SCHLAGE®

AD-402

FIPS 201-2 integration ready 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 greater compatibility with existing systems. Its patented 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.

AD-402 locks feature a multi-technology card and keypad reader (FMK) that is fully PIV and PIV-I capable for dual authentication to an external server. The open architecture software design of AD Series facilitates integration making AD-402 a desirable part of a Physical Access Control Software (PACS) provider's offering. Any completed PACS integrations that are tested and approved under HSPD-12 guidelines can then be applied in U.S. Federal Agency Buildings.

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 into one design that includes the electrified lock, credential reader, request-to-exit sensor, request-to-enter sensor, and both door position and tamper switches. The AD-402 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.

The AD-402 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.

Features and benefits

- PIV and PIV-I compatible

- Open architecture platform

- The PIM400-485 Panel Interface Module ensures seamless communication with your RS-485 system and can support up to 16 AD-402 devices

- 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

- ANSI/BHMA A156.25, ANSI/BHMA Grade 1, UL 294, UL10C, FCC Part 15, ADA, Industry Canada (IC), FL12400[1], FL1591[1], FL13013[1] and FL14482[1]

CYBERSECURITY
Learn about Allegion's commitment

[1]   Applies to cylindrical and mortise chassis.
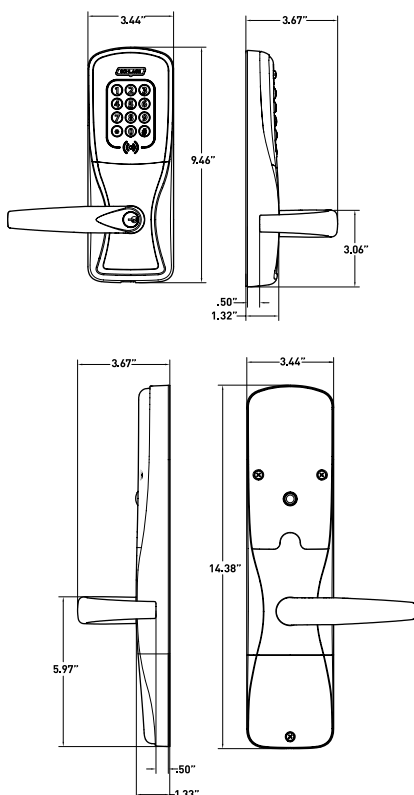
Reliable communications

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 penetrate 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-402 wireless lock and the access control panel, and can support up to 16 locks depending on your access control system.

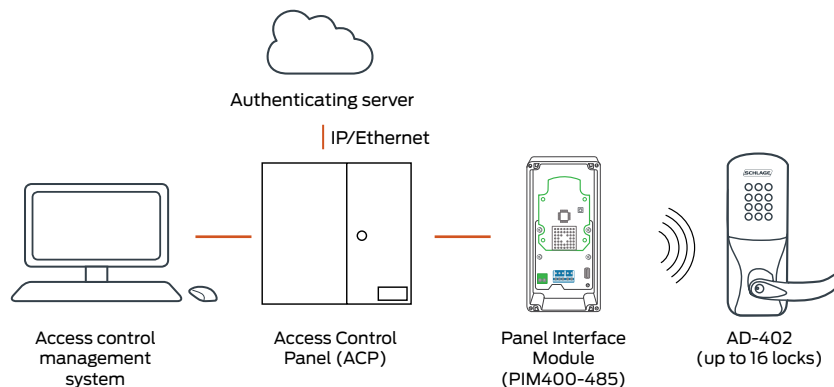## AD-402 electronic lock specifications

Modulation	900 MHz spread spectrum, direct sequence, 10 channels
Frequency range	902-928 MHz
Transmission/encryption	AES-128 bit key
Credential verification time	< 2 seconds in FASC-N mode: card certificate validated by the ACP only 2-6 seconds in full authentication mode: card certificate validated by 3rd party server
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
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[1]	FASC-N mode: 18-24 months (4AA) Full authentication mode: 10-12 months (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
Accessories	Panel Interface Module (PIM400), SUS-A Cable with SUS Android mobile app. Also supported by existing Handheld Devices (HHD)

Functions
- Classroom/storeroom[2]
- Office[2]
- Privacy
- Apartment

Available status signals
- Lock/unlock status
- Request-to-exit
- Door position
- Mechanical key override
- Deadbolt position
- Interior push button
- Interior cover tamper guard
- Battery status
- Communication status
- Request-to-enter

Authenticating server

IP/Ethernet

Access control management system — Access Control Panel (ACP) — Panel Interface Module (PIM400-485) — AD-402 (up to 16 locks)

[1] Battery life testing results based on an average 20 activations per day.
[2] Classroom/storeroom and office function not available with mortise deadbolt option.

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	Pressure cast zinc, plated		
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 in a conventional cylinder with two patented keys standard. Additional options available including SFIC, FSIC and competitor brands. See lever and cylinder compatibility data sheet (010432).		

FMK multi-technology reader specification

Credential technologies	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
Proximity credential use	**Compatibility:** Schlage, HID®, GE/CASI ProxLite®, AWID® and LenelProx® **Schlage credential style formats:** Clamshell, ISO card, ISO card with magnetic stripe, keyfob, thin keyfob, PVC disk
Smart credential use	**Secure sector compatibility:** Schlage MIFARE Classic®, Schlage MIFARE Plus®, Schlage MIFARE® DESFire® EV1 and EV2 with PACSA; PIV and PIV-I[1] **CSN only compatibility:** DESFire, HID iClass®, Inside Contactless Pico Tag®, MIFARE, MIFARE DESFire EV1 and EV2, ST Microelectronics®, Texas Instruments Tag-It®, Phillips I-Code® **Schlage credential style formats:** Clamshell, ISO card, ISO card with magnetic stripe, keyfob, thin keyfob, wearable wristband, PVC adhesive patch
Certifications/standards	FCC, Industry Canada (IC), UL 294 Listed, ISO standard 15693, and ISO standard 14443
Style/layout	12 button, 3x4 matrix backlit keypad

[1] 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 201-2 compliance. It is possible to upgrade existing, non-compliant AD Series locks to the new standard as follows:

- Field upgrade AD Series locks not currently set up for FIPS 201-2 by replacing the reader module with a FIPS 201-2 PIV-I capable FMK reader (sold separately)

- Field upgrade AD Series FIPS 201-1 compliant locks with an FMK reader manufactured after August 2016 by uploading FIPS 201-2 compatible firmware (AD.A.121 or higher)

Both types of upgrades should only be performed by a PACS provider who has tested and been approved under HSPD-12 for AD Series integration.

AD Series exit trim:

AD-402 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

PIV-I capable
- The FMK reader is required on AD Series locks to achieve FIPS 201-2 compliance; It supports proximity cards and is PIV-I capable using 13.56 MHz smart card technologies
- **+** KEYPAD

Ordering information

AD-402-CY-70-FMK-SPA-626-P6-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

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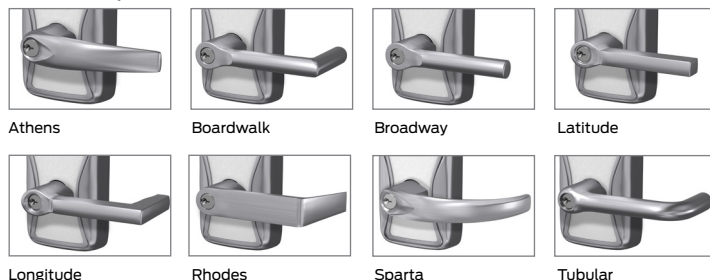
3 Chassis

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

Lock function capabilities are determined by users access control system

5 Reader

FMK	**FIPS 201-2 compatible multi-technology + keypad (125 kHz and 13.56 MHz)**

6 Lever

ATH	Athens
BRK	Boardwalk
BRW	Broadway
LAT	Latitude
LON	Longitude
RHO	Rhodes
SPA	Sparta
TLR	Tubular

Available with tactile warning options

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

P6	**Schlage 6-pin Conventional key-in-lever 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

Cylindrical

13-247	**2 ³/₄" backset, deadlatch, square corner, 1 ¹/₈" x 2 ¹/₄"**

Mortise

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

Cylindrical

10-025	**1 ³/₁₆" lip, ANSI, no box, 1 ¹/₄" x 4 ⁷/₈"**

Mortise

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

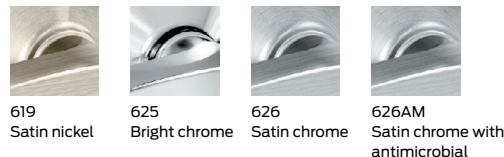Conventional cylinders shown, SFIC and FSIC also available.

Athens

Boardwalk

Broadway

Latitude

Longitude

Rhodes

Sparta

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

About Allegion

Allegion (NYSE: ALLE) is a global pioneer in safety and security, with leading brands like CISA®, Interflex®, LCN®, Schlage®, SimonsVoss® and Von Duprin®. Focusing on security around the door and adjacent areas, Allegion produces a range of solutions for homes, businesses, schools and other institutions. Allegion is a $2 billion company, with products sold in almost 130 countries. For more, visit **www.allegion.com.**

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