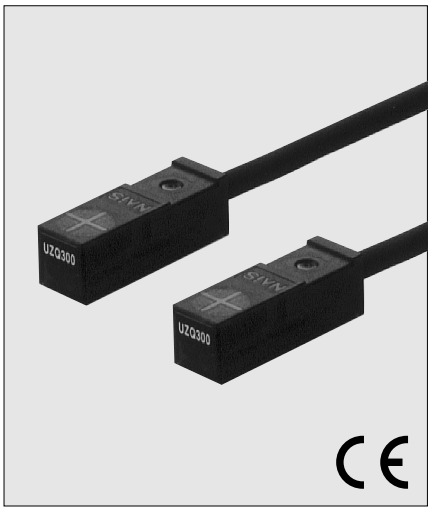
NAiS

SQUARE-SHAPED MINIATURE PROXIMITY SENSORS

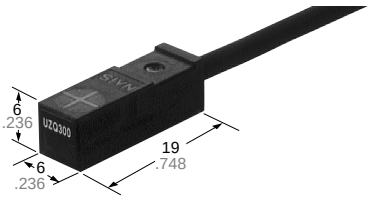
UZQ30 Series

HIGH PERFORMANCE IN SURPRISINGLY SMALL BODY WITH COST EFFECTIVENESS



The Smallest Size

Mountable in a tight space as the sensor is just 6×6×19mm .236×.236×.748inch in volume.

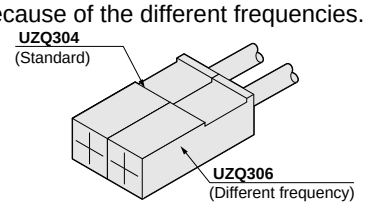


Cost Effectiveness

The **UZQ30** Series is available at the surprisingly low price.

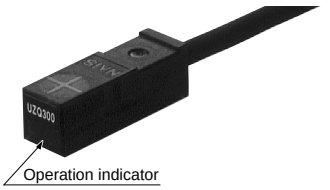
Close Mounting

Two sensors can be mounted closely because of the different frequencies.



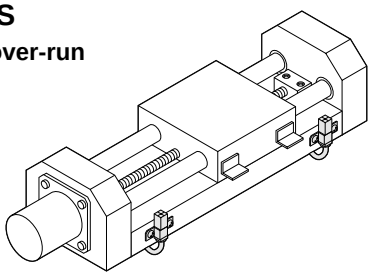
Operation Indicator

Despite the compactness, the **UZQ30** series are incorporated with the operation indicator for an operation check.

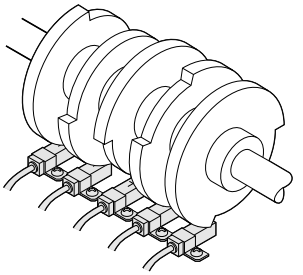


APPLICATIONS

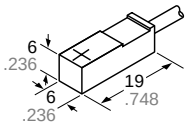
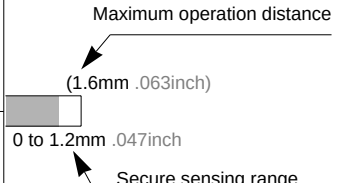
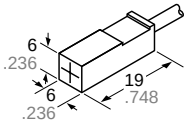
Observing table over-run



Sensing cam positions



ORDER GUIDE

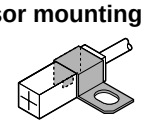
Type	Appearance (mm inch)	Sensing range (*1)	Model No. (2*)	Output operation
Front sensing			**UZQ300**	Approach ON
			UZQ302	
			UZQ301	Leave ON
			UZQ303	
Top sensing			**UZQ304**	Approach ON
			UZQ306	
			UZQ305	Leave ON
			UZQ307	

(*1) : The maximum operation distance stands for the distance that the sensor can detect the standard sensing object at the maximum.
The secure sensing range stands for the sensing range in which the sensor can stably detect the standard sensing object even if there are ambient temperature drifts and/or supply voltage fluctuations.
(*2) : The suffix “2, 3, 6 and 7 type” specifies the different frequency.

OPTION

Designation	Model No.	Description
Sensor mounting bracket	**UZQ831**	The brackets are useful to mount sensors side by side

Sensor mounting bracket



No machine screw, nut, nor washer is attached.

SPECIFICATIONS

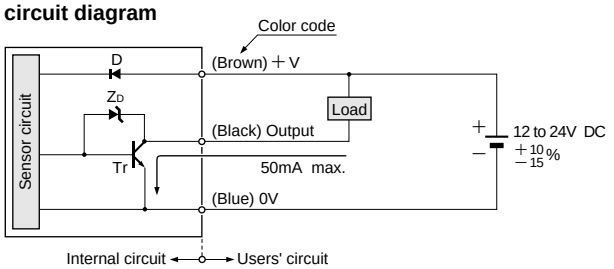
Item \ Type		Miniature							
		Front sensing				Top sensing			
			Different frequency		Different frequency		Different frequency		Different frequency
	Model No.	**UZQ300**	**UZQ302**	**UZQ301**	**UZQ303**	**UZQ304**	**UZQ306**	**UZQ305**	**UZQ307**
Max. operation distance (*1)		1.6mm .063inch ± 15%							
Secure sensing range (*1)		0 to 1.2mm .047inch							
Standard sensing object		Iron steel 12×12×t1mm .472×.472×t.039inch							
Hysteresis		15% or less of operation distance							
Supply voltage		12 to 24V DC $^{+10}_{-15}$% Ripple P-P 10% or less							
Current consumption		15mA or less							
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)							
	Utilization category	DC-12 or DC-13							
	Output operation	Approach ON		Leave ON		Approach ON		Leave ON	
Max. response frequency		400Hz							
Operation indicator		Orange LED (lights up when the output is activated)							
Environmental resistance	Pollution degree	3 (Industrial environment)							
	Protection	IP67 (IEC)							
	Ambient temperature	–10 to + 55°C +14 to 131°F Storage: –30 to + 80°C –22 to 176°F							
	Ambient humidity	45 to 85%RH, Storage: 35 to 95%RH							
	EMC	Emission : EN50081-2. Immunity : EN50082-2							
	Voltage withstandability	1,000V AC for one min. between all terminals connected and enclosure							
	Insulation resistivity	50MΩ or more at 250V DC Megger between all terminals connected and enclosure							
	Vibration-proof	10 to 55Hz frequency, 1.5mm .059inch amplitude, and X, Y, and Z directions each for two hours (unenergized)							
	Shock-proof	1,000m/s² acceleration {approx. 100G}, and X, Y, and Z directions each for three times (unenergized)							
Sensing range variation	Temperature characteristic	Within ±10% of sensing range at 20°C 68°F in –10 to + 55°C +14 to 131°F temperature range							
	Voltage characteristic	Within ± 2% at ± 10% fluctuation of the supply voltage							
Material		Case : Polyarilate							
Cable		Oil, heat and cold resistant cable 1m 3.281ft. long with three 0.08mm² conductors							
Cable extension		Maximum extension is 100m 328.084ft. overall with an equivalent cable with conductors are 0.3mm² or more							
Weight		Approx. 10g .350oz							
Accessory		**UZQ832** (Mounting bracket) : 1pc.							

(*1): The maximum operation distance stands for the distance that the sensor can detect the standard sensing object at the maximum.
The secure sensing range stands for the sensing range in which the sensor can stably detect the standard sensing object even if there are ambient temperature drifts and/or supply voltage fluctuations.

I/O CIRCUIT AND WIRING DIAGRAMS

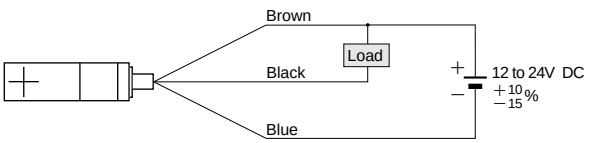
UZQ30□

I/O circuit diagram



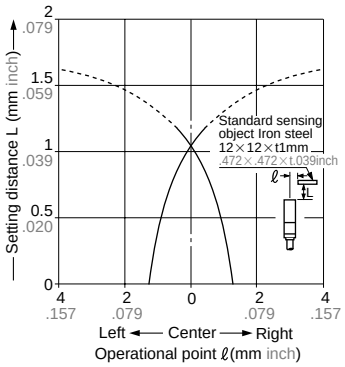
Symbol...D : Reverse polarity protection diode
ZD : Surge absorption zener diode
Tr : NPN output transistor

Wiring diagram

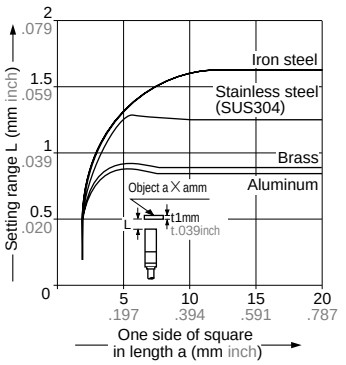


SENSING FIELDS (TYPICAL)

Sensing field



Correlation between object size and sensing range



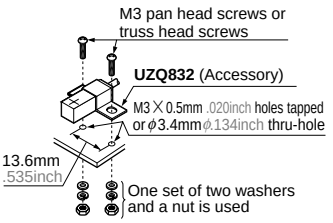
As an object size becomes smaller than the standard (iron steel 12×12×t1mm .472×.472×t.039inch), the sensing range shortens.

PRECAUTIONS FOR PROPER USE

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

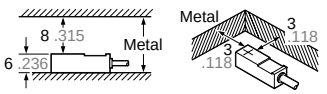
- Mount the sensor with the attached mounting bracket **UZQ832** or the optional mounting bracket **UZQ831**.
- Prepare a screw, a nut, and a washer that you may have, as they are not attached.
- To mount the sensor with a nut, the thru-hole diameter should be ϕ3.4mm ϕ.134inch.



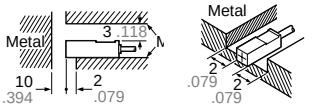
Influence by surrounding metal

- When there are metals near the sensor, keep the separation distance specified below at the minimum.

UZQ30□ 0~3 Type (Unit : mm inch)



UZQ30□ 4~7 Type(Unit : mm inch)



Wiring

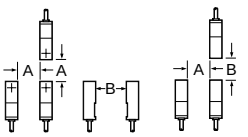
- The **UZQ30** does not incorporate a short-circuit protection at the output. Do not connect it directly to a power source or a capacitive load.

Crosstalk prevention

- When two or more sensors are installed in parallel or face to face, keep the separation distance specified below at the minimum to avoid crosstalk.

	UZQ30□	
	Between "different frequency" type and "non-different frequency" type. (*1)	Between "different frequency" type or "non-different frequency" type. (*1)
A	0mm (*2)	13mm .512inch
B	15mm .591inch	25mm .984inch

UZQ30□



(*1): The suffix "2, 3, 6 and 7 types" specifies the different frequency.
(*2): The altenative arrangement between "different frequency type" and "non-different frequency type" allows two sensors to be mounted closely, and three sensors or more mounted at 3.5mm .138inch pitch.

Sensing range

- The sensing range is specified with using the standard sensing object (iron steel 12×12×t1mm .472×.472×t.039inch). With a non-ferrous object, the sensing range is obtained by multiplying the correction coefficient specified. When an object is smaller than the standard sensing object or plated on the surface, the sensing range differs.

Correction coefficient

Metal \ Model No.	UZQ30□
Iron steel	1
Stainless steel (SUS304)	Approx. 0.76
Brass	Approx. 0.55
Aluminum	Approx. 0.52

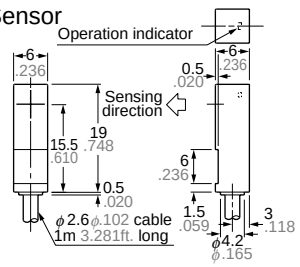
Others

- The transient time duration is 50ms after power-up.

DIMENSIONS (Unit : mm inch)

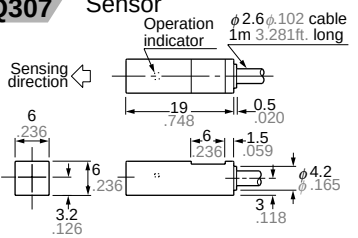
UZQ300, UZQ301, UZQ302, UZQ303

Sensor



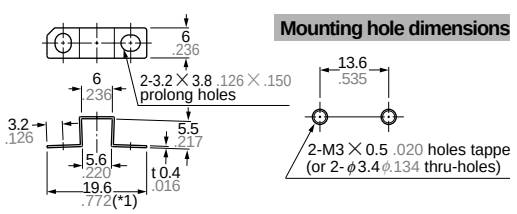
UZQ304, UZQ305 UZQ306, UZQ307

Sensor



UZQ832

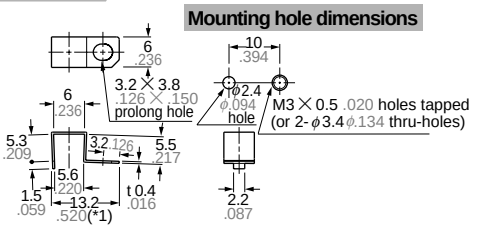
Sensor mounting bracket (Accessory)



(*1) : 20mm .787inch with the sensor fitted.

UZQ831

Sensor mounting bracket (Option)



(*1) : 13.4mm .528inch with the sensor fitted.