



GPS Compass System

GGC-E101

Description:

The Watson GGC-E101 provides attitude and GPS-based heading reference data. Three rate gyros, three accelerometers along with a GPS receiver and up to 65 meters of cabling are all housed within a rugged, water-resistant, portable case. The GGC was designed with portability and a quick set-up in mind. The cabling is stowed in the cover and the GPS antennas easily fold together and drop into the base for storage. This sensor system is a good choice for applications that require accurate alignment to a particular heading. Additional data provided by the GGC include: roll, pitch, and yaw rate, X, Y, and Z accelerations. Leveled accelerometer outputs are also available along with attitude data.



The GGC is intended to be transportable, so durability is important. The sensors in the GGC can survive shocks of up to 500g, and vibrations up to 10g. The entire sensor package fits inside a housing the size of a suitcase. This design allows the GGC to be easily transported and quickly set up in a new location.

Applications:

The GGC-E101 is used in the energy industry for the orientation and positioning of oil rigs. This sensor system is also useful for the alignment of satellite antennas, alignment and leveling of industrial equipment, and any other application where a portable system with precise orientation is needed.

- Portable, Water-resistant Case
- GPS Heading Reference
- Latitude, Longitude, Altitude Output
- Low Cost
- Rugged, High Reliability
- Vibration Resistant
- RS-232 Serial Data Outputs
- Two Year Limited Warranty
- Engineering Support



Watson Industries, Inc.

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GGC-E101 Specifications

Attitude

Range: Bank	±180°	
Range: Elevation	±75°	
Resolution:	0.02°	Binary mode (14 bit)
Accuracy: Static	±0.25°	
* Accuracy: Dynamic	±0.5%	

GPS Heading

Range:	0° - 360°	
Resolution:	0.02°	Binary mode (14 bit)
Accuracy: Static	±0.3°	Using GPS
* Accuracy: Dynamic or Relative	±0.5%	±0.05°/sec (without GPS)

Angular Rate

Range: Roll, Pitch, Yaw	±100°/sec	
Resolution:	0.025°/sec	Binary mode (14 bit)
Scale Factor Accuracy:	0.5%	
Bias: Roll, Pitch, Yaw	< 0.1°/sec	Digital ASCII
Non-Linearity:	< 0.1%	Full scale range
Bandwidth:	20 Hz	
Noise:	< 0.03°/sec rms	

Acceleration

Range: X, Y, Z	±10g	
Range: Forward, Lateral, Vertical	±10g	
Resolution:	4mg	
Scale Factor Accuracy:	1%	
Bias: X, Y, Z	< 10mg	
Non-Linearity:	0.1%	Full scale range
Bandwidth:	3 Hz	

GPS Positioning

Range: Latitude	±90°	
Range: Longitude	±180°	
Range: Altitude	0ft to 21500ft	
Resolution: Latitude, Longitude	0.00001 minutes	
Resolution: Altitude	2 ft	
Accuracy: Latitude, Longitude	±0.6m (with DGPS)	±2.5m (without DGPS)

Environmental

Temperature: Operating	-30°C to +70°C	
Temperature: Storage	-55°C to +85°C	
Vibration: Operating	5g rms	20 Hz to 2 KHz
Vibration: Survival	10g rms	20 Hz to 2 KHz
Shock: Survival	500g	10mS ½ sine wave

Electrical

Frame Rate:	71.1 Hz	Maximum
Startup Time: Data	5 sec	
† Startup Time: Satellite Acquisition	5 min	Typical
‡ Input Power:	18 to 35VDC	7.0W
‡ Input Current:	240mA @ 28VDC	280mA @ 24VDC
Digital Output:	RS-232	

Physical

Axis Alignment:	< 0.1°	
Size: Antenna Stowed	24.3"W x 19.5"L x 8.7"H	61.7 x 49.5 x 22.1 (cm)
Weight:	37lb	16.8Kg
Connection:	MS3112E12-10P	Mating: MS3116F12-10S

* Using velocity data with GPS mode on.

Actual accuracy can be calculated as the listed percentage multiplied by the change in value over the entire dynamic maneuver.

† Acquisition time for GPS units is typical for the contiguous United States. Acquisition time may differ due to interference in your geographic area.

‡ Including losses using 65 meter cabling.

• Specifications are subject to change without notice.

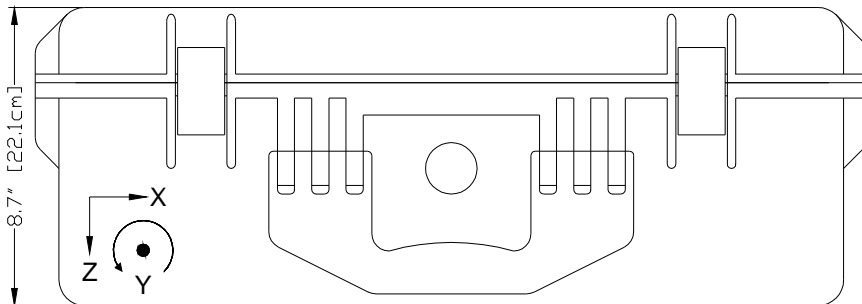
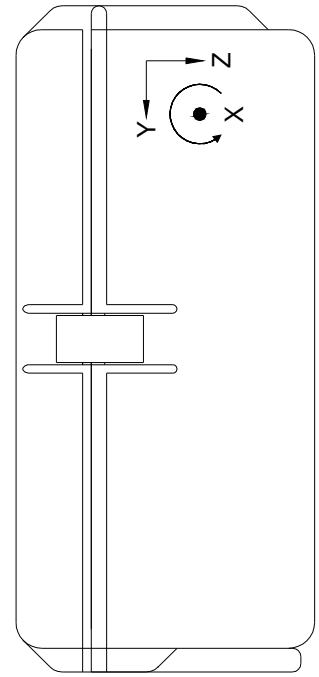
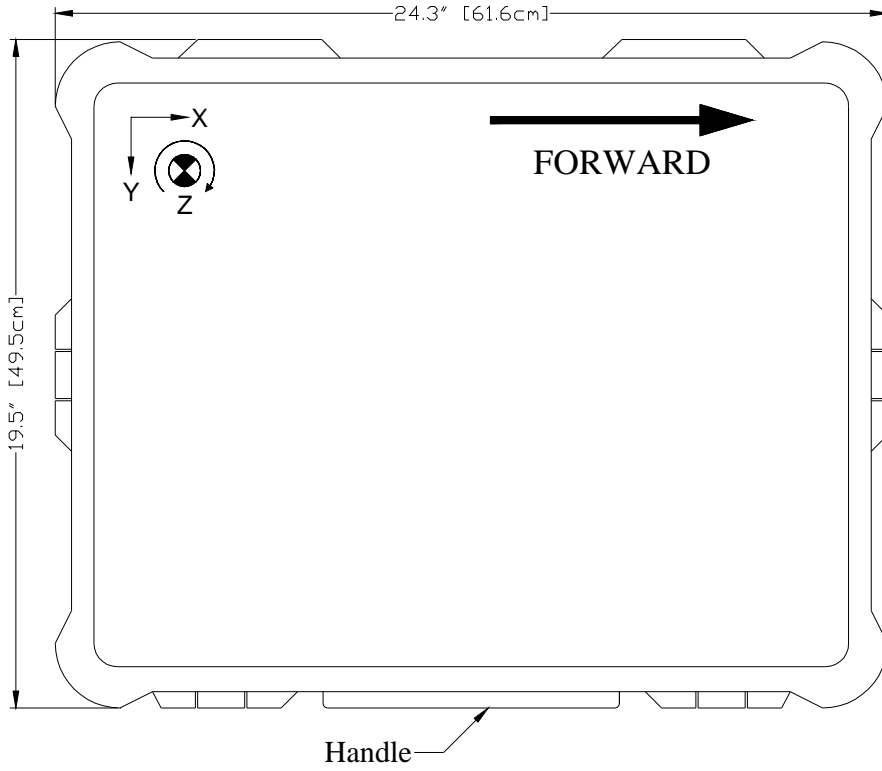
• This product may be subject to export restrictions. Please consult the factory.



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Dimensions:



12/15 DAO



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