



C/MRI Parts List

JLC Enterprises, Inc.

**Prototypical Grade
Crossing Controller
Parts List
(PGCC Rev E)**

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Prototypical Grade Crossing Controller Parts List (**PGCC Rev E**)
(In recommended order of assembly)

Qty.	Symbol	Description
10	–	4-40 x 1/4" long pan head machine screws (Digi-Key H142)
10	–	4-40 hex nuts (Digi-Key H216)
13	D1-D13	1N4148 switching diodes (Jameco 179215 – see text for possible parts omission)
1	D14	1A, 100V diode 1N4002 (Jameco 76961)
6	R1-R6	10K Ω resistors [brown-black-orange]
5	R7-R11	1.0K Ω resistors [brown-black-red]
11	R12-R22	100K Ω resistors [brown-black-yellow]
2	R23, R24	5.6K Ω resistors [green-blue-red]
2	R25, R26	47K Ω resistors [yellow-violet-orange]
2	R27, R28	22K Ω resistors [red-red-orange]
1	R29	91K Ω resistor [white-brown-orange]
1	R30	82K Ω resistor [gray-red-orange]
1	U8	Crossing bell sound recording SOIC (JLC GBELL1 – see text)
2	R31, R32	220 Ω 1/2W resistors [red-red-brown] - see text for alternatives
5	S1-S5	14-pin DIP sockets (Jameco 112214)
1	S6	8-pin DIP socket (Jameco 112206)
1	S7	6-pin DIP socket (Jameco 112193)
1	SW1	4-segment DIP switch (Digi-Key CT2064)
13	C1-C13	.1 μ F monolithic capacitors (Jameco 332672)
1	C14	1.0 μ F, 25V tantalum (Jameco 154860)
8	C15-C22	10 μ F, 25V tantalum capacitors (Jameco 94078)
1	C23	4.7 μ F, 50V radial electrolytic capacitor (Jameco 31002)
1	V1	7805T 5V, 1A positive voltage regulator (Jameco 51262)
3	P1-P3	1M Ω trim potentiometers (Digi-Key 3306F-105)
1	P4	200 Ω trim potentiometer (Digi-Key 3306F-201 or Mouser 652-3306F-1-201)

3	P5-P7	2K Ω trim potentiometers (Digi-Key 3306F-202 or Mouser 652-3306F-1-202) -see text for higher wattage alternatives for P6 and P7
3	U1-U3	LM324N quad op amps (Jameco 23683)
1	U4	CD4071 CMOS quad 2-input OR gate (Jameco 13274)
1	U5	CD4011 CMOS quad 2-input NAND gate (Jameco 12634)
1	U6	L272M dual .7A output op amp (Mouser 511-L272M)
1	U7	H11A5 optocoupler (4N36), 6-pin DIP (Jameco 783682)
2	J1, J2	Install long jumpers when flasher LEDs are wired in common anode configuration and short jumpers when wired in common cathode configuration. (Make from cut-off ends of resistor leads)
1	SPK1	2-in, 8 Ω Speaker your choice [or substitute larger diameter 8 Ω for greater fidelity]

Note: Author's recommendations for suppliers given in parentheses above with part numbers where applicable. Equivalent parts may be substituted. Resistors are 1/4W, 5 percent, except R31 and R32, which are 1/2W, with color codes given in brackets.