PW-Series Access Modules & Modular Access Control System

PW6K1R2, PW6K1IN, PW6K1OUT & PW6K1IC Intelligent Controllers

The next generation of the PW-Series family improves on the existing PW technology to offer superior features and benefits.

The PW-Series Modular Control System is an advanced access control hardware architecture capable of providing solutions for large enterprise applications whilst the Intelligent Controller (PW6K1IC) provides power and flexibility with its 32-bit architecture, TCP/IP support, flash memory, large local cardholder database, and large reader and I/O module support.

The Intelligent Controller is designed to operate off-line, making access control decisions independently from a PC or other controlling device. It can also be connected to a host computer for system configuration, alarm monitoring and direct control. Connectivity to the host computer is accomplished via direct serial communication (RS232 or RS485), dial-up modem, or TCP/IP network connection. The PW-6000 has Ethernet directly embedded and will support a second Ethernet connection.

The PW-6000 will support up to 300,000 cards and 50,000 transactions.

The Access Control Modules are controlled by and connected to the intelligent control module PW6K1IC through a supervised RS485 bus at 38,400 bps. Hardware interface configuration options are stored in the intelligent control module and may be directly controlled via operator intervention, time schedules, or event-based procedures. The PW6K1IC Intelligent Controller supports any combination of up to 32 I/O or reader boards to monitor alarm input points, relay output points and access control reader interfaces. By offering a modular design, the system can be tailored to meet a wide range of applications, while optimising cost and mounting space.

The Access Modules have been designed to allow for a modular customisable solution. The PW6K1R2 provides I/O support for two card access readers. In the event that communication to the intelligent control module is lost, the readers can be individually configured to allow entrance based on security needs. This customisation allows for a door to be configured as locked or unlocked, or accessed only via valid facility code. The PW6K1R2 also has an RS485 serial port to facilitate communications to third party reader and field device controllers.

The PW6K1OUT interfaces with the intelligent control module (PW6K1IC, PW5K1IC or PW3K1IC) providing up to 16-relay output control–12 relays on the front edge. Relays may be used for elevator control, status annunciation and for general facility control, such as door monitoring.

The PW6K1IN interfaces with the intelligent control module (PW6K1IC, PW5K1IC or PW3K1IC) providing 16 supervised alarm inputs. An analogue to digital converter samples the input values and the digitised result is filtered and processed. Filter parameters are configurable for each input point, resulting in the ability to specify a custom end-of-line (EOL) resistance value, sensitivity range and timing parameter.

The PW-Series Access Modules have been designed to accommodate various mounting options. Units can be wall mounted in a high density configuration (PW5K2ENC1) when space is limited, a 19" rack configuration (PW5K2ENC2), or in a tile mount configuration (PW5K1ENC3).

The PW-6000 controller utilises a built-in Web server to configure the hardware attributes of the controller.

KEY FEATURES – ACCESS MODULES

- Modular design fits a wide variety of applications

- User programmable relay outputs allow for specific control needs

- User programmable alarm inputs offer flexible system configuration and control

- RS485 communication to all modules

- Dedicated cabinet tamper and power monitor inputs

- Analogue to digital converter technology provides digital filtering and input conditioning

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KEY FEATURES – ACCESS MODULES (continued)

- Supports the choice of Normally Open/Normally Closed, supervised, and non-supervised circuits

- Supports a wide range of reader technologies including Wiegand, magnetic stripe, proximity, clock data and keypad

- Up to nine modules, power supply and battery can be accommodated by the PW5K2ENC1, PW5K2ENC2, and PW5K2ENC5 enclosure

- System off-line modes customisable per reader include facility code access, locked (no access), and unlocked (full access)

- Supports multiple reader and card formats for maximum flexibility and security options

- Operating modes include locked, unlocked, facility code, card only, card and PIN, card or PIN and PIN only

- Compatible with PW-6000 module, allowing systems and add-ons to be built with either version

- Any combination of 32 I/O or reader modules may be connected to the PW6K1IC RS485 port. 4,000 feet / 1,200 metres total bus length per port

- Alarm circuit type – Normally Open/Normally Closed, non-supervised, supervised (with correct EOL)

- UL294 / UL1076 and CUL Listed

- CE Certified

KEY FEATURES – INTELLIGENT CONTROLLERS

- Up to 12 intervals per time zone where each interval is a start time, stop time and day map. The day map indicates the day of the week or holiday

- 255 possible holidays are defined by a starting date and duration

- Automatic calculation of leap year and Daylight Saving Time

- 9-digit (32-bit) user ID standard / 15-digit maximum

- Support for FIPS long card numbers

- Activation and deactivation dates by card

- Up to 32 access levels per card or individual time zones per readers

- Up to 8-digit Personal Identification Numbers (PIN)

- Operating modes include locked, unlocked, facility code, card only, card and PIN, card or PIN, and PIN only

- Strike modes include fail-safe and fail-secure

- Up to eight card formats per reader

- Entire card bit-stream reported with invalid facility code or invalid card format

- Anti-passback support – free pass and exempt flags, last area accessed, last reader accessed and time/date of last access

- Configurable as standard, entry delay latching, entry delay non-latching and exit delay

- Configurable as standard (energise to activate) or fail-safe (de-energise to activate)

- Pulse control: single pulse (up to 24 hours) or repeating pulses (on/off in 0.1 second increments, up to 255 times)

- AES FIPS 197 Encryption

- PW-6000 Web server for hardware configuration

- UL294, UL1076 Listed

- CE Certified

BENEFITS

- True 32-bit microprocessor provides fast transaction processing for the most demanding network applications

- Modular hardware architecture provides flexibility and expansion capabilities

- Flash memory allows new versions of firmware to be downloaded from the host computer to the controller(s) through the central network

- Large, local controller database allows access control decisions to be made by controller in real time without the need to communicate to the server

- Scalable architecture ensures optimal performance with a seamless upgrade path to accommodate future growth beyond its initial installation

- Seamless support for TCP/IP protocols to allow intelligent controllers to tap into a LAN or WAN connectivity

- Supports multiple reader and card formats for maximum flexibility and security options

- Multiple communication methods provide redundant paths for more robust system connectivity

- Supervised communication and Lithium battery backup ensures system reliability

- System offline modes customisable per reader include facility code access, locked (no access), and unlocked (full access)

- Redundant communication port feature allowing secondary port communication if primary fails

- Anti-passback support – free pass and exempt flags, last area accessed, last reader accessed and time/date of last access

- Modular hardware architecture provides flexibility and expansion capabilities

- Large, local controller database allows access control decisions to be made by controller in real time without the need to communicate to the server

- Scalable architecture ensures optimal performance with a seamless upgrade path to accommodate future growth beyond its initial installation

- Four-state alarm input circuits - NO/NC, non-supervised, supervised (w/EOL)

- Flexible mounting options allow for rack or tile mounting

- Alarm conditioning with programmable sensitivity and hold time

- ADA compliant allowing expanded door times selectable per reader

- Selectable reader states include card and PIN, card only, PIN only or card and PIN

- Auto switching power supply allows 110/220 operation with PW5K2E2PS

- System off-line modes customisable per reader include facility code access, locked (no access), and unlocked (full access)

- Supports multiple reader and card formats for maximum flexibility

- Faster Processor - Freescale ColdFire 5282 Processor

- 32MB Ram and 16MB Flash - More Memory (larger databases)

- Integrated Ethernet - Faster Downloads (100mbit), Less configuration time then current add on board

- Store Configuration and User Database in Flash and recover

- Embedded WebServer for ease of configuring key hardware attributes

- Status LEDs for all the Inputs on every board

- Same serial port can be used to talk to Smart Card Readers

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PW6K1R2, PW6K1IN, PW6K1OUT & PW6K1IC Intelligent Controllers

SPECIFICATIONS

Database:
- Cardholders:
  - 300,000 on PW-6000
- Transaction storage:
  - 50,000 on PW-6000
- Flash programming for firmware revision updates
- Access codes: virtually unlimited
- Holidays: virtually unlimited
- Time codes: 255
- Card reader formats: 8 per reader
- Credential facility codes: 8
- Elevator support: 128 floors
- Dedicated tamper alarm
- Dedicated power fail alarm
- Real time clock:
  - Geographic time zone support
  - Daylight Saving Time
  - Leap year support
  - 4 bit parallel accurate to 50 ppm
  Database values may exceed current limitations of some security management systems

Communication Modules:
- Primary communication support:
  - RS232
  - RS485
  - Dial up modem
  - Ethernet (TCP/IP)
- Communication speed: 38.4 KBps
- Redundant communication support, automatic dial back: PW6K1IC
  - Dial back on alarm condition
  - Dial back on transaction buffer capacity reached
  - Dial back on primary power loss
- Second on-board Ethernet (TCP/IP) on PW-6000
- Download functionality:
  - System functional during system download: Yes
  - System functional during credential download: Yes

Access Modules:
PW-6000
- 2 RS485 ports supporting 32 total devices

PW-Series Dual Reader Module (PW6K1R2)
- 2 reader ports - 12 VDC at 50 mA, clock/data or data0/data1
- Keypad multiplexed with card data
- Two-wire or one-wire bi-colour LED support
- Buzzer support only with one-wire LED control
- 8 supervised, general purpose alarm inputs with programmable circuit type (only 6 available when using PW5K2ENC1 and PW5K2ENC2 enclosures)
- 2 dedicated alarm inputs for tamper detection and power loss
- 2 general purpose output relay, form-C, 5 A 28 VDC
- 4 general purpose output relay, form-C, 2 A 28 VDC (only 2 available when using PW5K2ENC1 and PW5K2ENC2 enclosures)

PW-Series Sixteen Output Module (PW6K1OUT)
- 2 dedicated alarm inputs for tamper detection and power loss
- 16 general purpose output relay, form- C, 2 A 28 VDC (only 12 are available when using PW5K2ENC1 and PW5K2ENC2 enclosures)
- 16 alarm input module

PW-Series Sixteen Input Module (PW6K1IN)
Module Specifications:
- 2 dedicated alarm inputs for tamper detection and power loss
- 16 general purpose inputs with programmable circuit type
- 2 general purpose, form-C, 2 A 30 VDC relays (only one available when using PW5K2ENC1 and PW5K2ENC2 enclosures)

Operational Functionality:
- Duress detection
- Operational modes:
  - Credential only

  - PIN only
  - Credential or PIN
  - Credential and PIN
  - Facility code only
- Maximum PIN size: 8 digit
- Door object support
- Threat level support: 100 levels
- Two person access rule
- Offline modes (selectable per reader):
  - Facility code access
  - Locked (no access)
  - Unlocked (free access)
- Anti-passback support:
  - While preventing access (hard)
  - While allowing access (soft)
- Transaction prioritisation: 999 levels

Reader Support:
- HID
- Indala
- OmniProx
- OmniClass
- DigiReaders
- Wiegand
- Keypads
- OmniAssure

Readers and Credentials:
- Prox:
  - OmniAssure w/Prox
  - OmniProx
  - HID Prox
  - DigiReaders
  - Indala Readers
- Smart:
  - OmniAssure
  - OmniClass
  - iClass
  - Mifare
  - DESFire
- Keypad
- Magstripe
- Wiegand

COMMON SPECIFICATIONS

Enclosure Dimensions:
- Board: 9.0" H x 5.5" W x 1.0" D
  (228.6 mm H x 139.7 mm W x 25.4 mm D)
- PW5K2ENC1: 13.9" H x 17" W x 9" D
  (353.0 mm H x 431.8 mm W x 228.6 mm D)
- PW5K2ENC2: 13.9" H x 18.9" W x 9" D
  (353.0 mm H x 480.0 mm W x 228.6 mm D)
- PW5K1ENC3: 14" H x 16" W x 4.5" D
  (355.6 mm H x 406.4 mm W x 114.3 mm D)

Environment:
- Temperature: 32 to 158° F (0 to 70° C) operational;
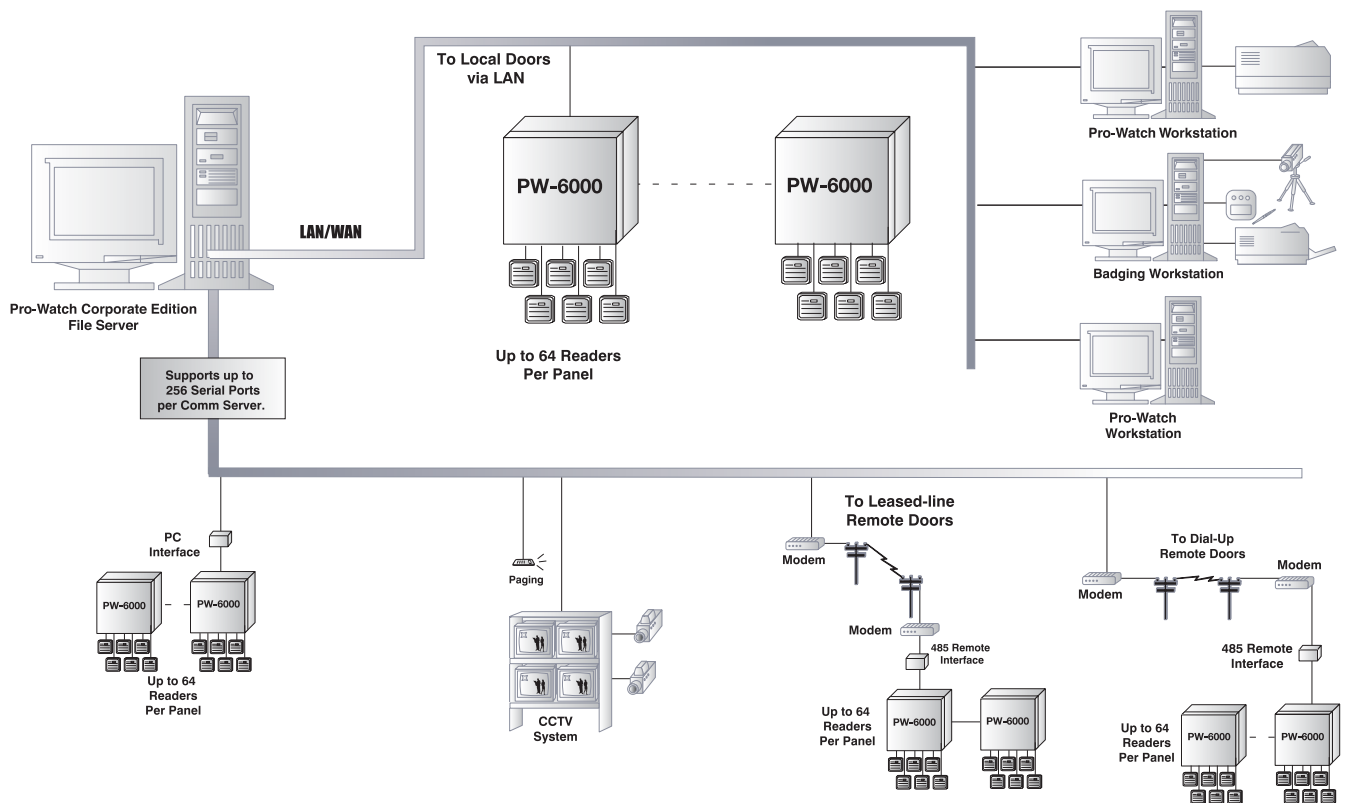 -67 to 185° F (-55 to 85° C) storage
- Humidity: 0 to 95% RHNC

Wire requirements:
- Power - twisted pair, 18 AWG
- RS485 - 24 AWG, 4,000' (1,200m) max, 2 twisted pairs with shield (120W, 23 pF, Belden 9842 or equiv.)
- RS232 - 24 AWG, 25' (7.6m) max
- Alarm input - twisted pair, 30 ohms max

Communication Features:
- RS485 port, 4000' (1,250m) total bus length
- Standard speed is 38,400 bps

PW-SERIES CONFIGURATION

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COMPATABILITY CHART

	PW6K1IC	PW6K1IN	PW6K1OUT	PW6K1R2
PW3K1IC		✓	✓	✓
PW5K1IC		✓	✓	✓
PW5K1IN	✓	✓	✓	✓
PW5K1OUT	✓	✓	✓	✓
PW5K1R1	✓	✓	✓	✓
PW5K1R2	✓	✓	✓	✓
PW5K1EN	*			
PW5K2E2PS	✓	✓	✓	✓
PW5K1DCC	✓	✓	✓	✓
PW5K2ENC1	✓	✓	✓	✓
PW5K2ENC2	✓	✓	✓	✓
PW5K2ENC3	✓	✓	✓	✓
PW5K1ENC4				

* = for redundant TCP/IP communication

ORDERING

Order #	Description

PW-6000 Intelligent Control System

PW6K1IC	PW-6000 Intelligent Controller – Capacity for 32 I/O or reader boards
PW6K1IN	PW-Series 16 input module
PW6K1OUT	PW-Series 16 relay output module
PW6K1R2	PW-Series dual reader module

Enclosures and Accessories

PW5K2ENC1	(Wall-mount) Capacity: Nine modules. Power supply and battery not included
PW5K2ENC2	(19" Rack-mount) Capacity: Nine modules. Power supply and battery not included
PW5K1ENC3	(Tile-mount) Capacity: Two modules. Power supply and battery included
PW5K1ENC4	(Tile-mount) Capacity: One module (PW5K1R1 only). Power supply and battery included

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