

Ultracompact, Ultrathin Photoelectric Sensor with Built-in Amplifier

The Improved E3T Series with Easier, Smoother Mounting and Installation

- The series includes Through-beam, Long-distance (2 m) Sensors (E3T-ST3□).
- Easy installation with M3-mounting Sensors (E3T-ST□□M, E3T-FD□□M, and E3T-SL□□M).
- Small Cylindrical Sensors for one-point mounting are also available (E3T-C□□□(S)).
- Infrared Sensors added to the Series (E3T-□T□□(M)F).



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.



Lineup Overview

							T
Appearance		Sensing method	Through-beam	Retro- reflective	Diffuse- reflective	Limited- reflective	BGS- reflective
	Side-view	M2-mounting		•		•	
Rectangular	Ψ.	M3-mounting	•			•	
type	Flat	M2-mounting	•		•		•
		M3-mounting			•		
Cylindrical	Top-view		•		•		
type	Side-view		•				

Ordering Information

Sensors [Refer to Dimensions on page 16.]

A set of mounting screws is included with the Sensor.

Red light Infrared light

Canaina mathad	A	Consinu distance	Onevetien mede	Model			
Sensing method	Appearance	Sensing distance	Operation mode	NPN output	PNP output		
		2 m	Light-ON	E3T-ST31 2M ^{*4}	E3T-ST33 2M*4		
		(Sensitivity Adjustment Unit can be used.)	Dark-ON	E3T-ST32 2M ^{*4}	E3T-ST34 2M ⁻⁴		
		1 m	Light-ON	E3T-ST11 2M*4	E3T-ST13 2M ^{*4}		
		(Sensitivity Adjustment Unit can be used.)	Dark-ON	E3T-ST12 2M*4	E3T-ST14 2M*4		
		300 mm	Light-ON	E3T-ST21 2M	E3T-ST23 2M		
		300 11111	Dark-ON	E3T-ST22 2M	E3T-ST24 2M		
))	Light-ON	E3T-ST31F 2M	E3T-ST33F 2M		
Through-beam		(2 m	Dark-ON	E3T-ST32F 2M	E3T-ST34F 2M		
<pre>/ Emitter *¹</pre>			Light-ON	E3T-ST11F 2M	E3T-ST13F 2M		
+		(1 m	Dark-ON	E3T-ST12F 2M	E3T-ST14F 2M		
Receiver		000	Light-ON	E3T-ST21F 2M	E3T-ST23F 2M		
,		300 mm	Dark-ON	E3T-ST22F 2M	E3T-ST24F 2M		
		500	Light-ON	E3T-FT11 2M*4	E3T-FT13 2M ^{*4}		
		500 mm	Dark-ON	E3T-FT12 2M*4	E3T-FT14 2M ^{*4}		
		200	Light-ON	E3T-FT21 2M	E3T-FT23 2M		
		300 mm	Dark-ON	E3T-FT22 2M	E3T-FT24 2M		
			Light-ON	E3T-FT11F 2M	E3T-FT13F 2M		
		500 mm	Dark-ON	E3T-FT12F 2M	E3T-FT14F 2M		
			Light-ON	E3T-FT21F 2M	E3T-FT23F 2M		
		300 mm	Dark-ON	E3T-FT22F 2M	E3T-FT24F 2M		
Retro-		Using the E39-R4 Reflector provided 200 mm [30 mm] *2	Light-ON	E3T-SR41 2M*3*4	E3T-SR43 2M'3'4		
reflective		Using the E39-R37-CA 100 mm [10 mm] *2	Dark-ON	E3T-SR42 2M ^{*3 *4}	E3T-SR44 2M ^{-3 -4}		
Diffuse-	/1	5 to 30 mm	Light-ON	E3T-FD11 2M ^{*4}	E3T-FD13 2M*4		
reflective	- P	5 10 30 11111	Dark-ON	E3T-FD12 2M ^{*4}	E3T-FD14 2M ^{*4}		
	(P)	E to 15 mm	Light-ON	E3T-SL11 2M*4	E3T-SL13 2M ^{*4}		
Limited-		5 to 15 mm	Dark-ON	E3T-SL12 2M*4	E3T-SL14 2M ^{*4}		
reflective		E to 20 ====	Light-ON	E3T-SL21 2M*4	E3T-SL23 2M*4		
	ı	■ 5 to 30 mm	Dark-ON	E3T-SL22 2M ^{*4}	E3T-SL24 2M ^{*4}		
		II 4 to 45	Light-ON	E3T-FL11 2M ^{*4}	E3T-FL13 2M*4		
BGS-		1 to 15 mm	Dark-ON	E3T-FL12 2M ^{*4}	E3T-FL14 2M*4		
reflective			Light-ON	E3T-FL21 2M ^{*4}	E3T-FL23 2M ^{*4}		
		1 to 30 mm	Dark-ON	E3T-FL22 2M ⁻⁴	E3T-FL24 2M ^{*4}		

A set of mounting serous is not included with the Sensor, Order a Serow Set senarately if required

Sensing method	Annogranco	Sensing distance	Operation mode		Model
ensing memod	Appearance	Sensing distance	Operation mode	NPN output	PNP output
) 1 m	Light-ON	E3T-ST11M 2M	E3T-ST13M 2M
			Dark-ON	E3T-ST12M 2M	E3T-ST14M 2M
Through-beam	-	300 mm	Light-ON	E3T-ST21M 2M	E3T-ST23M 2M
/ *1		300 11111	Dark-ON	E3T-ST22M 2M	E3T-ST24M 2M
Emitter +			Light-ON	E3T-ST11MF 2M	E3T-ST13MF 2M
Receiver		(1 m	Dark-ON	E3T-ST12MF 2M	E3T-ST14MF 2M
			Light-ON	E3T-ST21MF 2M	E3T-ST23MF 2M
		300 mm	Dark-ON	E3T-ST22MF 2M	E3T-ST24MF 2M
Diffuse-	/,	E to 20 mm	Light-ON	E3T-FD11M 2M	E3T-FD13M 2M
reflective		∥ 5 to 30 mm	Dark-ON	E3T-FD12M 2M	E3T-FD14M 2M
		5 to 15 mm	Light-ON	E3T-SL11M 2M	E3T-SL13M 2M
Limited-	/.1	5 to 15 mm	Dark-ON	E3T-SL12M 2M	E3T-SL14M 2M
reflective		5 to 30 mm	Light-ON	E3T-SL21M 2M	E3T-SL23M 2M
		■ 3 10 30 IIIIII	Dark-ON	E3T-SL22M 2M	E3T-SL24M 2M

^{*1.} The model number of the Emitter is expressed by adding an "L" to the set model number in the table. Example: E3T-ST11-L 2M The model number of the Receiver is expressed by adding a "D" to the set model number in the table. Example: E3T-ST11-D 2M

^{*2.} Values in parentheses indicate the minimum required distance between the Sensor and Reflector.
*3. Models are available either with or without the E39-R37-CA Reflector included.

Models with E39-R37-CA Reflector: E3T-SR4□-S

Models without Reflector: E3T-SR4□-C
*4. Models with robot (bending-resistant) cable are also available with "R" in the model number. (Example: E3T-ST11R 2M)

Small Cylindrical Sensors A set of mounting nuts is included with the Sensor.

Sensing method	Appearance	ppearance Sensing distance O		Operation mode	Mo	odel
Sensing method	Appearance	Sensing u	iistance	Operation mode	NPN output	PNP output
Through-beam	- Alexander		1 m	Light-ON		
/ Emitter \	A STREET			Dark-ON	E3T-CT12 2M	E3T-CT14 2M
+ Receiver	1		500 mm	Light-ON		
()	1		300 111111	Dark-ON	E3T-CT22S 2M	E3T-CT24S 2M
Diffuse- reflective		☐ 3 to 50 n	mm -	Light-ON	E3T-CD11 2M	E3T-CD13 2M
(with adjuster)		0 10 30 11		Dark-ON		

Accessories (Order Separately)

Accessories for M2-mounting Sensors These accessories are not included with the Sensor. Order them separately if required.

Name		Applicable Sensor	Model	Quantity	Dimensions page	Remarks		
		E3T-ST3□□				Sensing distance 200 mm, Minimum detectable object (reference value) 0.5-mm dia.		
	0.5 dia.	E3T-ST1□□				Sensing distance 100 mm, Minimum detectable object (reference value) 0.5-mm dia.		
Slit for Through-beam		E3T-ST2□□	E20 S62		,	Sensing distance 30 mm, Minimum detectable object (reference value) 0.5-mm dia.		
Side-view Sensors		E3T-ST3□□	E39-S63			Sensing distance 600 mm, Minimum detectable object (reference value) 1-mm dia.		
	1 dia.	E3T-ST1□□		2 (One each for Emitter		Sensing distance 300 mm, Minimum detectable object (reference value) 1-mm dia.		
		E3T-ST2□□		and Receiver; common with Slit widths of 1 dia. and 0.5 dia.)	21	Sensing distance 100 mm, Minimum detectable object (reference value) 1-mm dia.		
	0.5.1	E3T-FT1□□				Sensing distance 50 mm, Minimum detectable object (reference value) 0.5-mm dia.		
Slit for Through-beam Flat Sensors	0.5 dia.	E3T-FT2□□		700		Sensing distance 30 mm, Minimum detectable object (reference value) 0.5-mm dia.		
	1 dia	E3T-FT1□□	E39-S64			Sensing distance 100 mm, Minimum detectable object (reference value) 1-mm dia.		
	1 dia.	E3T-FT2□□				Sensing distance 50 mm, Minimum detectable object (reference value) 1-mm dia.		
Sensitivity Adjustment Ur Through-beam Side-view	Sensitivity Adjustment Unit for Through-beam Side-view Sensors with		E39-E10	1		Sensing distance (reference value) 1,200 to 1,800 mm		
Red Light	001.0010 111	E3T-ST1□				Sensing distance (reference value) 300 to 800 mm		
			E39-L116	1	00			
Mounting Brackets for Sid sors *1	de-view Sen-	E3T-S□□□□	E39-L117		22	Nut plate provided		
			E39-L118					
Mounting Brackets for Fla	at Canaara *1	EST FORDS	E39-L119		23			
Mounting Brackets for Fig	at Sensors	E3T-F	E39-L120	_				
Screw Set for Side-view S	Sensors *2*3	E3T-S	E39-L164	- 2 for each		Material: Iron (Same type as provided with the Sensor.) Contents: Set screws (M2×14), Hexagonal nuts		
Screw Set for Flat Sensors *2*3		E3T-F□□□□	E39-L165	- 2 IOI eacii		Material: Iron (Same type as provided with the Sensor.) Contents: Set screws (M2×8), Hexagonal nuts		
SUS Screw Set for Flat Sensors *2		E3T-F□□□□	E39-L172	2		Material: SUS304 Contents: Bolt with hexagonal hole (M2×6)		
SUS Screw Set for Side-view Sensors		E3T-S□□□□	E39-L173	2 for each		Material: SUS304 Contents: Bolt with hexagonal hole (M2×12), Hexagonal nuts, Spring washers, Flat washers		

^{*1.} When using Through-beam Sensors (E3T-ST□□, E3T-FT□□), order one Bracket for the Emitter and one for the Receiver.

*2. Order two Sets, one for the Emitter and one for the Receiver, for Through-beam Sensors (E3T-ST□□ or E3T-FT□□).

This is the Screw Set for mounting the Sensor to the Mounting Bracket. Order this Set if you lose the screws. Do not use this Screw Set to mount the Mounting Bracket to the equipment. ***3.** This is included with the Sensor.

Accessories for M3-mounting Sensors These accessories are not included with the Sensor. Order them separately if required.

Name		Applicable Sensor	Model	Quantity	Dimensions page	Remarks	
	0.5	E3T-ST1□M□	E39-S76A			Sensing distance 100 mm, Minimum detectable object (reference value) 0.5-mm dia.	
Slits for Through-beam	dia.	E3T-ST2□M□	203-370A	2 (One each for	21	Sensing distance 30 mm, Minimum detectable object (reference value) 0.5-mm dia.	
Side-view Sensors	1 dia.	E3T-ST1□M□	E39-S76B	Emitter and Receiver)	2.	Sensing distance 300 mm, Minimum detectable object (reference value) 1-mm dia.	
	i uia.	E3T-ST2□M□	203-3700			Sensing distance 100 mm, Minimum detectable object (reference value) 1-mm dia.	
Mounting Bracket for Side-v Sensors *1	iew	E3T-S□□□M□	E39-L166			Nut plate provided	
Mounting Bracket for Flat S	ensors	-E3T-FD□□M	E39-L167	1	24		
Back-mounting Spacer for F sors	lat Sen-		E39-L168			Use this Spacer when mounting a Flat Sensor (E3T-FD□□M) from the back.	
SUS Screw Set for Flat Sensors *2		for Flat Sensors *2 E3T-FD M E39-L170		2		Material: SUS304 Contents: Bolt with hexagonal hole (M3×6)	
SUS Screw Set for Side-view Sensors *2*3		E3T-S□□M□	E39-L171	2 for each		Material: SUS304 Contents: Bolt with hexagonal hole (M3×15), Hexagonal nuts, Spring washers, Flat washers	

^{*1.}When using Through-beam Sensors (E3T-ST \square M \square), order one Bracket for the Emitter and one for the Receiver.

Accessories for Small Cylindrical Sensors

Name	Applicable Sensor	Model	Quantity	Dimensions Page	Remarks	
	E3T-CT□□ E3T-CT□□S	E39-M5	4 (Hexagonal nuts), 2 (Toothed washers)		Material: SUS303	
SUS Nut Set for Diffuse-reflective Sensors	E3T-CD	E39-M6	2 (Hexagonal nuts), 1(Toothed washers)		(Same type as provided with the Sensor.)	
Adjustment Driver for Diffuse-reflective Sensors		E39-G17	1		This Driver is used to turn the sensitivity adjuster. Provided with E3T-CD	

^{*1.} This Nut Set is for the Emitter/Receiver. This is the Nut Set for mounting the Sensor. Order this Set if you lose the screws.

Accessories for All Sensors

Name	Applicable Sensor	Model	Quantity	Dimensions Page	Remarks	
Small Reflectors	E3T-SR4□	E39-R4		20	Sensing distance 200 mm [30 mm] *1 Minimum detectable object 2-mm dia. Provided with the E3T-SR4□	
(for Retro-reflective Sensors)	E3T-SR4□-S	E39-R37-CA *2	1	20	Sensing distance 100 mm [10 mm] *1 Minimum detectable object 2-mm dia. Provided with the E3T-SR4□-S	
		E39-RS1-CA *2			Sensing distance 100 mm [10 mm]*1 Minimum detectable object 2-mm dia.	
Tape Reflectors (for Retro-reflective Sensors)	E3T-SR4□-C	E39-RS2-CA *2		21	Use Tape Reflectors in combination with the E3T-SR4□-C, which	
		E39-RS3-CA *2			does not come with a Reflector.	

^{*1.} Values in parentheses indicate the minimum required distance between the Sensor and Reflector.

^{*2.} This is the Screw Set for mounting the Sensor to the Mounting Bracket. Order this Set if you lose the screws. Do not use this Screw Set to mount the Mounting Bracket to the equipment.

^{*3.} Order two Sets, one for the Emitter and one for the Receiver, for Through-beam Sensors (E3T-ST \(\subseteq M \subseteq \)).

^{*2.} The E3T-SR4□ cannot be used with the E39-R37 or E39-RS1/2/3 (without CA) Tape Reflectors.

The E39-□-CA Reflector is for use only with the E3T-SR4□. It cannot be used with other Sensors.

Ratings and Specifications

	Sensing method					Throug	gh-beam				
	Appearance			Poetenguler	type (Side-viev	••\			Rectangula	ar type (Flat)	
Item							u o n				
NPN	Light-ON	E3T-ST31	E3T-ST31F	E3T-ST11 E3T-ST11M	E3T-ST11F E3T-ST11MF	E3T-ST21 E3T-ST21M	E3T-ST21F E3T-ST21MF	E3T-FT11	E3T-FT11F	E3T-FT21	E3T-FT21F
output	Dark-ON	E3T-ST32	E3T-ST32F	E3T-ST12 E3T-ST12M	E3T-ST12F E3T-ST12MF	E3T-ST22 E3T-ST22M	E3T-ST22F E3T-ST22MF	E3T-FT12	E3T-FT12F	E3T-FT22	E3T-FT22F
PNP	Light-ON	E3T-ST33	E3T-ST33F	E3T-ST13 E3T-ST13M	E3T-ST13F E3T-ST13MF	E3T-ST23 E3T-ST23M	E3T-ST23F E3T-ST23MF	E3T-FT13	E3T-FT13F	E3T-FT23	E3T-FT23F
output	Dark-ON	E3T-ST34	E3T-ST34F	E3T-ST14 E3T-ST14M	E3T-ST14F E3T-ST14MF	E3T-ST24 E3T-ST24M	E3T-ST24F E3T-ST24MF	E3T-FT14	E3T-FT14F	E3T-FT24	E3T-FT24F
Sensing of	distance	2 m		1 m		300 mm		500 mm		300 mm	
	sensing object	Opaque, 3-r	nm dia. min.	Opaque, 2-m	m dia. min.			Opaque, 1.3	-mm dia. min.		
Minimum (reference	detectable object e value)	Opaque, 3-r	nm dia.	Opaque, 2-m	m dia.			Opaque, 1.3	-mm dia.		
	is (white paper)										
Black/wh		Emitter: 2° to 20° Receiver: 2° to 70° Receiver: 3° to 25° Receiver: 3° min.									
Light sou	ırce (wavelength)	Red LED					Infrared LED (860 nm)				
Power su	pply voltage	12 to 24 VDC ±10%, ripple (p-p) 10% max.						1			
Current c	onsumption	30 mA max. (Emitter 10 mA max., Receiver 20 mA max.)									
Control o	output	Load power supply voltage: 26.4 VDC max. Load current: 50 mA max. (residual voltage: 2 V max. for load current of 10 to 50 mA, 1 V max. for load current of less than 10 mA) Open-collector output						1			
Indicators	s	Operation in	dicator (orange	e), Stability indi	icator (green)						
Protectio	n circuits		ly and control o		polarity protection	on,					
Response	e time	Operate or r	eset: 1 ms max	κ.							
Ambient i	illumination	Incandescer	nt lamp: 5,000 l	x max., Sunlig	ht: 10,000 lx ma	X.					
Ambient t	temperature	Operating: - Storage: -40 (with no icin		ion)							
Ambient	humidity range	Operating: 3 Storage: 35° (with no con	% to 95%	Â							
Insulation	n resistance	20 M Ω min.	at 500 VDC) /						
	strength	AC1,000V, 5	50/60 Hz for 1 r	min.	7						
(destruct	•	10 to 2,000	Hz, 1.5-mm do	uble amplitude	or 300 m/s ² for	0.5 hours eacl	n in X, Y, and Z	directions			
Shock res (destruct	ion)	1,000 m/s² 3 times each in X, Y, and Z directions									
	f protection	IEC 60529 IP67									
	on method packed state)	Pre-wired (standard length: 2 m)									
weight (p		Approx. 40 (alata)							
	Case		itylene terephth	iaiate)							
Materi-	Display window Lens	Denatured p									
als			ooiyaiyidl e								
	Hexagonal nuts										
	Toothed wash- ers				(Oide :		IA Flat Control	. MO O\ N .			
Accessor	ries *	instruction n	nanual, Set scr	ews for mounti	ing (Side-view S	ensors: M2 × 1	14, Flat Sensors	$: M2 \times 8), Nut$	S		

^{*} Only the *Instruction Manual* is included with an M3-mounting Sensor (E3T-ST\(\subseteq M(F)). Order the Set of Mounting Screws separately if required.

	Appearance			Retro-reflective (without M.S.R. function)			
	Appearance	Cylindrical type (Top-view)	Cylindrical type (Side-view)	Rectangular type (Side-view)			
			++				
Item			• •	•			
NPN .	Light-ON			E3T-SR41			
output	Dark-ON	E3T-CT12	E3T-CT22S	E3T-SR42			
PNP output	Light-ON			E3T-SR43			
output	Dark-ON	E3T-CT14	E3T-CT24S	E3T-SR44			
Sensing di		1 m	500 mm	200 mm [30 mm] * (Using the E39-R4) 100 mm [10 mm] * (Using the E39-R37-CA)			
	sensing object	Opaque, 4-mm dia. min.	Opaque, 5-mm dia. min.	Opaque, 27-mm dia. min.			
(reference				2-mm dia. (Sensing distance 100 mm)			
	s (white paper)						
Black/whit				1			
Directiona	-	Receiver: 2°	Receiver: 10°	2° to 20°			
	rce (wavelength)	Red LED (630 nm)	Red LED (625 nm)	Red LED (650 nm)			
•	pply voltage	12 to 24 VDC ±10%, ripple (p-p) 10% max.					
Current co	onsumption	30 mA max. (Emitter 15 mA max., Receiver 15	20 mA max.				
Control ou	utput	Load power supply voltage: 30 VDC max. Load current: 80 mA max. (residual voltage: 1 V max.) Open-collector output	Load power supply voltage: 26.4 VDC max. Load current: 50 mA max. (residual voltage: 2 V max. for load current of 10 to 50 mA, 1 V max. for load current of less than 10 mA) Open-collector output				
Indicators		Operation indicator (orange), Stability indicator					
Protection	n circuits	Power supply reverse polarity protection, Output short-circuit protection		Power supply and control output reverse polarity protection, Output short-circuit protection, Mutual interference prevention			
Response	time	Operate or reset: 0.5 ms max.		Operate or reset: 1 ms max.			
Ambient il	llumination	Incandescent lamp: 3,000 lx max.	70	Incandescent lamp: 5,000 lx max., Sunlight: 10,000 lx max.			
Ambient te range	emperature	Operating: -25 to 55°C Storage: -30 to 70°C (with no icing or condensation)	100	Operating: -25 to 55°C Storage: -40 to 70°C (with no icing or condensation)			
Ambient h	numidity range	Operating or Storage: 35% to 85% (with no con-	densation)	Operating: 35% to 85% Storage: 35% to 95% (with no condensation)			
Insulation	resistance	20 MΩ min. at 500 VDC					
Dielectric :	strength	AC500V, 50/60 Hz for 1 min.) ′	AC1,000V, 50/60 Hz for 1 min.			
Vibration r (destruction	resistance on)	10 to 55 Hz, 1.5-mm double amplitude for 2 hou	urs each in X, Y, and Z directions	10 to 2,000 Hz, 1.5-mm double amplitude or 300 m/s² for 0.5 hours each in X, Y, and Z directions			
Shock resi (destruction		500 m/s ² 3 times each in X, Y, and Z directions		1,000m/s ² 3 times each in X, Y, and Z directions			
Degree of	protection	IEC 60529 IP65		IEC 60529 IP67			
Connectio	on method	Pre-wired (standard length: 2 m)					
Weight (pa	acked state)	Approx. 60 g		Approx. 20 g			
	Case	SUS303		PBT (polybutylene terephthalate)			
	Display window	Polysulfone		Denatured polyarylate			
Materi- als	Lens	Polysulfone		Methacrylc resin			
uio	Hexagonal nuts	SUS303					
	Toothed wash- ers	SUS303					
Accessori		Instruction manual, Hexagonal nuts, Toothed wa	ashers	Instruction manual, Set screws for mounting (M2×14), Nuts, E39-R4 (E3T-SR4□ only), E39-R37-CA (E3T-SR4□-S only)			

^{*} Values in parentheses indicate the minimum required distance between the Sensor and Reflector.

	Sensing method	Diffuse-	reflective	Limited	-reflective	BGS-reflective		
	Appearance	Rectangular type (Flat)	Cylindrical type (Top-view)	Rectangular	type (Side-view)	Rectangu	lar type (Flat)	
		T. E.				er.h.		
Item	Light-ON	E3T-FD11	E3T-CD11	E3T-SL11	E3T-SL21	E3T-FL11	E3T-FL21	
NPN output	Dark-ON	E3T-FD11M E3T-FD12		E3T-SL11M E3T-SL12	E3T-SL21M E3T-SL22	E3T-FL12	E3T-FL22	
PNP	Light-ON	E3T-FD12M E3T-FD13 E3T-FD13M	E3T-CD13	E3T-SL12M E3T-SL13 E3T-SL13M	E3T-SL22M E3T-SL23 E3T-SL23M	E3T-FL13	E3T-FL23	
output	Dark-ON	E3T-FD14 E3T-FD14M		E3T-SL14 E3T-SL14M	E3T-SL24 E3T-SL24M	E3T-FL14	E3T-FL24	
Sensing	distance	5 to 30 mm (50 × 50 mm white paper)	3 to 50 mm (100 × 100 mm white paper)	5 to 15 mm (50 × 50 mm white paper)	5 to 30 mm (50 × 50 mm white paper)	1 to 15 mm (50 × 50 mm white paper)	1 to 30 mm (50 × 50 mm white paper)	
	d sensing object			T				
	n detectable eference value)	0.15-mm dia. (sensing distance 10 mm)		0.15-mm dia. (sensing distar	nce 10 mm)	0.15-mm dia. i	non-glossy obje nce 10 mm)	
• •	sis (white paper)	6 mm max.	15% or less of the sensing distance	2 mm max.	6 mm max.	0.5 mm max.	2 mm max.	
Black/wh	nite error		1			15% max.		
	nal angle		1			•		
Light soı (wavelen		Red LED (650 nm)	Infrared LED (870 nm)	Red LED (650 nm)				
	upply voltage consumption	12 to 24 VDC ±10%, ripple (p-p) 20 mA max.	10% max.					
Control output		Load power supply voltage: 26.4 VDC max. Load current: 50 mA max. (residual voltage: 2 V max. for load current of 10 to 50 mA, 1 V max. for load current of less than 10 mA)	Load power supply voltage: 30 VDC max. Load current: 80 mA max. (residual voltage: 1 V max.) Open-collector output	Load power supply voltage: 26.4 VDC max. Load current: 50 mA max. (residual voltage: 2 V max. for load current of 10 to 50 mA, 1 V max. for load current of less than 10 m/Open-collector output				
Indicator	1 9	Open-collector output Operation indicator (orange), Sta	hility indicator (green)					
	on circuits	Power supply and control output reverse polarity protection, Output short-circuit protection, Mutual interference prevention	Power supply reverse polarity protection, Output short-circuit protection	Power supply and control output reverse polarity protection Output short-circuit protection, Mutual interference prevention			protection,	
Respons	se time	Operate or reset: 1 ms max.	Operate or reset: 0.5 ms max.	Operate or reset: 1 ms max.				
Ambient	illumination	Incandescent lamp: 5,000 lx max., Sunlight: 10,000 lx max.	Incandescent lamp: 3,000 lx max.	Incandescent I	amp: 5,000 lx max	c., Sunlight: 10,0	000 lx max.	
Ambient range	temperature	Operating: -25 to 55°C Storage: -40 to 70°C (with no icing or condensation)	Operating: –25 to 55°C Storage: –30 to 70°C (with no icing or condensation)	Operating: -25 Storage: -40 to (with no icing of				
	humidity range	Operating: 35% to 85% Storage: 35% to 95% (with no condensation)	Operating or Storage: 35% to 85% (with no condensation)	Operating: 35% Storage: 35% (with no conde	to 95%			
	n resistance c strength	20 MΩ min. at 500 VDC 1,000 VAC, 50/60 Hz for 1 min. 10 to 2.000 Hz.	500 VAC, 50/60 Hz for 1 min.	1,000 VAC, 50	/60 Hz for 1 min.			
Vibratior (destruct	n resistance ion)	1.5-mm double amplitude or 300 m/s² for 0.5 hours each in X, Y, and Z directions	10 to 55Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions		, 1.5-mm double a nd Z directions	mplitude or 300	m/s² for 0.5 hou	
Shock re (destruct	esistance ion)	1,000 m/s 2 3 times each in X, Y, and Z directions	500 m/s² 3 times each in X, Y, and Z directions	1,000m/s ² 3 tir	nes each in X, Y, a	and Z directions		
	of protection	IEC 60529 IP67	IEC 60529 IP65	IEC 60529 IP6	7			
	ion method packed state)	Pre-wired (standard length: 2 m) Approx. 20 g	Approx. 40 g	Approx. 20 g				
weignt (Case	PBT (polybutylene terephtha-	SUS303		ene terephthalate)		
	Display window	late) Denatured polyarylate	Ероху	Denatured pol		•		
Materi-	Lens	Denatured polyarylate Denatured polyarylate	Polysulfone	Denatured poly	•			
als	Hexagonal nuts		SUS303		· • • •			
	Toothed wash- ers		SUS303					
ers SUS303			Instruction manual, Hexagonal	Instruction manual, Set screws for mounting (M2 × 14), Nuts * Instruction manual, Set screw for mounting (M2 × 8), Nuts				

^{*} Only the Instruction Manual is included with an M3-mounting Sensor (E3T-FD M or E3T-SL M). Order the Set of Mounting Screws separately if required.

Sensors

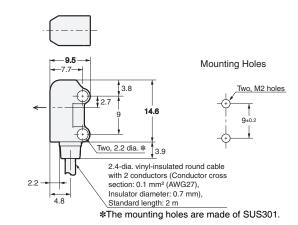
M2-mounting Sensors

Through-beam Side-view Sensors

E3T-ST1□(F) (Emitter) E3T-ST2□(F) (Emitter)



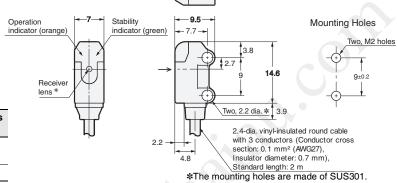
Emitter: E3T-ST□□(F)-L Receiver: E3T-ST□□(F)-D Emitter lens (1.3 dia.)



E3T-ST1□(F) (Receiver) E3T-ST2□(F) (Receiver) E3T-ST3□(F) (Receiver)

*The receiver lens diameters are given below.

Model	Receiver lens diameter
E3T-ST1□-D E3T-ST2□-D	(1.3 dia.)
E3T-ST3□-D	(2.4 dia.)

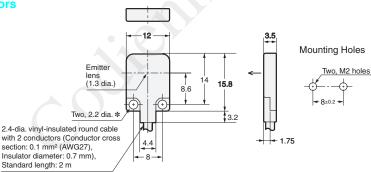


Through-beam Flat Sensors

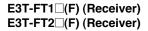
E3T-FT1□(F) (Emitter) E3T-FT2□(F) (Emitter)

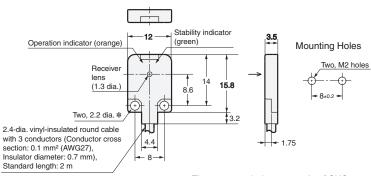


Emitter: E3T-FT (F)-L Receiver: E3T-FT (F)-D



*The mounting holes are made of SUS301.

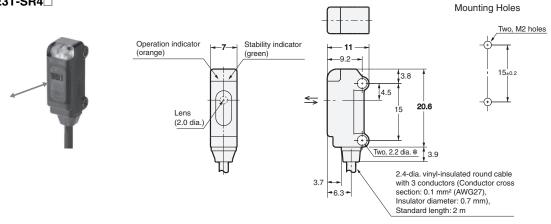




*The mounting holes are made of SUS301.

Retro-reflective Side-view Sensors

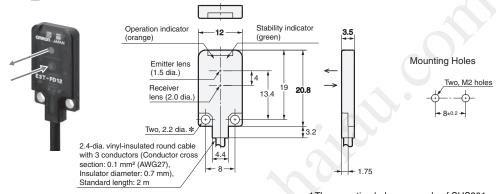
E3T-SR4□



*The mounting holes are made of SUS301.

Diffuse-reflective Flat Sensors



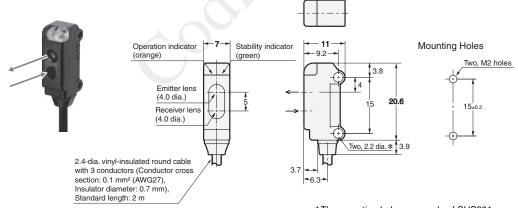


*The mounting holes are made of SUS301.

Limited-reflective Side-view Sensors

E3T-SL1□

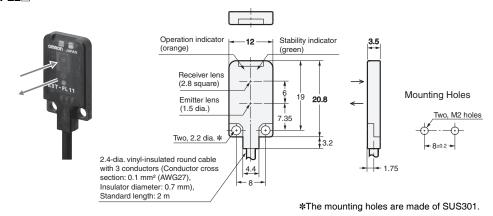
E3T-SL2□



*The mounting holes are made of SUS301.

BGS-reflective Flat Sensors

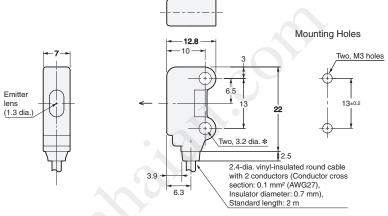
E3T-FL1□ E3T-FL2□



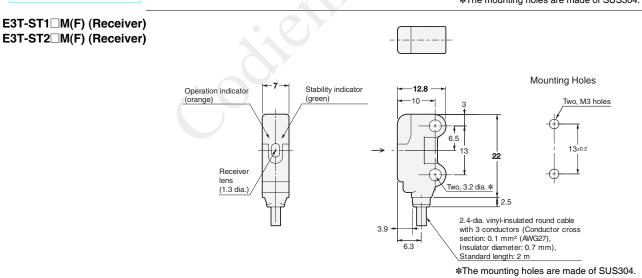
M3-mounting Sensors Through-beam Side-view Sensors E3T-ST1□M(F) (Emitter) E3T-ST2□M(F) (Emitter)



Emitter: E3T-ST□□(F)M-L Receiver: E3T-ST□□(F)M-D



*The mounting holes are made of SUS304.



Diffuse-reflective Flat Sensors E3T-FD1□M Stability indicator Operation indicator (orange) -12.6 Mounting Holes Two, M3 holes Emitter lens 20.4 (1.5 dia.) 14.8 Receiver lens (2.0 dia. Two, 3.2 dia. * 2.4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.1 mm² (AWG27), Insulator diameter: 0.7 mm), *The mounting holes and plate are made of SUS304. Standard length: 2 m **Limited-reflective Side-view Sensors** E3T-SL1□M E3T-SL2□M Mounting Holes 12.8 Two, M3 holes Operation indicator Stability indicator (orange) -10 (green) 4.8 Emitter lens (4.0 dia.) 16±0.2 Receiver lens (4.0 dia.) Two, 3.2 dia. * 2.4-dia. vinyl-insulated round cable with 3 conductors (Conductor cross section: 0.1 mm² (AWG27), Insulator diameter: 0.7 mm), Standard length: 2 m *The mounting holes are made of SUS304. **Small Cylindrical Sensors** Toothed 10 dia. Two, hexagonal nuts (M5) washer E3T-CT1□ (Emitter) Mounting Hole 4.4 2.5-dia. vinyl-insulated round cable (1.8)Optical with 2 conductors (Conductor cross section: 0.15 mm² (AWG25), M5×0.5 Insulator diameter: 0.8 mm), Standard length: 2 m 2.7-dia. vinyl-insulated round cable with 3 conductors (Conductor cross Emitter: E3T-CT1 □-L Receiver: E3T-CT1□-D Toothed section: 0.15 mm² (AWG25), Insulator diameter: 0.85 mm), washer Two, hexagonal nuts (M5) 10 dia. Standard length: 2 m Optical E3T-CT1 (Receiver) Mounting Hole 5.6 dia. (1)_ 2.5 9.7 Stability indicator Operation indicator M5×0.5 (green) (orange)

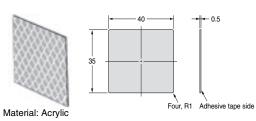
Through-beam Side-view Sensors Toothed Two, hexagonal nuts (M5) E3T-CT2□S (Emitter) washer 10 dia Mounting Hole 5.6 dia. 2.5-dia. vinyl-insulated round cable with 2 conductors (Conductor cross section: 0.15 mm² (AWG25), Insulator diameter: 0.8 mm), M5×0.5 Standard length: 2 m 2.7-dia. vinyl-insulated round cable Toothed washer with 3 conductors (Conductor cross section: 0.15 mm² (AWG25), Insulator diameter: 0.85 mm), Two, hexagonal nuts (M5) Emitter: E3T-CT2 S-l Standard length: 2 m 10 dia. 27.2 Receiver: E3T-CT2 S-D Operation indicator (orange) 13.1 Mounting Hole 3.5 E3T-CT2□S (Receiver) Stability 5.6 dia indicator Optical axis (green) 9.7 M5×0.5 **Diffuse-reflective Top-view Sensors** Sensitivity adjuster E3T-CD1□ 19.9 Stability indicator 2.8 Mounting Hole (green) Operation indicator (orange) Toothed washer Two, hexagonal nuts (M6) 11 dia. M6×0.75 **JUN** 6.8 dia. 2.7-dia. vinyl-insulated round cable (1.2) Optical 6.5 with 3 conductors (Conductor cross section: 0.15 mm² (AWG25), 29.1 Insulator diameter: 0.85 mm). Standard length: 2 m **Accessories** Reflector (Provided with E3T-SR4) 13.7 E39-R4 9.7 **→**|.4.7 Material, reflective surface: acrylic Two, 2.2 dia. Rear surface: ABS Reflector (Provided with E3T-SR4□-S) Reflector Mounting bracket E39-R37-CA -13.7 **-8.7**→ ||- (1.1) Reflective surface: acrylic 18.3 10.2 23 18.3 23 Reflector: t 0.5 (adhesive tape side) Mounting Bracket: t 0.5 Material: Mounting plate: stainless Two, R1.55 Two, 3.1 dia steel (SUS301) Note: The reflective plate and mounting plate (1) come as a set.

Reflective surface: acrylic

Accessories (Order Separately)

Tape Reflectors E39-RS1-CA Tour, R1 Adhesive tape side Material: Acrylic

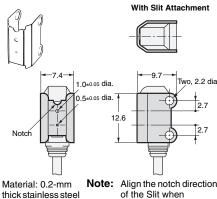
E39-RS2-CA



E39-RS3-CA 80 70 Four, R1 Adhesive tape side

Slit for E3T-ST□□(F) Through-beam Sensors

E39-S63

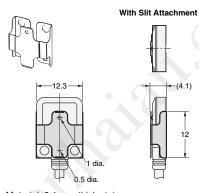


thick stainless steel (SUS301)

Note: Align the notch direction of the Slit when installing on the Emitter and Receiver.

Slit for E3T-FT□□(F) Through-beam

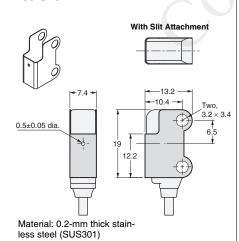
E39-S64



Material: 0.1-mm thick stainless steel (SUS301)

0.5-dia Slit for E3T-ST□□M(F) Through-beam Sensors

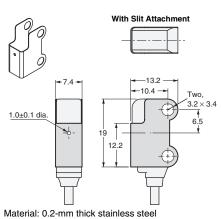
E39-S76A



1-dia Slit for E3T-ST□□M(F) Through-beam Sensors

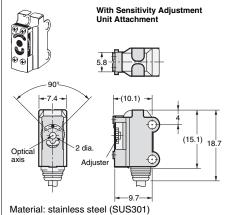
E39-S76B

(SUS301)



Sensitivity Adjustment Unit for E3T-ST1□/ST3□ Through-beam Sensors

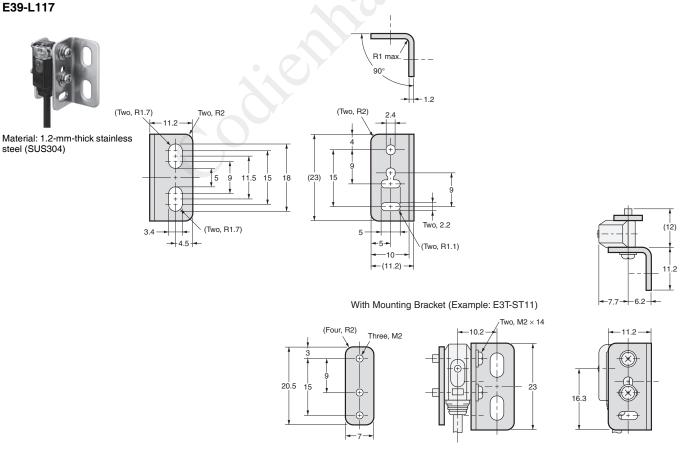
E39-E10

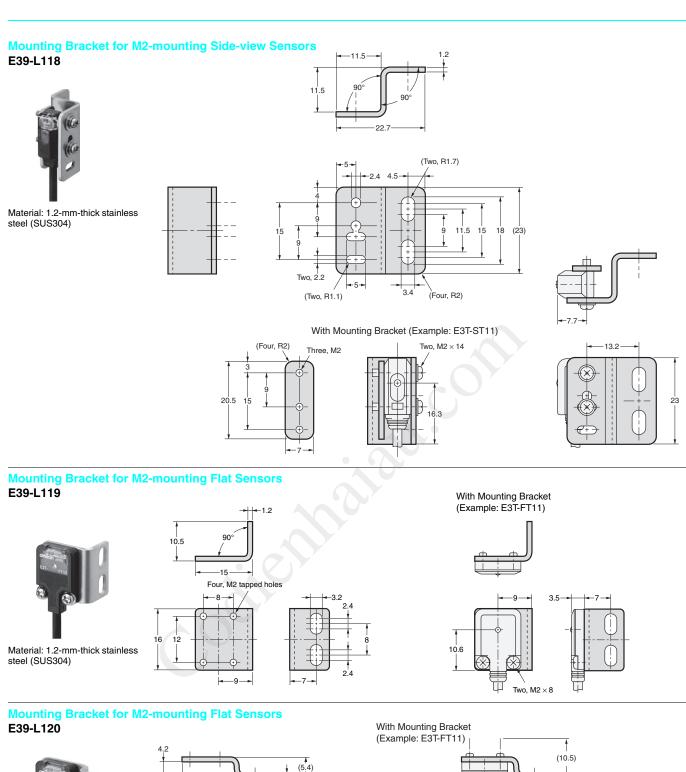


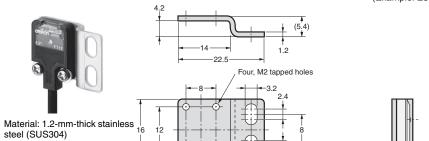
Mounting Bracket for M2-mounting Side-view Sensors E39-L116 (Two, R1.7) (17.8) 1 7.5 (Two, R2) (Two, R2) Material: 1.2-mm-thick (12) stainless steel (SUS304) (Two, R1.1) 31.2 9.5 (Two, R1.2) With Mounting Bracket (Example: E3T-ST11) R1.5 max. -10-(Four, R2) Three, M2 20.5

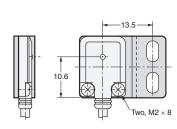
Mounting Bracket for M2-mounting Side-view Sensors











Mounting Bracket for M3-mounting Side-view Sensors E39-L166 1.2 90° 16 11.5 Material: 1.2-mm-thick stainless steel (SUS304) (12.6) 3.2 13.8 (15) With Mounting Bracket (Example: E3T-ST11M) - 10 — 8.5 15 Three, M3 Two. M3 × 15 12.9 13.5

