

AIGD module wasRe: Need help designing an automotive engine run detector.

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- *From:* LVMarc <LVMarc@xxxxxxx>
 - *Date:* Tue, 09 Oct 2007 18:06:14 -0700
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Jeff Liebermann wrote:

On Tue, 09 Oct 2007 20:11:04 -0000, Gerbermultit001@xxxxxxxxxxx wrote:

On Oct 8, 10:38 pm, Jeff Liebermann <je...@xxxxxxxxxxx> wrote:

Bad idea. You're bypassing the entire fuse and breaker protection mechanisms in the vehicle. You would need to attach a fuse directly to the positive terminal of the battery, a non-trivial exercise. You're worried about the GUM (great unwashed masses) doing a proper install, yet you don't seem to be worried about the same person is going to get a wrench between the positive terminal and ground, with the resultant smoke, fire, burns, and litigation.

Bad idea?

Well yes. It really depends on who does the install. If it's the clueless bozo that you're apparently you market audience, anything that requires tools is a bad idea. Horror stories on request.

Hmmm, I wonder how the high powered car amplifier market gets by. They sell millions of those things a year. Perhaps because they do not actually supply the wiring?

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Most are installed by auto electronics shops (and then cleaned up by auto electric shops after the wiring harness gets torched). It can be done successfully by anyone who actually follows the instructions, but your target audience apparently doesn't qualify. You're correct.

Directly wired to the battery.

http://www.caraudiohelp.com/how_to_install_a_car_amp/how_to_install_a_car_amp.htm

See item #7 on fuse location.

Incidentally, if you want your worst case nightmare for do it thyself automotive electronics, see:

<http://www.mp3car.com>

in the "Show off your project" forum section:

<http://www.mp3car.com/vbulletin/show-off-your-project/>

Some of the installs are rather marginal bordering on dangerous.

Others are really impressive works of electronic artistry. The majority seem to survive without fire or an extended vehicle warranty.

I'm shopping for new wheels and plan to install a computer in roughly the same manner.

Similar case to the electric hedge cutters. Ever see one lately with a corded pigtail for power? No? That's because some fool probably cut through the supplied pigtail, sued them, and won. So, to counteract, the guys making the hedge cutters molded a plug into their handle. Now if the fool cuts through the cord, they need to sue the extension cord maker :).

You're stretching it a bit. Between about 1973 and 1985, my hobby was product liability litigation. It was a hobby rather than a profession because I carefully avoided most pitfalls and traps in the products I helped design. I would collect horror stories from the news and trade journals and bring them to meetings. That would inspire the others to be VERY careful. Anyway, if you have any relevant horror product liability horror stories, please make them relevant to user installed automotive electronics. Hedge cutters aren't even close.

I'll let our lawyers determine if we supply wiring, fuses harness to connect to VBAT, etc... Or if we play it on the safe side and make it the customers responsibility to supply these goods.

Actually, the lawyers don't decide anything. They advise.

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As I understand it (possibly wrong), dumping the responsibility on the customer, where the customer is forced to make a decision based on insufficient information, is a loser in court. The customer merely has to say that he did not understand the instructions and they're off the hook. It's your responsibility to insure that the customer cannot do anything wrong, cannot misinterpret, and cannot injure themselves. Consult an attorney to be sure.

Yep. That's the worst case scenario for electronics. Roughly -40C to +105C. Don't forget about water proofing and high voltage spikes on the power lines.

I design underhood electronics to survive all know electrical system faults and SAE-J1113-11 transients at +125C

When activated this product will draw about 5 amp.

75 watts? Where are you going to empty out the heat?

Product design and packaging will take this into account.

Ok, I have a design question. It draws 5amps. How are you going to turn it on and off or is that the purpose of the engine run detector? If this is the case, how are you going to prevent Joe Sixpack, from placing a boom box on the air filter, and playing race track sound effects CD's at full blast, causing your engine sound activated contrivance to falsely activate? No answer required, but at least think about the many ways in which such a system can fail.

Incidentally, does this have to work in a hybrid? They don't make very much noise when running on battery.

I didn't want to run additional wiring. However, if I have to, IGN would be my 1st choice.

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Well, it does have the benefits of simplicity. However, once you have a microprocessor to abuse, engine run detectors can be made as complicated and elaborate as the software will allow. Complex algorithms, that accept input from multiple sensors (sound, vibration, IR, acceleration, etc). We're not fighting for every byte of RAM or counting CPU cycles these days.

Thanks for your feedback Jeff.

Glad to be of assistance. Incidentally, I spent 9.5 years designing consumer marine electronics. It's not the same as automotive, but it's close enough with the added enjoyment of a corrosive environment and a semi-intoxicated operator.

Have a design concept for non-contact and low power, could be battery powered. automotive ignition detector uses non contact radiated engine or electric motor contractors spikes, and a coincidence detector. Please contact me for commercial versions of this module!

Marc
Best regards and happy designing

marc

<http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&rd=1&item=300142128658&ssPageName=STRK:MESE:IT&ih=0>

link to actual mixer site

www.fwt.niat.net amazing antennas

<http://www.youtube.com/profile?user=LVMarc>
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