



BRIDGE MATE™ BY MARINE TECHNOLOGIES

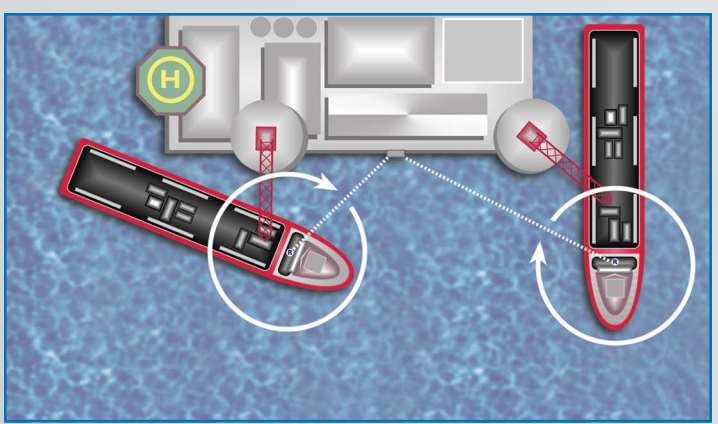
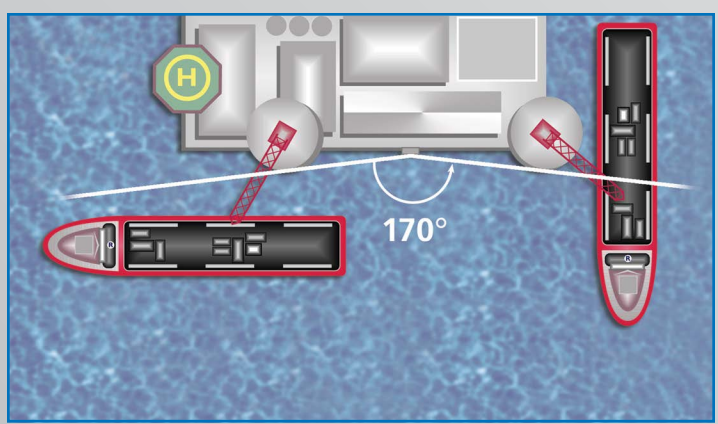


## BRIDGE MATE MINI RADASCAN MICROWAVE POSITION REFERENCE SENSOR



The Bridge Mate Mini RadaScan is an advanced position reference sensor for use in DP (dynamic positioning) and other vessel control applications. Based on radar, it complements GPS/DGPS for close range operations and overcomes the limitations of traditional laser and taut-wire systems. Mini RadaScan is fully compatible with all types of modern DP systems. The sensor accurately measures the range and bearing of one or more targets, enabling the system to calculate the vessel's position relative to the target. The positional data is fed directly to the vessel's DP system.

Mini RadaScan can be used with "fixed" targets, such as drilling platforms, and with "mobile" target vessels such as FPSOs and vessel-to-vessel "track and follow" operations.



Bridge Mate Mini RadaScan offers a wide target viewing angle allowing for multiple vessel target lock (left), as well as 360-degree scanning capabilities (right).

FOR SHIP OWNERS CONCERNED WITH QUALITY AND SAFETY



## BRIDGE MATE MINI RADASCAN SENSOR

The Mini RadaScan sensor's rotating antenna transmits a beam of radio energy and detects the reflected signal. Unlike conventional radar, Mini RadaScan ignores the "clutter" typically reflected by an offshore platform, and only "sees" the reflections from active Mini RadaScan targets. Each target adds its own unique ID to the reflected signal, enabling the sensor to distinguish between multiple targets. The sensor's continuous 360° rotational scan maintains target lock during vessel turns without the need to reset the sensor. This enables the Mini RadaScan to be used "hands free", even during the most critical part of a maneuver.

The Mini RadaScan system has three main components:

- Mini RadaScan Sensor – the sensor is installed on a vessel equipped with a DP system.
- Mini RadaScan Console – the console software is used by the DP operator to control the Mini RadaScan sensor. The software runs on a marine computer installed on the vessel's bridge.
- Mini RadaScan Target – one or more targets are mounted on the target platform or vessel.



## BRIDGE MATE MINI RADASCAN CONSOLE

The Mini RadaScan console's clear display and intuitive user interface enable DP operators to use Mini RadaScan safely and effectively. The same user interface is used on our CyScan console, helping to make sure that CyScan-trained operators will already be familiar with Mini RadaScan controls. The Mini RadaScan sensor and console computer are connected via a standard ethernet link, enabling multiple control stations to be installed, if required.



## BRIDGE MATE MINI RADASCAN TARGET

Mini RadaScan targets act as reflectors for the sensor, enabling it to "lock on" to the target platform or vessel on which they are fitted. Single or dual Mini RadaScan targets can be mounted permanently or temporarily on the target structure or vessel. For added redundancy and precise heading control, the Mini RadaScan sensor can lock onto two targets simultaneously. Each target can be used simultaneously by any number of vessels. Targets can be powered either externally, or by an internal battery pack. A rechargeable battery option is also available. All targets are UL and ATEX certified as intrinsically safe for use in hazardous environments.

## OPERATIONAL BENEFITS

- Precision – Provides the kind of positional accuracy usually associated with laser or DGPS.
- All-weather operation – Able to operate through rain, snow, fog, steam and dust in temperatures ranging from -13° to 131°F (-25° to 55°C).
- Stability and reliability – Coded targets make the system immune to false reflections from other vessels or crew life jackets.
- Close-range operation – Unaffected by the GPS/DGPS shadow that affects GPS/DGPS systems working close to large platforms.
- Vessel maneuverability – 360° scanning sensor retains target lock during vessel maneuvers.
- Deep water operation – Unrestricted by the water-depth limitations associated with taut-wire systems.
- Multi-vessel capability – Each target can be used simultaneously by any number of vessels.
- Safety – All targets are UL and ATE certified as intrinsically safe in hazardous offshore environments.
- Compatibility – Fully compatible with all modern DP systems and can be used with other DP sensors.
- Versatile mounting options – The compact, lightweight sensor can be mounted in a variety of locations onboard a vessel. A mounting plinth may not be required.
- Easy transport and installation – The compact, lightweight sensor can be carried by hand between vessels.
- Simple upgrades – Fast software upgrade using a USB memory key, with the option of remote access via VSAT.
- Reduced asset costs – The system can be moved quickly and easily from vessel to vessel, allowing spot market asset sharing of equipment.
- Reduced operational costs – The system can be serviced easily by any competent, trained technician. No expensive manufacturer visits required.
- Reduced training costs – "Click and play" operation is simple and intuitive. See it, select it, use it.

## SPECIFICATIONS

### SENSOR DETAILS

Transceiver Type	Frequency Modulated Continuous Wave (FMCW)
Frequency Band	9.2 to 9.3 GHz
Maximum Power Output	3 W
Maximum Operating Range*	1,968.5 ft (600 m)
Minimum Operating Range	32.8 ft (10 m)
Range Accuracy**	0.8 ft (0.25 m) (1 $\sigma$ ) up to 1,968.5 ft (600 m)
Angular Accuracy**	0.2° (1 $\sigma$ ) up to 1,968.5 ft (600 m)
Operating Field of View	360°
Target Detection	Automatic
Vertical Beam Height	22°
Multiple Target Capability	Up to 4 (with version 3.0 sensor software installed)

### VESSEL INTERFACE

Sensor Power	85 to 264 VAC 45-65 Hz 5A
Sensor Control	1 x Ethernet 100Base-T
Sensor DP Feed	1 x RS422
Supported DP Systems	Includes Kongsberg, GE Energy (Converteam), L-3, Marine Technologies, Rolls Royce, Navis and Beier Radio
Sensor Control	Up to 9 control consoles (master and slaves)
Sensor Control Protocol	Ethernet TCP/IP
Supported DP Telegram Formats	Includes MDL single/multi-target and NMEA 0183 to IEC 61162-1:2010(E); custom formats also available on application

### ENVIRONMENTAL

Operating Temperature Range	-13° to 131°F (-25° to 55°C)
Atmospheric Conditions	Operates in fog, heavy rain, snow and ice conditions
Water and Dust Protection	IP66 certified
Standards Compliance	EN 60945 & EN301 843-1 (EMC) EN 62388:2002, Annex B ITU-R Recommendation RM. 1177 European Directive 2004/108/EC EMC: CE Certified, FCC Approved
RF Immunity	Resistant to S and X band radar when installed as recommended

\*Operating ranges measured with part number 20-0174-0-A Mini Radascan sensor.

\*\*Accuracy is defined as a measurement of repeatability. Data obtained from various worldwide locations in different sea states, locations include the North Sea and Gulf of Mexico. Marine Technologies, LLC reserves the right to alter or amend the published specifications without notice.

## SPECIFICATIONS

### SENSOR WEIGHT AND DIMENSIONS

Diameter	1.6 ft (0.5 m)
Height	1.3 ft (0.4 m)
Weight	46.3 lb (21 kg)

### FLIGHT CASE WEIGHT AND DIMENSIONS

Dimensions	24.4 in x 24.4 in x 28.7 in (620 mm x 620 mm x 730 mm)
Weight	138.9 lb (63 kg) – includes computer, monitor, mouse and cables (typical)

### TARGET DETAILS

Target Type	Active
Azimuth Response (horizontal viewing angle)	170°
Elevation Response (vertical viewing angle)	35°
Power Source	Self-contained battery
Battery Life	12 months fixed cell, 1 month rechargeable
Environmental Use	ATEX certified
Dimensions (h x w x d)	10.24 in x 6.69 in x 5.12 in (260 mm x 170 mm x 130 mm)
Weight	11 lb (5 kg)

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