

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.

| | | | | |
|--|--|---|---|-----------------------|
| 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 |
|--|--|---|---|-----------------------|

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 <i>Scope of delivery</i> - 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 |

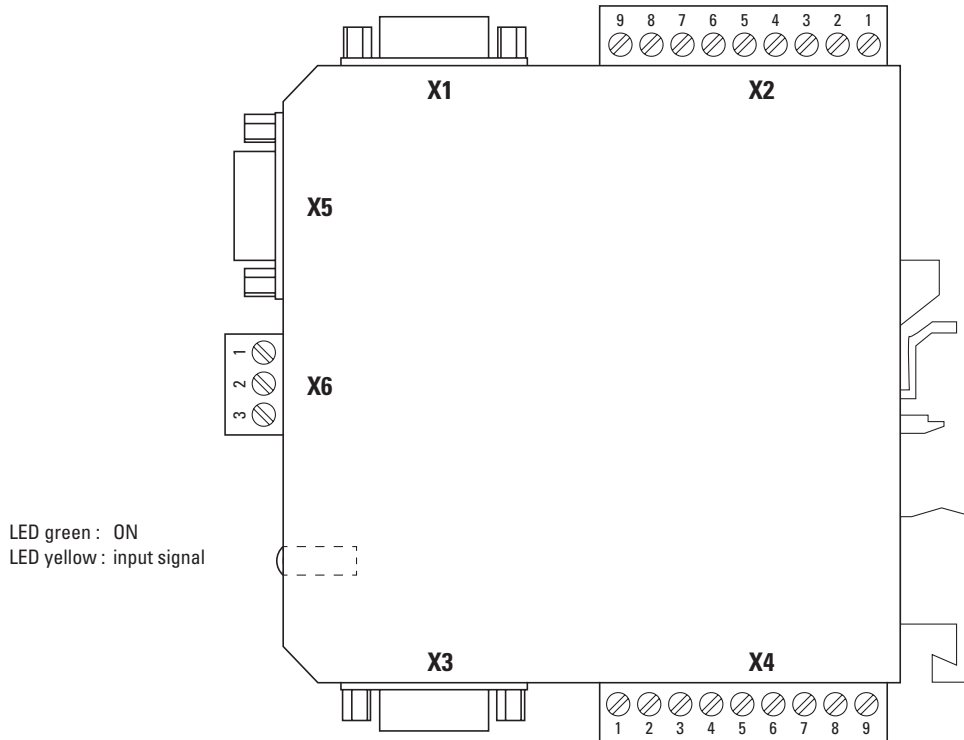
| SinCos outputs X1, X3 | |
|---------------------------|--|
| Number of outputs | 2 |
| Amplitude | 0.8 ... 1.2 Vpp |
| Offset | approx. 2.5 V DC |
| Tracks | Sin+, Sin-, Cos+, Cos-, Ref+, Ref- |
| Termination | 120 Ohm (required on the target device) |
| Type of connection | Sub-D female contacts,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

