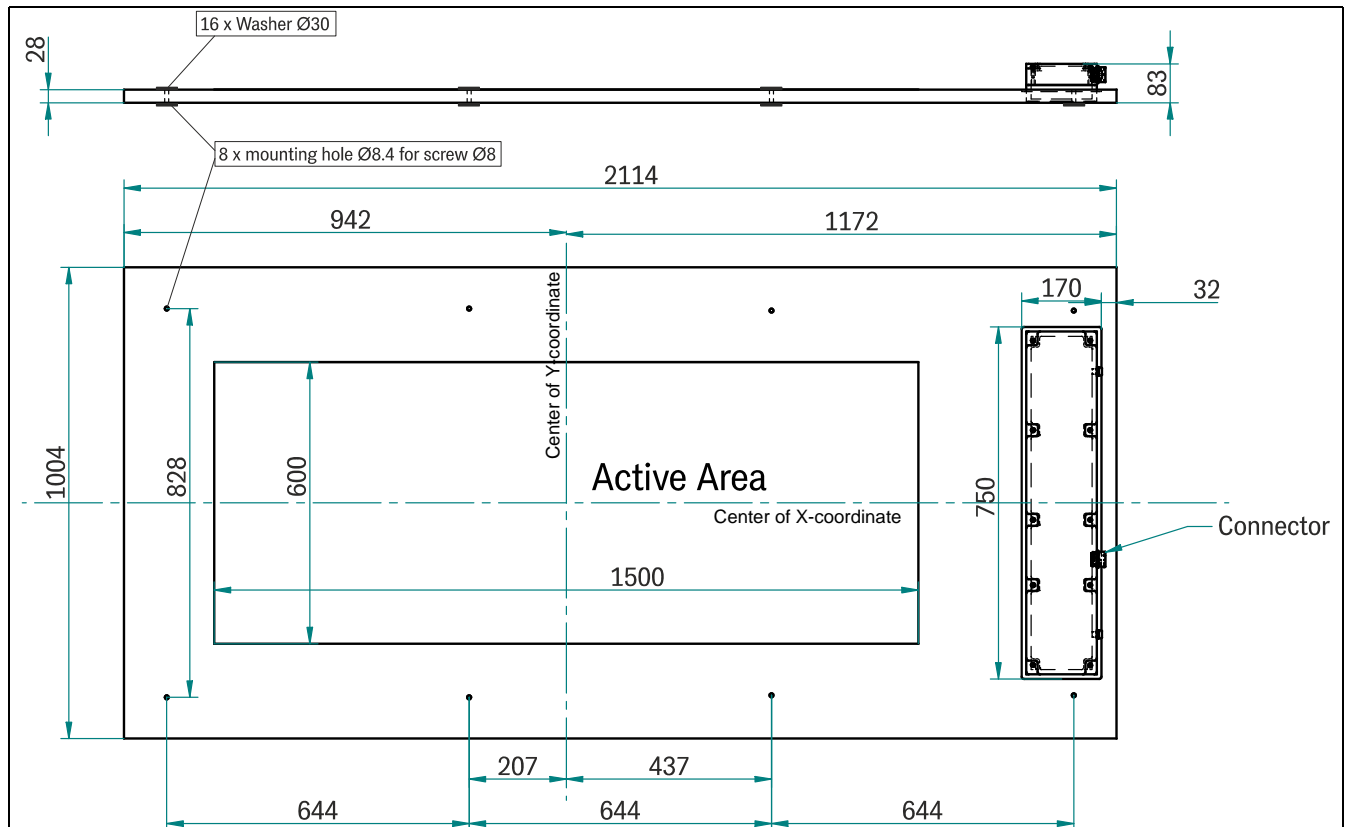
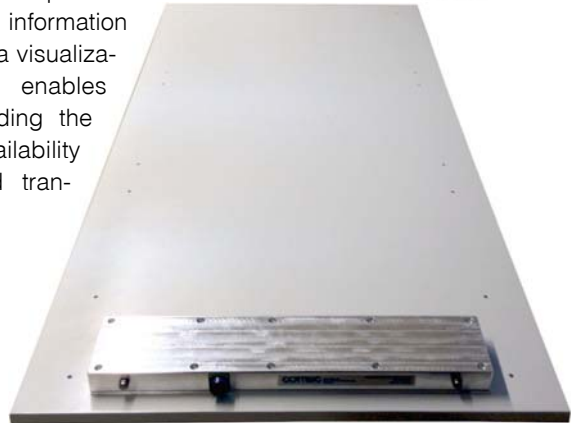
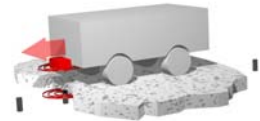
Antenna HG 98860ZA is especially designed for positioning and/or track guidance of vehicles in outdoor environment, as all electronic components are sealed resp. varnished and are designed for an extended temperature range.

All important settings, calibrations and software updates can be effected via a serial interface.

HG 98860ZA uses an antenna concept which has a broad operating range with a regular, linear transponder localization in x- and y-axis direction.

User specific system information can be configured into the output data.

This additional information may be stored in a visualization system and enables statements regarding the condition and availability of antennas and transponders.



System Tasks

- ♦ Energy Supply of the Transponder
- ♦ Reception of the Transponder's Signal
- ♦ Determination of the Transponder Code
- ♦ Output of the Transponder Code, Positioning Impulse (in direction of travel) and deviation (x, y)

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Functional Description

When the antenna crosses a transponder, the transponder is supplied by a 128 kHz energy field and transmits its code number back to the reading antenna at half frequency.

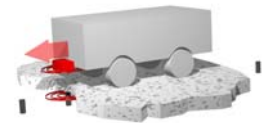
The relative transponder position in x and y direction is measured. The internal interpreter decodes the transponder code. Each crossing of the coordinate axes in direction of travel generates a positioning impulse with adjustable duration.

The antenna reads the code of the transponder and detects the relative x/y offsets to the antenna's axes in mm. Only one transponder can be detected and measured at the same time. To determine the position and heading of a vehicle a series of transponders on the track has to be read and

the code and position data has to be processed by a suitable computer or control unit. Due to the measuring principle different signal strengths of transponders and altitude variations of the antenna have hardly any influence on the output signal.

Using a cable of max. 10 meter (RS 422 / CAN bus), the antenna is connected with the vehicle electronics. The serial output may be chosen as 3964R or as a transparent protocol and is adjustable between 19200 or 38400 baud.

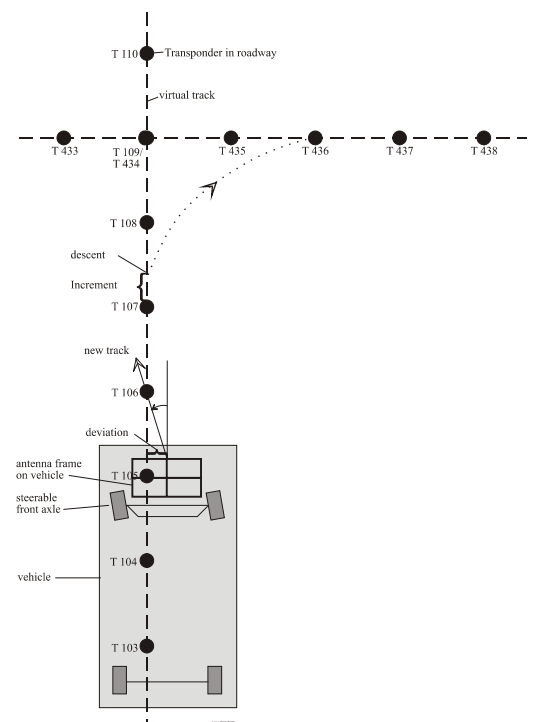
Different parameters of the antenna, such as current consumption and supply voltage, etc. will be measured further on and are added to the serial output protocol on demand.



Application example

The sketch shows a vehicle with an antenna frame for track guiding. Using the transponder (T105) the deviation from the intended track is determined. An external computer is now able to evaluate the new course in such a way, that the virtual track is reached again as quickly as possible (the external computer is not included in this system). Incremental encoders (or steering potentiometers) enable to alter the course as desired.

Due to a previously entered descent (T107 + incremental value) it is therefore possible to turn on to a new track. The vehicle corrects itself again at the next transponder (T436). The distances between the transponders are to be determined according to the conditions.



Technical Data

- Casing dimensions	2114 x 1004 x max. 83 mm (L x W x H)
- Transponder Pos. Detection Area	1500 x 600 mm
- Reading distance	150 to 350 mm; nominal reading distance: 200 - 250 mm with Transponder HG 70653
- Position accuracy	static: $\pm 15\text{ mm}$ @ nominal reading distance with Transponder HG 70653 8 ms signal processing time
- Max. crossing speed	10 m/s
- Weight	approx. 36 kg
- Protection	IP 65
- Temperature range	-25 to +50° C, warm-up time 5 minutes
- Current supply	24 V -20 % +50 %, max. 1.3 A @ 24 V
- Connector	16-pin Amphenol plug connector
- Interface	RS422 & CAN 19200 resp. 38400 Bd., protocol 3964R or „transparent“, potentially separated
- Positioning pulse	20 mA current source, potentially separated