

Inductive Proximity Switches PB



- M8 to M30
- Nickel plated brass or stainless steel
- IP67 (EN 60529)
- UL Certified
- Reverse polarity protection
- Output short circuit protection
- LED Indicator 360 Degree visibility



Options and ordering codes

PB	12	02	/	D	S	A	P	-	A	S	*
Body Style										Body Material	
Cylindrical	PB									S	Stainless Steel
											Nickel Plated Brass (Blank)
Body Size										Connection Type	
M8	08									A	Pre-cabled 2m
M12	12									H	M12 Connector
M18	18										
M30	30										
Sensing Distance (mm)										Output Logic	
M8 (1.5mm)		01					P			PNP	
M8, M12		02					N			NPN	
M8		03								Two wire (blank)	
M8, M12		04									
M12, M18		05							Output		
M12		07					A			Normally Open	
M18		08					C			Normally Closed	
M18, M30		10							Body Termination		
M18		12					S			Shielded	
M30		15					U			Un-Shielded	
M30		22									
Operating Voltage											
10-36VDC or 10-30VDC for two wire types										D	
20-250VAC (two wire)										A	

Specification Common To All Models

Operating Temperature	-25°C to 70°C
Protection	Short Circuit, Overload & Polarity Reversal
Indication	LED Visible 360°
Ingress Protection	IP67
Body Material	Metal---nickel plated brass or stainless steel
In Compliance with	GB/T14048.10 EN 60947-5-2

*Additional suffix (30) will denote short style body

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M8

Exit Type	Part Number Pre-cabled	Sn		Type		Supply Voltage			Output					
		Sensing Distance mm	Shielded	Un- Shielded	VDC		VAC	Status		Logic		Load Current mA	Switching frequency Hz	
					10-30	10-36	20-250	NO	NC	NPN	PNP			
3 wire DC	PB0801/DSAN-A	1.5	●			●			●		●		150	2k
	PB0801/DSAP-A	1.5	●			●			●			●	150	2k
	PB0801/DSCN-A	1.5	●			●				●	●		150	2k
	PB0801/DSCP/A	1.5	●			●				●		●	150	2k
	PB0803/DUAN-A	3		●		●			●		●		150	2k
	PB0803/DUAP-A	3		●		●			●			●	150	2k
	PB0803/DUCN-A	3		●		●				●	●		150	2k
	PB0803/DUCP-A	3		●		●				●		●	150	2k
3 wire DC Extended sensing	PB0802/DSAN-A	2	●			●			●		●		150	2k
	PB0802-DSAP-A	2	●			●			●			●	150	2k
	PB0802/DSCN-A	2	●			●				●	●		150	2k
	PB0802/DSCP-A	2	●			●				●		●	150	2k
	PB0804/DUAN-A	4		●		●			●		●		150	2k
	PB0804/DUAP-A	4		●		●			●			●	150	2k
	PB0804/DUCN-A	4		●		●				●	●		150	2k
	PB0804/DUCP-A	4		●		●				●		●	150	2k

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M12

Exit Type	Part Number Pre-cabled	Sn Sensing Distance mm	Type		Supply Voltage			Output				Load Current mA	Switching frequency Hz
			Shielded	Un- Shielded	VDC		VAC	Status		Logic			
					10-30	10-36	20-250	NO	NC	NPN	PNP		
2 wire DC	PB1202/DSA-A	2	●		●			●				50	800
	PB1202/DSC-A	2	●		●				●			50	800
	PB1205/DUA-A	5		●	●			●				50	500
	PB1205/DUC-A	5		●	●				●			50	500
2 wire DC Extended Sensing	PB1204/DSA-A	4	●		●			●				50	250
	PB1204/DSC-A	4	●		●				●			50	250
	PB1207/DUA-A	7		●	●			●				50	200
	PB1207/DUC-A	7		●	●				●			50	200
3 wire DC	PB1202/DSAN-A	2	●			●		●		●		200	800
	PB1202/DSAP-A	2	●			●		●			●	200	800
	PB1202/DSCN-A	2	●			●			●	●		200	800
	PB1202/DSCP-A	2	●			●			●		●	200	800
	PB1205/DUAN-A	5		●		●		●		●		200	800
	PB1205/DUAP-A	5		●		●		●			●	200	800
	PB1205/DUCN-A	5		●		●			●	●		200	800
	PB1205/DUCP-A	5		●		●			●		●	200	800
3 wire DC Extended Sensing	PB1204/DSAN-A	4	●			●		●		●		200	800
	PB1204/DSAP-A	4	●			●		●			●	200	800
	PB1204/DSCN-A	4	●			●			●	●		200	800
	PB1204/DSCP-A	4	●			●			●		●	200	800
	PB1207/DUAN-A	7		●		●		●		●		200	800
	PB1207/DUAP-A	7		●		●		●			●	200	800
	PB1207/DUCN-A	7		●		●			●	●		200	800
	PB1207/DUCP-A	7		●		●			●		●	200	800
2 wire AC	PB1202/ASA-A	2	●				●	●				350	25
	PB1202/ASC-A	2	●				●		●			350	25
	PB1205/AUA-A	5		●			●	●				350	25
	PB1205/AUC-A	5		●			●		●			350	25
2 wire AC Extended Sensing	PB1204/ASA-A	4	●				●	●				350	25
	PB1204/ASC-A	4	●				●		●			350	25
	PB1207/AUA-A	7		●			●	●				350	25
	PB1207/AUC-A	7		●			●		●			350	25

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M18

Exit Type	Part Number Pre-cabled	Sn Sensing Distance mm	Type		Supply Voltage			Output				Load Current mA	Switching frequency Hz
			Shielded	Un- Shielded	VDC		VAC	Status		Logic			
					10-30	10-36	20-250	NO	NC	NPN	PNP		
2 wire DC	PB1805/DSA-A	5	●		●			●				50	800
	PB1805/DSC-A	5	●		●				●			50	800
	PB1810/DUA-A	10		●	●			●				50	500
	PB1810/DUC-A	10		●	●				●			50	500
2 wire DC Extended Sensing	PB1808/DSA-A	8	●		●			●				50	250
	PB1808/DSC-A	8	●		●				●			50	250
	PB1812/DUA-A	12		●	●			●				50	200
	PB1812/DUC-A	12		●	●				●			50	200
3 wire DC	PB1805/DSAN-A	5	●			●		●		●		200	800
	PB1805/DSAP-A	5	●			●		●			●	200	800
	PB1805/DSCN-A	5	●			●			●	●		200	800
	PB1805/DSCP-A	5	●			●			●		●	200	800
	PB1808/DUAN-A	8		●		●		●		●		200	800
	PB1808/DUAP-A	8		●		●		●			●	200	800
	PB1808/DUCN-A	8		●		●			●	●		200	800
	PB1808/DUCP-A	8		●		●			●		●	200	800
3 wire DC Extended Sensing	PB1808/DSAN-A	8	●			●		●		●		200	800
	PB1808/DSAP-A	8	●			●		●			●	200	800
	PB1808/DSCN-A	8	●			●			●	●		200	800
	PB1808/DSCP-A	8	●			●			●		●	200	800
	PB1812/DUAN-A	12		●		●		●		●		200	800
	PB1812/DUAP-A	12		●		●		●			●	200	800
	PB1812/DUCN-A	12		●		●			●	●		200	800
	PB1812/DUCP-A	12		●		●			●		●	200	800
2 wire AC	PB1805/ASA-A	5	●				●	●				350	25
	PB1805/ASC-A	5	●				●		●			350	25
	PB1808/AUA-A	8		●			●	●				350	25
	PB1808/AUC-A	8		●			●		●			350	25
2 wire AC Extended Sensing	PB1808/ASA-A	8	●				●	●				350	25
	PB1808/ASC-A	8	●				●		●			350	25
	PB1812/AUA-A	12		●			●	●				350	25
	PB1812/AUC-A	12		●			●		●			350	25

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M30

Exit Type	Part Number Pre-cabled	Sn Sensing Distance mm	Type		Supply Voltage			Output					
			Shielded	Un- Shielded	VDC		VAC	Status		Logic		Load Current mA	Switching frequency Hz
					10-30	10-36	20-250	NO	NC	NPN	PNP		
2 wire DC	PB3010/DSA-A	10	●		●			●				50	350
	PB3010/DSC-A	10	●		●				●			50	350
	PB3015/DUA-A	15		●	●			●				50	300
	PB3015/DUC-A	15		●	●				●			50	300
2 wire DC Extended Sensing	PB3015/DSA-A	15	●		●			●				50	300
	PB3015/DSC-A	15	●		●				●			50	300
	PB3022/DUA-A	22		●	●			●				50	200
	PB3022/DUC-A	22		●	●				●			50	200
3 wire DC	PB3010/DSAN-A	10	●			●		●		●		200	500
	PB3010/DSAP-A	10	●			●		●			●	200	500
	PB3010/DSCN-A	10	●			●			●	●		200	500
	PB3010/DSCP-A	10	●			●			●		●	200	500
	PB3015/DUAN-A	15		●		●		●		●		200	500
	PB3015/DUAP-A	15		●		●		●			●	200	500
	PB3015/DUCN-A	15		●		●			●	●		200	500
	PB3015/DUCP-A	15		●		●			●		●	200	500
3 wire DC Extended Sensing	PB3015/DSAN-A	15	●			●		●		●		200	500
	PB3015/DSAP-A	15	●			●		●			●	200	500
	PB3015/DSCN-A	15	●			●			●	●		200	500
	PB3015/DSCP-A	15	●			●			●		●	200	500
	PB3022/DUAN-A	22		●		●		●		●		200	500
	PB3022/DUAP-A	22		●		●		●			●	200	500
	PB3022/DUCN-A	22		●		●			●	●		200	500
	PB3022/DUCP-A	22		●		●			●		●	200	500
2 wire AC	PB3010/ASA-A	10	●				●	●				350	25
	PB3010/ASC-A	10	●				●		●			350	25
	PB3015/AUA-A	15		●			●	●				350	25
	PB3015/AUC-A	15		●			●		●			350	25
2 wire AC Extended Sensing	PB3015/ASA-A	15	●				●	●				350	25
	PB3015/ASC-A	15	●				●		●			350	25
	PB3022/AUA-A	22		●			●	●				350	25
	PB3022/AUC-A	22		●			●		●			350	25

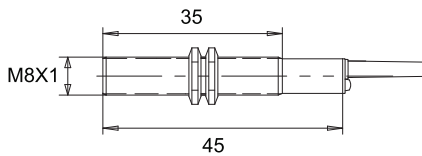
For device with M12 Plug connector replace the suffix 'A' with 'H'

A 2m 4 pole axial M12 cable to suit devices with M12 Plug connect is M12F0240202000

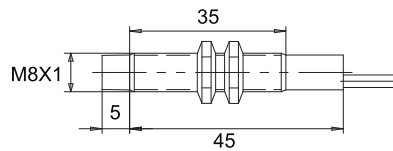
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Dimensions (mm)

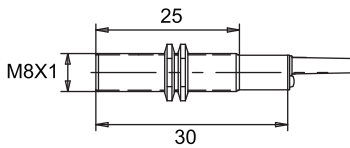
PB0801/*S**-A PB0802/*S**-A
Pre-wired, Shielded Style



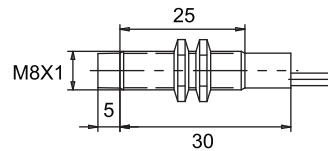
PB0803/*U**-A PB0804/*U**-A
Pre-wired, Unshielded Style



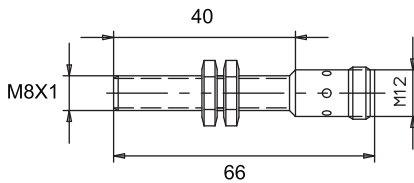
PB0801/*S**-A30 PB0802/*S**-A30
Pre-wired, Shielded, Short Style



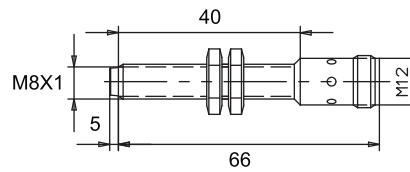
PB0803/*U**-A30 PB0804/*U**-A30
Pre-wired, Unshielded, Short Style



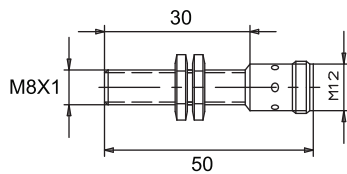
PB0801/*S**-H PB0802/*S**-H
Quick Connector (M12), Shielded, Short



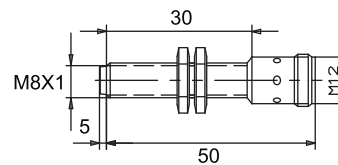
PB0803/*U**-H PB0804/*U**-H
Quick Connector (M12), Unshielded, Short



PB0801/*S**-A30 PB0802/*S**-H30
Quick Connector (M12), Shielded, Short



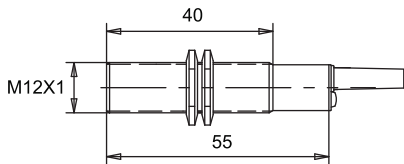
PB0803/*U**-A30 PB0804/*U**-H30
Quick Connector (M12), Unshielded, Short



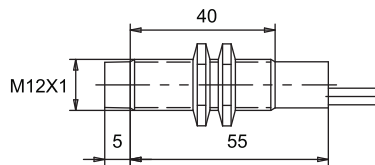
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Dimensions (mm)

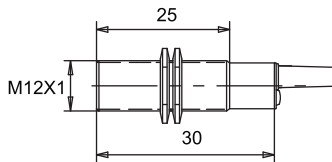
PB1202/*S**-A PB1205/*S**-A
Pre-wired, Shielded Style



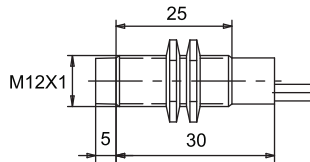
PB1204/*U**-A PB1207/*U**-A
Pre-wired, Unshielded Style



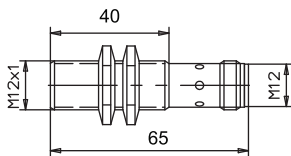
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Pre-wired, Shielded, Short Style



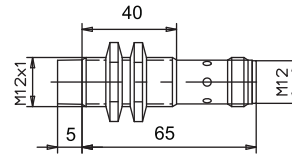
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Pre-wired, Unshielded, Short Style



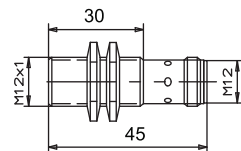
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Quick Connector (M12), Shielded, Short



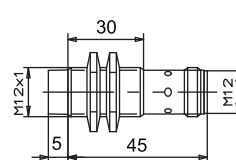
PB1204/*U**-H PB1207/*U**-H
Quick Connector (M12), Unshielded, Short



PB1202/*S**-H30 PB1205/*S**-H30
Quick Connector (M12), Shielded, Short



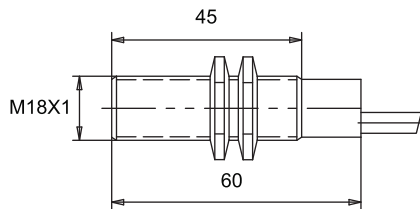
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Quick Connector (M12), Unshielded, Short



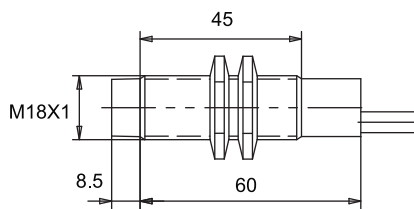
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Dimensions (mm)

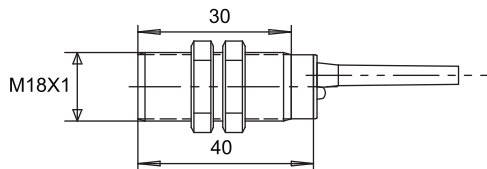
PB1805/*S**-A PB1808/*S**-A
Pre-wired, Shielded Style



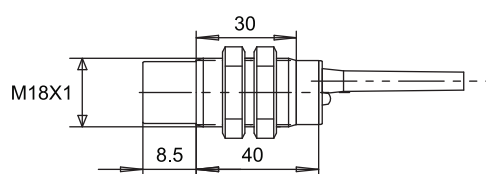
PB1810/*U**-A PB1812/*U**-A
Pre-wired, Unshielded Style



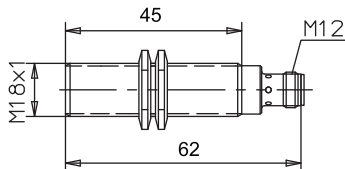
PB1805/*S**-A30 PB1808/*S**-A30
Pre-wired, Shielded, Short Style



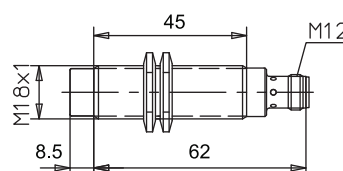
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Pre-wired, Unshielded, Short Style



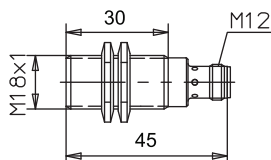
PB1805/*S**-H PB1808/*S**-H
Quick Connector (M12), Shielded, Short



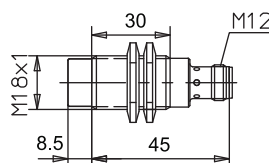
PB1810/*U**-H PB1812/*U**-H
Quick Connector (M12), Unshielded, Short



PB1805/*S**-H30 PB1808/*S**-H30
Quick Connector (M12), Shielded, Short



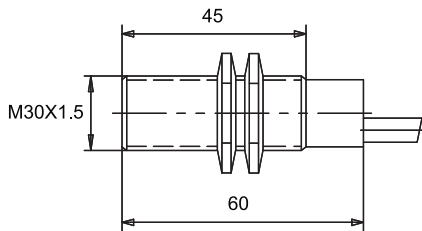
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Quick Connector (M12), Unshielded, Short



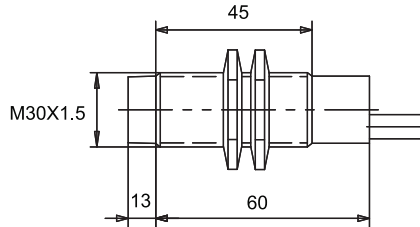
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Dimensions (mm)

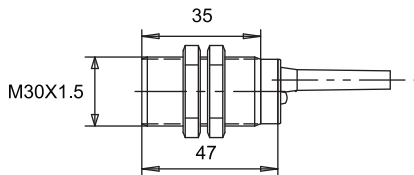
PB3010/*S**-A PB3015/*S**-A
Pre-wired, Shielded Style



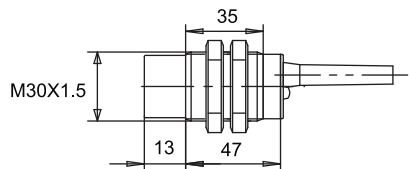
PB3015/*U**-A PB3022/*U**-A
Pre-wired, Unshielded Style



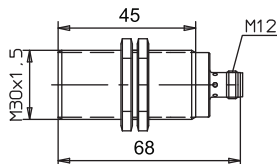
PB3010/*S**-A30 PB3015/*S**-A30
Pre-wired, Shielded, Short Style



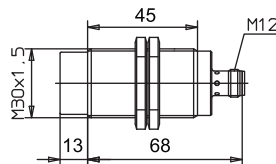
PB3015/*U**-A30 PB3022/*U**-A30
Pre-wired, Unshielded, Short Style



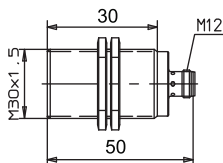
PB3010/*S**-H PB3015/*S**-H
Quick Connector (M12), Shielded, Short



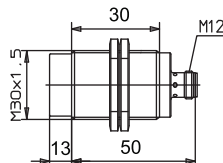
PB3015/*U**-H PB3022/*U**-H
Quick Connector (M12), Unshielded, Short



PB3010/*S**-H30 PB3015/*S**-H30
Quick Connector (M12), Shielded, Short



PB3015/*U**-H30 PB3022/*U**-H30
Quick Connector (M12), Unshielded, Short



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Sensing Distance (Sn)

The sensing distance of the inductive proximity sensor varies with different target materials. The sensing distance of the inductive sensors in the catalogue use a steel target. The sensing distance for other material can be calculated by multiply a correction factor shown in the table below:

Material	Attenuation coefficient
Steel	1
Stainless steel	0.85
Aluminum	0.4
Brass	0.4
Copper	0.3

The sensing distance will also vary with different size and shape of the target. A square target block will result in a longer sensing distance that a round one. A bigger target will have a longer sensing distance.

Note: Operating frequency of the inductive proximity switch is measured at 1/2 Sn.

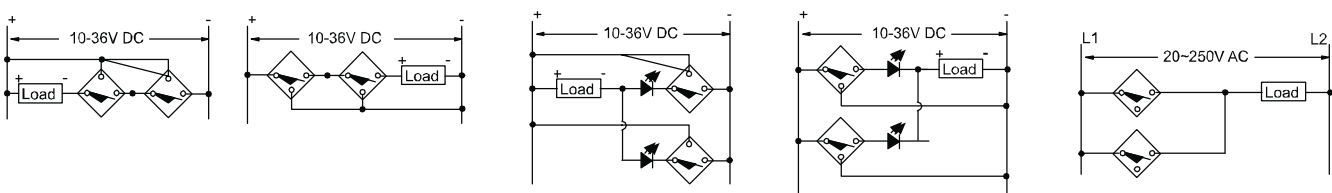
Repeat Accuracy (R) Ratio of the difference value between any of the two measurements and distance of checking (Sn).
 Return Difference (H) Distance between operating point when target metal moves close to proximity switch and rest point when target metal moves away from proximity.

Wiring Diagram

	Leadwire N.O.	Leadwire N.C.	Quick Connect N.O.	Quick Connect N.C.
NPN three-wire DC				
PNP three-wire DC				
two-wire AC				

Note: Load with two-wire AC can be connected to either of the brown or blue leadwire

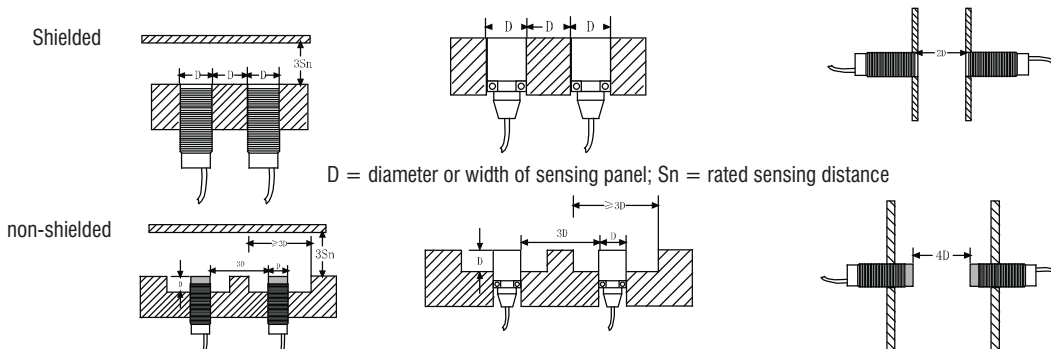
Series and Parallel



Note:

- 1) For series connection, if sensor do not operate stably, provide each with 500 k to 10 M resistor in parallel. This will stabilise the voltage and allow the sensor to operate stably.
- 2) Use parallel connect only when 2 or more sensors are not activated simultaneously. The leakage current, however, will be n times the value for each sensor and reset failures will frequently occur.

Mounting Requirements



D = diameter or width of sensing panel; Sn = rated sensing distance