Special-beam Models

Detection with Increased Reliability

P10

A variety of heads incorporating the latest optical technology makes it possible to solve common problems related to detection and to increase reliability.

- Resistant to dust and dirt
- Capable of detecting small workpieces
- Resistant to workpiece vibration

Use these models to handle unstable detection conditions.

Small-spot models
E32-C42+
E39-F3A

Area-sensing models
E32-T16J

Limited-reflective models
E32-L24L

High-power models
E32-T17L

Environment-resistive Models

High Resistance to External Conditions with Fiber

P14

We have developed model variations for adapting to a variety of environmental conditions. These models enable detection in high-temperature environments and vacuums.

Heat-resistant models

Chemical-resistant models

- High-temperature environments
- Environments subject to the splattering of chemicals
- Vacuums

Use these models to handle applications in special environments.

Application-corresponding Models

Fiber Units for the Food-packaging, Semiconductor, and FPD Industries

P16

These models, which were developed for specific applications, offer top-quality detection performance.

- Label detection
- Liquid-level detection
- Alignment and mapping of glass substrates
- Wafer mapping

Use these models for specific applications.

Label-detection models
E32-G14

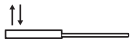
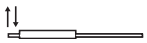
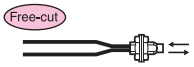
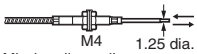
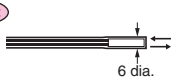
Alignment-check models
E32-L16

Liquid-level detection models
E32-D36T

Fiber Units with Reflective Sensors

High-resolution mode | Standard mode | High-speed mode (Super-high-speed mode)

*When used in combination with the E3X-DA-S Amplifier Unit (general-purpose).

Type		Appearance (mm) *3	Sensing distance (mm) *1	(Min. sensing object) (mm) *2	Min. bending radius (mm)	Features	Model number
Special-beam models	Convergent-reflective	Free-cut 	3.3 3.3 3.3 (3.3)	(0.005 dia.)	R25	Small level differences, high power, side-view	E32-L25
		Free-cut 				Small level differences, top-view	E32-L25A
		Free-cut 	0 to 4 0 to 4 0 to 4 (0 to 4)		R10	Ultracompact, flat-view	E32-L24S
		Free-cut 	2 to 6 (center: 4) 2 to 6 (center: 4) 2 to 6 (2 to 6) (center: 4)			Heat resistant up to 105°C *4, top-view	E32-L24L
		Free-cut 	5.4 to 9 (center: 7.2) 5.4 to 9 (center: 7.2) 5.4 to 9 (5.4 to 9) (center: 7.2)			Heat resistant up to 105°C *4, top-view	E32-L25L
			4 to 10 4 to 10 4 to 10 (4 to 10)		R25	Heat resistant up to 200°C, flat-view	E32-L86
		Free-cut	0 to 15 0 to 15 0 to 12 (0 to 12)			Wide-range sensing, flat-view	E32-L16
Environment-resistive models	Heat-resistant	150°C*5 Free-cut  M6	400 230 160 (72)	(0.005 dia.)	R35	Heat resistant up to 150°C	E32-D51
		200°C*6  M6	150 90 60 (27)		R10	Heat resistant up to 200°C	E32-D81R-S E32-D81R
		350°C*6  M6			R25	Heat resistant up to 350°C	E32-D61-S E32-D61
		400°C*6  M4 1.25 dia. Min. bending radius of sleeve: 10	100 60 40 (18)			Heat resistant up to 400°C, with sleeve	E32-D73-S E32-D73
	Chemical-resistant	Free-cut  6 dia.	160 95 65 (30)	(0.005 dia.)	R40	Fluororesin cover, long distance	E32-D12F
		Free-cut  7 dia.	70 40 30 (10)			Fluororesin cover, side-view	E32-D14F

*1. The sensing distances are for white paper.
*2. The values for the minimum sensing object are representative values that indicate values obtained in standard mode with the sensing distance and sensitivity set to optimum values.
*3. Free-cut Indicates models that allow free cutting.
*4. For continuous operation, use the products within a temperature range of –40°C to 90°C.
*5. For continuous operation, use the products within a temperature range of –40°C to 130°C.
*6. The maximum temperature that can be withstood varies with the location

Fiber Units

Item \ Type	Environment-resistive models				
	Heat-resistant				
	E32-T5□ E32-D5□	E32-T8□R-S E32-D8□R-S	E32-T84S-S	E32-T6□-S E32-D6□-S	E32-D73-S
Ambient operating temperature range *1	−40°C to 150°C *4	−40°C to 200°C *3		−60°C to 350°C *3	−40°C to 400°C *3
Ambient humidity range *1	35% to 85%				
Fiber material	Plastic (fluororesin coating)	Glass (fluororesin coating)	Glass (SUS spiral coating)		
Degree of protection	IEC standard: IP67				

Item \ Type	Environment-resistive models				
	Chemical-resistant			Vacuum-resistant	
	All other models	E32-T51F	E32-T81F-S	All other models	32-T84SV
Ambient operating temperature range *1	−40°C to 70°C	−40°C to 150°C *4	−40°C to 200°C *3	−25°C to 120°C	−25°C to 200°C
Ambient humidity range *1	35% to 85%				
Fiber material	Plastic (fluororesin coating)		Glass (fluororesin coating)	Glass (fluororesin coating)	Glass (SUS spiral coating)
Degree of protection	IEC standard: IP67			---	

Item \ Type	Application-corresponding models				
	Label-detection	Liquid-level detection			Wafer-mapping
		All other models	E32-A01 E32-A02	E32-D82F	
Ambient operating temperature range *1	−40°C to 70°C			−40°C to 200°C *3	−40°C to 70°C
Ambient humidity range *1	35% to 85%				
Fiber material	Plastic (polyethylene coating)		Plastic (fluororesin coating)	(Fluororesin coating)	Plastic (polyethylene coating)
Degree of protection	IEC standard: IP67	IEC standard: IP50		IEC standard: IP68	IEC standard: IP50
Other		Repeat accuracy: 1 mm max.		Repeat accuracy: 0.5 mm max.	

Item \ Type	Application-corresponding models				
	Glass-substrate-alignment		Glass-substrate-mapping		
	All other models	E32-L66	E32-A09	E32-A09H	E32-A09H2
Ambient operating temperature range *1	−40°C to 70°C	0°C to 300°C *3, *5	−40°C to 70°C	−40°C to 150°C *4	−40°C to 300°C *3
Ambient humidity range *1	35% to 85%				
Fiber material	Plastic (polyethylene coating)	Glass (SUS spiral coating)	Plastic (polyethylene coating)	Plastic (fluororesin coating)	Glass (SUS spiral coating)
Degree of protection	IEC standard: IP40				

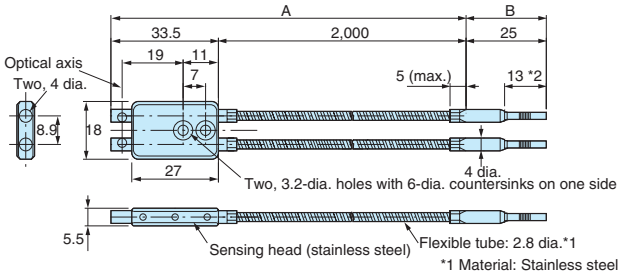
*1. There must be no icing or condensation within the range specified for the ambient operating temperature.
*2. For continuous operation, use the products within a temperature range of −40°C to 90°C.
*3. The maximum temperature that can be withstood varies with the location. Refer to dimensions diagrams for details.
*4. For continuous operation, use the products within a temperature range of −40°C to 130°C.
*5. These values are based on the assumption that there are no repeated sudden changes in temperature.

Fiber Units with Reflective Sensors

Convergent-reflective Models

Free-cut Indicates models that allow free cutting.

E32-L86

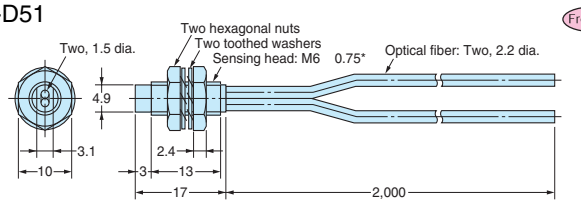


Note: The maximum allowable temperatures for sections A and B are 200°C and 110°C, respectively. The section inserted into the Amplifier Unit (indicated by *2), however, must stay within the Amplifier Unit's operating temperature range.

Heat-resistant Models

E32-D51

Free-cut

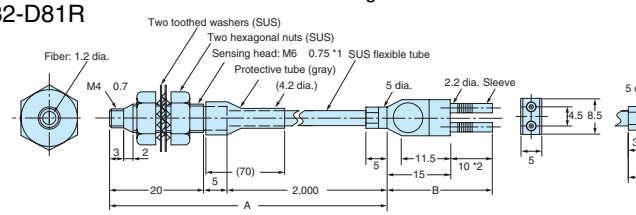


*Material: Brass/nickel plating

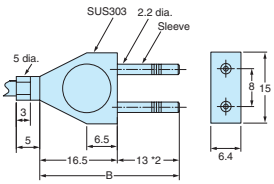
Note: The maximum allowable temperature is 150°C. The maximum allowable temperature for continuous operation is 130°C.

E32-D81R-S
E32-D81R

Using the E32-D81R-S



Using the E32-D81R

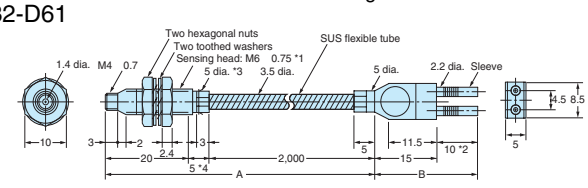


*1. Material: Stainless steel (SUS303)

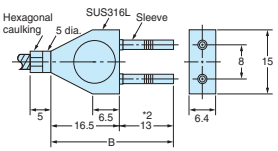
Note 1. The maximum allowable temperatures for sections A and B are 200°C and 110°C, respectively. The section inserted into the Amplifier Unit (indicated by *2), however, must stay within the Amplifier Unit's operating temperature range.

E32-D61-S
E32-D61

Using the E32-D61-S



Using the E32-D61

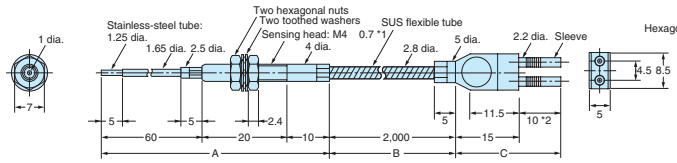


*1. Material: Stainless steel (SUS303)
*3. The diameter is 6 if the fiber length exceeds 10 m.
*4. The diameter is 10 if the fiber length exceeds 10 m.

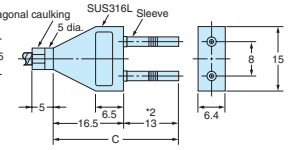
Note 1. The maximum allowable temperatures for sections A and B are 350°C and 110°C, respectively. The section inserted into the Amplifier Unit (indicated by *2), however, must stay within the Amplifier Unit's operating temperature range.

E32-D73-S
E32-D73

Using the E32-D73-S



Using the E32-D73



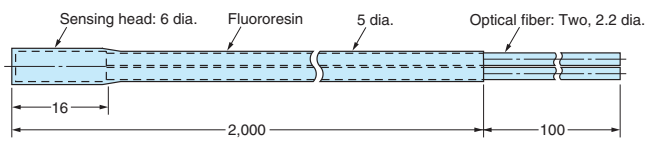
*1. Material: Stainless steel (SUS303)

Note 1. The maximum allowable temperatures for sections A, B, and C are 400°C, 300°C, and 110°C, respectively. The section inserted into the Amplifier Unit (indicated by *2), however, must stay within the Amplifier Unit's operating temperature range.

Chemical-resistant Models

E32-D12F

Free-cut



E32-D14F

Free-cut