

DCC Ammeter V4 BOM / stuffing guide.
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Meter M1 is a 0-30V DC 3 digit voltmeter with an input impedance of 100K or more. Be aware that meters on ebay have different mounting tab and connection wire locations. The PCB was designed for meters with mounting tabs along the top edge. Unsolder the 3 wires and insert standard 0.1" pins to mate with the pin header on the PCB.

Two header locations are provided so the meter can be mounted on the component side of the board (for front-mounting) or on the solder side of the board (for rear-mounting). The meter could also be remote mounted using a 3-wire servo extension cable.

Adjust R5 to just bring the meter indication down to zero with the output open.

If desired a separate power supply can be used to eliminate the small DCC current draw. In this case do not install B1 and instead supply +12VDC via the B1 output pin locations. A 2 terminal 0.1 spacing connector may be used if desired.

Part	Qty	Value	Description	MPN	MFR
B1	1	MB10M	Bridge Rectifier	MB10M	ASEMI
C1	1	100	CAPACITOR Electrolytic Radial 25V	UHE1E101MED1TD	Nichicon
C2,4,5,8	4	0.1	CAPACITOR, Ceramic, Radial, 50V	K104K15X7RF53L2	Vishay BC Comp
C3	1	1	CAPACITOR Tantalum Radial 35V	A-265	
C6,7	2	.01	CAPACITOR, Ceramic, Radial, 50V	K103K15X7RF53L2	
D1,2	2	1N4148	DIODE	1N4148	ON Semi
JP1-4	4	STAND-OFF	Stand Off - Board		
JP5-6	2	STAND-OFF	Stand Off - Meter		
JP7	1	HEADER_METER	PIN HEADER		
M1	1	METER	METER, 3 digit, 0-30 VDC, .36" LED		ebay
R1,2	2	5.11K 0.1%	RESISTOR, 0.1% metal film, 1/10 w	RN55C5111BRE6	Vishay / Dale
R3	1	732K	RESISTOR, 1% metal film, 1/8 w		
R4,8	2	10M	RESISTOR, 1% metal film, 1/8 w		
R5	1	2M	POTENTIOMETER, Cermet, 1/2 w	CT6EP205	Nidec Copal Elec
R6,9	2	10K	RESISTOR, 1% metal film, 1/8 w		
R7	1	2.5K	RESISTOR, 1% metal film, 1/8 w		
R10	1	1M	RESISTOR, 1% metal film, 1/8 w		
R11	1	2M	RESISTOR, 1% metal film, 1/8 w		
U1	1	AP7381Y	5V 150 mA, Low Quiescent Current LDO Regulator	AP7381-50Y-13	Diodes Inc
U2	1	ACS724	Linear Current Sensor, 10A bipolar	ACS724LLCTR-10AB-T	Allegro
U3	1	TLV2172	OP AMP 36V	TLV2172IDR	TI
X1,2	2		Screw terminal 2 pin 5.08 large pads	282841-2	TE Conn AMP Conn
BRD	1	Circuit Board	Circuit Board, 2 oz copper		Pcbway