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A Free & Open Forum For Electronics Enthusiasts & Professionals

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August 16, 2021, 03:22:48 pm

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EEVblog Electronics Community Forum » Products » Other Equipment & Products » Be aware: Yihua YH-305D bench PSU

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Author Topic: Be aware: Yihua YH-305D bench PSU (Read 88983 times)

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saturation
Super Contributor

Posts: 4787
Country:

Doveryai, no proveryai

Be aware: Yihua YH-305D bench PSU
« **on:** March 21, 2012, 07:19:57 pm »

Say Thanks Reply Quote

I've been running into this Instek, Mastech etc., look a like during eBay or google searches on bench power supplies. Its fairly prolific and some vendors are selling them like hotcakes.

Comparing Mastech and Yihua model appearances:

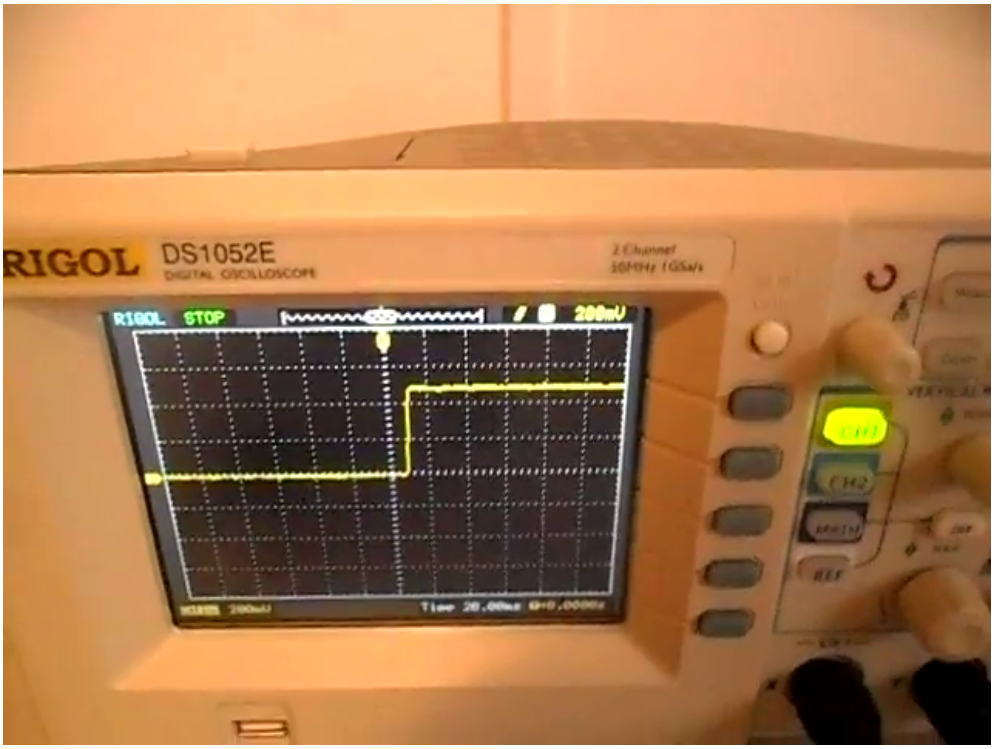
For example, both with the Yihua name and name removed, but containing the same model number. Scores are sold, and one vendor has > 800 stocked:

http://www.ebay.com/itm/290647013768?ssPageName=STRK:MEWAX:IT&_trksid=p3984.m1423.l2649
http://www.ebay.com/itm/140675103345?ssPageName=STRK:MEWAX:IT&_trksid=p3984.m1423.l2649

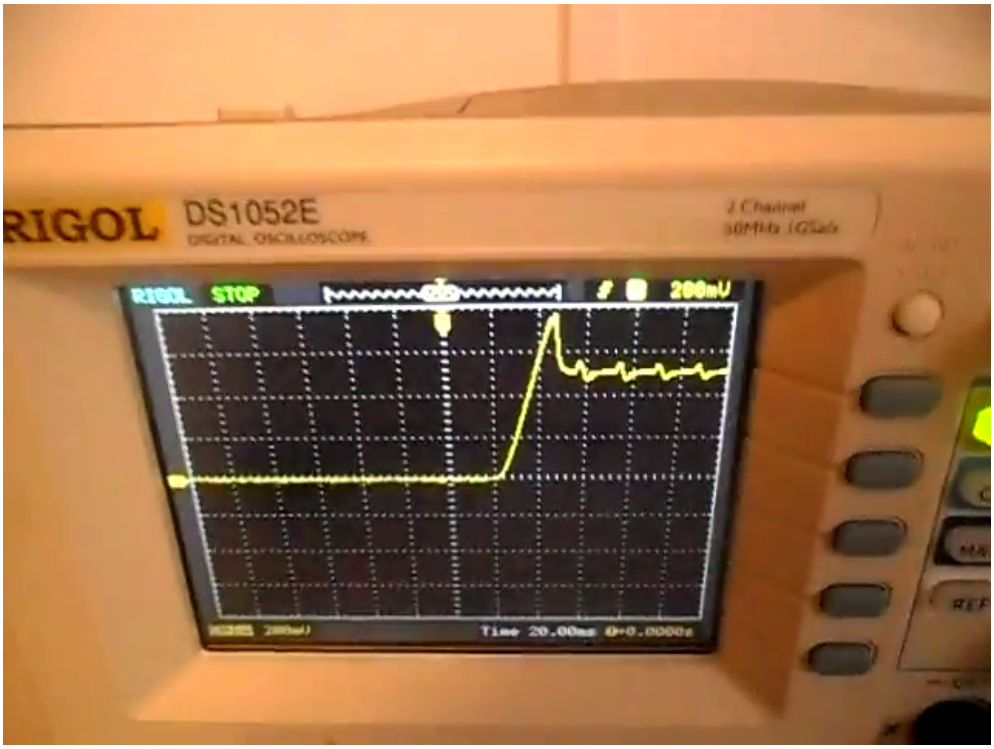
However, a user posted this youtube video on its simple turn-on response of a new Yihua versus his older Mastech PSU:

Key frame grabs:

Mastech:



Yihua:



Mastech turn on response.png (903.31 kB, 640x480 - viewed 48920 times.)

Yihua turn on response .png (903.31 kB, 640x480 - viewed 48940 times.)

« *Last Edit: March 21, 2012, 07:35:22 pm by saturation* »

Report to moderator Logged

Best Wishes,

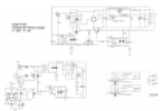
Saturation

ron
Regular Contributor
Posts: 87
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #1 on:** March 21, 2012, 08:03:07 pm »

Say Thanks Reply Quote

schematic of a 305D ... any mod suggestions?



Protel 305D Var. DC PS_002.jpg (245.7 kB, 1850x1254 - viewed 43312 times.)

« *Last Edit: March 22, 2012, 04:32:01 am by ron* »

Report to moderator Logged

ron
Regular Contributor
Posts: 87
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #2 on:** March 21, 2012, 08:59:40 pm »

Say Thanks Reply Quote

I just did a quick check on a 305D. Driving a ~6 ohm ww at 2.5 volt / .5 amp, I get a .5volt overshoot and ~.008 volt / 60hz ripple.

Report to moderator Logged

Spawn
Frequent Contributor

Posts: 510
Country:
32µ 0'000032

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #3 on:** March 22, 2012, 03:41:55 am »

Say Thanks Reply Quote

Lol nice to see that, I got a Yihua PS-3010D

It's a 10A version without Low and High Amps limitation, I wrote something about it in another topic while I was testing the fan noise of my scope.

The power supply came out the box with burned plus banana plug inserts, they used some crappy 3A versions so I changed that to 16A versions, and the fan makes too much noise (it is always on).
There is a huge capacitor dangling around in the housing which they try to mount to the bottom with a tie-rap mount, but that was also loose of course.
Wiring inside is crap, there are 4 output transistors mounted inside the housing on a 2mm aluminum piece used as heat sink but it is not even close to one.

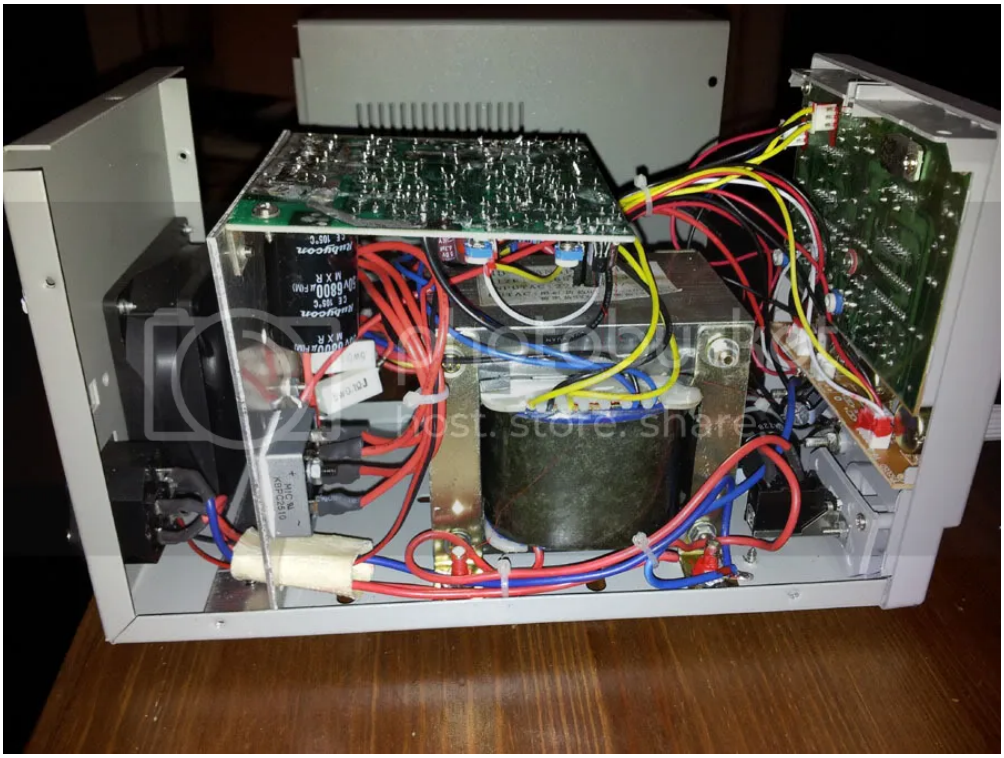
I just checked my phone there was some pictures of it which I took for my friend, I will post that below, also a movie with output noise on a scope.

I use the power supply for high current automotive lambs and other automotive things to test them out, so it is good enough for couple minutes using for me on not so fragile things.

But to be honest, I wouldn't recommend this power supply to anyone who is doing some fine electronics projects.

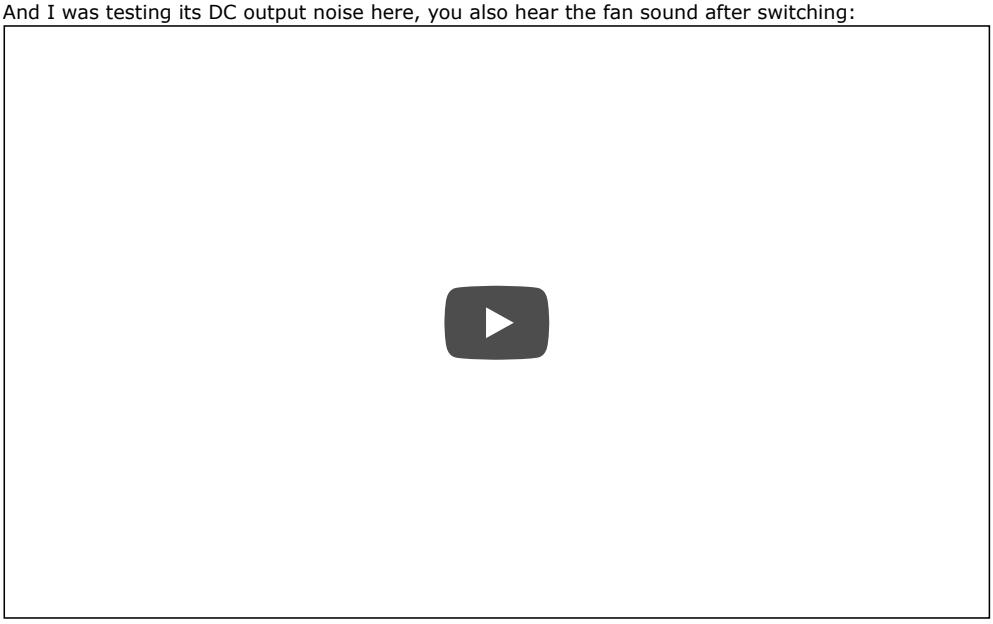
I was going to review this power supply but I really need a bigger bench, I don't have any room on my bench so I am heavily busy to make a new bench.

Anyways here are the pictures:



Sorry I guess my phone cam needs better focus

And I was testing its DC output noise here, you also hear the fan sound after switching:



Report to moderator Logged

My YouTube Channel

T4P
Super Contributor

Posts: 3706
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #4 on:** March 22, 2012, 06:10:12 am »

Say Thanks Reply Quote

Do they use preregulator switching ?
Or is it truly linear and uses multiple taps relay switching ?

Report to moderator Logged

Spawn
Frequent Contributor

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #5 on:** March 22, 2012, 12:34:59 pm »

Say Thanks Reply Quote

My model uses relays, switching at 8v, 16v and 24v

Report to moderator Logged

My YouTube Channel

Posts: 510
Country:

32μ 0'000032

T4P
Super Contributor

Posts: 3706
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #6 on:** March 22, 2012, 03:02:09 pm »
Say Thanks Reply Quote

Has anyone used totobay ?
http://www.totobay.com/zhaoxin-rxn305d-power-supply-220v_p15886.html

Report to moderator Logged

saturation
Super Contributor

Posts: 4787
Country:

Doveryai, no proveryai

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #7 on:** March 29, 2012, 08:53:27 pm »
Say Thanks Reply Quote

Yet another bad review, this time more suggestive of an intrinsic design fault or use of very inferior parts:

http://www.amazon.com/Precision-Variable-Adjustable-Power-Supply/dp/B005DHZVJK

Report to moderator Logged

Best Wishes,

Saturation

Salas
Frequent Contributor

Posts: 292
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #8 on:** May 24, 2012, 06:49:31 pm »
Say Thanks Reply Quote

Looks like Yihua and Mastech have same origin but circuit differences then. No problems with my Mastech branded dual also.


1.jpg (132.63 kB, 1024x768 - viewed 7059 times.)


2.jpg (90.26 kB, 1024x579 - viewed 5755 times.)


3.jpg (101.82 kB, 1024x768 - viewed 5592 times.)

Report to moderator Logged

saturation
Super Contributor

Posts: 4787
Country:

Doveryai, no proveryai

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #9 on:** May 24, 2012, 07:35:29 pm »
Say Thanks Reply Quote

I'm happy for you. I guess you can say Yihua and Mastech both originate from China, but there quality is far different. Your unit looks well made, by what I can see of the assembly, and most Mastech's I read about work as expected, and few if not any complaints. But I can't be sure that the brand name Matech is made by same company if you buy it in the US, Greece or other places in the world. So caveat emptor.

If you look at Spawn's Yihua photo here:

https://www.eevblog.com/forum/product-reviews-photos-and-discussion/beware-yihua-yh-305d-

bench-psu/msg99235/#msg99235

What can be seen at the top PCB looks rough, the power resistors that are dangling in the rear heatsink, and its odd to have a floating capacitor that is just zip tied, see middle photo.

Report to moderator Logged

Best Wishes,

Saturation

Spawn
Frequent Contributor

Posts: 510
Country:

32μ 0'000032

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #10 on:** May 24, 2012, 08:02:55 pm »
Say Thanks Reply Quote

Saturation is right there, yours look a lot better build than mine, like I mention mine came with melted plus connector, since I use it only for rough tests like automotive lambs and so on, it doesn't matter, I got couple other supplies for more delicate work.

Report to moderator Logged

My YouTube Channel

Salas
Frequent Contributor

Posts: 292
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #11 on:** May 24, 2012, 08:20:53 pm »
Say Thanks Reply Quote

The NTC thing I added it myself primary side by the way. Because it was 2 out of five times tripping my 10A breaker line when its massive toroid Tx was building up field at start up.

Report to moderator Logged

cliffyk
Frequent Contributor

Posts: 308
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #12 on:** May 24, 2012, 10:05:50 pm »
Say Thanks Reply Quote

While it is obvious that the loaded start-up and regulations characteristics of the MasTech supply are superior to those of the Yihua unit, it would never occur to me to start-up either supply with a load connected--especially if said load were a an established device or project under development--BTW the Mastech's ability in that regard are impressive.

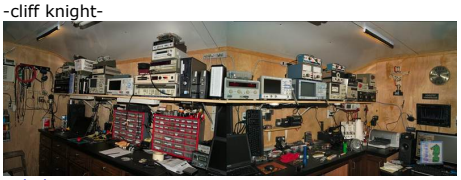
With regard to MasTech bench supplies however, ***I have a dead HY-3010E that will will give to anyone willing to pay the packing and shipping costs***. I bought it several years ago and was never impressed with it's quality, i worked for a couple years and then the smoke came out--MasTech was of no help whatsoever, they sent me a schematic that is different from the version I have and made it clear that no replacement parts or modules were available. It is a switching type supply and I believe the transformer in the control supply is shorted.

I also have two Leader bench supplies, a 7110-3D 110V 3A and a 718-20D 18V 20A. They look very similar to the MasTech instruments, which I believe to be at least cosmetically clones of the Leader units, and are 10-15 years old and have never missed a beat. They are digitally controlled analog supplies whose only deficit is their weight.

The "yee-haw" supplies would appear to be cosmetic clones of the MasTech devices...

Report to moderator Logged

-cliff knight-



paladinmicro.com

mAJORD
Contributor

Posts: 33

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #13 on:** May 25, 2012, 12:27:52 am »
Say Thanks Reply Quote

Quote from: cliffyk on May 24, 2012, 10:05:50 pm

> While it is obvious that the loaded start-up and regulations characteristics of the MasTech supply are superior to those of the Yihua unit, it would never occur to me to start-up either supply with a load connected--especially if said load were a an established device or project under development--BTW the Mastech's ability in that regard are impressive.

With regard to MasTech bench supplies however, ***I have a dead HY-3010E that will will give to anyone willing to pay the packing and shipping costs***. I bought it several years ago and was never impressed with it's quality, i worked for a couple years and then the smoke came out--MasTech was of no help whatsoever, they sent me a schematic that is different from the version I have and made it clear that no replacement parts or modules were available. It is a switching type supply and I believe the transformer in the control supply is shorted.

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The "yee-haw" supplies would appear to be cosmetic clones of the MasTech devices...

Actually, all these units (Yihua and co, above mastech, Leader) are aesthetic copies, or rebadged Goodwill (now GW Instek) units.

The classic design dates back god knows how long, and originally had analogue readouts. You can still buy this version new (GPS-3030). I think nearly every electronics bench I've seen has has one of these. They're very recognisable, probably why everyone copies them.

back to the topic though, I've got some pictures at home of a really cheap BEST supply.. another Yihua under the skin I believe.

quite amusing, It arrived with the front PCB smashed off, and after I decided to load test it at 1.5A (Rated 2A) for a while, the main transformer burnt out (primary short)

I shall post pic's later

« *Last Edit: May 25, 2012, 12:32:12 am by mAJORD* »

Report to moderator Logged

cliffyk

Frequent Contributor

Posts: 308

Country:

Re: Be aware: Yihua YH-305D bench PSU

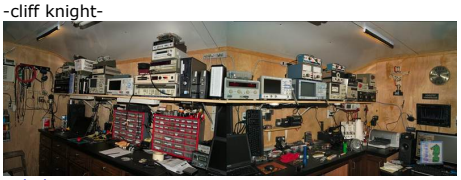
« **Reply #14 on:** May 25, 2012, 12:42:24 am »

Say Thanks Reply Quote

I have to disagree, to the extent that the older, "heavy" (40 lbs), Leader supplies like those I have--made in 1994 and 1995--share nothing with the newer GW/Instek, MasTech, and whatever clones. They were made well before Leader had begun acquiring machines from GoodWill...

Report to moderator Logged

-cliff knight-



paladinmicro.com

Salas

Frequent Contributor

Posts: 292

Country:

Re: Be aware: Yihua YH-305D bench PSU

« **Reply #15 on:** May 25, 2012, 10:41:39 am »

Say Thanks Reply Quote

They would be complete with output on/off switches and remote sensing on front panel even if they would have to cost more. TTi EX-R style functionality at lower quality but still decent in other words. That's a market gap begging to be to filled.

Report to moderator Logged

IFMATOS

Newbie

Posts: 1

Re: Be aware: Yihua YH-305D bench PSU

« **Reply #16 on:** May 28, 2012, 06:29:34 pm »

Say Thanks Reply Quote

Hi,
I have the same power supply with code ST-305D sold by Instrutech in Brazil. It has worked fairly for a couple of years. Unfortunately they dont put a fuse to protect and I've blown my on 220V without changing the switch to the correct voltage. Does anyone have the schematic to help me so I can fix it ? Thanks !!

Report to moderator Logged

Salas

Frequent Contributor

Posts: 292

Country:

Re: Be aware: Yihua YH-305D bench PSU

« **Reply #17 on:** May 30, 2012, 11:33:51 pm »

Say Thanks Reply Quote

There is a CCT in previous page post #2. Does not show the transformer part though.

Report to moderator Logged

mark5009
Contributor
Posts: 25

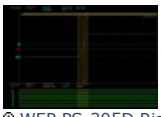
Re: Be aware: Yihua YH-305D bench PSU
« **Reply #18 on:** June 05, 2012, 05:35:55 am »
Say Thanks Reply Quote

Hi, all.

Recently, I have been putting together a little hobby lab (after too many years of software only work), and got one of these 305D supplies (mine is labelled WEP PS-305D). After getting the unit, I read this post and thought I would check my unit (plus also playing with my QA-100 ;-)).

The results are attached. Seems like, as with many Chinese products, your mileage may vary.

-mark.



WEP PS-305D Rise.jpg (143.59 kB, 1380x938 - viewed 4590 times.)

Report to moderator Logged

akis
Frequent Contributor
Posts: 967
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #19 on:** June 05, 2012, 07:40:14 am »
Say Thanks Reply Quote

After my ancient bench PSU died, I then built my own (2 * 25V @ 6A) . I would be very interested to know what tests you are running to compare these PSUs so I would run them on mine too to see how it fares.

Report to moderator Logged

mark5009
Contributor
Posts: 25

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #20 on:** June 05, 2012, 08:19:00 am »
Say Thanks Reply Quote

akis,

I just followed along from the the little video posted saturation (I think). Three diodes and a resistor, scope probes across the resistor, have the scope on single-shot, then power-up the PS. Seems as simple as that.

-mark.

Report to moderator Logged

akis
Frequent Contributor
Posts: 967
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #21 on:** June 05, 2012, 05:37:50 pm »
Say Thanks Reply Quote

Ah I see now, I watched the video. I have an analog scope and can only see a flash then the screen goes blank.

What would happen if during the test he turned on his PSU first, waited a few seconds, and *then* connected the load? Because as far as I can see he is testing how well the PSU starts up and connects the load.

Report to moderator Logged

saturation
Super Contributor

Posts: 4787
Country:
Doveryai, no proveryai

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #22 on:** June 05, 2012, 06:15:43 pm »
Say Thanks Reply Quote

The turn on test is a rough test of its transient response, e.g. in a cell phone when you transmit it pulls a lot of power from the batteries causing a potential droop and a good PSU should keep output voltage constant; when the transmission stops, the output voltage should not overshoot since the load is abruptly stopped. In addition there are noise spikes that suggests damaged components.

Quote from: akis on June 05, 2012, 05:37:50 pm

> Ah I see now, I watched the video. I have an analog scope and can only see a flash then the screen goes blank.
>
> What would happen if during the test he turned on his PSU first, waited a few seconds, and *then* connected the load? Because as far as I can see he is testing how well the PSU starts up and connects the load.

Report to moderator Logged

Best Wishes,

Saturation

nctnico
Super Contributor

Posts: 21320
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #23 on:** June 05, 2012, 07:05:58 pm »
Say Thanks Reply Quote

Looking for overshoots on the output is very wise. Some powersupplies output a short spike of the maximum output voltage.

Story time :
At one the companies I worked for we had an intern test a whole batch of PCBs. Ofcourse we retested a few PCBs and none where working. The intern (a bright fellow) said that he was shure he did the test right so we asked him to show how he did the test. So he did and nothing seemed wrong. However when he switched off the power supply I noticed the volt meter spiking. A quick check with a scope showed the problem: a 30V spike when the power supply was switched off. The PCBs contained several 4000 series CMOS chips which didn't like 30V. Some of my co-workers didn't agree when I wanted to throw the PSU in the dumpster. So to avoid dumpster diving and having the PSU show up somewhere I 'ordered' the intern to find a big hammer and use it on the PSU. A chore he gladly accepted. Deep inside we all are still cavemen that like to break stuff just for fun

Report to moderator Logged

There are small lies, big lies and then there is what is on the screen of your oscilloscope.

ZotDitzMyo
Contributor

Posts: 8
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #24 on:** August 24, 2012, 08:48:34 pm »
Say Thanks Reply Quote

I just recently lost an eBay bid for an unbranded model exactly like the 305D, guess I was lucky after all :-)

The bid is now at 10$ + 30$ shipping. Even knowing the faults, would it be worthwhile? I'm really a hobbyist on a tight budget and between the JTag probes, soldering stations etc I have to be frugal.

Would a DIY solution be economical? or a kit?

thanks!

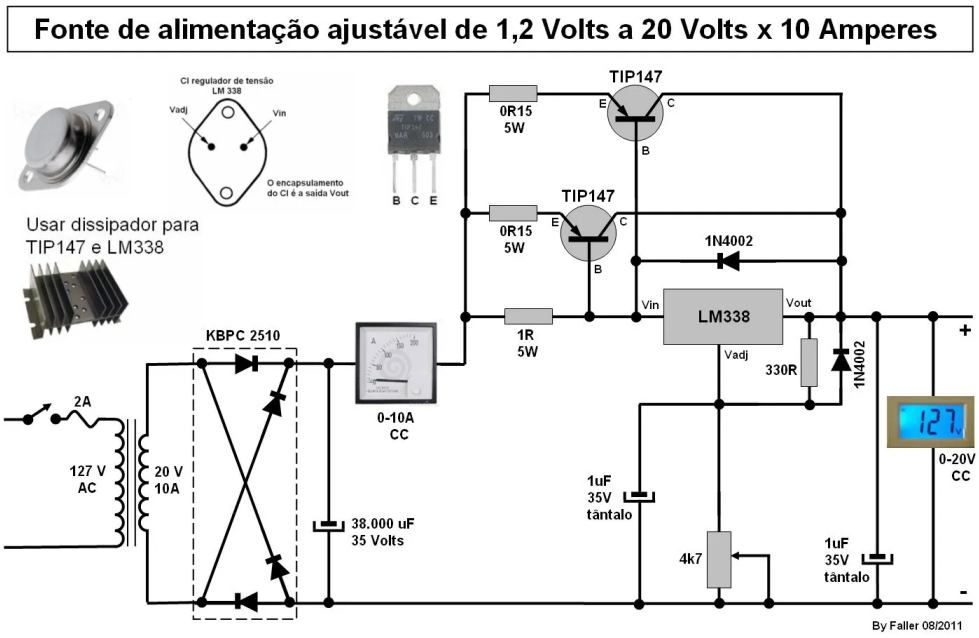
Report to moderator Logged

ablacon64
Frequent Contributor

Posts: 370
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #25 on:** August 25, 2012, 02:26:36 am »
Say Thanks Reply Quote

I think I'll build one. Look what I've found, it seems very good and cheap to build:



Report to moderator Logged

T4P
Super Contributor

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #26 on:** August 25, 2012, 03:50:15 am »
Say Thanks Reply Quote

well ... LM338 ...
that what makes it cheap and easy but certainly no good for a bench PSU, not even competitious with

Posts: 3706
Country:

a OHL PSU
And also no current limiting either unless you make your own loop

Report to moderator Logged

M. András
Super Contributor

Posts: 1020
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #27 on:** August 25, 2012, 10:13:47 am »

Say Thanks Reply Quote

the ammeter is in the wrong place too you could try look up some op amp datasheet these usually have a psu shematic if you want 8-10A look at the TI/BB opa 549

Report to moderator Logged

AndyC_772
Super Contributor

Posts: 3814
Country:

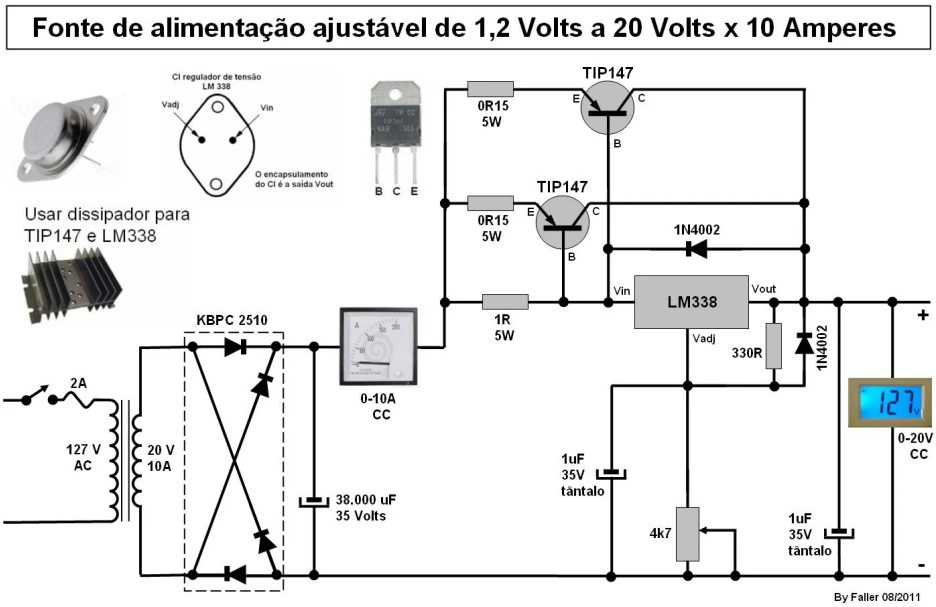
Professional design engineer

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #28 on:** August 25, 2012, 11:23:43 am »

Say Thanks Reply Quote

Quote from: ablacon64 on August 25, 2012, 02:26:36 am

I think I'll build one. Look what I've found, it seems very good and cheap to build:



That design might work, but I'd be seriously concerned about how hot it'll get. Draw a lot of current from it at a low voltage and those power transistors will get very, very hot indeed.

Example: if you draw the full 10A at 5V, then they'll be dropping 15V @ 10A = 150W of heat between them, 75W each. That's the equivalent of a couple of good soldering irons' worth per transistor, so that heat sink had better be very effective indeed. A fan wouldn't do any harm either.

Report to moderator Logged

News: design focus - high speed digital design and termination
CEL | Reliable Electronics

T4P
Super Contributor

Posts: 3706
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #29 on:** August 25, 2012, 11:35:29 am »

Say Thanks Reply Quote

And the heatsink would need to be at least 0.5C/W which is pretty HUGEEE

Report to moderator Logged

saturation
Super Contributor

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #30 on:** August 25, 2012, 03:39:58 pm »

Say Thanks Reply Quote

Posts: 4787
Country:

Doveryai, no proveryai

PSU should deliver clean power, and since the test unit doesn't it fails its fundamental purpose.

Its worth modding or repairing an Agilent or other name brand industrial supply, because likely the fault was due to abuse or a common wear-tear element: power capacitors. But in cheaply made units, parts that haven't failed yet, may fail later on, leading to endless repair and wasted time and money. Its a poor risk.

If you're in Canada, check out A1 electronics in Toronto. At least you can return it if the units performance isn't good.

Quote from: ZotDitzMyo on August 24, 2012, 08:48:34 pm

> I just recently lost an eBay bid for an unbranded model exactly like the 305D, guess I was lucky after all :-)
>
> The bid is now at 10$ + 30$ shipping. Even knowing the faults, would it be worthwhile? I'm really a hobbyist on a tight budget and between the JTag probes, soldering stations etc I have to be frugal.
>
> Would a DIY solution be economical? or a kit?
>
> thanks!

Report to moderator Logged

Best Wishes,

Saturation

ablacon64

Frequent Contributor

Posts: 370
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #31 on:** August 26, 2012, 12:36:41 am »

Say Thanks Reply Quote

Quote from: M. András on August 25, 2012, 10:13:47 am

> the ammeter is in the wrong place too

Why? I don't understand, it's a DC ammeter with an internal shunt, see (sorry, in portuguese DC is "CC"): http://www.ebay.com/itm/DC-0-10A-Analog-Ampmeter-Ammeter-Current-Panel-Shunt-/120782824832?pt=LH_DefaultDomain_0&hash=item1c1f37a580

Report to moderator Logged

tom66

Super Contributor

Posts: 4379
Country:

Electron Fiddler, FPGA Hacker, Embedded Systems EE

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #32 on:** August 26, 2012, 01:26:48 am »

Say Thanks Reply Quote

The sad thing is, something like startup response costs nearly nothing to improve. Maybe a cap for the voltage reference to soft-start it, for example.

Report to moderator Logged

M. András

Super Contributor

Posts: 1020
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #33 on:** August 26, 2012, 07:24:41 am »

Say Thanks Reply Quote

Quote from: ablacon64 on August 26, 2012, 12:36:41 am

> **Quote from: M. András on August 25, 2012, 10:13:47 am**
>
> > the ammeter is in the wrong place too
>
> Why? I don't understand, it's a DC ammeter with an internal shunt, see (sorry, in portuguese DC is "CC"): http://www.ebay.com/itm/DC-0-10A-Analog-Ampmeter-Ammeter-Current-Panel-Shunt-/120782824832?pt=LH_DefaultDomain_0&hash=item1c1f37a580

cos on that place it measures the whole circuit's current not the output current

Report to moderator Logged

ablacon64
Frequent Contributor
Posts: 370
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #34 on:** August 27, 2012, 02:41:48 am »
Say Thanks Reply Quote

Quote from: M. András on August 26, 2012, 07:24:41 am

> cos on that place it measures the whole circuit's current not the output current

Nice! I wasn't aware of that, thanks a lot! I'll put it before the voltmeter, is it ok?

Report to moderator Logged

ablacon64
Frequent Contributor
Posts: 370
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #35 on:** August 27, 2012, 02:49:09 am »
Say Thanks Reply Quote

Quote from: AndyC_772 on August 25, 2012, 11:23:43 am

> Example: if you draw the full 10A at 5V, then they'll be dropping 15V @ 10A = 150W of heat between them, 75W each. That's the equivalent of a couple of good soldering irons' worth per transistor, so that heat sink had better be very effective indeed. A fan wouldn't do any harm either.

Do you think that adding one more TIP147 (or maybe two) would solve this issue?

Report to moderator Logged

AndyC_772
Super Contributor
Posts: 3814
Country:
Professional design engineer

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #36 on:** August 27, 2012, 08:40:25 am »
Say Thanks Reply Quote

It won't really solve anything - the same amount of heat will still be generated, and will still have to be dissipated somehow, it'll just be spread amongst a couple more devices. The finished product will end up being 20% electronic parts and 80% heatsink. I hope you live somewhere that has a generally cold climate!

How much current do you actually need? This supply might be able to deliver a 10A surge quite happily, but it's really not a good design for a supply which might be required to deliver that sort of current continuously.

Report to moderator Logged

News: design focus - high speed digital design and termination
CEL | Reliable Electronics

ablacon64
Frequent Contributor
Posts: 370
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #37 on:** August 27, 2012, 04:39:08 pm »
Say Thanks Reply Quote

Quote from: AndyC_772 on August 27, 2012, 08:40:25 am

> It won't really solve anything - the same amount of heat will still be generated, and will still have to be dissipated somehow, it'll just be spread amongst a couple more devices. The finished product will end up being 20% electronic parts and 80% heatsink. I hope you live somewhere that has a generally cold climate!
>
> How much current do you actually need? This supply might be able to deliver a 10A surge quite happily, but it's really not a good design for a supply which might be required to deliver that sort of current continuously.

Well, I was planning to put a big heatsink on each transistor. And I need 6A max, usually up to 4 or 5.

Report to moderator Logged

Tinman98
Newbie
Posts: 1

Re: Be aware: Yihua YH-305D bench PSU and ARKSEN PSU
« **Reply #38 on:** December 25, 2013, 07:40:13 pm »
Say Thanks Reply Quote

I do not know if Yihua and Arksen are just brand names or manufacturers, but they look virtually identical inside and out. And I can attest to the poor design and build quality of the ARKSEN. Oh sure, it works basically as advertised. But the quality is far less than even my Mastech power supplies. The old phrase, You get what you pay for, comes to mind.

There is one external and one internal difference that is very obvious. The binding posts are trash. Knob is plastic only with no metal threaded insert. The post itself has poor threads that look like they were cast, and the post isn't even round. Very easy to cross-thread. On the inside, the most obvious difference between Mastech and ARKSEN, et all, is the transformer. Arksen uses the old, very heavy steel laminate core that has been used for a hundred years (literally). Mastech uses the newer, lighter toroidal core.

As mentioned by the original poster, the heat sink for the pass transistors leaves a LOT to be desired.

I have the 10 amp model, and it only takes seconds at well less than 10 amps for the heat sink to get fairly hot. I have not tried to run it for an extended period of time. The fan is terrible noisy. I am working now to replace it, if it is a 12V fan, but have not yet determined what it is.

The assembly is VERY sloppy, to the point of potentially being dangerous. A bundle of wires, including high voltage AC wires goes through the heat sink hole in back with out any kind of protection. There is a protection sleeve, but the assembler did not bother to place it in the hole, so it's just useless. The small bypass cap across the output terminals had one bare wire almost touching (maybe it was and didn't know it) between the hot and the ground terminal. Many of the wires are poorly routed. Most wire connections to terminals are protected by heat shrink tubing. But get this. The wires to the bridge rectifier block have heat shrink tubing placed on them, but the dufus doing the assembly forgot to heat shrink them!!

I did not try to do any turn-on tests as the original poster did on the Yihua. However, my unit (a 3010D, 30 volt, 10 amp) would not reach 30 volts, only about 28 (both actually measured and as displayed). It did provide slightly over 10 amps however. As I don't expect to actually need 30 volts, it's not a big enough deal to return.

All in all, this PS would be a good entry level for a new experimenter, but I would buy another Mastech before I bought another one of these, no matter how cheap. And it was quite a bit cheaper than my Mastech, which is only a 5A, 30V. One other downside is, I was easily able to find a schematic diagram for the Mastech. I have not yet found one for the ARKSEN. I was looking when I found this site.

Report to moderator Logged

philpem
Frequent Contributor

Posts: 311
Country:
That Sneaky British Bloke

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #39 on:** December 26, 2013, 12:42:37 am »
Say Thanks Reply Quote

Oh crap. We use those things at work, I think they're Iso-Tech branded (so probably came from RS)... I had a prototype damaged the other week with one, no further problems once I swapped it out for one of our (even older!) Thurlby Thandar PSUs.

I think I'm going to be even more jealously protective of the old Thandar in future.

Report to moderator Logged

Phil / M0OFX -- Electronics/Software Engineer
"Why do I have a room full of test gear? Why, it saves on the heating bill!"

The following users thanked this post: Bukurat

suppersready
Contributor
Posts: 5

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #40 on:** January 26, 2014, 03:25:34 pm »
Say Thanks Reply Quote

I have a PS305D wich is identical but branded "LONG WEI", at power-on and power-off i have a very short high speed spike but no overshoot.

I have replaced the FAN because was very noisy, here is a page with a PWM Temperature controlled FAN mod designed by me and fitted into the power supply.

http://mytecblogg.blogspot.it/2013/12/alimentatore-da-laboratorio-ps305d.html

Report to moderator Logged

jimh
Newbie
Posts: 1

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #41 on:** July 11, 2014, 03:10:16 pm »
Say Thanks Reply Quote

Just thought I'd post to this in case anyone was still interested. I recently purchased and received (7/9/14) a YH-305D supply, and I believe it is a relatively recently manufactured model. First thing I did upon receiving it is to open it up and check out the bad things I had read about in several postings. I am sure that the 'bads' probably did exist in earlier models but the one I have was fairly well cleaned up. The soldering was not U.S. quality but it was respectable. Wiring passing through the notch in the heatsink was protected with a length of cable harness covering. Relatively confident in the craftmanship, I decided to put the cover back on and proceed to do an operational checkout. The voltage regulation and adjustment worked well, however, the current limiting does not work. My load resistor was able to pull a full 5 amps (with voltage staying in regulation), but I could not adjust a current limit. Because of the current limit malfunction I did not proceed to checkout load transient performance. Fortunately, I only paid $56.00 for the supply. I will investigate the current limit situation and re-post if I can find a solution.

Report to moderator Logged

pyromaniac4382

Re: Be aware: Yihua YH-305D bench PSU

Contributor

Posts: 43
Country:

« **Reply #42 on:** July 11, 2014, 03:29:30 pm » Say Thanks Reply Quote

I have a Yihua YH-305D that I got about a year ago. I will take pictures of its construction. The last time I used it I was shorting out the supply to adjust the current limit at which point the Unit popped and sparked. The unit still works (I think), but the fan never worked out of the box. I have a feeling it was supposed to be tripped by a thermal element on the heat sink. So of course I got out my heat gun and blasted the thermal element on the heat sink, and it would not trip the fan, so I cut and hard wired the fan to always be on by-passing the thermal element. I wouldn't know what a bad one looks like, but it doesn't look too bad inside. I paid about ~$60 shipped, it seems like it could be altered into a safer to use supply.

Report to moderator Logged

Z80 Project - http://z80project.wordpress.com
Z80 Journal - http://z80journal.wordpress.com

saturation

Super Contributor

Posts: 4787
Country:

Doveryai, no proveryai

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #43 on:** July 11, 2014, 08:31:31 pm » Say Thanks Reply Quote

I think its very easy for whomever makes Yihua to clean up their act; the bad things about it were just quality control issues in assembly as well as possibly bad sources for parts; the supply acts like any linear supply of 1970s design. In the end, for best thing for all these cheapo brand ?? Chinese supplies is to open them up and check assembly and parts, do a functional test [output stability, ripple, etc.,] and finally some form of "burn in" [say pull 50% power over 24 hours and checking for overheating and output stability or more exotic ones if you have an e-load] while the unit is under warranty. If it fails the burn in, at least you can still return it. You never know what you get from one production batch to the next, regardless of brand.

Report to moderator Logged

Best Wishes,

Saturation

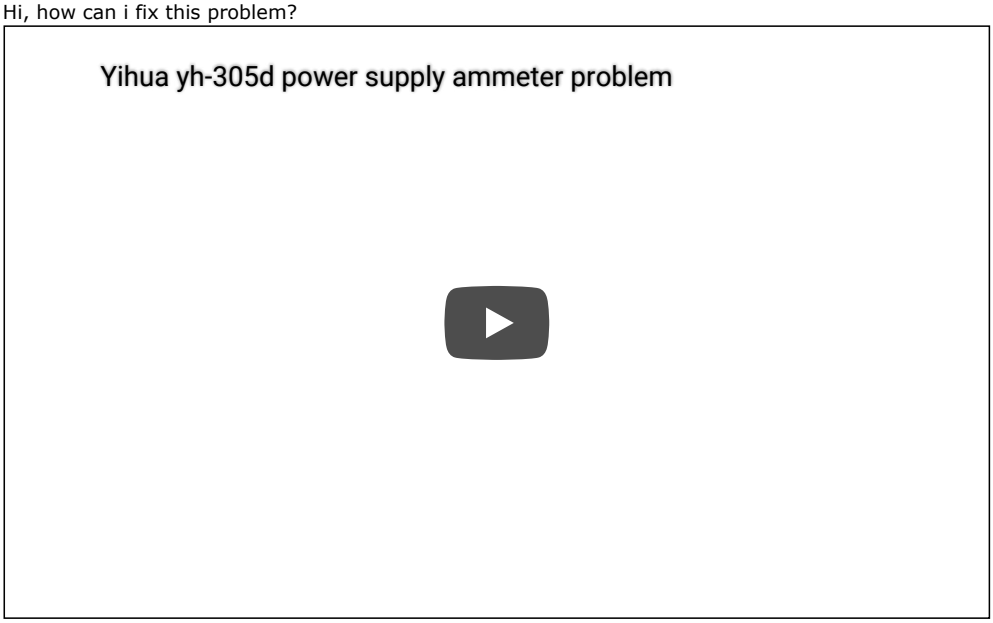
alex27riva

Contributor

Posts: 8

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #44 on:** November 28, 2014, 07:40:06 pm » Say Thanks Reply Quote

Hi, how can i fix this problem?



Report to moderator Logged

saturation

Super Contributor

Posts: 4787
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #45 on:** November 29, 2014, 12:00:44 pm » Say Thanks Reply Quote

Since the volts reading is stable it suggests the output current is also stable but the meter is faulted, likely the IC itself in the module.

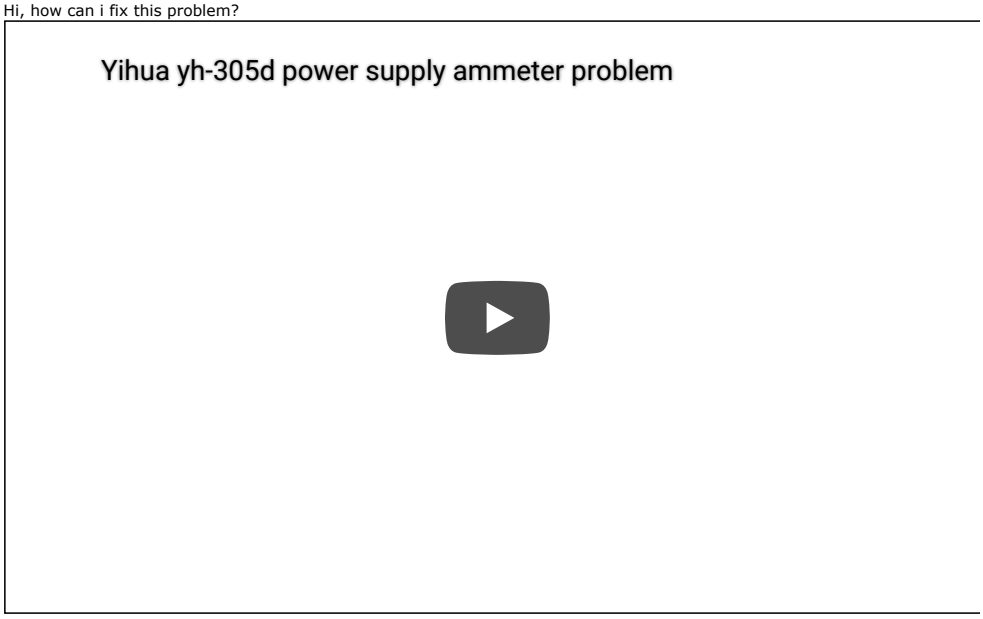
To confirm this, attach a good ammeter to the output and adjust the current. You should see the good ammeter read linearly as you adjust up and down while the PSU ammeter reads all over the place. Short circuit the output, and the CC LED should light, a final note that the current module is working by testing the short circuit protection.

Doveryai, no proveryai

If the above works, then its easiest to replace the ammeter module rather than repairing it.

Quote from: alex27riva on November 28, 2014, 07:40:06 pm

Hi, how can i fix this problem?



Report to moderator Logged

Best Wishes,

Saturation

alex27riva

Contributor

Posts: 8

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #46 on:** November 29, 2014, 06:31:52 pm »
Say Thanks Reply Quote

This problem occurs only a few times, now no longer does

Report to moderator Logged

saturation

Super Contributor

Posts: 4787
Country:

Doveryai, no proveryai

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #47 on:** November 29, 2014, 09:49:33 pm »
Say Thanks Reply Quote

That good news, its likely a poor connection or solder joint in the amp module. Chilling the unit could cause the problem to reoccur and warming it up can make it disappear.

Quote from: alex27riva on November 29, 2014, 06:31:52 pm

This problem occurs only a few times, now no longer does

Report to moderator Logged

Best Wishes,

Saturation

LEDAero

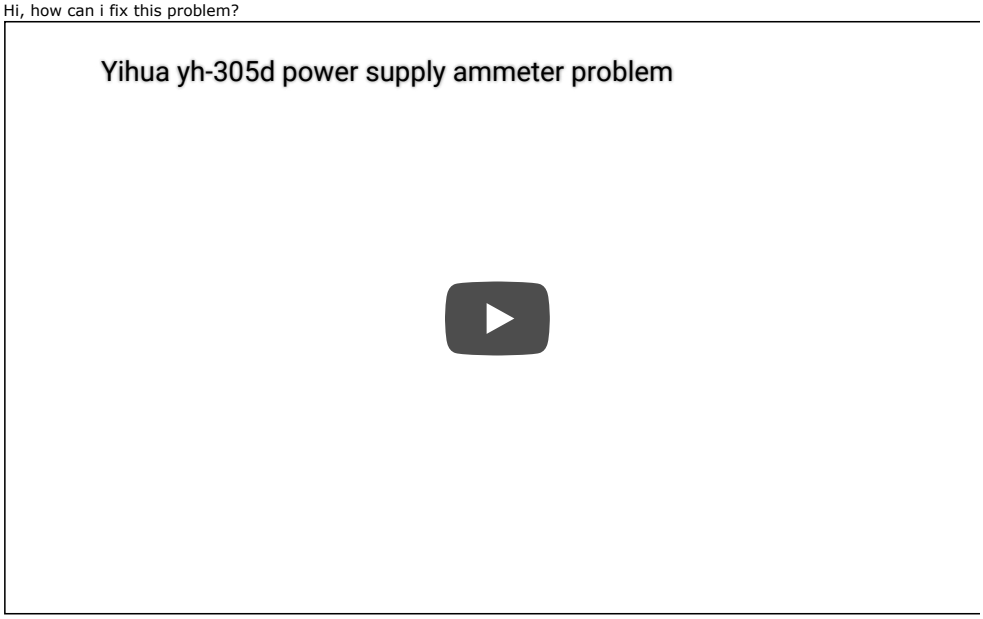
Regular Contributor

Posts: 77
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #48 on:** December 11, 2014, 07:27:57 am »
Say Thanks Reply Quote

Quote from: alex27riva on November 28, 2014, 07:40:06 pm

Hi, how can i fix this problem?



I think hitting it was the right thing to do. It's a universal fix...

[/sarc]

Report to moderator Logged

laser411
Newbie
Posts: 1

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #49 on:** December 21, 2014, 12:11:19 am »
Say Thanks Reply Quote

I've got one of these, I have a problem..... I dropped it at one point and broke the case. it still worked, but shortly after I had a problem where it would max the current out at 0 with the current limit light on no matter where the knob was turned (after a few minutes of operation). Now if wont put out anything at all. Shows current limited with 0.00 volts AND amps. Any idea what the problem could be?

Honestly not sure if it was from the drop or not. doesn't seem to be anything but broken plastic, I also ran it maxed out for 30 minutes one day trying to blow an automotive lightbulb (ended up cutting itself off for like 10 minutes) Drop was shortly after that >_<

« *Last Edit: December 21, 2014, 12:14:19 am by laser411* »

Report to moderator Logged

razvitm
Newbie
Posts: 2

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #50 on:** December 30, 2014, 04:04:23 pm »
Say Thanks Reply Quote

Quote from: ron on March 21, 2012, 08:03:07 pm

> schematic of a 305D ... any mod suggestions?

i have a power source just like this one, but i don't know where the wires from the knobs go. 2 voltage and 2 current knobes. where do i connect them? can someone please draw the wires on the schematic please?

Report to moderator Logged

LEDAero
Regular Contributor
Posts: 77
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #51 on:** January 15, 2015, 08:11:44 am »
Say Thanks Reply Quote

Quote from: laser411 on December 21, 2014, 12:11:19 am

> Honestly not sure if it was from the drop or not...

It was.

Report to moderator Logged

alex27riva

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #52 on:** December 27, 2015, 09:47:11 pm »
Say Thanks Reply Quote

Contributor

Posts: 8

Quote from: saturation on November 29, 2014, 12:00:44 pm

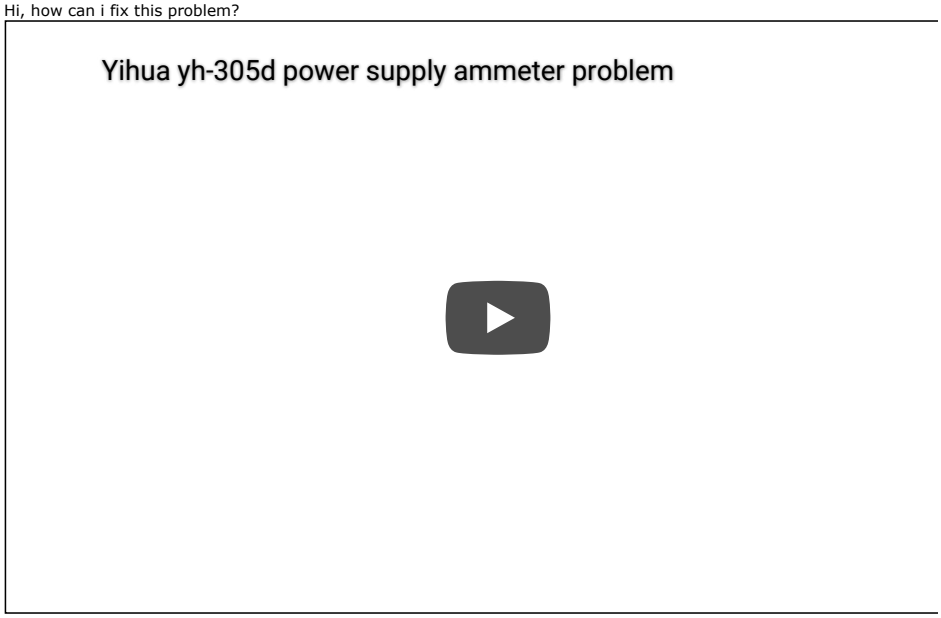
Since the volts reading is stable it suggests the output current is also stable but the meter is faulted, likely the IC itself in the module.

To confirm this, attach a good ammeter to the output and adjust the current. You should see the good ammeter read linearly as you adjust up and down while the PSU ammeter reads all over the place. Short circuit the output, and the CC LED should light, a final note that the current module is working by testing the short circuit protection.

If the above works, then its easiest to replace the ammeter module rather than repairing it.

Quote from: alex27riva on November 28, 2014, 07:40:06 pm

Hi, how can i fix this problem?



Same problem again, maybe the cold weather?

Report to moderator Logged

Shock

Super Contributor

Posts: 3547

Country:

Re: Be aware: Yihua YH-305D bench PSU

« **Reply #53 on:** December 28, 2015, 11:37:48 am »

Say Thanks Reply Quote

As mentioned an intermittent/dry solder joint or problematic connector. Capacitors failing with high ESR can be the cause of cold failures as the colder they are the higher the ESR.

Report to moderator Logged

Soldering/Rework: Pace ADS200, Pace MBT350
Multimeters: Fluke 189, 87V, 117, 112 >>> WANTED STUFF <<<
Oszilloskopen: Lecroy 9314, Phillips PM3065, Tektronix 2215a, 314

bob808

Regular Contributor

Posts: 131

Country: 00

Re: Be aware: Yihua YH-305D bench PSU

« **Reply #54 on:** August 26, 2016, 07:05:27 pm »

Say Thanks Reply Quote

I have the Zhaoxin RXN-305D variant.
Has anyone added a sense wire circuit into these power supplies?

ps.jpg (186.07 kB, 1000x1000 - viewed 477 times.)

003548-1.jpg (39.77 kB, 250x176 - viewed 4584 times.)

Report to moderator Logged

bitseeker
Super Contributor

Posts: 8877
Country:

Lots of engineer-tweakable parts inside!

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #55 on:** August 26, 2016, 11:45:20 pm »
Say Thanks Reply Quote

bob808, can you attach some more pics of the PCBs at higher resolution?

Report to moderator Logged

TEA is the way.

GigaJoe
Frequent Contributor

Posts: 282
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #56 on:** October 31, 2016, 02:42:11 am »
Say Thanks Reply Quote

Wonderful ..... 30 VAC (5 ??) between ground and a negative or positive output, regardless PS on or off ... Just fry my circuit, detached just a positive and left a negative wire, touch by soldering tip (it grounded) .... oops ...

Report to moderator Logged

GigaJoe
Frequent Contributor

Posts: 282
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #57 on:** March 13, 2017, 04:11:47 am »
Say Thanks Reply Quote

Finally, look inside, The problem with 30V AC on output , was due to power switch disconnect a ground wire, not a hot wire , so the hot wire over transformer and so induced that 30V on output. Changing wire on power socket solved it ...

Report to moderator Logged

bitseeker
Super Contributor

Posts: 8877
Country:

Lots of engineer-tweakable parts inside!

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #58 on:** March 13, 2017, 04:25:58 am »
Say Thanks Reply Quote

Wow, that was a nasty one. Good thing you found and fixed the source.

Report to moderator Logged

TEA is the way.

minicowman
Newbie

Posts: 1
Country:

But, if I type personal text, won't other see it?

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #59 on:** March 05, 2019, 05:09:40 pm »
Say Thanks Reply Quote

You showed the better part of a schematic for one of the Chinese power supplies (305D).. Some of it was cut off. Just wondering if I could get a look at the rest of the schematic. Or, if there is more documentation on this.. What you had posted is the most I had found on these to date. Thanks.

Report to moderator Logged

"I have never let my schooling interfere with my education."
— Mark Twain

henryinsydney
Contributor

Posts: 9
Country:

Re: Be aware: Yihua YH-305D bench PSU
« **Reply #60 on:** May 30, 2021, 12:12:11 pm »
Say Thanks Reply Quote

Thanks a lot for the schematics! This is really close to my WEP 305D if not the same board. I was about to reverse engineer it but there are about 80 components on the board (single sided, though), still an onerous job.
Mine just stopped putting out any voltage/current and even said so on the LEDs.. no matter what the dials were set to.

Report to moderator Logged