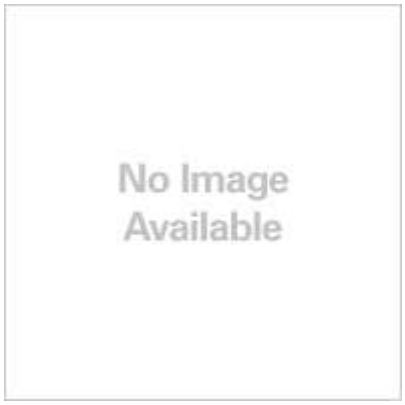
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Print

Built-in Amplifier Photoelectric Sensor (Medium Size)

E3S-AD88



Image

Medium Photoelectric Sensor With Built-in Amplifier, Diffuse-reflective, Vertical, Sensing distance: 100 mm (wide view), PNP, M12 connector models

Sensing method	Diffuse-reflective
Sensing distance	White paper 100 x 100 mm: 100 mm
Light source	Infrared LED (850 nm)
Connection method	M12 connector models

Ratings/Performance

As of July 25, 2024

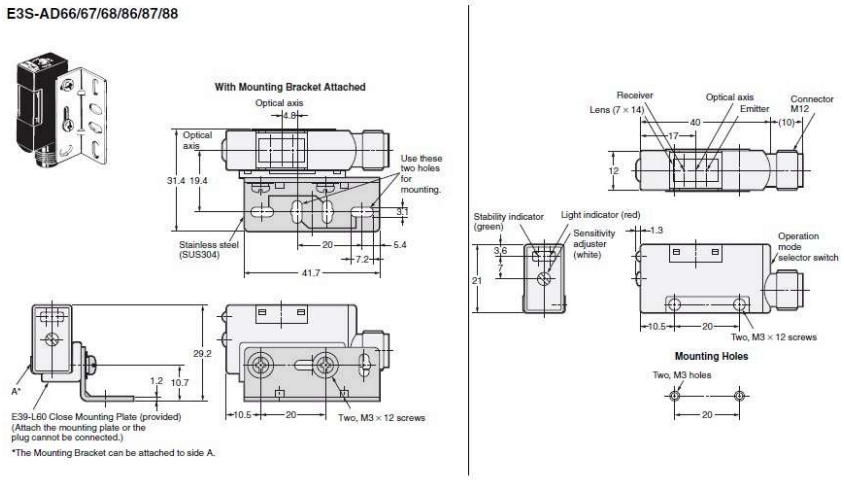
Shape	Square type
Sensing method	Diffuse-reflective
Sensing distance	White paper 100 x 100 mm: 100 mm
Differential distance	20% max. of sensing distance
Light source	Infrared LED (850 nm)
Power supply voltage	10 to 30 VDC ripple (p-p) 10% included
Current consumption	35 mA max.
Control output	PNP open 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 ℃ (with no freezing or condensation)
Ambient temperature range (Storage)	-40 to 70 ℃ (with no freezing or condensation)
Ambient humidity range (Operating)	35 to 85 % (with no condensation)
Ambient humidity range (Strage)	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	M12 connector models
Indicator	Light indicator (red), Stability indicator (green)
Weight	Package: Approx. 50 g
Accessories	Instruction manual, Mounting bracket, Sensitivity adjustment driver, Sensitivity adjusting knob, Close-mounting plate (only for Sensors with connector terminals)
Material	Case: Polybutylene terephthalate (PBT) Lens: Denatured Polyarylate Mounting Bracket: Stainless steel (SUS304)

As of July 25, 2024

Dimensions

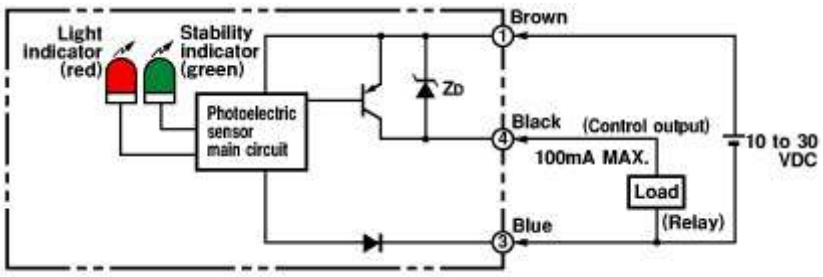
As of July 25, 2024



As of July 25, 2024

Output circuit diagram

As of July 25, 2024



As of July 25, 2024

Timing chart

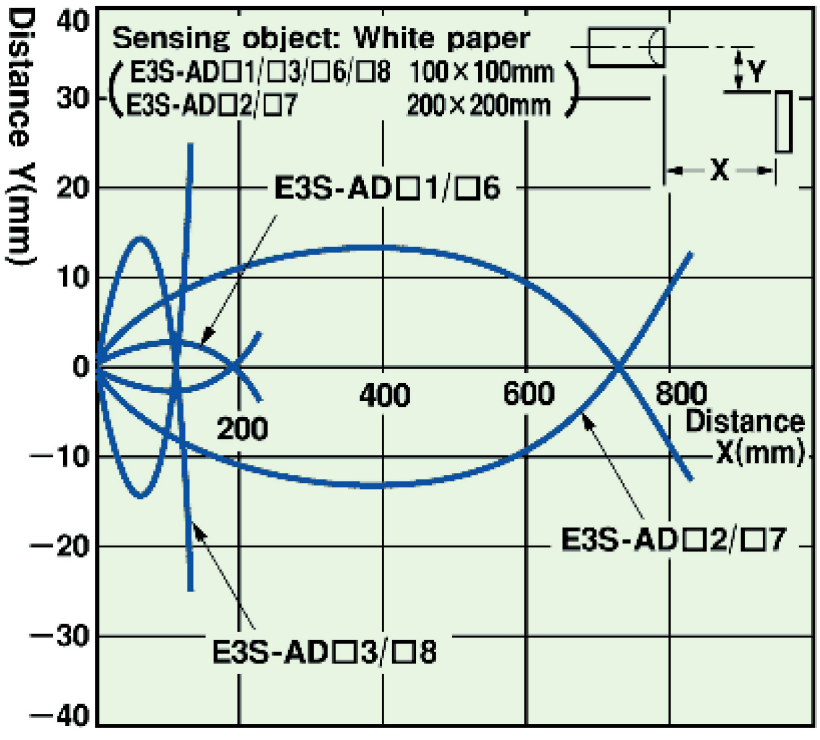
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Operation mode	Timing chart	Mode switch
Light ON	Incident light / No incident light Light indicator (red): ON / OFF Output transistor: ON / OFF Load (Relay): Operate / Reset (Between blue(③) and black(④))	L side (LIGHT ON)
Dark ON	Incident light / No incident light Light indicator (red): ON / OFF Output transistor: ON / OFF Load (Relay): Operate / Reset [Between blue(③) and black(④)]	D side (DARK ON)

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Operating range

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As of July 25, 2024

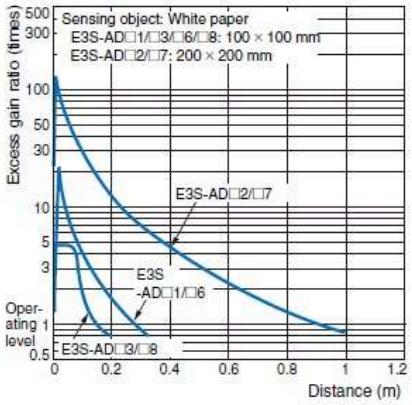
Setting distance

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Excess gain ratio vs. setting distance

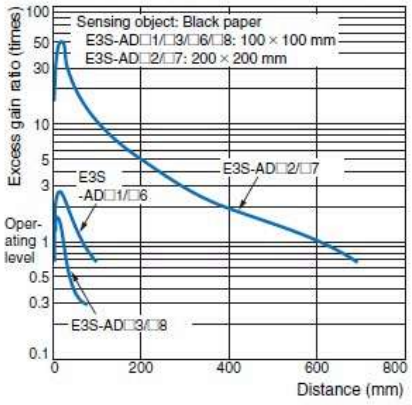
Diffuse-reflective Sensor

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

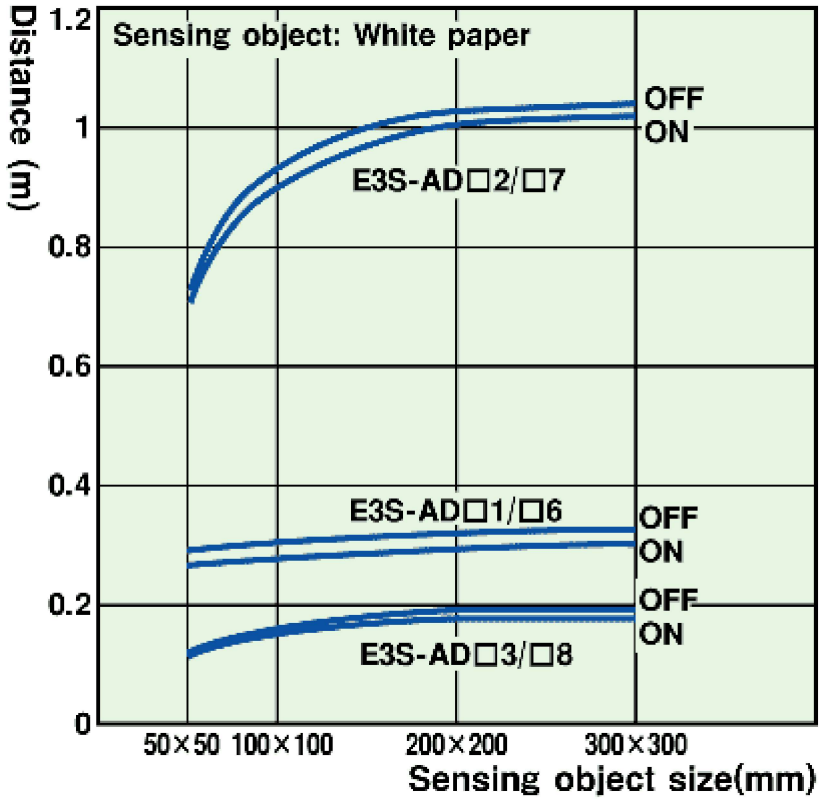


Diffuse-reflective Sensor

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



Sensing object size vs. setting distance



As of July 25, 2024