Firmware update for GEMAC sensors

Application Note

Content

1 Preconditions

For the firmware update of the sensors, the ISDControl software and the ISPA2 sensor programming adapter are required.

The current version of the ISDControl software is available on the following website:

https://gemac-sensors.com/en/all-downloads/

The sensor programming adapter ISPA2 (PR-23999-10) is available as an accessory:

https://gemac-sensors.com/en/sensors/accessories/starter-kit/

Firmware update files will be provided upon request.

2 Preparation

- Install ISDControl
  To install, the setup file must be started with administrator rights. During the installation, required drivers can optionally be installed. After installation, a restart of the PC is necessary.

- Connect the sensor programming adapter to the PC using a USB cable.

- Connect the digital sensor (CAN, CANopen and SAE J1939 interfaces) to the sensor programming adapter using the M12 to Sub-D (purple) digital cable. The digital cable contains a 120-ohms terminating resistor between the lines CAN_H and CAN_L.

- Sensors with analog output (current and voltage interfaces) are connected to the sensor programming adapter using an analog cable M12 to Sub-D (black).

3 Establishing a sensor connection

The CAN interface to be used is selected via the menu [Communication] => [Choose a CAN interface...]. If only one sensor programming adapter is connected to the PC, it is automatically selected.

In the toolbar, the interface of the sensor - digital (CAN/CANopen/SAE J1939) or analog (current/voltage) - can be selected. For sensors with a digital interface, the communication parameters baud rate and CAN identifier can also be set in the toolbar (Figure 1).

Sensors with analog output as well as digital sensors CAN/CANopen with standard configuration are automatically displayed in the program after selecting the interface.
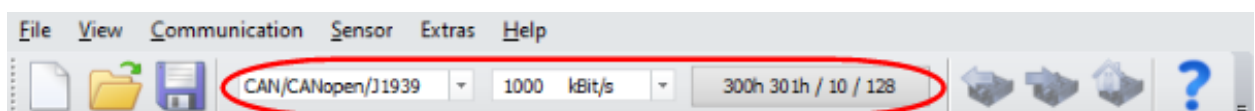

Figure 1: ISDControl Toolbar

For sensors with customer-specific configuration, the communication parameters baud rate and CAN identifier must be set in the program. For sensors with a SAE J1939 interface, the default setting for the baud rate is 250 kbit/s. Pressing the button [300h 301h / 10 / 128] in the toolbar (Figure 2) opens a dialog that allows the configuration of the CAN identifier, node ID and SAE J1939 address (Figure 3).
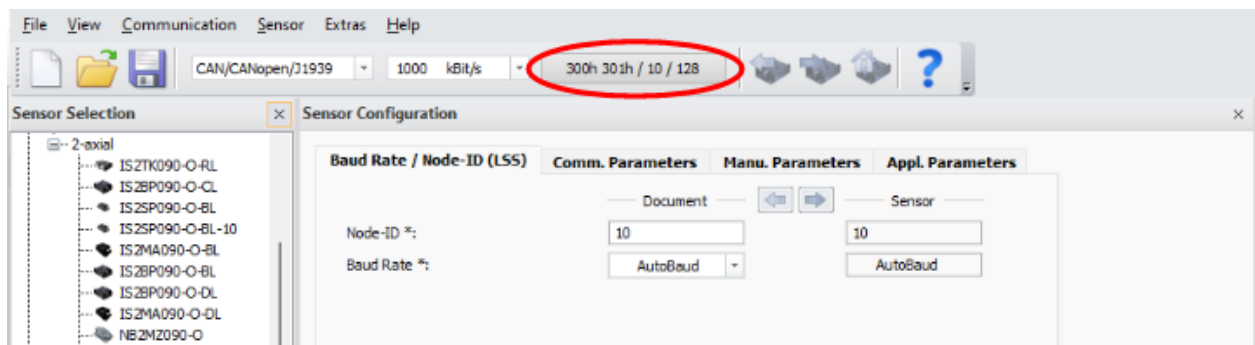

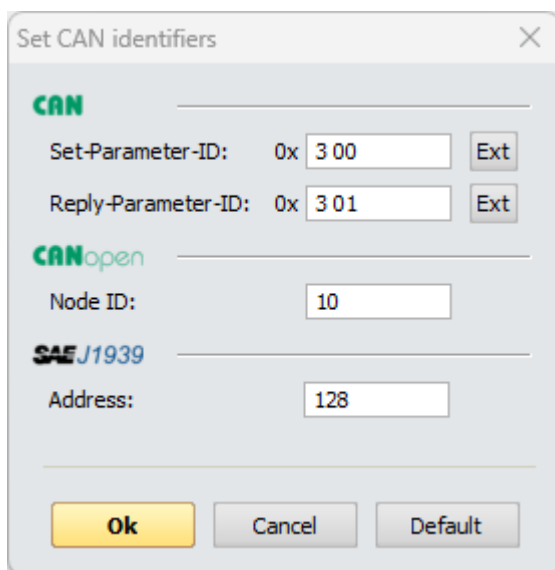*Figure 2: ISDControl Main Window*

Figure 3: Setting Communication Parameters

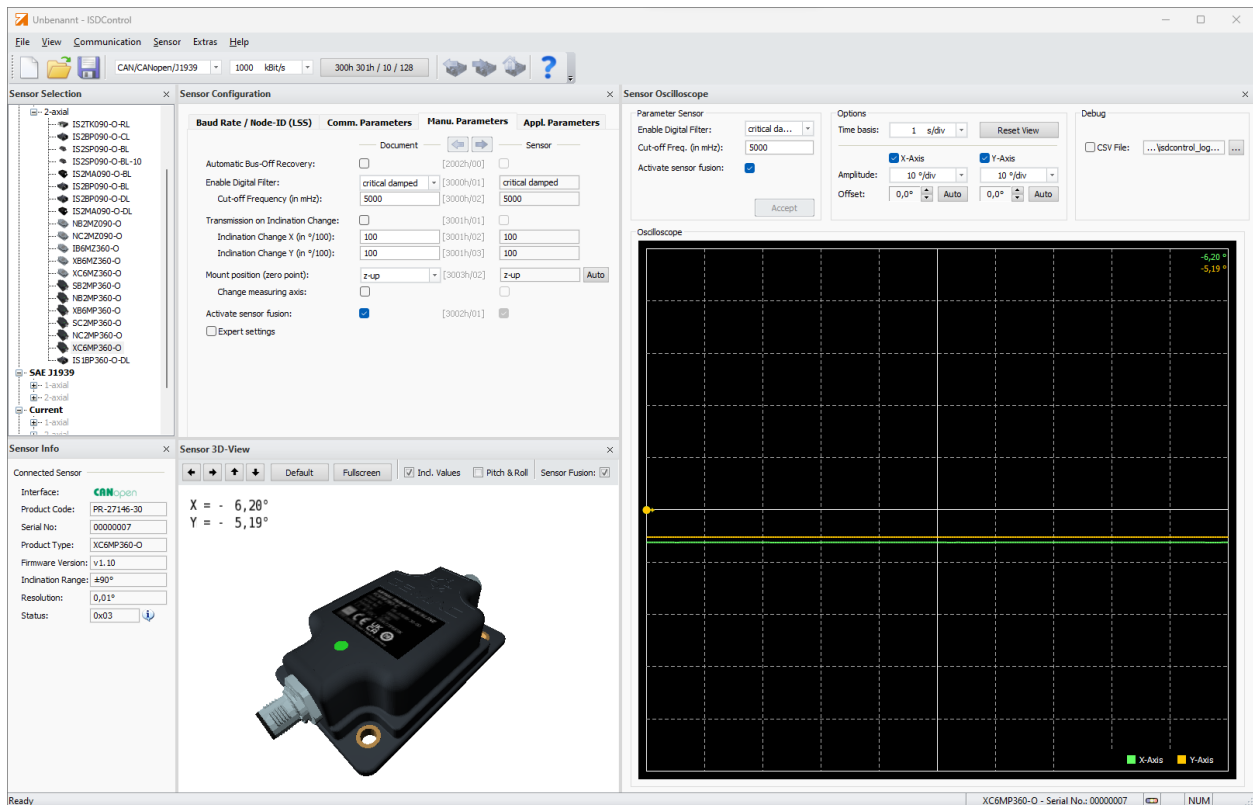After confirming the dialog with [Ok], the sensor should be detected in the program (Figure 4).

Figure 4: Exemplary sensor detected

4 Firmware-Update

If a sensor is displayed by the program, the sensor firmware can be updated in the [Sensor] => [Firmware Update...] menu (see Figure 5).
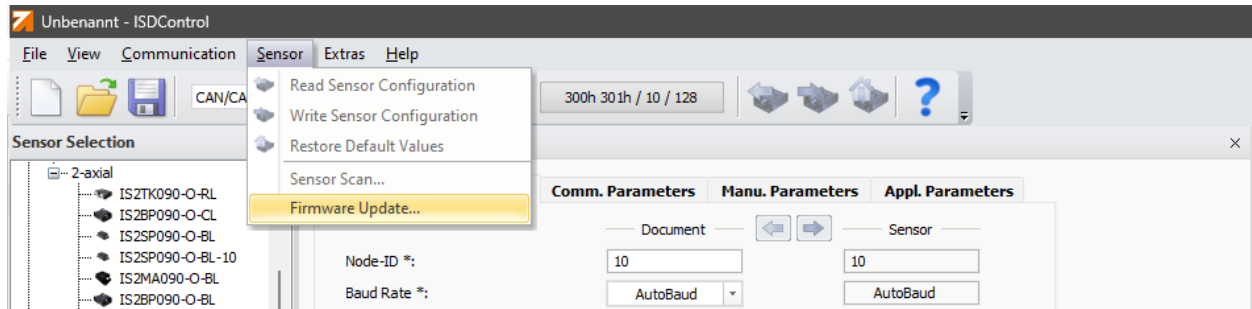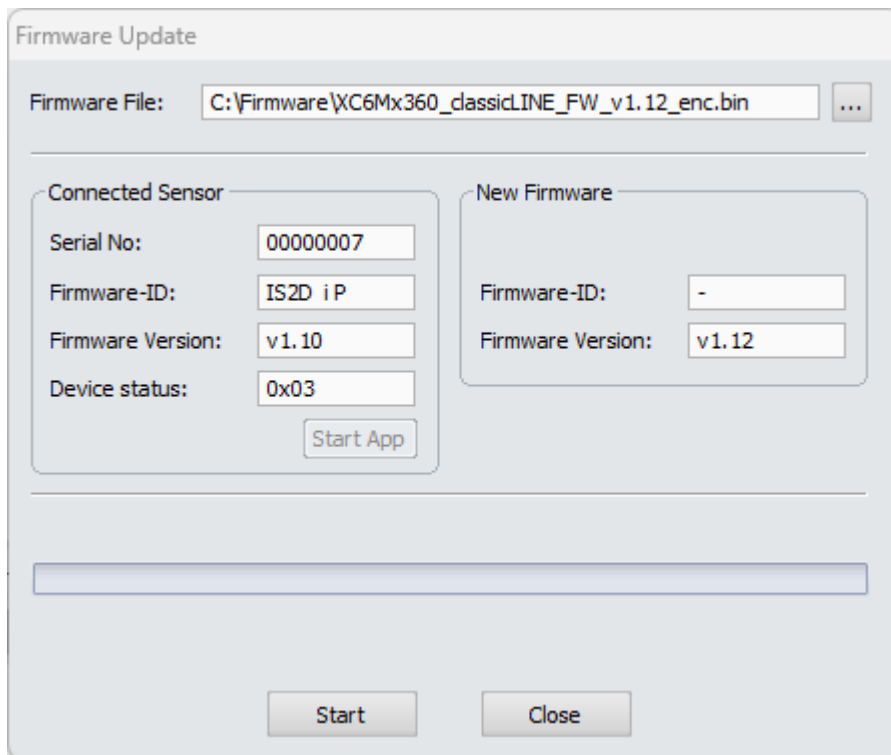

Figure 5: Firmware Update

Figure 6: Firmware Update Dialog

Under "Firmware file:" you can click on [...] to select the update to use. In order to perform an update, the firmware update and the connected sensor must be compatible. If this is not the case, an error message will be displayed in the program and an update will not be possible.

Under Firmware Version, the current version number of the sensor firmware is displayed, as well as the version of the selected update.

If a sensor is connected and a suitable firmware file is selected (see Figure 6), the update can be started by clicking the [Start] button.

During the update, the status is displayed in the dialog (see Figure 7). The sensor must not be disconnected from the programming adapter during the entire update.
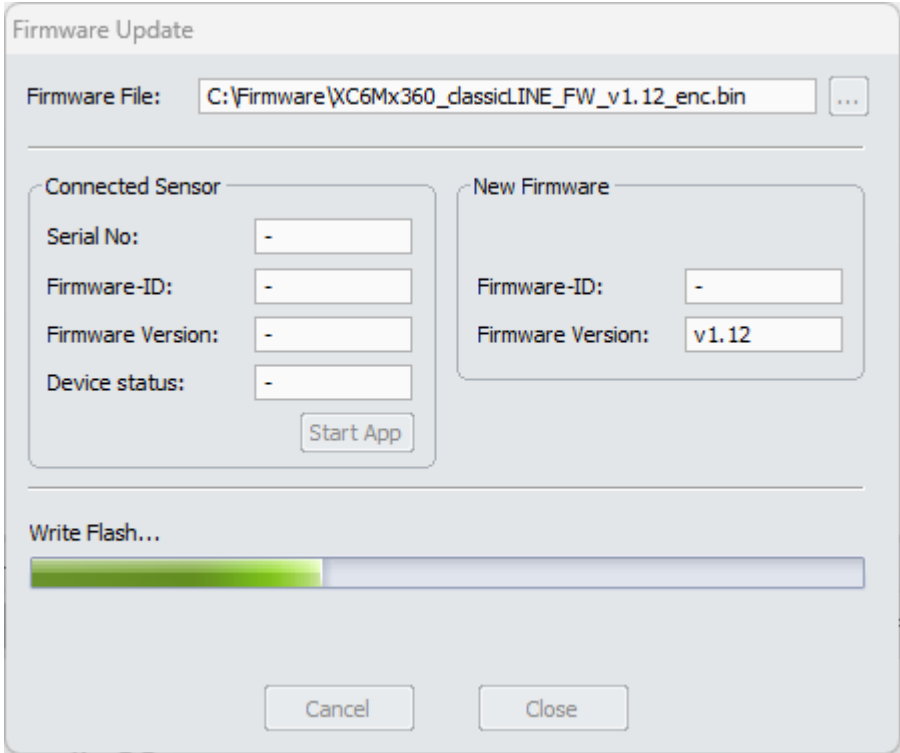
Figure 7: Firmware Update Status

After the update, the status is displayed in the dialog. After a successful firmware update, the firmware versions of the connected sensor and firmware file (left and right of the window, respectively) match (see Figure 8). If this is not the case, or if the update ended with an error, the update can be restarted by pressing [Start].
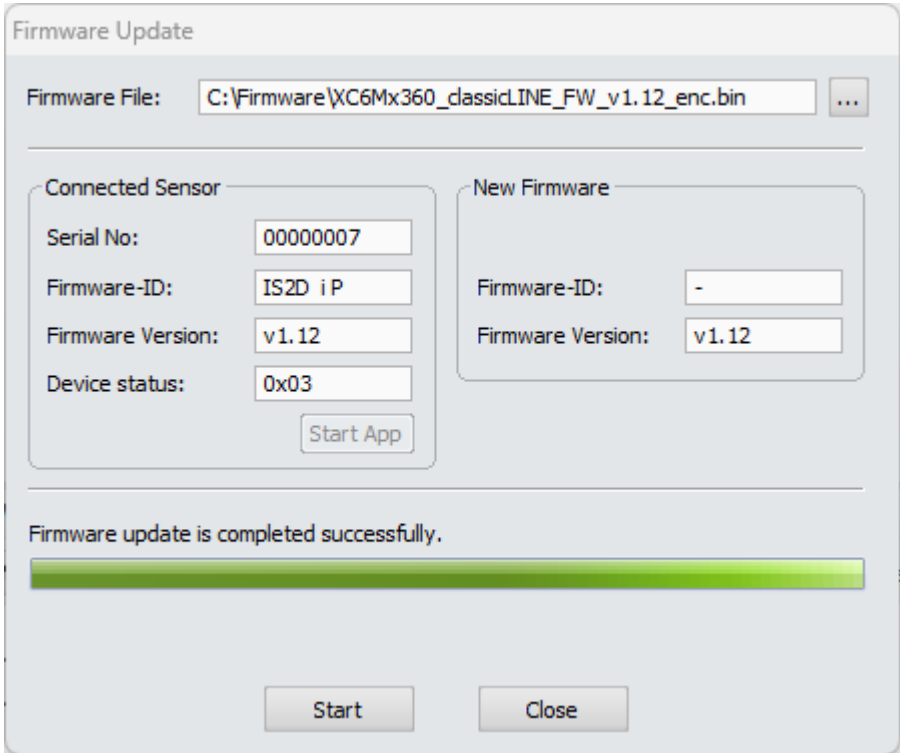

Figure 8: Update Completed