AUDIOMS AUTOMATIKA SED2 Single Ended to Differential Encoder Interface User Manual

Contents

AUDIOMS AUTOMATIKA SED2 Single Ended to Differential Encoder Interface

FAQ

- **Q:** How do I power the incremental encoder when connected to the SED2 interface?
  - **A:** The incremental encoder is powered by a 5V power source provided by the DCS-100-A servo driver via the Encoder port on the DCS-100-A servo driver.
- **Q:** What should I do to reduce electromagnetic interference?
  - **A:** To reduce electromagnetic interference, use shielded cables for the connection between the SED2 encoder interface and the DCS-100-A servo driver. Additionally, keep the cable length as short as possible.

Description

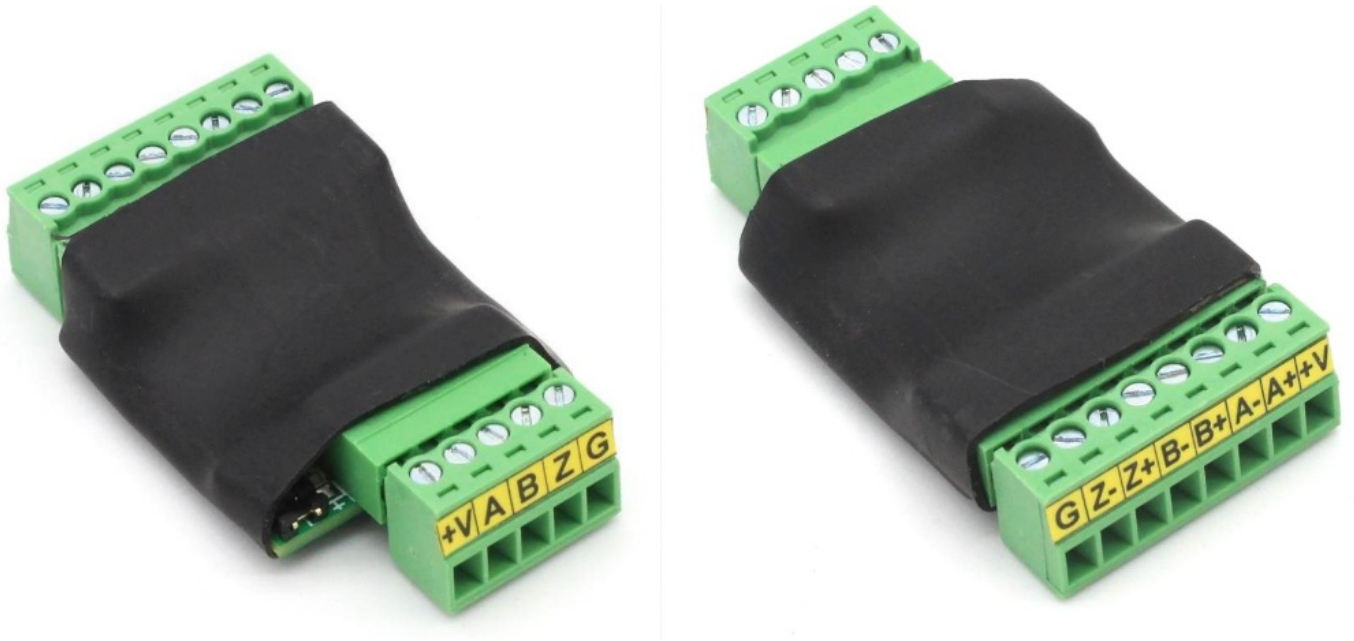

Figure 1.1 Encoder interface SED2

Single-ended to differential encoder interface SED2 (Figure 1.1) is a line driver that converts the single-ended input signals (A, B and Z) from the incremental encoder into differential (complementary) outputs (A+, A-, B+, B-, Z+ and Z-). It is intended for supply voltages of incremental encoders in the range from 5V to 24V, maximum up to 30V (High Transistor Logic – HTL).

The encoder interface SED2 is used for the connection of single-ended (optionally differential) incremental encoders to the Audioms Automatika DC servo driver DCS-3010(-HV) or to the DCS-100-A v.3 servo driver, as well as to systems from other manufacturers that require an encoder interface.

SED2 Encoder interface connection

The single-ended to differential encoder interface SED2 has 2 connectors on it (Figure 2.1):

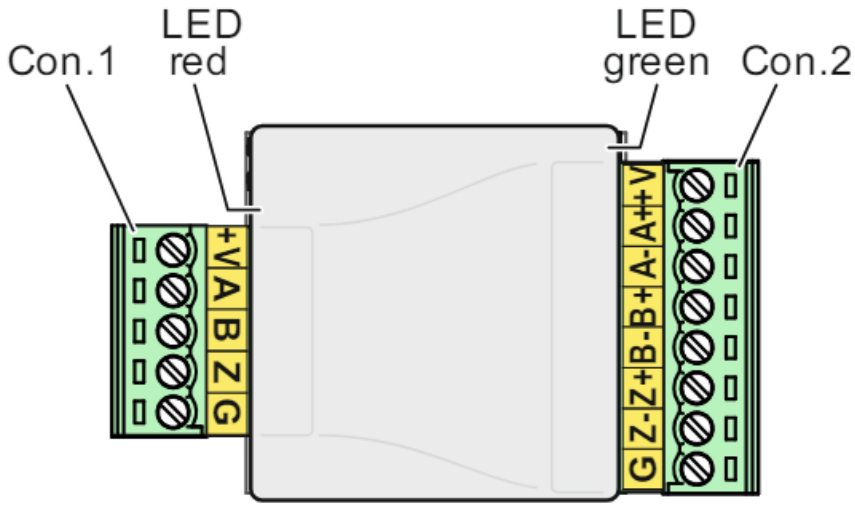

Figure 2.1 Position of the connector on the encoder interface SED2

- Detachable 5-pole connector for connection with incremental encoder (Con.1 – Figure 2.1). Table 2.1 gives the pinout of the connector for connecting the incremental encoder. Pull-up resistors of 4.7 kΩ are placed on inputs A, B and Z, and
- Detachable 8-pin connector (Con.2 – Figure 2.1) on which differential signals from the incremental encoder are

available in the form of A+, A-, B+, B-, Z+ and Z-. Table 2.2 provides a description of the pins of this connector.

The encoder interface SED2 has built-in 2 indicator LEDs, red on the side of connector Con.1 and green on the side of connector Con.2 (Figure 2.1).

Table 2.1: Description of the pins of the 5-pin connector (Con.1)

Pin No.	Name	Description	Function
1	G	GND – Encoder	Incremental encoder connection
2	Z	Z encoder channel – Input	
3	B	B encoder channel – Input	
4	A	A encoder channel – Input	
5	+V	Encoder power supply	

Table 2.2: Description of the pins of the 8-pin connector (Con.2)

Pin No.	Name	Description	Function
1	+V	Encoder power supply 5V to 24V	Output differential encoder signals
2	A+	A+ encoder channel – Output	
3	A-	A- encoder channel – Output	
4	B+	B+ encoder channel – Output	
5	B-	B- encoder channel – Output	
6	Z+	Z+ encoder channel – Output	
7	Z-	Z- encoder channel – Output	
8	GND	GND	

Connecting the encoder interface SED2 to the DCS-100-A servo driver

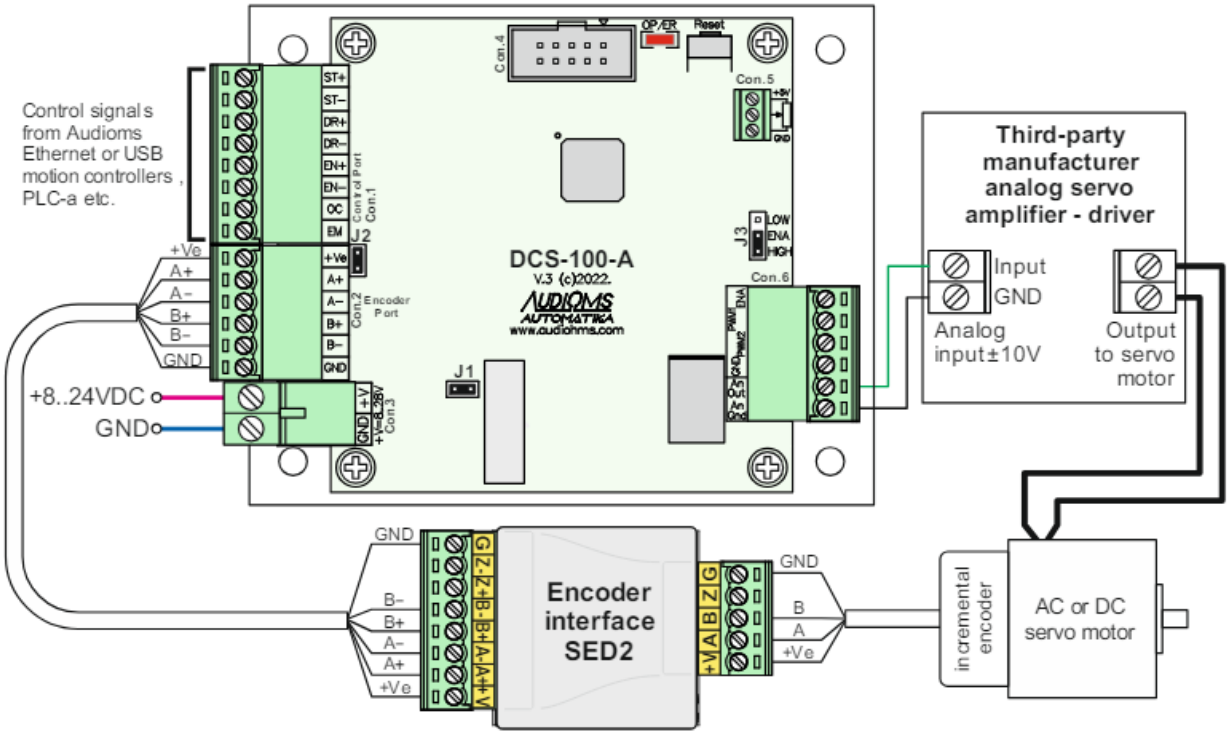

Figure 2.2 Connecting the encoder interface SED2 to the control system with the DCS-100-A servo driver

Figure 2.2 gives an example of connecting a single-ended incremental encoder to a DCS-100-A servo driver via the SED2 encoder interface. The incremental encoder is powered by a 5V power source provided by the DCS-100-A servo driver via the Encoder port (Con.2 on the DCS-100-A servo driver).

NOTE: It is recommended that the length of the cable between the incremental encoder and the SED2 encoder interface be as short as possible.

In order to reduce the impact of high-frequency electromagnetic interference, it is recommended to use a shielded cable for the connection of the SED2 encoder interface with the DCS-100-A servo driver. The encoder connection cable should not be longer than the specific application requires.

Contact

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- Ver. 1.0, April 2024, Initial revision

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Documents / Resources

	[AUDIOMS AUTOMATIKA SED2 Single Ended to Differential Encoder Interface](#) [pdf] User Manual DCS-3010 -HV, DCS-100-A v.3, SED2 Single Ended to Differential Encoder Interface, SED2, SED2 Encoder Interface, Single Ended to Differential Encoder Interface, Differential Encoder Interface, Encoder Interface, Interface

References

- [User Manual](#)