Reset after grid recovery

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

If the generator load is lost for example by grid drop, Main CB trip, or the generator disconnects from the grid under load this alarm will occur.

Check the alarm log:

This alarm will likely be preceded by 251- Generator Overspeed 1 and succeeded by one or more of the following faults: Grid alarms 2-70 (note that as a solution to CIM 2323- turbines with TACII Software version 110315 or later should show grid alarms 2-70 BEFORE 251 & 252), 260- Generator Speed Sensor Fault or 394- Overspeed guard TAC84.

When the generator is under load and the load is lost, the generator speed will momentarily spike almost instantaneously.

Due to the potential consequences of an overspeed condition the set points for this and other related alarms are extremely conservative and therefore precede the alarms that cause the overspeed in the alarm log (SW versions before 110315). If the overspeed condition is caused by a grid event, follow the acknowledgment instructions for the alarm. If this error occurs on multiple turbines within a short amount of time, it is likely caused by a grid event and the grid related alarms should be visible in the alarm logs.

Troubleshoot generator speed sensor

Does this solve the problem?

1] Yes

2] No

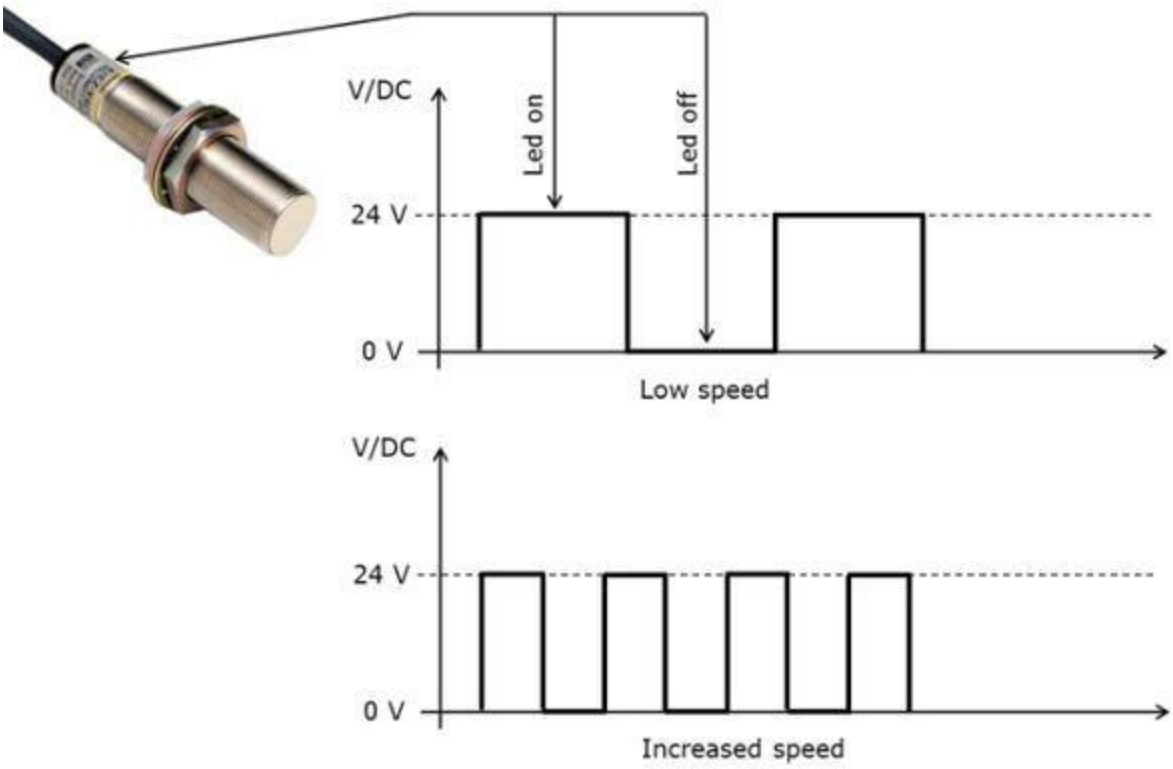
3] I don't know

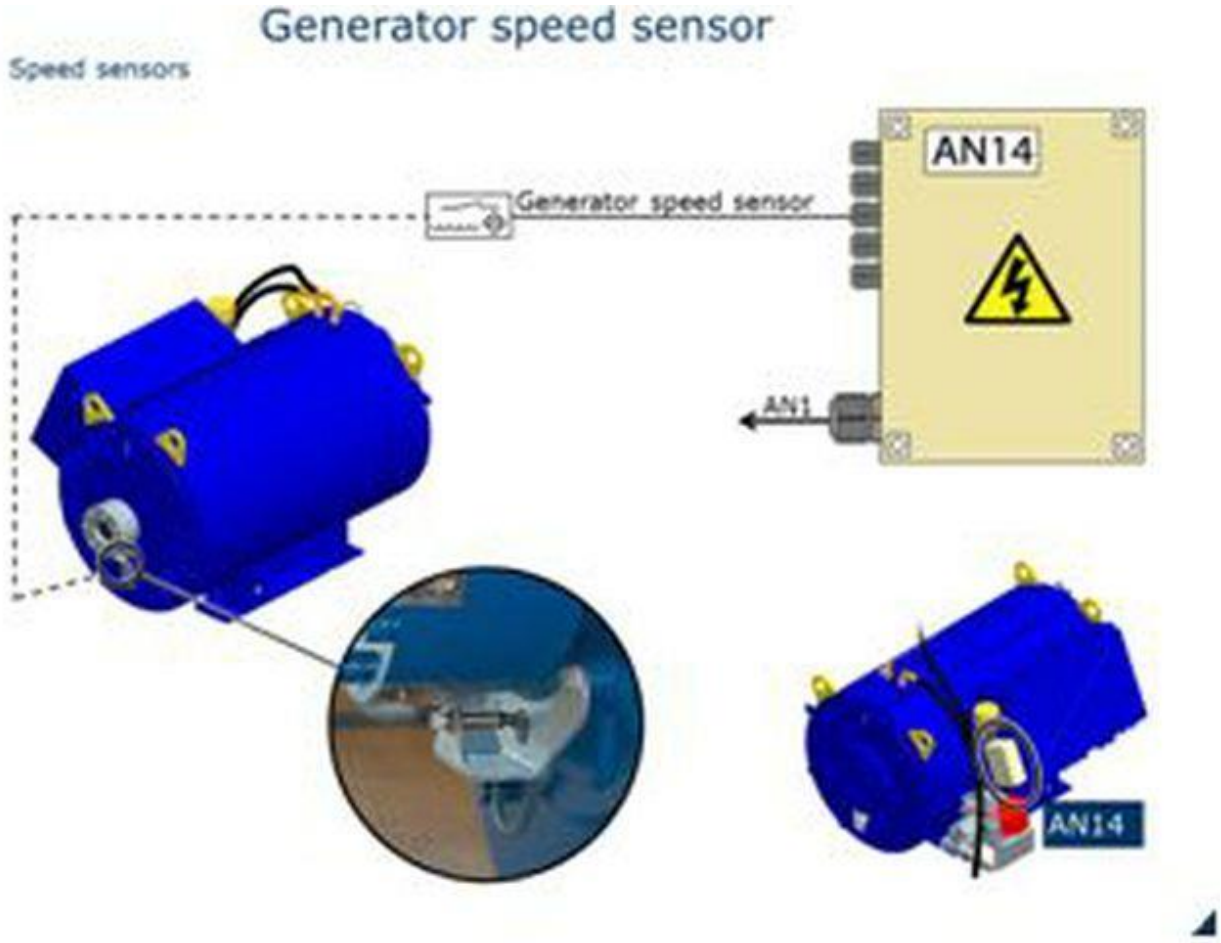
- **Explanation**

The generator speed is measured by an inductive proximity sensor which creates a pulse signal as a pickup point passes over it.

Inductive sensor function

Speed sensors





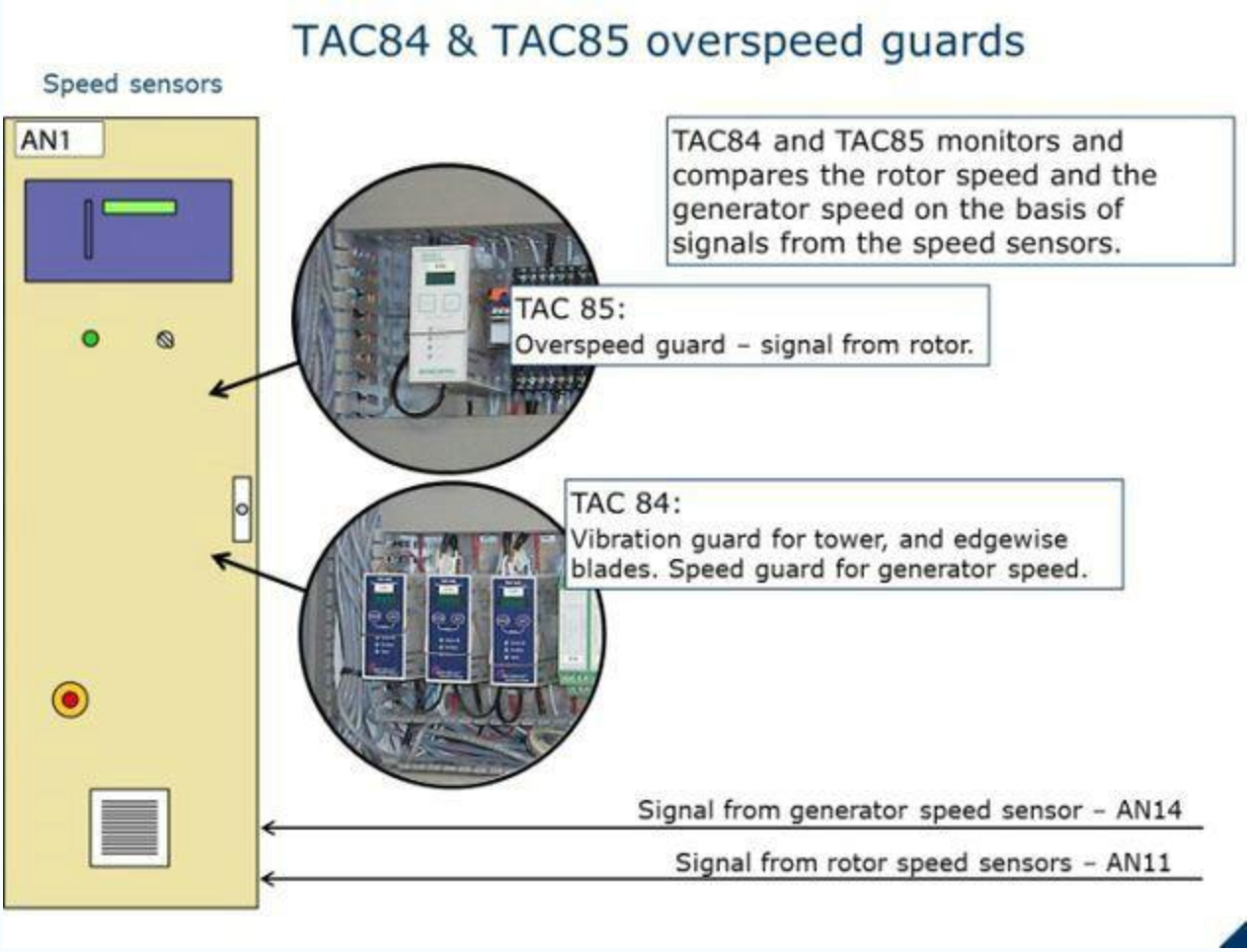
In the case of the generator, there are seven pickup points for every rotation of the shaft therefore the speed is calculated as # of pulses/7 =generator RPM. If the sensor is loose or failing it can "flicker" which will simulate a higher RPM than actual. The sensor can be tested by passing a screwdriver or other ferrous object past the sensor. If it consistently emits a light the sensor is likely operational. The sensor can also be tested by rotating the generator shaft and ensuring that the sensor emits a light when each of the (7) link element bolts passes over the sensor.

If the sensor does not emit a light each time a link element bolt passes over it, lock the shaft and check for correct sensor adjustment. Check the bolts on the speed sensor bracket and ensure that they are properly tightened. The end of the sensor should be within 1,5-5 mm from the pickup point. Adjust the sensor by loosening the nuts that clamp it to the mounting bracket and move it forward or back to achieve the required distance from the pickup point.

Sensor adjustment nuts:

If after adjustment the sensor still does not light up, or lights up intermittently when passing the pickup point- replace the sensor (sensor and cable are combined-W509) Item number: **60021406 Cable -W509 NM30t. inductive sensor.**

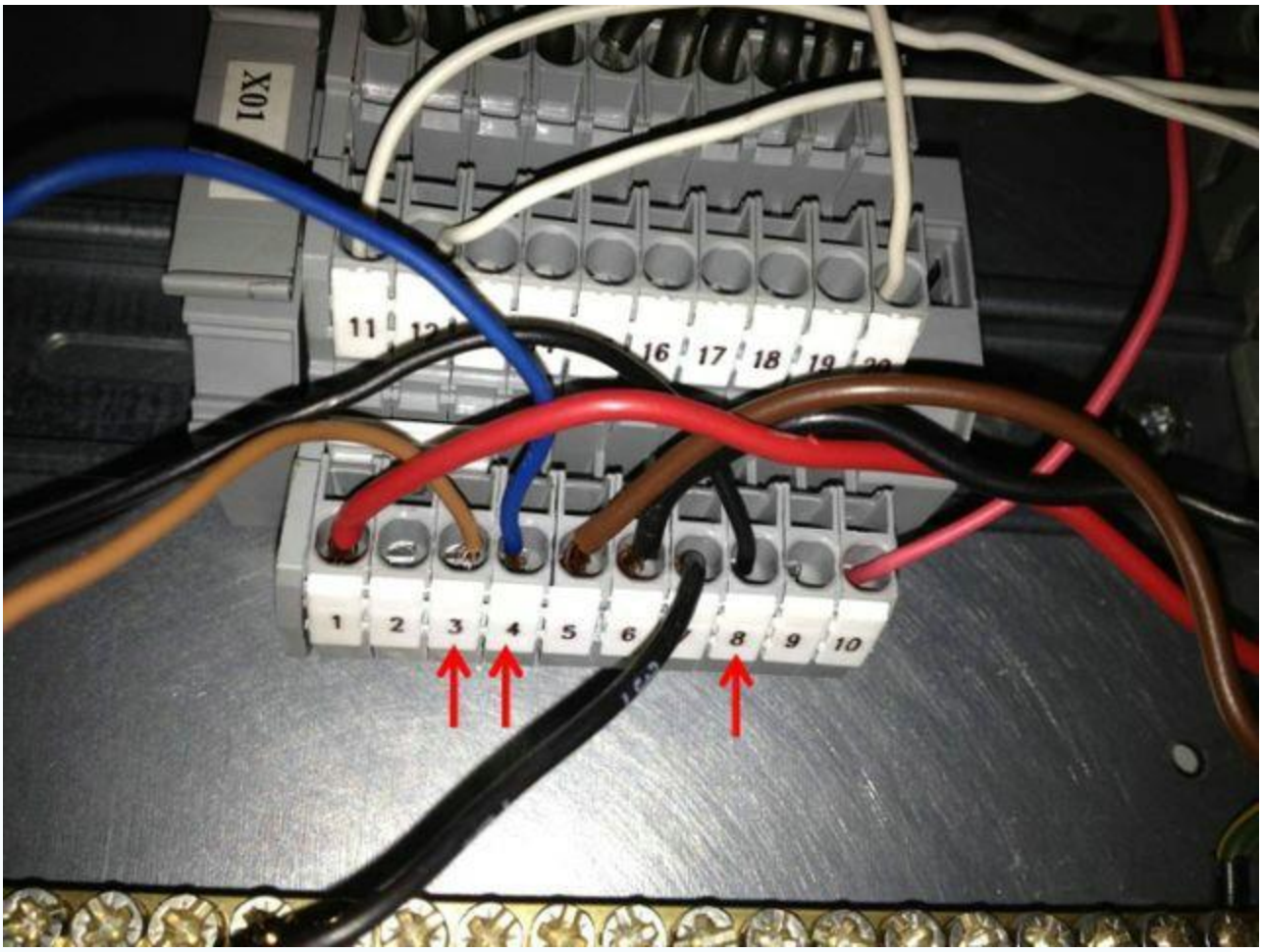
The signal is transmitted to the TACII controller and the three Vibration/overspeed guard modules.



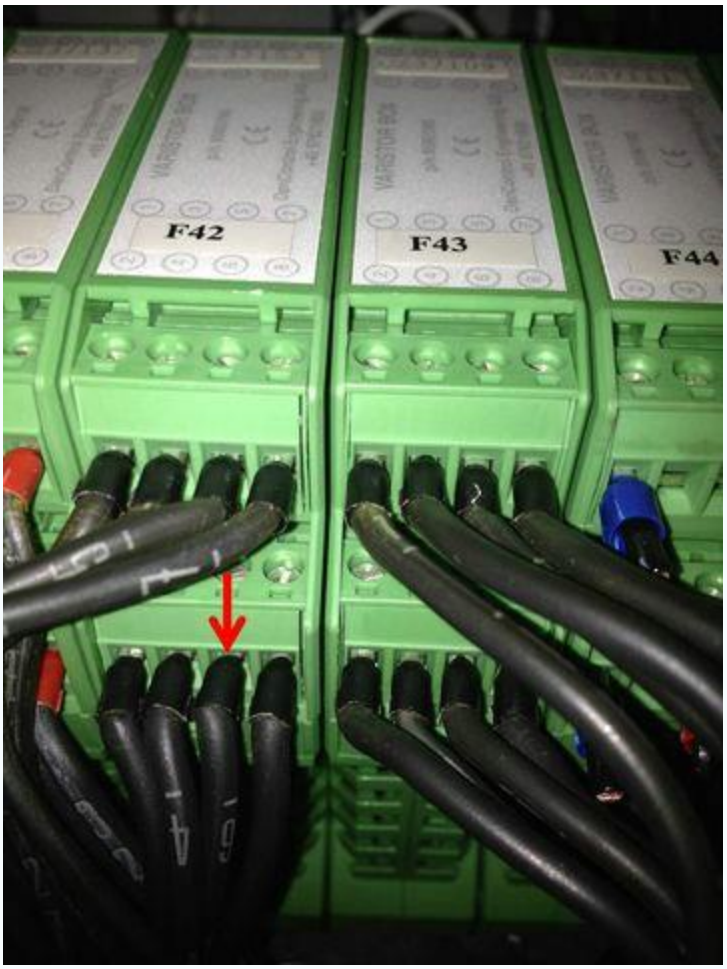
Before replacing the sensor or components, check the circuit for loose connections.

Check for loose sensor terminations in the AN14 panel. (The AN14 terminal panel exists only in V82 1.65 Mw. NM72/82 1650Kw generator speed sensor cables terminate directly at the AN1 Top Box).

Terminal block –X01 terminals 3, 4 & 8:



Check for loose wire terminations in the AN1 Top Box (sensor wire from the AN14 terminates into F42 Varistor Box terminal 6:

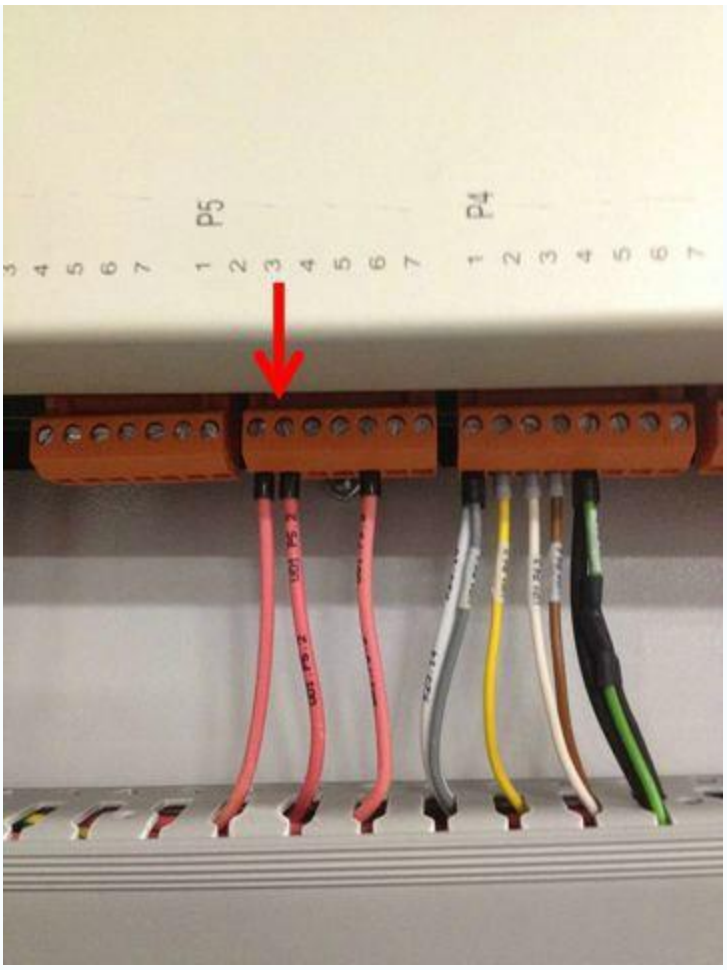


The signal wires from the F42 varistor box are double stacked, pay close attention to this crimped connection as the wires may be loose:

One of the signal wires from the F42 varistor box is for the TACII Generator Speed signal and can be traced to the X01 Amphenol plug on the side of the AN1 Top Box. The other signal wire from the F42 varistor box is for the TAC 84 overspeed/vibration modules.

Check the termination at the X01 Amphenol plug W500 cable and X01 Amphenol plug at the AT2 cabinet.

Finally check the signal termination at the TAC controller (P5 terminal 2):


P5
P4