

Transponder Quick Reference Guide

Refer to the respective transponder Instruction manual for more detailed information about the individual transponder.

Safety information

Due to safety rules, the "Safety information for transponder and transponder battery" **must be read** before handling transponders or separate transponder batteries.

Refer to the respective transponder instruction manual / the Transponder Safety Data Sheet (859-164733 / Internet)

Battery

As a standard, a SPT / MPT transponder contains a lithium battery.

Hazards identification

Short-circuits, overheating, mechanical damage and exposure to water can start chemical reactions and high currents inside the transponder lithium battery. This can generate noxious gases and / or danger of explosions.

- **Noxious gases** - thionyl chloride, sulphur dioxide, hydrogen chloride and chlorine. All personnel that have been exposed to the noxious gases should immediately be seen by a doctor.
- **Explosion** - if the transponder explodes, either the transducer or the bottom end cap will blow out, or the transponder becomes fragmented. This can cause serious damages on personnel / equipment.

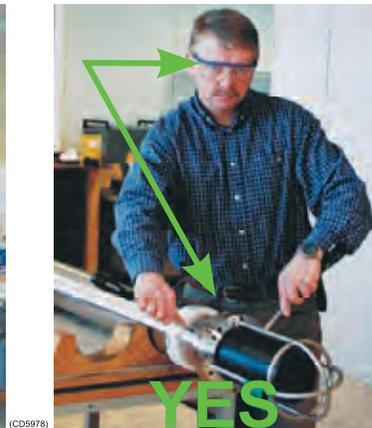
Handling

All personnel that handle transponders must know the transponder's status:

'Functioning' – 'Failing' – 'Unknown'

A transponder with unknown status, must be handled as a transponder that is failing. A 'failing' transponder must be handled as possible water ingress.

- All transponders recovered from the sea, should be placed in a safe place out on deck and controlled for **minimum 2 hours**:
 - Look for outer damages that could involve a water leakage.
 - The transponder housing temperature must be checked to verify a possible temperature increase in the battery.



Handling a heated or self-heated transponder / transponder battery

Cool down the battery with copious amounts of cold water.

- Immerse the transponder / separate transponder battery in the sea for 12 hours or permanent.
 - If this method is impossible, the transponder / separate battery can be cooled down by use of a fire hose.
- Use necessary protection equipment.
- Wash out chemical reaction products with water.

Opening a transponder

- Open the transponder in a safe place out on deck, shielded from people and vital equipment.
- Use necessary protection equipment.
- Do not stand in front of transducer or bottom end cap, when opening a transponder.

Storage

- A transponder that is failing, must be stored in a safe place out on deck, shielded from people and vital equipment.
- A transponder that is functioning, and separate batteries can be stored indoors. A fire station, with fire hose (water), must be placed outside the storeroom.

Disposal

- For safe disposal, contact a company that has been approved to collect and dispose lithium batteries.

General

The SPT / MPT transponders are compatible with the Kongsberg Maritime HiPAP / HPR systems. The SPT / MPT transponders includes units deep water rated to 1000 / 3000 / 6000 meters.

The transponders are supplied with different transducer heads, according to the transponder specifications. The transponder name indicates the transponder specification.

A transponders are designed for operation in water only!

Transponder name

The transponder name consists of:

- Model name (three letters)
- Model number (three digits)
- Any options included (letters after digits)

Model name

SPT: SSBL Positioning Transponder
MPT: Multifunction Positioning Transponder

Model number

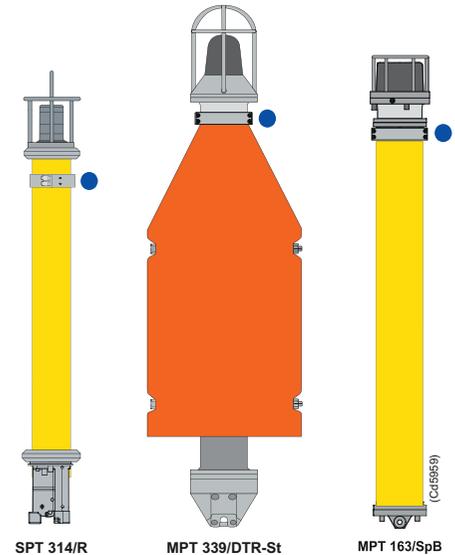
The three digit describes:

- Digit 1: frequency band
- Digit 2: depth rating and
- Digit 3: beamwidth

Options

Available options are described in the respective Instruction manual.

Transponders in general



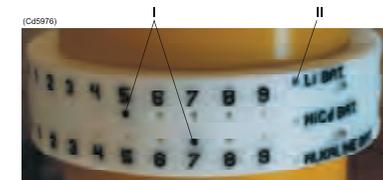
Identification

The identification clamp ring is tightened around the transponder body. This ring is engraved with:

- Transponder name
- Registration number (unique serial number)
- Frequency channel.
- Type of battery

If the transponder configuration and battery is changed, the channel numbers (A) and the type of battery (B) can be altered by setting pegs into different holes in the clamp.

The figure below shows an identification clamp ring for a transponder using channel B57 and includes a lithium battery. Name and serial number is engraved on the other side.



Refer to the respective instruction manual for special tools and procedures required to open a transponder.

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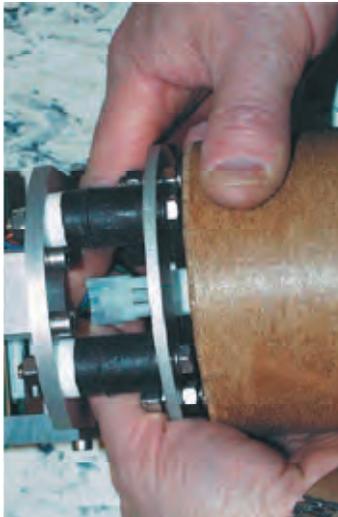
Refer to the respective transponder Instruction manual for detailed information about the individual transponder.

● Connecting the battery

At delivery, the transponder battery is disconnected, and must therefore be connected before transponder deployment.

To connect the battery, the unit must be opened. This is described in detail in the respective manual. **NB!** It is important to follow these procedures ●.

- 1 Grab the connector firmly using both hands.
- 2 Press the connector onto the battery plug.
- 3 When you connect the battery, listen for the transponder initialization:
 - Three bursts should be transmitted at a rate of one per second.
 - If you do not hear any bursts, disconnect the battery immediately, and wait minimum 20 sec. before you connect it again.
- 4 When the battery correctly connected, assemble the transponder.
 - **NB!** remember to inspect the O-rings and backup rings (if used). Refer to the respective instruction manual.



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Set-up of the system

All transponders are preset by the manufacturer. The channel setting may be changed if required. This can be done as follows:

- Use of internal switches, or
- with use of acoustic telemetry from a HiPAP / HPR 400 system. The HPR 300 systems can not send telemetry for this purpose.

References

For information about set-up of a transponder, refer to APOS Instruction manual / On-line help.

Pre- deployment checks

- 1 Perform a visual inspection of the transponder.
- 2 Perform a functional check before deployment, to ensure it will operate correctly once it has been positioned on the seabed.
- 3 The transponder tester, the TTC 400 can be used for functional check.

Deployment

At deployment, the unit must be positioned with the transducer upright. Ensure a clear line of sight between the transponder's head and the ship's transducer. The release mechanism (if fitted) must be attached to the shackle.

The shackle will ensure the transponder is released smoothly when requested by the operator.

When you deploy the transponder, the anchor-weight must be lifted separately from the transponder.

DO NOT attempt to lift both the transponder and the anchor-weight via the transponder - the transducer cage is only certified for lifting the transponder and the buoyancy collar.

During deployment, prevent the transponder from slamming against other solid objects.

Ready for operation

Once deployed, the transponder is ready for operation. The sensors in your application will respond to requests from the HiPAP / HPR system, when they are enabled using telemetry.

Operation

The operation of the transponder performed at the HiPAP / HPR topside Operator Station. For information regarding operation, refer to APOS Instruction manual / On-line help system.

Recovery checks

After recovery, wash the unit thoroughly in fresh water to dissolve any salt deposits and clean off any sand or silt. If available, an high pressure hose may be used. If the unit is not to be re-deployed in the near future, disconnect the battery.

Refer to safety information on the opposite page.

Mounting

A transponder may be:

- Secured to a subsea structure, using mounting brackets.
- Located on the open seabed. This requires an anchor-weight and a buoyancy collar to hold the transponder securely in position on the seabed.

Maintenance

No maintenance is normally required, apart from washing the unit. To change the battery pack, the unit must be dismantled.

Transport

At transportation and storage, the transducer face and the O-ring grooves must be protected (if the transponder is open).

- All transponders and separate transponder batteries must be shipped in accordance with prevailing regulations.
- During transport the battery must always be disconnected from the electronics.
- Original transponder / battery cages must be used.

Changing the battery

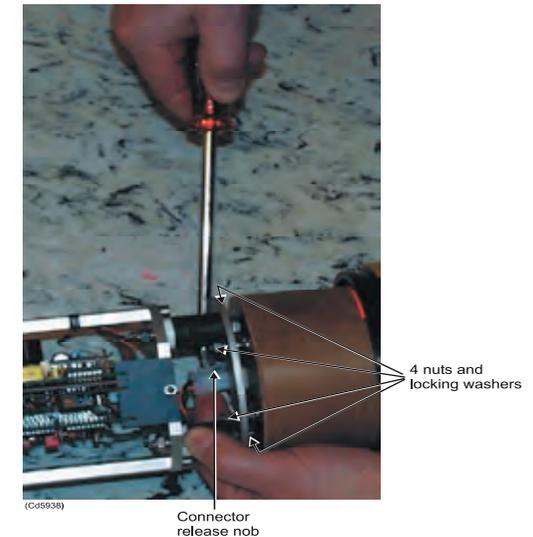
To change the battery, the transponder unit must be opened.

If the transponder is fitted with a release unit, disconnect the release plug at the bottom of the battery before removing the battery.

Unplug the connector from the battery by:

- 1 Support the connector with your left hand and use a screw driver to press the release knob, as you pull out the connector.
- 2 Remove the four nuts and locking washer holding the battery to the chassis.
- 3 Replace the battery pack in the reverse order. How to connect the battery see ●.

● For the SPT 339- / 331- / 139 RspSx transponders read the details for battery connection in the instruction manual.



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Connector release nob