

RADius 2000



KONGSBERG



High precision relative positioning reference system

RADius is based on radar principles and the system is developed for DP applications in need of robust and reliable relative positioning. It is a fully solid state system with low maintenance costs.

Innovative technology

The implementation is fully solid-state and based on measurements of reflected radar signals from a number of passive transponders in the nearby area. Each reflected signal is mixed with a unique ID to separate different targets from each other. Advanced signal processing allows for simultaneous and continuous measurements to any practical number of transponders. RADius is designed for multiple users leveraging the same transponders simultaneously.

Multiple sensor heads

RADius can be deployed as an omni-directional system using four sensor heads. These can be placed on suitable locations on the vessel, depending on the construction and operation. This provides full 360° signal acquisition as well as avoidance of blind angles.

Operational features

RADius is capable of detecting and measuring accurate range and bearing to any transponder within the range of up to 550 metres. The range depends on type of targets.

Autodetecting transponders

Search and identification of transponders is easily done with the autosearch utility. Transponders are automatically detected and shown in the operator view.

Wide vertical angle

RADius has a wide vertical operational sector of 100°. This secures continuity and high availability in close-by operations where the difference in height for the mounted transponder and interrogator can be significant.

A variety of transponders

Retroreflective transponders are mounted on the target which is to be approached. A variety of transponders are available, suitable for any operation that requires a robust and reliable relative positioning solution.

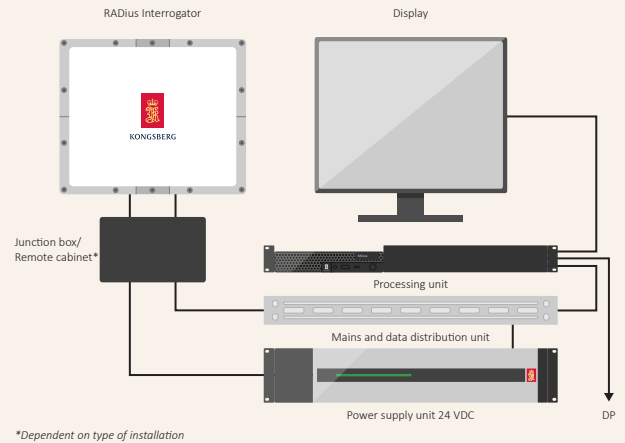
Ease-of-use HMI

RADius features a highly intuitive touch-ready user interface, developed in close co-operation with experienced DP operators. The user interface enables the operators to use the RADius system safely and effectively during operation. For a better visibility under different light conditions, the operator can easily select between a set of colour palettes, including a well proven night display.



FEATURES

- No moving parts
- No regular maintenance
- Easy and quick installation
- Support for multiple sensors for extended operational area (100 - 360° coverage)
- Automatic search for transponders
- Operates in all weather conditions
- Multi-vessel capability - each transponder can be used simultaneously by any number of vessels
- ATEX, IECEx, Inmetro and UL certified transponders available for use in hazardous offshore environments



*Dependent on type of installation

Technical specifications

RADIUS 2000

Performance

DP range (depending on transponder type)	Up to 550 m
Range accuracy ¹	0.25 m (1 σ)
Angle accuracy ¹	0.2° (1 σ)
Update frequency rate	5 Hz
Latency	< 0.5 sec.
Vertical opening angle	±50°
Horizontal opening angle	±50°
Operating frequency band	5.51 - 5.61 GHz

Interfaces

Processing Unit

Serial ports	4 isolated ports, RS-422
Ethernet/LAN	5
USB	USB 3.2, 5 Type-A, 1 Type-C

Data outputs

Message types	PSXRAD, ABBDP, Artemis, Fanbeam, BCD/MDL, NMEA VER, DDC
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Weights and dimensions

Interrogator Unit	10.9 kg, 390 × 470 × 162 mm
Processing Unit	3.7 kg, 51 × 481 × 267 mm
Power supply	4.4 kg, 88 × 485 × 335 mm

Power specifications

Interrogator Unit	24 V DC, max. 48 W
Processing Unit	100 - 240 V AC, 50/60 Hz max. 170 W
Power supply	110 - 240 V AC, supplies up to 4 Interrogator Units

Environmental specifications

Interrogator Unit

Operating temperature	-25 °C - 55 °C
Storage temperature	-25 °C - 70 °C
Operating humidity	100 %
Storage humidity	Max. 60 %
Enclosure protection	IP 66

Processing Unit

Operating temperature	-15 °C - 55 °C
Storage temperature ²	-20 °C - 70 °C
Operating humidity	Max. 90 % non-condensing
Storage humidity	Less than 55 %

Power supply

Operating temperature	-15 °C - 55 °C
Storage temperature	-20 °C - 70 °C
Operating humidity	Max. 90 % non-condensing
Storage humidity	Less than 55 %

Mechanical

Vibration	IEC 60945, IACS E10, DNV-CG-0339
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Electromagnetic compatibility

Compliance to EMC, immunity/emission	IEC 60945, IACS E10, DNV-CG-0339
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Regulatory

EU	Radio Equipment Directive (RED) 2014/53/EU
Anatel	This equipment is not entitled to protection against harmful interference and may not cause interference to duly authorized systems.

Certificate

Anatel certificate no.	02359-24-03288
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Product safety

Compliance to LVD, standard used	IEC 61010-1
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RADIUS transponders

Refer to their respective datasheets for more information.

¹ All accuracy specifications are based on real-life tests conducted in the North Sea under various conditions. Operation on other locations under different conditions may produce different results.

² Recommended long term storage temp. between 5 °C - 35 °C.

Specifications subject to change without any further notice.