

Intelligent Fibre-Optic Gyro (iFG)

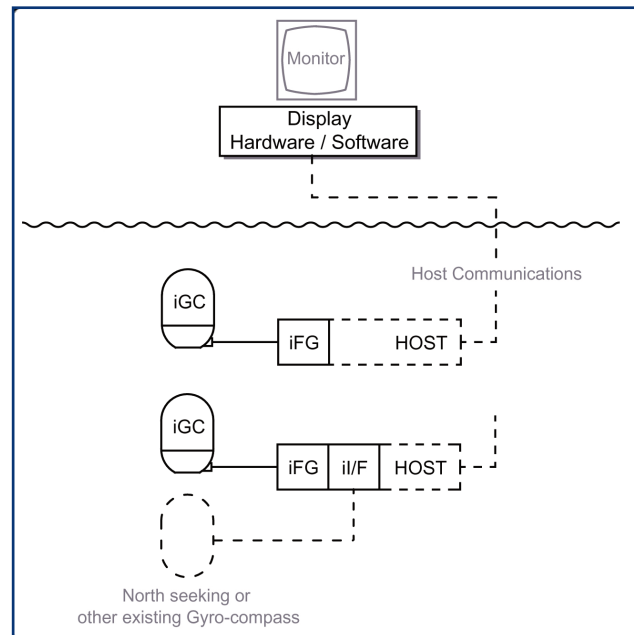
Solid State Heading Stabilisation for Magnetically Referenced Compass Systems

Features

- Solid state - robust and reliable
- Low drift rate. Excellent stability, linearity, resolution and repeatability
- State of the art display software
- User programmable output modes and filter parameters
- Multiple interface options
- Minimal maintenance costs
- High shock rating
- Very compact

Applications

- Replacement of high maintenance mechanical (aircraft type) gyro compass systems
- Live back up for survey (North seeking) gyro compass systems
- Improved heading and autopilot stability in the presence of fluctuating external magnetic fields
- Compatible with the Tritech ArcNet network of survey products
- Compatible with the iVP/iPP range of intelligent valve and sensor control systems



The new Tritech iFG (Intelligent Fibre-Optic Gyro) provides additional heading stability when combined with the Tritech Intelligent Gyro Compass (iGC), or other heading and motion reference units. It uses a single-axis FOG sensor, mounted inside an extruded aluminium housing, and can typically reduce heading drift errors more effectively than most magnetically referenced aircraft gyros.

An on-board processor manages the FOG sensor interface, mode selection, power supplies and water ingress sensing (for use if the iFG is mounted inside its own pod).

The iFG provides internal compensation for pitch and roll angles using data from the iGC attitude sensors. The iFG receives magnetic heading, pitch and roll data from the iGC. Using proprietary slaving algorithms it then provides an output of stabilised heading with low drift rate optimised for pitch and roll angles up to 10°. Output data is transmitted to the three serial ports provided.

Additional (external) interface cards are available when an iGC/iFG is fitted to existing ROVs to replace a mechanical gyro compass. This provides specific communication protocol compatibility and analogue (autopilot) functionality. Currently available with Scorpio, Diablo / Demon and Pioneer interface cards.



Specifications



Orientation range	360° single axis (yaw axis)
Angular Velocity Range	+/- 375°/sec
Orientation angle resolution	0.01°
Typical output resolution	0.1° (depending on selected protocol)
Typical heading accuracy	Better than 1° (based on iGC magnetic heading)
Pitch / Roll compensation	+/- 20° pitch & roll, <0.5% error / turn
Drift rate	Typically <5° per hour
Typical bandwidth	20-50Hz (depending on selected protocol)
Initialisation time	5 seconds
Magnetic slave rate	Typically 20° per hour for >90° difference between magnetic heading & FOG
Automatic slave time	3 seconds from acquiring good iGC data
Output modes	NMEA 0183 format; Proprietary iFG; all industry standard gyro formats; ROV specific hardware interface (via separate interface card)
Input heading sensor	iGC, north-seeking gyro or other asynchronous heading sensor
Output interface	RS232 (2 ports available) RS485 2 x 9-way D-type male connectors
Power Requirements	10 to 30V DC, 5W maximum
Operating temperature	-40°C to +70°C
Shock (functional)	Functional sawtooth 40g, 6-10msec
Random Vibration	20 to 2000Hz, 8g rms, operational
MTBF	>55,00 hour
Weight	0.5 kg
Dimensions (mm)	110w x 45h x 90d mm (excluding mating connectors)

All specifications are subject to change in line with Tritech's policy of continual product development.

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