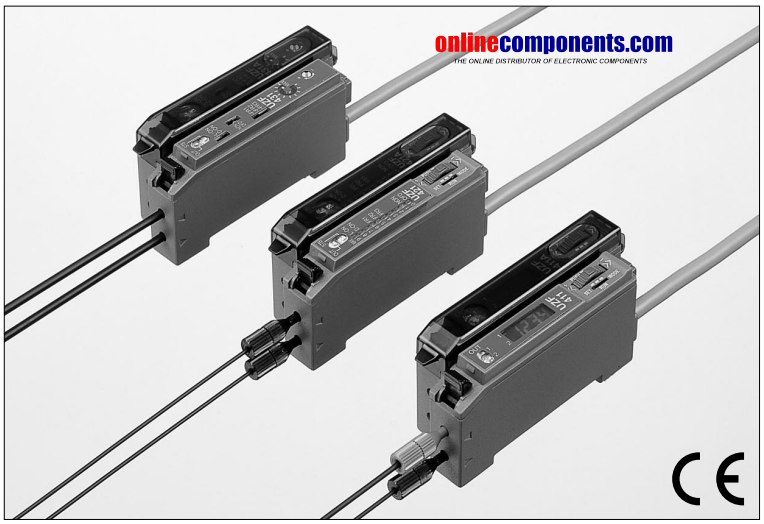
NAiS

NEW OPTICAL FIBER DIGITAL/AUTO/MANUAL SETTING TYPE PHOTOELECTRIC SENSORS

UZF41/42/43 Series

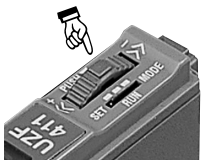
SIMPLE OPERATION WITH INNOVATIVE JOG SWITCH SETTING AND MANUAL SETTING TYPE



Simple Operation UZF41/42 series

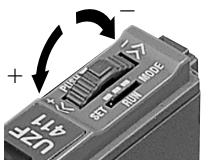
Uses an innovative highly operable jog switch.
Anyone can easily do the threshold value (sensitivity in case of **UZF42** series) setting or fine adjustment by using a single jog switch.

Press



Threshold value (sensitivity in case of **UZF42** series) or each mode is set.

Turn

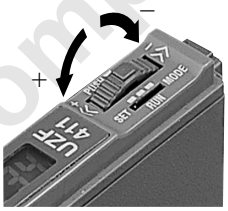


Threshold value (sensitivity in case of **UZF42** series) setting or fine adjustment, and selection of each mode is done.

Fine Adjustment is Possible UZF41/42 series

Fine adjustment is possible after setting the threshold value (sensitivity in case of **UZF42** series).

Simply turn the jog switch to the '+' or the '−' side for fine adjustment.



3 Types of Settings are Possible UZF41/42 series

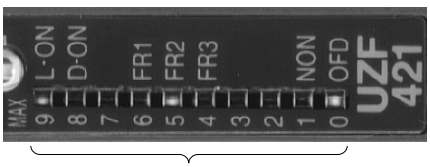
You can select from the following three types of settings:
1) 2-level teaching
2) Limit teaching, which is highly suitable for threshold value (sensitivity in case of **UZF42** series) setting in the object absent condition, or in case a background body is present, or for minute difference detection.
3) Full auto-teaching, which is suitable for detecting a moving object, without stopping the production line.

Digital Display UZF41 series

Since the incident light intensity and the threshold value can be confirmed on a digital display (4 digit LCD), the threshold value can be set by seeing the numerical values. Moreover, since the display has a back light, the values can be read even in a dark place.

Level Indicators UZF42 series

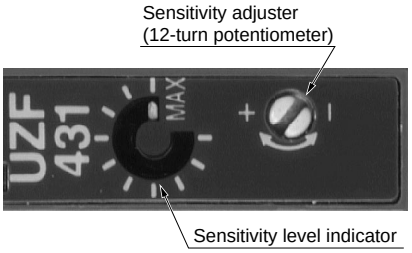
Level indicators, comprising of 10 LEDs, enable confirmation of the set sensitivity at one glance.
Setting can be done while confirming the value on the level indicators.



Level indicators

12-turn Potentiometer with Indicator UZF43 series

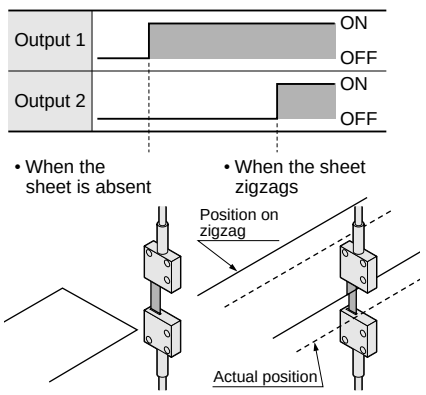
12-turn potentiometer has been incorporated for unprecedent fine adjustments. It enables detection of very fine differences.
Moreover, the potentiometer position can be confirmed at a glance on the indicator.



Incorporates Two Independent Outputs UZF41 series

Since two independent outputs are incorporated, one sensor suffices even in places where, so far, two sensors had to be used.

Detection of a sheet's zigzag movement



Incorporates a Convenient Timer Function

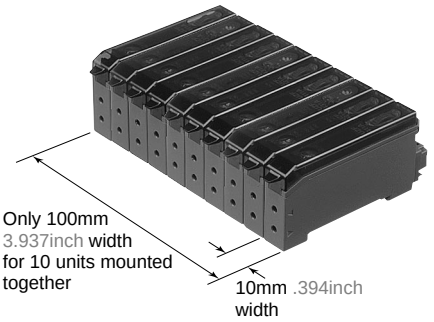
UZF41 series incorporates an ON-delay timer and an OFF-delay timer. The timer period can be selected from four values — 40ms, 100ms, 200ms and 500ms. Further, the **UZF42** series and the **UZF43** series incorporate a fixed 40ms (approx.) OFF-delay timer.

Close Mounting of Three Fibers is Possible

Three fibers can be mounted closely by selecting three different emission frequencies with the jog switch (frequency selection switch in case of **UZF43** series).

10mm .394inch Width Slim Size

Since the width is merely 10mm .394inch, it can be installed in a narrow space.



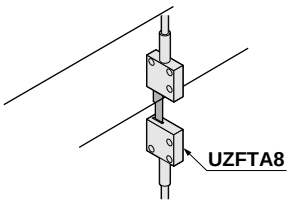
Connector Type Available

Besides the cable type, connector type sensors suitable for sensor and simple wire-saving using a sensor block and a connector attached cable, are available.

APPLICATIONS

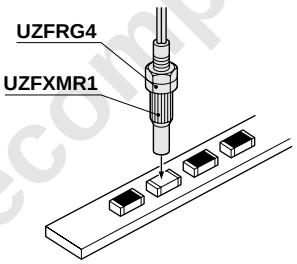
Detection of a sheet's zigzag movement

Since the **UZF41** series incorporates two independent outputs, the sheet's presence/absence and its zigzag movement can be detected at the same time.



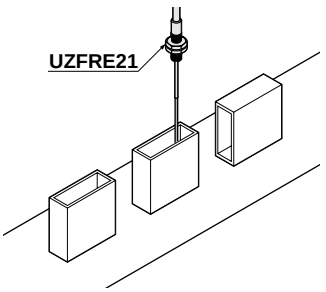
Distinguishing top/bottom surface of a chip component

Due to the small spot size, the top surface can be distinguished from the bottom surface for small components, such as the 1005 chip.



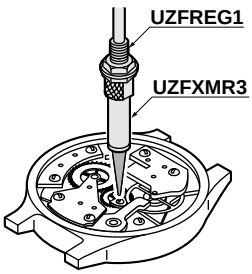
Detection of upright position of a condenser

Since the **UZF41** series incorporates two independent outputs, it can detect not only the presence/absence of a condenser coming from a parts feeder, but also whether it stands upright.



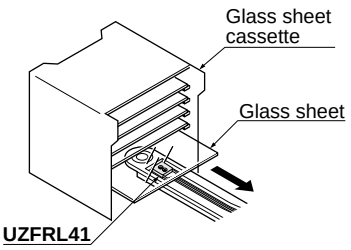
Detection of presence/absence of very small parts

It can reliably detect very small parts in a wrist watch.



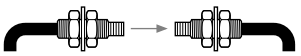
Detection of presence/absence of glass sheets

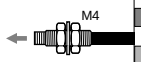
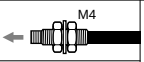
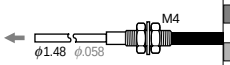
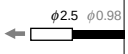
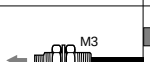
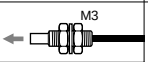
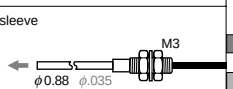
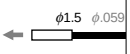
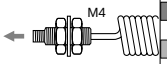
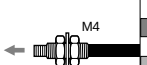
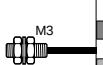
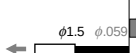
It can reliably detect individual glass sheets which are normally difficult to detect.



ORDER GUIDE

For general use fiber optic cable [Thru-beam type (one set consists of two pcs.)]



	Shape of sensing probe (mm inch)	Sensing range (*1) ■ : Red LED type □ : Green LED type	Min. sensing object [on optimum condition (*2)] [Ⓡ: Red LED type Ⓖ: Green LED type]	Features	Fiber optic cable length	Model No.
Long sensing range	Lens applicable 	650mm 25.591inch 115mm 4.528inch	Ⓡ ϕ0.16mm ϕ.006inch opaque object Ⓖ ϕ0.08mm ϕ.003inch opaque object	• Twise the sensing range as before of standard type	Freely cuttable 2m 6.562ft	**UZFTB8**
Standard	Lens applicable 			• Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFTF8**
	With sleeve 	380mm 14.961inch 60mm 2.362inch	Ⓡ ϕ0.12mm ϕ.005inch opaque object Ⓖ ϕ0.04mm ϕ.002inch opaque object			**UZFTF89** Sleeve 90mm 3.543inch **UZFTF84** Sleeve 40mm 1.575inch
						**UZFTS8**
Economy Long sensing range		600mm 23.622inch 100mm 3.937inch	Ⓡ ϕ0.16mm ϕ.006inch opaque object Ⓖ ϕ0.08mm ϕ.003inch opaque object	• Low price & free-cut	Freely cuttable 2m 6.562ft (*3)	*New* **UZFTNB8**
		350mm 13.780inch 50mm 1.969inch	Ⓡ ϕ0.12mm ϕ.005inch opaque object Ⓖ ϕ0.04mm ϕ.002inch opaque object			*New* **UZFTN8**
Small sensing probe	Lens applicable 	380mm 14.961inch 60mm 2.362inch	Ⓡ ϕ0.12mm ϕ.005inch opaque object Ⓖ ϕ0.04mm ϕ.002inch opaque object	• Same sensing range as the standard with a smaller sensing probe	Freely cuttable 2m 6.562ft	**UZFTT8**
Small diameter		100mm 3.937inch 15mm .591inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.03mm ϕ.001inch opaque object	• Suitable for sensing in the intricate apparatus • Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFTF4**
	With sleeve 					**UZFTF49** Sleeve 90mm 3.543inch **UZFTF44** Sleeve 40mm 1.575inch
						**UZFTS4**
Flexible	Lens applicable Small diameter 	70mm 2.756inch 13mm .512inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.04mm ϕ.002inch opaque object	• Small diameter sensing probe coiled cable	2m 6.562ft	**UZFTC4**
	Lens applicable 	320mm 12.598inch 60mm 2.362inch	Ⓡ ϕ0.12mm ϕ.005inch opaque object Ⓖ ϕ0.05mm ϕ.002inch opaque object	• Allowable bending radius : R4mm R.157inch • Bending durability : one million times min.	Freely cuttable 2m 6.562ft	**UZFTP8**
	Small diameter 	100mm 3.937inch 10mm .394inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.03mm ϕ.001inch opaque object			**UZFTP4**
	Small diameter 	120mm 4.724inch 18mm .709inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.08mm ϕ.003inch opaque object		1m 3.281ft	**UZFTP2**

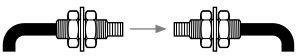
(*1): The free-cut fibers may reduce the sensing ranges 20% lower than the above specified according to how they are cut off.

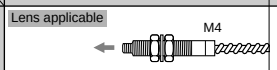
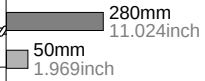
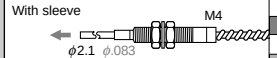
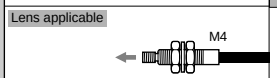
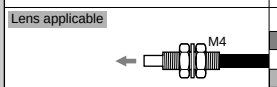
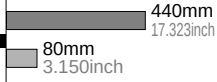
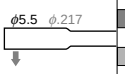
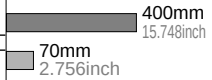
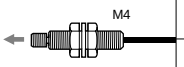
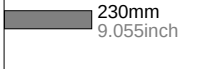
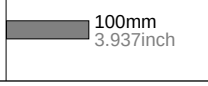
(*2): The optimum condition is the condition when the sensitivity is set so that the sensing output just changes to light incident operation in the object absent condition.

(*3): Fiber cutter **UZFXCT1** in not supplied as accessory along with Standard (Economy) fibers. Please procure it separately.

ORDER GUIDE

For environmental-resistant use fiber optic cable [Thru-beam type (one set consists of two pcs.)]



	Shape of sensing probe (mm inch)	Sensing range (*1) ■ : Red LED type □ : Green LED type	Min. sensing object [on optimum condition (*2)] [Ⓡ : Red LED type Ⓖ : Green LED type]	Features	Fiber optic cable length	Model No.
Heat-resistant	Lens applicable 		Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.05mm ϕ.002inch opaque object	• Heat-resistant : 350°C 662°F Cold-resistant : –60°C –76°F	2m 6.562ft	**UZFTH7**
	With sleeve 					**UZFTH76** Sleeve 60mm 2.362inch
	Lens applicable 			• Silicon housing makes cable lead-around easy. • Heat-resistant : 200°C 392°F Cold-resistant : – 60°C – 76°F	1m 3.281ft	**UZFTH6**
	Lens applicable 		Ⓡ ϕ0.16mm ϕ.006inch opaque object Ⓖ ϕ0.12mm ϕ.005inch opaque object	• Heat-resistant : 130°C 266°F Cold-resistant : –60°C –76°F • Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFTH8**
Chemical-resistant			Ⓡ ϕ0.5mm ϕ.020inch opaque object Ⓖ ϕ0.3mm ϕ.012inch opaque object	• For the application in liquid chemical • Heat-resistant specification (115°C 239°F) • Long sensing range type with lens	2m 6.562ft Bending R : 30mm 1.181inch	**UZFTL8Y**
			Ⓡ ϕ0.5mm ϕ.020inch opaque object Ⓖ ϕ0.3mm ϕ.012inch opaque object	• For the application in liquid chemical • Heat-resistant specification (115°C 239°F) • Side-view type	2m 6.562ft Bending R : 30mm 1.181inch	**UZFTV8Y**
Vacuum-resistant	Lens applicable 		Ⓡ ϕ0.16mm ϕ.006inch opaque object	• For the application in vacuum area • Heat-resistant : 120°C 248°F	1m 3.281ft Bending R : 200mm 7.874inch	**UZFT6V**
			Ⓡ ϕ0.16mm ϕ.006inch opaque object		1m 3.281ft Bending R : 30mm 1.181inch	**UZFT60V**

(*1): The free-cut fibers may reduce the sensing ranges 20% lower than the above specified according to how they are cut off.

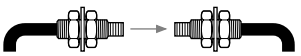
(*2): The optimum condition is the condition when the sensitivity is set so that the sensing output just changes to light incident operation in the object absent condition.

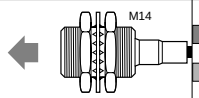
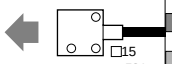
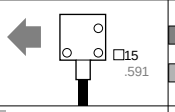
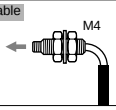
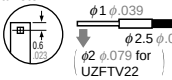
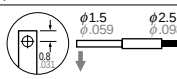
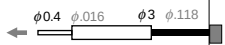
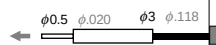
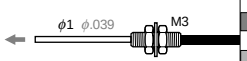
The vacuum fiber must be used with both the followings.

UZFTJ6 : Outer fibers in the atmosphere (One pair of two fibers a set)
UZFVBR1 : Terminal joints (One pair of two joints a set)

ORDER GUIDE

For special application use fiber optic cable [Thru-beam type (one set consists of two pcs.)]



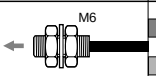
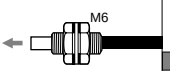
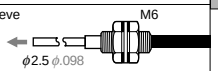
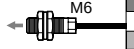
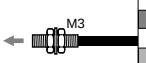
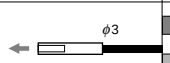
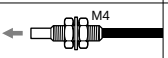
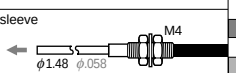
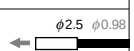
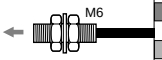
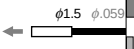
	Shape of sensing probe (mm inch)	Sensing range (*1) ■ : Red LED type □ : Green LED type	Min. sensing object [on optimum condition (*2)] [Ⓡ: Red LED type Ⓖ: Green LED type]	Features	Fiber optic cable length	Model No.
Long sensing range with lens		10,000mm 393.7inch 2,800mm 110.236inch	Ⓡ ϕ0.5mm ϕ.020inch opaque object Ⓖ ϕ0.5mm ϕ.020inch opaque object	• By applying large diameter lens, a long sensing range is achieved. • Fiber optic cable length is 10m 32.808ft long	Freely cuttable 10m 32.808ft	**UZFTL9**
		800mm 31.496inch 130mm 5.118inch	Ⓡ ϕ0.16mm ϕ.006inch opaque object Ⓖ ϕ0.16mm ϕ.006inch opaque object	• A long sensing range is achieved with a very small sensing probe of ϕ2.5mm ϕ.098inch.	Freely cuttable 2m 6.562ft	**UZFTL8**
Array	Top sensing 	320mm 12.598inch 50mm 1.969inch	Ⓡ ϕVertical ϕ0.7mm ϕ.028inch opaque object ϕHorizontal ϕ0.05mm ϕ.002inch opaque object Ⓖ ϕVertical ϕ0.2mm ϕ.008inch opaque object ϕHorizontal ϕ0.04mm ϕ.002inch opaque object	• Arrayed beam does not miss by detecting object regardless of its position.	Freely cuttable 2m 6.562ft	**UZFTA8**
	Side sensing 	290mm 11.417inch 40mm 1.575inch	Ⓡ ϕVertical ϕ0.7mm ϕ.028inch opaque object ϕHorizontal ϕ0.05mm ϕ.002inch opaque object Ⓖ ϕVertical ϕ0.2mm ϕ.008inch opaque object ϕHorizontal ϕ0.04mm ϕ.002inch opaque object			**UZFTA8E**
Elbow	Lens applicable 	270mm 10.630inch 45mm 1.772inch	Ⓡ ϕ0.12mm ϕ.005inch opaque object Ⓖ ϕ0.08mm ϕ.003inch opaque object	• Installation is simple as the sensing probe is bent 90 degrees and has 5mm .197inch radius.	Freely cuttable 2m 6.562ft	**UZFTR8**
Side-view	Small diameter  Sleeve part cannot be bent.	175mm 6.890inch 18mm .709inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.05mm ϕ.002inch opaque object	• Side sensing method saves installation space.	1m 3.281ft	**UZFTV22**
		70mm 2.756inch 10mm .394inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.06mm ϕ.002inch opaque object		Freely cuttable 2m 6.562ft	**UZFTV41**
	 Sleeve part cannot be bent.	200mm 7.874inch 35mm 1.378inch	Ⓡ ϕ0.12mm ϕ.005inch opaque object Ⓖ ϕ0.05mm ϕ.002inch opaque object			**UZFTV82**
Ultra-small diameter	 Sleeve part cannot be bent.	7mm .276inch	Ⓡ ϕ0.02mm ϕ.0008inch opaque object	• Ultra-small diameter, and diameter of ϕ0.125mm ϕ.005inch	500mm 19.685inch	**UZFTE1**
	 Sleeve part cannot be bent.	30mm 1.181inch	Ⓡ ϕ0.02mm ϕ.0008inch opaque object	• Ultra-small diameter, and diameter of ϕ0.25mm ϕ.010inch	1m 3.281ft	**UZFTE2**
Narrow -view	 Sleeve part cannot be bent.	160mm 6.299inch 18mm .709inch	Ⓡ ϕ0.08mm ϕ.003inch opaque object Ⓖ ϕ0.02mm ϕ.0008inch opaque object	• The spread of beam is one-sixth of conventional model, so that it doesn't cause crosstalk.	1m 3.281ft	**UZFTK22**

(*1): The free-cut fibers may reduce the sensing ranges 20% lower than the above specified according to how they are cut off.

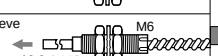
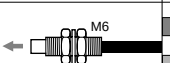
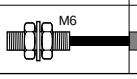
(*2): The optimum condition is the condition when the sensitivity is set so that the sensing output just changes to light incident operation in the object absent condition.

ORDER GUIDE

For general use fiber optic cable (reflective type)

	Shape of sensing probe (mm inch)	Sensing range (*1) (*2) ■ : Red LED type □ : Green LED type	Min. sensing object [at the maximum sensitivity (*3)] [Ⓡ: Red LED type Ⓖ: Green LED type]	Features	Fiber optic cable length	Model No.
Standard (Long sensing range)		210mm 8.268inch 40mm 1.575inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.05mm ϕ.002inch copper wire	• Long sensing range • Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFR8B**
Standard	Coaxial 	140mm 5.512inch 20mm .787inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.02mm ϕ.0008inch copper wire	• Suitable for green LED type	500mm 19.685inch	**UZFRF5**
				• Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFRF8**
	With sleeve 					**UZFRF89** Sleeve 90mm 3.543inch **UZFRF84** Sleeve 40mm 1.575inch
Economy		120mm 4.724inch 18mm .709inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.12mm ϕ.005inch copper wire	• Low price & free-cut	Freely cuttable 2m 6.562ft (*4)	*New* **UZFRN8**
	Small diameter 	34mm 1.339inch 3mm .118inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.3mm ϕ.012inch copper wire			*New* **UZFRN4**
Small sensing probe		140mm 5.512inch 20mm .787inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.02mm ϕ.0008inch copper wire	• Same sensing range as the standard with small sensing probe	Freely cuttable 2m 6.562ft	**UZFRT8**
	Small diameter 	40mm 1.575inch 5mm .197inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.05mm ϕ.002inch copper wire			**UZFRT4**
		140mm 5.512inch 20mm .787inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.02mm ϕ.0008inch copper wire			**UZFRS8**
Small diameter				• Suitable for sensing in the intricate apparatus • Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFRF4**
	With sleeve 	40mm 1.575inch 5mm .197inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.05mm ϕ.002inch copper wire			**UZFRF49** Sleeve 90mm 3.543inch **UZFRF44** Sleeve 40mm 1.575inch
						**UZFRS4**
Flexible		100mm 3.937inch 16mm .630inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.05mm ϕ.002inch stainless steel bar	• Allowable bending radius : R4mm R.157inch • Bending durability : one million times min.	Freely cuttable 2m 6.562ft	**UZFRP8**
	Small diameter 	16mm .630inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire			**UZFRP4**
	Small diameter 	23mm .906inch 2.5mm .098inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.02mm ϕ.0008inch copper wire		1m 3.281ft	**UZFRP2**

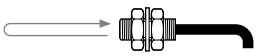
For environmental-resistant use fiber optic cable (reflective type)

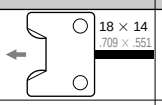
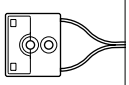
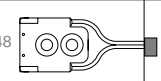
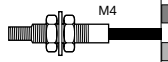
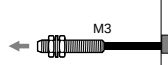
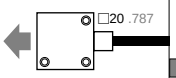
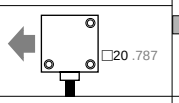
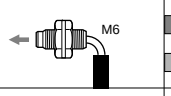
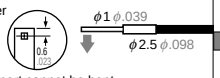
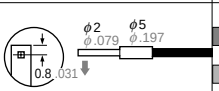
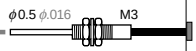
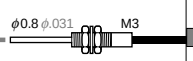
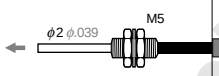
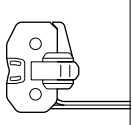
	Shape of sensing probe (mm inch)	Sensing range (*1) (*2) ■ : Red LED type □ : Green LED type	Min. sensing object [at the maximum sensitivity (*3)] [Ⓡ: Red LED type Ⓖ: Green LED type]	Features	Fiber optic cable length	Model No.
Heat-resistant	Coaxial 	140mm 5.512inch 18mm .709inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.01mm ϕ.0004inch gold wire	• Heat-resistant : 350°C 662°F Cold-resistant : −60°C −76°F	2m 6.562ft	**UZFRH7**
	With sleeve 					**UZFRH76** Sleeve 60mm 2.362inch
	Coaxial 			• Silicon housing makes cable lead-around easy. • Heat-resistant : 200°C 392°F Cold-resistant : −60°C −76°F	1m 3.281ft	**UZFRH6**
		150mm 5.906inch 26mm 1.024inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.06mm ϕ.002inch stainless steel bar	• Heat-resistant : 130°C 266°F • Cold-resistant : −60°C −76°F • Freely cuttable type	Freely cuttable 2m 6.562ft	**UZFRH8**
Vacuum-resistant		75mm 2.953inch	Ⓡ ϕ0.01mm ϕ.0004inch copper wire	• For the application in vacuum area • Heat-resistant : 120°C 248°F	1m 3.281ft	**UZFR6V**

The vacuum fiber must be used with both the followings.
UZFTJ6 : Outer fibers in the atmosphere (One pair of two fibers a set)
UZFVBR1 : Terminal joints (One pair of two joints a set)

ORDER GUIDE

For special applications use fiber optic cable (reflective type)



	Shape of sensing probe (mm inch)	Sensing range (*1) (*2) ■ : Red LED type □ : Green LED type	Min. sensing object [at the maximum sensitivity (*3)] [Ⓡ: Red LED type Ⓖ: Green LED type]	Features	Fiber optic cable length	Model No.
Fixed-focus board		4.5 to 12mm .177 to .472inch (Center: 8mm .315inch)	Ⓡ ϕ0.01mm ϕ.0004inch gold wire	• Sensing performance is not affected by color or surface condition of the object.	Freely cuttable 2m 6.562ft	**UZFRL4**
Glass sheet detection	24×21 .945×.827 	3 to 14mm .118 to .551inch (Center: 8mm .315inch)	Ⓡ ϕ0.2mm ϕ.008inch gold wire	• Just 4mm .157inch thick • Glass board is securely detected.		**UZFRL41**
Wafer or specular object detection	15×19 .591×.748 	Center: 2mm .079inch	Ⓡ ϕ0.2mm ϕ.008inch gold wire	• Just 3mm .118inch thick • Wafer is securely detected.		**UZFRL42**
High precision (Coaxial)	Lens applicable Coaxial 	50mm 1.969inch 7.5mm .295inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.02mm ϕ.001inch stainless steel bar	• A highly precise positioning is possible with coaxial reflective mode.	Freely cuttable 2m 6.562ft 500mm 19.685inch	**UZFRG4** **UZFRG1**
	Lens applicable Coaxial • Small diameter 	17mm .669inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire	• Approx. ϕ0.3mm ϕ.012inch is achieved by means of combining with ultra-small spot lens **UZFXMR3**.	500mm 19.685inch	**UZFREG1**
Array	Top sensing 	110mm 4.331inch	Ⓡ Vertical ϕ0.1mm ϕ.004inch copper wire Horizontal ϕ0.01mm ϕ.0004inch gold wire Ⓖ Vertical ϕ0.06mm ϕ.002inch stainless steel bar Horizontal ϕ0.01mm ϕ.0004inch copper wire	• Arrayed beams meet various sensing demand.	Freely cuttable 2m 6.562ft	**UZFRA8** **UZFRA8E**
	Side sensing 	17mm .669inch				
Elbow		85mm 3.346inch 13mm .512inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.2mm ϕ.008inch stainless steel bar	• Installation is simple as sensing probe is bent 90 degrees and has 5mm .197inch radius.	Freely cuttable 2m 6.562ft	**UZFRR8**
Side-view	Small diameter  Sleeve part cannot be bent.	25mm .984inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire	• Side sensing method saves installation space.	Freely cuttable 2m 6.562ft	**UZFRV41**
	Coaxial  Sleeve part cannot be bent.	45mm 1.772inch 5mm .200inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire Ⓖ ϕ0.5mm ϕ.020inch stainless steel bar			**UZFRV82**
Ultra-small diameter	 Sleeve part cannot be bent.	2mm .079inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire	• Suitable for sensing in the intricate apparatus	500mm 19.685inch	**UZFRE11**
	Coaxial  Sleeve part cannot be bent.	17mm .669inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire	• A highly precise positioning is possible with coaxial reflective type.	1m 3.281ft	**UZFRE21**
Narrow-view	Coaxial  Sleeve part cannot be bent.	15mm .591inch	Ⓡ ϕ0.01mm ϕ.0004inch gold wire	• The spread of beam is one-sixth of a conventional model. It is effective for the detection in the narrow space.	1m 3.281ft	**UZFRK22**
Liquid level detection		—	Ⓡ (Liquid)	• Reduces malfunction due to liquid drop at the tip.	Freely cuttable 2m 6.562ft	**UZFRM8Y**
Mountable on pipe	25×20 .984×.787 	Applicable pipe diameter: ϕ6 to ϕ26mm ϕ.236 to ϕ1.024inch [Pipe made of PFA (fluorine resin) or material having equivalent transparency, thickness 1mm .039inch.]	Ⓡ (Liquid)	• Liquid drop on top never affects the sensing securely.		**UZFRM4**
					Freely cuttable 5m 16.404ft	**UZFRM9**

(*1): The sensing range is specified with using white non-glossy paper (**UZFR8B**: 200×200mm 7.874×7.874inch, **UZFRL42** and **UZFRV41**: 50×50mm 1.969×1.969inch, **UZFRK22**: 10×10mm .394×.394inch, **UZFRL41**: glass sheet 25×25×t1.3mm .984×.984×t.051inch, Others: 100×100mm 3.937×3.937inch)

(*2): The free-cut fibers may reduce the sensing ranges 20% lower than the above specified according to how they are cut off.

(*3): The minimum sensing object is obtainable with the maximum sensitivity, but at the ideal sensing distance within the rated sensing range.

(*4): Fiber cutter **UZFXCT1** in not supplied as accessory along with Standard (Economy) fibers. Please procure it separately.

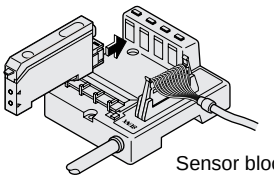
ORDER GUIDE

Amplifiers

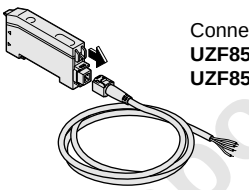
Type		Appearance	Model No.	Emitting element	Output
Digital setting	Red LED type		**UZF411**	Red LED	NPN open-collector transistor (Output 1, Output2)
			UZF4115		PNP open-collector transistor (Output 1, Output2)
Auto-setting	Red LED type	 	**UZF421**	Red LED	NPN open-collector transistor (Sensing output, self-diagnosis output)
			UZF4215		PNP open-collector transistor (Sensing output, self-diagnosis output)
	Green LED type		**UZF422**	Green LED	NPN open-collector transistor (Sensing output, self-diagnosis output)
Manual setting	Red LED type		**UZF431**	Red LED	NPN open-collector transistor (Sensing output, self-diagnosis output)
			UZF4315		PNP open-collector transistor (Sensing output, self-diagnosis output)
	Green LED type		**UZF432**	Green LED	NPN open-collector transistor (Sensing output, self-diagnosis output)

Plug-in connector type

Plug-in connector type is available. (Standard: cable type)
To order the plug-in connector type, add suffix '**A**' at the end of the model No.
Example: Plug-in connector type of **UZF4215** is '**UZF4215A**'.
Usable with the sensor block for simple wiring **UZZ70** or **UZZ72**, or with connector attached cable **UZF851** or **UZF852**.



Sensor block for simple wiring **UZZ70/UZZ72**



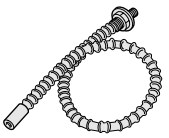
Connector attached cable
UZF851 (2m 6.562ft. long)
UZF852 (5m 16.404ft. long)

OPTION

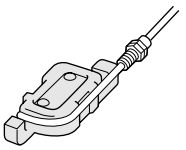
Component	Model No.	Description			
Protective tube for Thru-beam fiber optic cable	**UZF831** (0.5m 1.64ft)	For M4 thread	Combined fiber optic cables	**UZFTB8** **UZFTP8** **UZFTF8** **UZFTH8** **UZFTF89** **UZFTF84**	Stainless steel protection tube protects fiber from external force.
	UZF832 (1m 3.28ft)				
	UZF833 (1.5m 4.92ft)				
	UZF834 (0.5m 1.64ft)	For M3 thread		**UZFTT8** **UZFTP4** **UZFTF4** **UZFRT4** **UZFTF49** **UZFRP4** **UZFTF44**	
	UZF835 (1m 3.28ft)				
	UZF836 (1.5m 4.92ft)				
Protective tube for Reflective fiber optic cable	**UZF841** (0.5m 1.64ft)	For M6 thread		**UZFR8B** **UZFRP8** **UZFRF8** **UZFRH8** **UZFRF89** **UZFRF84**	
	UZF842 (1m 3.28ft)				
	UZF843 (1.5m 4.92ft)				
	UZF844 (0.5m 1.64ft)	For M4 thread		**UZFRT8** **UZFRF4** **UZFRF49** **UZFRF44**	
	UZF845 (1m 3.28ft)				
	UZF846 (1.5m 4.92ft)				
Fiber bender	**UZFXB1**	Sleeve head can be bent easily with adequate bending radius. (*1)			
Fiber cutter	**UZFXCT1**	The straight portion of the free-cut type fiber and the flexible coiled fiber can be freely cut.			

Note: Do not bend the sleeve part of any side-view fiber, ultra-small diameter probe fiber, narrow beam fiber, or narrow-view fiber.

Protective tube



Fiber bender

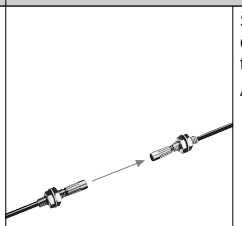


Fiber cutter

OPTION

For Thru-beam fiber optic cable

Long sensing range lens — UZFXLE1



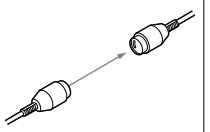
Sensing range extended more than 5 times.

Ambient temperature : −60 to +350°C −76 to +662°F

Sensing range (mm inch) [when mounting two pieces of lens]

Fiber optic cable \ Combined amplifier	Red LED type	Green LED type
UZFTB8	3,000 118.11	650 25.591
UZFTF8	3,500 137.795 (*1)	600 23.622
UZFTT8	3,500 137.795 (*1)	600 23.622
UZFTC4	800 31.496	220 8.661
UZFTP8	3,500 137.795 (*1)	500 19.685
UZFTH7	2,800 110.236	300 11.811
UZFTH6	1,600 62.992 (*1)	300 11.811
UZFTR8	2,400 94.488	400 15.748

Ultra-long sensing range lens — UZFXLE2



Sensing range strikingly increased with the large diameter lens.

Ambient temperature : −60 to +350°C −76 to +662°F

Sensing range (mm inch) [when mounting two pieces of lens]

Fiber optic cable \ Combined amplifier	Red LED type	Green LED type
UZFTB8	3,500 137.795 (*1)	3,500 137.795 (*1)
UZFTF8	3,500 137.795 (*1)	3,000 118.11
UZFTP8	3,500 137.795 (*1)	3,000 118.11
UZFTH7	3,500 137.795 (*1)	2,700 106.299
UZFTH6	1,600 62.992 (*1)	1,600 62.992 (*1)
UZFTH8	3,500 137.795 (*1)	2,400 94.488
UZFTR8	3,500 137.795 (*1)	2,400 94.488

Side view lens — UZFXSV1

Beam axis is bent 90 degrees.

Ambient temperature : −60 to +300°C −76 to +572°F

Sensing range (mm inch) [when mounting two pieces of lens]

Fiber optic cable \ Combined amplifier	Red LED type	Green LED type
UZFTB8	650 25.591	120 4.724
UZFTF8	600 23.622	100 3.937
UZFTT8	600 23.622	100 3.937
UZFTC4	180 7.087	20 .787
UZFTP8	600 23.622	100 3.937
UZFTH7	450 17.717	75 2.953
UZFTH6	280 11.024	75 2.953

Long sensing range lens for vacuum-resistant fiber optic cable — UZFVLE1

Sensing range extended more than 5 times

Ambient temperature : −40 to +120°C −40 to +248°F

Sensing range (mm inch) [when mounting two pieces of lens]

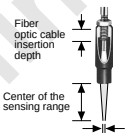
Fiber optic cable \ Combined amplifier	Red LED type	Green LED type
UZFT6V	2,700 106.299	—
UZFT60V	1,400 55.118	—

For Reflective fiber optic cable

Pinpoint spot lens — UZFXMR1

Pinpoint spot of ϕ0.5mm ϕ.020inch, detects fine small object or small mark.
- Combined amplifiers : Red LED type
- Applicable fiber : **UZFRG4**
- Center of the sensing range : 6±1mm .236±.039inch
- Ambient temperature : −40 to +70°C −40 to +158°F

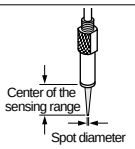
Zoom lens — UZFXMR2



Spot optic cable diameter is adjustable from ϕ0.7 to 2mm ϕ.028 to .079inch changing fiber optic cable insertion depth.
- Combined amplifiers : Red LED type
- Applicable fiber : **UZFRG4**
- Ambient temperature : −40 to +70°C −40 to +158°F

Fiber optic cable insertion depth	Center of the sensing range	Spot diameter
7mm .276inch	Approx.18.5mm .728inch	ϕ0.75mm ϕ.030inch
12mm .472inch	Approx.27mm 1.063inch	ϕ1.2mm ϕ.047inch
14mm .551inch	Approx.43mm 1.693inch	ϕ2.0mm ϕ.079inch

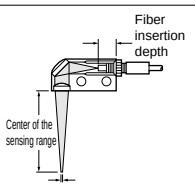
Ultra-small pinpoint lens — UZFXMR3



The smallest spot diameter in the industry : ϕ0.3mm ϕ.012inch
- Combined amplifiers : Red LED type
- Applicable fiber : **UZFRG4**
- Ambient temperature : −40 to +70°C −40 to +158°F

Fiber optic cable model No.	Center of the sensing range	Spot diameter
UZFREG1	7.5±0.5mm .295±.020inch	Approx. ϕ0.3mm ϕ.012inch
UZFRG4	7.5±0.5mm .295±.020inch	Approx. ϕ0.5mm ϕ.020inch

Zoom lens (side-view type) — UZFXMR5



UZFXMR2 is modified to side-view type to facilitate mounting in the limited space.
- Combined amplifiers : Red LED type
- Applicable fiber : **UZFRG4**
- Ambient temperature : −40 to +70°C −40 to +158°F

Fiber optic cable insertion depth	Center of the sensing range	Spot diameter
8mm .315inch	Approx.13mm .512inch	ϕ0.5mm ϕ.020inch
10mm .394inch	Approx.15mm .591inch	ϕ0.8mm ϕ.031inch
14mm .551inch	Approx.30mm 1.181inch	ϕ3.0mm ϕ.118inch

(*1) : Actual sensing range is set at 3,500mm 137.795inch (1,600mm 62.992inch for **UZFTH6**) depending on fiber optic cable length.

SPECIFICATIONS

Fiber optic cable

Item \ Type		Standard, small sensing probe, small diameter, flexible, long sensing range with lenses, array, elbow, high precision, thru-beam type of ultra-small diameter	Temperature-resistant			Chemical-resistant
			350°C 662°F type	200°C 392°F type	130°C 266°F type	
Allowable bending radius		R25mm .984inch or more (Flexible: R4mm .157inch or more, Thru-beam type of ultra-small diameter: R5mm .984inch or more)				R30mm 1.181inch or more
Ambient temperature		−40 to +70°C −40 to +158°F (**UZFREG1**: −20 to +60°C −4 to +140°F)	−60 to +350°C −76 to +662°F (*1)	−60 to +200°C −76 to +392°F	−60 to +130°C −76 to +266°F	−40 to +115°C −76 to +239°F
Ambient humidity		35 to 85%RH (No condensation or icing allowed)				
Material	Fiber core	Acrylic	Multi-component glass (*2)		Acrylic	
	Sheath	Polyethylene (Thru-beam type of ultra-small diameter and flexible, except for **UZFTC4** and **UZFRP2**: Vinyl chloride)	SUS (Stainless steel)	Silicone (Inside SUS spiral tube)	Fluorine resin	Protective tube: Fluorine resin Fiber sheath: Polypropylene
	Sensing probe	Brass (Nickel plated): Threaded part of standard, threaded part of small diameter, high precision, **UZFTC4**, threaded part of thru-beam type ultra-small diameter, **UZFTP8**, **UZFRP8**, array, threaded part of **UZFTR8** SUS (Stainless steel) : **UZFTS8,** small sensing probe, **UZFTS4**, **UZFRS4**, **UZFTL8**, **UZFTP4**, **UZFTP2**, **UZFRP4**, **UZFRP2** ABS : **UZFTL9** (Lens: Acrylic) Zinc alloy die-cast : Threaded part of **UZFRR8**		Brass (Nickel plated)	Brass (Nickel plated)	
Accessories		Threaded head fiber: 2 pcs. of nuts (thru-beam type: 4 pcs.) and 1 No. of toothed lock washer (thru-beam type: 2 pcs.) Free-cut fiber (except economy type), flexible coiled fiber, chemical-resistant fiber: 1 No. of **UZFXCT1** (Fiber cutter) Small diameter free-cut fiber, high precision free-cut fiber: 2 sets of plug attachments				

(*1) If the fiber is used under −30°C −22°F, its resistable maximum temperature drops to +200°C +392°F. If the side-view lens **UZFXSV1** is put on the fiber head, the allowable maximum temperature comes down to +300°C +572°F. (The ambient temperature range of the **UZFXSV1** is from −60 to +300°C −76 to +572°F.)
(*2) If the fiber material is multi-component glass, keep it away from vibration or impact.

Fiber optic cable

Item \ Type		Vacuum-resistant	Fixed-focus reflective	Side-view, narrow-view, reflective type of ultra-small diameter	Liquid level detection	
						Mountable on pipe
Allowable bending radius		R200mm 7.874inch or more (**UZFT60V**: R30mm 1.181inch or more)	R10mm .394inch or more	R25mm .984inch or more	Protective tube: R40mm 1.575inch or more Fiber cable: R15mm .591inch or more	R10mm .394inch or more
Ambient temperature		−40 to +120°C −40 to +248°F	−40 to +70°C −40 to +158°F (**UZFRL42**: −40 to +60°C −40 to +140°C)	−20 to +60°C −4 to +140°C (**UZFTV41** and **UZFRV41**: −40 ~ +60°C −40 ~ +60°C)	−40 to +125°C −40 to +257°F (*1)	−40 to +100°C −40 to +212°F (*1)
Ambient humidity		35 to 85%RH (No condensation or icing allowed)				
Material	Fiber core	Quartz glass (*2)	Acrylic			
	Sheath	Fluorine resin	Polyethylene (Reflective type of narrow-view: Polyurethane)		Protective tube: Fluorine resin Sheath: Polypropylene	Polypropylene
	Sensing probe	Aluminium	ABS: **UZFRL41**, **UZFRL41** (Lens: Acrylic) Aluminium: **UZFRL42** (Lens: Acrylic)	SUS (Stainless steel) Threaded part of **UZFRE11, UZFRE21, UZFRK22** and **UZFRK22**: Brass		Polyetherimido
Accessories		Threaded head fiber: 2 pcs. of nuts (thru-beam type: 4 pcs.) and 1 No. of toothed lock washer (thru-beam type: 2 pcs.) Free-cut type fiber: 1 No. of **UZFXCT1** (Fiber cutter) Convergent reflective fiber, **UZFRM4** and **UZFRM9**: 1 set of attachments (**UZFRL4**: 2 sets) **UZFRM4** and **UZFRM9**: 4 pcs. of tying bands and 2 pcs. of anti-slip tubes **UZFRL4**: 2 pcs. of M2.6×12mm screws with washers and 2 pcs. of nuts				

(*1) With the liquid level detection fiber, make sure that the temperature of the liquid is also within the ambient temperature range.
(*2) If the fiber material is quartz glass, keep it away from vibration or impact.

SPECIFICATIONS

Amplifiers

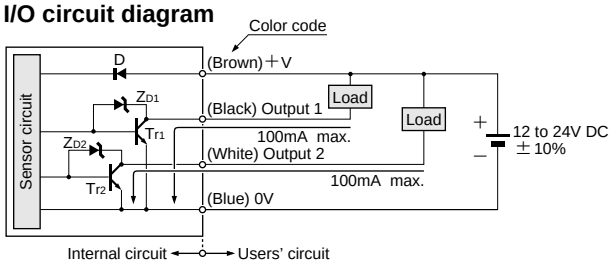
Item \ Type	NPN output					PNP output		
	Digital setting	Auto-setting		Manual setting		Digital setting	Auto-setting	Manual setting
	Red LED type	Red LED type	Green LED type	Red LED type	Green LED type	Red LED type		
Model No.	**UZF411**	**UZF421**	**UZF422**	**UZF431**	**UZF432**	**UZF4115**	**UZF4215**	**UZF4315**
Supply voltage	12 to 24V DC ±10% Ripple P-P 10% or less							
Current consumption	45mA or less	50mA or less		45mA or less		45mA or less	50mA or less	45mA or less
Sensing output (Note 1)	NPN open-collector transistor • Maximum sink current: 100mA • Applied voltage: 30V DC or less • Residual voltage: 1V or less (at 100mA sink current) 0.4V or less (at 16mA sink current)					PNP open-collector transistor • Maximum source current: 100mA • Applied voltage: 30V DC or less • Residual voltage: 1V or less (at 100mA source current) 0.4V or less (at 16mA source current)		
Output operation	Switchable, either Light-ON or Dark-ON, with jog switch			Switchable, either Light-ON or Dark-ON, with selection switch		Switchable, either Light-ON or Dark-ON, with jog switch		Switchable, either Light-ON or Dark-ON, with selection switch
Short-circuit protection	Incorporated							
Self-diagnosis output	———	NPN open-collector transistor • Maximum sink current: 50mA • Applied voltage: 30V DC or less • Residual voltage: 1V or less (at 50mA sink current) 0.4V or less (at 16mA sink current)				———	PNP open-collector transistor • Maximum source current: 50mA • Applied voltage: 30V DC or less • Residual voltage: 1V or less (at 50mA source current) 0.4V or less (at 16mA source current)	
Output operation	———	ON in unstable sensing condition				———	ON in unstable sensing condition	
Short-circuit protection	———							
Response time: Emission Frequency 1	0.5ms or less							
Response time: Emission Frequency 2	0.65ms or less							
Response time: Emission Frequency 3	0.75ms or less							
Sensitivity setting	2-level teaching/Limit teaching/ Full auto-teaching			Potentiometer setting		2-level teaching/Limit teaching/ Full auto-teaching		Potentiometer setting
Sensitivity adjuster	———			12-turn potentiometer with indicator		———		12-turn potentiometer with indicator
Timer function	Incorporated with ON-delay timer/OFF-delay timer, switchable, either effective or ineffective (Note 2)	Approx. 40ms fixed OFF-delay timer, switchable, either effective or ineffective				Incorporated with ON-delay timer/OFF-delay timer, switchable, either effective or ineffective (Note 2)	Approx. 40ms fixed OFF-delay timer, switchable, either effective or ineffective	
Interference prevention function	Incorporated (Three units of sensors can be mounted closely.)							
Environmental resistance: Ambient temperature	0 to +50°C +32 to +122°F Storage: −20 to +70°C −4 to +158°F	−10 to +50°C +14 to +122°F (No dew condensation or icing allowed), Storage: −20 to +70°C −4 to +158°F				0 to +50°C +32 to +122°F Storage: −20 to +70°C −4 to +158°F	−10 to +50°C +14 to +122°F (No dew condensation or icing allowed), Storage: −20 to +70°C −4 to +158°F	
Environmental resistance: Ambient humidity	35 to 85%RH, Storage: 35 to 85%RH							
Environmental resistance: Ambient illuminance (Extraneous light immunity)	Sunlight: 10,000ℓx at the light-receiving face, Incandescent light: 3,000ℓx at the light-receiving face							
Environmental resistance: EMC	Emission: EN50081-2, Immunity: EN50082-2							
Environmental resistance: Voltage withstandability	1,000V AC for one min. between all live terminals connected together and enclosure (Note 3)							
Environmental resistance: Insulation resistance	20MΩ, or more, with 250V DC megger between all live terminals connected together and enclosure (Note 3)							
Environmental resistance: Vibration withstandability	10 to 150Hz frequency, 0.75mm amplitude in X, Y, and Z directions for two hours each (unenergized)							
Environmental resistance: Shock withstandability	98m/s² acceleration (10G approx.) in X, Y, and Z directions for five times each (unenergized)							
Emitting element	Red LED (modulated)		Green LED (modulated)	Red LED (modulated)	Green LED (modulated)	Red LED (modulated)		
Material	Enclosure: Heat-resistant ABS, Case cover: Polycarbonate							
Cable	0.2mm² 4 core cabtyre cable 2m 6.652ft. long							
Cable extension	Extension up to total 100m possible with 0.3mm² (or above) cable							
Weight	70g 2.47oz approx.							
Accessories	**UZF811** (Amplifier mounting bracket): 1 No. Adjusting screw-driver (Manual setting type only): 1 No.							

(*1) The digital setting fiber sensor **UZF41** series is equipped with two independent outputs (Output 1, Output 2).
(*2) The timer period of ON-delay timer and OFF-delay timer can be selected from 40ms, 100ms, 200ms and 500ms. Also, independent settings can be made for Output 1 and Output 2.
(*3) The voltage withstandability and the insulation resistance values given in the above table are for the amplifier only.

I/O CIRCUIT AND WIRING DIAGRAM

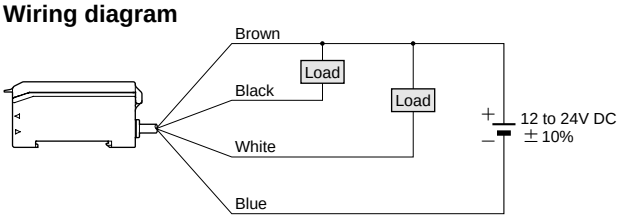
UZF411□ NPN output

I/O circuit diagram

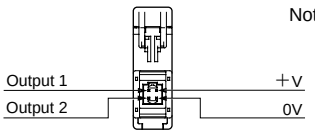


Symbol ... D: Reverse polarity protection diode
Z_{D1}, Z_{D2}: Surge absorption zener diode
Tr_1, Tr_2: NPN output transistor

Wiring diagram



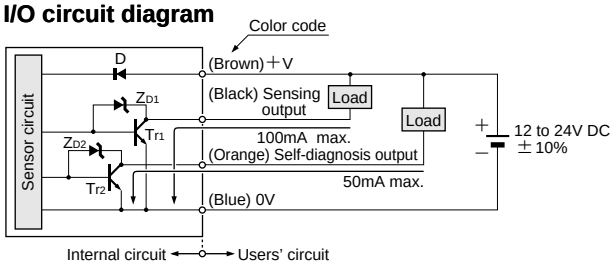
Pin position for connector type (Note)



Note: In case the optional connector attached cable **UZF85**□ is connected to the connector type sensor, the color of Output 2 wire is orange.

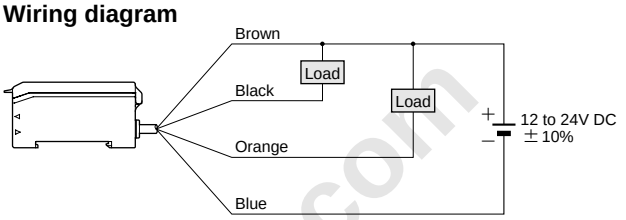
UZF421□ UZF431□ NPN output

I/O circuit diagram

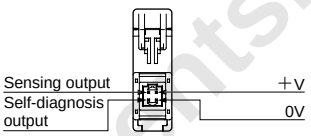


Symbol ... D: Reverse polarity protection diode
Z_{D1}, Z_{D2}: Surge absorption zener diode
Tr_1, Tr_2: NPN output transistor

Wiring diagram

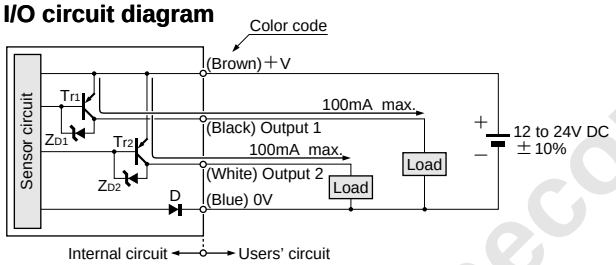


Pin position for connector type



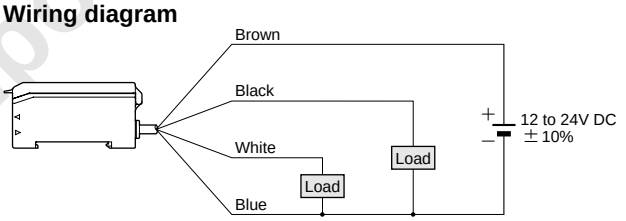
UZF4115□ PNP output

I/O circuit diagram

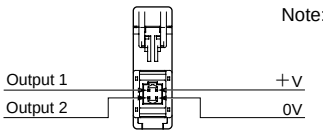


Symbol ... D: Reverse polarity protection diode
Z_{D1}, Z_{D2}: Surge absorption zener diode
Tr_1, Tr_2: PNP output transistor

Wiring diagram



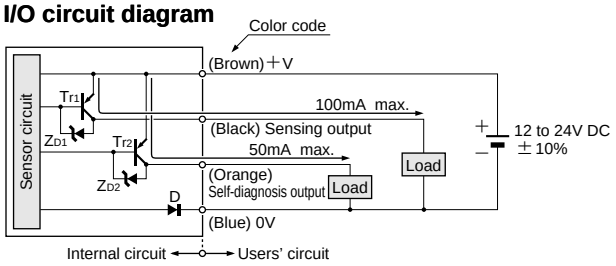
Pin position for connector type (Note)



Note: In case the optional connector attached cable **UZF85**□ is connected to the connector type sensor, the color of Output 2 wire is orange.

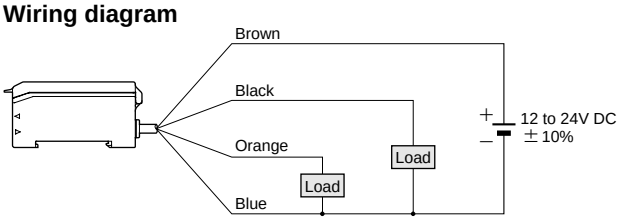
UZF4215□ UZF4315□ PNP output

I/O circuit diagram

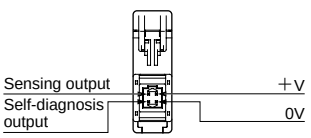


Symbol ... D: Reverse polarity protection diode
Z_{D1}, Z_{D2}: Surge absorption zener diode
Tr_1, Tr_2: PNP output transistor

Wiring diagram

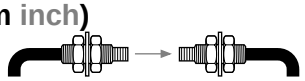


Pin position for connector type

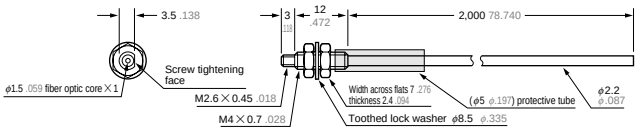


DIMENSIONS (Unit : mm inch)

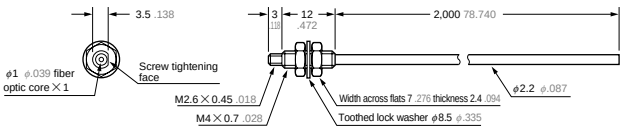
Thru-beam fiber optic cable



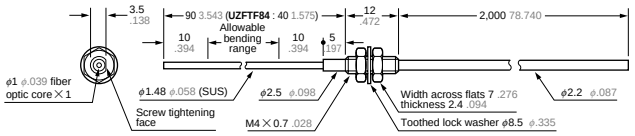
UZFTB8 — Freely cuttable



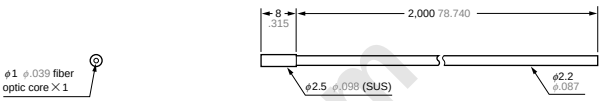
UZFTF8 — Freely cuttable



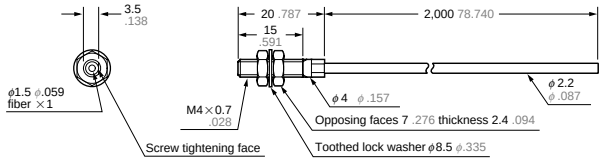
UZFTF89 UZFTF84 — Freely cuttable



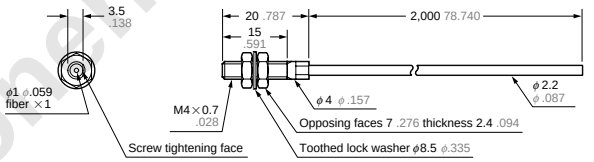
UZFTS8 — Freely cuttable



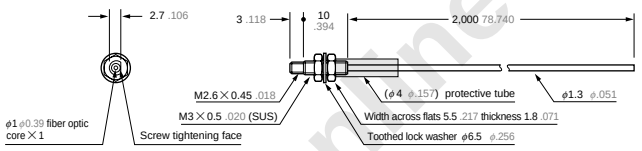
UZFTNB8 — Freely cuttable



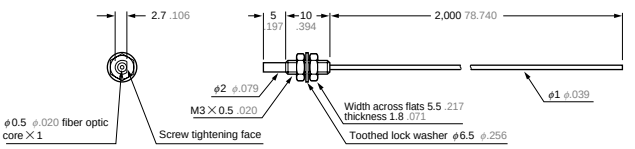
UZFTN8 — Freely cuttable



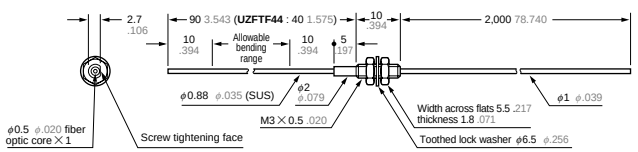
UZFTT8 — Freely cuttable — With attachment



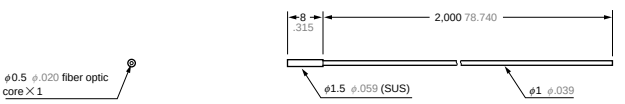
UZFTF4 — Freely cuttable — With attachment



UZFTF49 UZFTF44 — Freely cuttable — With attachment



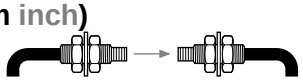
UZFTS4 — Freely cuttable — With attachment



(SUS) : Stainless Steel

DIMENSIONS (Unit : mm inch)

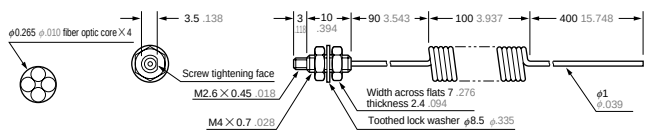
Thru-beam fiber optic cable



UZFTC4

With attachment

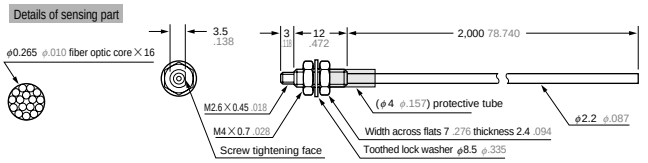
Details of sensing part



UZFTP8

Freely cuttable

Details of sensing part

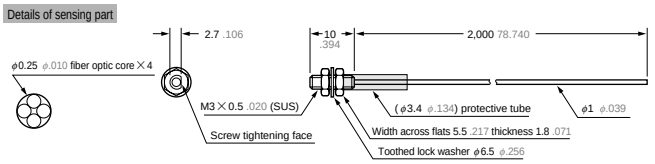


UZFTP4

Freely cuttable

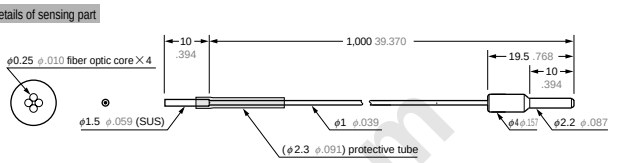
With attachment

Details of sensing part



UZFTP2

Details of sensing part



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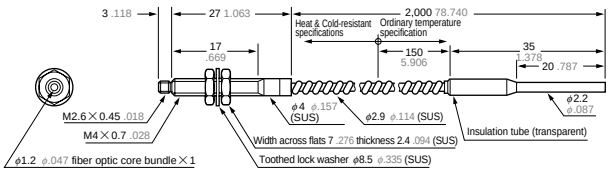

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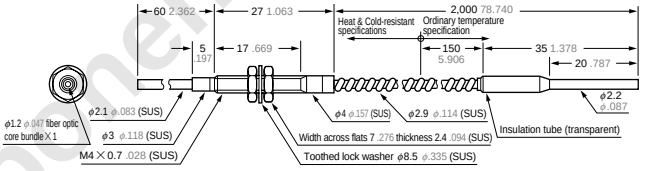

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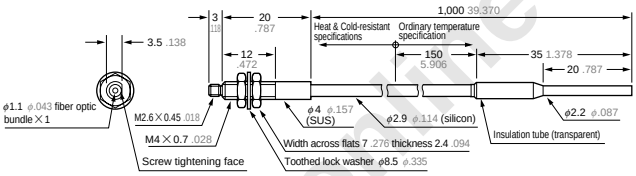
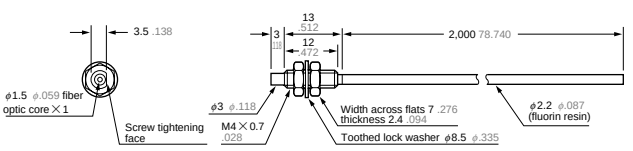
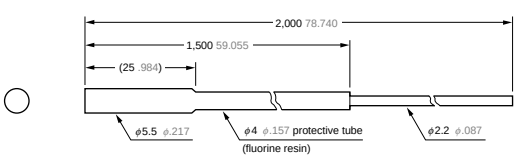


UZFTH8

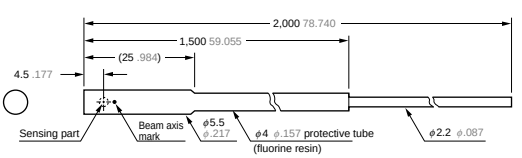
Freely cuttable



UZFTL8Y



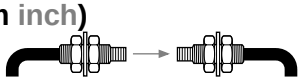
UZFTV8Y



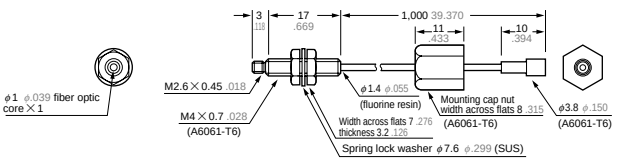
(SUS) : Stainless Steel

DIMENSIONS (Unit : mm inch)

Thru-beam fiber optic cable



UZFT6V



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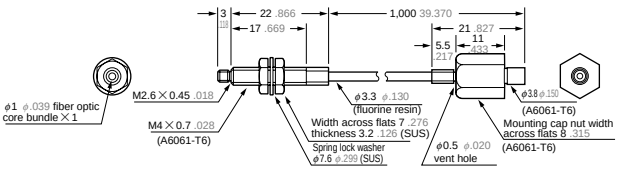
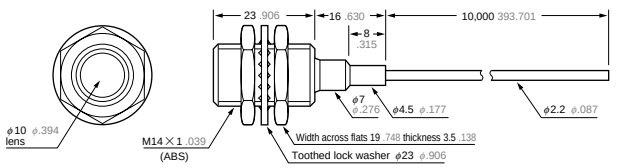


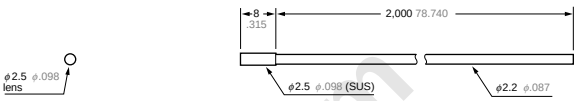
UZFTL9

Freely cuttable



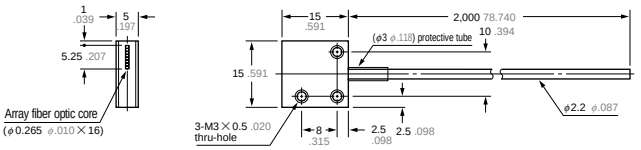
UZFTL8

Freely cuttable



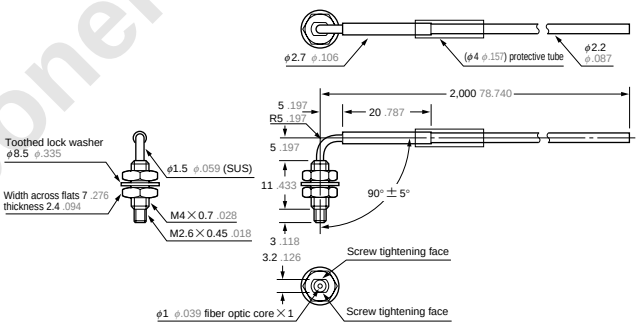
UZFTA8

Freely cuttable



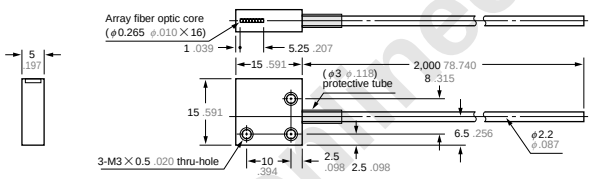
UZFTR8

Freely cuttable

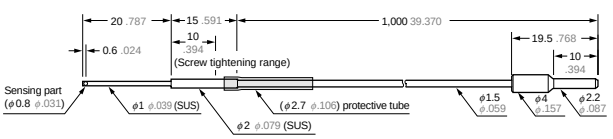


UZFTA8E

Freely cuttable



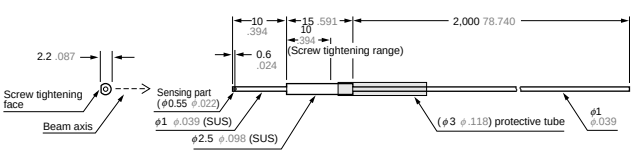
UZFTV22



UZFTV41

Freely cuttable

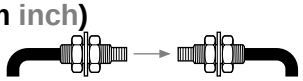
With attachment



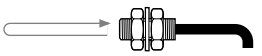
(SUS) : Stainless Steel

DIMENSIONS (Unit : mm inch)

Thru-beam fiber optic cable

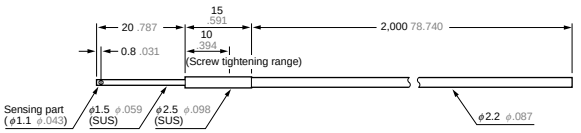


Reflective fiber optic cable

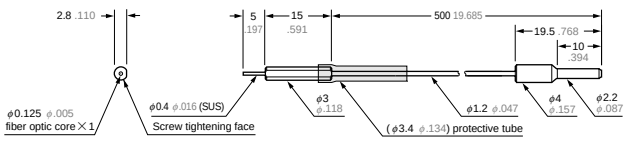


UZFTV82

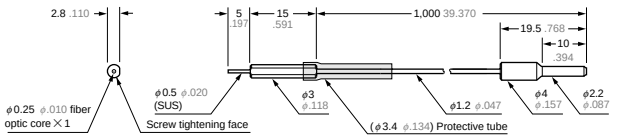
Freely cuttable



UZFTE1



UZFTE2



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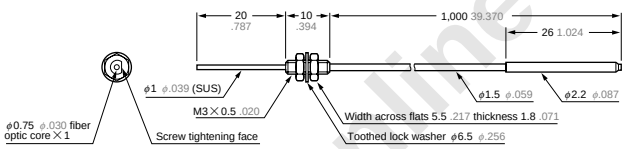
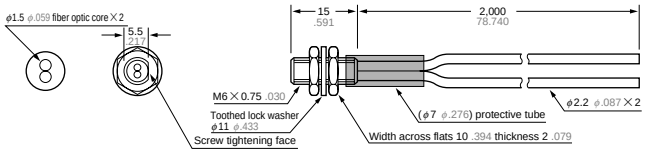


UZFR8B

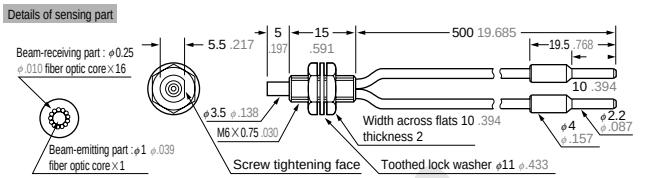
Freely cuttable

Details of sensing part



UZFRF5

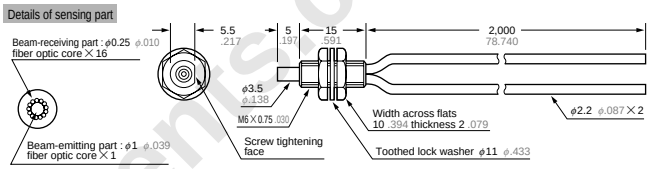
Details of sensing part



UZFRF8

Freely cuttable

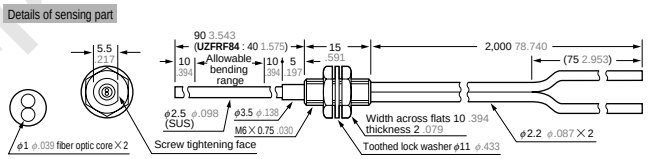
Details of sensing part



UZFRF89
UZFRF84

Freely cuttable

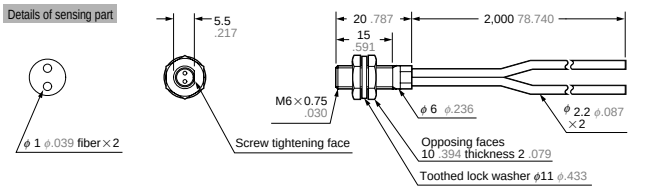
Details of sensing part



UZFRN8

Freely cuttable

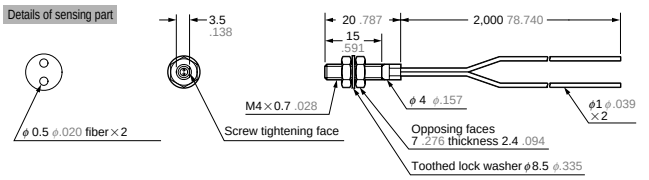
Details of sensing part



UZFRN4

Freely cuttable With attachment

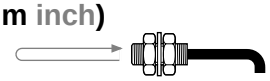
Details of sensing part



(SUS) : Stainless Steel

DIMENSIONS (Unit : mm inch)

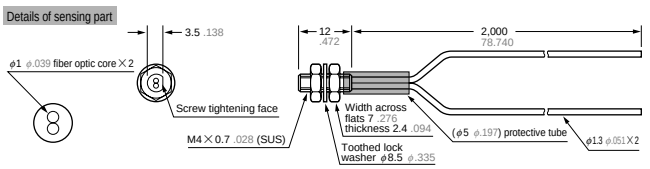
Reflective fiber optic cable



UZFRT8

Freely cuttable

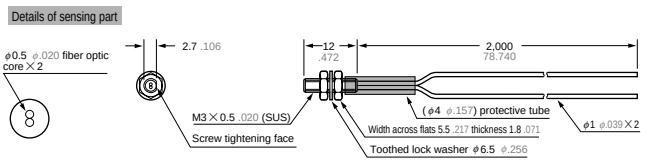
With attachment



UZFRT4

Freely cuttable

With attachment



UZFRS8

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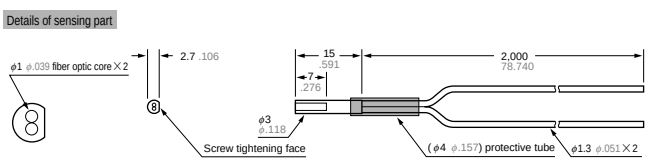
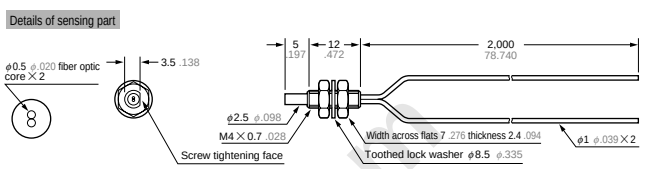
With attachment



UZFRF4

Freely cuttable

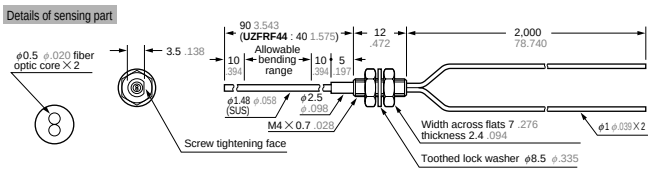
With attachment



UZFRF49
UZFRF44

Freely cuttable

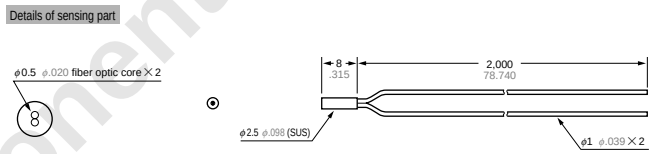
With attachment



UZFRS4

Freely cuttable

With attachment



UZFRP8

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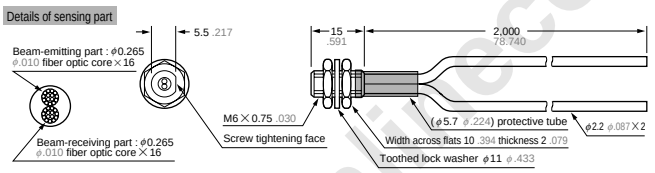
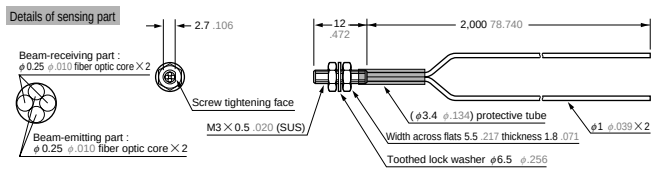


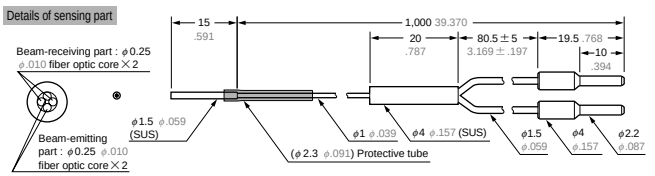
UZFRP4

Freely cuttable

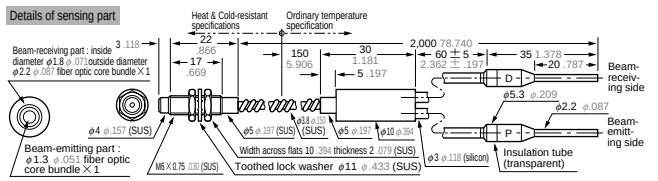
With attachment



UZFRP2



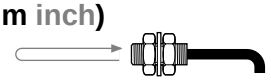
UZFRH7



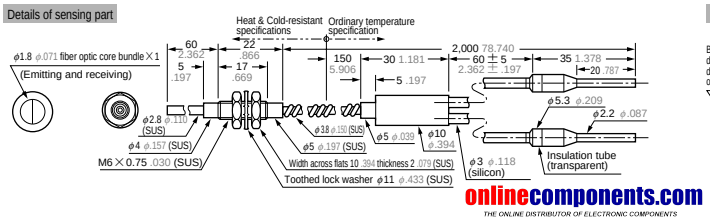
(SUS) : Stainless Steel

DIMENSIONS (Unit : mm inch)

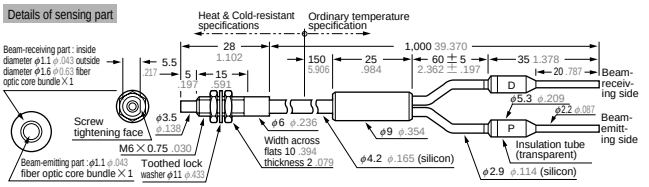
Reflective fiber optic cable



UZFRH76

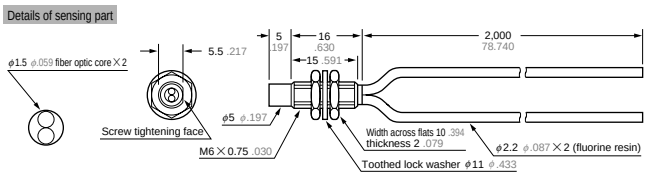


UZFRH6

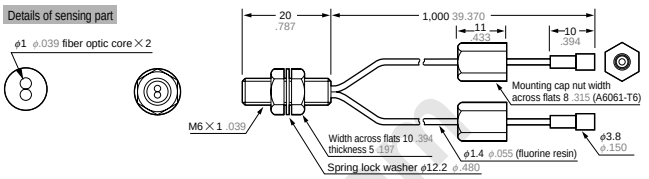


UZFRH8

Freely cuttable

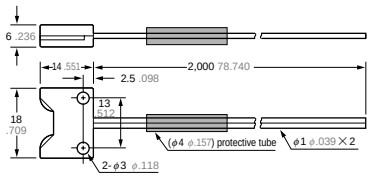


UZFR6V



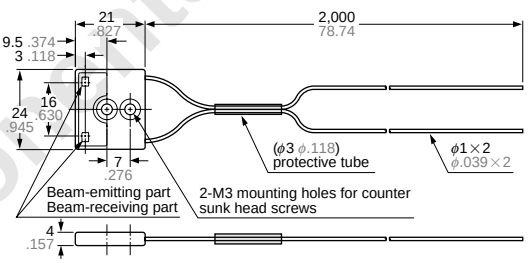
UZFRL4

Freely cuttable With attachment



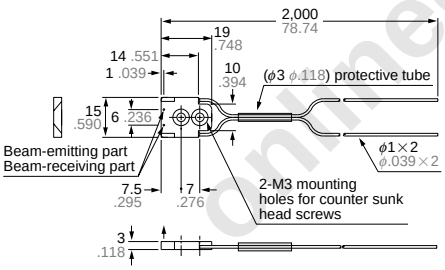
UZFRL41

Free-cut With attachment



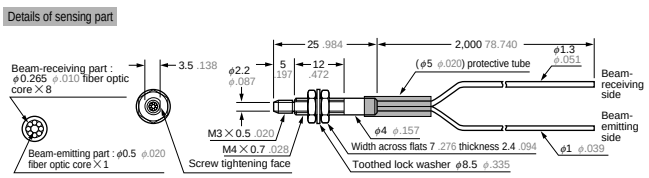
UZFRL42

Free-cut With attachment

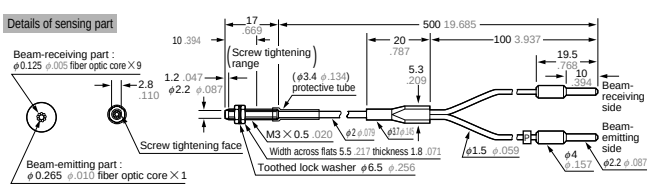


UZFRG4

Freely cuttable With attachment

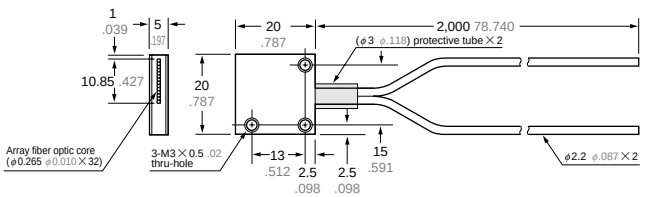


UZFREG1



UZFRA8

Freely cuttable

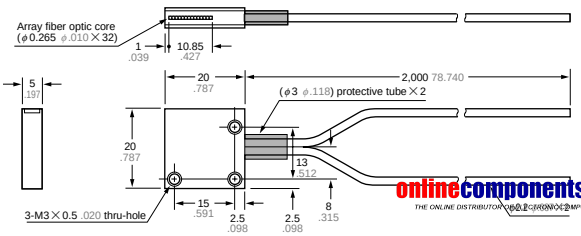


(SUS) : Stainless Steel

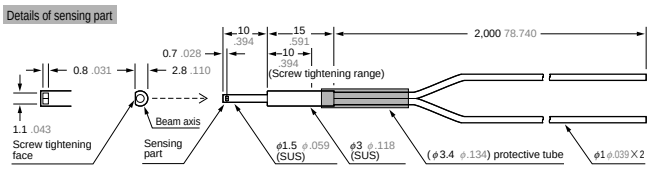
DIMENSIONS (Unit : mm inch)

Reflective fiber optic cable

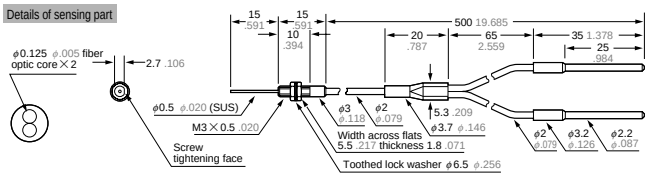
UZFRA8E — Freely cuttable



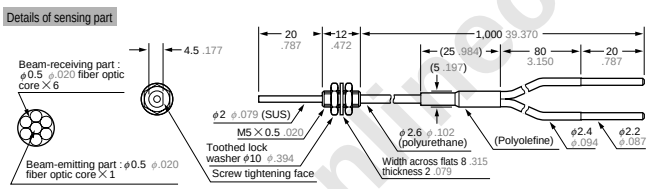
UZFRV41 — Freely cuttable — With attachment



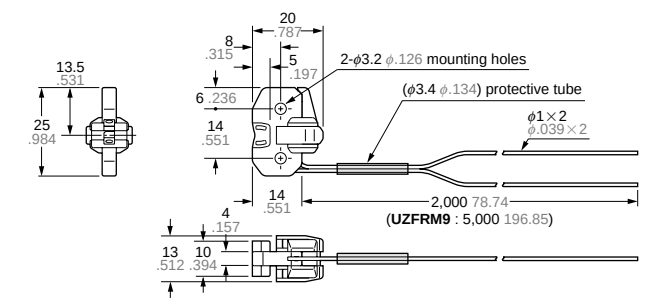
UZFRE11



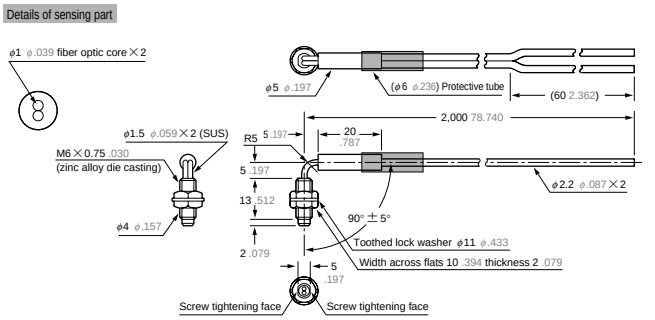
UZFRK22



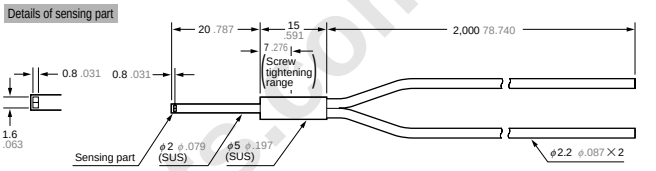
UZFRM4 UZFRM9 — Free-cut — With attachment



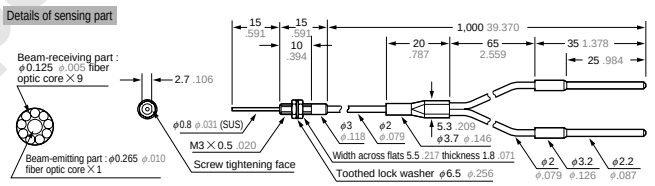
UZFRR8 — Freely cuttable



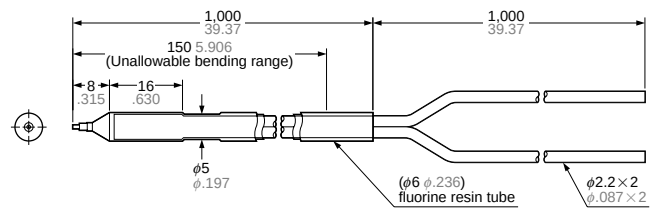
UZFRV82 — Freely cuttable



UZFRE21



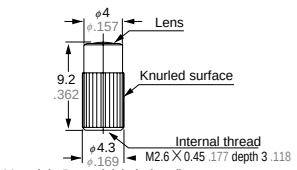
UZFRM8Y — Free-cut



(SUS) : Stainless Steel

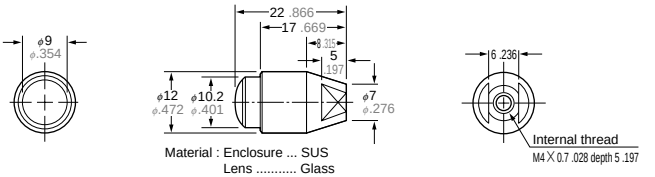
DIMENSIONS (Unit : mm inch)

UZFXLE1 Long sensing range lens (option)



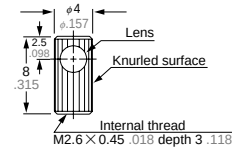
Material : Brass (nickel-plated)
Lens ... Glass

UZFXLE2 Ultra-long sensing range lens (option)



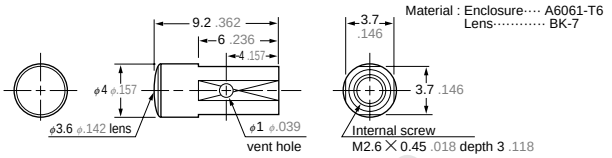
Material : Enclosure ... SUS
Lens ..... Glass

UZFXSV1 Side-view lens (option)



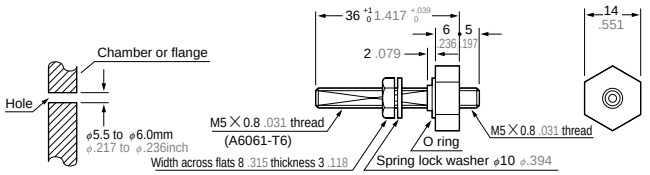
Material : Brass (nickel-plated)
Lens ... Glass

UZFVLE1 Long sensing range lens (for vacuum-resistant fiber optic cable)

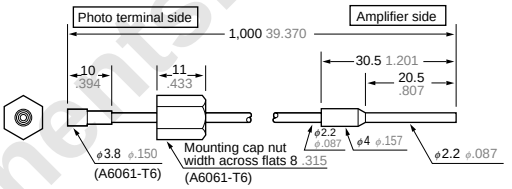


Material : Enclosure···· A6061-T6
Lens····· BK-7

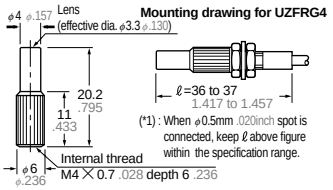
UZFVBR1 Photo terminal (for vacuum-resistant fiber optic cable)



UZFTJ6 Fiber optic cable at atmospheric side (for vacuum-resistant fiber optic cable)

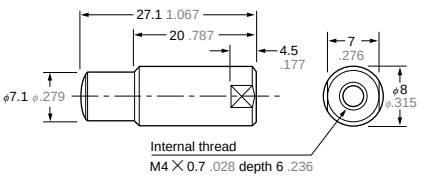


UZFXMR1 Pinpoint spot lens (option)



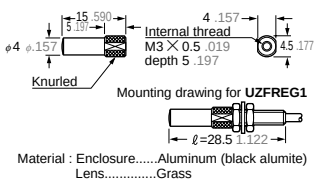
Material : Enclosure.....Aluminum (black alumite)
Lens.....Glass

UZFXMR2 Zoom lens (option)



Material : Enclosure...Aluminum (black alumite)
Lens.....Grass

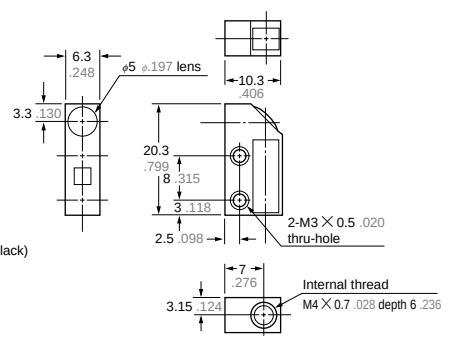
UZFXMR3 Ultra-small pinpoint spot lens (option)



Material : Enclosure.....Aluminum (black alumite)
Lens.....Grass

(*1) : When ϕ0.3mm .012inch spot is connected, keep ℓ above figure to 28.5mm 1.122inch.
(*2) : When inserting a fiber optic cable, put it in until the cable end.

UZFXMR5 Zoom lens (option)



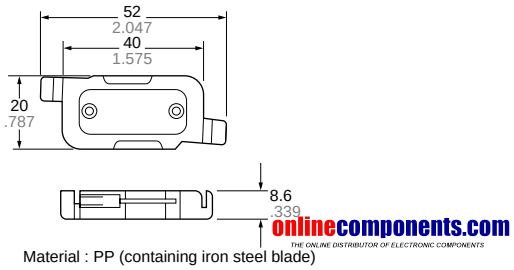
Material : Enclosure...PBT (black)
Lens.....Grass

Supplied with exclusive nut

(SUS) : Stainless Steel

DIMENSIONS (Unit : mm inch)

UZFXB1 Fiber bender (Option)

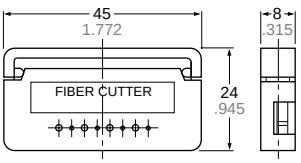


Material : PP (containing iron steel blade)

UZFXCT1 Fiber cutter

(Accessory for every free-cut fiber or coiled fiber)

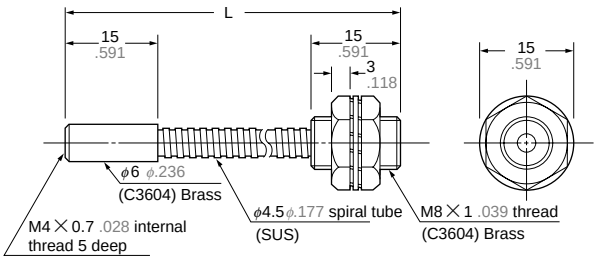
Accessory with free-cut fiber (except economy type), flexible coiled fiber, chemical-resistant fiber, **UZFRL41**, **UZFRL42** or liquid level detection fiber



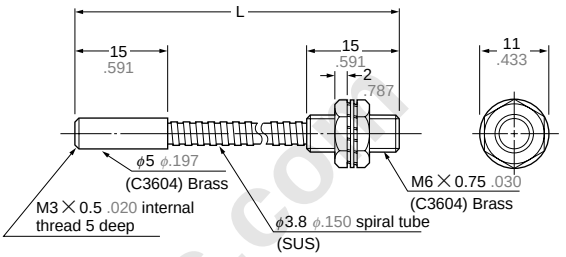
Material : ABS

UZF83□, UZF84□ Protective tube (Option)

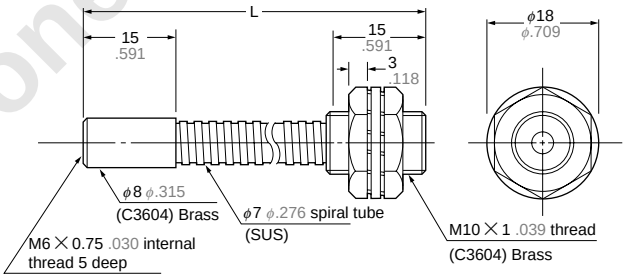
UZF831, UZF832, UZF833
UZF844, UZF845, UZF846



UZF834, UZF835, UZF836



UZF841, UZF842, UZF843



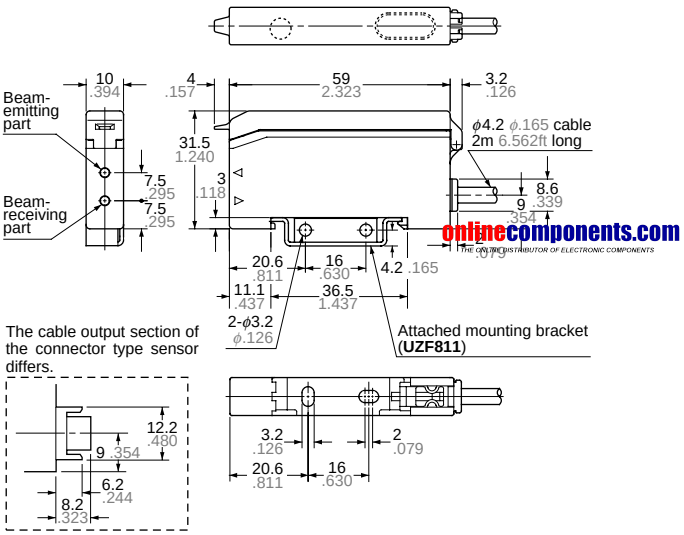
Model No.	Length L (mm inch)
UZF831, UZF834, UZF844, UZF841	500 $^{+10}_{0}$ 19.685 $^{+.394}_{0}$
UZF832, UZF835, UZF845, UZF842	1,000 $^{+10}_{0}$ 39.37 $^{+.394}_{0}$
UZF833, UZF836, UZF846, UZF843	1,500 $^{+10}_{0}$ 59.055 $^{+.394}_{0}$

(SUS) : Stainless Steel

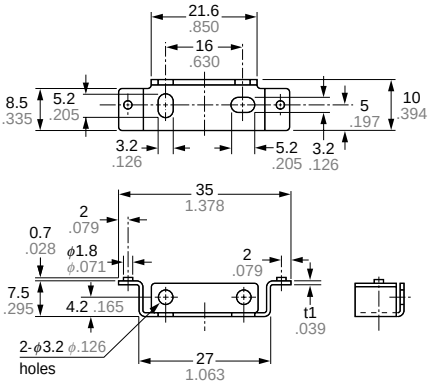
DIMENSIONS (Unit : mm inch)

UZF41□ UZF42□ UZF43□ Amplifier

Assembled dimensions with attached mounting bracket

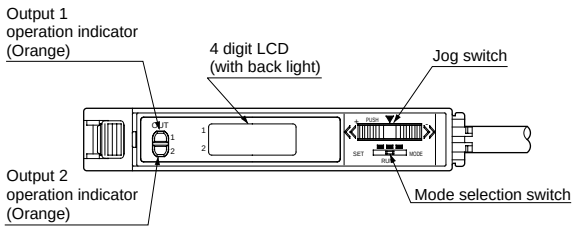


UZF811 Amplifier mounting bracket (Accessory for amplifier)

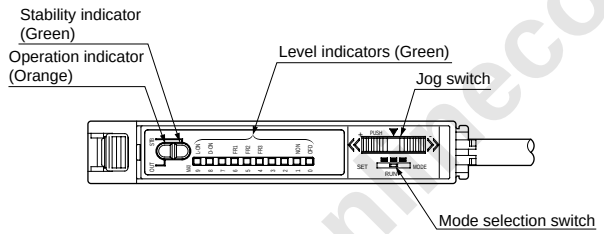


Display part

UZF41□



UZF42□



UZF43□