

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. Range depending 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

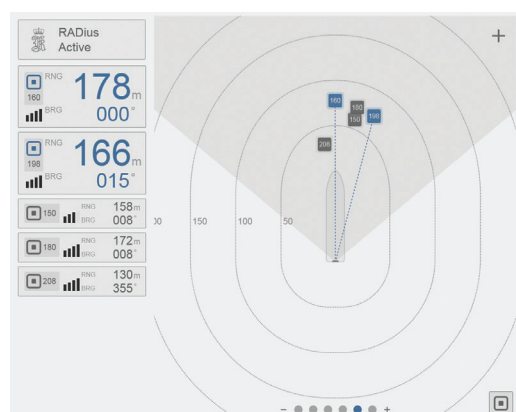
operations where the difference in height for the mounted transponder and interrogator can be significant.

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.

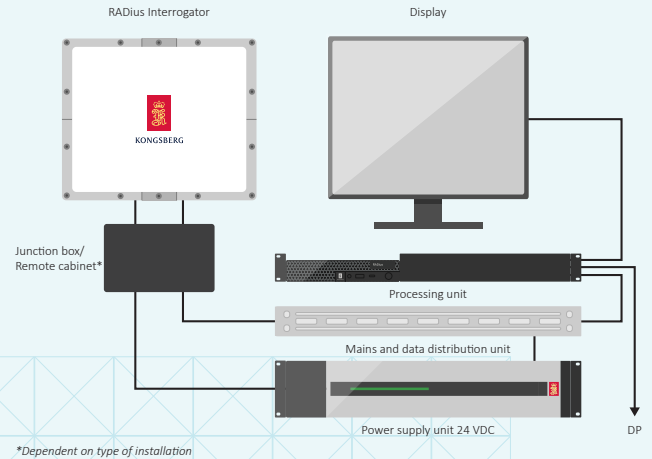
Ease-of-use HMI

RADius features a highly intuitive touch-ready HMI developed in close co-operation with experienced DP operators. The HMI enables the operators to use the RADius system safely and effectively during operation. For 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 environment



TECHNICAL SPECIFICATIONS

RADIUS

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 to 5.61 GHz

INTERFACES

RADius Processing Unit

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

DATA OUTPUTS

RADius Processing Unit	
Message types	PSXRAD, ABBDP, Artemis, Fanbeam BCD/MDL, NMEA VER, DDC

WEIGHTS AND DIMENSIONS

RADius 2000 Interrogator Unit	390 x 470 x 162 mm 10.9 kg
RADius Processing Unit	51 x 481 x 267 mm 3.7 kg
RADius power supply	88 x 485 x 335 mm 4.4 kg

POWER SPECIFICATIONS

RADius 2000 Interrogator Unit	24 V DC, max. 48 W
RADius Processing Unit	100 to 240 V AC, 50/60 Hz max. 170 W
RADius power supply	100 to 240 V AC, supplies up to 4 Interrogator Units

ENVIRONMENTAL SPECIFICATIONS

RADius 2000 Interrogator Unit

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

RADius Processing Unit

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

RADius power supply

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

Mechanical

Vibration	IEC 60945/IACS E10 /DNV-CG-0339
-----------	---------------------------------

Electromagnetic compatibility

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

Regulatory

Compliance to Radio Equipment Directive (RED)	2014/53/EU
---	------------

Product safety

Compliance to LVD	61010-1
-------------------	---------

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 to +35 °C

KONGSBERG MARITIME

Switchboard: +47 73 54 55 00
Global support 24/7: +47 33 03 24 07
E-mail sales: km.seatex.sales@km.kongsberg.com
E-mail support: km.support.seatex@km.kongsberg.com

kongsberg.com/maritime



KONGSBERG