

EVERY
THING
ULTRA
SONIC

Extract from our online catalogue:

ews ultrasonic through-beam barrier

Current to: 2018-09-13



Ultrasonic through-beam sensor in different housings

HIGHLIGHTS

- › Emitter and receiver › in miniature cubic or M18 housing
- › Installation-compatible with many light barriers › a true alternative for critical applications
- › Up to 500 Hz switching frequency › for fast sampling

BASICS

- › 1 switching output in pnp variant
- › microsonic Teach-in using a button
- › Working distance between the transmitter and the receiver selectable from 10 to 2,500 mm
- › 20-30 V operating voltage

Overview

Ultrasonic through-beam barrier ews

for contact free detection of objects specially in the most diverse applications e.g. with bottles or plastic foils. The through-beam sensor ews is available as a cuboid miniature housing and a cylindrical M18 housing. The ews family covers a working range of 10 mm to 2,500 mm.

A through-beam barrier

consists of two constructively-identical units which are operated as a transmitter and a receiver. The two units recognize whether they are intended to work as a transmitter or a receiver via the control input. If pin 2 +UB is activated, this unit functions as a transmitter.



The functional principle ultrasonic through-beam barrier

The functional principle

one through-beam sensor ews, set as emitter, sends cyclic sound impulses, received by another one, set as receiver. If an object interrupts the pulses between the transmitter and the receiver, the switching output of the receiver is set.

microsonic Teach-in

The Teach-in button on the top of the cubic through-beam barrier ews-15/CD allows for a convenient configuration of the response time and the output function of the switching output of the receiver. With the Teach-in procedure the response time and an off-delay of 6,9 ms can be set. At the through-beam barrier in the M18 housing, response time and output function can be set via the Teach-in procedure at Pin 2.

Two LEDs

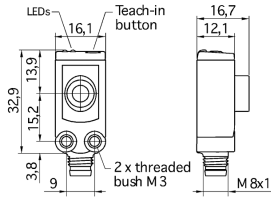
show the operating state and the state of the switching output of the receiver.

ews-15/CD Set

scale drawing

detection zone

2x



1 x pnp

working range	50 - 250 mm
design	cuboidal
operating mode	one-way barrier
particularities	Empfänger für Einweg-Ultraschall-Schranke Sender für Einweg-Ultraschall-Schranke kleinste quaderförmige Bauform

ultrasonic-specific

means of measurement	Transmitter-receiver pulse mode
transducer frequency	380 kHz

electrical data

operating voltage U_B	20 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	$\leq 30 \text{ mA}$
type of connection	4-pin M8 initiator plug

ews-15/CD Set

outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ($U_B = 2\text{V}$) NOC/NCC adjustable, short-circuit-proof
output 3	Strom: 4-20 mA / Spannung: 2-10 V (bei $U_B \geq 15 \text{ V}$), kurzschlussfest
switching frequency	400 Hz, bei aktiviertem Filter 80 Hz
response time	2,3 ms, bei aktiviertem Filter 6,9 ms
delay prior to availability	< 300 ms

inputs

input 1	control input
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housing

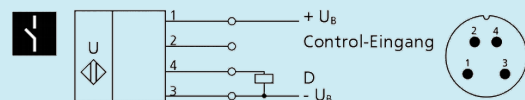
material	ABS
ultrasonic transducer	polyurethane foam, epoxy resin with glass contents
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	2 x 12 g
further versions	single transmitter/receiver

technical features/characteristics

controls	1 push-button
scope for settings	Teach-in via push-button
indicators	LED green (transmitter and receiver: working), LED yellow (only receiver: switch status)
particularities	Empfänger für Einweg-Ultraschall-Schranke Sender für Einweg-Ultraschall-Schranke Kleinste quaderförmige Bauform

documentation (download)

pin assignment

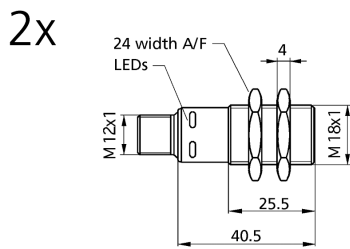


order no.

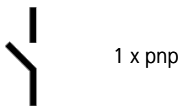
ews-15/CD Set

ews-15/M18/CD Set

scale drawing



detection zone



working range	10 - 150 mm
design	cylindrical M18
operating mode	one-way barrier
particularities	Empfänger für Einweg-Ultraschall-Schranke Sender für Einweg-Ultraschall-Schranke

ultrasonic-specific

means of measurement	Transmitter-receiver pulse mode
transducer frequency	380 kHz

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	as emitter ≤ 45 mA, as receiver ≤ 25 mA
type of connection	4-pin M12 initiator plug

ews-15/M18/CD Set

outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ($U_B = 2\text{V}$) NOC/NCC adjustable, short-circuit-proof
switching frequency	500 Hz, bei aktiviertem Filter 125 Hz
response time	2 ms, bei aktiviertem Filter 6 ms
delay prior to availability	< 300 ms

inputs

input 1	Control-Eingang Teach-in-Eingang
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housing

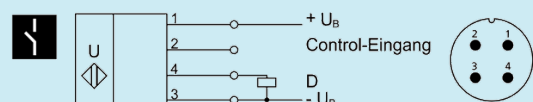
material	ABS
max. tightening torque of nuts	1 Nm
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	2 x 15 g
further versions	single transmitter/receiver

technical features/characteristics

controls	control input
scope for settings	Teach-in
indicators	LED green (transmitter and receiver: working), LED yellow (only receiver: switch status)
particularities	Empfänger für Einweg-Ultraschall-Schranke Sender für Einweg-Ultraschall-Schranke

documentation (download)

pin assignment

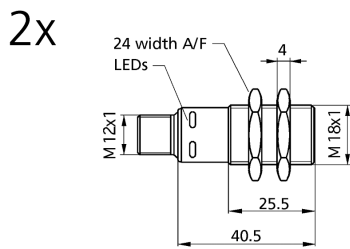


order no.

ews-15/M18/CD Set

ews-25/M18/CD Set

scale drawing



detection zone



working range	10 - 400 mm
design	cylindrical M18
operating mode	one-way barrier
particularities	Sender für Einweg-Ultraschall-Schranke Empfänger für Einweg-Ultraschall-Schranke

ultrasonic-specific

means of measurement	Transmitter-receiver pulse mode
transducer frequency	320 kHz

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	as emitter ≤ 45 mA, as receiver ≤ 25 mA
type of connection	4-pin M12 initiator plug

ews-25/M18/CD Set

outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ($U_B = 2V$) NOC/NCC adjustable, short-circuit-proof
switching frequency	500 Hz, bei aktiviertem Filter 125 Hz
response time	2 ms, bei aktiviertem Filter 6 ms
delay prior to availability	< 300 ms

inputs

input 1	Control-Eingang Teach-in-Eingang
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housing

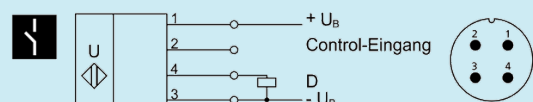
material	ABS
max. tightening torque of nuts	1 Nm
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	2 x 15 g
further versions	single transmitter/receiver

technical features/characteristics

controls	control input
scope for settings	Teach-in
indicators	LED green (transmitter and receiver: working), LED yellow (only receiver: switch status)
particularities	Sender für Einweg-Ultraschall-Schranke Empfänger für Einweg-Ultraschall-Schranke

documentation (download)

pin assignment

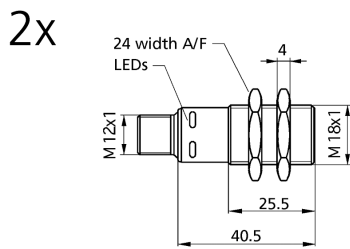


order no.

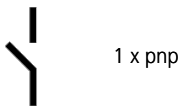
ews-25/M18/CD Set

ews-100/M18/CD Set

scale drawing



detection zone



working range	100 - 2,500 mm
design	cylindrical M18
operating mode	one-way barrier
particularities	Empfänger für Einweg-Ultraschall-Schranke Sender für Einweg-Ultraschall-Schranke

ultrasonic-specific

means of measurement	Transmitter-receiver pulse mode
transducer frequency	200 kHz

electrical data

operating voltage U_B	10 - 30 V d.c., reverse polarity protection
voltage ripple	$\pm 10 \%$
no-load current consumption	as emitter ≤ 50 mA, as receiver ≤ 25 mA
type of connection	4-pin M12 initiator plug

ews-100/M18/CD Set

outputs

output 1	switching output pnp: $I_{\max} = 200 \text{ mA}$ ($U_B = 2V$) NOC/NCC adjustable, short-circuit-proof
switching frequency	200 Hz, bei aktiviertem Filter 50 Hz
response time	5 ms, bei aktiviertem Filter 15 ms
delay prior to availability	< 300 ms

inputs

input 1	Control-Eingang Teach-in-Eingang
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housing

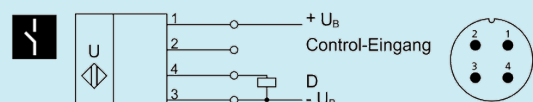
material	ABS
max. tightening torque of nuts	1 Nm
class of protection to EN 60529	IP 67
operating temperature	-25°C to +70°C
storage temperature	-40°C to +85°C
weight	2 x 15 g
further versions	single transmitter/receiver

technical features/characteristics

controls	control input
scope for settings	Teach-in
indicators	LED green (transmitter and receiver: working), LED yellow (only receiver: switch status)
particularities	Empfänger für Einweg-Ultraschall-Schranke Sender für Einweg-Ultraschall-Schranke

documentation (download)

pin assignment



order no.

ews-100/M18/CD Set