



# Signal Converter

## K23-SSI/Rx/IU-C

- Multifunction device with operating modes for incremental rotary encoders, SSI absolute rotary encoders, and rotary encoders with start/stop interface
- 16 bit analog output, configurable for voltage or current operations
- USB interface and RS232/RS485 interface for configuration and readout
- Extremely short conversion times
- User-definable, non-linear characteristic curve with 24 interpolation points
- Auxiliary voltage output 5 V DC and 24 V DC for rotary encoder supply
- Numerous connection options due to six control inputs and six control outputs

SSI/analog signal converter



### Function

The K23-SSI/Rx/IU-C is a small and inexpensive, but extremely powerful signal converter for industrial applications, where SSI telegrams from sensors or encoders are converted into an analog signal or a serial RS-232/RS-485 format. The device is contained in a compact housing for rail mounting.

The device features

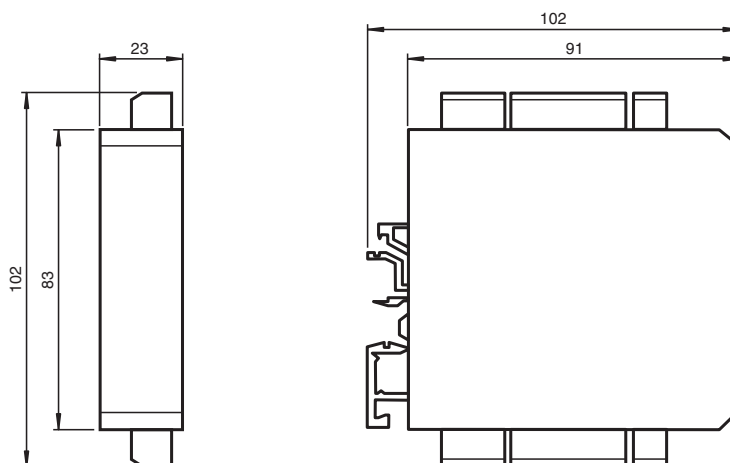
- screw terminals
- a USB connection
- 6 user-configurable digital control inputs
- 6 user-configurable digital preset outputs

#### Applicable encoders and sensors

Encoders and all comparable sensors with SSI interface (10 ... 32 bit binary or Gray code), either in leading mode (the device generates the clock signal itself), or in guided mode (the device switches to an existing clock signal).

Incremental input signals are processed in frequency converter mode or counter mode. In start-stop mode, transonic or magnetostrictive displacement sensors can be connected.

### Dimensions



### Technical Data

#### Indicators/operating means

LED green status display

#### Electrical specifications

Release date: 2022-01-21 Date of issue: 2022-01-21 Filename: 70114663\_eng.pdf

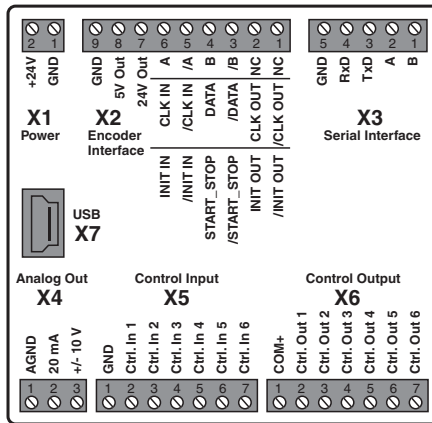
## Technical Data

Fusing		External: T 0.5 A Reverse polarity protection
Operating voltage	$U_B$	18 ... 30 V DC
Operating current	$I_B$	approx. 50 mA (Unladen)
Supply		Encoder: 5 VDC/24 VDC Max. 250 mA
<b>Interface 1</b>		
Interface type		Serial RS-232, RS-485
Transfer rate		9600, 19200, or 38400 baud
<b>Interface 2</b>		
Connection of		Clock, /Clock, Data, /Data
Interface type		SSI Managing or managed operations
Frequency range		max. 1 MHz
Load current		max. 3 mA / $R_i > 10 \text{ k}\Omega$ / 10 pF
Resolution		10 bits ... 32 bits
Data format		Binary code or gray code
<b>Interface 3</b>		
Interface type		Start/Stop RS422 input: 1 x (Start_Stop, /Start_Stop); 1x (ext. Init_In, ext. /Init_In) RS422 output: 1 x (Init_Out, /Init_Out)
Resolution		Depends on the speed of the encoder wave guide
Frequency		Init pulse width: 1 s ... 9 $\mu$ s (adjustable) Init pulse frequency: 62.5 ... 5000 Hz (adjustable) Time measured via pulse frequencies: 48 MHz
<b>Input 1</b>		
Input type		Incremental
Input format		RS422, TTL, HTL differential, HTL PNP, or HTL NPN
Connection		Lanes: A, /A, B, /B
Input frequency		RS422: max. 1 MHz (RS422 differential signal > 0.5 V) HTL differential: max. 500 kHz (HTL differential signal > 2 V) TTL/HTL (PNP/NPN): max. 250 kHz
Load current		Max. 6 mA/ $R_i > 5 \text{ k}\Omega/10 \text{ pF}$
<b>Input 2</b>		
Input type		6 x Control input
Input format		HTL, PNP (low: 0 V ... 3 V, high: 9 V ... 30 V)
Input frequency		max. 10 kHz
Load current		Max. 2 mA/ $R_i > 15 \text{ k}\Omega/470 \text{ pF}$
<b>Output 1</b>		
Number/Type		Analog output Configurable as Current or voltage output
Current		0/4 mA ... 20 mA (Max. load: 270 $\Omega$ )
Voltage		-10 ... 10 V (Max. 2 mA)
Resolution		16 bit $\pm 0.1 \%$ at 0 °C ... 45 °C $\pm 0.15 \%$ at -20 °C ... 0 °C und 45 °C ... 60 °C
Response time		< 1 ms
<b>Output 2</b>		
Output type		6 x Control output
Output format		PNP
Output voltage		5 V ... 30 V (Depending on voltage at COM+)
Output rated operating current		max. 200 mA
Response time		< 1 ms
<b>Standard conformity</b>		
Electromagnetic compatibility		EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61326-1
<b>Ambient conditions</b>		
Operating temperature		-20 ... 60 °C (-4 ... 140 °F) (noncondensing)

**Technical Data**

Storage temperature	-25 ... 75 °C (-13 ... 167 °F) (noncondensing)
<b>Mechanical specifications</b>	
Degree of protection	IP20
Connection	screw terminals , Max. core cross section: 1.5 mm <sup>2</sup> / AWG 16
Material	
Housing	plastic
Installation	on 35 mm DIN mounting rail acc. to EN 60715:2001
Mass	approx. 100 g
Dimensions	(W x H x D) 23 mm x 102 mm x 102 mm

**Connection Assignment**



**Connection**

**Note**  
Operate the device with shielded cables only!

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