



A Leader in Electric Motor Testing

Tip Of The Week

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Is the Whole the Sum of the Parts?

Our answer to this question is, not always when it comes to a multi-cable power supply. If you have ever tried to measure the current on a high amperage power supply that has multiple cables to support the higher amperage, you have likely struggled to find the right probes to measure it. The flexible probes are a big advantage in these situations as they can be wrapped around the entirety of most of the multi-cable power supplies. Flexible probes are a Rogowski design and although often used on DC drive signals for qualitative analysis, are generally reserved for testing an AC signal. When testing a multi-cable DC power supply with the PdMA 2128.29 AC/DC current clamp-on probe, you most likely cannot get them around multiple cables so the natural progression in testing or troubleshooting is to test a single cable and multiply it with a CT ratio to determine what the total current is. Right? Wrong... It is important to measure each of the cables in a multi-cable power supply to determine if a problem or imbalance exists between the individual cables. More often you will find that slight differences in circuit resistance in neighboring cables can create a difference in current substantial enough to warrant a second look. If you are looking at the differential current from the input to output of the DC armature you would not want to use only one of the input and output cables to identify the differential. Additionally, to improve accuracy don't forget that if you are only testing one cable of a multi-cable power supply you might want to reduce the probe setting to ensure you are measuring the maximum current within the range selected. Using the PdMA 2128.29 AC/DC probes as an example, measuring 100 amps on the 1500 amp setting would be testing only 6% of the full range. If you switch to the 150 amp setting you would be testing 66% of the full range.

You are invited to submit an Electric Motor Testing Tip of your own and receive a free PdMA® mug or hat if we publish it! Contact Lou at 813-621-6463 ext. 126 or lou@pdma.com.

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