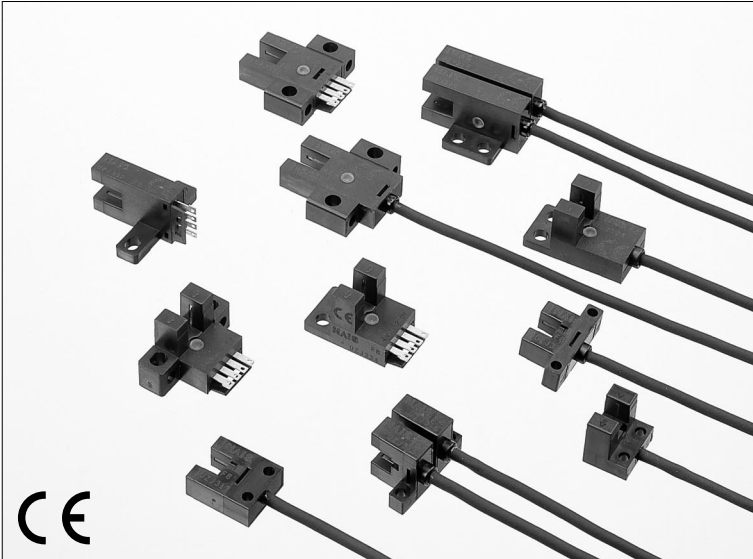


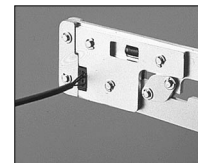
INDUSTRY'S SMALLEST SIZE ENABLES SPACE SAVING AND QUICK INSTALLATION!



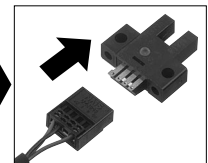
Quick Fitting Hook-up Connector

Easy to maintain connector type models are available. Its exclusive connector is the industry's first hook-up connector.

Since only crimping with exclusive pliers is to be done, cumbersome soldering or insulation is absolutely not required.



Crimp the connector on the cable.



Quick connection to the sensor.

Wide Model Variation

A wide variation of 17 shapes and 29 types is available. You may select from this wide range to suit the mounting conditions.

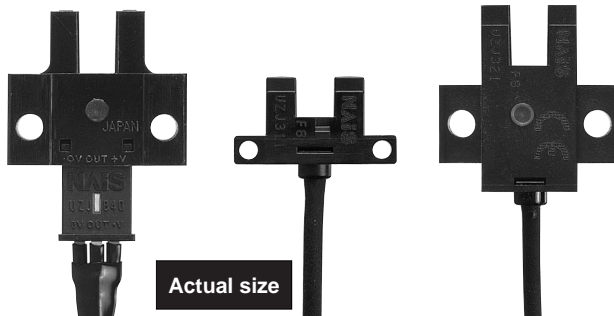
Industry's Smallest

Ultra-small type **UZJ31** achieves industry's smallest size. It contributes to the miniaturization of your equipment.

Conventional product

Ultra-small type **UZJ311**

Small cable type **UZJ321**

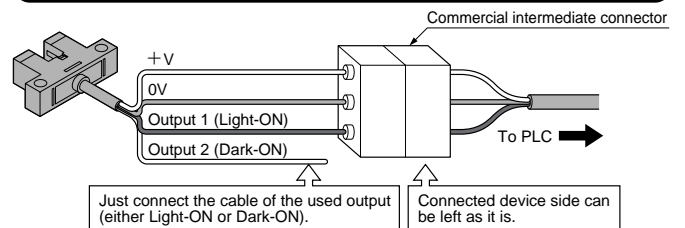


Even the small cable type has become very compact.

Equipped with Two Independent Outputs

All models are equipped with two independent outputs¹ Light-ON and Dark-ON. Hence, one model suffices even if the output is to be used differently depending upon the location of use. Also, since two independent outputs have been provided, cumbersome handling of the output conversion control input or fear of logic inversion due to a cable break is eliminated. The sensor can be connected to the existing wiring as it is.

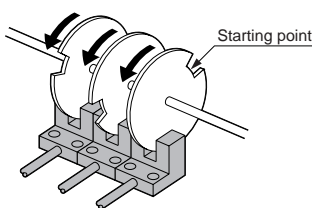
Example of connection with a commercial intermediate connector



APPLICATIONS

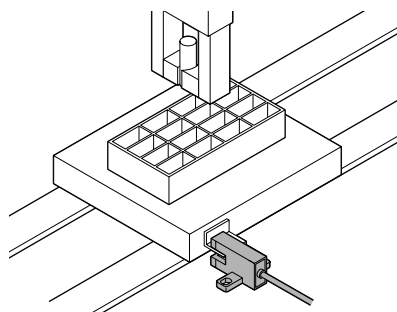
Sensing the starting point on a rotating body

The starting point can be sensed by making a slit in the rotating body.



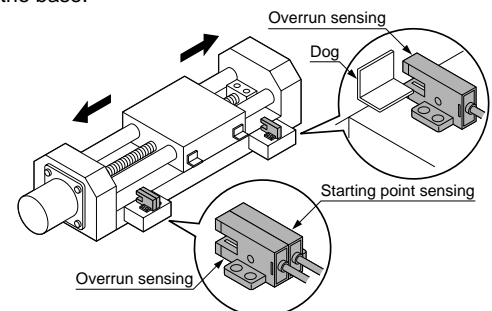
Determining the pallet position

Pallet is stopped by sensing the dog.

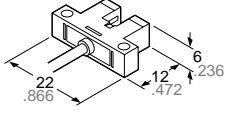
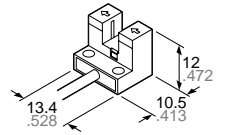
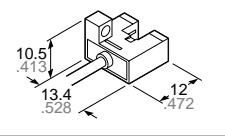
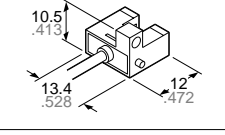
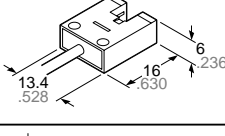
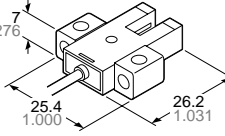
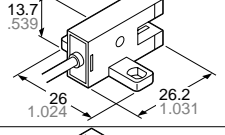
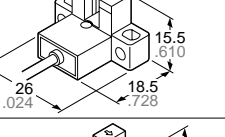
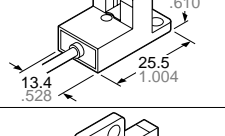
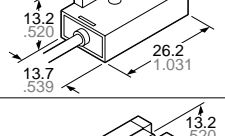
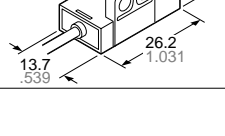


Sensing the starting point and overrun of a moving body

Starting point and overrun is sensed using the dog on the base.



ORDER GUIDE

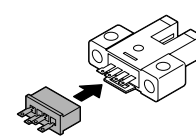
Type	Appearance (mm inch)	Sensing range	Model No.	Output	Output operation
Ultra-small type	K type 	5mm (Fixed)	UZJ311	NPN open-collector transistor	Incorporated with 2 outputs: Light-ON/Dark-ON
	L type 		UZJ313		
	F type 		UZJ315		
	R type 		UZJ316		
	U type 		UZJ317		
Small type with cable	K type 	5mm (Fixed)	UZJ321	NPN open-collector transistor	Incorporated with 2 outputs: Light-ON/Dark-ON
	T type 		UZJ3215	PNP open-collector transistor	
			UZJ322	NPN open-collector transistor	
	L type 		UZJ3225	PNP open-collector transistor	
			UZJ323	NPN open-collector transistor	
	Y type 		UZJ3235	PNP open-collector transistor	
			UZJ324	NPN open-collector transistor	
	F type 		UZJ3245	PNP open-collector transistor	
			UZJ325	NPN open-collector transistor	
	R type 		UZJ3255	PNP open-collector transistor	
UZJ326		NPN open-collector transistor			
			UZJ3265	PNP open-collector transistor	

Type	Appearance (mm inch)	Sensing range	Model No.	Output	Output operation
Small type with connector		5mm (Fixed)	UZJ331	NPN open-collector transistor	Incorporated with 2 outputs: Light-ON/Dark-ON
			UZJ3315	PNP open-collector transistor	
			UZJ332	NPN open-collector transistor	
			UZJ3325	PNP open-collector transistor	
			UZJ333	NPN open-collector transistor	
			UZJ3335	PNP open-collector transistor	
			UZJ334	NPN open-collector transistor	
			UZJ3345	PNP open-collector transistor	
			UZJ335	NPN open-collector transistor	
			UZJ3355	PNP open-collector transistor	
			UZJ336	NPN open-collector transistor	
			UZJ3365	PNP open-collector transistor	

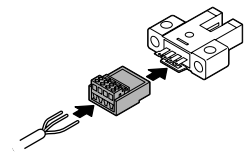
OPTION

Designation	Model No.	Description
Connector	UZJ844	Connector for soldering
Hook-up connector	UZJ845	This connector can be crimped on 0.08mm ² to 0.2mm ² cable simply in one grip. Wire diameter: ϕ 0.7 to ϕ 1.2mm
Hook-up pliers	UZJ85	These are exclusive pliers for crimping hook-up connector UZJ845 .

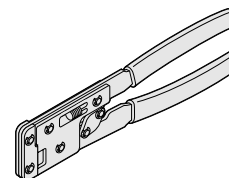
Connector



Hook-up connector



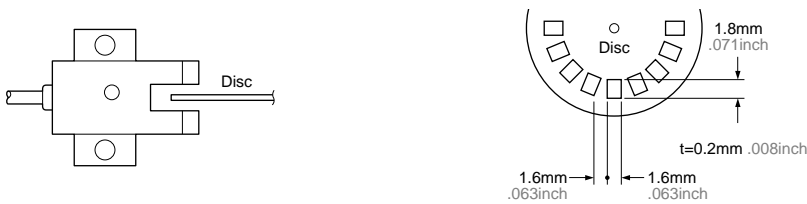
Hook-up pliers



SPECIFICATIONS

Item	Type		Ultra-small type	Small type	
	Model No.			With cable	With connector
		NPN output type		UZJ31 □	UZJ32 □
	PNP output type		—————	UZJ32 □5	UZJ33 □5
Sensing range			5mm .197inch (Fixed)		
Min. sensing object			0.8×1.8mm .031×.071inch opaque object		
Hysteresis			0.05mm .002inch or less		
Repeatability			0.03mm .001inch or less		
Supply voltage			5 to 24V DC ± 10% Ripple P-P 10% or less		
Current consumption			15mA or less		
Output			<NPN type> NPN open-collector transistor • Maximum sink current: 50mA • Applied voltage: 30V DC or less • Residual voltage: 0.7V or less (at 50mA sink current) 0.4V or less (at 16mA sink current)		
Output operation			<PNP type> PNP open-collector transistor • Maximum source current: 50mA • Applied voltage: 30V DC or less • Residual voltage: 0.7V or less (at 50mA source current) 0.4V or less (at 16mA source current)		
Response time			Under the Light condition: 20µs or less Under the Dark condition: 100µs or less (Response frequency: 1kHz or more)(Note 1)		
Operation indicator			Orange LED (lights up under the Light condition)		
Environmental resistance	Ambient temperature (Note 2)		- 25 to +55°C - 13 to +131°F (No dew condensation or icing allowed), Storage: - 30 to +80°C - 22 to +176°F		
	Ambient humidity		35 to 85%RH, Storage: 35 to 85%RH		
	Ambient illuminance (Extraneous light immunity)		Fluorescent light: 1,000 lx at the light-receiving face		
	EMC		Emission: EN50081-2, Immunity: EN50082-2		
	Voltage withstandability		1,000V AC for one min. between all terminals connected together and enclosure		
	Insulation resistance		50MΩ or more with 250V DC megger between all terminals connected together and enclosure		
	Vibration-proof		Frequency 10 to 2,000Hz, amplitude 1.5mm .059inch in X, Y and Z directions for 2 hours each (unenergized)		
	Shock-proof		Acceleration 15,000m/s ² (1,500G approx.) in X, Y, and Z directions 3 times each (unenergized)		
Emitting element			Infrared LED (non-modulated)		
Material			Enclosure: PBT, Slit cover: Polycarbonate, Terminal part [UZJ33 □(5) only]: Solder plated		
Cable			0.09mm ² 4 core cabtyre cable 1m 3.281ft. long		—————
Cable extension			Maximum extension is 100m 328.08ft. overall with a 0.3mm ² or more cable		
Weight			10g .35oz approx.	15g .53oz approx.	3g .11oz approx.

Notes: 1) The response frequency is the value when the disc, given in the figure below, is rotated.

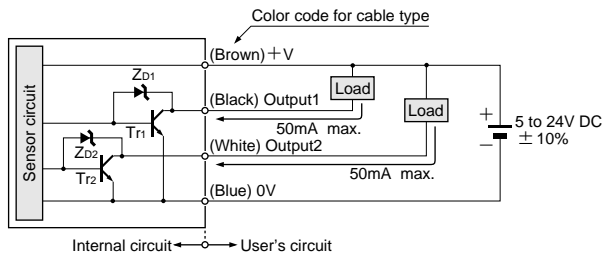


2) In case ultra-small type **UZJ31**□ is used at an ambient temperature of 50°C, or more, make sure to mount it on a metal body.

I/O CIRCUIT AND WIRING DIAGRAMS

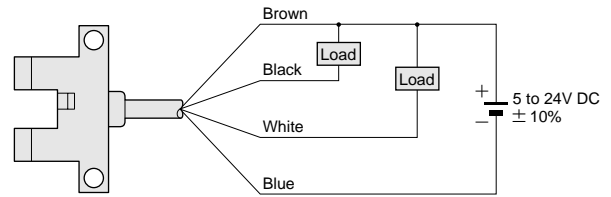
UZJ31□, UZJ32□
UZJ33□ NPN output type

I/O circuit diagram



Symbol . . . ZD1, ZD2: Surge absorption zener diode
Tr1, Tr2 : NPN output transistor

Wiring diagram

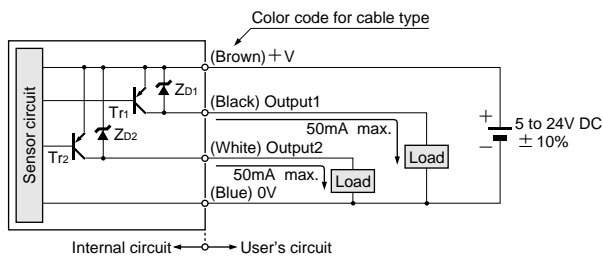


Output operation

	Color code	Output operation
Output 1	Black	Light-ON
Output 2	White	Dark-ON

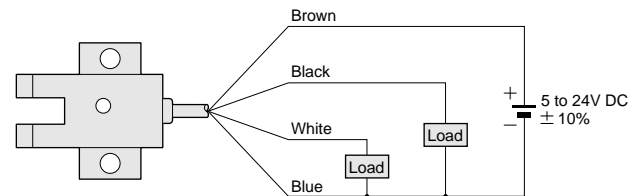
UZJ32□5
UZJ33□5 PNP output type

I/O circuit diagram



Symbol . . . ZD1, ZD2: Surge absorption zener diode
Tr1, Tr2 : PNP output transistor

Wiring diagram



Output operation

	Color code	Output operation
Output 1	Black	Light-ON
Output 2	White	Dark-ON

PRECAUTIONS FOR PROPER USE

All models

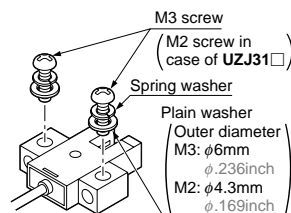


These products are **not** safety sensors and are **not** designed or intended to be used to protect life and prevent bodily injury or property damage.

Mounting

- If the sensor is fixed with screws, use M3 screws (M2 screws in case of UZJ31□) and the tightening torque should not exceed the values given below. Further, use small, round type plain washers. (M3: $\phi 6\text{mm}$ $\phi.236\text{inch}$, M2: $\phi 4.3\text{mm}$ $\phi.169\text{inch}$)

Model No.	Tightening torque
UZJ31□	0.15Nzm {1.5kgfzcm}
UZJ32□(5)	0.5Nzm {5.1kgfzcm}
UZJ33□(5)	

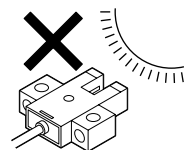


Wiring

- Please carry out the wiring carefully since protection circuits against reverse power supply connection and output short-circuit are not incorporated.
- Make sure to carry out wiring in the power supply off condition.
- When using a commercial switching regulator, ground the F.G. terminal.
- When some device generating noise, such as, a switching regulator or an inverter motor, is placed near the sensor, ground the F.G. terminal.
- Do not run the sensor cable along any high-voltage or power cable or put them in the same raceway. It may cause malfunction due to induction.

Others

- Since the sensor is intended for use inside machines, no special countermeasures have been taken against extraneous light. Take care that extraneous light is not directly incident on the beam receiving section.
- Do not use the sensor in the transient time duration of 50ms after power-up.
- Avoid dust, dirt, and steam. Do not place it in an area where it may come in direct contact with water or oil.



PRECAUTIONS FOR PROPER USE

UZJ33□
UZJ33□5

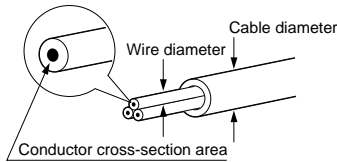
Crimping of hook-up connector UZJ845

- The cable to be connected should have the following specifications:

Conductor cross-section area: 0.08 to 0.2mm²
(AWG28 to AWG24)

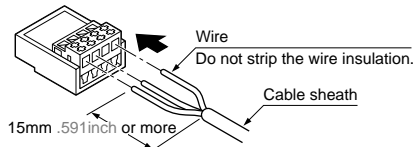
Wire diameter: $\phi 0.7$ to $\phi 1.2$ mm $\phi .028$ to $\phi .047$ inch

Wire insulation material: vinyl chloride or soft polyethylene

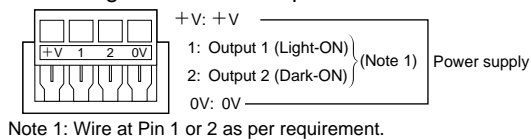


Crimping method

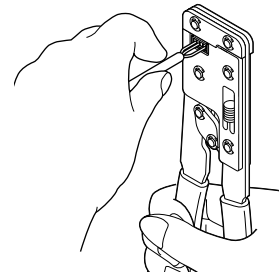
- Strip the cable sheath 15mm .591inch, or more, and insert the wires into the connector insertion holes till the wire tips reach the end.



Pin arrangement of hook-up connector



- Crimp with the exclusive pliers **UZJ85**.

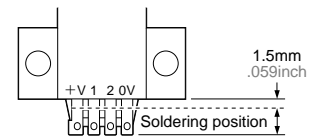


Caution: Make sure to use the exclusive crimping pliers **UZJ85**.
Commercially available pliers cannot be used.

Soldering

- If soldering is done directly on the terminals, strictly adhere to the conditions given below.

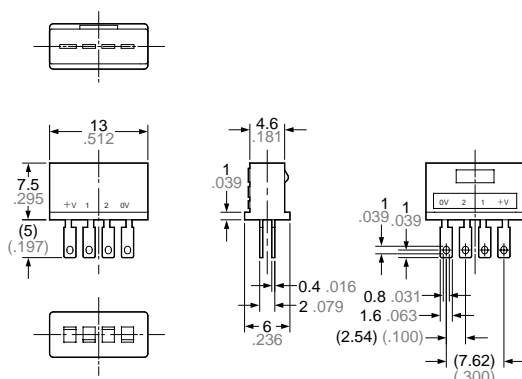
Item	Model No.	UZJ33□(5)
Soldering temperature		260°C 500°F or less
Soldering time		3 sec. or less
Soldering position		Refer to the right figure



DIMENSIONS (Unit: mm inch)

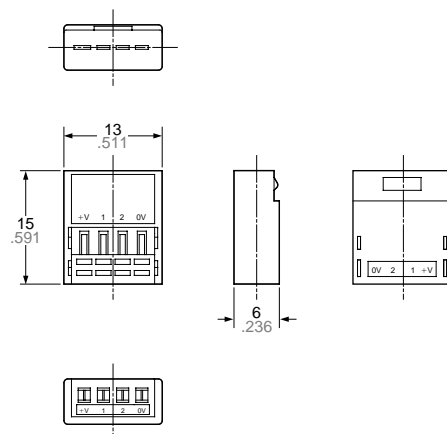
UZJ844

Connector (Optional)



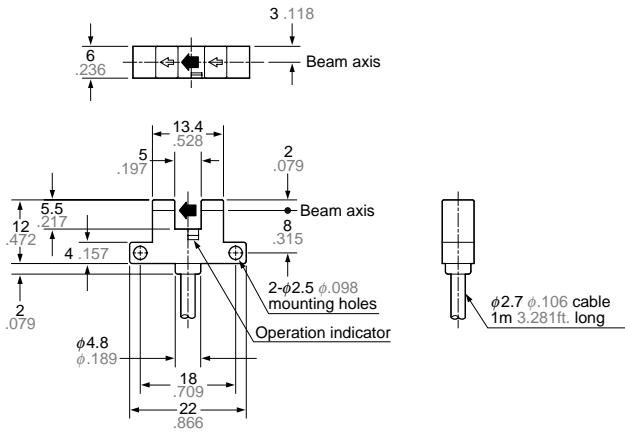
UZJ845

Hook-up connector (Optional)

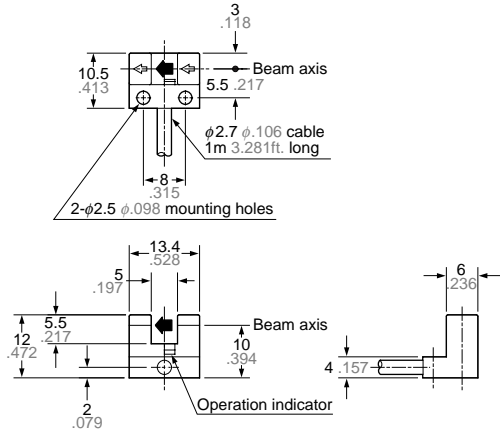


DIMENSIONS (Unit: mm inch)

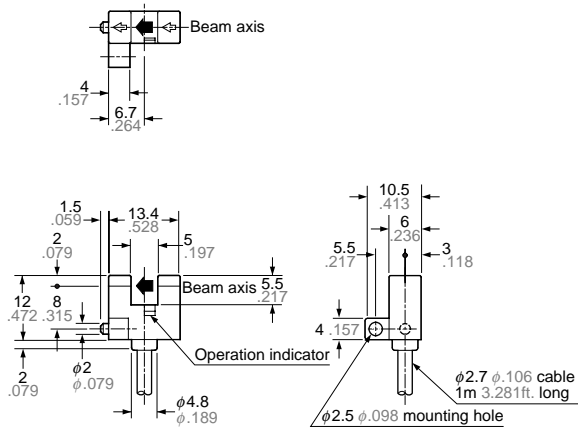
UZJ311 Sensor



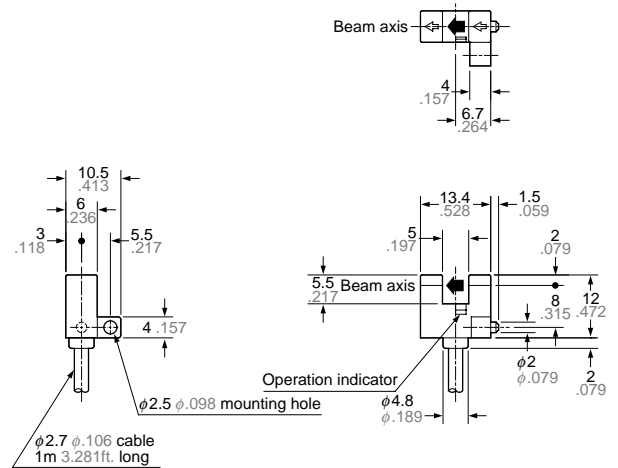
UZJ313 Sensor



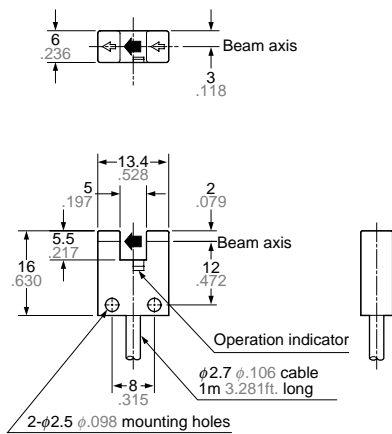
UZJ315 Sensor



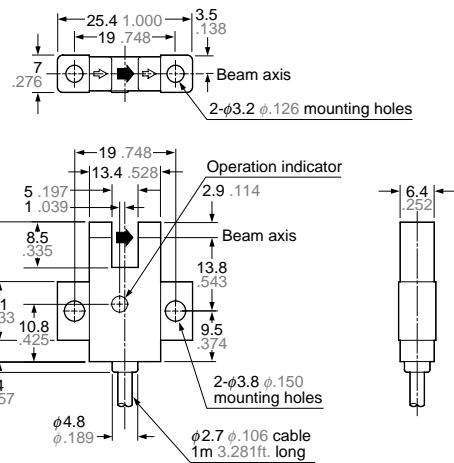
UZJ316 Sensor



UZJ317 Sensor

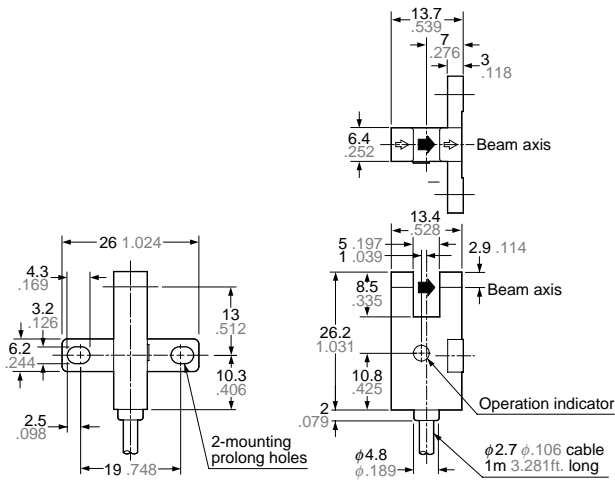


UZJ321
UZJ3215 Sensor

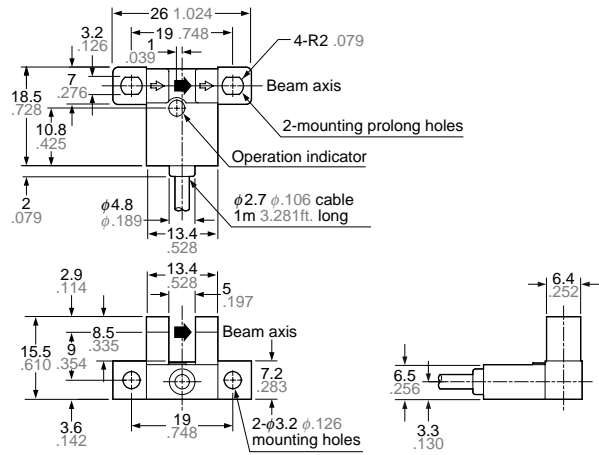


DIMENSIONS (Unit: mm inch)

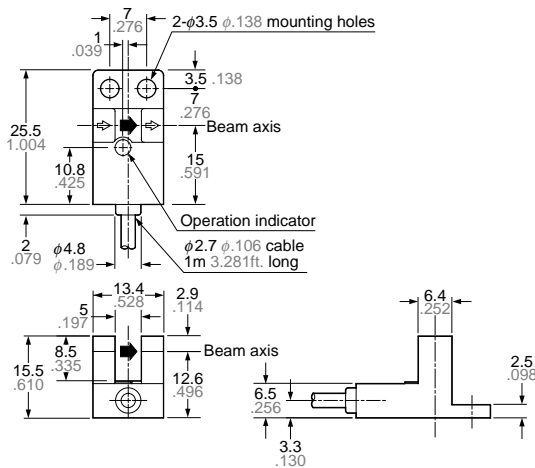
UZJ322
UZJ3225 Sensor



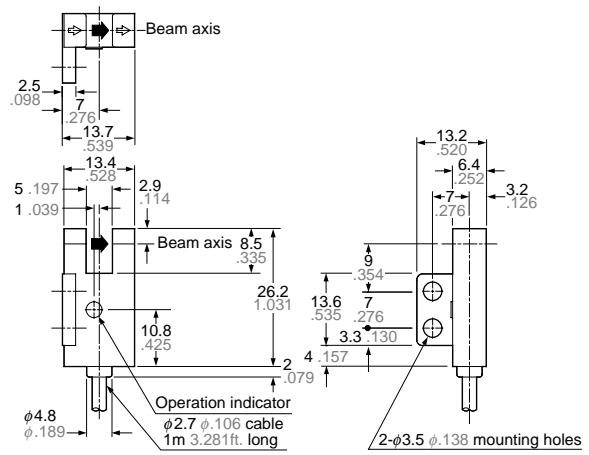
UZJ323
UZJ3235 Sensor



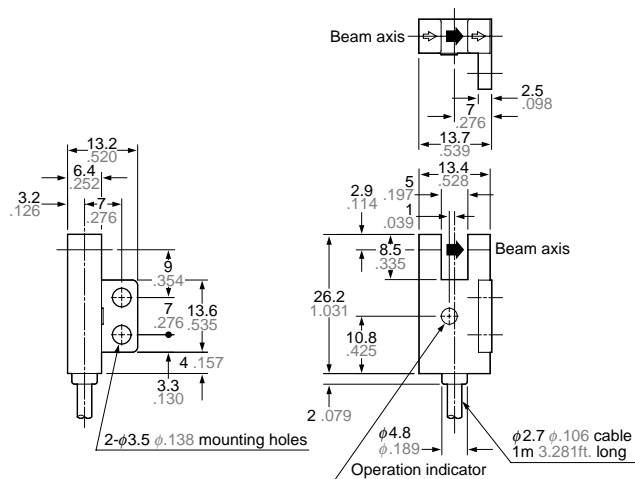
UZJ324
UZJ3245 Sensor



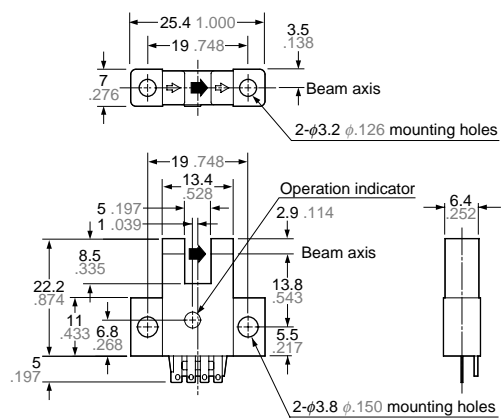
UZJ325
UZJ3255 Sensor



UZJ326
UZJ3265 Sensor

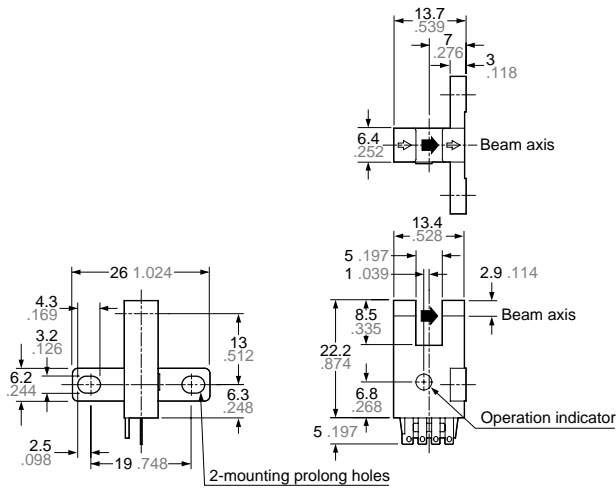


UZJ331
UZJ3315 Sensor

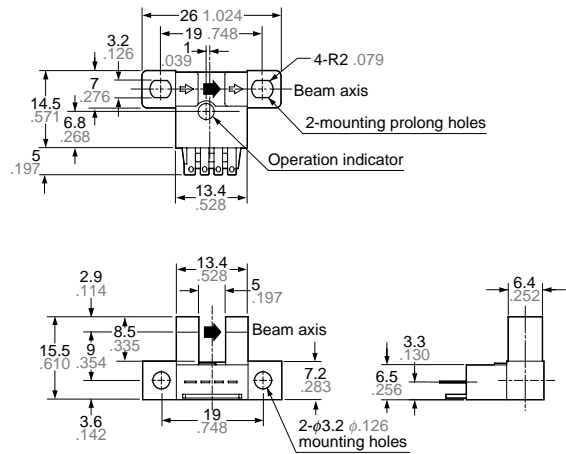


DIMENSIONS (Unit: mm inch)

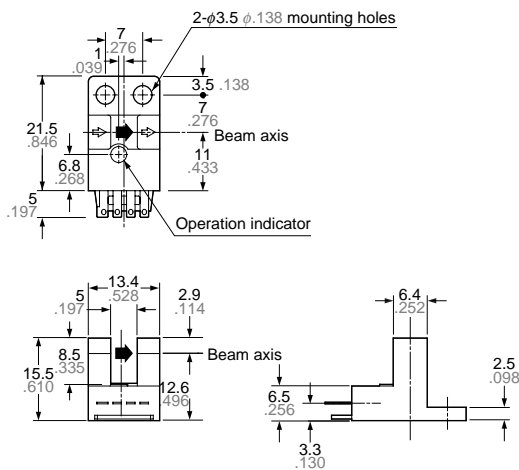
**UZJ332
UZJ3325** Sensor



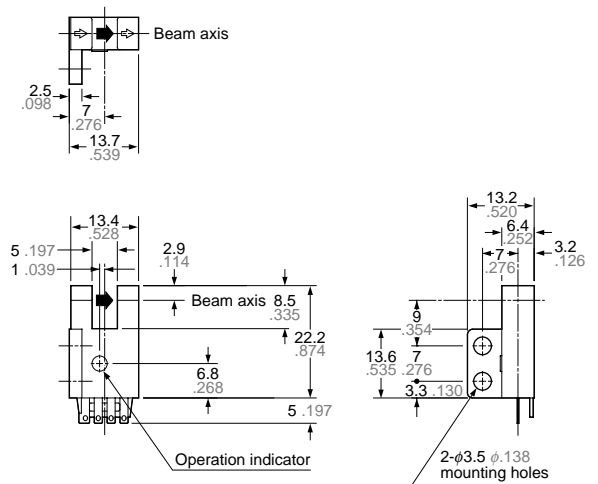
**UZJ333
UZJ3335** Sensor



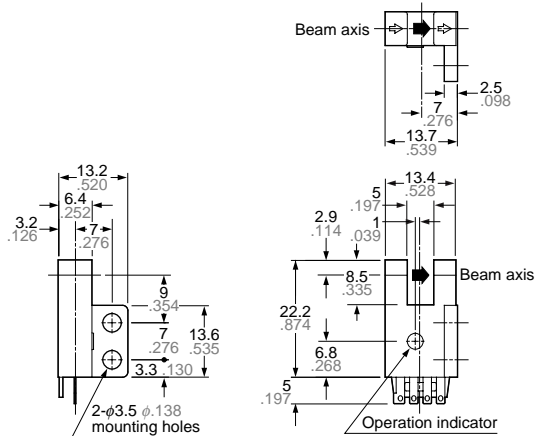
**UZJ334
UZJ3345** Sensor



**UZJ335
UZJ3355** Sensor



**UZJ336
UZJ3365** Sensor



* Terminal part (UZJ33□, UZJ33□5)

