



LabScape

Bruker AutoDiagnose

Frequently Asked Questions

Innovation with Integrity

AutoDiagnose is Bruker's latest innovation in proactive NMR instrument monitoring and maintenance. The platform provides a user-friendly interface to monitor the health status of all connected NMR systems at a glance whether they are in the same room or from different buildings or sites.

At Bruker, we're proud to have over 300 spectrometers connected worldwide via AutoDiagnose. This strong network is a testament to our system's reliability.

We understand that data sharing can raise questions due to potential regulatory, competitive, financial, and security implications. Minimizing these risks is a cornerstone of the AutoDiagnose platform architecture.

To help you make an informed decision and connect your spectrometer, we've compiled a list of frequently asked questions. We hope this information will facilitate your choice to join us.

What is AutoDiagnose?

AutoDiagnose is a platform that allows users and administrators of Bruker NMR spectrometers to monitor and supervise their systems remotely. It provides a user-friendly graphical interface to display and report technical information from the connected systems.

By sharing the technical data in the cloud, the customer will allow Bruker providing a proactive assistance and a fast and reliable support.

AutoDiagnose Functionality and Data

How does AutoDiagnose work?

The AutoDiagnose platform receives the relevant data from the transmitting module integrated into TopSpin software. Data are then analyzed in the cloud application.

What kind of data are visible on the user graphical interface?

The user can visualize the health status of the connected instruments, the system configuration, the cryogen levels and the AutoCalibrate results (when available). Moreover, more than 200 instrument-related parameters are shared with Bruker to enable remote monitoring and malfunctioning diagnosis by Bruker's service team.

What is the data package size, and what is the frequency of the data push?

The data package size and frequency of the push depend on sensor and configuration. The main values are summarized in the table below:

Data description	Frequency	Data size
Heartbeat A timestamp that signalizes that the connection is still established	5 min	Few bits
Hardware and software configuration This includes part and serial numbers of the main components of the console and corresponding Engineering Change Level (ECL) and firmware version.	When updated by executing cf or edprobe commands	< 100 kB
Device data, sensor values such as board temperatures, shim values, gas flows etc.	Every 12 hours	< 400 kB
AutoCalibrate results (when available)	After each AutoCalibrate run	< 25 kB

Will my experimental data be accessible by Bruker?

No. The data transmitted are solely spectrometer-related and do not include users and experiment information or any details of the substances being analyzed other than for the Bruker standard samples used for the spectrometer performance tests.

How are the data collected and used? Is there any file exchange?

The transmitting module, integrated into the TopSpin software on the customer's PC, is always initiating the communication between the sender and the backend in the cloud, where they can be browsed and analysed. By no means the cloud server is contacting the individual sender or pushing data, scripts, or software updates to it. This is an important fact in the context of data privacy and data protection. Sensor data are not persisted on the workstation but are temporarily stored in the RAM of the spectrometer console.

Instrument Compatibility and Control

Which instrument can be connected to AutoDiagnose?

Connection can be activated for the consoles of the AVANCE NEO, AvanceCore and Fourier 80 NMR spectrometers.

Does AutoDiagnose require supervision and any maintenance after activation?

No. The application keeps on working in the background without any specific action from the user or by IT, even after reboot of the system.

Can the connection be switched on/off?

Yes, the customer can either pause or terminate the connection at any time. Afterwards, the connection can be re-established from the spectrometer workstation.

Pausing allows the customer to easily reconnect the spectrometer later and access the previously sent data

In contrast, terminating the connection and reconnecting the spectrometer will lead to a new digital twin in the cloud, thereby disallowing the view of the previously sent data and the data of the new digital twin as a coherent stream.

Performance

Does the data transfer affect the performance of the instrument?

No. AutoDiagnose has been designed and validated to ensure it does not interfere with the spectrometer's performance.

Does the data transfer affect the performance of the internal network?

No. AutoDiagnose has minimal impact on the network bandwidth. Please refer to the table on data package sizes for more details.

Security and Privacy

How can computer viruses be prevented?

Computer viruses can be prevented through the use of virus protection systems installed on the instrument's computer. It is the responsibility of the users to ensure that virus protection is in place.

Should a port be left open? How is the connection secured?

The communication between the sender and the backend is based on HTTPS and REST and is therefore encrypted using TLS. For the sender to communicate with the backend, port 443 must be open, and the following URL must be allowed: <https://be.autodiagnose.bruker.com>.

For the customer to view the Customer-UI webpages, also port 443 for the following URL must be open: <https://autodiagnose.bruker.com>.

Bruker can provide an official statement based on its own internal assessments and audits to assure that we follow the best industry-recognized security and communication protocols, to ensure the security and integrity of our data and transactions. Such declaration can be requested by the user any time is needed.

Does the instrument need to have a static IP address?

No. A static IP is not required; it can be assigned via DHCP.

Are proxy servers allowed?

Yes, proxy servers are allowed, their configuration is under customer's IT department responsibility. URLs as mentioned above must be reachable.

Does AutoDiagnose require a VPN (Virtual Private Network) connection?

No. VPN connection is not required.

Does the AutoDiagnose use industry-recognized security and communication protocols?

Yes. The spectrometer utilizes HTTPS via TLS for secure communication.

Contact us

For specific questions, you can send your support request online via [contact form](#) or offline via your local support team (list available at: <https://www.bruker.com/en/services/support.html>)

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