Signal converter

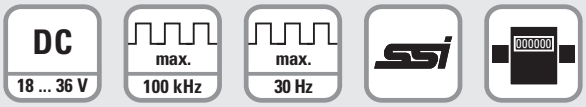
Signal converter	SK 1S-1P	SSI - Parallel



The converter module been designed for industrial applications that require converting a sensor or encoder signal available in SSI format into a parallel signal.

This device has 12 screw terminal connections and a 37-pin (parallel) Sub-D socket.

The module can be easily and conveniently mounted in a cabinet on a standard DIN rail.



Characteristics

- Input: synchronous serial interface SSI.
- Output: parallel, max. 26 bits, 8 .. 30 V, max. 100 mA, short-circuit proof and bus-capable.
- Master/Slave operation switchable.
- Switchable Gray/Binary input code.
- Switchable Gray/Binary/BCD output code.
- Hold and OE inputs.
- Strobe output.
- Housing for DIN rail mounting EN 50022.
- Connection with plug-in screw terminals and 37-pin Sub-D socket.

Benefits

- SSI encoders for retrofitting old controls with parallel input.

Order no.

Signal converter	**8.SK.1S-1P**	*Scope of delivery* - Signal converter - Manual

© Fritz Kübler GmbH, subject to errors and changes. 05/2023

Signal converter	SK 1S-1P	SSI - Parallel

Technical data

Electrical characteristics

Power supply	18 ... 36 V DC 5 V DC ±10% optional 12 V DC ±10% optional
Power consumption (no load)	70 mA (18 .. 36 V DC) 250 mA (5 V DC) 110 mA (12 V DC)
Isolation voltage	500 V / 1 min
Type of connection	plug-in screw terminals and Sub-D female contacts, 37-pin

Mechanical characteristics

Material	housing	Polycarbonate
Mounting		35 mm DIN rail (acc. to EN 50022)
Dimensions (W x H x D)		45 x 118 x 137.5 mm [1.77 x 4.65 x 5.41“]
Protection		IP20
Weight		approx. 300 g [10.58 oz]
Working temperature		0 °C ... +50 °C [+32 °F ... +122 °F] non condensing
Storage temperature		-20 °C ... +70 °C [-4 °F ... +158 °F] non condensing
Relative humidity		< 80 % (non condensing)
Protection class		protection class II
Application area		pollution level 2 overvoltage category II

Approvals

CE compliant in accordance with	
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU
UKCA compliant in accordance with	
EMC Regulations	S.I. 2016/1091
RoHS Regulations	S.I. 2012/3032

SSI signal input

Resolution		10 ... 26 bits
Code type		Binary or Gray
Data input		RS422/RS485 receiver
Clock input		RS422/RS485 receiver
Clock output		RS422/RS485 driver
Master operation	clock frequency	internal, 100 kHz
	data entry	app. 30 values/sec
Slave operation	clock frequency	internal, max. 125 kHz
	delay between pulse trains	min 500 µs
	data entry	app. 30 values/sec

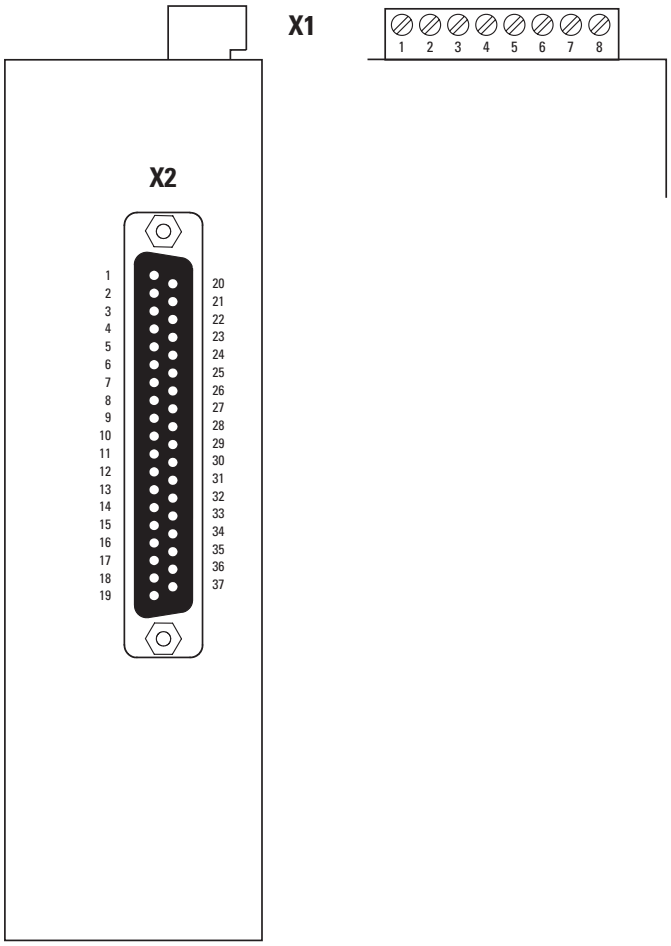
Parallel outputs

Logic	PNP, 8 ... 30 V 100 mA, short-circuit proof
Isolation voltage	3 kV / 1 min

3 Fritz Kübler GmbH, subject to errors and changes. 05/2023

Signal converter	SK 1S-1P	SSI - Parallel

Terminal assignment



Interface	Function	Screw terminals, 8-pin								
Connection X1		Signal:	0 V	+V	⏚	GND	Data-	Data+	Clk+	Clk-
	Power supply	Pin:	7	8	6	–	–	–	–	–
	SSI input	Pin:	–	–	–	5	4	3	2	1

Interface	Function	Sub-D female contacts, 37-pin									
Connection X2	Parallel outputs	Signal:	Vs	Vs	Vs	Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6
		Pin:	1	20	2	21	3	22	4	23	5	24
		Signal:	Bit 7	Bit 8	Bit 9	Bit 10	Bit 11	Bit 12	Bit 13	Bit 14	Bit 15	Bit 16
		Pin:	6	25	7	26	8	27	9	28	10	29
		Signal:	Bit 17	Bit 18	Bit 19	Bit 20	Bit 21	Bit 23	Bit 22	Bit 24	Bit 25	Reserve
		Pin:	11	30	12	31	13	32	14	33	15	34
		Signal:	Error 2	Strobe	Error 1	Output Enable		Hold	GND	GND		
		Pin:	16	35	17	36		18	37	19		

+V :	Power supply
0 V :	Encoder power supply ground GND (0 V)
GND :	Power supply ground GND (0 V) SSI-GND
Data+, Data- :	Data +/- (SSI)
Clk+, Clk- :	Clock +/- (SSI)

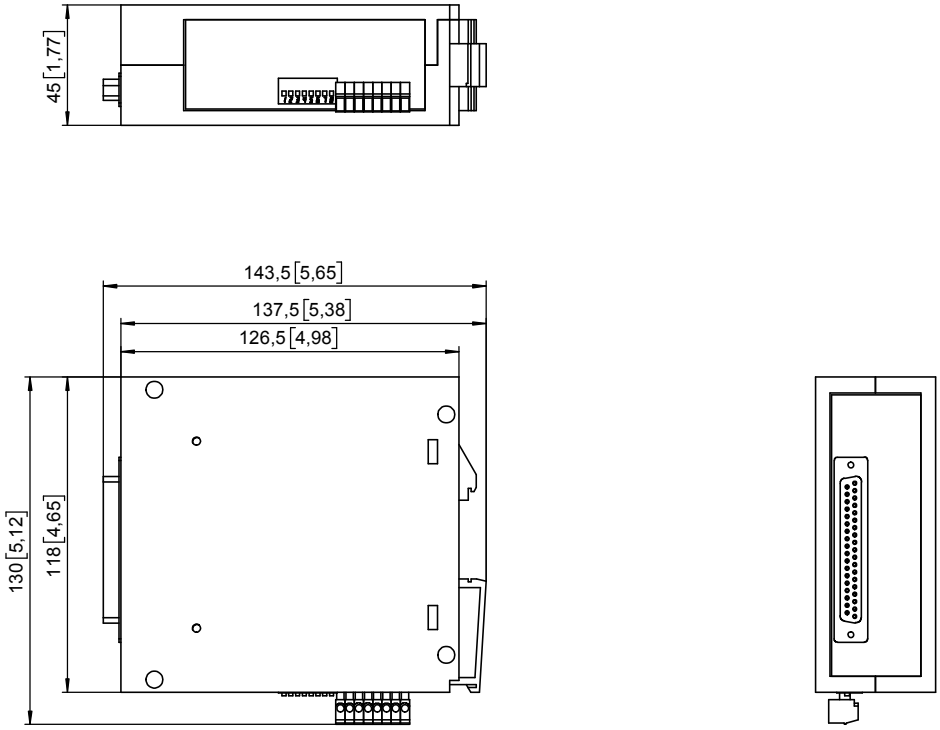
Vs :	Supply voltage output driver
Bit 0 ... 25 :	Signal outputs
Reserve :	Bus-capable signal lines (for extensions)
Error 1, 2 :	Error signal output (1 = SSI, 2 = output driver)
Strobe :	Output take-over pulses
Output Enable :	Input bus control
Hold :	Input holding value (up to max. 30 ms)

© Fritz Kübler GmbH, subject to errors and changes. 05/2023

Signal converter	SK 1S-1P	SSI - Parallel

Dimensions

Dimensions in mm [inch]



3 Fritz Kübler GmbH, subject to errors and changes. 05/2023