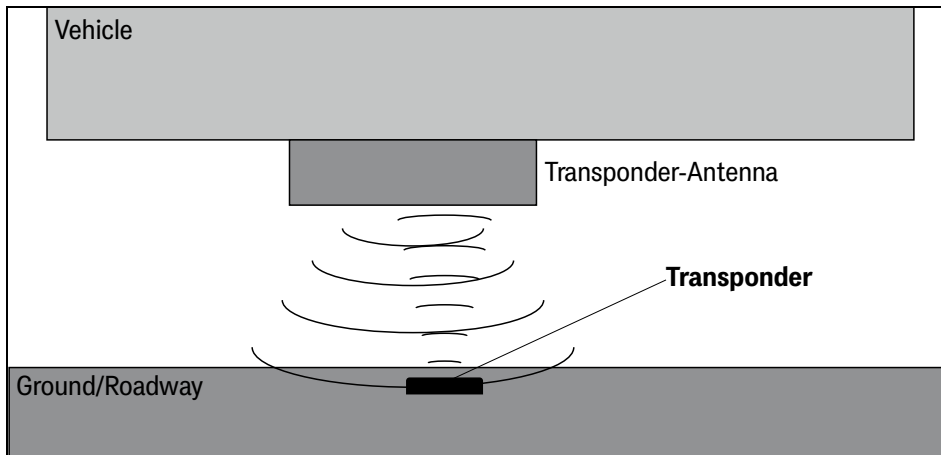


Functional Description



The system utilizes the frequencies 128 kHz and 64 kHz. The transponder-antenna wirelessly supplies the transponder with energy by using an alternating field of 128 kHz. This induces a voltage within the coil of the transponder, which generates a current that is sufficient power supply for the micro chip.

Using the induced energy the transponder transmits its code in full duplex mode at half the antenna's frequency. The antenna receives the code while the transponder is within its field. A normal reading cycle including all security checks is approximately 8 ms.

The system's operability is guaranteed through non-conductive material (fluid, gaseous as well as solid). However, if mounted directly on or within metal, the transponder's reading distance is affected.

Read-Write Transponder (RW)

The Read-Write Transponders are equipped with an EEPROM in which the code is stored. The EEPROM may be rewritten up to 100.000 times.

Application Examples from the Automation Industry

Automated Guided Vehicles (AGV)

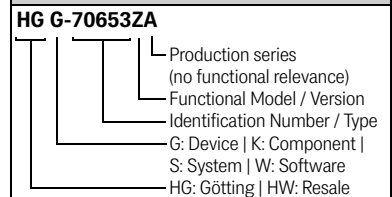
- ♦ Positioning
- ♦ Track Guidance
- ♦ Identification



Overview

- ♦ Transponder for positioning systems for automated guided vehicles (AGV)
- ♦ Indoor/Outdoor, IP 67
- ♦ Reading distance 90 to 350 mm (depending on the antenna, see table on backside)
- ♦ Operating frequency: 128/64 kHz
- ♦ R/W Transponder (reprogrammable with HG G-81840 Transponder Programmer)

Götting Product IDs (order codes)



Mounting Notes

Do not mount a transponder directly over metal! The minimum metal-free distances around the transponder as shown in the box to the right should be observed.

- Central hole for screw-on mounting provided.
- Exact alignment is required, otherwise there will be positioning errors.

Range and accuracy of positioning are influenced by:

- Any large metal pieces (sheets) in the ground.
- Inductive loops, as they are created e. g. by steel building mats, have a greater influence. Individual metal poles have little effect. Those may partially be within the metal-free area.

The following environmental conditions have no effect on the function:

- Snow, ice, water.
- Oil, tar, earth, dirt, etc.

The following equipment will be required for mounting (not included in the scope of supply):

- Rotary hammer drill
- Core bit (ø 85 mm)
- ø 8 to 10 mm drill bit
- hammer and chisel
- suitable sealing material (epoxy resin, see box below)

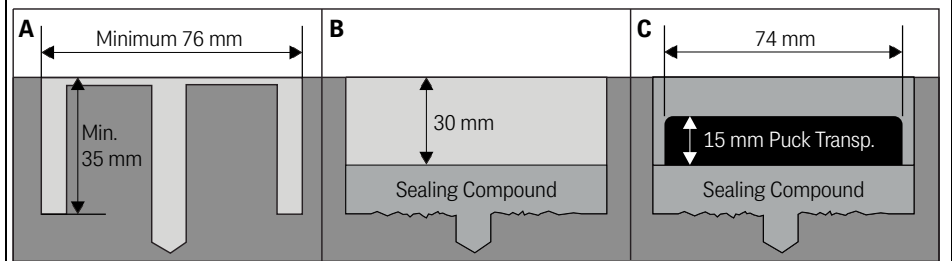
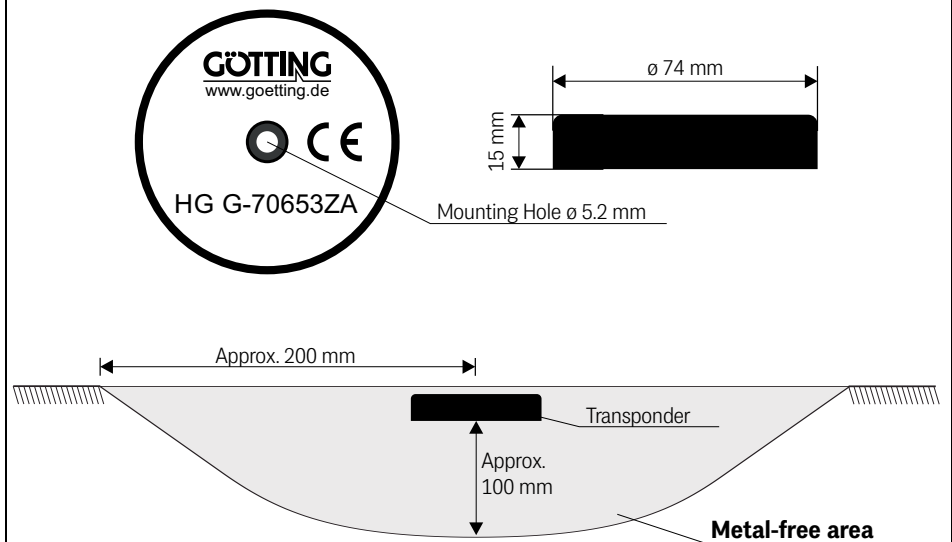
Recommended Mounting Procedure (see mounting sketch in the box to the right)

- It is recommended that a test hole be drilled prior to installing the transponder.
- The position of the transponder should be premarked and a centering hole should be drilled with an appropriate drill bit.
- A hole may then be drilled with a diameter of 76 mm to a depth of approx. 35 mm (A).
- Any loose material must be removed and the floor of the hole has to be as even as possible (B).
- Afterwards fill the hole with sealing compound (epoxy resin) up to a height of 30 mm below the road and let the resin harden (B).
- Place the transponder into position with its label uppermost (C).
- Fill up the hole with sealing compound.

Complementary Products / Accessories

HG G-98760	Transponder-Antennas
HG G-98810	
HG G-98850	
HG G-98860	
HG G-98870	
HG G-81840	Transponder Programmer
Elan-tech ADH 141.242 epoxy resin	Example for a two component sealing compound that we used successfully

Casing Dimensions / Metal-Free Area / Mounting Sketch



Transponder-Antenna	Possible Reading Distances
HG G-98760	90 – 250 mm
HG G-98810	85 – 300 mm
HG G-98850	100 – 300 mm
HG G-98860	150 – 350 mm
HG G-98870	130 – 260 mm

Technical Data	
Dimensions	ø 74 mm x 15 mm (ø x H)
Mounting Hole	ø 5.2 mm
Material	Polycarbonate ABS casing filled with Polyurethane compound
Weight	100 g
Protection class	IP 67
Mechanical pressure	max. 490 N/cm ²
Relative humidity	100% @ 25° C (without condensation)
Temperature ranges	Operation: -20° C to +60° C / Storage: -20° C to +60° C
Reading system, read write	PSK
Operating frequency	128 kHz antenna system, 64 kHz transponder
Code length	20 bit of useful data
Reading time	8 ms
Reading distance	Distance between antenna and top of transponder 90 to 350 mm, depending on the antenna, see table above
Min. distance between two transponders	1.5 times the antenna width