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(57) Abstract :
The industrial safety isolation gateway system (100) is a specialized device designed to protect industrial control systems (ICS) (130) from unauthorized access and cyber-attacks. The gateway (100) comprises a hardware device (110) with a processor (111), memory (112), and network interfaces (113), and a software component (120) with a configuration unit (121) and a control unit (122). The configuration unit (121) enables the initial setup of the gateway (100), configuring network interfaces (113), security settings, and access control policies. The control unit (122) manages the gateway (100) by monitoring network traffic, detecting anomalies, and enforcing access control policies. Additional security features include network traffic encryption (123), intrusion detection and prevention (124), and network segmentation (125). The gateway (100) safeguards the ICS (130) by isolating it from the production network (140), monitoring network traffic, implementing security features, and enabling secure operation of industrial machinery.

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