

Case Study: Loose Connections in VFD Detected with EMPATH



Figure 1: VFD interior with red arrows to loose connections

Routine testing performed on a VFD. Auto-detection indicated a loose connection in Phase 1 (voltage clip and CT labeled 1). Nameplate and pump data had not yet been provided.

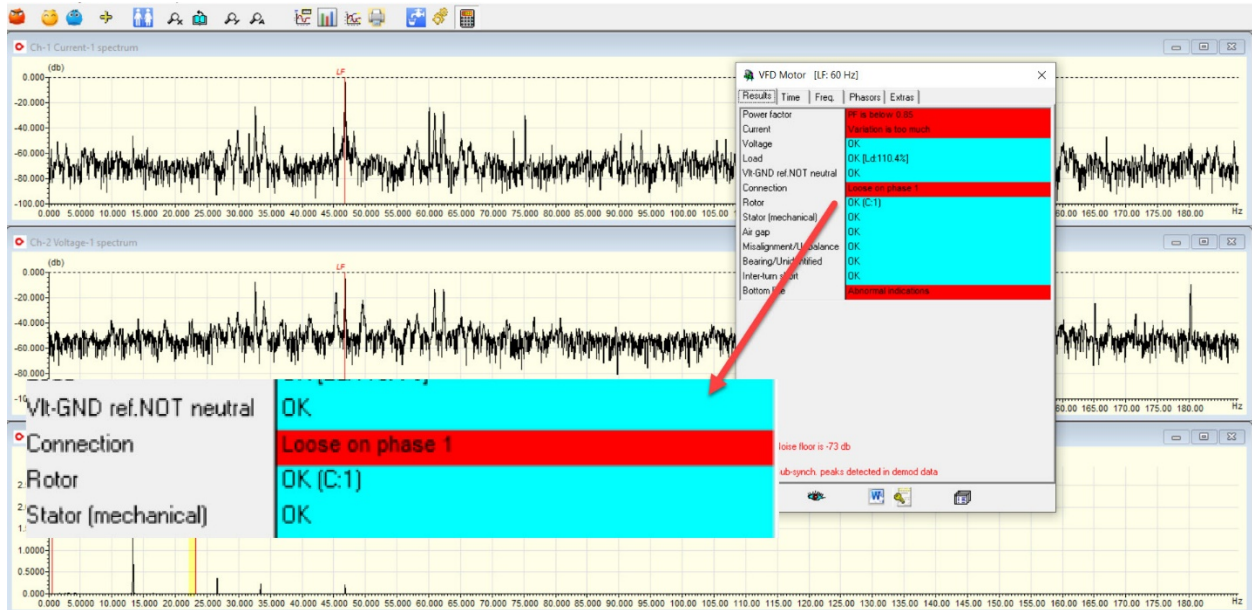


Figure 2: Auto detection without motor nameplate or pump information entered.



Immediately following testing, the VFD was de-energized and the connections (Figure 1) were tightened and the VFD was re-started and re-tested.

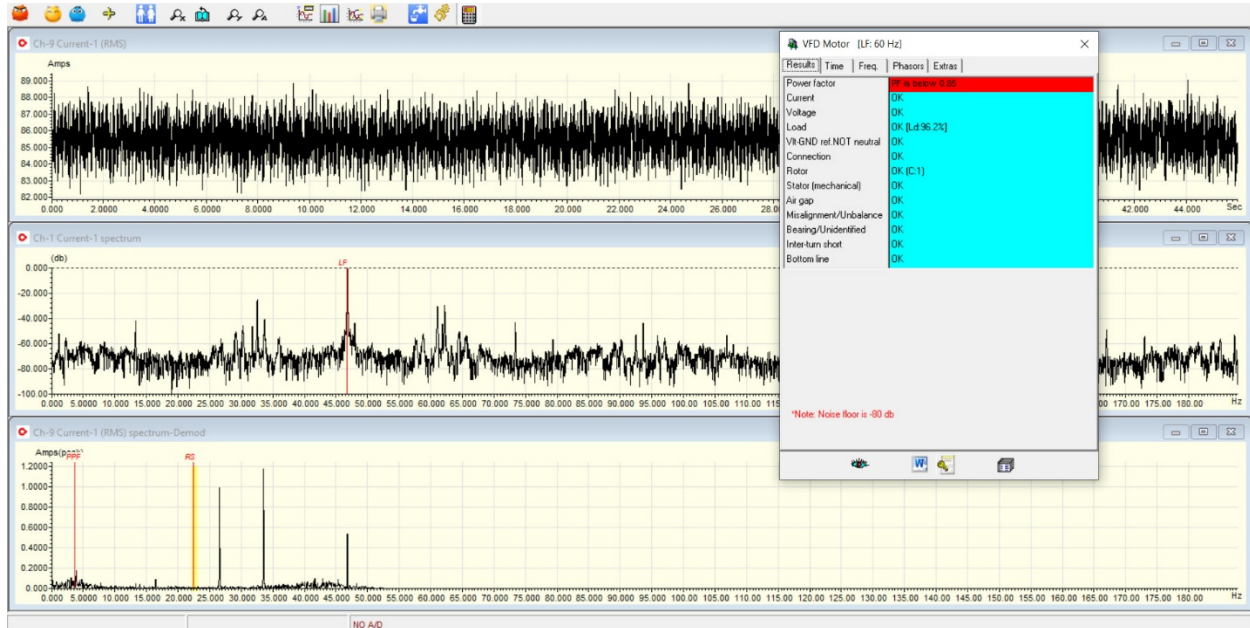


Figure 3: Auto detection without motor nameplate or pump information entered. Fault no longer present. Other peaks will be associated with pump.

The loose connection causes a measurable impedance unbalance as well as other indicators.

The auto-detection capability of EMPATH™ and EmpathCMS™ provides the ability to detect issues for:

- AC Induction Motors
- AC Synchronous Motors
- AC Wound Rotor Motors
- VFD Motors
- DC Motors (Including Drive)
- Generators
- Asynchronous Generators
- Transformers

And will detect such conditions as: power quality; bearings (including part); fans; pumps; gearboxes; belted application issues; dynamic/static eccentricity; rotor bars including severity; stator issues; and much more.

EMPATH includes a database of over 8400 motors with rotor bars and stator slots and a bearing database of over 50,000 bearings.

Contact us for more information or pricing: info@motordoc.com