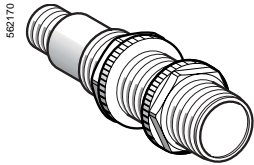


# Ultrasonic sensors

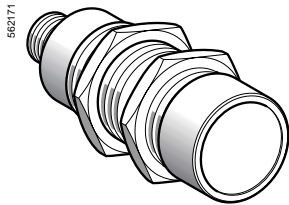
Osisonic<sup>®</sup>, Optimum and Universal  
Threaded plastic case, M12 x 1, M18 x 1, M30 x 1.5  
d.c. supply, solid-state output



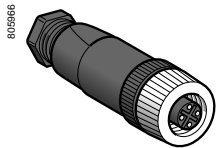
XX5 12A1KAM8



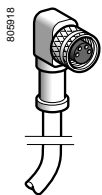
XX5 18A1KAM12



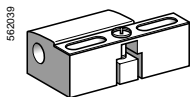
XX6 30A1KAM12



XZ CC12FD40B



XZ CP1041L



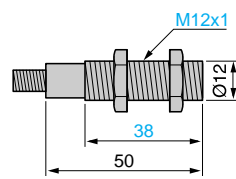
XSZ B11

## References of sensors

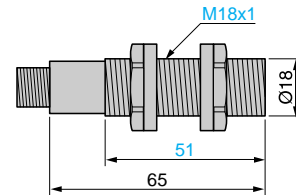
Sensors	Sensing distance (Sn) m	Function	Output	Reference	Weight kg
Ø 12	0.05	NO	PNP/NPN	XX5 12A1KAM8	0.011
Ø 18	0.15	NO	PNP/NPN	XX5 18A1KAM12	0.033
Ø 30	1	NO	PNP/NPN	XX6 30A1KAM12	0.091

## Dimensions

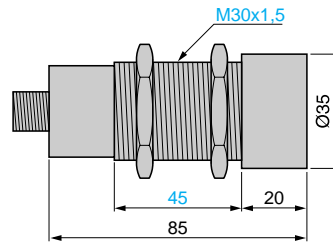
XX5 12A1KAM8



XX5 18A1KAM2



XX6 30A1KAM12



## References of accessories

### Cabling accessories

Connectors	For use with sensor	Type	Reference	Weight kg	
M8	Ø 12	Connection by in-line IDC	Straight	XZ CC8FDM40V	0.010
			Elbowed	XZ CC8FCM40V	0.010
		Connection to solder terminals	Straight	XZ CC8FDM40S	0.010
			Elbowed	XZ CC8FCM40S	0.010
M12	Ø 18, Ø 30	Metal clamping ring	Straight	XZ CC12FDM40B	0.020
			Elbowed	XZ CC12FCM40B	0.020
		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	Ø 12	Straight	2	XZ CP0941L2	0.080
			5	XZ CP0941L5	0.180
			10	XZ CP0941L10	0.360
		Elbowed	2	XZ CP1041L2	0.080
			5	XC CP1041L5	0.180
			10	XC CP1041L10	0.360
M12	Ø 18, Ø 30	Straight	2	XC CP1141L2	0.090
			5	XC CP1141L5	0.190
			10	XC CP1141L10	0.370
		Elbowed	2	XC CP1241L2	0.090
			5	XC CP1241L5	0.190
			10	XC CP1241L10	0.370

### Fixing accessories

Description	For use with sensor	Reference	Weight kg
Fixing clamps	Ø 12	XSZ B112	0.006
	Ø 18	XSZ B118	0.010

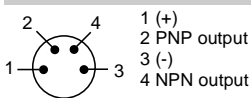
# Ultrasonic sensors

Osisonic<sup>®</sup>, Optimum and Universal  
Threaded plastic case, M12 x 1, M18 x 1, M30 x 1.5  
d.c. supply, solid-state output

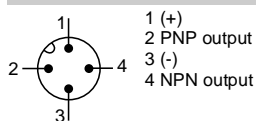
Sensor type		XX5 12A1KAM8	XX5 18A1KAM12	XX6 30A1KAM12
<b>Characteristics</b>				
Product certifications		CE		
Conformity to standards		IEC 60947-5-2		
Connection	Connector	M8 - 4-pin	M12 - 4-pin	
Sensing range	mm	6.4...51	19...152	51...991
Nominal sensing distance (Sn)	m	0.05	0.15	1
Operating distance	mm	6.4...51 Fixed	25...152 Fixed	Adjustable using teach mode
Differential travel	mm	< 0.7	< 0.35	< 2.5
Blind zone (no object must pass through this zone whilst the sensor is operating)	mm	0...6.4	0...19	0...51
Transmission frequency	kHz	500	200	
Repeat accuracy	mm	± 0.7	± 0.9	
Overall beam angle (see detection lobe)		14°	20°	
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 1.6 mm up to a sensing distance of 635 mm
Degree of protection	Conforming to IEC 60529	IP 67		
Storage temperature	°C	- 40...+ 80		
Operating temperature	°C	- 20...+ 65	0...+ 60	
Materials	Case	Plastic PEI ULTEM <sup>®</sup> (registered trademark of General Electric CO)		
	Sensing face	Ceramic	Silicone membrane	
Vibration resistance	To IEC 60068-2-6	Amplitude ± 1 mm (f = 10...55 Hz)		
Mechanical shock resistance	To IEC 60068-2-27	30 gn, duration 11 ms, in the 3 axes		
Resistance to electromagnetic interference				
Electrostatic discharges	To IEC 61000-4-2	kV	8, level 4	
Radiated electromagnetic fields	To IEC 61000-4-3	Vm	10, level 3	
Fast transients	To IEC 61000-4-4	kV	1, level 3	
LED indicators	Output state	Yellow LED, rear	–	Yellow LED, rear
	Power on	Orange LED, rear	–	–
	Setting-up assistance	–	–	Multi colour LED, rear
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	20	60	80
Switching capacity	mA	< 100 (PNP and NPN) with overload and short-circuit protection		
Voltage drop	V	< 1 (PNP and NPN)		
Maximum switching frequency	Hz	125	80	10
Delays	First-up	ms	20	350
	Response	ms	2	3
	Recovery	ms	2	3

## Wiring schemes

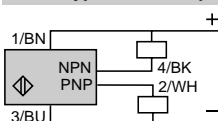
### M8 connector



### M12 connector



### 4-wire type =, NO outputs, PNP and NPN



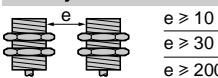
(-) BU (Blue)  
(+) BN (Brown)  
WH (White)  
BK (Black)

## Setting-up precautions

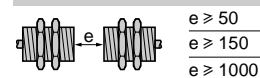
### Minimum mounting distances (cm)

Ø 12  
Ø 18  
Ø 30

#### Side by side

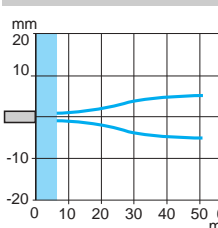


#### Face to face

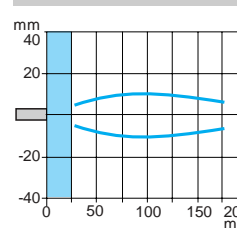


## Detection curves

### XX5 12A1KAM8



### XX5 18A1KAM12



### XX6 30A1KAM12

