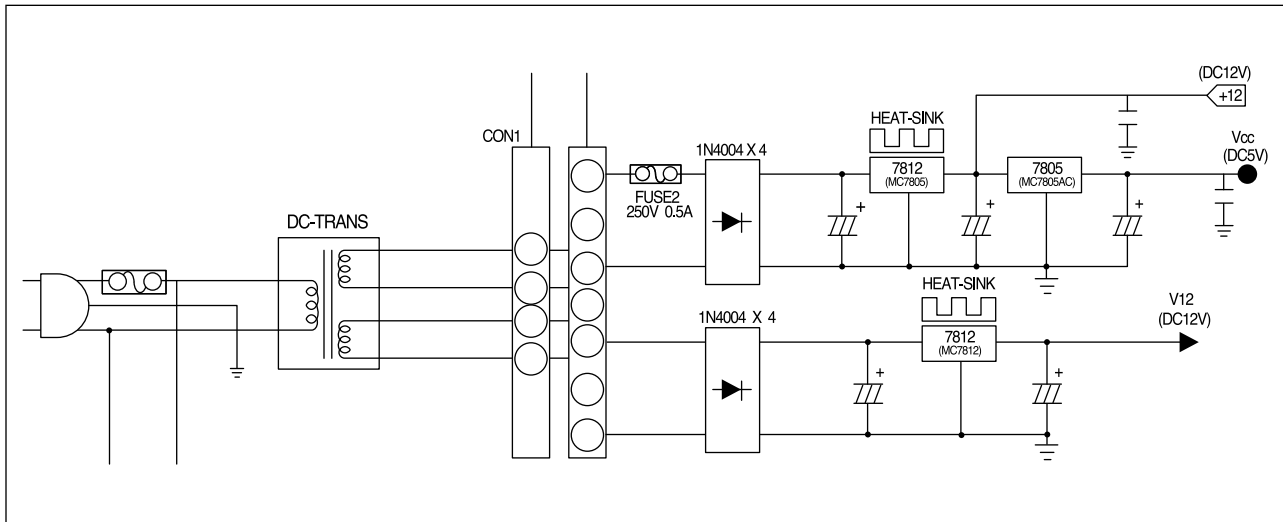


8. Circuit operating theory

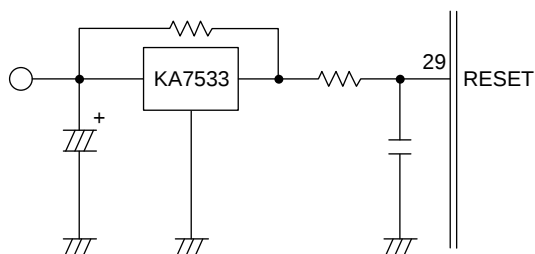
8-1 Power supply part



Voltage	Circuit used
+12 (DC 12V)	Relay Operation
Vcc (DC 5V)	Power around MICOM & Sensor Detector
V12 (DC 12V)	LED Display & S/W Detector

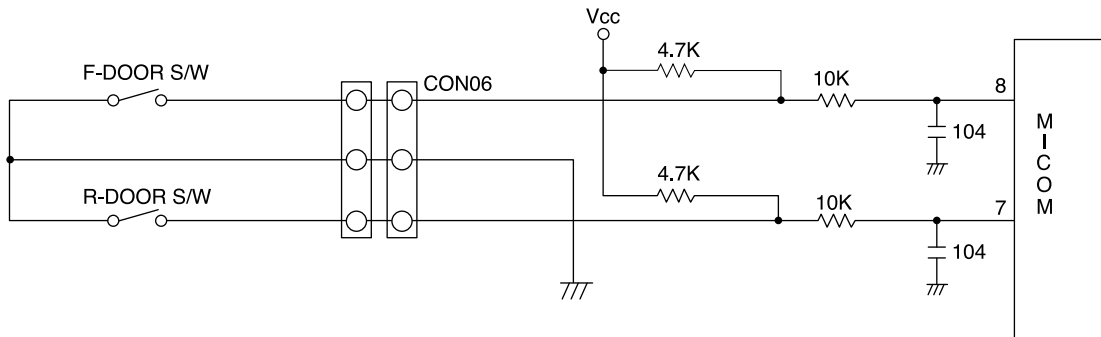
Secondary voltage output of DC trans is sourced 1~3 and 5~7 about 15V. On the 'a' part, input is rectified and regulated by MC 7812 and is about DC12V. This voltage is applied for relay running and regulated again by 7805 to transformer. DC 5V is applied to display part after rectified and regulated by MC7812.

8-2 Resetpart



Reset part is initialize RAM of MICOM and others when power is on or power is interrupted for some time. It will make whole program runs from the first status. When power is supplied, reset voltage is "low" status for a few seconds and turn into "High" status in the normal operating.

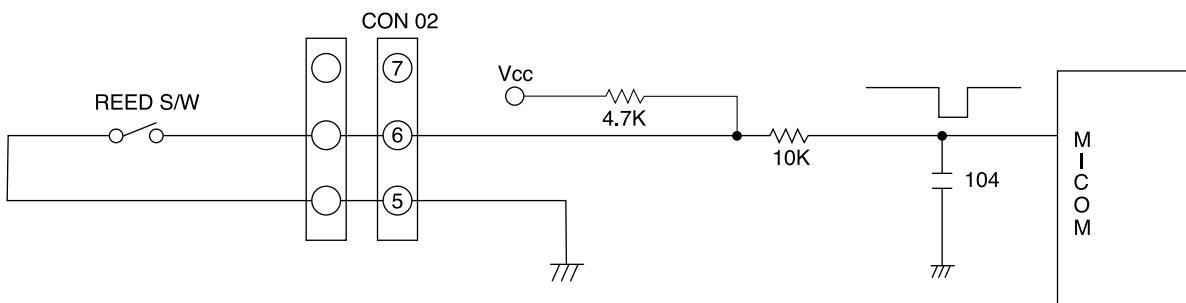
8-3 Door S/W sensing part



DOOR	Door Conditions	Door S/W Contact	CON06 PIN NO	Micom Input Voltage
F	CLOSE	CLOSE	1	“HIGH”
	OPEN	OPEN		“LOW”
R	CLOSE	CLOSE	3	“HIGH”
	OPEN	OPEN		“LOW”

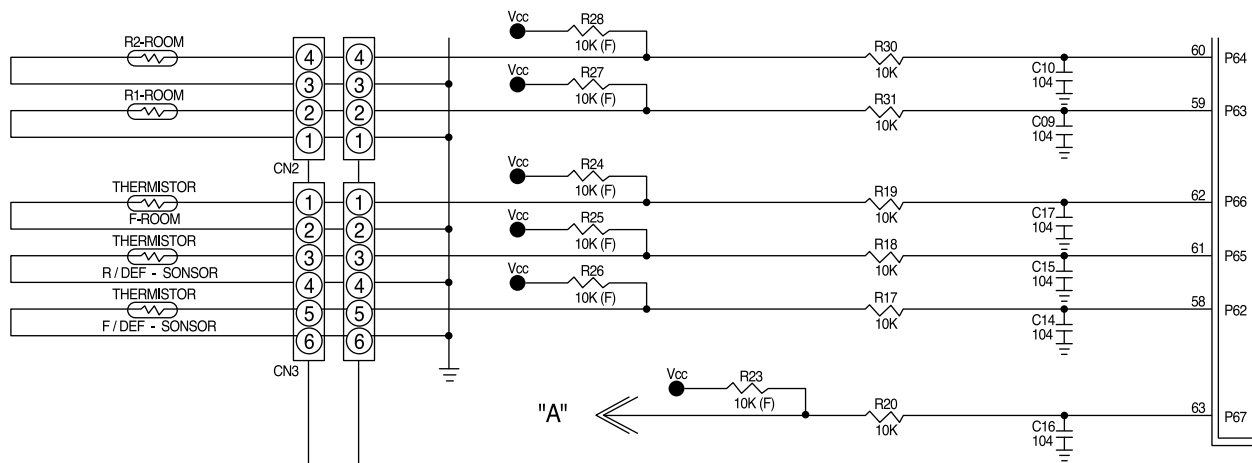
- 1) When the door is opened, the door S/W closed and MICOM input is ‘Low’.
Then the door-open is sensed.
- 2) When the door is closed, the door S/W is opened and MICOM input is ‘high’.
Then the door closed is sensed.

8-4 “V” motor, location sensing part (Reed S/W)



- 1) “V” motor’s location sensing which is for G.A. fuzzy control is done by reed S/ W.
- 2) There occurs a “high” to “Low” and “Low” to “High” conversion period on con02 pin6 by the motion of swing fan. “V” motor’s location is detected by it

8-5. Temp. sensing part

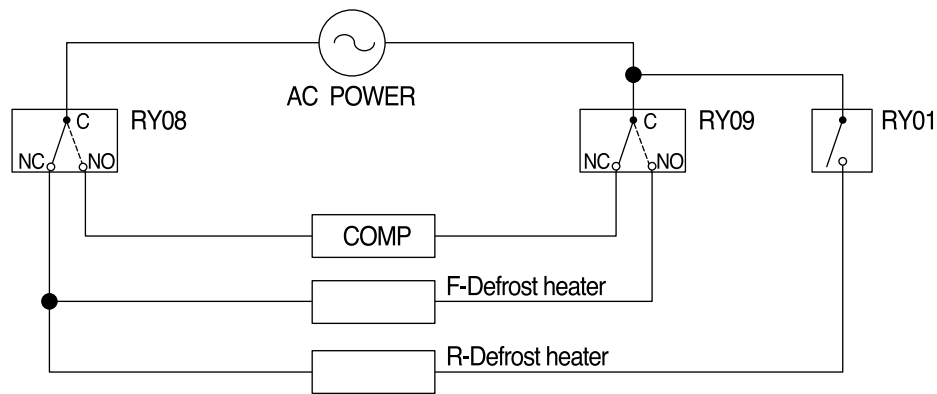


(Room Temp Sensor)

When Sensor is opened	When sensor is cut off
MICOM input "HIGH"	MICOM input "LOW"

- 1) Thermistor is used for sensing which has negative resistance coefficient to the temperature.
- 2) MICOM input voltage, V_F of sensor is $V_F = \frac{R_{TH}}{R_{TH} + R_{24}} \times V_{CC}$ (V_{CC} : 5V, R_{th} : Sensor resistance)
- 3) Refer to conversion table for V_F and R_{TH} according to temperature.

8-6 Comp and defrosting heater operating



As it is seen above block diagram, 220V line is connected to the commons of Comp relay, Ry78 and defrosting heater relay, Ry77, Ry71. When those relays are off state Comp and defrosting heater are also off. As Comp relay moves to on and AC 220V applied to Comp load it starts operating. On the other hand defrost heater runs if defrost heater relay moves to on. There is no chance that both Comp and defrost heater runs together so it's useful for safety aspect.

RELAY		Load	Remark
COMP	Defrost H		
ON	OFF	Comp Operation	Defrost-Heater Power Off
ON	OFF	Comp off, Defrost-Heater Off	
ON	OFF	Defrost-Heater On	Comp Power Off
ON	OFF	Comp Off, Defrost-Heater Off	