

# Signal converter

|                         |                 |                       |
|-------------------------|-----------------|-----------------------|
| <b>Signal converter</b> | <b>SK 1S-1P</b> | <b>SSI - Parallel</b> |
|-------------------------|-----------------|-----------------------|



The converter module been designed for industrial applications that require converting a sensor or encoder signal available in SSI format into a parallel signal.

This device has 12 screw terminal connections and a 37-pin (parallel) Sub-D socket.

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

|  |   |  |                         |                                      |
|--|---|--|-------------------------|--------------------------------------|
| <b>DC</b><br>18 ... 36 V<br>Power supply | <b>max.</b><br>100 kHz<br>Input frequency | <b>max.</b><br>30 Hz<br>Output frequency | <b>SSI</b><br>SSI input | <b>DIN-rail</b><br>DIN-rail mounting |
|--|---|--|-------------------------|--------------------------------------|

## Characteristics

- Input: synchronous serial interface SSI.
- Output: parallel, max. 26 bits, 8 .. 30 V, max. 100 mA, short-circuit proof and bus-capable.
- Master/Slave operation switchable.
- Switchable Gray/Binary input code.
- Switchable Gray/Binary/BCD output code.
- Hold and OE inputs.
- Strobe output.
- Housing for DIN rail mounting EN 50022.
- Connection with plug-in screw terminals and 37-pin Sub-D socket.

## Benefits

- SSI encoders for retrofitting old controls with parallel input.

|                  |                   |  |
|------------------|-------------------|--|
| <b>Order no.</b> |                   |  |
| Signal converter | <b>8.SK.1S-1P</b> | <i>Scope of delivery</i><br>- Signal converter<br>- Manual |

# Signal converter

|                         |                 |                       |
|-------------------------|-----------------|-----------------------|
| <b>Signal converter</b> | <b>SK 1S-1P</b> | <b>SSI - Parallel</b> |
|-------------------------|-----------------|-----------------------|

## Technical data

| Electrical characteristics         |   |
|------------------------------------|---|
| <b>Power supply</b>                | 18 ... 36 V DC<br>5 V DC $\pm$ 10% optional<br>12 V DC $\pm$ 10% optional                               |
| <b>Power consumption (no load)</b> | 70 mA (18 .. 36 V DC)<br>250 mA (5 V DC)<br>110 mA (12 V DC)  |
| <b>Isolation voltage</b>           | 500 V / 1 min   |
| <b>Type of connection</b>          | plug-in screw terminals and<br>Sub-D female contacts, 37-pin  |
| <b>Conformity and standards</b>    | EMC guideline 2014/30/EU EN 61000-6-2, EN 61000-6-3, EN 61000-6-4<br>RoHS guideline 2011/65/EU EN 50581 |

| Mechanical characteristics    |   |
|-------------------------------|---|
| <b>Material</b>               | housing Polycarbonate                               |
| <b>Mounting</b>               | 35 mm DIN rail (acc. to EN 50022)                   |
| <b>Dimensions (W x H x D)</b> | 45 x 118 x 137,5 mm<br>[1.77 x 4.65 x 5.41"]        |
| <b>Protection</b>             | IP20  |
| <b>Weight</b>                 | approx. 300 g [10.58 oz]                            |
| <b>Working temperature</b>    | 0°C ... +50°C [+32°F ... +122°F]<br>non condensing  |
| <b>Storage temperature</b>    | -20°C ... +70°C [-4°F ... +158°F]<br>non condensing |
| <b>Relative humidity</b>      | < 80 % (non condensing)                             |
| <b>Protection class</b>       | protection class II                                 |
| <b>Application area</b>       | pollution level 2<br>overvoltage category II        |

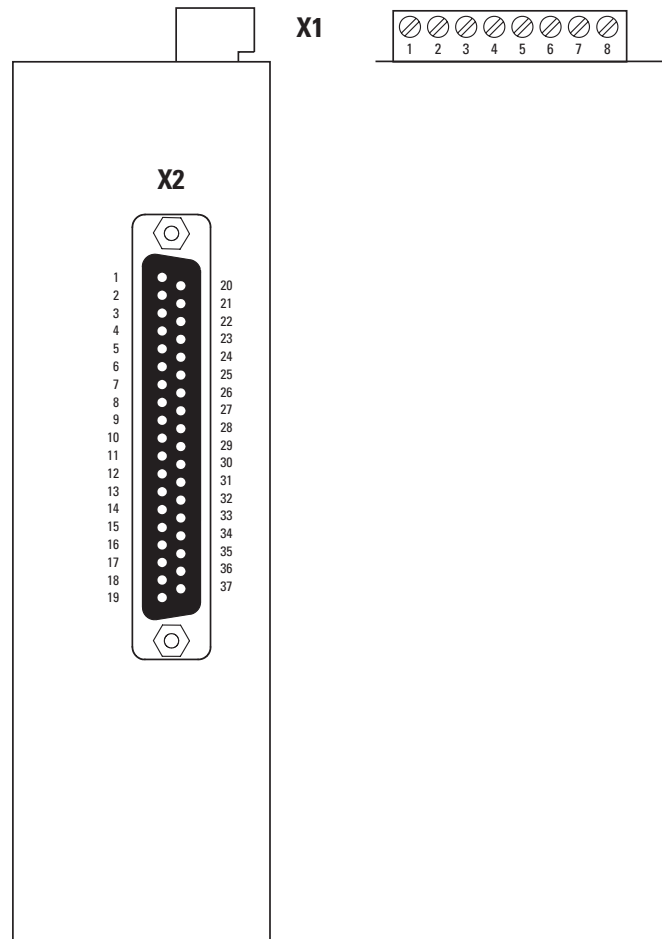
| SSI signal input        |   |
|-------------------------|---|
| <b>Resolution</b>       | 10 ... 26 bits  |
| <b>Code type</b>        | Binary or Gray  |
| <b>Data input</b>       | RS422/RS485 receiver  |
| <b>Clock input</b>      | RS422/RS485 receiver  |
| <b>Clock output</b>     | RS422/RS485 driver  |
| <b>Master operation</b> | clock frequency internal, 100 kHz<br>data entry app. 30 values/sec  |
| <b>Slave operation</b>  | clock frequency internal, max. 125 kHz<br>delay between pulse trains min 500 $\mu$ s<br>data entry app. 30 values/sec |

| Parallel outputs         |  |
|--------------------------|--|
| <b>Logic</b>             | PNP, 8 ... 30 V<br>100 mA, short-circuit proof |
| <b>Isolation voltage</b> | 3 kV / 1 min                                   |

# Signal converter

|                         |                 |                       |
|-------------------------|-----------------|-----------------------|
| <b>Signal converter</b> | <b>SK 1S-1P</b> | <b>SSI - Parallel</b> |
|-------------------------|-----------------|-----------------------|

## Terminal assignment



| Interface            | Function     | Screw terminals, 8-pin |     |    |   |     |       |       |      |      |  |
|----------------------|--------------|------------------------|-----|----|---|-----|-------|-------|------|------|--|
| <b>Connection X1</b> |              | Signal:                | 0 V | +V | ⊥ | GND | Data- | Data+ | Clk+ | Clk- |  |
|                      | Power supply | Pin:                   | 7   | 8  | 6 | -   | -     | -     | -    | -    |  |
|                      | SSI input    | Pin:                   | -   | -  | - | 5   | 4     | 3     | 2    | 1    |  |

| Interface            | Function         | Sub-D female contacts, 37-pin |         |        |         |               |        |        |        |        |        |         |  |
|----------------------|------------------|-------------------------------|---------|--------|---------|---------------|--------|--------|--------|--------|--------|---------|--|
| <b>Connection X2</b> | Parallel outputs | Signal:                       | Vs      | Vs     | Vs      | Bit 0         | Bit 1  | Bit 2  | Bit 3  | Bit 4  | Bit 5  | Bit 6   |  |
|                      |                  | Pin:                          | 1       | 20     | 2       | 21            | 3      | 22     | 4      | 23     | 5      | 24      |  |
|                      |                  | Signal:                       | Bit 7   | Bit 8  | Bit 9   | Bit 10        | Bit 11 | Bit 12 | Bit 13 | Bit 14 | Bit 15 | Bit 16  |  |
|                      |                  | Pin:                          | 6       | 25     | 7       | 26            | 8      | 27     | 9      | 28     | 10     | 29      |  |
|                      |                  | Signal:                       | Bit 17  | Bit 18 | Bit 19  | Bit 20        | Bit 21 | Bit 23 | Bit 22 | Bit 24 | Bit 25 | Reserve |  |
|                      |                  | Pin:                          | 11      | 30     | 12      | 31            | 13     | 32     | 14     | 33     | 15     | 34      |  |
|                      |                  | Signal:                       | Error 2 | Strobe | Error 1 | Output Enable | Hold   | GND    | GND    |        |        |         |  |
|                      |                  | Pin:                          | 16      | 35     | 17      | 36            | 18     | 37     | 19     |        |        |         |  |

- |   |   |
|---|---|
| +V : Power supply                           | Vs : Supply voltage output driver                             |
| 0 V : Encoder power supply ground GND (0 V) | Bit 0 ... 25 : Signal outputs                                 |
| GND : Power supply ground GND (0 V)         | Reserve : Bus-capable signal lines (for extensions)           |
|   | Error 1, 2 : Error signal output (1 = SSI, 2 = output driver) |
| Data+, Data- : Data +/- (SSI)               | Strobe : Output take-over pulses                              |
| Clk+, Clk- : Clock +/- (SSI)                | Output Enable : Input bus control                             |
|   | Hold : Input holding value (up to max. 30 ms)                 |

# Signal converter

|                         |                 |                       |
|-------------------------|-----------------|-----------------------|
| <b>Signal converter</b> | <b>SK 1S-1P</b> | <b>SSI - Parallel</b> |
|-------------------------|-----------------|-----------------------|

## Dimensions

Dimensions in mm [inch]

