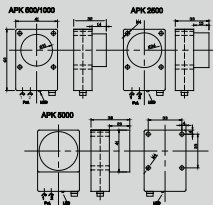


Ultrasonic Sensors

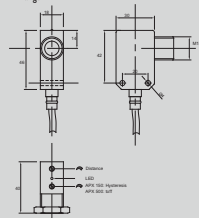
Today's ultrasonic sensors have an advantage over optical sensors because they emit a sound wave they will work under dust, dirt, fog and bright light where as an infra red detector could miss read when dust or dirt accumulates on the lens. Also an Ultrasonic sensor will detect a transparent film or reflective foil where an optical sensor may not. Ultrasonic sensors are ideally suited for modern manufacturing processes, for operations such as counting objects as they move along a conveyor or measuring fluid as it is filled into a container. The new range of programmable Smart sensors have an easy teach function allowing the reversal of the output from Normally closed to Normally open and vastly reducing the set up time.

APK Range

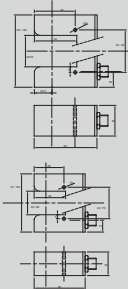
Dimensions



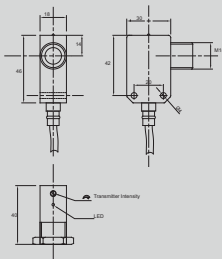
APX Range



APF Range



APB Range



Our Switch Range:
We have a comprehensive range of switches including: Reed Switches, Tilt Switches, Proximity Switches and Magnets, Electronic Proximity Switches, Non Mercury Tilt, Tip Over and Acceleration Switches, Float Switches, Glass Mercury and Mercury Switches, Optical Level Switches, Pressure Switches and Low Cost Alarm Switches.

Automated Access

The APX ultrasonic switch is used instead of a conventional electric wall mounted switch when a non contact operation is necessary (eg automated doors for the disabled or in hospitals). This complies with certain hygienic demands (food processing industry, clean rooms etc). The sensor reacts to pressure not movement so there is no waving of hands needed, as soon as an object is a hand is within the 30cm detection zone the sensor will operate, it has a 100% background suppression. The advantage of ultrasonic sensors compared to optical switches is that they are less susceptible to dirt and fully water resistant.

Please scan the code box with your QR enabled smart phone.



Optical Range

The APOF optical proximity switch is the base electronics for the AFOF scanner and AFOI barrier fibre optics. It can also act as a stand alone optical proximity switch. With it's clocked infrared light source it can detect objects at high distances and is suited to a long and thin wave guide. The electronics are housed in a robust metal enclosure and when used with the glass fibre wave guides is a very robust detection device for small parts under difficult conditions. The switching distance can be memorized by way of the teach in keys or by an external signal. The change from NO to NC switching can also be adjusted by the keypad. Optical wave guide sensors are ideally suited to detect in confined spaces. Glass fibre guides are more robust and have a longer service life than plastic guides. The AFOF guide acts as a scanner detecting an object when it passes the invisible light beam at a preselected distance. The AFOI sensor works as a light barrier, when the invisible light is interrupted by an object the sensor switches.

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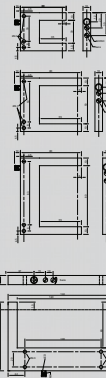
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Ultrasonic Sensors

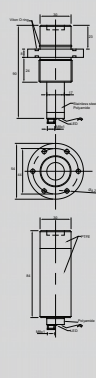


Dimensions

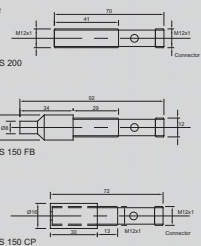
AOPF Range



APR Range



APS Range



APL Range



ULTRASONIC & OPTICAL SENSORS BARRIERS



OPTICAL



CE

TYPE	APX 500	APX 1000	APX 2500	APX 5000	APX 150	APX 500	APX-A 10/8	APX-A 40/8	APX-A 40/13	APX-A 70/12	APB 1500	ADPF 30	ADPF 50	ADPF 80	ADPF 120	ADPIL	APY 702	APR 1003	APR 1503	APS 200 TYPH 24C	APS 200 TOR 24CA	APS 200 TMR24C	APL 200	
Detection Range	mm 80-500	135-1000	250-2500	400-5000	0-170	0-500	detection width 8	detection width 8	detection width 13	detection width 13	0-1500	Fork width 30	Fork width 50	Fork width 80	Fork width 120	Fork width 30-120	300	0-1000	0-1500	20-200	20-200	20-200	0-200	
Detection Range (Large Objects)	mm 80-800	135-1500	250-3000	400-6500	-	-	-	-	-	-	-	Red Emitted Light 640nm, cycled					class 2 laser	-	-	-	-	-	-	200mm fixed switch distance
Blind Range	mm 0-80	0-125	0-250	0-400	-	-	-	-	-	-	-	-	-	-	-	-	-	0-180	0-180	20	20	20	-	
Adjustment Range	mm 80-500	135-1000	250-2500	400-5000	0-170	120-500	-	-	-	-	-	-	-	-	-	-	-	180-1000	-	-	-	-	-	
Hysteresis of Binary output axial	mm 15	25	40	80	10-40	10	-	-	-	-	-	-	-	-	-	-	-	45-15	-	-	-	-	16	
Linearity of analogue output	%FS <±0.3%	<±0.3%	<±0.3%	<±0.3%	-	-	<±0.2%	<±0.2%	<±0.2%	<±0.2%	-	-	-	-	-	-	-	-	-	<±1%	<±1%	<±1%	<±1%	
Accuracy across temperature range	%FS <1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	±1%	±1%	-	-	-	-	
Status Indicator	Red/Green LED	Red/Green LED	Red/Green LED	Red/Green LED	Red LED	Red LED	3 LED in keyboard	3 LED in keyboard	3 LED in keyboard	3 LED in keyboard	Trans Green/Red Ball LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED	Yellow LED	-	Red LED	Red LED	Red/Yellow LED	Red/Yellow LED	Red/Yellow LED	Red LED	
Binary Output, short circuit proof, Max 0.1A	PNP/NPN/NO/NC	PNP/NPN/NO/NC	PNP/NPN/NO/NC	PNP/NPN/NO/NC	PNP/NPN/NO/NC	PNP/NPN/NO/NC	-	-	-	-	PNP/NPN/NO/NC	PNP/NO/NC switchable	PNP/NO/NC switchable	PNP/NO/NC switchable	PNP/NO/NC switchable	PNP/NO/NC switchable	Relay (1 change switch NO NC)	PNP/NPN/NO/NC	PNP/NPN/NO/NC	PNP/NO/NC	PNP/NO/NC	PNP/NO/NC	PNP/NPN/NO/NC	
Resolution	%FS 0.2%	0.1%	0.1%	0.1%	-	-	0.1 @ 20-80% covered		0.15 @ 0-100% covered		-	Resolution smallest 0.5mm	Resolution smallest 0.5mm	Resolution smallest 0.5mm	Resolution smallest 0.8mm	Resolution smallest 0.5mm	-	-	-	-	-	-	-	
Switching Speed Max/Operating Frequency	Hz/kHz 8/180	5/180	3/120	2/80	15/350	2/125	samples 500/180		samples 285/130		samples 800/switches 200	4kHz	4kHz	4kHz	2kHz	3kHz	180	7/180	Operate frequency 180	13/400	13/400	13/400	15/350	
Analogue output in detection range (version)	V 0-100mV 0-0V	0-100mV 0-0V	0-100mV 0-0V	0-100mV 0-0V	-	-	0-10V output signal	0-10V output signal	0-10V output signal	0-10V output signal	-	-	-	-	-	-	Switch Voltage relay 20V AC/DC	0-10V 10-0V	0-10V 10-0V	-	-	-	0-10V 4-20mA	
RL min.10kΩ with V output	mA 4-20mA low 20-4mA	4-20mA low 20-4mA	4-20mA low 20-4mA	4-20mA low 20-4mA	-	-	-	-	-	-	-	-	-	-	-	-	Switch Current relay 6A	4-20mA	4-20mA	-	-	-	-	
RL max.500kΩ with mA output	mA 50/80	130/90	200/120	700/140	5/40	2/10	-	-	-	-	3-400V<3	-	-	-	-	-	0.1acc 3acc	<±100	<±100	30	-	-	5/40	
1/200th binary output (depending on potentiometer setting)	mV ±40	±20	±15	±20	-	-	-	-	-	-	-	-	-	-	-	-	-	±100	±100	-	-	-	-	
Ripple of analogue output	mV 0.06	0.25	0.4	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.4	<0.4	-	-	-	-	
Tracking speed of analogue output	μV/μs 15-30	15-30	15-30	15-30	12-20	12-28	8-30	8-30	8-30	8-30	18-30	10-35	10-35	10-35	10-35	10-35	-	-	-	-	-	-	-	
Power supply voltage (reverse polarity protection)	VDC 15-30	15-30	15-30	15-30	12-20	12-28	8-30	8-30	8-30	8-30	18-30	10-35	10-35	10-35	10-35	10-35	-	-	-	10-30	15-30	18-30	12-20	
Ripple of supply voltage	% <10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	-	-	-	-	-	<10	<10	<10	<10	<10	<10	
Mean consumption, switched without load	mA 60	60	60	65	65	55	Power consumption 0.1W	Power consumption 0.1W	Power consumption 0.1W	Power consumption 0.1W	Mean consumption 10mA Max	Mean consumption 10mA Max	Mean consumption 10mA Max	Mean consumption 10mA Max	Mean consumption 10mA Max	Mean consumption 10mA Max	60	35	35	30	30	30	45	
Peak current, switched without load	mA 85/0.1ms	85/0.1ms	95/0.2ms	100/0.3	100/0.05	250/0.1	Square wave signal 3.5-30V	Square wave signal 3.5-30V	Square wave signal 3.5-30V	Square wave signal 3.5-30V	Mean consumption 35mA Max	Mean consumption 35mA Max	Mean consumption 35mA Max	Mean consumption 35mA Max	Mean consumption 35mA Max	Mean consumption 35mA Max	300mA / 0.1 ms	300mA / 0.1 ms	-	-	-	-		
Temperature coefficient of sensor	%/°K -	-	-	-	-0.1	-0.1	min signal duration 0.02ms	min signal duration 0.02ms	min signal duration 0.02ms	min signal duration 0.02ms	Peak consumption 15mA Max	-	-	-	-	-	-	typ +4	typ +4	-	-	-	-	
Temperature coefficient of air path	%/°K -0.17 (increasing temperature → output decreases)	-	-	-	-0.17	-0.17	Max sample freq 500kHz	Max sample freq 500kHz	Max sample freq 500kHz	Max sample freq 500kHz	Peak consumption 55mA Max	-	-	-	-	-	-	-0.17 (increasing temperature → output decreases)	-0.17 (increasing temperature → output decreases)	-	-	-	-	
Ambient temperature during operation	°C -20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50	-20 to 50	0 to 60	0 to 60	0 to 60	0 to 60	-20 to 50	-10 to 60	-10 to 60	-10 to 60	-10 to 60	-10 to 60	-20 to 50	-20 to 50	-20 to 50	-20 to 70	-20 to 70	-20 to 70	-20 to 50	
Sensor temperature during operation	°C -20 to 70	-20 to 70	-20 to 70	-20 to 70	-20 to 70	-20 to 70	-10 to 70	-10 to 70	-10 to 70	-10 to 70	Amb light immunity 80,000Lx	Amb light immunity 80,000Lx	Amb light immunity 80,000Lx	Amb light immunity 80,000Lx	Amb light immunity 80,000Lx	Amb light immunity 80,000Lx	-20 to 70	-20 to 70	-20 to 70	-20 to 70	-20 to 70	-20 to 70	-20 to 70	
Pressure range	mbar abs 900 - 1100	900 - 1100	900 - 1100	900 - 1100	900 - 1100	900 - 1100	-	-	-	-	900 - 1100	-	-	-	-	-	-	-	900-1100	-	-	-	900-1100	
Mass without cable	g 90	90	90	105	50	50	-	-	-	-	45	-	-	-	-	-	-	45	45	25	25	25	100	
Protection class	IP 67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	65	65	65	67	
Housing material	Polyamide and glass fibre reinforced				Polyamide and stainless steel		Black anodized Aluminium	Black anodized Aluminium	Black anodized Aluminium	Black anodized Aluminium	Polyamide and stainless steel	Zinc die cast, black lacquerred					Aluminium, black elox	Polyamide	Polyamide or V2A Stainless steel			Nickel plated Brass		Nickel plated Brass
Electrical connection	MB Connector 4 pin or integrated cable				MB connector or integrated cable		Max cable length 20m	Max cable length 20m	Max cable length 20m	Max cable length 20m	3 pin connector 8mm	MB connector 3 pin					Aluminium, black elox	Screw terminal	MB connector or integrated cable			N12 connector, 4 pin	N12 connector	