HIOKI

Application Note

Dynamic Uninterrupted Power Supplies

MEMORY HiCORDER Case Study

Mission critical business operations cannot afford even the slightest of downtime, let alone an extended power outage. To keep information technology, telecommunications, and factory floor and call centre operations running smoothly, businesses have to take a close look at their power infrastructure to identify vulnerabilities and take action to prevent costly downtime.

A key component of an effective power infrastructure is the UPS system. UPS systems provide a first line of defence against unexpected downtime and load loss, and offer various levels of redundancy, communications and interoperability with other power equipment.

Figure 1: Dynamic UPS

There are different systems on offer today to solve the problems linked with the continuity of power supply.

One of our customers, a leading dynamic UPS system manufacturer from Belgium, has one such system that provides a power solution to ensure uninterrupted, continuous and conditioned power supply to mission critical processes.

According to the Project Engineer, when there is a failure at the main power grid, the switching of the Dynamic UPS from “Normal Mode” to “Emergency Mode” is achieved by the switching of the D1 and D2 relays as shown on the next page in Figure 3.

As such, measuring the switching conditions of these 2 relays during maintenance becomes an important task in order to ensure that the Dynamic UPS is able to quickly support the loads during a mains failure situation.

Analysing the Data

Figure 2 on the next page shows an example of the data measured and recorded with the Hioki Memory HiCorder MR8880-20.

From the logic waveform data recorded by MR8880-20 for the D1 and D2 relays, the delay timing between these 2 relays can be captured and the duration of the chattering of the relays can also be determined.

By using the cursor function on the MR8880-20, the customer was able to quickly determine all the parameters related to the switching of the D1 and D2 relays and easily print out the results using the MR8880-20 printer. Any faulty relays can be immediately identified and replaced ensuring the functionality of the Dynamic UPS.

Professional Tool

The customer had commented that the Hioki Memory HiCorder MR8880-20 is such a versatile tool that not only can it record logic signals, but is also able to record voltage waveforms of up to 600V and current signals simultaneously. This feature allows them to perform more tasks in the future should the need arises.

The Hioki MR8880-20 Memory HiCorder was chosen for exactly these reasons.

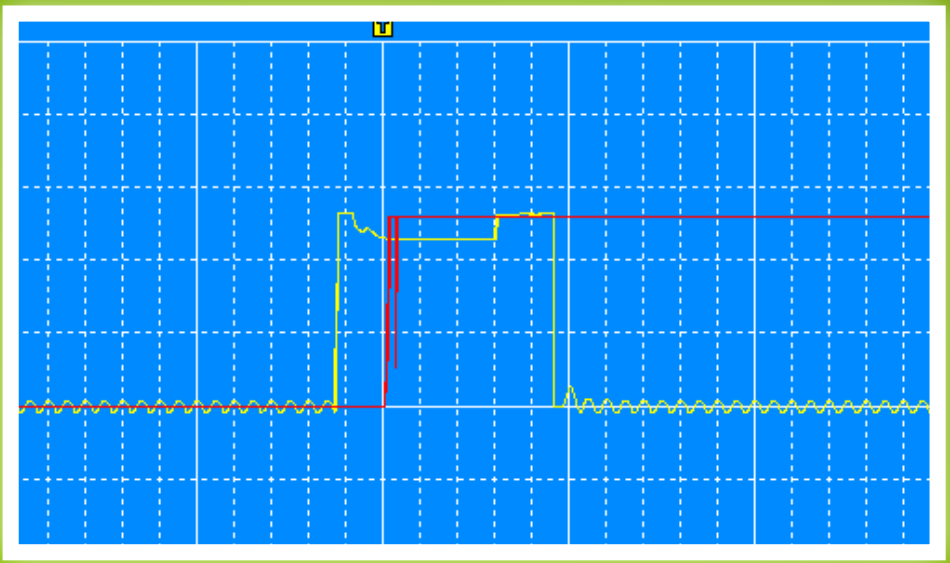

Figure 2: Actual Logic switching of D1 and D2 relays

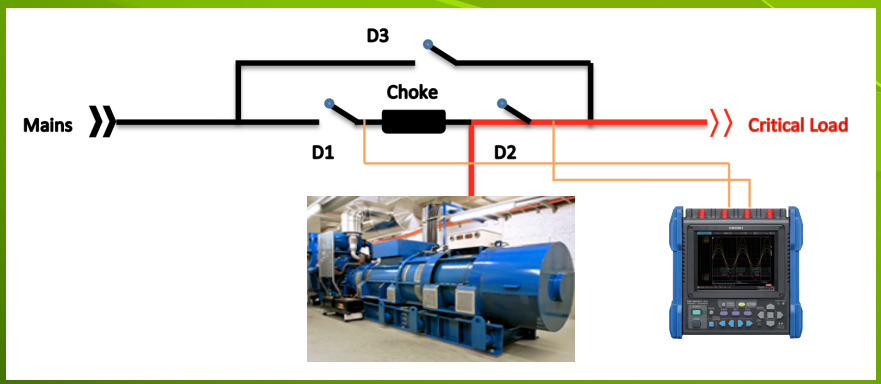

Figure 3: MR8880-20 Measuring D1 and D2 switching relays

One-touch easy load printer option is indispensable for factory maintenance

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