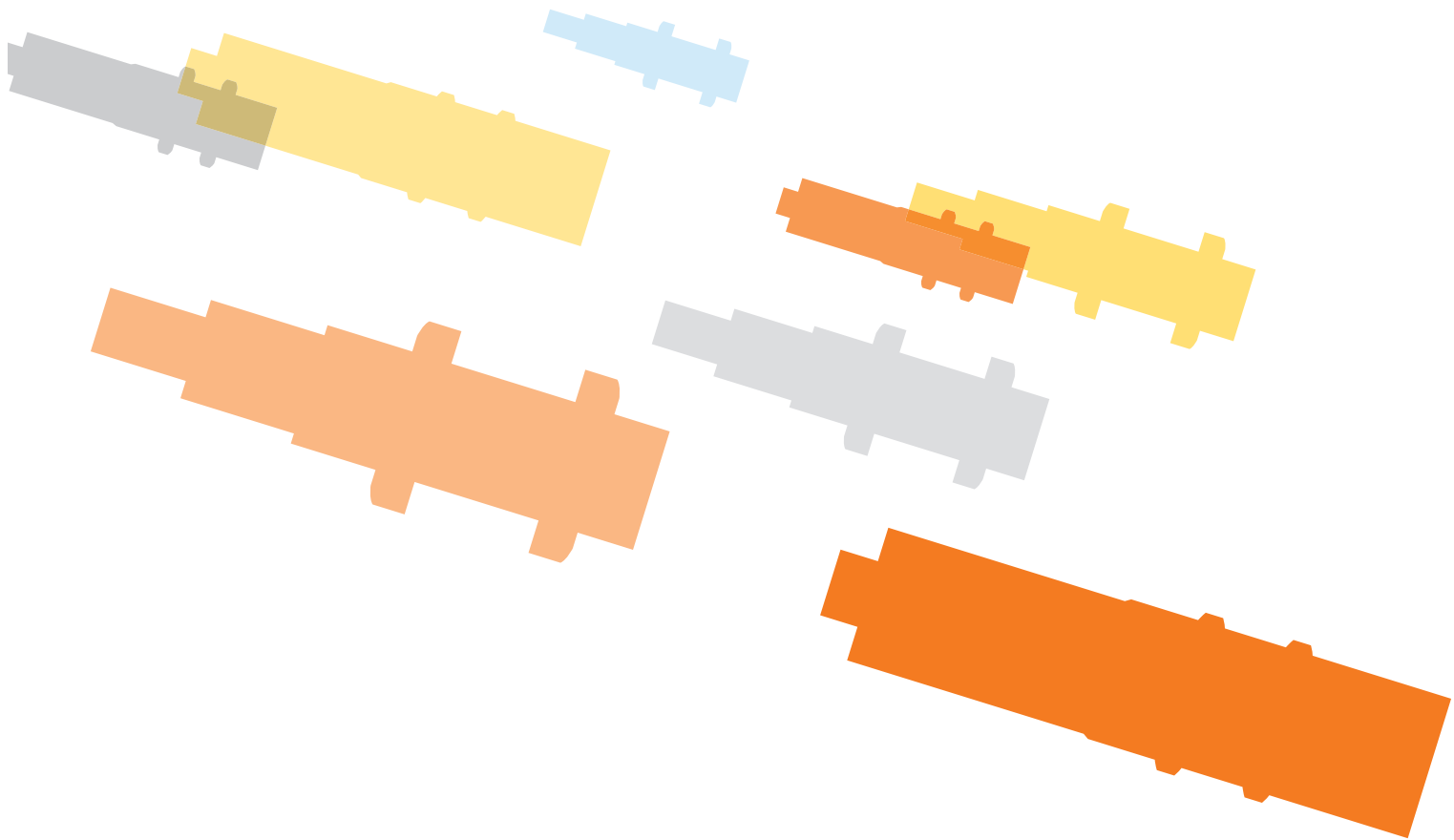


Ultraschallsensoren *ultrasonic sensors*

Zylindrisch *cylindric* | Rechteckig *cuboid*



Ultraschallsensoren erfassen mithilfe von Schallwellen berührungslos und verschleißfrei eine nahezu alle Objekte. Dabei spielt es keine Rolle, ob das Objekt durchsichtig, metallisch, fest, flüssig oder pulverförmig ist. Umgebungseinflüsse beeinträchtigen die Funktion kaum.

Typische Anwendungen sind die Füllstandsmessung und Steuerung sowie die Abstandsmessung.

Ultrasonic sensors are designed for non contact and wear-free detection of a variety of targets by means of sonic waves. It is important whether the target is transparent or opaque , matallic or non-metallic, firm, liquid or powdery.

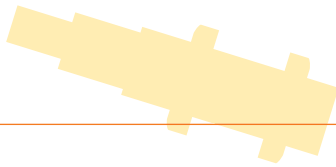
Environmental conditions such as spray,dust or rain hardly affect their function.

Ultraschallsensoren
ultrasonic sensors

Ultraschallsensoren *ultrasonic sensors*

Zylindrisch *cylindric* | Rechteckig *cuboid*

Ultraschallsensoren
ultrasonic sensors



- + Robustes Gehäuse, integrierte Elektronik *tough metal housing with integrated electronics*
- + Bauform M12 bis M30 *dimension from M12 to M30*
- + Einfache und schnelle Montage *simple and fast assembling*
- + Hohe Schutzart IP67 *high protection class IP67*
- + Hohe Schaltfrequenz *high switching frequency*
- + Empfindlichkeitseinstellung *sensitivity adjustable*
- + Hohe Messgenauigkeit *high precision of measurement*
- + Große Reichweite *large range*
- + Normstecker M8 und M12 *connector M8 and M12*
- + Ausgänge kurzschlußfest und verpolsicher *output short circuit proof*
- + Erfassung kleinster Teile *detection of smallest items*
- + Erkennt transparente Objekte und Flüssigkeiten *detection of transparent objects and liquids*
- + Garantie 2 Jahre *warranty 2 years*
- + Anwendungsbezogene Sonderausführungen möglich *special sizes are available on request*

Typenschlüssel *coding*

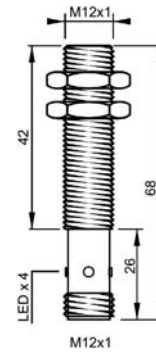
US (X) - 12 - P S K - ST3

| | |
|-----|---|
| US | US = Ultraschallsensor <i>ultrasonic sensor</i> |
| (X) | D = hoher Sn <i>high range</i> T = höchster Sn <i>maximum range</i> W = radialer Wandler <i>radial converter</i> |
| 12 | Bauform <i>dimension</i> |
| P | P = pnp A = Analog <i>analog</i> |
| S | S = NO O = NC A = NO+NC I = Stromausgang <i>current output</i> V = Spannungsausgang <i>voltage output</i> |
| K | K = Kurzschlußfest <i>short circuit proof</i> |
| ST3 | ST3 = Stecker M8 <i>connector M8</i> ST4 = Stecker M12 <i>connector M8</i> |

Ultraschallsensoren *ultrasonic sensors*

Zylindrisch *cylindric*

| | |
|------------------------------------|----------------------------------|
| Bauform <i>dimension</i> | M12 |
| Anschluss <i>connection</i> | Stecker M12 <i>connector M12</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



| | | | |
|--|---|--------|---------|
| Betriebsspannung <i>service voltage</i> | 15-30 VDC | | |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 30 mA | | |
| Sendefrequenz <i>frequency range</i> | 400 kHz | | |
| Schalthysterese <i>switching hysteresis</i> | < 1 % | – | – |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % | – | – |
| Schutzart <i>protection class</i> | IP 65 | | |
| Umgebungstemperatur <i>ambient temperature</i> | - 25°C ... + 70°C | | |
| Gehäusematerial <i>casing material</i> | Messing vernickelt <i>nickel plated brass</i> | | |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> | – | – |
| Analogausgang <i>min. item size</i> | – | 0-10 V | 4-20 mA |
| Erfassungsbereich <i>detection area</i> | 20 - 200 mm | | |
| max. Laststrom <i>max. load current</i> | 100 mA | | |
| Schaltfrequenz <i>max. operating frequency</i> | 13 Hz | – | – |

Schema *diagramm* Ausgang *output*

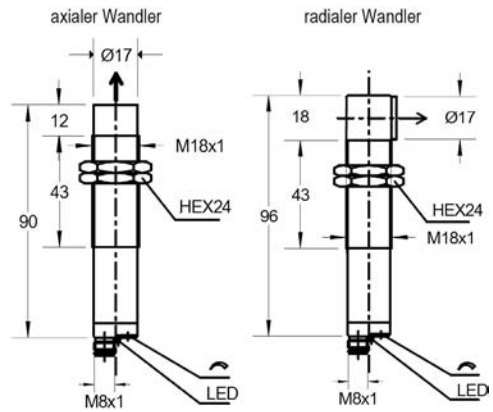
| | | | | |
|----|--------|---------------|--------------|--------------|
| 1 | PNP-NO | US-12-PSK-ST4 | | |
| 14 | analog | | US-12-AV-ST4 | US-12-AI-ST4 |

Ultraschallsensoren
ultrasonic sensors

Ultraschallsensoren *ultrasonic sensors*

Zylindrisch *cylindric*

| | |
|------------------------------------|--------------------------------|
| Bauform <i>dimension</i> | M18 |
| Anschluss <i>connection</i> | Stecker M8 <i>connector M8</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



Ultraschallsensoren
ultrasonic sensors

| | | | |
|--|-------------------|--------|---------|
| Betriebsspannung <i>service voltage</i> | 18-30 VDC | | |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 35 mA | | |
| Sendefrequenz <i>frequency range</i> | 180 kHz | | |
| Schalthysterese <i>switching hysteresis</i> | < 1 % | - | - |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % | | |
| Schutzart <i>protection class</i> | IP 67 | | |
| Umgebungstemperatur <i>ambient temperature</i> | - 25°C ... + 70°C | | |
| Gehäusematerial <i>casing material</i> | Polyamid | | |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> | - | - |
| Analogausgang <i>min. item size</i> | - | 0-10 V | 4-20 mA |
| Erfassungsbereich <i>detection area</i> | 0 - 100 mm | | |
| max. Laststrom <i>max. load current</i> | 300 mA | - | - |
| Schaltfrequenz <i>max. operating frequency</i> | 7 Hz | - | - |

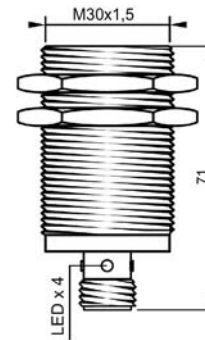
Schema *diagramm* Ausgang *output*

| | | | | |
|----|-----------|--------------------|------------------|------------------|
| 7 | PNP-NO+NC | US (W) -18-PSK-ST4 | | |
| 14 | analog | | US (W)-18-AV-ST4 | US (W)-18-AI-ST4 |

Ultraschallsensoren *ultrasonic sensors*

Zylindrisch *cylindric*

| | |
|------------------------------------|----------------------------------|
| Bauform <i>dimension</i> | M30 |
| Anschluss <i>connection</i> | Stecker M12 <i>connector M12</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



| | | | |
|--|---|---------------|---------------|
| Betriebsspannung <i>service voltage</i> | 12-28 VDC | | |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 45 mA | | |
| Sendefrequenz <i>frequency range</i> | 350 kHz | | |
| Schalthyterese <i>switching hysteresis</i> | < 1 % | - | - |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % | - | - |
| Schutzart <i>protection class</i> | IP 67 | | |
| Umgebungstemperatur <i>ambient temperature</i> | - 20°C ... + 70°C | | |
| Gehäusematerial <i>casing material</i> | Messing vernickelt <i>nickel plated brass</i> | | |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> | - | - |
| Analogausgang <i>min. item size</i> | - | 0-10 V | 4-20 mA |
| Erfassungsbereich <i>detection area</i> | 0 - 200 mm | 350 - 3500 mm | 350 - 3500 mm |
| max. Laststrom <i>max. load current</i> | 100 mA | - | - |
| Schaltfrequenz <i>max. operating frequency</i> | 15 Hz | - | - |

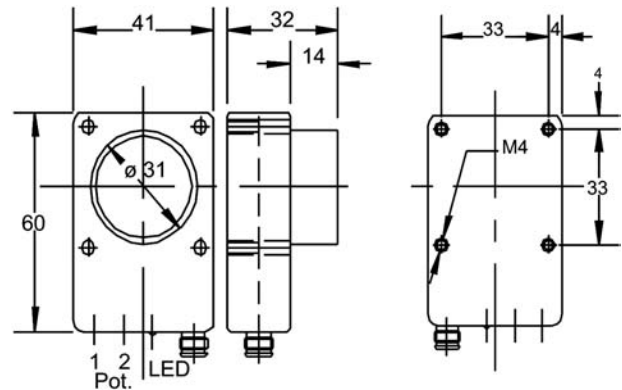
| Schema <i>diagramm</i> | Ausgang <i>output</i> | | | |
|------------------------|-----------------------|----------------|--------------|--------------|
| 1 | PNP-NO | US -30-PSK-ST4 | | |
| 14 | analog | | US-30-AV-ST4 | US-30-AI-ST4 |

Ultraschallsensoren
ultrasonic sensors

Ultraschallsensoren *ultrasonic sensors*

Rechteckig *cuboid*

| | |
|------------------------------------|---|
| Bauform <i>dimension</i> | 41 x 60 x 32 mm |
| Anschluss <i>connection</i> | Stecker M8 4polig <i>connector M8 4pole</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



Ultraschallsensoren
ultrasonic sensors

| | | |
|--|-------------------|------------------|
| Betriebsspannung <i>service voltage</i> | 15-30 VDC | |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 80 mA | |
| Sendefrequenz <i>frequency range</i> | 180 kHz | |
| Schalthysterese <i>switching hysteresis</i> | < 1 % | - |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % | |
| Schutzart <i>protection class</i> | IP 67 | |
| Umgebungstemperatur <i>ambient temperature</i> | - 20°C ... + 50°C | |
| Gehäusematerial <i>casing material</i> | Polyamid | |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> | - |
| Analogausgang <i>min. item size</i> | - | 0-10 V + 4-20 mA |
| Erfassungsbereich <i>detection area</i> | 80 - 500 mm | |
| max. Laststrom <i>max. load current</i> | 100 mA | - |
| Schaltfrequenz <i>max. operating frequency</i> | 8 Hz | - |

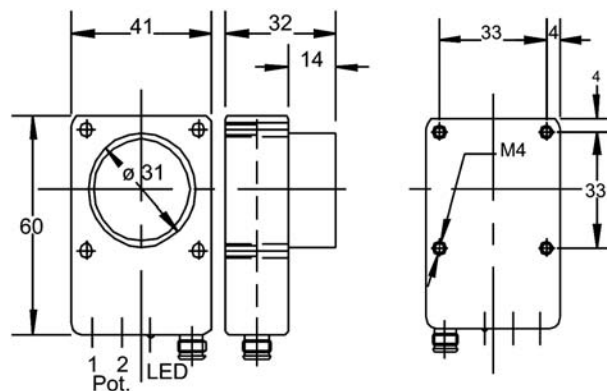
Schema *diagramm* Ausgang *output*

| | | | |
|----|-----------|-----------------|----------------|
| 7 | PNP-NO+NC | US -500-PAK-ST4 | |
| 14 | analog | | US-500-AVI-ST4 |

Ultraschallsensoren *ultrasonic sensors*

Rechteckig *cuboid*

| | |
|------------------------------------|---|
| Bauform <i>dimension</i> | 41 x 60 x 32 mm |
| Anschluss <i>connection</i> | Stecker M8 4polig <i>connector M8 4pole</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



| | |
|--|-------------------|
| Betriebsspannung <i>service voltage</i> | 15-30 VDC |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 80 mA |
| Sendefrequenz <i>frequency range</i> | 180 kHz |
| Schalthyterese <i>switching hysteresis</i> | < 1 % |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % |
| Schutzart <i>protection class</i> | IP 67 |
| Umgebungstemperatur <i>ambient temperature</i> | - 20°C ... + 50°C |
| Gehäusematerial <i>casing material</i> | Polyamid |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> |
| Analogausgang <i>min. item size</i> | 0-10 V + 4-20 mA |
| Erfassungsbereich <i>detection area</i> | 80 - 1000 mm |
| max. Laststrom <i>max. load current</i> | 100 mA |
| Schaltfrequenz <i>max. operating frequency</i> | 5 Hz |

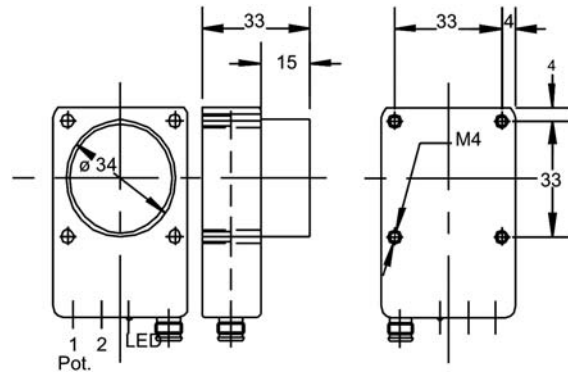
| Schema <i>diagramm</i> | Ausgang <i>output</i> |
|------------------------|-----------------------|
| 7 | PNP-NO+NC |
| 14 | analog |
| | US -1000-PAK-ST4 |
| | US-1000-AVI-ST4 |

Ultraschallsensoren
ultrasonic sensors

Ultraschallsensoren *ultrasonic sensors*

Rechteckig *cuboid*

| | |
|------------------------------------|---|
| Bauform <i>dimension</i> | 41 x 60 x 33 mm |
| Anschluss <i>connection</i> | Stecker M8 4polig <i>connector M8 4pole</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



Ultraschallsensoren
ultrasonic sensors

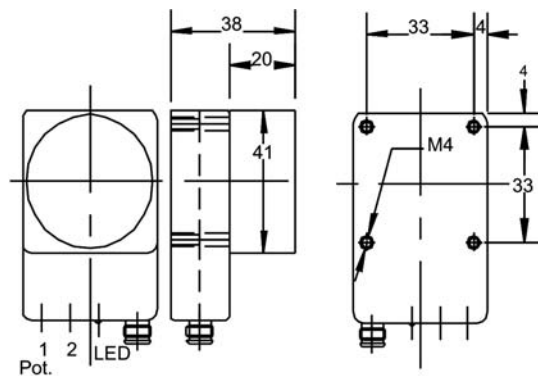
| | | |
|--|-------------------|------------------|
| Betriebsspannung <i>service voltage</i> | 15-30 VDC | |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 80 mA | |
| Sendefrequenz <i>frequency range</i> | 180 kHz | |
| Schalthysterese <i>switching hysteresis</i> | < 1 % | - |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % | |
| Schutzart <i>protection class</i> | IP 67 | |
| Umgebungstemperatur <i>ambient temperature</i> | - 20°C ... + 70°C | |
| Gehäusematerial <i>casing material</i> | Polyamid | |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> | - |
| Analogausgang <i>min. item size</i> | - | 0-10 V + 4-20 mA |
| | | |
| Erfassungsbereich <i>detection area</i> | 80 - 2500 mm | |
| max. Laststrom <i>max. load current</i> | 100 mA | - |
| Schaltfrequenz <i>max. operating frequency</i> | 3 Hz | - |

| Schema <i>diagramm</i> | Ausgang <i>output</i> | |
|------------------------|-----------------------|------------------|
| 7 | PNP-NO+NC | US -2500-PAK-ST4 |
| 14 | analog | US-2500-AVI-ST4 |

Ultraschallsensoren *ultrasonic sensors*

Rechteckig *cuboid*

| | |
|------------------------------------|---|
| Bauform <i>dimension</i> | 41 x 60 x 38 mm |
| Anschluss <i>connection</i> | Stecker M8 4polig <i>connector M8 4pole</i> |
| Empfindlichkeit <i>sensitivity</i> | einstellbar <i>adjustable</i> |



| | |
|--|-------------------|
| Betriebsspannung <i>service voltage</i> | 15-30 VDC |
| Eigenstromaufnahme <i>internal power consumpt.</i> | < 80 mA |
| Sendefrequenz <i>frequency range</i> | 180 kHz |
| Schalthysterese <i>switching hysteresis</i> | < 1 % |
| Reproduzierbarkeit <i>reproducibility</i> | < 0,5 % |
| Schutzart <i>protection class</i> | IP 67 |
| Umgebungstemperatur <i>ambient temperature</i> | - 20°C ... + 70°C |
| Gehäusematerial <i>casing material</i> | Polyamid |
| kurzschlußfest <i>short-circuit-proof</i> | ja <i>yes</i> |
| Analogausgang <i>min. item size</i> | 0-10 V + 4-20 mA |
| Erfassungsbereich <i>detection area</i> | 80 - 5000 mm |
| max. Laststrom <i>max. load current</i> | 100 mA |
| Schaltfrequenz <i>max. operating frequency</i> | 2 Hz |

| Schema <i>diagramm</i> | Ausgang <i>output</i> |
|------------------------|-----------------------|
| 7 | PNP-NO+NC |
| 14 | analog |
| | US -5000-PAK-ST4 |
| | US-5000-AVI-ST4 |

Ultraschallsensoren
ultrasonic sensors



Automática Electrónica y Control, S.L. Gorina i Pujol, 61 - 08203 Sabadell (Barcelona)
Tel 902 900 765 Fax 937 209 999 www.automaticelec.es info@automaticelec.es