

Security Risks in Manufacturing Environments and Key Points to Know. - China Security Standards Edition

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Cybersecurity regulations for the manufacturing industry in China have become stricter. Some PLCs (Programmable Logic Controllers) are now required to comply with the mandatory national standard GB40050-2021, based on the China Cybersecurity Law. This document outlines the relevant laws and standards, as well as the certification status of OMRON PLCs. It serves as a reference for companies considering exporting to the Chinese market.

1. Preface

Cyberattacks targeting the manufacturing sector are increasing each year. Some countries, including China, have established mandatory security standards at the national level. PLCs, which are central to factory automation, are also subject to these regulations. This document explains the legal framework for PLCs in China and the compliance status of OMRON PLCs.

2. Laws and Standards in China

China Cybersecurity Law: Enacted in November 2016 and effective from June 2017, this law sets requirements for network products and services (Article 22) and mandates certification for 'critical network equipment and dedicated network security products' (Article 23). Some PLCs are designated as critical network equipment and must obtain certification¹⁾.

Mandatory National Standard GB40050-2021: This standard, effective since August 2021, applies to critical network equipment sold in China. Compliance is mandatory. The standard covers both security function requirements and secure development lifecycle requirements. From January 2026, penalties such as sales bans and fines will be enforced for non-compliance.

3. OMRON PLC Compliance

OMRON's NJ/NX and CS/CJ series controllers have obtained GB40050-2021 certification. Certified models can be checked on the [OMRON China website](https://www.fa.omron.com.cn/networksecuritysearch)²⁾.

For the CS/CJ series, compliance is achieved when used with the EtherNet/IP unit. The CP series is not subject to this regulation, and it can continue to be sold and provided within China without obtaining GB40050-2021 certification



Fig.1 Products Certified to GB40050-2021

OMRON has also obtained certification for the international standard IEC 62443-4-1 and implements secure development lifecycle activities.

4. Conclusion

This document has outlined the mandatory national standard GB40050-2021 for PLCs in China and its legal basis. We hope this information is helpful for manufacturers considering exporting equipment to China.

References

- 1) PLCs with an instruction execution time of ≤ 0.08 microseconds are subject to these regulations.
- 2) <https://www.fa.omron.com.cn/networksecuritysearch>