

# Belimo NFC

Belimo NFC coupled with Belimo's Assistant App allows for fast programming, commissioning and troubleshooting. We at Belimo are committed to providing efficient and time saving solutions for our customers, without sacrificing security.

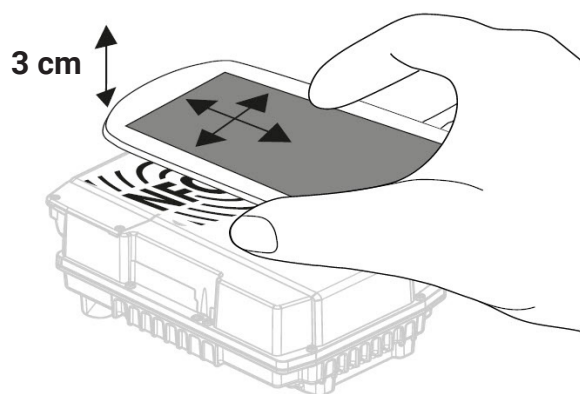


## General

### **What exactly is NFC?**

Near-field communication (NFC) is a wireless communication protocol defined by ISO/IEC 14443. It operates at a frequency of 13.56 MHz between an active reader (e.g., smartphone) and a passive device (e.g., Belimo actuator). For communication to occur between two devices using NFC, the NFC interfaces must be placed close enough to each other. Belimo NFC works best with direct contact to the actuator. Communication works at distances of up to 3 cm.

The active device's NFC uses electromagnetic induction to power the passive device's NFC interface. This also means Belimo NFC products can be accessed in both their powered on or off states.



## Belimo NFC

### ***How can Belimo devices be accessed over NFC?***

Belimo provides the costless Belimo Assistant App for smartphones / tablets to access NFC enabled Belimo devices. Once the app is started and the smart device is held within 3 cm of the NFC symbol on the Belimo device, a connection will be automatically established.

### ***What are the advantages of using NFC?***

NFC has several advantages:

- works with powerless actuators (configuration can be downloaded before the electrical installation is completed),
- Belimo Assistant App provides an easy to use interface with extensive configuration settings / diagnosis and commissioning tools at your finger tips,
- automatic app updates ensure that the latest Belimo devices are supported,
- direct communication with the device, no second guessing which device you're communicating with.

### ***What information is exchanged over NFC?***

While using the Belimo Assistant App, the user has access to the following:

- settings for communication and application parameters,
- software information such as the firmware version,
- system utilization and history,
- current sensor values, target setpoints,
- warnings and error reports for diagnostics,
- newly added features with each major update.

### ***What are the system requirements for NFC communication?***

Android smartphones / tablets with NFC enabled can connect directly to Belimo products. Other smart devices (such as Android devices without NFC capabilities or Apple iOS devices) cannot connect directly. If they support Bluetooth, they can be connected indirectly via a ZIP-BT-NFC module. The Belimo ZIP-BT-NFC is a wireless Bluetooth gateway that translates data between NFC and Bluetooth.

### ***Which Belimo products are NFC compatible?***

There are currently several Belimo products that are equipped with NFC. This is indicated on the front of the device with an NFC logo. Please refer to the latest Belimo catalog or contact your Belimo representative for a current list.

## Security

### ***How secure is NFC in Belimo products?***

Belimo is integrating NFC in its products based on the fundamental principle that once a person has physical access to a device it cannot be considered secure anymore. A person with physical access to a device can compromise the device (e.g., with the use of a simple wrench, one can loosen the shaft of the damper).

### ***Is NFC communication between the reader and Belimo product encrypted?***

No. This is because very close physical proximity (a few cm) is required to eavesdrop on NFC communication, which cannot be achieved without being noticed by the service technician.

### ***What is the maximum distance between an NFC reader (smartphone) and a passive NFC tag for successful communication?***

Measured maximum distances of successful NFC functionality with current smartphones or NFC-readers is less than 5 cm. Belimo products may work up to 3 cm.

### ***RFID tags are read from larger distances by readers, how does a Belimo device block those signals?***

There are numerous RFID technologies utilizing different frequency bands. Belimo products incorporate NFC technology which utilize a carrier frequency of 13.56 MHz and contain very small antennas within the devices. This means NFC tags cannot be read from far like some other RFID tags.

### ***Can an NFC signal be broadcasted into a building that effects Belimo devices?***

NFC signals cannot be broadcasted over larger distances.

### ***Can the NFC signal between Belimo devices and NFC readers be "cloned"?***

An NFC signal can be eavesdropped and cloned only if it can be physically intercepted in between the NFC reader/smartphone and NFC-tag of the Belimo device. This implies that the person eavesdropping has physical access to the device.

### ***Can NFC in Belimo products be switched on and off by the customer?***

An NFC switch feature is currently not implemented.

### ***Can the SSL certificate that a Belimo device uses to access the Belimo Cloud via Ethernet be read using NFC?***

No.

### ***Does NFC communication read and write some data to the customer's smartphone?***

NFC communication via the Belimo Assistant App includes the Belimo device configuration data to the smartphone. However, the configuration data is not permanently stored on the phone, just displayed by the App. The user can then change the configuration and download it back to the Belimo device. The data is deleted after it has been sent to the Belimo Core Cloud and the app is closed.

### ***Will the information received on a device over NFC be relayed to the Cloud?***

Yes. All data read from a Belimo device is relayed to the Cloud by the Belimo Assistant App. The App may be used offline, in which case data transfer is not possible.

### ***What steps should I take to ensure safe use of NFC with Belimo products?***

Always use the updated version of the Belimo Assistant App. If your smartphone doesn't support NFC (e.g., all Apple iPhones), please use a ZIP-BT-NFC module for NFC to Bluetooth conversion. The ZIP-BT-NFC is updated automatically by the Assistant App as needed.

For further information, please visit [www.belimo.com](http://www.belimo.com)