

Replace the failed fuse: (F09)

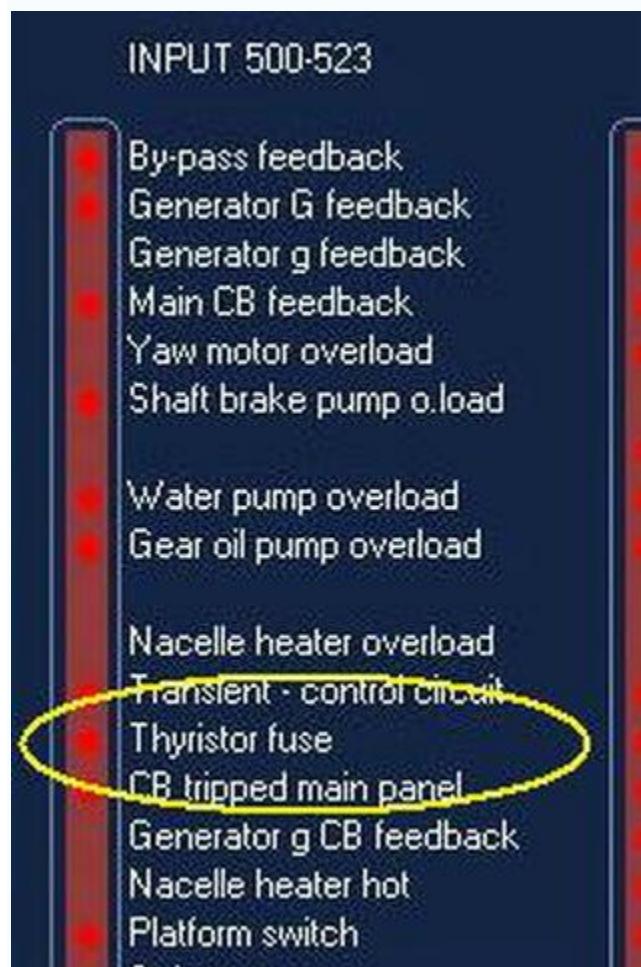
Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

- **Explanation**

To verify that the alarm is real:

Check "Thyristor fuse" led in Tower TOI:



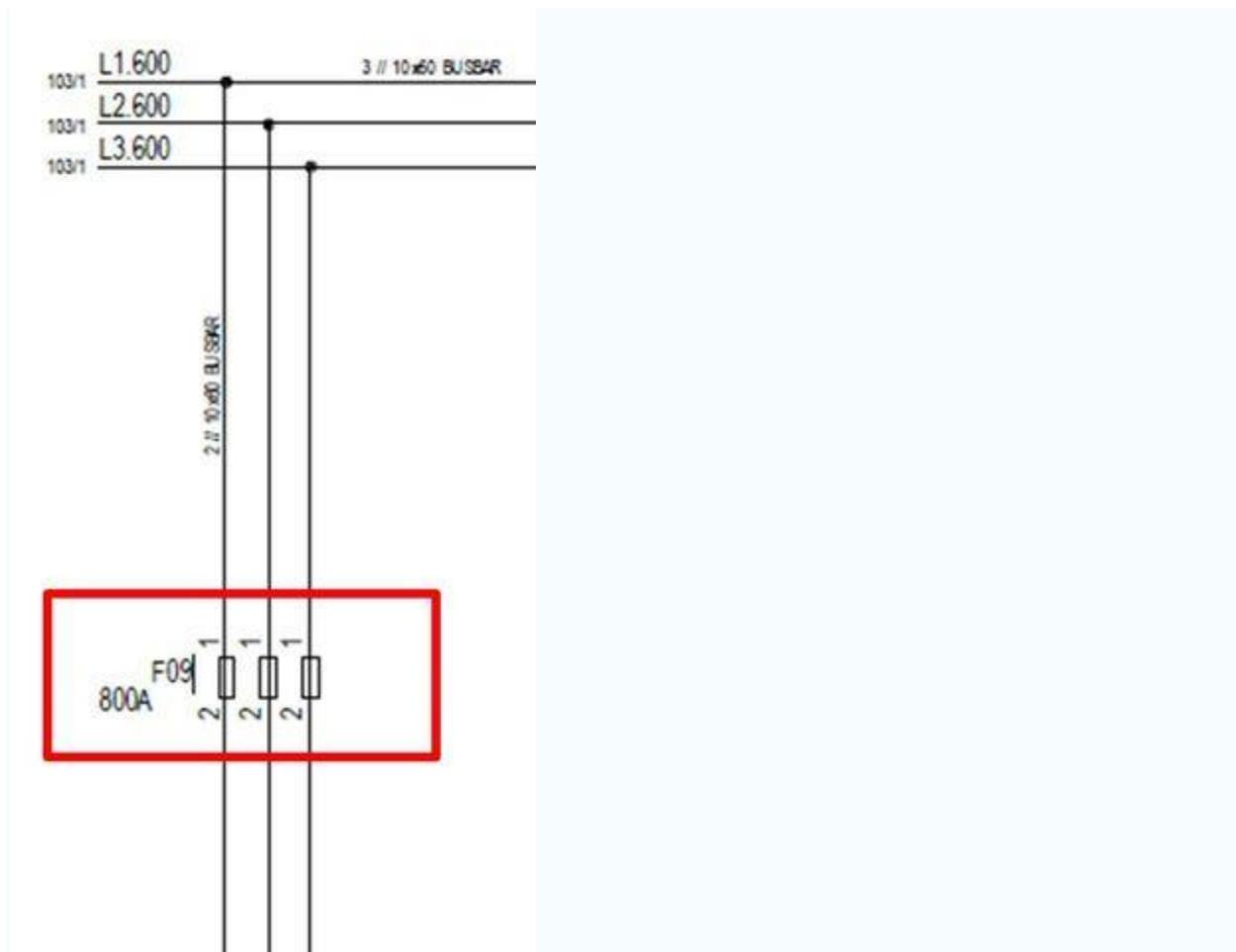
If it is OFF, the alarm is real and nothing can be done in remote. The thyristor fuse will need to be replaced: Notify the site of the problem and dispatch a service team.

If it is ON, try to reset and restart the turbine. If the alarm reoccurs, notify the site and dispatch a service team.

Using a multimeter set to read Ohms, check the continuity of the fuse.

Relevant spare parts	
Description	Item No.
FUSE SEMI 660V 800A PSC IEC/UL	60005355





Check the wire tightness and continuity

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

• **Explanation**

Check that the cable connections and bus bar connections are tight.

Check the connections of the thyristor fuse feedback wires, repair or replace any faulty connections.



THYRISTOR FUSE
FEED BACK

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Correct the dynamic compensation parameter

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

- **Explanation**

Parameter error in relation to dynamic compensation system (Turbine is compensating during cut-in which makes disturbance in the measurements resulting in fault-triggering of thyristor). Correct the compensation parameter in the controller (Enable stop dyn unit during cut-in =1).

Inspect/replace failed PFC contactors

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Welded contactors in the turbines own compensation system (Turbine is compensating during cut in which makes disturbance in the measurements resulting in fault-triggering of thyristor).

Correct the blade offset parameters

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Wrong settings regarding offset in relation to LM versus AL blades. (Enable LM blade offset configuration if LM blades are installed, if not ensure that LM blade offset parameter is disabled).

Update the BIOS in the turbine controller

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Earlier versions of the V82 were supplied with an older version of BIOS in the controller. Under certain conditions in low wind, this could cause the thyristor fuses to fail. Check the BIOS version in the controller and update if necessary (this is unlikely as most affected turbines have been upgraded at this point).

Use document [1001826](#) for additional information on upgrading the BIOS, including tools required is latest BIOS version (latest BIOS version is available on TechDoc in the same location as turbine software).

Check the operation of the Thyristors cooling fans

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Check the operation of the M3, M4, and M5 cooling fans. If they do not operate, verify that power is making it to the fan and replace the fan if needed. Failure fans will leads to thyristor to get overheated which may lead to thyristor/fuse failure.



	Spare parts
Item no.	Description
<u>092279</u>	FAN AXIAL 230V 97m3 120x120mm
<u>60014608</u>	FAN 230V 18W

Inspect/replace the failed contactor/KIT

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**
IN THE AT1 CABINET:

Check all the contactor function K01, K02 & K03.

If defective replace the contactor:



Troubleshooting:

It is very important to make a correct evaluation of the contact. Fare too many contacts are being replaced for no

reason, because the evaluation of the contact condition is wrong.

There is 2 contact set for each phase.

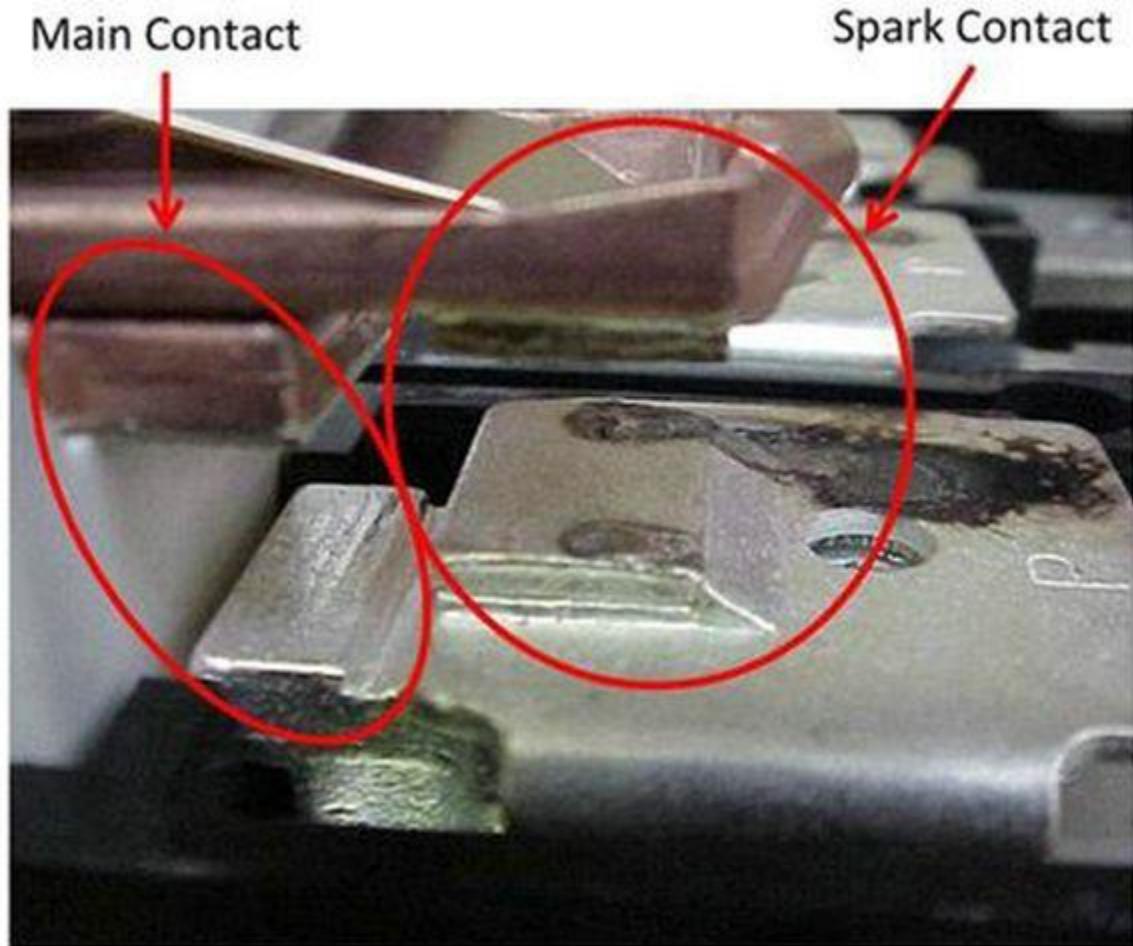
A Main contact and a spark contact (See picture 1 below)

The main contact set must be in a good looking condition. This is where the full load is to be transferred through the contactor.

The Spark contact is designed to handle the unavoidable sparks and arcs that will be developed when opening and closing this amount of energy. (Up to 2-3MW). So burn marks on the spark contact set is not only allowed, it is expected.

A complete melt down of the spark contact set is of course not allowed, but most important is it to make sure that the main contact set is not burned.

Picture 1.



The contactors below show clearly burn marks, but all burn marks that can be seen from this view are placed on the **Spark contact set** where it is supposed to be like this.

Only a closer look from the side of the contactor will show if the **Main contact set** is damaged.



Refer the below pictures for burn damaged spark contact and main contacts:











Solution:

If the **spark contact set** has suffered a complete melt down or have extreme burn damage making the spark contact fall apart, then a replacement is required.

If the **main contact set** has burn marks making the surface un-even, then a replacement is required.

Spare parts		
Description	New Item No.	Old Item No
CONTACTOR EH1200	093693	60004316

CONTACT SET FOR EH1200

[093466](#)

The picture below shows an EK/EH1200 contactor, where a new contact set (repair kit) have been mounted.

