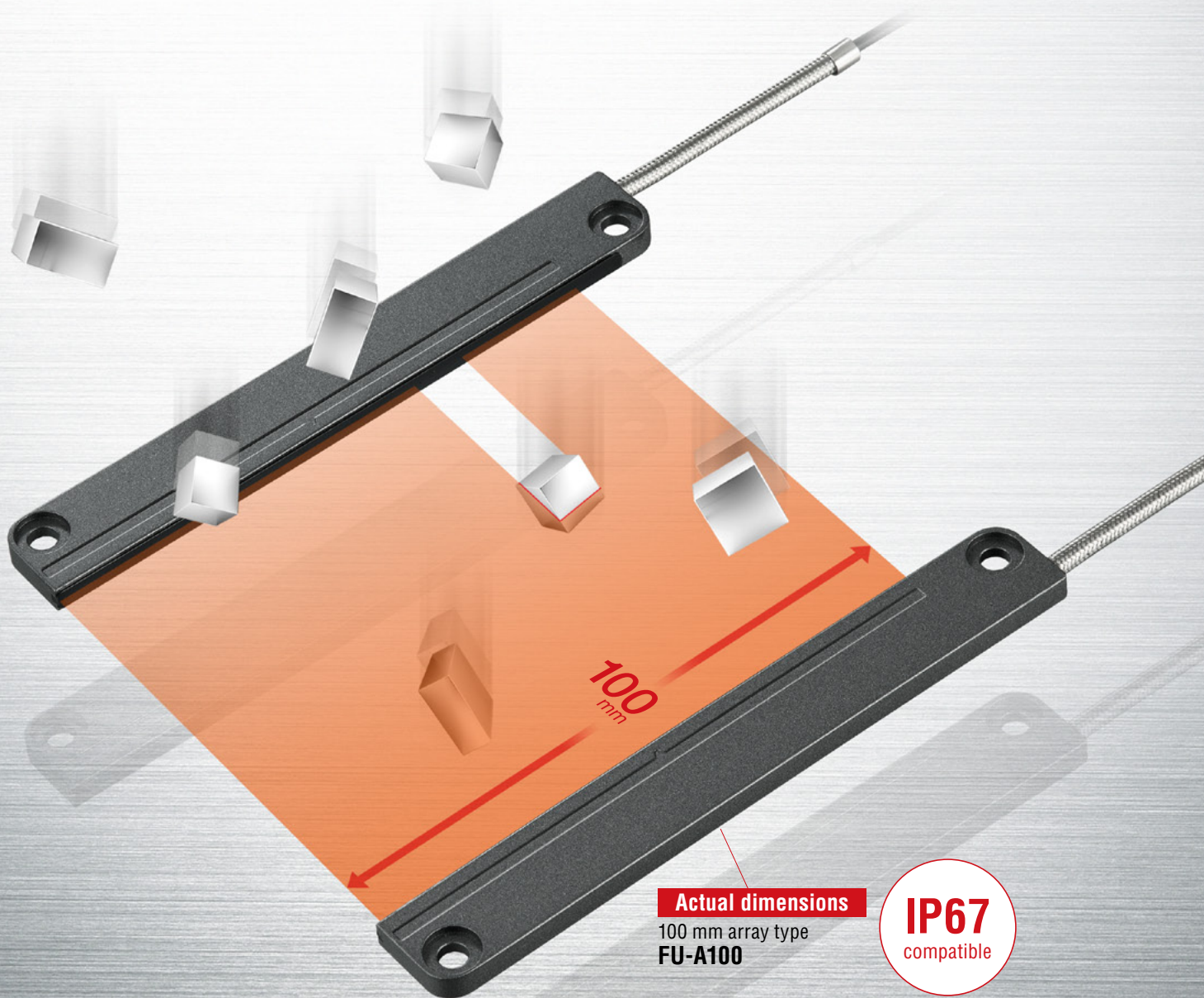


100 mm

THE INDUSTRY FIRST

WIDE-RANGE FIBRE SENSOR



Released simultaneously
with the **40 mm** type

The 40 mm array type **FU-A40**

Digital Fibreoptic Sensor
FS-neo Series



Created with emphasis on wide area detection.

Rated IP67, it is sturdy and easy to use.

POINT 1

TOUGH BODY

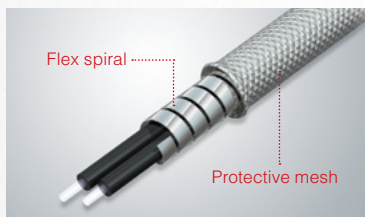
Protected by a die-cast metal case. The internal structure is filled with epoxy resin, therefore this unit is able to withstand cracks caused by impact or breakdown caused by the infiltration of liquid into the device.

POINT 2

STRONG CABLE BASE

The cable base unit (50 mm), uses a stainless-steel jacket. This protects the base unit, which takes on a load when the cable is winded. It is possible to install the device in a narrow space without worry.

Stainless-steel jacket structure



* The illustration is only an example.

IP67

POINT 3

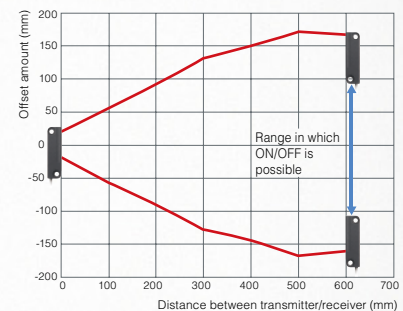
EASY OPTICAL AXIS ALIGNMENT

Similarities with an array fibre

Uses bundle fibre*1. Arranges 30 core fibres with a diameter of 0.25 mm. Because the light expands in a wide field, optical axis alignment can be performed with ease.

*1 A bundle of thin, raw fibre wires.

• FU-A40 parallel movement characteristics (typical example)



MEASUREMENT CONDITIONS

Amp: FS-N11N (FINE mode, APC-OFF)
Measures the position at which ON/OFF is possible after performing maximum sensitivity settings and with all light blocked/all light entering

POINT 4

SLIM BODY

Compact structure, excellent for narrow installation.

(L:120 mm x W:17 mm x T:5 mm)

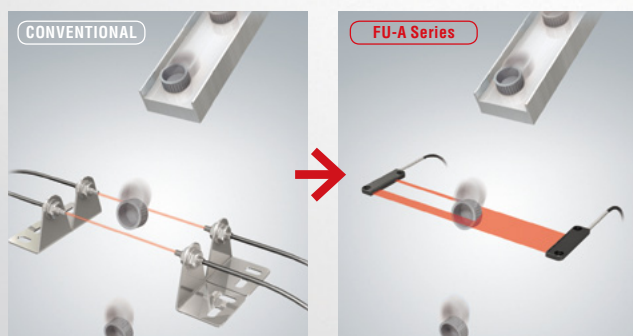
POINT 5

COST EFFICIENT AND TIME SAVING

Eliminate multiple sensors installation for wide area detection applications.

Confirmation

It is also possible to stably detect workpieces that vary in drop position.

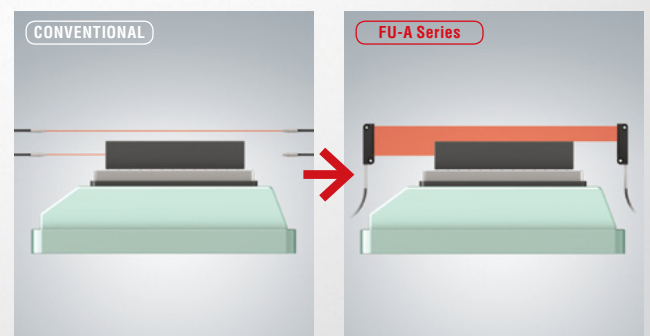


Multiple sensors are arranged and installed

Full range covered with a single unit

Differentiation of product type

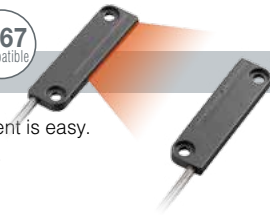
By using 2 output amplifiers, it is possible to distinguish different workpiece types with a single unit.



Sensors are installed for each individual product type

Output possible in response to the amount of blocked light

WIDE-RANGE FIBRE LINEUP



ARRAY SENSORS

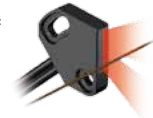
The raw fibre wires are arranged to form light into a band. Because the aperture angle is 60°, optical axis alignment is easy. Furthermore, because it features a waterproof and dust-proof structure, it has excellent environmental resistance.

Thrubeam array type

Type	Type Detection area width	Fibre length (diameter) Ambient operating temperature	Appearance (mm)	Minimum cable bend radius (mm)	Detection distance (mm) ^{*1}		Optical axis diameter (mm)	Model Weight
					MEGA FINE	Other Power mode		
Array	40 mm	2 m free-cut (not including the 50 mm spiral section) -20 to +50°C	Thickness 5	R10	MEGA : 2800 FINE : 640	ULTRA : 1900 SUPER : 1250 TURBO : 900 HSP : 360	Approx. 40 x 0.25	NEW FU-A40 Approx. 70 g
	100 mm	2 m free-cut (not including the 50 mm spiral section) -20 to +50°C	Thickness 5		MEGA : 2800 FINE : 600	ULTRA : 1900 SUPER : 1200 TURBO : 850 HSP : 320	Approx. 100 x 0.25	NEW FU-A100 Approx. 110 g
	5 mm	2 m free-cut (ø2.2) -40 to +70°C	Thickness 4	R4 ^{*2}	MEGA : 2200 FINE : 440	ULTRA : 1400 SUPER : 840 TURBO : 540 HSP : 200	Approx. 6 x 0.3	FU-A05 Approx. 20 g
	10 mm	2 m free-cut (ø2.2) -40 to +70°C	Thickness 4				Approx. 11 x 0.3	FU-A10 Approx. 20 g

*1 When the FS-N10 Series is used. *2 R10 for the first 10 mm of cable from the housing.

When using a reflective type to detect small objects at short distances, the received light intensity will be more than that of an area type. Can detect with greater stability when detecting workpieces with vibration.



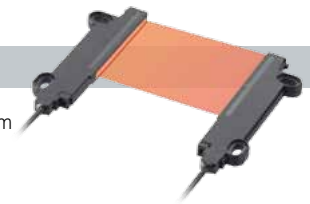
Reflective array type

Type	Type Detection area width	Fibre length (diameter) Ambient operating temperature	Appearance (mm)	Minimum cable bend radius (mm)	Detection distance (mm) ^{*1}		Minimum detectable object (mm) ^{*3}	Model Weight
					MEGA FINE	Other Power mode		
Array	10 mm (At a detection distance of 4 mm)	2 m free-cut (ø2.2 x 2) -40 to +70°C	Thickness 4	R4 ^{*2}	MEGA : 740 FINE : 140	ULTRA : 460 SUPER : 260 TURBO : 180 HSP : 60	ø0.005 Gold wire	FU-A05D Approx. 20 g
	15 mm (At a detection distance of 4 mm)	2 m free-cut (ø2.2 x 2) -40 to +70°C	Thickness 4					FU-A10D Approx. 20 g

*1 When the FS-N10 Series is used. *2 R10 for the first 10 mm of cable from the housing.
*3 The minimum detectable object was determined at the optimal detecting distance and sensitivity setting.

AREA SENSORS

By housing the lens within the device, the light intensity distribution is equalised. As a result, with a thrubeam type, it is possible to detect minute changes in light intensity better than an array type.



Thrubeam area type

Type	Type Detection area width	Fibre length (diameter) Ambient operating temperature	Appearance (mm)	Minimum cable bend radius (mm)	Detection distance (mm) ^{*1}		Optical axis diameter (mm)	Model Weight
					MEGA FINE	Other Power mode		
Area	11 mm	2 m free-cut (ø2.2) -40 to +50°C	Thickness 4	R2 ToughFlex	MEGA : 3600 FINE : 2700	ULTRA : 3600 SUPER : 3600 TURBO : 3600 HSP : 1300	11 x 2	FU-E11 Approx. 20 g
	40 mm	2 m free-cut (ø2.2) -40 to +50°C	Thickness 5.1		MEGA : 3600 FINE : 3600	ULTRA : 3600 SUPER : 3600 TURBO : 3600 HSP : 2500	40 x 3	FU-E40 Approx. 30 g

*1 When the FS-N10 Series is used. The maximum detection distance is set at 3600 mm because the fibre length is 2 m on one side.

By housing the lens within the device, the light is formed into a band. As a result, the light spreads less than an array type.

Reflective area type

Type	Type Detection area width	Fibre length (diameter) Ambient operating temperature	Appearance (mm)	Minimum cable bend radius (mm)	Detection distance (mm) ^{*1}		Minimum detectable object (mm) ^{*2}	Model Weight
					MEGA FINE	Other Power mode		
Area	15 mm (At a detection distance of 15 mm)	2 m free-cut (ø2.2 x 2) -40 to +70°C	Thickness 4	R25	MEGA : 5 to 200 FINE : 5 to 140	ULTRA : 5 to 200 SUPER : 5 to 200 TURBO : 5 to 160 HSP : 5 to 110	ø0.1 Gold wire	FU-11 Approx. 19 g

*1 When the FS-N10 Series is used. *2 The minimum detectable object was determined at the optimal detecting distance and sensitivity setting.

Best when used under tough conditions

The introduction of a waterproof-type fibreoptic amplifiers

IP66 compatible and has NEO series functions.



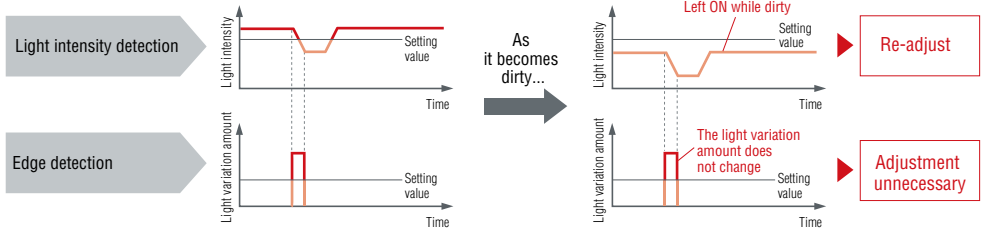
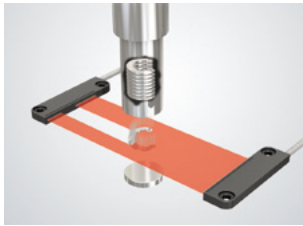
FS-N15CN/N15CP

Even more stable detection is possible with the FS-neo Series

Functions that are useful when using a wide-range fibre

Edge detection mode

Ignores mild changes in light intensity caused by dirt on the detection unit and temperature changes to detect only changes in light intensity produced by the workpiece. It is possible to reduce the frequency of periodic maintenance or readjustment, enabling long-term, stabilised detection.



SPECIFICATIONS

Type	Array thrubeam 40 mm type		Array thrubeam 100 mm type	
Model	FU-A40		FU-A100	
Optical axis area (Standard detection target) (mm)	40 x 0.25		100 x 0.25	
Detection distance (mm) When the FS-N10 Series is used	MEGA	2800	2800	
	ULTRA	1900	1900	
	SUPER	1250	1200	
	TURBO	900	850	
	FINE	640	600	
	HSP	360	320	
Minimum detectable object (mm) ^{*1}	ø2.5 opaque object		ø6 opaque object	
Enclosure rating	IP67			
Operating ambient temperature	-20 to +50°C (No freezing)			
Operating ambient humidity	35 to 85% RH (No condensation)			
Fibre allowable bend radius (mm)	R10			
Cable length	2 m [*] (Free-cut) ø2.2 mm Spiral parts cannot be cut			
Tightening torque	0.75 N·m			
Material	Case: Die-cast zinc, Detecting surface: PBT, Core fibre: Acrylic, Fibre sheath: Polyethylene			
Weight (g)	Approx. 70		Approx. 110	
Accessories	Fibre cutter, Mounting screws (M4 X L8, 4 units)			

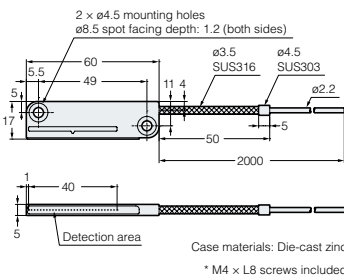
*1 The minimum detectable object was determined at the optimal detecting distance and sensitivity setting.

*2 A 5 m type is also available. Contact your nearest KEYENCE sales office.

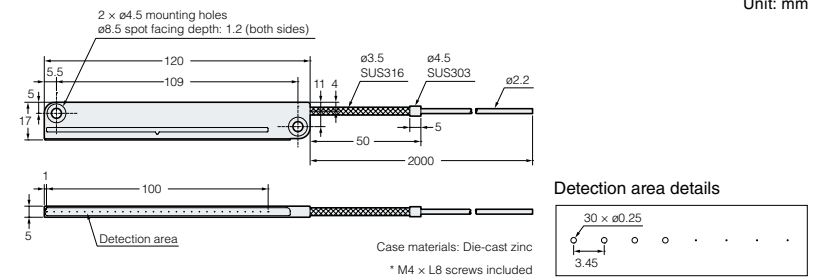
DIMENSIONS

CAD DATA DOWNLOAD www.keyence.com.sg/CADG

■ FU-A40



■ FU-A100



Please visit: www.keyence.com

SAFETY INFORMATION
 Please read the instruction manual carefully in order to safely operate any KEYENCE product.

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