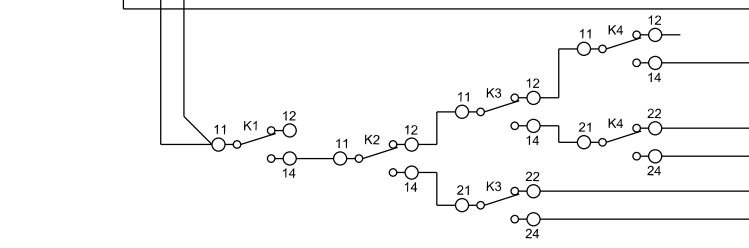
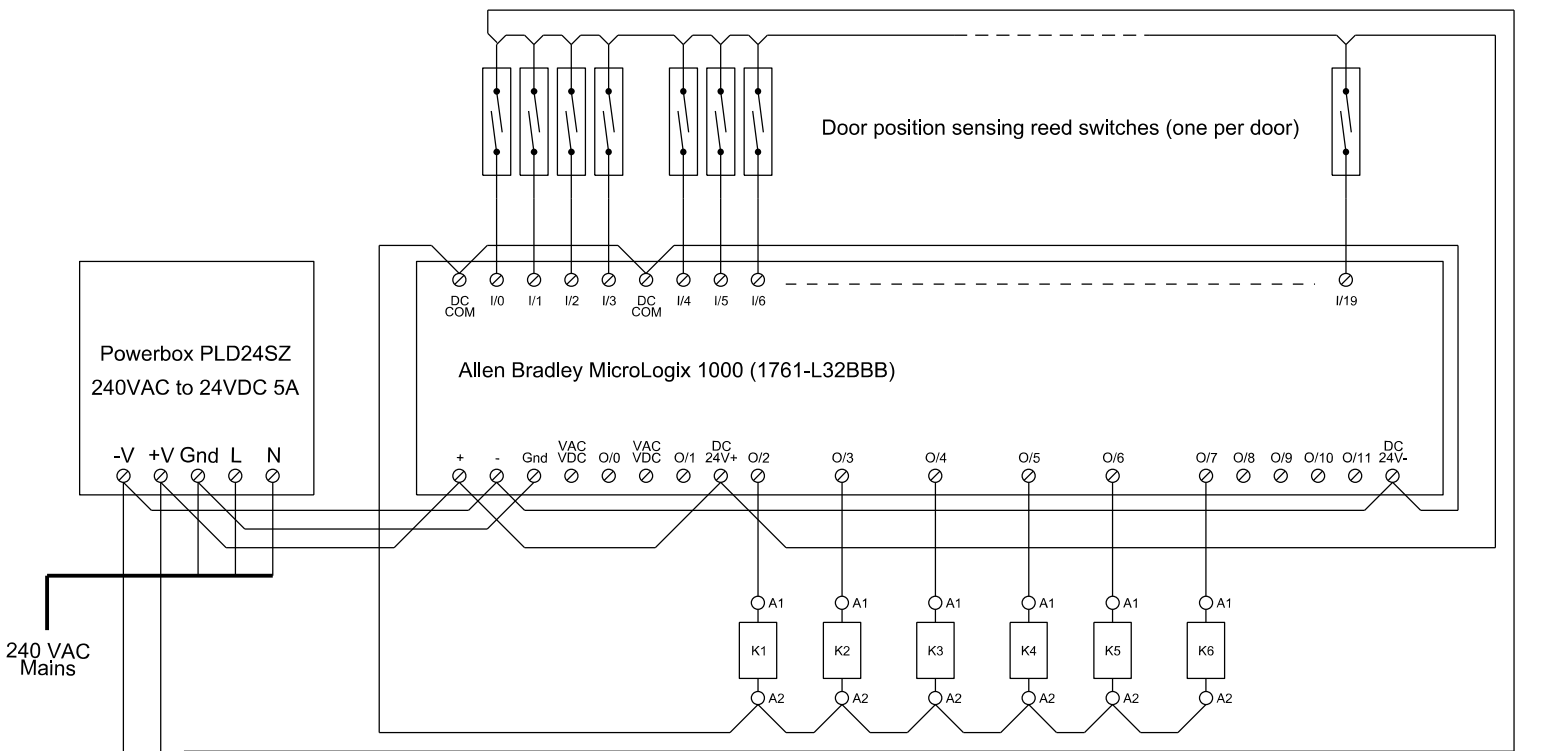


Possum Feeder Electrical Schematic V1.0

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COMPONENTS

Diodes: 40 x 1N5404 (400 V 3 A). It may be possible to use 1 A diodes (e.g. 1N4004) as these will only see 1.75A momentarily.

Solenoids (S1-20): 20 x ZYE1-0530 12 V 1.75 A. These were used because they were available cheaply. Ideally, you would use 24 VDC solenoids here. A solenoid that draws around 20 W when energised will have enough pull for this application, but be aware that a solenoid can only be run at this power level for perhaps 10 seconds before it overheats; the PLC must be programmed to only energise the required solenoid for about a second.

Reed Switches: 20 x 500 mA (size: 15x2mm). There are no special requirements here and you can use the cheapest you can find.

Resistor R1: 1 x 6.8 Ω 10W - This is used only to allow the 12V solenoids to be used in a 24 V circuit and can be eliminated if you use 24 V solenoids.

Relays: 24V Coil, 5 A contacts. K1,2,5 = SPDT, K3,4,6 = DPDT. Omron G2RS socketed relays were used due to availability, but any general purpose relay which can handle at least 2 A at 24 VDC will be OK.

Power Supply: A 5A power supply was used because it was available. It should be possible to use a 2.5 A power supply.

COMMENTS

Relay K1 is a strobe relay to prevent race conditions from occurring when selecting the appropriate solenoid. The PLC first energises whichever of K2 to K6 are required to select the required solenoid, and then pulses K1 after a short delay.

The arrangement of relays shown would allow for another column of solenoids to be fitted (i.e. 24 doors in total), however the system as it stands can only monitor the status of 20 doors.

