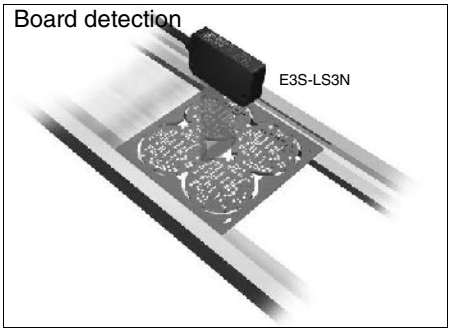
Printed Circuit Board Sensor

# E3S-LS3N

*Printed circuit board sensor capable of stable detection without being affected by holes or notches.*

- Suitable for incorporation in devices (E3S-LS3N).
- Wide range is suitable for component boards with high or irregularly shaped components (E3S-LS3NW).

## Applications




## Ordering Information

Infrared light

| Sensor type | Shape | Connection method | Detection distance * | Output form | Model |
|---|---|---|---|---|---|
| Limited reflective |  | Pre-wired | 20 to 35 mm | Light ON | E3S-LS3N |
| | | | 10 to 60 mm | | NEW E3S-LS3NW |

* Using 80 x 80 mm white art paper

PNP output models will be available soon. Please contact your OMRON sales representative.

## Rating/performance

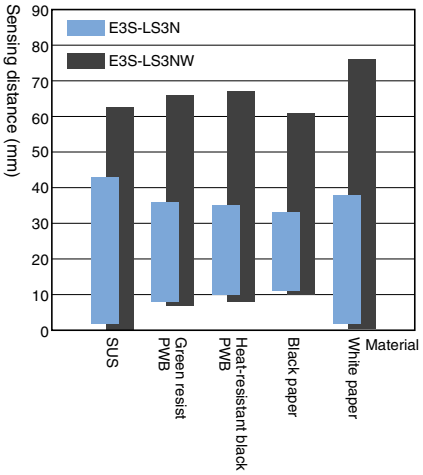
| Item | Sensor / Model | Limited reflective | |
|---|---|---|---|
| | | E3S-LS3N | E3S-LS3NW |
| Sensing | White art | 20 to 35 mm | 10 to 60 mm |
| | Black paper | 20 to 30 mm | 15 to 50 mm |
| Light source (wave length) | | Red LED (660 nm) | |
| Power supply voltage | | 12 to 24 V DC ±10%, ripple (p-p) 10% or less | |
| Current consumption | | 25 mA max. | |
| Control output | | Load supply voltage: 24 VDC or less; load current: 50 mA or less (residual voltage 1 V or less); NPN open collector output type | |
| Response time | | Operation or reset: 1 ms max. | |
| Ambient illuminance | | Incandescent lamp: 5,000 lux max. | |
| Ambient temperature | | Operating: -10° to 55°, Storage: -25° to 70°C (with no icing or condensation) | |
| Ambient humidity | | Operating: 35% to 85%RH, Storage: 35% to 95%RH (with no condensation) | |
| Insulation resistance | | 20 M Ω min. at 500 VDC | |
| Dielectric strength | | 1,000 VAC at 50/60 Hz for 1 minute | |
| Vibration resistance | | 10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions | |
| Shock resistance | | Destruction: 500 m/s$^2$ for 3 times each in X, Y, and Z directions | |
| Protective structure | | IEC Standard IP40 | |
| Connection method | | Pre-wired models (standard length: 2 m) | |
| Weight (Packed state) | | Approx. 50 g | |
| Material | Case | Heat-resistant ABS resin | |
| | Lens | Acrylics | |
| Accessories | | Instruction manual | |

* At 80 x 80 mm

## Characteristic data (typical)

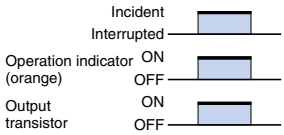
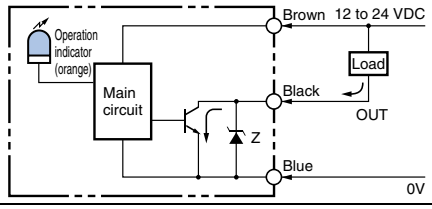
### Detection range - material properties

E3S-LS3N/E3S-LS3NW




## Output Circuit Diagram

### NPN output (PNP output will be available soon)

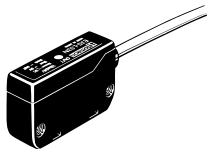
| Model | Operating status of output transistor | Timing chart | Output circuit |
|---|---|---|---|
| E3S-LS3N<br>E3S-LS3NW | Light ON |  |  |

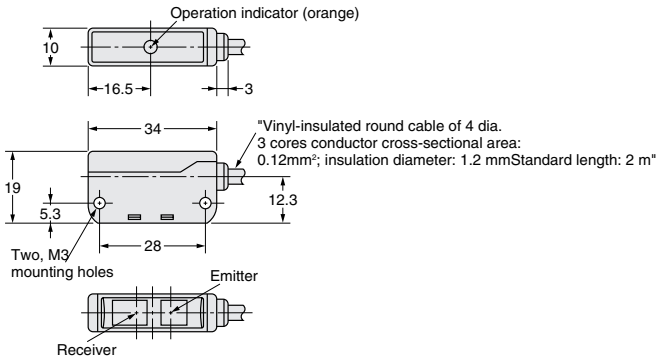




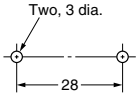
## Dimensions (Unit: mm)

E3S-LS3N
E3S-LS3NW






Mounting Holes




CAD file E3S_51