HID®

pivCLASS®
Authentication Module
with Reader Services

PKI AT THE DOOR® (STRONG AUTHENTICATION)

- **Enables upgrade to FIPS 201 compliance** – Upgrades any physical access control system (PACS) to achieve FIPS 201 compliance without the need to rip-and-replace the existing PACS.

- **Configurable Wiegand output format** – Matches PACS's desired format and bit length. Enables mandated PKI at the door without upgrading PACS controller or head-end software.

- **Validates PKI-based smart cards** – Authenticates PIV, PIV-I, CIV (a.k.a., PIV-C), TWIC, FRAC and CAC cards. Performs path validation and certificate revocation checking using CRL, OCSP or SCVP.

- **Meets regulatory requirements** – Enables facilities to authenticate PIV, PIV-I, CIV, TWIC, FRAC and CAC cards using single-, two- and three-factor authentication to meet all necessary authentication modes and assurance levels specified in NIST SP 800-116 and the TWIC Reader Specification.

- **Central management of authentication modes** – Enables dynamic control of authentication modes through the pivCLASS Reader Services.

HID Global pivCLASS® Government Solutions enable facilities to upgrade their existing physical access control system (PACS) to FIPS 201 compliance. The pivCLASS Authentication Module (PAM) is an embedded computer packaged in a small form factor with pre-installed, updatable firmware. The PAM is installed between a supported reader (such as an HID Global pivCLASS reader) and the existing access control panel, and provides configurable Wiegand output to the controller. This enables the system to be upgraded to support PIV cards for access control without replacing the existing access control panels.*

pivCLASS Reader Services is used to configure and manage each connected PAM. It runs as part of the pivCLASS PACS Services and sets the PAM operating parameters (including authentication mode for each door, badge ID derivation rules and Wiegand formats). It can be used to dynamically change the authentication mode at each access point.

The PAM supports a range of commercially available contact, contactless and biometric readers, including an extensive line of Genuine HID pivCLASS readers. Each PAM can process up to two readers at one or two doors. Readers pass card information to the PAM, which performs the required authentication to validate (or invalidate) the cardholder's credentials. If validated, the PAM derives and sends the badge ID to the access control panel for the access authorization decision. For invalid cards, the PAM can be configured to trigger an output relay and/or to send a preset badge ID to the PACS controller. pivCLASS Reader Services can also notify many PACS of invalid transactions via the PACS normal alarm queue.

Central management of authentication modes enables dynamic control of authentication modes through the pivCLASS Reader Services. Since the PAM regularly receives and caches card and cardholder status from the pivCLASS Reader Services, the result is nearly real-time PKI-based high security at the door.
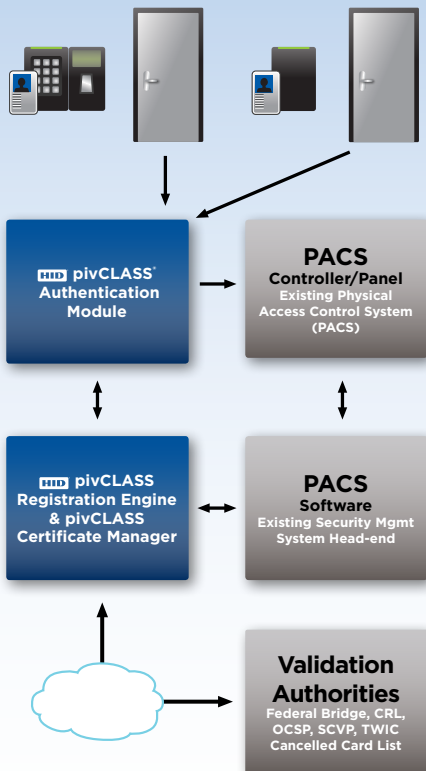
In its role, the PAM does the "heavy lifting" of the PIV cardholder's credential validation each time a card is presented to a reader. Validation data is cached on the PAM, enabling it to function offline if required.

Much of the existing wiring may be reusable.

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SPECIFICATIONS

HID Model Number	M2000
HID Part Number	91000
Dimensions, Board	6.7" x 6.05" (17 cm x 15.4 cm)
Dimensions, Enclosure (optional)	7.4" x 6.7" x 1.3" (18.6 cm x 16.8 cm); mounting holes 7.05" x 6.35" (17.91 cm x 16.13 cm)
Input Power	12-24 VDC, 1.2 Amp – 600 mA
Output Reader Power	11.5 VDC, 300 mA (each)
Battery	Backup for real time clock
Housing Color	Gray
Operating Temperature	32°-120° F (0° - 49° C)
Operating Humidity	0% to 85% RHNC; indoor only
INTERFACE TO READERS	
Number Channels	Supports 1 or 2 readers at 1 or 2 doors
Communication	2 RS-485 serial ports
Protocols	CoreStreet Reader Protocol (CSRP), HID pivCLASS
INTERFACE TO PACS CONTROLLER	
Number Channels	Output for 1 or 2 readers
Communication	2 Wiegand ports
INTERFACE TO PVS MANAGEMENT SYSTEM	
Protocol	Ethernet TCP/IP
Security	Optional 256-bit AES encrypted Ethernet TCP/IP
Initial Configuration Security	Web interface enabled/disabled with DIP switch
COMPLIANCE & CERTIFICATION	
PVS Management Station Interface	256-bit AES encryption
Crypto Firmware	FIPS 140-2 Level 1 certified
Safety	FCC, UL 294
Module Warranty	18 months
OPERATIONAL	
Memory	2GB SD flash memory card (standard)
Number Cardholders	Up to 100,000
Firmware	Centralized, automated management of PAM firmware updates is provided by pivCLASS Reader Services
Relay Connectors	2 configurable connectors for triggering optional auxiliary relay switches
Diagnostic Console Port	Enabled/disabled with DIP switch
Status Indicators	Color LEDs; power, tamper, reader online, fault, power failure
Offline Operation	Functions normally if communication to the pivCLASS Reader Services is interrupted
Operation Interface	Embedded browser-based interface for initial configuration, network settings and hardware options. Full PAM configuration and management via pivCLASS Reader Services.

Additional Product Features:

- The PAM supports the pass through of legacy card identifiers (Prox, iCLASS®, DESFire®) for use in transitioning from these card types to FIPS 201 card types.

- The PAM uses a FIPS 140-2 Level 1 certified cryptographic module for all its crypto processing.

- The PAM supports up to two pivCLASS readers using a four-wire RS-485 connection per reader, typically enabling facilities to re-use much of their existing wiring.

- The PAM can be ordered with or without an enclosure.

pivCLASS® System Diagram

pivCLASS® Authentication Module

PACS Controller/Panel
Existing Physical Access Control System (PACS)

pivCLASS Registration Engine & pivCLASS Certificate Manager

PACS Software
Existing Security Mgmt System Head-end

Validation Authorities
Federal Bridge, CRL, OCSP, SCVP, TWIC Cancelled Card List

Authentication Module & Reader Functions
- Signature checks
- Private key challenge
- Conformity & freshness checks
- PIN & BIO checks

Registration Engine & Certificate Manager Functions
- Credential Registration
- Path discovery and validation
- Revocation checking

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