



Product: MRU 5th Generation
Version: MRU sw revision 5.03.01
Date: 2015-12-04

Release Note

This MRU software is an upgrade of previous software with following changes from earlier version:

Changed functionality

- *MGC R3 COMPASS type approved as IMO gyro compass.* The software is type approved according to the gyro compass standard.
- *Heading output from MGC R3.* The heading output variable (no. 68) is always the IMO approved heading calculated by the AHRS algorithm. This heading estimate is also the heading output if the NMEA output format is used (NMEA HDT, THS, etc.). When using the MGC in the inertial navigation mode, the inertial navigation orientation solution is available as the roll, pitch and yaw output variables, or by using one of the binary output formats (EM300, BIN23, BIN26, etc.).
- *Time synchronization functionality extended.* Both the MRU and MGC can now be time synchronized through input of ZDA message, NTP server or the TSC command.
- *Heave measurement with mean value dependent of vessel tilt.* Lever arm compensated heave relative to CG with nonzero mean (LA_PosMp1_D and LA_PosMp2_D) is modified to subtract the length of the configured vertical lever arm. The mean heave offset is then only dependent on the static mean roll and pitch angle. In previous versions the heave mean offset also included the (configured) vertical lever arm length.
- *Integrated heave output.* The following two output options can now be configured: 1) with zero mean value or 2) with heave offset depending on static roll/pitch angle.
- *Stable yaw output from MRU in calm position.* When in calm position the yaw rate drift is estimated in order to keep the yaw angle stable (variables 65 Yaw and 68 Heading). This applies to MRU 3, H, E, 5 and 5+.

Corrected errors

- *Heading status on Seapath binary 23.* The heading status of the Seapath binary 23 format when output from an MGC R3 is corrected.

Note: This MRU software version only works on 5th generation MRU models (identified by serial number above 20000, titanium coloured housing and Ethernet communication).

Installation

Use MRC+ version 5.05.00 or later to upgrade the 5th generation MRU to MRU sw version 5.03.01. Proceed as follows:

- 1) Copy the new MRU software file **MruV531.bex** from the Memory stick or Email file to the MRU or MRC directory on your PC with the MRC+ software installed.
- 2) Connect the sensor unit to the PC by use of the MRU-T-015 cable and the MRU-E-CE1 peer-to-peer Ethernet cable. Use the power supply MRU-E-P24 to supply the sensor unit with 24 V DC. Insert the power connector on the power inlet on the MRU-T-015 box. Alternatively, connect the sensor unit to the junction box MRU-E-JB3 and an Ethernet cable between the PC and the junction box.
- 3) When the sensor unit LED is flashing green, start up the MRC+ software by double-clicking on the MRC+ icon.
- 4) Click on the **Sensor** menu and select **Connect**. Enter the IP-address and port number and press **Connect** button. The selection "Factory IP address" includes the default MRU IP address (192.168.1.20). Note: If problems connecting the sensor unit to the MRC+ see **MRC+ Help** under the **Help** menu in MRC+ or the Installation Manual.
- 5) The MRC+ receives configuration from the sensor unit and a **Configuration** tab appears on the screen. You are now connected and can upgrade the MRU software.
- 6) Click on the **Sensor** menu and select **Upgrade software**. Enter the location of the **MruV531.bex** file and press **Open**. Press **Yes** to the question "Are you sure you want to upgrade software on the sensor unit?". The upgrade starts and takes also some seconds.
- 7) In the MRC+ top bar **5.03.01** is shown in the **MRU sw version** field. If so, the installation is completed.