

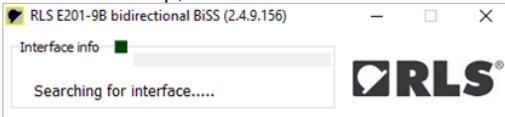
E201-9B demo software user manual

Software installation

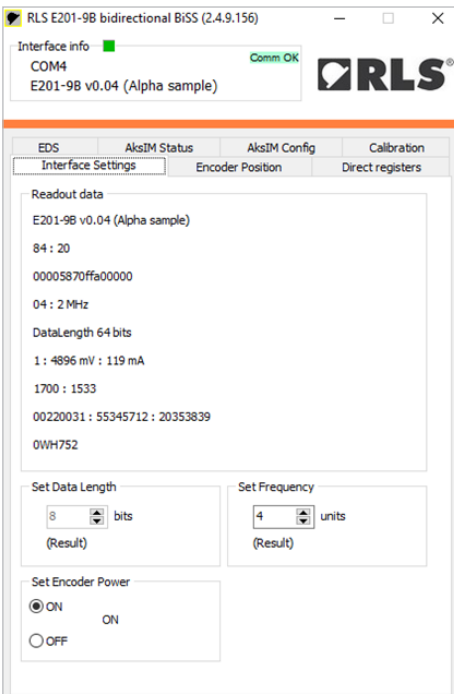
NOTE: Please ensure you have the latest software by downloading it from www.rls.si/e201-9b.

- Download the latest software and USB drivers package from www.rls.si.
- Run the wizard and follow the installation instructions.

Software startup, E201 hardware not connected:

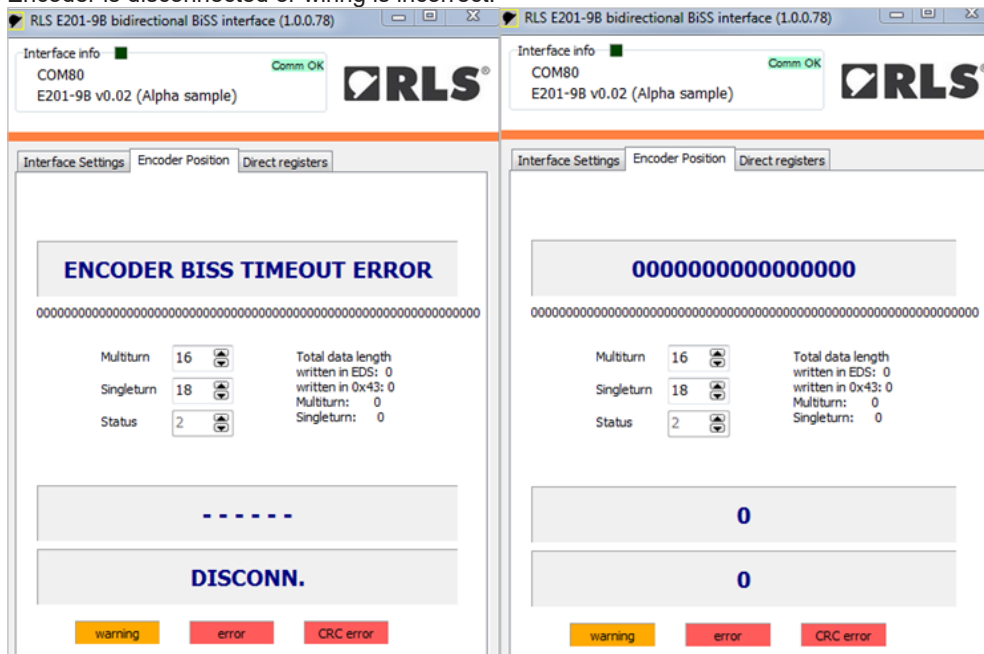


Interface status, readout of all supported commands.
 Encoder voltage and current readout
 Encoder power switch
 BiSS frequency settings



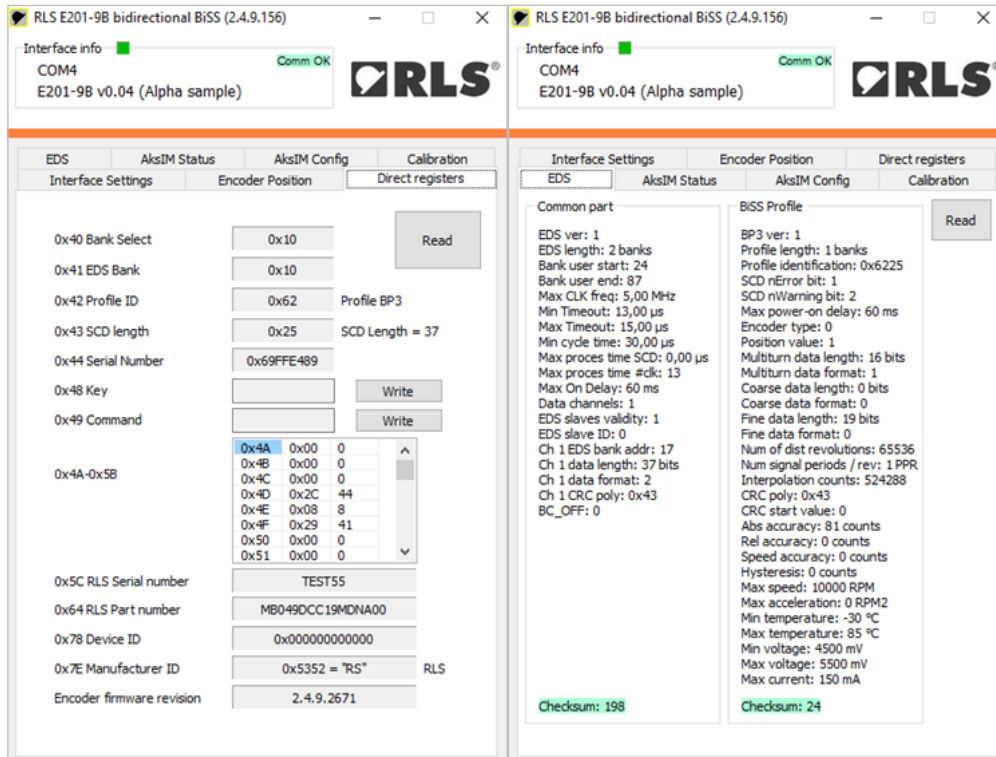
Nominal current consumption:
 AksIM: 130 mA
 Orbis: 67 mA

Encoder is disconnected or wiring is incorrect:



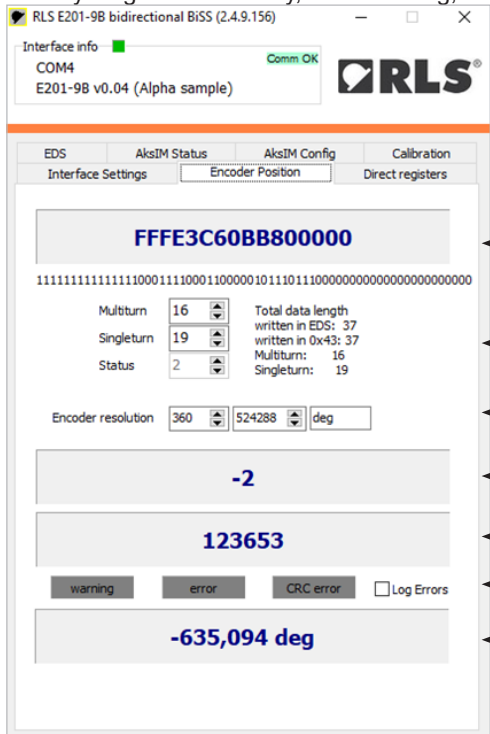
Reading registers in the encoder

Open tab Direct Registers and click Read. Multiple tabs will appear after successful read. Electronic datasheet (EDS) should be read next to get all the data about encoder and to configure single-cycle data packet to read encoder position.



Reading encoder position

If everything is set correctly, then Warning, Error and CRC status lights will be off.



The screenshot shows the 'Encoder Position' tab in the RLS E201-9B software. The interface displays the following data and controls:

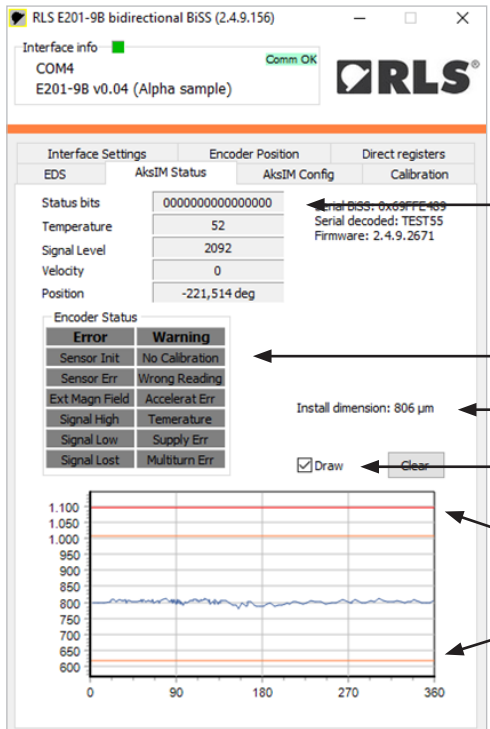
- Data read from the encoder:** FFFE3C60BB800000
- Position data length:** 111111111111100011100011000010111011100000000000000000000000
- Encoder resolution:** 360 / 524288 deg
- Multiturn counter:** -2
- Singleturn position:** 123653
- Status lights:** warning, error, CRC error (all are off)
- Position readout:** -635,094 deg

Annotations on the right side of the image point to these specific elements:

- Data read from the encoder
- Position data length
- Nominator, denominator and units for position readout
- Multiturn counter
- Singleturn position
- Status lights
- Position readout

Encoder status

Readout of detailed status bits and auxiliary values.



The screenshot shows the 'Encoder Status' tab in the RLS E201-9B software. The interface displays the following data and controls:

- Detailed status bits read from the encoder:** 0000000000000000
- Temperature:** 52
- Signal Level:** 2092
- Velocity:** 0
- Position:** -221,514 deg
- Encoder Status:**
 - Error:** Sensor Init, Sensor Err, Ext Magn Field, Signal High, Signal Low, Signal Lost
 - Warning:** No Calibration, Wrong Reading, Accelerat Err, Temperature, Supply Err, Multiturn Err
- Install dimension:** 806 µm
- Graph:** A line graph showing the gap distance over ring rotation from 0 to 360 degrees. The y-axis ranges from 600 to 1,100. The graph shows a blue line fluctuating around 800, with red and orange horizontal lines indicating error and warning limits.

Annotations on the right side of the image point to these specific elements:

- Detailed status bits read from the encoder
- Visualized status bits
- Distance between ring surface and readhead mounting surface
- Plot the gap distance over the ring rotation
- Error and warning limits

Encoder settings

Zero position offset

Factory settings (do not change)

Multiturn error wake-up tolerance arc length*

Write protect*

Multiturn counter preset

Automatic zero preset

Reset all parameters to factory settings (except Write protect)

* Parameters available with later encoder firmware revisions.

Setting multiturn counter and clearing Multiturn counter error

Write the desired number and press Apply. Value must be between 0 and 65535.

Running encoder self-calibration

Partial arc settings (same or equal to mechanical movement, min. 180°)*

Send command to the encoder*

Progress bar (10 sec countdown)

Encoder back to normal operation

Reasons for calibration failure

Calibration completed successfully

Numerical results of calibration*

* Parameters available with later encoder firmware revisions.

If measured ring eccentricity is too big (> 0.2 mm), it is recommended to adjust mechanical assembly.

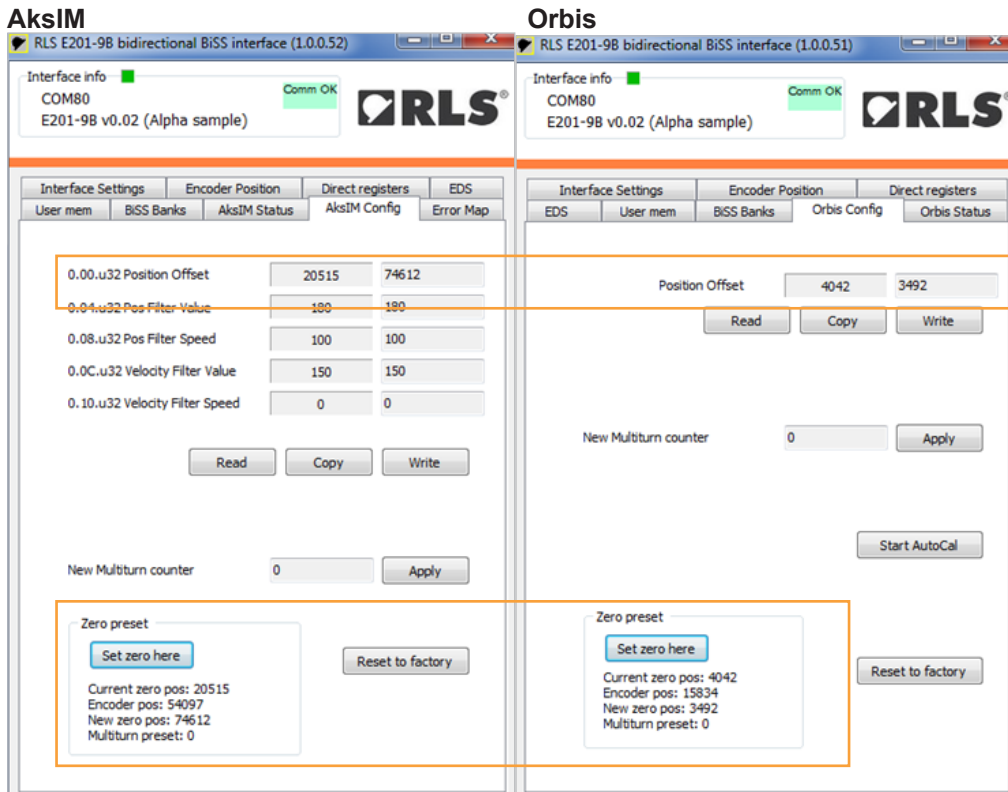
Setting encoder zero position

1. Manual

Switch to tab AksIM Config or Orbis Config. Read current zero offset. Write desired position offset (unit is encoder counts). Value must be between 0 and max encoder count value. Press Write button. This number will be subtracted from the absolute encoder position.

2. Automatic

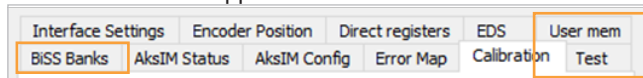
Rotate the encoder to mechanical position, where zero is required. Press the button "Set zero here". Multiturn and singleturn position will be set to zero on this mechanical position.



Advanced functions

Press CTRL + A

Additional tabs will appear:



BiSS Banks are used to check the raw data contents of all registers on the encoder.

User mem offers access to free memory for storage of custom data into the encoder.

Test allows recording the encoder data for further analysis.

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Document issues

Issue	Date	Page	Corrections made
1	6. 9. 2018	-	New document

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