

Разделители сигналов SP 1SC-2SC2D, SP 2D-2D

Технические характеристики

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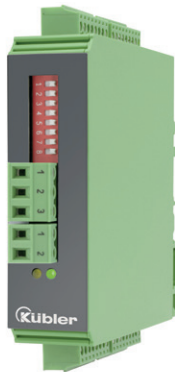
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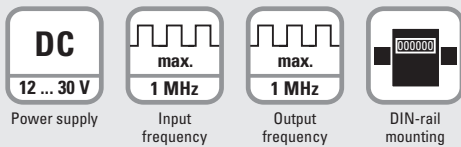
Signal converter

Signal splitter	SP 2D-2D	HTL, RS422 / HTL, RS422
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The signal splitter SP 2D-2D is a universal encoder interface (without potential separation) with 2 incremental encoder inputs for level conversion, distribution as well as contactless and bounce-free switching of encoder signals to the HTL or RS422 format.

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



Characteristics

- 2 pulse inputs in the format A, B, 0 [HTL] or A, /A, B, /B, 0, /0 [RS422].
- Input frequency up to 250 kHz for asymmetrical signals and up to 1 MHz for symmetrical signals.
- 2 control inputs for HTL / PNP signals [10 ... 30 V DC].
- 2 output channels in the format A, B, 0 [HTL] or A, /A, B, /B, 0, /0 [RS422], separately adjustable for every output.

Benefits

- Lost-free duplication of encoder signals.
- Conversion from TTL into HTL and vice versa possible.
- 2 different synchronous signal outputs for 2 different terminal devices.

Order no.

Signal splitter

8.SP.2D-2D

Scope of delivery

- Signal splitter
- Manual

Signal converter

Signal splitter	SP 2D-2D	HTL, RS422 / HTL, RS422
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Technical data

Electrical characteristics		
Power supply	12 ... 30 V DC (residual ripple ≤ 10 % at 24 V DC)	
Power consumption (no load)	max. 50 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 and 10 ... 28 V DC (approx. 2 V DC lower than input voltage)
	output current	max. 125 mA
	protective circuit	short-circuit proof
	type of connection	screw terminal, 1.5 mm ²

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	-20 °C ... +60 °C [-4 °F ... +140 °F] non condensing	
Storage temperature	-30 °C ... +75 °C [-22 °F ... +167 °F] non condensing	

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

Incremental inputs X3, X4		
Number of inputs	2	
Level	TTL / RS422 (differential signal > 1 V) or HTL (10 ... 30 V)	
Tracks	HTL / TTL symmetrical HTL asymmetrical	A, /A, B, /B, 0, /0 A, B, 0
Frequency	TTL symmetrical HTL asymmetrical	max. 1 MHz max. 250 kHz
Internal resistance	R _i ≈ 4.7 kOhm	

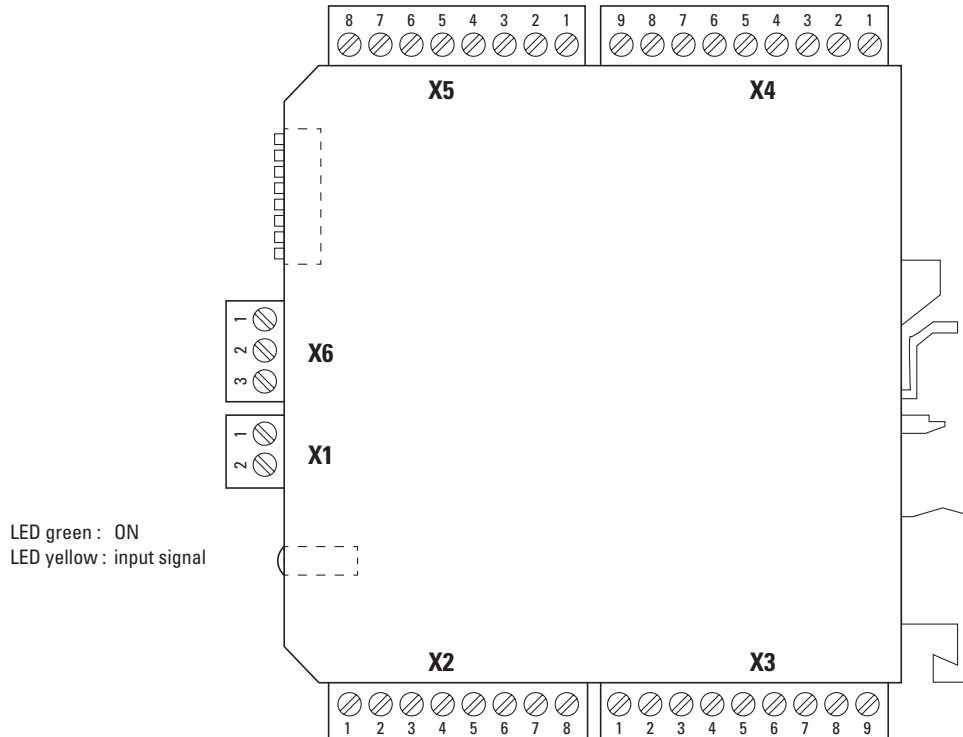
Control inputs X6		
Number	2	
Use	contactless & bounce-free signal path switching	
Level	HTL, PNP (10 ... 30 V)	

Incremental outputs X2, X5		
Number of outputs	2	
Level	adjustable for TTL / RS422 or HTL (12 ... 30 V, power supply)	
Tracks	A, /A, B, /B, 0, /0	
Output current	max. 30 mA (per channel)	
Output stage	Push-Pull	
Signal propagation time	approx. 600 ns	
Protective circuit	short-circuit proof	

Signal converter

Signal splitter	SP 2D-2D	HTL, RS422 / HTL, RS422
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Terminal assignment



Interface	Function	Screw terminal, 2-pin		
Connection X1	Power supply	Signal:	0 V	+V
		Pin:	2	1

Interface	Function	Screw terminal, 3-pin			
Connection X6	Control input	Signal:	Contr. 1	Contr. 2	0 V
		Pin:	1	2	3

Interface	Function	Screw terminal, 9-pin									
Connection X3, X4	Input TTL / HTL	Signal:	0 V	5.2 V _{out}	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	24 V _{out}
		Pin X3:	9	8	7	6	5	4	3	2	1
		Pin X4:	1	2	3	4	5	6	7	8	9

Interface	Function	Screw terminal, 8-pin								
Connection X2, X5	Output TTL / HTL	Signal:	0 V	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	–
		Pin X2:	8	7	6	5	4	3	2	1
		Pin X5:	1	2	3	4	5	6	7	8

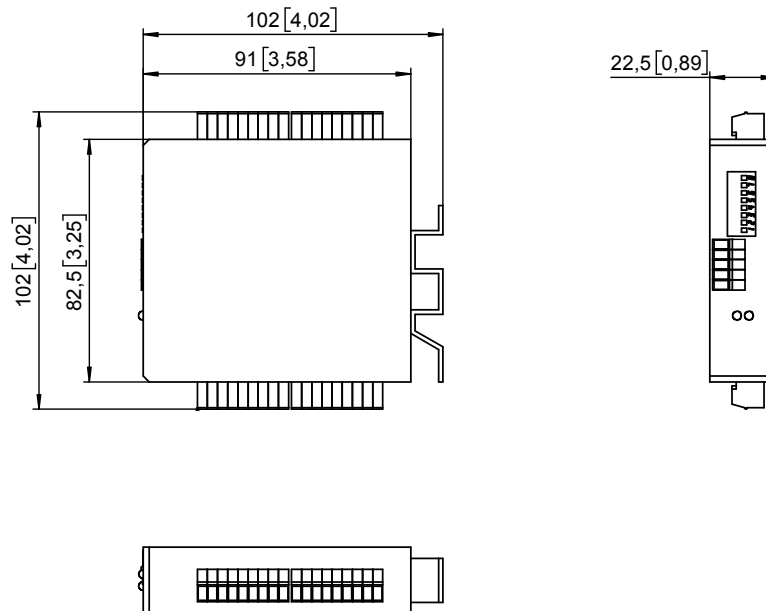
+V : Power supply
 0 V : Encoder power supply ground GND (0 V)
 V_{in}, V_{out} : Power supply encoder
 Contr. 1 / 2 : Control inputs
 A, $\bar{A}$: Incremental output channel A (Cosine)
 B, $\bar{B}$: Incremental output channel B (Sine)
 0, $\bar{0}$: Reference signal

Signal converter

Signal splitter	SP 2D-2D	HTL, RS422 / HTL, RS422
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Dimensions

Dimensions in mm [inch]



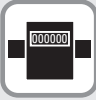
Signal converter

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°
Sub-D male contacts, 9-pin, with cable outlet 70°

8.0000.514B.0000

8.0000.514A.0000

1) Other lengths available.

Signal converter

Signal splitter	SP 1SC-2SC2D	SinCos - SinCos HTL, TTL, RS422
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Technical data

Electrical characteristics		
Power supply		17 ... 30 V DC (residual ripple ≤ 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

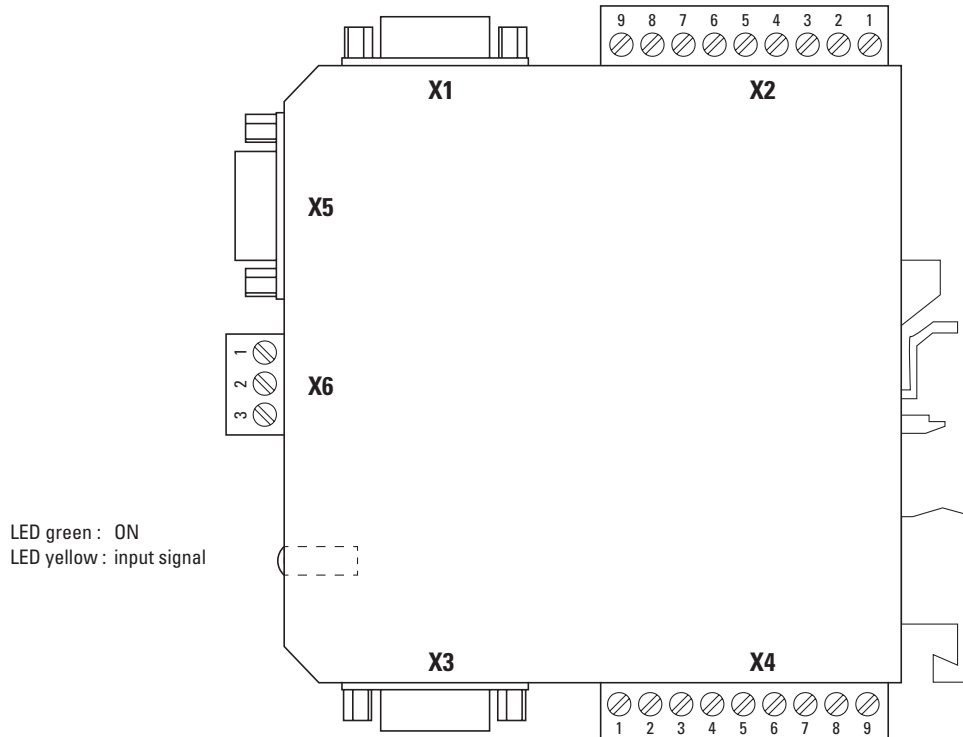
SinCos outputs X1, X3	
Number of outputs	2
Amplitude	0.8 ... 1.2 Vpp
Offset	approx. 2.5 V DC
Tracks	Sin+, Sin-, Cos+, Cos-, Ref+, Ref-
Termination	120 Ohm (required on the target device)
Type of connection	Sub-D female contacts, 9-pin

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

Signal converter

Signal splitter	SP 1SC-2SC2D	SinCos - SinCos HTL, TTL, RS422
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Terminal assignment



Interface	Function	Sub-D male contacts, 9-pin										
Connection X5	Input SinCos	Signal:	0 V	$V_{out}(\text{encoder})$	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	$V_{in}(\text{encoder})$
		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	

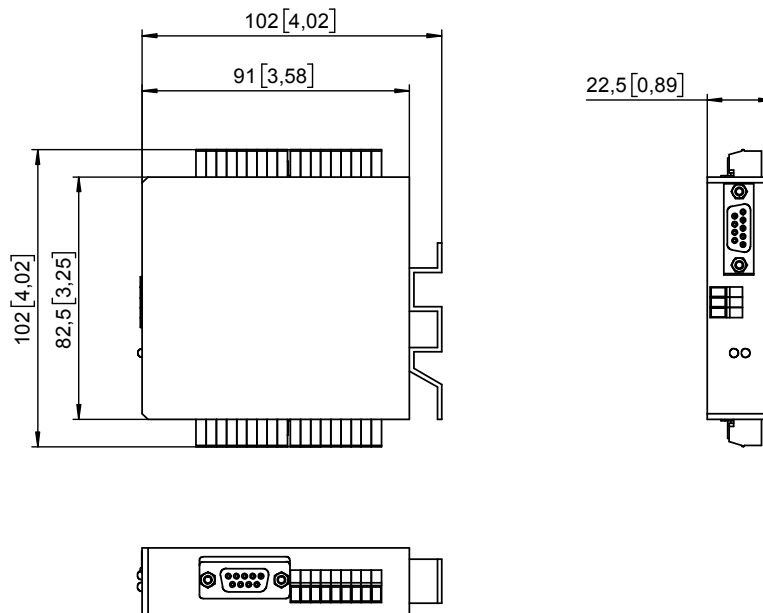
+V :	Power supply
0 V :	Encoder power supply ground GND (0V)
V_{in} , V_{out} :	Power supply encoder
Sin+, Sin- :	Differential signal (Sine)
Cos+, Cos- :	Differential signal (Cosine)
Ref+, Ref- :	Differential signal (Reference)
A, $\bar{A}$:	Incremental output channel A (Cosine)
B, $\bar{B}$:	Incremental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

Signal converter

Signal splitter	SP 1SC-2SC2D	SinCos - SinCos HTL, TTL, RS422
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Dimensions

Dimensions in mm [inch]





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