

**Saab TransponderTech**

# R4 AIS Class B Transponder

**Configuration Manual**



**SAAB**

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**ii Disclaimer**

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**iii Manual Part Number and Revision**

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# 1 GENERAL

This manual concerns configuration of the Saab TransponderTech R4 AIS Class B transponder unit (p/n 7000 112-010) by utilization of the R4 AIS Class B Configuration tool 'PC' software (p/n 7000 112-036).

## 1.1 Reference Documents

1	7000 112-020: R4 AIS Class B Transponder instruction manual
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## 1.2 Static Data Parameters

Before the R4 AIS Class B Transponder can be used it requires configuration of the following parameters pertinent to the own ship:

- MMSI number
- Ship name
- Callsign
- Ship type
- Ship dimensions with respect to the GPS antenna location

In most countries the operation of an AIS unit is included under the vessel's marine VHF license provisions. The vessel on to which the AIS unit is to be installed must therefore possess a current VHF radiotelephone license which lists the AIS system and the vessel Call Sign and Maritime Mobile Service Identity (MMSI) number.

An MMSI number is required in order for the R4 AIS Class B transponder to operate.

Please contact the relevant authority in your country for more information.

**Do not attempt to configure the R4 AIS Class B transponder before a valid MMSI number has been obtained. Once programmed, the unit has to be returned to an authorized dealer in order for the MMSI number to be changed.**

## 1.3 Other configurable parameters

Apart from setting of static data, the following parameters can be configured:

- RS232 port baud rate (default 38400 bps)
- RS422 port baud rate (default 38400 bps)
- Output of messages from the internal GPS receiver on the serial interface (each second, each four seconds or disabled)

## 2 EQUIPMENT REQUIRED

The following additional equipment is required for configuration of an R4 AIS Class B transponder (p/n 7000 112-010):

- 'PC' computer equipped with an RS232 or RS422 serial port
- R4 AIS Class B configuration tool 'PC' sw (p/n 7000 112-036)
- 12 V DC power source with at least 1.5A capacity
- Power cable for transponder (p/n 7000 112-011)
- Serial interface cable as described below

### 2.1 'PC' computer requirements

The R4 AIS Class B Configuration tool software is to be executed on a 'PC' computer equipped with Microsoft .NET Framework version 2.0 or higher.

The 'PC' must be equipped with a bi-directional serial port according to the RS232 or RS422 standard. If no such port is available, a USB to serial interface adapter (together with associated 'PC' driver routines) will be required. Installation of such an adapter is beyond the scope of this manual.

### 2.2 Connecting to the transponder

A connection shall be established between a serial port on the 'PC' (or serial adapter) and one of the serial ports (RS232 or RS422) on the R4 AIS Class B transponder.

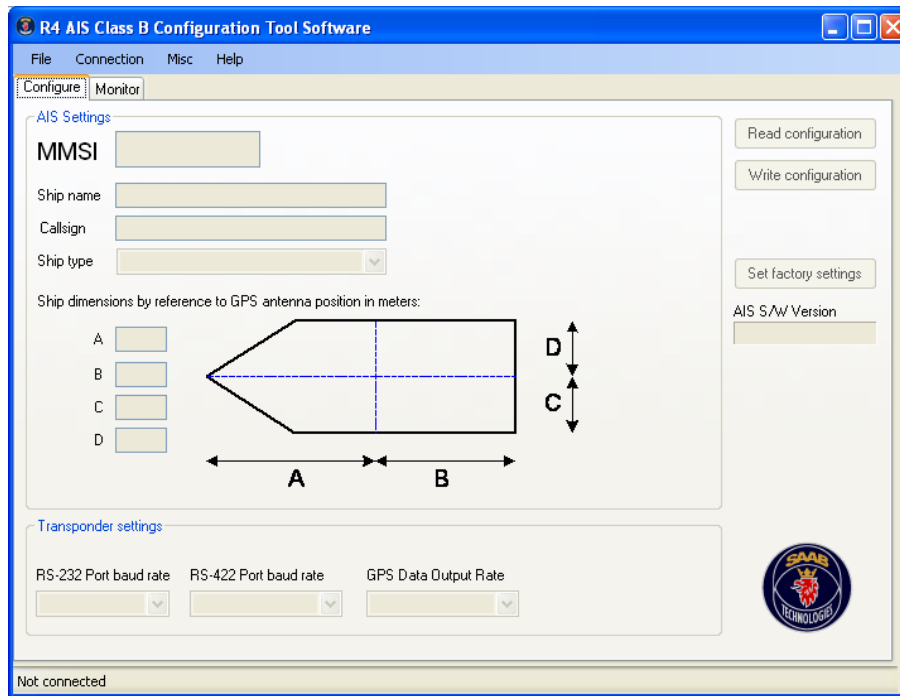
It is recommended that connection is established between an RS232 port on the 'PC'/adapter and the RS232 port on the R4 AIS Class B Transponder. For this purpose a 'straight' serial cable (not a 'crossed' or 'null modem cable') with DB9 connectors can be connected directly between the DB9-F connector on the transponder and a standard RS232 DB9 connector on the 'PC' or adapter.

Optionally, a connection can be established between an RS422 port on the 'PC'/adapter and the RS422 port on the transponder. In this case a special cable will have to be designed.

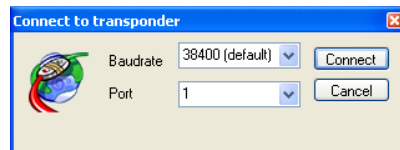
In all cases, the 'Tx' lines on the 'PC' or adapter shall be connected to 'Rx' lines on the transponder serial port and vice versa. Refer to the R4 AIS Class B transponder instruction manual (ref [1]) for a definition of the transponder connectors.

## 3 CONFIGURATION OF THE TRANSPONDER

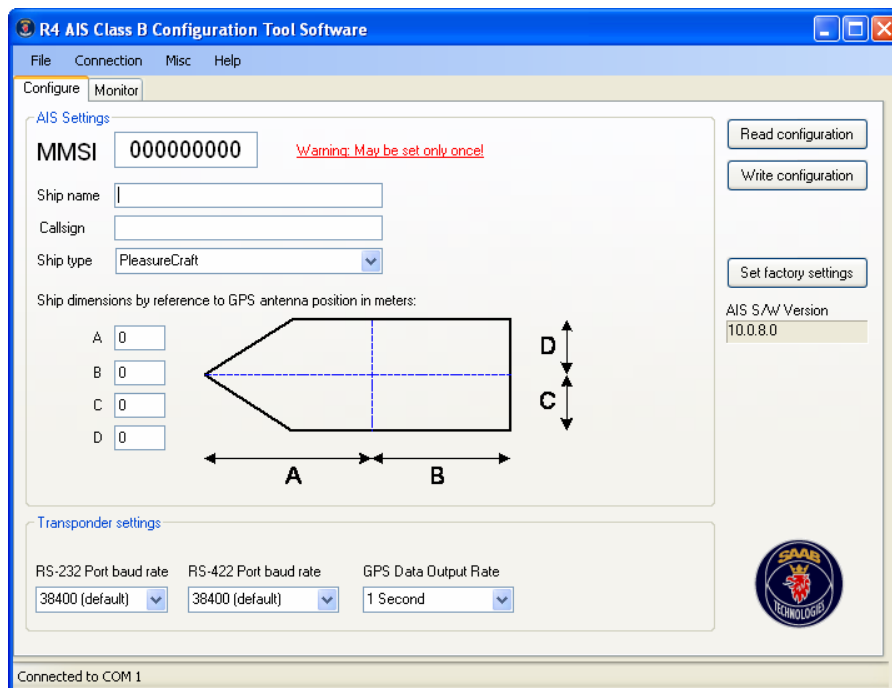
1. Copy the R4 AIS Class B transponder configuration tool executable file (file name extension .exe) to a suitable place on the local hard drive of the 'PC' computer.
2. Connect the serial interface of the transponder to the 'PC' as described in the previous section above.
3. Apply 12V DC power to the transponder unit.
4. Start the configuration tool by double clicking on the executable file icon.



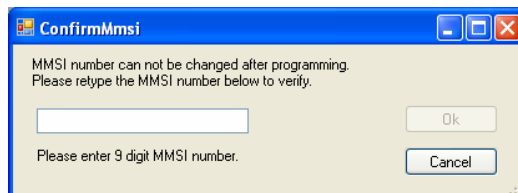
- From the drop-down menu select 'Connection' and then 'Open Connection'. A pop-up menu 'Connect to transponder' will be displayed. Select appropriate serial port number and baud rate for connection with the transponder. The default baud rate is 38400.



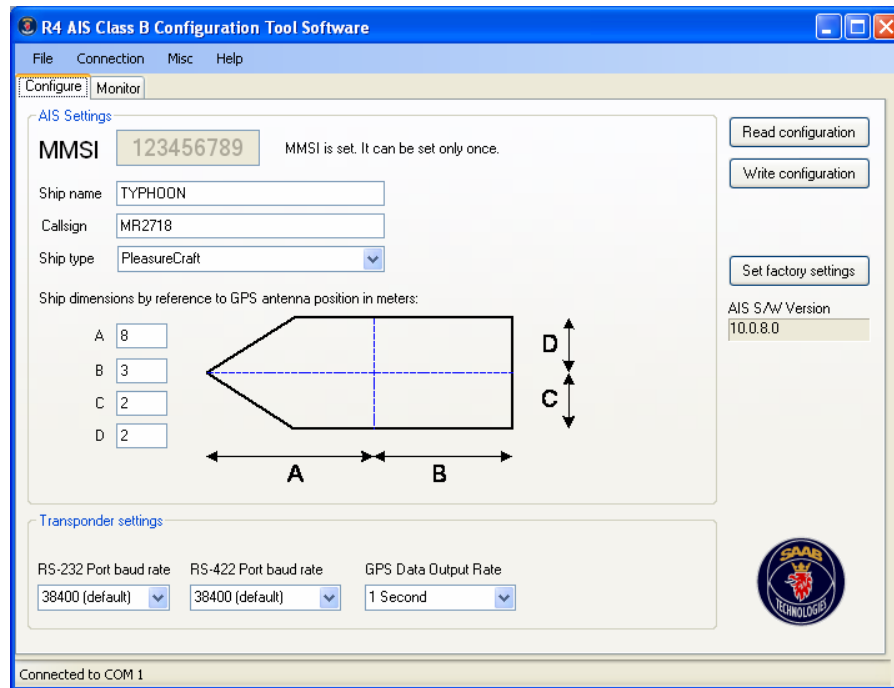
When connection with the transponder has been established, the current configuration parameter settings will automatically be read from the transponder and displayed.



6. Enter the correct data for parameters MMSI, ship name, callsign, ship type (selected from a drop down list of predefined values) and ship dimensions in meters (as referred to the transponder GPS antenna mounting position on board the ship).
7. It is possible to change baud rate setting for the transponder RS232 and RS422 serial port from the default 38400 to other values.
8. It is possible to select data rate for output of serial data from the internal GPS receiver between one second and four seconds and also totally disable this output. It is recommended that one second output is selected if the transponder is to be connected to an external chart plotter application not using any other source of position data for the own ship.
9. When all parameters have been set use the 'Write Configuration' button in order to store the data in the transponder.
10. A popup menu will be displayed asking for confirmation of the MMSI number to be set. This number can not be changed once programmed. Enter the correct 9 digit MMSI number and use the 'Ok' button to finalize the configuration process.



The new parameters will be read back from the transponder and displayed. MMSI will henceforth not be possible to change.



The button 'Set factory settings' can be used to reset the configuration parameters to default values. This will however not affect MMSI number if this has been set.

If desired, the data contents displayed by the configuration tool can be reset using the drop down option 'Misc' – 'Clear Data'. Configuration parameters can then be manually uploaded from the transponder with the 'Read Configuration' button.

## 4 ADDITIONAL CONFIGURATION TOOL FEATURES

The 'Monitor' section of the configuration tool includes some features that may be helpful during system checkout and troubleshooting.

- The 'Plot' view displays current position from the transponder internal GPS receiver and a list of received AIS targets
- The 'Alarms' view displays transponder alarm status
- The 'Log' view displays data on the transponder serial interface and provides a function for storage of data to a log file