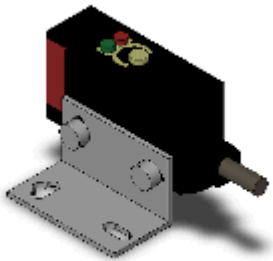


Built-in Amplifier Photoelectric Sensor (Medium Size)

E3S-AD11 2M

Medium Photoelectric Sensor With Built-in Amplifier, Diffuse-reflective, Horizontal, Sensing distance: 200 mm, NPN, Pre-wired model, 2 m



Image

| | |
|-------------------|----------------------------------------|
| Sensing method | Diffuse-reflective |
| Sensing distance | White paper 100 x 100 mm: 10 to 200 mm |
| Light source | Red LED (660 nm) |
| Connection method | Pre-wired models |

Ratings/Performance

As of July 25, 2024

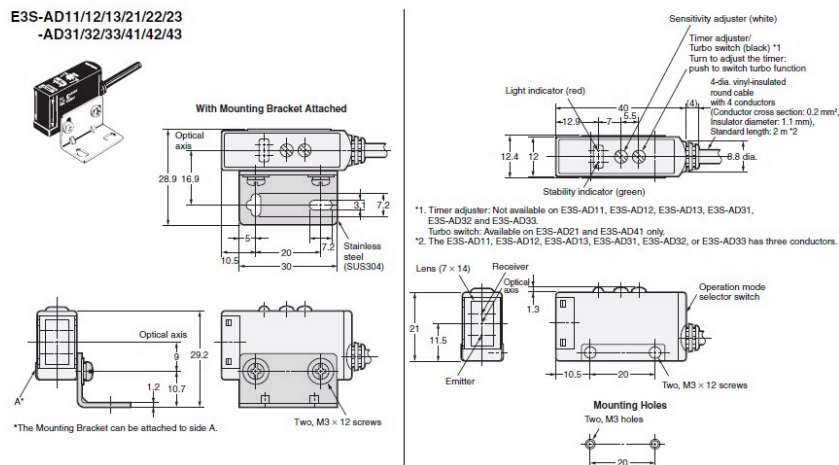
| | |
|---------------------------------------|--------------------------------------------------------------------------------|
| Shape | Square type |
| Sensing method | Diffuse-reflective |
| Sensing distance | White paper 100 x 100 mm: 10 to 200 mm |
| Differential distance | 10% max. of sensing distance |
| Light source | Red LED (660 nm) |
| Power supply voltage | 10 to 30 VDC ripple (p-p) 10% included |
| Current consumption | 30 mA max. |
| Control output | NPN open collector 30 VDC max. 100 mA max. Residual voltage: 1 V max. |
| Operation mode | Light-ON/Dark-ON selectable |
| Protective circuit | Output short-circuit protection, Power supply reverse polarity protection |
| Response time | Operate or reset: 0.5 ms max. |
| Sensitivity setting | 2-turn endless adjustment (with indicator) |
| Ambient illuminance | Incandescent lamp: 5,000 lx max. Sunlight: 10,000 lx max. |
| Ambient temperature range (Operating) | -25 to 55 °C (with no freezing or condensation) |
| Ambient temperature range (Storage) | -40 to 70 °C (with no freezing or condensation) |
| Ambient humidity range (Operating) | 35 to 85 % (with no condensation) |
| Ambient humidity range (Storage) | 35 to 95 % (with no condensation) |
| Insulation resistance | 20 MΩ min. (500 VDC megger) |
| Dielectric strength | 1000 VAC 50/60 Hz 1 min |

| | |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------|
| Vibration resistance | Destruction: 10 to 55 Hz, 1.5 mm double amplitude each in X, Y, and Z directions for 2 h |
| Shock resistance | Destruction: 500 m/s ² 3 times each in X, Y and Z directions |
| Degree of protection | IEC: IP67 NEMA 4X (indoors only) |
| Connection method | Pre-wired models (Cable length 2 m) |
| Indicator | Light indicator (red), Stability indicator (green) |
| Weight | Package: Approx. 90 g |
| Accessories | Instruction manual, Mounting bracket, Sensitivity adjustment driver, Sensitivity adjusting knob |
| Material | Case: Polybutylene terephthalate (PBT) Lens: Denatured Polyarylate Mounting Bracket: Stainless steel (SUS304) |

As of July 25, 2024

Dimensions

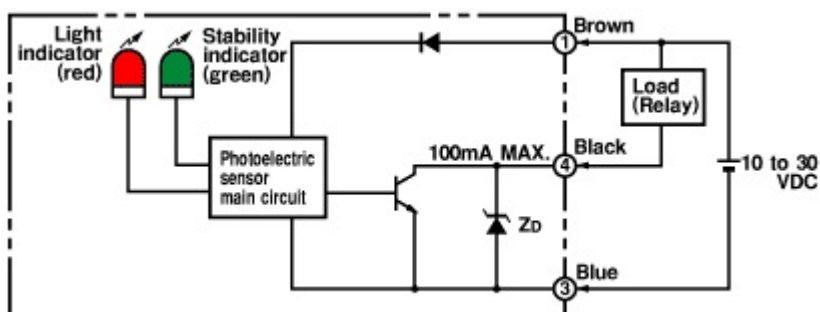
As of July 25, 2024



As of July 25, 2024

Output circuit diagram

As of July 25, 2024



As of July 25, 2024

Timing chart

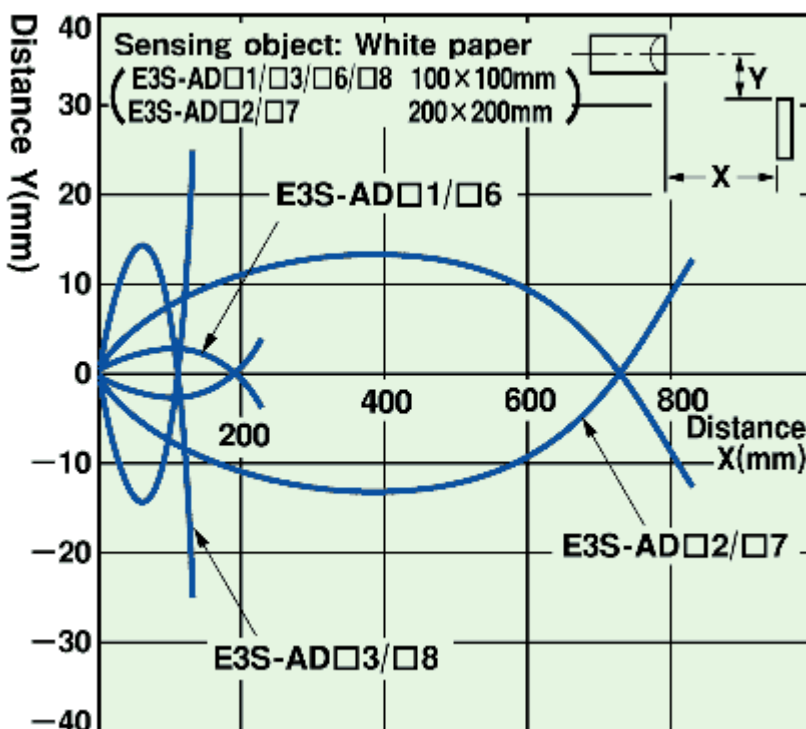
As of July 25, 2024

| Operation mode | Timing chart | Mode switch |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Light ON | <p>Incident light: [Green pulse]</p> <p>No incident light: [Baseline]</p> <p>Light indicator (red): ON [Red pulse], OFF [Baseline]</p> <p>Output transistor: ON [Green pulse], OFF [Baseline]</p> <p>Load (Relay): Operate [Green pulse], Reset [Baseline]</p> <p>(Between brown(1) and black(4))</p> | L side (LIGHT ON) |
| Dark ON | <p>Incident light: [Green pulses]</p> <p>No incident light: [Baseline]</p> <p>Light indicator (red): ON [Red pulses], OFF [Baseline]</p> <p>Output transistor: ON [Green pulse], OFF [Baseline]</p> <p>Load (Relay): Operate [Green pulse], Reset [Baseline]</p> <p>(Between brown(1) and black(4))</p> | D side (DARK ON) |

As of July 25, 2024

Operating range

As of July 25, 2024

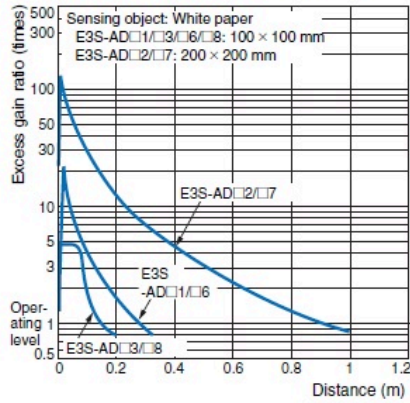


As of July 25, 2024

Excess gain ratio vs. setting distance

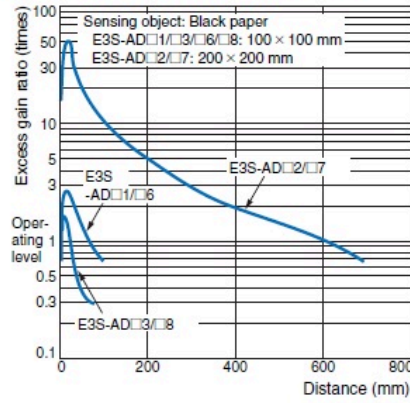
Diffuse-reflective Sensor

E3S-AD□1/AD□2/AD□3/AD□6/AD□7/
AD□8 (Detection of White Paper)



Diffuse-reflective Sensor

E3S-AD□1/AD□2/AD□3/AD□6/AD□7/
AD□8 (Detection of Black Paper)



Sensing object size vs. setting distance

