

SENSORS

Sensor Comparison

Each of the three sensor categories has its strengths and weaknesses. The chart below provides you with a comparison:

	Limit Switches	Proximity Sensors	Photoelectric Sensors
Method of Detection	Physical contact	Electromagnetic field	Light beam
Sensing Range	Physical contact	Close: within 1" (25.4 mm)	Far: can be up to 800' (243.8m)
Target Material	Target must be able to withstand physical contact	Inductive: metallic only Capacitive: metallic and non-metallic	Can be affected by target surface, for example if the target is shiny or transparent
Object Markings	Not able to detect	Not able to detect	Able to detect
Cost	Low	Low	Low to high depending upon sensing mode
Sensor Size	Tend to be large	Small to large	Very Small (fiber optic) to large
Environmental Sensitivity	Affected by debris	Inductive: electrical interference Capacitive: humidity	Light interference
Response Time	Milliseconds	Milliseconds	Microseconds