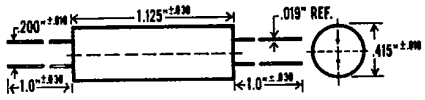
T-41-81

Photomods® Neon Modules

CLM3120A CLM4120A

- Long Life
- Fast Rise and Decay
- Low Impedance
- Complete Electrical and Mechanical Isolation
- High Cell To Lamp Voltage Breakdown



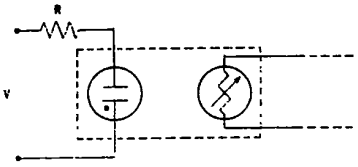
APPLICATIONS

CLM3120A and CLM4120A — Neon lamp modules can provide electrically isolated (signal) coupling between powerline or other high voltage (AC or DC) circuitry and low voltage (solid state) process control, or indicating (alarm) circuitry.

Remote indication or control is facilitated since the output is electrically isolated and wiring need not conform to powerline code requirements.

The neon lamp may serve as a (circuit) component in the high voltage circuitry. In suitable circuit configurations, the cell will serve to monitor voltage, resistance or capacitance in addition to the simple indication of power ON or OFF.

Voltage (presence) Indicator



$R_{K\,ohms} = \frac{V-70}{1.7}$ (V: RMS or DC)

With V, R_{CELL} will be low

Without V, R_{CELL} will be very high

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TECHNICAL DATA

OUTPUT RESISTANCE

MODULE PART NUMBER	AC LAMP OPERATION		DC LAMP OPERATION ③			⑥
	Rated Lamp Voltage 60 Hz V_R Volts	Output ① Resistance @ Rated Voltage R_{C_A} Ohms	Control Lamp Current I_R Milliamps	Control Lamp Life Hours	Output Resistance At I_R R_{C_D} Ohms	Minimum Off Resistance R_D Megohms
		Maximum ②		Minimum	Maximum	
CLM 3120A	120	1150	2	2000 ④	750	100 10 Seconds after Lamp Turn off.
			1	50,000 ⑤	1200	
CLM 4120A	120	160	2	2,000 ④	135	1 10 Seconds after Lamp Turn Off.
			1	50,000 ⑤	200	

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SPEED OF RESPONSE

MODULE PART NUMBER	AFTER LAMP HAS BEEN ON FOR 24 HOURS				NO LAMP POWER FOR 96 HOURS PRIOR TO MEASUREMENT			
	Maximum Rise Time To: ⑦		Maximum Decay Time To: ⑧		Maximum Rise Time To: ⑦		Maximum Decay Time To: ⑧	
	$5 \times R_{2.5}$ ⑨ Milliseconds	$2 \times R_{2.5}$ ⑨ Milliseconds	$30 \times R_{2.5}$ ⑨ Milliseconds	$5 \times R_{2.5}$ ⑨ Milliseconds	$5 \times R_{2.5}$ ⑨ Milliseconds	$2 \times R_{2.5}$ ⑨ Milliseconds	$30 \times R_{2.5}$ ⑨ Milliseconds	$5 \times R_{2.5}$ ⑨ Milliseconds
CLM3120A	0.6	1.6	50	12	5.0	7.0	60	18
CLM4120A	2.5	5.0	125	30	5.0	8.0	250	55

MAXIMUM RATINGS

PHOTOCELL TEMPERATURE.....–25°C TO +75°C
CELL SHUNT CAPACITANCE.....5 PICOFARADS
VOLTAGE ACROSS CELL..... 200V – PEAK AC
MAXIMUM POWER.....100 MW @ 25°C ⑩
MAXIMUM VOLTAGE BETWEEN CELL & LAMP LEADS..2.5 KV

NOTES ON DATA

① Data is taken using a 27K resistor in series with the neon lamp. Note: SERIES RESISTOR IS NOT INCLUDED IN THE MODULE.

② Values are taken after lamp power has been applied for more than 24 hours.

③ Lamp currents below 1 milliamp are not recommended.

④ High-brightness lamp rating: for 10 volt change in breakdown or maintaining voltage. Breakdown voltage: 75-135 volts; Maintaining voltage; approximately 70 volts.

⑤ Calculated operating time for 10 volt change in breakdown or maintaining voltage.

⑥ After five (or more) seconds illumination at 2 milliamps measured with 30V applied to cell.

⑦ Maximum rise time is the time from application of lamp voltage to the stated multiple of the resistance at 2.5 milliamps on the neon ($R_{2.5}$).

⑧ Maximum decay time is the time from lamp turn off to the stated multiple of the resistance at ($R_{2.5}$).

⑨ $R_{2.5}$ is the cell resistance with 2.5 milliamps on the neon lamp. Rise time is given for multiples of 5 and 2 times the resistance at 2.5 milliamps. Decay time is given for multiples of 30 and 5.

⑩ Derated linearly to zero at 75°C as measured on the cell.