

Signal converter

Signal converter	SK 1S-1A2RS	SSI - Analog, RS232 / RS485
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The signal splitter SK 1S-1A2RS has been designed especially for industrial applications that require converting a sensor or encoder information available in SSI format into an analog signal or into a serial RS232/RS485 format. This device has 12 screw terminal connections and a 9-pin Sub-D socket.

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



DC 18 ... 30 V Power supply	max. 1 MHz Input frequency	mA, V Analog output	RS 232 / 485 Interfaces	SSI SSI input	DIN-rail mounting
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Characteristics

- Allows connecting all sensors and absolute encoders with SSI interface.
- RS232- / RS485 interface for serial read-out of the sensor information.
- Scalable analog output configurable for voltage or current operation.
- Additional functions such as bit blanking, round loop function, etc.
- Specification possibility for any characteristic linearization curves.
- Easy programming by TEACH function or with a PC.
- Auxiliary voltage output 5 V DC for encoder supply.

Benefits

- Integration of fast SSI inputs in the PLC.
- Absolute SSI monitoring possible also with an analog input.
- Usable in combination with SSI encoders and sensors.
- Read-out possible also via RS232/485.

Order no.	
Signal splitter	8.SK.1S-1A2RS <i>Scope of delivery</i> - Signal splitter - Manual

Connection technology	Order no.
Cordset, pre-assembled	Sub-D male contacts, 9-pin, with cable outlet 70° single-ended 2 m [6.56'] PVC cable ¹⁾
	8.0000.6V00.0002.0082
Connector, self-assembly	Sub-D male contacts, 9-pin, with cable outlet 70°
	8.0000.514A.0000

Further accessories can be found in the accessories section or in the accessories area of our website at: www.kuebler.com/accessories.
Additional connectors can be found in the connection technology section or in the connection technology area of our website at: www.kuebler.com/connection_technology.
You will find an overview of our systems and components for Functional Safety and the corresponding software in the safety technology section or under www.kuebler.com/safety.

1) Other lengths available.

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Technical data

Electrical characteristics	
Power supply	18 ... 30 V DC (residual ripple ≤ 10 % at 24 V DC)
Power consumption (no load)	approx. 170 mA at 24 V (auxiliary voltage)
Reverse polarity protection of the power supply	yes
Type of connection	screw terminal, 1.5 mm ²
Encoder supply	output voltage + 5.5 V DC output current max. 150 mA
Conformity and standards	EMC guideline 2014/30/EU EN 61000-6-2, EN 61000-6-3, EN 61000-6-4 RoHS guideline 2011/65/EU EN 50581

Mechanical characteristics	
Material	housing plastic
Mounting	35 mm DIN rail (acc. to EN 60715)
Dimensions (W x H x D)	40 x 79 x 91 mm [1.57 x 3.11 x 3.58"]
Protection	IP20
Weight	approx. 190 g [6.70 oz]
Working temperature	0°C ... +45°C [+32°F ... +113°F] non condensing
Storage temperature	-25°C ... +70°C [-13°F ... +158°F] non condensing
Failure rate (MTBF in years)	65.6 a continuous operation at 60°C [140°F]

SSI interface X1 + X2	
Inputs (SSI, TTL)	TTL differential, RS422
Frequency range	100 Hz ... 1 MHz
Resolution	13, 21 or 25 bit
SSI pause time	min. 4 x clock
Type of connection	screw terminals, 1.5 mm ²

Control input	
Input logic	PNP, active high
Signal level	HTL LOW: 0 ... 3 V, HIGH: 10 ... 30 V
Function	Set/Preset
Pulse duration	min. 10 ms
Internal resistance	Ri ≈ 5 kOhm
Type of connection	screw terminals, 1.5 mm ²

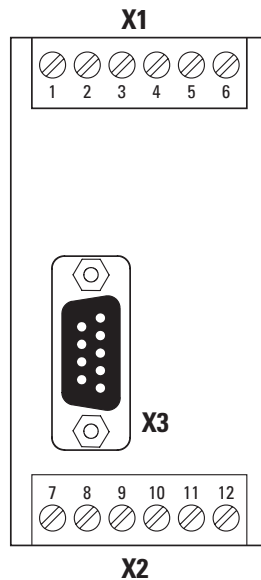
Analog output X1 + X2	
Voltage	10 ... +10 V / 0 ... 10 V (max. 2 mA)
Current	0 ... 20 mA / 4 ... 20 mA (load: max. 270 Ohm)
Resolution	14 Bit (± 13 Bit)
Accuracy input	0.1 %
Settling time	2 ms
Type of connection	screw terminals, 1.5 mm ²

Serial interface X3	
Format	RS232 or RS485
Baud rate (switchable)	600, 1200, 2400, 4800, 9600 (standard), 19200, 38400 Baud
Operating modes	PC mode or Printer mode
Type of connection	Sub-D female contacts, 9-pin

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Terminal assignment



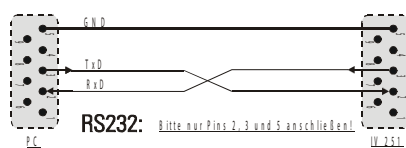
Interface	Function	Screw terminals, 2 x 6-pin												
Connection X1, X2	Signal:	0 V	+V	0 V	+V	D+	D-	Clk+	Clk-	0 V	V _{out}	I _{out}	Set	
	Power supply	Pin :	6	5	–	–	–	–	–	–	–	–	–	10
	SSI input	Pin :	–	–	12	11	9	8	3	2	–	–	–	–
	Analog output	Pin :	–	–	–	–	–	–	–	–	4	1	7	–

Interface	Function	Sub-D female contacts, 9-pin									
Connection X3	Signal:	0 V	TxD	RxD	T+	T-	R+	R-	–	–	
	RS232	Pin :	5	3	2	–	–	–	–	–	
	RS485 (2-wire)	Pin :	–	–	–	8	7	–	–	–	
	RS485 (4-wire)	Pin :	–	–	–	8	7	6	1	–	

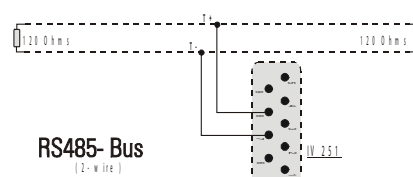
- +V : Power supply
- 0 V : Encoder power supply ground GND (0 V)
- D+, D- : Data +/- (SSI)
- Clk+, Clk- : Clock +/- (SSI)
- T+, T- : Transmit +/- (RS485)
- R+, R- : Receive +/- (RS485)
- TxD : Transmit (RS232)
- RxD : Receive (RS232)
- V_{out} : Voltage output (+/- 10 V)
- I_{out} : Current output (0 ... 20 mA / 4 ... 20 mA)
- Set : Set input (SSI set value)

Connection principle

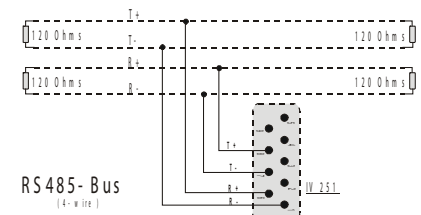
RS232



RS485 (2-wire)



RS485 (4-wire)



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Dimensions

Dimensions in mm [inch]

