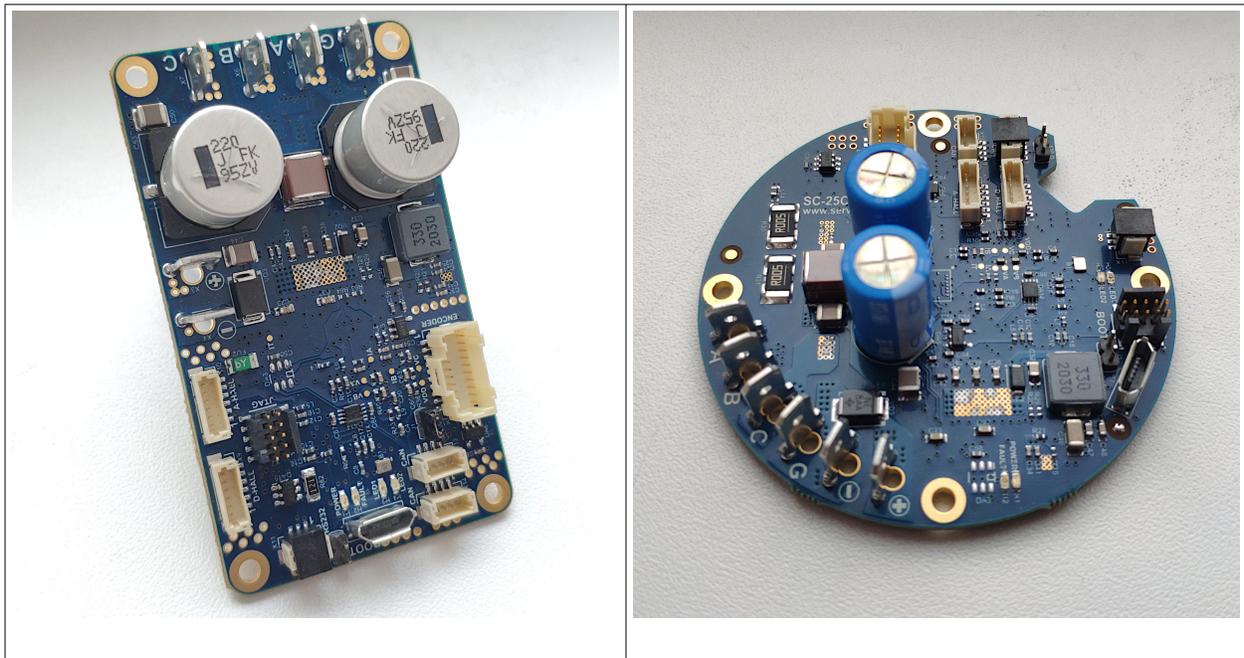


Connecting CUI Devices AMT233B-V encoder to Servosila SC-25 Brushless Motor Controller

Technical Note

Revision A



www.servosila.com/en/motion-control

Table of Contents

Introduction.....	3
SPI vs. SSI.....	3
SPI configuration settings.....	4

Introduction

This technical note is written in regards to CUI Devices AMT233B-V absolute encoder, a 14bit absolute encoder.

SPI vs. SSI

The encoder provides a “single-ended SSI” interface which actually more resembles SPI than SSI (no RS422 compatibility).

The encoder **should be connected to the SPI interface** of the Servosila SC-25 motor controllers rather than to the SSI/BISS-C interface.

When making a cable, refer to the datasheets of both devices to match SPI pins of the corresponding connectors.

SPI configuration settings

The following configuration settings of the SPI interface of Servosila SC-25 controllers have been found to work with the CUI Devices AMT233B-V encoders (**14 bits resolution**).

Configuration Parameter	Value	Units
Payload: Moment of Inertia (Rotor and Payload)	0.000005	kg*m2
Hall Sensors	0	0 or 1
Motor Encoder	0	-
Servo Encoder	3	-
Gearbox: Reduction Ratio	1	-
> Control Laws		
> Features		
> Work Zone		
> Brake		
> Fault Management		
> Peripheral: Hall Sensors		
> Peripheral: Quadrature Encoder		
> Peripheral: SSI/BISS-C Encoder		
▼ Peripheral: SPI Encoder		
counts per revolution	16384	counts
encoder bias vs. electrical position	0	counts
inverted installation	0	0 or 1
request frequency: divider	1	-
clock frequency: divider	22	-
clock polarity	0	0 or 1
clock phase	0	0 or 1
total number of bits in packet	16	-
POSITION field: start bit	2	-
POSITION field: length	14	-
POSITION field: is inverted	0	0 or 1
CRC field: is used	0	0 or 1
CRC field: start bit	0	-
CRC field: length	0	-
CRC field: is inverted	0	0 or 1
CRC input: start bit	0	-
CRC input: length	0	-
CRC input: is inverted	0	0 or 1
ERROR bit: is used	0	0 or 1
ERROR bit: bit position	0	-
ERROR bit: is inverted	0	0 or 1
WARN bit: is used	0	0 or 1
WARN bit: bit position	0	-
WARN bit: is inverted	0	0 or 1
> Peripheral: PWM Encoder		

For **12bit devices**:

- Change “counts per revolution”: 16384 → 4096
- Change “total number of bits in packets”: 16 → 14
- Change “POSITION field: length”: 14 → 12



*Servo drives designed around SERVOSILA SC-25C
brushless motor controllers*

YouTube: <http://www.youtube.com/user/servosila>

www.servosila.com/en/motion-control