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extract from our online catalogue:

# *nero-15/CD*

current to: 2026-11-20

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# nero

Ultrasonic proximity switch nero in M18 plastic sleeve with 4 detection ranges

## Highlights

## Basics

- Variant with 90° angled head
- UL Listed to Canadian and US safety standards
- 1 switching output › pnp or npn basis
- Analogue output 4–20 mA or 0–10 V
- 4 detection ranges with a measurement range of 20 mm to 1.3 m
- microsonic-Teach-in
- 0.2 mm resolution
- 10–30 V operating voltage

# *nero ultrasonic proximity switches*

are available in a M18 plastic sleeve. The ultrasonic proximity switches detect contactless and reliable objects with four detection ranges from 20 mm to 1.3 m.

### *Two output stages*

are available for 4 detection ranges:

1 switching output with pnp or npn switching technology

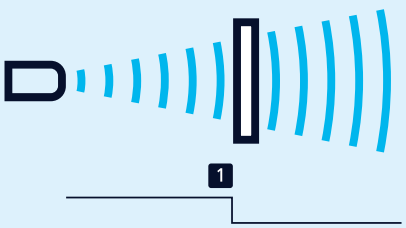
1 analogue output 4–20 mA or 0–10 V

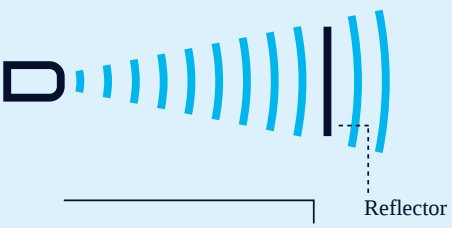
### *Sensors with switching output have three operating modes:*

- Single switching point
- Two-way reflective barrier
- Window mode

### *Teach-in of a single switching point*

- Place object to be detected (1) at the desired distance
- Apply $+U_B$ to pin 2 for about 3 seconds
- Then apply $+U_B$ to pin 2 again for about 1 second

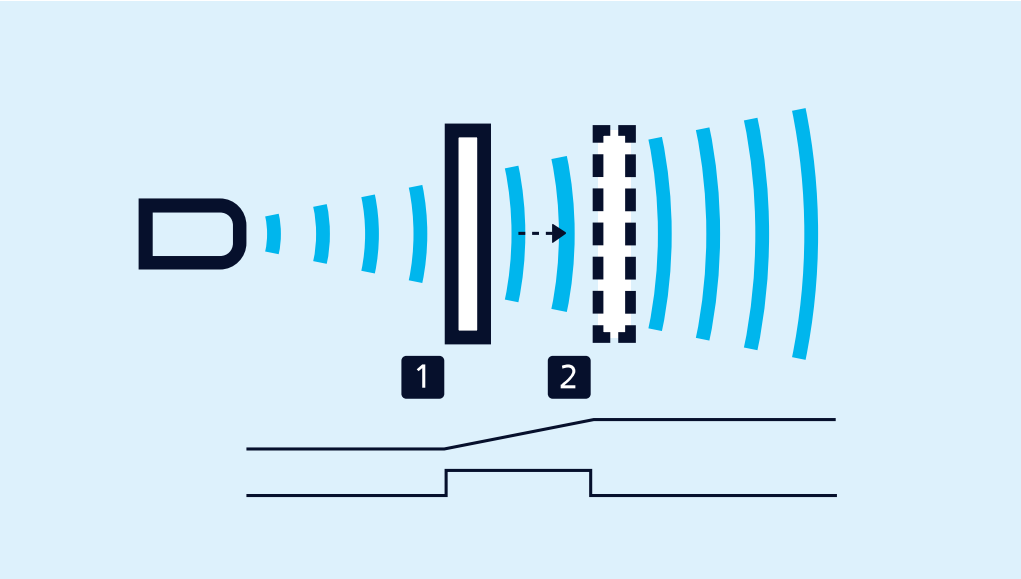


### Teach-in of a two-way reflective barrier

with a fixed reflector

- Apply +$U_B$ to pin 2 for about 3 seconds
- Then apply +$U_B$ to pin 2 again for about 10 seconds




*Teach-in of an analogue characteristic or a window with two switching points*

### For configuration of a window

- Place object at the near edge of the window (1)
- Apply +$U_B$ to pin 2 for about 3 seconds
- Then move the object to the far edge of the window (2)
- Then apply +$U_B$ to pin 2 again for about 1 second

### NCC/NOC

and rising/falling analogue characteristic curve can also be set via pin 2.

### One green and one yellow LED

indicate the state of the output and support microsonic Teach-in.

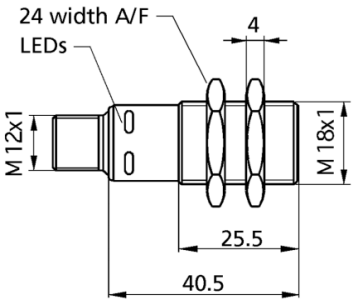
# *You have special requirements?*

Nothing as simple as that.

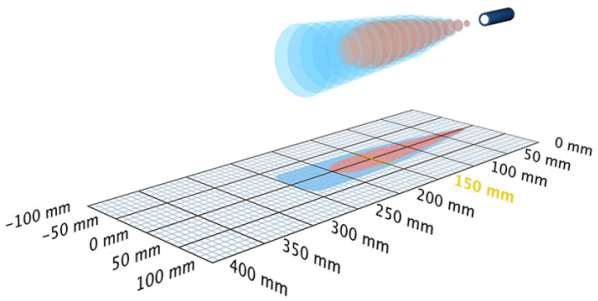
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# nero-15/CD

## scale drawing




## detection zone




1 x pnp

250 mm

| | |
|---|---|
| design | cylindrical M18 |
| operating mode | proximity switch/reflective mode<br>reflective barrier<br>window mode |
| particularities | UL Listed |

## Ultrasonic-Specific

| | |
|---|---|
| means of measurement | echo propagation time measurement |
| transducer frequency | 380 kHz |
| blind zone | 25 mm |
| operating range | 150 mm |
| max. range | 250 mm |
| resolution | 0.20 mm |
| reproducibility | ± 0.15 % |
| accuracy | temperature drift 0.17 %/K |

## Electrical Data

| | |
|---|---|
| operating voltage $U_B$ | 10 - 30 V d.c., reverse polarity protection |
| voltage ripple | ± 10 % |
| no-load current consumption | ≤ 40 mA |
| type of connection | 4-pin M12 initiator plug |

## Outputs

| | |
|---|---|
| output 1 | switching output<br>pnp: $I_{max}$ = 200 mA ($U_B$-2V) |
| switching hysteresis | 2.0 mm |
| switching frequency | 25 Hz |
| response delay | 32 ms |
| delay prior to availability | < 300 ms |

## Inputs

| | |
|---|---|
| input 1 | Teach-in input |

## Housing

| | |
|---|---|
| material | PBT |
| 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 | 15 g |
| further versions | nero-15/WK/CD |
| further versions | 90° angular head |

## Technical Features/Characteristics

| | |
|---|---|
| temperature compensation | no |
| controls | control input |
| scope for settings | Teach-in |
| synchronization | no |
| multiplex | no |
| indicators | 1 x LED green: working, 1 x LED yellow: switch status |

## Accessories

| | |
|---|---|
| deployable accessory | BF-18<br>KST4A-2/M12<br>KST4A-5/M12<br>KST4G-2/M12<br>KST4G-5/M12 |

## pin assignment

