

# SpotTrack®



KONGSBERG



## Laser-based relative positioning sensor

SpotTrack is a high-performance laser-based relative positioning reference sensor. The sensor is developed for use in offshore applications in need of high accuracy range and bearing measurements.

### Dynamic positioning reference system

SpotTrack is primarily used as a reference system for relative positioning in dynamic positioning operations. The SpotTrack sensor is a robust motion stabilized rotating laser sensor which measures range and bearing to one or several retro-reflective targets installed on the target platform or vessel. Automatic wave motion stabilization provides optimum target lock. All calculations are carried out within the SpotTrack sensor. The onboard processing unit runs the application software which makes configuration and monitoring of the SpotTrack system easy and efficient.

### Robust multi-target tracking

The innovative design of the signal processing circuits secures lock on true targets at different heights. In addition to a high bearing resolution, SpotTrack introduces a vertical resolution of the same magnitude, which reduces the risk of false reflections and rejects outliers. This, combined with real time adjustments in dynamic environments, provides robust target tracking. Robust target tracking combined with true horizontal distance measurements provides a high-integrity reference solution, with accurate range and bearing input for dynamic positioning operations.

### Close-by operations

Due to its unique design, SpotTrack is capable of target tracking in close-by operations. By utilizing roll and pitch stabilization, SpotTrack has a wide vertical field of regard which keeps track of targets even at high elevation angles.

### Increased availability

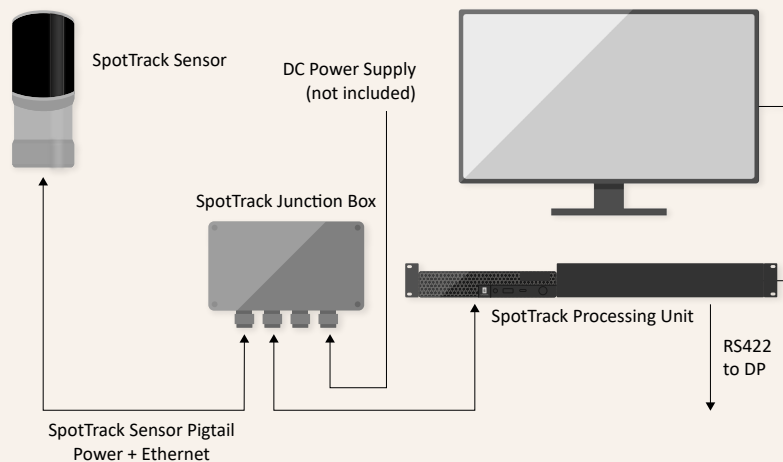
When connected to a Motion Reference Unit (MRU), SpotTrack obtains increased accuracy and robustness when operating in extreme weather conditions/high dynamic environments. This provides a more precise horizontal target distance.

### Easy setup - low maintenance

The SpotTrack system is easy to install and operate. All moving parts are enclosed within the sensor housing. The mechanical wear due to harsh weather conditions is thus kept at a minimum, allowing for low maintenance costs.

## FEATURES

- Advanced multi-target tracking
- Wide vertical field of regard for close-by operations
- Interfaces to all DP systems
- Easy to install and operate
- Roll/pitch stabilization for high dynamic environments
- True 3D positioning system
- Vertical field-of-view stabilized for roll and pitch
- Automatic data recording
- Optional MRU interface
- Fanbeam and CyScan replacement kit available



## Technical specifications

### SpotTrack®

#### Performance

Laser classification	Eye Safe Class 1 IEC 60825
Laser wavelength	905 nm
DP range prism reflector	10 - 1500 m <sup>1</sup>
DP range tape reflector	10 - 350 m <sup>1</sup>
Horizontal pos.accuracy (2σ)	1 m @ 1000 m range
Bearing accuracy (2σ)	1 mrad
Horizontal angular coverage	360°
Vertical angular accuracy (2σ)	0.2°
Vertical angular coverage forwards on sensor	-40° - +60°
Vertical angular coverage backwards on sensor	-26° - +54°
Instantaneous vertical FOV	10°
Vertical stabilization accuracy	<0.5° for roll/pitch <20°
Scanning frequency	1 Hz

#### Interfaces

##### SpotTrack sensor

Serial ports	1 x RS-422
Ethernet/LAN	1

##### 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 formats	Proprietary NMEA 0183
Message types	PSXST, PSXRAD, PGNKM, FanBeam MDL

#### Weights and dimensions

SpotTrack sensor	6 kg, Ø 173, 455 mm
Processing Unit	3.6 kg, 44 × 481 × 267 mm

#### Power specifications

##### SpotTrack sensor

Input voltage	12 - 35 VDC
Power consumption	30 W max.

##### Processing Unit

Input voltage	100 - 240 VAC, 50/60 Hz
Power consumption	170 W, max.

#### Environmental specifications

##### SpotTrack sensor

Operating temperature	-25 °C - +55 °C
Storage temperature	-40 °C - +70 °C
Operating humidity	100 %
Storage humidity	90 %
Enclosure material	Anodised aluminium and acrylic
Enclosure protection	IP66

##### Processing Unit

Operating temperature range	+10 - +35°C
Storage temperature range	-40 - +60°C
Operating humidity	20 - 80%
Storage humidity	10 - 90%
Enclosure material	Steel, Aluzinc, plastic

#### Mechanical

Vibration	IEC 60945, IACS E10
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#### Electromagnetic compatibility

Compliance to EMC, immunity/emission	IEC 60945, IACS E10
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#### Product safety

Compliance to LVD	IEC 61010-1
Eye safe Class 1	IEC 60825

<sup>1</sup> Depending on reflector type, size and atmospheric conditions.