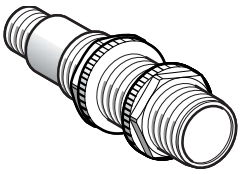
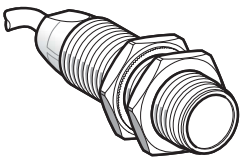
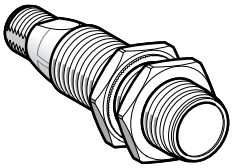
Ultrasonic sensors
OsiSense XX
Cylindrical plastic case, M12 x 1, M18 x 1, M30 x 1.5
DC supply, solid-state output

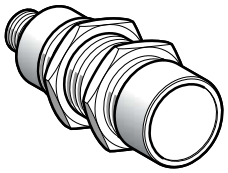
564546

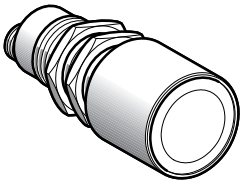
XX5 12A1KAM8

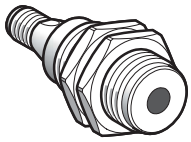
564547

XX5 18A1KAM12

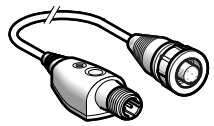
537688

XX5 18A3●●L2

532713

XX5 18A3●AM12

532243

XX6 30A1KAM12

564531

XX6 30A3●CM12

537727

XX6 V3A1●CM12

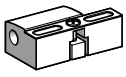
564530

XXZ PB100

564533

XZ CC12FD●40B

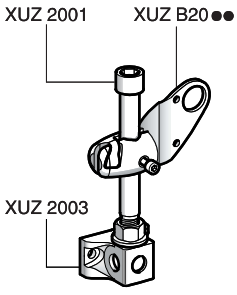
564534

XZ CP1041L●

564535

XSZ B11●

564532

XUZ A118

532417


3D xing kit example

Fixed sensing distance sensors

Sensors	Sensing distance (Sn)	Function	Connection	Output	Reference	Weight
	m					kg
Ø 12	0.05	NO + NO	M8 connector	PNP/NPN	XX5 12A1KAM8	0.011
	0.10	NO	M8 connector	NPN	XX5 12A2NAM8	0.011
				PNP	XX5 12A2PAM8	0.011
Ø 18	0.15	NO + NO	M12 connector	PNP/NPN	XX5 18A1KAM12	0.033

Adjustable sensing distance sensors

Ø 18	0.50 (adjustable)	NO	Pre-cabled (L = 2 m)	NPN	XX5 18A3NAL2	0.080
				PNP	XX5 18A3PAL2	0.080
			M12 connector	NPN	XX5 18A3NAM12	0.033
				PNP	XX5 18A3PAM12	0.033
Ø 30	1 (adjustable)	NO + NO	M12 connector	PNP/NPN	XX6 30A1KAM12	0.090
		NO	M12 connector	NPN	XX6 V3A1NAM12	0.090
				PNP	XX6 V3A1PAM12	0.090
		NO + NC	M12 connector	NPN	XX6 30A1NCM12	0.090
					XX6 30S1NCM12 (1)	0.090
				PNP	XX6 30A1PCM12	0.090
					XX6 30S1PCM12 (1)	0.090
	8 (adjustable)	NO + NC	M12 connector	NPN	XX6 30A3NCM12	0.110
				PNP	XX6 30A3PCM12	0.110

(1) Stainless steel 303 case.

Accessories

Teach pushbutton

Teach pushbutton	For use with sensors	Reference	Weight kg
Selection of detection window Input: M12 female connector Output: M12 male connector	XX5 18A3●AM12 and XX6 V3A●AM12	XXZ PB100	0.035

Cabling accessories (4-wire output) (2)

Connectors	For use with sensor	Type of connection		Reference	Weight kg
M8, 3-pin	Ø 12	IDC	Straight	XZ CC8FDM30V	0.010
			Elbowed	XZ CC8FCM30V	0.010
M8, 4-pin	Ø 12	Solder terminals	Straight	XZ CC8FDM40S	0.010
			Elbowed	XZ CC8FCM40S	0.010
M12	Ø 18, Ø 30	Screw terminals, metal clamping ring	Straight	XZ CC12FDM40B	0.020
			Elbowed	XZ CC12FCM40B	0.020
		Screw terminals, plastic clamping ring	Straight	XZ CC12FDP40B	0.020
			Elbowed	XZ CC12FCP40B	0.020

Pre-wired connectors	For use with sensor	Type	Length m	Reference	Weight kg
M8, 3-pin	Ø 12	Straight	2	XZ CP0166L2 (3)	0.080
		Elbowed	2	XZ CP0266L2 (3)	0.080
M12	Ø 18, Ø 30	Straight	2	XZ CP1141L2 (3)	0.090
		Elbowed	2	XZ CP1241L2 (3)	0.090

Fixing accessories

Description		For use with sensor	Reference	Weight kg
Fixing clamps		Ø 12	XSZ B112	0.006
		Ø 18	XSZ B118	0.010
90° xing bracket		Ø 12	XXZ 12	0.025
		Ø 18	XUZ A118	0.038
		Ø 30	XXZ 30	0.115
3D xing kit (4)	M12 rod	Ø 12, Ø 18 and Ø 30	XUZ 2001	0.050
	Support for M12 rod	Ø 12, Ø 18 and Ø 30	XUZ 2003	0.160
	Ball-joint mounted fixing bracket	Ø 12	XUZ B2012	0.175
		Ø 18	XUZ B2003	0.175
		Ø 30	XUZ B2030	0.160

(2) For 3-wire cabling accessories, refer to the Global Detection catalogue.
(3) For a 5 m long cable replace L2 by L5; for a 10 m long cable replace L2 by L10.
(4) To obtain a 3D xing kit, order:
rod support XUZ 2003, M12 rod XUZ 2001 and ball-joint mounted xing bracket XUZ B20●●

General: page 6/4 | Characteristics: page 6/10 | Dimensions: pages 6/12 and 6/13 | Schemes: page 6/15

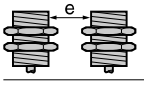
Ultrasonic sensors
OsiSense XX
Cylindrical plastic case, M12 x 1, M18 x 1, M30 x 1.5
DC supply, solid-state output

Sensor type			XX5 12A1●●●●	XX5 12A2●●●●	XX5 18A1●●●●	XX5 18A3●M12	XX5 18A3●●L2	XX6 V3A1●●●●	XX6 30A1●●●● 30S1●●●●	XX6 30A3●●●●
Characteristics										
Product certi cations			CE, UL		CE, UL, CSA	CE, UL		CE, UL, CSA		
Conformity to standards			IEC 60947-5-2, UL508 pending and CSA C22-2 n° 14 pending							
Connection	Connector		M8, 4-pin	M8, 3-pin	M12, 4-pin	M12, 4-pin	–	M12, 4-pin	M12, 4-pin	M12, 4-pin
	Pre-cabled		–	–	–	–	Length = 2 m 4 x 0.008 mm²	–	–	–
Sensing range		mm	6.4…51	6.4…102	19…152	51…508	51…508	100...1000	51…991	203…8000
Nominal sensing distance (Sn)		m	0.05	0.1	0.15	0.50	0.50	1	1	8
Detection distance		mm	Fixed			Remotely adjustable using external teach button			Adjustable using teach button on sensor	
Blind zone (no object must pass through this zone whilst the sensor is operating)		mm	0…6.4	0…6.4	0…19	0…51	0…51	0...100	0…51	0…203
Differential travel		mm	< 0.7	< 0.7	< 0.35	< 2.5	< 2.5	< 2.5	< 2.5	< 12.7
Transmission frequency		kHz	500			300	300	180	200	75
Repeat accuracy		mm	± 0.7			± 1.27	± 1.27	± 1.6	± 0.9	± 2.54
Overall beam angle (see detection lobe)			11°	10°	8°	6°	6°	7°	10°	16°
Minimum size of object to be detected			Cylinder Ø 2.5 mm or flat bar 1 mm wide		Cylinder Ø 1.6 mm	Cylinder Ø 2.5 mm up to a sensing distance of 150 mm	Cylinder Ø 2.5 mm up to a sensing distance of 150 mm	Cylinder Ø 50 mm up to a sensing distance of 1000 mm	Cylinder Ø 1.6 mm up to a sensing distance of 635 mm	Cylinder Ø 50.8 mm up to a sensing distance of 4732 mm
Degree of protection	Conforming to IEC 60529 and IEC 60947-5-2		IP 67					IP 67	IP 65	IP 67
Storage temperature		°C	- 40…+ 80							
Operating temperature		°C	- 20…+ 65		0…+ 50	- 20…+ 65	- 20…+ 65	0…+ 70	0…+ 60	- 20…+ 60
Materials	Case		ULTEM®			Valox®	Valox®	Valox®	ULTEM®	ULTEM®
			Stainless steel 303 for XX6 30AS1●●●●							
	Sensing face		Epoxy		Silicone	Epoxy	Epoxy	Epoxy	Silicone	Epoxy
Vibration resistance	Conforming to IEC 60068-2-6		Amplitude ± 1 mm (f = 10…55 Hz)							
Mechanical shock resistance	Conforming to IEC 60068-2-27		30 gn, duration 11 ms, in all 3 axes							
Resistance to electromagnetic interference										
Electrostatic discharges	Conforming to IEC 61000-4-2	kV	8, level 4							
Radiated electromagnetic fields	Conforming to IEC 61000-4-3	V/m	10, level 3							
Fast transients	Conforming to IEC 61000-4-4	kV	1, level 3							
LED indicators	Output state		Yellow LED	Yellow LED	–	Yellow LED				
	Power on		Green LED	Green LED	–	Green LED			–	
	Setting-up assistance		–	–	–	Dual colour LED			Multicolour LED	
Rated supply voltage		V	⎓ 12…24 V with protection against reverse polarity							
Voltage limits (including ripple)		V	⎓ 10…28 V							
Current consumption, no-load		mA	25		60	40	40	60	50	50
Switching capacity		mA	< 100 (PNP and NPN) with overload and short-circuit protection							
Voltage drop		V	< 1 (NPN); < 1.5 (PNP)							
Maximum switching frequency		Hz	125	125	80	40	40	70	10	2
Delays	First-up	ms	20	20	350	100	100	75	720	800
	Response	ms	2	3	3	10	10	15	20	200
	Recovery	ms	2	3	3	10	10	75	20	200
Deviation angle from 90° of he object to be detected			± 10°	± 10°	± 10°	± 7°	± 7°	± 5°	± 7°	± 5°

Setting-up

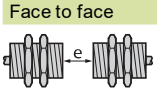
Minimum mounting distances

Side by side



e: respect the distances indicated on the detection curves shown on page 6/14.

Face to face



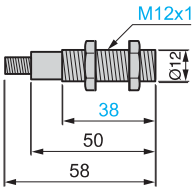
e = 4 x Sn max.

General: page 6/4
References: page 6/10
Dimensions: pages 6/12 and 6/13
Schemes: page 6/15

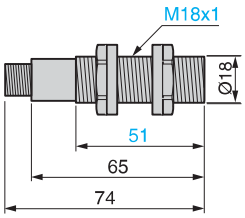
Ultrasonic sensors
OsiSense XX
Cylindrical plastic case, M12 x 1, M18 x 1, M30 x 1.5
DC supply, solid-state output

Dimensions

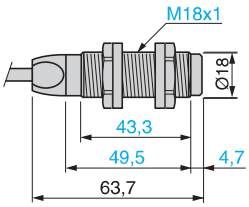
XX5 12A●●AM8



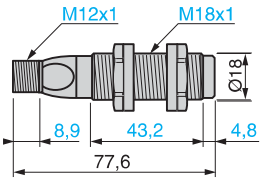
XX5 18A1KAM12



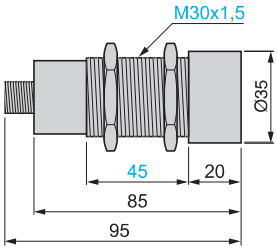
XX5 18A3●●L2



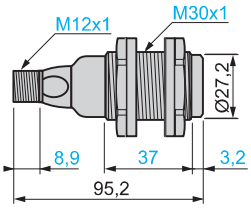
XX5 18A3●AM12



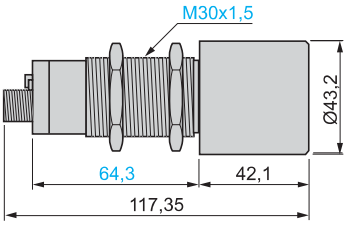
XX6 30A1●●M12/ XX6 30S1●●M12



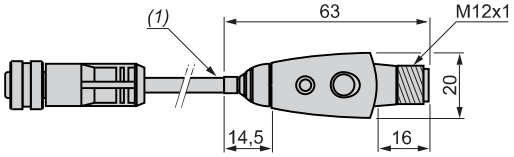
XX6 V3A1●AM12



XX6 30A3●●M12



XXZ PB100



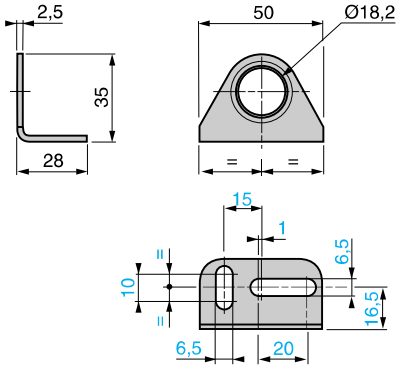
(1) Cable, length: 152.4 mm.

6

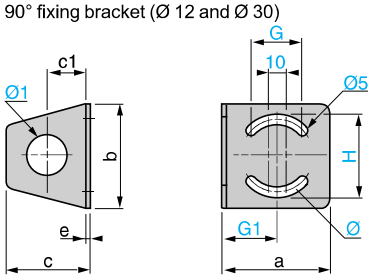
Ultrasonic sensors
OsiSense XX
Cylindrical plastic case, M12 x 1, M18 x 1, M30 x 1.5
DC supply, solid-state output

Dimensions
Accessories

XUZ A118
90° fixing bracket (Ø 18)

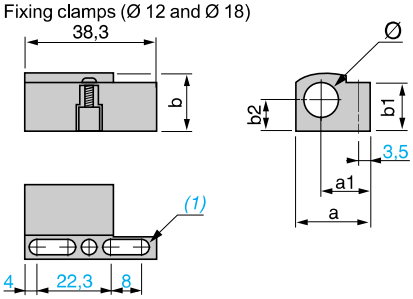


XXZ 12, XXZ 30
90° fixing bracket (Ø 12 and Ø 30)



XXZ	a	b	c	c1	e	H	G	G1	Ø	Ø1
12	35	40	33	18	2	31	18	18	25	13
30	67	65	52	25	3	51	35	33	50	31

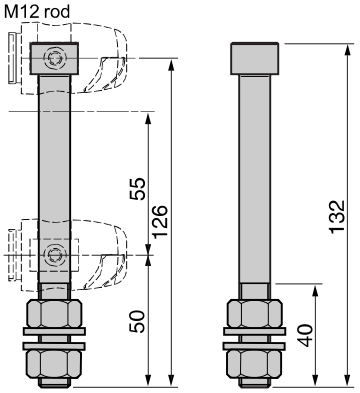
XSZ B112, XSZ B118
Fixing clamps (Ø 12 and Ø 18)



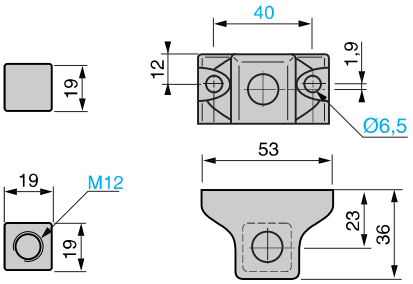
XSZ	a	a1	b	b1	b2	Ø
B112	21.9	14.5	16	15.5	8.5	12
B118	26	15.7	22.3	20.1	11.5	18

(1) 2 elongated holes Ø 4 x 8.

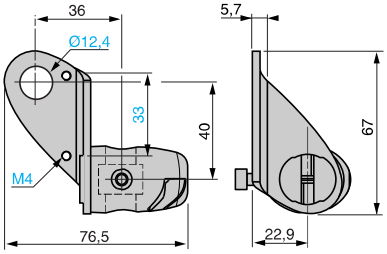
XUZ 2001
M12 rod



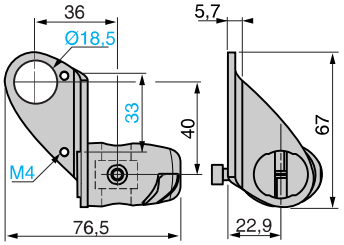
XUZ 2003
Support for M12 rod



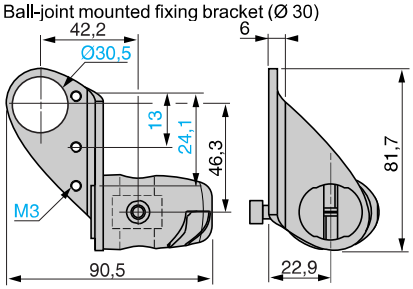
XUZ B2012
Ball-joint mounted fixing bracket (Ø 12)



XUZ B2003
Ball-joint mounted fixing bracket (Ø 18)



XUZ 2030
Ball-joint mounted fixing bracket (Ø 30)

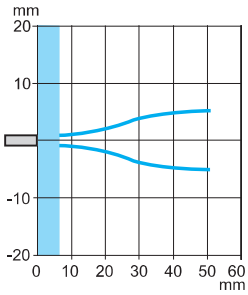


6

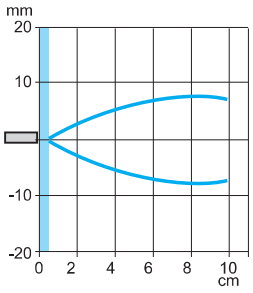
Ultrasonic sensors
OsiSense XX
Cylindrical plastic case, M12 x 1, M18 x 1, M30 x 1.5
DC supply, solid-state output

Detection curves

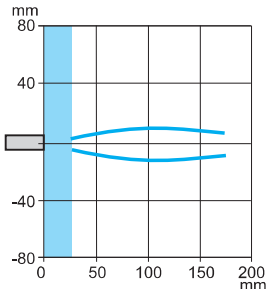
XX5 12A1KAM8



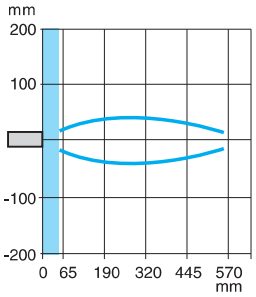
XX5 12A2●NAM8



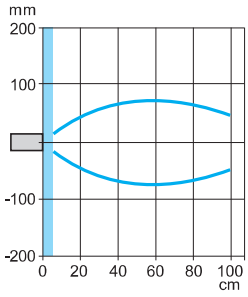
XX5 18A1KAM12



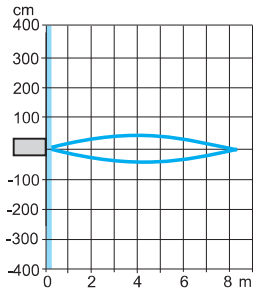
XX5 18A3●●L2/XX5 18A3●AM12



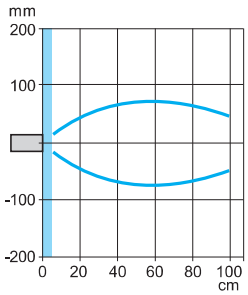
XX6 30A1●CM12



XX6 30A3●CM12



XX6 V3A1



Blind zone

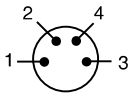
Ultrasonic sensors
OsiSense XX
Cylindrical plastic case, M12 x 1, M18 x 1, M30 x 1.5
DC supply, solid-state output

Wiring schemes

M8 connector

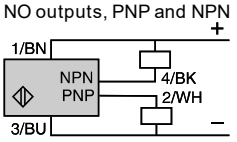
XX5 12A1KAM8

4-wire type



1 (+) 2 PNP output
3 (-) 4 NPN output

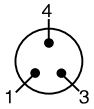
NO outputs, PNP and NPN



(-) BU (Blue) (+) BN (Brown)
WH (White) BK (Black)

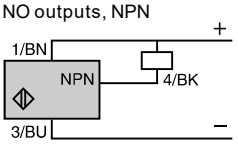
XX5 12A2●

3-wire type



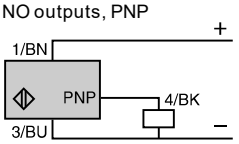
1 (+) 3 (-)
4 NPN or PNP output

NO outputs, NPN



(-) BU (Blue) (+) BN (Brown)
BK (Black)

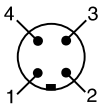
NO outputs, PNP



M12 connector

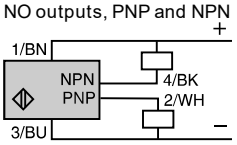
XX5 18A1KAM12

4-wire type



1 (+) 2 PNP output
3 (-) 4 NPN output

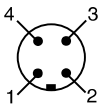
NO outputs, PNP and NPN



(-) BU (Blue) (+) BN (Brown)
WH (White) BK (Black)

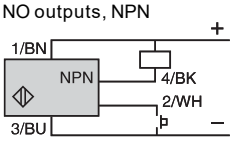
XX5 18A3●, XX6 V3●

3-wire type



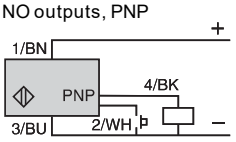
1 (+) 2 Teach input
3 (-) 4 NPN or PNP output

NO outputs, NPN



(-) BU (Blue) (+) BN (Brown)
BK (Black)
WH (White)

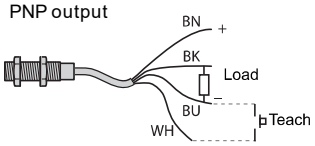
NO outputs, PNP



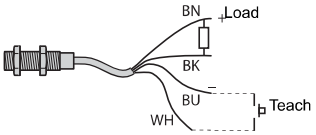
Pre-cabled

XX5 18A3●●L2

PNP output

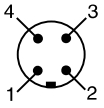


NPN output



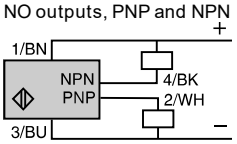
XX6 30A1KAM12

4-wire type



1 (+) 2 PNP output
3 (-) 4 NPN output

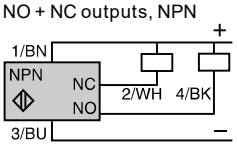
NO outputs, PNP and NPN



(-) BU (Blue) (+) BN (Brown)
WH (White) BK (Black)

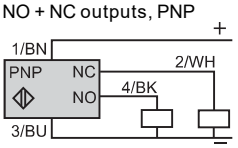
XX6 30A●●CM12

NO + NC outputs, NPN



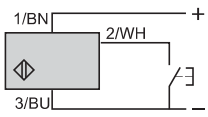
(-) BU (Blue) (+) BN (Brown)
WH (White) BK (Black)

NO + NC outputs, PNP

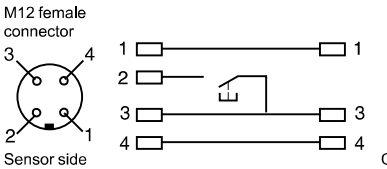


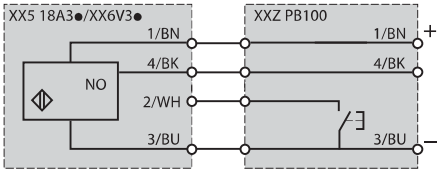
Wiring for teaching of detection window

Using external contact
XX5 18A3●/XX6 V3●



Using XXZ PB100





6