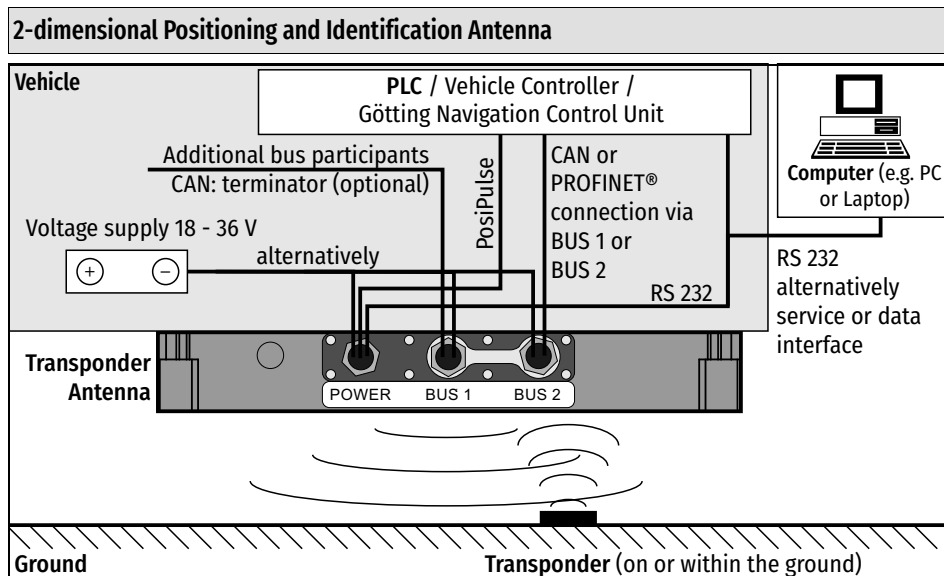




HG G-98830YB
HG G-98835YB

Transponder-Antenna | 2-dim. | serial | CAN / PROFINET®



The transponder antenna is used to localize and track automated guided vehicles (AGVs) or cranes with the help of ground markers (transponders).

As soon as a transponder is in the antenna's reading range, it is supplied with energy without contact and then transmits its code back to the antenna cyclically every eight milliseconds at half the antenna transmission frequency. The transponder is otherwise completely passive and does not require its own power supply or battery. Only one transponder may be in the reading range of the antenna at any one time.

The position of the transponder relative to the center of the antenna is also determined every eight milliseconds from the signal sent by the transponder to the antenna. The field of the

transponder is rotationally symmetrical, so that the orientation or position cannot be determined with a single measurement. The orientation must be determined from a sequence of transponder readings or by means of a second antenna. With a second antenna on the vehicle, it is also possible to determine the orientation when stationary and to navigate omnidirectional vehicles.

The interpreter for determining the code and position is integrated in the antenna. When crossing the Y-axis (transverse to the direction of travel), a high-precision positioning pulse (PosiPulse) with an adjustable duration is emitted. The PosiPulse is available both as a digital output and via the telegrams of the serial and bus interfaces.

Overview

- Transponder antenna for Automated Guided Vehicles (AGV)
- Flat casing, sealed electronics
- Indoor & outdoor, IP 64
- Mounting directly on or flush with metal
- Reading distance 20 to 80 mm, nominal reading distance 50 mm
- Active area for positioning 200 mm x 200 mm
- Max. crossing speed 4 m/s
- Voltage supply 18 - 36 V, current consumption max. 1 A when programming transponders, typically 300 mA @ 24 V
- Connectors: 3 x M12 5 pin, A coded: 1x Power (incl. serial RS 232 + PosiPulse) / 2x CAN resp. PROFINET®
- Bus interface depending on variant CAN/CANopen® or PROFINET® (see below)
- PosiPulse when crossing the middle axis in direction of travel, 24 V 20 mA power source, not isolated, alternatively in the serial or CAN/PROFINET® telegrams
- Serial interface either usable as service interface for the configuration (default, also for firmware updates) or data interface (telegram contents can be configured)
- Programming of Transponders

Versions/Variants

HG G-98830YB	CAN/CANopen®
HG G-98835YB	PROFINET®

Mounting Notes

- The antenna is designed for a reading height of 20 to 80 mm above the transponder, nominal reading height is 50 mm.
- The antenna may be mounted with her 5 shielded sides directly onto or within metal.
- For mounting the antenna there are 4 M6 mounting screw threads and 8 slots for optional aligning pins integrated into the antenna casing.
- Avoid interferences by e.g. conductive material, conductor loops or reinforcements within the antenna's reading field or close to the transponders (also see transponder data sheets). Clocked engines and their power supply cables close to the antenna may also affect the operation.
- Observe a minimum distance of 200 mm between two transponder antennas.
- There may ever be at most one transponder within the antenna's reception range. Thus a minimum distance of 500 mm between the transponders has to be observed.

Configurations

- Configuration of antenna and interface parameters via RS 232
- Adjustment of detection thresholds for the compensation of light interferences
- De-/activation of an automatic calibration function (AutoTune)
- Programming of compatible R/W transponders with a new code

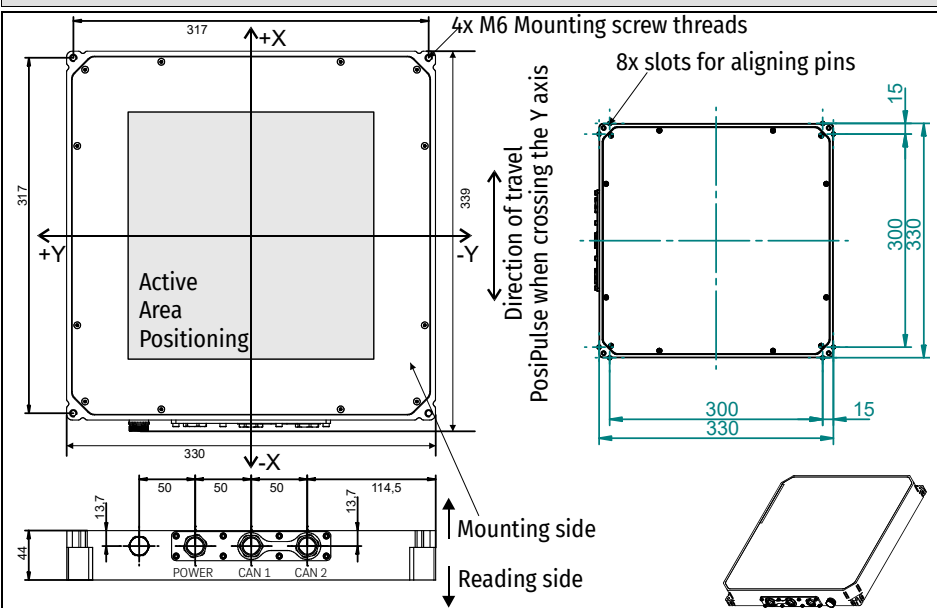
CAN interface (HG G-98830YB)

- Not isolated, Terminator not integrated, Full CAN
- CAN: According to ISO/DIS 11898 identifier, data rate, standard/extended frames; configurable via serial interface
 - CANopen®: CANopen®, device profile DS 401 node ID and data rate configurable via ser. interface or SDOs

Complementary products

HW CAB00001	Power: Cable PUR, 5 m, M12 elbow socket, open end
HW CON00055	CAN1: CAN Terminator, M12 plug, 5 pin, A coded
HW CAB00064	CAN 2: CAN-Bus cable, 10 m, with shielding, M12 socket straight, open end
HW DEV00095	Disc-Transponder R/W
HW DEV00098	Disc-Transponder R/W pre-programmed
HG G-71325XA	Bar-Transponder R/W
HG G-81840ZA	Transponder programming device
HG G-73650ZD	Control Unit

Casing Dimensions / Mounting



Pin Allocations, all connectors M12

	All Variants	HG G-98830YB	HG G-98835YB
Pin	Power 5 pin, A-coded, male	CAN 1 5 pin, A-coded, female	PROFINET® 1 & 2 4 pin, D-coded, female
1	+UB	Not connected	TX+
2	PosiPulse output	+UB	RX+
3	TxD RS 232 data output	GND	TX-
4	RxD RS 232 data input	CAN_H	RX-
5	GND	CAN_L	

Technical Data

Dimensions	approx. 339 x 330 x 44 mm (L x W x H)
Casing	Aluminum, potential-free
Weight	approx. 8 kg
Active antenna area	220 mm x 220 mm
Reading distance	20 to 80 mm bottom side antenna <-> transponder
Nominal reading distance	50 mm
Voltage supply	18 to 36 V, nominal voltage 24 V
Current consumption	approx. 300 mA @ 24 V, up to 1 A during programming of transponders
Temperature ranges	Operation 0° C to +50° C / storage -20° C to +60° C
Protection class	IP 64
Relative humidity	95 % at 25° C (without condensation)
Mechanical resilience	5 g 11 ms / 2 g 10 to 55 Hz
Signal processing time	8 ms
Max. crossing speed	4 m/s
Static positioning accuracy	1σ = 1 mm at nominal reading distance within an area of ± 90 mm around the antenna's center
Connectors	3x M12 connectors: - All Variants: Power (5 pin, A-coded, male) - Variant HG G-98830YB: CAN 1 (5 pin, A-coded, female) CAN 2 (5-pin, A-coded, male) - Variant HG G-98835YB: PROFINET 1 PROFINET 2 (4 pin, D-coded, female)
Interfaces	- RS 232: The output is carried out with 19200 resp. 38400 baud. The telegram content can be configured. Protocols 3964R, transparent or monitor only. Alternatively usable as service or data interface. Factory setting: Service interface (monitor only) at 38400 baud, 8 data bits, parity even - PosiPulse: 24 V 20 mA power source, not isolated - CAN (HG G-98830YB): see box to the left - PROFINET® (HG G-98835YB): With integrated switch