



# AD-401

FIPS 201-1 compliant  
networked wireless  
electronic lock



## 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 changed to meet future needs without removing it from the door.

The AD-401 is an ideal solution for applications that require approval by the U.S. Federal Government under HSPD-12 for FIPS 201 Compliance. The AD-401 electronic integrated lock with a multi-technology + keypad reader (FMK), is FIPS 201-1 compliant for use in U.S. Federal Agency Buildings. The AD-401 lock allows for either a Wiegand or RS-485 connection to the access control panel.

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 request-to-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:
  - The PIM400-485 Panel Interface Module for RS-485 systems can support up to 16 AD-401 devices
  - The PIM400-TD2 Panel Interface Module for Wiegand systems 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 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, Industry Canada (IC), FIPS 201-1

## Reliable communications

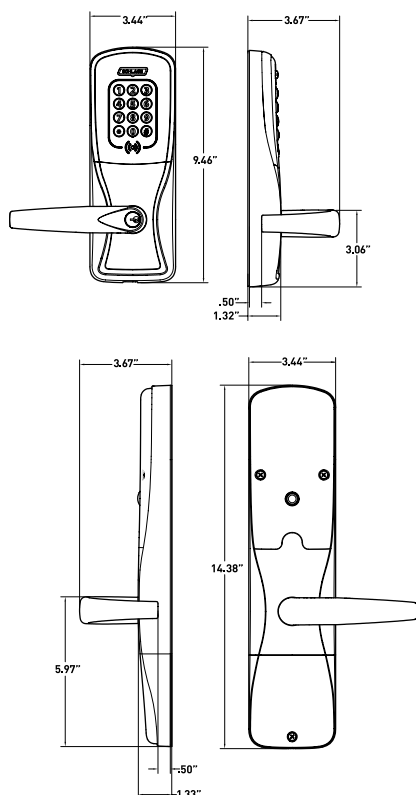
Secure and reliable wireless communication with the Panel Interface Module (PIM) is accomplished using 900 MHz frequency. 900 MHz band enables longer transmission ranges because signal propagation with longer wavelengths travel a greater distance and better penetrates typical building construction –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



## AD-401 electronic lock specifications

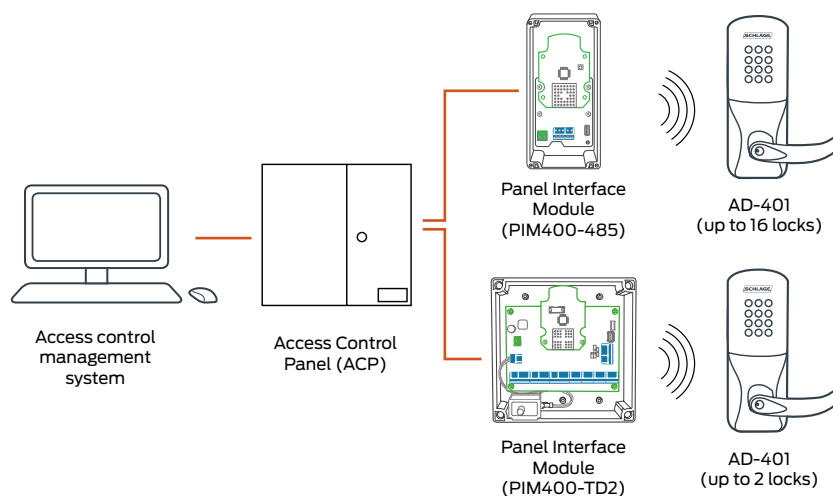
Modulation	900 MHz spread spectrum, direct sequence, 10 channels
Frequency range	902-928 MHz
Transmission/encryption	AES-128 bit key
Credential verification time	< 1 second <sup>1</sup>
Wake-Up on Radio	Responds to lock/unlock command from host in less than 10 seconds in battery powered applications (per field configuration)
Communication range	Up to 200 ft with obstructions (normal building construction), up to 1000 ft clear line of sight
RF interference avoidance	Configurable dynamic channel switching
Data rate	RF: 40 kbps
Visual/audible communications	Tri-colored LED's and audible indicators (field configurable)
System interface	RS-485, Wiegand, or Clock & Data via PIM400 to host
Power supply	4AA, 8AA, 12 VDC or 24 VDC
Voltage range	4 VDC to 26 VDC
Max current requirement	Up to 250 mA
Battery life	Up to 2 yrs with 4AA
Operating temperature/ exterior	-31° to 151°F (-35° to 66°C)
Operating temperature/ interior	32° to 120°F (0° to 49°C) (battery)
Operating humidity	0 - 100% non-condensing
Certifications	ANSI/BHMA A156.25, ANSI/BHMA Grade 1, UL 294, UL10 C, FCC Part 15, ADA, RoHS, FIPS 201-1
Accessories	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<sup>2</sup>
- Office<sup>2, 3, 4</sup>
- Privacy<sup>3, 4</sup>
- Apartment<sup>3, 4</sup>

### Available status signals

- Lock/unlock status<sup>5</sup>
- Request-to-exit
- Door position
- Mechanical key override<sup>3</sup>
- Deadbolt position<sup>3</sup>
- Interior push button<sup>3</sup>
- Interior cover tamper guard<sup>3</sup>
- Battery status
- Communication status<sup>3</sup>
- Request-to-enter<sup>3</sup>



<sup>1</sup> Lock requires less than 100 msec, response time does not include latency time of ACP.

<sup>2</sup> Classroom/storeroom and office function not available with mortise deadbolt option.

<sup>3</sup> 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.

<sup>4</sup> Not available on exit trim.

<sup>5</sup> Software indicates lock/unlock status based on sequence of events, but cannot validate mechanical clutch position unless monitored on RS-485 connection.

## Mechanical specifications

Chassis	Cylindrical	Mortise	Exit trim
Handing	Handed to order, field reversible		
ANSI standard (Meets or exceeds)	A156.25 A156.2 Series 4000 Grade 1	A156.25 A156.13 Series 1000 Grade 1	A156.25 A156.3
Door thickness	1 3/4" standard, 1 3/8" to 2 3/4" optional (available in 1/8" increments)		
Backset	Standard: 2 3/4" Optional: 2 3/8", 3 3/4", 5"	2 3/4" only	Defined by exit device
Latch bolt	Standard: 1/2" throw Optional: 3/4" throw	Standard: 3/4" throw Optional: 1" throw on mortise deadbolt	Provided by exit device
Levers	For lever base metals see lever and cylinder compatibility data sheet (010432)		
Strike	Standard: 1 3/16" lip, ANSI, 1 1/4" x 4 7/8" Optional: Additional configurations available please see price book		Provided by exit device
Cylinder and keys	Schlage 6-pin Everest 29 S123 keyway cylinder with two patented keys standard Additional options available including Standard, SFIC, FSIC and competitor brands. See lever and cylinder compatibility data sheet (010432)		

## FMK multi-technology reader specification

Frequency	125 kHz proximity and 13.56 MHz smart card
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 <sup>1,2</sup>
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 XceedID credentials	125 kHz clamshell, ISO card, ISO card with magnetic stripe, keyfob, and PVC disk (7000 series)
13.56 MHz compatible aptiQ™ credentials	aptiQ™ smart cards using MIFARE® in clamshell, ISO card, ISO card with magnetic stripe, keyfob and PVC Patch (9000 Series); aptiQ™ smart cards using MIFARE DESFire™ EV1 in clamshell, ISO card, ISO card with magnetic stripe, keyfob, and PVC disk (8000 Series)
Certifications/standards	FCC, Industry Canada (IC), UL 294 Listed, ISO standard 15693, and ISO standard 14443, FIPS 201-1
Style/layout	12 button, 3x4 matrix backlit keypad

<sup>1</sup> The AD Series can be used in applications which require approval by the U.S. Federal Government under HSPD-12 for FIPS 201-1 compliance.

<sup>2</sup> 75 bit output format default. Configurable to other output formats.

## AD Series FMK reader module

The AD Series is an ideal solution for applications which require approval by the U.S. Federal Government under HSPD-12 for FIPS 201-1 compliance. In order to meet requirements, the AD-401 networked lock can either be 1.) sold as a complete unit with the FMK multi-technology + keypad reader, or 2.) the AD-400 can be field upgraded to a FIPS 201-1 compliant solution by adding the FMK reader (sold separately) and by utilizing the most current firmware available.



## AD Series exit trim:

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 Allegion. 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

## FIPS 201-1 compliant multi-technology

- An FMK reader is required on AD Series locks to achieve FIPS 201-1 compliance; It supports both proximity and smart card technologies

 KEYPAD

# Ordering information

Available through one of our GSA schedule 84 approved distributions; BAA options available

AD-401-CY-70-FMK-SPA-626-PD-S123-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

Standards 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
Lock function capabilities are determined by users access control system	
5	Reader
FMK	FIPS 201-1 compliant multi-technology + keypad (125 kHz and 13.56 MHz)
6	Lever
SPA	Sparta
RHO	Rhodes
ATH	Athens
TLR	Tubular
Available with knurled surface	

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
See price book for other SFIC, FSIC and Less Cores options available. Compatible with Schlage®, Sargent®, Corbin Russwin, Medeco® and Yale®.	
9	Keyway type
S123	Everest 29
See price book for other available keyway options including master keying	
10	Handing
RH	Right handed
LH	Left handed
Field reversible	

11	Battery
4B	4AA
8B	8AA
12	Backset & latch or armor front
<b>Cylindrical</b>	
13-049	2 3/4" backset, deadlatch, square corner, 1 1/8" x 2 1/4"
<b>Mortise</b>	
09-663	Armor front, 1 1/4" wide, square corner
See price book for mortise deadbolt and other backset and latch options or armor front options	
13	Strike
<b>Cylindrical</b>	
10-025	1 3/16" lip, ANSI, no box, 1 1/4" x 4 7/8"
<b>Mortise</b>	
10-072	1 3/16" lip, 1 1/4" x 4 7/8" square corner, box
See price book for other available strikes	
14	Door thickness
1 3/4"	
Other thicknesses available between 1 3/8" and 2 3/4"	
See price book for detail	

## Lever styles

Standard cylinders shown, SFIC and FSIC also available.



Sparta

Rhodes



Athens

Tubular

## Finishes

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

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