

NX series

DATASHEET

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

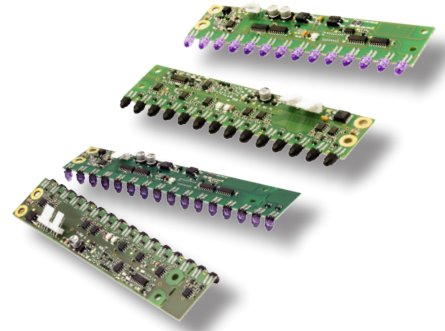
NX series

Medium resolution area sensors
without housing



features

- Complete protection against electrical damages
- LED indicators
- Crossed beams detection
- Without housing
- 16 or 14 optics
- Detection of goods in automatic vending machines
- Detection of objects with irregular shape




code description

| | | NX | 16 | SR | / | X | A | N | - | A | 0 | 00 | |
|--------------------|--|----|-------------------------------------|----|---|---|---|---|---|---|---|----|--|
| series | | NX | Area sensor without housing | | | | | | | | | | |
| optics | | 16 | 16 optics (150 mm area height) | | | | | | | | | | |
| | | 14 | 14 optics (132 mm area height) | | | | | | | | | | |
| emitter / receiver | | S | Emitter with sensitivity adjustment | | | | | | | | | | |
| | | R | Receiver | | | | | | | | | | |
| | | SR | Emitter + receiver kit | | | | | | | | | | |
| emitter / receiver | | 0 | Emitter without check | | | | | | | | | | |
| | | X | Emitter with check | | | | | | | | | | |
| | | R | Receiver | | | | | | | | | | |
| output | | 0 | Emitter | | | | | | | | | | |
| | | A | NO output | | | | | | | | | | |
| | | C | NC output | | | | | | | | | | |
| output | | 0 | Emitter | | | | | | | | | | |
| | | P | PNP output | | | | | | | | | | |
| | | N | NPN output | | | | | | | | | | |
| optics | | A | Axial optics | | | | | | | | | | |
| | | C | Right angle optics | | | | | | | | | | |
| model | | 0 | Standard model | | | | | | | | | | |
| | | T | Moisture resistant model | | | | | | | | | | |
| output | | 00 | Output without delay off | | | | | | | | | | |
| | | 10 | 100 ms output delay off | | | | | | | | | | |
| distance | | - | Sensing distance 0,5...2 m | | | | | | | | | | |
| | | 20 | Sensing distance 0,25...0,7 m | | | | | | | | | | |

available models

| function | optics | adjust. | check | output | moisture resistant | delay (ms) | distance (m) | model | |
|--------------------|----------------|---------|-------|----------|--------------------|------------|--------------|-------------------|--|
| emitter + receiver | 14 axial | ● | ● | NPN - NO | - | 100 | 0,5...2 | NX14SR/XAN-A010 | |
| | | | | | | - | | NX14SR/XAP-A000 | |
| | 14 right angle | | | PNP - NO | - | - | | NX14SR/XAP-C000 | |
| | | | | | | | | NX14SR/XAP-C010 | |
| | 14 axial | | | NPN - NC | ● | 100 | | NX14SR/XCN-AT10 | |
| | | | | | - | | | NX14SR/XCN-C010 | |
| | 14 right angle | | | | ● | | | NX14SR/XCN-CT10 | |
| | | | | PNP - NC | | - | | NX14SR/XCP-C000 | |
| | 16 axial | | | NPN - NO | - | 100 | | NX16SR/XAN-A010 | |
| | | | | | | - | | NX16SR/XAN-C000 | |
| | 16 right angle | | | | ● | | | NX16SR/XAN-C010 | |
| | | | | | ● | | | NX16SR/XAN-CT10 | |
| | 16 axial | | | PNP - NO | | | | NX16SR/XAP-A010 | |
| | 16 right angle | | | | - | | | NX16SR/XAN-C010 | |
| | | | | NPN - NC | | 100 | | NX16SR/XCN-A010 | |
| | 16 axial | | | | ● | | | NX16SR/XCN-AT10 | |
| | | | | | - | | | NX16SR/XCN-C010 | |
| | 16 right angle | | | | ● | | | NX16SR/XCN-CT10 | |
| | | | | | | | | | |
| | axial | | | NPN - NO | - | | 0.25...0.7 | NX16SR/XAN-A01020 | |
| | | | | | ● | | | NX16SR/XAN-CT1020 | |
| | right angle | | | PNP - NO | | | | NX16SR/XAP-C01020 | |
| | | | | | - | | | NX16SR/XCN-AT1020 | |
| | axial | | | | | | | | |
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technical specification

| | NX**SR/***_*****20 | NX**SR/***_***** |
|--------------------------------|---|--|
| |  | |
| type | medium resolution area sensor with 16/14 optics, step 10 mm | |
| nominal sensing distance | 0.25...0.7 m 880 nm (beam pitch ≥ 10 mm) | 0.5...2 m 880 nm (beam pitch ≥ 10 mm) |
| emission | infrared (880 nm), modulated | |
| controlled height | 150 mm (16 optics) ; 132 mm (14 optics) | |
| minimum sensing distance | 0.25 m | 0.5 m |
| minimum detectable object | $\varnothing 15^{(1)}$ / $\varnothing 7.5^{(2)}$ / $\varnothing 5^{(3)}$ mm | |
| hysteresis | < 10% | |
| supply voltage | 10 – 26 Vdc | |
| ripple | 10% | |
| no-load supply current | 150 mA (emitter) – 25 mA (receiver) | |
| output current | 100 mA | |
| leakage current | < 10 μ A (a Vdc max.) | |
| voltage drop | 2 V a 100 mA | |
| output type | NPN or PNP open collector, NO or NC | |
| input | check input | |
| response time (Light/Dark) | 500 μ sec | |
| response time (Light/Dark) | 7 ms | |
| power on delay | < 85 ms (switch on delay) | |
| output delay | 100 ms (according to models) | |
| power supply protections | polarity reversal - transient | |
| output protection | short circuit (autoreset) | |
| temperature range | -0 /+ 55 °C (without freeze) | |
| interference to external light | 1000 lux (incandescent lamp) 1500 lux (sunlight) | |
| IP mechanical protection | not defined | |
| emitter LED | yellow (supply and emission active) | |
| receiver LED | red (signal level) – Yellow (output state active) | |
| housing material | No housing. Mechanical and electrical protections of the PCB have to be submitted to the machine structure | |
| connections | With PCB connectors / Emitter, Conn. 3 MOLEX 22-05-7038 - Positive, Check, Common / Receiver, Conn. 1 MOLEX 22-05-7038 - Positive, Check, Common / Receiver, Conn. 2 MOLEX 22-05-7048 Positive, Check, Output, Common | |
| dimensions | 157 x 36 x 18 mm (16 optics) - 140 x 36 x 18 mm (14 optics) | |
| weight (approximate) | 104 g | |

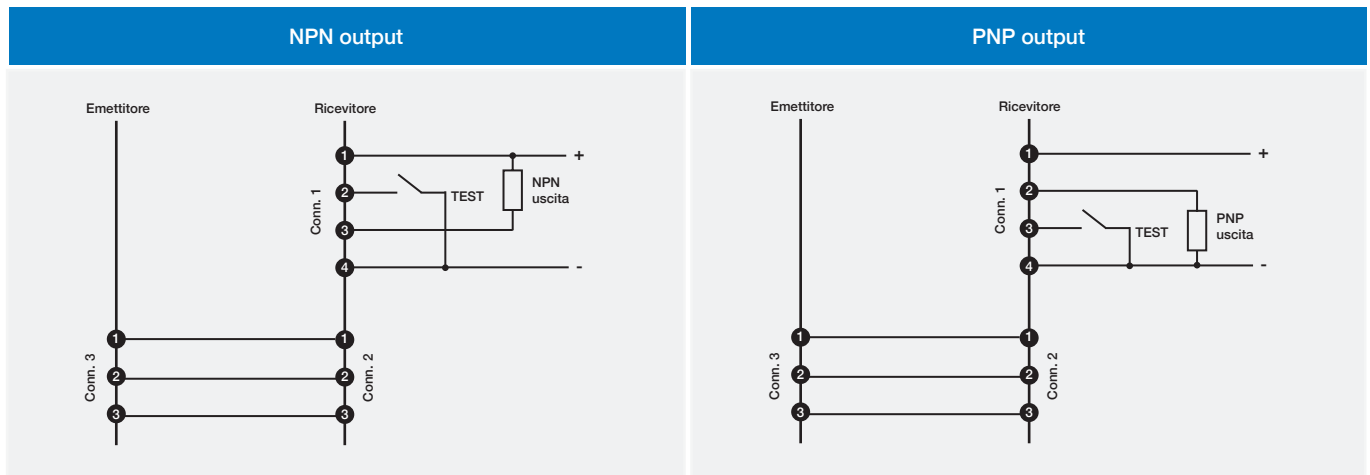
⁽¹⁾ Guaranteed resolution everywhere in the detection area

⁽²⁾ Guaranteed resolution in the central part of the detection

⁽³⁾ As note (2), but with sensivity adjustment

Dark zones are parts of the detection area close to the emitter and receiver, their amplitude X is proportional to the distance D between the emitter and the receiver. X=0.06D.

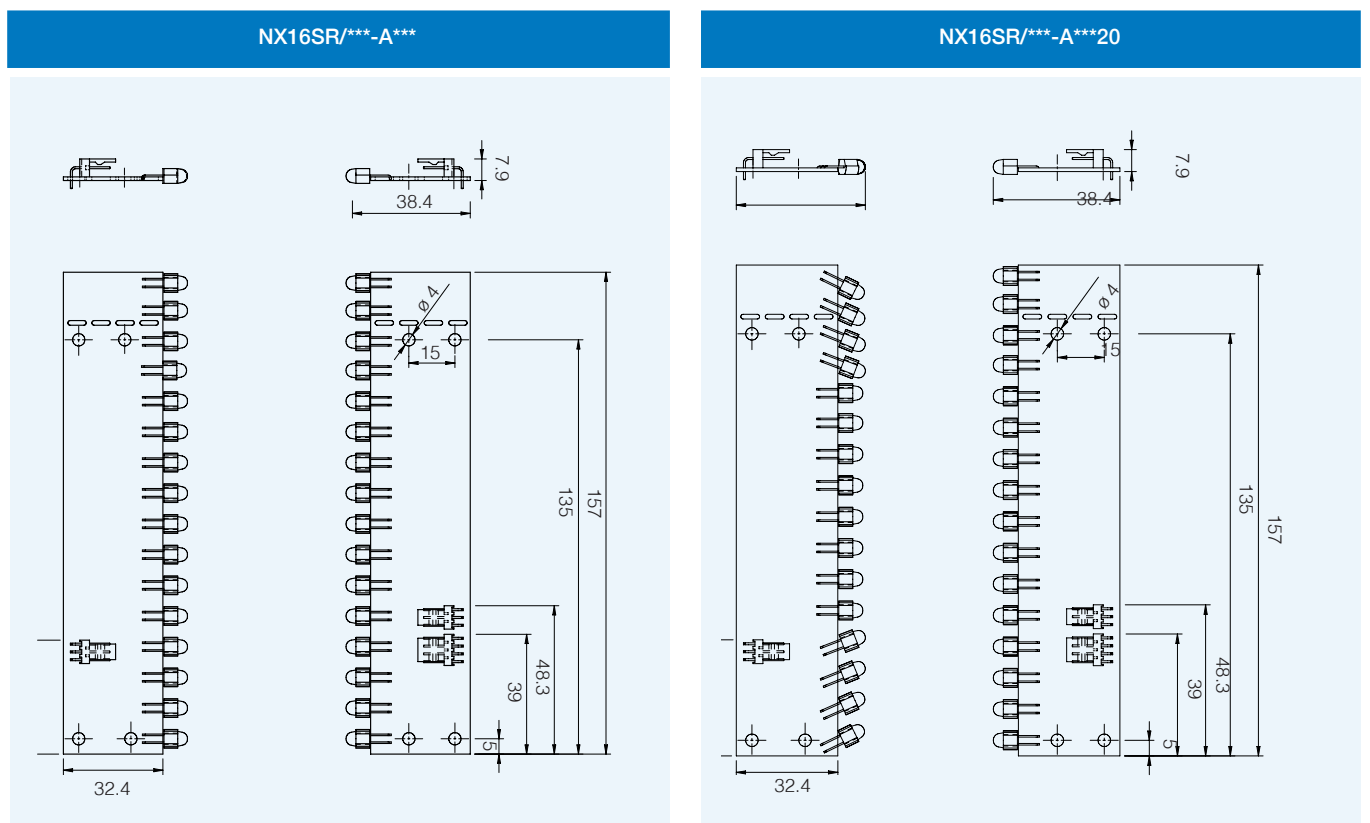
electrical diagrams of the connections



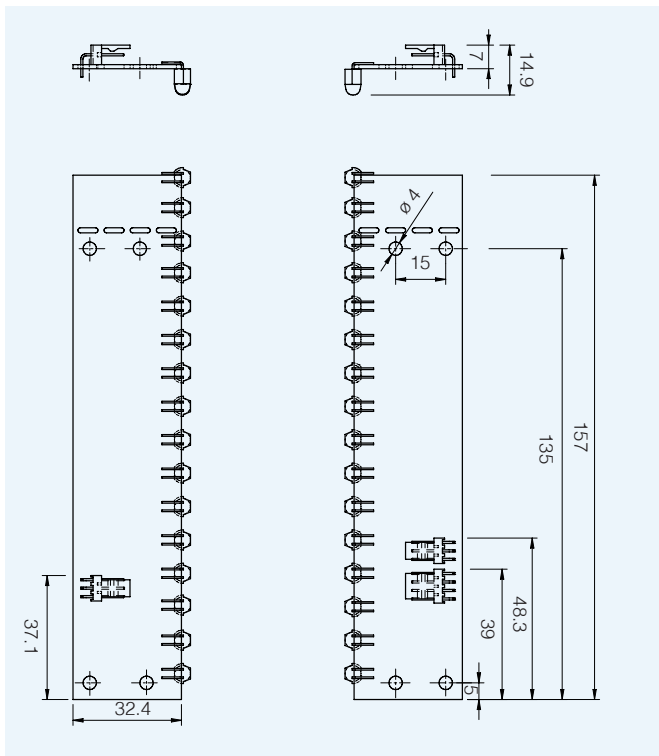
Warnings regarding to electrostatic discharge (ESD)

- disconnect the supply voltage before touching the device
- discharge the electrostatic charges before touching the device
- use metallic screws to install the device

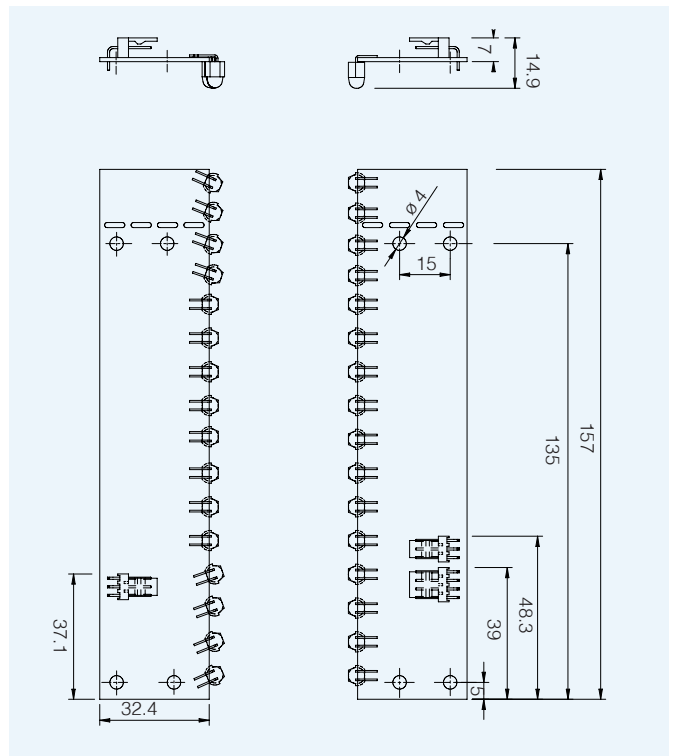
dimensions (mm)



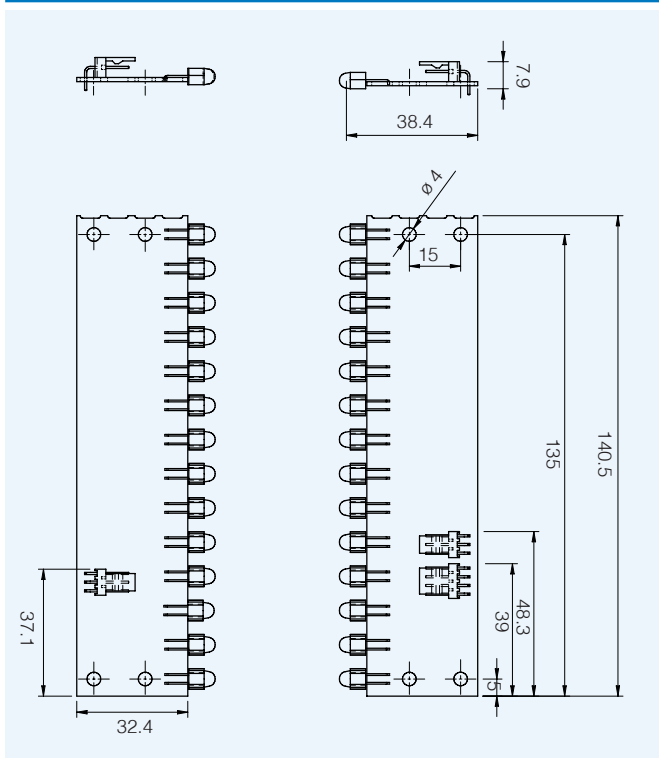
NX16SR/***-C***



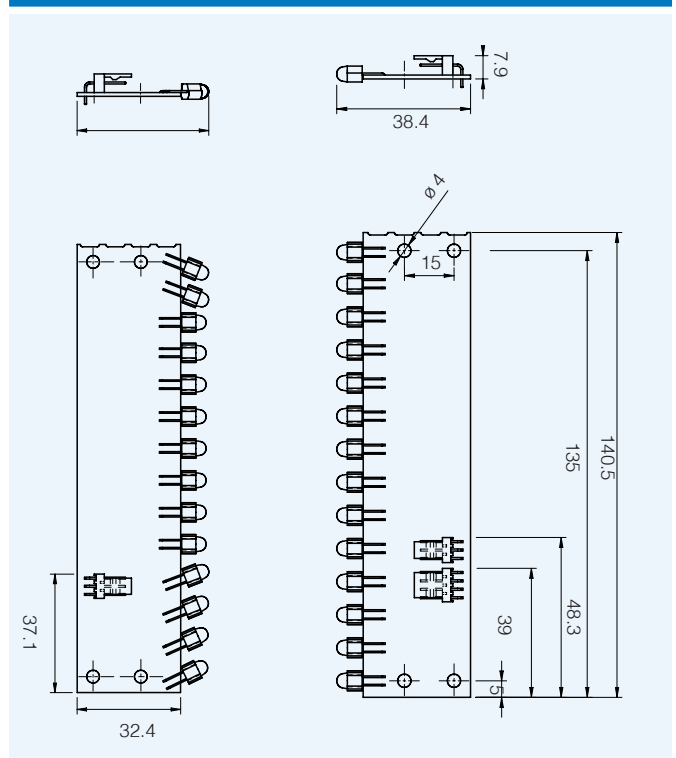
NX16SR/***-C***20



NX14SR/***-A***



NX14SR/***-A***20



dimensions(mm)

