DEUTSCH

Ultraschallsensor
mit einem Schaltausgang
Betriebsanleitung

Sicherheitshinweise

- ▶ Vor der Inbetriebnahme die Betriebsanleitung lesen.
- ▶ Anschluss, Montage und Einstellung nur durch Fachpersonal.
- ▶ Gerät bei Inbetriebnahme vor Feuchte und Verunreinigung schützen.
- ▶ Kein Sicherheitsbauteil gemäß EU-Maschinenrichtlinie.

Bestimmungsgemäße Verwendung

Der UM30-1_111/5 ist ein Ultraschallsensor und wird zum berührungslosen Erfassen von Sachen, Tieren und Personen eingesetzt.

Inbetriebnahme

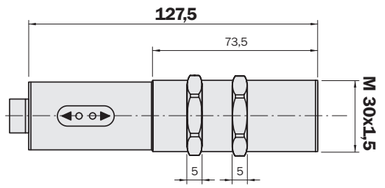
Siehe Diagramm.
Default-Werte: Schaltschwelle=max. Betriebstastweite, Schaltausgang=Q.

Wartung

SICK-Sensoren sind wartungsfrei. Wir empfehlen, in regelmäßigen Abständen
- die Grenzflächen zu reinigen,
- Verschraubungen und Steckverbindungen zu überprüfen.

A

UM30-11111/5
UM30-12111/5
UM30-13111/5



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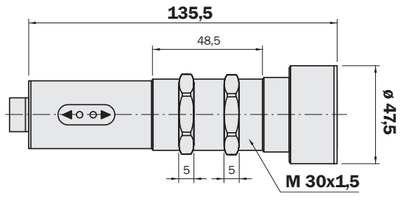

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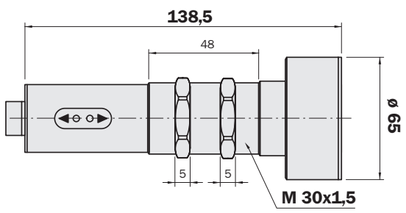
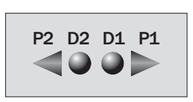


Alle Typen



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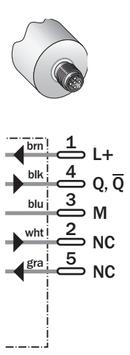

SICK

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UM30-1_111/5

Änderungen vorbehalten
Angegebene Produkteigenschaften und technische Daten stellen keine Garantieerklärung dar

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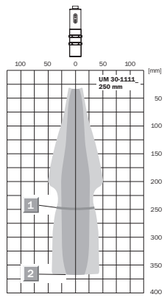

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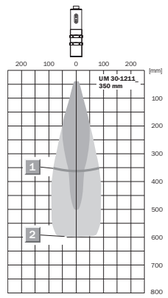

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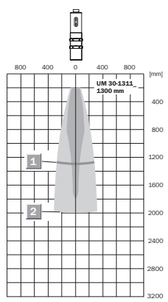

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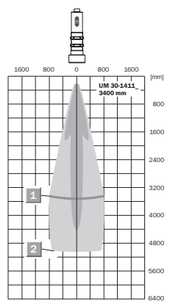
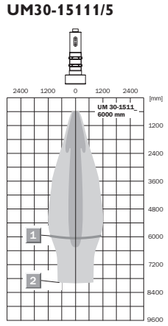
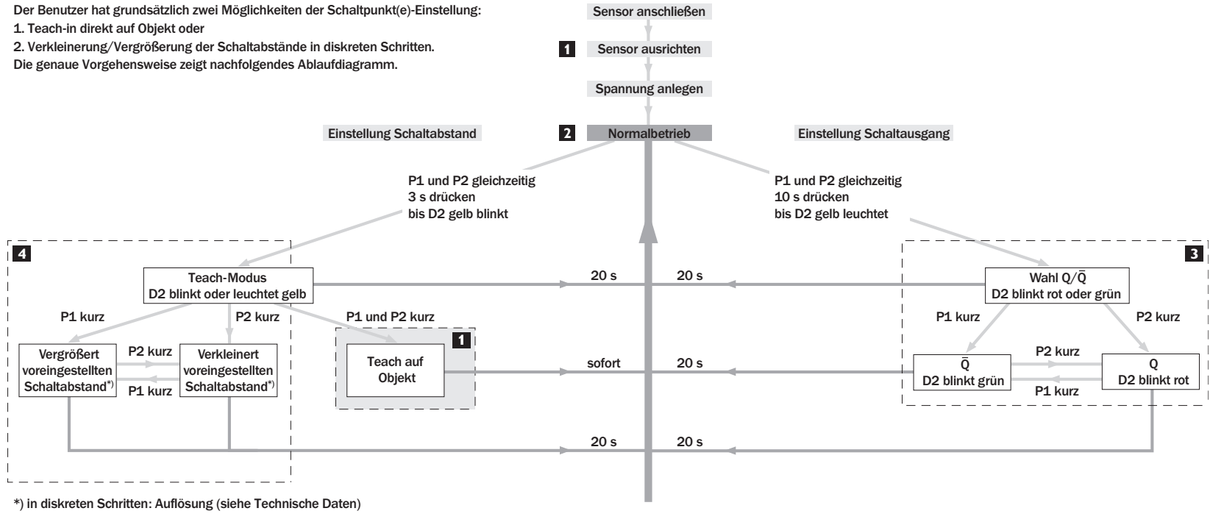


UM30-15111/5



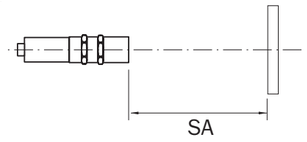
1 Betriebstastweite
2 Grenztastweite

Der Benutzer hat grundsätzlich zwei Möglichkeiten der Schaltpunkt(e)-Einstellung:
1. Teach-in direkt auf Objekt oder
2. Verkleinerung/Vergrößerung der Schaltabstände in diskreten Schritten.
Die genaue Vorgehensweise zeigt nachfolgendes Ablaufdiagramm.



*) in diskreten Schritten: Auflösung (siehe Technische Daten)

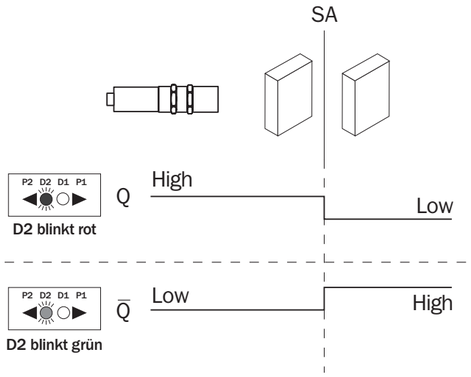
1



SA = Schaltabstand

2

3



4

UM30	-11111/5	-12111/5	-13111/5	-14111/5	-15111/5
Betriebstastweite (Grenztastweite)	30-250 mm (350)	60-350 mm (600)	200-1300 mm (2000)	350-3400 mm (5000)	800-6000 mm (8000)
Ultraschallfrequenz	320 kHz	400 kHz	200 kHz	120 kHz	80 kHz
Auflösung	0,36 mm			1 mm	
Reproduzierbarkeit	±0,15 % von Endwert				
Versorgungsspannung [1]	DC 9 ... 30 V				
Restwelligkeit	±10 %				
Stromaufnahme [2]	≤ 60 mA				
Bereitschaftsverzug	2 s				
Ansprechzeit	50 ms	70 ms	110 ms	180 ms	240 ms
Schaltausgang [3]	1 x PNP/1 x NPN				
Schaltfrequenz	11/s	8/s	6/s	3/s	2/s
Schalthysterese	2,5 mm	5 mm	20 mm	50 mm	100 mm
Anschlussart [4]	M12				
Schutzart	IP 65				
Betriebsumgebungstemperatur [5]	-20 ... +70 °C				

[1] Verpolsicher
[2] Ohne Last
[3] Kurzschlussgeschützt, invertierbar
I_{max} = 200 mA
PNP: High = U_V/(< 2 V)/LOW = 0 V
NPN: High = U_V/LOW ≤ 2 V
[4] 5-polig
[5] Temperaturkompensiert bei -20 ... +65 °C

ENGLISH

Ultrasonic sensor
with one switching output
Operating Instructions

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UM30-1_111/5

Safety Specifications

- ▶ No safety component in accordance with EU machine guidelines.
- ▶ Read the operating instructions before starting operation.
- ▶ Connection, assembly, and settings only by competent technicians.
- ▶ Protect the device against moisture and soiling when operating.

Proper Use

The UM30-1_111/5 is an ultrasonic sensor and is used for non-contact detection of objects, animals, and people.

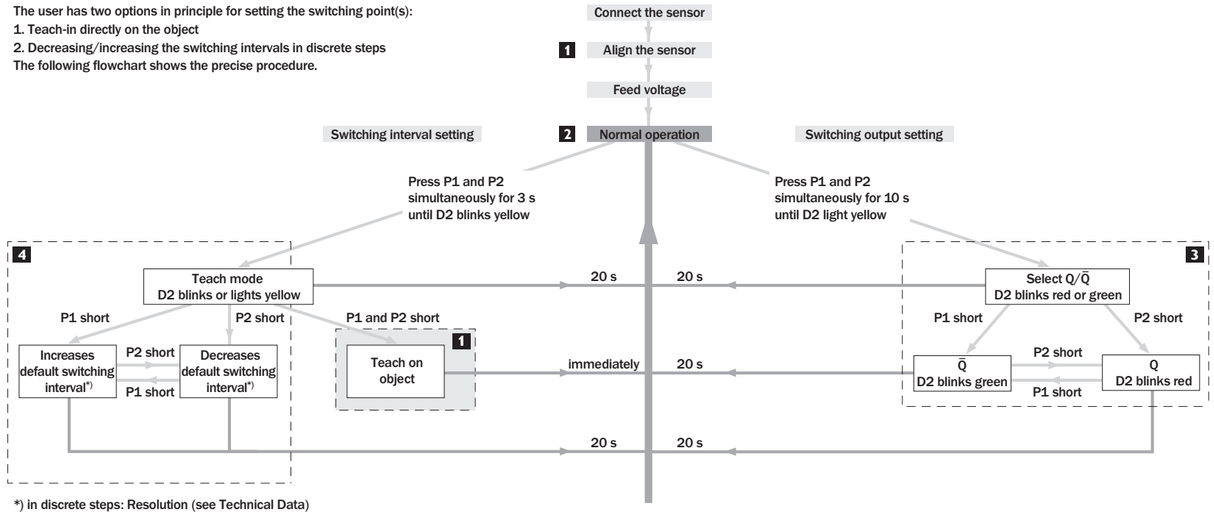
Starting Operation

See diagram.
Default values: Switching threshold=max. operating scanning range, switching output=Q.

Maintenance

SICK sensors do not require any maintenance. We recommend that you clean the optical surfaces and check the screw connections and plug-in connections at regular intervals.

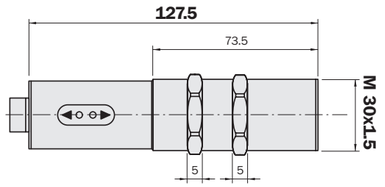
The user has two options in principle for setting the switching point(s):
1. Teach-in directly on the object
2. Decreasing/increasing the switching intervals in discrete steps
The following flowchart shows the precise procedure.



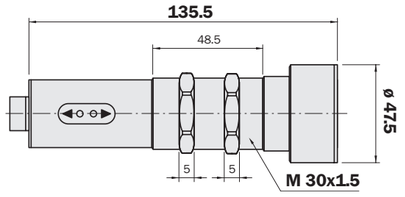
*) in discrete steps: Resolution (see Technical Data)

A

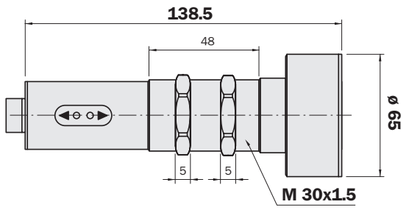
UM30-11111/5
UM30-12111/5
UM30-13111/5



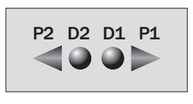
UM30-14111/5



UM30-15111/5



All types



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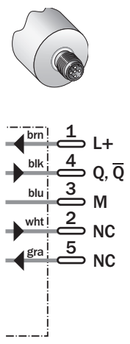
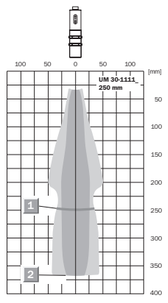
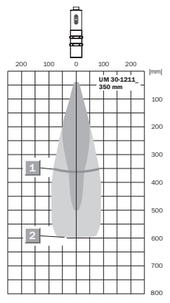


We reserve the right to make changes without prior notification

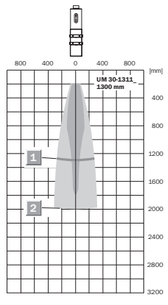
UM30-11111/5



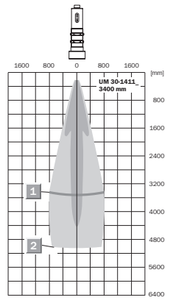
UM30-12111/5



UM30-13111/5



UM30-14111/5



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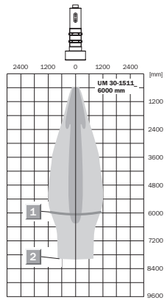
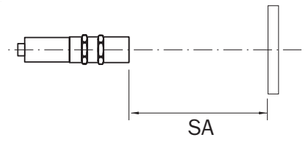


1 Operating scanning range
2 Limiting scanning range

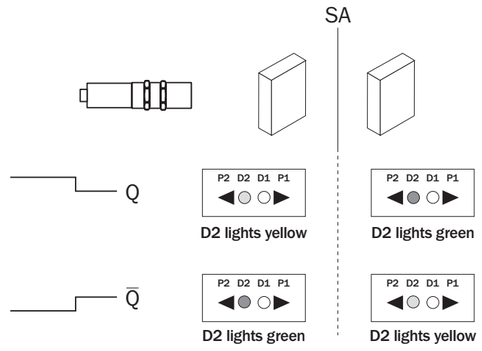
1



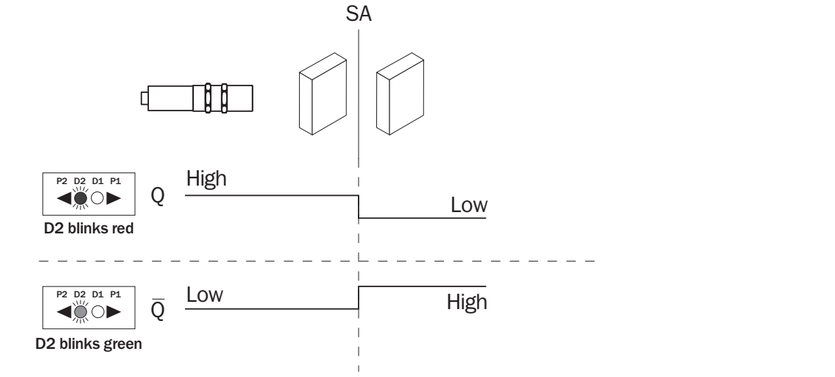
SA = switching interval

2

Dependent on the relative position of the object to be detected to the switching interval, the LED D2 has different states.

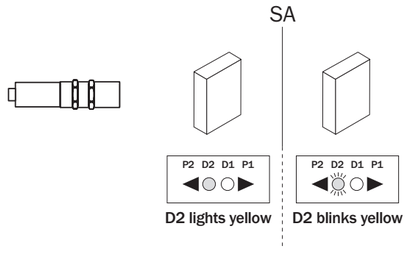


3



4

Dependent on the relative position of the object to be detected to the switching interval, the LED D2 has different states.



UM30	-11111/5	-12111/5	-13111/5	-14111/5	-15111/5
Operating scanning range (limiting scanning range)	30-250 mm (350)	60-350 mm (600)	200-1300 mm (2000)	350-3400 mm (5000)	800-6000 mm (8000)
Ultrasonic frequency	320 kHz	400 kHz	200 kHz	120 kHz	80 kHz
Resolution	0.36 mm			1 mm	
Reproducibility	±0.15 % of final value				
Supply voltage [1]	9 ... 30 V DC				
Residual ripple	±10 %				
Current consumption [2]	≤ 60 mA				
Standby delay	2 s				
Response time	50 ms	70 ms	110 ms	180 ms	240 ms
Switching output [3]	1 x PNP/1 x NPN				
Switching frequency	11/s	8/s	6/s	3/s	2/s
Switching hysteresis	2.5 mm	5 mm	20 mm	50 mm	100 mm
Connection type [4]	M12				
Enclosure rating	IP 65				
Ambient operating temperature [5]	-20 ... +70 °C				

[1] Reverse-polarity protected
[2] Without load
[3] Short-circuit protected, reversible
$I_{max.}$ = 200 mA
PNP: High = V_S–(< 2 V)/LOW = 0 V
NPN: High = V_S/LOW ≤ 2 V
[4] 5-pin
[5] Temperature compensation at –20 …+65 °C