

Signal converter

Signal splitter	SP 1SC-2SC2D	SinCos - SinCos HTL, TTL, RS422
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The signal splitter SP 1SC-2SC2D is used to distribute signals from SinCos encoders or measuring systems without loss and without problems to several terminal devices. It features 2 SinCos outputs and 2 incremental outputs (HTL or TTL / RS422). The connected terminal devices can optionally be controlled with SinCos signals or with incremental pulses.

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

DC 17 ... 30 V Power supply	max. 500 kHz Input frequency SinCos	max. 500 kHz Output frequency SinCos	max. 500 kHz Output frequency square	 DIN-rail mounting
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Characteristics

- Encoder supply 5 V or 24 V (switchable).
- Encoder signal input in the 1 Vpp format: SIN+ / SIN- / COS+ / COS- / REF+ / REF-.
- Two SinCos outputs with the same format as the input.
- Two incremental outputs in the format A, /A, B, /B, 0, /0 individual.
- Adjustable for TTL/RS422 or HTL level (10 ... 30 V DC).
- Maximum SinCos input frequency 500 kHz.

Benefits

- Lost-free duplication of encoder signals.
- Conversion from SinCos into rectangular.

Order no.

Signal splitter

8.SP.1SC-2SC2D

Scope of delivery
- Signal splitter
- Manual

Cables and connectors		Order no.
Preassembled cables	Sub-D female contacts, 9-pin, with cable outlet 70° single-ended 2 m [6.56'] PVC cable ¹⁾	8.0000.6V00.0002.0086
Connectors	Sub-D female contacts, 9-pin, with cable outlet 70°	8.0000.514B.0000
	Sub-D male contacts, 9-pin, with cable outlet 70°	8.0000.514A.0000

Further Kübler accessories can be found at: kuebler.com/accessories

Further Kübler cables and connectors can be found at: 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	17 ... 30 V DC (residual ripple $\leq 10\%$ at 24 V DC)
Power consumption (no load)	max. 70 mA
Reverse polarity protection of the power supply	yes
Type of connection	screw terminal, 1.5 mm ²
Encoder supply	output voltage 5.2 V DC (generated internally) or 5 ... 30 V DC (supplied externally) output current max. 150 mA

Mechanical characteristics		
Material	housing	plastic
Mounting	35 mm DIN rail (acc. to EN 60715)	
Dimensions (W x H x D)	22.5 x 102 x 102 mm [0.89 x 4.02 x 4.02"]	
Protection	IP20	
Weight	approx. 100 g [3.53 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)	70.5 a continuous operation at 60 °C [140 °F]	

Approvals		
CE compliant	in accordance with	
	EMC Directive	2014/30/EU
	RoHS Directive	2011/65/EU

SinCos input X5	
Amplitude	0.8 ... 1.2 Vpp
Offset	2 ... 3 V DC
Tracks	Sin+, Sin-, Cos+, Cos-, Ref+, Ref-
Frequency	max. 500 kHz
Termination	120 Ohm (present internally)
Type of connection	Sub-D male contacts, 9-pin

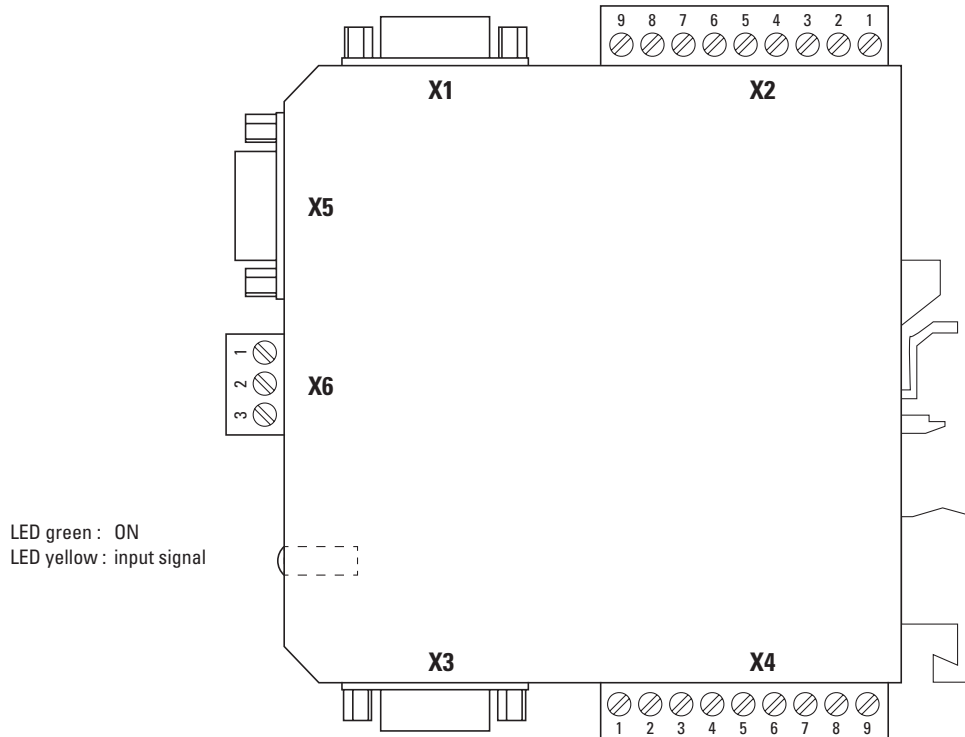
SinCos outputs X1, X3	
Number of outputs	2
Amplitude	0.8 ... 1.2 Vpp
Offset	approx. 2.5 V DC
Tracks	Sin+, Sin-, Cos+, Cos-, Ref+, Ref-
Termination	120 Ohm (required on the target device)
Type of connection	Sub-D female contacts, 9-pin

Incremental outputs X2, X4	
Number of outputs	2
Level	RS422 / TTL or HTL (max. 30 V)
Tracks	A, /A, B, /B, 0, /0
Output current	max. 30 mA (per channel)
Output stage	Push-Pull
Signal propagation time	approx. 200 ns
Protective circuit	short-circuit proof
Type of connection	screw terminal, 1.5 mm ²

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Terminal assignment



Interface	Function	Sub-D male contacts, 9-pin										
Connection X5	Input SinCos	Signal:	0 V	V_{out} (encoder)	Sin+	Sin-	Cos+	Cos-	Ref+	Ref-	-	-
		Pin:	5	4	3	2	1	9	7	6	8	

Interface	Function	Screw terminal, 3-pin			
Connection X6	Power supply	Signal:	0 V	+V	V_{in} (encoder)
		Pin:	1	2	3

Interface	Function	Sub-D female contacts, 9-pin									
Connection X1, X3	Output SinCos	Signal:	0 V	Sin+	Sin-	Cos+	Cos-	Ref+	Ref-	-	-
		Pin:	5	3	2	1	9	7	6	4	8

Interface	Function	Screw terminal, 9-pin									
Connection X2, X4		Signal:	0 V	+V	A	\bar{A}	B	\bar{B}	0	$\bar{0}$	shield
	Output HTL	Pin:	1	2	3	-	5	-	7	-	9
	Output TTL	Pin:	1	2	3	4	5	6	7	8	9

- +V : Power supply
- 0 V : Encoder power supply ground GND (0V)
- V_{in} , V_{out} : Power supply encoder
- Sin+, Sin- : Differential signal (Sine)
- Cos+, Cos- : Differential signal (Cosine)
- Ref+, Ref- : Differential signal (Reference)
- A, \bar{A} : Incremental output channel A (Cosine)
- B, \bar{B} : Incremental output channel B (Sine)
- 0, $\bar{0}$: Reference signal

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Dimensions

Dimensions in mm [inch]

