## Pooja's School Level Science Projects, Call: 9380952616, 9952078807,

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SMOKE ALARM: 's School Level Science Proj IC2 12 volts Dr LM7805 5 volt regulator C2 7 2 4 X IN400. 12V DC OR 12V AC BU7 C1 D3 470E buzzer 10K \$ 10E\$R3 LD1 Y LED ; LM358 bc547 10 01 IKS GAS/CO2 SENSOR P2 SIK 10K POT P1 LPG GAS / CO2 LEAK ALARM

This circuit can detect carbon-di-oxide or carbon-monoxide gas using a typical gas sensor (MQ 7) with a voltage comparator circuit using LM 358 (IC -1). A voltage comparator has 2 inputs and 1 output. 1st input is supplied with a adjustable reference voltage and the other input is connected to the gas sensor resistance network. Normally the sensing input voltage is set lesser than the reference input voltage, if a gas is sensed by the sensor, the sensor input voltage is increased which exceeds to that of the reference input resulting in a high logic voltage of the comparator output. The output of the comparator switches on a buzzer using Q1 BC547, a NPN transistor. The gas sensor has an internal heater element which is supplied with 5 volts. The sensor settles down after 2 minutes and then start sensing. This circuit is operated with 12 volts adapter. IC - 2 7805 is responsible for outputting 5 volts for the heater.

Components: R1 = 1k resistor, R2 = 470 ohms resistor, R3 = 10e Resistor, C1 = 1000uf capacitor, C2= , Q1 = BC 547 NPN Transistor, P1=pot/preset, D1 – D4 = in4007 diode, LD1 = L E D, IC 1 = LM 358 (with base), IC2-LM7805,12v adapter, DC Socket, Buzzer, MQ7-CO2 or Gas Sensor.

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Pooja's	BC547 NPN TRANSISTOR COLLECTOR BASE	Level Level	● <sup>7805</sup> ≥nce	
10:#	EMITTER 1 2 3		COM	Smoke Sensor
Pooja's	LM358			Projects
Diodes	1 OUTPUT 1 1 INPUT - 2 1 INPUT + 3 V - 4	8 V + 7 2 OUTPUT 6 2 INPUT - 5 2 INPUT +	12v ADAPTER	DC SOCKET
Pooja's	School		ience ence	e Projects e Projects
Buzzer	L.E.D	Preset	/Pot	