Proximity Sensors

Inductive Sensors

Inductive Proximity Sensors are used when the target or object to be sensed is metal. Inductive types are the most widely used proximity sensors for industrial applications.

Typical Applications

- Parts Detection
- Parts Counting
- Positioning
- Broken Tool Detection
- Indexing
- Robotics and Conveyors
- Motion and Speed Control
- Punch Press Feed and Ejection Control
- Parts Inspection
- Parts Diverting

Capacitive Sensors

Capacitive Sensors can sense conducting and non-conducting materials in solid, powder or liquid form. The higher the dielectric constant of the target material, the greater the sensing range.

Typical Applications

- Liquid Level Control
- Package Inspection (Content and Fill Level)
- Plastic Pellet Detection
- Wire Break Detection

Inductive and Capacitive Proximity Sensors Identification Codes

1 2 3	4	5 6 7	8	9	10	11 12 13	14	15 16 17
Product Group	—	Type/Size of Housing	Output	Type of Output	—	Sensing Distance	—	Options

1 K = Non-contact proximity sensor

2 I = Inductive
C = Capacitive

3 B = Flush/shielded
N = Non-flush/Non-shielded
A = Adjustable flush/non-flush via sensitivity control
V = Sensor amplifier

4 Dash

5 M = Metric threaded metal barrel
T = Metric threaded plastic barrel
D = Cylindrical metal smooth barrel
R = Cylindrical plastic smooth barrel
Q = Rectangular metal housing
P = PG threaded metal barrel
E = Rectangular plastic housing
S = Slot type sensor
N = DIN standard housing
B = Bar sensor

6 If the housing is cylindrical or barrel, the two digit code refers to the diameter in millimeters.

7 Example
03 = 3 mm dia
40 = 40 mm dia
format for other shapes: digits 5, 6 and 7
S03 = 3.5 mm slot sensor
Q05 = 5 x 5 x 25 mm
Q08 = 8 x 8 x 40 mm side sensing
Q80 = 8 x 8 x 40 mm middle sensing
Q12 = 12 x 12 x 55 mm
B40 = Bar sensor
E50 = 50 x 25 x 55 mm
E28 = 28 x 16 x 11 mm
E40 = 40 x 26 x 12 mm
N40 = 40 x 40 x 40 mm
N04 = 40 x 40 x 72.5 mm
N44 = 40 x 40 x 112 mm
E68 = 68 x 30 x 15 mm
E80 = 80 x 30 x 20 mm

8 P = PNP
N = NPN
A = AC2-wire
E = Namur
Z = DC2-wire
M = AC/DC-multivoltage
R = Relay
Q = Triac
T = Thyristor AC3-wire
G = Push/Pull
D = NPN/PNP

9 S = Normally open
O = Normally closed
P = Programmable switch selectable NO/NC
A = Analog
U = Complementary 4-wire NO/NC

10 Dash

11-13 Sensing distance
Example:
1.5 = 1.5 mm
002 = 2.0 mm
040 = 40.0 mm

14 Dash

15 K = Short circuit protection

16 L = LED

17 Cable length in meters
Example: 2 = 2 meters
6 = 6 meters
S = Socket
E = Sensor with extended sensing range
V = Short body housing
P = Potentiometer
PU = Polyurethane cable
SD = Plug with terminals according to DIN standard usually comes with plug fitted
SM = Mini socket snap fit (quick disconnect)
S8 = M8 quick disconnect screw type
S12 = M12 quick disconnect screw type
SM8= M8 quick disconnect universal snap and screw
N = Stainless steel
F = High switching frequency
C = High chemical resistance surface
T = High temperature

Capacitive Sensors

Barrel Sizes: M12, M18, M30, M32, 34mm Dia
Input Voltage: 3 Wire DC and 2 Wire AC
Integral Cable and Quick Disconnect Versions
All Sensors Fitted With Sensitivity Adjustment

- NEMA 12
- LED output indication
- Temperature range -13°F + 158°F
- Short circuit protected
- Reverse polarity protected
- Transient noise protected

Sensor Selection

Type and Construction	Sensing Range	Input Voltage	Switching Function	Switching Freq. Hz	Output Current	Model	Part Number
M12 x 1	4 mm ***	10-36 VDC	NPN/NO	25	200 mA	KCN-T12NS/004 KLP2	650-7319-001
Threaded Plastic Body	4 mm ***	10-36 VDC	PNP/NO	25	200 mA	KCN-T12PS/004 KLP2	650-7919-001
M18 x 1	8 mm ***	10-60 VDC	NPN/NO	100	200 mA	KCA-T18NS/008 KLP2	650-7321-723
Threaded Plastic Body	8 mm ***	10-60 VDC	PNP/NO	100	200 mA	KCA-T18PS/008 KLP2	650-7921-724
	8 mm ***	20-250 VAC	NO	15	5/300 mA	KCN-T18AS/008 LP2	650-8521-001
Quick Disconnect	8 mm ***	10-60 VDC	NPN/NO	25	200 mA	KCN-T18NS/008 KLPSM8	650-7321-002
Quick Disconnect	8 mm ***	10-60 VDC	PNP/NO	25	200 mA	KCN-T18PS/008 KLPSM8	650-7921-002
Quick Disconnect	8 mm ***	20-250 VAC	NO	15	5/300 mA	KCN-T18AS/008 LPS12A	650-8521-004
M30 x 1.5	20 mm***	10-60 VDC	NPN/NO	25	400 mA	KCN-T30NS/020 KLP2	650-7323-001
Threaded Plastic Body	20 mm***	10-60 VDC	PNP/NO	25	400 mA	KCN-T30PS/020 KLP2	650-7923-727
	20 mm***	20-250 VAC	NO	15	5/300 mA	KCN-T30AS/020 LP2	650-8523-001
M32 x 1.5	30 mm***	10-60 VDC	NPN/PNP*	25	400 mA	KCN-T32DP/030 KLP2	650-7013-001
Threaded Plastic Body			NO/NC				
M32 x 1.5	15 mm**	10-60 VDC	NPN/PNP*	25	400 mA	KCB-M32DP/015 KLP2	650-7013-011
Threaded Metal Body	Flush		NO/NC				
34mm dia.	30 mm***	10-60 VDC	NPN/NO	10	400 mA	KCN-R34NS/030 KLP2	650-7315-001
Smooth Plastic Body	30 mm***	10-60 VDC	PNP/NO	10	400 mA	KCN-R34PS/030 KLP2	650-7915-001
	30 mm***	48-250 VAC	NO	10	10/300 mA	KCN-R34AS/030 LP2	650-8515-001

mm x .3937 = inches

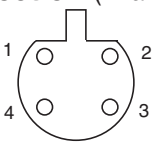
* See Wiring Diagram PNP/NPN Switch Selectable

** This sensor can be mounted flush.

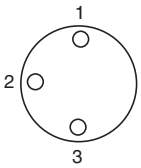
*** These Capacitive Sensors are Non-Flush Mount, Adjustable by Sensitivity Adjustment

Quick Disconnect Selection (Available in 2 M or 5 M Cable Lengths)

M12 x 1 Quick Disconnect AC Input Voltage



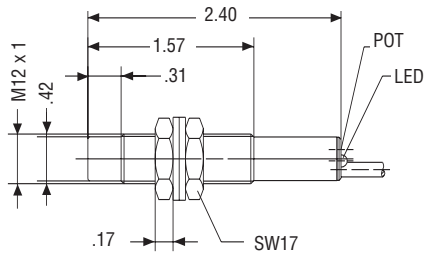
M8 x 1 Quick Disconnect DC Input Voltage



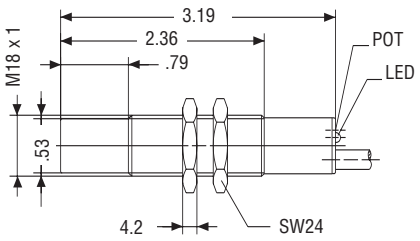
	2-wire	2-wire	3-wire	3-wire
Model	GDK-M12AS/S00-2	WDK-M12AS/S00-2	GDK-M08US/S00-2.5PU	WDK-M08US/S00-2.5PU
Part #	413-9100-248	413-9100-250	413-9100-261	413-9100-278
Model	GDK-M12AS/S00-5		GDK-M08US/S00-5PU	WDK-M08US/S00-5PU
Part #	413-9100-249		413-9100-263	413-9100-279

For Brackets see Page 23.

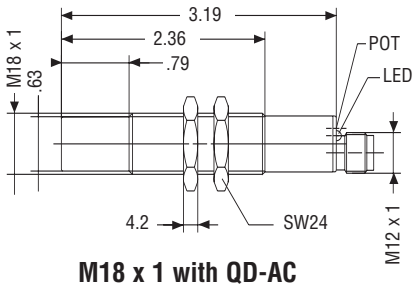
Mechanical Data (Dimensions are in inches)



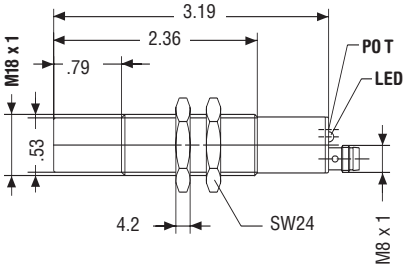
M12 x 1 with Cable



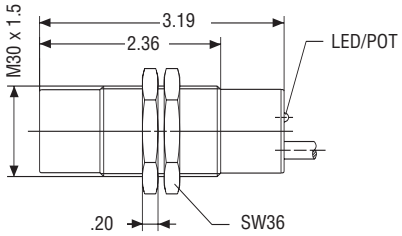
M18 x 1 with Cable



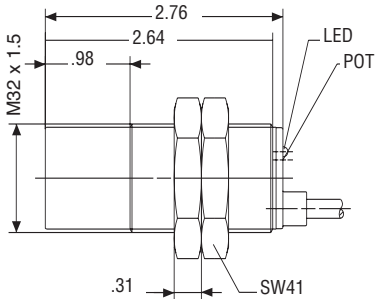
M18 x 1 with QD-AC



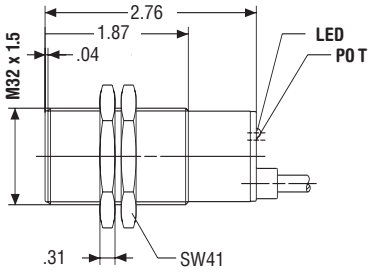
M18 x 1 with QD-DC



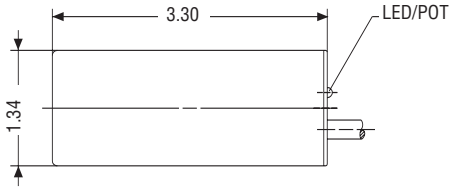
M30 x 1.5 with Cable



M32 x 1.5 Plastic with Cable

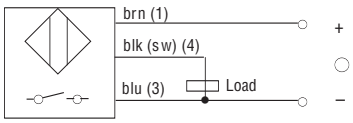


M32 x 1.5 Metal with Cable



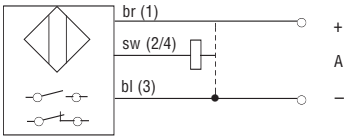
34 mm Dia. with Cable

Wiring Diagram



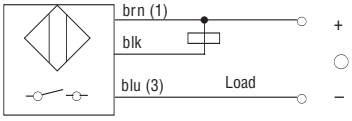
PNP Normally Open

During operation, output of PNP transistor is switched to positive .



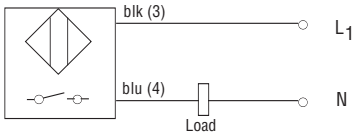
*PNP/NPN Switch selectable

Two integrated switches selection between PNP/NPN switching and normally open/ normally closed functions.



NPN Normally Open

During operation, output of NPN transistor is switched to negative.



2 Wire AC Normally Open

During operation, a thyristor which is positioned above a rectifier bridge applies the load to the operating voltage.

brn = Brown
blk = Black
blu = Blue
sw = Switch