

TA 2300-0006

Technical Instruction



Security tips when connecting Jenbacher Installations to the Internet



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1 General

The INNIO Jenbacher GmbH & Co OG DIA.NE® operating system provides customer connectivity via network connections. Using this connection, the customer is able to access GE Jenbacher's DIA.NE WIN® application and thus control the plant remotely.

This network connection was EXCLUSIVELY planned by INNIO Jenbacher GmbH & Co OG for connections to local customer networks (customer LANs).

By the use of today's technologies and because of widespread Internet connectivity, the network connections referred to offer a possibility for connecting the plant to the Internet. Customers often use a network router with port-forwarding for this application.

This technical instruction explains the risk associated with this solution and shows the appropriate solution from a security standpoint provided by INNIO Jenbacher GmbH & Co OG.

2 Security risks / dangers

Using such routers with port-forwarding contain a wide range of **serious security issues!**

Some examples:

- Unencrypted transmission of data over the Internet
 - Detection of transmitted unencrypted passwords by HACKERS!
 - Possibility for HACKERS to start a Man-In-The-Middle attack (Online-modification of transmitted data, e.g. setpoint values, parameters, ...).
- Using correctly configured routers (correct port limitations): Possibility of direct access to the Web server installed at the DIA.NE(r) WIN-server
 - No protection against web server directed viruses, worms, Denial of Service (DoS) and exploit attacks (e.g. Code Red)!
 - Little protection against password cracking attacks by HACKERS (Finding out of passwords)!

- Using mismanaged routers or using outdated router firmware (Security updates not installed): Direct access to the server's operating system
 - No protection against all sorts of viruses, worms, trojan and Denial of Service (DoS) attacks (e.g. Blaster, Sasser, Spybot, Beagle,...)!
 - Password protection can be bypassed by HACKERS at all levels!
- No access control and access logging by the INNIO Jenbacher GmbH & Co OG Remote Access Portal (dual Layer authentication)

These serious security problems cause **direct danger for customer and plant:**

- Access to the plant using inappropriately obtained passwords or Man-In-The-Middle attacks by unauthorised persons:
This means that such persons have full access to all setpoint values, plant parameters, historical data including modification and deletion.
- Take-over of full control of the server by unauthorised persons:
 - Bypassing all security restrictions provided by the operation system and consequently full access to all the applications setpoint values, plant parameters and historical data.
 - Unauthorised use of the server's hardware and the Internet connection for criminal activities (spam mailing, DoS attacks, ...).
- Damage to the DIA.NE® WIN server:
Total loss of the server (data, accessibility, hardware) due to deletion of the server's harddisk by HACKER intervention or by a VIRUS.

These manipulations can cause catastrophic damage to the plant and can be life threatening!

3 Solution based on Jenbacher Firewall

To solve these problems, INNIO Jenbacher GmbH & Co OG has developed a specific solution for accessing plants over Internet.

This solution uses an on-site firewall to protect the plant which can handle a highly secured, encrypted connection to a central firewall at INNIO Jenbacher GmbH & Co OG (Virtual Private Network, VPN). These connections and all devices involved are directly controlled and maintained by INNIO Jenbacher GmbH & Co OG specialists, who ensure a very fast response to system-based security problems (updates) or hacker activities.

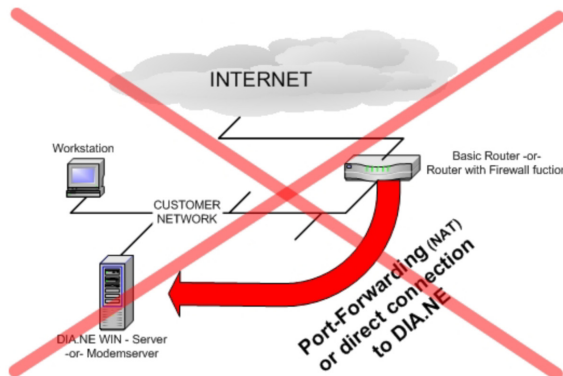
Using the firewall and VPN connections prevents the plant from being accessed directly. Only authenticated users gain access to the plant over INNIO Jenbacher GmbH & Co OG Remote Access Portal.

4 Warning

STRICTLY PROHIBITED!
Unsafe

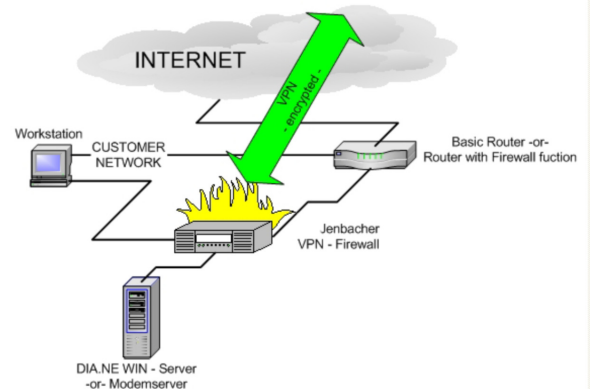
Safe

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Router with port forwarding:

Direct access to DIA.NE® WIN with unencrypted login via the DIA.NE® password.



INNIO Jenbacher GmbH & Co OG Firewall solution:

Access to DIA.NE® WIN only via INNIO Jenbacher GmbH & Co OG Remote Access Portal (1. encrypted authentication at the portal, 2. encrypted login with the DIA.NE® password)

INNIO Jenbacher GmbH & Co OG is not liable for any damage or defects resulting from port forwarding or direct connection to the DIA.NE® WIN server. Such damage or defects are not covered by the INNIO Jenbacher GmbH & Co OG warranty.

5 Revision code

Revision history

Index	Date	Description / Revision summary	Expert Auditor
2	30.04.2019	GE ersetzt durch INNIO / GE replaced by INNIO	Stojiljkovic T. Pichler R.
1	26.05.2010	Umstellung auf CMS / Change to Content Management System ersetzt / replaced Index: -	Schartner Pichler

