Data Sheet

Transponder

Functional Description

Vehicle

PLC / Vehicle Controller

CAN oder PROFINET®
Anschluss an BUS 1 oder BUS 2

Additional Bus participants
CAN: Terminator (optional)

+UB (+) (−)

alternatively with CAN

Transponder Antenna

Position Power Ethernet PN SF PN RDY/BF

Computer (e.g. PC or Laptop)

Ethernet
Configuration / Logging

USB

Emergency Update

Mounting Bracket (optionally available as accessories)

Reading distance
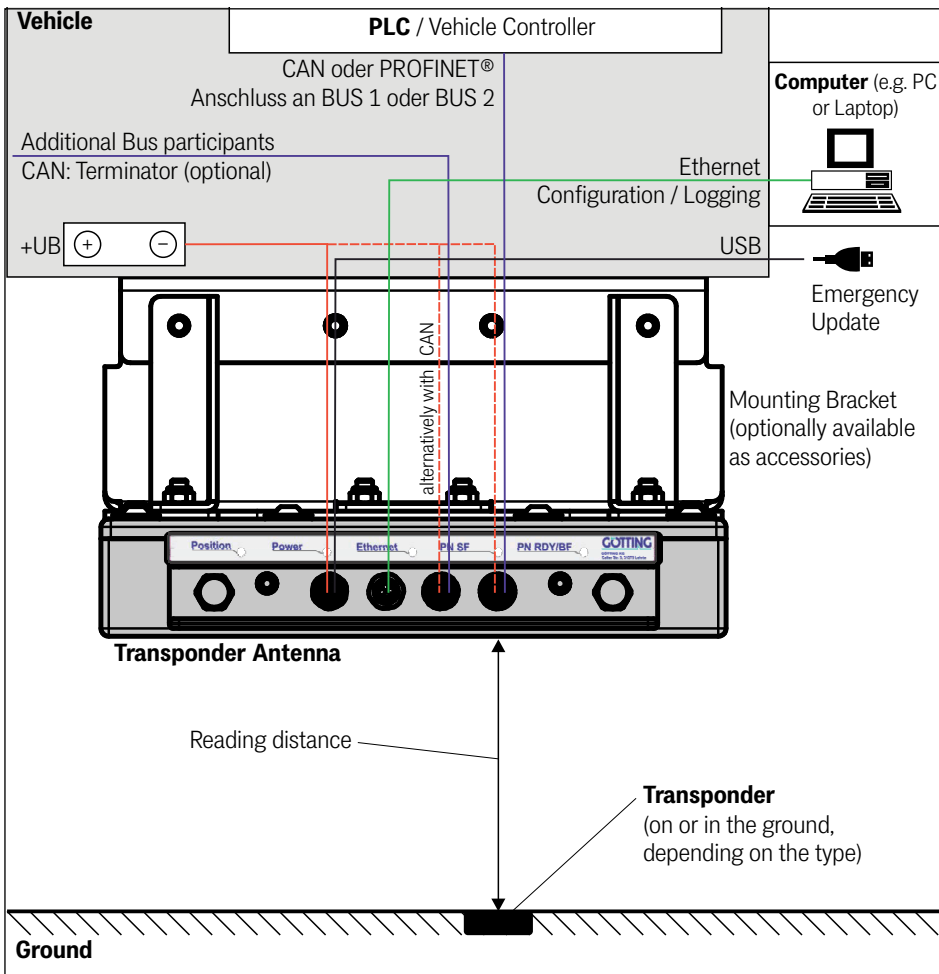
Transponder
(on or in the ground, depending on the type)

Ground

Main Features

- Transponder antenna for continuous position measurement on e.g. RMGs
- Outdoor use, IP67
- For use with passive transponders (128/64 kHz)
- Internal transponder list
- Continuous position output (always at least 1 transponder and max. 2 transponders in the detection range)
- Output of absolute position in X-direction (direction of travel)
- Interfaces: USB, Ethernet, bus interface depending on the variant CAN/CANopen® or PROFINET®
- Reading distance: 130 to 210 mm, nominal reading distance: 170 mm (depending on transponder)
- High accuracy
- High crossing speed
- Visualization of operating status by LEDs
- Configuration via Ethernet with web browser (Google Chrome, Opera, Firefox, Edge and others)

Versions/Variants

HG G-98870	ZA	CAN/CANopen®
	YA	PROFINET®

Götting Product IDs (order codes)

HG G-98870ZA

- Production series (no functional relevance)
- Functional Model / Version
- Identification Number / Type
- G: Device | K: Component | S: System | W: Software
- HG: Götting | HW: Resale

The transponder antenna HG G-98870 determines the longitudinal position of a vehicle or crane by continuously detection of passive transponders installed on or in the ground (depending on the type) under the antenna.

When a transponder is crossed, the antenna induces a supply voltage into the transponder and receives the unique transponder code in response. At the same time, the position of the transponder relative to the center of the antenna field is measured.

Using the transponder position data stored in the antenna processor (transponder list), the absolute longitudinal position of the antenna is determined and output via the bus interface.

Mounting Notes

- The antenna is designed for a reading distance of 130 to 210 mm above the transponders.
- A maximum of two transponders may be in the sensor's detection range at the same time.
- Distance between transponders: 1,000 to 1,500 mm.
- Suitable mounting brackets can be ordered from Götting if required, see picture on the right and table "Complementary products" below.
- Metal-free area around the antenna:
  - 50 mm distance from the side to metal.
  - 100 mm distance from the underside.
  - No closed conductor loops above, below or around the antenna within 400 mm.
  - No metal plates above or around the antenna within 400 mm.

Configuration via Ethernet

- Configuration of sensor and interface parameters.
- Adjustment of detection thresholds (transponder threshold)
- Mounting settings
- Transmitter coil adjustment
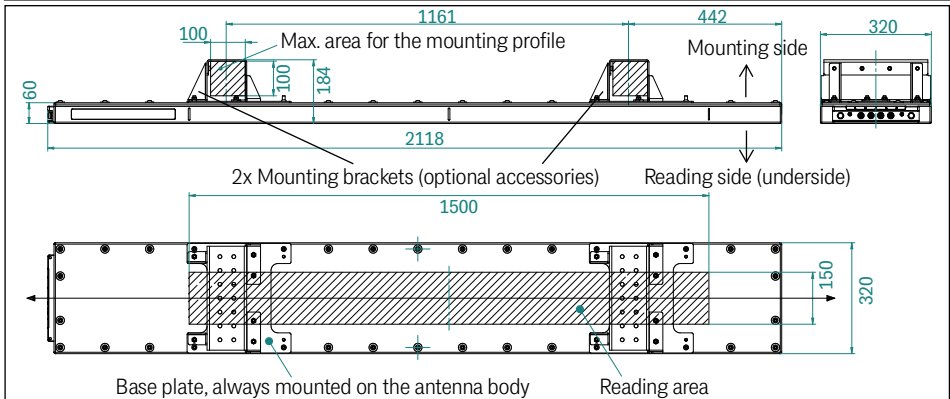- Transponder list
- Logging settings

Factory settings

- IP: 10.10.10.10
- transponder threshold = 400
- CAN (HG G-98870ZA): CAN format: CANOpen, Node ID: 0x01 [Hex] / 1[Dec], baud rate: 250kByte, output rate: 8ms
- Mounting: direction: normal; offset = 0
- Tune: 3
- No transponder list

Complementary products

HG Z-98870-001	Mounting Bracket Set (2x Mounting Bracket)
HW CAB00001	Power: Cable PUR, 5 m, one side fitted with M12 elbow socket
HW CAB00064	CAN 1: CAN bus cable, 10 m, with shielding, M12 socket straight, open end
HW CON00096	CAN 1: CAN Terminator, M12 socket, 5 pin, A cod.
HW CON00055	CAN 2: CAN Terminator, M12 plug, 5 pin, A coded
Ethernet (Service)	Available as accessory from other suppliers: Cable, approx. 2m, plug RJ45 to M12 plug D-coded, shielded
HG G-70633ZB	Glass Transponder
HG G-70652ZC	Puck Transponder
HG G-70653ZA	Puck Transponder
HG G-70654ZB	Marking Nail Transponder (very robust)

Casing and Dimensions

2x Mounting brackets (optional accessories)   Reading side (underside)

Max. area for the mounting profile   Mounting side

Base plate, always mounted on the antenna body   Reading area

Pin Allocations (all connectors M12)

Pin	All Variants		HG G-98870ZA		HG G-98870YA
	Power 5 pin, A cod., male	**Ethernet** 4 pin, D cod., female	**CAN 1** 5 pin, A cod., male	**CAN 2** 5pin, A cod., female	**PROFINET® 1 & 2** 4 pin, D cod., female
1	+UB	TX+	Shield	Shield	TX+
2	GND	RX+	+UB	+UB	RX+
3	D+ (USB)	TX-	CAN_GND	CAN_GND	TX-
4	D- (USB)	RX-	CAN_H	CAN_H	RX-
5	GND (data & supply)		CAN_L	CAN_L	

Technical Data

Dimensions	approx. 2118 x 320 x 70 mm (L x W x H) Height with optional mounting brackets: 184 mm
Casing	GRP (Durostone® UPM 203) and stainless steel
Weight	– Antenna approx. 44 kg – Mounting brackets 3.4 kg each
Reading area	1500 x 150 mm
Reading distance	130 to 210 mm (with Transponder HG G-70652ZB)
Nominal reading distance	170 mm (with Transponder HG G-70652ZB)
Accuracy	– ≤ 2 mm at nominal reading distance – ≤ 4 mm at min.-max. distance at the edges of the reading range
Voltage supply	18 to 36 V, nominal voltage supply 24 V
Current consumption	approx. 410 mA @ 24 V
Temperature ranges	Operation -20° C to +50° C / Storage -20° C to +70° C
Mechanical load capacity	5 g 11 ms / 2 g 10 to 55 Hz
MTTF$_D$	Mean time to dangerous failure: 53 years For information on the calculation see https://www.goetting-agv.com/search/node/mttfd
Protection class	IP 67
Climate conditions	Relative humidity max. 95
Frequency	128/64 kHz
Transponder	– Distance between two Transponders: min. 1,000 mm to max. 1,500 mm – Maximum length of the transponder list in the device: 8,000 Transponders
Code Decoding	8 ms
Processing time / cycle	2 ms
Output rate	≥ 2 ms adjustable
Max. crossing speed	12 m/s
Outputs	HG G-98870ZA: 4 LEDs / HG G-98870YA: 5 LEDs
Connectors	– All Variants: 1x M12 5-Pin A-coded: Power (male) | 1x M12 4-Pin D-coded: Ethernet (female) – HG G-98870ZA: 2x M12 5-Pin A-coded: CAN 1 (male) | CAN 2 (female) – HG G-98870YA: 2x M12 4-Pin D-coded: PROFINET 1 & 2 (female)
Interfaces	– USB: Emergency update – Ethernet: Configuration via web interface over web browser, Logging – CAN (HG G-98870ZA): Not isolated, terminator not integrated, Full CAN according to ISO/DIS 11898, standard frames, identifier and data rate configurable, telegram identifier compatible with CANopen® – PROFINET® (HG G-98870YA): With integrated Switch