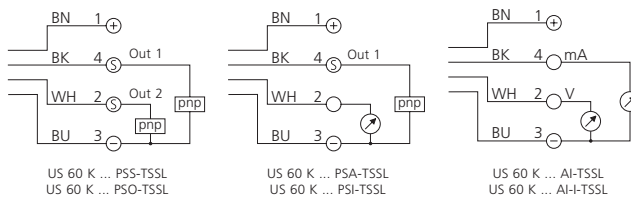


## Ultraschall-Sensoren | Ultrasonic sensors

- Stabiles Gehäuse
- Arbeitsbereich einstellbar
- Schmutzunempfindlich
- Störgeräuschunempfindlich
- Messung oberflächenunabhängig
- Schalt- und Analogausgang
- Hohe Folgegeschwindigkeit
- Hohe Auflösung
- Piezokeramischer Verbundwandler

- Robust casing
- Scanning range adjustable
- Insensitive to dirt
- Insensitive to ambient noise
- Scanning does not depend on surface
- Binary and analog output
- High follow-up speed
- High resolution
- Piezo-ceramic composite transducer

### Anschlussschema Connection diagram

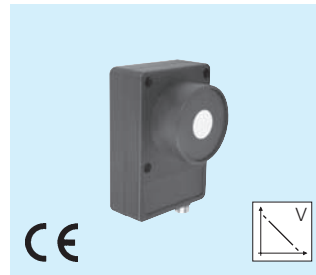


BN = Braun / brown  
BK = Schwarz / black

BU = Blau / blue  
WH = Weiß / white

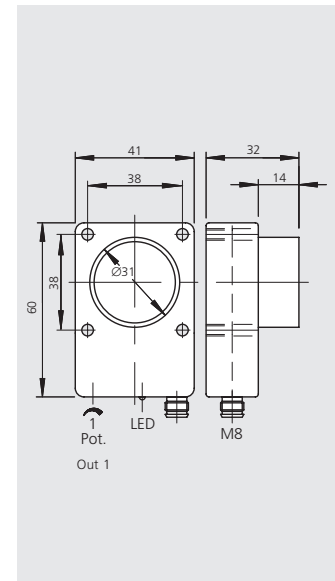
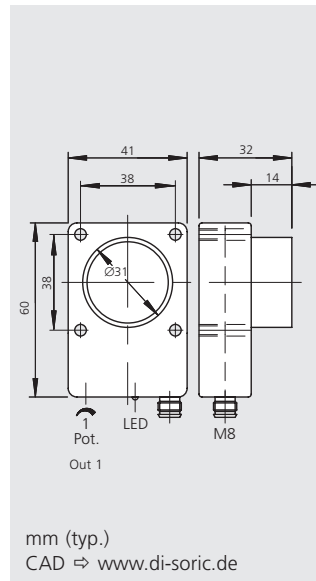
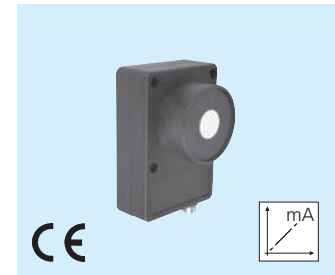
Arbeitsbereich  
Scanning range

500 mm



Arbeitsbereich  
Scanning range

500 mm

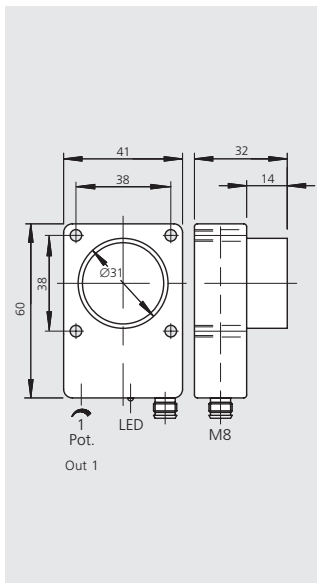
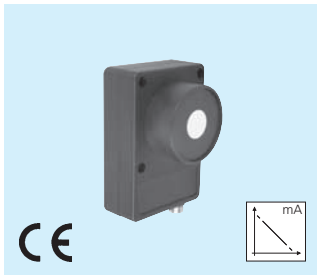


| Technische Daten         | Technical Data             | bei + 20 °C, 24 V DC / at + 20 °C, 24 V DC |                                 |
|--------------------------|----------------------------|--------------------------------------------|---------------------------------|
| <b>Arbeitsbereich</b>    | <b>Scanning range</b>      | <b>ca. 80 ... 500 mm</b>                   | <b>ca. 80 ... 500 mm</b>        |
| Sendefrequenz            | Operating frequency        | 180 kHz                                    | 180 kHz                         |
| Betriebsspannung         | Service voltage            | 15 ... 30 V DC                             | 15 ... 30 V DC                  |
| Eigenstromaufnahme       | Internal power consumption | ca. 60 mA                                  | ca. 80 mA                       |
| Schaltausgang            | Binary output              | Transistor pnp, 100 mA, NO                 | Transistor pnp, 100 mA, NO      |
| Schaltfrequenz           | Switching frequency        | ca. 8 Hz                                   | ca. 8 Hz                        |
| Ansprech- / Abfallzeit   | Response / release time    | ca. 50 ms / 80 ms (50% Sn max.)            | ca. 50 ms / 80 ms (50% Sn max.) |
| Schalthysterese axial    | Switching hysteresis axial | ca. 15 mm                                  | ca. 15 mm                       |
| Genauigkeit              | Accuracy                   | < ± 1 % / Sn max.                          | < ± 1 % / Sn max.               |
| <b>Analogausgang</b>     | <b>Analog output</b>       | <b>8,4 ... 0 V</b>                         | <b>6,6 ... 20 mA</b>            |
| Linearität Analogausgang | Linearity analog output    | < ± 0,5 % / Sn max.                        | < ± 0,5 % / Sn max.             |
| Lastwiderstand           | Load resistance            | > 10 kΩ                                    | max. 400 Ω                      |
| Welligkeit               | Ripple                     | ca. ± 60 mV                                | ca. ± 60 mV                     |
| Folgegeschwindigkeit     | Follow-up speed            | 60 ms (95% Sn max.)                        | 60 ms (95% Sn max.)             |
| Auflösung                | Resolution                 | ca. 0,2 % / Sn max.                        | ca. 0,2 % / Sn max.             |
| Temperaturfehler         | Temperature error          | < 1 % (-20 ... +50 °C)                     | < 1 % (-20 ... +50 °C)          |
| Umgebungstemperatur      | Ambient temperature        | -20 ... +50 °C                             | -20 ... +50 °C                  |
| Schutzart                | Protection class           | IP 67                                      | IP 67                           |

| Bestelltabelle                   | Ordering Table                     | Typ / Model                   |                             |
|----------------------------------|------------------------------------|-------------------------------|-----------------------------|
| <b>Ausgang</b>                   | <b>Output</b>                      |                               |                             |
| 2 x NO                           | 2 x NO                             | –                             | –                           |
| NO + NC (antivalent)             | NO + NC (exclusive OR)             | –                             | –                           |
| NO + analog                      | NO + analog                        | <b>US 60 K 500 PSA-I-TSSL</b> | <b>US 60 K 500 PSI-TSSL</b> |
| 2 x analog                       | 2 x analog                         | –                             | –                           |
| Anschlusskabel (sep. Datenblatt) | Connecting cable (sep. data-sheet) | TK ... /4                     | TK ... /4                   |

Arbeitsbereich  
Scanning range

500 mm



ca. 80 ... 500 mm

180 kHz

180 kHz

15 ... 30 V DC

ca. 80 mA

Transistor pnp, 100 mA, NO

ca. 8 Hz

ca. 50 ms / 80 ms (50% Sn max.)

ca. 15 mm

< ± 1 % / Sn max.

**17,4 ... 4 mA**

< ± 0,5 % / Sn max.

max. 400 Ω

ca. ± 60 mV

60 ms (95% Sn max.)

ca. 0,2 % / Sn max.

< 1 % (-20 ... +50 °C)

-20 ... +50 °C

IP 67

—

—

—

—

**US 60 K 500 PSI-I-TSSL**

—

—

TK ... /4

TK ... /4