FRAX clamps and connections

FRAX Application Note 2016-03-31

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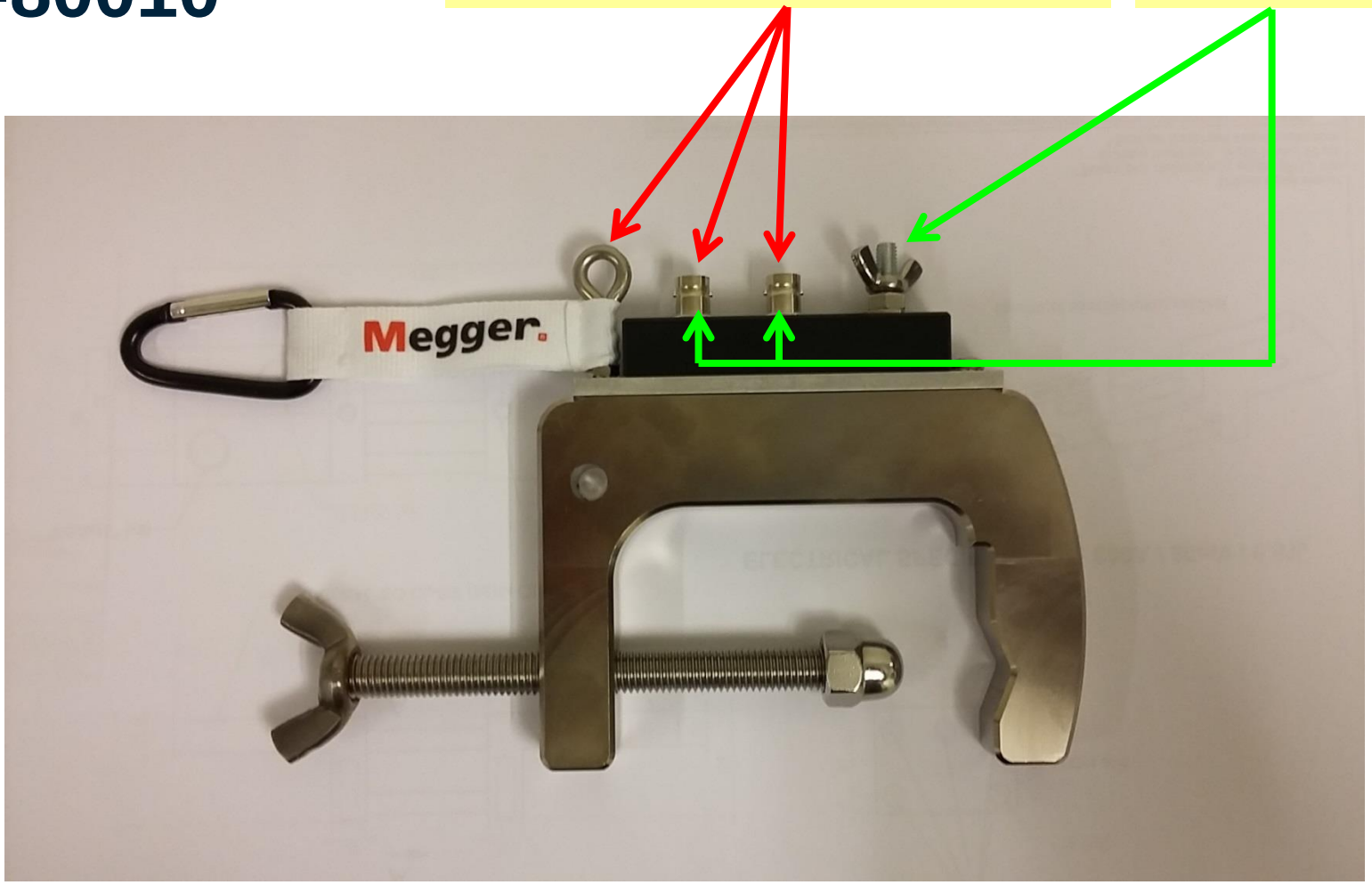
FRAX C-clamp GC-80010

C-LAMP - Generator & Measure Signal: BNC center connector, entire clamp including strain relief holder.

GROUND Ground screw BNC housing



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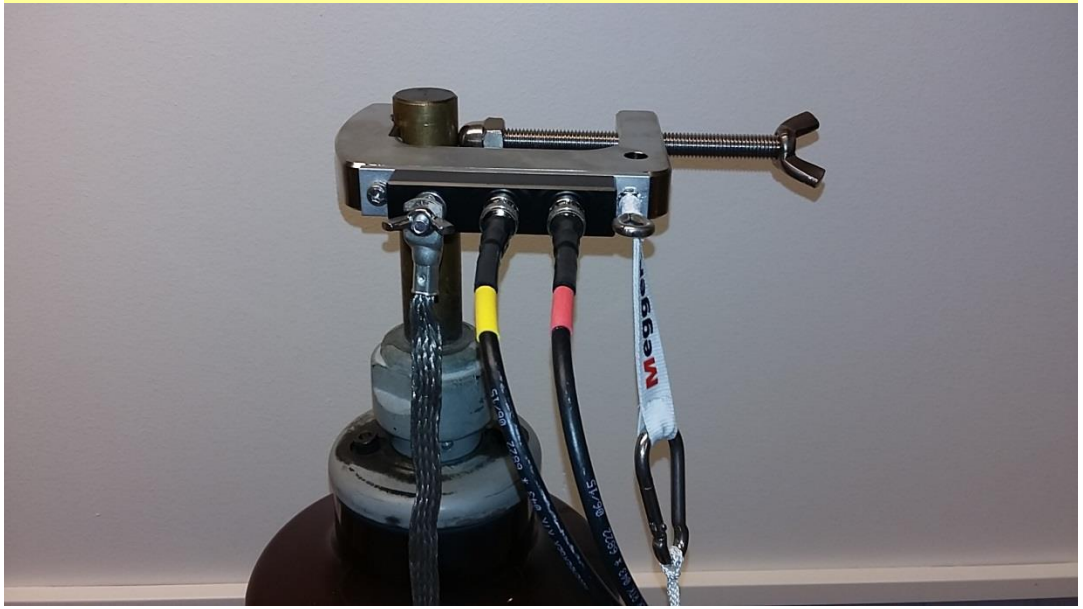
FRAX C-clamp - How to connect!

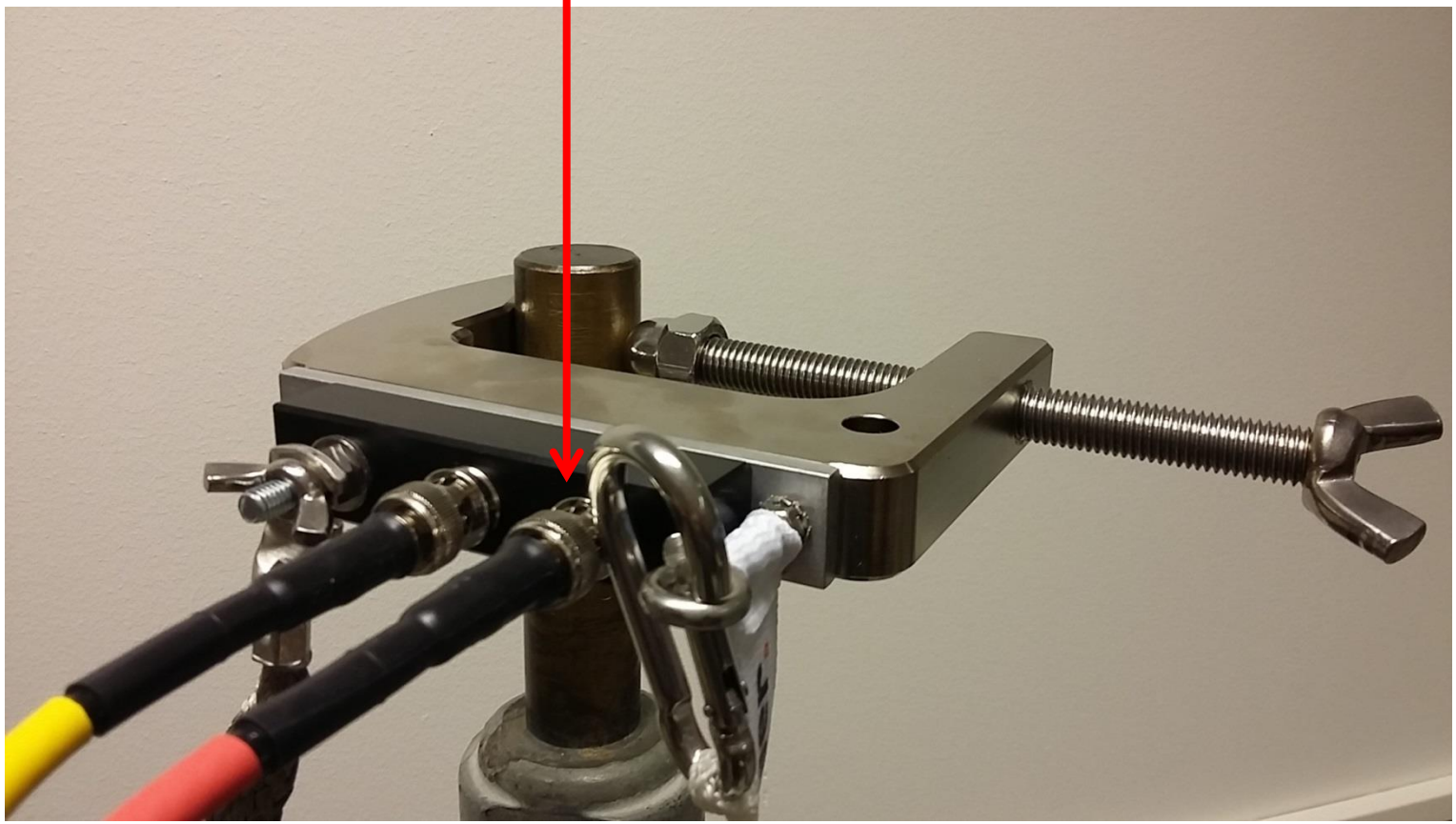
Ground braid from ground screw, straight down the bushing to the nearest ground at the bottom of the bushing (small ground connection c-clamp). Good braid-to-ground connection is essential for repeatable measurements at higher frequencies (< 500 kHz).

Connect FRAX cables to BNC connectors and make sure to use the strain relief correctly to avoid unnecessary loading/wear on BNC cable and connectors.



FRAX Clamp & Cables – Generator fault

Short circuit between generator signal and ground.
Strain relief in contact with BNC ground via snap hook.



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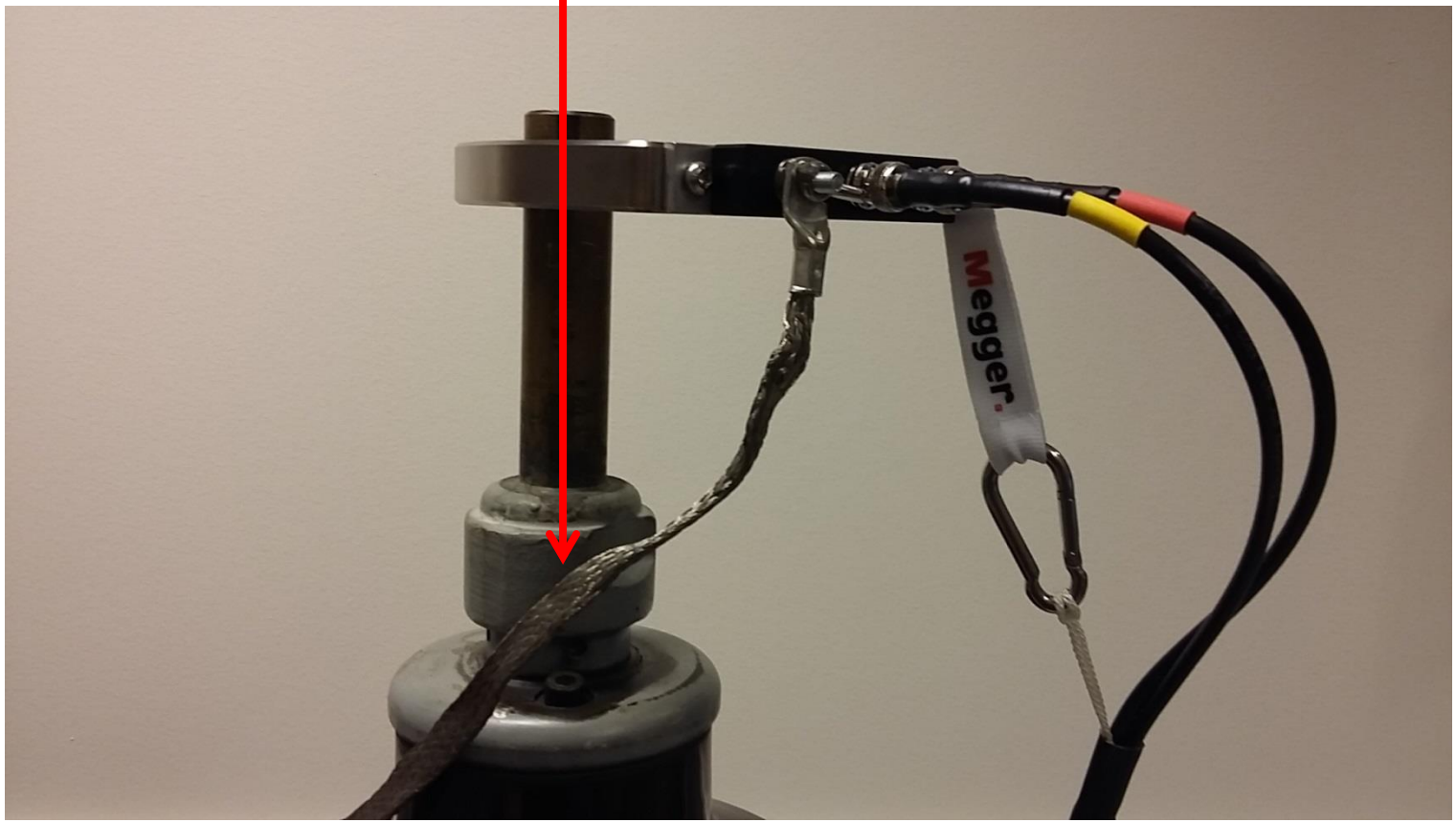
FRAX Clamp & Cables – Generator fault

Short circuit between bushing/generator signal and ground braid.



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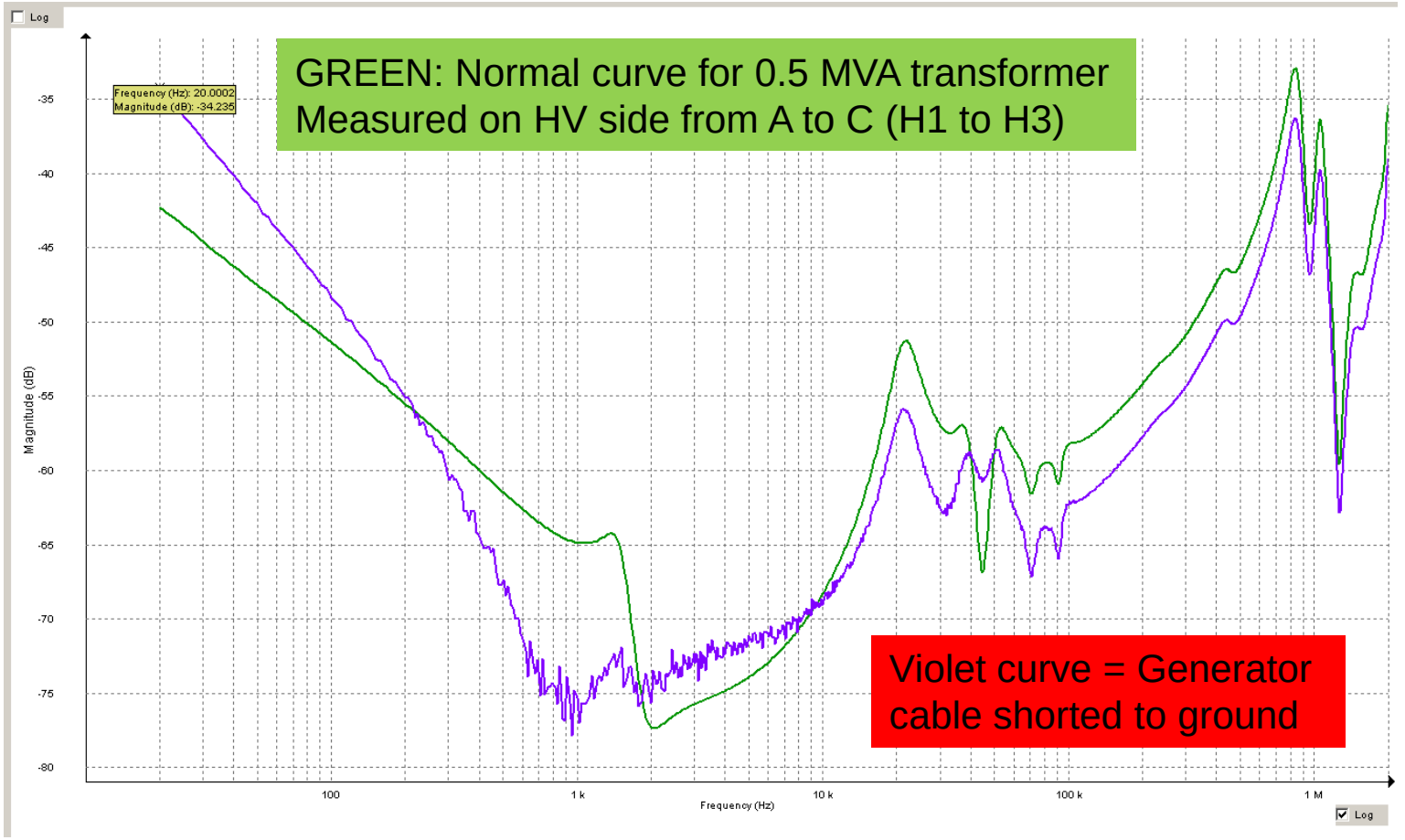
Generator fault - Results



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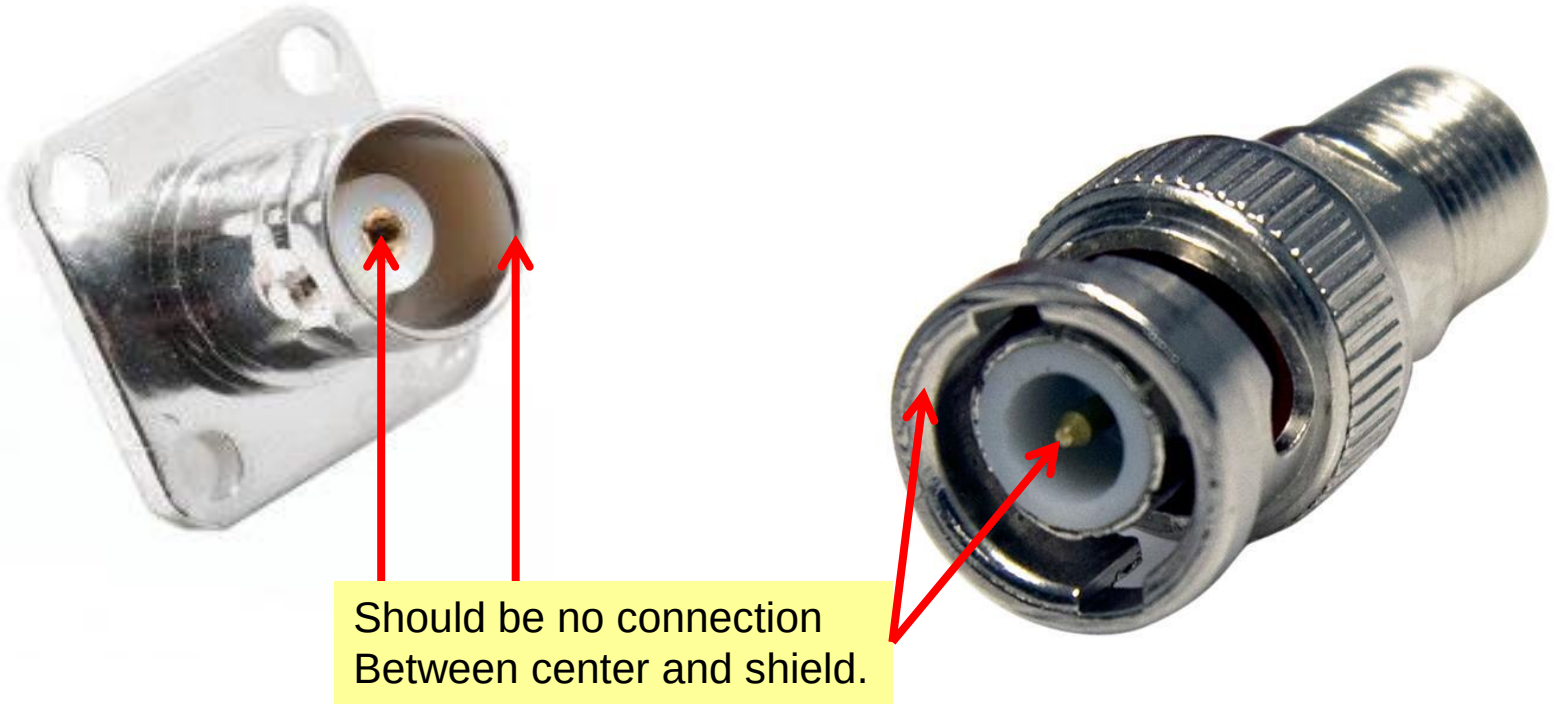
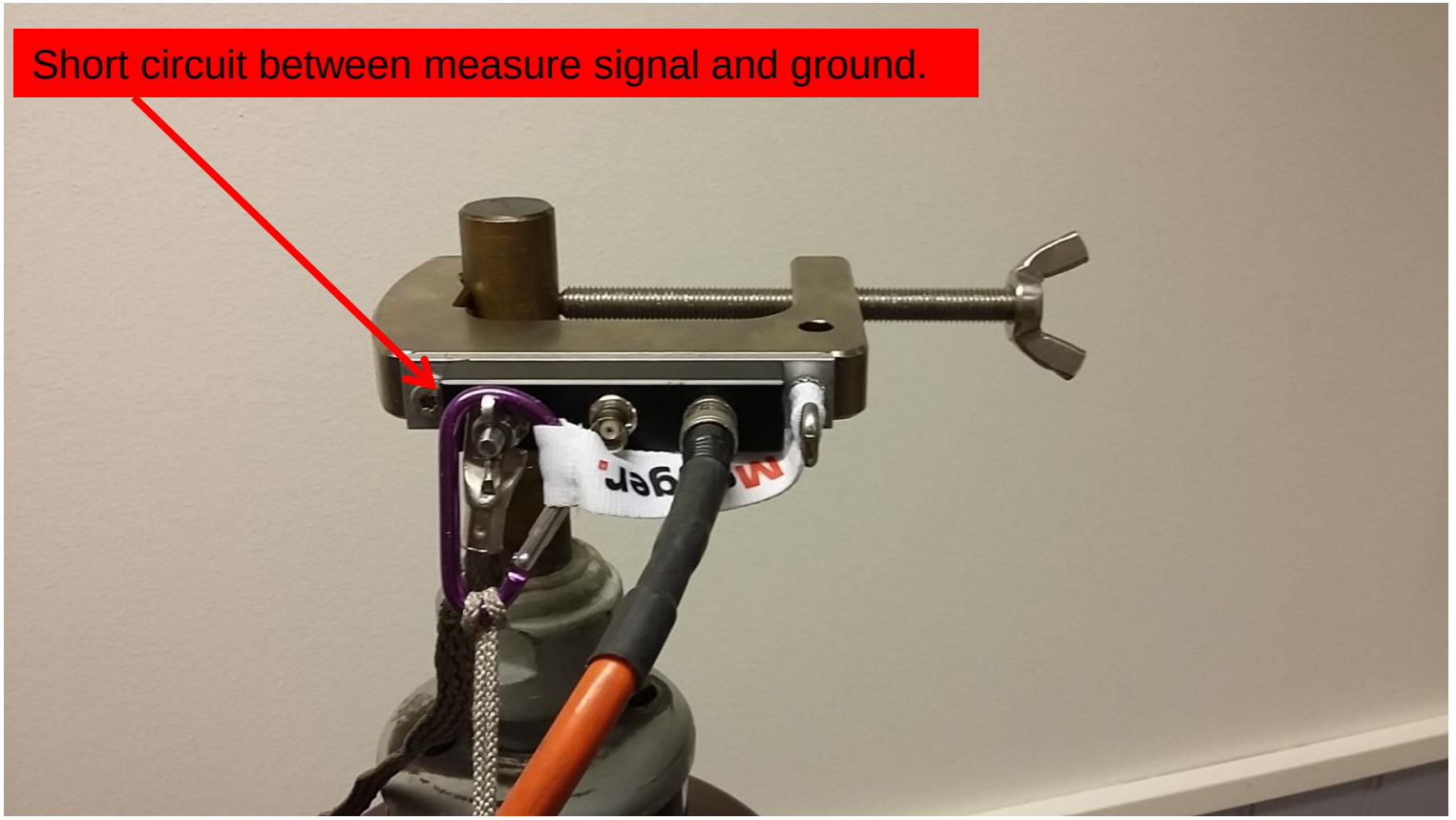
BNC connector fault – Short circuit

Additional information:

A possible cable problem is a short circuit between center lead and shield, which is the same as clamp being short circuited to ground. Same faulty curves appear as in the examples.



FRAX Clamp & Cables – Measure fault



FRAX Clamps & Cables – Measure fault

Short circuit between bushing/generator signal and ground braid.

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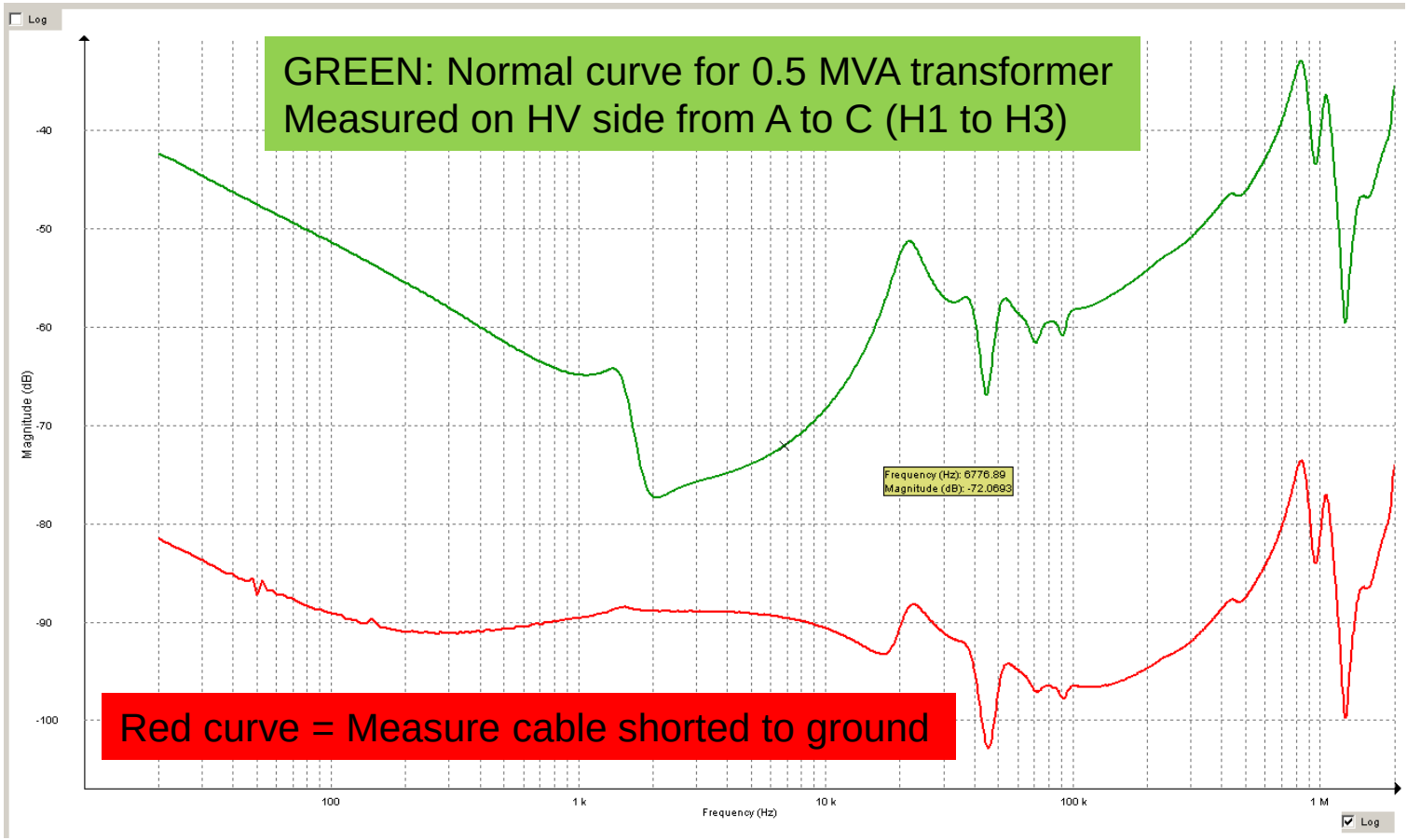
FRAX Clamps & Cables – Measure example



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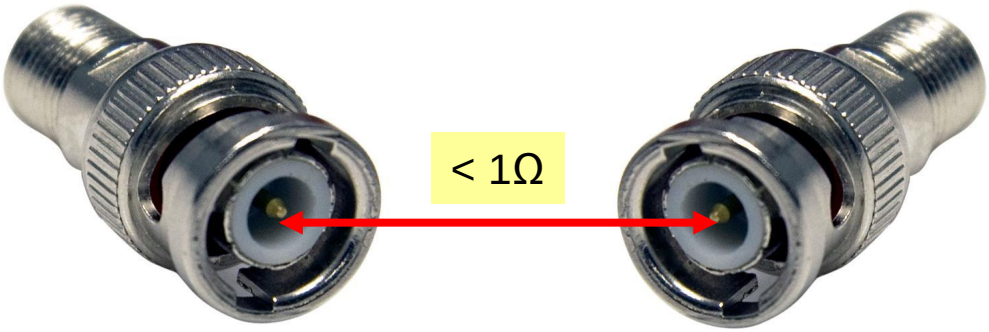
FRAX C-clamp & Cables – No connection

Additional information:

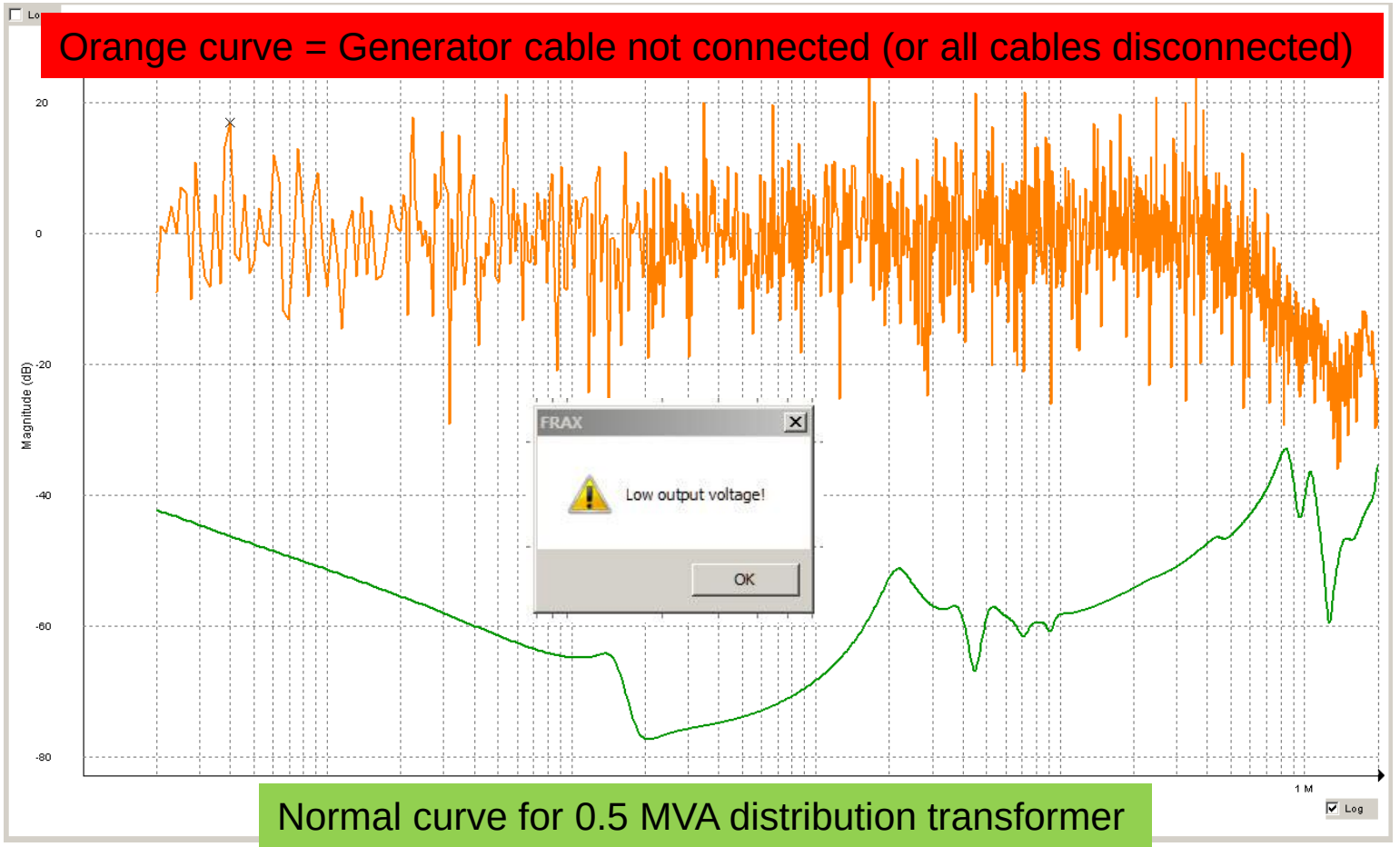
Disconnected cable can also be a broken cable where there is no connection between BNC center and center conductor of cable. This easy to check. Use a std ohm-meter and check that you have a good connection between BNC center conductors.

The same symptoms will appear if the C-clamp has a broken connection between BNC center and clamp. This is very unusual but easy to check. Use a std ohm-meter and check that you have a connection between clamp and BNC center conductor.

Examples of faulty curves, see the following examples.

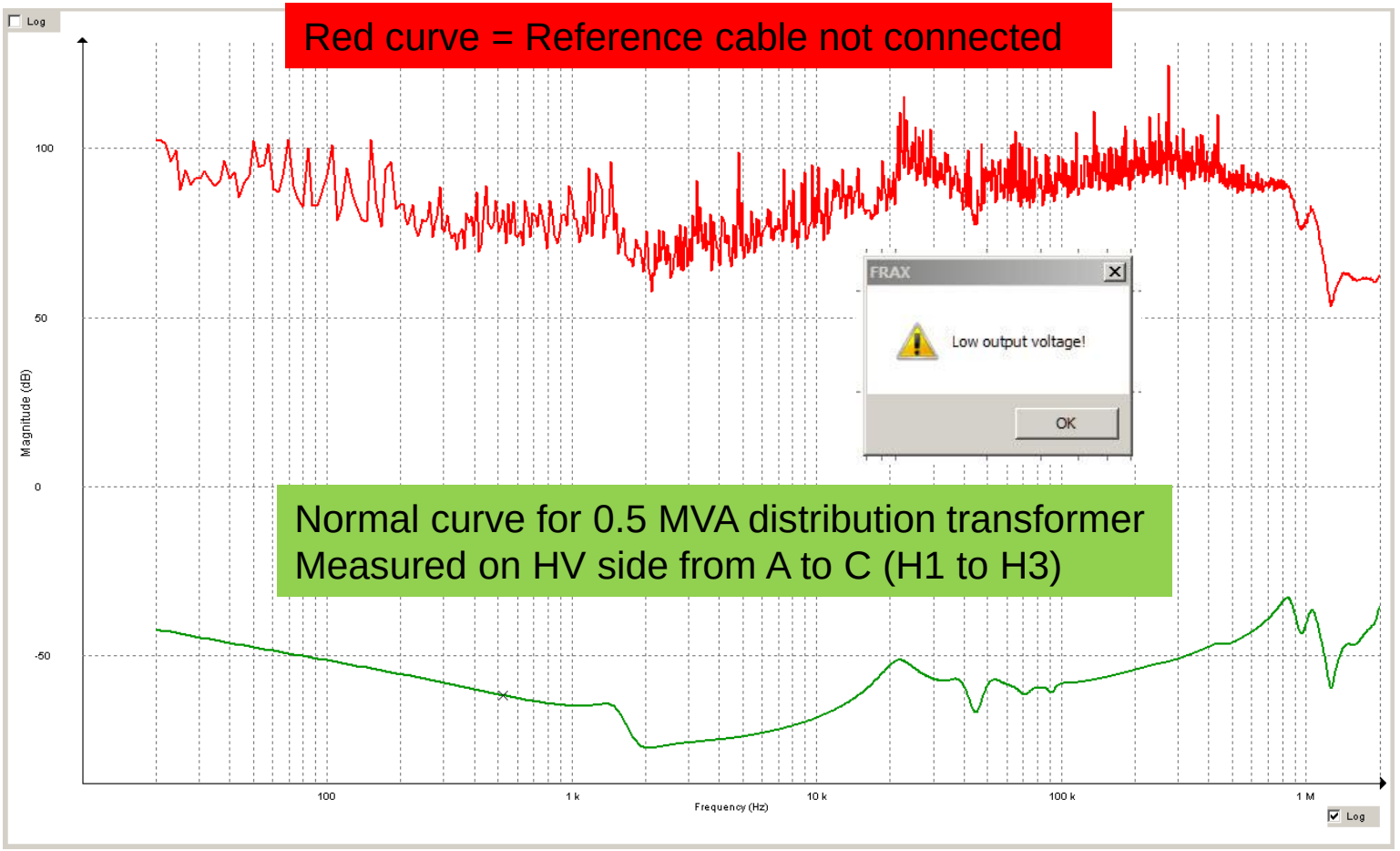


FRAX connections – Not connected faults



Normal curve for 0.5 MVA distribution transformer
Measured on HV side from A to C (H1 to H3)

FRAX connections – Not connected faults



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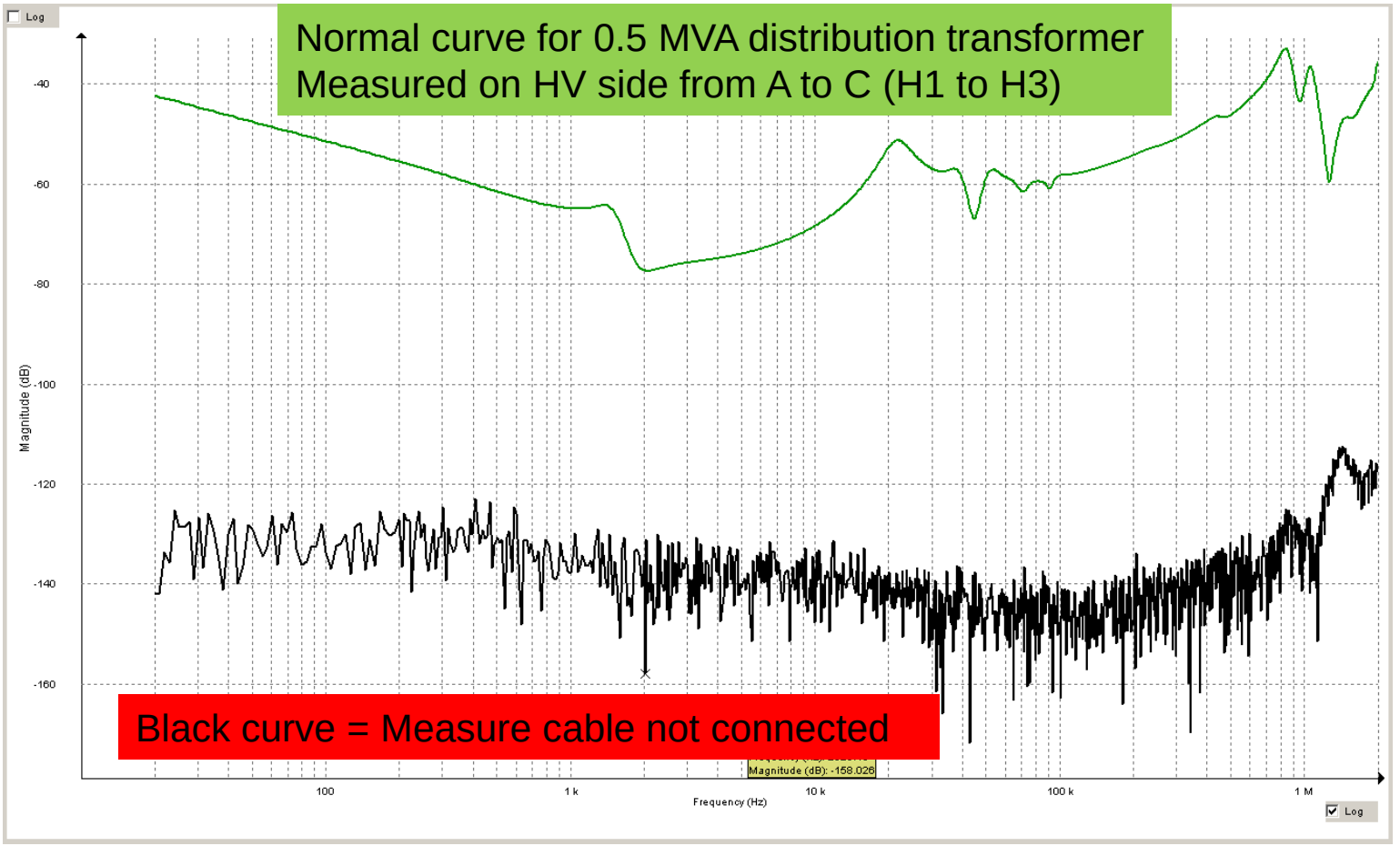
FRAX connections – Not connected faults



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