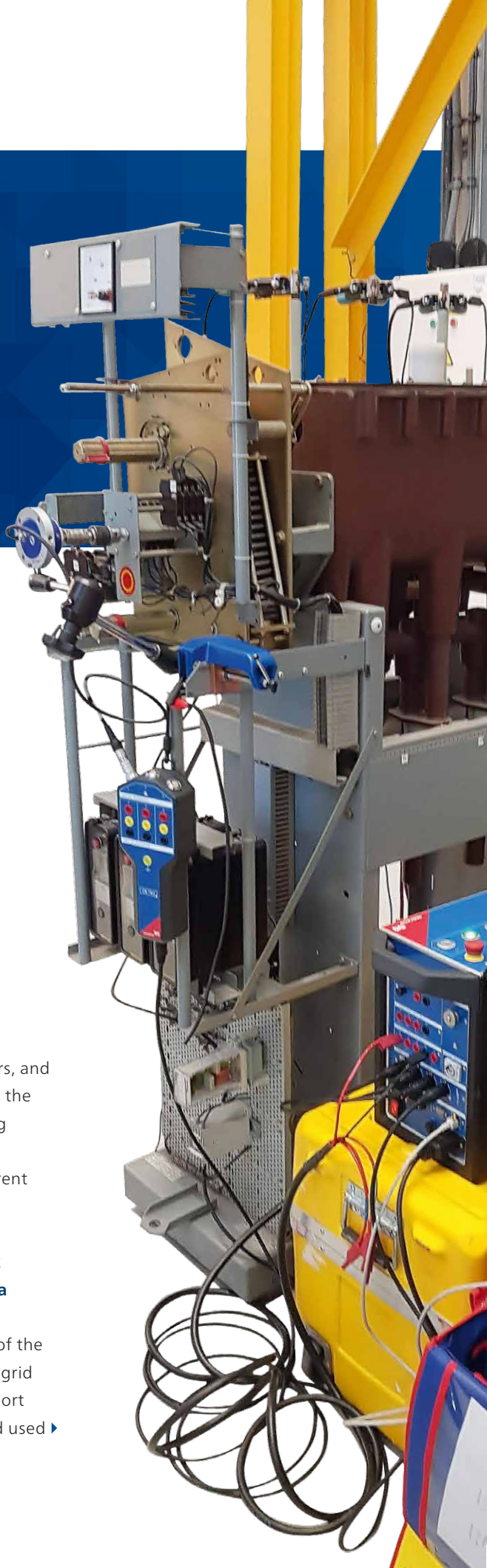
Qirion

100 YEARS OF CIRCUIT BREAKER TESTING EXPERIENCE

Qirion Netherlands – a CIBANO 500 power user



In 2021, OMICRON sold its 1,000th CIBANO 500 device worldwide. To figure out why customers appreciate this new generation of circuit breaker test sets, we talked to a service provider with a century of circuit breaker testing experience. Mick Huisert, a Component Engineer at Qirion and Rick Tiemessen, a Component and Maintenance Engineer at Qirion answered our questions.

Thanks for taking the time to talk to me. Can you please briefly introduce yourselves?

Mick Huisert: I'm a component engineer in the Qirion Circuit Breaker division, and my focus lies in air-insulated switchgear. My work includes complete overhauls of 50 kV and 150 kV breakers in our workshop in Duiven.

Rick Tiemessen: I'm also in the Qirion Circuit Breaker division, where I work as a component and maintenance engineer. I specialize in medium voltage switchgear from 6 kV to 27.5 kV and handle general maintenance questions for Qirion's customers.

How did Qirion become the circuit breaker experts in the Netherlands?

Mick: Qirion and our legal predecessors have been maintaining the electrical grid for about 100 years. Our team of experts absorbed a vast array of knowledge about all kinds of breakers. Our main clients are two large grid operators, Liander and TenneT, but we also perform commissioning and maintenance for other power plants, railway operators, and offshore plants. This puts us in the unique position of maintaining all kinds of breakers from different manufacturers, different types, and ages.

How important do you think circuit breaker testing is for a reliable energy grid?

Rick: Circuit breakers are one of the most important devices in the grid because they can switch off short circuits. They are designed and used ▸

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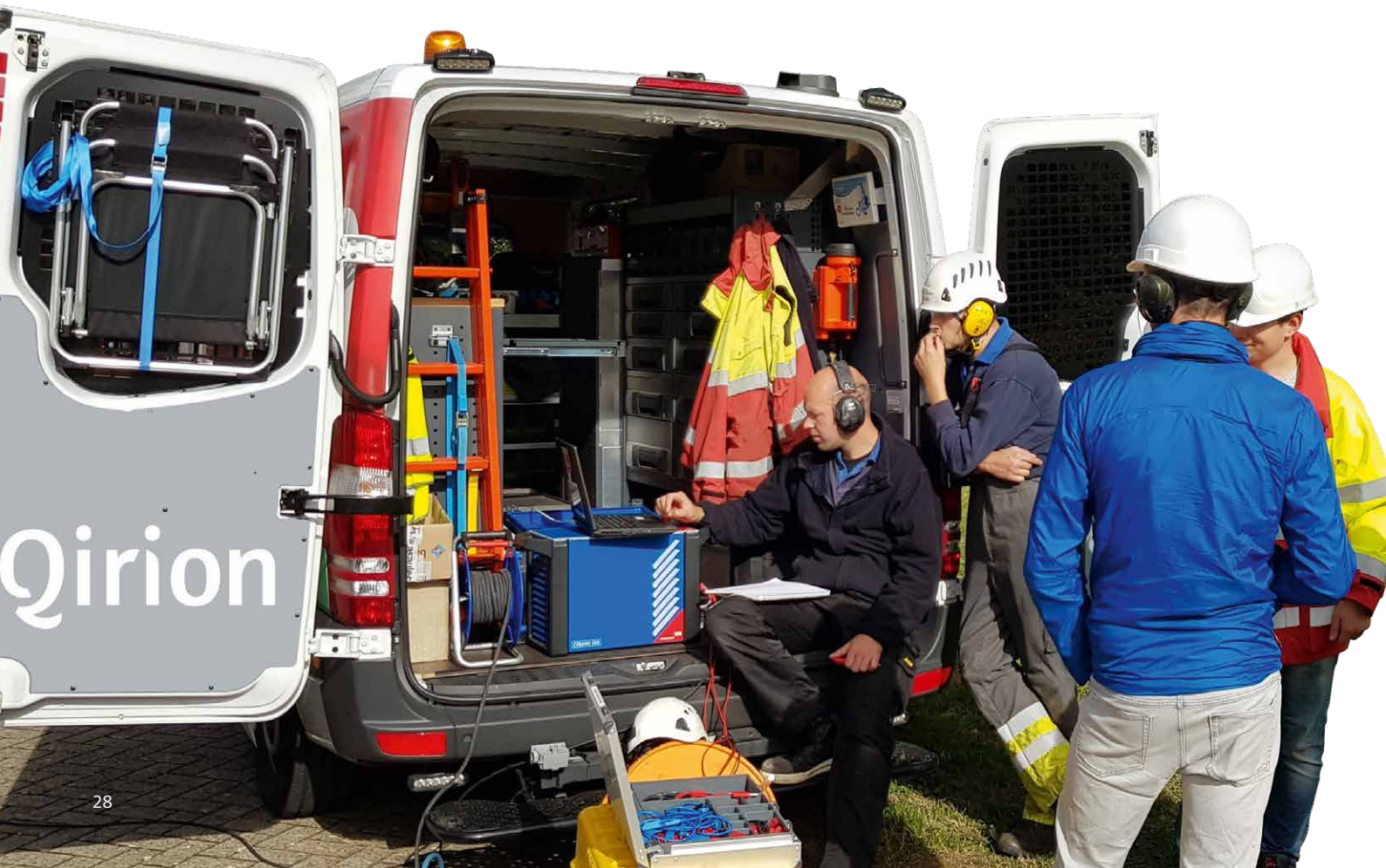
Rick Tiemessen,
Component and Maintenance Engineer,
Qirion

to prevent catastrophes and damage to components. Without breakers, most faults would lead to widespread and long-lasting outages, not to mention the damage and repair costs that come with them.

Mick: Testing helps us make proper maintenance decisions at the right moment. Recently, we had an older Brown, Boveri & Company (BBC) breaker with an oil leak. A motion measurement revealed that the motion went up and then abruptly stopped during the closing operation. So, we concluded that the damping wasn't working.

When we opened the damper, we saw that the inside was completely broken, and the hydraulic oil was empty. After fixing it, the measurement showed that it was damping again. You can identify these types of issues with measurements, and of course, we're very excited about that.



How often do you test your customers' breakers?

Rick: That depends on the environment in which the breaker is being used, how often it is switched, and many other factors. Some customers have fixed cycles, but if we get the chance to influence those cycles, we take a hybrid approach between time-based and condition-based maintenance. In general, we test medium voltage breakers at least every four years.

Mick: We also perform a functional test on high voltage breakers at least every three years, and every six years, we include measurements.

You replaced your breaker test set fleet a few years ago. Can you explain why you did that?

Rick: Our former test system was developed in the nineties, which are long gone and the application needs have diversified and increased. We wanted a more digital variant and the ability to test with grounding on both sides for safety, but the information technology support tipped the scales for us.

Did you go through a unique selection process?

Rick: Yes, first we asked our colleagues who work with the devices what they would need from a new device. Our technicians wanted an easy-to-use, compact system that could perform all measurements. Our engineers also preferred one system for all tests. For them, the price and good customer support were also important. In addition, they wanted onsite training to help our technicians use the device as quickly and efficiently as possible.

We made a pre-selection with three devices, which we took to a workshop for a week. Our experts tested them on a variety of breakers – 20 kV vacuum, 150 kV air-insulated, 150 kV gas-insulated, and 380 kV air-insulated. The two best devices were then tested on-site with our most unique breakers. Then we summarized both testing sessions and put together the results. In the end, the CIBANO 500 came out on top, so the choice was easy.

What is the most significant advantage that the CIBANO 500 offers you?

Rick: It's easy to use, and compared to other test sets, you have to mount fewer devices to perform a complete measurement. If you have the correct template made, you can perform rapid measurements, measure one breaker after the other and save a lot of time.

Can you give advice to anyone that has less experience with circuit breaker testing?

Mick: Aside from all the inconvenience that comes with a failing breaker, it's essential to understand the cause of the failure, because that understanding will increase your knowledge. So, if you repair as much as you can by yourself, your knowledge will continue to expand.

Thank you for the interview.

«Aside from all the inconvenience that comes with a failing breaker, ***it's essential to understand the cause of the failure, because that understanding will increase your knowledge.»***

Mick Huisert,
Component Engineer,
Qirion