



# UD18-22DC221

UD18

ULTRASONIC DISTANCE SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
UD18-22DC221	6058914

Other models and accessories → [www.sick.com/UD18](http://www.sick.com/UD18)



### Detailed technical data

#### Mechanics/electronics

<b>Supply voltage <math>V_s</math></b>	DC 20 V ... 30 V <sup>1)</sup>
<b>Power consumption</b>	≤ 1.5 W <sup>2)</sup>
<b>Initialization time</b>	< 300 ms
<b>Design</b>	Cylindrical
<b>Housing material</b>	Metal (Nickel-plated brass, PBT/PA, ultrasonic transducer: polyurethane foam, glass epoxy resin)
<b>Thread size</b>	M18 x 1
<b>Connection type</b>	Connection cable with open end: 7 x 0,25 mm <sup>2</sup> , 2 m, PUR Sender: connection cable to receiver with M8 male connector, 3-pin, 1 m, PUR Receiver: connection cable to sender with M8 female connector, 3-pin, 1.2 m, PUR
<b>Indication</b>	2 x LED
<b>Weight</b>	160 g
<b>Sending axis</b>	Straight
<b>Dimensions (W x H x D)</b>	18 mm x 18 mm x 64 mm
<b>Enclosure rating</b>	IP65
<b>Protection class</b>	III

<sup>1)</sup> Limit values, reverse-polarity protected, operation in short-circuit protected network: max. 8 A.

<sup>2)</sup> Without load.

#### Performance

<b>Installation distance</b>	30 mm ... 70 mm, 50 mm ± 3 mm (default setting)
<b>Target</b>	Natural objects
<b>Resolution</b>	1 material layer
<b>Response time</b>	5.5 ms <sup>1)</sup>
<b>Switching frequency</b>	100 Hz
<b>Output time</b>	5 ms, trigger mode: < 0.5 ms <sup>1)</sup>
<b>Ultrasonic frequency (typical)</b>	200 kHz
<b>Additional function</b>	3 selectable sensitivity levels Teach-in of up to 4 individual sensitivity level Sensitivity level changeover during operation Set parameters via Connect+ Software <sup>2)</sup>

<sup>1)</sup> Set parameters via Connect+ Software.

<sup>2)</sup> Functions may vary depending on sensor type.

<b>Blind zone</b>	7 mm ... 7 mm (from sender and receiver)
<b>Permissible angle deviation</b>	± 45° perpendicular to material layer
<b>Detectable material</b>	Paper with grammages: 100 g/m <sup>2</sup> ... 2,000 g/m <sup>2</sup> Metal-laminated sheets and films: ≤ 5 mm Self-adhesive films, metal sheets: ≤ 2 mm Corrugated cardboard: single wall F, N and G flute sizes Washi Wafer PCB

<sup>1)</sup> Set parameters via Connect+ Software.

<sup>2)</sup> Functions may vary depending on sensor type.

## Interfaces

<b>Digital output</b>	Number	2 <sup>1) 2)</sup>
	Type	PNP
	Function	Q <sub>1</sub> : switching output double layer, Q <sub>2</sub> : switching output single / no layer, normally closed
	Maximum output current I <sub>A</sub>	≤ 200 mA
<b>Control input</b>		3 x

<sup>1)</sup> Outputs Q<sub>1</sub> and Q<sub>2</sub> short-circuit protected.

<sup>2)</sup> PNP: Active = V<sub>s</sub> - (< 2 V) / Inactive = 0 V;  
NPN: Active ≤ 2 V / Inactive = V<sub>s</sub>.

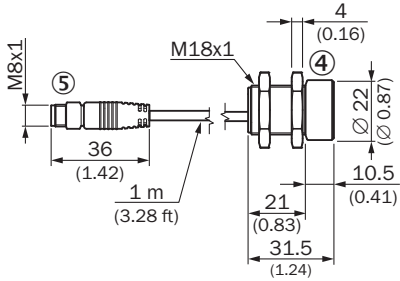
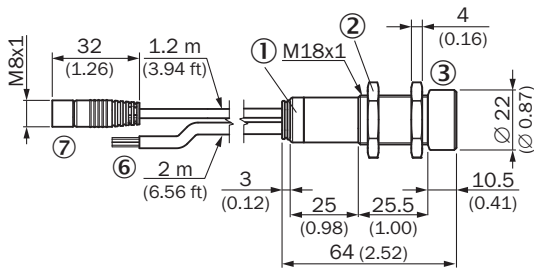
## Ambient data

<b>Ambient temperature, operation</b>	+5 °C ... +60 °C
<b>Ambient temperature, storage</b>	-40 °C ... +85 °C

## Classifications

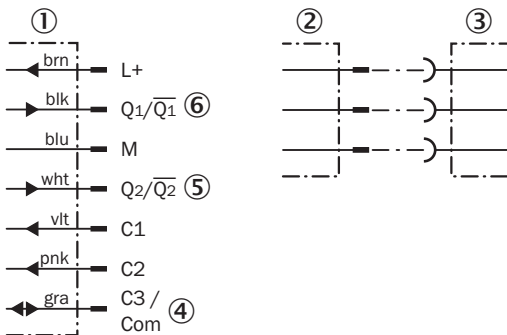
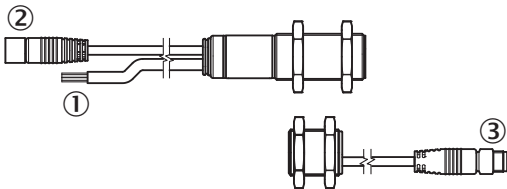
<b>ECLASS 5.0</b>	27270804
<b>ECLASS 5.1.4</b>	27270804
<b>ECLASS 6.0</b>	27270804
<b>ECLASS 6.2</b>	27270804
<b>ECLASS 7.0</b>	27270804
<b>ECLASS 8.0</b>	27270804
<b>ECLASS 8.1</b>	27270804
<b>ECLASS 9.0</b>	27270804
<b>ECLASS 10.0</b>	27270804
<b>ECLASS 11.0</b>	27270804
<b>ECLASS 12.0</b>	27272806
<b>ETIM 5.0</b>	EC001846
<b>ETIM 6.0</b>	EC001846
<b>ETIM 7.0</b>	EC001846
<b>ETIM 8.0</b>	EC001846
<b>UNSPSC 16.0901</b>	41111960

## Dimensional drawing (Dimensions in mm (inch))



- ① LED status indicator
- ② Fixing nuts, width 24 mm
- ③ Receiver with evaluation unit
- ④ Sender
- ⑤ Plug M8x1, 3-pin, for connection with the receiver
- ⑥ Supply voltage and controls connection cable
- ⑦ Female connector M8x1, 3-pin, for connection with the sender



## Connection diagram



- ① Connection cable for supply voltage and controls, with control inputs C1, C2, C3 and digital output Q1, Q2
- ② Female connector M8x1, 3-pin, for connection with the sender
- ③ Plug M8x1, 3-pin, for connection with the receiver
- ④ Communication via Connect+ adapter (CPA)
- ⑤ No material/single layer
- ⑥ Double layer

### Recommended accessories

Other models and accessories → [www.sick.com/UD18](http://www.sick.com/UD18)

	Brief description	Type	Part no.
Cloning modules			
	Tool for visualization, configuration and cloning, 3-digit LED display, supply voltage: DV 9 V ... 30 V	Connect+ adapter (CPA)	6037782
Mounting brackets and plates			
	Mounting plate for M18 sensors, steel, zinc coated, without mounting hardware	BEF-WG-M18	5321870

## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)