Cakeen PID Temperature Controllers: Core Parameters, Certifications and Selection Guide

Technical Parameters, Compliance Certifications and Industrial Selection Reference

CALIFORNIA, CA, UNITED STATES, July 10, 2026 /EINPresswire.com/ -- Wuxi, China July 9, 2026 — Wuxi Keen Technology Co., Ltd. Cakeen , has developed a lineup of industrial PID temperature controllers that combine proprietary control algorithms with modular hardware for use in semiconductor processing, pipeline heating, and general industrial automation. The company's technical architecture and parameter specifications are outlined below to support engineering procurement and system integration decisions.

logo for Cakeen

Core Architecture and Design

Wuxi Keen Technology Co., Ltd. Cakeen PID temperature controllers, such as the KE-48 panel mount model and the KE-2104 DIN rail mount model, are built around several foundational technologies that enable ±0.1°C control accuracy across a wide range of thermal processes.

1. High-Resolution Signal Acquisition
The controllers accept input from up to 13 types of thermocouples and PT100 RTDs (types PT, K, J, R, S, T, B, E, N, L). The internal measurement chain uses 24-bit analog-to-digital conversion to achieve temperature readings with a resolution of 0.1°C, consistent with the ±0.1°C control specification listed for all models.

2. Industrial Electromagnetic Compatibility (EMC) Protection

Products comply with CE directive standards EN 55032:2015+A11:2020 and EN 55035:2017+A11:2020 for radiated and conducted emissions, as verified by certification numbers CEJS22011335967 and CEJS22011335968. The circuitry includes transient suppression and filtering for reliable operation in electrically noisy industrial environments.

3. Multi-Protocol Communication Architecture
Wuxi Keen Technology Co., Ltd.□Cakeen□ controllers support RS485 communication with Modbus RTU protocol. The CMS Communication Module (K42CE-D) adds an Ethernet port supporting Modbus TCP, enabling integration with factory SCADA or the company's own Central Monitoring System (CMS), which can poll more than 10,000 Modbus TCP devices every 10 seconds.

4. Rugged Housing and Environmental Durability
Enclosures are constructed from flame-retardant engineering plastic or aluminum alloy, depending on the model. The KE-H10 and ASH series, designed for pipe heating tape control, use aluminum housing for heat dissipation. While specific operating temperature ranges are not published, the materials and construction are intended for continuous industrial deployment.

Selection Parameters (Representative Models)

Temperature Measurement Range: Dependent on sensor type (PT100: −200…850°C; K: −200…1372°C; J, R, S, T, B, E, N, L according to IEC 60584)
Control Accuracy: ±0.1°C (all PID controller models)
Supported Sensor Types: PT100, K, J, R, S, T, B, E, N, L
Output Options: SSR driver (built-in or external), 0–20 mA, 4–20 mA, 0–10 V (depending on model)
Communication Protocol: RS485 / Modbus RTU (all models); Modbus TCP (via K42CE-D module)
Protection Rating: Varies by model; panel mount units offer IP54 front face; standard industrial interior installation
Explosion-proof Specification: Not available (standard industrial use)
Operating Temperature Range: −10…+60°C (typical industrial controller range; refer to individual datasheet)

Certified Quality and Compliance

Cakeen controllers are manufactured under an ISO9001:2015 quality management system (certificate 50325Q3891R0S), ISO14001:2015 environmental management system (50325E3892R0S), and ISO45001:2018 occupational health and safety management system (50325S3893R0S), all issued by Beijing Zhong Ding Qian Yuan Certification Co., Ltd. Select products hold additional certifications: the CMS Communication Module (K42CE-D) is SEMI S2 certified (certificate 220252 by SAFES) for semiconductor safety, and the MFC Gas Flow Controller

(HOT N2) carries CE LVD certification (TRCN-22262WCT01 by INTEGRA96).

Application Focus and Market Impact

The controllers are designed for industries requiring high stability under continuous operation. Specific use cases include heating tape control for semiconductor chemical delivery pipelines (models KE-H10, H6625, ASH), multi-zone temperature management in diffusion furnaces and CVD chambers (KE-2104 4-channel DIN rail controller), and panel-mount temperature monitoring in factory automation (KE-48). In OEM applications, a semiconductor equipment integrator has reported sustained use of over 50 units per year for four years, with consistent process temperature across chambers.

The company’s Central Monitoring System (CMS) software complements the hardware by aggregating data from thousands of controllers over Modbus TCP, storing 365-day time-series history, and providing real-time alarm management.

Contact and OEM Inquiry

Wuxi Keen Technology Co., Ltd.（Cakeen） welcomes engineering inquiries, OEM/ODM projects, and certification verification. Customization of parameters, logo, and appearance is available with typical lead times of 30–45 days and minimum order quantities starting at 500 units for standard models.

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