

# BISS-C Encoder interface

Please contact NiLAB to buy the programming cable and software to change the standard configuration.

Encoder BISS-C position corresponds to single turn absolute value where single turn is related to 60mm of linear displacement.

## Standard configuration

Interpolator is set to 8192 pulses/revolution corresponding to  $60/8192 = 7,32$  microns of resolution  
This resolution is on the AB TTL 5V digital output signal.

The screenshot displays the BISS-C Encoder interface software with the following configuration settings:

- Read Sensor:** Decimal, Period Counter: 0, Singleturn Data: 0, Error: Off, Warning: Off, Stop on Error: Off, Continuous Read: On, Data Display: Off, Save to File: Off, Cycle Count: 1.
- Signal Conditioning:** Interpolator Setup, Interface Setup, Hex Editor.
- Converter Functions:** Resolution: 8192 (0x03), Hysteresis: 0.7031° (0x04).
- Signal Monitoring:** Amplitude Monitoring: 1.0<->4.5 Vpp (0x04), Frequency Error: Off, Amplitude Error: Off.
- Incremental Signals:** Output A, B, Z: Normal (0x00), Output Delay A, B, Z: immediately (0x00), Zero Signal Position: 0.00° (0x00), Zero Signal Length: 90° (0x00), Zero Signal Logic: B=1, A=1 (0x00), Reset Enable: Off, Code Direction: Off.
- Maximum Possible Converter Frequency:** FCTR: 0x0004, Max. Input Frequency: 170.90 Hz, Min. Transition Distance: 0.44 µsec, Oscillator Frequency (MHz): 56.0 min. to 90.0 max.
- Bottom Panel:** Read RAM, Write RAM, Write Immediately: On, CRC: 0xE4, Save Config, Load Config, Write EEPROM.
- Interaction Feedback:** 1. Loading configuration succeeded, 0. GUI initialized.
- Online Help:** BISS C with CDS.

Additional resolution can be selected : 4096, 2048, 1024 pulses/revolution.

The screenshot shows a software interface for configuring a BiSS C sensor. At the top, there are fields for 'Read Sensor' (Decimal) and 'Singleturn Data', both showing '0'. There are also checkboxes for 'Error' and 'Warning', and a 'Cycle Count' field set to '1'. Below this is a navigation bar with tabs for 'Signal Conditioning', 'Interpolator Setup', 'Interface Setup', and 'Hex Editor'. The 'Interface Setup' tab is active, showing various configuration options: 'Protocol Version' (BiSS C), 'Protocol Options' (BiSS C), 'Period Counter' (none), 'SSi Data Format' (binary coded), 'Timeout TIMO' (ca. 20 µs), 'CRC Polynomial - Status Messages' (0x43 - nE, nW), 'Timeout TOA' (adaptive), and 'Zero Bit' (no zero bit). There are also fields for 'BiSS Identifier ROM' (all zeros) and 'BiSS Identifier' (4E, 51, 43, 35, C0, 83, 69, 43). To the right, the 'Test Functions' section has 'Test Mode' (OFF) and 'Analog Test Mode' (disabled). Below that, 'Register Access Safety Level' is set to 0, with read/write permissions for Bank 0, Bank 1..7, Bank 8..15, and Bank 0x40..7F. At the bottom, there are buttons for 'Read RAM', 'Write RAM', 'Write Immediately' (checked), 'CRC' (0xE4), 'Save Config', 'Load Config', and 'Write EEPROM'. A status bar at the very bottom shows 'Interaction Feedback' with messages: '1. Loading configuration succeeded' and '0. GUI initialized', and 'Online Help'.

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