Ratings and Specifications

Item \ Sensing method		Through-beam	Retro-reflective (with M.S.R. function) *1	Diffuse reflective	
Item \ Model		Horizontal E3S-CT11(-M1J)	Horizontal E3S-CR11(-M1J)	Horizontal E3S-CD11(-M1J)	Horizontal E3S-CD12(-M1J)
		Vertical E3S-CT61(-M1J)	Vertical E3S-CR61(-M1J)	Vertical E3S-CD61(-M1J)	Vertical E3S-CD62(-M1J)
Sensing distance		30 m	3 m (when using E39-R1)	700 mm (300 × 300 mm white paper)	2 m (300 × 300 mm white paper)
Standard sensing object		Opaque, 15-mm dia. min.	Opaque, 75-mm dia. min.	---	
Differential travel		---		20% max. of sensing distance	
Directional angle		Emitter and Receiver: 3° to15°	3° to 10°	---	
Light source (wavelength)		Infrared LED (880 nm)	Red LED (700 nm)	Infrared LED (880 nm)	
Power supply voltage		10 to 30 VDC including 10% (p.p) ripple			
Current consumption		50 mA max. (Emitter 25 mA max. Receiver 25 mA max.)	40 mA max.		
Control output		Load power supply voltage: 30 VDC max. Load current: 100 mA max. (Residual voltage: NPN output: 1.2 V max., PNP output: 2.0 V max.) Open controller output (NPN/PNP selectable) Light-ON/Dark-ON selectable			
Protection circuits		Power supply reverse polarity circuit protection, Output short-circuit protection	Power supply reverse polarity protection, Output short-circuit protection, Mutual interference prevention		
Response time		Operate or reset: 1 ms max.			Operate or reset 2 ms max.
Sensitivity adjustment		One-turn adjuster		Two-turn endless adjuster with an indicator	
Ambient illumination (Receiver side)		Incandescent lamp: 5,000 lx max. Sunlight: 10,000 lx max.			
Ambient temperature range		Operating: –25°C to 55°C, Storage: –40°C to 70°C (with no icing or condensation)			
Ambient humidity range		Operating: 35% to 85%, Storage: 35% to 95% (with no condensation)			
Insulation resistance		20 MΩ min. (at 500 VDC)			
Dielectric strength		1,000 VAC, 50/60 Hz for 1 min			
Vibration resistance		Destruction: 10 to 2,000 Hz, 1.5-mm double amplitude or 300 m/s^2 for 0.5 hours each in X, Y, and Z directions			
Shock resistance		Destruction: 1,000 m/s^2 3 times each in X, Y, and Z directions			
Degree of protection		IEC 60529: IP67 (in-house standards: oil-resistant), NEMA: 6P (indoors only) *2			
Connection method		Pre-wired (standard cable length: 2 m) or Pre-wired M12 Connector (standard cable length: 0.3 m)			
Weight (packed state)		Approx. 270 g (Pre-wired cable) Approx. 230 g (Pre-wired Connector (M12))	Approx. 160 g (Pre-wired cable) Approx. 130 g (Pre-wired Connector (M12))	Approx. 150 g (Pre-wired cable) Approx. 110 g (Pre-wired Connector (M12))	
Material	**Case**	Zinc die-cast			
	Operation panel cover	PES (polyether sulfone)			
	Lens	Methacrylic resin			
	Mounting Bracket	Stainless steel (SUS304)			
Accessories		Mounting Bracket (with screws), Adjustment screwdriver, Instruction manual, and Reflector (only for Retro-reflective Sensors)			

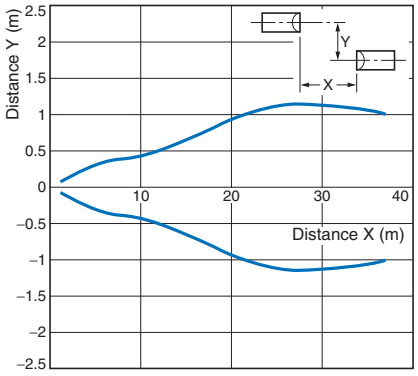
*1. Refer to *MSR function* of *Technical Guide (Technical version).*
*2. NEMA: National Electrical Manufactures Association

Engineering Data (Reference value)

Parallel Operating Range

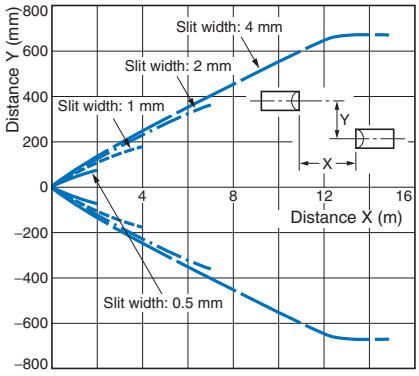
Through-beam

E3S-CT□ (-M1J)



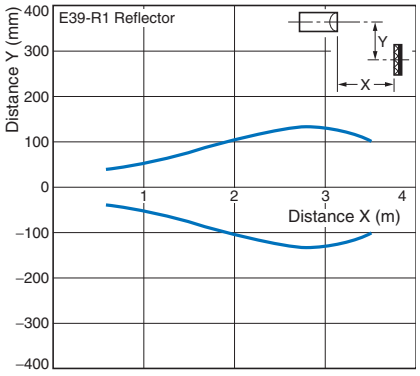
Through-beam

E3S-CT□ (-M1J) + E39-S61 Slit (Order Separately)



Retro-reflective

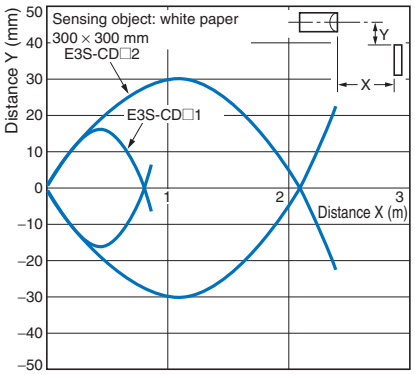
E3S-CR□1 (-M1J) + E39-R1 Reflector (Provided)



Operating Range

Diffuse-reflective

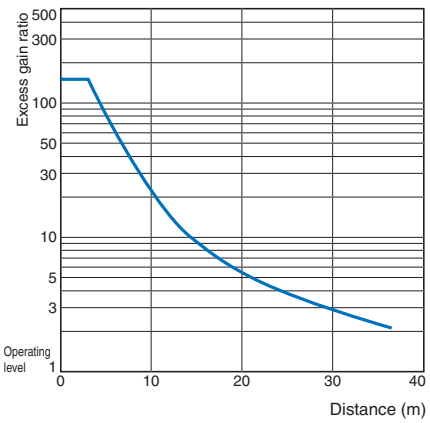
E3S-CD□□ (-M1J)



Excess Gain vs. Set Distance

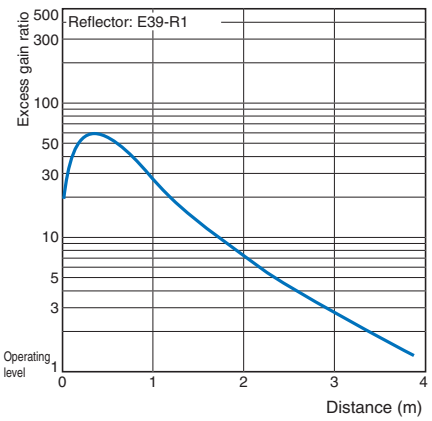
Through-beam

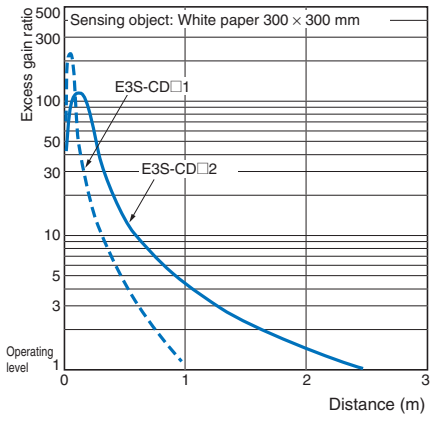
E3S-CT□1 (-M1J)



Retro-reflective

E3S-CR□1 (-M1J) + E39-R1 Reflector (Provided)



Diffuse-reflective

E3S-CD□□ (-M1J)