

Fanbeam[®] 4.2



LASER RADAR DYNAMIC POSITIONING SENSOR

New Fanbeam[®]
control system available now!



world leading laser measurement technology





Fanbeam[®] 4.2 Laser Radar

LASER POSITIONING FOR OFFSHORE VESSELS

MDL's Fanbeam[®] system is a laser based positioning sensor designed for repetitive, high accuracy range and bearing measurements from offshore support vessels and other marine structures.

The system is primarily used as a dynamic positioning (DP) reference sensor measuring the position of an offshore support vessel (OSV) relative to an offshore structure such as a platform. Using the position data from the Fanbeam and other sensors, the DP system automatically holds the vessel on station allowing operations to take place. The system is regularly used as the primary position reference during critical short-range operations such as cargo container lifts from platform supply vessels.

The system has also been extensively used for seismic source positioning relative to geophysical exploration vessels and for positioning mine detection equipment relative to navy vessels.



The system is in use on all types of different OSV's including:

- Crew Supply Vessels
- Platform Supply Vessels
- Anchor Handling Tug Supply Vessels
- Construction Support Vessels
- Multi-Purpose Support Vessels
- Dive Support Vessels
- Dredging & Rock Dumping Vessels
- Well Stimulation Vessels
- Heavy Lift Construction Semi-Subs
- Accommodation Flotels

The Fanbeam[®] is therefore well known by the thousands of DP operators who already have operational experience with the system.

The System

The system comprises of a laser sensor with a unique vertically “fanned” output allowing returns to be observed from passive retro-reflective targets despite relative 6D movement experienced on any offshore vessel. The laser is mounted on a motorised base allowing for horizontal rotation in both directions. The laser can also be tilted in the vertical plane using the built in Autotilt mechanism allowing the laser to view targets at a different height to the sensor.



The system has embedded software for both single and multi-target operations. The control software is very user friendly and simple to operate ensuring that minimal interaction is required to obtain optimum performance. In multi-target operation, the system can output a relative heading allowing for operations relative to a moving structure.

System Advantages:

- Performs excellently during short range or long-range operations.
- Achieves high accuracy consistently
- Utilises inexpensive intrinsically safe targets that can be permanently installed onto many offshore installations
- Rugged design
- Long product life
- Valuable alternative or compliment to DGPS and other position sensors
- Simple operation and setup
- Quick and easy to mobilise
- Access to global support network
- Low cost compared to other systems
- Rental systems widely available



Touchscreen panel PC with new software

Control System

MDL have embarked upon a re-write of the control software for the Fanbeam® system in order to implement various enhancements to the functionality of the system. Many improvements have been made to all aspects of the software including many which will increase further the reliability of the single target tracking capability.

The new software allows multiple operator stations to be set up, which caters for situations where control needs to be transferred between bridge personnel. A training package for the software includes a fully featured simulator allowing for realistic simulation

Benefits

- Automatic target filtering by signal strength using historic data
- Gyro Interface
- Intelligent Target Clutter Rejection
- Visual presentation of Fanbeam behaviour
- Reduces potential for spurious targets to compromise reliable positioning
- Less Need for Operator to manipulate configuration when tracking
- Faster method for changing vertical tilt when tracking
- Simple presentation of tracking confidence
- More flexible interfacing options
- Multiple operator station configuration option



Service and Support

Understanding the need for Rapid-Response to failures of mission critical systems on large offshore DP vessels, MDL has invested significantly in building a Global network of Authorised Service Centers (ASC) for the Fanbeam® product.

A number of ASC's have already been established in key regions around the world, all of which have fully fitted workshops and MDL trained personnel. Each ASC carries a full complement of spare parts as well as complete backup Fanbeam® systems for hire or loan. ASC's are maintained to the highest standard through regular training programs and technical audits. Several new ASC's are planned to roll out during 2009, including Brazil, West Africa and India

MDL can also offer rental systems directly or via partners.





Technical Specifications

Laser

- Laser Type: Semiconductor Laser Diode
- Rep Rate: 7.5kHz
- Wavelength: 905nm
- Beam Divergence: Vertical: 18° / Horizontal: 2.5 mrad
- Laser Eye Safety Classification: Class 1*
- Maximum Range: 2000m / 6562 ft
- Accuracy: 20cm

Motorised Yoke

- Gearbox: Stepper Driven Worm and Wheel
- Scan speed: Software Selectable up to 50°/s
- Horizontal Angle Range: 0° to 360°
- Horizontal Resolution: 0.01°

Auto Tilt Mechanism

- Gearbox: Servo Driven Worm and Wheel
- Range: -15° to +15°

Communication

- Sensor to control unit: 20mA Current Loop @ 9600 Baud
- Control Unit Output: RS232 / RS422 / Ethernet
- Various Telegrams

Environmental

- Operating Temperature: -20°C to +55°C
- Water / Dust Resistant: IP66
- Complies with: EN 60945 / EN 60950-1:2001
- Vibration: DNV standard for certification No. 24 April 2001, Section 3.6

Mechanical

- Enclosure Construction: Machined Aluminium
- Sensor Dimensions: 200 x 300 x 290mm (W x L x H)
- Sensor Weight: 12.9kgs / 28lbs

Power Supply Unit

- Universal Input: 85V-264V AC / 47-440Hz
- Output: 28V DC 3.5A

Control System

- CPU: 1.1GHz
- Operating System: Windows XP Embedded
- Touchscreen Option
- Monitor size: 15"
- Monitor Resolution: 1024 x 768 x 1617
- USB Data Archive: Option
- Data Output: RS232 / RS422 Option / Ethernet

Targets

- Short Range: Reflective Tube Target
- Long Range: Various Prism Cluster options

