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ULTRA-SLIM TYPE PHOTOELECTRIC SENSOR **Inflection resistant cable type**

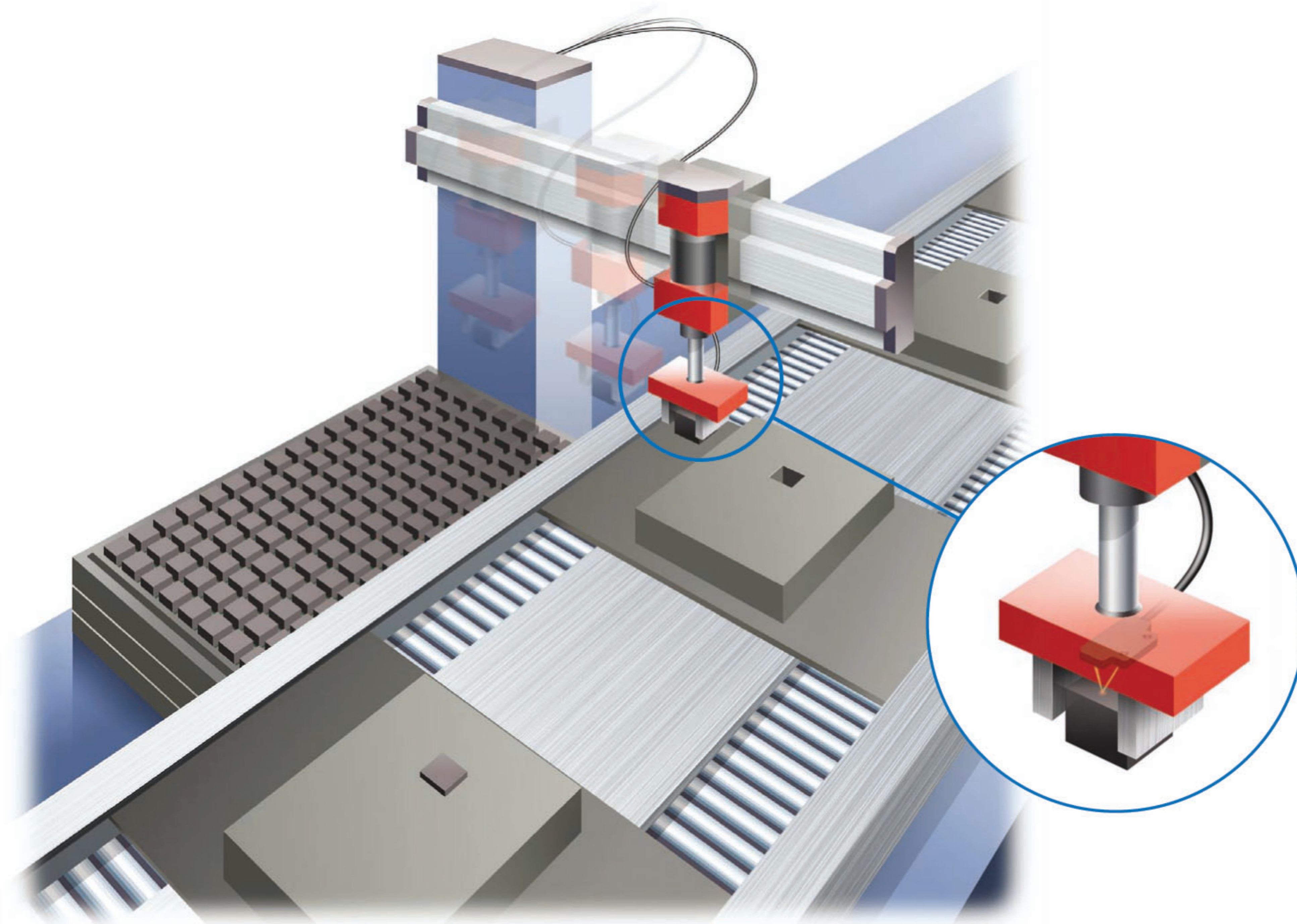
New

EX-10-R SERIES



Suitable for moving parts!

Inflection resistant cable type is now available

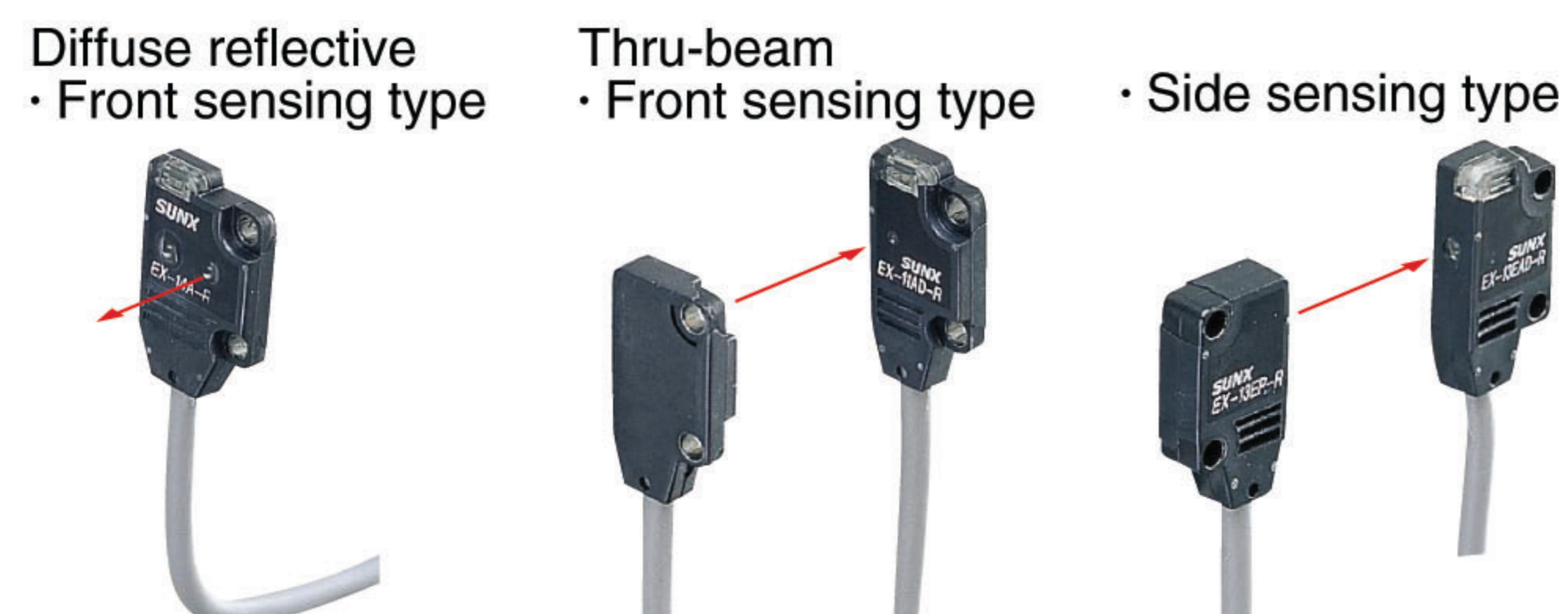


Ten Times Greater Inflection Resistance

EX-10-R series has ten times greater inflection resistance. It is most suitable for moving parts, such as robot arm, etc.

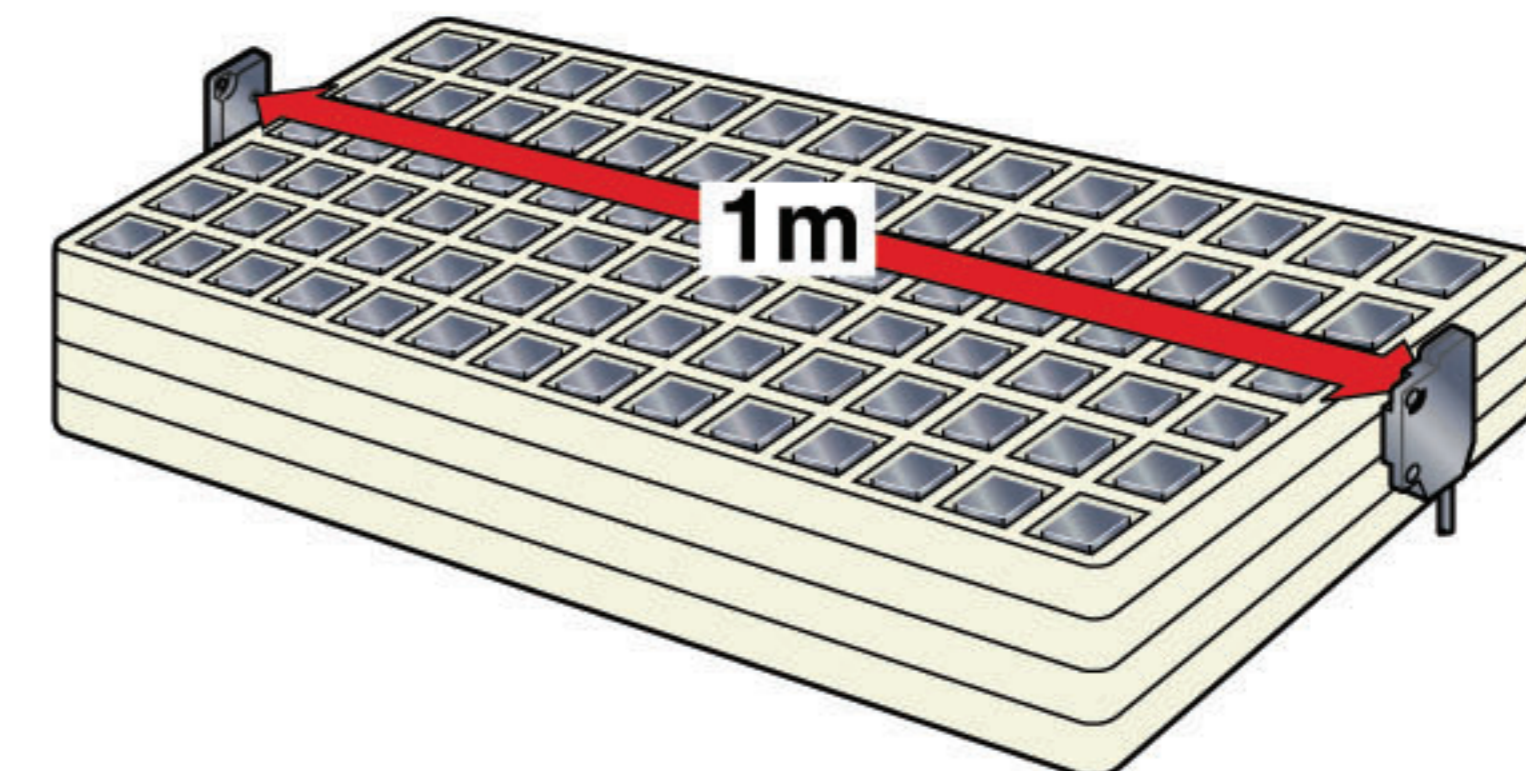
Flexible Mounting

The diffuse reflective type sensor is front sensing and is so thin that it gives an impression of being just pasted on the mounting base. The thru-beam type sensor is available as front sensing type, as well as, side sensing type, allowing flexible mounting.



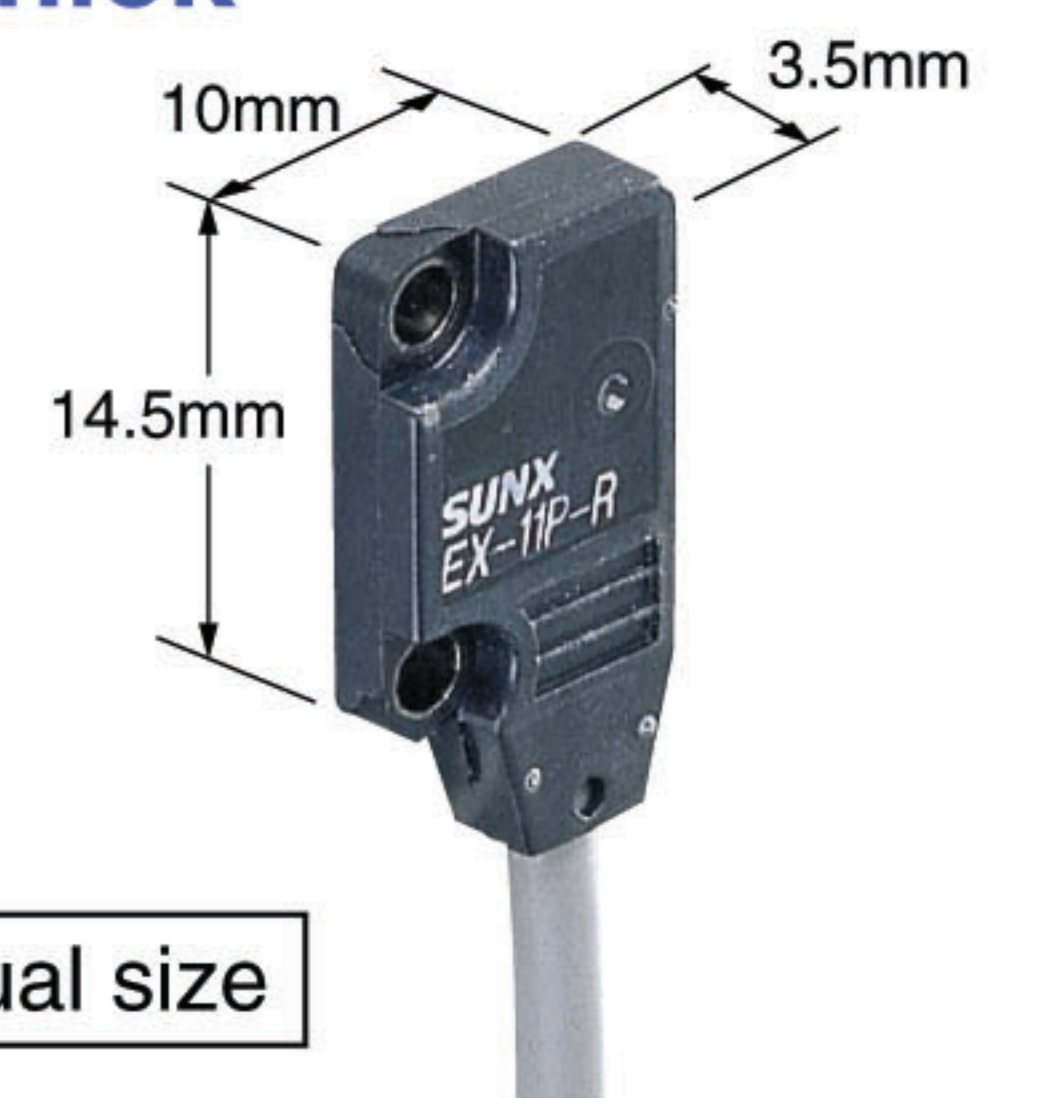
Long Sensing Range: 1m (EX-19□-R)

A sensing range of 1m has been realised with a slim size of just 3.5mm. It can be used to detect even wide IC trays.



Smallest Body, Just 3.5mm Thick

It can be mounted in a very small space as its size is just W10 × H14.5 × D3.5mm (thru-beam, front sensing type).

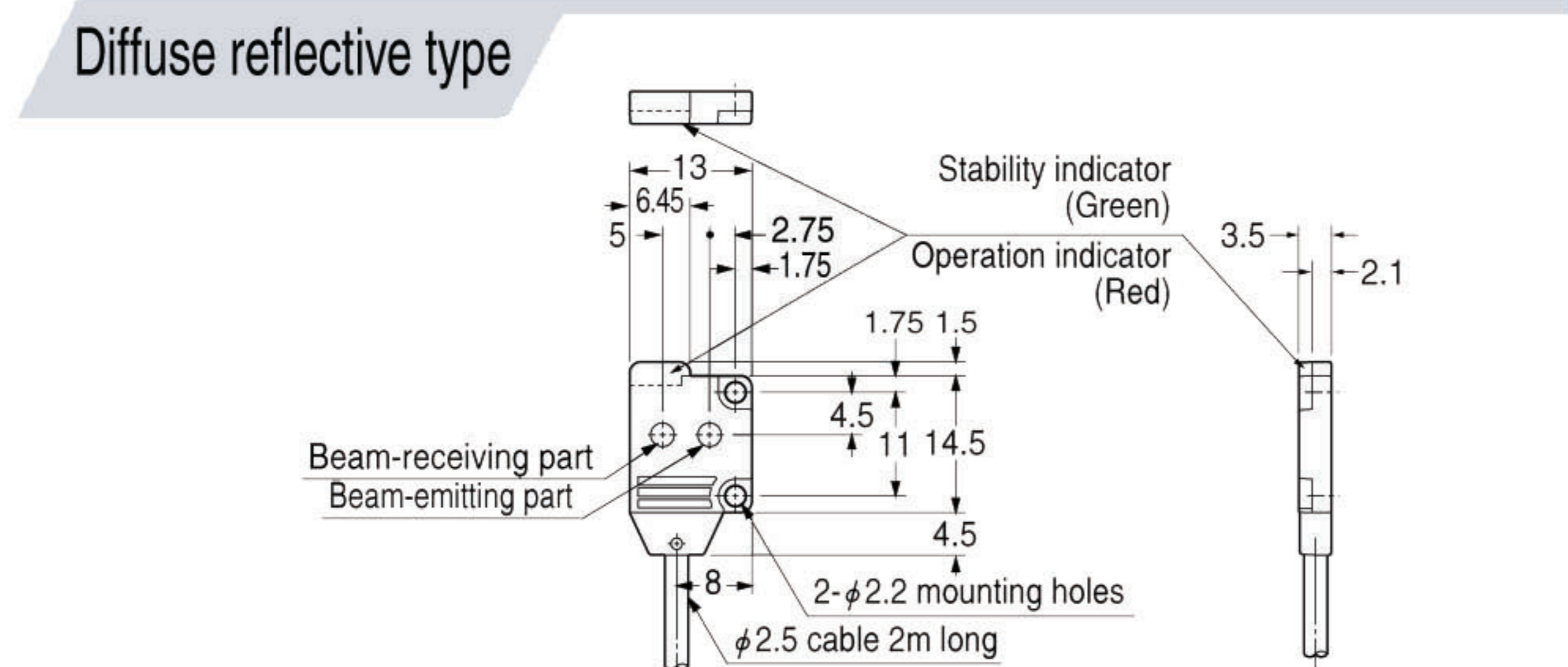
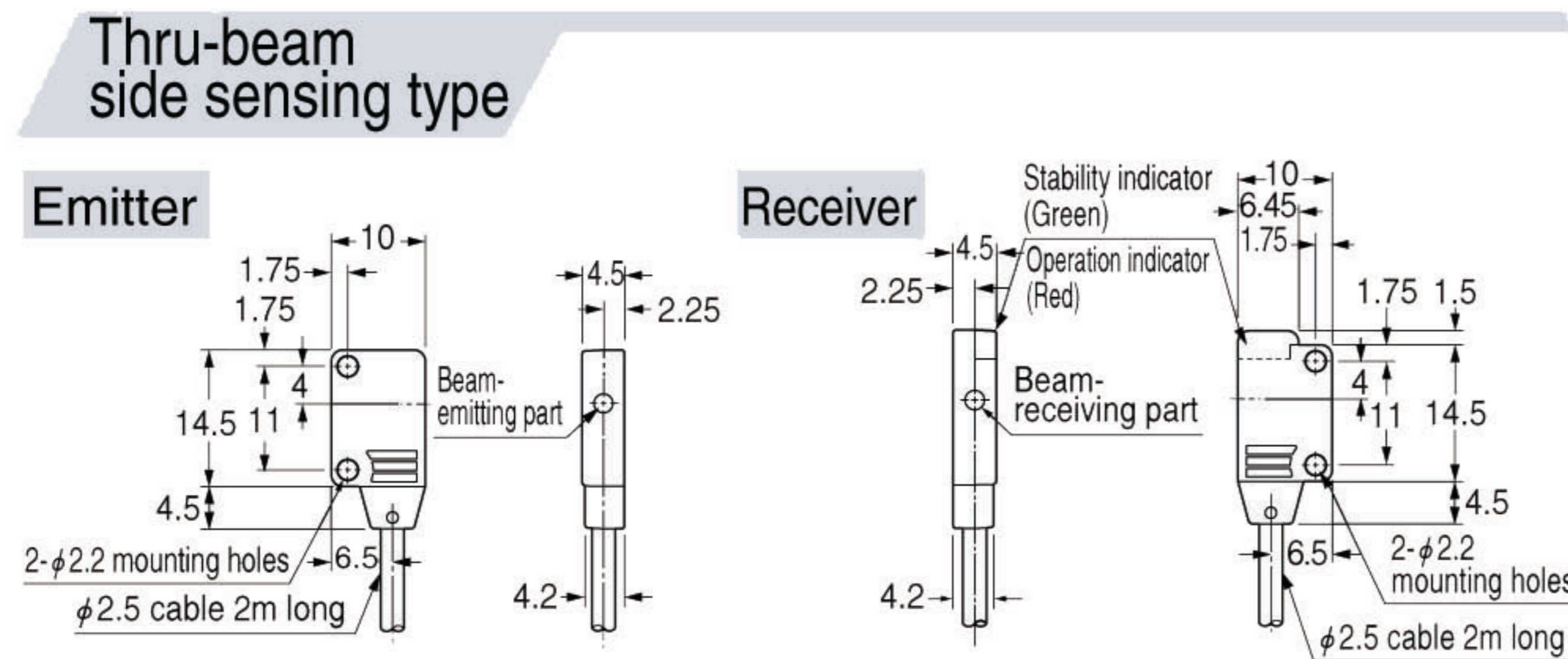
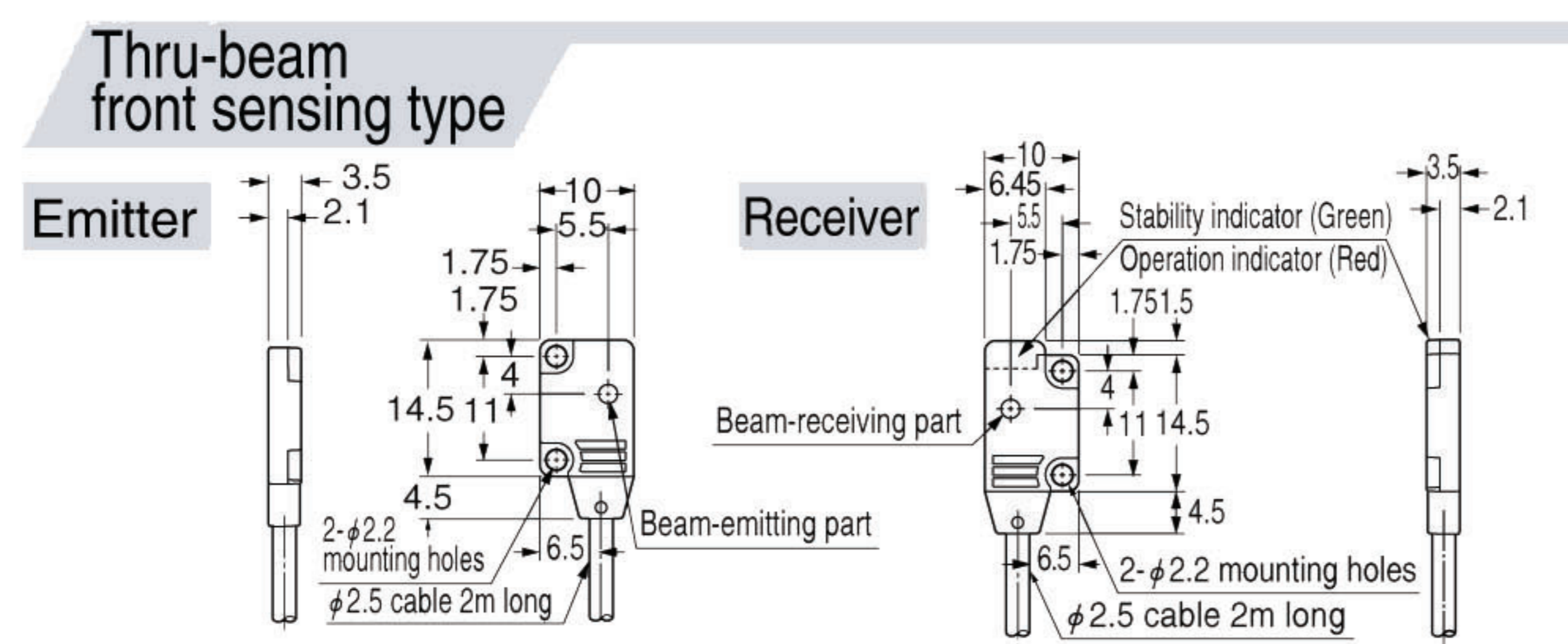


SPECIFICATIONS

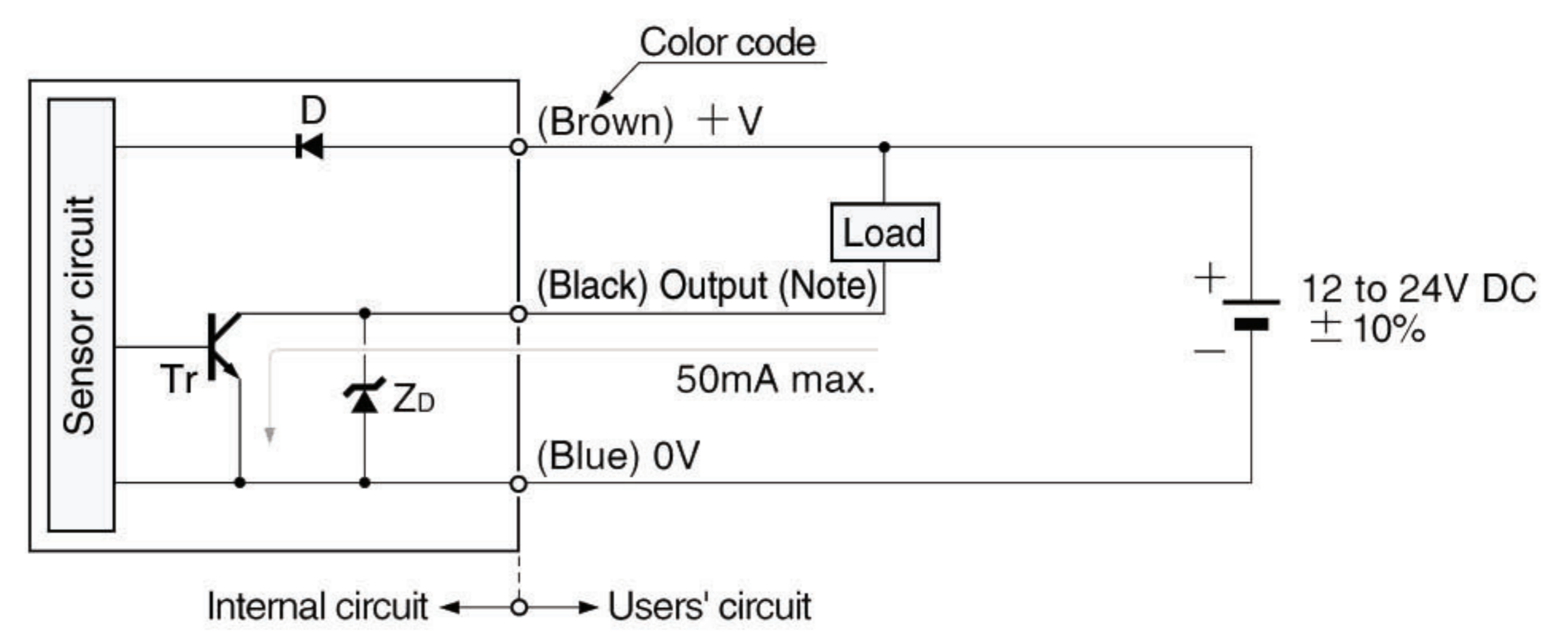
Item	Type		Thru-beam				Convergent reflective	
	Model No.	Light-ON	Front sensing	Side sensing	Front sensing	Side sensing	Front sensing	Side sensing
		Dark-ON	EX-11A-R	EX-11EA-R	EX-13A-R	EX-13EA-R	EX-19A-R	EX-14A-R
			EX-11B-R	EX-11EB-R	EX-13B-R	EX-13EB-R	EX-19B-R	EX-14B-R
Sensing range			150mm		500mm		1m	2 to 25mm (Note 2) (Conv. point: 10mm)
Min. sensing object			φ 1mm opaque object (Setting distance between emitter and receiver: 150mm)		φ 2mm opaque object (Setting distance between emitter and receiver: 500mm)		φ 2mm opaque object (Setting distance between emitter and receiver: 1m)	φ 0.1mm copper wire (Setting distance: 10mm)
Hysteresis								15% or less of operation distance
Supply voltage			12 to 24V DC ± 10% Ripple P-P10% or less					
Output			NPN open-collector transistor · Maximum sink current: 50mA · Applied voltage: 30V DC or less (between output and 0V) · Residual voltage: 1V or less (at 50mA sink current) 0.4V or less (at 16mA sink current)					
Response time			0.5ms or less					
Protection			IP67 (IEC)					
Accessories			Mounting screws: 2 sets					Mounting screws: 1 set

Note: Please refer to EX-10 series catalog or sensor general catalog for more details specifications and options.

DIMENSIONS (Unit: mm)



I/O CIRCUIT DIAGRAM



Note: The emitter of the thru-beam type sensor does not incorporate the output.

Symbols ... D : Reverse supply polarity protection diode
 Zd: Surge absorption zener diode
 Tr: NPN output transistor

PRECAUTIONS FOR PROPER USE



This product is not a safety sensor. Its use is not intended or designed to protect life and prevent body injury or property damage from dangerous parts of machinery. It is a normal object detection sensor.

All information is subject to change without prior notice.



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