



Signal Converter

K23-SSI/USB/25B-C

- Multifunction device with operating modes for incremental rotary encoders, SSI absolute rotary encoders, and rotary encoders with start/stop interface
- USB interface for configuring and reading
- 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

SSI/parallel signal converter

Function

The K23-SSI/USB/25B-C is a small and inexpensive, but extremely powerful signal converter for industrial applications, where SSI telegrams from sensors or encoders are converted into parallel signals.

The device is contained in a compact housing for rail mounting.

The device features

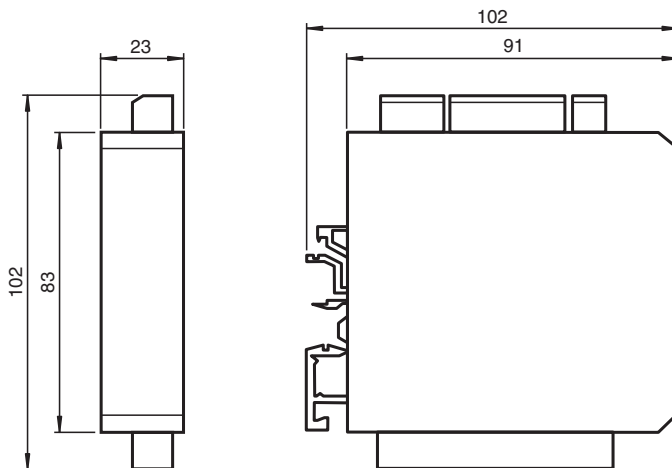
- screw terminals
- a USB connection
- a 25-pin Sub-D socket
- 3 user-configurable digital control inputs

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

Functional safety related parameters	
MTBF	56.4 a (continuous operation at 60°C)
Indicators/operating means	
LED green	status display
Electrical specifications	

Release date: 2022-04-27 Date of issue: 2022-04-27 Filename: 70132674_eng.pdf

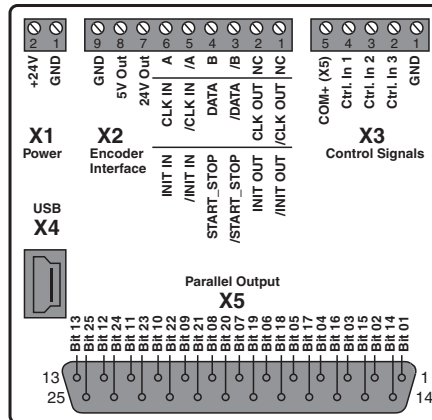
Technical Data

Fusing		External: T 0.5 A Reverse polarity protection
Operating voltage	U_B	10 ... 30 V DC
Operating current	I_B	approx. 30 mA (Unladen)
Supply		Rotary encoder: 5 V DC and 24 V DC (approx. 1 V less than U_B) Max. 250 mA
Interface 1		
Interface type		Mini USB
Transfer rate		115,200 baud
Flow control		8none1
Interface 2		
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
Interface 3		
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 μs (adjustable) Init pulse frequency: 62.5 ... 5000 Hz (adjustable) Time measured via pulse frequencies: 48 MHz
Input 1		
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/ $R_i > 5 \text{ k}\Omega/10 \text{ pF}$
Input 2		
Input type		3 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/ $R_i > 15 \text{ k}\Omega/470 \text{ pF}$
Output		
Number/Type		Parallel
Signal		Push/pull
Output rated operating current		Gray-Code, Binary-Code, BCD-Code
Resolution		25 bit
Contact loading		max. 35 V on COM+ (Short-circuit resistance up to 27 V) max. 20 kA at 24 V ($R_i = 600 \Omega$)
Sampling time		0.001 s ... 9.999 s (adjustable)
Ambient conditions		
Operating temperature		-20 ... 60 °C (-4 ... 140 °F) (noncondensing)
Storage temperature		-25 ... 75 °C (-13 ... 167 °F) (noncondensing)
Mechanical specifications		
Housing width		23 mm
Housing height		102 mm
Housing depth		102 mm
Degree of protection		IP20

Technical Data

Connection	screw terminals 1.5 mm ² , AWG 16 25-pin Sub-D socket
Material	
Housing	plastic
Installation	on 35 mm DIN mounting rail acc. to EN 60715:2001
Mass	approx. 100 g

Connection Assignment



Connection

Note

Operate the device with shielded cables only!