



FAQ

SIPP Control Equipment

	FAQ SIPP Control equipment	Release: 2021-05-03
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What is an oil catch pit?

Under a transformer there is an oil catch pit that protects the surrounding environment from leaking oil in the event of a transformer breakdown.

In order for the pit to function correctly, it must be regularly emptied of rainwater.

Normally, the pit contains only clean rainwater and water from melting snow. However, due to temperature fluctuations and minor leakage and/or spills when maintenance is conducted, the pit may also contain transformer oil.

SIPP detects oil leaks from the transformer, verifies that the oil catch pit is tight and confirms that there is always room in the pit for all of the transformer oil in the event of a breakdown.

The permanently installed units (SIPP Node or SIPP LW) monitor the oil catch pit 24/7 in terms of water level and temperature.

SIPP mobile and SIPP Node measure and check all water before emptying in regard to oil content and ensure that only water below the limit value is pumped out.


All discharges are documented in terms of volume, time, location, and oil content.

Our measurement method

The measuring cell is the component in the system that ensures that all water that is pumped out is clean in respect to oil.

It is an optical measurement method whereby an IR light is sent through the flowing liquid and several receivers register the amount of light and its scattering. Clean rainwater and water contaminated with oil look optically different. This is the way the measuring cell can evaluate whether there are oil emulsions in the water and to what degree.

The measuring cell detects both mineral oils and synthetic oils. Through proven technology that has been developed and evolved over many years, we measure with an accuracy of +-1ppm.

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What functionality does SIPP control equipment provide?

SIPP Control Equipment delivers the following functionality:

- Detection of oil leakage from the transformer
- A continuous check that the oil catch pit is secure
- Ensures that transformer oil does not exceed capacity
- Process support for installation and predictive maintenance
- Monitoring 24/7/365 with automatically generated alarms in case of an error report
- Interface for integration with business and maintenance systems

The equipment has been designed to integrate with external business and maintenance systems.

The equipment is able to integrate with other sensors at the substation.

IT security

Gomero has a clear focus on security work and independent consultants are hired for analysis and review of security.


All staff have signed confidentiality agreements and receive ongoing security training.

For the cloud service, Gomero uses AWS's data infrastructure (the world's largest) to ensure availability, backups, and monitoring. All services we use are C5 compliant and AWS are certified according to ISO270001.

All communication between the customer interfaces and the application servers is encrypted with Hypertext Transfer Protocol Secure (HTTPS).

Communication via e-mails is done with S/MIME signing. This means that we confirm (via our private key) that all content in the email comes from us and that the content has not been changed by anyone on the way to the recipient.

In addition, Gomero uses VPN tunnels for communication between devices in the field and the cloud. The wireless communication from device to servers takes place via the mobile network (2G/3G) and special IoT SIM cards.

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Which model should we choose?

For a completely worry-free and fully automated solution, the obvious choice of equipment is a SIPP Node. There are three different models to choose from.

Some general advice:

- Select a model that has a slow pump-out speed.
- Choose a model that is able to pump out an average of the volume generated by a normal annual rainfall at the installation site.

Contact us to get help in choosing the right model.

We will ask for the following information:

- Dimensions of the pit
- Amount of oil in the transformer
- Amount of precipitation at the installation location (average per year)
- Maximum amount of precipitation over a 24-hour period that the equipment should be able to handle


Training

SIPP requires no formal training for operation and maintenance. However, we recommend that as a new customer you go through a one-day training course to get a basic understanding of the system.

We offer these both digitally and on site at your workplace.

We will go through:

- Basic functionality
- The structure of the system and its various parts
- How does the measurement work, detection of oil/oil emulsions
- The user interface for web and app
- Maintenance needs
- Convenient things to keep in mind when using

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Installation

The cabinets are mounted either on a wall using a wall bracket or on a mounting post at the edge of the oil catch pit. The post can be attached to the edge of the frame in three different ways:

- On top of the edge with expander bolt that is screwed into the foundation
- Using the post's wall bracket on the side of the rim edge with expander bolt
- With a rim clamp that enables installation without the need to drill into the foundation.

SIPP LW is mounted with the same mounting post as a SIPP Node.

Installation must be carried out by a trained and certified person on site or by the customer on site with the remote help of a trained and certified person.

The following tools are available to perform the installation:

- Instructional video in web interface and app
- Digital guide in the app
- Detailed instructions and directions for remote assistance via the remote installation service.

Operation and maintenance

The SIPP nodes are autonomous, they mostly work on their own. As a customer or maintenance manager, you will be notified when they need supervision.

Supervision normally takes place between 6 to 24 months. The equipment notifies when it is time for inspection or service.

Normally, a maintenance visit takes 10-15 minutes.

Instructional videos and a digital guide (check list) for how maintenance and supervision are conducted are easily available via the system's process support, the SIPP app, which can be downloaded to both Android and iOS phones or tablets.