



## AD-401

### FIPS 201-1 Compliant Networked Wireless Multi-Technology & Keypad Reader

#### Overview

AD-Series electronic locks from Schlage are designed to be modular and provide more options to choose from, more functionality in the lock and more compatibility with existing systems. Its patent-pending modular design allows the lock to be customized to fit the needs of an application now, and can change to meet future needs without removing it from the door.

The AD-401 is an ideal solution for applications which require approval by the U.S. Federal Government under HSPD-12 for FIPS 201 Compliance. The AD-401 electronic integrated lock with FMK multi-technology reader + keypad is FIPS 201-1 compliant for use in U.S. Federal Agency Buildings using smart card technology. The AD-401 lock with an FMK reader allows both a Wiegand and RS-485 solution.

Factory orderable options include choices of chassis type, network configurations, locking functions, power options, lever styles and finishes. It also offers a selection of features that can be configured in the field to customize your openings.

To simplify installation, the AD-Series combines all the hardware components required at the door for a complete access control system into one integrated design that includes the electrified lock, credential reader, request-to-exit and -enter sensors, door position switch, tamper guard and more.

The AD-401 wireless networked lock gives you many of the key benefits of a hardwired access control system — without the wires. This allows you to secure doors that were traditionally difficult to run wires to in the past—and increase the security throughout your facility.

The AD-401 has a number of features built in that are configurable in the field and a long list of items that can be monitored by access control software. Please consult your access control software partner for details on the integration of specific features.



#### Features and Benefits

- Open Architecture platform
- Panel interface options ensure seamless communication with your system:
  - AD-401 with integrated RS-485 software providers will require the use of a PIM400-485 Panel Interface Module which can support up to 16 AD-401 devices
  - AD-401 in Wiegand systems will require the use of a PIM400-TD2 Panel Interface Module which can support up to 2 AD-401 devices and may require the optional dry-contact relay board (RLBD)
- Non-invasive installations for historic buildings and sensitive areas
- Secure encrypted data transmission
- Unique communication protocols that won't interfere with other wireless networks
- Patent-pending wireless feature that enables efficient centralized lockdown in less than 10 seconds while still optimizing battery life up to 2 years
- Available in cylindrical, mortise, mortise with deadbolt and exit trim
- Compatible with major brands of master key systems
- Wireless accessories available for remote, gate, elevator and portable (mustering) applications
- ANSI/BHMA A156.25, ANSI/BHMA Grade 1, UL 294, UL10C, FCC Part 15, ADA, RoHS, FIPS 201-1

## Reliable Communications

Secure and reliable wireless communication with the Panel Interface Module (PIM) is accomplished using 900 MHz frequency. 900 MHz band enables longer transmission ranges because signal propagation with longer wavelengths travels a greater distance and better penetrates typical building construction – allowing for simplified system design.

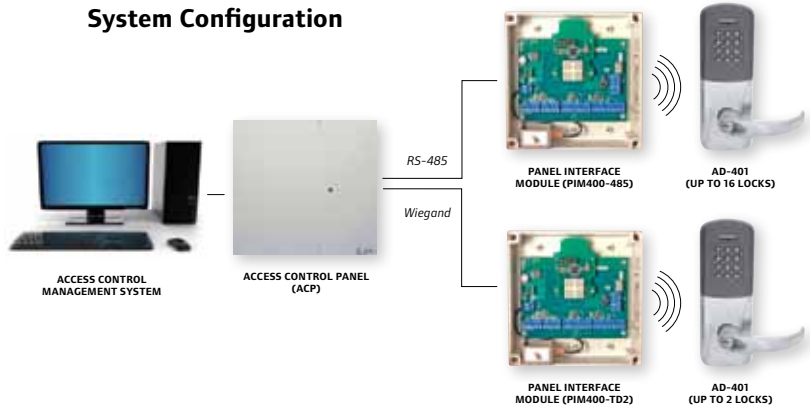
## Wake-Up On Radio

This feature enables implementation of wireless locks in applications where centralized lockdown or unlock is required. ‘Wake Up on Radio’ utilizes patent-pending technology to enable real-time activation at a remote battery-powered wireless lock. The technology is configurable from 10 to 1 second increments. When Wake-Up On Radio is used in critical applications Dynamic Channel Switching should also be enabled.

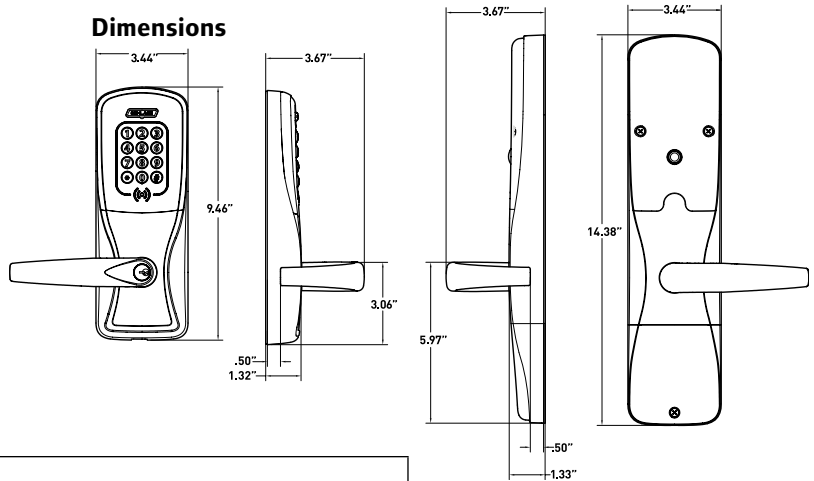
## Panel Interface Module (PIM400)

The PIM400 (sold separately) is required for communication between the AD-401 wireless lock and the access control panel, and can support up to 16 locks depending on your access control system.

## System Configuration



## Dimensions



AD-401 Electronic Lock Specifications	
<b>Modulation</b>	900 MHz spread spectrum, direct sequence, 10 channels
<b>Frequency Range</b>	902-928 MHz
<b>Transmission/Encryption</b>	AES-128 bit Key
<b>Credential Verification Time</b>	< 1 second*
<b>Wake-up on Radio</b>	Responds to lock/unlock command from host in less than 10 seconds in battery powered applications (per field configuration)
<b>Communication Range</b>	Up to 200 ft w/ obstructions (normal building construction), up to 1000 ft clear line of site
<b>RF Interference Avoidance</b>	Configurable Dynamic Channel Switching
<b>Data Rate</b>	RF: 40 kbps
<b>Visual/Audible Communications</b>	Tri-colored LED's & audible indicators (field configurable)
<b>System Interface</b>	RS-485, Wiegand, or Clock & Data via PIM400 to host
<b>Power Supply</b>	4AA, 8AA, 12 VDC or 24 VDC
<b>Voltage Range</b>	4 VDC to 26 VDC
<b>Max Current Requirement</b>	Up to 250 mA
<b>Battery Life</b>	Up to 2 yrs with 4AA (8AA option recommended for smart card and multi-technology options)
<b>Operating Temperature/Exterior</b>	-31° to 151°F (-35° to 66°C)
<b>Operating Temperature/Interior</b>	32° to 120°F (0° to 49°C) (battery)
<b>Operating Humidity</b>	0 - 100% condensing
<b>Certifications</b>	ANSI/BHMA A156.25, ANSI/BHMA Grade 1, UL 294, UL10 C, FCC Part 15, ADA, RoHS, FIPS 201-1
<b>Accessories</b>	Panel Interface Module (PIM400), Handheld Device (HHD), Remote antennas for PIM400 to extend range, Dry Contact Relay Board (RLBD) may be required for supervised inputs (Wiegand systems)

## Functions

- ▶ Classroom/Storeroom
- ▶ Office\*\*
- ▶ Privacy\*\*
- ▶ Apartment\*\*

**Note:** BHMA/ANSI functions such as these can be implemented by the Software when Door Position, Deadbolt Position and/or Interior Push button are monitored. Consult Software provider for specific capabilities. Classroom/Storeroom and Office function not available with Mortise Deadbolt option.

## Available Status Signals

- ▶ Lock/Unlock Status<sup>†</sup>
- ▶ Request-to-Exit
- ▶ Door Position
- ▶ Mechanical Key Override\*\*
- ▶ Deadbolt Position\*\*
- ▶ Interior Push Button\*
- ▶ Interior Cover Tamper Guard\*
- ▶ Battery Status
- ▶ Communication Status\*
- ▶ Request-to-Enter\*

\* Lock requires less than 100 msec, response time does not include latency time of ACP.

\*\* Consult your access control software provider for specific scope of support. Interior pushbutton, mechanical key override and deadbolt position are only available when linked via PIM400-485.

† Software indicates lock/unlock status based on sequence of events, but cannot validate mechanical clutch position unless monitored on RS-485\*\* connection.

<b>Mechanical Specifications</b>		
Chassis	Cylindrical (Based on Schlage ND-Series)	Mortise (Based on Schlage L-Series)
Handing	Handed to Order, Field Reversible	
ANSI Standard	Meets or exceeds A156.25 and A156.2 Series 4000, Grade 1 strength and operational requirements	Meets or exceeds A156.25 and A156.13 Series 1000, Grade 1 operational and security
Door Thickness	1-3/4" standard, 1-3/8" to 2-3/4" optional (available in 1/8" increments)	
Backset	2-3/4" standard, 2-3/8", 3-3/4" and 5" optional	2-3/4" only
Latch Bolt	1/2" throw security latch standard, 3/4" throw optional	3/4" throw with anti-friction tongue standard, <b>1" throw deadbolt on Mortise Deadbolt option*</b>
Levers	Pressure cast zinc, plated to match finish symbols	Steel, plated to match finish symbols
Strike	ANSI curved lip strike 1-1/4" x 4-7/8" x 1-3/16" lip to center standard, optional strikes, lip lengths and ANSI strike box available	ANSI curved lip strike 1-1/4" x 4-7/8" x 1-3/16" lip to center with dust box standard, optional strikes lip lengths available
Cylinder & Keys	Schlage 6-pin Everest C123 keyway cylinder with two patented keys standard Additional options available including Standard, SFIC, FSIC and competitor brands	

\*Classroom/Storeroom and Office options not available with deadbolt.

### AD-Series Exit Trim

AD-301 and AD-401 exit trim is exclusively compatible with Von Duprin 98/99 and 98/99XP (Rim, Mortise, and SVR. CVC and CVR on metal doors only), Von Duprin 22/22F (Rim and SVR) and Falcon 25 (Rim) exit devices made by Ingersoll Rand. The proper low current request to exit switch (RX-LC or AE) is required.

Part Numbers for Request to Exit Switch:  
 • Von Duprin: 050281  
 • Falcon: 650359

<b>FMK Multi-Technology Reader Specification</b>	
Frequency	125 kHz proximity and 13.56 MHz smart card
Standards	Standards ISO Standard 15693 and ISO 14443
Maximum Read Range	up to 1.25" on 125 kHz proximity, up to 0.75" on 13.56 MHz smart card
125 kHz compatibility	Schlage Proximity, XceedID™ Proximity, HID® Proximity, GE/CASI ProxLite®, AWID® Proximity, LenelProx®
13.56 MHz compatibility	Schlage MIFARE® Secure Sector, XceedID™ MIFARE® Secure Sector, aptiQ™ Smart Cards using MIFARE DESFire™ EV1 with PACSA; PIV and PIV-I**†
13.56 MHz compatibility (serial number only)	DESFire® CSN, HID iClass® CSN, Inside Contactless PicoTag® CSN, MIFARE®, MIFARE DESFire™ EV1, ST Microelectronics® CSN, Texas Instruments Tag-It® Serial Number, Phillips I-Code® CSN
125 kHz Compatible Schlage Credentials	125 kHz Clamshell (SXF7410), 125 kHz ISO Card (SXF7510), 125 kHz ISO Card w/Magnetic Stripe (SXF7510MS)
13.56 MHz Compatible Schlage Credentials	13.56 MHz MIFARE Clamshell (SXF9420), 13.56 MHz MIFARE ISO Printable (SXF9520, SXF9551, SXF9558), 13.56 MHz MIFARE Key Tag (SXF9651), 13.56 MHz MIFARE PVC Patch (SXF9751), aptiQ™ Smart Cards using MIFARE DESFire™ EV1 (SXF9000 Series)
Certifications/Standards	FCC, RSS210, UL 294, Listed, ISO Standard 15693, and ISO Standard 14443, FIPS 201-1
Style/Layout	12 button, 3x4 matrix backlit keypad

#### Notes:

\*\* The AD-Series FIPS 201-1 Compliant Option can be used in applications which require approval by the U.S. Federal Government under HSPD-12 for FIPS 201-1 Compliance.

† 75 bit output format default. Configurable to other output formats

### AD-Series FMK Reader Module



- **FIPS 201-1 Compliant Multi-Technology**

- FMK reader required for FIPS 201-1 Compliant multi-technology & keypad reader supporting both proximity and smart cards

 **KEYPAD**

# Ordering Information

Available through one of our GSA Schedule 84 approved distributors; BAA options available

AD-401-CY-70-FMK-SPA-626-PD-C123-RH-4B-13-049-10-025-1-3/4													
Series	Class	Chassis	Function	Reader	Lever Style	Finish	Lever Cylinder	Keying Type	Handing	Battery	Backset & Latch	Strike	Door Thickness
1	2	3	4	5	6	7	8	9	10	11	12	13	14

## Selections Correspond With the Numbers Above

Standard options are indicated in bold. See price book for specific configuration options.

3 Chassis	
CY	Cylindrical
MS	Mortise
MD	Mortise Deadbolt
993R	Exit Trim – Rim/CVC/CVR
993S	Exit Trim – SVR
993M	Exit Trim – Mortise
993DT	Non-Functioning Dummy Trim for Exit
4 Function	
70	Classroom/Storeroom
50	Office
40	Privacy
60	Apartment
<i>Lock function capabilities are determined by users access control system</i>	
5 Reader	
FMK	FIPS 201-1 Multi-Technology + Keypad (125 kHz and 13.56 MHz)

6 Lever	
SPA	Sparta
RHO	Rhodes
ATH	Athens
TLR	Tubular
<i>Available with knurled surface</i>	
7 Finish	
626	Satin Chrome
605	Bright Brass
606	Satin Brass
612	Satin Bronze
619	Satin Nickel
625	Bright Chrome
643e	Aged Bronze
626AM	Satin Chrome Antimicrobial
8 Lever Cylinder Type	
PD	Schlage 6-pin Full Cylinder
<i>See price book for other SFIC, FSIC and Less Cores options available. Compatible with Schlage, Sargent, Corbin, Medeco and Yale</i>	
9 Keyway Type	
<b>C123 Everest</b>	
<i>See price book for other available keyway options including master keying</i>	
10 Handing	
<b>RH</b>	<b>Right Handed</b>
LH	Left Handed
<i>Field reversible</i>	

11 Battery	
<b>4B</b>	<b>4AA</b>
8B	8AA
12 Backset & Latch or Armor Front	
<b>Cylindrical</b>	
<b>13-049</b>	<b>2-3/4" Backset, Deadlatch, Square Corner, 1-1/8" x 2-1/4"</b>
<b>Mortise</b>	
<b>09-663</b>	<b>Armor Front, 1-1/4" Wide, Square Corner</b>
<i>See price book for mortise deadbolt and other backset and latch options or armor front options</i>	
13 Strike	
<b>Cylindrical</b>	
<b>10-025</b>	<b>1-3/16 Lip, ANSI, No Box, 1-1/4" x 4-7/8"</b>
<b>Mortise</b>	
<b>10-072</b>	<b>1-3/16" Lip, 1-1/4" x 4-7/8" Square Corner, Box</b>
<i>See price book for other available strikes</i>	
14 Door Thickness	
<b>1-3/4"</b>	
Other thicknesses available between 1-3/8" and 2-3/4"	
<i>See price book for detail</i>	

## Lever styles

Standard cylinders shown, SFIC and FSIC also available.



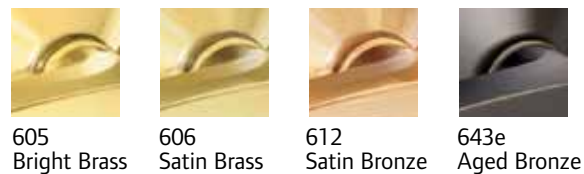
Sparta

Rhodes

Athens

Tubular

## Warm tone finishes



605 Bright Brass

606 Satin Brass

612 Satin Bronze

643e Aged Bronze

## Cool tone finishes



619 Satin Nickel

625 Bright Chrome

626 Satin Chrome

626AM Satin Chrome with Antimicrobial

INGERSOLL RAND, the Ingersoll Rand logo, SCHLAGE, the SCHLAGE logo, XceedID, Von Duprin, Falcon and aptiQ are trademarks of Ingersoll-Rand plc, its subsidiaries and/or affiliates in the United States and other countries. Inside PicoTag is a trademark of Inside Technologies. GE, CASI and ProxLite are trademarks of General Electric Corporation. MIFARE and MIFARE DESFire EV1 are trademarks of NXP B.V. HID and iCLASS are trademarks of HID Corporation. Tag-It is a trademark of Texas Instruments. STMicroelectronics is a trademark of STMicroelectronics Inc. Infineon and my-d are trademarks of Infineon Technologies. AWID is a trademark of Applied Wireless Identifications Group. All other trademarks are the property of their respective owners.

