

Background · What is Sigfox

Frese FLOWGUARD and Frese BYPASS use the Sigfox network to send and receive data from the valve's control box. This allows you to operate every single installation from your desk or out in the field via the webbased Frese FLOWCLOUD®. But what is Sigfox really? Get an overview of the technology behind here.

Who is Sigfox?

Sigfox is a French company, which emerged in 2009 with the goal of launching a global network dedicated to IoT - The Internet of Things. Their motto was "Make Things Come Alive". They have succeeded and Sigfox is now used in more than 60 countries around the world in no less than 6.7 million units in many different industries.

Sigfox collaborates with local network operators in the various countries. This means that, as a customer, you will cooperate with a national company.

How does Sigfox work?

The concept of broadband has long ago become part of our everyday language. Sigfox operates at the opposite end of the spectrum, using so-called Narrowband technology.

Where Wi-Fi and mobile technology allow us to send large amounts of data very quickly, for example when streaming video content, Narrowband can only handle very small amounts of data. In Sigfox, the devices can send data packages of only 12 bytes per second and receive 8 bytes, which corresponds to approx. 12 and 8 characters. In many IoT projects, however, there is no need for more.

This applies to Frese FLOWGUARD and Frese BYPASS, both working perfectly within that technological framework.

The major advantages of Narrowband lie in the international name for this type of network: LPWAN - Low-Power Wide-Area Networks.

Because the amounts of data are so small, and the devices only send and receive at certain times, they use very little power. Therefore, they can be battery operated, making them relatively inexpensive as there is no need to invest in infrastructure in the form of connection to the main power supply. This shows both on the bottom line and in the installation process. The batteries have a life expectancy of up to 5-10 years dependent on type of product.

In addition, Narrowband technology has a very long range, and data can easily be sent from the device to a base station located several miles away without using extra power.

Another advantage of this technology is that it is not based on the mobile network, as many other technologies are. This means that the device does not have a sim card, but only a chip, which makes it far less complicated.

What does Sigfox provide?

Sigfox owns their own technology, and their national network operators pay a fee - a license - for using the system. All data goes through Sigfox's servers in France, while the national network

operators are responsible for the entire infrastructure and creation of the base stations through which the customer's units communicate.

This is a subscription model that requires only limited effort. The customer does not have to do all the work - and carry all the expenses - to develop and operate infrastructure and IT systems. These resource-demanding elements are simply part of the package at the national network operators and Sigfox.

How good is the coverage?

Sigfox is constantly expanding its global coverage by building new base stations in order to ensure better and more stable connections.

You can find updated information on the roll-out and expansion process on your national operators website. Please find your national operator at

partners.sigfox.com/search/companies



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What about the security?

At a time when debate about hacking and cybercrime is running at full pressure, it is essential for Sigfox to control security all the way through the network chain.

The device itself - in this case Frese FLOWGUARD or Frese BYPASS - is triple secured: first with an authorization ID, then by sending all messages three times on different frequencies with a very narrow bandwidth, which is effective against jamming. And finally, because the device does not use MAC and IP address, which means it cannot be accessed by any outside hackers.

The base stations with which the devices communicate are secured with the Trusted Platform Module security technology that complies with international standards (ISO / IEC 11889).

Sigfox is Cloud based and hosted in secure data centers in France. The company has a strong focus on preventing crashes and protecting itself from cyber-attacks.

Last but not least, the customer's communication with Sigfox is sent through a secure connection to the same standard as when shopping online with credit cards.

Why did Frese choose Sigfox ?

Sigfox was chosen because they have a unified platform that can be used worldwide. It's a super-easy, consistent technology that fits perfectly in Frese's setup, where battery life is important and the amount of data is very small. Frese FLOWGUARD and Frese BYPASS do not need to exchange more data, the rest is built into the controller firmware. So, it just needs to know what to do, and then it will figure out the rest for itself.

To customers, this means that they get a solution that is very easy to install and handle in everyday life. For example, you do not even have to set up a radio network, as was the case with many of the remote read meters that have been installed in recent years. It is already there. Also, there are no sim card complications, as everything is hosted in the built-in chip. The entire infrastructure is established for the customer from the start.

Sigfox is as close to plug-and-play as it can get. This is where the advantage lies.

At the same time, the financial aspects are transparent, as there is a completely fixed subscription price per unit. And if the unit is in an area where coverage is not optimal, there are also fixed prices for different types of signal repeaters.