

AW: Replacement capacitor

1 message

Daniel Urfer, Nufer Medical AG <d.urfer@nufer-medical.ch>

To: "steve.hardaker@viamed.co.uk" <steve.hardaker@viamed.co.uk>

20 November 2022 at 13:06

Dear Steve

The product is basically suitable. The requirement criteria are fulfilled. Regarding capacity (1.0 F) and the connection pitch (7.5mm), this type would have to be selected:

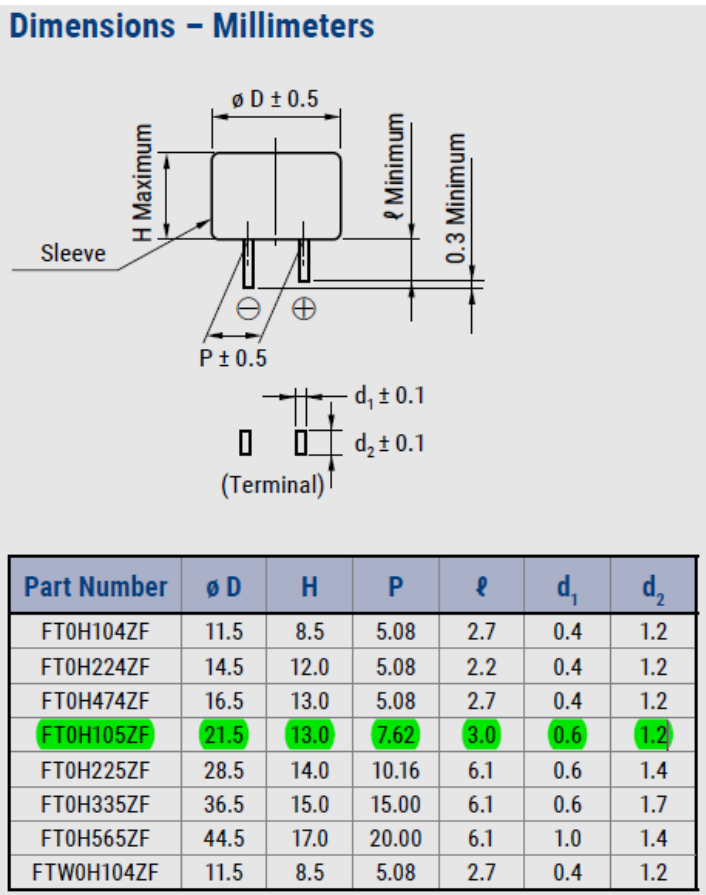


Table 1 – Ratings & Part Number Reference

Part Number	Maximum Operating Voltage (VDC)	Nominal Capacitance		Maximum ESR at 1 kHz (Ω)	Maximum Current at 30 Minutes (mA)	Weight (g)
		Charge System (F)	Discharge System (F)			
FT0H104ZF	5.5	0.10	0.14	16	0.15	1.6
FT0H224ZF	5.5	0.22	0.28	10	0.33	4.1
FT0H474ZF	5.5	0.47	0.60	6.5	0.71	5.3
FT0H105ZF	5.5	1.0	1.3	3.5	1.5	10.0
FT0H225ZF	5.5	2.2	2.8	1.8	3.3	18.0
FT0H335ZF	5.5	3.3	4.2	1.0	5.0	38.0
FT0H565ZF	5.5	5.6	7.2	0.6	8.4	72.0
FTW0H104ZF	5.5	0.10	0.14	16	0.15	2.0

Part numbers in bold type represent popularly purchased components.

I hope to help with this.

Best regards

Daniel

Daniel Urfer

Geschäftsleiter
Managing Director



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Von: Main Account <viamedinbox@gmail.com> **Im Auftrag von** Steve Hardaker

Gesendet: Freitag, 18. November 2022 18:10

An: Daniel Urfer, Nufer Medical AG <d.urfer@nufer-medical.ch>

Betreff: Re: Replacement capacitor

Hi Daniel,

Just going back to this issue about the failing gold cap capacitors on the Ceratherm 600-3.

A Medical Engineering Department in one of our hospitals has sourced a suitable looking capacitor, they successfully performed a repair using this. I just wanted to check with you whether it looks suitable.

Please can you review the attached data sheets and advise?

Best Regards,

Steve Hardaker
Technical Support Manager
Viamed Ltd.

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On Tue, 9 Aug 2022 at 10:21, Daniel Urfer, Nufer Medical AG <d.urfer@nufer-medical.ch> wrote:

Hi Steve

I hope you are well.

These Supercaps already have large capacity tolerances (>20%) when new. Over the years, they also lose capacity due to ageing (temperature and voltage are driving factors for ageing). For this reason, the standard also specifies these ten minutes.

However, since the Ceratherm must never be operated unattended, according to its intended purpose, a mains failure will be noticed immediately by the user.

However, the customer can replace the energy storage device (super capacitor) if necessary. This component can be procured on the market (available from various manufacturers) and must comply with the following specifications:

Super Capacitor (C16 on CPU-Board)

Capacity: **1.0 F**
Dielectric strength: **5.5 V**
Temperature range: **85 °C**

Pitch: **7.5 mm**
Diameter: 20mm (other dimensions possible)
Height: 11mm (other dimensions possible)

Manufacturer: Various manufacturers, technical data and availability are relevant

I hope I was able to help with this information.

Best regards

Daniel

Daniel Urfer

Geschäftsleiter
Managing Director



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Von: Main Account <viamedinbox@gmail.com> **Im Auftrag von** Steve Hardaker

Gesendet: Freitag, 5. August 2022 18:39

An: Daniel Weibel, Nufer Medical AG <d.weibel@nufer-medical.ch>

Cc: Service-Repair-Division, Nufer Medical AG <techservice@nufer-medical.ch>; Jonas Boss, Nufer Medical AG <j.boss@nufer-medical.ch>

Betreff: Re: Replacement capacitor

Hi Daniel,

Sorry for the delay, we have now been able to run the Ceratherm 600-3 power disconnections tests in each room following an extended period of time (longer than the recommended time) with the power connected to ensure that the capacitors are at full charge. The results are as follows:

Test	Serial No.	Alarm Time
Pass	308-3-0813	10min
Fail	278-3-0713	8min
Pass	310-3-0813	10min
Fail	316-3-0913	7.5min
Fail	204-3-0113	6min
Fail	468-3-0314	9.6min

The units performed better on a full charge, with 4 failing and 2 passing.

Please can you advise a solution? The customer is reluctant to change the entire PCB if replacing the gold capacitor is an option.

If this is viable, do you supply the capacitor or can you advise the manufacturer part number and specification?

Thanks and I look forward to hearing from you.

Best Regards,

Steve Hardaker
Technical Support Manager
Viamed Ltd.

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On Thu, 21 Jul 2022 at 13:45, Daniel Weibel, Nufer Medical AG <d.weibel@nufer-medical.ch> wrote:

Hi Steve,

To be sure, your idea to run the test again in normal daily operation is very good.

As you have already found out, these gold cap capacitors take a long time to fully charge compared to normal capacitors.

Due to their age, I would imagine that the capacitors need a little longer to be fully saturated.

The physical structure of a gold cap is comparable to the parallel connection of many small capacitors.

During the charging process, capacitors are charged, which in turn charge the capacitors further back and so on. For this very reason, it is important that the gold cap is given sufficient time to fully charge. Sufficient means between 5 minutes and more. A Gold Cap that is only partially charged loses its charging voltage quite fast after the voltage source is switched off.

I am eagerly awaiting your feedback and result of another power failure test.

Have a nice Day

Kind regards,

Daniel Weibel

Service Techniker
Technician



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Von: Main Account <viamedinbox@gmail.com> **Im Auftrag von** Steve Hardaker

Gesendet: Donnerstag, 21. Juli 2022 14:10

An: Daniel Weibel, Nufer Medical AG <d.weibel@nufer-medical.ch>

Cc: Service-Repair-Division, Nufer Medical AG <techservice@nufer-medical.ch>
Betreff: Re: Replacement capacitor

Hi Daniel,

Thank you for getting back to me.

I've spoken to our technician and he says that he cannot be absolutely certain that the device was powered up (and therefore charging the capacitor) for the full 5 minutes recommended in the Service Manual prior to the power disconnect alarm test.

He thinks that he did the electrical safety test on the device before checking the power disconnect alarm, which could have prevented the capacitor from fully charging.

I will see whether we are able to get an engineer at the hospital to do the disconnect test and advise what I find.

Regards,

Steve Hardaker
Technical Support Manager
Viamed Ltd.

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On Wed, 20 Jul 2022 at 15:33, Daniel Weibel, Nufer Medical AG <d.weibel@nufer-medical.ch> wrote:

Good day Mr. Hardaker

Yes, you are right. This capacitor is responsible for maintaining the alarm in the event of a power failure.

May I ask how long you had the heater plugged in before this test was performed?

Best regards,

Daniel Weibel

Service Techniker
Technician



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Von: Main Account <viamedinbox@gmail.com> **Im Auftrag von** Steve Hardaker

Gesendet: Mittwoch, 20. Juli 2022 12:18

An: INFO, Nufer Medical AG <info@nufer-medical.ch>

Betreff: Fwd: Replacement capacitor

Hi,

I understand that Daniel is away from the office, so hopefully someone else can help. Please see my email below.

Regards,

Steve Hardaker
Technical Support Manager
Viamed Ltd.

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----- Forwarded message -----

From: Steve Hardaker <steve.hardaker@viamed.co.uk>

Date: Mon, 18 Jul 2022 at 17:46

Subject: Replacement capacitor

To: Urfer Daniel, Nufer Medical AG <d.urfer@nufer-medical.ch>

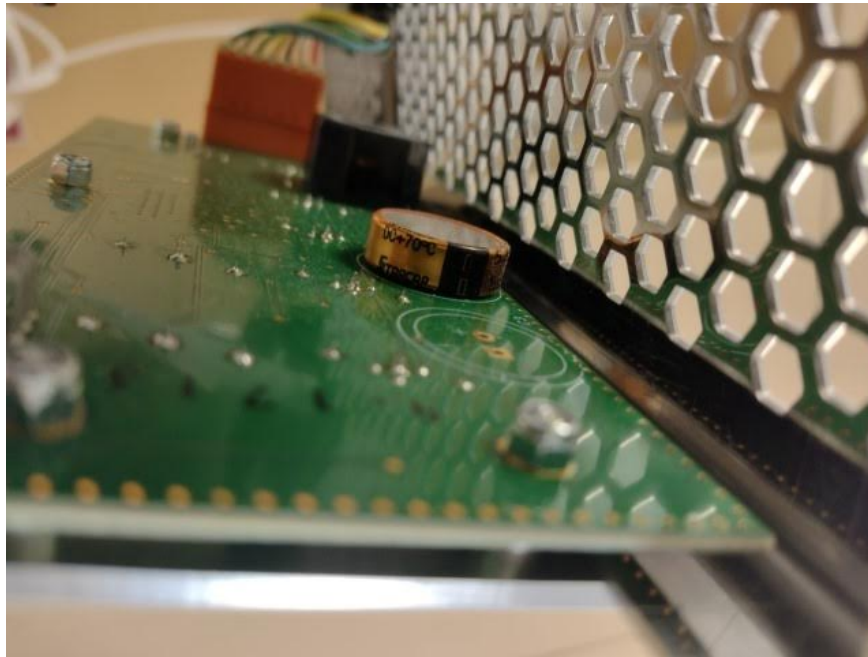
Hi Daniel,

We have recently performed a field service visit for 6 Ceratherm 600-3 units that we supplied to a customer in 2013.

All 6 devices failed to meet the requirement of the power disconnect alarm sounding for 10 minutes without power.

I assume that replacing the controller PCB will resolve this issue, but that is a very expensive fix. Is there a simple solution?

Looking at the PCB, we can see that there is a capacitor on there. I don't have a wiring diagram but it seems very likely that this capacitor could be storing the charge to maintain the alarm in the event of a power failure.



Would a simple replacement of this capacitor fix the problem? And if so, do you supply it or can you give me the capacitor specification so that we can try it?

Thanks in advance.

Regards,

Steve Hardaker
Technical Support Manager
Viamed Ltd.

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