

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. At the top, there are controls for 'Read Sensor' (Decimal), 'Period Counter' (0), and 'Singleturn Data' (0). There are also buttons for 'Error' and 'Warning', and checkboxes for 'Stop on Error' (Off), 'Continuous Read' (On), and 'Data Display' (Off). A 'Save to File' checkbox is also present, along with a 'Cycle Count' field set to 1.

The main configuration area is divided into four panels:

- Converter Functions:** Resolution is set to 8192 (0x03) and Hysteresis is set to 0.7031° (0x04).
- Signal Monitoring:** Amplitude Monitoring is set to 1.0<->4.5 Vpp (0x04). Frequency Error and Amplitude Error are both disabled.
- Incremental Signals:** Output A, B, Z is set to Normal (0x00). Output Delay A, B, Z is set to immediately (0x00). Zero Signal Position is 0.00° (0x00), Zero Signal Length is 90° (0x00), and Zero Signal Logic is B=1, A=1 (0x00). Reset Enable and Code Direction are both disabled.
- Maximum Possible Converter Frequency:** FCTR is 0x0004, Max. Input Frequency is 170.90 Hz, Min. Transition Distance is 0.44 µsec, and Oscillator Frequency (MHz) is 56.0 min. to 90.0 max.

At the bottom, there are buttons for 'Read RAM', 'Write RAM', 'Write Immediately' (On), 'CRC' (0xE4), 'Save Config', 'Load Config', and 'Write EEPROM'. An 'Interaction Feedback' section shows '1. Loading configuration succeeded' and '0. GUI initialized'. An 'Online Help' button is also present. The bottom right corner indicates 'BISS C with CDS'.

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

Read Sensor Period Counter: 0 Singleturn Data: 0 Error: Warning: Stop on Error: On Continuous Read: On Data Display: On Save to File: On Cycle Count: 1

Signal Conditioning **Interpolator Setup** **Interface Setup** **Hex Editor**

Interface Setup

Protocol Version: BiSS C 0x00 Protocol Options: BiSS C 0x01 Period Counter: none 0x00

SSI Data Format: binary coded 0x00 Timeout TIMO: ca. 20 µs 0x00 CRC Polynomial - Status Messages: 0x43 - nE, nW 0x01

Timeout TOA: adaptive 0x01 Zero Bit: no zero bit 0x01

BiSS Identifier ROM: 00 00 00 00 00 00 00 00

BiSS Identifier: 4E 51 43 35 C0 83 69 43 IC-NQC 5

Test Functions

Test Mode: OFF 0x00 Analog Test Mode: Enable

PIN A: A PIN B: B PIN SDA: SDA PIN SCL: SCL

Register Access Safety Level: 0

Bank 0 Config. Dat: read / write Bank 1..7 EDS: read / write Bank 8..15 User Data: read / write 0x40..7F BiSS ID: read / write

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

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