

PROXIMITY SENSOR NOTES

PROXIMITY SENSOR TYPES AND CONFIGURATIONS

SENSOR TYPES

Proximity sensors are used as input for control systems and detect the presence or absence of an object, the type of sensor determines what it is able to sense.

INDUCTIVE

Inductive proximity sensors will detect metals only.

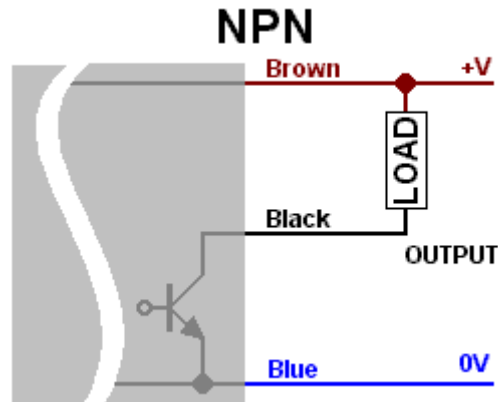
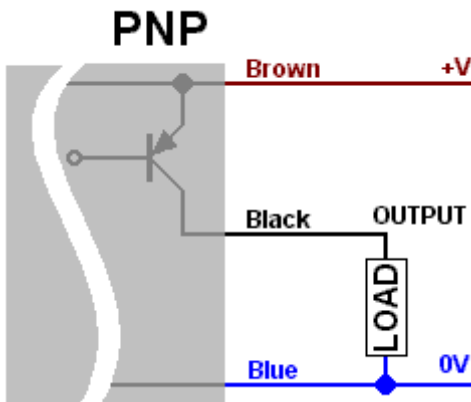
CAPACITIVE

Capacitive proximity sensors will detect other material as well a metals, such as water, plastics, wood and glass.

SENSING DISTANCE

The sensing distance will depend on the material being detected, ferrous steel having the longest sensing distance and glass and plastics having the shortest.

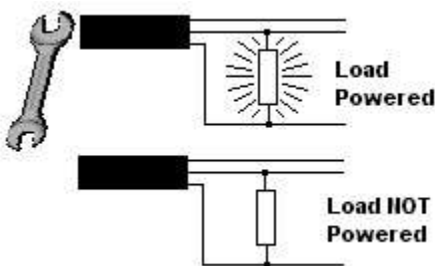
NPN / PNP



NO / NC

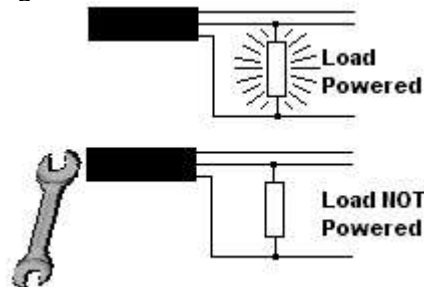
NO

Normally Open (NO)
Puts power on to the LOAD when an object is placed in front of the proximity sensor within sensing range.



NC

Normally Open (NC)
Removes power from the LOAD when an object is placed in front of the proximity sensor within sensing range.



PROXIMITY SENSOR NOTES

SUMMARY

NPN / PNP		NO / NC	
PNP	LOAD TO 0V and OUTPUT	NO	Object Present Load Powered
NPN	LOAD TO V+ and OUTPUT	NC	No Object Present Load NOT Powered
			Load NOT Powered Load Powered

OUTPUT VOLTAGE

	PNP	
	NO	NC
Object Sensed	V+	0V
No Object Sensed	0V	V+

	NPN	
	NO	NC
Object Sensed	0V	V+
No Object Sensed	V+	0V

SENSING DISTANCE

INDUCTIVE	
Material	Adjustment
Iron	1 x D
Stainless Steel	0.9 x D
Brass	0.5 x D
Aluminium	0.4 x D
Copper	0.4 x D

CAPACITIVE	
Material	Adjustment
Metal	1 x D
Water	1 x D
Glass	0.5 x D
Plastics	0.5 x D
Wood	0.4 x D

D = The nominal sensing distance,
These are approximate and the sensor data sheet should be consulted for more accurate information.

SERVICES

Control system problems.
Electronic problems.
Electrical problems.
Mechanical problems.
Pneumatic problems.
Hydraulics problems.
Device communications problems.
Thermography.



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MAINTENANCE AND MODIFICATIONS

Root cause analysis for persistent failures or problems.
Repairs of electronic circuit boards with surface mount components.
Supply of replacement control systems (design, programming and fitting)
PLC and HMI programming and configuring of VFD and other devices.
Diagnostic data logging and condition monitoring.
Thermographic Survey.
Fitting of safety interlocking.
Safety training presentations.
Implementation of maintenance strategies and documentation.
Technical consultancy and advice.