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2014

45LM Series Modules

Q45 sensors easily accept the addition of output timing logic and signal strength display functions. Display models have a 7-element display which gives a "finer" indication of excess gain than does the LED that is standard on most Q45 sensors. The modules listed below may be used with all Q45 sensors except NAMUR models.

Function	Model	Timing Logic Functions
Programmable output timing logic	**45LM58**	• Models with programmable output timing provide the following timing logic functions: - ON delay - OFF delay - ON/OFF delay - Retriggerable one-shot - Non-retriggerable one-shot - Delayed one-shot - ON delayed one-shot - Repeat cycle timer - Limit timer - Rate sensor - Flip-flop (alternate action)
Programmable output timing, plus signal strength display	**45LM58D**	• Selectable timing ranges: 0.01 to 0.15 seconds 0.1 to 1.5 seconds 1 to 15 seconds • Delay and hold time ranges may be individually selected and times precisely set using 15-turn adjustment potentiometers. Delay or hold time may also be displayed (zero seconds). • Module allows sensor output to be programmed for normally-open or normally-closed operation.
Signal strength display, only (no programmable functions)	**45LMD**	• Models with signal strength display gives precise indication of excess gain. Valuable for sensor setup and alignment, critical evaluation of alternative sensing schemes and close monitoring of sensing performance over time (example, dirt build-up on lenses or progressive misalignment).

45LM Series Module Specifications

Operating Temperature	-40° to +70° C
Timing Adjustments	Two 15-turn clutched potentiometers with brass elements, accessible from outside at the top of the sensor, beneath an o-ring sealed polycarbonate cover.
Timing Repeatability	Plus or minus 2% of the timing range (max.); assumes conditions of constant temperature and power supply.
Useful Time Range	Useful time range is from maximum time down to 5% of maximum. When the timing potentiometer is set fully counterclockwise, time will be approximately 5% of maximum.
Response Time	When the delay time is switched OFF, the card adds no measurable sensing response time.
LED Display	7-element LED display, visible through transparent top sensor cover. The more LEDs that are lit, the stronger the received light signal; three LEDs lit is equivalent to an excess gain of about 1x.

Signal Strength Display

LED Number	Approximate Gain	Display
#1	0.25x	
#2	0.5x	
#3	1.0x	
#4	2.0x	
#5	4.0x	
#6	6.0x	
#7	8.0x	