SPT and MPT 31x -St series

KONGSBERG

SSBL Positioning Transponder (SPT)
Multifunction Positioning Transponder (MPT)

Stainless steel - 1000 m rated

Introduction

The SPT-St and MPT-St transponders have been designed for a long mechanical life. This has been achieved by using materials more resistant to seawater. The outer casing is made of stainless steel. The electronic circuitry and software are identical to the SPT 319 and MPT 319 transponders. The -St transponders are designed for use with the HiPAP and the HPR 400 systems.
However, a different battery capacity may be supplied as an option, although this will affect the physical length of the transponders. Two of these transponders are explosion-protected electronics units of the type EEx dIIB T6.

Models

- MPT 319/L-St
- MPT 319/DT-St
- SPT 319/I-St
- MPT 316/DT EEx
- MPT 316/EEx 90

Naming principles

The transponder name contains three letters followed by three digits, and the letters after the digits describes the options.

MPT	=	Multifunction Positioning Transponder
SPT	=	SSBL Positioning Transponder
3xx	=	30 kHz band
x1x	=	Depth rated for 1000 meters
xx9	=	±90° beamwidth
xx6	=	±60° beamwidth
DT	=	Depth and Temperature sensors
I	=	Inclinometers (X and Y angles)
L	=	Long tube, to accommodate a larger battery
EEx	=	Meet requirements of EN 50 014-50020 or VDE0171, "*Electrical apparatus for potentially explosive atmosphere*" respectively.
EEx 90	=	As described for EEx, and the transducer is mounted at an angle of 90° perpendicular to the longitudinal axes of the transponder.
St	=	Stainless steel (housing)

Basic data

Maximum depth rating..... 1000 meters
Housing material..... Stainless steel
Housing design lifetime ..... 25 years
Transducer beamwith.....±90° or ±60°

Source level:
- ±90°, 4 steps:..... max 188 dB rel. 1 µPa ref. 1 m
- ±60°, 4 steps:..... max 192 dB rel. 1 µPa ref. 1 m

Receiver sensitivity, 2 steps .....max 100 dB rel. 1 µPa
Operation temperature .....0° to + 30° C

MPT 319/L-St

The MPT 319/L-St is a long-life transponder, and it is designed to be installed and retrieved by an ROV.
Specifications as for basic unit except:
Weight in air / water.....54 kg / 36 kg
Overall length.....1750 mm
Outside diameter, housing / max..... 124 / 153 mm

Lithium Battery

Type.....L 10/36 (36/60)
Can not be replaced by Alkaline / Rechargeable battery.
Shelf lifetime..... 10 years
Maximum continuous operation .....375 days
Quiescent time .....1150 days

Number of replies:
- Low source level ..... 48 million
- Maximum source level ..... 12 million

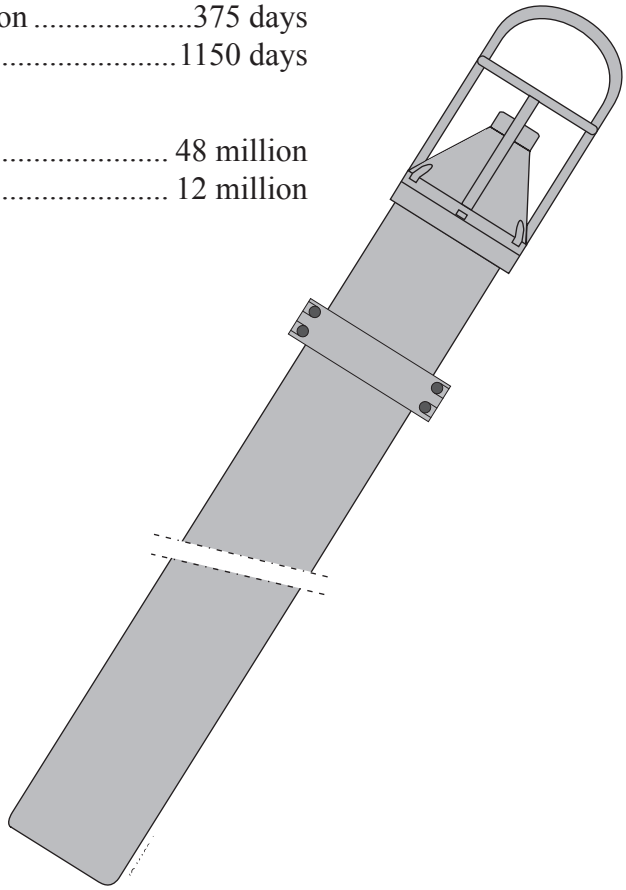
MPT 319/DT-St

The MPT 319/DT-St is a standard multifunction transponder. It is designed to be installed and retrieved by an Remotely Operated Vehicle (ROV). Depth and temperature sensor functions may be switched off via telemetry to extend battery life.
Specifications as for basic unit except:
Weight in air / water.....37 kg / 25 kg
Overall length.....1180 mm
Outside diameter, housing / max..... 124 / 153 mm

TD sensor:
- Max depth.....1000 m
- Accuracy pressure sensor .....±1 m
- Resolution pressure sensor .....0.1 m
- Range temperature sensors..... -10° to + 40° C
- Accuracy temperature sensor .....0.2° C
- Resolution temperature sensor .....0.1° C

Lithium Battery

Type.....L 10/36 (18/30)
Shelf lifetime..... 10 years
For more data see table.



MPT 319/DT-St and MPT 319/L-St transponders

SPT 319/I-St

The SPT 319/I-St is an Inclinometer transponder. It is equipped with one set of inclinometers and is designed to measure and monitoring angles of various types of underwater structures.

Specifications as for basic unit except:

Weight in air / water.....37 kg /25 kg
Overall length.....1180 mm
Outside diam, housing / max ..... 124 / 153 mm
Maximum detectable angles:
- HPR 400/300 channels .....±60°/±15°

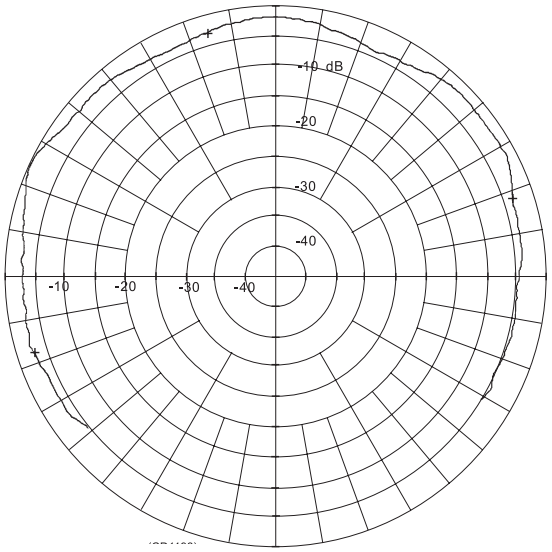
Resolution:
- HPR 400/300 channels.....0.25°/0.02°
- Accuracy, standard sensors ..... 0.25°

Lithium Battery

Type.....L 10/36 (18/30)
Shelf lifetime..... 10 years
For more data see table.

Beam pattern

The transponder beam pattern shows the transmit / receive sensitivity in the different directions.



Example of MPT 319 Beam pattern

Batteries

The L10/36 (18/30) battery pack may be replaced by an Alkaline or a Rechargeable battery. The specification for these batteries are shown in the table to the right.

Battery data	Lithium	Alkaline	Rechargeable
Battery Type no	L10/36 (18/30)	A10/36 (24/24)	N10/36 (18/30)
Battery Part no	290-101665	290-216804	290-212364
Maximum continuous on-time	185 days	71 days	16 days
Quiescent time	1045 days	301 days	90 days
No. of replies, low source level	19.6 million	5.4 million	1.44 million
No. of replies, max source level	4.9 million	1.1 million	0.36 million

Alkaline battery

This battery pack may be used as an replacement for the standard L10/36 (15/40) battery.
Weight .....8.0 kg
For more data see table.

Rechargeable battery

This battery pack may be used as an replacement for the standard L10/36 (15/40) battery.
Weight .....8.5 kg
Number of charge / discharge cycles 250
For more data see table.

Battery charger

Type.....BCN 1036
Weight .....3.5 kg
Outline dimension.....172 x 120 x 231 mm

MPT 316/DT EEx

This model is designed to be used in zones where there is a danger of explosive gasses or liquids accumulating. It is equipped with a depth and temperature sensor for telemetry. The transponder is a completely encapsulated unit. The depth and temperature sensor functions may be switched off via telemetry to extend battery life.

Specifications as basic except:

Protection class ..... EEx d IIB T6
Transducer material..... Titanium
Weight in air / water.....32 kg / 22 kg
Dimensions see outline drawing.

TD sensor:

- Max depth.....1000 m
- Accuracy pressure sensor. .....±1 m
- Resolution pressure sensor .....0.1 m
- Range temperature sensor ..... -10° to + 40° C
- Accuracy temperature sensor .....0.2° C
- Resolution temperature sensor .....0.1° C

Lithium Battery

Type.....L 10/36 (15/20)
Can not be replaced by Alkaline / Rechargeable battery.
Shelf lifetime..... 10 years
Maximum continuous operation .....150 days
(When used as depth transponder with 1 ping every 5 second)
Quiescent time .....1045 days
Number of replies:

- Low source level ..... 10.8 million
- Maximum source level ..... 2.7 million

MPT 316/EEx 90

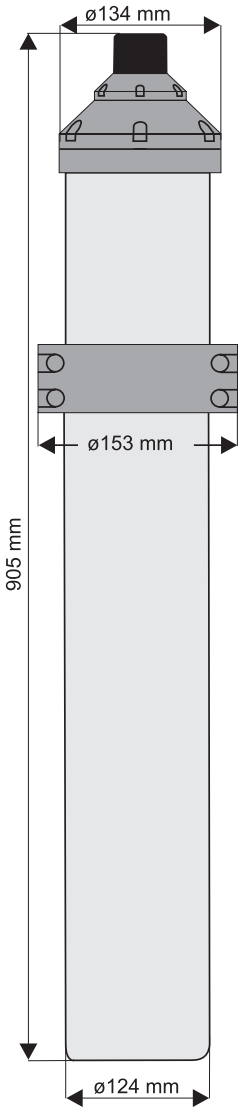
The MPT 316/EEx 90 is a multifunction positioning transponder with a 90 degree tilted transducer head. It is designed to be used in zones where there is a danger of explosive gasses or liquids accumulating, and specially designed for mounting onto valve heads in offshore loading applications.

Specifications as for basic except:

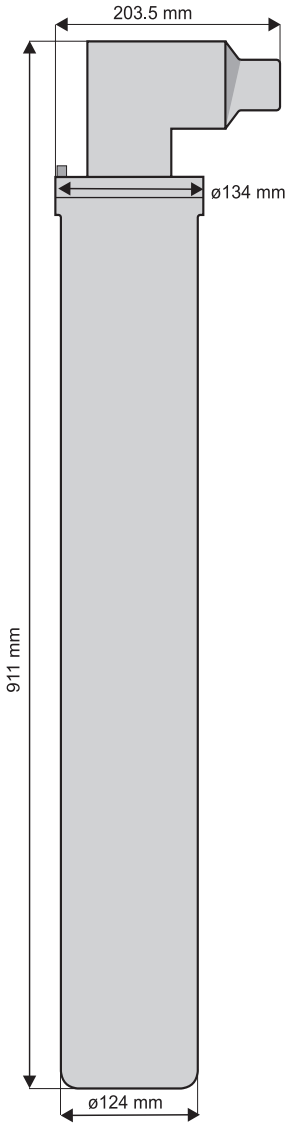
Protection class ..... EEx d IIB T6
Transducer material..... Titanium
Weight in air / water.....33 kg / 23 kg
Dimensions .....see outline drawing

Battery

Same lithium battery as for the MPT 316/DT EEx.



MPT 316/DT EEx outline dimensions



MPT 316/EEx 90 outline dimensions

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