



intelligent Combi-Compass (iCC)

Features

- Combines three angular rate gyros with three orthogonal accelerometers, three magnetometers and a fibre optic gyro in a single 4000m housing
- Solid state - robust and reliable
- More accurate than a flux gate compass
- Low drift rate. Excellent stability, linearity, resolution and repeatability
- Multiple interface options
- Minimal maintenance costs
- State of the art display software
- User programmable output modes and filter parameters
- Simple serial interface, non volatile memory, inertially filtered system

Applications

- Replacement of high maintenance mechanical magnetically slaved gyro and flux gate compasses.
- Low cost inertially stabilised ROV/AUV heading sensor and MRU.
- Excellent heading and autopilot stability in the presence of fluctuating magnetic fields.
- Compatible with the Tritech ArcNet range of survey products.

The Tritech solid state intelligent Gyro Compass (iCG) and intelligent Fibre-optic Gyro (iFG) have rapidly become the leading MRUs and vehicle-heading sensors for most ROV and AUV applications. In response to market demand Tritech is proud to introduce the new intelligent Combi-Compass (iCC), which combines the iCG and the iFG in a single 4000m depth rated housing.

The gyro compass element in the iCC combines three angular rate gyros with three orthogonal accelerometers and magnetometers. This makes it an invaluable accurate and reliable heading sensor and MRU, which can provide movement data that is unobtainable from magnetically slaved gyros and flux gate compasses.



The single axis fibre optic compass within the iCC provides additional heading stability for the gyro compass or for other heading and motion reference units. It incorporates a single-axis FOG sensor, which is able to reduce heading drift errors to less than 5 degrees per hour.

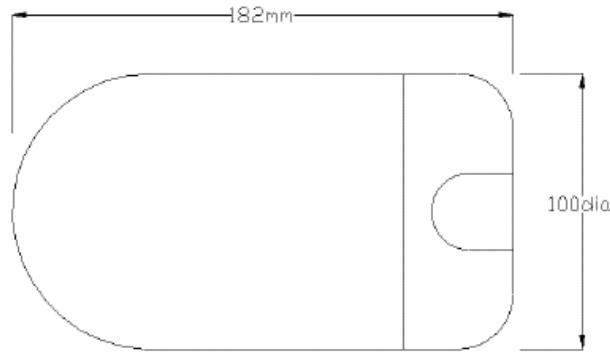
An on-board processor manages the FOG sensor interface, mode selection, power supplies and water ingress sensing. The integral FOG sensor provides internal compensation for pitch and roll angles using data from the iCG and attitude sensors.

The unit uses magnetic heading and proprietary slaving algorithms to provide an output of stabilised heading with low drift rate, optimised for pitch and roll angles of up to 10 degrees.

The user can configure the data output telegram to emulate commonly used industry standard message formats.



Specifications



Orientation range:	360° full scale (FS), all axes (Matrix, Quaternion modes)
Angular Velocity Range:	+/- 300°/second (max)
Sensor Resolution:	16 bits
Dynamic Compensation:	Closed loop digital control (0 - 50Hz)
Orientation Angle Resolution:	< 0.1°
Typical Accuracy	Better than 1° (based on magnetic reference)
Temperature Drift:	+/- 0.025% °C
Nonlinearity:	0.23% full scale (tested in static conditions)
Repeatability:	0.2°
Output Modes:	Processed outputs: NMEA-0183, Proprietary iGC and all common industry standard formats Unprocessed outputs: Orientation matrix, Quaternion, Euler and raw sensor bit stream
FOG Stability/ drift rate:	Typically <5° per hour
Initialisation time:	30 seconds
Sensor Range:	Gyros: +/-300°/sec FS Accelerometers: +/- 5 Gs FS Magnetometers: +/- 1 Gauss FS
Digital Outputs:	Serial RS232, RS485
Output Data Rate:	Selectable up to 20Hz
Serial Data Rate:	All standard baud rates through 1,200kbaud - 115.2kbaud RS232/485 or 156 / 78 kbaud ArcNet
Power Requirements:	24VDC @ 8W
Operating Temperature:	-40°C to 70°C
Weight in Air:	2.4 kg
Weight in Water	1.1 kg
Diameter:	100 mm
Length:	182 mm
Depth Rating:	4,000m

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

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Tritech International Limited
Peregine Road, Westhill Business Park, Aberdeen,
AB32 6JL, United Kingdom

Marketed by:

T: +44 (0)1224 744111
F: +44 (0)1224 741771
Email: sales@tritech.co.uk