

PRESS RELEASE

## **VDS-C enables fast online checks on medium-voltage cables**

### **Identifying partial discharges during operation**

**Sulz, November 2023** – With its VDS-C VDS PD coupler, BAUR GmbH (Sulz/Austria) now offers an additional, innovative connection accessory for the liona online partial discharge measuring device – something that has been on the wish list of many distribution network operators for a long while. This is because the VDS-C makes it possible to identify partial discharges on medium-voltage cables or their accessories without having to switch off the cable route.

Up until now, network operators have had two options for testing medium-voltage cables for partial discharges using BAUR equipment: offline measurement or online measurement using the liona and HFCT sensors. However, on many cables, attaching and removing the HFCT sensors requires the cables to be briefly taken out of operation. The VDS-C makes this unnecessary, as it is connected directly to the VDS sockets of the switchgear during operation.

### **Adjustment of the frequency response enables PD testing on long cables**

Testing on VDS sockets only enables the identification of partial discharges in the immediate vicinity of the switchgear, as the signals of partial discharges that are further away are suppressed by the high-pass character of the measurement setup. However, by adjusting the frequency response, the BAUR team has managed to ensure that the VDS-C allows through unsuppressed signals that result from partial discharges at a greater distance. Cables several kilometres long can therefore be checked for partial discharges without having to be de-energised. The sync channel allows the measurement to be synched to the measured phase, so that the partial discharges can be displayed according to the correct phase. And in contrast to measurements taken with HFCT sensors, it is also possible to identify partial discharges between two phases on belted cables.

### **Spot tests on medium-voltage cables possible at last**

Thanks to the easy connection without having to disconnect the cable route, it is possible to check for partial discharges within a matter of minutes. If significant partial discharges are identified, scheduling further diagnostics on the cable is recommended. To locate the fault, measurement engineers can use the online measurements of the liona iPD transponder and the HFCT sensors, or the tried-and-tested offline diagnostics. The spot tests with the liona and VDS-C facilitate the scheduling of more sophisticated cable diagnostics. They also enable partial discharge testing on cables that cannot be de-energised for testing, or only as part of a complex and time-consuming process.

You can find further information at [www.baur.eu/en/liona](http://www.baur.eu/en/liona)

### **Identify critical cables within five minutes**

One of the first operators of the VDS-C is Mitteldeutsche Netzgesellschaft Strom mbH, MITNETZ STROM, which had the use of a prototype of the new liona accessory. MITNETZ STROM operates a distribution network of around 15,000 kilometres of medium-voltage cables, of which more than a third has already been in use for more than 30 years. In order to ensure maximum availability, the network operator carries out approx. 1,000 cable diagnostics and PD commissioning measurements per year.

"However, for normal cable diagnostics including partial discharge measurement we have to de-energise the cable," says Nico Biewald. He is a measurement technology installer and responsible for, among other things, diagnostics and cable fault location at MITNETZ STROM. "This is often also usually the case for online measurements, because the HFCT sensors cannot be connected and disconnected on many routes while in the operating state."

For his team, the VDS-C is a boon. "Now we can check cables for partial discharge without having to interrupt supply," says Biewald. "This is particularly useful in built-up areas where we would otherwise have to ensure supply with an emergency power generator."

Biewald not only tested the VDS-C, but also compared the measurements taken using the accessory to the results of conventional offline and online measurements. His conclusion: Using the VDS-C VDS PD coupler also provides reliable information on whether there are partial discharges on a medium-voltage cable. "What the online measurement with the VDS-C doesn't provide is the fault location," says the installer. "Nevertheless, the new accessory still saves us a lot of work. Within a few minutes we can perform a spot test on routes and only need to perform a complex offline measurement if the results are positive."

For MITNETZ STROM, this also means that, overall, more cables can be diagnosed and the time-consuming measurements better planned. This ultimately leads to better knowledge about the cable condition and, in the medium-term, to a lower probability of a failure occurring. "I reckon that we will purchase at least one VDS-C for each network area," says Biewald, who's eagerly awaiting its market launch. "In combination with the liona online partial discharge measuring device, it will help us with diagnostics within our own network, as well as with the service work that we carry out on behalf of other network operators."

### **About MITNETZ STROM**

Mitteldeutsche Netzgesellschaft Strom mbH (MITNETZ STROM), with registered office in Kabelsketal, Saxony-Anhalt, Germany, is a fully-owned subsidiary of envia Mitteldeutsche Energie AG (enviaM). As the largest regional distribution network operator in eastern Germany, MITNETZ STROM is responsible for, among other things, the planning, operation, and marketing of the enviaM power grid. The power distribution network managed by MITNETZ STROM is around 74,000 km long and covers areas of the federal states of Brandenburg, Saxony, Saxony-Anhalt, and Thuringia.



Connect whilst energised, measure while energised: With the help of the new VDS-C connection accessory, partial discharges on cables can be detected quickly and easily. (Images: BAUR)



Nico Biewald, Installer at MITNETZ STROM, on the VDS-C: "Within a few minutes we can perform a spot test on routes and only need to perform a complex offline measurement if the results are positive." (Image source: Biewald)



liona sets (Image: BAUR)

You can find print-ready images [here](#).

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