

Transponder Quick Reference Guide

Refer to the respective transponder instruction manuals for more information about the individual transponder.

Safety precautions!

Transponder in general

Battery

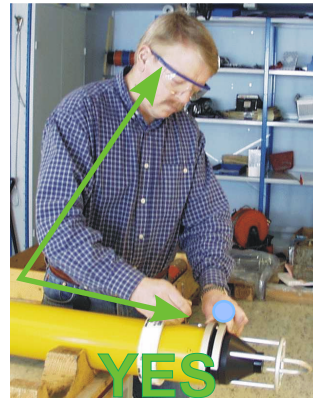
As a standard, a SPT/MPT transponder contains a Lithium battery.

CAUTION:

Never use water to fight a lithium fire. It can result in the release of hydrogen that may cause an explosion.

How to handle a transponder

- When on deck, the transponder must be placed in a sturdy rack placed in a solid room with no other vital or delicate equipment.
- Before deployment, perform a visual inspection of the transponder.
- During deployment, prevent the transponder from slamming against other solid objects.



● Refer to the instruction manuals for special tools and procedures required for opening the transponder.

- After retrieval of the transponder, check for damages that could cause water leakage and hence possible temperature increase.
- If the transponder is to be opened, be aware that it might be a pressure built-up inside. Be sure to use protective glasses and take special precautions to avoid personnel injury.

If failing

If the transponder stops working during an operation, special care must be taken during retrieval. As soon as the transponder is above water:

- Look for outer damages that could involve a water leakage.
- The temperature on the transponder housing must be checked to verify a possible temperature increase in the Lithium battery.

If a short circuit occurs due to water ingress while the battery still has much remaining energy, the energy will mainly be converted into heat.

CAUTION:

If the cells that form the battery reach the critical temperature of 180° C they will explode.

If leaking

If there is any reason to believe that the transponder battery has been exposed to sea water, the temperature on the transponder housing must be checked as soon as the transponder is off the water. If the temperature on the transponder housing for some reasons is increasing, immediately lower the transponder into the sea, where it should stay for at least two hours. Back on deck the temperature must be checked again.

General

The SPT and MPT transponders are compatible with the Kongsberg Simrad HPR and HiPAP systems. The Kongsberg Simrad SPT and 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.

All 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 digits describe:

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

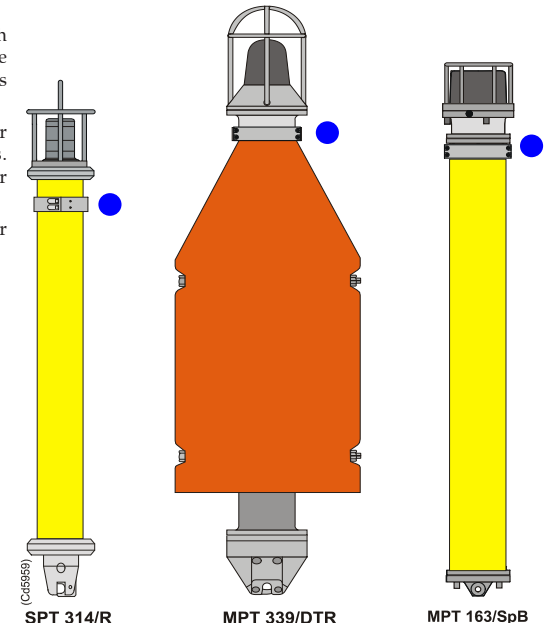
Options

Available options are described in the respective instruction manuals.

Identification

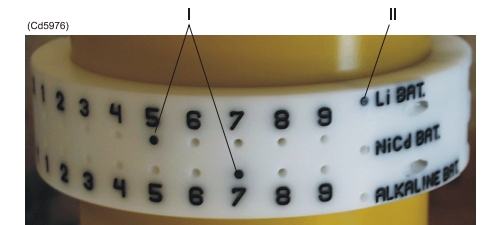
● The identification clamp ring is tightened around the transponder body. This ring is engraved with:

- Transponder name
- Registration number
- Unique serial number
- Frequency channel
- Type of battery



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

The figure shows an identification clamp ring for a transponder using channel 57 and includes a Lithium battery. Name and serial number is engraved on the other side.



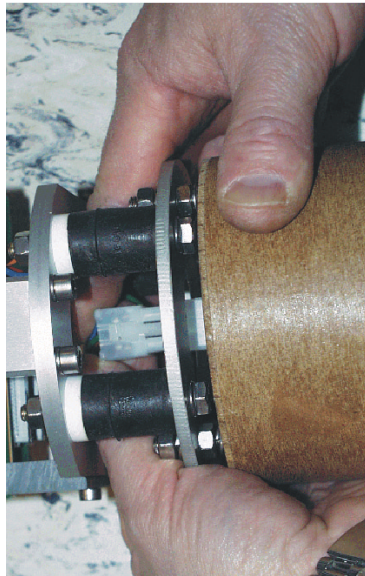
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● Connecting the battery

At delivery, the transponder battery is disconnected, and must therefore be connected before 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 connecting the battery, listen for the transponder initialization:
 - Three bursts should be transmitted at a rate of one per second.
 - If no bursts are heard, disconnect the battery immediately, and wait minimum 20 sec. before connecting/reconnecting it again.
- 4 When the battery is correctly connected, assemble the transponder.
 - **NB!** remember to inspect the O-rings and backup rings (if used). Refer to the instruction manuals



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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 HPR 400 or a HiPAP system. (A HPR 300 system can not send telemetry for this purpose.)

References

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

Pre-deployment check

- 1 Check that the unit is correctly assembled and sealed.
- 2 Perform a functional check before deployment, to ensure it will operate correctly once it has been positioned on the seabed.

- The functional check is performed at the Operator Station.
- When checking, lower the transponder on a rope over the vessel's side. Ensure the transponder replies to the correct interrogation frequency.

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.

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 a shackle.

The shackle will ensure a smooth release of the transponder when requested by the operator unit.

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.

Ready for operation

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

Operation

The operation of the transponder is 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, a high pressure hose may be used. If the unit is not to be re-deployed in the near future, disconnect the battery.

Maintenance

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

Transportation and storage

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

CAUTION:

Always ensure to follow the existing rules for transport of equipment containing lithium. During transport the Lithium battery must always be disconnected from the electronics. Original transponder cages must be used. If not available, label the goods correctly (Hazard label).

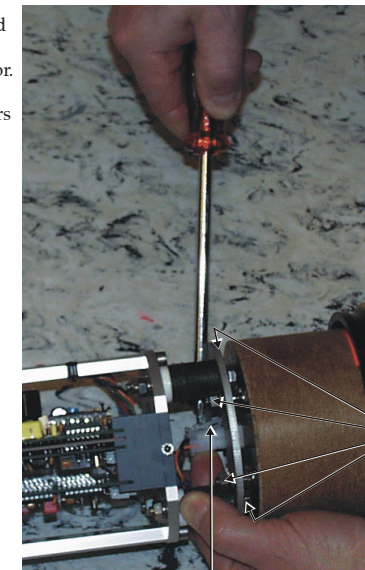
Changing the battery

To change the Lithium battery /rechargeable battery, the transponder unit must be opened.

If the transponder is fitted with a release unit, disconnect the Release plugg 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 washers holding the battery to the chassis.
- 3 Replace the battery pack in the reverse order. For battery connection see ●.



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Connector release knob

4 nuts and locking washers