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Description:	<ul style="list-style-type: none"> • ATS maxiGRIP is a proven high-reliability mechanical attachment system • Provided with pre-assembled thermal interface material 	 Download Datasheet

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 May 26, 2022, 01:59:16 pm

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Topic: **Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)** (Read)

volvo_nut_v70 and 1 Guest are viewing this topic.

JohnDee

Contributor

Posts: 5



Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« on: November 04, 2013, 09:13:06 pm »

Say Thanks Reply Quote

I have a Fluke 189 multimeter. It suddenly died (nothing shows on the LCD display). I changed the 4 batteries (the old batteries were only slightly below normal). The two fuses checked OK. Inspection of the circuit board shows some leaking on a small (6.5mm diameter) surface mount battery. The marking of this two-tab coin cell has the logo of Matsushita (now Panasonic) and the numbers 3709. I could not identify this cell on the web in order to find a suitable replacement. I am hoping somebody can help...

« Last Edit: November 28, 2013, 04:28:11 pm by JohnDee »

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retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount coin cell

« Reply #1 on: November 04, 2013, 11:52:54 pm »

Say Thanks Reply Quote

Quote from: JohnDee on November 04, 2013, 09:13:06 pm

Inspection of the circuit board shows some leaking on a small (6.5mm diameter) surface mount battery. The marking of this two-tab coin cell has the logo of Matsushita (now Panasonic) and the numbers 3709. I could not identify this cell on the web in order to find a suitable replacement.

I suggest you clean up the leakage with a q-tip/toothbrush with a generous amount of IPA.

I remember seeing an ebay auction for what you are talking about ...

<http://www.ebay.com/itm/281103728372>

Right now, I can't find any more information regarding the specifications.

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retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #2 on: November 05, 2013, 12:31:30 am »

It might be the Panasonic EN gold capacitor?

http://www.panasonic.com/industrial/components/pdf/goldcap_tech-guide_052505.pdf

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JohnDee

Contributor

Posts: 5



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #3 on: November 05, 2013, 12:42:33 pm »

You are right !!! It is indeed a Panasonic EN gold capacitor. I see that it is available at Mouser (\$2.84 unit price). I will order it and hopefully it will fix the problem. I also read the Panasonic Technical Guide you sent me and reading at sections 4.1 and 4.2 on expected lifetime it seems to me that selecting that capacitor was a poor design choice with a surface mounted component having to be changed after barely a few years of usage... Thanks for the great help !

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #4 on: November 05, 2013, 01:38:12 pm »

Damn, is this leaking supercap at the board is a serious problem plaguing the fluke dmm 180 & 280 series ?

As a new owner of 287, this makes me worry as I just knew it.

JohnDee, please post the photo of that leaked cap and the damages at the pcb if any.

« Last Edit: November 05, 2013, 01:40:59 pm by BravoV »

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[> YOUR FAV. BENCH LAB PSU](#)

M. Andrés

Super Contributor



Posts: 1020

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #5 on: November 05, 2013, 07:23:51 pm »

Quote from: BravoV on November 05, 2013, 01:38:12 pm

Damn, is this leaking supercap at the board is a serious problem plaguing the fluke dmm 180 & 280 series ?

As a new owner of 287, this makes me worry as I just knew it.

JohnDee, please post the photo of that leaked cap and the damages at the pcb if any.

there is some internal pictures of the 287 here in the forum its hard to find btw.

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uoficowboy

Regular Contributor



Posts: 186

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #6 on: November 05, 2013, 08:06:47 pm »

Interesting - I had noticed that my 189 did not have the battery life that it used to have. Still lasting months... but it used to last years. So the consensus is that replacing this component will fix that?

Report to moderator Logged

tsmith35

Frequent Contributor



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #7 on: November 05, 2013, 08:21:55 pm »



Posts: 262
Country:

Quote from: JohnDee on November 04, 2013, 09:13:06 pm

I have a Fluke 189 multimeter. It suddenly died (nothing shows on the LCD display). I changed the 4 batteries (the old batteries were only slightly below normal). The two fuses checked OK. Inspection of the circuit board shows some leaking on a small (6.5mm diameter) surface mount battery. The marking of this two-tab coin cell has the logo of Matsushita (now Panasonic) and the numbers 3709. I could not identify this cell on the web in order to find a suitable replacement. I am hoping somebody can help...

From what I've found, that's a supercapacitor rated at 3.3V and 0.2F. Looks like they're discontinued, but perhaps one of these may do the job: [Digikey](#)

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mikeselectricstuff

Super Contributor



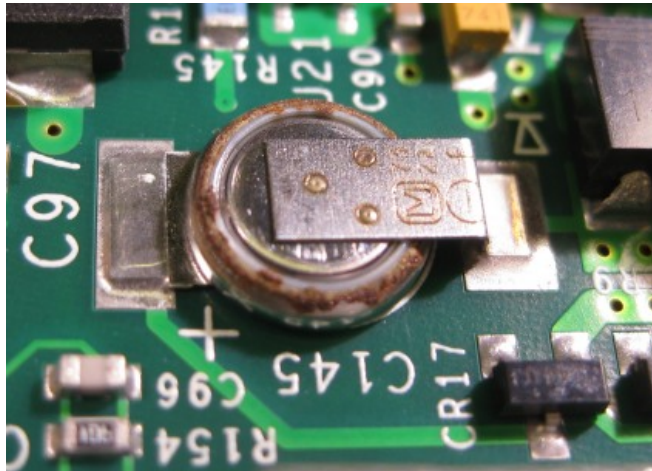
Posts: 12868
Country:

Re: Fluke 189 with leaking surface mount coin cell

« Reply #8 on: November 05, 2013, 08:32:21 pm »

Say Thanks Reply Quote

Just had a look in my 287 - some signs of corrosion on the cap



img_4145.jpg (43.43 kB, 425x305 - viewed 13091 times.)

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Youtube channel: Taking wierd stuff apart. Very apart.
Mike's Electric Stuff: High voltage, vintage electronics etc.
Day Job: Mostly LEDs

M. András

Super Contributor



Posts: 1020
Country:

Re: Fluke 189 with leaking surface mount coin cell

« Reply #9 on: November 05, 2013, 08:41:10 pm »

Say Thanks Reply Quote

Quote from: mikeselectricstuff on November 05, 2013, 08:32:21 pm

Just had a look in my 287 - some signs of corrosion on the cap

how old is your unit?

Report to moderator Logged

mikeselectricstuff

Super Contributor



Posts: 12868
Country:

Re: Fluke 189 with leaking surface mount coin cell

« Reply #10 on: November 05, 2013, 08:47:19 pm »

Say Thanks Reply Quote

About 6 years old I think

Report to moderator Logged

Youtube channel: Taking wierd stuff apart. Very apart.
Mike's Electric Stuff: High voltage, vintage electronics etc.
Day Job: Mostly LEDs

JohnDee

Contributor

Posts: 5

Re: Fluke 189 with leaking surface mount coin cell

« Reply #11 on: November 05, 2013, 10:38:26 pm »

Say Thanks Reply Quote



ElektroQuark

Supporter
●●●●



Posts: 1242
Country:

BravoV

Super Contributor
●●●●

Posts: 7368
Country:

+++ ATH1

BravoV

Super Contributor
●●●●

Posts: 7368
Country:

+++ ATH1

To answer BravoD's question below, the supercap on my Fluke189 looks very much like the one in mikeselectricstuff's 287 picture below.
The original Panasonic supercap (P/N EECEN0F204AK) is still available in the USA and Canada from Digikey, Allied and others but with a min buy qty of 2,000pcs. May as well buy a new DMM... However I did a datasheet comparison and ELNA P/N DSK-3R3H204T614-H2L (corresponding to Digikey 604-1147-1-ND at \$2.81ea, no min qty) as suggested by tsmith35 below looks like a good candidate for replacement. I will probably go with that one.

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Re: Fluke 189 with leaking surface mount coin cell

« Reply #12 on: November 05, 2013, 11:01:38 pm »

Say Thanks Reply Quote

What does FLUKE say about this?
Warranty?



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www.elektroquark.com
EQVideo



Re: Fluke 189 with leaking surface mount coin cell

« Reply #13 on: November 06, 2013, 01:37:08 am »

Say Thanks Reply Quote

Quote from: M. Andrés on November 05, 2013, 07:23:51 pm

there is some internal pictures of the 287 here in the forum its hard to find btw.

A huge high res photo of 287's gut -> [Fluke 287 DMM Teardown and photos](#), although its not very clear whether its using Panasonic cap, can't identify the (M) Matsushita logo like Mike's.

Quote from: mikeselectricstuff on November 05, 2013, 08:32:21 pm

Just had a look in my 287 - some signs of corrosion on the cap

Quote from: mikeselectricstuff on November 05, 2013, 08:47:19 pm

About 6 years old I think

Mike, looks like you need to de-solder that cap off, worry it will going to burst out the goo once the container structure collapsed eaten by rust.

My two 287s are manufactured in Jan and April 2013, will open it up to see which brand, its very unlikely they're using Panasonic Goldcap like Mike's since Panasonic already discontinued that for a while.

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Fluke 287 with corroded ultra cap

« Reply #14 on: November 06, 2013, 05:09:59 am »

Say Thanks Reply Quote

My 287 is manufactured in April 2013 (Box label) with serial no 23780XXX.

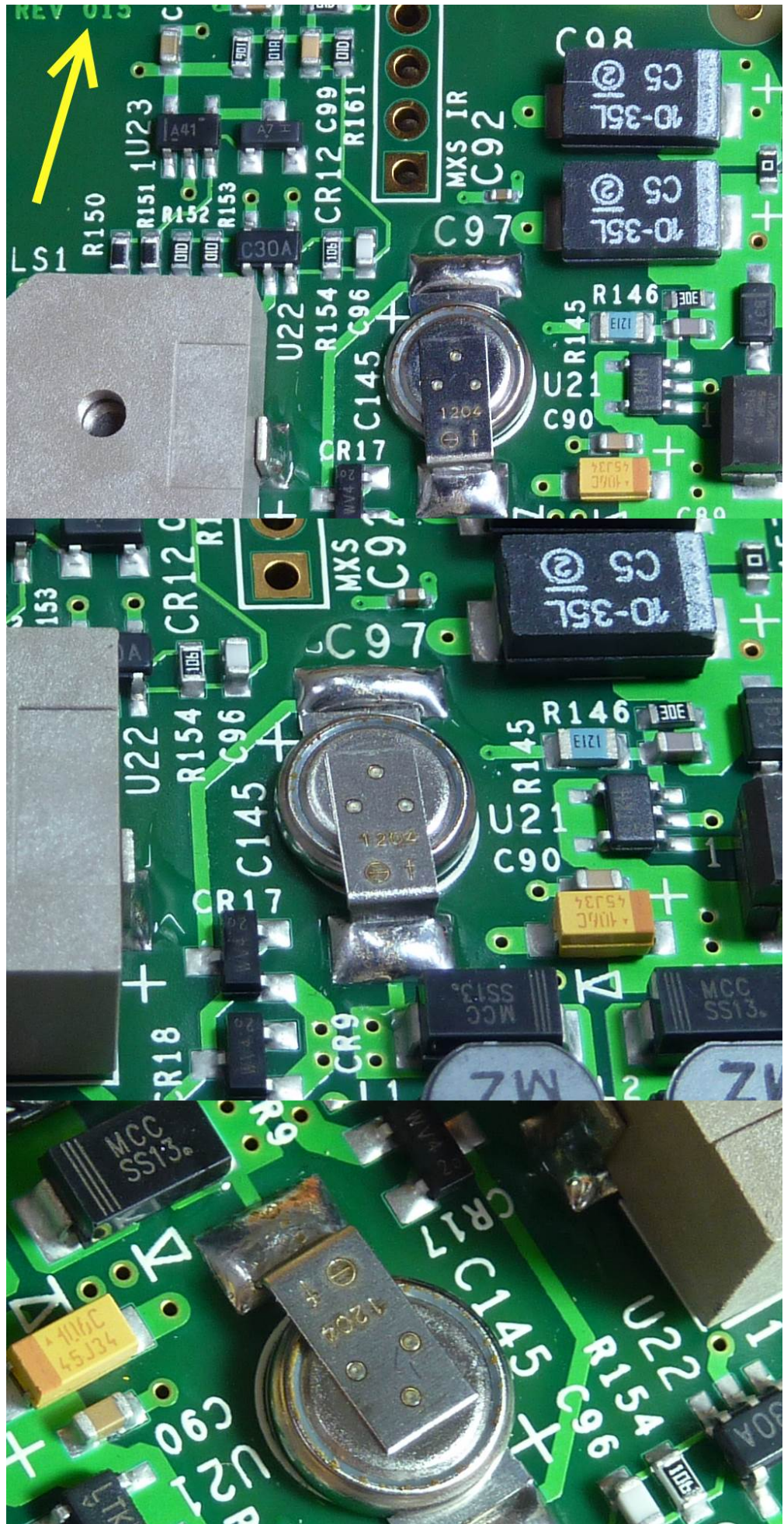
The ultra cap's date code 1204 is also showing corroded sign, not as bad as Mike's though. Definitely not Panasonic (Matsushita brand) with that (M) logo like Mike's.

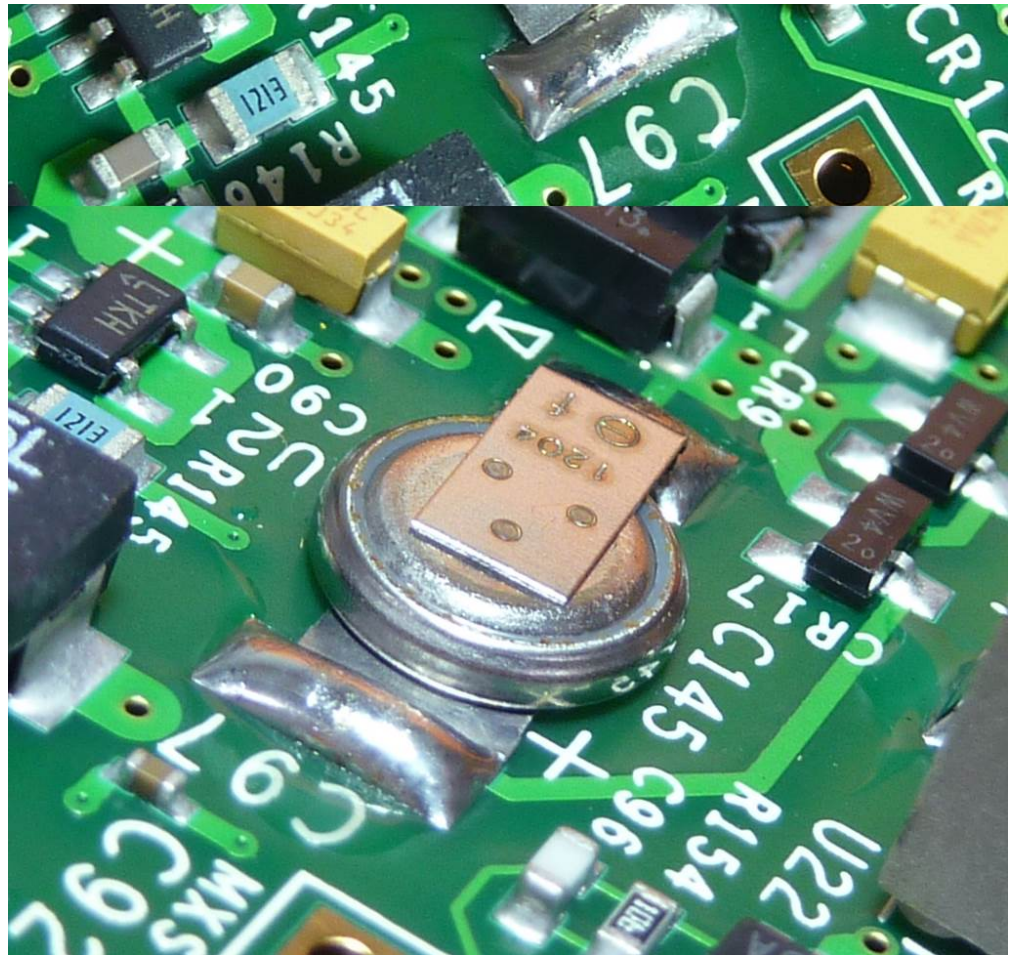
Does this thing leak ? Anyone knows what brand is that ?

Dave, this issue should be a good material for a short video blog.

Close up shots attached below.







FLUKE 287 Ultracap.JPG (475.93 kB, 1024x3072 - viewed 5418 times.)

« Last Edit: November 06, 2013, 01:48:56 pm by BravoV »

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Tasman

Contributor



Posts: 40

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #15 on: November 06, 2013, 10:00:18 am »

Just had a look inside my 187 - it does not have one of these capacitors. Seems like they are for the logging memory backup. Glad I didn't cough up the extra for the 189. 😊

Report to moderator Logged

Svuppe

Regular Contributor



Posts: 91

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #16 on: November 06, 2013, 10:16:58 am »

Ahh, good news. I was going to open my 187 tonight, but thanks to you I don't have to.

-Mikael

Report to moderator Logged

amyk

Super Contributor



Posts: 7818



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #17 on: November 06, 2013, 11:11:11 am »

The original Xbox had the same problem with its supercapacitor... you should definitely replace it as it can cause rather serious damage to the PCB if it bursts: <http://dannyalaga.com/xbox.html>

There's also a rather strange paragraph in the datasheet given earlier:

Quote

7. Brown extraction
Brown extraction may occur around the sealing part depending on use conditions. This extraction is electrically nonconductive.
Therefore, it does not influence in the electric characteristics.

« Last Edit: November 06, 2013, 11:17:42 am by amyk »

Report to moderator Logged

tsmith35
Frequent Contributor



Posts: 262
Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #18 on: November 06, 2013, 11:16:13 am »

Quote from: JohnDee on November 05, 2013, 10:38:26 pm

However I did a datasheet comparison and ELNA P/N DSK-3R3H204T614-H2L (corresponding to Digikey 604-1147-1-ND at \$2.81ea, no min qty) as suggested by tsmith35 below looks like a good candidate for replacement. I will probably go with that one.

Actually, with Digikey's shipping, you might as well buy a dozen and sell the remaining caps off on eBay for \$6.88 each. 😊

Report to moderator Logged

BravoV
Super Contributor

Posts: 7368
Country:

+++ ATH1

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #19 on: November 06, 2013, 12:42:26 pm »

Quote from: amyk on November 06, 2013, 11:11:11 am

There's also a rather strange paragraph in the datasheet given earlier:

Quote

7. Brown extraction
Brown extraction may occur around the sealing part depending on use conditions. This extraction is electrically nonconductive.
Therefore, it does not influence in the electric characteristics.

Interesting, I missed that part.

If the brown goo even grew into like Mike's is harmless, then its fine, but at JohnDee's its leaking and ruined the board and surrounding components as he claimed, wish he could share some close up photo here.

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Kjelt
Super Contributor

Posts: 6229
Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #20 on: November 06, 2013, 02:35:37 pm »

How about the calibration settings? Are those also going to be affected?

Report to moderator Logged

dr.diesel
Super Contributor



Posts: 2213
Country:

Cramming the magic smoke back in...

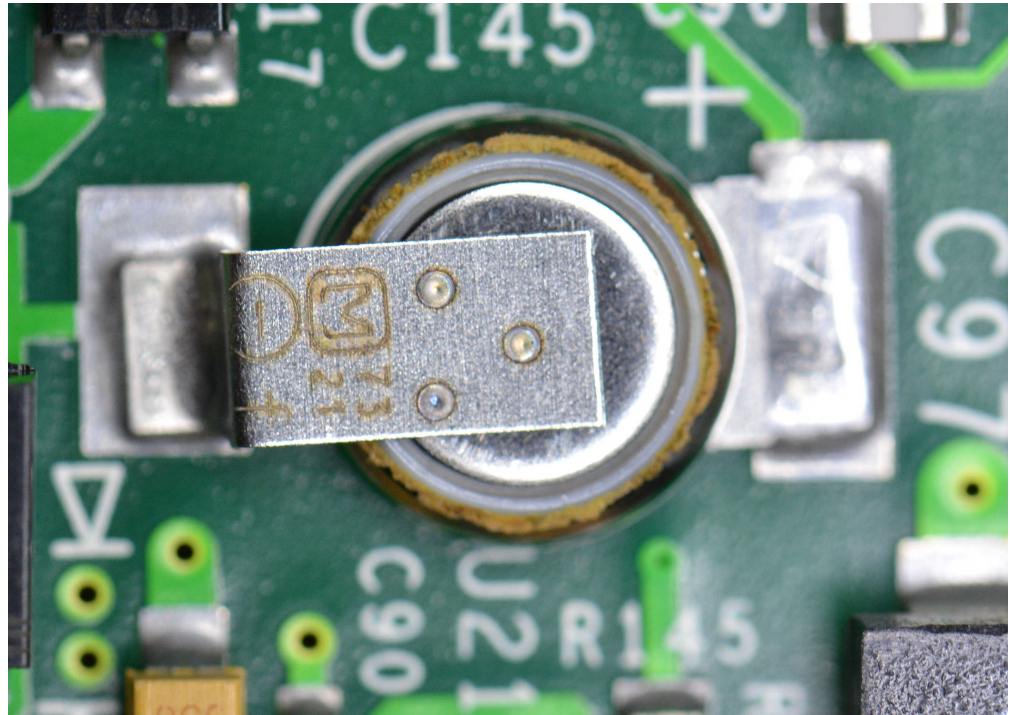


Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #21 on: November 06, 2013, 04:21:40 pm »

Fluke 289 cap, board rev 14, cap has been dead for years.



cap.jpg (380.65 kB, 2898x2064 - viewed 4738 times.)

Report to moderator Logged

[Beware of Siglent](#)

somlioy
Regular Contributor

Posts: 128
Country:

Re: Fluke 189 with leaking surface mount coin cell

« **Reply #22 on:** November 06, 2013, 05:00:07 pm »

Say Thanks Reply Quote

My fluke 289

« *Last Edit:* March 22, 2014, 01:46:07 pm by somlioy »

Report to moderator Logged

JohnDee
Contributor

Posts: 5

Re: Fluke 189 with leaking surface mount coin cell

« **Reply #23 on:** November 06, 2013, 05:30:50 pm »

Say Thanks Reply Quote

Just to clarify things up, the supercap on my 189 is just as bad as the what has been shown in the previous pictures. It has NOT leaked onto the board or on other components.

Report to moderator Logged

dr.diesel
Super Contributor

Posts: 2213
Country:
Cramming the magic smoke back in...

Re: Fluke 189 with leaking surface mount coin cell

« **Reply #24 on:** November 06, 2013, 05:34:20 pm »

Say Thanks Reply Quote

Quote from: Kjelt on November 06, 2013, 02:35:37 pm

How about the calibration settings? Are those also going to be affected?

Nope, cal will be fine.

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ModemHead
Frequent Contributor

Re: Fluke 189 with leaking surface mount coin cell

« **Reply #25 on:** November 06, 2013, 06:30:55 pm »

Say Thanks Reply Quote

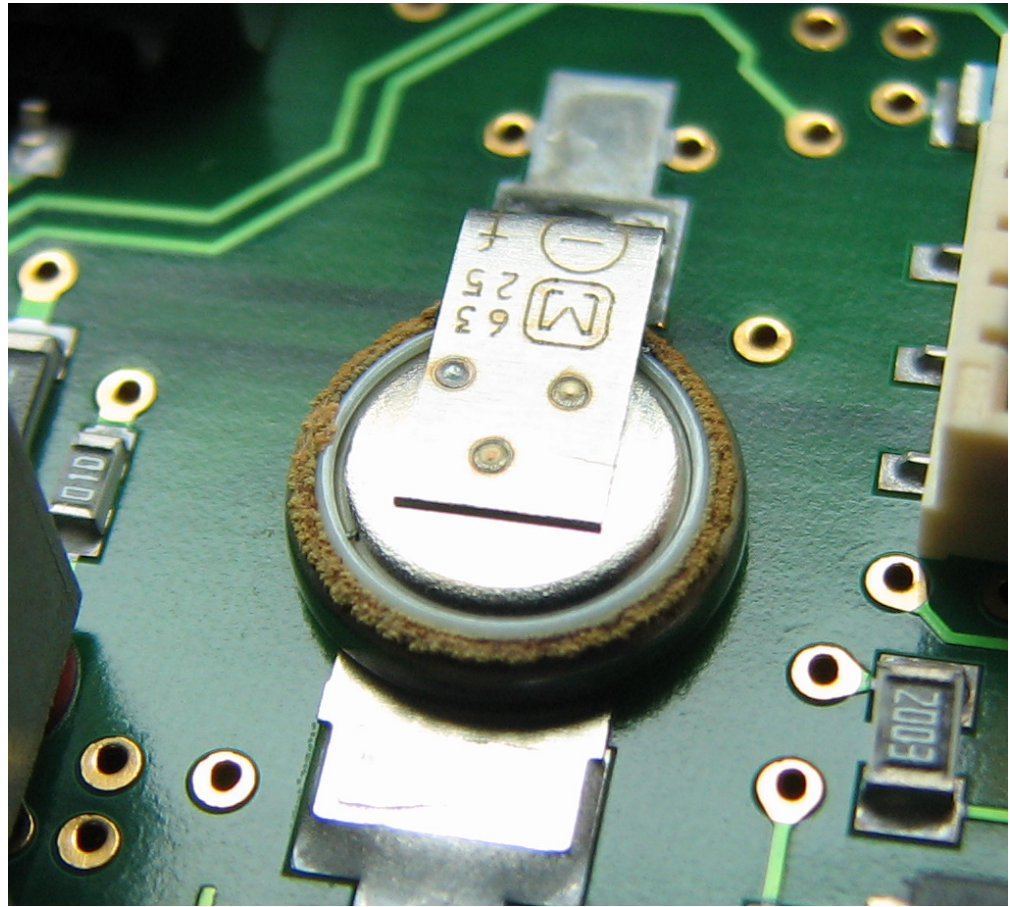
Here's what my 189 looks like. It's a dry brown fuzz on this one.



Posts: 731

Country:

No user-serviceable parts inside.



F189_cap.jpg (257.86 kB, 1020x921 - viewed 1334 times.)

Report to moderator Logged

M. András

Super Contributor



Posts: 1020

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #26 on: November 06, 2013, 07:01:26 pm »

ffs i will take mine apart in this weekend. if its leaking can i contact the distributor to get them replace the thing within warranty? as itsd will seriously decrease the life of the instrument

Report to moderator Logged

uoficowboy

Regular Contributor



Posts: 186

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #27 on: November 06, 2013, 07:53:05 pm »

Quote from: ModemHead on November 06, 2013, 06:30:55 pm

Here's what my 189 looks like. It's a dry brown fuzz on this one.

That's pretty much identical to the two 189s I looked at today.

Is there any consensus on if these parts need to be replaced or not? Any means of testing them? I would be very sad if my 189 were to die!

Report to moderator Logged

alm

Guest

Re: Fluke 189 with leaking surface mount coin cell

Reply Quote

« Reply #28 on: November 06, 2013, 07:58:37 pm »

The note from the datasheet suggests that this behavior is normal for this particular cap and might not indicate its imminent failure.

I just checked a fairly early 189 and it had a different surface mount supercap (with plastic sleeve) that did not show any signs of leakage.

Report to moderator Logged

tsmith35
 Frequent Contributor

 Posts: 262
 Country: 

 **Re: Fluke 189 with leaking surface mount coin cell** Say Thanks Reply Quote
 « Reply #29 on: November 06, 2013, 08:19:55 pm »

Quote from: M. András on November 06, 2013, 07:01:26 pm




fffs i will take mine apart in this weekend. if its leaking can i contact the distributor to get them replace the thing within warranty? as itsd will seriously decrease the life of the instrument

From the Fluke warranty page:

Industrial Products Limited Lifetime Warranty

*Lifetime is defined as seven years after Fluke discontinues manufacturing the product, but the warranty period shall be at least ten years from date of purchase. *(Lifetime Warranty applies to products manufactured after October 1996). The warranty does not cover manuals, fuses, disposable batteries, damage from neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including failures caused by use outside of the product's specifications, or normal wear and tear of mechanical components. This warranty covers the original purchaser only and is not transferable. This warranty covers the LCD for 10 years only (state-of-the-art for LCDs). To establish original ownership proof of purchase is required (20, 70, 80, 170, 180 and 280 models).*

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dr.diesel
 Super Contributor

 Posts: 2213
 Country: 
 Cramming the magic smoke back in...


 **Re: Fluke 189 with leaking surface mount coin cell** Say Thanks Reply Quote
 « Reply #30 on: November 06, 2013, 08:29:31 pm »

My 289's cap was completely shorted. I'd kinda been wondering why new batteries only lasted 2-3 days before going ka-put 🤔, however not enough to actually spend the time tearing it down! I've modified mine with a 2.1mm DC jack, it's been powered by a power supply for years sitting on the bench.

Just ordered a new cap from Digikey for \$2.50, for 5 minutes of down time I'll be back in business!

[Report to moderator](#) 

[Beware of Siglent](#)

M. András
 Super Contributor

 Posts: 1020
 Country: 

 **Re: Fluke 189 with leaking surface mount coin cell** Say Thanks Reply Quote
 « Reply #31 on: November 06, 2013, 08:31:22 pm »

i know what the warranty states but what is that damn component falls under?

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alm
 Guest

 **Re: Fluke 189 with leaking surface mount coin cell** Reply Quote
 « Reply #32 on: November 06, 2013, 09:19:14 pm »



Quote from: dr.diesel on November 06, 2013, 08:29:31 pm

I've modified mine with a 2.1mm DC jack, it's been powered by a power supply for years sitting on the bench.

Just ordered a new cap from Digikey for \$2.50, for 5 minutes of down time I'll be back in business!

Just note that this defeats most of the meter's protection circuit unless the barrel plug, lead and power supply offer the same isolation as the DMM. If you connect the common lead to mains, the barrel connector and power supply will probably also be at mains potential, something common DC barrel connectors and wiring are not designed to protect from. Not a big deal for separated extra-low voltage (eg. Arduino) circuits, as long as your aware and clearly indicate on the meter that the CAT IV 600 V (or even a CAT I 300 V) rating no longer applies.

[Report to moderator](#) 

dr.diesel
 Super Contributor

 Posts: 2213
 Country: 

 **Re: Fluke 189 with leaking surface mount coin cell** Say Thanks Reply Quote
 « Reply #33 on: November 06, 2013, 09:34:14 pm »

Wait a minute, there's life above 3.3v? 🤔

All kidding aside, absolutely, this is on my personal bench, otherwise I wouldn't allow it.

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Cramming the magic smoke back in...



alm

Guest

[Beware of Siglent](#)

Re: Fluke 189 with leaking surface mount coin cell

[Reply](#) [Quote](#)

« **Reply #34 on:** November 06, 2013, 09:44:43 pm »

Some voltage references go all the way up to 7V! But fair enough, you have to get really creative to get shocked by low voltage DC. I would probably affix a label to the front notifying anyone picking it up of the mod, but I can certainly see the convenience of a wall-powered 289.

[Report to moderator](#)

tsmith35

Frequent Contributor



Posts: 262

Country:



Re: Fluke 189 with leaking surface mount coin cell

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #35 on:** November 06, 2013, 10:36:43 pm »

Quote from: M. András on November 06, 2013, 08:31:22 pm

i know what the warranty states but what is that damn component falls under?

☹️ It's not a battery, so it seems pretty straightforward.

[Report to moderator](#)

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #36 on:** November 07, 2013, 01:16:02 am »

Quote from: dr.diesel on November 06, 2013, 08:29:31 pm

My 289's cap was completely shorted. I'd kinda been wondering why new batteries only lasted 2-3 days before going kaput 🤔, however not enough to actually spend the time tearing it down! I've modified mine with a 2.1mm DC jack, it's been powered by a power supply for years sitting on the bench.

Great to know this, thanks for sharing. For sure I will be watching the batteries consumption rate, if its getting significantly faster than it used to.

Other thought, with that shorted cap, just curious if that heated up cap will increase the ambient temp inside the DMM significantly ? Cause the DMM case is quite thick and made from 2 layers of different plastics which is quite effective to seal out the heat from inside. 🤔

Assuming we're not going to chase for warranty from Fluke, on the cap replacement, is there any better alternative brand/type of supercap that won't leak and has much more longer life than just <5 years ? Size wise for the replacement cap is not that critical since there should be enough space.

« *Last Edit: November 07, 2013, 01:19:57 am by BravoV* »

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[> YOUR FAV. BENCH LAB PSU](#)

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount coin cell

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #37 on:** November 07, 2013, 01:30:10 am »

Quote from: BravoV on November 07, 2013, 01:16:02 am

Great to know this, thanks for sharing. For sure I will be watching the batteries consumption rate, if its getting significantly faster than it used to.

Other thought, with that shorted cap, just curious if that heated up cap will increase the ambient temp inside the DMM significantly ? Cause the DMM case is quite thick and made from 2 layers of different plastics which is quite effective to seal out the heat from inside. 🤔

Assuming we're not going to chase for warranty from Fluke, on the cap replacement, is there any better alternative brand/type of supercap that won't leak and has much more longer life than just <5 years ? Size wise for the replacement cap is not that critical since there should be enough space.

Mine had a phantom draw, I knew it was there just never bothered to find it cause it was bench powered, easy enough to test by measuring standby current.

Since it's only the settings and date/time that is stored by the supercap, reliability really isn't that much of a concern, just replace the cap if and when it goes bad, especially since you can buy like and

kind for about \$2.50.

Your correct though, there is plenty of room if you'd like to retrofit a higher voltage piece, hopefully with longer life.

Report to moderator Logged

[Beware of Siglent](#)

BravoV
 Super Contributor

 Posts: 7368
 Country: 00
 +++ ATH1

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #38 on: November 07, 2013, 02:28:32 am »

Quote from: dr.diesel on November 07, 2013, 01:30:10 am

Since it's only the settings and date/time that is stored by the supercap, reliability really isn't that much of a concern

Agree, its just I don't like the idea of knowing that the cap is keep growing nasty brown goo, that may leak or burst it's liquid once the container is weakened enough by corrosion caused by that brown stuff. 🤔

Possible candidates are CDE Cornell Dubilier type ELDR ultracap ([Datasheet](#)) which highlights the long-life feature than ordinary ultracap.



Same capacitance as original cap at 0.2F 3.6V, and cost \$2.79 a pop at Digikey -> [EDLRD224H3R6C](#), has two terminals styles like above pics, just abit bigger than original cap and not much, and I think its still manageable like by bending it's legs to fit in the solder pads.

« Last Edit: November 07, 2013, 02:31:59 am by BravoV »

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> [YOUR FAV. BENCH LAB PSU](#)

true
 Frequent Contributor

 Posts: 302
 Country:
 INTERNET

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #39 on: November 07, 2013, 03:46:56 am »

I've repaired a couple of these (that otherwise wouldn't turn on) with 22uF MLCCs. As long as batteries are in the unit it works fine...I think they may lose settings during battery change but it's been a while since I've had to change them, maybe I should check?

Report to moderator Logged

dr.diesel
 Super Contributor

 Posts: 2213
 Country:
 Cramming the magic smoke back in...

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #40 on: November 07, 2013, 08:32:32 am »

Quote from: BravoV on November 07, 2013, 02:28:32 am



Same capacitance as original cap at 0.2F 3.6V, and cost \$2.79 a pop at Digikey -> [EDLRD224H3R6C](#), has two terminals styles like above pics, just abit bigger than original cap and not much, and I think its still manageable like by bending it's legs to fit in the solder pads.

Yup, this one should fit no problem, and probably last longer like you said. 🤔

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[Beware of Siglent](#)

dr.diesel
 Super Contributor

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #41 on: November 08, 2013, 04:50:57 pm »

For anyone wondering, Digikey part#P11068CT-ND is a perfect fit for the original on the 289.



Posts: 2213

Country:

Cramming the magic smoke back in...



BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



[Beware of Siglent](#)

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #42 on: November 09, 2013, 01:43:31 pm »

Quote from: dr.diesel on November 08, 2013, 04:50:57 pm

For anyone wondering, Digikey part#P11068CT-ND is a perfect fit for the original on the 289.

Did you purchase that ? Digikey currently don't carry it anymore for cut tape, and also I can't find the datasheet at Panasonic for this product type, another discontinued series ?

> [YOUR FAV. BENCH LAB PSU](#)

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #43 on: November 09, 2013, 01:48:29 pm »

Quote from: BravoV on November 09, 2013, 01:43:31 pm

Quote from: dr.diesel on November 08, 2013, 04:50:57 pm

For anyone wondering, Digikey part#P11068CT-ND is a perfect fit for the original on the 289.

Did you purchase that ? Digikey currently don't carry it anymore for cut tape, and also I can't find the datasheet at Panasonic for this product type, another discontinued series ?

Sure did:

Online Ordering | Digi- x

www.digikey.com/classic/Ordering/AddPart.aspx

Koji Bug Slashdot [H] [H] Dslr Fedora RR tvc Weather Google pfSense [Phoronix] Ars Other Bookmarks

Pricing is valid for this Web ID until 11/26/2013 if you place your order online

If you need to find a part number, use the search box in the upper right of the page or click the icon here.

If you know exactly what you want, fill in the quantity, part number, and optional customer reference number below and select **Add to Order**.

Quantities are not reserved until the order has been submitted. You will be reminded of backorder quantities at submit time. Available quantities may have changed due to real time inventory. To check current availability, click the "Update Stock Status" button below.

Quantity	Part Number	Customer Reference	
<input type="text"/>	<input type="text"/>	<input type="text"/>	Add to Order

Click on the **Part Number** to **MODIFY** or **DELETE** an item from your order.

All prices are in US dollars.

Index	Quantity	Part Number	Description	Customer Reference	Available Quantity	Backorder Quantity	Unit Price	Extended Price
1	1	P11068CT-ND	CAP SUPER 0.2F 3.3V COIN SMD		1 Immediate	0	2.56000	\$2.56
							Subtotal	\$2.56
							Shipping	Estimate
							Sales Tax	unknown
							Total	unknown

[Are you shipping outside the United States?](#)

Fields marked as unknown cannot be determined at this time.
 Applicable taxes will be added to your order at submit time unless you have a tax exempt certificate on file with us.
 All duties and taxes are the responsibility of the customer.
 These commodities, technology or software will be exported from the United States in accordance with the Export Administration regulation. Diversion contrary to

supercap.png (96.59 kB, 1039x700 - viewed 981 times.)

[Beware of Siglent](#)

BravoV
 Super Contributor

 Posts: 7368
 Country: 00
 +++ ATH1

Re: Fluke 189 with leaking surface mount coin cell Say Thanks Reply Quote
 « **Reply #44 on:** November 10, 2013, 04:21:52 pm »

Damn, I guess I was blind when I browse the Digikey. 🙄

Btw, that Panasonic cap doesn't have any datasheet, and at the DK page its rated with lifetime @ Temp. 500 Hrs @ 60°C.

Just fyi, at the CDE type ELDR ultracap I pointed previously, after the exposure of 2000 h at +85 °C ,still capable of maintaining ±30% of the initial measured value.

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

dr.diesel
 Super Contributor

 Posts: 2213
 Country:
 Cramming the magic smoke back in...

Re: Fluke 189 with leaking surface mount coin cell Say Thanks Reply Quote
 « **Reply #45 on:** November 10, 2013, 04:25:17 pm »

Quote from: BravoV on November 10, 2013, 04:21:52 pm

Just fyi, at the CDE type ELDR ultracap I pointed previously, after the exposure of 2000 h at +85 °C ,still capable of maintaining ±30% of the initial measured value.

You are correct Sir, I should have put forth a bit more research into retrofitting a better cap, time got the best of me.

I'll be doing this exercise again in the future. 🙄

Report to moderator Logged

[Beware of Siglent](#)

smoothtalker
 Regular Contributor

 Posts: 76
 Country:

Re: Fluke 189 with leaking surface mount coin cell Say Thanks Reply Quote
 « **Reply #46 on:** November 12, 2013, 10:13:11 am »

is this leaking cap issue affecting all fluke 289? i'm disappointed with fluke how can this happen to their top of the line modal.

I'm thinking of buying 289, but now i guess i've to stick with 87v. fluke 289 is disappointing.. leaking cap, the ghosting dot matrix lcd, the poor battery life. expensive usb cable, and lack of thermal probe compared to 87v etc.

other than graphing are there advantages for 289 over 87v? ok i can see loz and crest factor calculation.

« *Last Edit: November 12, 2013, 10:15:43 am by smoothtalker* »

Report to moderator Logged

The following users thanked this post: FrankE

dr.diesel
 Super Contributor

 Posts: 2213
 Country:
 Cramming the magic smoke back in...

Re: Fluke 189 with leaking surface mount coin cell Say Thanks Reply Quote
 « **Reply #47 on:** November 12, 2013, 10:41:44 am »

Really depends on your requirements. I am not happy with my 289, it's huge and bulky, battery life is not good. If they made the 289 in a compact bench unit I'd be a happy camper.

Note, there is an available TC probe for the 289, which I do use all the time.

Report to moderator Logged

[Beware of Siglent](#)

BravoV
 Super Contributor

 Posts: 7368
 Country: 00

Re: Fluke 189 with leaking surface mount coin cell Say Thanks Reply Quote
 « **Reply #48 on:** November 13, 2013, 05:15:51 am »

I suspect the decaying cap has something to do with poor battery life ? 🙄

+++ ATH1



Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #49 on: November 13, 2013, 11:19:06 am »

Quote from: BravoV on November 13, 2013, 05:15:51 am

I suspect the decaying cap has something to do with poor battery life ?

Very true, but even with a properly working cap the battery life is not too good IMO. If memory serves the 289 is rated for just under 200 hours, with no back-light use. Probably fine for light duty use, but in heavy industrial applications your having to change the batteries every 2 week.

Here in the dark depths of a power plant, the auto power off and auto back-light off are always disabled.

The 287/289 should have come with a rechargeable pack, charging nightly or every few nights would have sealed the deal.

Report to moderator Logged

[Beware of Siglent](#)

The following users thanked this post: FrankE

amyk

Super Contributor



Posts: 7818



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #50 on: November 13, 2013, 11:43:38 am »

I think officially, they're supposed to leak slightly over their rated lifetime, according to the product datasheet.

Report to moderator Logged

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #51 on: November 13, 2013, 12:01:03 pm »

Quote from: amyk on November 13, 2013, 11:43:38 am

I think officially, they're supposed to leak slightly over their rated lifetime, according to the product datasheet.

That's disappointing. As Bravo stated, there is plenty of physical room, heck that meter is HUGE, they should have used a more suitable cap, with hopefully no leakage.

Report to moderator Logged

[Beware of Siglent](#)

turbo!

Regular Contributor



Posts: 89



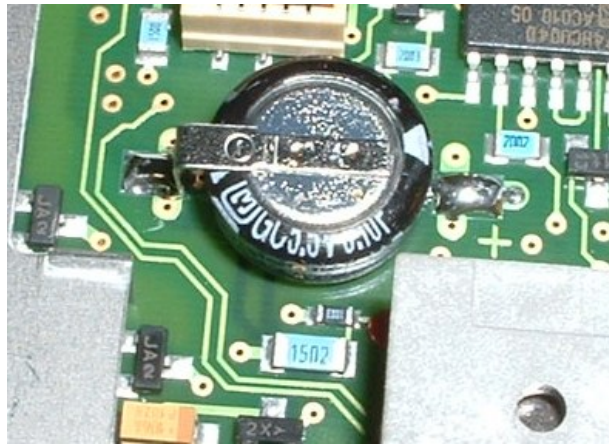
Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #52 on: November 13, 2013, 09:02:23 pm »



I opened my up and guess what, its doing it too



Report to moderator Logged

turbo!
 Regular Contributor

 Posts: 89

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #53 on: November 13, 2013, 09:05:22 pm »

Quote from: smoothtalker on November 12, 2013, 10:13:11 am

is this leaking cap issue affecting all fluke 289? i'm disappointed with fluke how can this happen to their top of the line modal.

I'm thinking of buying 289, but now i guess i've to stick with 87v. fluke 289 is disappointing.. leaking cap, the ghosting dot matrix lcd, the poor battery life. expensive usb cable, and lack of thermal probe compared to 87v etc.

other than graphing are there advantages for 289 over 87v? ok i can see loz and crest factor calculation.

The user interface to use the peak min/max in 189 is crap and capacitor test algorithm (for which one of the 87V's patent is for) on 87V is better, but my 189 is plagued with this leaking cap and the 87V is plagued with GSM interference susceptibility.

Great eh?

Report to moderator Logged

BravoV
 Super Contributor

 Posts: 7368
 Country: 00
 +++ ATH1

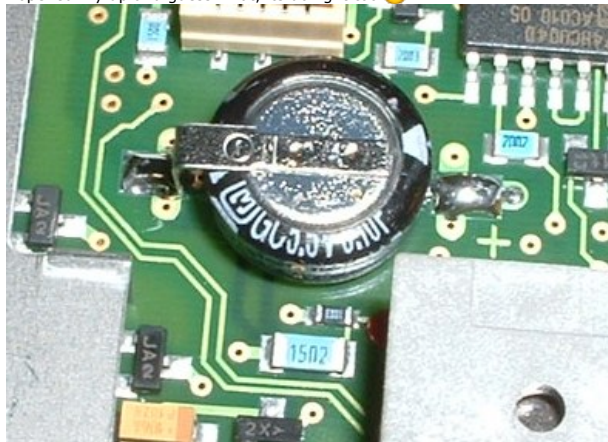
Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #54 on: November 14, 2013, 04:17:31 am »

Quote from: turbo! on November 13, 2013, 09:02:23 pm

I opened my up and guess what, its doing it too



Looks like there are many variations of these Matshusita caps installed at Fluke DMM aren't they ?

Yours doesn't seem to have that brown goo sticking on it. Maybe that black shrunk plastic wrapper is protecting the outer shell ?

Is it dead ?

> [YOUR FAV. BENCH LAB PSU](#)

SeanB
Super Contributor



Posts: 15842
Country:

turbo!
Regular Contributor

Posts: 89



Napalm2002
Regular Contributor

Posts: 152
Country:

BravoV
Super Contributor

Posts: 7368
Country:
+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #55 on: November 14, 2013, 04:29:46 am »

I had Panasonic cordless phones with a similar supercap that was used to store data like number lists and such in them Those caps never did that, the only failures were the leads breaking off and the cap rattling around loose in the case. 0.022F 5V cap with through hole leads. I retired the last one (mine) last year as I had run out of spare parts for it, it did 15 years of work. I had a pile that I used for RF modules, antenna's, microphones, speakers, cases and keypad rubbers. The handset flap latches were weak, so I modified it to use a small magnet (CDRom lens motor) and a reed switch to replace the switch as well. These were expensive units, costing around \$150 each when new.

Report to moderator Logged

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #56 on: November 14, 2013, 01:34:48 pm »

Quote from: BravoV on November 14, 2013, 04:17:31 am

Quote from: turbo! on November 13, 2013, 09:02:23 pm

WTF! WTF!

I opened my up and guess what, its doing it too



Report to moderator Logged

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #57 on: November 27, 2013, 02:04:24 am »

Has anyone come up with an ideal replacement?

Report to moderator Logged

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #58 on: November 27, 2013, 02:11:13 am »

Check post #38, although it is not a fully ideal replacement regarding it's size, but check both datasheets, the CDE Cornell Dubilier type ELDR ultracap can be easily soldered with a bit of tweaking, and since the DMM still has plenty of spare space in there, it should not be a problem.

When it comes to long term reliability, it beats that shitty Matshusita cap out of the water, simply no contest here.

Quote from: BravoV on November 10, 2013, 04:21:52 pm

Btw, that Panasonic cap doesn't have any datasheet, and at the DK page its **rated with lifetime @ Temp. 500 Hrs @ 60°C.**

Just fyi, at the CDE type ELDR ultracap I pointed previously, **after the exposure of 2000 h at +85 °C**, still capable of maintaining ±30% of the initial measured value.

« Last Edit: November 27, 2013, 02:21:11 am by BravoV »

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

JohnDee

Contributor

Posts: 5



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #59 on: November 28, 2013, 12:36:46 am »

By the way, I just replaced the supercap on my Fluke 189 and it is now back to life !! I used the Elna supercap suggested by tsmith35 (reply #7; Digikey PN 604-1147-1-ND) but also bought as a backup the CDE Cornell supercap suggested by BarvoV (reply #38) just in case. The Elna has the exact same footprint which made the re-soldering a simple task. As the originator of the initial query, I wish to thank all contributors to this blog for having helped me solve my problem - Cheers !

Report to moderator Logged

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #60 on: November 28, 2013, 12:47:32 am »

Quote from: JohnDee on November 28, 2013, 12:36:46 am

By the way, I just replaced the supercap on my Fluke 189 and it is now back to life !!

Thanks for reporting back. Too often, we never get feedback from the original poster.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #61 on: November 28, 2013, 01:12:52 am »

Quote from: retiredcaps on November 28, 2013, 12:47:32 am

Quote from: JohnDee on November 28, 2013, 12:36:46 am

By the way, I just replaced the supercap on my Fluke 189 and it is now back to life !!

Thanks for reporting back. Too often, we never get feedback from the original poster.

+1 , thanks too, and this thread will be good resource and its proven, and maybe useful for someone that experiencing the same problem. 🙌😊

JohnDee, since you're the thread starter, suggesting to update the thread title (edit the 1st post's title) by adding two words "287" and "289", hopefully these will help improve the search result.

Meanwhile, since this is a proven fix, maybe its time to stalk cheap & dead Fluke 189 on ebay ? 🐱

« Last Edit: November 28, 2013, 04:35:36 pm by BravoV »

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #62 on: November 28, 2013, 01:50:31 am »

Quote from: BravoV on November 28, 2013, 01:12:52 am

Meanwhile, since this is a proven fix, maybe its time to stalk cheap & dead Fluke 189 on ebay ? 🐱

Just remember that the modern Flukes are all closed case calibration. So dead modern Flukes do have a risk of being uncalibrated after being repaired.

Report to moderator Logged

BravoV

Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

Super Contributor



Posts: 7368

Country:

+++ ATH1



« Reply #63 on: November 28, 2013, 01:56:54 am »

Quote from: retiredcaps on November 28, 2013, 01:50:31 am

Quote from: BravoV on November 28, 2013, 01:12:52 am

Meanwhile, since this is a proven fix, maybe its time to stalk cheap & dead Fluke 189 on ebay ? 🙄

Just remember that the modern Flukes are all closed case calibration. So dead modern Flukes do have a risk of being uncalibrated after being repaired.

C'mon retiredcaps, I guess probably your finger will be itchy to pull the trigger after seeing an offer for a dead 189 but with good physical for a price say at \$50 or less ? Worth the gamble isn't it ? 🙄

I'm pretty sure ModemHead will do it. 🙄

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #64 on: November 28, 2013, 04:45:26 am »

Quote from: BravoV on November 28, 2013, 01:56:54 am

C'mon retiredcaps, I guess probably your finger will be itchy to pull the trigger after seeing an offer for a dead 189 but with good physical for a price say at \$50 or less ?



Report to moderator Logged

Napalm2002

Regular Contributor



Posts: 152

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #65 on: November 28, 2013, 03:10:09 pm »

I love my 289. I know battery life sucks but I feel that it's worth a few batteries every two weeks to have that much power at your fingertips.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #66 on: November 28, 2013, 03:49:19 pm »

Quote from: Napalm2002 on November 28, 2013, 03:10:09 pm

I love my 289. I know battery life sucks but I feel that it's worth a few batteries every two weeks to have that much power at your fingertips.

How old is your 289 ?

Not sure though, maybe the leaking cap is also leaking the current and drains the battery even its turned off ? As we know this 280 series never turned off galvanically by design. 🙄

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

Napalm2002

Regular Contributor



Posts: 152

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #67 on: November 29, 2013, 12:42:06 am »

I bought my 289 used about a year ago. I don't get to use it often and I do not have to replace batteries every two weeks. I was commenting on previous posts about the non desirable battery life. I do feel that no matter how often that I need to replace the batteries that it is worth it to have so much diagnostic power in the palm of your hand.

Snake dr out...

Report to moderator Logged

smoothtalker

Regular Contributor



Posts: 76

Country:



retiredcaps

Super Contributor



Posts: 3565

Country:



dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #68 on: November 30, 2013, 10:51:38 pm »

I'm just wondering, why doesn't anyone consider sending it back for warranty claim?? isn't it lifetime warranty??? I've never sent in my fluke but i purchase them for that reason. LOL

and if everyone send in.. fluke will surely notice this "design problem" and improve?

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #69 on: November 30, 2013, 11:32:34 pm »

Quote from: smoothtalker on November 30, 2013, 10:51:38 pm

I'm just wondering, why doesn't anyone consider sending it back for warranty claim?? isn't it lifetime warranty???

See Fluke's definition in attached picture taken from the 187/189 manual. The 89IV/189 are discontinued.

In addition, some of us buy used/abused Flukes which do not officially qualify.

Lifetime Limited Warranty

Each Fluke 20, 70, 80, 170 and 180 Series DMM will be free from defects in material and workmanship for its lifetime. As used herein, "lifetime" is defined as seven years after Fluke discontinues manufacturing the product, but the warranty period shall be at least ten years from the date of purchase. This warranty does not cover fuses, disposable batteries, damage from neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including failures caused by use outside of the product's specifications, or normal wear and tear of mechanical components. This warranty covers the original purchaser only and is not transferable.

For ten years from the date of purchase, this warranty also covers the LCD. Thereafter, for the lifetime of the DMM, Fluke will replace the LCD for a fee based on then current component acquisition costs.

To establish original ownership and prove date of purchase, please complete and return the registration card accompanying the product, or register your product on <http://www.fluke.com>. Fluke will, at its option, repair at no charge, replace or refund the purchase price of a defective product purchased through a Fluke authorized sales outlet and at the applicable international price. Fluke reserves the right to charge for importation costs of repair/replacement parts if the product purchased in one country is sent for repair elsewhere.

If the product is defective, contact your nearest Fluke authorized service center to obtain return authorization information, then send the product to that service center, with a description of the difficulty, postage and insurance prepaid (FOB Destination). Fluke assumes no risk for damage in transit. Fluke will pay return transportation for product repaired or replaced in-warranty. Before making any non-warranty repair, Fluke will estimate cost and obtain authorization, then invoice you for repair and return transportation.

fluke-warranty.jpg (127.24 kB, 1057x431 - viewed 561 times.)

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #70 on: December 01, 2013, 01:22:51 pm »

Quote from: smoothtalker on November 30, 2013, 10:51:38 pm

I'm just wondering, why doesn't anyone consider sending it back for warranty claim?? isn't it lifetime warranty???

For me personally? It took me < a few minutes to fix my 289, vs filing with Fluke, mailing the unit in, waiting for them to fix it, shipping back etc.

Report to moderator Logged

[Beware of Siglent](#)

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #71 on: December 01, 2013, 01:30:07 pm »

Quote from: dr.diesel on December 01, 2013, 01:22:51 pm

Quote from: smoothtalker on November 30, 2013, 10:51:38 pm

I'm just wondering, why doesn't anyone consider sending it back for warranty claim?? isn't it lifetime warranty???

For me personally? It took me < a few minutes to fix my 289, vs filing with Fluke, mailing the unit in, waiting for them to fix it, shipping back etc.

+1

Also there is no guarantee that Fluke will replace it with better cap than this problematic one, and even though you still can make the same claim again in next few years, meanwhile you suffer from the high battery drain while the cap is rotting in those period. 🙄

My relatively new 287 with date code April 2013 already shows the early rotting sign at the cap. 🙄

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

ElektroQuark

Supporter



Posts: 1242

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #72 on:** December 01, 2013, 02:39:04 pm »

Say Thanks Reply Quote

But by repairing aren't you voiding the warranty?

Report to moderator Logged

www.elektroquark.com

[EQVideo](#)

[Spanish forum](#)

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #73 on:** December 01, 2013, 02:46:32 pm »

Say Thanks Reply Quote

Quote from: EdoNork on December 01, 2013, 02:39:04 pm

But by repairing aren't you voiding the warranty?

Of the hundreds that I've deployed, never once a bad Fluke, saving weeks of RMA time is worth the risk IMO.

Report to moderator Logged

[Beware of Siglent](#)

neslekkim

Super Contributor



Posts: 1305

Country:



Re: Fluke 189 with leaking surface mount coin cell

« **Reply #74 on:** December 01, 2013, 03:34:33 pm »

Say Thanks Reply Quote

Quote from: Napalm2002 on November 28, 2013, 03:10:09 pm

I love my 289. I know battery life sucks but I feel that it's worth a few batteries every two weeks to have that much power at your fingertips.

I bought my 289 at an auction in june (was not used), and havent even changed the batteries that came with it, it doesnt get used a lot, but at least, the batteries is not draining..

Report to moderator Logged

nukie

Frequent Contributor



Posts: 788

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #75 on:** December 02, 2013, 02:01:33 am »

Say Thanks Reply Quote

I have two 187 and a 189 of different manufacture batch. No leaky caps. No battery drain. Battery life has been great with Eneloops. I never have to worry about it.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #76 on:** December 02, 2013, 02:03:42 am »

Say Thanks Reply Quote

Quote from: nukie on December 02, 2013, 02:01:33 am

I have two 187 and a 189 of different manufacture batch. No leaky caps. No battery drain. Battery life has been great with Eneloops. I never have to worry about it.

I thought 187 doesn't have that cap ? See post #15.

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

nukie
 Frequent Contributor

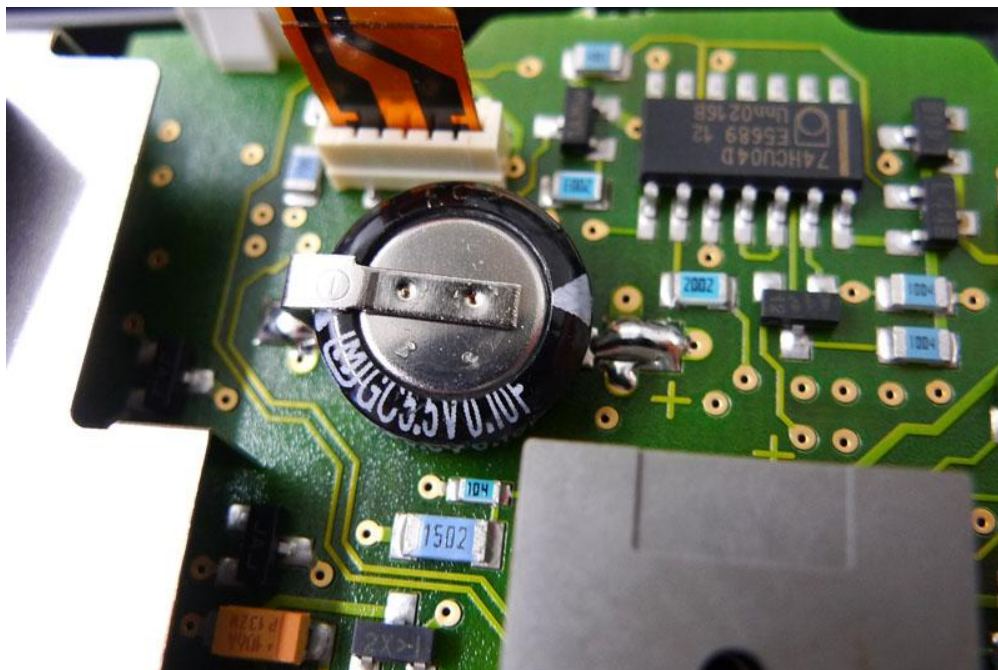
 Posts: 788
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #77 on: December 02, 2013, 02:20:44 am »

Yes I know 187s have no caps, what I mean was the 187s and 189 have similar battery consumption and I have replaced my 189 cap. It wasn't leaky or anything but it sure looks pretty rusty when I got it last time.



P1100199.jpg (117.12 kB, 800x533 - viewed 1996 times.)

Report to moderator Logged

BravoV
 Super Contributor

 Posts: 7368
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #78 on: December 02, 2013, 02:26:07 am »

Is that the new replaced cap ? I can see there is a (M) Mashusita logo on it, are you using the same type ?

Isn't that Mashusita brand product is no longer produced and replaced by Panasonic brand ?

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

nukie
 Frequent Contributor

 Posts: 788
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #79 on: December 02, 2013, 02:29:21 am »

I bought it from rockby.com.au many years ago but it seems they don't have it anymore.

I bought some Panasonic FM, FR caps from Digikey recently they are still using the "M" logo. I have some bigger EC series caps have the full "Panasonic" printed on them but the M logo would save them printing cost on caps that cost a few cents.

I found exact replacement here for \$1

<http://www.westfloridacomponents.com/J544APK02/0.1uF+5.5V+Memory+Backup+Capacitor+Panasonic+>
 Disregard the specs on the webpage it's entered incorrectly the part no. ending with 104 is 0.1F

Capacitance: 0.10uF would not be a supercap. It would be a very poorcap.



« Last Edit: December 02, 2013, 02:42:48 am by nukie »

Report to moderator Logged

smoothtalker

Regular Contributor



Posts: 76

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #80 on: December 03, 2013, 04:17:00 am »

Quote from: BravoV on December 01, 2013, 01:30:07 pm

Also there is no guarantee that Fluke will replace it with better cap than this problematic one, and even though you still can make the same claim again in next few years, meanwhile you suffer from the high battery drain while the cap is rotting in those period. 😞

My relatively new 287 with date code April 2013 already shows the early rotting sign at the cap. 😞

Dave should really do a video on this issue. Fluke needs to do something. It's actually quite a shame to Fluke's reputation that this is happening.

« Last Edit: December 03, 2013, 04:21:32 am by smoothtalker »

Report to moderator Logged

CSmith

Supporter



Posts: 23

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #81 on: December 03, 2013, 04:51:35 am »

I have the Fluke 189, and I bought the "upgraded" Fluke 289 when it came out. Am I alone in that I find myself preferring the Fluke 189? I believe that I find the boot time of the Fluke 289 to be excessive.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #82 on: December 03, 2013, 04:57:25 am »

Quote from: smoothtalker on December 03, 2013, 04:17:00 am

Quote from: BravoV on December 01, 2013, 01:30:07 pm

Also there is no guarantee that Fluke will replace it with better cap than this problematic one, and even though you still can make the same claim again in next few years, meanwhile you suffer from the high battery drain while the cap is rotting in those period. 😞

My relatively new 287 with date code April 2013 already shows the early rotting sign at the cap. 😞

Dave should really do a video on this issue. Fluke needs to do something. It's actually quite a shame to Fluke's reputation that this is happening.

Agree, and the worst part is this problem is affecting Fluke's high-end models which I think deserved more attentions, especially 287 or 289 are belong to top tier models, and they are not cheap. 😞

Already raised this issue to Dave at my post # 14, and also PM-ed him, but no reply yet though.

A few more similar PMs from some of you that have the same concern to Dave probably will raise his attention, just a suggestion.

Also I think this issue alone has good and enough materials to make single video out of it, especially involves more details like measuring the off current, ultra cap leak, or ask people who are affected to do the same measurements to gather much larger data and get a clue what is happening and etc.

If I had a chance, I will measure the off state current consumption on my both 287s to see if there are big differences, and hope not. 😞

« Last Edit: December 03, 2013, 05:02:41 am by BravoV »

Report to moderator Logged

[> YOUR FAV. BENCH LAB PSU](#)

retiredcaps

Super Contributor



Posts: 3565

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #83 on: December 06, 2013, 05:55:28 pm »

Country:



Add Fluke 1653 with potential bad Panasonic gold EN cap to list as per

<https://www.eevblog.com/forum/testgear/fluke-1653-installation-tester-repair-help/>

Report to moderator Logged

smoothtalker

Regular Contributor



Posts: 76

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #84 on: December 06, 2013, 09:41:00 pm »

Someone needs to tell Fluke about this! I can't find any contact details on Fluke website after they change it.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #85 on: December 08, 2013, 08:19:58 am »

Quote from: smoothtalker on December 06, 2013, 09:41:00 pm

Someone needs to tell Fluke about this! I can't find any contact details on Fluke website after they change it.

Don't think they will give a damn. 😞

If friends ask me about 280 series, looking at current situation, I will tell them to go Agilent straight a away. 😞

Looking at the past experience with 87V model which was vulnerable to GSM phone signal, that Dave raised up while ago, looks like Fluke reacted quickly. Again, I think raising this to Dave and hopefully he will consider to make a video on this once he sees enough people are "whining" about it. 😞

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

apelly

Supporter



Posts: 1045

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #86 on: December 08, 2013, 09:37:32 am »

Quote from: BravoV on December 08, 2013, 08:19:58 am

Don't think they will give a damn.

Correct.

Report to moderator Logged

I'd rather a Google clue, link, or some theory than "do this" (generally)

smoothtalker

Regular Contributor



Posts: 76

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #87 on: December 08, 2013, 02:27:12 pm »

Quote from: BravoV on December 08, 2013, 08:19:58 am

Quote from: smoothtalker on December 06, 2013, 09:41:00 pm

Someone needs to tell Fluke about this! I can't find any contact details on Fluke website after they change it.

Don't think they will give a damn. 😞

If friends ask me about 280 series, looking at current situation, I will tell them to go Agilent straight a away. 😞

Looking at the past experience with 87V model which was vulnerable to GSM phone signal, that Dave raised up while ago, looks like Fluke reacted quickly. Again, I think raising this to Dave and hopefully he will consider to make a video on this once he sees enough people are "whining" about it. 😞

Actually Fluke took quite a while over the GSM issue. Don't seem very sincere though. Fluke seems to be becoming more passive in everything recently.

I do have contact of Fluke's Marcom manager. Unfortunately she is not related to engineering. We need your powers Dave! Where are you Dave!

Report to moderator Logged

alm

Guest

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Reply Quote

« Reply #88 on: December 08, 2013, 03:36:44 pm »

Has anyone actually shipped a meter with leaking cap to Fluke and was refused repair?

Report to moderator Logged

Nermash

Frequent Contributor



Posts: 256



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #89 on: December 09, 2013, 07:29:41 am »

Maybe we should ask Martin from mjlorton channel to do a video about this... He has a 287 which is old enough to demonstrate this issue.

Last time it took Fluke around 18 months to issue a firmware update for 287 (problem causing shutdown when logging, in presence of high intensity IR source around data port).

This would probably take the same amount of time, and the solution would probably be the same as with the 87V GSM issue: "send it for calibration and we will fix it for free".

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #90 on: December 09, 2013, 02:31:18 pm »

The difficulties, cost and resources needed in fixing issues just by updating the firmware, is nothing when compared to fixing an issue that needs Fluke to replace that sick cap from complaining owners, maybe also unsold products withdrawal that are affected, new cap thorough testing, procurement and etc.

« Last Edit: December 09, 2013, 02:37:16 pm by BravoV »

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #91 on: December 09, 2013, 11:20:19 pm »

Does someone with a non gmail/yahoo/hotmail (in case Fluke blocks these addresses) address want to try contacting

duane.smith@fluke.com

He is Senior Sale Support at Fluke. I have seen a lot of his articles. His linkedin profile.

<http://www.linkedin.com/pub/duane-smith/11/434/436>

Report to moderator Logged

neslekkim

Super Contributor



Posts: 1305

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #92 on: December 10, 2013, 08:28:02 am »

fluke didn't block my gmail when contacting them atleast, I mailed them because i got my 289 with and note to register for getting probes, the link at fluke was dead, but they responded, and month later I got my probes.

Report to moderator Logged

winluk

Guest

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Reply Quote

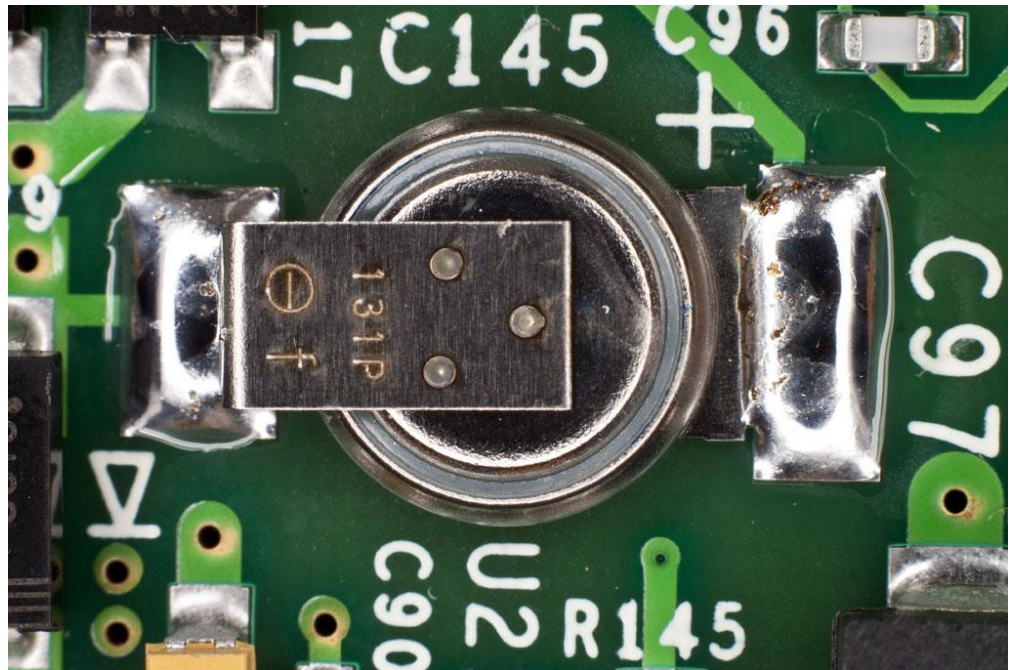
« Reply #93 on: January 03, 2014, 07:59:58 am »

Just had a look in my 289 - no corrosion on the cap.

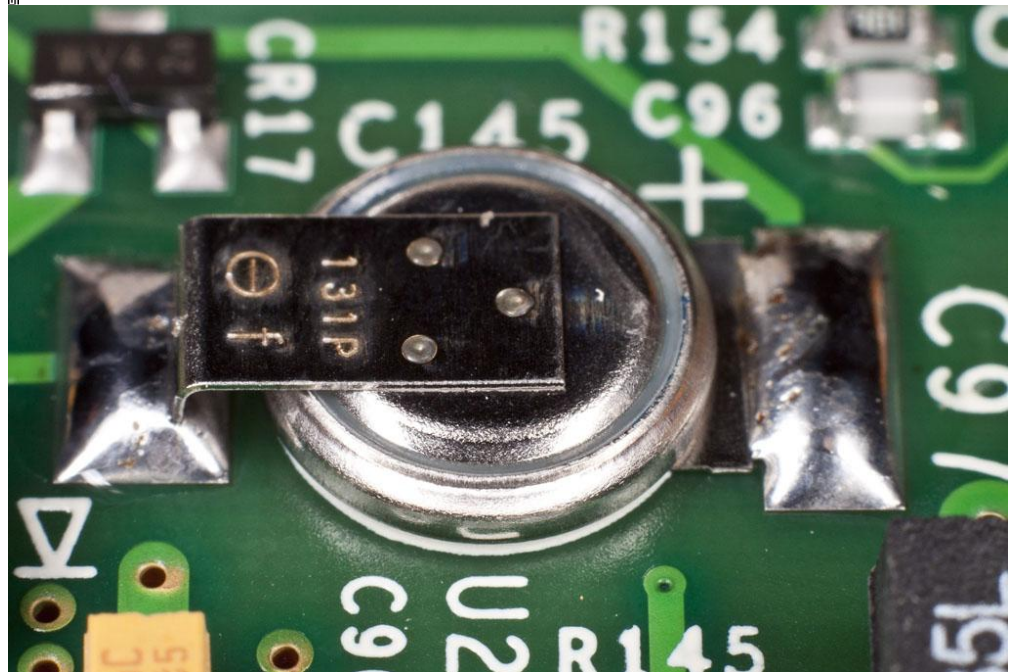
I bought it in mid 2013 but the setup menu / info says it was built 25 Jun 2010 but calibrated 25 Apr 2013.

The board is Rev. 015.

Cheers



289_0.jpg (196.25 kB, 1024x683 - viewed 1196 times.)



289_1.jpg (156.31 kB, 1024x683 - viewed 1588 times.)

[Report to moderator](#) [Logged](#)

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #94 on:** January 03, 2014, 08:53:36 am »

[Say Thanks](#) [Reply](#) [Quote](#)

Quote from: retiredcaps on December 09, 2013, 11:20:19 pm

Does someone with a non gmail/yahoo/hotmail (in case Fluke blocks these addresses) address want to try contacting duane.smith@fluke.com

Martin did a video and will send an email to Duane.

T4D #88 - Fluke multimeters with leaking / corroded surface mount s...



Report to moderator Logged

Huluvu

Regular Contributor



Posts: 78

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« **Reply #95 on:** January 03, 2014, 09:19:43 am »

Just watched Martins Video and checked the behavior of my Fluke 189 which shows the same residues on the super-cap surface.

I found this remark in the Datasheet from [Panasonic](#) (page 20):

Quote

7. Brown extraction

Brown extraction may occur around the sealing part depending on use conditions. This extraction is electrically nonconductive. Therefore, it does not influence in the electric characteristics.

For myself I will monitor the part periodically if something changed, but it is not that dramatically as described by the OP

i'm more concerned about leaking batteries by storing a meter for a long time period.

Report to moderator Logged

"Yeah, but no, but yeah, but no..."

mimmus78

Supporter



Posts: 676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« **Reply #96 on:** January 03, 2014, 09:50:18 am »

Mine 287 is from 2007 or 2008 and supercap is corroded.

I think this should be changed ...



Report to moderator Logged

BravoV
 Super Contributor

 Posts: 7368
 Country: 00
 +++ ATH1

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #97 on: January 03, 2014, 09:51:01 am »

Quote from: winluk on January 03, 2014, 07:59:58 am

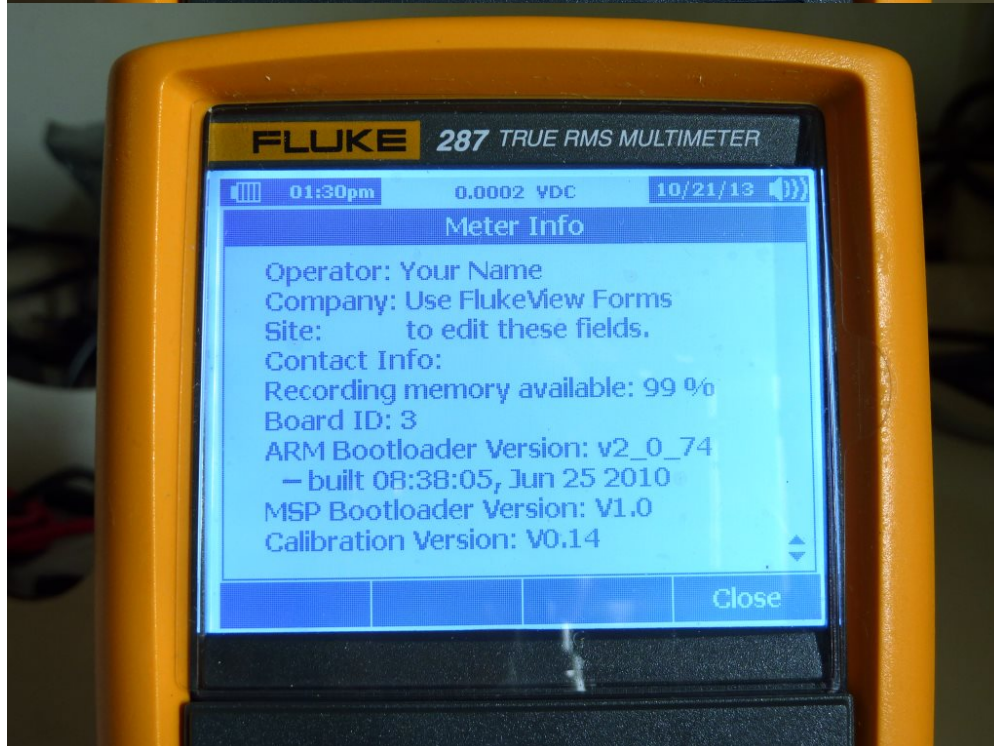
Just had a look in my 289 - no corrosion on the cap.
 I bought it in mid 2013 but the setup menu / info says it was built 25 Jun 2010 but calibrated 25 Apr 2013.
 The board is Rev. 015.

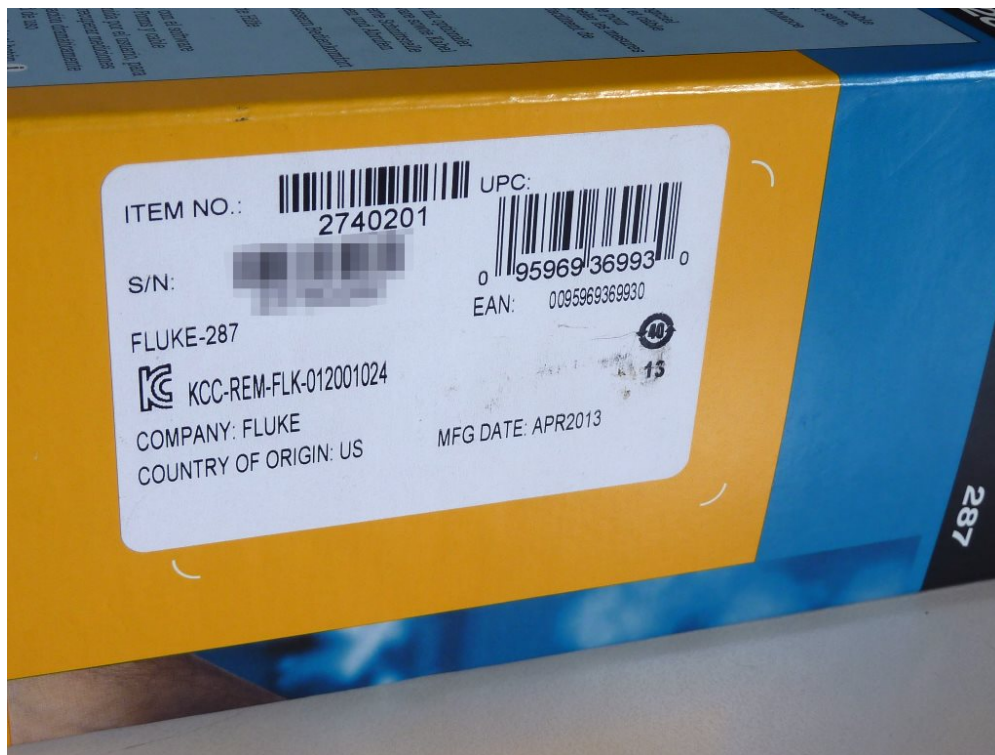
That is weird, what is the current cal count ? If its still 1 (one), then this must be strange, manufactured in 2010 but with 2013 factory cal date is quite long time. 🤔

Are you sure you're not mistaken by the bootloader's date at the info screen ?

Also "assuming" the marking at the cap represents the cap's date code, then your cap there is quite new (made at 2013), while at my 287 is manufactured in April 2013 (check post #14), and with the cap's date code at 2012.

Here my 287 info screen and it's box which stated its manufactured at April 2013, and yes, both serial no (blurred here 🙈) are identical at the meter and at the box.





« Last Edit: January 03, 2014, 10:01:31 am by BravoV »

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

SeanB
Super Contributor



Posts: 15842
Country:

winluk
Guest

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #98 on: January 03, 2014, 09:56:40 am »

Bootloader build is the firmware build date, it would have been programmed later than that, and the cal date says it was finally assembled and tested probably the day before and then left running overnight for burn in prior to calibration. AFAIK Fluke uses an ATE bed to do cal, so the date would be the time of manufacture within a week at most before, and the first cal is the factory one.

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Reply Quote

« Reply #99 on: January 03, 2014, 09:57:44 am »

Quote

That is weird, what is the current cal count ? If its still 1 (one), then this must be strange, manufactured in 2010 but with 2013 factory cal date is quite long time. 🤔

Are you sure you're not mistaken by the bootloader's date at the info screen

Calibration Date: 25/04/13
Calibration Counter: 1
Board ID: 3
The rest is same as per your screen...

I'm DOPE!!!
The 'built' part is for the 2 liner.. "ARM bootloader..... built 08:38:05, Jun 25 2010" 😊

Report to moderator Logged

mimmus78
Supporter

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #100 on: January 03, 2014, 09:58:11 am »



Posts: 676
Country:

Bravov
Super Contributor

Posts: 7368
Country:
+++ ATH1

I think this "built" date is relative to the build date of the boot loader (when it was compiled) not to the meter "motherboard".

Report to moderator

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #101 on: January 03, 2014, 10:03:44 am »

Quote from: winluk on January 03, 2014, 09:57:44 am

Quote

That is weird, what is the current cal count ? If its still 1 (one), then this must be strange, manufactured in 2010 but with 2013 factory cal date is quite long time. 🤔

Are you sure you're not mistaken by the bootloader's date at the info screen

Calibration Date: 25/04/13
Calibration Counter: 1
Board ID: 3
The rest is same as per your screen...

I'm DOPE!!!
The 'built' part is for the 2 liner... "ARM bootloader.... built 08:38:05, Jun 25 2010" 😄

Well, just see at the bright side, at least you now have few months to enjoy the shiny ultra cap before its starting to poo out around at the outer shell like mine. 🤔👉

Report to moderator

> [YOUR FAV. BENCH LAB PSU](#)

quarks
Frequent Contributor



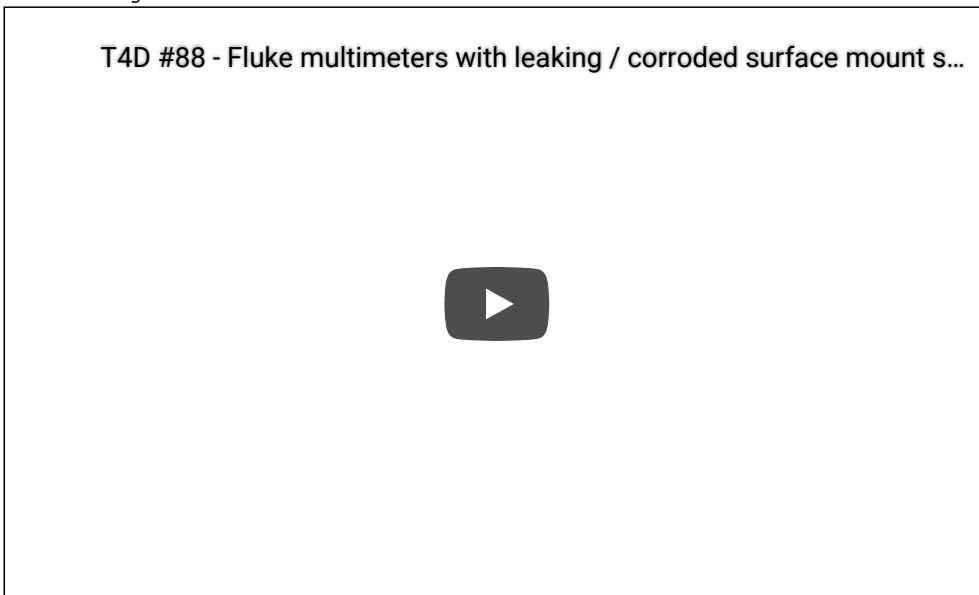
Posts: 873
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #102 on: January 03, 2014, 07:31:47 pm »

after watching Martins video



I had a look in my 289 and it is also having some leakage on the capacitor 🤔
Although that looks like an easy to fix issue, I must say, that is not what I expected to see in my Fluke.

Report to moderator

Terabyte2007
Frequent Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #103 on: January 03, 2014, 10:32:32 pm »



Posts: 527
Country:

It is purpose that created us... That defines us..



CSmith

Supporter



Posts: 23
Country:



BravoV

Super Contributor



Posts: 7368
Country:

+++ ATH1



CSmith

Supporter



Posts: 23
Country:



mjlorton

Contributor



Posts: 44
Country:

www.YouTube.com/mjlorton



Looks like I am cracking open my 289 this weekend!

Report to moderator Logged

Eric Haney, MCSE, EE, DMC-D
Electronics Designer, Prototype Builder

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #104 on: January 03, 2014, 11:17:26 pm »

I opened up two of my Fluke 189's and two of my Fluke 289's, and their supercaps were all in pristine condition despite the passage of time, so some of the supercap's must be up to the challenge. I wonder if it is a supercap manufacturing quality issue such that there were bad batches, or whether there might be environmental influences that help spur them to go bad.

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #105 on: January 04, 2014, 05:01:59 am »

Quote from: CSmith on January 03, 2014, 11:17:26 pm

I opened up two of my Fluke 189's and two of my Fluke 289's, and their supercaps were all in pristine condition despite the passage of time, so some of the supercap's must be up to the challenge. I wonder if it is a supercap manufacturing quality issue such that there were bad batches, or whether there might be environmental influences that help spur them to go bad.

Interesting, how old are those 189s and 289s ?

Report to moderator Logged

> **YOUR FAV. BENCH LAB PSU**

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #106 on: January 05, 2014, 11:26:01 pm »

Quote from: BravoV on January 04, 2014, 05:01:59 am

Quote from: CSmith on January 03, 2014, 11:17:26 pm

I opened up two of my Fluke 189's and two of my Fluke 289's, and their supercaps were all in pristine condition despite the passage of time, so some of the supercap's must be up to the challenge. I wonder if it is a supercap manufacturing quality issue such that there were bad batches, or whether there might be environmental influences that help spur them to go bad.

Interesting, how old are those 189s and 289s ?

By purchase date, the 189's were acquired in 2002/12/05 and 2003/06/05.

By initial calibration date, the 289's were first calibrated in 2008/5/15 and 2009/6/15.

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #107 on: January 07, 2014, 12:43:02 am »

After posting a video on the issue I emailed Duane (Fluke). He has just responded with the following:

On 1/6/2014 6:40 PM, Smith, Duane wrote:> We are aware of the failures of this particular part. We are working with the vendor in hopes of determining why these particular parts are leaking.

> Customers who have units either where the cap has failed or experienced leakage can get their units repaired under warranty at their closest Fluke service facility.

> Since this part is soldered to the pcb, customer replacement is not recommended as it will void the units warranty.

>

> The capacitor specification says that the capacitor should draw <150 uA after 10 minutes.

- > If there were one measurement to take, it would be to measure battery draw with the unit off after applying the battery voltage for 10 minutes. The
- > current draw on failed caps will rise after 10 minutes.
- >
- > The good news is the supercap is only in the unit to maintain the units date and time. It has no other purpose. It does not support instrument memory or logged /saved readings.
- > After we hear back from our component vendor we will determine next steps needed if any but for the short-term customers who own units affected by this part can have it replaced
- > under warranty through Fluke service centers worldwide.
- >
- > Cheers, Duane

« Last Edit: January 07, 2014, 04:29:29 pm by mjlorton »

Report to moderator Logged

www.YouTube.com/mjlorton
Solar Power and Electronic Measurement Equipment

ModemHead

Frequent Contributor



Posts: 731

Country:

No user-serviceable parts inside.



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #108 on: January 07, 2014, 01:06:33 am »

Thanks for looking into this and posting the response. That explains why I have to reset the clock every time I change batteries, but never lose the logged data.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #109 on: January 07, 2014, 05:43:29 am »

Martin, thanks for the update, really appreciate it !

Quote from: mjlorton on January 07, 2014, 12:43:02 am

- >
- > The capacitor specification says that the capacitor should draw <150 uA after 10 minutes.
- > If there were one measurement to take, it would be to measure battery draw after 10 minutes. The
- > current draw on failed caps will rise after 10 minutes.
- >

Great info ! Now, I'm going to measure mine.

~~Curious on the time, why 10 minutes ?~~ Edit : NVM, found it in the cap datasheet.

« Last Edit: January 07, 2014, 05:45:40 am by BravoV »

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

Huluvu

Regular Contributor



Posts: 78

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #110 on: January 07, 2014, 07:06:29 am »

Quote from: mjlorton on January 07, 2014, 12:43:02 am

- > The good news is the supercap is only in the unit to maintain the units date and time. It has no other purpose. It does not support instrument memory or logged /saved readings.

What about removing the supercap permanently from the Meter?
I rarely use the logging capability.

Report to moderator Logged

"Yeah, but no, but yeah, but no..."

BravoV

Super Contributor



Posts: 7368

Country: 00

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« Reply #111 on: January 07, 2014, 07:16:27 am »

Quote from: Huluvu on January 07, 2014, 07:06:29 am

Quote from: mjloron on January 07, 2014, 12:43:02 am

> The good news is the supercap is only in the unit to maintain the units date and time. It has no other purpose. It does not support instrument memory or logged /saved readings.

What about removing the supercap permanently from the Meter?
I rarely use the logging capability.

Or maybe replace it with just ordinary lower capacitance cap, but good and reliable one ?

Report to moderator

Logged

> [YOUR FAV. BENCH LAB PSU](#)

jucole

Guest

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Reply

Quote

« Reply #112 on: January 08, 2014, 01:29:04 pm »

Someone posted a link to a Panasonic datasheet with what looked like to be the same super-cap. type; in the datasheet it specified the max. current draw to be 10uA and just wondered what the draw was on the Flukes and also the operating voltage; there seem to be 2 types which look very similar ; the EN and EM types but have different properties; for example the EN has a current limit of 10uA and can be reflowed upto 250c for 5 secs according the information at the start of the document but the EM type seems like it can only be reflowed to 240c, but yet has no max. current draw specified. It's interesting to note that the specification for the EN type mentioned the reflow of 240c but that conflicts with the information at the beginning of the document.

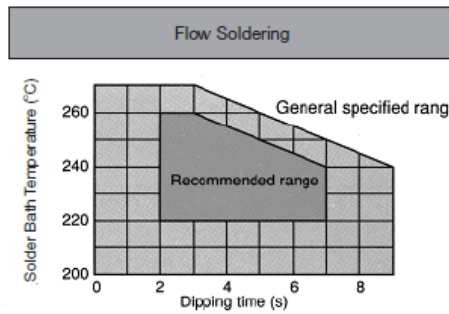
Did someone get the EN and EM types mixed up maybe? Or maybe they reflowed the EM type to the EN temperature described at the top of the document?

Looking at Mikes DMM, with the wide tabs it looks like a Type A, but is that an EN or EM?

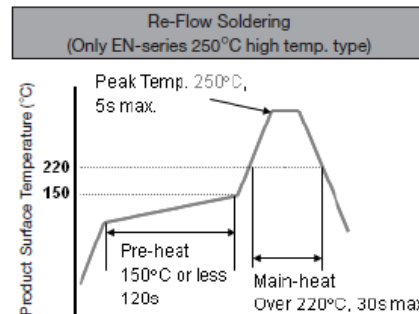
6. Heat stress during soldering

Excessive heat stress may result in the deterioration of the electrical characteristics of the capacitor, loss of vacuum, and electrolyte leakage due to the rise in internal pressure.

- If the tip of the soldering iron touches the capacitor's external sleeve, the sleeve will melt or rupture.
- Use the general reference charts to set soldering temperature versus time.



Pre-heating temperature : 110°C or under (on the surface of circuit board)
 100°C or under (on the surface of capacitor)
 Pre-heating time : 60 seconds or under
 Board thickness : 0.8 mm or more



Soldering time
 Reflow profile at 250°C.

7. Brown extraction

Brown extraction may occur around the sealing part depending on use conditions. This extraction is electrically non-conductive. Therefore, it does not influence in the electric characteristics.

4-2-2 Caution

1. This specification guarantees the quality and performance of the product as individual components. Before use, check and evaluate their compatibility when installed in your products.

2. Do not use the products beyond the specifications described in this document.

3. Electrolyte leakage: Electrolyte is used in the product. Misuse can result in rapid deterioration of characteristics and its functionality. Electrolyte leakages damage printed circuit and affects performance, characteristics, and functions of the circuit.

4. Over Voltage: If Gold Capacitor is used at a voltage exceeding its maximum operating voltage, not only is its life shortened but it may cause capacitor to leak or rupture.

5. Polarity: Be sure to verify the polarity of the capacitor before use. If a reverse voltage is applied for a long period of time, capacitor life is shortened and serious damage such as electrolyte leakage may occur.

08-01-2014 12-58-57.png (148.52 kB, 662x628 - viewed 685 times.)

Panasonic Gold Capacitors Technical Guide Product Specifications

Surface Mount Type
 Series: EN

Country of Origin: Japan

Features:

- No-flow soldering method available (240°C)
- Low-leakage (leakage current: 100 nA max.)
- Long life and environmentally friendly

Recommended Applications:

- Memory card/power supply to hold memory)
- Mobile phones, PDAs, digital cameras

Specifications:

Category temp. range	-10 to +40°C
Maximum Operating Voltage	3.3 V DC
Nominal Capacitance	0.2 F
Maximum Operating Current	10 μA MAX

Stability at low temperature and high temperature:

Category temp. range	-10 to +40°C
Capacitance change	±30% of initial measured value at +20°C
Internal resistance	±10 times of initial measured value at +20°C

Endurance:

Category temp. range	+20°C
Capacitance change	±20% of initial measured value at +20°C
Internal resistance	±2 times of initial measured value at +20°C

Short Life:

Category temp. range	+40°C
Capacitance change	±30% of initial measured value
Internal resistance	±1 k times or less

Dimensions in mm (not to scale):

Type A	Type B	Type RL

Standard Products:

Maximum Operating Voltage (VDC)	Capacitance (F)	Capacitance range (F)	Internal resistance (Ω at 1kHz)	Mass (g)	Part number	Min. packaging Qty
3.3	0.2	0.16 to 0.36	200	0.2 (approx.)	EECEMF00M1	2000

08-01-2014 12-45-47.png (342.62 kB, 1518x913 - viewed 589 times.)

Panasonic Electric Double Layer Capacitors(Gold Capacitor)EM

Surface Mount Type
 Series: EM

Country of Origin: Japan

Features:

- No-flow soldering method available (240°C)
- Low-leakage (leakage current: 100 nA max.)
- Long life and environmentally friendly

Recommended Applications:

- Memory card/power supply to hold memory)
- Cordless telephones, PDAs, digital cameras

Specifications:

Category temp. range	-25 to +70°C
Maximum Operating Voltage	2.5 V DC
Nominal Capacitance	0.2 F

Stability at low temperature and high temperature:

Category temp. range	-25 to +70°C
Capacitance change	±20% of initial measured value at +20°C
Internal resistance	±5 times of initial measured value at +20°C

Endurance:

Category temp. range	+70°C
Capacitance change	±30% of initial measured value
Internal resistance	±4 times of initial specified value

Short Life:

Category temp. range	+40 to 95% R.H.
Capacitance change	±20% of initial measured value
Internal resistance	±1 initial specified value

Dimensions in mm (not to scale):

Type A	Type B	Type R

Standard Products:

Maximum Operating Voltage (VDC)	Capacitance (F)	Capacitance range (F)	Internal resistance (Ω at 1kHz)	Mass (g)	Part Number	Min. packaging Qty
2.5	0.2	0.16 to 0.36	100	0.2 (Approx.)	EECEM020M1	2000

« Last Edit: January 08, 2014, 03:20:13 pm by jucole »

Report to moderator Logged

bernroth
 Regular Contributor

Posts: 126
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)
 « Reply #113 on: January 08, 2014, 09:52:32 pm »

Say Thanks Reply Quote

Just for the statistics: The problem is not only with the multimeters, the Fluke 1653 installation testers are affected too by this problem. I suspect the newer models 1653B/1654B using the same cap!

I recently bought two Fluke 1653 installation testers and while checking them internally I found exactly the same type of surface mount capacitors on the front panel leaking like hell. The testers are not the newest but honestly this must not happen.

I replaced them with two TH supercaps (rated 0.25F@5V) and everything is back working normal.

« Last Edit: January 08, 2014, 09:54:41 pm by bernroth »

Report to moderator Logged

mjlorton

Contributor



Posts: 44

Country:

www.YouTube.com/mjlorton



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #114 on: January 09, 2014, 01:17:03 pm »

Further feedback from Duane / Fluke:

"As a follow up to this discussion, I've attached the datasheet for the supercap. If you review Note 1 toward the bottom of the page, it makes note of "brown deposited materials found around the sealing area" and the fact that this material will not affect the electrical performance of the part. So, in essence in some situations this leakage could be found as normal under some environmental conditions. Regardless, we plan on still working with the vendor to clarify this further."

PanasonicCap.pdf (51.72 kB - downloaded 387 times.)

Report to moderator Logged

www.YouTube.com/mjlorton

Solar Power and Electronic Measurement Equipment

jucole

Guest

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Reply Quote

« Reply #115 on: January 09, 2014, 01:30:42 pm »

Quote from: mjlorton on January 09, 2014, 01:17:03 pm

I've attached the datasheet for the supercap.

Thanks Martin for clarifying the actual part number used.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #116 on: January 10, 2014, 09:21:22 am »

Even though its harmless, is it fair to expect from a high end Fluke's DMM series that use component that doesn't poo ? 🙄

Its very disappointing, especially they already knew it from the beginning. 🙄📱

Report to moderator Logged

[> YOUR FAV. BENCH LAB PSU](#)

eb4eqa

Regular Contributor



Posts: 98



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #117 on: January 10, 2014, 02:36:13 pm »

Hi all,

I found leakage on the top of the cap in my 289 (5 years old). I simply removed it since I don't change batteries that frequently but I do want to prevent further damage to the PCB.

I use eneloops in it and they last for a long time with the use I make of the meter. I am a big fan of those batteries, highly recommended.

Thanks from bringing this up,
Roberto EB4EQA

Report to moderator Logged

CSmith

Supporter



Posts: 23

Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #118 on: January 10, 2014, 04:25:11 pm »

I really do appreciate Fluke's continued use of common AA batteries in their handheld meters, especially compared to Agilent's (Keysight?) use of AAA batteries that do not last very long at all in



these more sophisticated meters.

Report to moderator Logged

ron
 Regular Contributor

 Posts: 87
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #119 on: January 10, 2014, 06:44:26 pm »

What corrosion? What "corrosive" material is in a cap? Remember that the original poster thought it was a battery cell.

I just checked my oldest 189 and sure enough the cap had obviously leaked. I used a tooth pick to remove the most of the dried brown crud (Latin term for dielectric?) and wiped the remaining residue off with a q-tip dampened with IPA. Looks clean now. Under a 20x loupe, I see no pitting or "corrosion" on the cap case. The residue is harmless except it indicates a failed or failing cap. Yes, this cap has a problem, but it isn't going to corrode the pcb or anything else. Don't panic. 😊

Report to moderator Logged

BravoV
 Super Contributor

 Posts: 7368
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #120 on: January 11, 2014, 11:31:22 am »

Quote from: ron on January 10, 2014, 06:44:26 pm

What corrosion? What "corrosive" material is in a cap? Remember that the original poster thought it was a battery cell.

I just checked my oldest 189 and sure enough the cap had obviously leaked. I used a tooth pick to remove the most of the dried brown crud (Latin term for dielectric?) and wiped the remaining residue off with a q-tip dampened with IPA. Looks clean now. Under a 20x loupe, I see no pitting or "corrosion" on the cap case. The residue is harmless except it indicates a failed or failing cap.

Yes, this cap has a problem, but it isn't going to corrode the pcb or anything else. Don't panic. 😊

If cap already oozed out so many of it's internal material, let alone this goo if its harmless, but then this raised few questions :

- Does the leakage current still at < 150uA as new one ?
- If the internal leakage is increasing, then how much ? Will the cap suck the battery charge significantly even the DMM is at OFF position, since its basically connected all the time to the battery.

Still don't have time to measure my 287s off current. 🙄

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

ron
 Regular Contributor

 Posts: 87
 Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #121 on: January 11, 2014, 08:09:02 pm »

Quote from: BravoV on January 11, 2014, 11:31:22 am

If cap already oozed out so many of it's internal material, let alone this goo if its harmless, but then this raised few questions :

- Does the leakage current still at < 150uA as new one ?
- If the internal leakage is increasing, then how much ? Will the cap suck the battery charge significantly even the DMM is at OFF position, since its basically connected all the time to the battery.

Still don't have time to measure my 287s off current. 🙄

The cap apparently failed open(or nearly open), as would be expected. Current draw in off position is <70uA. This meter does forget time when batteries are removed -- a non issue for me. I checked another 189 and 2 289's and they are OK. Using enerloops, battery life in all of my X89 meters is much better than spec.

Report to moderator Logged

SoundTech-LG
 Frequent Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote



Posts: 681
Country:

« Reply #122 on: January 27, 2014, 05:45:00 am »

Hi,

I'll have to tear into it and check, but I bought a 189 off ebay recently. When it arrived it was dead. Replaced the batteries, and it came right up. Curious now if the supercap is the reason.

[Report to moderator](#) [Logged](#)

SoundTech-LG

Frequent Contributor



Posts: 681
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #123 on: January 27, 2014, 05:24:05 pm »

Had the creeping crud... removed the cap entirely. Cleaned up the mess on the board. Not sure I will be installing a replacement. Never use logging storage. Oh, date/time... maybe I will replace!

[Report to moderator](#) [Logged](#)

true

Frequent Contributor



Posts: 302
Country:

INTERNET



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #124 on: January 29, 2014, 07:10:56 am »

Quote from: BravoV on January 07, 2014, 07:16:27 am

Quote from: Huluvu on January 07, 2014, 07:06:29 am

Quote from: mjlorton on January 07, 2014, 12:43:02 am

> The good news is the supercap is only in the unit to maintain the units date and time. It has no other purpose. It does not support instrument memory or logged /saved readings.

What about removing the supercap permanently from the Meter?
I rarely use the logging capability.

Or maybe replace it with just ordinary lower capacitance cap, but good and reliable one ?

I wrote this earlier in the thread, but I did just this and it works fine.

[Report to moderator](#) [Logged](#)

BravoV

Super Contributor



Posts: 7368
Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #125 on: January 29, 2014, 07:33:34 am »

Is there any significant change on the battery's life after the replacement ?

[Report to moderator](#) [Logged](#)

> [YOUR FAV. BENCH LAB PSU](#)

SoundTech-LG

Frequent Contributor



Posts: 681
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #126 on: January 29, 2014, 04:44:33 pm »

Besides my personal 189, we have one here at work that is used in the RF Lab daily. I inquired as to it's history of battery life, the main user says he thinks it typically lasts over one year. We have not however done an inspection of this one yet . I'm a bit confused on the exact purpose of the SuperCap. Does it's usefulness only come into play during battery swaps, when there is no other voltage present to maintain the memories? Mine is without one now, but if I just power off, and back on, it still seem to retain memory.

[Report to moderator](#) [Logged](#)

BravoV

Super Contributor



Posts: 7368
Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #127 on: January 29, 2014, 04:51:50 pm »

That cap's purpose is just to retain the dmm clock during batteries replacement, according to Fluke.

[Report to moderator](#) [Logged](#)

> [YOUR FAV. BENCH LAB PSU](#)

SoundTech-LG

Frequent Contributor



Posts: 681

Country:



tony3d

Frequent Contributor



Posts: 385

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #128 on: January 30, 2014, 05:07:00 pm »

Thanks... that's good to confirm, I was coming to that conclusion. I think I'll just leave it out. Obviously it caused more problems for Fluke, than it solved.

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #129 on: January 30, 2014, 06:31:15 pm »

According to CDI The life expectancy seems to be 2.8 years. That is dependent on several factors, one humidity must remain below 50%. Kinda strange for a meter meant to last 10 years!

Ultra High Capacitance, Small Case Size Options

Life Design	Type EDL supercapacitors have a useful lifetime that decreases with increasing operating temperature, humidity, applied-voltage, current and backup-time requirements. Expected lifetime is the product of four factors: Expected Life = (Lifetime)-(Temperature Factor)-(Voltage Factor)-(Moisture Factor)
Lifetime	The minimum rated life at 85 °C with 5.5 Vdc applied is 1000 hours with maximum permitted end-of-life capacitance change of -30% and a 4 times increase in internal resistance.
Temperature Factor	To determine the effect of temperature on expected life of a supercapacitor, use the fact that expected lifetime doubles for each 10 °C that the operating temperature is reduced. As an illustration, at 85 °C and full voltage the rated lifetime is 1000 hours. So, at 40 °C the expected lifetime would be multiplied by 2(85-40)/10 = 2^4.5 = 22.6 times. The Temperature Factor is 22.6, and for 1000-h, 85 °C rated life, the expected 40 °C life would be 22600 hours.
Voltage Factor	The rate of change of capacitance decreases with decreasing applied voltage. The effect on life extension is roughly proportional to the voltage derating, e.g., 5 V applied to 5.5 V rated supercapacitors extends the life 1.1 times.
Moisture Factor	Expected life of these supercapacitors is considerably shortened by operation in high humidity. The applications discussed here assume that the relative humidity is no more than 50%.
Expected Life Example	So, for a 5.5 V supercapacitor at 40 °C charged to 5.V in less than 50% RH the expected life is: Expected Life = (Lifetime) (Temperature Factor) (Voltage Factor) (Moisture Factor) = (1000 h) (22.6) (1.1) (1) = 24800 hours = 2.8 years
RoHS Compliant	

Screen Shot 2014-01-30 at 1.26.49 PM.jpg (385.39 kB, 1281x909 - viewed 668 times.)

Report to moderator Logged

stuartk

Regular Contributor



Posts: 102

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #130 on: February 13, 2014, 04:11:03 pm »

I cracked the case on my 289 purchased in 2007 and found the leaking capacitor. It was giving me intermittent loss of timekeeping.

I sent it off to Fluke Canada. Apparently they have a lifetime warranty up here in the frozen north.

They have replaced the cap, changed my scuffed up battery cover, changed the batteries and recalibrated it, with a certificate and documentation.

All for free. 😊

Kudos to Fluke Canada and thank you.

Stuart

Report to moderator Logged

Excavatoree

Frequent Contributor



Posts: 859

Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #131 on: February 13, 2014, 04:20:54 pm »

Has anyone found the Fluke part number for this capacitor? When one has a meter repaired under warranty, is this information given? I'd expect not, but since these aren't available in the US in



quantities less than 2000, I was considering ordering from Fluke. However, Fluke will do no parts research - one has to know the part number.

Report to moderator Logged

stuartk

Regular Contributor



Posts: 102
Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #132 on: February 13, 2014, 08:39:54 pm »

Say Thanks Reply Quote

No they didn't. They only said replaced capacitor C145...

Report to moderator Logged

dr.diesel

Super Contributor



Posts: 2213
Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #133 on: February 13, 2014, 08:46:50 pm »

Say Thanks Reply Quote

Quote from: Excavatoree on February 13, 2014, 04:20:54 pm

Has anyone found the Fluke part number for this capacitor?

Search back a few pages, I replaced mine with a \$2 part from Digikey.

Report to moderator Logged

Beware of Siglent

Excavatoree

Frequent Contributor



Posts: 859
Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #134 on: February 13, 2014, 08:56:47 pm »

Say Thanks Reply Quote

Quote from: dr.diesel on February 13, 2014, 08:46:50 pm

Quote from: Excavatoree on February 13, 2014, 04:20:54 pm

Has anyone found the Fluke part number for this capacitor?

Search back a few pages, I replaced mine with a \$2 part from Digikey.

I saw that. It looks like that's the only alternative for a non-warranty unit.

My 189 has the larger capacitor pictured earlier in this thread. It seems to be OK, but I didn't unsolder it to look underneath.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368
Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #135 on: February 14, 2014, 02:59:06 am »

Say Thanks Reply Quote

Quote from: stuartk on February 13, 2014, 04:11:03 pm

I cracked the case on my 289 purchased in 2007 and found the leaking capacitor. It was giving me intermittent loss of timekeeping.

I sent it off to Fluke Canada. Apparently they have a lifetime warranty up here in the frozen north.

They have replaced the cap, changed my scuffed up battery cover, changed the batteries and re-calibrated it, with a certificate and documentation.

All for free. 😊

Kudos to Fluke Canada and thank you.

Stuart

Stuart, closeup photo of the newly replaced cap please.

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

retiredcaps

Super Contributor



Posts: 3565

Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)« **Reply #136 on:** February 14, 2014, 04:34:29 am »**Quote from: stuartk on February 13, 2014, 04:11:03 pm**

I sent it off to Fluke Canada. Apparently they have a lifetime warranty up here in the frozen north.

All for free. 😊

Hi Stuart,

Are you the original owner of the meter and did you purchase it from an authorized dealer?

edit: The other advantage of sending it back to Fluke for repair, especially if you owned the meter for a few years, is that you might get calibration thrown in for free.

« *Last Edit:* February 14, 2014, 04:43:35 am by retiredcaps »

[Report to moderator](#) [Logged](#)

 SoundTech-LG

Frequent Contributor



Posts: 681

Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)« **Reply #137 on:** February 16, 2014, 06:13:30 pm »**Quote from: BravoV on February 14, 2014, 02:59:06 am****Quote from: stuartk on February 13, 2014, 04:11:03 pm**

I cracked the case on my 289 purchased in 2007 and found the leaking capacitor. It was giving me intermittent loss of timekeeping.

I sent it off to Fluke Canada. Apparently they have a lifetime warranty up here in the frozen north.

They have replaced the cap, changed my scuffed up battery cover, changed the batteries and re-calibrated it, with a certificate and documentation.

All for free. 😊

Kudos to Fluke Canada and thank you.

Stuart

Stuart, closeup photo of the newly replaced cap please.

Probably would void the calibration 😊

[Report to moderator](#) [Logged](#)

 stuartk

Regular Contributor



Posts: 102

Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)« **Reply #138 on:** February 17, 2014, 12:38:48 am »

Yep,

I'm the original owner. I was going to crack the case, but they put the calibration sticker and a tamper sticker over the case.

I think they were trying to send a message to me after I sent them a picture of my leaking cap! 😊

I suspect I might mess up the calibration if I crack it in anyhow....

Stuart



Fluke Sticker 003.jpg (151 kB, 1280x960 - viewed 935 times.)



Fluke Sticker 004.jpg (94.54 kB, 1280x960 - viewed 812 times.)

Report to moderator Logged

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #139 on: February 17, 2014, 05:20:33 am »

Say Thanks Reply Quote

Quote from: stuartk on February 17, 2014, 12:38:48 am

I'm the original owner. I was going to crack the case, but they put the calibration sticker and a tamper sticker over the case.


Well, thanks for reporting back. I wouldn't break the seals either if it were my meter.

Report to moderator  Logged **BravoV**

Super Contributor



Posts: 7368

Country: 

+++ ATH1

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #140 on: February 17, 2014, 08:17:14 am »

Say Thanks Reply Quote

+1 , thanks for the update.


I guess we'll have to wait at least until next year to be able to peek the replaced cap in Stuart's 289.

Report to moderator  Logged[> YOUR FAV. BENCH LAB PSU](#) **SoundTech-LG**

Frequent Contributor



Posts: 681

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #141 on: February 18, 2014, 01:28:56 am »

Say Thanks Reply Quote


One, or two things seem pretty certain. One funky Super Cap does not ruin the Fluke reputation. Fluke equipment holds it's value, particularly the handhelds. They get re-sold for quite respectable sums on a regular basis. This, in contrast to the junk meters that you toss in the trash.

Report to moderator  Logged **BravoV**

Super Contributor



Posts: 7368

Country: 


+++ ATH1

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #142 on: February 18, 2014, 02:00:14 am »

Say Thanks Reply Quote

Agree, apart from the ultra-cap problem, have to admit this 28x series build quality is excellent.

I was very impressed when seeing Martin tested his 287 in freezing cold in the chill box, the measurement result was still spot on with it's spec at operating temp -20 °C to 55 °C. 


« Last Edit: February 18, 2014, 02:05:38 am by BravoV »

Report to moderator  Logged[> YOUR FAV. BENCH LAB PSU](#) **elex_enthusiast**

Regular Contributor



Posts: 95

Country: 

Everything has user-salvageable parts inside!!!!

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #143 on: February 18, 2014, 12:41:27 pm »

Say Thanks Reply Quote

hi guys..

i have a 1 year old fluke287 and it consumes battery much faster..i opened the case and i saw the same cap corroding.. i wonder if a 0.06F supercap i have could be a good replacement?

Report to moderator  Logged

aahh bad english

 kaz911

Super Contributor



Posts: 1023

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**


« Reply #144 on: February 27, 2014, 09:17:16 am »

Say Thanks Reply Quote

Quote from: elex_enthusiast on February 18, 2014, 12:41:27 pm

hi guys..

i have a 1 year old fluke287 and it consumes battery much faster..i opened the case and i saw the same cap corroding.. i wonder if a 0.06F supercap i have could be a good replacement?

Don't fix them. I just handed a 289 and a 287 into Fluke and they will be repaired on warranty despite being quite old  Fluke has "Limited World Wide" warranty on them - and they have a list of serial numbers for which repair is free of charge. As I only paid \$200 for my 289 since it was not perfect - I'm now very happy that has been fixed on warranty as well.

And to quote the Calibration girl - 287/289's are really well made apart from the Cap issue - so they are usually in spec/calibration even after 6+ years - they have so far not seen a working 287/289 that was NOT within spec if it had not been "mishandled"

Report to moderator  Logged

elex_enthusiast

Regular Contributor



Posts: 95

Country:

Everything has user-salvageable parts inside!!!!



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #145 on: February 27, 2014, 09:45:12 am »

Say Thanks

Reply

Quote

Quote from: kaz911 on February 27, 2014, 09:17:16 am

Don't fix them. I just handed a 289 and a 287 into Fluke and they will be repaired on warranty despite being quite old 😊 Fluke has "Limited World Wide" warranty on them - and they have a list of serial numbers for which repair is free of charge. As I only paid \$200 for my 289 since it was not perfect - I'm now very happy that has been fixed on warranty as well.

And to quote the Calibration girl - 287/289's are really well made apart from the Cap issue - so they are usually in spec/calibration even after 6+ years - they have so far not seen a working 287/289 that was NOT within spec if it had not been "mishandled"

well the problem is i cant find any fluke service center here in Philippines 🙄..so im thinking the best thing to do is to replace the cap myself just like others did..i love my fluke but i hate the way it consumes the battery 🙄

« Last Edit: February 27, 2014, 09:47:44 am by elex_enthusiast »

Report to moderator Logged

aahh bad english

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #146 on: February 27, 2014, 10:36:28 am »

Say Thanks

Reply

Quote

Quote from: elex_enthusiast on February 27, 2014, 09:45:12 am

well the problem is i cant find any fluke service center here in Philippines 🙄..so im thinking the best thing to do is to replace the cap myself just like others did..i love my fluke but i hate the way it consumes the battery 🙄

Are you sure the cap is bad, the 28x is a battery hog even with a good cap?

Mine was drawing something like 10mA when powered off, if you have the means you might test yours. If you look back in this thread there is a spec, in the uA is what it should draw when working correctly.

Report to moderator Logged

[Beware of Siglent](#)

kaz911

Super Contributor



Posts: 1023

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #147 on: February 27, 2014, 10:53:05 am »

Say Thanks

Reply

Quote

Quote from: elex_enthusiast on February 27, 2014, 09:45:12 am

Quote from: kaz911 on February 27, 2014, 09:17:16 am

Don't fix them. I just handed a 289 and a 287 into Fluke and they will be repaired on warranty despite being quite old 😊 Fluke has "Limited World Wide" warranty on them - and they have a list of serial numbers for which repair is free of charge. As I only paid \$200 for my 289 since it was not perfect - I'm now very happy that has been fixed on warranty as well.

And to quote the Calibration girl - 287/289's are really well made apart from the Cap issue - so they are usually in spec/calibration even after 6+ years - they have so far not seen a working 287/289 that was NOT within spec if it had not been "mishandled"

well the problem is i cant find any fluke service center here in Philippines 🙄..so im thinking the best thing to do is to replace the cap myself just like others did..i love my fluke but i hate the way it consumes the battery 🙄

I handed mine into a distributor - not Fluke direct. So any distributor can verify warranty recalls

Mine has been off to Holland for repair as the local guys does not do any repairs. All at no cost to me.

Report to moderator Logged

kaz911

Super Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #148 on: February 27, 2014, 10:56:22 am »

Say Thanks

Reply

Quote



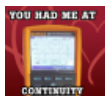
Posts: 1023

Country:



elex_enthusiast

Regular Contributor



Posts: 95

Country:

Everything has user-salvageable parts inside!!!!



and the quick way to check CAP problem - put in new batteries - check time and date is fine. Leave on for a couple of minutes. Shut it down. Remove the batteries - count to 10 - plug batteries back in. If it asks for time/date - you have a super-cap issue.

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #149 on: February 27, 2014, 12:20:05 pm »

yes it does ask to reset the time/date..

Quote from: dr.diesel on February 27, 2014, 10:36:28 am

Mine was drawing something like 10mA when powered off, if you have the means you might test yours.

unfortunately i have no other reliable meter i can use to measure its current draw but im pretty sure the cap is bad..

« Last Edit: February 27, 2014, 01:48:10 pm by elex_enthusiast »

Report to moderator Logged

aahh bad english

Excavatoree

Frequent Contributor



Posts: 859

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #150 on: February 27, 2014, 01:03:47 pm »

Quote from: mikeselectricstuff on November 05, 2013, 08:32:21 pm

Just had a look in my 287 - some signs of corrosion on the cap

Great. I tried to order the Elna part to replace my capacitor (small type, like Mike's picture above) and Digi-Key and Mouser are out of stock.

The Panasonic part is only available in quantities of 2000 or more.

Are those the only choices?

For the larger cap used in the 189 and 89-V, is the parts situation any better? I may have missed it, but I haven't seen any recommended part numbers to replace this one.

Do I need to unsolder it and check underneath, or would leakage be visible from the top?

Maybe I'll make a Wiki page about this to summarize all the information and ask Dave to add it.

« Last Edit: April 02, 2014, 02:00:13 am by Excavatoree »

Report to moderator Logged

sotos

Frequent Contributor



Posts: 256

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #151 on: February 27, 2014, 03:00:14 pm »

Have the same problem.

Report to moderator Logged

tsmith35

Frequent Contributor



Posts: 262

Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #152 on: February 27, 2014, 07:10:33 pm »


Quote from: Excavatoree on February 27, 2014, 01:03:47 pm

Great. I tried to order the Elna part to replace my capacitor (small type, like Mike's picture above) and Digi-Key and Mouser are out of stock.


Just get this instead: <http://www.digikey.com/product-detail/en/DSK-3R3H224U-HL/604-1020-1-ND/970232>

Very slightly taller, but with 0.22F instead of the original 0.20F, and same footprint as the original.

sotos
Frequent Contributor



Posts: 256
Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #153 on: February 27, 2014, 08:00:15 pm »

Quote from: tsmith35 on February 27, 2014, 07:10:33 pm

Quote from: Excavatoree on February 27, 2014, 01:03:47 pm

Great. I tried to order the Elna part to replace my capacitor (small type, like Mike's picture above) and Digi-Key and Mouser are out of stock.

Just get this instead: <http://www.digkey.com/product-detail/en/DSK-3R3H224U-HL/604-1020-1-ND/970232>

Very slightly taller, but with 0.22F instead of the original 0.20F, and same footprint as the original.

Why not this?

<http://export.farnell.com/taiyo-yuden/pas414hr-va5r/cap-super-60000uf-3-3v-smd/dp/2112777>

tsmith35
Frequent Contributor



Posts: 262
Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #154 on: February 28, 2014, 01:19:45 am »


Quote from: sotos on February 27, 2014, 08:00:15 pm

Why not this?

<http://export.farnell.com/taiyo-yuden/pas414hr-va5r/cap-super-60000uf-3-3v-smd/dp/2112777>


60000uf is only .06F, about 30% as much capacitance as the original.

BravoV
Super Contributor



Posts: 7368
Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #155 on: February 28, 2014, 02:04:59 am »

Quote from: Excavatoree on February 27, 2014, 01:03:47 pm

Are those the only choices?

Whats wrong with the CDE cap that I proposed earlier at post #38 ? DK part no 338-3477-ND and its available.

Panasonic cap is not even in the same league when it comes to reliability and long term life compared to this one.

Though you will need to bend it's pin to fit in the foot print, but not a big deal imo.

« Last Edit: February 28, 2014, 02:09:06 am by BravoV »

> [YOUR FAV. BENCH LAB PSU](#)

Excavatoree
Frequent Contributor



Posts: 859
Country:



Re: Fluke 189 with leaking surface mount coin cell

Say Thanks Reply Quote

« Reply #156 on: February 28, 2014, 03:47:31 am »

Quote from: BravoV on February 28, 2014, 02:04:59 am

Quote from: Excavatoree on February 27, 2014, 01:03:47 pm

Are those the only choices?

Whats wrong with the CDE cap that I proposed earlier at post #38 ? DK part no 338-3477-ND and its available.

Panasonic cap is not even in the same league when it comes to reliability and long term life compared to this one.

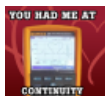
Though you will need to bend it's pin to fit in the foot print, but not a big deal imo.

Ah, I forgot. That's one reason I thought it might be better to put a summary of such information in one place. When it's spread out over several pages in a thread, things can get lost.

Report to moderator Logged

elex_enthusiast

Regular Contributor



Posts: 95

Country:

Everything has user-salvageable parts inside!!!!



Re: Fluke 189 with leaking surface mount coin cell

« Reply #157 on: February 28, 2014, 04:04:29 am »

Say Thanks Reply Quote

Quote from: tsmith35 on February 28, 2014, 01:19:45 am

60000uf is only .06F, about 30% as much capacitance as the original. [/quote]

will it affect the performance of the meter? i have the same cap stocked on my bin and i thought of using it to replace the bad cap on my meter..

Report to moderator Logged

aahh bad english

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount coin cell

« Reply #158 on: February 28, 2014, 05:03:08 am »

Say Thanks Reply Quote

Quote from: elex_enthusiast on February 28, 2014, 04:04:29 am

will it affect the performance of the meter?

No, that cap's purpose is just as a backup power for the dmm's clock & calendar during the batteries swapping period.

Not a very serious problem imo, especially you rarely use the logging feature.

Just make sure the new replacement cap has low leakage, other wise it will drain the batteries power even its powered off, as the example of the original cap does when its deteriorated. 🙄

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

sotos

Frequent Contributor



Posts: 256

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #159 on: February 28, 2014, 05:46:52 am »

Say Thanks Reply Quote

I think it's not a problem to leave it out, if you don't need the clock and calendar when swapping batteries.

Report to moderator Logged

elex_enthusiast

Regular Contributor



Posts: 95

Country:

Everything has user-salvageable parts inside!!!!



Re: Fluke 189 with leaking surface mount coin cell

« Reply #160 on: February 28, 2014, 06:05:44 am »

Say Thanks Reply Quote

Quote from: BravoV on February 28, 2014, 05:03:08 am

Quote from: elex_enthusiast on February 28, 2014, 04:04:29 am

will it affect the performance of the meter?

No, that cap's purpose is just as a backup power for the dmm's clock & calendar during the batteries swapping period.

Not a very serious problem imo, especially you rarely use the logging feature.

Just make sure the new replacement cap has low leakage, other wise it will drain the batteries power even its powered off, as the example of the original cap does when its deteriorated. 🙄

yeah i seldom use its logging feature..i only use the meter to measure parameters of the projects im working in my bench..i just want to be sure that replacing the bad cap with a lower capacitance wont affect the performance of my meter since i dont have any reference service manual..does anyone here did the same thing??

i was wondering why fluke didnt use a standard CMOS battery instead of those shitty caps to back-up the date/time of the meter 🙄... does it makes any difference?

[Report to moderator](#) [Logged](#)

aahh bad english

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #161 on:** February 28, 2014, 10:36:26 am »

The cap has no effect on meter performance. It only holds the date/time/backlight settings, no cal data.

[Report to moderator](#) [Logged](#)

[Beware of Siglent](#)

t95mwp

Newbie



Posts: 2

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

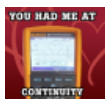
« **Reply #162 on:** March 27, 2014, 10:02:30 pm »

Hi folks,I replaced mine capacitor on 189 after it died and never come back alive. Anything else known wrong with this meter,yes I installed capacitor right and new fresh batteries 😊. Thanks

[Report to moderator](#) [Logged](#)

elex_enthusiast

Regular Contributor



Posts: 95

Country:

Everything has user-salvageable parts inside!!!!



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #163 on:** March 29, 2014, 07:05:47 am »

Quote from: dr.diesel on February 28, 2014, 10:36:26 am

The cap has no effect on meter performance. It only holds the date/time/backlight settings, no cal data.

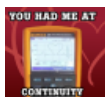
indeed.. i have replaced mine with a 0.06F bnew cap and it worked fine..thanks for the advice..this time the date/clock remains after i remove the battery for 10-15 sec...

[Report to moderator](#) [Logged](#)

aahh bad english

elex_enthusiast

Regular Contributor



Posts: 95

Country:

Everything has user-salvageable parts inside!!!!



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #164 on:** March 29, 2014, 07:10:33 am »

Quote from: t95mwp on March 27, 2014, 10:02:30 pm

Hi folks,I replaced mine capacitor on 189 after it died and never come back alive. Anything else known wrong with this meter,yes I installed capacitor right and new fresh batteries 😊. Thanks

maybe the supercap is not an issue with your dmm..have you checked the board..?

[Report to moderator](#) [Logged](#)

aahh bad english

Marvin

Contributor

Posts: 45

Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #165 on:** April 01, 2014, 09:16:42 am »



This is interesting - I received my brand new 289 with manufacturer date of 30. Sept 2013 and it has calibration count of 2! It was not 100% official channel but a reliable seller from eBay and it really looks like it was brand new in box - and the box serial/manufacturing date stickers and all match. Could it be that it was manufactured on that date and then when the capacitor issue became public a week later they already refitted the fix in it or this is just some strange coincidence it coming out of factory with 2 calibrations? Can't open it up to see the soldering on the capacitor as the case is closed with a tamperproof sticker and I don't want to invalidate it.

Got to love friends who visit USA once and a while and agree to bring stuff over the pond in their bags 😊

Report to moderator Logged

t95mwp

Newbie



Posts: 2

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #166 on: April 01, 2014, 03:12:09 pm »

Quote from: elex_enthusiast on March 29, 2014, 07:10:33 am

Quote from: t95mwp on March 27, 2014, 10:02:30 pm

Hi folks,I replaced mine capacitor on 189 after it died and never come back alive. Anything else known wrong with this meter,yes I installed capacitor right and new fresh batteries 😊. Thanks

maybe the supercap is not an issue with your dmm..have you checked the board..?

It was bad definitely,it started with would not turn on all the time and by changing batteries would fix the problem for the while then finally died.Board is super clean no damage of leaking and I installed new capacitor that was purchased form digi-key and recommended here on the board.

Report to moderator Logged

smoothtalker

Regular Contributor



Posts: 76

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #167 on: April 01, 2014, 03:47:35 pm »

Quote from: Marvin on April 01, 2014, 09:16:42 am

This is interesting - I received my brand new 289 with manufacturer date of 30. Sept 2013 and it has calibration count of 2! It was not 100% official channel but a reliable seller from eBay and it really looks like it was brand new in box - and the box serial/manufacturing date stickers and all match. Could it be that it was manufactured on that date and then when the capacitor issue became public a week later they already refitted the fix in it or this is just some strange coincidence it coming out of factory with 2 calibrations? Can't open it up to see the soldering on the capacitor as the case is closed with a tamperproof sticker and I don't want to invalidate it.

Got to love friends who visit USA once and a while and agree to bring stuff over the pond in their bags 😊

your best bet is to check with fluke directly! email them the serial number.

Anyway i don't think the super capacitor affects the cal. it's job is just to retain the dates etc as mentioned previously.

Report to moderator Logged

Marvin

Contributor

Posts: 45

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #168 on: April 01, 2014, 04:14:01 pm »

If you open the case it is instant calibration void (technically that is, of course if you have a new sticker etc you can close it and put a new sticker on it) - that's what I'm thinking - the manufacturing date on the box match the calibration date in the unit but the count is 2. Maybe they opened it before sending it out and fixed something? So it is officially factory calibrated but 2 times.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #169 on: April 01, 2014, 04:57:36 pm »

Marvin, an intriguing new Fluke 289 with 2 cal counts.

Any chance taking the photo of the tamper proof seal, or does it look similar to this [example here](#), and also whats the firmware version it has in there ?

> [YOUR FAV. BENCH LAB PSU](#)

Marvin

Contributor

Posts: 45

Country:

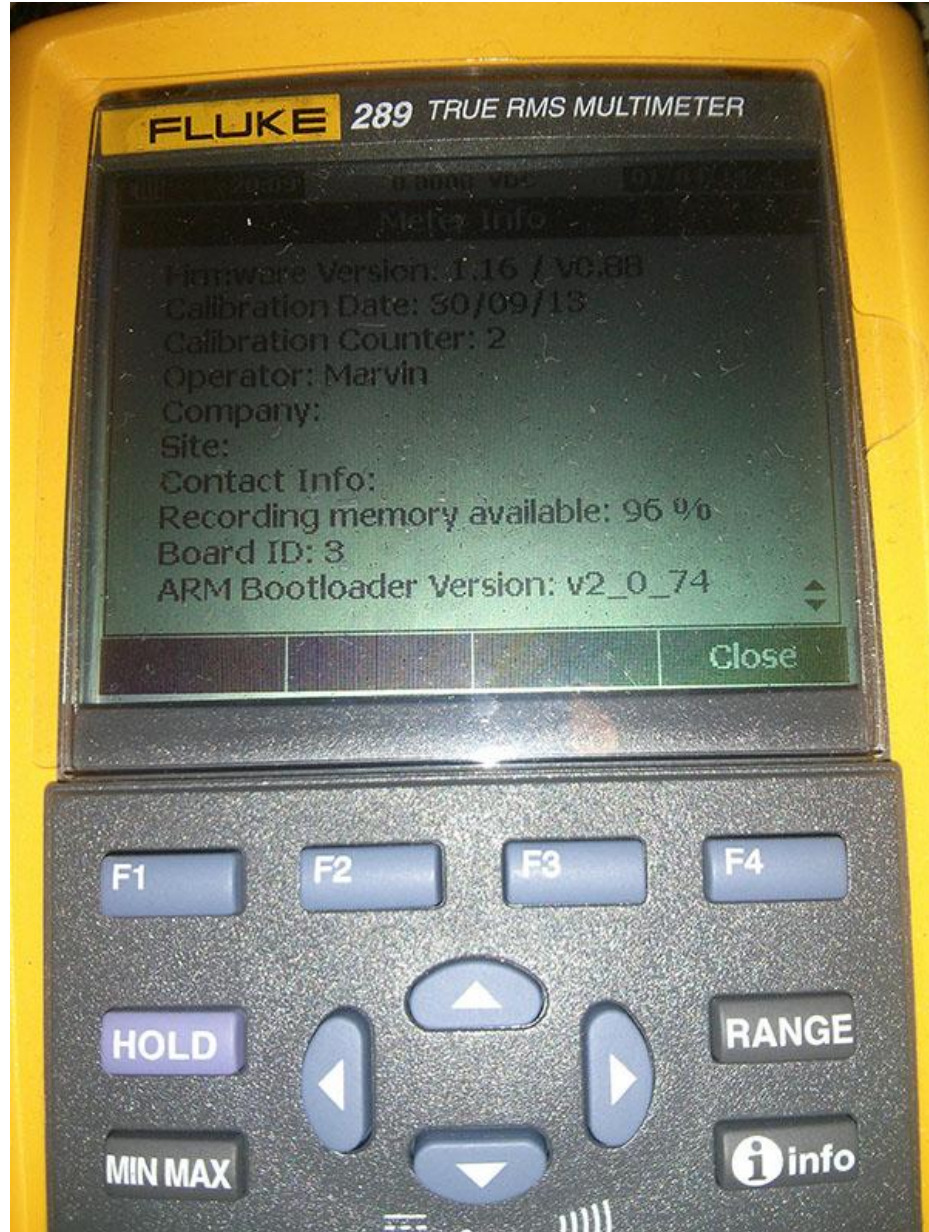


Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

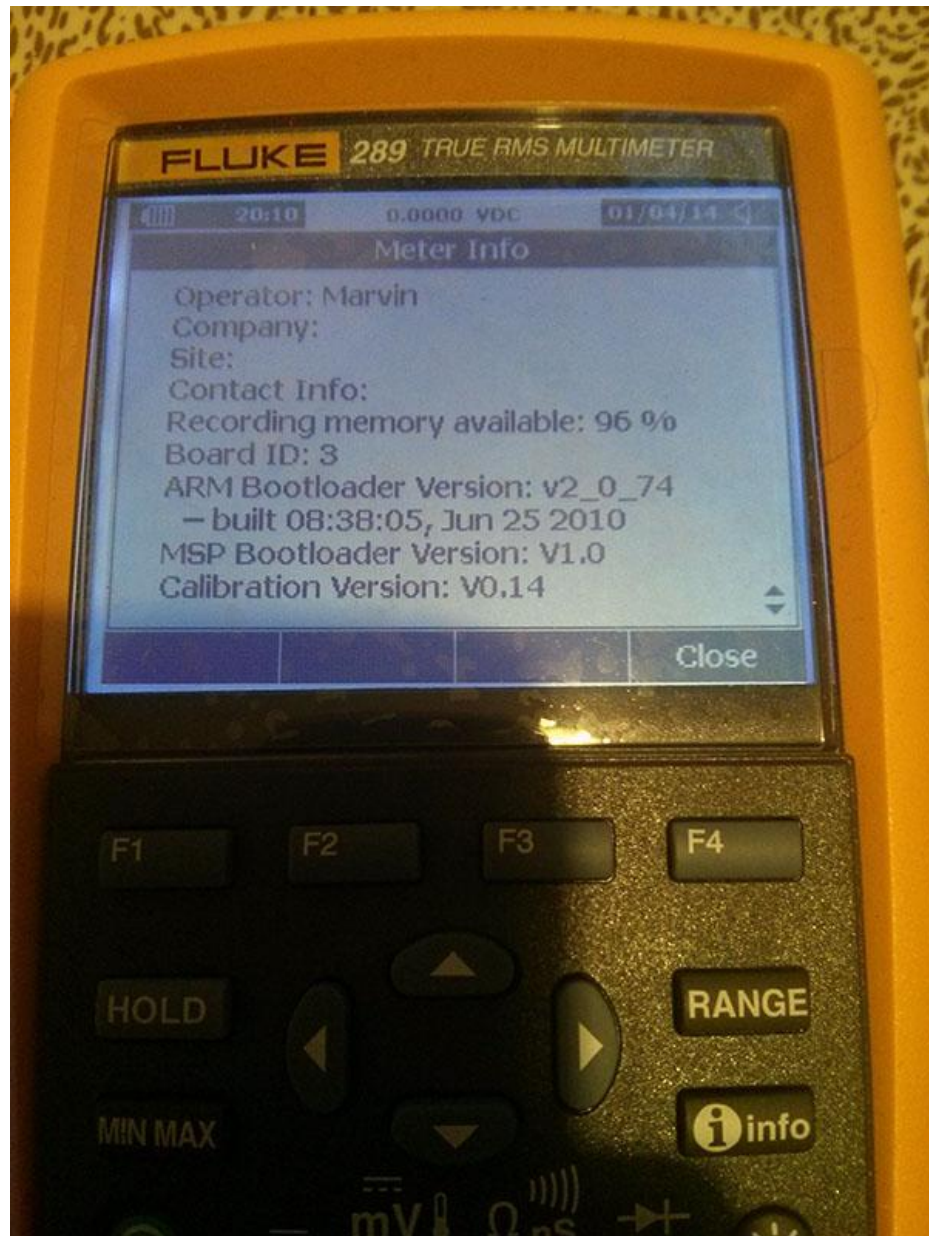
Say Thanks Reply Quote

« Reply #170 on: April 01, 2014, 05:18:12 pm »

Here you go. I bought the cable too and changed the owner name if you are wondering if it came like that - nope.



289_1.jpg (182.65 kB, 600x800 - viewed 718 times.)



289_2.jpg (114.57 kB, 600x800 - viewed 723 times.)



289_3.jpg (94.55 kB, 600x800 - viewed 649 times.)



289_4.jpg (106.61 kB, 600x800 - viewed 646 times.)

Report to moderator Logged

BravoV
 Super Contributor

 Posts: 7368
 Country: 00
 +++ ATH1

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #171 on: April 01, 2014, 05:36:13 pm »

Marvin, thanks for the photos, looks legit to me, and its also has the latest firmware too.

Pretty sure its also came with the Fluke's factory calibration paper that has the exact date printed as in your meter info, right ? Example from my 287 -> [HERE](#).

Well, at least you still have quite some time before the cap start to poo since its quite new, congratulation, enjoy that good DMM.

PS : Suggesting NOT to use alkaline cells as it will leak as it happened to mine , good NiMH cells work just fine like Eneloop.

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

Marvin
 Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote


« Reply #172 on: April 01, 2014, 05:38:21 pm »


Posts: 45
Country: 

casinada
Frequent Contributor


Posts: 600
Country: 


dr.diesel
Super Contributor




Posts: 2213
Country: 
Cramming the magic smoke back in...

TVman
Frequent Contributor





Posts: 260
Country: 
Life is A bunch of people staring at computers. ;)

casinada
Frequent Contributor


Posts: 600
Country: 

retiredcaps
Super Contributor


Posts: 3565
Country: 

Yes, just like that. Only added LoZ and LoOhm measurements. Date/serial matches.

Report to moderator  Logged

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #173 on: April 01, 2014, 08:48:38 pm »

Interesting that yours shows 96% memory like other people reported. Mine shows 100% but I think I have the supercap problem since it loses the date and time each time I change batteries. It also drains batteries fast until it shows only two bars and then stays there (have eneloops now). I don't know if a problem supercap increases current drain 😞

Report to moderator  Logged

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #174 on: April 01, 2014, 09:09:40 pm »

Quote from: casinada on April 01, 2014, 08:48:38 pm

I don't know if a problem supercap increases current drain 😞

Yes, a shorted cap will contribute to battery drain. Mine would be completely dead in about a week without use on Alkaline batts.


Report to moderator  Logged

Beware of Siglent

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #175 on: April 01, 2014, 09:15:56 pm »

You need to replace that capacitor! 😞
Otherwise it will be  forever!

Report to moderator  Logged

Yeah, I play Minecraft!
But I'm on here more because I learn more. 😞

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #176 on: April 01, 2014, 09:19:36 pm »

dr Diesel,
Did you repair it yourself or sent it to Fluke?
I purchased mine second hand.

Report to moderator  Logged

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #177 on: April 01, 2014, 10:20:17 pm »

Quote from: t95mwp on April 01, 2014, 03:12:09 pm

It was bad definitely, it started with would not turn on all the time and by changing batteries would fix the problem for the while then finally died.

Check the battery contact strips to make sure they are making contact with the pcb. You might have bent them while putting the back cover on?

See modemhead's pictures here.

http://mrmodemhead.com/blog/wp-content/gallery/f189_00/F189_026.JPG

If they seem okay, see if the PCB is getting any voltage from the 4 AA batteries?

Report to moderator  Logged

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #178 on: April 01, 2014, 10:54:26 pm »

Quote from: casinada on April 01, 2014, 09:19:36 pm

dr Diesel,
Did you repair it yourself or sent it to Fluke?
I purchased mine second hand.

Yup replaced myself, no need to wait weeks/months for Fluke and a \$2 part, took 2 minutes.

Disclaimer, you'll likely void your warranty if there is any left. If you search back on this thread I posted the Digikey part number I used.

Report to moderator Logged

[Beware of Siglent](#)

casinada

Frequent Contributor



Posts: 600

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #179 on: April 02, 2014, 05:02:09 am »

Got RMA for my Fluke 289 today. I'm shipping to Everett Washington tomorrow. They said that turnaround is 5 days, I can live with that. Never sent a unit to Fluke before, I want to see what happens.

Report to moderator Logged

tsmith35

Frequent Contributor



Posts: 262

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #180 on: April 02, 2014, 10:57:49 am »

Casinada, units I've sent in to them in the past were cleaned and calibrated. They have pretty nice service.

Report to moderator Logged

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #181 on: April 02, 2014, 11:21:15 am »

Casinada, what type of damage did you claim at the RMA declaration ? Just bad cap ?

Too bad its sealed, really curious what type of cap Fluke used for the replacement. 😞

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

casinada

Frequent Contributor



Posts: 600

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #182 on: April 19, 2014, 01:14:22 am »

I sent the Fluke 289 on April 2nd and they shipped it back on April 17th. I should be getting it back sometime next week.

I called and told them that the each time I changed the batteries I had to reset the time and date and that it was draining the batteries faster than normal otherwise the DMM was working great. It must be something very common as they didn't ask any questions and generated an RMA. Originally they told me that the turnaround was 5 business days but when I called Tech support on Tuesday they told me that the backlog was around four weeks. I'll report further when I get the unit back. So far the service has been top notch. 😊

Report to moderator Logged

casinada

Frequent Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote



Posts: 600

Country:



« Reply #183 on: April 23, 2014, 12:33:08 am »

I got the Repaired Fluke 289 today:

Service detail:

Problem description: Does not hold time, drains battery.

Repair description: Diagnosis: confirmed the problem

Replaced C145, Ready for cal

The calibration was verified with a Fluke 5520A Calibrator and found in tolerance.

They sent a calibration certificate but without values 😞

Overall great service 🙌😊

Report to moderator Logged

 tsmith35

Frequent Contributor



Posts: 262

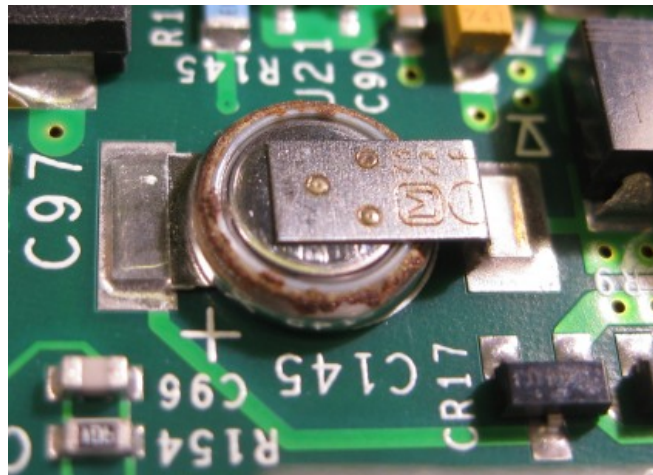
Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #184 on: April 23, 2014, 03:30:16 am »

Say Thanks Reply Quote

Well, C145 is the supercap, so that solves that.



Looks like you got a nice turnaround time. Glad to hear it worked out for you.

Report to moderator Logged

 Jay_Diddy_B

Super Contributor



Posts: 2629

Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #185 on: May 13, 2014, 03:52:18 am »

Say Thanks Reply Quote

Hi,

I can report two DIY fixes of Fluke 289s.

Unit 1

Symptoms: unit works fine, all reading correct, kills the batteries in a few days, even if switched off.

Findings:

Measured current consumption around 30 mA when off. Removed the CAP C145, off current dropped to 45uA

Connected C145 to power supply, set 3.3V with mA meter in series. Test confirmed bad supercap.

Fix: Replaced the super capacitor with Panasonic Coin Super Capacitor 0.33F 5.5V EEC-S0HD334H

(This is larger than the original but it can be made to fit)

Unit 2

Symptoms: unit works fine, all reading correct, loses time and data if batteries are removed for about 10 minutes

Findings:

Measured current consumption around 2 mA when off. Removed the CAP C145, off current dropped to

45uA

Connected C145 to power supply, set 3.3V with mA meter in series. Test confirmed bad supercap.

Fix: Replaced the super capacitor with Panasonic Coin Super Capacitor 0.33F 5.5V EEC-S0HD334H

(This is larger than the original but it can be made to fit)

I think that Panasonic was optimistic in rating the original part at 3.3V. Typical values are 2.7V for a single capacitor and 5.5V for the parts that internally have two capacitors in series.

Unit 3

This is a unit that I purchased new and has very few hours of use. The current consumption of this meter was 45uA when off.

Regards,

Jay_Diddy_B

Report to moderator Logged

The following users thanked this post: Marco1971

casinada
Frequent Contributor

Posts: 600
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #186 on: May 13, 2014, 05:30:12 am »

Good job Jay.

Why didn't you send them to Fluke? At least they do a Calibration verification after the repair. 😞

Report to moderator Logged

BravoV
Super Contributor

Posts: 7368
Country:
+++ ATH1

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #187 on: May 13, 2014, 07:26:34 am »

Quote from: Jay_Diddy_B on May 13, 2014, 03:52:18 am

... current consumption around 30 mA when off.

Wow .. 30mA !!!! 🤔

Those darn cap are sucking the batteries power so bad even the meter is turned off, I guess they will be sucked dried in days.

Btw, did you measure the capacitance of those goo oozing bad caps ? How much left ?

JDB, thanks for reporting this. 👍

Report to moderator Logged

> [YOUR FAV. BENCH LAB PSU](#)

xwarp
Frequent Contributor

Posts: 360
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #188 on: May 13, 2014, 07:58:23 am »

Quote from: Jay_Diddy_B on May 13, 2014, 03:52:18 am

Fix: Replaced the super capacitor with Panasonic Coin Super Capacitor 0.33F 5.5V EEC-S0HD334H

(This is larger than the original but it can be made to fit)

What had to be done for the new cap to be made to fit?

If this cap is nothing more than being used to keep the time in memory for the time it takes to replace batteries, then can a lower voltage be used if the size is closer to the original?

[Report to moderator](#) Logged

WVL_KsZeN

Regular Contributor



Posts: 92

Country:



Jay_Diddy_B

Super Contributor



Posts: 2629

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #189** on: May 13, 2014, 08:03:44 am »

[Say Thanks](#) [Reply](#) [Quote](#)

Never use a lower voltage, only a lower capacity. Actually, you want to use a cap with a higher voltage to make it last longer.

[Report to moderator](#) Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #190** on: May 13, 2014, 10:51:03 am »

[Say Thanks](#) [Reply](#) [Quote](#)

Quote from: casinada on May 13, 2014, 05:30:12 am

Good job Jay.

Why didn't you send them to Fluke? At least they do a Calibration verification after the repair. 😊

Several reasons:

- 1) I am not the original owner. The new one which has not failed (yet?) is mine from new. One of the used units is mine the other belongs to a friend.
- 2) I want to see if the meters had the problem reported here.
- 3) The super capacitor does not impact calibration.
- 4) It was quicker to fix than return to Fluke.
- 5) If Fluke replaced C145 with the same part, the problem will return.
- 6) I can do a performance check, I can't call it a calibration because my equipment has not been calibrated recently. I have the following:

Fluke 5101B - Multifunction calibrator

Fluke 732A - DC Voltage standard

Datron 1281 - 8.5 digit meter

Fluke would like to find them out of calibration, so they can charge you for a calibration.

- 7) I have no reason to believe that the meters were out of calibration.

To xwarp

I will post a picture the next time I have it apart. It is quite easy, you trim the leads and solder the thru-hole part to the SMD pads.

To BravoV,

I did not measure the capacitance of the bad caps, they was so much leakage current it would be hard to do. If I had to, I would measure the discharge time with a resistive load. But these caps were dead, expired, permanently damaged, useless, beyond hope... 😞

I think that this is correct:

for two fixed 289s

Regards,

Jay_Diddy_B

[Report to moderator](#) Logged

casinada

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

Frequent Contributor



Posts: 600

Country:



« Reply #191 on: May 14, 2014, 04:37:56 am »

Thank you for Replying Jay,
 I purchased mine used and they never asked me anything but the serial number of the unit. As soon as I told them the problem they issued an RMA.
 I'm sure they know what is going on with the supercap so they're probably using a better part (don't know because it has the stickers now so I don't want to open it). Every time they open an instrument for repair they do a calibration if necessary. On my 289 they plugged it to a 5520A and it was still within specifications. I wonder how they test temperature and capacitance.
 I'm trying to repair a Fluke 5102B...progress is very slow. It would help to have the extender boards. There are lots of revisions of this calibrator 😞
 I try to repair everything myself but in this case sending the unit to Fluke was part of the experience 😞

Report to moderator Logged

quarks

Frequent Contributor



q

Posts: 873

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #192 on: May 14, 2014, 01:00:51 pm »

Quote from: casinada on May 14, 2014, 04:37:56 am

I wonder how they test temperature and capacitance.

If you look in the calibration manual (page 16-17) you find

1. Turn the Meter on and position the rotary switch to \overline{mV} and select the temperature function. Select the degrees C function key.
2. On the Meter, select Offset. Adjust the offset to 000.0 using keypad edit buttons.
3. Close the Offset window.
4. Set the 5520A for K-type thermocouple and an output of 0 °C.
5. Perform the measurement steps in Table 3.

Table 3. Temperature Test Input and Display

Input	Display	
	Lower Limit	Upper Limit
0.0 °C	-1.0 °C	1.0 °C
100.0 °C	98.0 °C	102.0 °C
1000.0 °C	989.0 °C	1011.0 °C

if you do not have a calibrator you can just look at a Type K data table and try to simulate the Input Voltages:

0°C = 0V
 100°C = 4,09623mV
 1000°C = 41,27561mV

and for capacitance verification they only check one value (5nF see page 19)

Reconnect Test Leads to 5520A						
42	Capacitance	10.00 nF ^[4]	5 nF		4.90	5.10

1. Turn the Meter on and position the rotary switch to \overline{mV} and select the temperature function. Select the degrees C function key.
2. On the Meter, select Offset. Adjust the offset to 000.0 using keypad edit buttons.
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1000.0 °C	989.0 °C	1011.0 °C

(28.04 kB, 683x353 - viewed 5456 times.)

Reconnect Test Leads to 5520A						
42	Capacitance	10.00 nF ^[4]	5 nF		4.90	5.10

(4.85 kB, 674x62 - viewed 5225 times.)

« Last Edit: May 14, 2014, 01:07:39 pm by quarks »

Report to moderator

casinada

Frequent Contributor



Posts: 600

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #193 on: May 15, 2014, 01:57:16 am »

Say Thanks Reply Quote



Report to moderator

Excavatoree

Frequent Contributor



Posts: 859

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #194 on: May 15, 2014, 12:18:26 pm »

Say Thanks Reply Quote

Quote from: casinada on May 14, 2014, 04:37:56 am

Thank you for Replying Jay,
I purchased mine used and they never asked me anything but the serial number of the unit. As soon as I told them the problem they issued an RMA.

I doubt they'd repair my 189-II, however. It's pretty obvious I'm not the original owner. I suppose I could get a 287 LCD mask for it, but I suspect the serial number is flagged as well.

However, I could be wrong. Has anyone tried it?

Report to moderator

casinada

Frequent Contributor



Posts: 600

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #195 on: May 15, 2014, 06:07:42 pm »

Say Thanks Reply Quote

Excavatoree,
Just Call and open a Ticket. They will ask for your name, address, email, serial number.

Report to moderator

retiredcaps

Super Contributor



Posts: 3565

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #196 on: May 15, 2014, 07:03:14 pm »

Say Thanks Reply Quote


Quote from: casinada on May 15, 2014, 06:07:42 pm

Excavatoree,
Just Call and open a Ticket. They will ask for your name, address, email, serial number.

@Excavatoree, identify yourself as the owner of the staircase Fluke photo. That might buy you some goodwill?

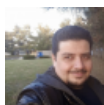
Report to moderator Logged

tsmith35
Frequent Contributor





Posts: 262
Country:

malgailany
Newbie




Posts: 2
Country:

tsmith35
Frequent Contributor




Posts: 262
Country:

ivaylo
Frequent Contributor



Posts: 646
Country:

malgailany
Newbie



Posts: 2
Country:

erazor
Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #197 on: May 16, 2014, 01:14:19 am »

Say Thanks Reply Quote

Quote from: retiredcaps on May 15, 2014, 07:03:14 pm

@Excavatoree, identify yourself as the owner of the staircase Fluke photo. That might buy you some goodwill?

Wow, just looked it up... [stairway to heaven?](#) 😊

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #198 on: June 28, 2014, 12:39:51 am »

Say Thanks Reply Quote

Excavatoree,

I wrote my experience with fluke, check it out
<http://mjlorton.com/forum/index.php?topic=531.msg4429#msg4429>

Cheers!

Report to moderator Logged

M. AlGailani

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #199 on: June 28, 2014, 05:45:37 am »

Say Thanks Reply Quote

Quote from: malgailany on June 28, 2014, 12:39:51 am

I wrote my experience with fluke, check it out
<http://mjlorton.com/forum/index.php?topic=531.msg4429#msg4429>

Wow, that's pretty cool. Looks like a new meter. 😊

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #200 on: June 28, 2014, 07:08:11 am »

Say Thanks Reply Quote

Just got mine back too. Same thing, back cover replaced, calibrated, they even put fresh batteries. Haven't looked inside yet, but now these stories about replacing PCBs and all are tempting me to peel the seal... Very good experience over all!

Report to moderator Logged

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #201 on: June 30, 2014, 08:01:30 pm »

Say Thanks Reply Quote

I'm interested in knowing the differences between board ID1 and board ID3. I took some photos to my old board (ID1) before I send it to service. I don't want to peel my sticker to look inside. It would be nice if someones share photos for board ID3.

Report to moderator Logged

M. AlGailani

The following users thanked this post: bc888

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #202 on: July 18, 2014, 06:44:06 am »

Say Thanks Reply Quote

Posts: 7



I have an issue with the clock drifting in my Fluke 289, see here:

<https://www.eevblog.com/forum/testgear/fluke-289-clock-drift/>

User retiredcaps suggested this might be related to this capacitor issue. To see if this is in fact the case, maybe a user could check behaviour before and after capacitor replacement. Thanks.

Report to moderator

The following users thanked this post: Marco1971

Crazyasianskillz

Newbie

Posts: 3



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #203 on: December 25, 2014, 10:11:49 pm »

Sorry to start up an old thread, but I'm considering purchasing a new fluke 287 from an authorized dealer. Does anyone know if fluke has resolved the leaky cap issue in 2014 builds?

Report to moderator

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #204 on: December 25, 2014, 10:35:34 pm »

Quote from: Crazyasianskillz on December 25, 2014, 10:11:49 pm

Does anyone know if fluke has resolved the leaky cap issue in 2014 builds?

No change or resolution has been reported.

Report to moderator

Beware of Siglent

Crazyasianskillz

Newbie

Posts: 3



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #205 on: December 26, 2014, 04:01:23 pm »

I gave fluke tech support a call this morning inquiring about this issue. They claimed that this issue had been handled and that newer meters should not have this issue. Can anyone confirm this? I'm going to go ahead with the purchase. Im planning to use this for microcontroller development and msic tasks around the house and garage.

Report to moderator

JoeO

Frequent Contributor



Posts: 527

Country:

I admit to being deplorable



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #206 on: December 26, 2014, 04:36:33 pm »

Quote from: Crazyasianskillz on December 26, 2014, 04:01:23 pm

I gave fluke tech support a call this morning inquiring about this issue. They claimed that this issue had been handled and that newer meters should not have this issue. Can anyone confirm this? I'm going to go ahead with the purchase. Im planning to use this for microcontroller development and msic tasks around the house and garage.

What did Fluke mean by "newer meters". Call them back and ask for the serial number that the fix was put in.

Then when you buy a meter, ask them for the serial number of the meter.

There is no other way to guarantee that you will receive a "fixed" meter unless you do this.

Report to moderator

The day AI Gore was born there were 7,000 polar bears on Earth. Today, only 26,000 remain.

Crazyasianskillz

Newbie

Posts: 3



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #207 on: December 26, 2014, 05:56:42 pm »

I asked when the changed was implemented but couldn't get any additional information. The only description that was given was that it was "handled and should not be an issue anymore". However I received a follow up email from info-fluke@fluke.com claiming it was the first time the tech had heard of the leaking capacitor issue and had no database record. The disparity in the responses is a little concerting.

I'll do a check to see what the current draw is when the unit is powered down. From what I've seen it appears the nominal draw should be in the micro amp range, if it's in the milli range then the unit would most likely be affected. I'm ordering the unit off of amazon prime so hopefully they stock newer built units.

I'm hoping my incoming unit isn't affected, but they do come with a lifetime warranty just in case. I've got a 189 unit on my bench at work and doesn't appear to have symptoms. I'd just like my personal meter to be flawless as well.

Report to moderator  Logged

retiredcaps

Super Contributor



Posts: 3565

Country: 



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #208 on: December 26, 2014, 06:42:45 pm »

Say Thanks

Reply

Quote

Quote from: Crazyasianskillz on December 26, 2014, 05:56:42 pm

However I received a follow up email from info-fluke@fluke.com claiming it was the first time the tech had heard of the leaking capacitor issue and had no database record. The disparity in the responses is a little concerting.

It is not surprising to hear that Fluke support personnel don't know about the issue or that you are getting conflicting answers.

Quote

I'm hoping my incoming unit isn't affected, but they do come with a lifetime warranty just in case.

You should check to make sure Amazon is an authorized Fluke dealer because there was controversy about that in the past.

<https://www.eevblog.com/forum/testgear/amazon-con-is-not-a-fluke-authorized-reseller/>

You should read the fineprint regarding lifetime warranty in the 289 manual. The word lifetime doesn't mean lifetime in the way an ordinary person would interpret it.

In addition, Danaher needs to make money long term in order to actually be around to provide "lifetime" warranty.


Report to moderator  Logged

sotos

Frequent Contributor



Posts: 256

Country: 



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #209 on: December 26, 2014, 10:13:15 pm »

Say Thanks

Reply

Quote

My story with the meter.

After I've read the forum, I opened mine and found the capacitor leaking. I desoldered it and ordered this one, <http://www.digikey.com/productsearch/en?vendor=0&keywords=EDLRD224> as per Reply #38 on this forum.

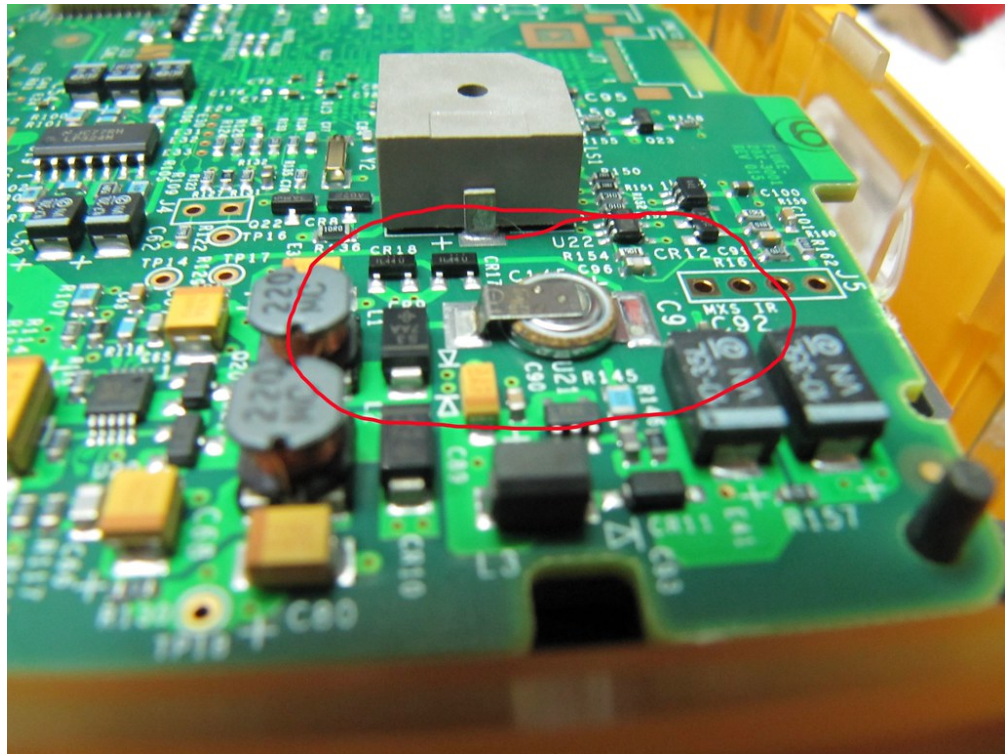
When it came I didn't have time to change it so I left it over. The meter hadn't the capacitor in as people around here, claimed it is only for time and date so I didn't care. But when I needed it I powered it up, a very short message notified me about memory- time, something like that (it was fast to make a notice) and then died.

It never started up again. Because I had to continue I left it, and continued with another meter. After 3-5 days I had time to look at the meter, the meter was dead, I measured the batteries to find out that they were also completely dead.

Wow I said I found the problem so I changed the batteries, nothing at all, the meter was dead even the power switch did not respond, turning itself green. Again I left it, Next day, searched for the problem to find that the new batteries were completely dead at 0,5 volts. Something was draining them completely.

So I soldered the capacitor back and as it has a limited lifetime guarantee I sent it to my local distributor mentioning that the meter is completely dead, he took it and sent it the fluke service agent. 2 months later the meter arrived back full functional, calibrated and stickers around the meter.

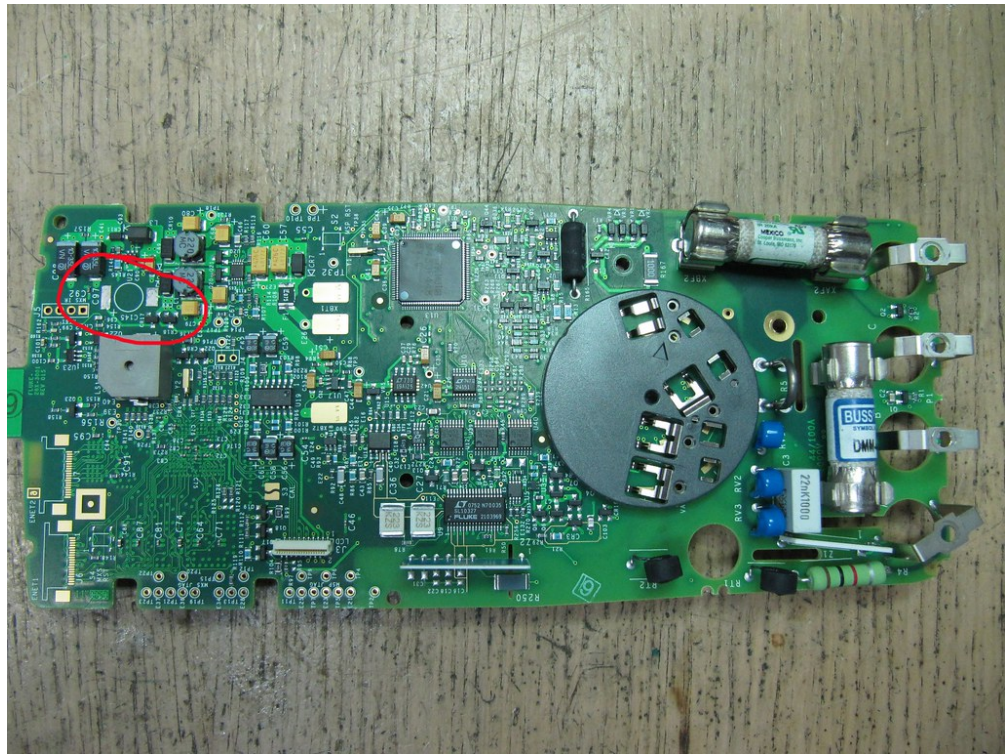
No charge, meter has a limited lifetime guarantee, so why try it yourselves? Just send it back.



IMG_9835 by sotron100, on Flickr



IMG_0591 by sotron100, on Flickr



IMG_0407 by sotron100, on Flickr

« Last Edit: December 26, 2014, 10:14:52 pm by sotos »

Report to moderator Logged

kitaismith

Newbie

Posts: 2

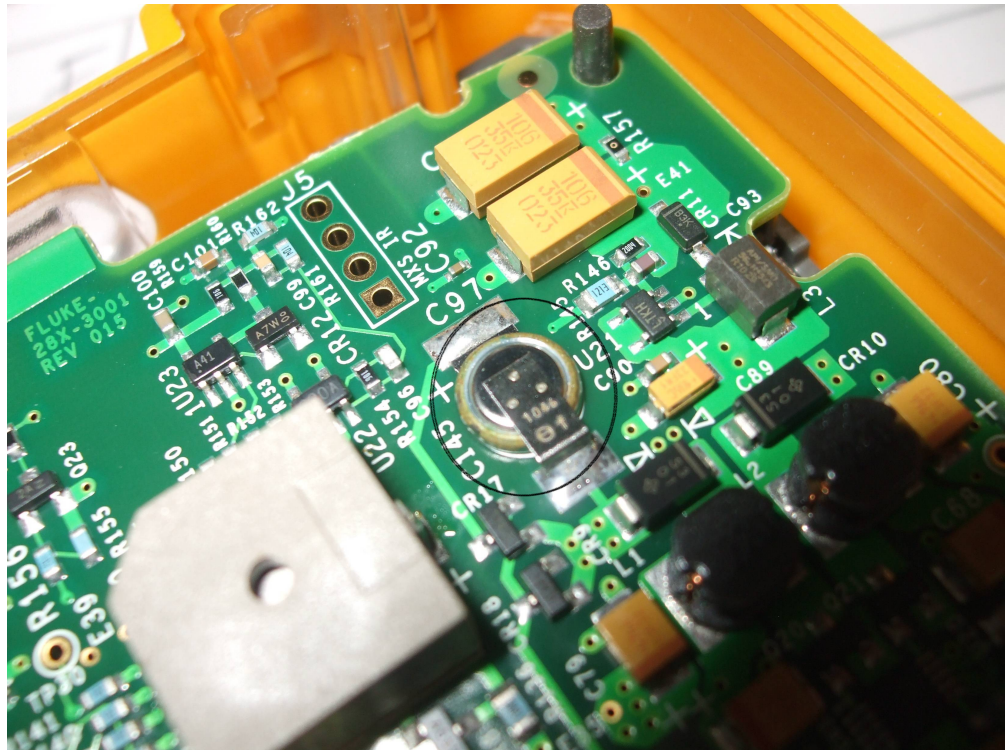


Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #210 on: March 06, 2015, 09:48:39 am »

Say Thanks Reply Quote

Just opened my Fluke 287 as well, lo and behold I have it too..:



I called the service center 01603256620, they told me they are not aware such a problem existed and further more, since the capacitor is corroded it is not longer under warranty. To add salt to the wound, the lady on the phone added that it'll take about £240 for it to be repaired..... 🤔

I asked her to repeat that like about 5 times..

I've fired off an email to the UKServiceDesk@fluke.com explaining the situation and what I've just been told, still waiting for reply.
So we'll see how it goes...

Report to moderator  Logged

The following users thanked this post: Marco1971

 **Ericho**
Regular Contributor


Posts: 52
Country: 


 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**


Say Thanks Reply Quote

« Reply #211 on: March 06, 2015, 12:00:10 pm »

Quote

I called the service center 01603256620, they told me they are not aware such a problem existed and further more, since the capacitor is corroded it is not longer under warranty. To add salt to the wound, the lady on the phone added that it'll take about £240 for it to be repaired..... 

I asked her to repeat that like about 5 times..
I've fired off an email to the UKServiceDesk@fluke.com explaining the situation and what I've just been told, still waiting for reply.
So we'll see how it goes...

There goes the extra money you pay for warranty, service and quality. Fluke 

I'm not gonna bother with them, Its takes less time to fix it myself then 1 Phone call with them of a visit to the local shop.

Report to moderator  Logged

 **kitaismith**
Newbie
Posts: 2


 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #212 on: March 06, 2015, 05:34:52 pm »

Yeah...I know it would've been easy to repair it myself but since it should be under warranty and doing it myself will void the warranty , I might as well use it (in theory at least).
Anyways, I got a reply back from the email I sent out..:

Quote

We have forwarded this information to the higher management and our Manager has agreed to bring the unit in under Warranty.
Can you kindly fill out the attached RMA form so we can create an Returns number for you.

Hope to hear from you.





I filled out the attached RMA form, emailed it back to them and they've emailed a Service Order Form to me. That'll be included with the multimeter when I send it back.

All in all, looks like they've decided to do the right thing and to be honest, apart from the lady I spoke to earlier on the phone, the guys I emailed about it got everything sorted real quick so I'm gonna reserve my judgement till everything's sorted.
I'll send it back tomorrow and keep you guys posted.



« Last Edit: March 06, 2015, 05:37:43 pm by kitaismith »

Report to moderator  Logged

 **mjlorton**
Contributor

Posts: 44
Country: 
www.YouTube.com/mjlorton


 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #213 on: April 16, 2015, 08:11:13 pm »

Fluke respond to the issue of corrosion of the capacitor on the Fluke 287/289:

Original video (2 January 2014) - T4D #88 - Fluke multimeters with leaking / corroded surface mount supercap:

T4D #88 - Fluke multimeters with leaking / corroded surface mount s...



On Forum: <http://mjlorton.com/forum/index.php?topic=531.30>

Fluke email:

On 4/16/2015 11:22 AM, Wright, Dan wrote: Hello Martin

I've done some investigating on the issue of the Fluke 287/289 and the corrosion of the capacitor. Our team has looked in to this at length and arrived at the following:

Yes, there are instances where the capacitor is showing visible sign of discoloration, corrosion and what may be described as "leakage."

Yes, this is an issue that will be addressed in the next design and production update taking place next month.

Despite the visual signs, there is no degradation to the performance of the meter. The component in question provides backup power to the internal clock and should it fail, the only thing affected will be time and date settings after a battery change.

If a user finds that the component has made the meter unusable, the user should contact a Fluke Service Center so the product can be evaluated.

Best regards

Dan

[Report to moderator](#) Logged

www.YouTube.com/mjlorton
Solar Power and Electronic Measurement Equipment

shane124

Newbie

Posts: 2

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #214 on:** May 03, 2015, 03:53:36 am »

Just replaced the bad cap in my 289. Not very difficult and works great! 😊
Used the one from Digikey 338-3477-ND. MFG# EDLRD224H3R6C 220MF 3.6V.

Bought it used. Est. Around 2009 Model. (The meter).

« *Last Edit:* May 03, 2015, 03:55:46 am by shane124 »

[Report to moderator](#) Logged

The following users thanked this post: Marco1971

Gonzakpo

Newbie

Posts: 2



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)

« **Reply #215 on:** May 24, 2015, 04:21:40 pm »

Any news about this issue? I'm considering buying the 287 but this is kind of a showstopper. I mean, the only reason I want to buy a Fluke it's because its reliability. But if that is gone... then maybe I should be looking somewhere else.

[Report to moderator](#) Logged

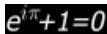
The following users thanked this post: Chris56000

dadler

Supporter

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#) [Reply](#) [Quote](#)



Posts: 851
Country:



« Reply #216 on: May 24, 2015, 06:12:41 pm »

Has anyone had this actually affect the performance of their meter?

Report to moderator

Lightages

Supporter



Posts: 4303
Country:

Canadian po

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #217 on: May 24, 2015, 06:21:41 pm »

If Fluke says it doesn't affect the meter, I would tend to believe it. Does it look good that they won't replace the thousands of bad looking components? I think it hurts their reputation a bit but I wouldn't worry about it. Leave it until/if it causes a problem and they will fix it then.

Report to moderator

Jay_Diddy_B

Super Contributor



Posts: 2629
Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #218 on: May 25, 2015, 02:10:15 am »

Quote from: dadler on May 24, 2015, 06:12:41 pm

Has anyone had this actually affect the performance of their meter?

I had the problem on two meters. It did not effect the measurement accuracy. It impact the life of the AA batteries. I posted my experience in this message:

<https://www.eevblog.com/forum/testgear/fluke-189-with-leaking-surface-mount-coin-cell/msg443374/#msg443374>

Regards,

Jay_Diddy_B

Report to moderator

Muxr

Super Contributor



Posts: 1345
Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #219 on: May 25, 2015, 02:27:25 am »

My guess is the supercap is used for the Real Time Clock. It allows the RTC to survive the battery change. I am assuming RTC is important for the data logging feature.

Report to moderator

The following users thanked this post: Marco1971

retiredcaps

Super Contributor



Posts: 3565
Country:

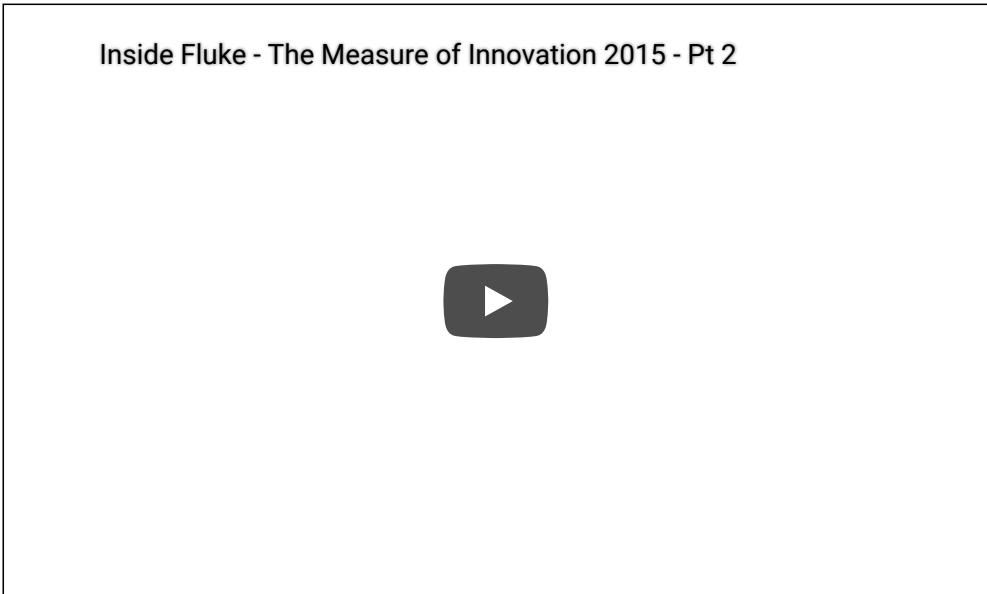


Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #220 on: May 29, 2015, 06:21:21 am »

Martin's latest video has some of the feedback and discussions he had with Fluke at the 26 to 30 minute mark regarding the IR and super capacitor.



Report to moderator Logged

miguelvp

Super Contributor



Posts: 5550

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #221 on: May 29, 2015, 06:29:48 am »

Say Thanks Reply Quote

One of my co-workers back on the late 90s used to work for Boing (unmanned vehicle Dark Star) he told me that they used to get rain inside their buildings 😊

Report to moderator Logged

SeanB

Super Contributor



Posts: 15842

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #222 on: May 29, 2015, 07:38:02 pm »

Say Thanks Reply Quote

Quote from: miguelvp on May 29, 2015, 06:29:48 am

One of my co-workers back on the late 90s used to work for Boing (unmanned vehicle Dark Star) he told me that they used to get rain inside their buildings 😊

Reminds me when I was in training, and the only room available was the one with the big half roof skylight. Good thing was it was the dry season, and I put in a fan heater on a time switch, to heat the room for 2 hours before we came back, and to turn off when we left in the morning. Was interesting to be able to do astronomy from my bed at night. Was not fun though that the showers invariably had no hot water, especially as it was winter in Pretoria. Used to wake up at 2AM to go to a shower and have that hot shower luxury. Plus was the mains was always between 250 and 265V, due to the area having legacy 250VAC mains transformers, dating from the early days of electrification in South Africa, in the supply, and harmonising the area to 220V was considered too expensive in replacing all of them simultaneously. Great for heating, though lights had a really short but brilliant life.

Report to moderator Logged

firehopper

Frequent Contributor



Posts: 408

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #223 on: June 08, 2015, 05:52:33 pm »

Say Thanks Reply Quote

I have a fluke 289 with the rusty looking cap, it wont hold time or date when you pull the batteries. so what should I do? replace it myself or send it in..

Report to moderator Logged

retiredcaps

Super Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote



Posts: 3565

Country:

[« Reply #224 on: June 08, 2015, 06:02:32 pm »](#)**Quote from: firehopper on June 08, 2015, 05:52:33 pm**

replace it myself or send it in..

If you are the original owner and bought it from an authorized Fluke dealer, I suggest sending it in for the following reasons:

- 1) you might get a complete new pcb with the latest modifications and firmware
- 2) you are likely to have the 289 (either repaired or new pcb) with its calibration checked for "free"
- 3) shipping within the USA even with a tracking number should be a reasonable \$10 to Fluke

The calibration check normally costs between \$50 to \$100 and you get it back knowing it is within its accuracy specifications across all ranges.

[« Last Edit: June 08, 2015, 06:07:52 pm by retiredcaps »](#)[Report to moderator](#) **sotos**

Frequent Contributor



Posts: 256

Country:

**Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)[« Reply #225 on: June 08, 2015, 07:00:04 pm »](#)

I agree with retiredcaps. When I tried to change mine it got bricked, I had to send it to the service center and after the repair it was also calibrated, for free.

[Report to moderator](#) **firehopper**

Frequent Contributor



Posts: 408

Country:

**Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)[« Reply #226 on: June 08, 2015, 11:48:25 pm »](#)

I'm not the original owner.. I bought it used off ebay. I did register the serial number on flukes website, on fluke's advice. so no idea if I should still send it back, like I said remove batteries and it forgets time and date.

Quote from: retiredcaps on June 08, 2015, 06:02:32 pm**Quote from: firehopper on June 08, 2015, 05:52:33 pm**

replace it myself or send it in..

If you are the original owner and bought it from an authorized Fluke dealer, I suggest sending it in for the following reasons:

- 1) you might get a complete new pcb with the latest modifications and firmware
- 2) you are likely to have the 289 (either repaired or new pcb) with its calibration checked for "free"
- 3) shipping within the USA even with a tracking number should be a reasonable \$10 to Fluke

The calibration check normally costs between \$50 to \$100 and you get it back knowing it is within its accuracy specifications across all ranges.

[Report to moderator](#) **retiredcaps**

Super Contributor



Posts: 3565

Country:

**Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)[« Reply #227 on: June 09, 2015, 05:14:28 am »](#)

If you are not the original owner, then Fluke, technically, has no obligation to fix it under warranty for you.

Here are the options that I see.

1) If the date and time setting are not required, just ignore the problem and leave the capacitor as is. Alternatively, you can remove the capacitor and the unit will function fine. Note, I can't remember if it is in this thread or this model, but at least one person who removed the capacitor couldn't get the meter to power on again. So there is a non zero chance of screwing something up if you are not careful (lift a solder pad, short something out, zap components/pcb with ESD, etc).

2) Fluke built its service reputation in the past, as reported here and in other forums, by providing fantastic service to the customer. Sometimes, but not all, the service centre will fix the problem

regardless of the terms and condition of the warranty for free.

So you could take a chance and send it to Fluke (make sure you get a tracking number + insurance) for around \$10 USD and see if Fluke will fix it under warranty and ignore the fact that you bought it from ebay second hand. It is my understanding, and you should confirm by talking to a customer service representative, that if you do not qualify for warranty repair that Fluke will contact you with an \$\$ estimate to fix your meter. Then you can decide if the price is reasonable or not. If you choose not to get it fixed due to cost, then Fluke will send it back to you unrepaired. I believe Fluke will pay return shipping so at most you are out the original shipping costs.

Again, you may want to talk and verify with a Fluke customer service representative. If you choose the second option, please report back so we know the outcome.

PS. I am well aware of negative posts about Fluke customer service. I find that by talking *nicely* to a person and treat them the way you expect to be treated, that you will get a lot better result.

Report to moderator  Logged

Kibi

Supporter



Posts: 385

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks

Reply

Quote

« Reply #228 on: June 09, 2015, 12:41:37 pm »

Quote from: retiredcaps on June 09, 2015, 05:14:28 am

PS. I am well aware of negative posts about Fluke customer service. I find that by talking *nicely* to a person and treat them the way you expect to be treated, that you will get a lot better result.

I totally agree that good manners will get you a long way.

However, politeness and good manners don't get you anywhere with Fluke UK. Their representatives are polite, well mannered and sound professional. I treat them over the telephone as they treat me, but unfortunately that is the last you hear from them. They never once got back to me about my spare parts request on any of the three occasions that I telephoned their service centre. I also sent the same request over email, but I got no response either. In my opinion, this is very poor service on the part of Fluke UK.

Hopefully their other branches provide a better service.

I went elsewhere and then got my parts within days.


Report to moderator  Logged

retiredcaps

Super Contributor



Posts: 3565

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks

Reply

Quote

« Reply #229 on: June 09, 2015, 06:50:39 pm »

Quote from: Kibi on June 09, 2015, 12:41:37 pm

However, politeness and good manners don't get you anywhere with Fluke UK.

My professional experience/industry is not the T&M so I don't know how it works in T&M, but when I call a company for help, I'm usually assigned a case number. That case isn't closed until I say so.

In the past couple of years, I have made contact with Fluke Canada and Extech USA. Neither provided me with a case number. Without a case number, I have no way to escalate to a supervisor and when I get passed onto another customer service representative, there is no history or case notes.

Report to moderator  Logged

retiredcaps

Super Contributor



Posts: 3565

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks

Reply

Quote

« Reply #230 on: June 13, 2015, 05:44:15 pm »

Quote from: retiredcaps on June 09, 2015, 05:14:28 am

So you could take a chance and send it to Fluke (make sure you get a tracking number + insurance) for around \$10 USD and see if Fluke will fix it under warranty and ignore the fact that you bought it from ebay second hand.

@firehopper, see this thread wrt to above comments.

[https://www.eevblog.com/forum/testgear/fluke-287\(9\)-leaking-super-cap/msg692664/#msg692664](https://www.eevblog.com/forum/testgear/fluke-287(9)-leaking-super-cap/msg692664/#msg692664)

Report to moderator  Logged

D. Head

Contributor

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks

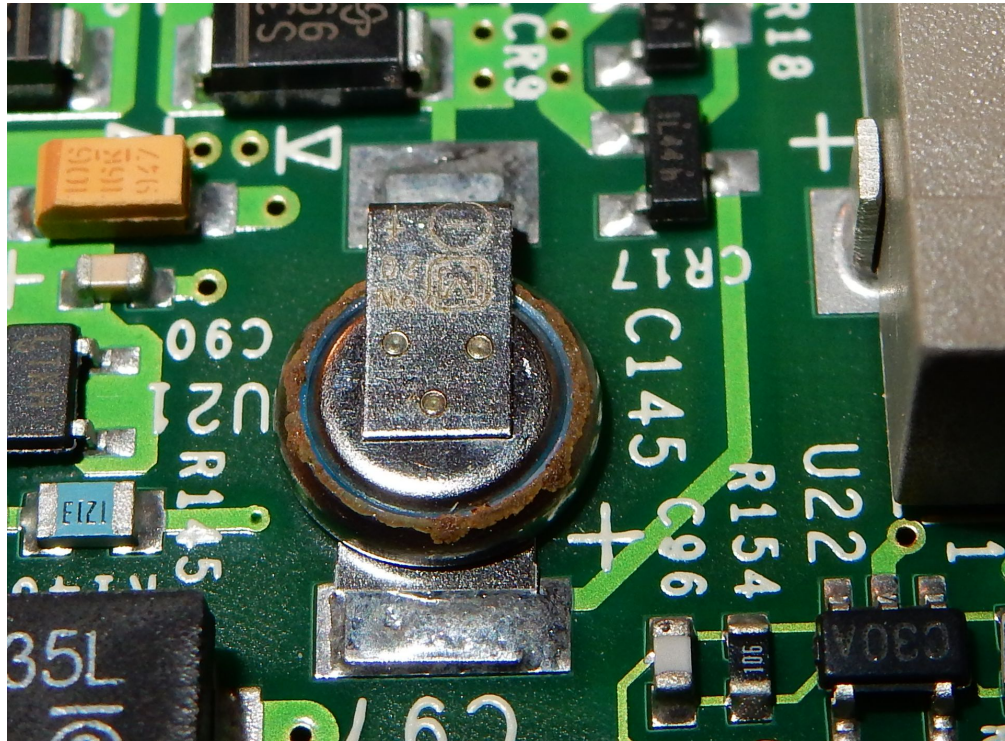
Reply

Quote

« Reply #231 on: August 13, 2015, 06:10:25 pm »

Posts: 27
Country: 


Hello Everyone,
this is what the supercap from my Fluke 289 looks like.



Is this "bad" enough to send it back to Fluke?
(i live in the area of Eindhoven)

Thanks



01.jpg (454.1 kB, 1910x1410 - viewed 11747 times.)

« Last Edit: August 13, 2015, 06:14:01 pm by D. Head »

Report to moderator  Logged

retiredcaps

Super Contributor



Posts: 3565

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #232 on: August 13, 2015, 07:30:10 pm »

Quote from: D. Head on August 13, 2015, 06:10:25 pm

Is this "bad" enough to send it back to Fluke?

The cap is supposed to keep time and date. If you take the batteries out and it doesn't properly keep time and date, then you would have a valid claim for warranty service (free). Take a look at my post 225 above again for why you might want to send it in.


Report to moderator  Logged

M. András

Super Contributor



Posts: 1020

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #233 on: August 19, 2015, 07:57:22 pm »

Quote from: retiredcaps on August 13, 2015, 07:30:10 pm

Quote from: D. Head on August 13, 2015, 06:10:25 pm

Is this "bad" enough to send it back to Fluke?

The cap is supposed to keep time and date. If you take the batteries out and it doesn't properly keep time and date, then you would have a valid claim for warranty service (free). Take a look at my post 225 above again for why you might want to send it in.

I dont recall from the manual how much time it supposed to hold the time and date settings? wanna see how is my unit holding up without taking it apart

dr.diesel

Super Contributor



Posts: 2213

Country:

Cramming the magic smoke back in...



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #234 on: August 19, 2015, 08:10:21 pm »

Measure the parasitic power draw. When mine went bad it was almost 10mA, lost the time/date instantly if batteries removed.

[Beware of Siglent](#)

Muttley Snickers

Supporter



Posts: 2230

Country:

Cursed: 671 times



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

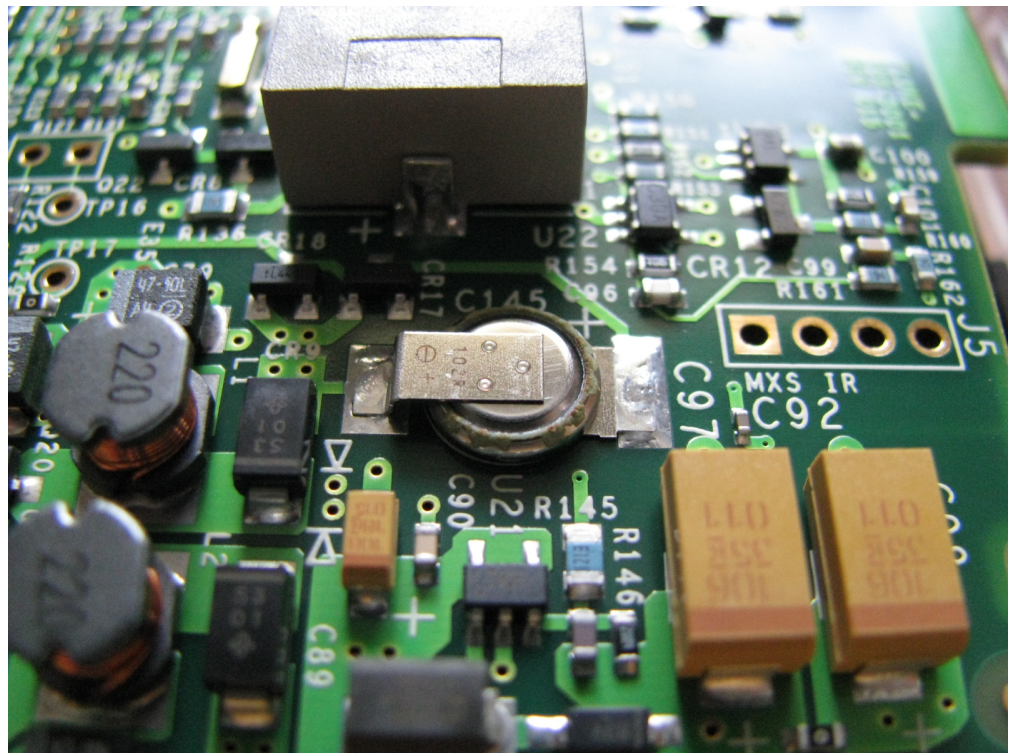
« Reply #235 on: December 23, 2015, 08:14:24 am »

The super capacitor in my 289 looks a little bit crusty but the meter still seems to work well and I have listed the current consumption details below for reference. I recently opened and inspected my 189 again and it is still in immaculate condition in relation to the super capacitor, I have owned this meter since brand new and as mentioned elsewhere on the forum I religiously remove the batteries after each use and have always done so.

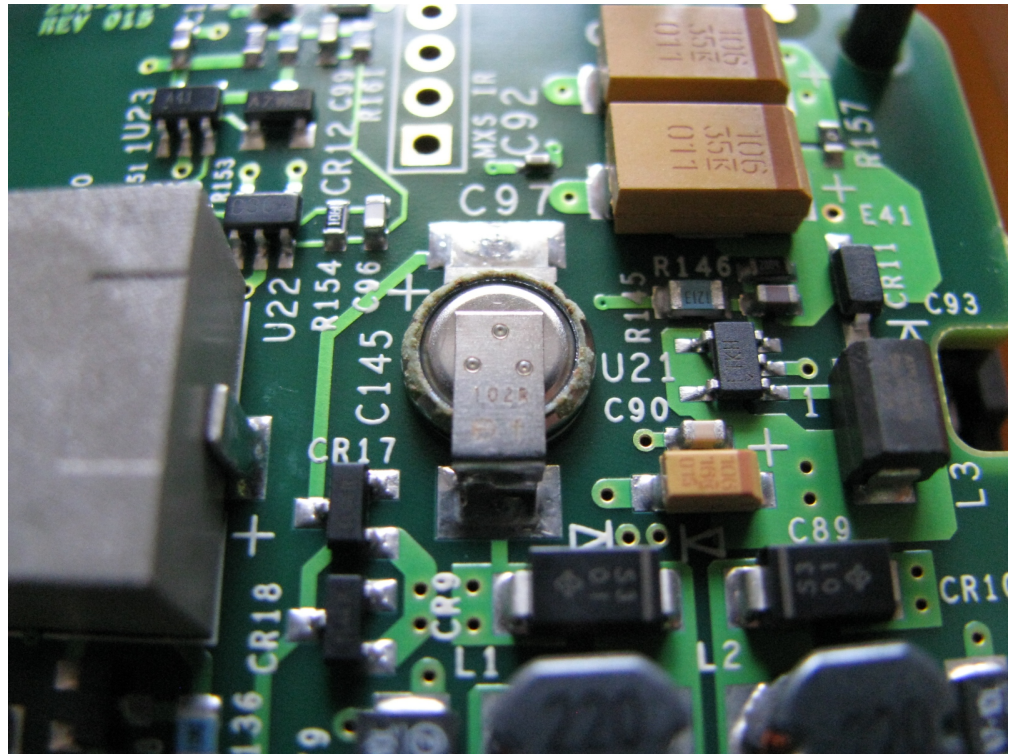
Fluke 289 Current Consumption

- Power Off, Logged for 20 mins.....32uA
- Power On, Ohms Open, BL Off.....22mA
- Power On, Ohms Open, BL Low.....36mA
- Power On, Ohms Open, BL High.....56mA

Firmware Version 1.12/V0.88 (Now upgraded to 1.16)
Calibration Date: 25/07/2010. Calibration Count: 1. Board ID: 1.



Bad Cap_01.JPG (967.18 kB, 1600x1200 - viewed 1273 times.)



Bad Cap_02.JPG (909.37 kB, 1600x1200 - viewed 1115 times.)

« Last Edit: August 14, 2018, 02:50:25 pm by Muttley Snickers »

Report to moderator Logged

Fonnesbek

Contributor

Posts: 8



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #236 on: December 23, 2015, 11:16:03 am »

Hi

I have just replaced the super cap in my 189 I also have a 289 but the cap looked ok in that, so I will not change it at this moment.

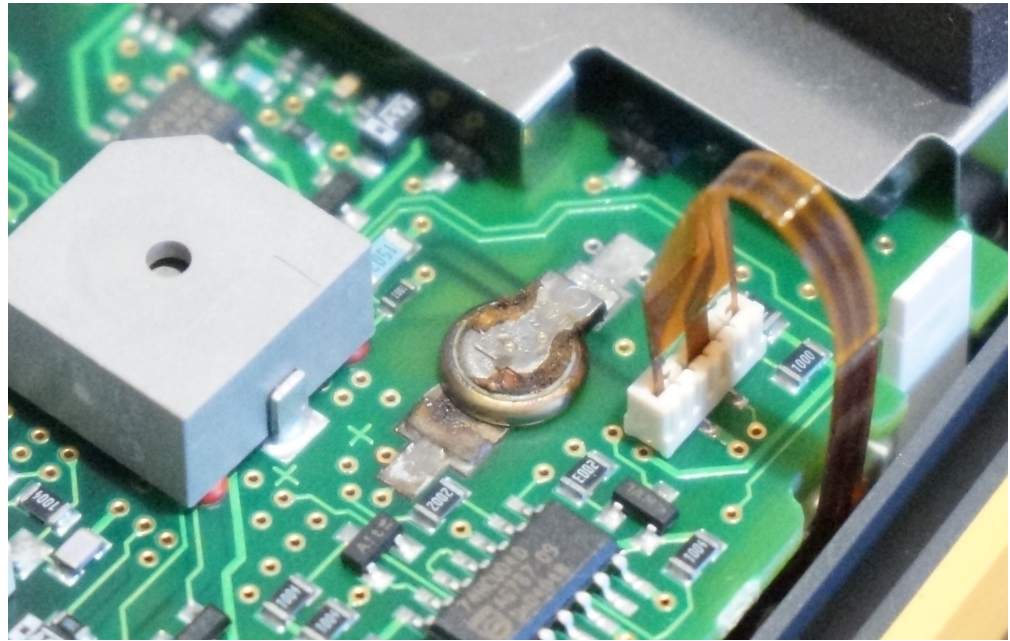
I replaced the cap with a EDLRD224H3R6C which I got from amazon.co.uk

http://www.amazon.co.uk/gp/product/B017V3X02S?ref_=pe_385721_37038051_TE_3p_dp_1

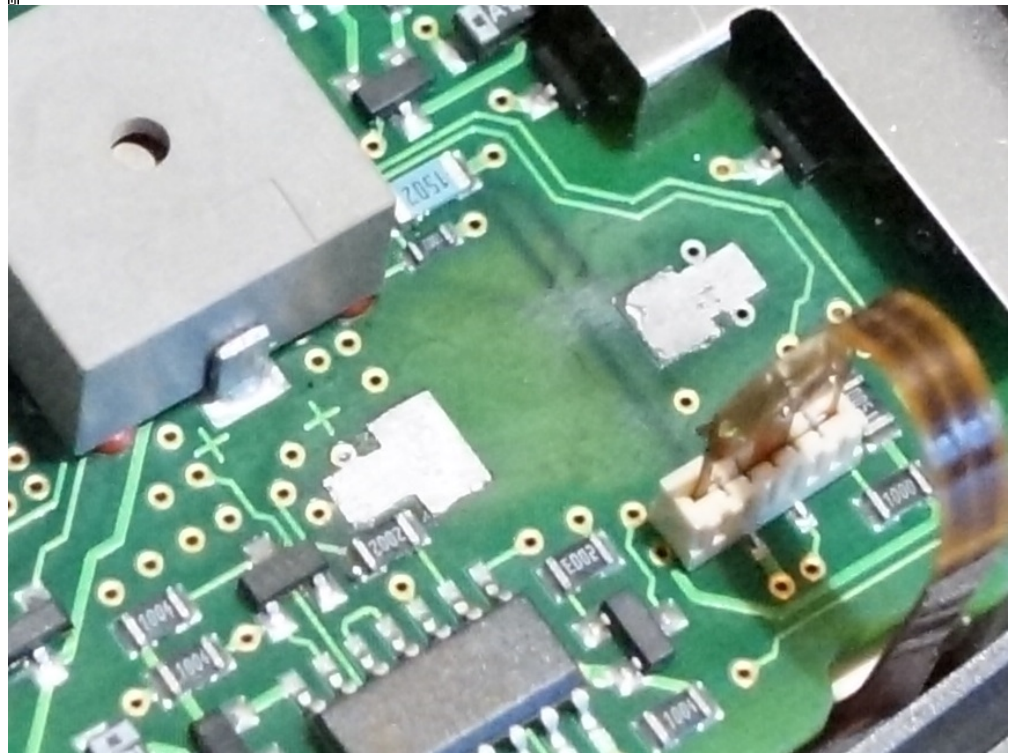
It can properly be bought cheaper but shipping rate and time was an important factor.

I have attached a few pictures of the replacement, the last one is of the super cap in my 289.

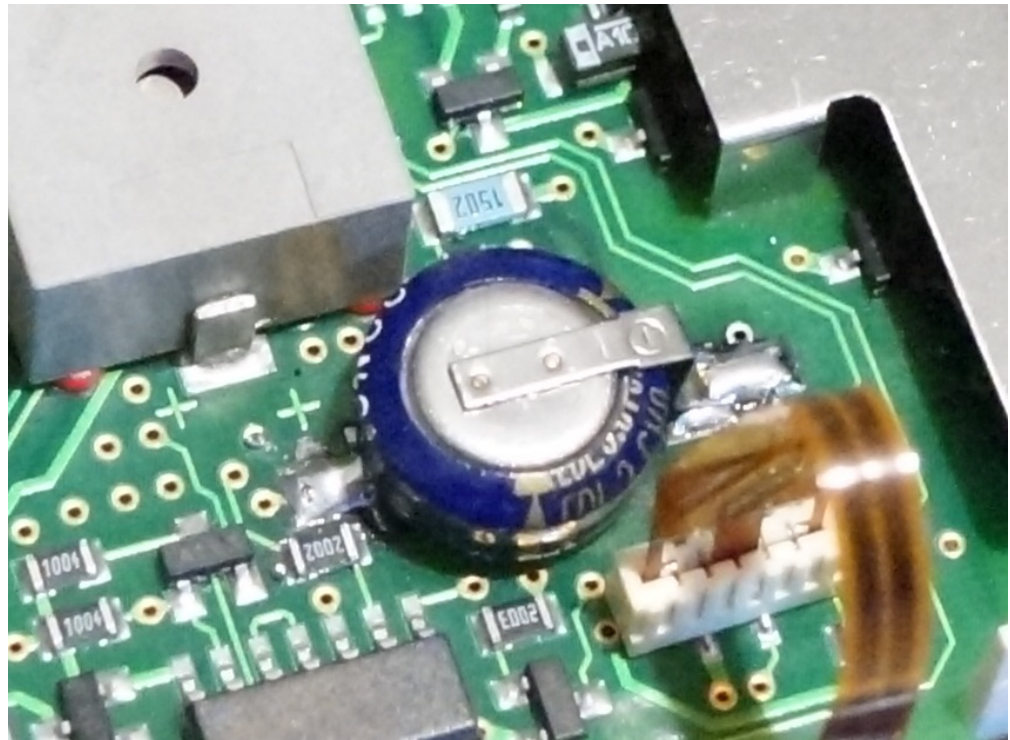
/Fonnesbek



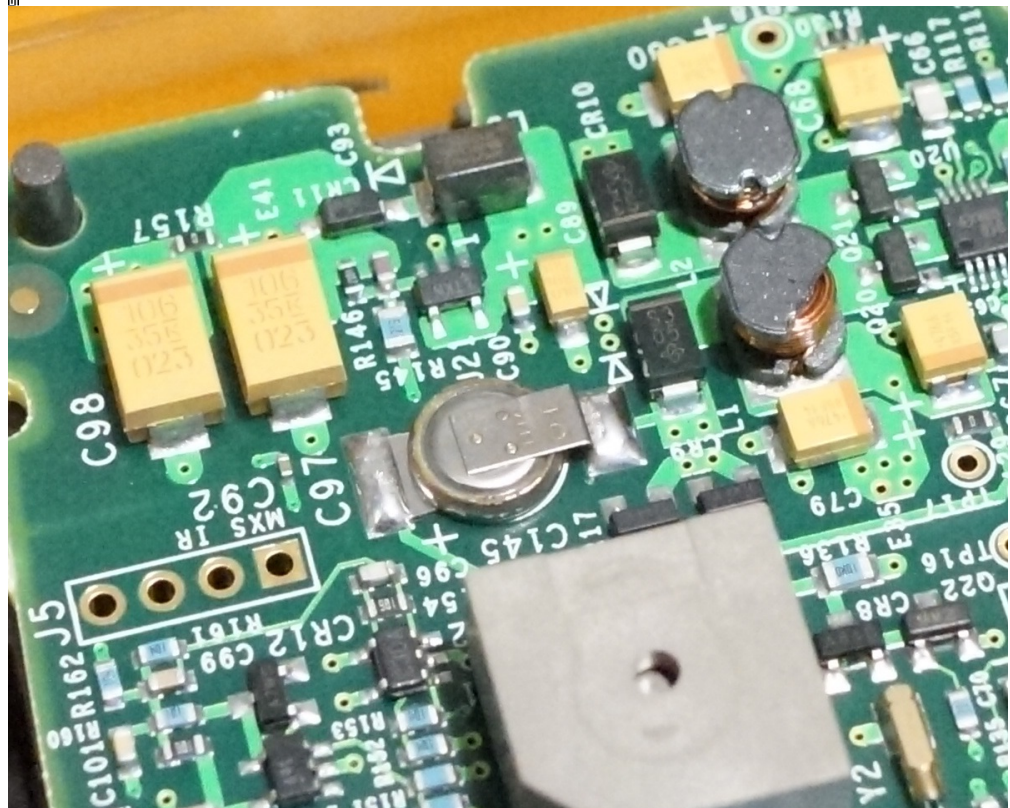
189 old cap LR.jpg (479.51 kB, 2106x1339 - viewed 1194 times.)



189 no cap LR.jpg (136.82 kB, 864x647 - viewed 1089 times.)



189 new cap LR.jpg (134.15 kB, 851x626 - viewed 1211 times.)



289 Cap low res.jpg (310.21 kB, 1200x965 - viewed 1431 times.)

[Report to moderator](#) [Logged](#)

Helix70

Supporter



Posts: 276

Country:

VK4JNA



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

[Say Thanks](#)

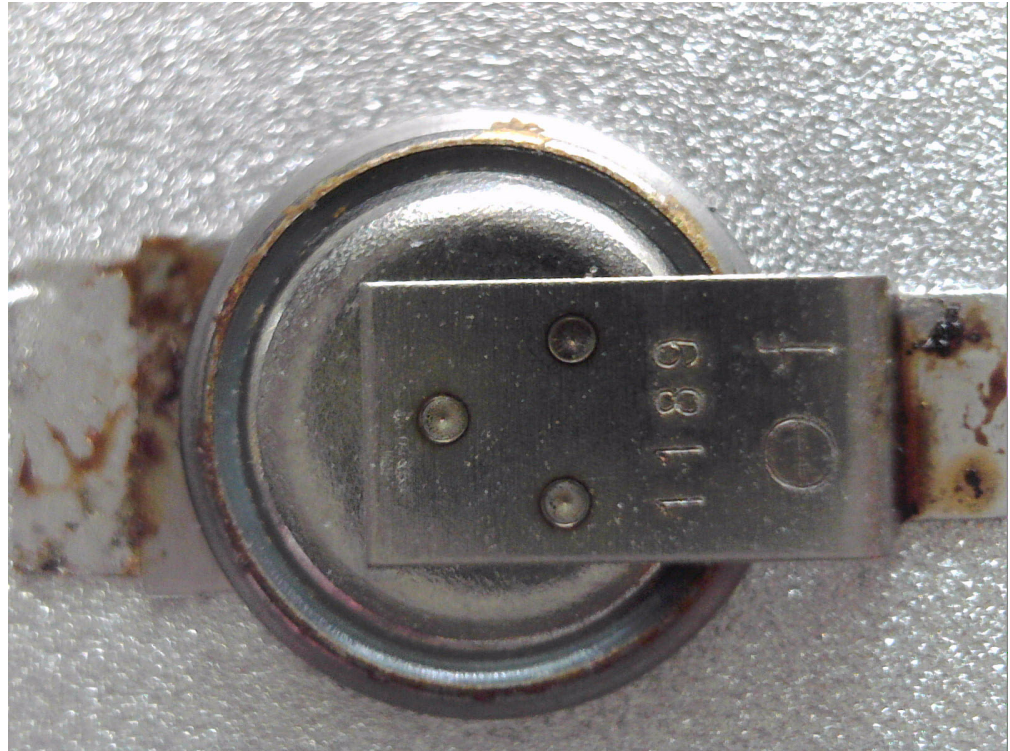
[Reply](#)

[Quote](#)

« [Reply #237 on:](#) February 13, 2016, 04:09:22 am »

My 287 supercap failed in a different way to most on here. Mine won't hold charge. I took it out, attached it to 3.3V and it immediately jumped to 3.3V drawing 40uA. This current slowly decays over about 2 minutes until it hits about 3uA. I set the meter to >10G input impedance and disconnected the supply, and in 5 seconds the voltage on the supercap dropped to about 2V, then 1.8V after 30 seconds, drawing < 0.02uA.

Needless to say, the meter did not hold date and time, and the corrosion on mine was minimal (ignore the flux on the leads, I put that there).



Fluke 287 Supercap.jpg (361.14 kB, 1600x1200 - viewed 1022 times.)

« Last Edit: February 13, 2016, 04:12:46 am by Helix70 »

Report to moderator Logged

toni31

Contributor

Posts: 18



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #238 on: February 20, 2016, 08:58:19 pm »

Say Thanks Reply Quote

I'm considering purchasing a new fluke 287 from an authorized dealer does anyone know if fluke has resolved the leaky cap issue

Report to moderator Logged

Helix70

Supporter



Posts: 276

Country:

VK4JNA



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

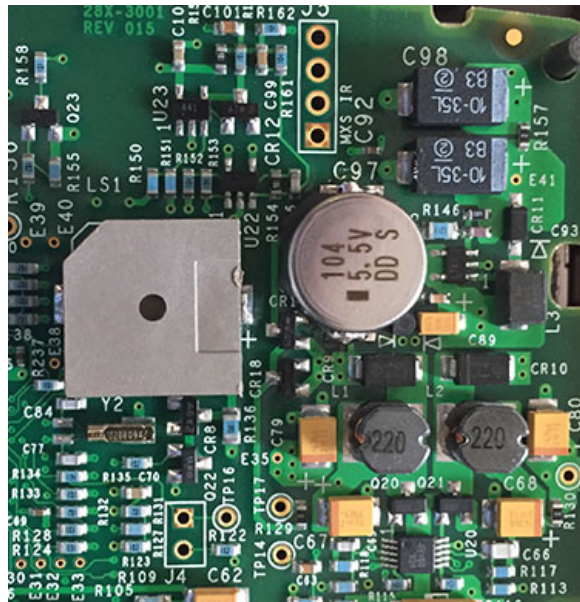
« Reply #239 on: February 21, 2016, 12:37:04 am »

Say Thanks Reply Quote

All fixed. Got a 0.1F supercap from RS - a Kemet FCS0H104ZFTBR24. Cost \$4 for two delivered.

I had to snip the lower left plastic corner off to make it fit around the SOT23 part, otherwise it fit very neatly. The shroud fits over it without issues.

Tried it for 15 minutes without batteries, all ok. Hopefully with the increased voltage rating this one won't die or leak!



Fluke 287 Supercap.jpg (104 kB, 376x387 - viewed 1434 times.)

Report to moderator Logged

The following users thanked this post: Marco1971

hansibull
Regular Contributor

Posts: 92
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #240 on: June 16, 2016, 09:44:55 pm »

I just desoldered this 0.33F 5V Matsushita super cap from some almost-unused equipment. Can/Should I just whack this in, or should I get one that's almost identical to the original one. And how about the polarity, what is + and what is - on the PCB?



2016-06-16 22.40.07.jpg (706 kB, 2132x1402 - viewed 918 times.)

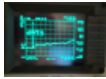
Report to moderator Logged

VK5RC
Supporter

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #241 on: November 23, 2016, 11:44:22 am »

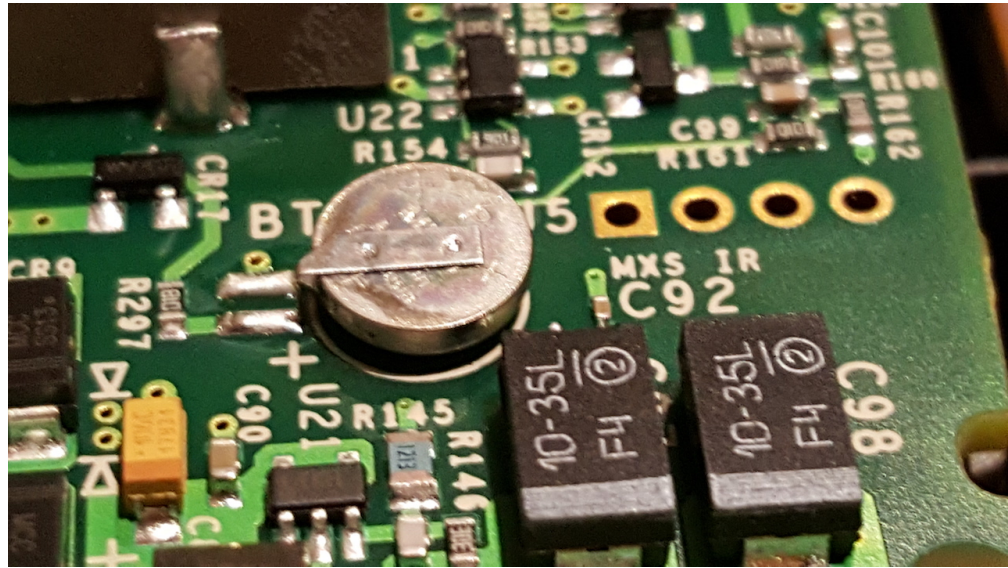


Posts: 2649

Country:



A recent purchase of a 289 view from the inside, looks like they have redesigned the board a little and the Cap has been replaced by a battery??



Fluke 289 Battery.jpg (346.65 kB, 1280x720 - viewed 1806 times.)

[Report to moderator](#) Logged

Whoah! Watch where that landed we might need it later.

The following users thanked this post: Marco1971

Daruosha

Regular Contributor



Posts: 180

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #242 on:** February 21, 2017, 04:56:11 pm »

[Say Thanks](#)

[Reply](#)

[Quote](#)

I just found this thread and wondered what is your PCB rev? I purchased two fluke 289 and production date of the first one is 2015 and the other one is 2016.

Anyone would suggest to break the warranty and tear them apart for further inspection?

[Report to moderator](#) Logged

evava

Regular Contributor



Posts: 163

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #243 on:** April 27, 2017, 12:40:05 pm »

[Say Thanks](#)

[Reply](#)

[Quote](#)

Hello everyone,

I also got Fluke 289 from ebay lately.
And I have got two questions:

1. when changing batteries, it actually "holds" time (and date), by which I mean time (and date) "freezes" until new batteries are put in and then time runs again from the point where I removed batteries, but delay remains.

So, it "holds" time, but time is not running forward when batteries are not in the meter - is it OK? Or is it supposed that time counter continues when batteries are removed? (consumption when meter is off is about 50uAmps, which is OK probably)

2. on Lo Ohm (50 Ohms) range, with shorted input posts, readings slowly decreases from about 60 ohms to the 0 Ohms during ten (fifteen) seconds and through 0 Ohms continues to the minus Ohms readings slowly and still very slowly increases minus Ohms readings, just like in that video



and maybe never stops completely (it is not my movie nor mine instrument but the same symptom). If it is normal behaviour, then it seems to me that 50 Ohm range is not any good? Or is my meter broken?

« Last Edit: April 28, 2017, 09:29:50 am by evava »

Report to moderator Logged

todd_fuller

Contributor

Posts: 37

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

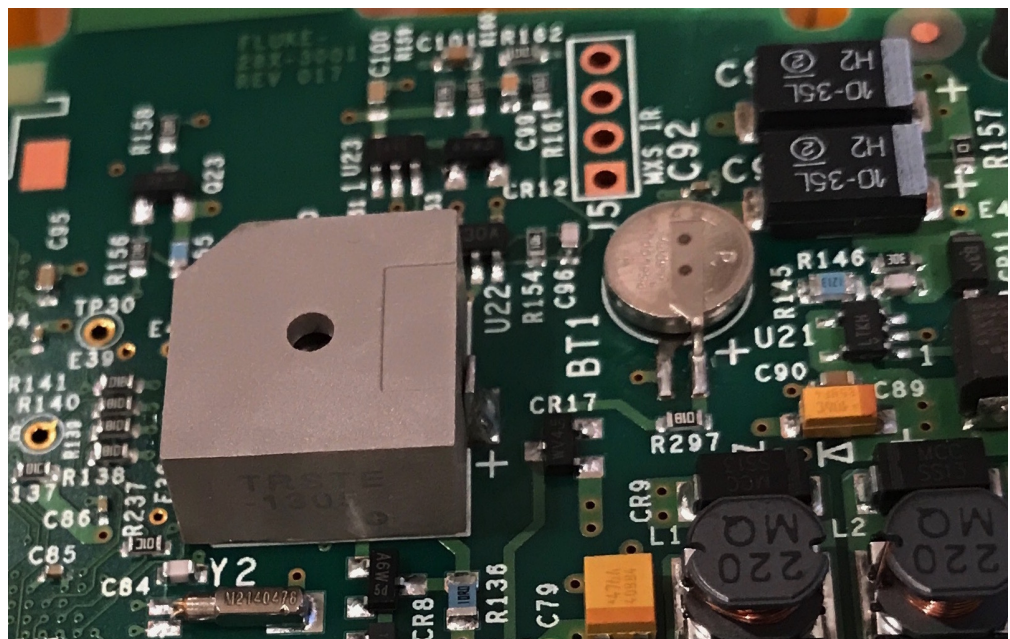
Say Thanks Reply Quote

« Reply #244 on: April 28, 2017, 01:13:30 am »

I recently acquired a Fluke 287/FVF and was quite curious if this was something I needed to be worried about. This was purchased from Amazon. Serial # 3567XXXX, 7/16 build date, rev 17 board.

As others show, cap is now replaced with a battery.

Off-topic: anyone know if the J5 header is is the UART to the IR? It would be interesting to add a BT module here.



2017042719524435-D8C4E11A-C416-4E51-9B4D-31A8588D1FFC.jpg (422.35 kB, 1605x1018 - viewed 1020 times.)

Report to moderator Logged

M. Andrés

Super Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote



Posts: 1020

Country:



« Reply #245 on: May 27, 2017, 07:35:47 pm »

measured my 289 in stanby today. consumes over 600uA as my testo clamp says OL back to a chinese meter it says 650uA if you can belive to them in terms of accuracy, the was bought back in 2012 so its still well within warranty, will see what the distributor says in the next days

Report to moderator

sergio

Regular Contributor



Posts: 149

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #246 on: May 27, 2017, 09:12:00 pm »

Say Thanks Reply Quote

My 287 after replacing super caps consumed 26,5 uA (238 uW) in standby (OFF) mode.

Report to moderator

Electro Detective

Super Contributor



Posts: 2676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #247 on: May 28, 2017, 12:58:40 am »

Say Thanks Reply Quote

Both 189 and 289 have the ongoing cRapacitor problem which I cleaned up with some isohol and may swap out one day when I get the right part and patience to do without killing it *(since Fluke in Oz want receipts n s***, to verify first ownership to fix a -FLUKE PROBLEM- for an 'unimportant' long time loyal Fluke customer)*

Strangely enough, the battery life on both has been great for over 6 months now, on or off, backlight on, logging stuff etc just using ANY weird name brand cheapies

i.e. same set of cheap batteries going well for 6 months, and no leaks yet.

Am I lucky, or 6 months use on a set of cheapies is no big deal?

I haven't been removing or blocking the batteries either btw (lazy, forgetful, busy, whatever) and the meters are still going fine

The math is that 5 or 6 dollars in total to swap out twice a year on batteries for each feature packed meter sounds like a good deal, and may be beat any leakage happening too if doing so every 6 months



« Last Edit: May 28, 2017, 03:44:17 am by Electro Detective »

Report to moderator

The following users thanked this post: Marco1971

Dwaine

Frequent Contributor



Posts: 299

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #248 on: May 28, 2017, 05:18:31 am »

Say Thanks Reply Quote

Yeah, I think your right about the header being for the IR. Slap in a Bluetooth and the device could be used better for data logging.

Report to moderator

sergio

Regular Contributor



Posts: 149

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #249 on: May 28, 2017, 08:11:20 am »

Say Thanks Reply Quote

Quote from: Dwaine on May 28, 2017, 05:18:31 am

Yeah, I think your right about the header being for the IR. Slap in a Bluetooth and the device could be used better for data logging.

And for internal noise too 😊 Or you'll do completely EMI testing with all Bluetooth module's modes? Or will changing firmware for sending "sleep" signal for bluetooth module?

Report to moderator

Helix70

Supporter



Posts: 276

Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #250 on: May 28, 2017, 08:13:50 am »

Say Thanks Reply Quote

<http://www.fluke.com/fluke/auen/accessories/wireless-accessories/fluke-ir3000-fc.htm?pid=78550>

VK4JNA



Report to moderator Logged

serggio

Regular Contributor



Posts: 149

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #251 on: May 28, 2017, 08:35:32 am »

Quote from: VK5RC on November 23, 2016, 11:44:22 am

A recent purchase of a 289 view from the inside, looks like they have redesigned the board a little and the Cap has been replaced by a battery??

New one revision 017 is pretty interesting... If this is real battery, how long it will support memory without main batteries installed in meter? What will happening when backup battery will completely dead? They will change battery or entire PCB? 😞

For super caps mentioned time for keeping data without main batteries installed on meter is about 4 hour.

Also for super capacitors shelf life time is about from 1000 h to several years.

Report to moderator Logged

Electro Detective

Super Contributor



Posts: 2676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #252 on: May 28, 2017, 08:57:57 am »

Quote from: serggio on May 28, 2017, 08:35:32 am

Quote from: VK5RC on November 23, 2016, 11:44:22 am

A recent purchase of a 289 view from the inside, looks like they have redesigned the board a little and the Cap has been replaced by a battery??

New one revision 017 is pretty interesting... If this is real battery, how long it will support memory without main batteries installed in meter? What will happening when backup battery will completely dead? They will change battery or entire PCB? 😞

For super caps mentioned time for keeping data without main batteries installed on meter is about 4 hour.

Also for super capacitors shelf life time is about from 1000 h to several years.

This is Fluke's job to solve and FIX FOR FREE -UNCONDITIONALLY- FOR ANY OWNER,

look at the LUDICROUS prices they charge for decent meters 🤔 with SILLY problems 🤔 that DON'T always need a board replacement and a 'yeah it works' -calibration- 🤔

« Last Edit: May 28, 2017, 09:09:59 am by Electro Detective »

Report to moderator Logged

serggio

Regular Contributor



Posts: 149

Country:



Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #253 on: May 28, 2017, 09:06:28 am »

So other manufactures do not have problem with super caps?

Yes, Fluke offering "lifetime" warranty and probably will solve problem. Past PCB revisions for 280 series used Panasonic EN series supercaps with just 500h shelf life 🤔 this series has been discounted by Panasonic.

Probably best way is using battery that will able changed by customer. I do not see any reason for using battery soldered directly to PCB.

« Last Edit: May 28, 2017, 09:11:11 am by serggio »

Report to moderator Logged

Electro Detective

Super Contributor



Posts: 2676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #254 on: May 28, 2017, 09:14:44 am »

Quote from: serggio on May 28, 2017, 09:06:28 am

So other manufactures do not have problem with super caps?
Yes, Fluke offering "lifetime" warranty and probably will solve problem. Past PCB revisions for 280 series used Panasonic EN series supercaps with just 500h shelf life 🤔 this series has been discounted by Panasonic.
Probably best way is using battery that will able changed by customer. I do not see any reason for using battery soldered directly to PCB.

BRAVO! 🤔 this is EXACTLY what I believe too. 🤔

It is SHEER **DUMBASS** to replace one SOLDERED leaking component with another SOLDERED soon to leak battery component inside an overpriced CAT 111/1V meter !!! 🤔🤔

that may do WORSE DAMAGE in the future,

usually ONE DAY after the lifetime warranty has ENDED. 🙄

Whoever pays the bills and wages at Fluke needs to word up the engineers YESTERDAY 🙄🙄🙄 to look inside their CAD computers 🛠️ and check out the 'user replaceable' BIOS backup battery arrangement on the main board, 🙄🙄 that's been in use across TWO CENTURIES of consumer electronics!!!!!! 🙌🙌

« Last Edit: May 28, 2017, 09:57:37 pm by Electro Detective »

Report to moderator 🗨️ Logged

serggio
 Regular Contributor
 Posts: 149
 Country: 🇷🇺

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #255 on: May 28, 2017, 12:10:25 pm »

Quote from: Electro Detective on May 28, 2017, 09:14:44 am

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It's not BIOS 🙄 RTC and probably temp offset, contrast and some user variables.

http://media.fluke.com/documents/287-289_mveng0200.pdf

To be honestly, I do not see big problem with super capacitor except of shorting life of batteries. Even if you do not have warranty, you can easy to replace it oneself. I replaced super caps in my meter oneself just for save my time.

At any case they have new revision for PCB, let's see what will going on with

Report to moderator 🗨️ Logged

Dwaine
 Frequent Contributor
 Posts: 299
 Country: 🇨🇦

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #256 on: May 28, 2017, 01:30:55 pm »

That's true. The existing separate Bluetooth module really nice.

Report to moderator 🗨️ Logged

Electro Detective
 Super Contributor
 Posts: 2676
 Country: 🇺🇸

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #257 on: May 28, 2017, 10:02:30 pm »

Quote from: serggio on May 28, 2017, 12:10:25 pm

Quote from: Electro Detective on May 28, 2017, 09:14:44 am

Whoever pays the bills and wages at Fluke needs to word up the engineers YESTERDAY 🙄🙄🙄 to look inside their CAD computers 🛠️ and check out the 'user replaceable' BIOS backup battery arrangement on the main board, 🙄🙄 that's been in use across TWO CENTURIES of consumer electronics!!!!!! 🙌🙌

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At any case they have new revision for PCB, let's see what will going on with

My point was to put a shake proof secured 'user replaceable battery' rather than a stupid leaky underated cRapacitor or dumbass soldered in battery that may leak too, whose insides may be half fried by the soldering process to help along the inevitable. -is not rocket science- 🙌

« Last Edit: May 28, 2017, 10:11:40 pm by Electro Detective »

Report to moderator 🗨️ Logged

Tim5000
 Contributor
 Posts: 12
 Country: 🇬🇧

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #258 on: June 06, 2017, 09:03:08 pm »



Hello all,

I recently discovered my Fluke 189 had a leaking supercap. It also struggled a little turning on sometimes (may or may not be related).

I was aware of this thread so I contacted Fluke UK and they immediately said "It's under limited warranty - just send it in." I queried charges and they said I'd have to pay postage...great I thought they sound like they might replace the cap!

So I sent it in.

After a couple of weeks I've received the quote...

Please be advised that the meter is out of service hence no parts available.

We are quoting you for an replacement unit Fluke-289 at the repair cost which includes 50% discount off the pricelist.

Please be advised that the 50% discount is only applicable for trading in your old unit.

-Repair price : 268.00GBP (End customer price)

-Calibration type : Traceable Calibration with Data (OPTIONAL ON REPLACEMENT UNIT)

-Calibration price : 87.50GBP (End customer price)

-Investigation fee if quotation is rejected : 46.00GBP (End customer price)

-Shipping charge : 10.00GBP

All ex VAT of course.

To me that sounds like a pretty poor show from Fluke.

The offer of:

- 1) Buying a 289 from them (which I don't want) at a price that is more than I want to spend.
- 2) Calibrating my meter for £105 + postage but retaining the fault as "no parts available"
- 3) Paying £55 + postage to have it sent back to me.

I even mentioned that there's a very long thread about the design issue of the supercap and she didn't sound like it was a big shock.

I've absolutely no problem paying for these things when told upfront but the very nice lady on the phone didn't indicate these options when I asked what the options could be.

Has anyone else had any better luck from Fluke (UK) on this matter? I'm wishing I'd just replaced it myself now 😞

Thanks

Tim

[Report to moderator](#) [Logged](#)

serggio

Regular Contributor



Posts: 149

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #259 on:** June 06, 2017, 09:17:21 pm »

[Say Thanks](#) [Reply](#) [Quote](#)

Are you eligible?

Quote

Lifetime is defined **as seven years after Fluke discontinues manufacturing the product**, but the warranty period **shall be at least ten years from date of purchase**. *(Lifetime Warranty applies to products manufactured after October 1996). The warranty does not cover manuals, fuses, disposable batteries, damage from neglect, misuse, contamination, alteration, accident or abnormal conditions of operation or handling, including failures caused by use outside of the product's specifications, or normal wear and tear of mechanical components. This warranty covers the original purchaser only and is not transferable. This warranty covers the LCD for 10 years only (state-of-the-art for LCDs). To establish original ownership proof of purchase is required (20, 70, 80, 170, 180 and 280 models). THE FOLLOWING PRODUCTS ARE INTENDED FOR SALE AND USE IN THE CHINESE AND HIGH GROWTH MARKETS ONLY AND AVAILABLE FOR WARRANTY PROTECTION ONLY IF SOLD, PURCHASED AND USED SOLELY FROM AN AUTHORIZED DISTRIBUTOR WITHIN THESE TERRITORIES: 101, 106, 107, 15B+, 17B+ and 18B+. THE WARRANTY FOR THESE PRODUCTS IS VOID IF THE PRODUCT IS SOLD, PURCHASED OR USED OUTSIDE OF THESE TERRITORIES, OR FROM UNAUTHORIZED DISTRIBUTORS AND NO WARRANTY COVERAGE, SERVICE, REPAIR OR REPLACEMENT WILL BE PROVIDED.

If not, ask them return your meter, replace capacitor oneself and be happy with your trusted meter.

[Report to moderator](#) [Logged](#)

Tim5000

Contributor

Posts: 12

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« **Reply #260 on:** June 06, 2017, 09:37:58 pm »

[Say Thanks](#) [Reply](#) [Quote](#)

Hi serggio, yes I believe I am eligible. As I mentioned I also queried it with the support lady. What's frustrating is she could have quite easily told me "we can't repair them" but she didn't - she instead told me to send it in as it's covered under the limited warranty. And I phoned twice to check before going ahead with it.

But now to get it back I have to pay £55 + postage. Again if that had been mentioned upfront when I asked about fees I wouldn't have a complaint - but it absolutely wasn't mentioned. My concern is why didn't they just tell me over the phone that they won't repair these meters? To my mind not being upfront when asked is just theft.

I would be interested if anyone else has dealt with Fluke UK specifically on the matter of this design issue.


[Report to moderator](#)  [Logged](#)

serggio

Regular Contributor



Posts: 149

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« **Reply #261 on:** June 07, 2017, 05:07:18 am »

[Say Thanks](#) [Reply](#) [Quote](#)

Hi Tim5000,
If you still eligible for lifetime limited warranty (no 10 year left from date of purchase), I suppose they should did repair/replace your meter for free.
You still responsible for postage fees but not for repair cost.
Try contact their US support by mail for clarify this situation or head their service department in UK.
Girl on reception just for bla-bla-bla, she is not responsible for any decisions and not check any service bulletin during phone conversation.

« *Last Edit:* June 07, 2017, 07:15:42 am by *serggio* »

[Report to moderator](#)  [Logged](#)

Electro Detective

Super Contributor



Posts: 2676

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« **Reply #262 on:** June 22, 2017, 11:15:34 am »

[Say Thanks](#) [Reply](#) [Quote](#)

It must be obvious by now that Fluke are either dropping the ball too often,
or their service agents are not worded up properly about how Fluke support works,
or both!

Tim5000s situation described above sounds like a feeble attempt to relieve him or her of more money without fixing a WELL KNOWN meter issue that is Fluke's part blunder, not the CUSTOMERS! 🤔

To add more SALT to the wound they want Tim5000 to dump the 189 and fork out difference money and get a 289,

which bears NO RESEMBLANCE in functionality, **[[SIZE!!!]]** and convenience to a 189, even though many of the specs are similar

i.e. the 189 is a sportscar, the 289 a pimped up pickup ute.

What the FLUKE is going on?

The competition is watching...note more orange Keysights, green Mastechs and red Brymens and Uni-Ts out there ! 🤔

let's not forget those little rippa **BLUE** meters that are quickly gaining favour too 🤔


« *Last Edit:* June 24, 2017, 08:02:49 pm by *Electro Detective* »

[Report to moderator](#)  [Logged](#)

iamjanco

Contributor

Posts: 6

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« **Reply #263 on:** June 27, 2017, 02:30:56 am »

[Say Thanks](#) [Reply](#) [Quote](#)

Hi everyone, realize this thread is about the 289 supercap issue, hoping my query is somewhat relevant (I'd rather not invest in a current Fluke, if they're no longer the brand they used to be).

I've been considering purchasing a 289 FVF package for use in computer benching given its logging capabilities, but haven't been able to locate much in the way of whether Fluke has properly addressed the leaking supercap issue in the newer releases. I'm also a bit concerned about battery life during longer test intervals and am open to other alternatives that offer similar functionality. My needs are focused on short and longer interval voltage and thermal measurements and am not adverse to a smaller bench unit (space is limited), even a used one, though I'd prefer to keep pricing within the same range.


Info and suggestions would be greatly appreciated.

[Report to moderator](#)  [Logged](#)

Tim5000

Contributor

Posts: 12

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)« **Reply #264 on:** June 27, 2017, 06:30:22 pm »

Hi, There was a post earlier in the thread I think that seemed to show the cap had been designed out of newer models and a battery has instead been designed in...

With regards to my issue with Fluke UK, I'm just waiting for my meter back.

I wasn't happy with the offer of a 289 - I think they should at least have replaced the cap if they didn't have any boards.

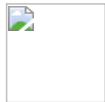
But apparently fluke don't have any parts..I'm not sure I believe that but it is what it is! They did at least waiver the "investigation fee" so I went with that option.

Mostly I was dissapointed they didn't straight up say that they didn't/couldn't/wouldn't do anything - it would have saved both mine and their time and money and I'd have got it done by now!


So all in all I'm a little bit lighter of pocket for double shipping fees and will investigate fixing it myself when it arrives.

[Report to moderator](#)  Logged**The following users thanked this post:** theirishscion, Electro Detective, iamjanco **technogeeky**

Frequent Contributor



Posts: 559

Country: 

Older New "New Player"

Player Playas'

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)« **Reply #265 on:** June 27, 2017, 09:54:08 pm »**Quote from: Tim5000 on June 27, 2017, 06:30:22 pm**

Hi, There was a post earlier in the thread I think that seemed to show the cap had been designed out of newer models and a battery has instead been designed in...

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So all in all I'm a little bit lighter of pocket for double shipping fees and will investigate fixing it myself when it arrives.

As fucking well they should have waived the fee! You already knew what the problem was! They know what the problem is. What is there to investigate?

This whole situation is absurd.

I don't currently own any Fluke multimeters, but I certainly aspired to one day own what I thought was such a high-end meter. But now, I can't see myself making such a purchase. It's probably been obvious for a long time to some that they aren't fundamentally better; and now it's obvious that they can indeed be worse.


It's a shame, really. They were a "great" American brand.

[Report to moderator](#)  Logged**The following users thanked this post:** Electro Detective **Electro Detective**

Super Contributor



Posts: 2676

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#)[Reply](#)[Quote](#)« **Reply #266 on:** June 28, 2017, 08:01:27 am »

You just need to find someone local (clued and honest) that can sort out the cRapacitor issue (without causing other issues) if you don't want to stuff about DIY.

Mine still suffer from the issue but are working 100%

Both the 189 and 289 are still killa meters to this day, and will continue to be so, 🙄


unless Volts, Amps and Ohms become obsoleted in the near future. 🙄

Report to moderator  Logged

 **Tim5000**

Contributor

Posts: 12

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #267 on: June 28, 2017, 09:16:33 pm »

Thanks for the replies.

I've got a couple of meters - the 189 that's getting on and then I've also got a 2016 87V that I got for a great price on ebay virtually new. The 87V is good - I like it, but I still reach for the 189. As I told Fluke - this was my personal meter but as a consultant engineer at my work when it comes to buying new equipment I can and will give an honest account of my experience with their support. I even pointed them at this forum and the 87V quality forum to highlight that a lot of people are losing faith in them...but they just weren't open to moving at all. Apparently the limited support ran out in April (2 months out) so they couldn't do anything but of course were very sorry!

So..when the meter comes back I'll order the parts and get it repaired myself, it doesn't look hard and I can't leave it knowing it's there - I just wanted to use Fluke's "legendary" service. I'm not happy - but lessons learned and people will always vote with their feet.

Tim

Report to moderator  Logged

The following users thanked this post: theirishscion

 **Electro Detective**

Super Contributor



Posts: 2676

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #268 on: June 28, 2017, 11:48:05 pm »

I use the 189 and 87V combo sometimes, it's a bench test no brainer 🙄

Just watch out for the 87V AC default return when measuring DC current and switching from MA to uA, I've got a taped on sticky note to remind me


Report to moderator  Logged

 **ketimoi**

Contributor



Posts: 10

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #269 on: September 30, 2017, 05:12:59 am »

This thread is so useful no doubt about that. I own a fluke multimeter after reading this best multimeter review <https://totalguide.org/best-multimeter/>. Overall it is an good multimeter. But, this month I am seeing some problem with it. I am reading whole thread to figure out my problem.


« Last Edit: October 01, 2017, 04:49:49 am by ketimoi »

Report to moderator  Logged

 **Tim5000**

Contributor

Posts: 12

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #270 on: September 30, 2017, 04:07:37 pm »

Quote from: ketimoi on September 30, 2017, 05:12:59 am

This thread is so useful no doubt about that. I own a fluke multimeter and seeing some problem with it. I am reading whole thread to figure out my problem.

Hi ketimoi, good news is you'll get a lot of help here I'm sure.

And being in the US everything I've read is that Fluke is very much more interesting in doing "the right thing".

I've actually only just got around to revisiting my Fluke 189 meter with this issue so I've ordered what a few others have mentioned - a Panasonic EECS0HD334H. Will update when I try and fit it - it should be arriving this week.

EDIT: Confirmed that it fitted (with a little trimming of the tabs as it's physically bigger), and time is now held whilst changing batteries.


« Last Edit: October 03, 2017, 09:09:28 pm by Tim5000 »

[Report to moderator](#)  [Logged](#) **Marco1971**

Contributor



Posts: 29

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #271 on: March 22, 2018, 12:22:36 pm »

Hi, all...my 89 IV and 189 are in the same condition (pristine)...only in the 89 IV there are some signs of leaking. Both from year 2000.

Any issue if instead of 0.1 F i'll use one supercap with another value of capacitance (e.g 0.22 or 0.33 F) ? I just ordered four of this...



Many thanks.

Marco1971.

« Last Edit: March 23, 2018, 09:13:23 am by Marco1971 »

[Report to moderator](#)  [Logged](#) **coromonadalix**

Super Contributor



Posts: 3632

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #272 on: March 22, 2018, 10:31:49 pm »

For the moment in my 189

I have removed the supercap, it was rusted


I dont care about the clock, the meter works very well, i did find an physical equivalent at digikey, 0.22f at 5 volts at 1.52\$ can, ordered 5 of them but they are out of stock, back order for 2 month ...

[Report to moderator](#)  [Logged](#) **bayati**

Contributor



Posts: 15

Country:  **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#) [Reply](#) [Quote](#)

« Reply #273 on: January 05, 2019, 07:01:29 pm »

Hi

I'm sorry to bringing up an old thread and I know it has been talked a lot about this issue but please bear with me because I'm seriously confused.

I have 2 fluke 289. both have corroded cap and they can't hold the time when the battery is removed. I measured it's consumption right after installing the batteries. It draws 10 mA at first but after 1 min it stops at 20-30 uA (I think it charges the cap). Both working perfectly and I don't have any problems in measurements and I think battery consumptions are normal.

Note: I can't send them to Fluke

-- Now my questions:

1. Two people mentioned that after removing the cap their meters broke. How common is that? It can be related to other issues not removing cap?
2. Many substitute caps mentioned. 0.1F 3.3v, 0.22F 5.5v, 0.33F 5.5v? In super caps using higher capacity is dangerous or higher voltage?
3. The meter's firmware is 1.12. Is it better to change the super cap after updating to 1.16 or before that?
4. Should I wait for the cap to get discharged completely then removing them or it does not matter?
5. This question may look absurd but one person mentioned just using hot air to change the cap, not soldering iron?!!! but he did not mentioned why! (I think using soldering iron is better because using hot air, I think it messes up the calibration)
6. The meters are calibrated in 2011. I don't care about the date but I'm worried that the battery corrosion expands or shorts. what do you think? should change it?

Thank you in advance.

« Last Edit: January 05, 2019, 10:08:08 pm by bayati »

[Report to moderator](#)  [Logged](#)

The following users thanked this post: Marco1971

 **coromonadalix**

Super Contributor

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**[Say Thanks](#) [Reply](#) [Quote](#)



Posts: 3632

Country:



« Reply #274 on: January 06, 2019, 03:25:13 am »

On my 3x 189 they had an 0.1 farad supercap, changed them to 0.33 farad at 5.5 volts, bended the legs to fit pcb pads, i desoldered one side at the time, none of them broke afterwards, while waiting for the caps, i did use them with no problems ??

I did use anti static protocol, not shorted anything in case the supercaps where charged, mine were corroded on top.

« Last Edit: January 06, 2019, 02:47:59 pm by coromonadalix »

Report to moderator Logged

The following users thanked this post: bayati

 Daruosha

Regular Contributor



Posts: 180

Country:

**Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks

Reply

Quote

« Reply #275 on: January 06, 2019, 09:33:55 am »

Quote from: bayati on January 05, 2019, 07:01:29 pm

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6. The meters are calibrated in 2011. I don't care about the date but I'm worried that the battery corrosion expands or shorts. what do you think? should change it?

Thank you in advance.

- 1- Removing the caps wouldn't do any harm. Fluke themselves confirmed the purpose of that cap is to keep the clock.
- 2- Higher caps ratings are OK (except in high ripple filtering where ESR is important)
- 3- Firmware version doesn't matter.
- 4- If the corrosion process has been started, remove the cap ASAP.
- 5- Removing an SMD cap can be done in many many ways. Just do it the way it suites you and you feel comfortable enough to do it. If you do it properly with small enough air nozzles, hot air wouldn't do any damage and drift.
- 6- Yes, Change them.

Report to moderator Logged

The following users thanked this post: Marco1971, bayati

 sotos

Frequent Contributor



Posts: 256

Country:

**Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks

Reply

Quote

« Reply #276 on: January 06, 2019, 01:14:59 pm »

I'm one of the guys that after removing the capacitor the meter refused to boot. I sent it to Fluke and they changed the capacitor and repaired the meter free of charge but I had to wait 1 month as I remember.

PS. I repair pcbs for a living and know how to solder through hole and smd components.

« Last Edit: January 06, 2019, 01:20:53 pm by sotos »

Report to moderator Logged

The following users thanked this post: bayati

 coromonadalix

Super Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« Reply #277 on: January 06, 2019, 02:54:55 pm »



Posts: 3632

Country:



@sotos Errors can happen to experimented techs, an sudden discharge at the wrong place, bad manipulation etc ...

Glad Fluke repaired it, sad they haven't issued a official recall for this supercap, "they" know its a problem for a long time.

I used Panasonic eec-s0hd334h pn: p11064-nd at Digikey

But they are being phased out ... i have 3 left in case ...

Report to moderator Logged

The following users thanked this post: Marco1971, bayati

bayati

Contributor



Posts: 15

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #278 on: January 06, 2019, 04:09:23 pm »

Fluke has a big unofficial market in Iran (just like apple) but no official service. I think i should take a risk and do it. I try to discharge the super cap with a resistor before removing it. wish me luck

Report to moderator Logged

sotos

Frequent Contributor



Posts: 256

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #279 on: January 06, 2019, 05:02:11 pm »

When you remove the capacitor don't try to turn it on to see if it can work without the cap. I suggest you remove it put a new one in and then turn it on.

I did this to mine and didn't boot, I tried it without the cap. Maybe it doesn't like it.

Report to moderator Logged

The following users thanked this post: bayati

coromonadalix

Super Contributor



Posts: 3632

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #280 on: January 06, 2019, 05:18:37 pm »

@ sotos

My 189 worked pretty well without the supercap, I did not use any time logging feature and or set a clock

I wont say for the 289 series, apparently there may be an real battery instead of an supercap ??
Some teardown photos showed that.

Report to moderator Logged

The following users thanked this post: Marco1971

say

Contributor

Posts: 28



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #281 on: January 06, 2019, 06:58:03 pm »

Could you please post a link of those photos.

Report to moderator Logged

joeqsmith

Super Contributor



Posts: 8952

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #282 on: January 06, 2019, 07:15:23 pm »

I was working with a friend that has a 189 a month ago. I went to use his meter and it was dead. He had just put fresh batteries in. With permission, I took it apart and sure enough the cap was going bad. No need to discharge it, it was flat. These meters are getting old.

Report to moderator Logged

How electrically robust is your meter?? <https://www.youtube.com/channel/UCsK99WXk9VhcghnAauTBsbg>
Software, documentation and test reports for the low cost NanoVNA, V2+4 and LiteVNA may be found here: <https://github.com/joeqsmith>

The following users thanked this post: Marco1971, bayati

Electro Detective

Super Contributor



Posts: 2676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« Reply #283 on: January 07, 2019, 12:06:53 am »

I'm still sitting on the fence about removing the stupercrapacitors on the 189 and 289 🙄

I would prefer to remove the caps and leave a blank space there, but without killing the meter/s and or affecting their logging functions

or have the charger circuit/firmware/software go nuts with **"Dude, where's my cap?!!"** 🤪

Reset of the clock on battery changes is a trivial matter compared to having leak prone caps and coin batteries lurking in there

Both meters working great, I really don't want to kill em

Would an electrically isolated soldering iron or station with a wee tiny tip be ok to get this done? or should the iron be earth/ground referenced?

I don't want to mess with hot air, nor do I wish to encourage any ESD zaps during a simple heat and remove operation

i.e. I want them GONE without the **'SOL-Game Over'** thing flashing on the meter display

« Last Edit: January 07, 2019, 08:32:12 am by Electro Detective »

Report to moderator

Logged

The following users thanked this post: bayati

coromonadalix

Super Contributor



Posts: 3632

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« Reply #284 on: January 07, 2019, 12:58:01 am »

i've done the supercap change on a anti static bench mat, with an normally earth grounded hakko soldering post, nothing fancy, if you're not so sure, discharge the supercap with an 100 ohms resistor ...

For the supposed battery in a 287 289 link : <https://www.eevblog.com/forum/testgear/fluke-189-with-leaking-surface-mount-coin-cell/225/>

On the pcb it is marked BT1 : <https://www.eevblog.com/forum/testgear/fluke-189-with-leaking-surface-mount-coin-cell/?action=dlattach;attach=311290;image>

My 189 had c xxx marked on the pcb, the confusion would be : it is a supercap used as a small battery ??

Report to moderator

Logged

The following users thanked this post: Electro Detective, bayati

Electro Detective

Super Contributor



Posts: 2676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« Reply #285 on: January 07, 2019, 08:56:41 am »

Mine both look like un-shaven, *not so super* capacitors

I reckon owners of later model 289, with the internal backup battery instead of the supercapacitor, will be having similar adventures in a few years time, especially if the battery sort of internally shorts itself or changes polarity, leaks, or just goes weird... 🤪 as I've seen happen on PC Bios backup batteries 🤪

Why oh why did Fluke not fit a CR2032 battery style socket, someplace where vibrations and leakage won't cause drama 🤪

or silicone bodge it down...

These are their flagship meters FFS (For Flukes Sake) and 289 is still current, this silly business does not instill repeat buyer confidence, especially at those 'forget mates rates' prices...

Report to moderator Logged

The following users thanked this post: bayati

bayati

Contributor



Posts: 15

Country:

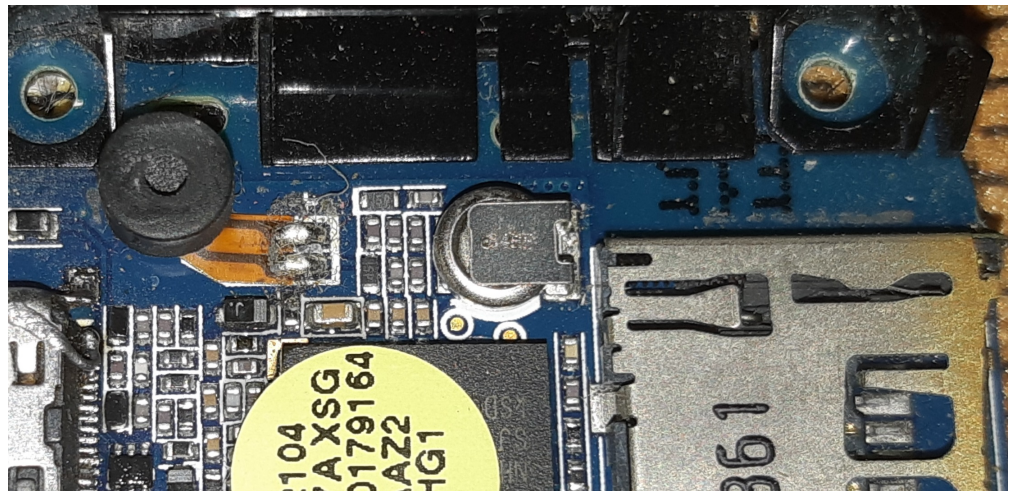


Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #286 on: January 09, 2019, 10:16:24 am »

Just to confirm that Fluke could do much better job, it is a picture of Samsung E250 motherboard. The board is made in 2006. It has a ~3.4v lithium battery at least 13 years old. As you see, no leaking and I read 3v on it right now. It is as small as the supercap that is used in the 189/289/287 (if not smaller).



Screenshot_20190109-125454_Gallery.jpg (817.79 kB, 2220x1080 - viewed 656 times.)

« Last Edit: January 09, 2019, 10:22:51 am by bayati »

Report to moderator Logged

The following users thanked this post: Electro Detective, Marco1971

SteinarN

Newbie

Posts: 1

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #287 on: January 29, 2019, 10:59:43 pm »

My first post on this forum.

I've had a 287 for years, but from the start it was draining the batteries in a month or two just by sitting on the shelf, clock also lost its time. Tonight i was searching this problem and I came over a couple threads on this forum. I have identified the supercap on the pcb and ordered 4 of these: <https://no.mouser.com/ProductDetail/555-DSK3R3H224U-HL>

I hope this will cure the illness of my otherwise excellent meter.

I have a few small projects I am working on and I hope I can get some help from you for those projects when I start on them later 😊

Steinar

Report to moderator Logged

say

Contributor

Posts: 28



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #288 on: January 30, 2019, 09:10:44 pm »

It should. Good luck


Report to moderator Logged

 **bayati**

Contributor



Posts: 15

Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

[Say Thanks](#)

[Reply](#)

[Quote](#)

« **Reply #289 on:** January 31, 2019, 12:48:43 pm »

Hi guys.
I changed my 289's supercap.

My meter is built in 2011 Firmware 1.12. Before sharing my experience you should know that Fluke 289 is about 700\$ to 800\$ in Iran and as it is illegal to be exported to Iran, it is very rare and there is no warranty for it.

First I searched for a replacement cap and the best I could find in Iran was MGC 5.5V 0.33F (size wise not the best choice but the best for me). I bought it for 1\$. It is a Japanese Ricoh cap so I believe it will serve for a long time.

I opened the meter and I was reading 0.670v on the old supercap. I shorted it but I still read 0.670 . I disordered it anyway and soldered the new cap with soldering iron set on 330c. It boot with no problem but the hart attack happened when I checked the meter. It was reading too high!! 😞

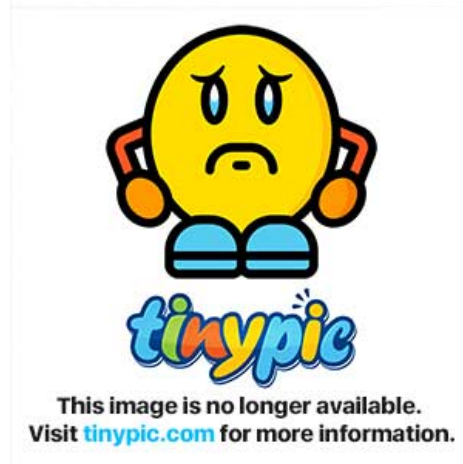
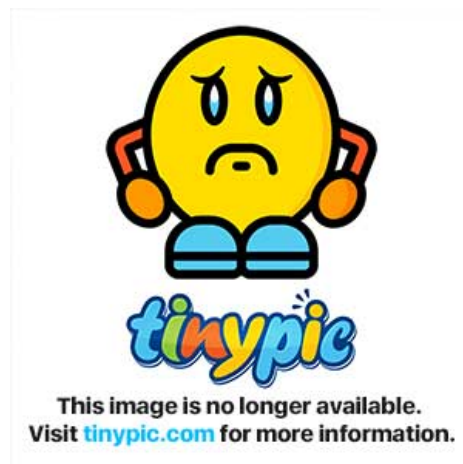
I opened it and thanks to the resent video of Dave, I thought maybe the shield is touching the negative lead of the cap as it is too big. I put tape on it and now it works perfectly. 📱😌

So i confirm that changing the cap does not break the meter. Just be ESD safe and do not turn it on before putting the new cap (I talked with someone who has removed the cap and it's working without it).
Tnx to all.

P.S. In the last picture the leads has been zeroed, that's why it reads few counts down

P.S. look at the inductor above the supercap!!! I didn't even touch it and I'm sure that I'm the first one who has opened it. It should be happened at the assembly. 🤖🗨️

*If the pictures don't open use this link: <https://photos.app.goo.gl/nmGjZ31ACf3h1owY8>





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« Last Edit: January 31, 2019, 04:23:23 pm by bayati »

Report to moderator Logged

The following users thanked this post: Electro Detective

bayati

Contributor



Posts: 15

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks

Reply

Quote

« Reply #290 on: February 01, 2019, 07:55:46 pm »

As we are talking about supercaps, you can use the following pdf (datasheet) or pictures to estimate the lifetime of your supercap. based on this equation mine should last for ~6.5 years.

<https://www.mouser.com/ds/2/88/EDL-19670.pdf>

Type EDL , Electric Double Layer Supercapacitors

Ultra High Capacitance, Small Case Size Options



Type EDL electric double layer supercapacitors offer extremely high capacitance values (farads) in a variety of packaging options that will satisfy, low profile, surface mount, through hole and high density assembly requirements. The EDL is a cut above the standard electrolytic capacitor in that it can act as a battery without having to deal with the environmental or hazardous material issues that batteries entail.

Highlights

- Unlimited charging and discharging capability
- Recycling is not necessary
- Long Life - 15 years
- Low ESR
- Will extend battery life up to 1.6 times
- First class performance with economy pricing

Specifications

Operating Temperature Range	-25 °C to +85 °C
Rated Voltage Range	2.1 Vdc to 5.5 Vdc
Capacitance Range	0.022 F to 70 F
Capacitor Tolerance	-20/+80%

How To Select an Electric Double Layer Capacitor

Estimated Initial Backup Time
Back-up time for Type EDL Electric Double Layer Supercapacitors decreases with use and over time especially when the current is large or operating at high temperature. Be sure to specify extra back-up time initially to allow for product changes.

Select the optimum supercapacitor according to applied current

The internal resistance of the supercapacitor prevents drawing high discharge currents. Select the supercapacitor capable of delivering the peak current at switchover to back-up mode using the following table.

Series	Maximum Operating (Discharge) Current				
	0.047 F	0.1 F to 0.33 F	0.47 F to 1.5 F	3.3 F to 4.7 F	10 F to 50 F
SG, SD, NF	200 µA	300 µA	1 mA	-	-
F	200 µA	300 µA	300 µA	-	-
EN	-	10 µA	-	-	-
HW	-	-	-	300 mA	1 A

Back Up Time Example

Back-up time is the time it takes for the applied voltage to decay to the cut-off voltage set by the user after applying the application's maximum voltage at application maximum temperature.

Example: An F Type EDL, P/N EDLF105B5R5C (Rated at 5.5 V, 1.0 F) is charged to 5.0 Vdc. The circuit requirement is such that it must maintain a memory circuit with a current drain of 10 µA in an ambient temperature of +40 °C. The memory RTC cut-off voltage is 2.0 Vdc.

Using minimum capacitance, calculate the back-up time as follows:

$$t = C\Delta V / I = C[V_0 - (iR) - V_1] / (i + i_L)$$

$$C = 1.0 \text{ F} - 20\% = 0.8 \text{ F}, R = 50 \Omega, V_0 = 5 \text{ V}, V_1 = 2 \text{ V}, i = 10 \mu\text{A}$$

Therefore,

$$t = 0.8 (5 - 0.0005 - 2) / ((10 + 2) \times 10^{-6}) = 55 \text{ hours}$$

And thus the initial back-up time is 55 hours. After 1000 hours, calculate the back-up time will drop to about 38 hours.

t: Back-up time (s)

C: Capacitance of Type EDL (F)

V₀: Applied voltage (V)

V₁: Cut-off voltage (V)

i: Current during back-up (A)

i_L: Leakage current (A)

R: Internal resistance (Ω) at 1 kHz

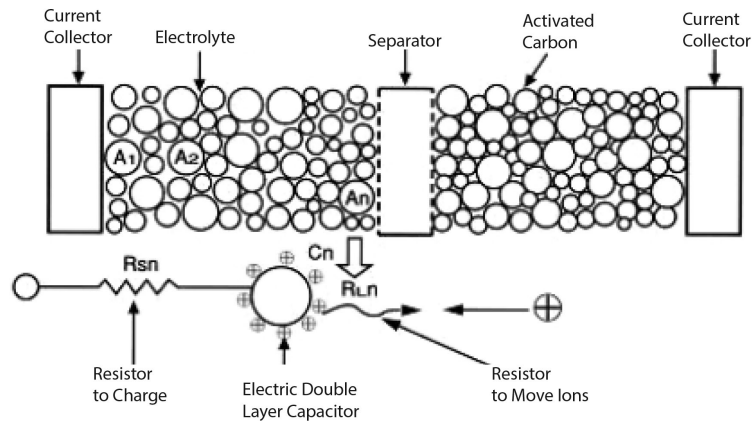
CDE Cornell Dubilier • 1605 E. Rodney French Blvd. • New Bedford, MA 02744 • Phone: (508)996-8561 • Fax: (508)996-3830

1.jpg (806.79 kB, 2316x3153 - viewed 379 times.)

Type EDL , Electric Double Layer Supercapacitors Ultra High Capacitance, Small Case Size Options

Life Design	Type EDL supercapacitors have a useful lifetime that decreases with increasing operating temperature, humidity, applied-voltage, current and backup-time requirements. Expected lifetime is the product of four factors: Expected Life = (Lifetime)-(Temperature Factor)-(Voltage Factor)-(Moisture Factor)
Lifetime	The minimum rated life at 85 °C with 5.5 Vdc applied is 1000 hours with maximum permitted end-of-life capacitance change of -30% and a 4 times increase in internal resistance.
Temperature Factor	To determine the effect of temperature on expected life of a supercapacitor, use the fact that expected lifetime doubles for each 10 °C that the operating temperature is reduced. As an illustration, at 85 °C and full voltage the rated lifetime is 1000 hours. So, at 40 °C the expected lifetime would be multiplied by $2^{(85-40)/10} = 2^{4.5} = 22.6$ times. The Temperature Factor is 22.6, and for 1000-h, 85 °C rated life, the expected 40 °C life would be 22600 hours.
Voltage Factor	The rate of change of capacitance decreases with decreasing applied voltage. The effect on life extension is roughly proportional to the voltage derating, e.g., 5 V applied to 5.5 V rated supercapacitors extends the life 1.1 times.
Moisture Factor	Expected life of these supercapacitors is considerably shortened by operation in high humidity. The applications discussed here assume that the relative humidity is no more than 50%.
Expected Life Example	So, for a 5.5 V supercapacitor at 40 °C charged to 5.V in less than 50% RH the expected life is: Expected Life = (Lifetime) (Temperature Factor) (Voltage Factor) (Moisture Factor) = (1000 h) (22.6) (1.1) (1) = 24800 hours = 2.8 years
RoHS Compliant	

Electric Double Layer Supercapacitor Construction



CDE Cornell Dubilier • 1605 E. Rodney French Blvd. • New Bedford, MA 02744 • Phone: (508)996-8561 • Fax: (508)996-3830
 2.jpg (700.14 kB, 2316x3153 - viewed 252 times.)

« Last Edit: February 01, 2019, 09:13:36 pm by bayati »

Report to moderator Logged

FrankE
Regular Contributor

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #291 on: February 03, 2019, 01:25:23 pm »

Posts: 188
Country:

The Supercap failed on my Fluke 289 so I sent it back to Fluke in the Netherlands in 2016 under an RMA for a warranty repair. I think it took about a week round trip, I wouldn't have known the Supercap was the issue if it wasn't for a thread that year on here. Every Friday I check all my batteries, replace/recharge as necessary. I also power on anything with a Supercap Friday and Tuesday (though I assume the 289s supercap is energised direct from the AA cells from before the switch. I noticed last Friday the time needed reset and the personal details have been wiped.

Changing the supercap is a warranty repair so shouldn't cost if still in warranty. The repair won't affect calibration and Fluke normally won't do a new factory calibration.

Report to moderator Logged

The following users thanked this post: Marco1971

agdr

Supporter



Posts: 105

Country:

 **10 year "limited" Fluke 289 warranty**

« Reply #292 on: February 05, 2019, 10:31:28 pm »

[Say Thanks](#)[Reply](#)[Quote](#)

So today I finally get around to calling Fluke's repair department here in the US about my two 289's that seem to have the supercap issue (both forget the date and time when the batteries are removed). I learn that the 289's have a 10 year warranty. The warranty repair does come with the non-data type calibration. Maybe their policy on calibration with repairs varies from country to country..

Also: I asked - when 289s go back to Fluke for repair you don't need to include the test leads, batteries, or any case. Just the meters. Shipping both via FedEx Ground today was \$18. If I had fully insured probably would have been more like \$26. Lol tried UPS first and they literally could not process the return address. Pffftt. There are some building numbers in front of part of it, and the UPS system didn't show that exact building. That is why I stopped using UPS for outbound a loooong time ago.

I hope this information helps others!

« Last Edit: February 07, 2019, 12:00:04 am by agdr »

[Report to moderator](#) **mr.fabe**

Regular Contributor



Posts: 168

Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #293 on: February 06, 2019, 12:30:29 am »

[Say Thanks](#)[Reply](#)[Quote](#)

I recently had my 289 in for a faded display issue in low ohms and possible supercap issue. Spoke with Fluke TS to confirm the work that was performed and the rep stated no pay, no calibration. I received the unit back yesterday. Fluke replaced the mobo and included a calibration certificate. All expense covered under warranty except shipping to Fluke.

Changes from my original unit
Board ID was 3 replaced with 5
Build date 6/2010 replaced with 11/2017
FW v1.16 replaced with v1.41

I purchased this unit last month on fleabay.. forgot to tell them I wasn't the original owner

[Report to moderator](#)

The following users thanked this post: FrankE, Marco1971

 Electro Detective

Super Contributor



Posts: 2676

Country:

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« Reply #294 on: April 13, 2019, 10:41:16 am »

[Say Thanks](#)[Reply](#)[Quote](#)

I got into one of those rare lab moods early today and decided to take my chances and de-solder the supercrapacitor from both the 189 and 289, with no intention of replacements same or better,

and damn the torpedoes...

Got everything set up ready to unsolder, ensure no ESR drama, thinking about somehow safely discharging any residual charge from the supercaps first,

and... WHOA! wait a minute!

I went another way:

I CAREFULLY used my sharp sidecutters to cut the top metal tab off the supercap, slowly lifted back the supercap to about 90 degrees max, bent it back and forth a few times, supporting the back so no pressure on the PCB solder area, till the bottom supercap tab snapped off clean

Cleaned up with isopropyl alcohol > Job done

Both meters working perfect, set their clocks, and no more suss supercrapacitor issues to think about, or rant on and Fluke bash at 189/289 posts

FWIW: the supercap tab remnants can be unsoldered any time in the future if I (no chance! 🙄) or the next owner wants to wack in a supercap, and resume the saga I just ended

i.e. *No Fluke was harmed by this procedure to remove a malignant tumor* 🤪

Happy Fluke Camper again 🤪🤪

Report to moderator Logged

Tim5000

Contributor
Posts: 12
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #295 on: April 13, 2019, 10:52:04 am »

Quote from: mr.fabe on February 06, 2019, 12:30:29 am

FW v1.16 replaced with v1.41

Firmware v1.41 - interesting! I wonder what the changes in that are.
The latest available on their website is 1.16: <https://www.fluke.com/en-gb/support/software-downloads/fluke-287-and-289-multimeter-firmware-update>

Report to moderator Logged

The following users thanked this post: Marco1971

mr.fabe

Regular Contributor

Posts: 168
Country:

Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #296 on: April 13, 2019, 05:40:06 pm »

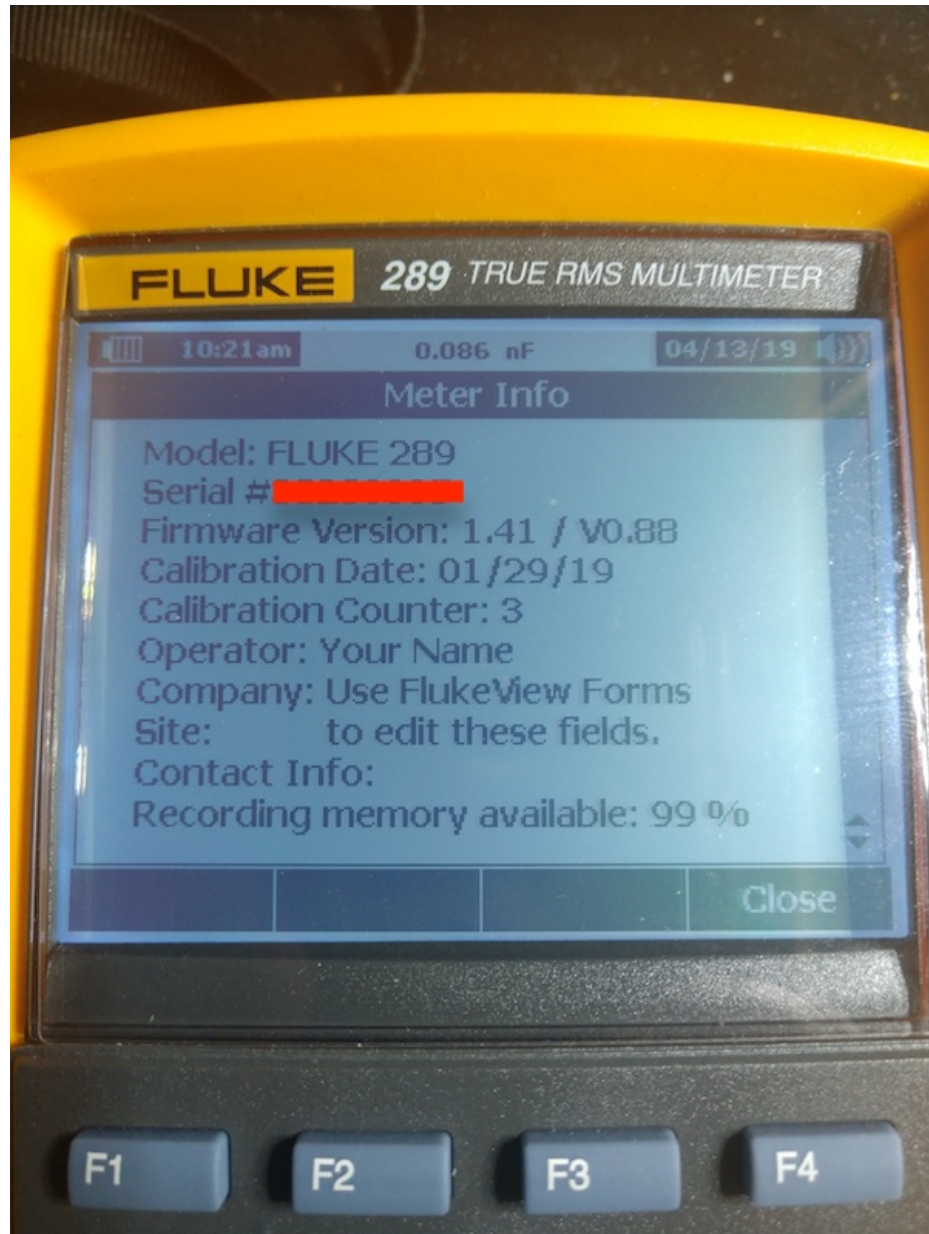
Quote from: Tim5000 on April 13, 2019, 10:52:04 am

Quote from: mr.fabe on February 06, 2019, 12:30:29 am

FW v1.16 replaced with v1.41

Firmware v1.41 - interesting! I wonder what the changes in that are.
The latest available on their website is 1.16: <https://www.fluke.com/en-gb/support/software-downloads/fluke-287-and-289-multimeter-firmware-update>

If your unit is working well as it was designed, I wouldn't worry about the firmware changes between v1.16 and v1.41
The major problems have already been addressed. It does boot fast and the batteries last a long time though... 🤪



IMG_20190413_102154104.jpg (151.24 kB, 600x800 - viewed 391 times.)

[Report to moderator](#) Logged

Electro Detective

Super Contributor



Posts: 2676

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #297 on: April 14, 2019, 11:03:10 pm »

[Say Thanks](#) [Reply](#) [Quote](#)

(Reader Alert: Tired and perhaps one beer too many zone...)

Would soldering in a small PCB coin battery holder be a proposition, so as to 'plug' in a supercapacitor (with its tabs cut) giving the meter owner the options of replacement and or removal any time

or perhaps a pair of wires soldered in that tiny spot, and the supercap and or holder parked elsewhere in a bigger or blank space on the PCB and properly secured.

Here's another brain bender:

is there a simple component addon to act as a one way valve so the supercapacitor can be charged

with just enough voltage/current to keep the clock alive for a few minutes during a battery swap, but ensure there is no way any voltage/current or a short or freaky polarity reversal can kick back at the charge source.

Maybe it's in there already, I don't know 🤔 and haven't gone that far to work it out (no schematic+lazy)

Faulty, underated, temperamental, or shorted supercaps and or the charging circuit overdriven into a short, may have caused grief to 189, 289 and 89IV owners over the years, awarding an undeserved bad rep to these fine meters

Fluke could/should have handled this matter a LOT better than just dumping it on the owners to sort it out, surfing for info at forums and Youtube, or hoping the issue will eventually time out and blow away

~~or cash strapped battlers can go without, sledge the Fluking meter 🤖 and wake up to affordable Aneng or better still Brymen/EEV/blog meters 🤖 and corporats toss them in the dumpster and buy cartons of new Flukes 🤖~~



Report to moderator Logged

coromonadalix

Super Contributor



Posts: 3632
Country: 🇨🇦



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #298 on: April 15, 2019, 01:35:05 am »

Say Thanks Reply Quote

@ Electro

This is too complicated for nothing, a new supercap at 2-4 \$ usd and voila, your troubles goes a way for a long time

Report to moderator Logged

The following users thanked this post: ModemHead

Electro Detective

Super Contributor



Posts: 2676
Country: 🇺🇸



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

« Reply #299 on: April 15, 2019, 02:03:15 am »

Say Thanks Reply Quote

Quote from: coromonadalix on April 15, 2019, 01:35:05 am

@ Electro

This is too complicated for nothing, a new supercap at 2-4 \$ usd and voila, your troubles goes a way for a long time

Hi mate, I'm aware of that option for a quick fix 🤖 but sometimes you can forget to check up on a multimeter for a long time, especially if the batteries last,

AND.. maybe have bad luck (that's me 🤖) with a faulty or leaky brand or batch of supercapacitor AGAIN,

or worse a freaky ESR zap or CAL nuke during the unsolder/soldering 🤖

and be back to the beginning of the drama, or worse off 🤖

These meters are too expensive to easily replace, and no real qualified local techs near me to fix them... for any amount less than the price of a new meter 🤖

I'm leaving them out for now as the meters are working great and no more thinking about what's going on inside or what may happen 🤖

and I don't mind updating the logger time clock once every few months (or longer) on battery change


and due to Daylight Savings Time here, you have to set the clock back or forward by one hour 🤖

twice a year anyway

« Last Edit: April 15, 2019, 02:08:13 am by Electro Detective »

Report to moderator  Logged

 **serggio**
Regular Contributor



Posts: 149
Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #300 on: April 26, 2019, 07:40:25 pm »

Three years ago I replased leaked cupercap in my Fluke 287 on Elna DSK-3R3H224U-HL. It still working well and keep time on my meter for four hour. That is enough for recharging Eneloop batteries that I use with my meter. Eneloop is really cool solution for power this meter. I do not see that supercaps is real issue.

Report to moderator  Logged

The following users thanked this post: Daruosha, Marco1971

 **rauldm**
Regular Contributor



Posts: 126
Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**


Say Thanks Reply Quote


« Reply #301 on: September 13, 2019, 04:51:35 am »


Hi, I have a 289 rev 15, the fucking meter works very good, but it has corrosion on cap 145, Fluke says in its web site, the 42830001 series it comes with new firmware "1.41", and all meters with lower serial numbers can't update to this firmware, I supposed the new Fluke, it comes with new PCB board and general improvements, someone knows about this? the cap leakage is solved? another good meter with same features? I have the u1282a, but is slow in cap and ohm modes, the metrawatt is good option? or only is stupid expensive?
Regards.

Report to moderator  Logged

 **mr.fabe**
Regular Contributor



Posts: 168
Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #302 on: September 13, 2019, 05:17:06 am »

Quote from: rauldm on September 13, 2019, 04:51:35 am

Hi, I have a 289 rev 15, the fucking meter works very good, but it has corrosion on cap 145, Fluke says in its web site, the 42830001 series it comes with new firmware "1.41", and all meters with lower serial numbers can't update to this firmware, I supposed the new Fluke, it comes with new PCB board and general improvements, someone knows about this? the cap leakage is solved?

I have a Fluke 289 with FW v1.41 and the serial starts with 3826####. My 289 was sent in for repair for the low ohms fade issue in January 2019. Fluke replaced the board and calibrated the unit prior to shipping it back. I asked about the supercap issue in the original work order and was told that is was no longer a problem.

Report to moderator  Logged

The following users thanked this post: Marco1971, rauldm

 **rauldm**
Regular Contributor



Posts: 126
Country: 



 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

Say Thanks Reply Quote

« Reply #303 on: September 13, 2019, 04:10:29 pm »

Quote from: mr.fabe on September 13, 2019, 05:17:06 am

Quote from: rauldm on September 13, 2019, 04:51:35 am

Hi, I have a 289 rev 15, the fucking meter works very good, but it has corrosion on cap 145, Fluke says in its web site, the 42830001 series it comes with new firmware "1.41", and all meters with lower serial numbers can't update to this firmware, I supposed the new Fluke, it comes with new PCB board and general improvements, someone knows about this? the cap leakage is solved?

I have a Fluke 289 with FW v1.41 and the serial starts with 3826####. My 289 was sent in for repair for the low ohms fade issue in January 2019. Fluke replaced the board and calibrated the unit prior to shipping it back. I asked about the supercap issue in the original work order and was told that is was no longer a problem.

The first board with ohms issues, do you know what revision number was?
Your new board you know what revision is?
if Fluke puts new firmware from 42830001 meter series I think your new board is last revision.

Really I searched another substitute for this meter, but I think another meter is not gathred all features for same price range.

Thanks for your answer, really I like this meter, I have 87v,28ii and 117, but this meter for me is better than others, even my others meter are just complement for my 289.

Report to moderator  Logged

 **mr.fabe**
Regular Contributor

Posts: 168
Country: 
  

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« **Reply #304 on:** September 13, 2019, 04:40:07 pm »

Say Thanks Reply Quote

In the meter info screen, the Board ID was 3 and was built on 6-26-10 with FW v1.16 / v.88.

My replacement Board ID is 5, built on 11-28-17 with FW v1.41 / v.88.

I noticed on the RMA that the serial # remained the same. Fluke probably just updated the number in the board for administrative purposes.

Service was fantastic from Fluke. One email and a phone call to resolve the defect. I bought my meter used on ePray for a great price and Fluke covered it under warranty. No hassles, new meter with calibration certificate. Can't beat that.

Yikes! I just realized the same info you requested is in a previous post #299 by me. My memory is failing...

Sent from my Moto Z (2) using Tapataalk

« Last Edit: September 13, 2019, 04:49:46 pm by mr.fabe »

Report to moderator  Logged

 **rauldm**
Regular Contributor

Posts: 126
Country: 
  

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**


« **Reply #305 on:** September 13, 2019, 06:52:06 pm »

Say Thanks Reply Quote

Ok, fluke eliminates the capacitor 145 on new board? How solves the problem? New firmware has it improves?

Report to moderator  Logged

 **mr.fabe**
Regular Contributor

Posts: 168
Country: 
  

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« **Reply #306 on:** September 16, 2019, 07:49:50 pm »

Say Thanks Reply Quote

I don't know what is on the new board but was told by Fluke that the supercap problem is not an issue. I have no reason to doubt Fluke and if there were a problem with losing the date/time then it would be covered under warranty. The supercap problem is a few years old and Fluke mentions that they were going to make changes on future revisions of the 287/289.

« Last Edit: September 16, 2019, 08:00:33 pm by mr.fabe »

Report to moderator  Logged

 **rauldm**
Regular Contributor

Posts: 126
Country: 
  

 **Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)**

« **Reply #307 on:** September 18, 2019, 07:15:58 pm »

Say Thanks Reply Quote


I talked with Fluke support about this capacitor, I attached datasheet of capacitor. In datasheet it comes this:

1.- Re-flow soldering method available (250 °C)

Note : 1. When the capacitor is being used in a high temperature and high humidity environment for a long period, brown deposited materials might be found around the sealing area. However, the materials are insulators and will not affect any electrical characteristics of the capacitor.

2. Do not use reflow soldering when cell voltage is above 0.3 V.

Really I dont know is or not recomendable an user change this capacitor, I think a meter is a tool in that you trust your life, if you don't doing the procedure correctly perhaps will not be trustworthy again.

 PanasonicCap.pdf (51.72 kB - downloaded 130 times.)

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The following users thanked this post: BravoV

 **CDaniel**

Frequent Contributor



Posts: 410

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #308 on: September 18, 2019, 08:56:56 pm »

The model 187 doesn't have that supercap fitted ... so it is just for not losing the logging data when the batteries are consumed . A user that doesn't do logging every day could use the meter (at least 189) very well with that cap just removed if it goes bad .

« Last Edit: September 18, 2019, 08:59:30 pm by CDaniel »

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The following users thanked this post: Marco1971

BravoV

Super Contributor



Posts: 7368

Country:

+++ ATH1



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #309 on: September 19, 2019, 03:41:05 am »

Quote from: rauldm on September 18, 2019, 07:15:58 pm

2. Do not use refl ow soldering when cell voltage is above 0.3 V.

Hmm ... the devil is in the details isn't it ?

I guess the manufacturers need to babysit short the cap before hand if use reflow method. 😞

Learned something today, thanks. 🙏

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> [YOUR FAV. BENCH LAB PSU](#)

Marco1971

Contributor



Posts: 29

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #310 on: June 19, 2020, 02:28:47 pm »

Quote from: coromonadalix on April 15, 2019, 01:35:05 am

@ Electro

This is too complicated for nothing, a new supercap at 2-4 \$ usd and voila, your troubles goes a way for a long time

Not much long time...two and half years for me and my Fluke 287.

Marco1971

Report to moderator Logged

paddyred

Contributor

Posts: 7

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #311 on: December 22, 2020, 03:33:29 pm »

Anyone know what the difference is on these new 289 boards? Rev5? I just sent mine in for repair after the supercap issue (produced 2016) and fluke just sent me a BNIB one with new leads, accessories and all the trimmings. New one made August 2020. 🙏🙏🙏

Report to moderator Logged

Xandinotor

Contributor

Posts: 20

Country:



Re: Fluke 189 with leaking surface mount supercap (also Fluke 287, Fluke 289)

Say Thanks Reply Quote

« Reply #312 on: December 10, 2021, 10:36:42 am »

Unfortunately haven't been so lucky with their customer service. Another 289 confirmed working w/o cap tho.

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