

Photo-electric sensors

OsiSense XU Application

Fibre design, amplifiers

Three-wire DC, solid-state output

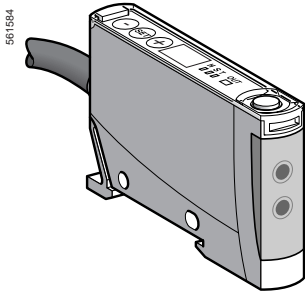
Teach mode

Amplifiers with fine adjustment and 4-digit screen

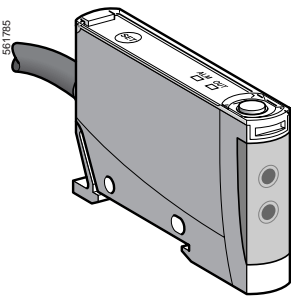
Sensing distance (Sn) m	Function	Output	Connection	Reference	Weight kg
Depending on fibre	NO/NC Programmable	PNP	Pre-cabled	XUDA2PSML2	0.040
			M8 connector	XUDA2PSMM8	0.040
		NPN	Pre-cabled	XUDA2NSML2	0.040
			M8 connector	XUDA2NSMM8	0.040

Amplifiers using teach mode

Sensing distance (Sn) m	Function	Output	Connection	Reference	Weight kg
Depending on fibre	NO/NC Programmable	PNP	Pre-cabled	XUDA1PSML2	0.040
			M8 connector	XUDA1PSMM8	0.040
		NPN	Pre-cabled	XUDA1NSML2	0.040
			M8 connector	XUDA1NSMM8	0.040



XUDA2


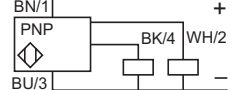
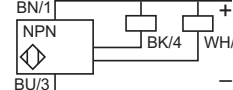


XUDA1


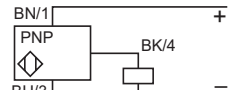
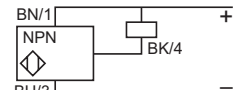
Characteristics

Sensor type		XUDA1●●SMM8, XUDA2●●SMM8	XUDA1●●SML2, XUDA2●●SML2
Product certifications		CE, cULus	
Connection	Connector	M8	–
	Pre-cabled	–	Length: 2 m
Sensing distance (Sn)		Depending on fibre used, see page 5/130. Sensing distance halved for XUDA2 configured for fast frequency	
Sensitivity adjustment		Teach mode on XUDA1, Teach mode and fine adjustment (+/- button) plus 4-digit screen on XUDA2	
Type of transmission		Red	
Degree of protection	Conforming to IEC 60529	IP 65 with Ø 2 mm fibre (IP 64 with Ø 1 mm fibre)	
Storage temperature		°C	- 30...+ 70
Operating temperature		°C	- 10...+ 55
Vibration resistance	Conforming to IEC 60068-2-6	7 gn, amplitude ± 0.5 mm (f = 10 to 55 Hz)	
Shock resistance	Conforming to IEC 60068-2-27	30 gn, duration 11 ms	
Indicator lights	Output state	Yellow LED	
	Stability	Red LED for XUDA1	
	Stability	Green LED for XUDA2	
Signal level		By 7 segment/4-digit display for XUDA2	
Rated supply voltage		V	--- 12...24 with protection against reverse polarity
Voltage limits (including ripple)		V	--- 10.8...26.4
Current consumption, no-load		mA	≤ 50
Switching capacity		mA	≤ 100 with overload and short-circuit protection
Alarm output		mA	≤ 50 for XUDA2 with overload and short-circuit protection
Protection against mutual interference		Yes for XUDA2	
Voltage drop, closed state		V	≤ 2 for XUDA●P●●●●, ≤ 1 for XUDA●N●●●●●
Maximum switching frequency		kHz	1 kHz for XUDA1, 1 or 5 kHz configurable for XUDA2
Output time delay		ms	0 or 40 on recovery for XUDA2
Delays	First-up	ms	< 120
	Response	ms	< 0.5 (0.1 for XUDA2 in fast frequency mode)
	Recovery	ms	< 0.5 (0.1 for XUDA2 in fast frequency mode)

XUDA2 wiring schemes

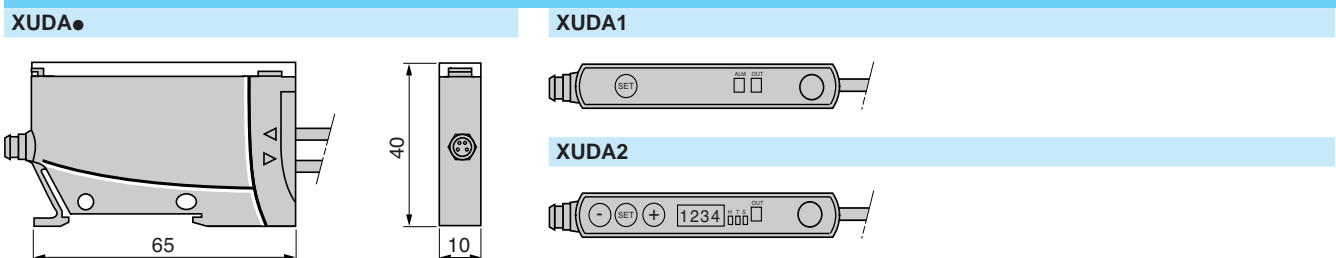
M8 connector	Pre-cabled	PNP	NPN
 <p>2 4 1 3 1(+) 3(-) 4 (OUT/output) 2 (alarm)</p>	<p>BN Brown (+) BU Blue (-) BK Black (output) WH White (alarm) (WH only on XUDA2)</p>	 <p>BN/1 + BU/3 - BK/4 WH/2</p>	 <p>BN/1 + BU/3 - BK/4 WH/2</p>

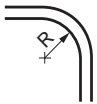
XUDA1 wiring schemes

M8 connector	Pre-cabled	PNP	NPN
 <p>2 4 1 3 1(+) 3(-) 4 (OUT/output) 2</p>	<p>BN Brown (+) BU Blue (-) BK Black (Output)</p>	 <p>BN/1 + BU/3 - BK/4</p>	 <p>BN/1 + BU/3 - BK/4</p>

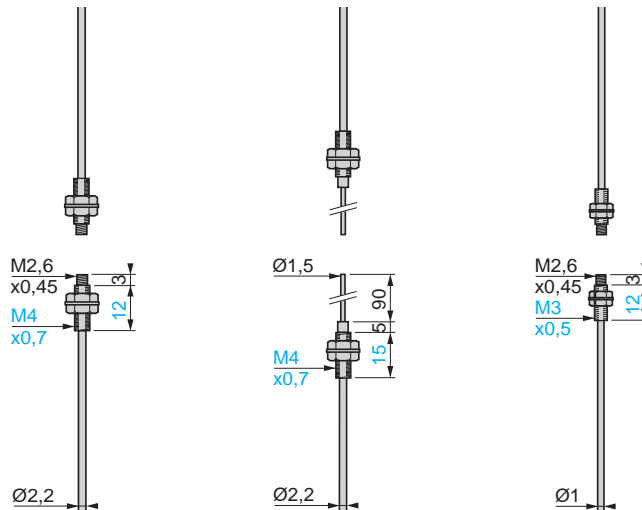
Please refer to our "Cabling accessories OsiSense XZ" catalogue.

Dimensions





R = minimum bend radius
Fibre of ext. Ø 2.2 mm, R = 25 mm
Fibre of ext. Ø 1 mm, R = 10 mm
XUFN2S01L, R = 4 mm



Nominal sensing distance (Sn)	With fibre L = 2 m	200 mm (1)	180 mm	50 mm (1)
	With lens	1500 mm (2)	–	1000 mm (2)
Application, features		General purpose		Accurate positioning

References (complete assembly - 2 fibres)

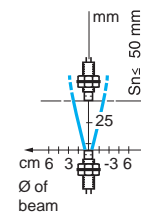
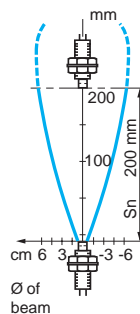
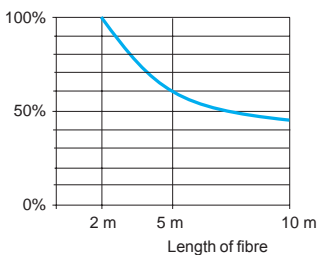
With standard end fittings	L = 2 m	XUFN12301	–	XUFN35301
	L = 10 m	XUFN12301L10	–	–
With 90 mm flexible end fittings, L = 2 m		–	XUFN12311	–
Weight (kg)		0.058 (L = 2 m)	0.030	0.045

Characteristics

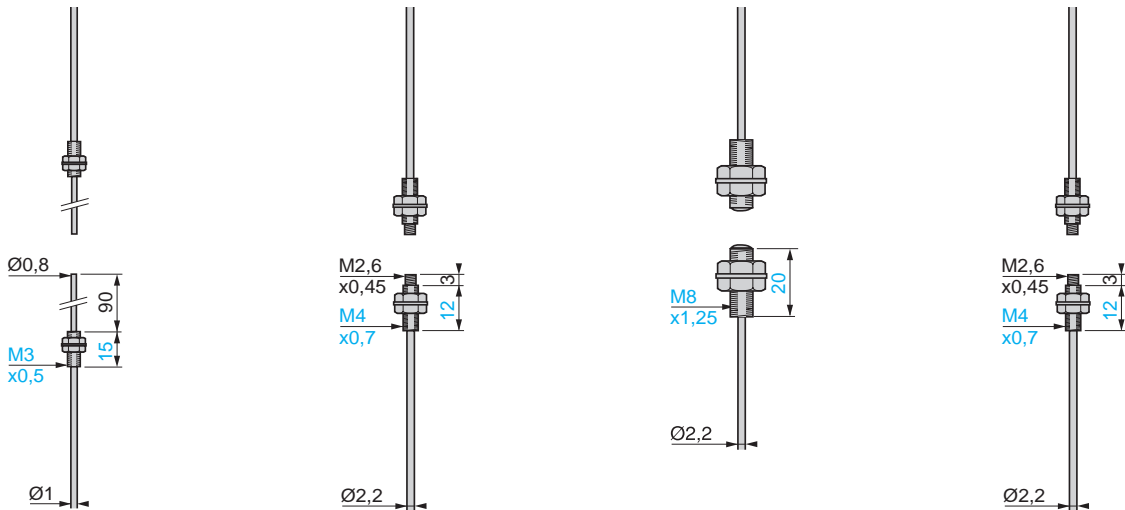
Fibre (view on sensing face)			
Core (Ø mm)	1 x Ø 1	1 x Ø 1	1 x Ø 0.5
Trimable to required length (trimmer XUFZ11 included)	Yes	Yes	Yes
Ambient air temperature	For operation: - 25... + 60 °C. For storage: - 40... + 80 °C		
Vibration resistance	7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-6		
Shock resistance	30 gn, duration 11 ms, conforming to IEC 60068-2-27		
Degree of protection	IP 64 conforming to IEC 60529 and IP 641 conforming to NF C 20-010		
Materials	Fibres: PMMA; sheath: PE		

Detection curves

XUFN●●●●●L10	XUFN12301, XUFN12311	XUFN35301
Percentage reduction in sensing distance related to length of fibre		



(1) Can be used with 90° mirror XUFZ02, see page 5/136.
(2) With lens accessory XUFZ01, see page 5/136.



30 mm	300 mm (1)	2500 mm	100 mm (1)
-	2000 mm (2)	-	750 mm (2)
Accurate positioning	Long sensing distance fibres	Fibres with integral lens Resistant to accumulation of dirt	Flexible fibres for cyclic movements, areas with restricted access
-	XUFN2P01L2	XUFN2L01L2	XUFN2S01L2
-	XUFN2P01L10	XUFN2L01L10	XUFN2S01L10
XUFN35311	-	-	-
0.045	0.058 (L = 2 m)	0.060 (L = 2 m)	0.062 (L = 2 m)

●	○	●	●
1 x Ø 0.5	1 x Ø 1.5	1 x Ø 1	1 x Ø 1
Yes	Yes	Yes	Yes

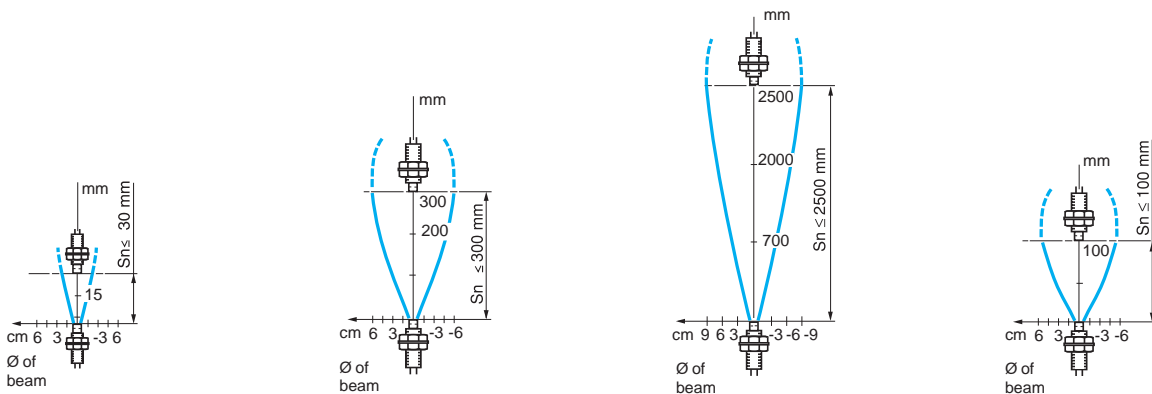
For operation: - 25...+ 60 °C. For storage: - 40...+ 80 °C
 7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-6
 30 gn, duration 11 ms, conforming to IEC 60068-2-27
 IP 64 conforming to IEC 60529 and IP 641 conforming to NF C 20-010
 Fibres: PMMA; sheath: PE

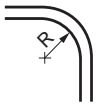
XUFN35311

XUFN2P01L2

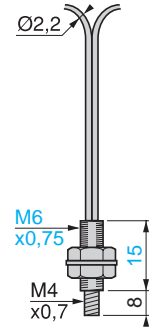
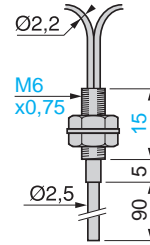
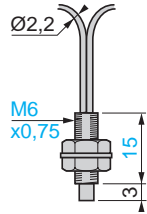
XUFN2L01L2

XUFN2S01L2





R = minimum bend radius
Fibre of ext. Ø 2.2 mm, R = 25 mm
Fibre of ext. Ø 1 mm, R = 10 mm
XUFN5S01L, R = 4 mm



Nominal sensing distance (Sn)	70 mm	60 mm	60 mm
Application, features	General purpose		Positioning

References

With standard end fittings	L = 2 m L = 10 m	XUFN05321 XUFN05321L10	– –	XUFN05323 –
With 90 mm flexible end fittings, L = 2 m		–	XUFN05331	–
Weight (kg)	0.058 (L = 2 m)	0.030		0.060

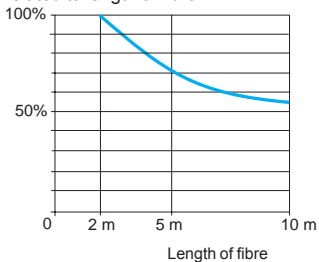
Characteristics

Fibre (view on sensing face)			
Core (Ø mm)	2 x Ø 1	2 x Ø 1	1 x Ø 1 + 16 x Ø 0.265
Trimable to required length (trimmer XUFZ11 included)	Yes	Yes	Yes
Ambient air temperature	For operation: - 25... + 60 °C. For storage: - 40... + 80 °C		
Vibration resistance	7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-27		
Shock resistance	30 gn, duration 11 ms, conforming to IEC 60068-2-27		
Degree of protection	IP 64 conforming to IEC 60529 and IP 641 conforming to NF C 20-010		
Materials	Fibres: PMMA; sheath: PE		

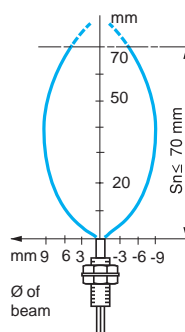
Detection curves (object 10 x 10 cm, white 90%)

XUFN●●●●L10

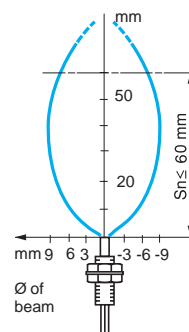
Percentage reduction in sensing distance related to length of fibre



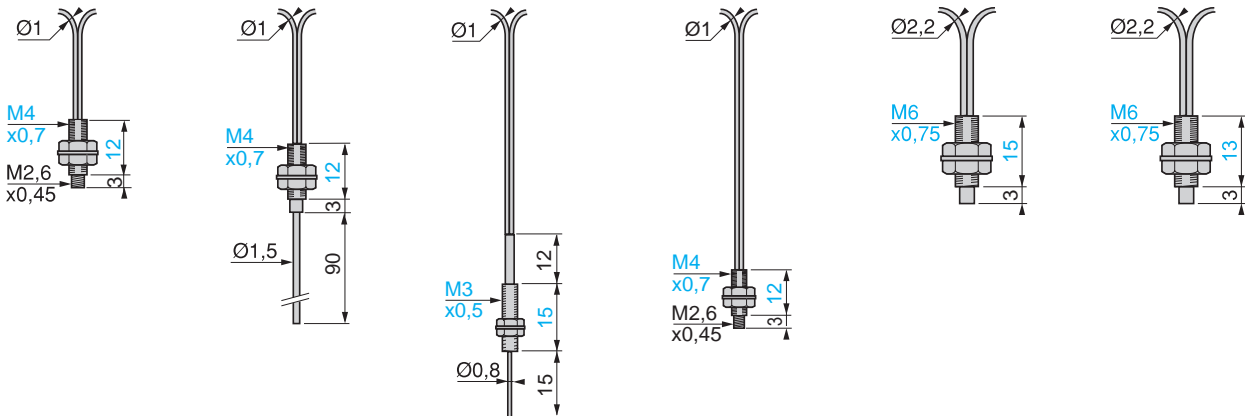
XUFN05321



XUFN05331, XUFN05323



(1) Fixing clamps included with fibre optic.



18 mm	18 mm	6 mm	15 mm	95 mm	55 mm
Positioning	Positioning	Areas with restricted access	Positioning	Long sensing distance fibres	Flexible fibres for cyclic movements, areas with restricted access
XUFN01321	-	XUFN04331	XUFN02323	XUFN5P01L2	XUFN5S01L2
-	-	-	-	XUFN5P01L10	XUFN5S01L10
-	XUFN01331	-	-	-	-
0.045	0.045	0.045	0.040	0.058 (L = 2 m)	0.062 (L = 2 m)

2 x Ø 0.5	2 x Ø 0.5	2 x Ø 0.265	1 x Ø 0.5 + 4 x Ø 0.25	2 x Ø 1.5	2 x Ø 1
Yes	Yes	Yes	Yes	Yes	Yes

For operation: - 25... + 60 °C. For storage: - 40... + 80 °C

7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-27

7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-6

30 gn, duration 11 ms, conforming to IEC 60068-2-27

IP 64 conforming to IEC 60529 and IP 641 conforming to NF C 20-010

Fibres: PMMA; sheath: PE

XUFN01321, XUFN01331 **XUFN04331** **XUFN02323** **XUFN5P01L2** **XUFN5S01L2**

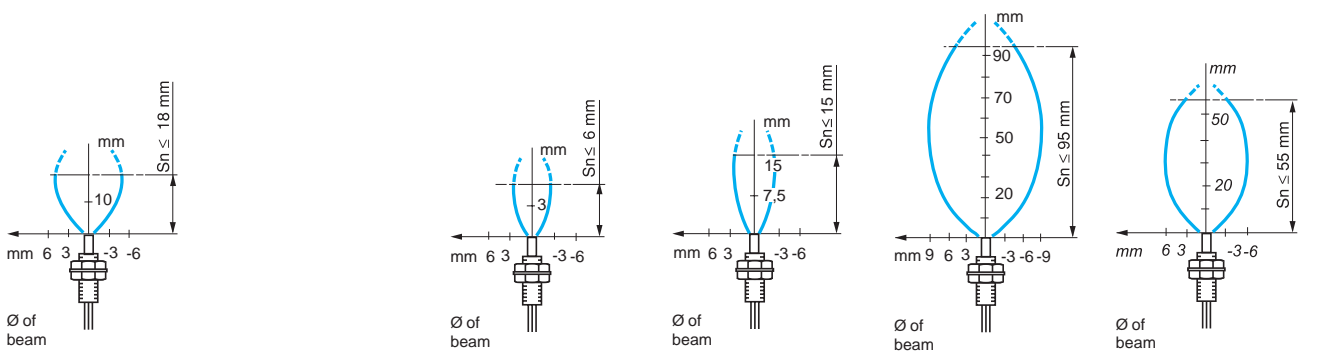
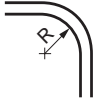


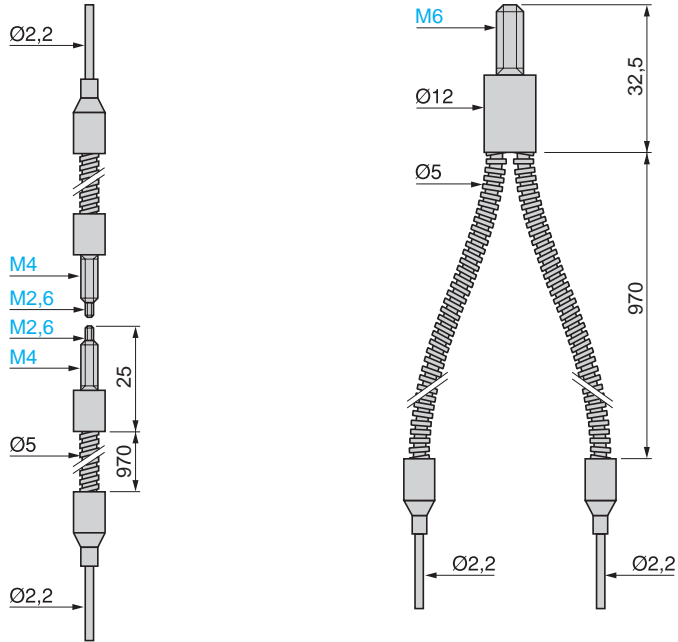
Photo-electric sensors

OsiSense XU Application
Fibre optics for amplifiers

“GLASS” fibres with end fittings, thru-beam and diffuse systems



R = minimum bend radius
Metal sheath, R = 90 mm



System	Thru-beam	Diffuse
Nominal sensing distance (Sn) with fibre L = 1 m	200 mm (1) 1500 mm (2)	70 mm
Application	High temperatures	

References (complete assembly - 2 fibres for thru-beam system)

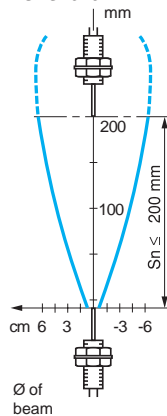
With standard end fittings	L = 1 m	XUFS2020	XUFS0520
Weight (kg)		0.070	0.075

Characteristics

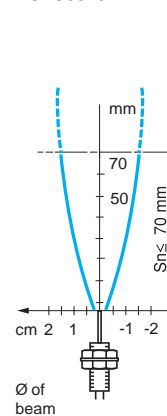
Fibre (view on sensing face)		
Core (Ø mm)	1 x Ø 1	2 x Ø 1
Ambient air temperature	For operation and storage: - 40...+ 180 °C	
Vibration resistance	7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-6	
Shock resistance	30 gn, duration 11 ms, conforming to IEC 60068-2-27	
Degree of protection	IP 64 conforming to IEC 60529 and IP 641 conforming to NF C 20-010	
Materials	Fibres: glass; sheath: metal	

Detection curves

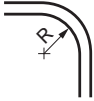
XUFS2020



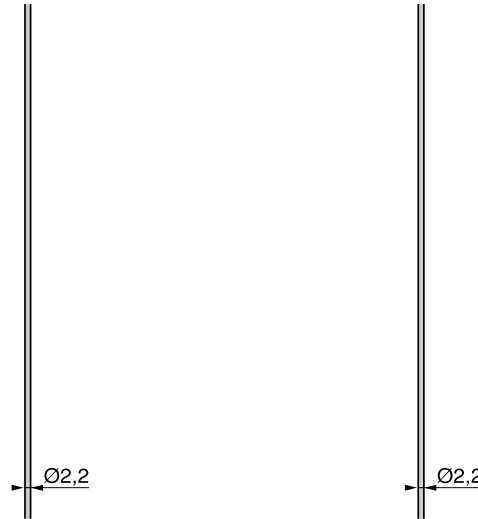
XUFS0520



(1) Can be used with 90° mirror **XUFZ02**, see page 5/136.
(2) With lens accessory **XUFZ01**, see page 5/136.



R = minimum bend radius
Fibre of ext. Ø 2.2 mm, R = 25 mm



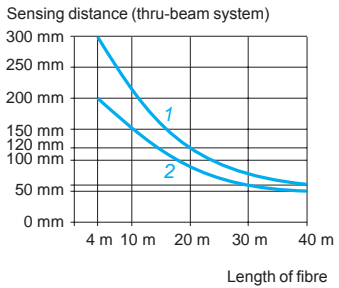
Nominal sensing distance (Sn) L = 2 m	See detection curves below (1)
Application	General purpose

References				
Fibre without end fitting	XUFZ910	XUFZ920	XUFZ911	XUFZ921
Weight (kg)	0.020	0.040	0.040	0.080

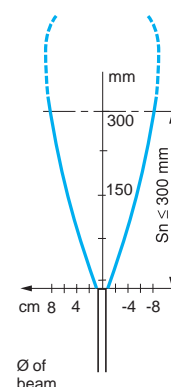
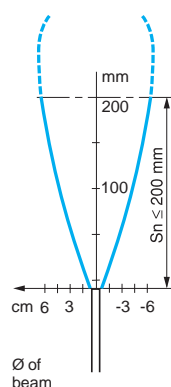
Characteristics				
Fibre				
Core (Ø mm)	1 x Ø 1		1 x Ø 1.4	
Length	10 m	20 m	10 m	20 m
Trimable to required length (trimmer XUFZ11 included)	Yes		Yes	
Ambient air temperature	For operation: - 25... + 60 °C. For storage: - 40... + 80 °C			
Vibration resistance	7 gn, amplitude ± 1.5 mm (f = 10...55 Hz), conforming to IEC 60068-2-6			
Shock resistance	30 gn, duration 11 ms, conforming to IEC 60068-2-27			
Degree of protection	IP 64 conforming to IEC 60529 and IP 641 conforming to NF C 20-010			
Materials	Fibres: PMMA; sheath: PE			

Detection curves

XUFZ911, XUFZ921 XUFZ910, XUFZ920	XUFZ910, XUFZ920	XUFZ911, XUFZ921
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- 1 XUFZ911, XUFZ921
 - 2 XUFZ910, XUFZ920
- Total length = sum of the 2 strands used to constitute a thru-beam system



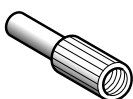
(1) It is possible to increase the sensing distance of fibres without end fittings by using fixing clamps with lens (XUFZ03, XUFZ04 or XUFZ05), see page 5/136.



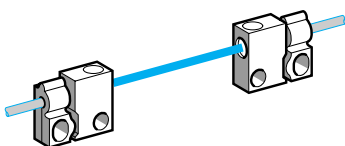
XUFZ02



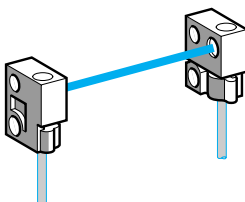
XUFZ01



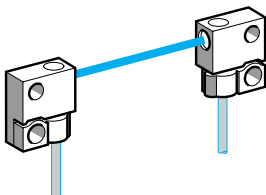
XUFZ06



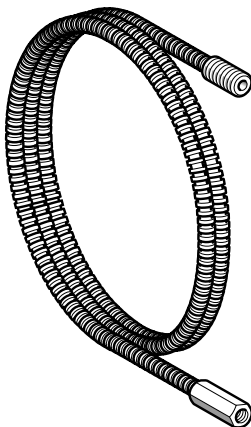
XUFZ13, XUFZ03



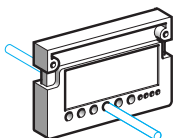
XUFZ14, XUFZ04



XUFZ15, XUFZ05



XUFZ10



XUFZ11



XUFZ08

Accessories for fibres with threaded end fittings

Description	For use with	Reference	Weight kg
90° mirror (set of 2)	Fibre optics XUFN1●30●, XUFN35301 and XUFS2020 (thru-beam system) XUFN2●01L●●	XUFZ02	0.005
Lenses for increasing sensing distance (set of 2)	Fibre optics XUFN1●30●, XUFN35301 and XUFS2020 (thru-beam system)	XUFZ01	0.005
Focusing lens for high precision detection. Detection of 0.5 mm objects at a distance of 7 mm. Also enables detection of objects against a background (1)	Fibre optics XUFN02323 (diffuse system)	XUFZ06	0.001

Accessories for plastic fibres without end fittings

Description	Mounting plane	For use with	Reference	Weight kg
Fixing clamps (set of 2)	Axial	Plastic fibre optics XUFZ	XUFZ13	0.002
	Frontal	Plastic fibre optics XUFZ	XUFZ14	0.002
	Lateral	Plastic fibre optics XUFZ	XUFZ15	0.002
Fixing clamps with lens (set of 2)	Axial	Plastic fibre optics XUFZ	XUFZ03	0.002
	Frontal	Plastic fibre optics XUFZ	XUFZ04	0.002
	Lateral	Plastic fibre optics XUFZ	XUFZ05	0.002

Protection accessories

Description	For use with	Reference	Weight kg
Protective tubing Length 1 m	Plastic fibre optic light guides with M4 threaded end fittings	XUFZ210	0.040
	Plastic fibre optic light guides with M6 threaded end fittings	XUFZ310	0.065

Other accessories

Description	Sold in lots of	Unit reference	Weight kg
Fibre trimmer	1	XUFZ11	0.006
Plastic end adaptor , for connecting Ø 1 mm fibres to amplifiers XUDA	2	XUFZ08	0.002

(1) Characteristics obtained when the fibre is fully screwed into the lens (screwing depth = 4 mm).

Detection curves for plastic fibre optic light guides with fixing clamps

Sensing distance of fibres XUFZ9●●● fitted with fixing clamps XUFZ●●

Fibre type	Clamp type				
	XUFZ13	XUFZ14, Z15	XUFZ03	XUFZ04, XUFZ05	Without clamp
XUFZ910, XUFZ920 (2 fibres L = 2 m) Sn	150 mm	100 mm	800 mm	600 mm	200 mm
XUFZ911, XUFZ921 (2 fibres L = 2 m) Sn	220 mm	150 mm	1200 mm	900 mm	300 mm

Other fibre lengths:

5 m fibres: reduce the sensing distance by a factor of 0.7.

10 m fibres: reduce the sensing distance by a factor of 0.5.

20 m fibres: reduce the sensing distance by a factor of 0.3.

Detection curves with lens

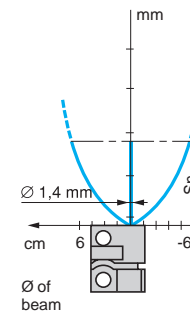
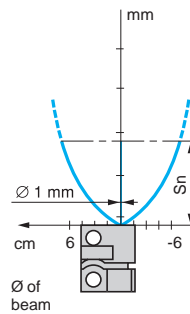
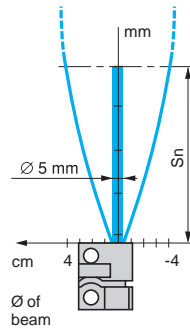
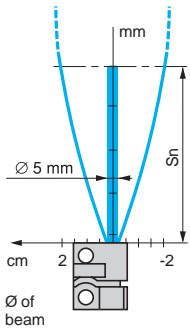
Fixing clamp XUFZ03, Z04 or Z05 + fibre XUFZ910 or XUFZ920

Fixing clamp XUFZ03, Z04 or Z05 + fibre XUFZ911 or XUFZ921

Detection curves without lens

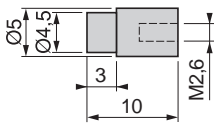
Fixing clamp XUFZ13, Z14 or Z15 + fibre XUFZ910 or XUFZ920

Fixing clamp XUFZ13, Z14 or Z15 + fibre XUFZ911 or XUFZ921

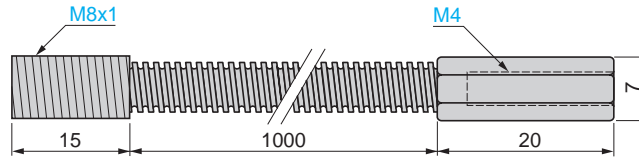


Dimensions

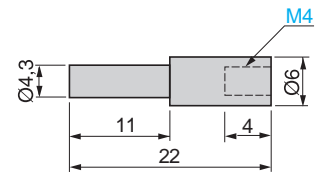
XUFZ01



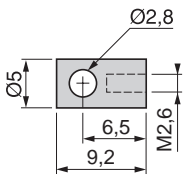
XUFZ210



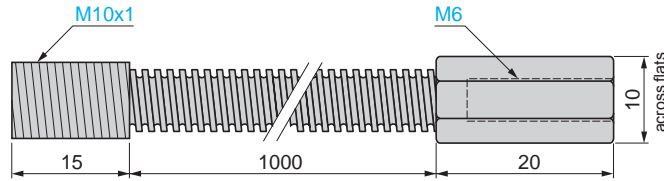
XUFZ06



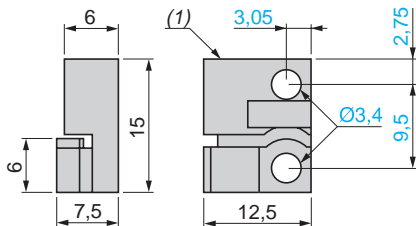
XUFZ02



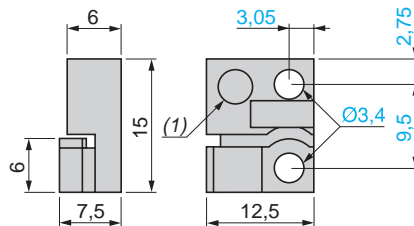
XUFZ310



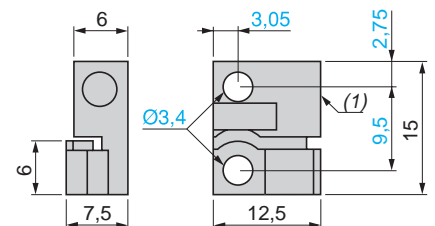
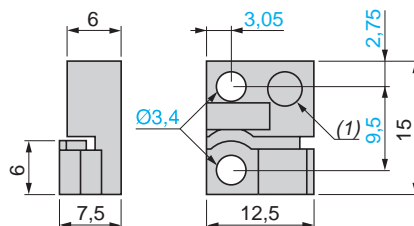
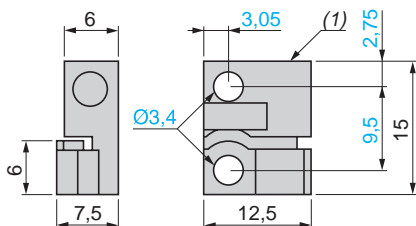
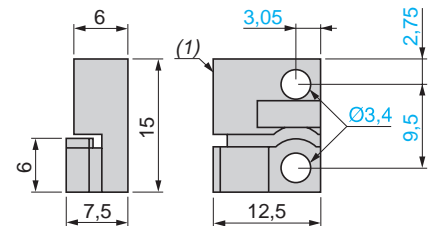
XUFZ03, XUFZ13



XUFZ04, XUFZ14

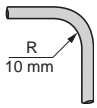


XUFZ05, XUFZ15

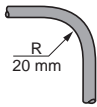


(1) Light beam window.

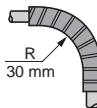
“GLASS” fibre optics for diffuse system



Standard sheath
External Ø
XUYFVP: 5 mm
XUYFVER: 3 mm

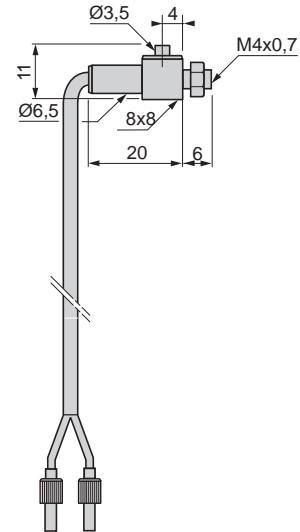
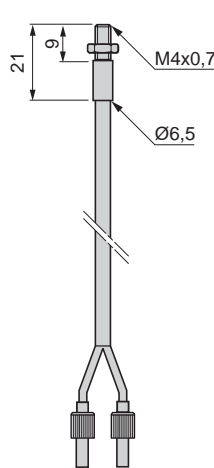


Metal reinforced sheath
XUYFVP: 5 mm
XUYFVER: 3.5 mm



High temperature sheath
XUYFVP: 5 mm
XUYFVER: 5 mm

R = minimum bend radius



Applications

- Detection in high temperature environment (up to 200 °C)
- Detection in aggressive environment
- Application requiring high level of performance

References

Type of end fitting	Straight			Lateral		
	Standard	Metal reinforced	High temperature	Standard	Metal reinforced	High temperature
Sheath						
References with 0.60 m long fibre (1)	XUYFVPSD61	XUYFVPMD61	XUYFVPTD61	XUYFVPSL61	XUYFVPL61	XUYFVPTL61
Nominal sensing distance Sn (mm)	80	80	80	80	80	80
Weight (kg)	0.040	0.045	0.052	0.042	0.056	0.056

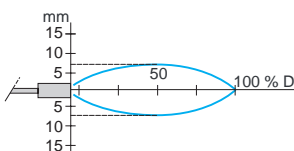
Characteristics

Fibre	400 strands per mm ²
Usable diameter of fibre	1.2 mm
Ambient air temperature	For operation Standard: - 25...+ 60 °C Metal reinforced: - 25...+ 120 °C High temperature: -25...+ 200 °C
Detection end fitting	Nickel plated brass
Materials	Fibre: 50 µ glass Sheath: Standard: PVC + thermo polyolefine, Metal reinforced: spiralled metal + polyolefine High temperature: flexible stainless steel

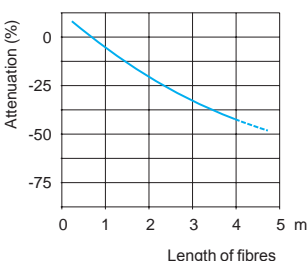
(1) For 1 m long fibre, replace 61 in the reference by 101. Example: XUYFVPSD61 becomes XUYFVPSD101 for a 1 m long fibre.
For 1.5 m long fibre, replace 61 in the reference by 151. Example: XUYFVPMD61 becomes XUYFVPMD151 for a 1.5 m long fibre.
For 2 m long fibre, replace 61 in the reference by 201. Example: XUYFVPTD61 becomes XUYFVPTD201 for a 2 m long fibre.

Detection and attenuation curves

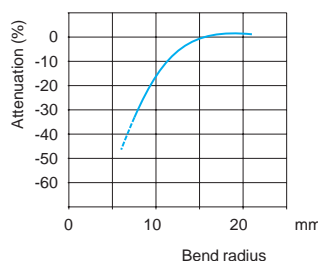
XUYFVP●●61



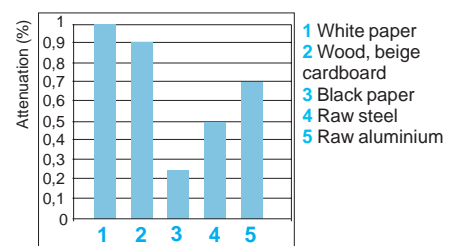
Attenuation related to length

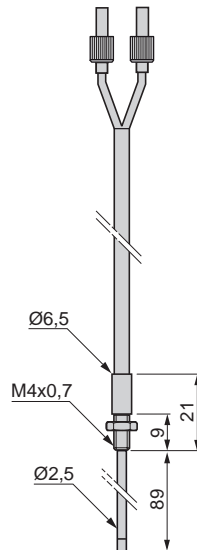
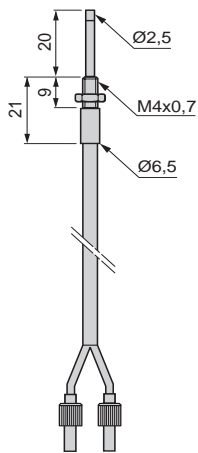


Bending influence



Material influence





Extended			Pliable		
Standard	Metal reinforced	High temperature	Standard	Metal reinforced	High temperature
XUYFVPSA61 (1)	XUYFVPMMA61 (1)	XUYFVPTA61 (1)	XUYFVPSA61 (1)	XUYFVPMMA61 (1)	XUYFVPTA61 (1)
80	80	80	80	80	80
0.041	0.046	0.053	0.043	0.057	0.057

400 strands per mm²

1.2 mm

Standard: - 25...+ 60 °C

Metal reinforced: - 25...+ 120 °C

High temperature: - 25...+ 200 °C

Nickel plated brass

50 µ glass

Standard: PVC + thermo polyolefine,

Metal reinforced: spiralled metal + polyolefine

High temperature: flexible stainless steel

(1) For 1 m long fibre, replace 61 in the reference by 101. Example: XUYFVPSA61 becomes **XUYFVPSA101** for a 1 m long fibre.

For 1.5 m long fibre, replace 61 in the reference by 151. Example: XUYFVPMMA61 becomes **XUYFVPMMA151** for a 1.5 m long fibre.

For 2 m long fibre, replace 61 in the reference by 201. Example: XUYFVPTA61 becomes **XUYFVPTA201** for a 2 m long fibre.

Photo-electric sensors

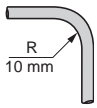
OsiSense XU Application

Fibre optics for amplifier

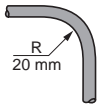
“GLASS” fibres with end fittings

For diffuse and thru-beam systems

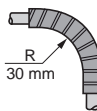
“GLASS” fibre optics for thru-beam system



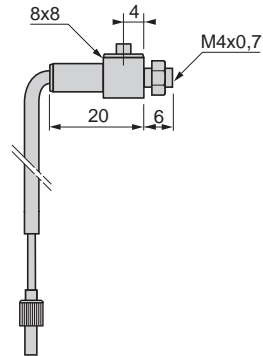
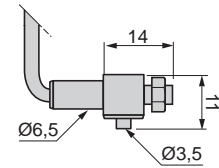
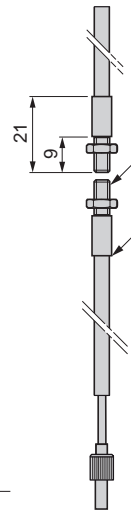
Standard sheath
External Ø
XUYFVP: 5 mm
XUYFVER: 3 mm



Metal reinforced sheath
XUYFVP: 5 mm
XUYFVER: 3.5 mm



High temperature sheath
XUYFVP: 5 mm
XUYFVER: 5 mm



R = minimum bend radius

Applications

- Detection in high temperature environment (up to 200 °C)
- Detection in aggressive environment
- Application requiring high level of performance

References

Type of end fitting				Lateral		
	Standard	Metal reinforced	High temperature	Standard	Metal reinforced	High temperature
Sheath						
References with 0.6 m long fibre (1)	XUYFVERSD61	XUYFVERMD61	XUYFVERTD61	XUYFVERSL61	XUYFVERML61	XUYFVERTL61
Nominal sensing distance Sn (mm)	200	200	200	200	200	200
Weight (kg)	0.042	0.046	0.060	0.052	0.061	0.075

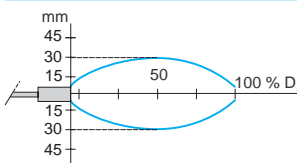
Characteristics

Fibre	400 strands per mm ²	
Usable diameter of fibre	1.2 mm	
Ambient air temperature	For operation	Standard: - 25...+ 60 °C, Metal reinforced: - 25...+ 120 °C High temperature: - 25...+ 200 °C
Detection end fitting	Nickel plated brass	
Materials	Fibre	50 µ glass
	Sheath	Standard: PVC + thermo polyolefine Metal reinforced: spiralled metal + polyolefine High temperature: flexible stainless steel

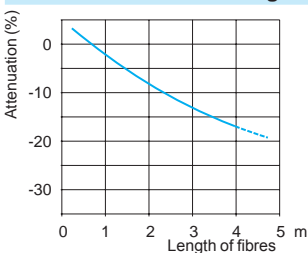
(1) For 1 m long fibre, replace 61 in the reference by 101. Example: XUYFVERSD61 becomes XUYFVERSD101 for a 1 m long fibre.
For 1.5 m long fibre, replace 61 in the reference by 151. Example: XUYFVERMD61 becomes XUYFVERMD151 for a 1.5 m long fibre.
For 2 m long fibre, replace 61 in the reference by 201. Example: XUYFVERTD61 becomes XUYFVERTD201 for a 2 m long fibre.

Detection and attenuation curves

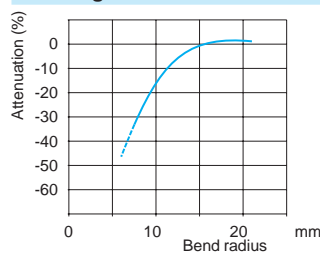
XUYFVER●●61



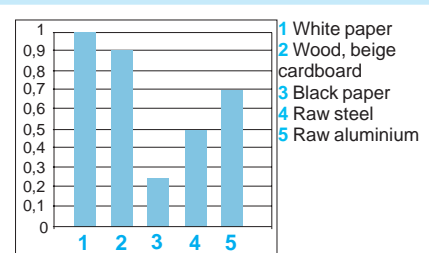
Attenuation related to length

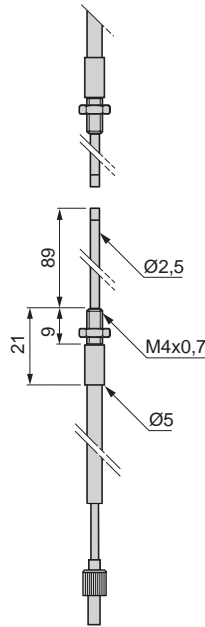
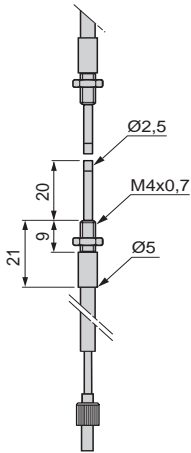


Bending influence



Material influence





Extended			Pliable		
Standard	Metal reinforced	High temperature	Standard	Metal reinforced	High temperature
XUYFVERSA61 (1)	XUYFVERMA61 (1)	XUYFVERTA61 (1)	XUYFVERSC61 (1)	XUYFVERMC61 (1)	XUYFVERTC61 (1)
80	80	80	80	80	80
0.043	0.047	0.061	0.053	0.061	0.076

400 strands per mm²

1.2 mm

Standard: - 25...+ 60 °C,
Metal reinforced: - 25...+ 120 °C
High temperature: - 25...+ 200 °C

Nickel plated brass

50 µ glass

Standard: PVC + thermo polyolefine
Metal reinforced: spiralled metal + polyolefine
High temperature: flexible stainless steel

(1) For 1 m long fibre, replace 61 in the reference by 101. Example: XUYFVERSA61 becomes XUYFVERSA101 for a 1 m long fibre.
 For 1.5 m long fibre, replace 61 in the reference by 151. Example: XUYFVERMA61 becomes XUYFVERMA151 for a 1.5 m long fibre.
 For 2 m long fibre, replace 61 in the reference by 201. Example: XUYFVERTA61 becomes XUYFVERTA201 for a 2 m long fibre.

Accessories

Focusers for diffuse system fibre optics

Description	For use with	Nominal sensing distance (Sn)	Unit reference	Weight
		mm		kg
Focusers for pinpoint reading of reference marks, contrasts, faults, etc.	XUYFVERSD61	10	XUY1120	0.003
	XUYFVERMD61	30	XUY1125	0.004
	XUYFVERTD61			

Focusers for thru-beam system fibre optics

Description	For use with	Nominal sensing distance (Sn)	Unit reference	Weight
		mm		kg
Focusers for increasing sensing distances (sold in lots of 2)	XUYFVERSD61	800	XUY1121 (1)	0.004
	XUYFVERMD61	3000	XUY1124 (2)	0.012
	XUYFVERTD61	800	XUY1122 (1)	0.006

(1) 70° max.

(2) 250° max.

Photo-electric sensors

OsiSense XU Application

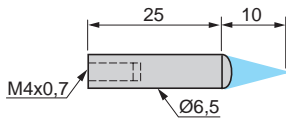
Fibre optics for amplifier

“GLASS” fibres with end fittings

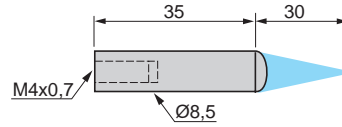
For diffuse and thru-beam systems

Focuseurs

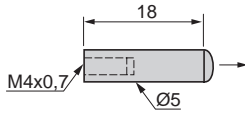
XUY1120



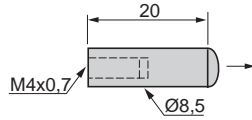
XUY1125



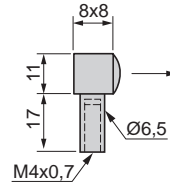
XUY1121



XUY1124



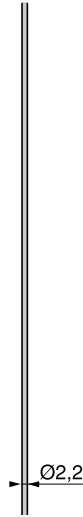
XUY1122R



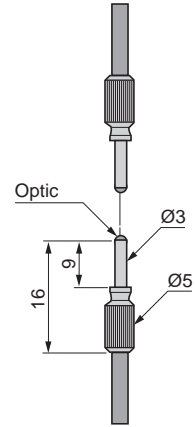
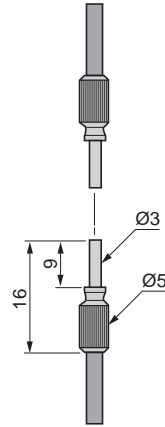
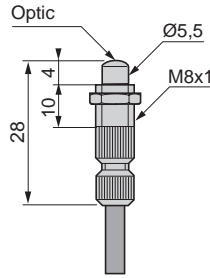
Ecofibre concept

Assemble your own fibre optics.

Fibres without end fitting



End fittings



End fittings

Nominal sensing distance S_n (mm)	70	200	800
Reference	XUYA110	XUYA210	XUYA211
Weight (kg)	0.009	0.004	0.004

Fibres without end fitting

Type of fibre

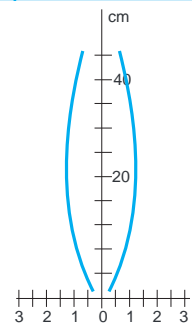
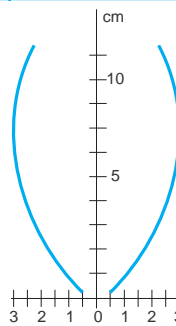
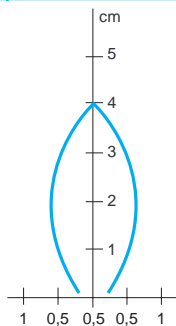
Single fibre, plastic, single strand

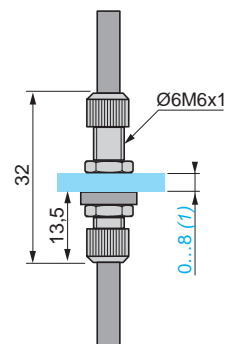
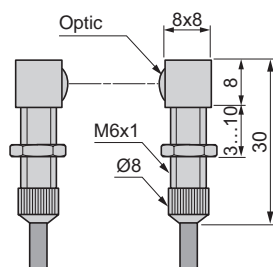
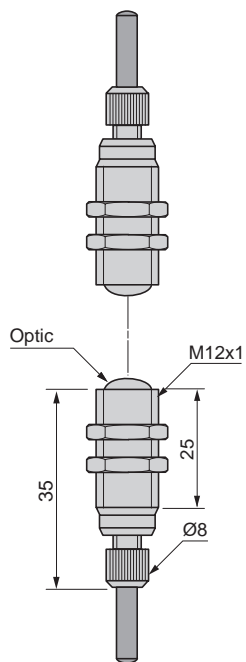
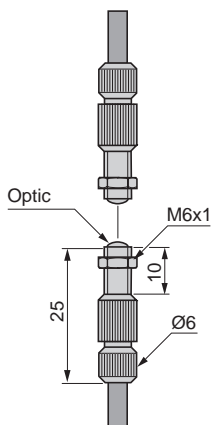


Length (m)	1	10	50
Usable diameter (mm)	1	1	1
External diameter (mm)	2.2	2.2	2.2
Reference	XUYA005	XUYA00510	XUYA00550
Weight (kg)	0.006	0.042	0.220

Curves

End fittings	XUYA110	XUYA210	XUYA211
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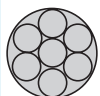


End fitting for passing through partition

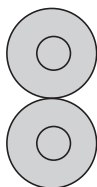
(1) Ø 6.2 cut-out

1200	4000	1200	-
XUYA212	XUYA213	XUYA220	XUYA310
0.011	0.045	0.018	0.017

Single fibre, plastic, multistrand

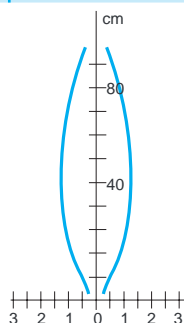
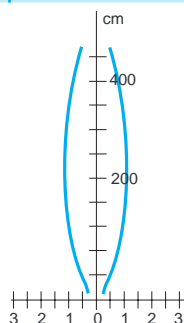
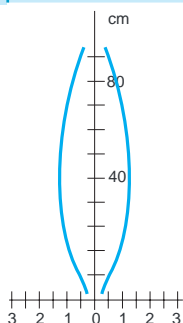


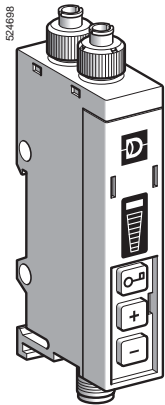
Dual fibre, plastic, single strand



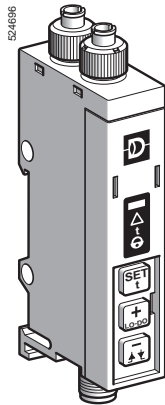
1	1
1	1
2.2	2.2
XUYAU005	XUYFP2BRINA005B
0.006	0.080

XUYA212	XUYA213	XUYA220
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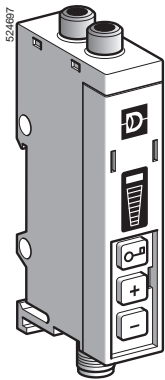




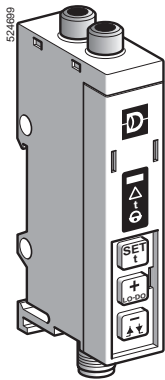
XUYAFP966S



XUYAFP946S



XUYAFV966S



XUYAFV946S

Amplifiers for plastic fibre optics (1)

Sensing distance (Sn) m	Function	Output	Connection	Reference	Weight kg
Adjustment using +/- button (2)					
Depending on fibre	NO/NC	PNP/NPN	Pre-cabled	XUYAFP966S	0.124
	dpg. on wiring		M8 connector	XUYAFPCO966S	0.056

Adjustment using teach mode (3)

Depending on fibre	NO/NC	PNP/NPN	Pre-cabled	XUYAFP946S	0.124
	programmable		M8 connector	XUYAFPCO946S	0.056

Amplifiers for glass fibre optics

Sensing distance (Sn) m	Function	Output	Connection	Reference	Weight kg
Adjustment using +/- button (2)					
Depending on fibre	NO/NC	dpg. on PNP/NPN wiring	Pre-cabled	XUYAFV966S	0.116
			M8 connector	XUYAFVCO966S	0.047

Adjustment using teach mode (3)

Depending on fibre	NO/NC	PNP/NPN	Pre-cabled	XUYAFV946S	0.124
	programmable		M8 connector	XUYAFVCO946S	0.047

Accessories

Description	Details	Length of cable m	Reference	Weight kg
Pre-wired M8 connector	Straight	2	XZCP0941L2	0.080
	Elbowed (90°)	2	XZCP1041L2	0.080
	Straight	5	XZCP0941L5	0.180
	Elbowed (90°)	5	XZCP1041L5	0.180

(1) Fibre trimmer included

(2) Indication of level by bargraph, adjustment by pressing button

(3) Fine mode or standard mode, adjustment using teach

Characteristics

Sensor type	XUYAF●9●6S		XUYAFCO9●6S
Product certifications	CE, cULus (4)		
Connection	Connector	-	
	Pre-cabled	Length: 2 m	M8, 4-pin
Nominal sensing distance (Sn)	Depending on fibre optic used		
Type of transmission	LED	Red LED	
	Modulation frequency	8 kHz	
Sensitivity adjustment	Using teach (fine mode or standard mode) and/or +/- button, depending on model		
Degree of protection	Conforming to IEC 60529 IP 65		
Ambient air temperature	For storage	°C	-20...+80
	For operation	°C	0...+60
Materials	Polycarbonate		
Immunity to ambient light	Incandescent bulb	Lux	10 000
	Natural light	Lux	20 000
Rated supply voltage	V $\overline{\text{---}}$ 12...24 with protection against reverse polarity		
Voltage limits (including ripple)	V $\overline{\text{---}}$ 10...30		
Current consumption, no-load	mA < 40		
Switching capacity	mA 100 with overload and short-circuit protection		
Voltage drop, closed state	V < 2		
Maximum switching frequency	kHz < 1		
External input (5)	Active	V	< 1.4
	Inactive	V	> 3
Delays	Response and recovery ms < 0.5		
Output time delay (5)	Range	s	0...5 in 11 adjustment increments
	Duration of each increment	ms	First increment 40 ms then 500 ms for each press

(4) This product is UL Listed if supplied by a class II or isolated supply delivering $\overline{\text{---}}$ 30 V max. (isolated transformer for example) and protected by a UL fuse rated at 3 A max.

(5) Only for models with teach mode.

Applications using plastic fibre optics

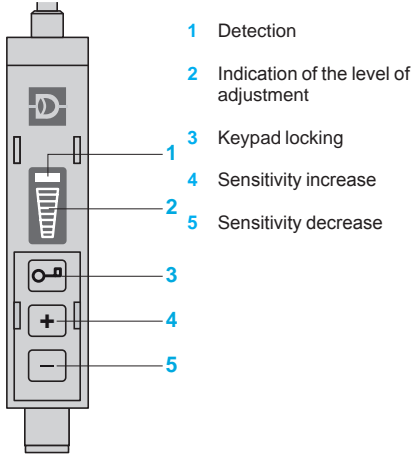
- Monitoring position or presence of parts on an assembly or packing machine
- Detection of objects on small conveyor
- Use of fibre optics in vibratory environments (robot arms)
- Detection of reference and colour marks in packaging

Applications with glass fibre optics

- Monitoring position or presence of parts on an assembly or packing machine
- Detection of presence of parts in a plastic mould
- Detection in aggressive environments
- Detection of items exiting an oven (high temperature fibres)

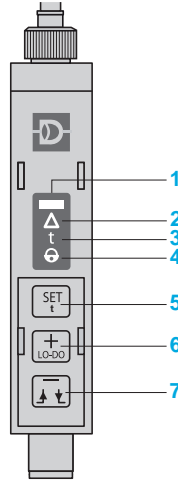
Presentation

XUYAF₀, adjustment using button



- 1 Detection
- 2 Indication of the level of adjustment
- 3 Keypad locking
- 4 Sensitivity increase
- 5 Sensitivity decrease

XUYAF₀, adjustment using teach mode

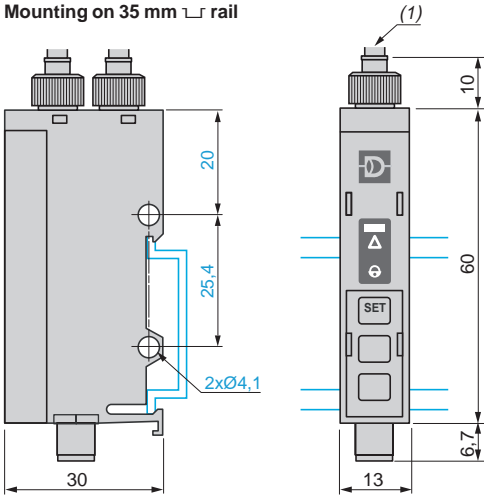


- 1 Detection
- 2 Dirty optics, limit of detection, alignment assistance
- 3 Time delay active
- 4 Action keypad, keypad locking
- 5 Automatic adjustment of the threshold, access to special functions
- 6 Sensitivity increase, direct/inverse output, time delay increase
- 7 Sensitivity decrease, On-delay, Off-delay inversion, time delay decrease

Dimensions

XUYAFP966S/AFPCO966S

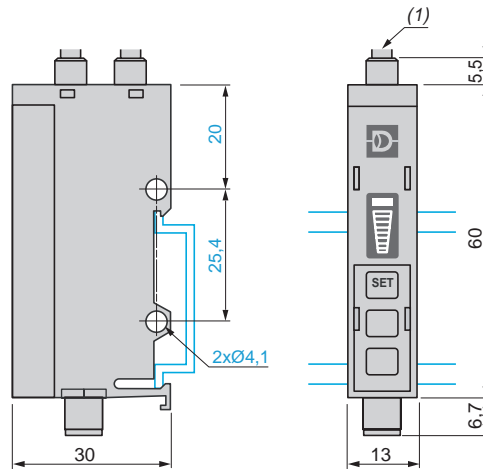
Mounting on 35 mm rail



(1) Plastic fibre optic: \varnothing 2.2 mm

XUYAFV966S/AFVCO966S

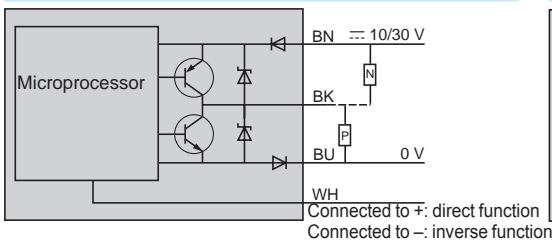
Mounting on 35 mm rail



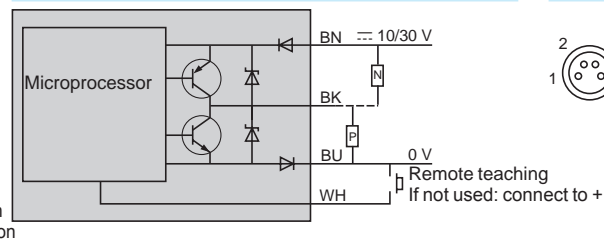
(1) Glass fibre optic: \varnothing 3 mm

Wiring schemes

XUYAFP966/AFV966



XUYAFP946/AFV946

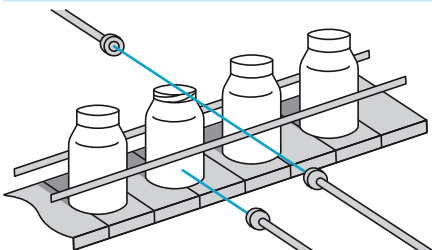


M8 connector

Pin N°	Colour
1	BN Brown
2	WH White
3	BU Blue
4	BK Black

Application examples

Thru-beam and diffuse system detection



Thru-beam system detection

