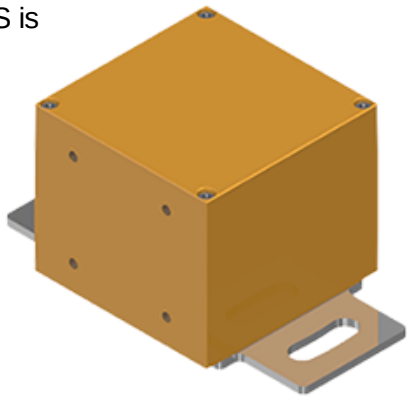
Precise MEMS Gyro Sensor

DIGITAL ADVANCED SENSORS DAS

GY100S

High performance MEMS based – precise gyro sensor GY100S is optimum for rough conditions of construction machinery, heavy equipment and special vehicles by its continuous-self-diagnosis and vibration-proof abilities.

GY100S excels at measuring horizontal rotation degree such as controlling turn-table which application that inclinometer (tilt sensor) cannot measure.



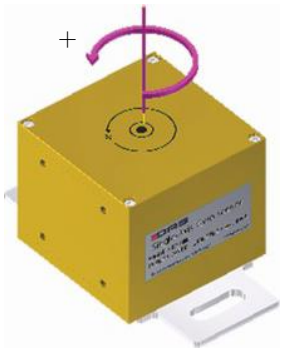
- *High performance MEMS based – precise gyro sensor*
- *External trigger for zero-positioning*
- *Excellent in-run bias stability*
- *Continuous-self-diagnosis and vibration-proof*

General Specifications

Item	Specification
Measuring Axis	YAW Horizontal Rotation
Measuring Range[1)]	-360 ... +360 deg
Accuracy	0.1 deg
Power Source	10 ... 30VDC
Current Consumption	<100mA
In-Run Bias Stability	<0.5 deg/h
Angular Random Walk	<0.45 deg/√h
Output	5.6 ... 18.4mA 0.5 ... 4.5Vdc RS232
Sampling Rate	2,000SPS
Operating Temp.	-20 ... +85 celsius
Waterproof	IP65
Dimensions[2)]	W65 x D65 x H55mm
Weight	550g
Cables	Shielded 4C, 50cm

[1)] at over +360 deg, back from -360 and increasing.
at under -360 deg, back from +360 and decreasing.

[2)] Without mounting



Wiring Connections

GY100S is wired by MG610331-5 plug (Korea Electric Terminal Co., Ltd.). The plug can be deleted when placed order.

Color	Analog	RS232
RED	V+	
BLACK	GND (COM)	
GREEN	Output+	Rx
WHITE	Trigger	Tx

✓ *To zero-positioning, short the trigger to V+.*

Ordering Code

Format : GY100S-(1)

(1)	MV	0.5 ... 4.5Vdc output
	MA	5.6 ... 18.4mA output
	RS232	RS232 output

***e.g.* GY100S-MV**

Options

1) Receptacle P/N : MG64REC
2) Cable length : additional cost per meter
3) The plug can be deleted when placed order.

RS232 Protocol

1) Baudrate (default) : 115,200bps

2) Data Format (ASCII)
= Count-A:degree, V:input voltage+CR+LF

✓ *Count is 7 digits, degree and voltage have 1 decimal point.*

***e.g.* 0012345-A:40.5, V:12.5+CR+LF**

3) Commands (not case sensitive)
Carriage Return and Line Feed must be attached to end of commands.

***e.g.* START+CR+LF**

BAUD #	[3] Baudrate setting
RESET	Zero-positioning
START	Measure data continuously.
STOP	Stop measuring.
INTERVAL #	[4] Data out-rate setting
INIT #	Factory reset

✓ *# : S/V*

[3] *Default Baudrate is 115,200bps. Baudrate can be set one of 57,600 / 38,400 / 19,200 / 9,600 / 4,800. If send command without S/V, current value will returned.*

[4] *Default out-rate is 100ms. Out-rate can be set within 10...1,000ms by 10ms of unit. In Angular Velocity mode, out-rate is fixed by 10ms. If send command without S/V, current value will returned.*

NOTES

1) *Ground connection is recommended in noise occurred environment.*
2) *Gyro sensor YAW axis occurs zero-position-drift continuously because it keeps calculating integral calculus for its zero position. This is a characteristic of MEMS gyro sensor.*
3) *RS232 protocol may cause delay or crash by internal processing time and other reasons. If commanding is not in real-time, repeat sending the command.*
4) *Check wiring connections before use.*
5) *12 months warranty is provided after released. Warranty provided only in case of using for designed purpose correctly.*
6) *Specifications, design and components can be changed without prior notice to improve its performances.*

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