



Operating Instructions

Ultrasonic one-way reflectiv barrier with one switched output

- ews-15/M18/CD Set
- ews-25/M18/CD Set
- ews-100/M18/CD Set

Product Description

If an object interrupts the measuring track between two ews-.../M18/CD, one set as a transmitter and another set as a receiver, the switched output of the receiver is set.

Via the Control input, the response time and the output function of the switched output are changeable (Teach-in).

Two LEDs indicate operation and the state of the switched output of the receiver.

Safety Notes

- Read the operating instructions prior to start-up.
- Connection, installation and adjustment works may only be carried out by expert personnel.

- No safety component in accordance with the EU Machine Directive.

Proper use

ews ultrasonic sensors are used for non-contact detection of objects.

Installation

- Mount two sensors ews-.../M18/CD at the installation site (see fig. 3).
Maximum torque: 0,5 Nm

- Connect the connection cables to the M12 device plugs.

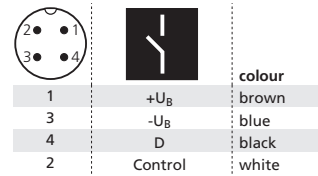


Fig. 1: Pin assignment with view onto sensor plug and colour coding of the microsonic connection cable.

- Set one ews-.../M18/CD to function transmitter and one ews-.../M18/CD as a receiver by corresponding assignment of pin 2 (see fig. 1 and 2).

assignment pin 2	operation mode
+U _B	transmitter
not connected	receiver

Fig. 2: Selection of operation mode.

Start-Up

- Connect the power supply.
- Carry out the setting in accordance with the diagram.

Factory Setting

- Switched output on NOC.
- Filter not active.

Maintenance

microsonic sensors are maintenance-free. In case of excess caked-on dirt we recommend cleaning the white sensor surface

Notes

- In the normal operating mode, an illuminated yellow LED at the receiver signals the switched output is switched through.
- The objects to be detected have to be bigger than the detection area.
- The actual detect points depend on size and shape of the object.
- An ews-.../M18/CD Set consists of two ews-.../M18/CD.



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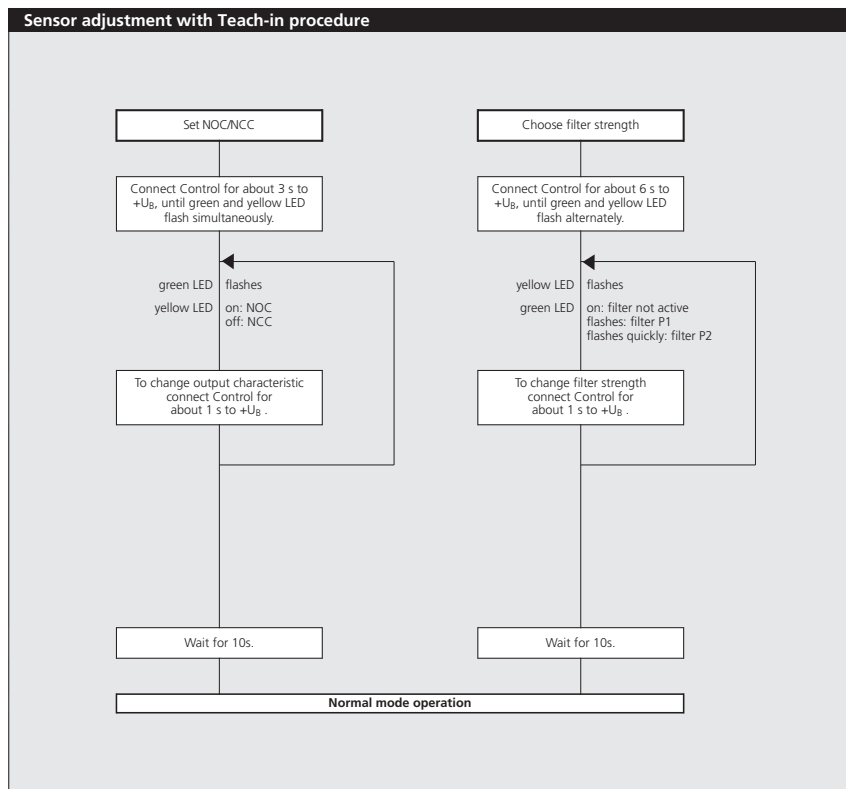
Contact

Sensor Partners BV

James Wattlaan 15
5151 DP Drunen
The Netherlands
+31 (0)416 - 37 82 39
info@sensorpartners.com
sensorpartners.com

Sensor Partners BVBA

Z.1 Researchpark 310
B-1731, Zellik
Belgium
+32 (0)2 - 464 96 90
info@sensorpartners.com
sensorpartners.com



Detection areas and minimum object sizes

Sensortyp	Mounting distance	Minimum object diameter ¹⁾
ews-15	50 mm	ø 10 mm
	150 mm	ø 10 mm
ews-25	100 mm	ø 27 mm
	200 mm	ø 27 mm
	400 mm	ø 40 mm
ews-100	625 mm	ø 70 mm
	1,250 mm	ø 70 mm
	2,500 mm	ø 40 mm

¹⁾ The given minimum object diameter relates to a round bar that is moved vertically to transmitter and receiver unit into the dection area.

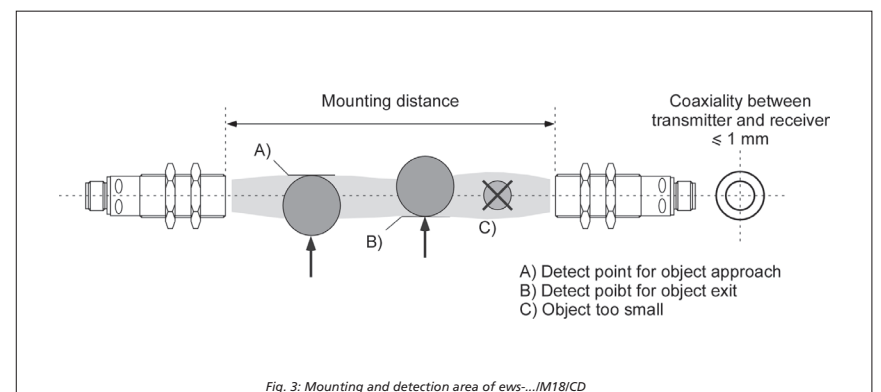
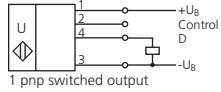
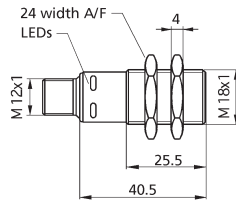
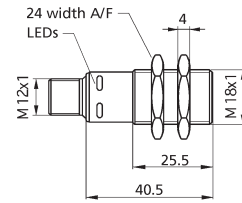
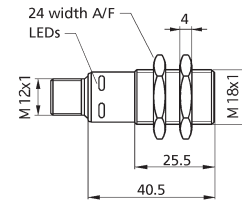


Fig. 3: Mounting and detection area of ews-.../M18/CD

Technical data

ews-15/M18/CD

ews-25/M18/CD

ews-100/M18/CD


spacing transmitter - receiver	10 - 150 mm	10 - 400 mm	100 - 2,500 mm
transducer frequency	380 kHz	320 kHz	200 kHz
detection area	see table »detection areas« and fig. 3	see table »detection areas« and fig. 3	see table »detection areas« and fig. 3
operating voltage U_B	10 - 30 V DC, reverse polarity protection	10 - 30 V DC, reverse polarity protection	10 - 30 V DC, reverse polarity protection
voltage ripple	±10 %	±10 %	±10 %
no-load current consumption as receiver	< 45 mA	< 45 mA	< 50 mA
no-load current consumption as transmitter	< 25 mA	< 25 mA	< 25 mA
housing	PBT ultrasonic transducer: polyurethane foam, epoxy resin with glass content	PBT ultrasonic transducer: polyurethane foam, epoxy resin with glass content	PBT ultrasonic transducer: polyurethane foam, epoxy resin with glass content
class of protection to EN 60 529	IP 67	IP 67	IP 67
type of connection	4-pin M12 initiator plug	4-pin M12 initiator plug	4-pin M12 initiator plug
controls	Control input	Control input	Control input
programmable	Teach-in	Teach-in	Teach-in
indicators	LED green (transmitter and receiver: operation) LED yellow (only receiver: state of output)	LED green (transmitter and receiver: operation) LED yellow (only receiver: state of output)	LED green (transmitter and receiver: operation) LED yellow (only receiver: state of output)
operating temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
storage temperature	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
weight	2 x 15 g	2 x 15 g	2 x 15 g
switching frequency ¹⁾	filter P0: 500 Hz filter P1: 166 Hz filter P2: 125 Hz	filter P0: 500 Hz filter P1: 166 Hz filter P2: 125 Hz	filter P0: 200 Hz filter P1: 66 Hz filter P2: 50 Hz
response time ¹⁾	filter P0: 2 ms filter P1: 6 ms filter P2: 6 ms	filter P0: 2 ms filter P1: 6 ms filter P2: 6 ms	filter P0: 5 ms filter P1: 15 ms filter P2: 15 ms
time delay before availability	< 300 ms	< 300 ms	< 300 ms
norm conformity	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
order no.	ews-15/M18/CD Set	ews-25/M18/CD Set	ews-100/M18/CD Set
switched output	pnp, U_B -2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof	pnp, U_B -2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof	pnp, U_B -2 V, I_{max} = 200 mA switchable NOC/NCC, short-circuit-proof

1) Can be programmed with Teach-in.