

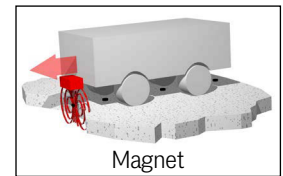
Photos show variant HG G-98630YA with CAN bus interface



Front (displays)

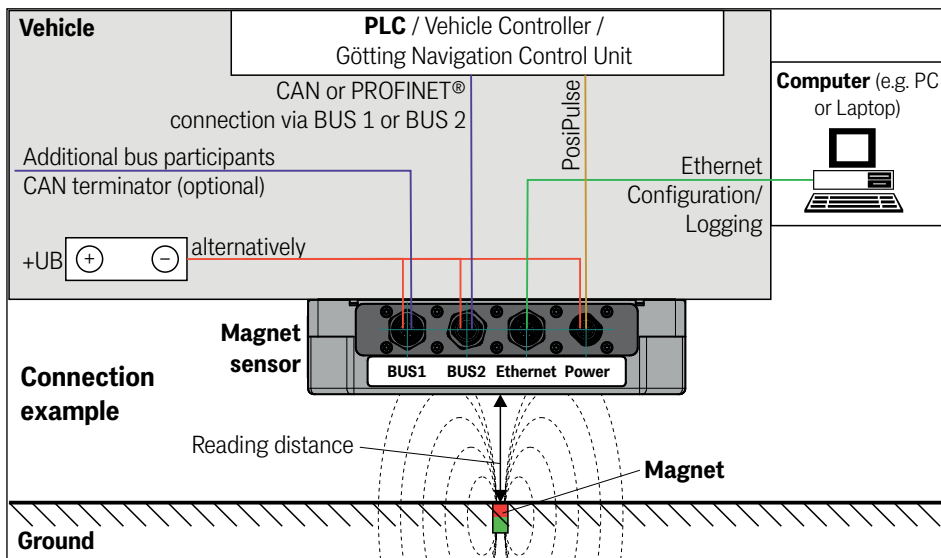


Back (connectors)



Magnet

Sensor for Navigation with Single Magnets



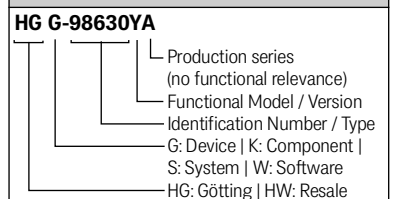
Features

- Magnet sensor for automated guided vehicles (AGVs)
- 2-dimensional detection of the position of magnets under the sensor
- Installation position/orientation of the sensor under the FTF can be individually selected by adjustable output coordinate system and magnet pole detection
- Output of travel direction (standard 0 – 360°, scale selectable)
- Real-time sensor diagram for checking and visualization of the magnet position
- Interfaces: Ethernet, bus interface depending on the variant CAN/CANopen® or PROFINET®
- Output of a positioning pulse (PosiPulse) as a digital switching output and via CAN bus
- Configuration via Ethernet with web browser (Google Chrome, Opera, Firefox, Edge and others)

Versions/Variants

HG G-98630	YA	CAN/CANopen®
	XA	PROFINET®

Götting Product IDs (order codes)



The 2-dimensional magnetic sensor is used for navigation/tracking of automated guided vehicles (AGVs) based on magnet points in the ground. The two-dimensional position detection also makes it possible to navigate omni-directional vehicles on a magnetic grid.

As soon as a magnet is in the detection range of the sensor, the relative position of the magnet in X and Y direction is calculated and output via the bus interface.

Furthermore, a PosiPulse is output as a digital switching output and via the bus interface. The PosiPulse triggers when the perpendicular to the direction of travel passes through the origin of the sensor and the magnet.

The reading area of the sensor is 150 x 112 mm. The reading distance between the magnet and the sensor depends on the magnet used.

The area around the magnet sensor as well as the detection range should be as free as possible from moving and immovable magnetic and ferromagnetic metals and undesired magnetic fields, as these affect the accuracy and range of the sensor (see mounting instructions on the back).

All settings, calibrations and software updates required for operation are made via the web interface.

Mounting Recommendations

- For mounting the antenna there are 4 M6 mounting screw threads and 8 slots for optional aligning pins integrated into the antenna casing.
- Maintain a distance of at least 30 mm from **permanently installed** magnetic and ferromagnetic metals.
- There must be **no moving** magnetic and ferromagnetic metals (e.g. moving wheel axles) within a range of 220 mm below or above the sensor.
- At the same time, **only one magnet** may be under the sensor.

Settings via Ethernet

- Configuration of sensor and interface parameters.
- Adjustment of detection thresholds to compensate for slight interferences.

Factory Settings

- IP: 10.10.10.10
- CAN (HG G-98630YA): CAN format: CANOpen, Node ID: 0x01 [Hex] / 1[Dec], baud rate: 250kByte, event time: 6ms
- Output settings: u=X, v=Y (original coordinate system) / no output inversion
- Angle scale: 360 / expected magnet pole: both
- Sensor: Magnet type: custom / detected threshold: 1.5 Gauss

Reading Distances [mm] (selection, other types possible)

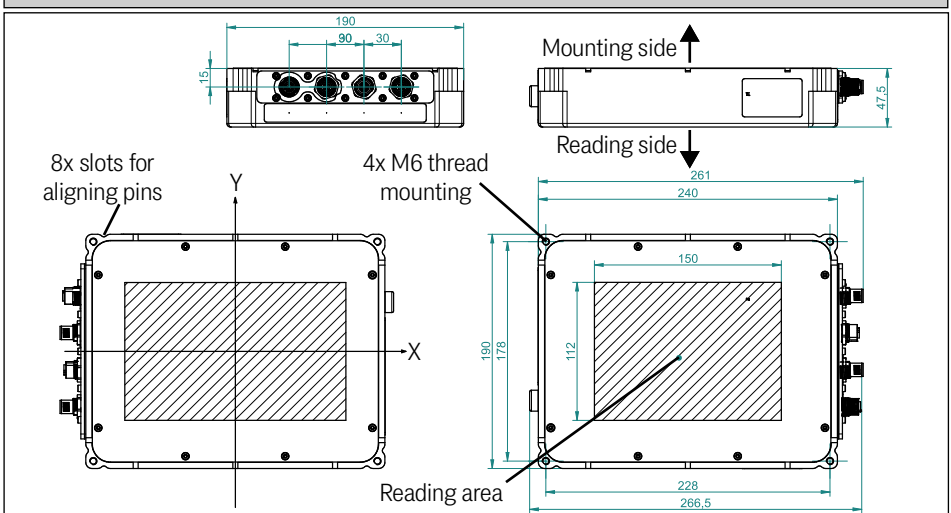
Magnet type *)	Min.	Max.	Norm
HW MAT00019	53	73	63
HW MAT00020	68	95	82
HW MAT00021	79	116	98
HW MAT00022	109	162	136
HW MAT00023	167	248	208

*) s. following table

Complementary Products

HW CAB00001	Power: Cable PUR, 5 m, one side fitted with M12 elbow socket
HW CON00055	CAN 1: CAN Terminator, M12 plug, 5 pin, A coded
HW CAB00064	CAN 2: CAN-Bus cable, 10 m, with shielding, M12 socket straight, open end
Ethernet (Service)	Available as accessory from other suppliers: Cable, approx. 2m, plug RJ45 to M12 plug D-coded, shielded
HW MAT00019	Magnet Ø10 x H10 mm
HW MAT00020	Magnet Ø10 x H20 mm
HW MAT00021	Magnet Ø10 x H40 mm
HW MAT00022	Magnet Ø20 x H20 mm
HW MAT00023	Magnet Ø35 x H20 mm
HG G-73650ZD	Navigation control unit

Dimensions / Mounting Notes



Pin Allocations (all connectors M12)

Pin	All Variants		HG G-98630YA		HG G-98630XA
	Power	Ethernet	CAN 1	CAN 2	PROFINET® 1 & 2
1	+UB	TX+	Shield	Shield	TX+
2	PosiPulse	RX+	+UB	+UB	RX+
3	– (reserved)	TX-	CAN_GND	CAN_GND	TX-
4	– (reserved)	RX-	CAN_H	CAN_H	RX-
5	GND (data & supply)		CAN_L	CAN_L	

Technical Data

Dimensions	266.5 x 190 x 47.5 mm (L x W x H)
Casing	Aluminum, potential-free
Weight	2 kg
Reading area	150 x 112 mm
Reading distance	30 – 250 mm (magnet dependent, s. also the box reading distances on the left)
Magnetic flux density	Min.: ±2 Gauss (or ±0.2 mT) Max.: ±8 Gauss (or ±0.8 mT) Keep in mind that magnetic/ferromagnetic metals and the earth's magnetic field can influence the measured flux density. Therefore, provide at least 1 Gauss as a reserve.
Voltage supply +UB	18 to 30 VDC, nominal voltage 24 V
Current consumption	80 mA
Temperature ranges	Operation: -20° to +50° C Storage: -20° to +70° C
Protection class	IP 64
Climate conditions	Relative humidity max. 95
Mechanical load capacity	5 g 11 ms / 2 g 10 to 55 Hz
Displays	HG G-98630YA: 4 LEDs / HG G-98630XA: 5 LEDs
Signal processing time	7 ms
Output rate	6 ms
Crossing speed	– Min.: 0 m/s (position) / 0.007 m/s (angle and PosiPulse) – Max.: 7 m/s horizontal / 5 m/s vertical
Static position error	≤ 2 mm
Connectors	– All Variants: 1x M12 5-Pin A-coded: Power (male) 1x M12 4-Pin D-coded: Ethernet (female) – HG G-98630YA: 2x M12 5-Pin A-coded: CAN 1 (female) CAN 2 (male) – HG G-98630XA: 2x M12 4-Pin D-coded: PN 1 & PN 2 (female)
Interfaces	– Ethernet: Configuration via web interface over web browser, Logging – PosiPulse: 24 V, 20 mA power source, not isolated – CAN (HG G-98630YA): Not isolated, terminator not integrated, Full CAN according to ISO/DIS 11898 with standard frames or CANopen®, identifier and data rate configurable – PROFINET® (HG G-98630XA): With integrated Switch

