

Battery Discharge Indicator with Hour Meter

JCBDHM is a high cost performance, easy to install Battery Charge meter with Hour Meter (BDIHM). It is completely solid state and provides a reliable, accurate, and easy to read display of battery state-of-charge. This battery charge meter with hour meter is ideal for golf cars, hunting buggies, forklift , commercial leaning equipment, mobility aids, electric bicycles and other similar EV.

Hour meter:6-digit LCD,5mm high; Max.99999.9 Hours; Resolution 0.1 hour Battery meter; detects and show the real battery state of charge and discharge Battery meter display;10 tri-color LED Bar

1. Model Encodement

Terminals					Voltage
1	2	3	4	Functions	1=12V
P	G	S	C	P: Battery +	2=24V
P	G	E	C	G: Battery -	3=36V
P	G	R+	C	R+: Relay output= battery voltage +, open circuit when battery voltage is low	4=48V
P	G	R-	C	R+: Relay output= grounding, open circuit when battery voltage is low	7=72V
				E: Empty	8=80V
Voltage per cell: 2.05@full , 1.73@ empty					

2. Technical Specification

Volts	Operating Current		Power Consumption		Battery Indicator	
	Nom.	Max	Nom.	Max	Range	Tolerance
12V	25mA	30mA	0.30W	0.36W	10.36V—12.32V	±0.13V
24V	25mA	30mA	0.60W	0.72W	20.76V---24.65V	±0.25V
36V	25mA	30mA	0.90W	1.08W	31.14V---36.98V	±0.40V
48V	25mA	30mA	1.20W	1.44W	41.52---49.31V	±0.50V
72	18mA	22mA	1.30W	1.58W	62.28V—73.95V	±0.75V
96	18mA	22mA	1.56W	1.98W	83.04V—98.62V	±0.95V
Hour meter Precision			±0.01%		Relay rating	90W

Mechanical

Display---Battery state-of- charge:10-bar,tri-color LED

Hour meter:6-digit LDC, 5mm high

Resolution—Hour meter: 99,999.9 hours

Environmental

Temperature---Operating: -40℃ to 85℃

Humidity—maximum 95% RH(Non condensing) @ 38℃

Case specifications

Instrument: Round, step type bezel, glass lens, maximum 4 pins, 3/16" terminals

Hardware kits: stainless steel U-shape mounting bracket, with washers(2 pcs), springs(2 pcs) and nuts(2 pcs), slip-on connectors(4 pcs), isolated sleeves(4 pcs).

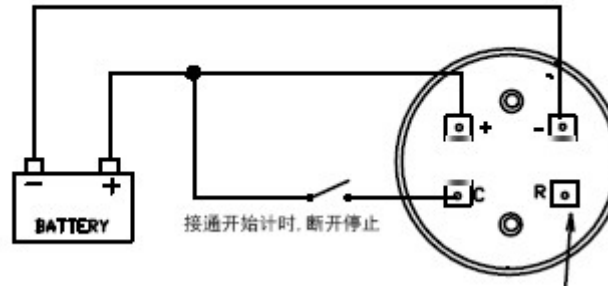
Panel Cutout—52mm, 2-1/16"

Mechanical Shock—SAE J 1378, 55g

Mechanical Vibration---- SAE J 1378, 20g

3 Installations

Pin#	1	2	3		4
	Battery +	Battery -	Empty	Relay	Control
Wiring	Connect to battery ,LED shows battery state-of-charge, hour meter tests each digit and shows 0.0 to get ready for counting		Hour meter cannot be reset	Relay output	Connect to high voltage. Switched on, hour meter begins to count time. Switched off, hour meter shows memorized hours



4. Operation

This part combines in one instrument a solid state LED battery state-of-charge indicator, and an LCD hour meter.

Battery State-of-charge Indicator:

Only when battery is properly charged (HVR) and keep at the voltage for over 6 minutes, is the right most LED (#10) lighted.

As battery's state-of-charge decreases, successive LED lights up, one at a time, 160s after detecting state low voltage.

The Led (#3, yellow) flashes, indicating "Energy reserve" (70% discharged).

The left most two LEDs (#1) flash by turns, indicating "Empty" (90% depth of discharge). (See Table 1)

Note: When battery sets are swapped, new battery voltage equals to OCR, the right most LED #10 is lighted.

LCD Hour Meter:

1. When connected to power, hour meter checks itself and shows each digit for 1 second and shows 0.0 to be ready for work.
2. When control pin (4#) is connected to high voltage (DC9V~80V), hour meter begins to count hours and the time icon flashes at 1Hz.
3. When control pin (4#) is disconnected, hour meter stops counting hours, and shows memorized hours.
4. When hour meter is completely powered off, memorized hours are keep in EEPROM and will be shown next time when it's powered on.

5. Troubleshooting

To maximize the life of the instrument, please ready all instructions in the manual carefully. Most minor problems can be resolved by removing all power for at least 10 seconds and then reconnecting. The following checklist should help you to troubleshoot problems with the instrument.

Problem	Possible cause
No display	Terminals not connected or improper voltage
LCD display present, but counter does not activate	Control pin not connected or input voltage not reaching specified minimum signal level
LCD will not reset	Reset pin not connected
LED stays at full	Instrument voltage does not match battery voltage
Empty too soon	Instrument voltage does not match battery voltage, or terminals not directly connected to battery

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