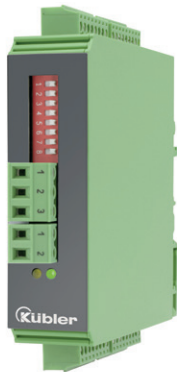


# Signal converter

<b>Signal splitter</b>	<b>SP 2D-2D</b>	<b>HTL, RS422 / HTL, RS422</b>
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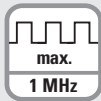


The signal splitter SP 2D-2D is a universal encoder interface (without potential separation) with 2 incremental encoder inputs for level conversion, distribution as well as contactless and bounce-free switching of encoder signals to the HTL or RS422 format.

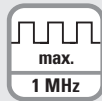
The module can be easily and conveniently mounted in a cabinet on a standard DIN rail.



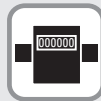
Power supply



Input frequency



Output frequency



DIN-rail mounting

## 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

<b>Signal splitter</b>	<b>SP 2D-2D</b>	<b>HTL, RS422 / HTL, RS422</b>
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## Technical data

Electrical characteristics	
<b>Power supply</b>	12 ... 30 V DC (residual ripple ≤ 10 % at 24 V DC)
<b>Power consumption (no load)</b>	max. 50 mA
<b>Reverse polarity protection of the power supply</b>	yes
<b>Type of connection</b>	screw terminal, 1.5 mm <sup>2</sup>
<b>Encoder supply</b>	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 <sup>2</sup>

Mechanical characteristics	
<b>Material</b>	housing plastic
<b>Mounting</b>	35 mm DIN rail (acc. to EN 60715)
<b>Dimensions (W x H x D)</b>	22.5 x 102 x 102 mm [0.89 x 4.02 x 4.02"]
<b>Protection</b>	IP20
<b>Weight</b>	approx. 100 g [3.53 oz]
<b>Working temperature</b>	-20 °C ... +60 °C [-4 °F ... +140 °F] non condensing
<b>Storage temperature</b>	-30 °C ... +75 °C [-22 °F ... +167 °F] non condensing

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

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

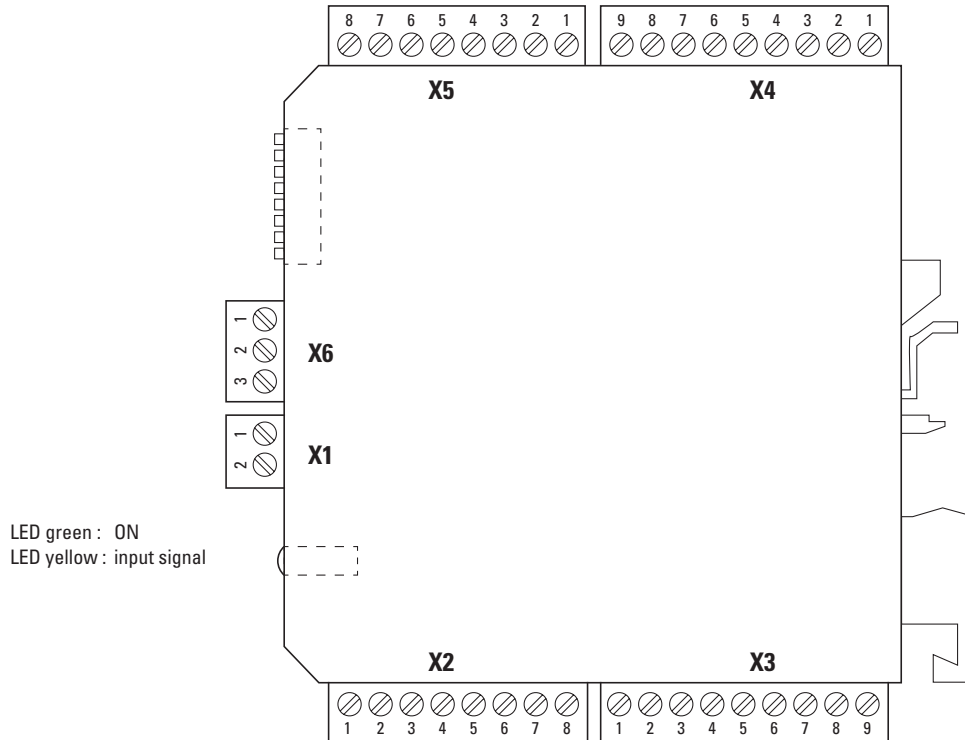
Control inputs X6	
<b>Number</b>	2
<b>Use</b>	contactless & bounce-free signal path switching
<b>Level</b>	HTL, PNP (10 ... 30 V)

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

# Signal converter

<b>Signal splitter</b>	<b>SP 2D-2D</b>	<b>HTL, RS422 / HTL, RS422</b>
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## Terminal assignment



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

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

Interface	Function	Screw terminal, 9-pin									
<b>Connection X3, X4</b>	Input TTL / HTL	Signal:	0 V	5.2 V <sub>out</sub>	A	$\bar{A}$	B	$\bar{B}$	0	$\bar{0}$	24 V <sub>out</sub>
		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								
<b>Connection X2, X5</b>	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<sub>in</sub>, V<sub>out</sub> : 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

## Dimensions

Dimensions in mm [inch]

