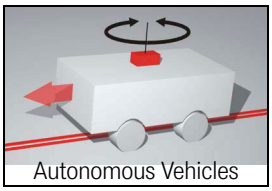
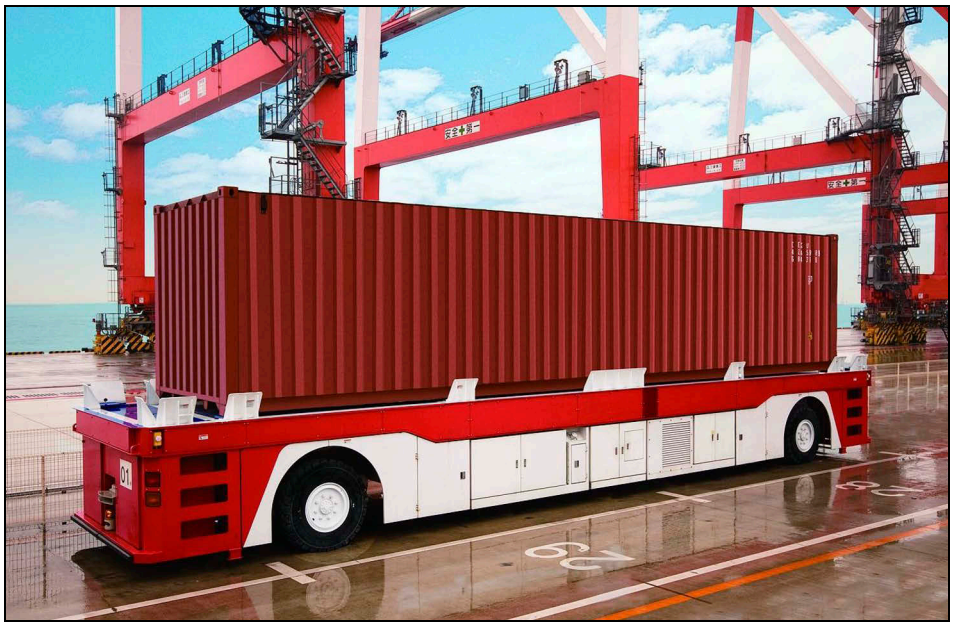
Data Sheet


Autonomous Vehicles

Overview / Example application: AGV in a harbor with transponder positioning



The Gyro HG 84300ZD measures the angle of one axis and permanently outputs this angle via its CAN/CANopen® interface (PROFINET® optionally available). This information can be used by a superordinate vehicle controller (not part of the scope of supply; e.g. Götting type HG G-73650) to calculate the current position of all types of vehicles, thus using the Gyro as part of an inertial navigation system.

The device is based on the latest generation of the MEMS technology. Compared to other gyroscopes, it offers advantages like cost-performance ratio, low current consumption, excellent robustness and long durability. In addition to the high quality technology the Gyro offers an integrated Drift Compensation algorithm, that can be used to further increase the accuracy of the angle measurement.

Main Functions

- Gyro for Automated Guided Vehicles (AGV)
- Output: Angle, 0° – 360°, resolution 0,01°
- Data rate of measurement output: 1 to 100 Hz (10 ms to 1 s)
- Maximum spin rate: 300 °/s
- Interfaces: CAN/CANopen® (data interface) & USB (service / configuration)
- Compact, light weight IP 65 casing
- Voltage supply 10 – 30 VDC
- Current consumption 10 mA @ 24 VDC
- Robust (no moving parts)
- Wide operating temperature range from -40 to +85° C
- Long lifetime (> 100.000 h),
- maintenance free

Date: 19.11.2021 | Revision 10 / English | Author(s): RAD / GW
Product page: http://goetting-agv.com/components/84300

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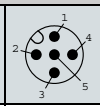
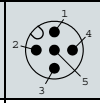
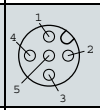
Mounting Notes

On the front plate of the Gyro two cover plates can be removed. Then two mounting drill holes can be reached (see picture to the right). When the gyro is mounted, the cover plates should be re-attached.

Connections

X1		**PWR / M12, male, 5 pin, A coded**
1	+Ub	Supply Voltage
2	nc	–
3	D+	USB
4	D-	
5	GND	Ground (Supply and USB)
X2		**CAN / M12, male, 5 pin, A coded**
1	Shield	Ground (Chassis)
2	+Ub	Supply Voltage
3	GND	Ground (Supply)
4	CAN_H	CAN-High
5	CAN_L	CAN-Low
X3		**CAN / M12, female, 5 pin, A coded**
1	Shield	Ground (Chassis)
2	+Ub	Supply Voltage
3	GND	Ground (Supply)
4	CAN_H	CAN-High
5	CAN_L	CAN-Low

Optional Accessories

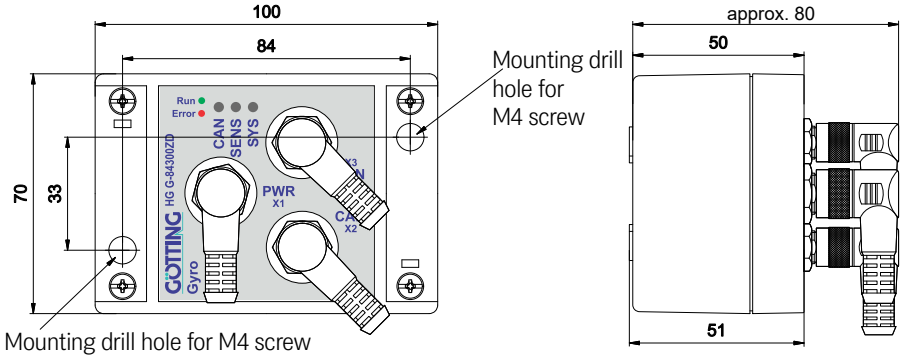
HG G-20960	Connection Box M12-5-8-USB
HW CAB00001	X1: Cable PUR, 5 m, one-sided M12 elbow socket
HW CAB00064	X2: CAN Bus cable, 10 m, with shielding, one-sided M12 socket straight
HW CON00055	X3: CAN terminator Plug M12 5 pin, A coded
HW CON00100	X3: Closing plug M12 5 pin, A coded, shieldable

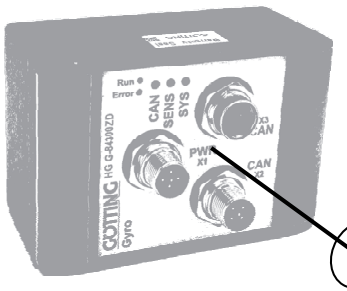
Götting Product IDs (order codes)

HG G-84300ZD

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

Casing Dimensions / Alignment of the Measuring Axis





The angle measurement for X increases when the Gyro is rotated counter-clockwise

Technical Data

Output	Angle, 0 – 360°
Resolution	0.01°
Maximum spin rate	±300 °/s
Data rate	1 to 100 Hz (10 ms to 1 s)
Interfaces	CAN/CANopen® and USB (Virtual COM Port, Service / Configuration)
Dimensions	100 x 70 x 50/80 mm L x B x H without/with connector plugs
Casing	Aluminium die cast
Mounting	2x mounting drill holes in the casing for M4 screws
Weight	approx. 430 g
Protection class	IP 65
Relative humidity	95 % @ 25° C (without condensation)
Temperature ranges	Operation: -40° C to +85° C / Storage: -55° to +125° C
Voltage supply	10 – 30 VDC, nominal supply 24 VDC
Current consumption	10 mA @ 24 VDC
MTTF	> 100.000 h
Connectors	3x M12 circular connector, 5 pin, A coded, X1 PWR male, X2 CAN male, X3 CAN female, Pin assignments see column on the left
Display	3x LED bi-color – SYS – Green: Normal operation / Red blinking: Parameter error – SENS – Green blinking: Measuring / Yellow flickering: Drift compensation active / Green flickering: Drift compensation completed – CAN – Green: Communication ok / Red blinking: CAN error
Accuracy of measurements	
Short term bias	Whole temperature range: < 0.1 °/s
	Constant temperature: < 0.01 °/s
Non-linearity scaling factor	< ± 0,3 % (covering complete measuring range)
Angular random walk	Typ. 0.4 °/$\sqrt{hr}$

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