OMRON

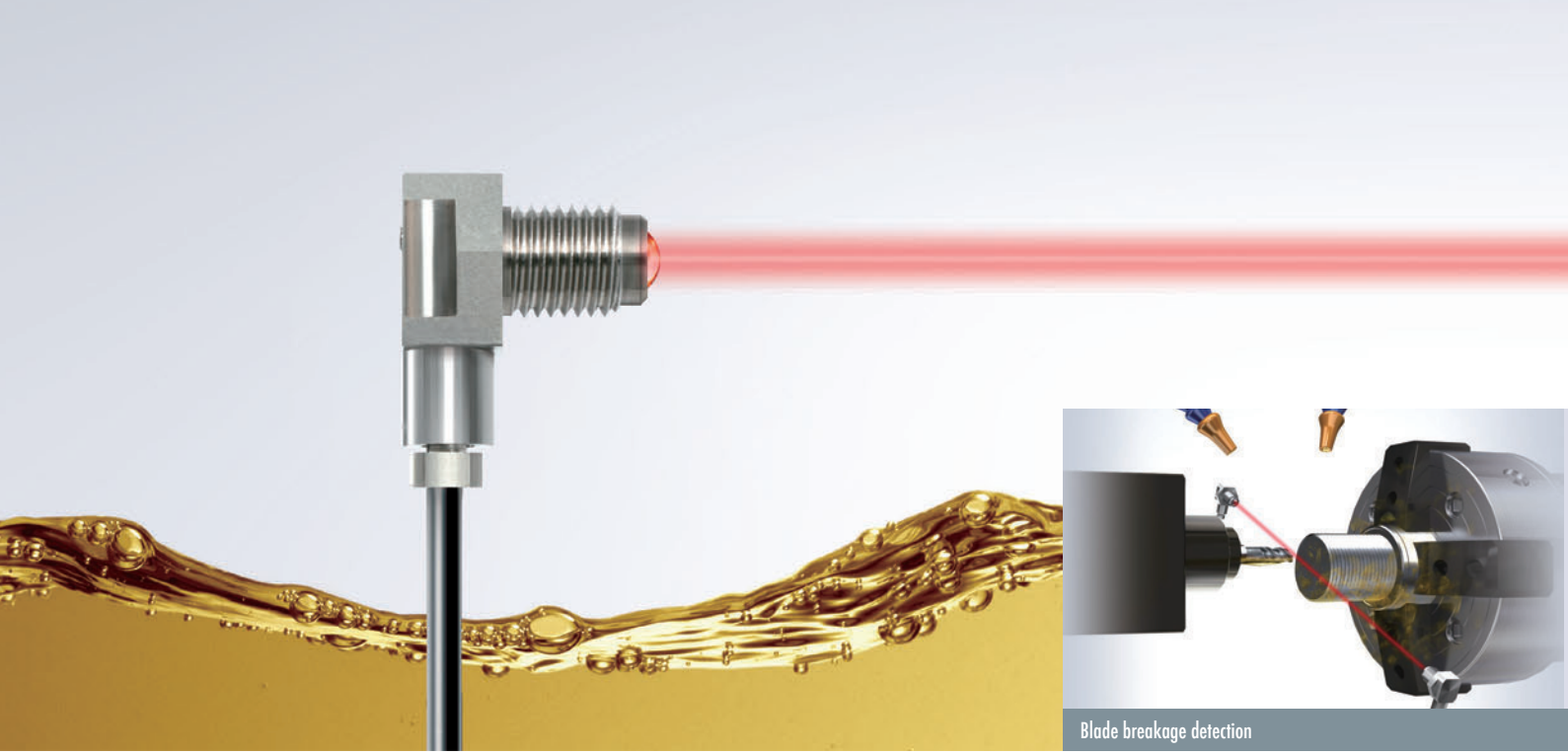
NEW

Oil-resistant Fiber Unit

E32-T11NF

The Ultimate Fiber Sensor for an Oily Environment

realizing



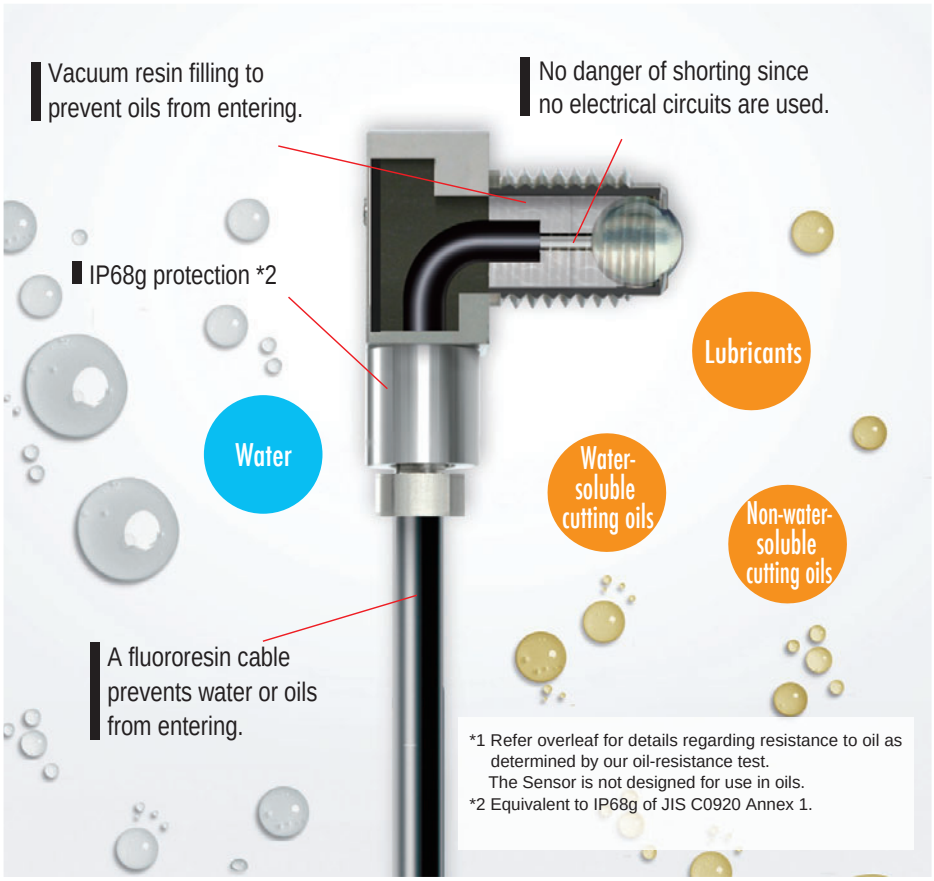
Blade breakage detection

The Ultimate Fiber Unit for Reliable,

Best oil resistance in FA factory realized through the

Reliable

Optical Fiber
Prevents Damage from Oils *1



*1 Refer overleaf for details regarding resistance to oil as determined by our oil-resistance test.
The Sensor is not designed for use in oils.
*2 Equivalent to IP68g of JIS C0920 Annex 1.

Stable

Reduces False
Due to Oils

Unique Configuration
Resists Oils and Chip immune

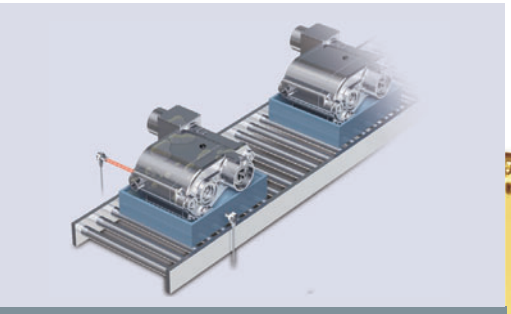
Spherical glass lens resists oils adhered

Without thread cutting to avoid oils and chip immune adhered.

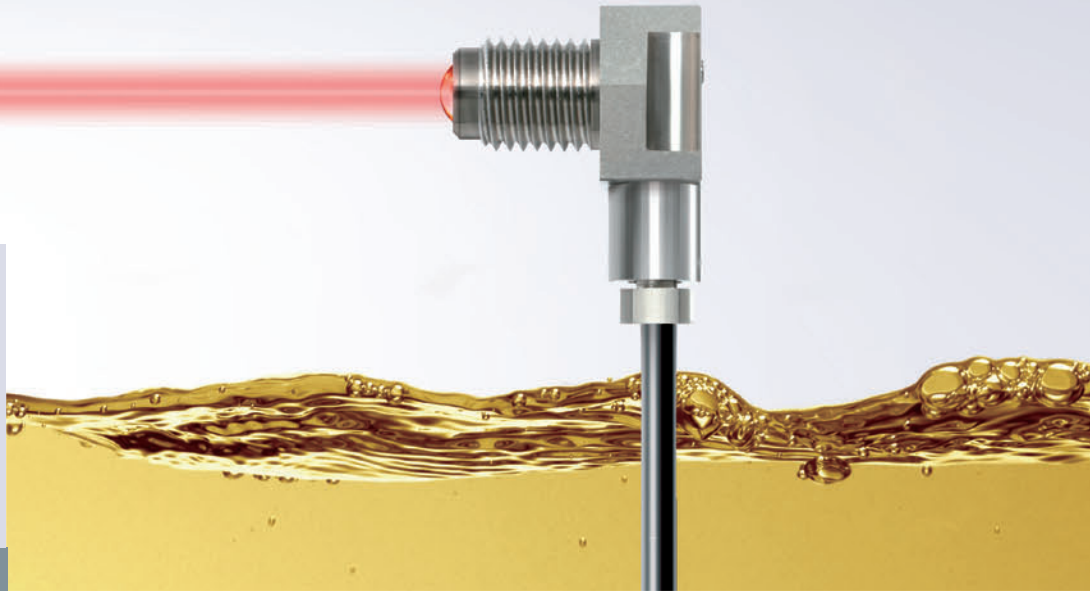
Maintains high-power output even when covered in oils

Maintains a digital value of 9,999 even if the light intensity falls to 1/100

In Giga Power Mode with a mounting distance of 500 mm and a fiber length of 2 m.



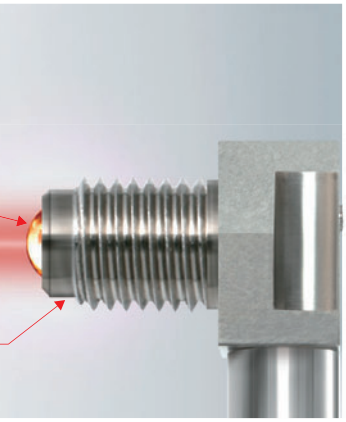
Detection of passing workpieces



Stable Operation in Oily Environments

use of fluororesin and overwhelming optical power.

Detections

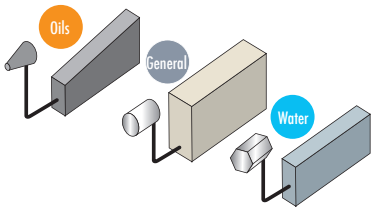


Affordable

Optical Fiber Lowers Total Cost

Optical Fiber Enables Using the Same Amplifiers to Reduce the Needs for Spare Equipments

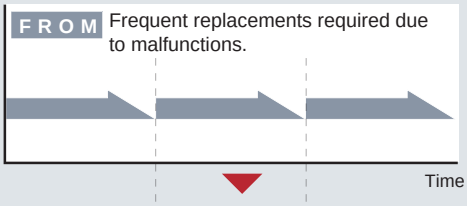
FROM Different models for different applications and environments.



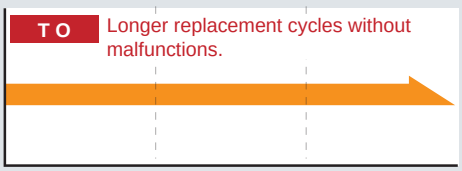
TO Unified specifications through the use of standard fiber Amplifier Units.

Reduces Replacement Costs

FROM Frequent replacements required due to malfunctions.

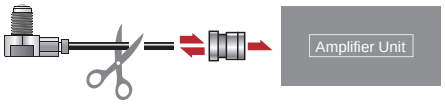


TO Longer replacement cycles without malfunctions.

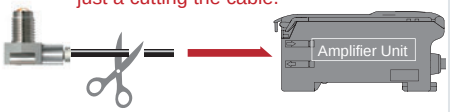


Reduces Time Spent Changing Cable Lengths

FROM Connector processing also required.



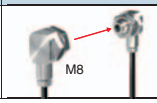
TO Connector processing not required by just a cutting the cable.



*Use the Fiber Cutter provided.

Standard Models

Fiber Units

Sensing method	Appearance	Model
Through-beam		E32-T11NF 2M
		E32-T11NF 5M

Amplifier Units

Appearance	Model	
	NPN output	PNP output
	E3X-HD11 2M	E3X-HD41 2M

Ratings and Specifications

Item / Model	E32-T11NF 2M	E32-T11NF 5M
Sensing distance	4 m*1	10 m
Standard sensing object	Opaque : 4-mm dia. min.	
Aperture angle	Approx. 20°	
Ambient temperature range	Operating: –25 to 70°C, Storage: –40 to 70°C (with no icing or condensation)	
Ambient humidity range	Operating: 35% to 85%, Storage: 35% to 95% (with no condensation)	
Degree of protection	IEC IP68 *2, oil resistance to OMRON in-house standard (equivalent to IP68g of JIS C0920 Annex 1) , Amplifier Units: IP50.	
Accessories	2 hexagonal nuts (M8, thickness: 5 mm,width:13 mm), 2 toothed washers, Fiber Cutter	
Materials	Fiber exterior covering: Fluororesin, Sensing head: SUS303, Sensing surface: Glass, Hexagonal nuts: SUS-XM7, Toothed washers: SUS304	

*1 When Giga Power Mode is used on the E3X-HD11 and E3X-HD41, the sensing distance is given as 4 m since the fiber length is 2 m on each side.
The actual power is greater than the value given here.
*2 We performed 100 heat shock cycles with 5°C cold water and 70°C hot water, and then checked to confirm that the variation in the digital value was within ±20%.
However, the Sensor is not designed for use in water.

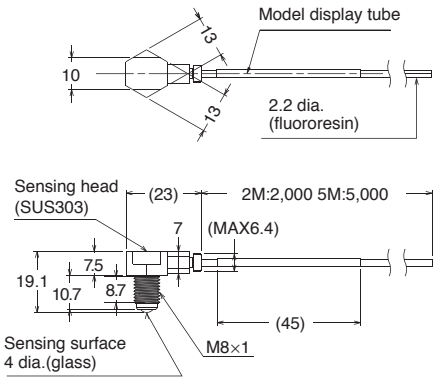
Oil Resistance*

The Sensor was submerged in the oils listed in the following table for 1,000hours at 55□ and then passed a test that the variation in the digital value remained within ±20%. Use the results in the following table as a guide when using the Sensor in environments containing oils not listed in the table. Additives in the oil may also affect performance. Always test applicability in advance. However, the Sensor is not designed for use in oils.

Test oil type	Product name	Kinetic viscosity (mm2/s) at 40°C	pH (dilution rate)
Lubricants	Velocity Oil No. 3 (manufactured by Exxon Mobil)	2.02	–
Water-soluble cutting oils	Syntilo 9954 (Manufactured by Castrol Ltd.)	–	8.5(×20)
	Yushiroken S50N (manufactured by Yushiro Chemical Industry Co., Ltd.)	–	8.6(×50)
Non-water-soluble cutting oils	Yushiron Cut Abas KZ216 (manufactured by Yushiro Chemical Industry Co., Ltd.)	7	–

Dimensions

(Unit: mm)

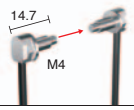
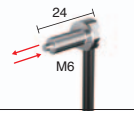


Fiber cable	Bending radius	R1 mm
	Free cutting	Available
	Unbendable length of cable at connection to sensing head	10 mm
	Tensile strength	29.4 N
Sensing head	Tightening torque	12 N·m
	Recommended mounting holes size	8.5 dia. + 0.50/ –0

*The Sensor cannot be mounted to a moving part.

<Refergnce>

Right-angle Fiber Units for General Environments

Sensing method	Appearance	Model
Through-beam		E32-T11N 2M
Reflective		E32-C11N 2M

Visit our website (www.ia.omron.com) for more details.

OMRON Corporation **Industrial Automation Company**
Tokyo, JAPAN
Contact: www.ia.omron.com

Regional Headquarters
OMRON EUROPE B.V.
Sensor Business Unit
Carl-Benz-Str. 4, D-71154 Nufringen, Germany
Tel: (49) 7032-811-0/Fax: (49) 7032-811-199

OMRON ELECTRONICS LLC
One Commerce Drive Schaumburg,
IL 60173-5302 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

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