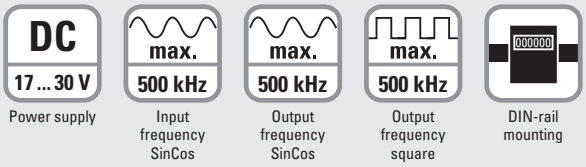
Signal converter

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



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.



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

Connection technology		Order no.
Cordset, pre-assembled	Sub-D female contacts, 9-pin, with cable outlet 70° single-ended 2 m [6.56'] PVC cable [1]	**8.0000.6V00.0002.0086**
	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 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 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		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 mm²
Encoder supply	output voltage	5.2 V DC (generated internally) or 5 ... 30 V DC (supplied externally)
	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)		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]

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 mm²

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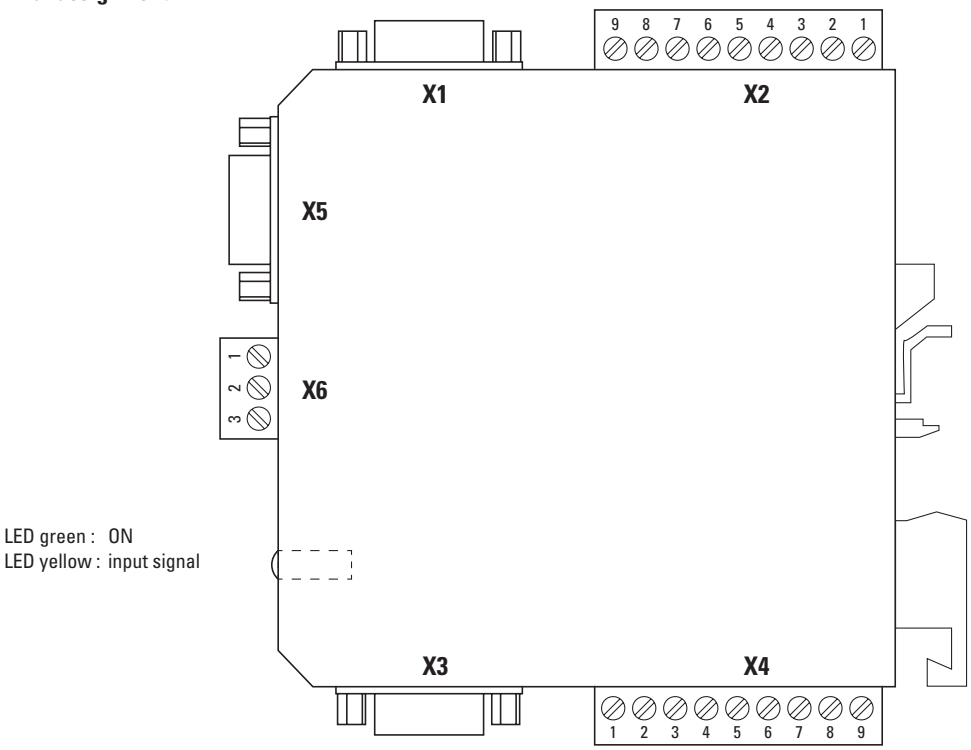
Terminal assignment



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	$\overline{A}$	B	$\overline{B}$	0	$\overline{0}$	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, $\overline{A}$: Incremental output channel A (Cosine)
B, $\overline{B}$: Incremental output channel B (Sine)
0, $\overline{0}$: Reference signal

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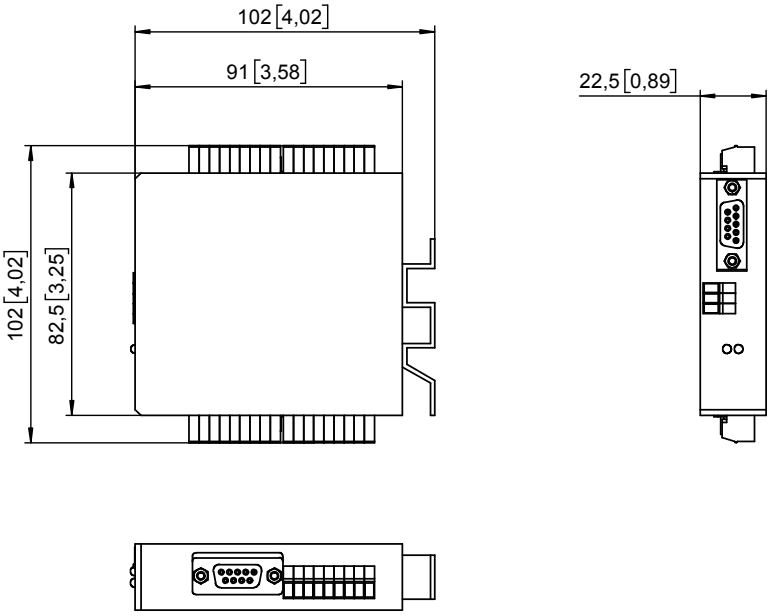
Dimensions

Dimensions in mm [inch]



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