

# Морские навигационные системы Marine navigation systems

## Гирокомпас PGM-C-009 Gyrocompass



ООО «ПНППК-Морская электроника»  
«PNPPE-Marine electronics» LLC

# PGM-C-009

## APPLICATION

Gyrocompass PGM-C-009 is designed to meet the most needs of the modern marine market. Highly accurate performance, small size, short settling time make it suitable for any type of vessel.

Gyrocompass provides the following data:

- heading relative to the geographical meridian at the vessel speed up to 90 knots, latitude up to 80 degrees, roll and pitch angles up to 45 degrees;
- rate of turn;
- information about operation mode and failures.

Gyrocompass PGM-C-009 complies with requirements of IMO A.424(XI), A.821 (19), IEC 60945 (2002), IEC 61162-1:2000 (E), ISO 8728-1999. It has Certificates of GL Luxemburg (Weelmark) and Russian Maritime Register of Shipping.

## CONFIGURATION

Gyrocompass has a monoblock design. The compass casing is made of a foamed polyurethane and has a window on the top for the compass card. If necessary, the built-in Control Unit may be mounted remotely, at the distance up to 100 meters away from gyrocompass.

The heart of the gyrocompass is a dynamically-tuned gyroscope – a very accurate sensor that ensures the follow-up speed up to 100°/s.

*Overall dimensions are*

**288 mm (H) x 240 mm (L) x 329 mm (W).**

*Weight is 15,5 kg.*

## FEATURES

- efficient one box design
- small size and versatility
- automatic start-up and alignment relative to the meridian
- short initial settling time
- high reliability
- high static and dynamic accuracy (latitude and speed compensation, automatic compensation of temperature drifts)
- easy installation and adjustment, built-in testing

- simple maintenance (no compass fluid, extra cooling and heating are not required, no periodic determination and compensation of azimuth drift, simplified methods of horizontal drift determination and compensation)
- adjustment of scale illumination brightness
- ecological safety
- operating temperature from  $-15^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$
- storage temperature from  $-60^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$
- shock resistance 10 g, 15 ms

## TECHNICAL DATA

- Settle Point Error  $\leq \pm 0,2^{\circ}$  sec  $\varphi$
- Dynamic Accuracy (Scorsby and intercardinal motion tests)  $\leq \pm 0,3^{\circ}$  sec  $\varphi$
- Settle Point Repeatability  $\leq \pm 0,2^{\circ}$  sec  $\varphi$
- Follow-up Speed  $\geq 100$  °/s
- Settling Time (with initial heading offset  $\pm 30^{\circ}$ )  $\leq 45$  min within  $0.7^{\circ}$

## OUTPUTS:

- Step 1x(TTL level), 6 steps per degree update: 6 °/s, 12 °/s, no limits
- Resolver 1 x 8 V 400 Hz (max 2 V per phase), full scale 360°
- Serial Data Channel A: 1 x RS232; 2 x RS422  
Channel B: 1 x RS232; 2 x RS422  
Channel C: 1 x RS232; 4 x RS422  
Channel D: 1 x RS232; 4 x RS422
- Analog ROT 1 x ROT ( $\pm 10$  V)  
 $\pm 30$  °/min;  $\pm 60$  °/min;  $\pm 90$  °/min;  $\pm 120$  °/min;  
 $\pm 180$  °/min;  $\pm 300$  °/min;  $\pm 1200$  °/min (customized)
- Serial data formats IEC 61162
- Baud rate 4800, 9600, 19200, 38400
- Data transmission rate 1 Hz, 10 Hz, 20 Hz, 50 Hz
- Gyrocompass status:  
System ready normally opened/  
normally closed contacts of relay
- Failure normally opened/  
normally closed contacts of relay

## INPUTS:

- Latitude IEC 61162 RS232 or RS422 from GPS
- Speed IEC 61162 RS232 or RS422 from GPS or log  
100, 200 or 400 pulses per nm from log
- Input Voltage 24(18–36)V DC
- Power Consumption  
- start-up 75 W  
- operation 20 W
- Assigned service life 40 000 h



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