GTRIC®

SENSOR PRODUCTS SELECTION MANUAL

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Company introduction

Wenzhou Gtric Technology Co., Ltd. is located in Yueqing IoT sensors Park, which covers 5,000 square meters, with over 100 employees. We are focuses on intelligent manufacturing and industrial automation, our main businesses are sensors, encoders, button switch, coupling, expansion set and other industrial automation products, providing standard and individual products and solutions for customers.

Our products cover over 20 series, 1000specificatison, which have passed CCC, CE, UL, ISO9001 certification as well as EU RoHS Environmental Directives.

Based on our technical advantages, Gtric can provide industrial automation solution according to customers' requirements.

We support OEM & ODM, if you need please feel free to contact us

Sensor characteristics

Installation conditions

Non shielded proximity switches can achieve maximum operating distance (with the diameter of the relevant); but in order to prevent the switch around the metal impact on the switch, the sensor head must be in a certain gap with the surrounding metal (Figure 1).

Due to the special shielding effect inside the shield, the radial magnetic field of the side is reduced, and the induction distance is about 60% of the non shield type, because it can be flush mounted in the metal (Figure 2).

The magnetic sensor is not affected by the conditions of installation, as long as the material around the material is not magnetized.

Figure 1

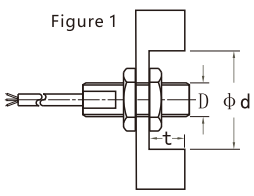
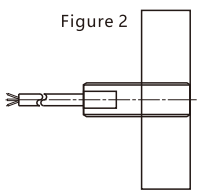
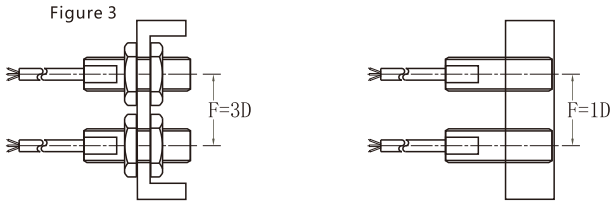


Figure 2



In order to prevent mutual interference, we must keep the minimum distance between each other(Figure 3).

Figure 3



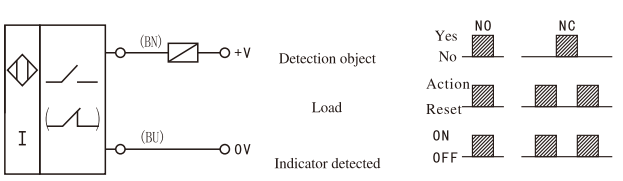
Please refer to the specific data of various types of instructions.

Sensor characteristics

Output mode and electrical characteristics

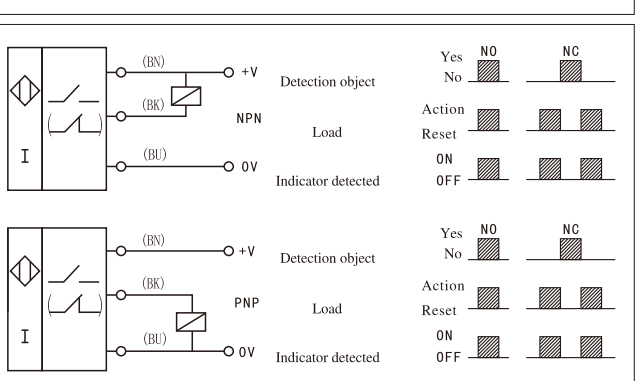
DC **2**-wire system NO or NC

The load must be connected in series in the sensor to work, there is a polarity and short circuit protection function; in the open circuit state, there is a very small leakage current; in the closed circuit, the switching element has a smaller voltage drop.



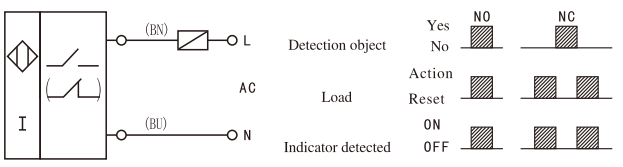
DC **3** -wire system(N,P type) NO or NC

These switches are connected to the load and power supply separately; the polarity, short circuit and overload protection function, and the residual current can be ignored.



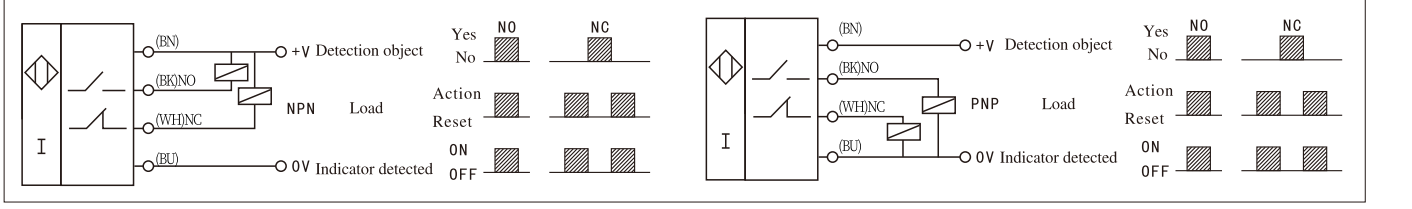
AC **2** -wire system NO or NC

The load must be connected in series in the sensor, in the closed circuit, the switching element has a smaller voltage drop.



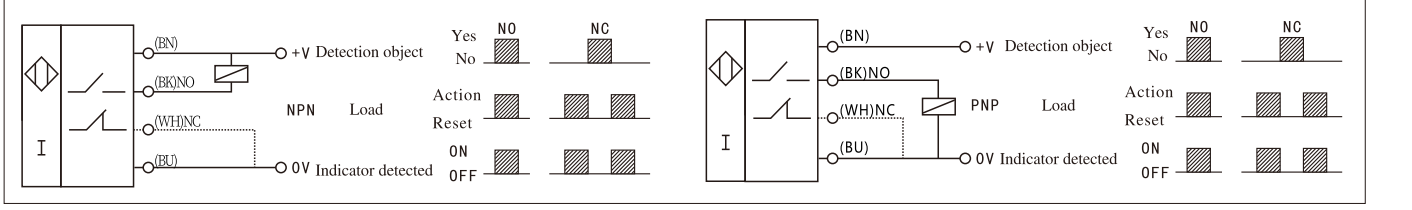
DC 4-wire system (NPN,PNP Type) NO+NC

Sensor switches can provide 2 groups of output NO+NC



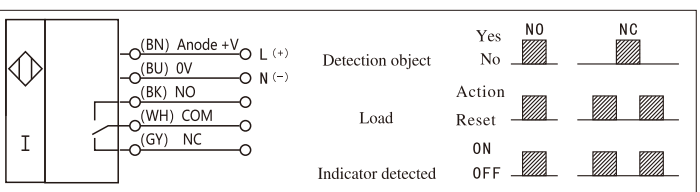
DC **4**-wire system (NPN,PNP Type) NO/NC

The switches can provide two groups of output NO or NC



NO+NC Ac/Dc five wire (relay output) NO + NC

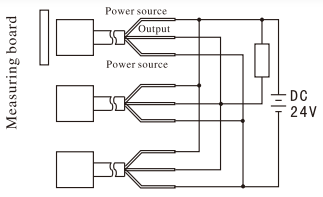
These switches can provide to often open, closed two group relay output.



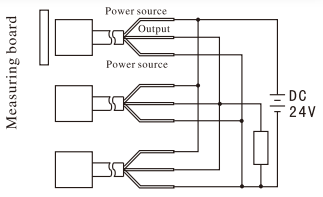
Sensor characteristics

Series and parallel connection of proximity switch

OR connection (NPN and PNP types can be used mixed) series When the proximity switch is OR connected, the action of any proximity switch can drive load. The quantity of the proximity switches depends on the sum of leakage current. More connections are available given that it doesn't affect the loading action.



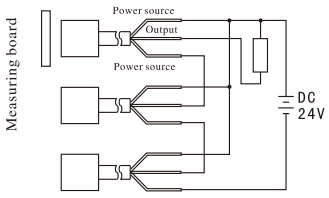
OR connection of NPN output



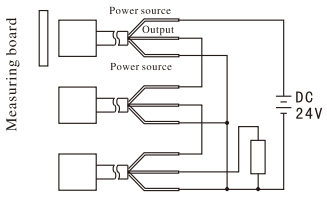
OR connection of PNP output

AND connection (series)

When the proximity switch is AND connected, the action of all proximity switches can drive load. The quantity of the proximity switches depends on the sum of saturation voltage. More connections are available given that it doesn't affect the supply voltage of the proximity switch. The response frequency of the proximity switch is the accumulation of initialized reset of various proximity switch.



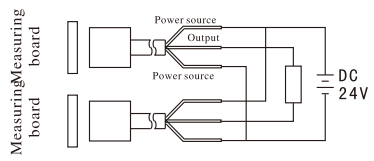
NPN connection of AND output



PNP connection of AND output

Series and parallel connection of proximity switch

AND connection (series) NPN, PNP mixed–use



Promixity switches matters need attention

Cautions when connected or disconnected with the power supply

When connecting the proximity switch with the counter and the programmable controller, there isn't any problem because of the built–in initialized reset circui Please avoid the conditions mentioned below

The detection object lies around the detection distance of the proximity switch; For DC voltage type and DC switch type, when power supply is turned on (turned off), time constant rises (drops) greatly; There is self-excitation and noise when the AC switch type proximity switch is power-on (off)

Capacitor, light load

The proximity switch can't have the capacitor or light that has larger jumping current as the load directly connected to be connected through a relay or series connected with a current-limiting resistance. The peak cuttent set by current-limiting resistance Ris within the load cuttent of the procimity switch; Make sure to connect through load.

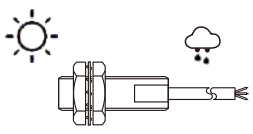
$$\frac{\text{Supply voltage V}}{\text{Peak load current value of proximity switch mA}} \leqslant R(K\Omega)$$

Allowable loss of resistance R (W)

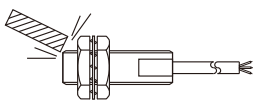
$$\frac{\text{Supply voltage } V^2}{\leqslant R(K\Omega)} \times 2 \text{ times above}$$

Installation notice of proximity switch

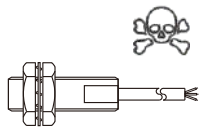
Don't use it in the open air, and use a protectivecover, if necessary.



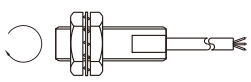
Don't knock the detection surface with hard objects and use a protective cover, if necessary.



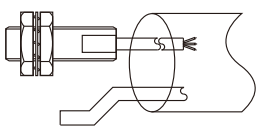
Don't use it in the environment with corrosive objects.



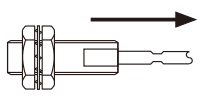
Don't fasten it with a big force, but fasten it with spring washer



The proximity switch must be equipped individually with metal flexible pipe, and don't make it with the electric line and power line in the same metal flexible pipe



Don't stretch the power line of the proximity switch with a big force.



GTRIC Diffuse Reflection Series Fiber Optic Sensors

※ Small size, suitable for all kinds of small space occasions
Requires use with amplifier

Selection Guide

FRS	3	10	TZ	M
①	③	④	⑤	⑥

①**Model Description**:1.FRS:Diffuse Reflection Non-Coaxial Fiber Optic Cable
PRC:Diffuse Reflection Coaxial Fiber Optic Cable

③**Fiber Head Diameter**:M3:M3*0.5mm、M4：M4*0.7mm、M6：M6*0.75mm

④**Fiber optic cable length:**10:1MFiber Optic Cable、20:2MFiber Optic Cable

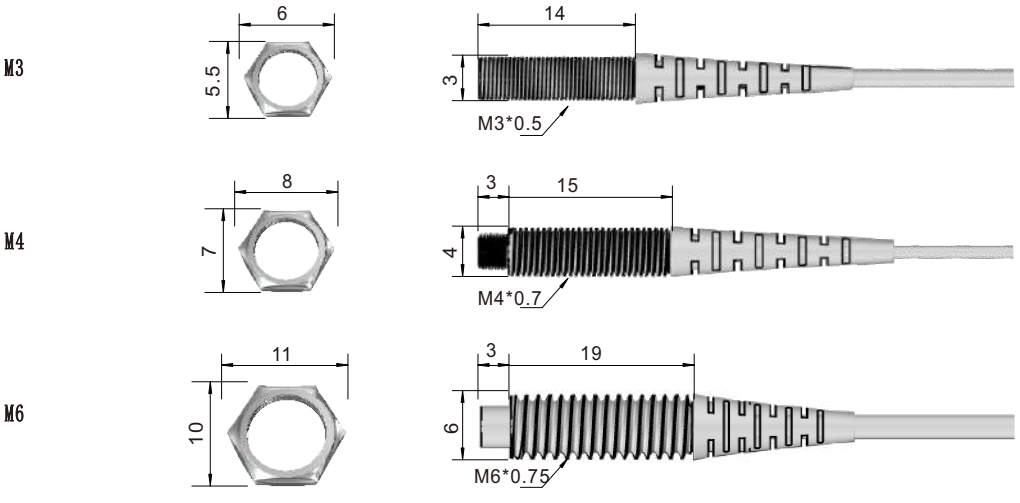
⑤**Induction direction:**□: Regular Straight Head、TZ: Elbow Head

⑥**With needle length:**Standard Type、I:With needle 10mm 、Custom Length

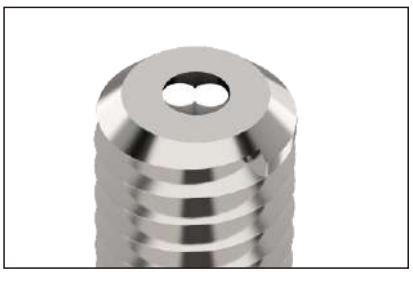
Specifications

Specifications							
Model	Standard series	FRS-310	PRC-310	FRS-410	PRC-410	FRS-610	PRC-610
	Needle length 5mm	FRS-310-S05	PRC-310-S05	FRS-410-S05	PRC-410-S05	FRS-610-S05	PRC-610-S05
	Needle length 10mm	FRS-310-I	PRC-310-I	FRS-410-I	PRC-410-I	FRS-610-I	PRC-610-I
	Needle length 15mm	FRS-310-S15	PRC-310-S15	FRS-410-S15	PRC-410-S15	FRS-610-S15	PRC-610-S15
	Needle length 20mm	FRS-310-S	PRC-310-S	FRS-410-S	PRC-410-S	FRS-610-S	PRC-610-S
	Thread pitch	M4*0.7MM		M4*0.7MM		M6*0.75MM	
Fiber optical core		Non-coaxial	Coaxial	Non-coaxial	Coaxial	Non-coaxial	Coaxial
Fiber size		Fiber core 0.5mm Outer diameter1.0mm				Fiber core 1mm Outer diameter 2 mm	
Minimum detection object		0.1MM					
Detection distance		0-120MM		0-400MM		0-600MM	
Fiber Head Material		Stainless steel					
Needle diameter		Standard 1.5mm(can becustomized0.5mm/0.8mm/1mm)					
Needle length		customizable					
Fiber line length		Standard 1M(can be customized2M/3M)					

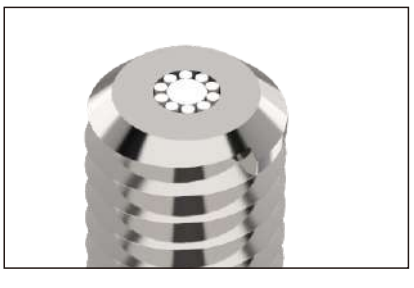
Dimension



non-coaxial fiber



coaxial fiber



※ Small size, suitable for all kinds of small space occasions
Requires use with amplifier

Selection Guide

FRS	3	10	TZ	M
①	③	④	⑤	⑥

①**Model Description**:1.FRS:Diffuse Reflection Non-Coaxial Fiber Optic Cable
PRC:Diffuse Reflection Coaxial Fiber Optic Cable

③**Fiber Head Diameter**:M3:M3*0.5mm、M4：M4*0.7mm、M6：M6*0.75mm

④**Fiber optic cable length:**10:1MFiber Optic Cable、20:2MFiber Optic Cable

⑤**Induction direction:**□: Regular Straight Head、TZ: Elbow Head

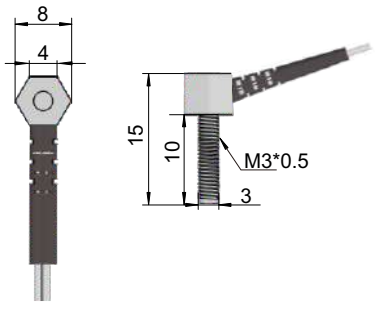
⑥**With needle length:**Standard Type、I:With needle 10mm 、Custom Length

Specifications

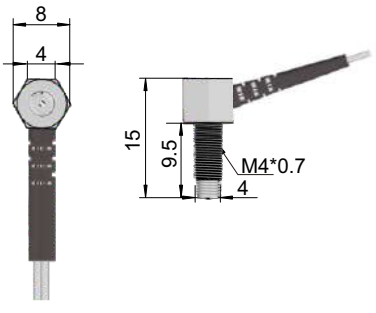
Specifications							
Model	Standard series	FRS-310-TZ	PRC-310-TZ	FRS-410-TZ	PRC-410-TZ	FRS-610-TZ	PRC-610
	Needle length 5mm	FRS-310-TZ-S05	PRC-310-TZ-S05	FRS-410-TZ-S05	PRC-410-TZ-S05	FRS-610-TZ-S05	PRC-610-TZ-S05
	Needlelength 10mm	FRS-310-TZ-I	PRC-310-TZ-I	FRS-410-TZ-I	PRC-410-TZ-I	FRS-610-TZ-I	PRC-610-TZ-I
	Needle length 15mm	FRS-310-TZ-S15	PRC-310-TZ-S15	FRS-410-TZ-S15	PRC-410-TZ-S15	FRS-610-TZ-S15	PRC-610-TZ-S15
	Needlelength20mm	FRS-310-TZ-S	PRC-310-TZ-S	FRS-410-TZ-S	PRC-410-TZ-S	FRS-610-TZ-S	PRC-610-TZ-S
Thread pitch		M4*0.7MM		M4*0.7MM		M6*0.75MM	
Fiber optical core		Non-coaxial	Coaxial	Non-coaxial	Coaxial	Non-coaxial	Coaxial
Fiber size		Fiber core 0.5mm outer diameter1.0mm				Fiber core 1mm Outer diameter 2 mm	
Minimum detection object		0.1MM					
Detection distance		0-120MM		0-120MM		0-200MM	
Fiber Head Material		Stainless steel					
Needle diameter		Standard 1.5mm(can becustomized0.5mm/0.8mm/1mm)					
Needle length		customizable					
Fiber line length		Standard 1M(can be customized2M/3M)					

Dimension

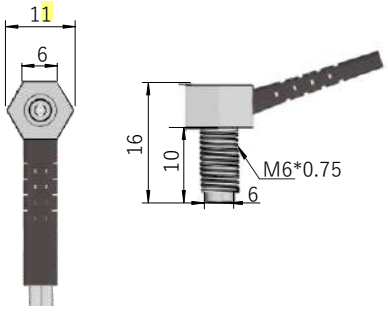
M3



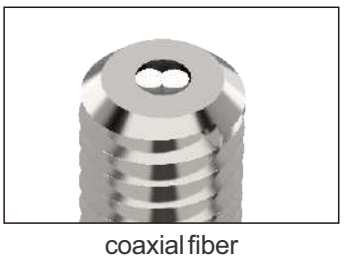
M4



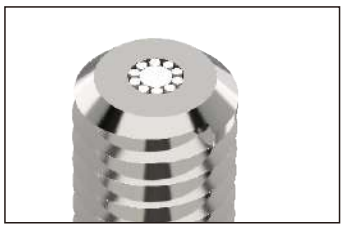
M6



non-coaxial fiber



coaxial fiber



GTRIC Through Beam Series Fiber Optic Sensors

※ Small size, suitable for all kinds of small space occasions
Requires use with amplifier

Selection Guide

FT	3	10	TZ	M
①	③	④	⑤	⑥

①**Model Description**:FT: Ordinary Through-beam Fiber Optic Cable
GT:High Quality Through beam Fiber Optic Cable

②**Fiber Head Diameter**:M3:M3*0.5mm、M4：M4*0.7mm、M6：M6*0.75mm

③**Fiber optic cable length:**10:1MFiber Optic Cable、20:2MFiber Optic Cable

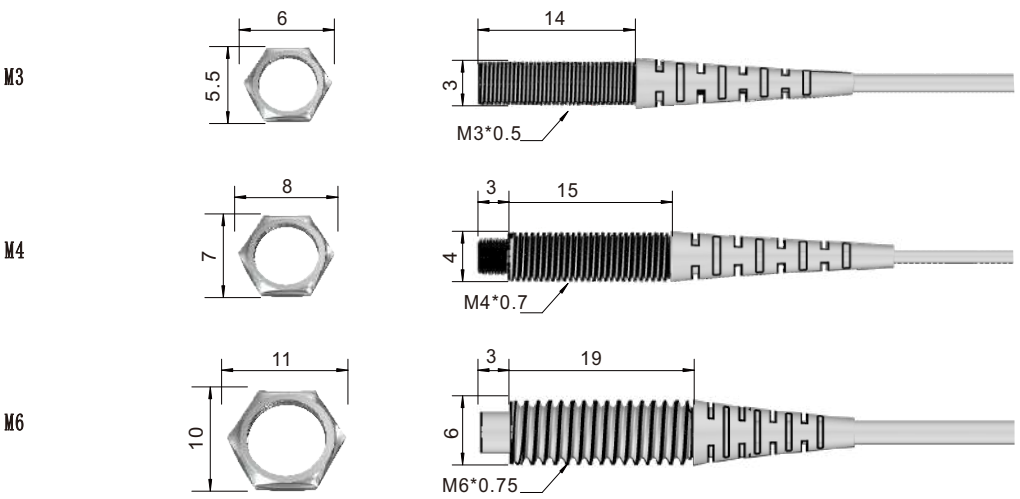
④**Induction direction:**□: Regular Straight Head、TZ: Elbow Head

⑤**With needle length:**standard type、With needle 10mm 、custom length

Specifications

Specifications				
Model	Standard series	FT-310	FT-410	FT-610
	High Transmittance series	GT-310	GT-410	GT-610
	Needle length 5mm	FT-310-S05	FT-410-S05	FT-610-S05
	Needle length 10mm	FT-310-I	FT-410-I	FT-610-I
	Needle length 15mm	FRS-310-S15	FRS-410-S15	FT-610-S15
	Needle length 20mm	FT-310-S	FT-410-S	FT-610-S
Thread pitch		M3*0.5MM	M4*0.7MM	M6*0.75MM
Fiber size		Fiber core 0.5mm outer diameter1.0mm		Fiber core 1.0mm Outer diameter2.2mm
Minimum detection object		0.1MM		
Detection distance		0-400MM	0-400MM	0-600MM
Fiber Head Material		Stainless steel		
Needle diameter		Standard 1.5mm(can becustomized0.5mm/0.8mm/1mm)		
Needle length		customizable		
Fiber line length		Standard 1M(can be customized2M/3M)		

Dimension



High quality opticalfiber cable

ordinary opticalfiber cable

GTRIC Elbow Through-beam Series Fiber Optic Sensors

※ Small size, suitable for all kinds of small space occasions
Requires use with amplifier

Selection Guide

FT	3	10	TZ	M
①	②	③	④	⑤

①**Model Description**:FT: Ordinary Through-beam Fiber Optic Cable
GT:High Quality Through beam Fiber Optic Cable

②**Fiber Head Diameter**:M3:M3*0.5mm、M4:M4*0.7mm、M6:M6*0.75mm

③**Fiber optic cable length:**10:1MFiber Optic Cable、20:2MFiber Optic Cable

④**Induction direction:**□: Regular Straight Head、TZ: Elbow Head

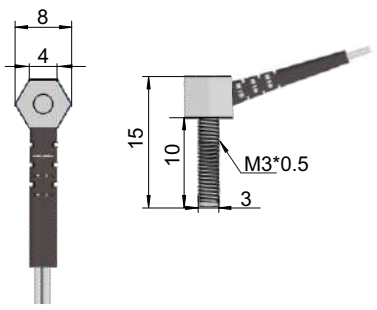
⑤**With needle length:**standard type、With needle 10mm 、custom length

Specifications

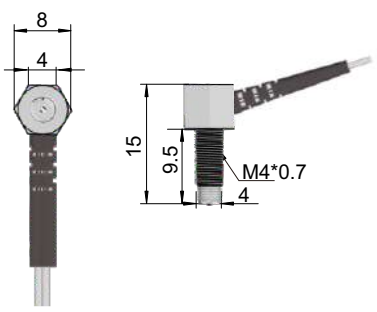
Specifications				
Model	Standard series	FT-310-TZ	FT-410-TZ	FT-610-TZ
	High Transmittance series	GT-310-TZ	GT-410-TZ	GT-610-TZ
Thread pitch		M3*0.5MM	M4*0.7MM	M6*0.75MM
Fiber size		Fiber core 0.5MM	outer diameter1.0MM	Fiber core 1.0MM outer diameter2.2MM
Minimum detection object		0.1MM		
Detection distance		0-400MM	0-400MM	0-600MM
Fiber Head Material		Stainless steel		
Needle length		customizable		
Fiber line length		Standard 1M(can be customized 2M/3M)		

Dimension

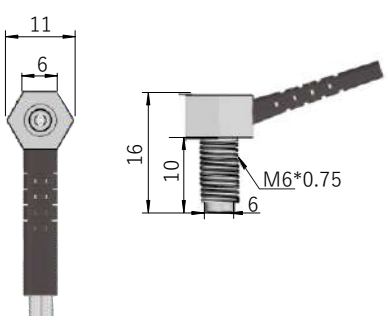
M3



M4



M6



High quality opticalfiber cable

ordinary opticalfiber cable

GTRIC Array Fiber Optic Sensor

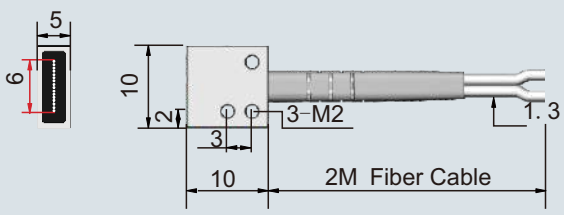
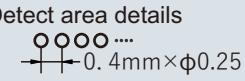
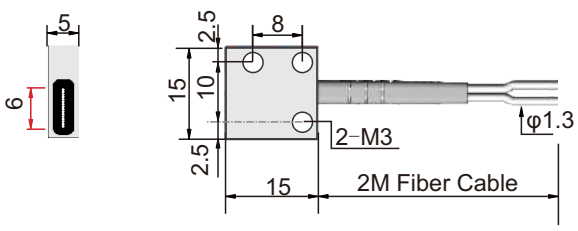
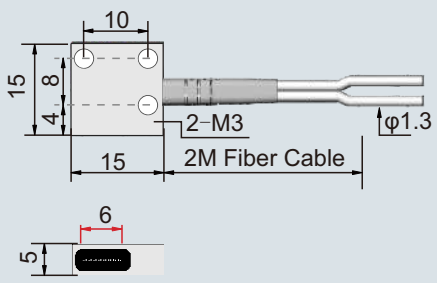
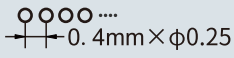
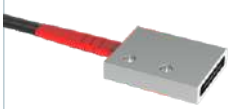
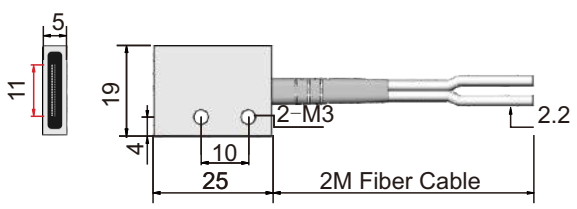
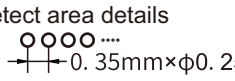
※ High precision, uniform light spot output, diverse sensing width
※ Requires use with amplifier

Selection Guide

FR	–	15	F
①		②	③

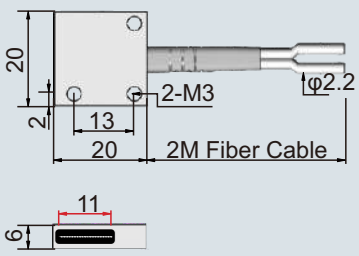
①**Model**:FR-Diffuse reflection、FT-Through beam
②**Fiber detection range**:15MM
③**Detection method**:F-Frontal detection、S-Side detection

Dimension

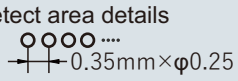
Model	Size	Specification
FR-10F Frontal detection Diffuse reflection 	unit mm)  Detect area details  	Light-emittting surface 6mm Spot Spacing 0.4mm Fiber outer diameter φ1.3 Fiber outer diameter φ0.25×8core×2 Working temperature -55 ~+70 Minimum bending radius R15
FR-15F Frontal detection Different reflection 	Unit mm)  Detect area details  	Light-emitting surface 6mm Spor Spacing 0.4mm Fiber outer diameter φ1.3 Fiber inner diameter φ0.25×8core×2 Working temperature -55 ~+70 Minimum bending radius R15
FR-15S Different reflection 	Unit mm)  Detect area details  	Light-emitting surface 6mm Spor Spacing 0.4mm Fiber outer diameter φ1.3 Fiber inner diameter φ0.25×8core×2 Working temperature -55 ~+70 Minimum bending radius R15
FR-20F Frontal detection Different reflection 	Unit mm)  Detect area details  	Light-emitting surface 11mm Spor Spacing 0.35mm Fiber outer diameter φ2.2 Fiber inner diameter φ0.25×16core×2 Working temperature -55 ~+70 Minimum bending radius R15

FR-20S
Different reflection

Unit mm)



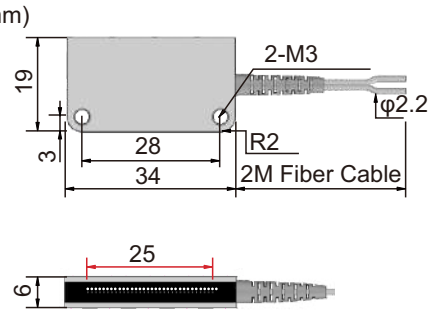
Detect area details



①Light-emitting surface
11mm
Spor Spacing
0.35mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-25S
Different reflection

Unit mm)

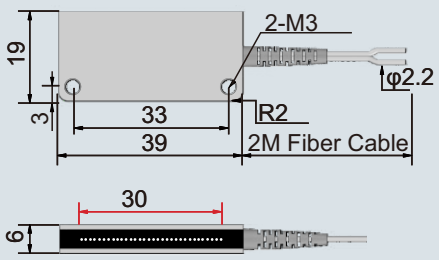


Detect area details

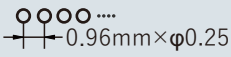
①Light-emitting surface
25mm
Spor Spacing
0.8mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-30S
Different reflection

Unit mm)



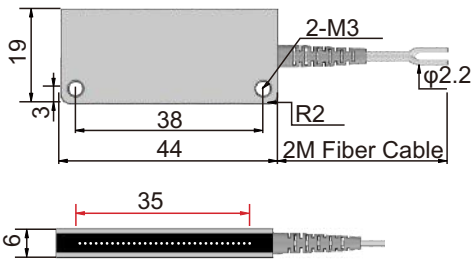
Detect area details



①Light-emitting surface
30mm
Spor Spacing
0.96mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-35S
Different reflection

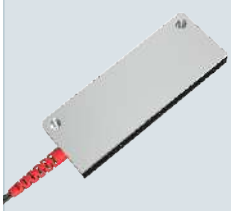
Unit mm)



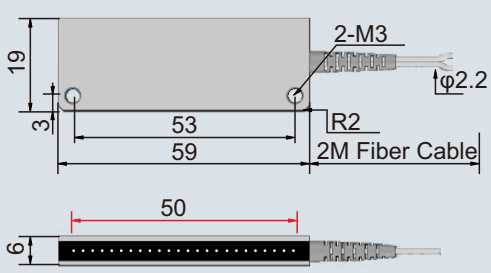
Detect area details

①Light-emitting surface
35mm
Spor Spacing
1.12mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

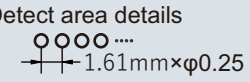
FR-50S
Different reflection



Unit mm)



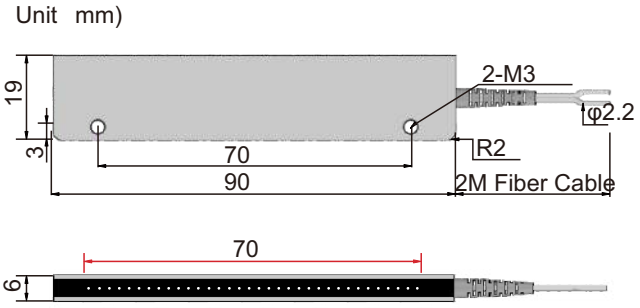
Detect area details



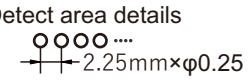
①Light-emitting surface
50mm
Spor Spacing
1.61mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-70S
Different reflection

Unit mm)



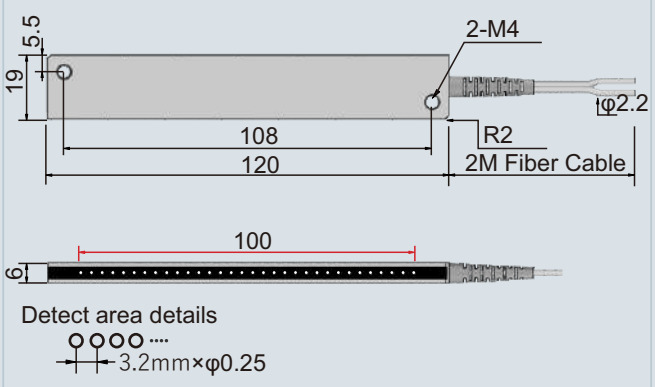
Detect area details



①Light-emitting surface
70mm
Spor Spacing
2.25mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25××16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-100S
Different reflection

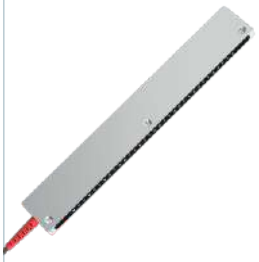
Unit mm)



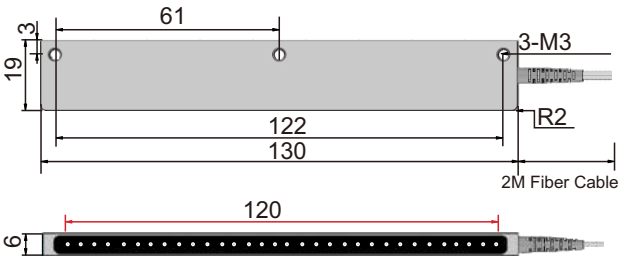
Detect area details

①Light-emitting surface
100mm
Spor Spacing
3.2mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25××16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-120S
Different reflection



Unit mm)

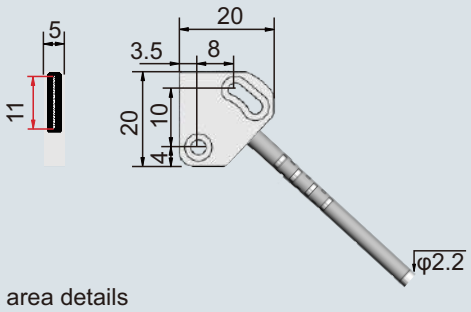


Detect area details

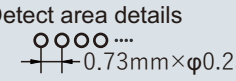
①Light-emitting surface
6mm
Spor Spacing
3.87mm
Fiber outer diameter
φ1.3
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FR-A10
Different reflection

Unit mm)

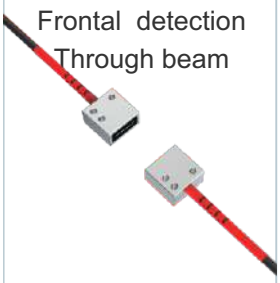


Detect area details

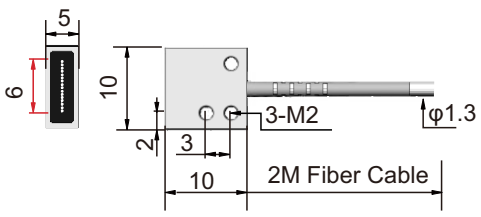


①Light-emitting surface
11mm
Spor Spacing
0.73mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

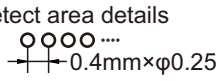
FT-10F
Frontal detection
Through beam



Unit mm)

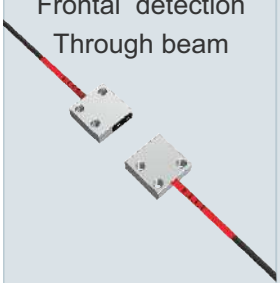


Detect area details

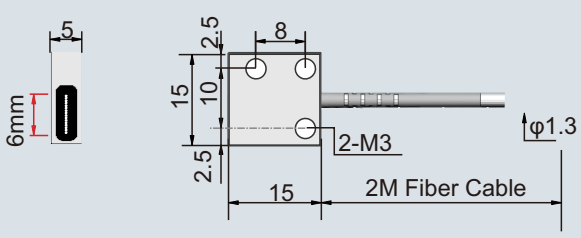


①Light-emitting surface
6mm
Spor Spacing
0.4mm
Fiber outer diameter
φ1.3
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

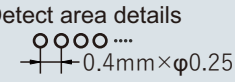
FT-15F
Frontal detection
Through beam



Unit mm)

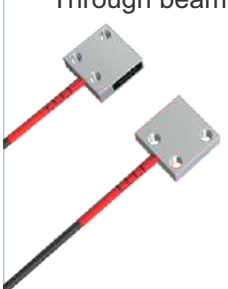


Detect area details

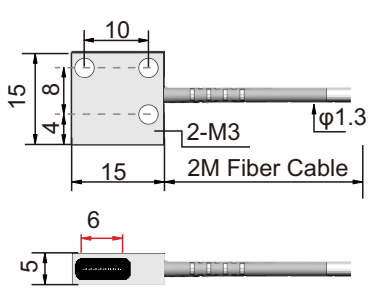


①Light-emitting surface
6mm
Spor Spacing
0.4mm
Fiber outer diameter
φ1.3
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

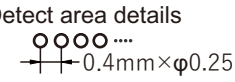
FT-15S
Through beam



Unit mm)

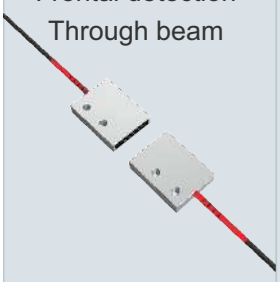


Detect area details

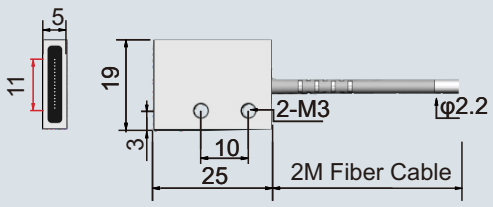


①Light-emitting surface
6mm
Spor Spacing
0.4mm
Fiber outer diameter
φ1.3
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-20F
Frontal detection
Through beam



Unit mm)

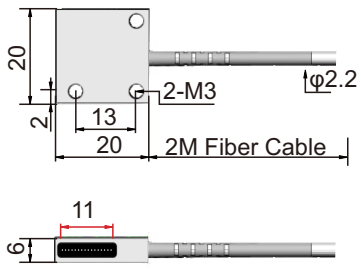


Detect area details
0.73mm×φ0.25

①Light-emitting surface
11mm
Spor Spacing
0.73mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-20S
Through beam

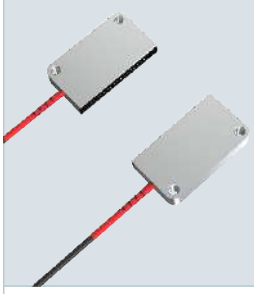
Unit mm)



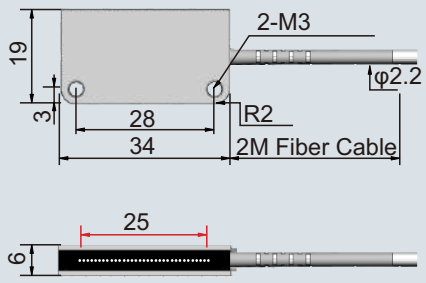
Detect area details
0.73mm×φ0.25

①Light-emitting surface
11mm
Spor Spacing
0.73mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-25S
Through beam



Unit mm)

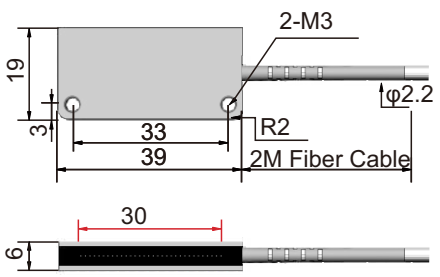


Detect area details
0.8mm×φ0.25

①Light-emitting surface
25mm
Spor Spacing
0.8mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-30S
Through beam

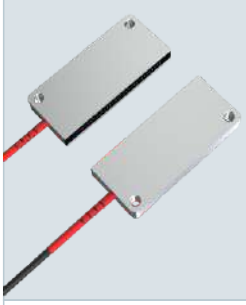
Unit mm)



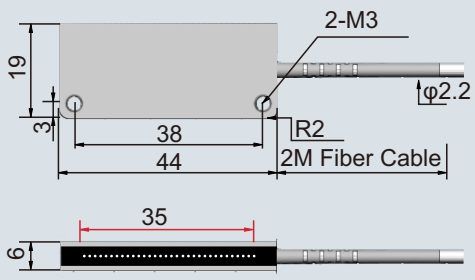
Detect area details
0.96mm×φ0.25

①Light-emitting surface
30mm
Spor Spacing
0.96mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-35S
Through beam



Unit mm)

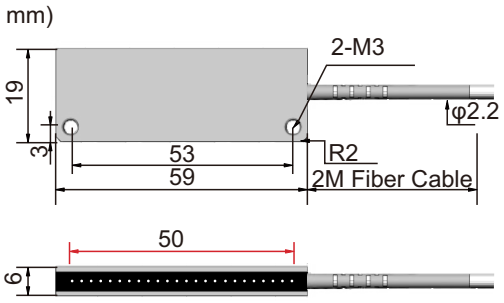


Detect area details
1.12mm×φ0.25

①Light-emitting surface
35mm
Spor Spacing
1.12mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-50S
Through beam

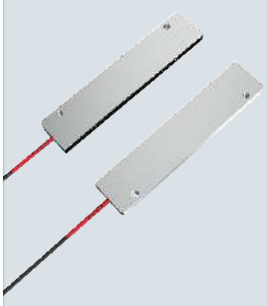
Unit mm)



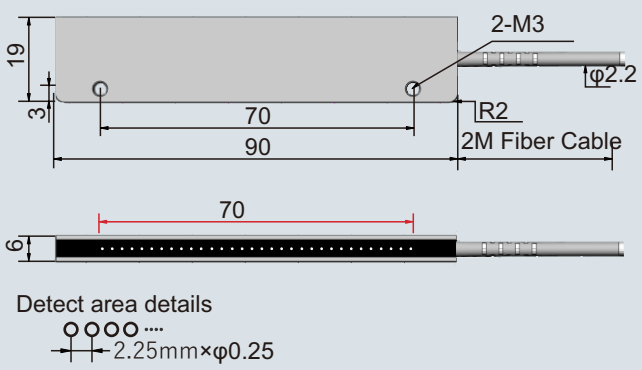
Detect area details
1.61mm×φ0.25

①Light-emitting surface
50mm
Spor Spacing
1.61mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-70S
Through beam



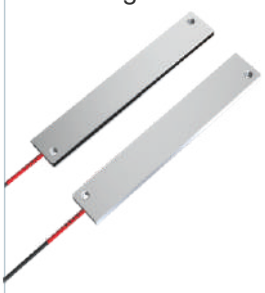
Unit mm)



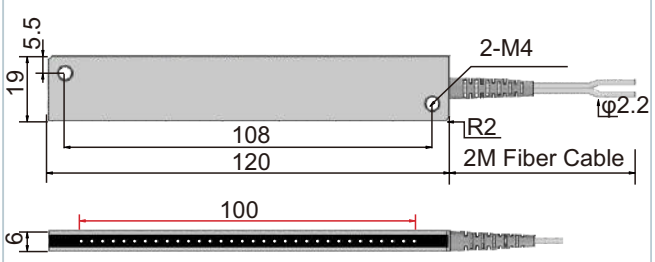
Detect area details

①Light-emitting surface
75mm
Spor Spacing
2.25mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

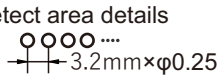
FT-100S
Through beam



Unit mm)

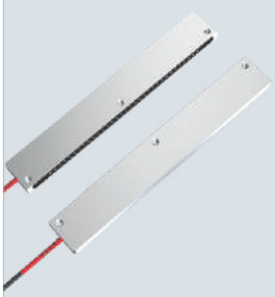


Detect area details

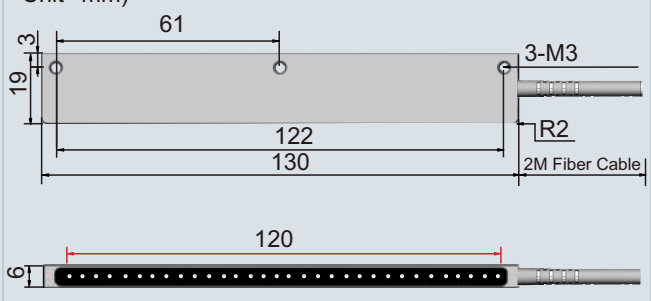


①Light-emitting surface
100mm
Spor Spacing
3.2mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-120S
Through beam



Unit mm)

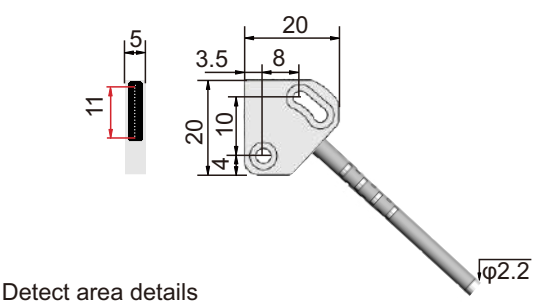


Detect area details

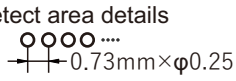
①Light-emitting surface
6mm
Spor Spacing
3.87mm
Fiber outer diameter
φ1.3
Fiber inner diameter
φ0.25×32core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-A10
Through beam

Unit mm)

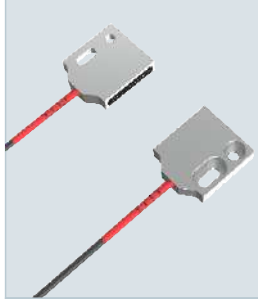


Detect area details

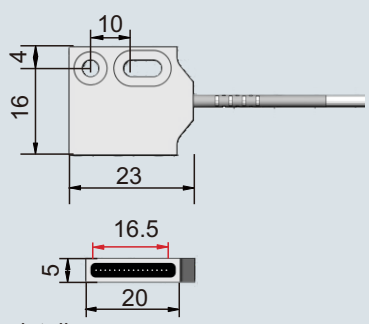


①Light-emitting surface
11mm
Spor Spacing
0.73mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

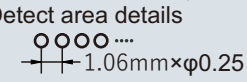
FU-12T
Through beam



Unit mm)



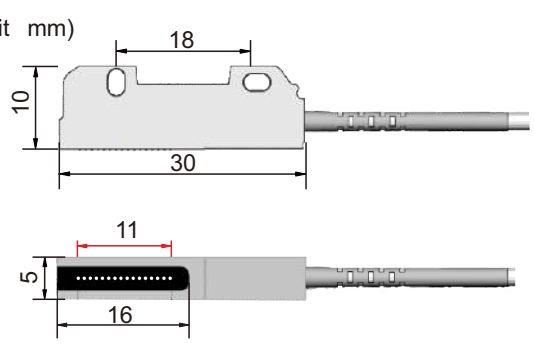
Detect area details



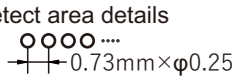
①Light-emitting surface
16.5mm
Spor Spacing
1.06mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

FT-11S
Through beam

Unit mm)



Detect area details



①Light-emitting surface
11mm
Spor Spacing
0.73mm
Fiber outer diameter
φ2.2
Fiber inner diameter
φ0.25×16core×2
Working temperature
-55℃~+70℃
Minimum bending radius
R15

※ Three-color light source, using RGB light source to identify a variety of targets High stability
※ For use with fiber optic sensors

Selection Guide

YR	C	3	10
①	②	③	④

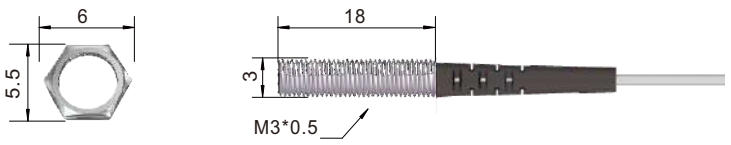
①Model Description:YR: Diffuse Color Fiber Optic Sensor
②**Product Specifications:**C: coaxial type
③**Fiber Head Diameter**:M3:M3*0.5mm、M6: M6*0.75mm
④**Fiber optic cable length:**10:1M、20:2M

Specifications

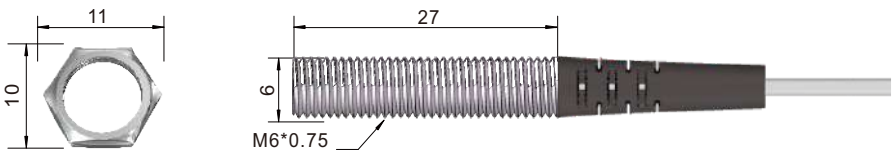
Specifications		
Model	YRC-310	YRC-610
Thread pitch	M3*0.5	M6*0.75
Fiber size	outer diameter 1.3mm	outer diameter 2.2mm
Sensing method	Coaxial reflex	
Detection distance	0-10MM	0-15MM
Best detection distance	0-5mm	
Fiber Head Material	Stainless steel	
Fiber line length	Standard 1M(canbecustomized2M/3M)	

Dimension

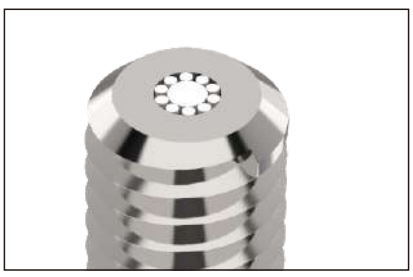
YRC-310



YRC-610



coaxial fiber



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