Battery Equalizer - EQ48-12

HDM's EQ48-12 Battery Equalizer is a bi-directional circuit which balances the voltage between four or more individual batteries connected in series during charge, discharge, and idle periods. EQ48-12 prevents severe under and over voltage, common in series connections, which can compromise the performance, reliability, and life of your battery system. Equalized batteries are able to receive a full, clean charge, increasing battery pack power, capacity, and life, therefore supporting your mission much better.

ELECTRICAL	
Nominal Battery Voltage	$12V_{DC}$
Operating	$10.5\sim16.5V_{DC}$
Maximum Equalization Current (I_{eq})	$3A_{DC}$[1]
Quiescent Current Draw	$<20mA_{DC}$
Low voltage shutdown	$<10.5(\pm0.4)V_{DC}$
Overvoltage shutdown	$>16.5(\pm0.4)V_{DC}$
Differential voltage auto shutdown	$>4(\pm0.4)V_{DC}$
Operating modes	Charge, Discharge, Idling
Fuse (external)	(4) 5A AGC
MECHANICAL	
Dimensions (LxWxH)	7.14 x 4 x 1.14"
Weight	2 lbs
Construction	Black Composite Case
INTERFACE	
48V Connection	18" Red 12AWG with 3/8 Stud Ring Terminal
36V Connection	18" Red 12AWG with 3/8 Stud Ring Terminal
24V Connection	18" Red 12AWG with 3/8 Stud Ring Terminal
12V Connection	18" Red 12AWG with 3/8 Stud Ring Terminal
Ground Connection	18" Black 12AWG with 3/8 Stud Ring Terminal
ENVIRONMENTAL	
Cooling	Natural Convection
Operating Temperature	-40 ~ +50°C
Storage Temperature	-40 ~ +60°C
MTBF Prediction[5]	333,000 Hrs

Industry-Leading Features

- Patented equalization technology which reduces size, cost, and weight
- Equalizes four 12v batteries in a series string
- Multi-module daisy-chain connection for high voltage system configuration
- Stackable / parallelable for high current equalization
- Easy installation and mounting
- Appropriate for sealed, agm, and gel batteries
- Extends battery life and run time
- Dust and splashproof
- Maintenance free

Standard Features

- Automatic equalization during charge, discharge, or idling
- Low voltage protection
- Overvoltage protection
- Overcurrent protection
- Automatic recovery[2]
- Flange mounting

Specifications typical at 25°C unless otherwise stated and are subject to change without notice.

1. Maximum current during equalization mode.
2. EQ48-12 will auto-recover when parameters are within operating limits and LED will return to steady or blink Green.
3. Battery low or over voltage warning indicates that the battery has exceeded the normal operating limit. Module may auto-recover and continue to equalize when external supply or load is removed. Manual reset is required to reset the warning indicator by disconnecting and reconnecting the module.
4. Module will auto-shutdown, but LED may remain steady or blink Green due to residual voltage across internal filter capacitor.
5. Calculated per Bellcore TR-NWT-000332 method at 50% stress, +40°C. Products are covered by 1 year limited warranty.

84 Lincoln Street, Brighton, MA 02135 • Ph: 617-562-4054 • Fax: 617-562-4013 • www.hdm-sys.com

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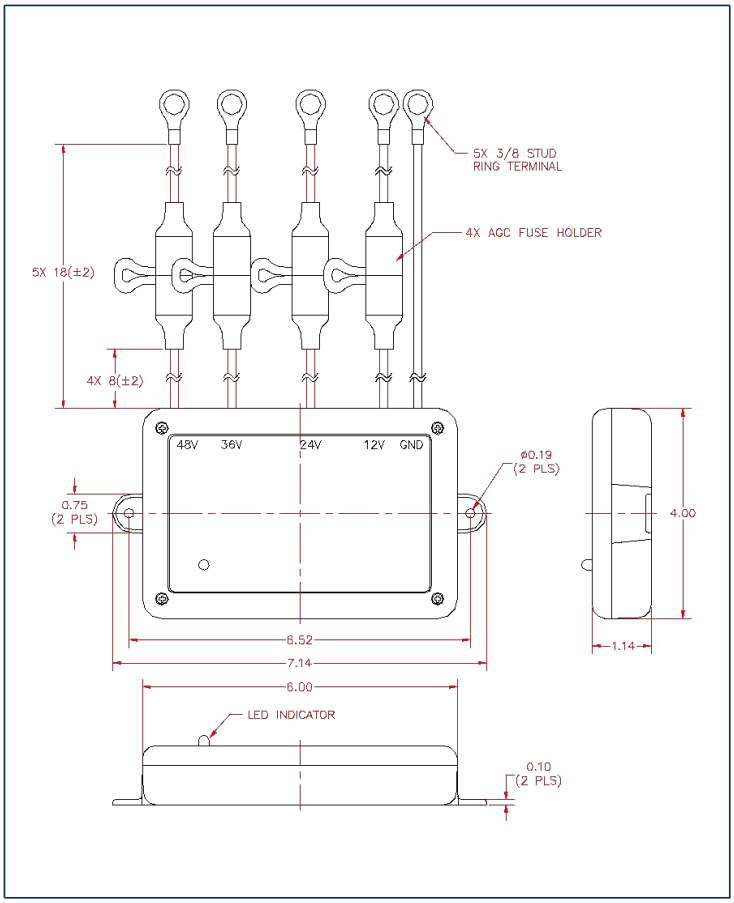
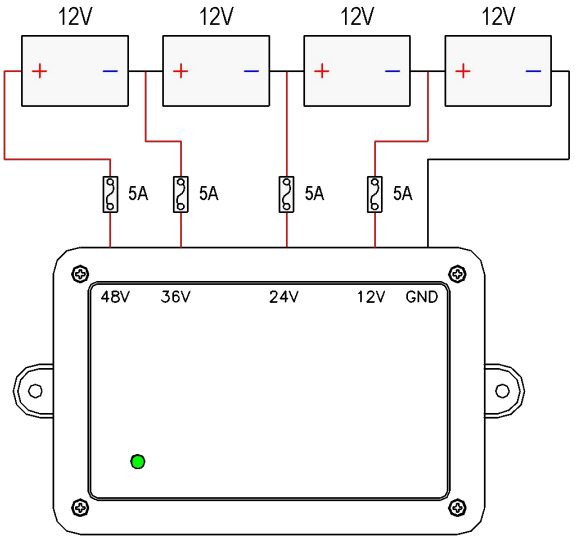
Battery Equalizer Diagram





PART NUMBER	DESCRIPTION
EQ48-12	48V-12V Battery Equalizer, 5-Wire

MODE	LED	MODE	MODE
Balanced		Steady Green	Voltage Differential <0.4V (+/-0.4)
Equalizing		Blink Green 1 Sec On/1 Sec Off	Voltage Differential >0.6V (+/-0.4)
Battery #1 Low/Over Warning (Gnd~12V Connection)		Green / Blink Orange 1x Per 4 Sec	Gnd~12V Conn - When Battery #1 Exceeded Normal Range[3] <10.5V or >16.5V (+/-0.4)
Battery #2 Low/Over Warning (12V~24V Connection)		Green / Blink Orange 2x Per 4 Sec	12V~24V Conn - When Battery #2 Exceeded Normal Range[3] <10.5V or >16.5V (+/-0.4)
Battery #3 Low/Over Warning (24V~36V Connection)		Green / Blink Orange 3x Per 4 Sec	24V~36V Conn - When Battery #3 Exceeded Normal Range[3] <10.5V or >16.5V (+/-0.4)
Battery #4 Low/Over Warning (36V~48V Connection)		Green / Blink Orange 4x Per 4 Sec	36V~48V Conn - When Battery #4 Exceeded Normal Range[3] <10.5V or >16.5V (+/-0.4)
Auto Shutdown		Steady Red	1. Diff Voltage >4V (+/-0.4) -or- 2. Any 12V, 24V, 36V, or 48V Lead Disconnected[4]

All dimensions in inches unless otherwise specified.

PB-EQ48-12 20130618-2300