

# Fiber Optic Sensors



- The optical fiber amplifier comes with automatic light compensation technology to effectively ensure the stability of detection
- Complete specifications of optical fiber components, perfect realization of the full range of replacement of mainstream models in the market
- Customized development can be carried out according to the user's on-site needs
- Abundant inventory, quick response and fast delivery



**PG1 Dual Digital Display Fiber Optic Amplifier**

- With automatic light compensation technology, 4-channel anti-light interference
- Small hysteresis, dual output selectable, the fastest speed up to 13 μ s

P.A-04



**PG5 High Stability Dual Digital Display Fiber Amplifier**

- APC Compensation function, high stability performance
- With AI function, automatically configure the most suitable luminous intensity
- Coded menu: greatly reduce the cost of use and maintenance

P.A-05



**PB1 High Performance Dual Digital Fiber Amplifier**

- Button design conforms to ergonomics
- Visible bright LED, easy settings
- Seletable NPN/PNP output

P.A-06



**PC1 Ultra High Speed Response Dual Digital Display Fiber Optic Amplifier**

- Fastest response time in the industry (15ms)
- Digital display of red and green light in comparison, easy installation
- Unique technology for light compensation, stable detection

P.A-07

Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

Guidance

Fiber amplifiers

Standard economical

High stability

High performance type

High speed response

Fiber components

Popular type

Array-type

Flat bracket type

Side-view type

High flexible type

High temperature resistant

Small spot type

Combination type

High end type

Fiber lens

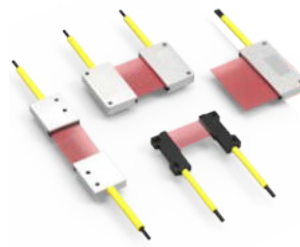
Fiber lens



### Popular Type

- Imported fiber optic core, wonderful performance
- Long sensing distance, cost-effective

P.A-08



### Array-type

- Suitable for moving objects detection
- Can detect unclear position objects

P.A-12



### Flat Bracket Type

- Flexible installation, easy to be fixed
- Fits into limited space

P.A-14



### Side-view Type

- Can detect objects in narrow space
- Easily access to detectable objects, high precision

P.A-15



### High Elasticity Type

- Good performance with excellent flexibility
- After bending at angles of 90 degree, transmission ability only reduces 10%

P.A-16



### High Temperature Resistant Type

- Heat resistant stainless steel outer casing, strong chemical resistance
- Can stand maximum temperature of 350°

P.A-17



### Small Spot Type

- Built-in lens, small beam spot
- Customizable high-flex optical fiber cables

P.A-18



### Combination Type

- Several fiber units combined together
- Customizable fiber length to tail your needs

P.A-19



### High End Type

- Pioneering hot melt leveling technology
- Metal sleeve cover type protective sleeve design

P.A-20



### Lens

- Offers a complete series of specifications; can replace most of the popular products in the market
- Both thru-beam and diffuse reflective model for you to choose from

P.A-20

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### Guidance

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Fiber lens
Fiber lens

### PG1 Dual Digital Display Fiber Optic Amplifier

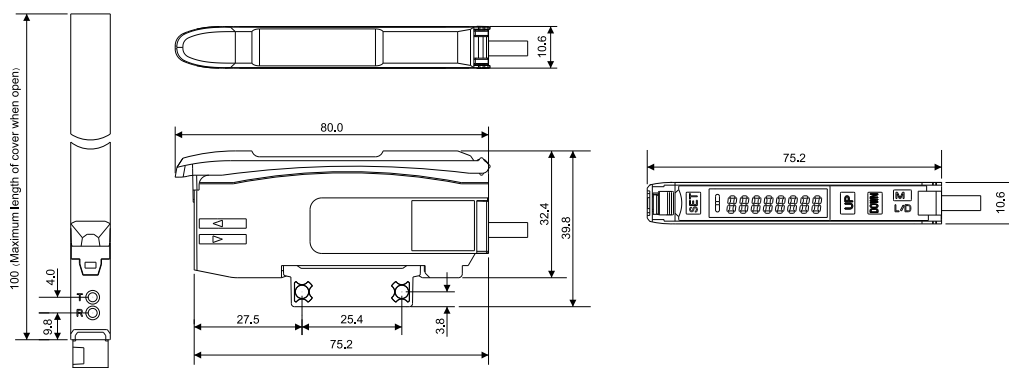
- With automatic light compensation technology, 4-channel anti-light interference
- Small hysteresis, dual output selectable, the fastest speed upto 13 μs



Model No.	PG1-N	PG1-P
Control output	1 output port	
Light source	Red, 4-element LED	
Response time	SHP: 13 μs, FINE: 30 μs, SUPR: 100 μs, MEGA: 200 μs	
Output selection	LIGHT-ON/DARK-ON (Short press MODE and select with UP DOWN)	
Display indicator	Operation indicator: Red LED, dual digital monitor: Dual 7-digit display, threshold (4-digit green LED body indicator) and current value (4-digit red LED body indicator) lit together. Current value range: 0-9999	
Detection method	Light intensity (area detection is available for automatic sensitive tracking)	
Delay function	1ms~9999ms	
Control output	NPN open collector, maximum 100mA, residual voltage: 1V	PNP open collector, maximum 100mA, residual voltage: 1V
Power supply	12~24V DC ± 10%	
Ambient illuminance	Incandescent lamp ≤ 20,000 lux, Sunlight ≤ 30000 Lux	
Power consumption	Standard mode: Max 300mW	
Vibration resistance	10~55Hz, double amplitude: 1.5mm, X, Y, Z axis are 2 hours respectively	
Ambient temperature	-10°C~+55°C, No freezing	

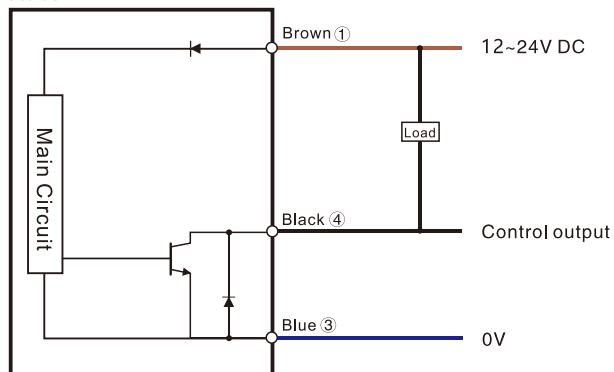
### Dimensions

Unit: mm

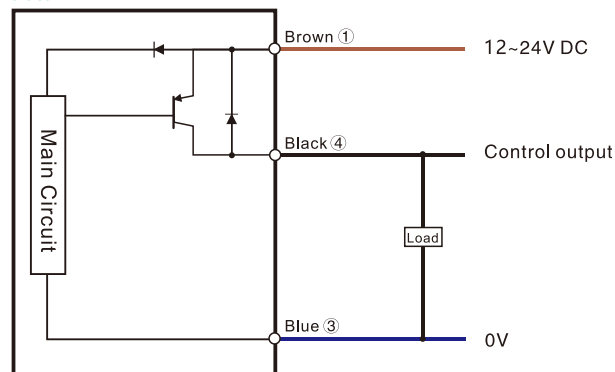


### Circuit diagram

#### NPN



#### PNP



#### Fiber Optic

- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

#### Guidance

#### Fiber amplifiers

- Standard economical
- High stability
- High performance type
- High speed response

#### Fiber components

- Popular type
- Array-type
- Flat bracket type
- Side-view type
- High elastic type
- High temperature resistant
- Small spot type
- Combination type
- High end type

#### Fiber lens

- Fiber lens

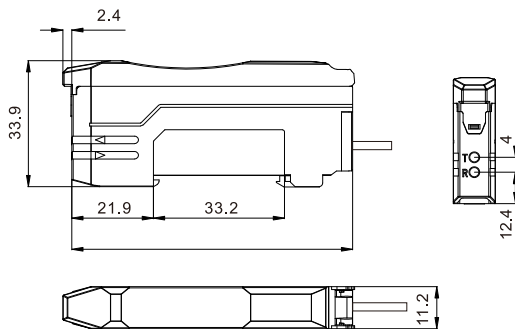
## PG5 Highly Stable Dual Digital Display Fiber Amplifier

- APC compensation function, high stability
- With AI function, automatically configure the most suitable luminous intensity
- Coded menu: greatly reduce the cost of use and maintenance;



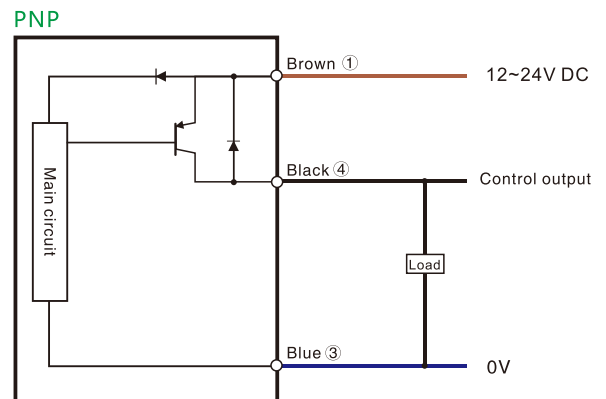
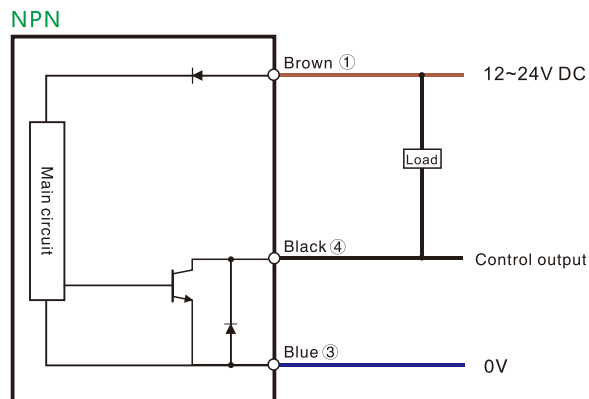
Model No.	PG5-N	PG5-P
light source	Red LED (wavelength 630nm)	
Reaction time	50μs ( P100 ) 、 250μs ( P101 ) 、 500μs ( P102 ) 、 1ms ( P103 ) 、	
Output method	Normally open and normally closed: L. on, D. on	
Protect the circuit	Power supply reverse connection protection, output surge protection, output reverse connection protection, output overcurrent protection, output ESD protection	
Timer function	Output off timing, output on timing, output single timing, output timing off	
Control output	Applied voltage: 30V DC or less (between detection output and 0V) Maximum output current: 100mA; residual voltage: below 2V	Applied voltage: below 30V DC (between detection output and +0V) Maximum output current: 100mA; residual voltage: below 2V
Delay function	Conventional: 900mW (at 24V, the maximum is 32mA; at 12V, the maximum is 47mA)	Conventional: 900mW (at 24V, the maximum is 36mA; at 12V, the maximum is 50mA)
Timing range	1-9999ms	
Utility function	Parameter initialization/key lock/threshold two points, automatic and manual setting, fast saturation attenuation	
Regional mode	Yes	
voltage	12-24VDC ± 10%	
Power consumption	20mA max	
Ambient luminosity	Incandescent lamp: maximum 20000lux, sunlight: maximum 30000lux	
Ambient temperature	-10°C~+55°C, no freezing	
Environment humidity	35~85% RH	
Vibration resistance	10 To 55Hz, full width 1.5mm, X, Y, Z axis directions for 2 hours each	
Impact resistance	500m/s <sup>2</sup> , 3 times each in X, Y, and Z axis directions	
Shell material	Polycarbonate	

### Dimensions



Unit: mm

### Circuit diagram



### ■ PB1 High Performance Dual Digital Fiber Amplifier

- Infrared communication function
- Regional mode
- 7-speed response time setting
- Novel and unique appearance



Model No.	PB1
Light source	Modulated red light 680nm
Operating voltage	8~30V DC
Saturation voltage	25mA < 1.2V, 100mA < 2V
Load current	< 50mA
Output current	< 200mA
Leakage current	< 100uA
Output type	NPN/PNP open-collector
Switch type	Selectable L.on/D.on
Display screen	7 segment 8 digit display (red: 4 digit, green: 4 digit)
Response time	50 μ s/ 250 μ s/ 500 μ s/ 1ms/ 4ms
Time delay function	< 50ms
Operating temperature	-10°C~+60°C
Operating humidity	35%~85%RH
Ambient brightness	Sunlight ≤ 10000Lux
Protective circuit	Short circuit protection, Reverse polarity protection, Over voltage protection
Shock resistance	10G(1500m/s²), XYZ three directions
Anti-vibration	10~55Hz Double amplitude 1.5mm, XYZ three directions, 2 hours each
Certification	CE
Connection method	2m 4 wire cable
Weight	65g

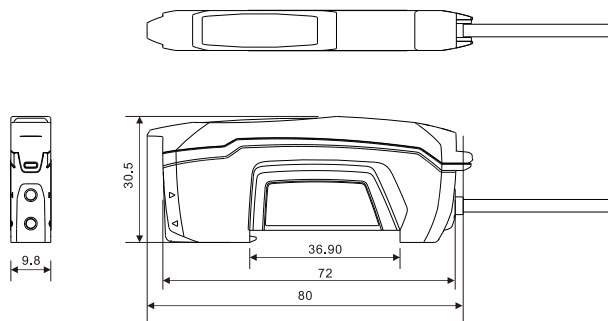
- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

- Guidance**
- Fiber amplifiers
  - Standard economical
  - High stability
  - High performance type
  - High speed response

- Fiber components**
- Popular type
  - Array-type
  - Flat bracket type
  - Side-view type
  - High elastic type
  - High temperature resistant
  - Small spot type
  - Combination type
  - High end type

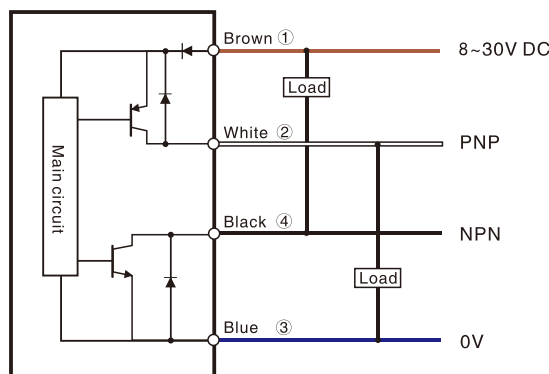
- Fiber lens**
- Fiber lens

### Dimensions



### Circuit diagram

NPN/PNP



# High Speed Response Type Fiber Amplifier

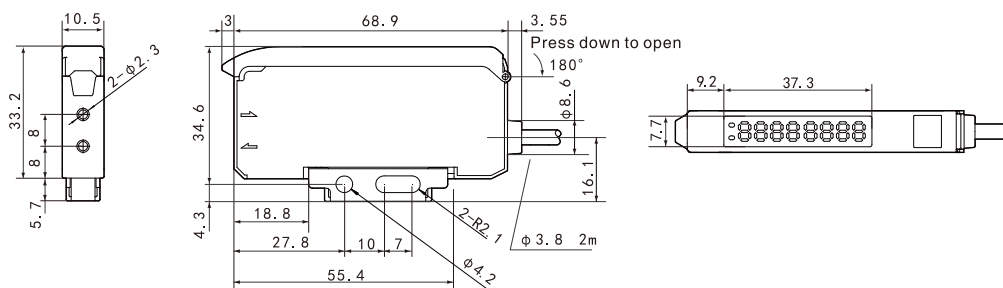
## PC1 Ultra High Speed Response Dual Digital Display Fiber Amplifier

- Fastest response time in the industry (15ms)
- Digital display of red and green light in comparison, easy installation
- Unique technology for light compensation, stable detection



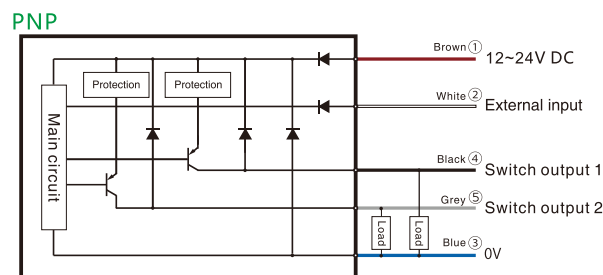
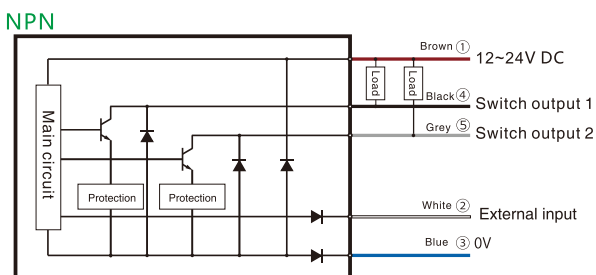
Model No.	PC1-NH	PC1-NH2	PC1-PH	PC1-PH2
Light source	Red LED 660nm			
Operating voltage	12~24V DC			
No-load supply current	Standard mode: 36mA max.(Single output), 39mA max.(Double output) Energy-saving mode: 25mA max.(Single output), 28mA max.(Double output)			
Output type	Single output NPN	Double output NPN	Single output PNP	Double output PNP
Switch type	≤100mA / 30V DC, Load current≤100mA, Voltage drop≤1.8V, Normally open (L.on), normally closed (D.on)			
Indicator	Selectable L.on, D.on			
Display screen	Single output indicator (Red), dual output indicator (Orange)			
Response time	7 segment 8 digit display (red: 4 digit, orange: 4 digit)			
ON/OFF Time delay function	15 μs(22us(1-HS), 70 μs(2-FS), 250 μs(3-ST), 500 μs(4-LG), 1ms(5-PL), 2ms(6-UL), 8ms(7-EL))			
Sensing distance	ON delay, OFF delay, Single pulse output, ON + OFF delay, ON delay+Single pulse output 0.1~9.999ms			
Sensitivity adjustment	Thru-beam: 4000mm, Diffuse reflection: 1200mm			
External output function	Teach-in / Manual			
Operating temperature	Remote teach-in, Input stops once it shines, Syn trigger input, reset-input (for two outputs only)			
Operating humidity	-25°C~+55°C			
Ambient brightness	35%~85%RH			
Anti-vibration	Sunlight≤10000lux, Incandescent lamp≤3000lux			
Shock resistance	10~55Hz Double amplitude 1.5mm, XZY three directions, 2 hours each			
Degree of protection	50G(500m/S²), XYZ three directions			
Material	IP50			
Connection method	Shell: PPE, Display: PC			
Weight	2m 5 core cable			
	50g			

### Dimensions



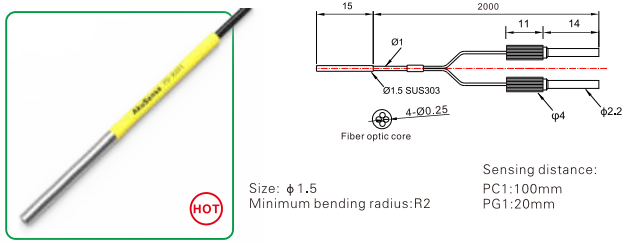
Unit: mm

### Circuit diagram



Diffuse reflection

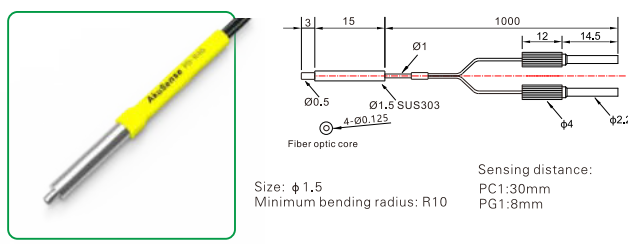
**PD-R49Y**



Size:  $\phi 1.5$   
Minimum bending radius: R2

Sensing distance:  
PC1:100mm  
PG1:20mm

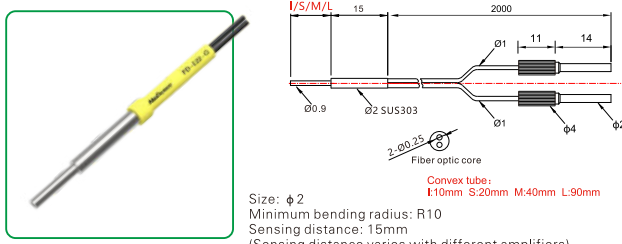
**PD-R46**



Size:  $\phi 1.5$   
Minimum bending radius: R10

Sensing distance:  
PC1:30mm  
PG1:3mm

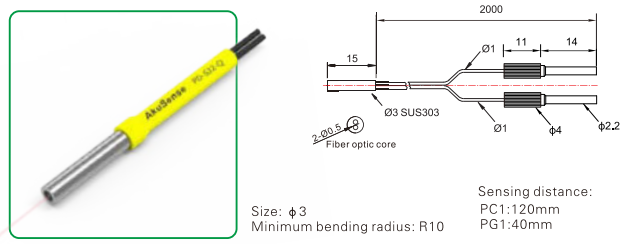
**PD-E22-Q-I/S/M/L**



Size:  $\phi 2$   
Minimum bending radius: R10  
Sensing distance: 15mm  
(Sensing distance varies with different amplifiers)

Convex tube:  
L:10mm S:20mm M:40mm L:90mm

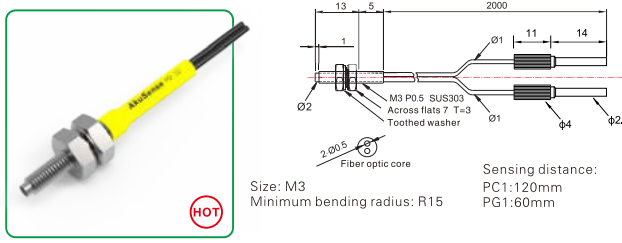
**PD-S32-Q**



Size:  $\phi 3$   
Minimum bending radius: R10

Sensing distance:  
PC1:120mm  
PG1:40mm

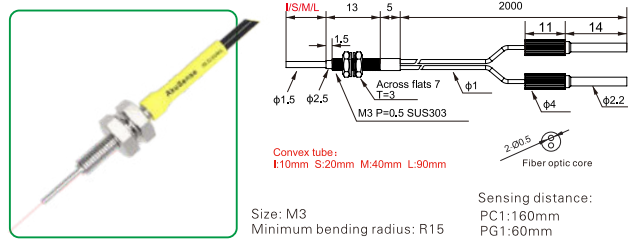
**PD-32**



Size: M3  
Minimum bending radius: R15

Sensing distance:  
PC1:120mm  
PG1:60mm

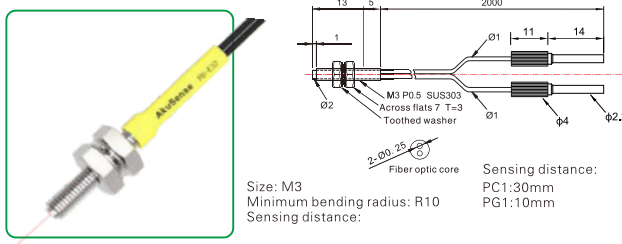
**PD-32-I/S/M/L**



Size: M3  
Minimum bending radius: R15

Sensing distance:  
PC1:160mm  
PG1:60mm

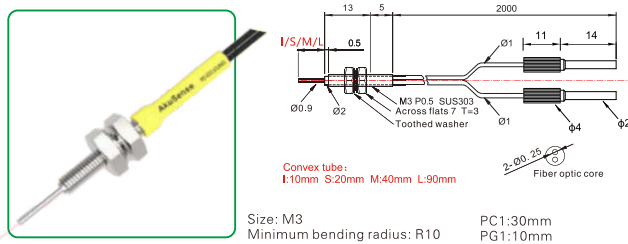
**PD-E32**



Size: M3  
Minimum bending radius: R10  
Sensing distance:

Sensing distance:  
PC1:30mm  
PG1:10mm

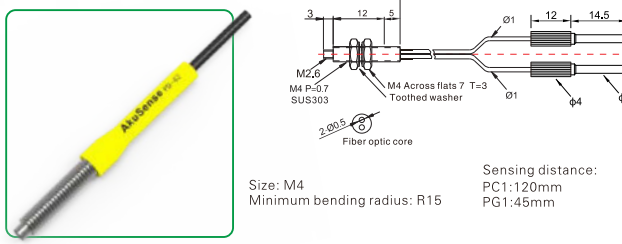
**PD-E32-I/S/M/L**



Size: M3  
Minimum bending radius: R10

PC1:30mm  
PG1:10mm

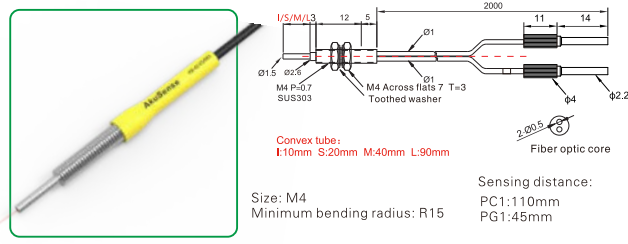
**PD-42**



Size: M4  
Minimum bending radius: R15

Sensing distance:  
PC1:120mm  
PG1:45mm

**PD-42-I/S/M/L**



Size: M4  
Minimum bending radius: R15

Sensing distance:  
PC1:110mm  
PG1:45mm

Fiber Optic

Slot Sensors
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High stability
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High speed response

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Combination type
High end type

Fiber lens

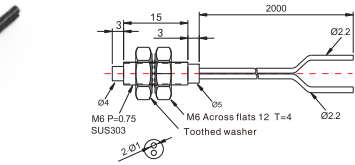
Fiber lens
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\*PG1: TEGA with a threshold setting of 200;  
PC1: 7-step with a threshold setting of 200.  
\*Cable length listed above can be customized.



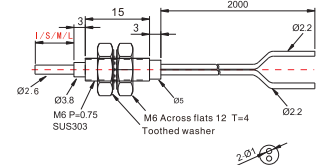
**Diffuse reflection**

**PD-62**



Size: M6  
Minimum bending radius: R25  
Sensing distance: PC1:350mm  
PG1:150mm

**PD-62-I/S/M/L**

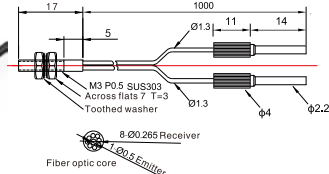


Convex tube:  
I:10mm S:20mm M:40mm L:90mm  
Size: M6  
Minimum bending radius: R25  
Sensing distance: PC1:350mm  
PG1:150mm

**PD-L35GA**



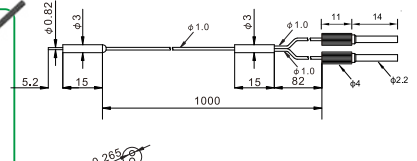
Coaxial



Size: M3  
Minimum bending radius: R2  
Sensing distance: PC1:200mm  
PG1:85mm

**HOT**

**PD-G45Y**

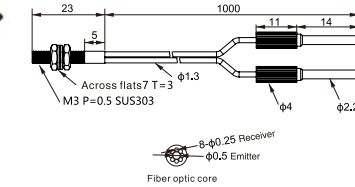


Size: Ø 0.82/3  
Minimum bending radius: R4  
Sensing distance: PC1:30mm  
PG1:10mm

**PD-C310-35FA**

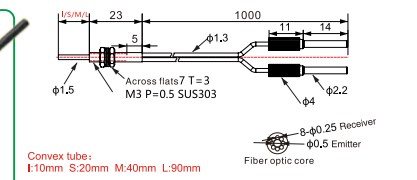


Coaxial



Size: M3  
Minimum bending radius: R15  
Sensing distance: PC1:220mm  
PG1:90mm

**PD-C310-35FA-I/S/M/L**

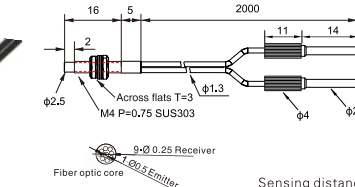


Convex tube:  
I:10mm S:20mm M:40mm L:90mm  
Size: M3  
Minimum bending radius: R15  
Sensing distance: PC1:200mm  
PG1:70mm

**PD-C42**



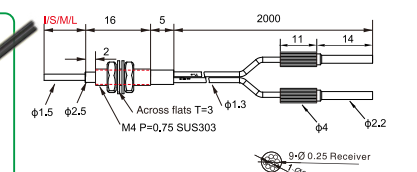
Coaxial



Size: M4  
Minimum bending radius: R15  
Sensing distance: PC1:180mm  
PG1:60mm

**HOT**

**PD-C42-I/S/M/L**

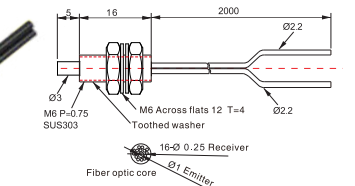


Convex tube:  
I:10mm S:20mm M:40mm L:90mm  
Size: M4  
Minimum bending radius: R15  
Sensing distance: PC1:220mm  
PG1:85mm

**PD-C62**

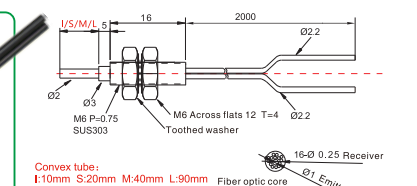


Coaxial



Size: M6  
Minimum bending radius: R25  
Sensing distance: PC1:350mm  
PG1:150mm

**PD-C62-I/S/M/L**



Convex tube:  
I:10mm S:20mm M:40mm L:90mm  
Size: M6  
Minimum bending radius: R25  
Sensing distance: 90mm  
(Sensing distance varies with different amplifiers)

\*PG1: TEGA with a threshold setting of 200;  
PC1: 7-step with a threshold setting of 200.  
\*Cable length listed above can be customized.

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Fiber lens

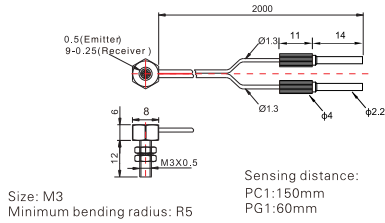
Diffuse reflection

PD-C32TZ

Coaxial

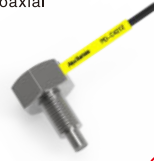


HOT

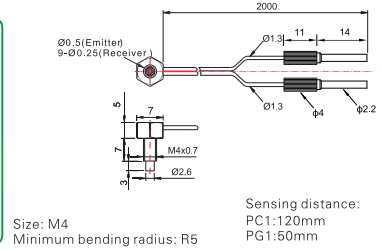


PD-C42TZ

Coaxial



HOT

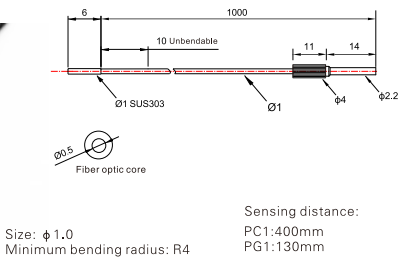


Thru-beam

PT-R58V



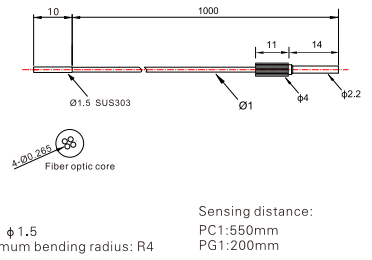
HOT



PT-R59



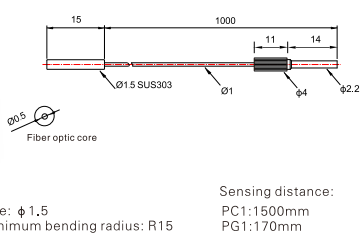
HOT



PT-S1520-Q



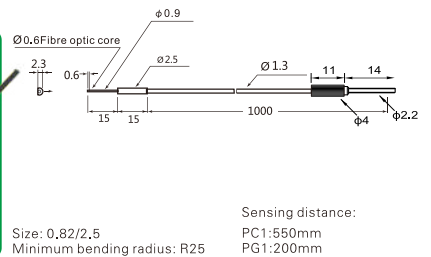
HOT



PT-G32



HOT



- Fiber Optic
- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

Guidance

- Fiber amplifiers
- Standard economical
- High stability
- High performance type
- High speed response

Fiber components

- Popular type
- Array-type
- Flat bracket type
- Side-view type
- High elastic type
- High temperature resistant
- Small spot type
- Combination type
- High end type

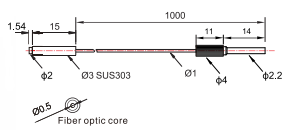
Fiber lens

- Fiber lens

\*PG1: TEGA with a threshold setting of 200;  
\*PC1: 7-step with a threshold setting of 200.  
\*Cable length listed above can be customized.

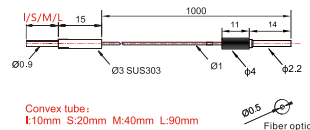
**Thru-beam**

**PT-S31-Q**



Size:  $\phi 3$   
 Minimum bending radius: R15  
 Sensing distance: 140mm  
 (Sensing distance varies with different amplifiers)

**PT-S31-Q-I/S/M/L**

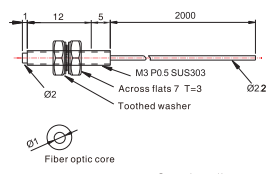


Convex tube:  
 I:10mm S:20mm M:40mm L:90mm

Size:  $\phi 3$   
 Minimum bending radius: R15

Sensing distance:  
 PC1:1000mm  
 PG1:180mm

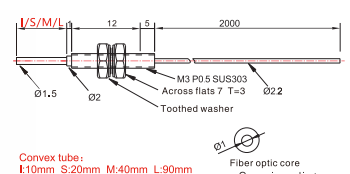
**PT-32**



Size: M3  
 Minimum bending radius: R25

Sensing distance:  
 PC1:1900mm  
 PG1:600mm

**PT-32-I/S/M/L**

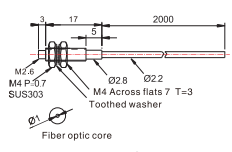


Convex tube:  
 I:10mm S:20mm M:40mm L:90mm

Size: M3  
 Minimum bending radius: R25

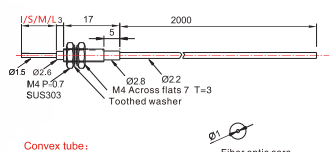
Sensing distance:  
 PC1:1900mm  
 PG1:700mm

**PT-42**



Size: M4  
 Minimum bending radius: R25  
 Sensing distance: 500mm  
 (Sensing distance varies with different amplifiers)

**PT-42-I/S/M/L**

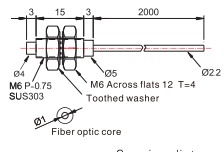


Convex tube:  
 I:10mm S:20mm M:40mm L:90mm

Size: M4  
 Minimum bending radius: R25

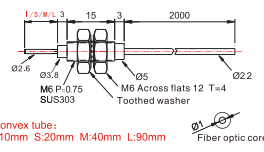
Sensing distance:  
 PC1:1800mm  
 PG1:400mm

**PT-62**



Size: M6  
 Minimum bending radius: R25  
 Sensing distance: 1500mm  
 (Sensing distance varies with different amplifiers)

**PT-62-I/S/M/L**

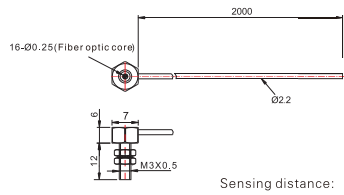


Convex tube:  
 I:10mm S:20mm M:40mm L:90mm

Size: M6  
 Minimum bending radius: R25

Sensing distance:  
 PC1:4000mm  
 PG1:600mm

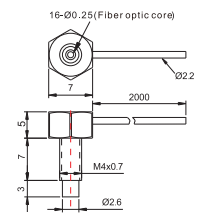
**PT-C32TZ**



Size: M3  
 Minimum bending radius: R5

Sensing distance:  
 PC1:1300mm  
 PG1:500mm

**PT-C42TZ**



Size: M4  
 Minimum bending radius: R15

Sensing distance:  
 PC1:1500mm  
 PG1:600mm

Fiber Optic
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Area
Ultrasonic
Vision
Vibration
Temperature
Annexes
Guidance

Fiber amplifiers
Standard economical
High stability
High performance type
High speed response

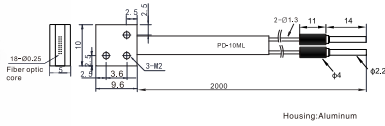
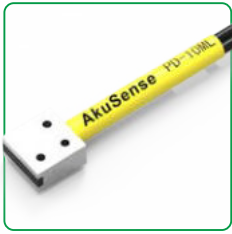
Fiber components
Popular type
Array-type
Flat bracket type
Side-view type
High elastic type
High temperature resistant
Small spot type
Combination type
High end type

Fiber lens
Fiber lens

\*PG1: TEGA with a threshold setting of 200;  
 PC1: 7-step with a threshold setting of 200.  
 \*Cable length listed above can be customized.

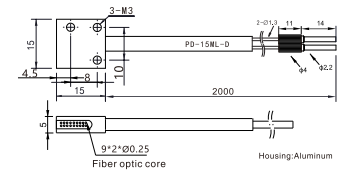
## Diffuse reflection

### PD-10ML



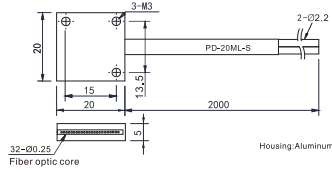
Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.05mm  
 Sensing distance:  
 PC1:250mm  
 PG1:80mm

### PD-15ML-D



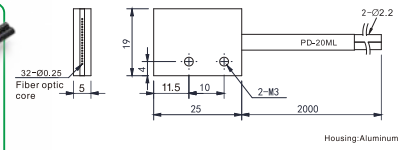
Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.05mm  
 Sensing distance:  
 PC1:250mm  
 PG1:80mm

### PD-20ML-S



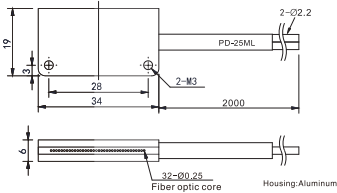
Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0,05mm  
 Sensing distance:  
 PC1:350mm  
 PG1:150mm

### PD-20ML



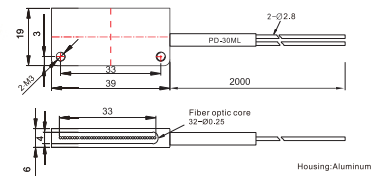
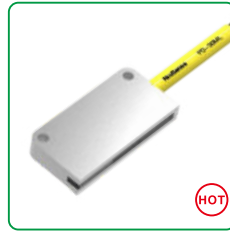
Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.05mm  
 Sensing distance:  
 PC1:530mm  
 PG1:140mm

### PD-25ML



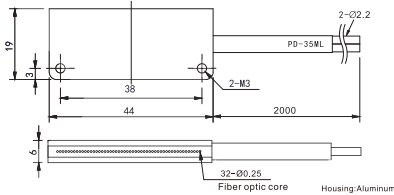
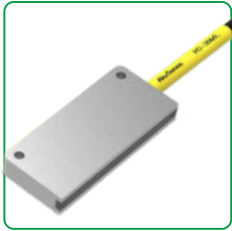
Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 2mm  
 Sensing distance:  
 PC1:300mm  
 PG1:150mm

### PD-30ML



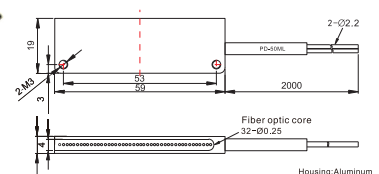
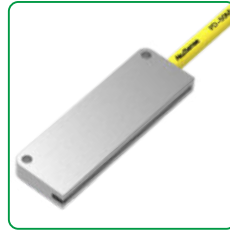
**HOT**  
 Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 4mm  
 Sensing distance:  
 PC1:300mm  
 PG1:150mm

### PD-35ML



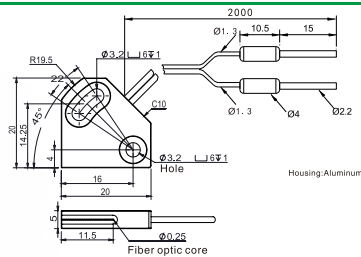
Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 6mm  
 Sensing distance:  
 PC1:450mm  
 PG1:120mm

### PD-50ML



Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 10mm  
 Sensing distance:  
 PC1:260mm  
 PG1:130mm

### PD-A10



Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.05mm  
 Sensing distance:  
 PC1:200mm  
 PG1:95mm

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Color sensor

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Popular type

Array-type

Flat bracket type

Side-view type

High elastic type

High temperature resistant

Small spot type

Combination type

High end type

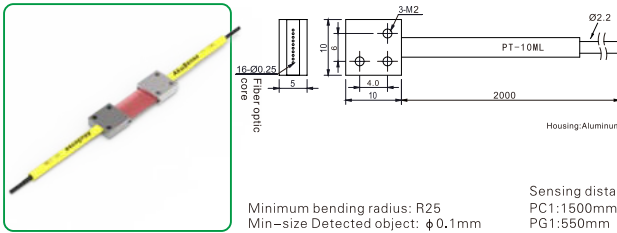
#### Fiber lens

Fiber lens

\*PG1: TEGA with a threshold setting of 200;  
 PC1: 7-step with a threshold setting of 200.  
 \*Cable length listed above can be customized.

Thru-beam

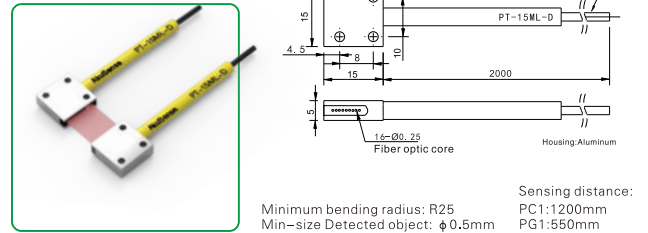
PT-10ML



Technical drawing showing dimensions: 16-Ø0.25 Fiber optic core, 3-M2, 11, 4.0, 19, 2000, Ø2.2, Housing: Aluminum.

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.1mm  
 Sensing distance:  
 PC1:1500mm  
 PG1:550mm

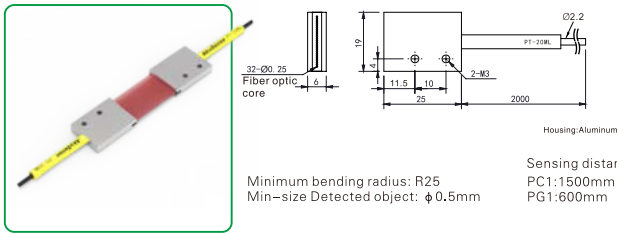
PT-15ML-D



Technical drawing showing dimensions: 3-M3, 10, 4.5, 15, 2000, Ø2.2, 1.6-Ø0.25 Fiber optic core, Housing: Aluminum.

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.5mm  
 Sensing distance:  
 PC1:1200mm  
 PG1:550mm

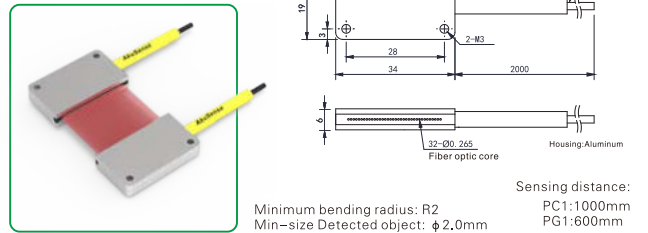
PT-20ML



Technical drawing showing dimensions: 32-Ø0.25 Fiber optic core, 11, 11.5, 10, 25, 2000, Ø2.2, 2-M3, Housing: Aluminum.

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.5mm  
 Sensing distance:  
 PC1:1500mm  
 PG1:600mm

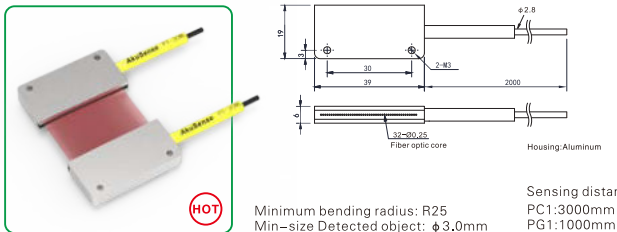
PT-25ML



Technical drawing showing dimensions: 10, 10, 28, 34, 2000, Ø2.2, 2-M3, 32-Ø0.265 Fiber optic core, Housing: Aluminum.

Minimum bending radius: R2  
 Min-size Detected object:  $\phi$ 2.0mm  
 Sensing distance:  
 PC1:1000mm  
 PG1:600mm

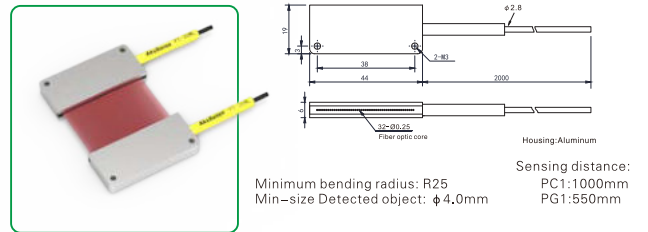
PT-30ML



Technical drawing showing dimensions: 10, 10, 30, 39, 2000,  $\phi$ 2.8, 2-M3, 32-Ø0.265 Fiber optic core, Housing: Aluminum.

**(HOT)**  
 Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 3.0mm  
 Sensing distance:  
 PC1:3000mm  
 PG1:1000mm

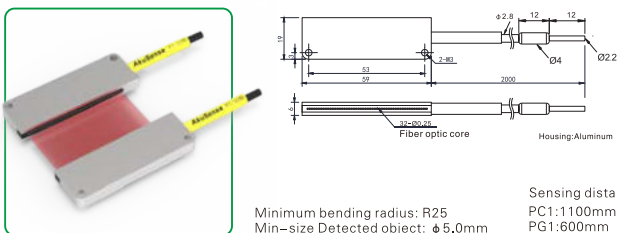
PT-35ML



Technical drawing showing dimensions: 10, 10, 38, 44, 2000,  $\phi$ 2.8, 2-M3, 32-Ø0.25 Fiber optic core, Housing: Aluminum.

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 4.0mm  
 Sensing distance:  
 PC1:1000mm  
 PG1:550mm

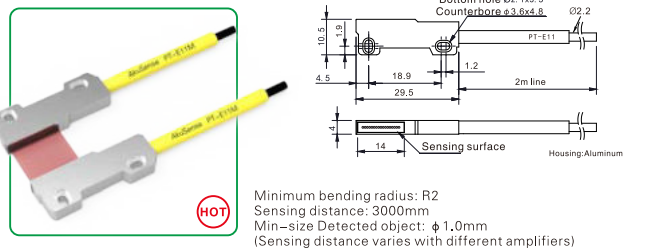
PT-50ML



Technical drawing showing dimensions: 10, 10, 53, 59, 2000,  $\phi$ 2.8, 12, 12, Ø4, Ø2.2, 2-M3, 32-Ø0.25 Fiber optic core, Housing: Aluminum.

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 5.0mm  
 Sensing distance:  
 PC1:1100mm  
 PG1:600mm

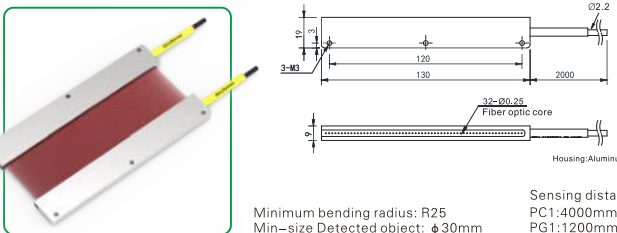
PT-E11M



Technical drawing showing dimensions: 10.5, 1.5, 4.5, 18.9, 1.2, 29.5, 2000, Ø2.2, Bottom hole  $\phi$ 2.1x3.5 Counterbore  $\phi$ 3.6x4.6, 2-M3, 32-Ø0.25 Fiber optic core, Sensing surface, Housing: Aluminum.

**(HOT)**  
 Minimum bending radius: R2  
 Sensing distance: 3000mm  
 Min-size Detected object:  $\phi$ 1.0mm  
 (Sensing distance varies with different amplifiers)

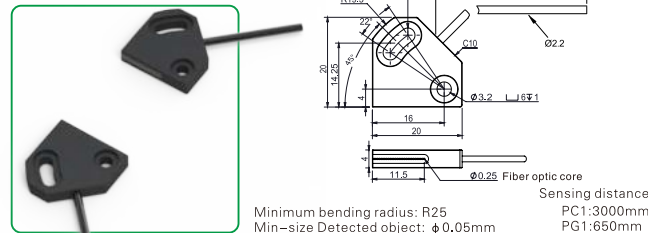
PT-120ML



Technical drawing showing dimensions: 12, 12, 120, 130, 2000, Ø2.2, 3-M3, 32-Ø0.25 Fiber optic core, Housing: Aluminum.

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 30mm  
 Sensing distance:  
 PC1:4000mm  
 PG1:1200mm

PT-A10



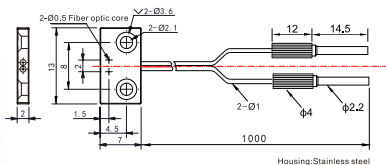
Technical drawing showing dimensions: 2000, R19.5, 20, 16, 20, 11.5, Ø3.2 L16x1, Ø2.2, C10, Ø3.2 L16x1, Ø0.25 Fiber optic core, Sensing distance:  
 PC1:3000mm  
 PG1:650mm

Minimum bending radius: R25  
 Min-size Detected object:  $\phi$ 0.05mm

\*PG1: TEGA with a threshold setting of 200;  
 PC1: 7-step with a threshold setting of 200.  
 \*Cable length listed above can be customized.

**Diffuse reflection**

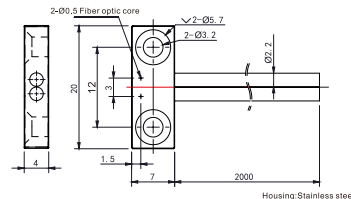
**PD-F41UA**



Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:80mm  
Min-size Detected object:  $\phi$ 0.05mm PG1:30mm

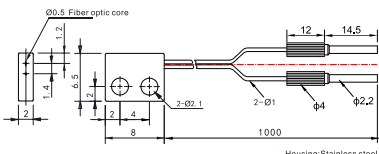
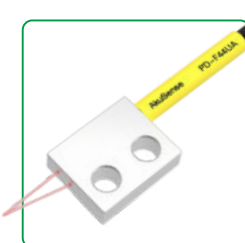


**PD-F42UA**



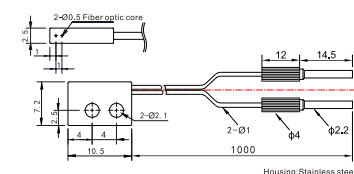
Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:160mm  
Min-size Detected object:  $\phi$ 0.05mm PG1:120mm

**PD-F44UA**



Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:120mm  
Min-size Detected object:  $\phi$ 0.05mm PG1:55mm

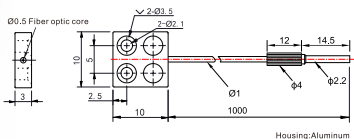
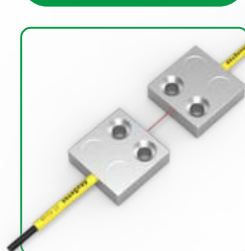
**PD-F47UA**



Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:80mm  
Min-size Detected object:  $\phi$ 0.05mm PG1:25mm

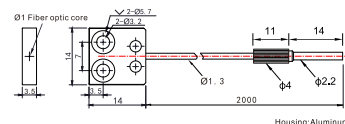
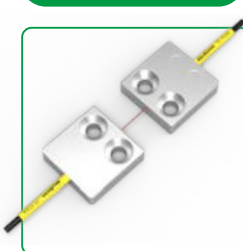
**Thru-beam**

**PT-F51UA**



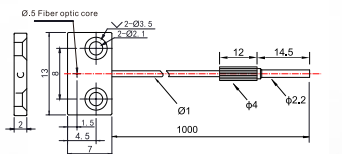
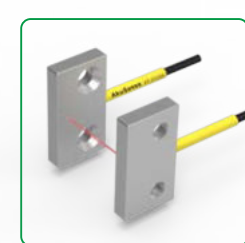
Housing:Aluminum  
Sensing distance:  
Minimum bending radius: R2 PC1:400mm  
Min-size Detected object:  $\phi$ 0.05mm PG1:130mm

**PT-F52UA**



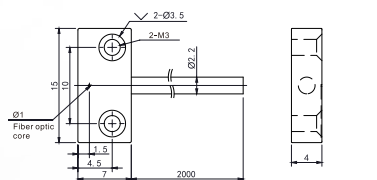
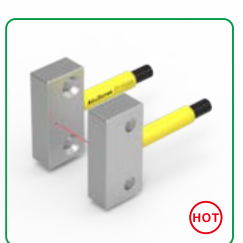
Housing:Aluminum  
Sensing distance:  
Minimum bending radius: R2  
Sensing distance: 1900mm  
Min-size Detected object:  $\phi$ 0.05mm  
(Sensing distance varies with different amplifiers)

**PT-F53UA**



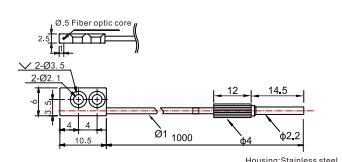
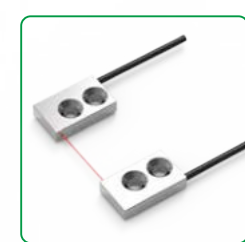
Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:210mm  
Sensing distance: 340mm  
Min-size Detected object:  $\phi$ 0.05mm  
(Sensing distance varies with different amplifiers)

**PT-F54UA**



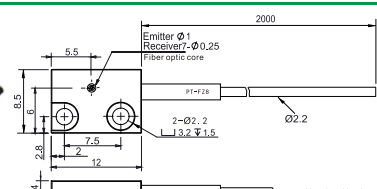
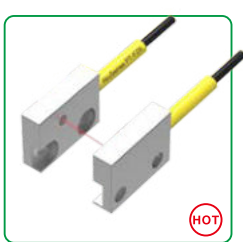
Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:1300mm  
Min-size Detected object:  $\phi$ 0.05mm PG1:450mm

**PT-F57UA**



Housing:Stainless steel  
Sensing distance:  
Minimum bending radius: R2 PC1:400mm  
Sensing distance: 480mm  
Min-size Detected object:  $\phi$ 0.05mm  
(Sensing distance varies with different amplifiers)

**PT-FZ8**



Housing:Aluminum  
Sensing distance:  
Minimum bending radius: R15  
Sensing distance: 120mm  
Min-size Detected object:  $\phi$ 0.1mm  
(Sensing distance varies with different amplifiers)

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Vibration

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Standard economical

High stability

High performance type

High speed response

Fiber components

Popular type

Array-type

Flat bracket type

Side-view type

High elastic type

High temperature resistant

Small spot type

Combination type

High end type

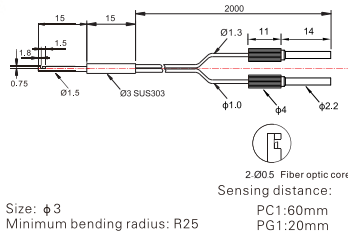
Fiber lens

Fiber lens

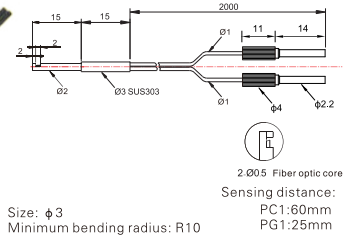
\*PG1: TEGA with a threshold setting of 200;  
PC1: 7-step with a threshold setting of 200.  
\*Cable length listed above can be customized.

## Diffuse reflection

### PD-32-DQ

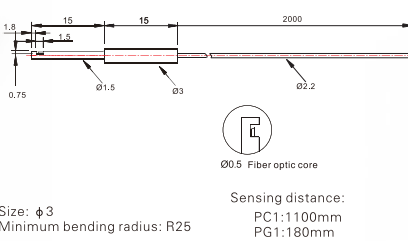


### PD-32-SQ

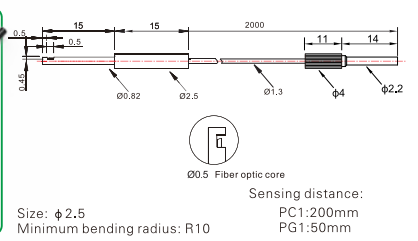


## Thru-beam

### PT-32-DQ



### PT-32-SQ



Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

Vibration

Temperature

Annexes

#### Guidance

#### Fiber amplifiers

Standard economical

High stability

High performance type

High speed response

Color sensor

#### Fiber components

Popular type

Array-type

Flat bracket type

Side-view type

High elastic type

High temperature resistant

Small spot type

Combination type

High end type

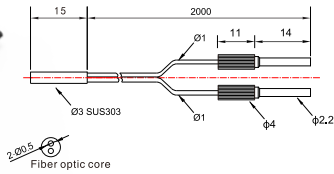
#### Fiber lens

Fiber lens

\*PG1: TEGA with a threshold setting of 200;  
PC1: 7-step with a threshold setting of 200.  
\*Cable length listed above can be customized.

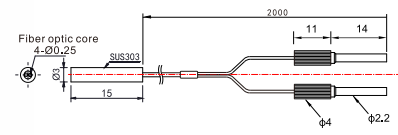
**Diffuse reflection**

**PD-W32-Q**



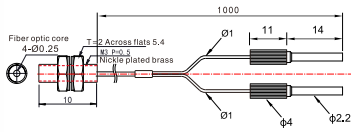
Size:  $\phi 3$   
 Minimum bending radius: R1  
 Sensing distance: PG1:45mm

**PD-W48**



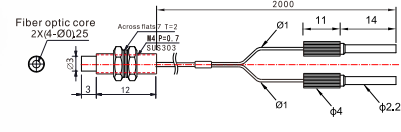
Size:  $\phi 3$   
 Minimum bending radius: R4  
 Sensing distance: 200mm  
 (Sensing distance varies with different amplifiers)

**PD-W69Y**



Size: M3  
 Minimum bending radius: R4  
 Sensing distance: PC1:110mm  
 PG1:25mm

**PD-W68**



Size: M4  
 Minimum bending radius: R4  
 Sensing distance: PC1:100mm  
 PG1:40mm

Fiber Optic

Slot Sensors

Photoelectric

Laser

Proximity

Displacement

Magnetic

Contact

Area

Ultrasonic

Vision

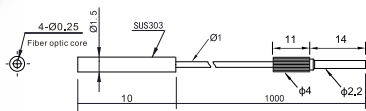
Vibration

Temperature

Annexes

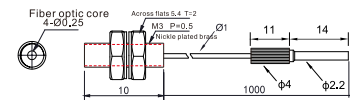
**Thru-beam**

**PT-W59**



Size:  $\phi 1.5$   
 Minimum bending radius: R4  
 Sensing distance: PC1:350mm  
 PG1:100mm

**PT-W79**



Size: M3  
 Minimum bending radius: R4  
 Sensing distance: PC1:900mm  
 PG1:120mm

Guidance

Fiber amplifiers

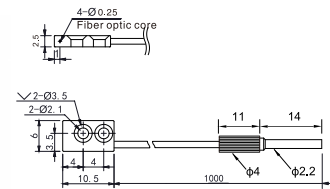
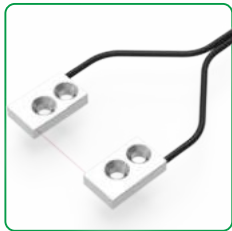
Standard economical

High stability

High performance type

High speed response

**PT-W57UF**



Size: 6\*10.5\*2.5  
 Minimum bending radius: R4  
 Sensing distance: 490mm  
 (Sensing distance varies with different amplifiers)

Fiber components

Popular type

Array-type

Flat bracket type

Side-view type

High elastic type

High temperature resistant

Small spot type

Combination type

High end type

Fiber lens

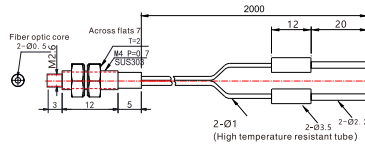
Fiber lens

\*PG1: TEGA with a threshold setting of 200;  
 PC1: 7-step with a threshold setting of 200.  
 \*Cable length listed above can be customized.



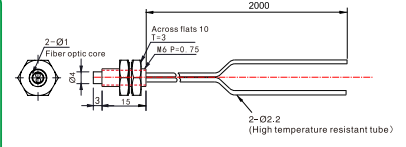
## Diffuse reflection

### PD-H42Y



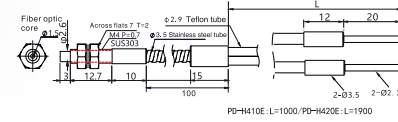
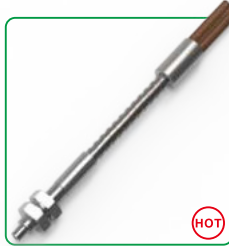
Size: M4  
 Max. temperature: 105°C  
 Sensing distance: 160mm  
 (Sensing distance varies with different amplifiers)

### PD-H62Y



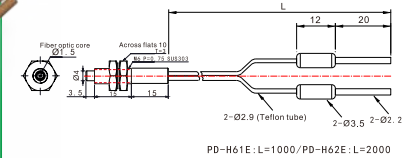
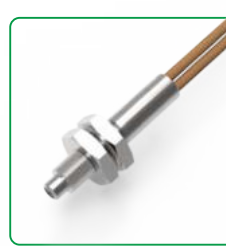
Size: M6  
 Max. temperature: 105°C  
 Sensing distance: 230mm  
 (Sensing distance varies with different amplifiers)

### PD-H41E/H42E



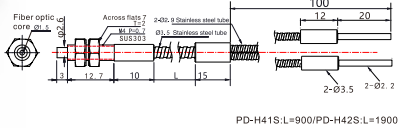
Size: M4  
 Max. temperature: 200°C  
 Sensing distance:  
 PC1:350mm  
 PG1:150mm

### PD-H61E/H62E



Size: M6  
 Max. temperature: 200°C  
 Sensing distance: 190mm/180mm  
 (Sensing distance varies with different amplifiers)

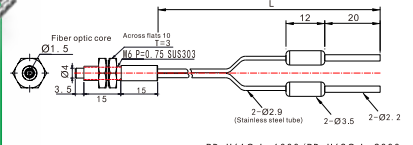
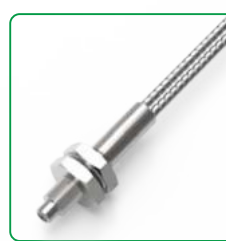
### PD-H41S/H42S



Size: M4  
 Max. temperature: 350°C

Sensing distance:  
 PC1:300mm  
 PG1:150mm

### PD-H61S/H62S



Size: M6  
 Max. temperature: 350°C  
 Sensing distance: 190mm/180mm

Sensing distance:  
 PG1:150mm

Guidance

Fiber amplifiers

- Standard economical
- High stability
- High performance type
- High speed response
- Color sensor

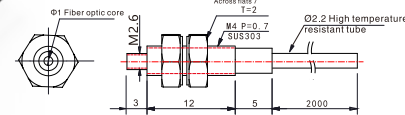
Fiber components

- Popular type
- Array-type
- Flat bracket type
- Side-view type
- High elastic type
- High temperature resistant
- Small spot type
- Combination type
- High end type

Fiber lens

- Fiber lens

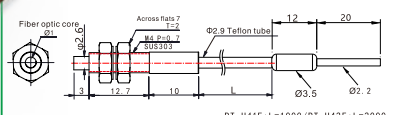
### PT-H42Y



Size: M4  
 Max. temperature: 105°C

Sensing distance:  
 PC1:2300mm  
 PG1:700mm

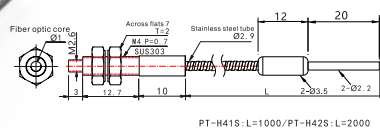
### PT-H41E/H42E



Size: M4  
 Max. temperature: 200°C  
 Sensing distance: 450mm/390mm  
 (Sensing distance varies with different amplifiers)



### PT-H41S/H42S



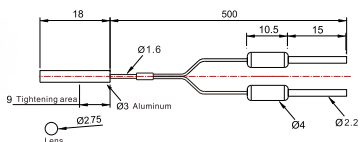
Size: M4  
 Max. temperature: 350°C

Sensing distance:  
 PC1:1500mm  
 PG1:600mm

## Thru-beam

\*PG1: TEGA with a threshold setting of 200;  
 PC1: 7-step with a threshold setting of 200.  
 \*Cable length listed above can be customized.

**PD-X20**



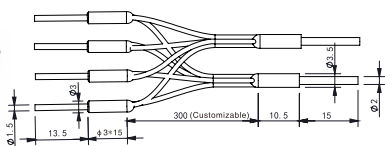
Size:  $\phi 3$   
 Minimum bending radius: R25  
 Focal distance: 5mm

Sensing distance:  
 PC1:25mm  
 PG1:20mm

**HOT**

**Combination type** Fiber components

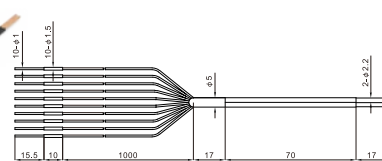
**PD-S4Q3-30**



Size:  $\phi 3$   
 Fiber optic sensor heads: 4 Units

Sensing distance:  
 PC1:250mm  
 PG1:150mm

**PD-S10Q1.5-100**



Size:  $\phi 1.5$   
 Fiber optic sensor heads: 10 Units

Sensing distance:  
 PC1:80mm  
 PG1:20mm

**Fiber Optic**

- Slot Sensors
- Photoelectric
- Laser
- Proximity
- Displacement
- Magnetic
- Contact
- Area
- Ultrasonic
- Vision
- Vibration
- Temperature
- Annexes

**Guidance**

**Fiber amplifiers**

- Standard economical
- High stability
- High performance type
- High speed response

**Fiber components**

- Popular type
- Array-type
- Flat bracket type
- Side-view type
- High elastic type
- High temperature resistant
- Small spot type**
- Combination type
- High end type

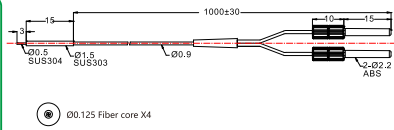
**Fiber lens**

- Fiber lens

\*PG1: TEGA with a threshold setting of 200;  
 \*PC1: 7-step with a threshold setting of 200.  
 \*Cable length listed above can be customized.

**Diffuse reflection**

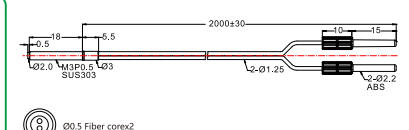
**PD-R15**



Size:  $\phi$  1.5  
 Minimum bending radius: R10  
 Sensing distance: 4.8mm  
 (Sensing distance varies with different amplifiers)

Ø0.125 Fiber core X4

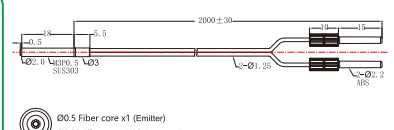
**PD-R32**



Size: M3  
 Minimum bending radius: R15  
 Sensing distance: PC1:240mm

Ø0.5 Fiber corex2

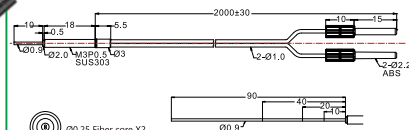
**PD-RC32**



Size: M3  
 Minimum bending radius: R15  
 Sensing distance: PC1:250mm PG1:75mm

Ø0.5 Fiber core x1 (Emitter)  
 Ø0.25 Fiber core X10 (Receiver)

**PD-RE32-I/S/M/L**

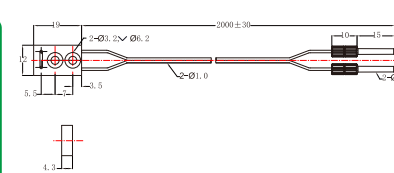


Size: M3  
 Minimum bending radius: R15  
 Sensing distance: 10mm  
 (Sensing distance varies with different amplifiers)

Ø0.25 Fiber core X2

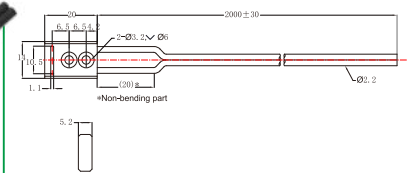
I:10mm S:20mm M:40mm L:90mm

**PD-R38V**



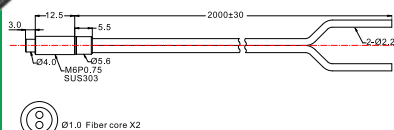
Minimum bending radius: R10  
 Sensing distance: 0-4mm  
 (Sensing distance varies with different amplifiers)

**PD-R38L**



Minimum bending radius: R25  
 Sensing distance: 8-32mm  
 (Sensing distance varies with different amplifiers)

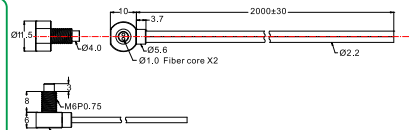
**PD-R62**



Size: M6  
 Minimum bending radius: R25  
 Sensing distance: PC1:400mm PG1:180mm

Ø1.0 Fiber core X2

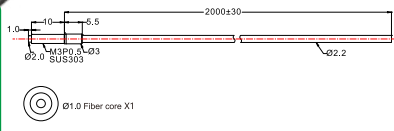
**PD-R62TE**



Size: M6  
 Minimum bending radius: R2  
 Sensing distance: 140mm  
 (Sensing distance varies with different amplifiers)

**Thru-beam**

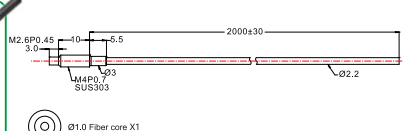
**PT-R32**



Size: M3  
 Minimum bending radius: R25  
 Sensing distance: 1000mm  
 (Sensing distance varies with different amplifiers)

Ø1.0 Fiber core X1

**PT-R42**



Size: M4  
 Minimum bending radius: R25  
 Sensing distance: PC1:2200mm PG1:500mm

Ø1.0 Fiber core X1

\*PG1: TEGA with a threshold setting of 200;  
 PC1: 7-step with a threshold setting of 200.

Fiber Optic
Slot Sensors
Photoelectric
Laser
Proximity
Displacement
Magnetic
Contact
Area
Ultrasonic
Vision
Vibration
Temperature
Annexes

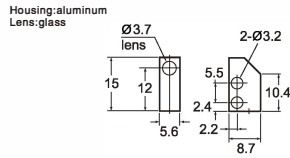
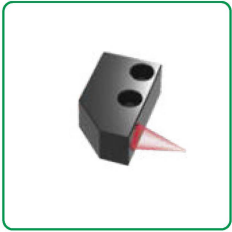
**Guidance**

<b>Fiber amplifiers</b>
Standard economical
High stability
High performance type
High speed response
Color sensor
<b>Fiber components</b>
Popular type
Array-type
Flat bracket type
Side-view type
High elastic type
High temperature resistant
Small spot type
Combination type
<b>High end type</b>

<b>Fiber lens</b>
Fiber lens

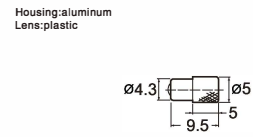
## Diffuse reflection

### PF-5D



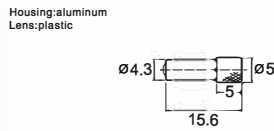
Diameter of beam:  $\phi$  0.5-3  
Suit to M3 diameter fiber optic sensor  
Focal distance: 8-30mm

### PF-3D



Size of pointed end:  $\phi$  4.3  
Diameter of beam: Approx.  $\phi$  4 (Sensing distance: 0-20mm)  
Suit to M3 diameter fiber optic sensor

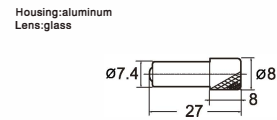
### PF-2D



Size of pointed end:  $\phi$  4.3  
Diameter of beam: Approx.  $\phi$  0.4  
Suit to M3 diameter fiber optic sensor  
Focal distance:  $7 \pm 2$ mm

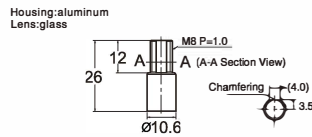
**HOT**

### PF-4D



Size of pointed end:  $\phi$  7.4  
Diameter of beam: Approx.  $\phi$  0.5  
Suit to M3 diameter fiber optic sensor  
Focal distance:  $15 \pm 2$ mm

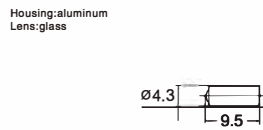
### PF-6D



Size of pointed end:  $\phi$  10.6  
Diameter of beam: Approx.  $\phi$  2.0  
Suit to M3 diameter fiber optic sensor  
Focal distance:  $35 \pm 2$ mm

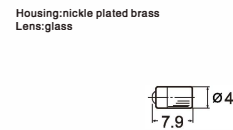
## Thru-beam

### PF-4T



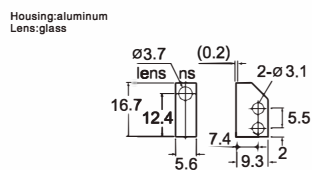
Size of pointed end:  $\phi$  4.3  
Suit to M2.6 diameter fiber optic sensor  
Max. sensing distance: 3600mm

### PF-2T



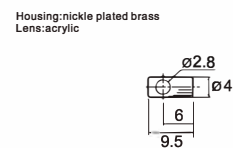
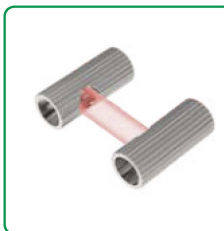
Size of pointed end:  $\phi$  4  
Suit to M2.6 diameter fiber optic sensor  
Max. sensing distance: 3600mm

### PF-5T



Suit to M2.6 diameter fiber optic sensor  
Max. sensing distance: 3600mm

### PF-1T



Size of pointed end:  $\phi$  4  
Suit to M2.6 diameter fiber optic sensor  
Max. sensing distance: 3600mm

#### Fiber Optic

#### Slot Sensors

#### Photoelectric

#### Laser

#### Proximity

#### Displacement

#### Magnetic

#### Contact

#### Area

#### Ultrasonic

#### Vision

#### Vibration

#### Temperature

#### Annexes

#### Guidance

#### Fiber amplifiers

#### Standard economical

#### High stability

#### High performance type

#### High speed response

#### Fiber components

#### Popular type

#### Array-type

#### Flat bracket type

#### Side-view type

#### High elastic type

#### High temperature resistant

#### Small spot type

#### Combination type

#### High end type

#### Fiber lens

#### Fiber lens