Aperio Technology

Wireless access control - The evolution starts here

ASSA ABLOY

aperio™

The global leader in
door opening solutions

Contents

Aperio Overview

Aperio is a new technology developed to complement new and existing electronic access control systems, providing end users with simple, intelligent way to upgrade the controllability and the security level of their premises.

The heart of Aperio is a short distance wireless communication protocol; designed to link an online electronic access control.

Application

An access control system is standard equipment for companies and public administrations and provides buildings with a very high standard of security. However, installing access control doors is very expensive due to the extensive wiring required. This is why access control systems often only cover doors with very high security requirements.

All other doors have mechanical locks and therefore cannot be monitored and managed. If a master key is lost, there can be a major security risk – not a satisfactory set of circumstances for security officers.

This is where Aperio technology comes in. Doors merely need to be equipped with wireless Aperio battery-powered cylinders, escutcheons or locks with integrated RFID readers and linked to the access-control system online via a communications hub ASSA ABLOY's Aperio technology allows security and facility managers to conveniently and cost-effectively increase the number of doors that can be monitored.

Aperio as HID genuine certified technology it supports a range of credentials including iCLASS, MIFARE, DESFire, SEOS, Legic and 125 kHz Proximity (HID PROX/ EM410). With such a vast range of credentials supported there is generally is no requirement to replace issued credentials.

Key Features

Affordable online door control of internal Doors
- Few Components
- Very easy installation
- No changes to existing access control installations

Extends existing access control system
- Connects over standard interface
- No Separate management software:
  - uses existing access control system management software
- No change of cards

Enhances security for internal doors
- Eliminates key management issues
- Authorization changes in real time
- Encrypted communication
- Audit trails and time zones through existing system

Control Panel

Wired access control door   Aperio enabled door
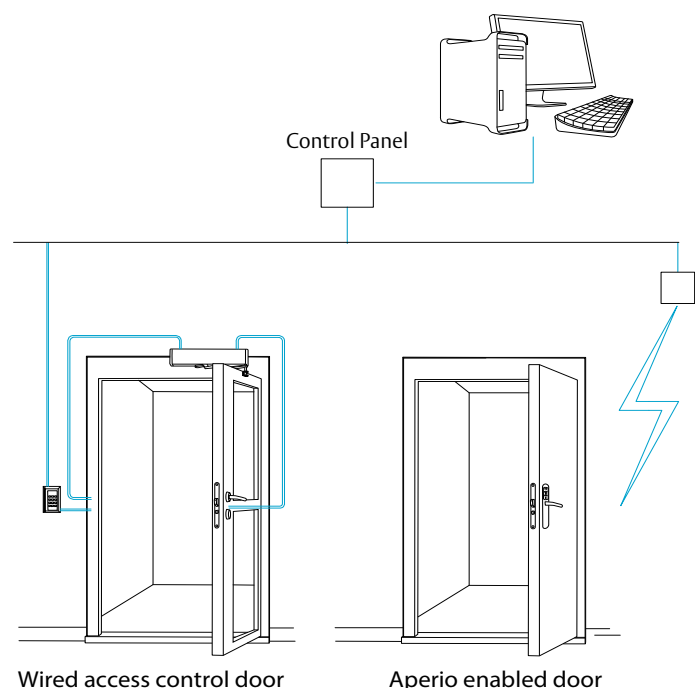
The 1 to 8 Communication Hub

- Live real time access & audit
- Significantly reduces cost for integrated access control doors
- Reduced time and effort required for installation
- Connects up to 8 Aperio devices
- Operates on a transmission range of about 25 meters
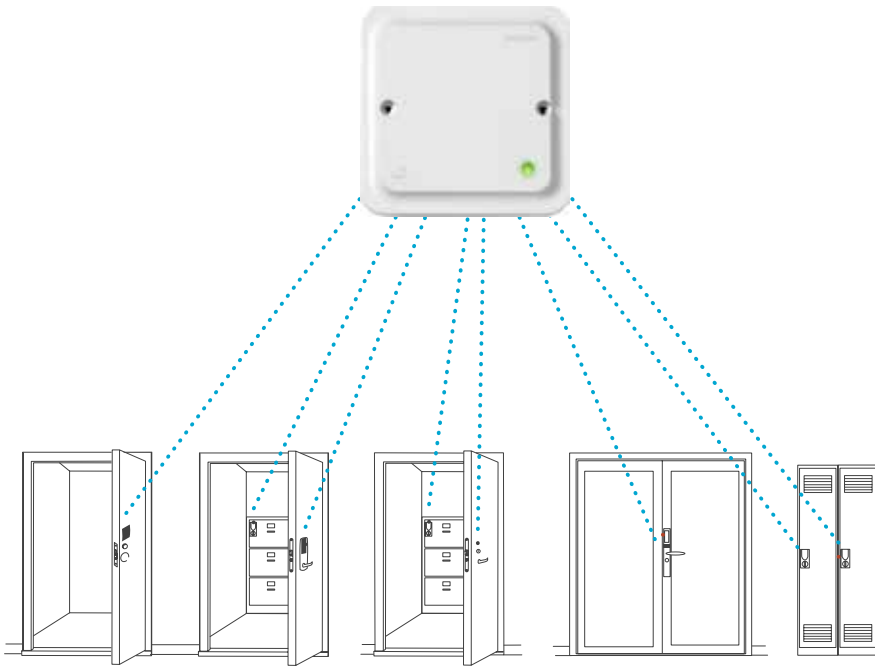
Aperio Components

C100 Cylinder
Converts any mechanical cylinder to an access control door.

K100 Cabinet Lock
Audit trail to medicine cabinets, cupboards, display cases, etc.

KS100 Data Cabinet Lock
Control access to data cabinets and servers. Data centre rack access solution.

E100 Escutcheon
All in one door furniture and reader with key override.

E100 Series Escutcheon

General Description

The E100 series escutcheon is designed to fit Lockwood mechanical 3570 series mortice locks & provide a cost effective migration to an on line electronic access control door. In addition to card access the external side of the door provides for key override entry, whilst the inside lever is designed for emergency egress.

The external plate incorporates a sophisticated battery powered proximity reader that communicates wirelessly to a hub. The Hub is then wired directly to the access control system and enables standard on line access control functionality at significantly reduced costs to that of a hard wired door.

Key Features

- Wireless on line access control
- Authorisation changes in real time
- Audit trails and time zones managed through existing system
- Compatible with Lockwood 3570 series mechanical mortice locks
- Additional Key Override
- Emergency egress
- Lock can store up to 10 override credentials/ prox cards
- Store last 200 events and audit trails locally in the lock
- Battery powered – up to 40,000 operations
- LED status
- Battery low warning sent to EAC system

Applications

- Internal doors only
- Retro fit mechanical mortice locks
- Expand existing access control installations
- New access control installations
- Doors that cant be hard wired
- Heritage listed buildings

Function

- **External** lever is always locked.
  To unlock badge card and activate lever.
  Door automatically re locks after set time.
  Can also be opened via Key override.

- **Internal** lever is set to escape – free egress at all times.

E100 Series Escutcheon

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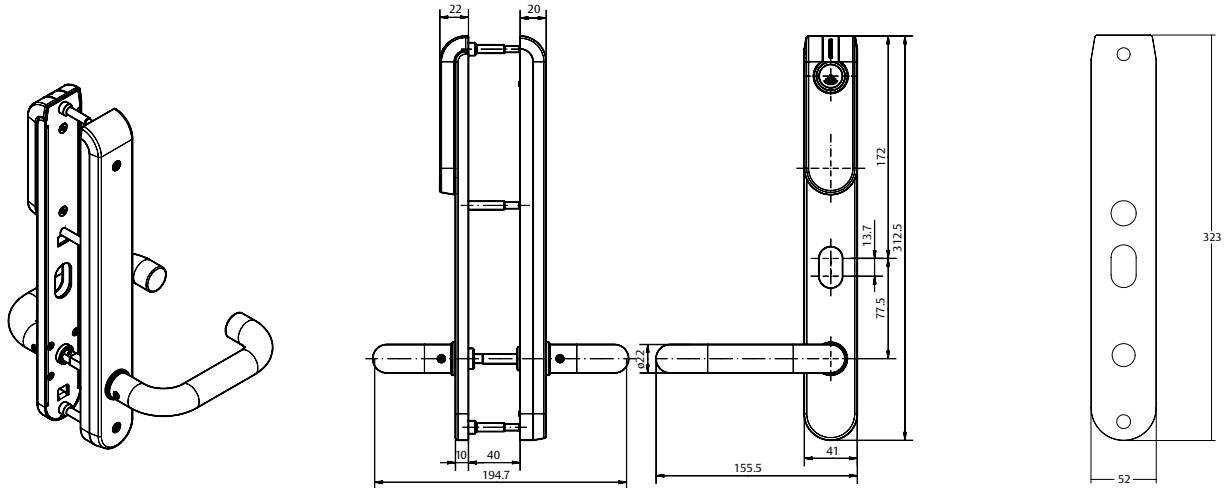
E100 cover plate

E100 Technical Information

Battery type	1 x Lithium CR123A
Battery life time	>40,000 cycles
Radio standard	IEEE 802.15.4 (2.4GHz)
Encryption	AES128 Bit
Wireless range	5-25m depending on location of Hub & environment
RFID technology**	Mifare Classic / Desfire, Mifare Classic / Plus iCLASS and Prox 125 Khz
RFID Reading	UID / sector / block
Card read range	< 4cm
Operating temperature	0ºC – 60ºC
Humidity	< 85% non condensating
IP-degree	IP30
Approvals	CE
Colour	Brushed stainless steel
Override cylinder	Lockwood Australian oval 570 series
Door Thickness	35mm to 85mm Requires Spindle to Suit
Spindles	7.6mm
Backset	60mm

** Model dependant

Ordering Information

Product Description	Part Number
E100 V2 35-45 Door Mifare Classic / Desfire	E102MU1SS1
E100 V2 46-55 Door Mifare Classic / Desfire	E102MU1SS2
E100 V2 35-45 Door iCLASS	E102IU1SS1
E100 V2 46-55 Door iCLASS	E102IU1SS2

Accessories

Product Description	Part Number
E100 Cover Plate – Pair	E100-PL2SSS
Aperio Hub 1:8 RS485 Hub	AH30-3-0
3572 Series Mortice Lock To Suit E100 Series	3572SCNOHD

Spare Parts

Product Description	Part Number
Aperio Spindle Kit 35-45mm	E-SP35/45
Aperio Spindle Kit 45-55mm	E-SP45/55

Notes:
- E100 cover plate is used only if required when retro fitting existing door furniture.
- Each cover plate is 1.2mm thick. A total of 2.4mm should be added to door thickness if using these plates
- To change the spindle; special tools may be required

C100 Series Cylinder

General Description

Designed to fit the standard Lockwood oval 570 series cylinder, the C100 provides a unique and cost effective migration to an online electronic access control door.

The external housing contains a sophisticated battery powered proximity reader that communicates wirelessly to a hub. The hub is then wired directly to the access control system and enables standard on line access control features at significantly reduced costs than that of a hard wired door.

Key Features

- Wireless Online access control
- Authorisation changes in real time
- Audit trails and time zones managed through existing system
- Compatible with standard Lockwood 3570 series mortice locks
- Cylinder can store up to 10 override credentials/prox cards
- Stores last 200 events and audit trails locally in the cylinder
- LED status indication
- Battery powered 40,000 operations
- Battery low warning sent to EAC system
- Available in Stainless Steel Knob

Applications

- Internal doors only
- Expand existing access control systems
- New access control installations
- Doors that cant be hard-wired
- Heritage listed buildings

Function

- **External** – badge card in front of cylinder and rotate knob to retract latch.
- **Internal** – lever on mortice lock is set to escape – free egress at all times.

C100 Series Cylinder
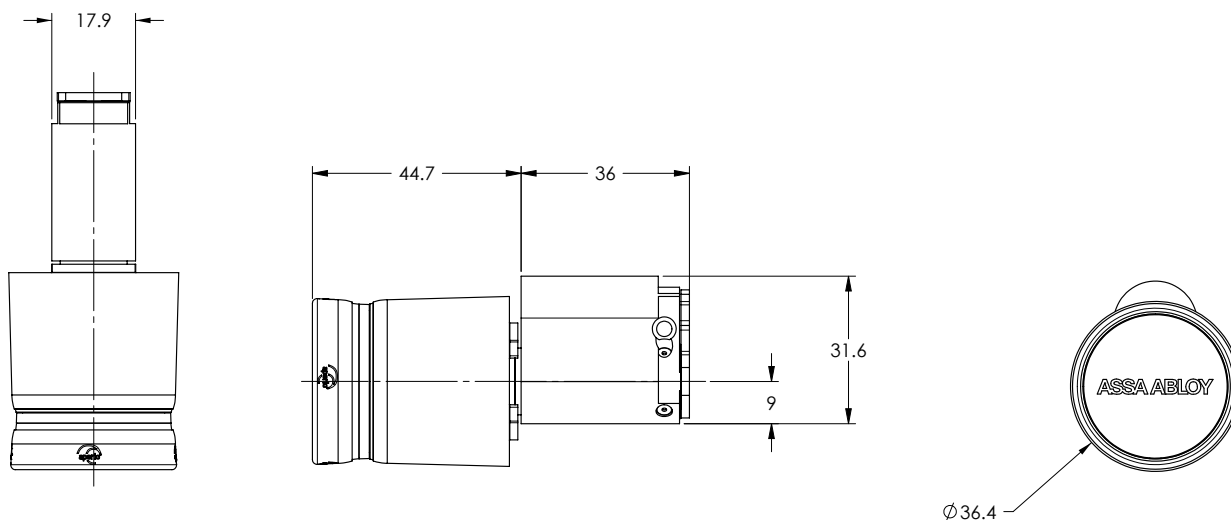
C100 Technical Information

|	
Battery type	1 x Lithium CR2
Battery lifetime	>40,000 cycles
Radio standard	IEEE 802.15.4 (2.4GHz)
Encryption	AES 128 Bit
Wireless range: Cylinder to Hub	5-25m depending on location of Hub & environment
RFID technology**	Mifare Classic / Desfire, Mifare Classic / Plus iCLASS Prox 125 Khz
RFID reading	UID / sector / block
Card reading range	<4cm
Operating temperature	0ºC - 60º
Humidity	<85% non condensation
IP-degree	IP 30
Knob colour	Black
Cylinder Colour	Satin Chrome. Other finishes on application
Cylinder format	Lockwood Australian oval 570 series
Door thickness	Suits standard doors up to 50mm
Approvals	CE

** Model dependant

Ordering Information

Product Description	Part Number
Aperio C100 Cylinder SC V2 iCLASS	C102IASC
Aperio C100 Cylinder SC V2 iCLASS SS Knob	C102IASCSS
Aperio C100 Cylinder SC V2 Mifare Classic / Desfire	C102MASC
Aperio C100 Cylinder SC V2 Mifare Classic /Desfire SS Knob	C102MASCSS

Accessories

Product Description	Part Number
Aperio Hub 1:8 RS485 Hub	AH30-3-0
Aperio Stainless Steel Hub only	A-KN-SS-C100
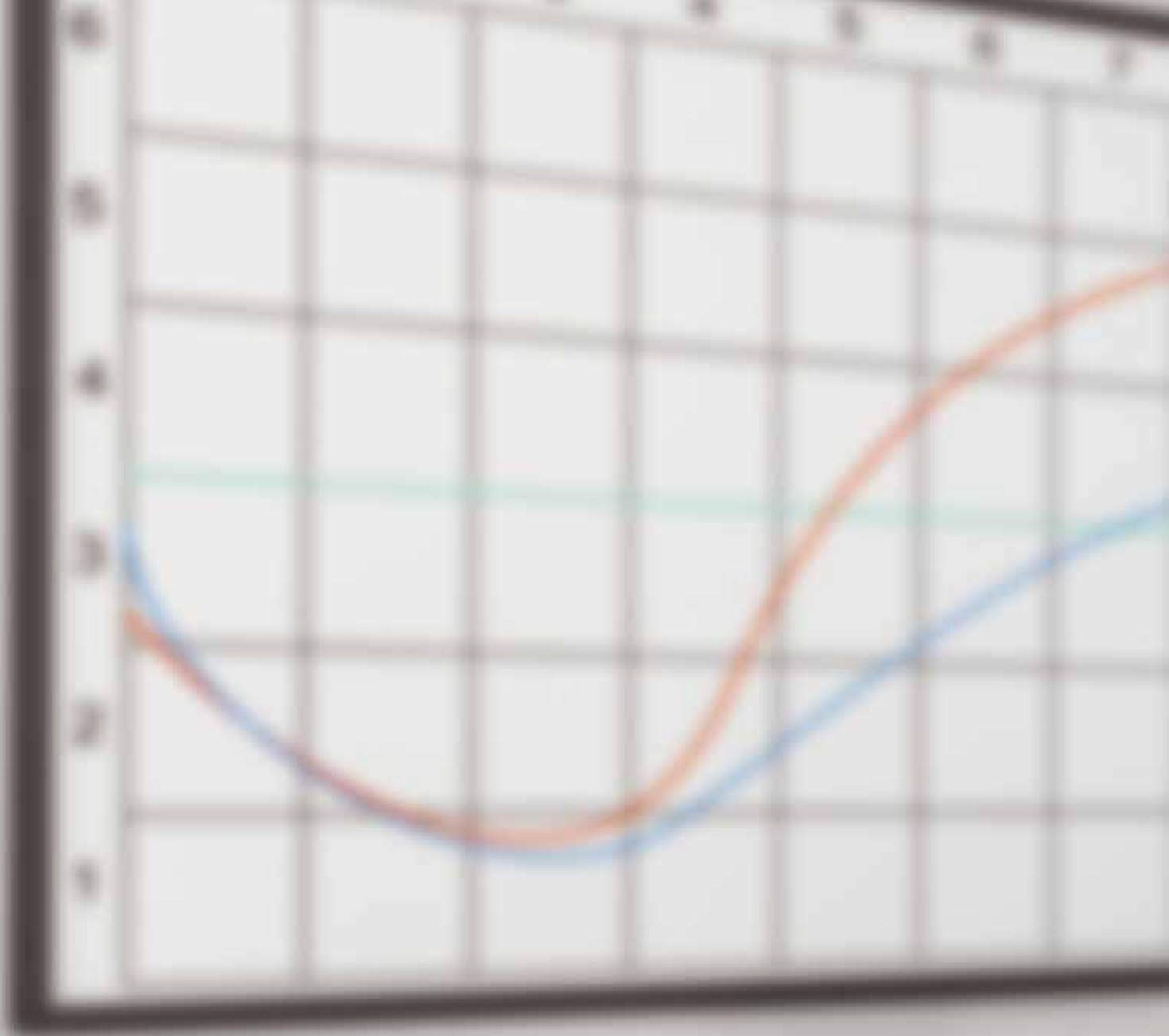
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KS100 Series Server Cabinet Lock

General Description

The KS100 server cabinet lock is a convenient way to bring real-time access control in a single-card system to individual server cabinet doors.

This greatly improves the monitoring and security level of each server cabinet. It uses existing access control cards so there are no keys to control or replace and no codes to secure or remember.

It also uses local wireless communication between the lock and an Aperio hub to connect to the access control system, eliminating the cost and difficulty of bringing integrated access control to the cabinet.

Key Features

- Wireless online access control

- Authorisation changes in real time

- High security Grade 1 asset protection

- Server cabinet door and lock status monitoring

    - 250 lb holding force, Grade 1 rating per ANSI A156.11-2003

    - Online & offline transaction audit trail capabilities.

- Fast, easy to install wireless lock tied to existing electronic access control system infrastructure

- Maintenance free Hardwired power; POE (Power over Ethernet) 48VDC or standard 8-24VDC - Low energy use

- Two forms of override available, including

    - Mechanical key override or offline credential

- Store up to 10 override credentials on lock locally

- LED Status indication

- Designed for standard 25mm x 100mm server lock opening

- For use on left hand or right hand doors

KS100 Technical Information

Power	48VDC Power over Ethernet (PoE) 802.3af compliant 8-24VDC, 250mA
Radio standard	IEEE 802.15.4 (2.4Ghz)
Encryption	AES128 Bit
Wireless range	5-25m depending on location of hub & environment
RFID Technology	iClass, Mifare and 125 Khz Prox (prox separate model)
Card read range	Card read range < 3cm
Operating Temperature	0-50°
Finishes	Black
Product dimensions	42W x 34 D x 223 H Suitable for 25mm x 150mm server lock openings
Approvals	FCC Part 15, Compliant, Industry Canada Compliant BHMA: A156.3, A156.36, A156.25 Compliant

KS100 Series Server Cabinet Lock
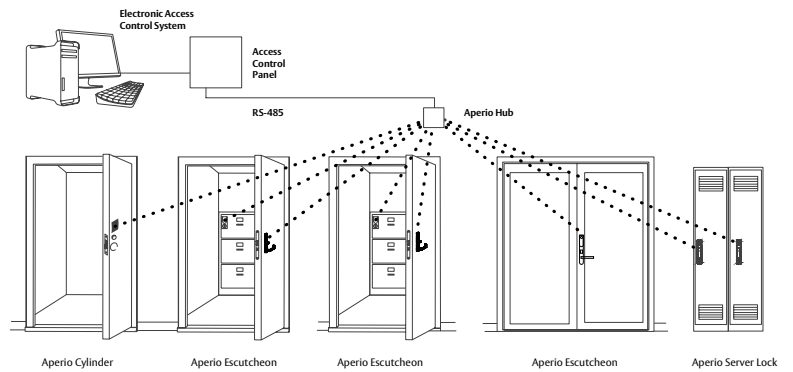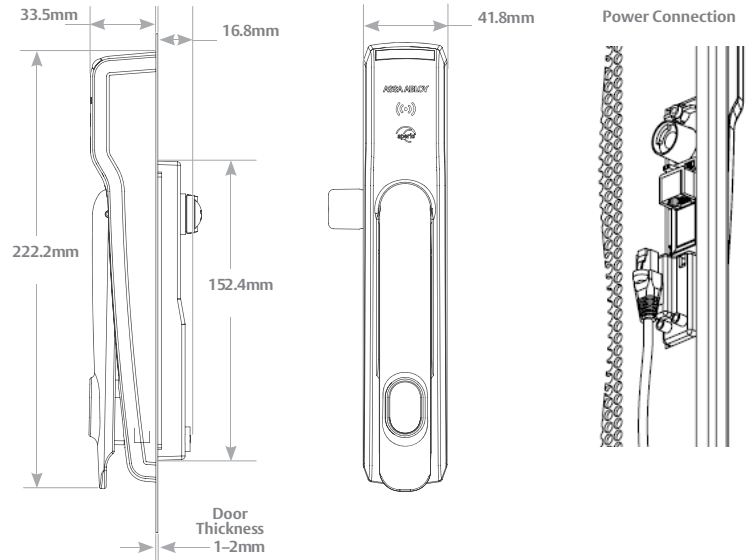
Internal Applications

Single door Data storage cabinets

Ideal for collocation data centres with multiple companies requiring access

Function

External lever is always locked. To unlock present card and rotate lever clockwise

Server Lock

Rotate lever clockwise, close data cabinet. Rotate lever anti clockwise

33.5mm · 16.8mm · 222.2mm · 152.4mm · 41.8mm · Power Connection · Door Thickness 1–2mm

Electronic Access Control System · Access Control Panel · RS-485 · Aperio Hub · Aperio Cylinder · Aperio Escutcheon · Aperio Escutcheon · Aperio Escutcheon · Aperio Server Lock

Ordering Information

Product Description	Part Number
KS100 server cabinet lock LF	KS102MB
KS100 server cabinet lock PX	KS102PB

K100 Series Cabinet Lock

General Description

The K100 series cabinet lock makes it easy and cost effective to bring access control to cabinets and drawers where audit trail and monitoring are becoming increasingly critical. It uses local wireless communication between the lock and an Aperio hub to connect to an access control system, eliminating the cost and difficulty of bringing integrated access control to the cabinet.

The lock incorporates a sophisticated battery powered reader with 50,000 cycles of operation with a single CR123A battery.

Key Features

- Wireless online access control
- Authorisation changes in real time
- High security Grade 1 asset protection with audit control
  - Cabinet lock latch bolt status monitoring
  - 112kg (250 lb) holding force, Grade 1 rating per ANSI A156.11-2003
- Fast, easy to install wireless lock tied to existing electronic access control system infrastructure
- Low maintenance with 50,000 cycles of operation with a two AA lithium batteries
- Two forms of override available, including mechanical key override and battery jump start pack
- Store up to 10 override credentials on lock locally
- LED Status
- Battery low warning sent to EAC system

Internal Applications

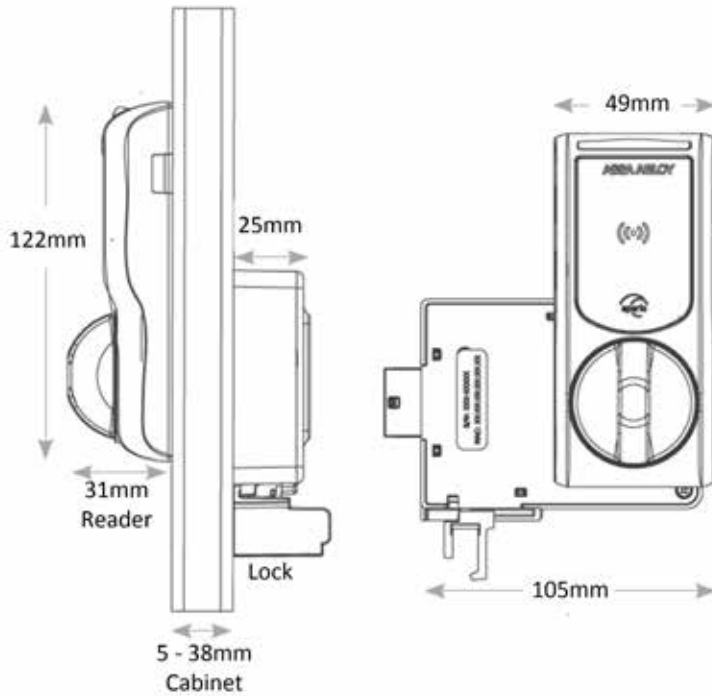Single door Cabinets
Drawers

Function

Unlock

External Knob is always locked. To unlock present card and turn knob anti-clockwise

Lock

Push cabinet or drawer closed until latched. Lock with automatically relock

K100 Series Cabinet Lock

K100 Technical Information

Battery type	Two AA Lithium
Battery Lifetime	30,000 operations
Radio Standard	IEEE 802.15.4 (2.4Ghz)
Encryption	AES128 Bit
Wireless range	5-25m depending on location of hub & environment
RFID Technology	iClass, Mifare and 125 Khz Prox (prox separate model)
Card read range	< 3cm
Operating Temperature	0-50°
Approvals	CE Ctick & ANSI A156.11-2003 Grade 1
Finishes	Black or White
Cabinet Thickness	13-38mm

Ordering Information

Product Description	Part Number
K100 Cabinet Lock Black	K102MB
K100 Cabinet Lock White	K102MW

Accessories

Product Description	Part Number
620 Jumpstart Pack	620JSPK100
Aperio Hub 1:8 RS485	AH30-3-0
Aperio USB Dongle	APRD1/PAP1

R100 Surface Mount Reader

General Description

The R100 series surface mounted wireless reader offers an elegant way to extend access control to glass, stone, granite and marble entryways. The easy-to-install wireless reader, requires no drilling or pulling of wires and adheres quickly to the outside of a glass door.

Glass entryways can now integrate robust access control while maintaining a clean, wireless appearance.
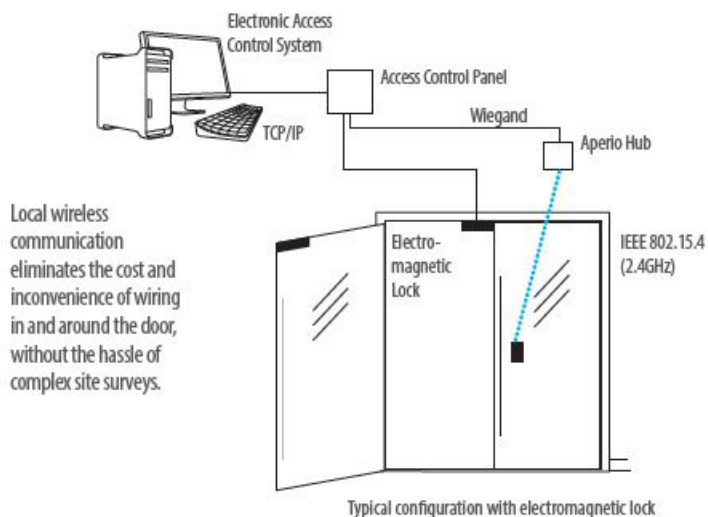
Available in both standard Aperio integration and a prepared Weigand Aperio Hub for connection to any access control system.
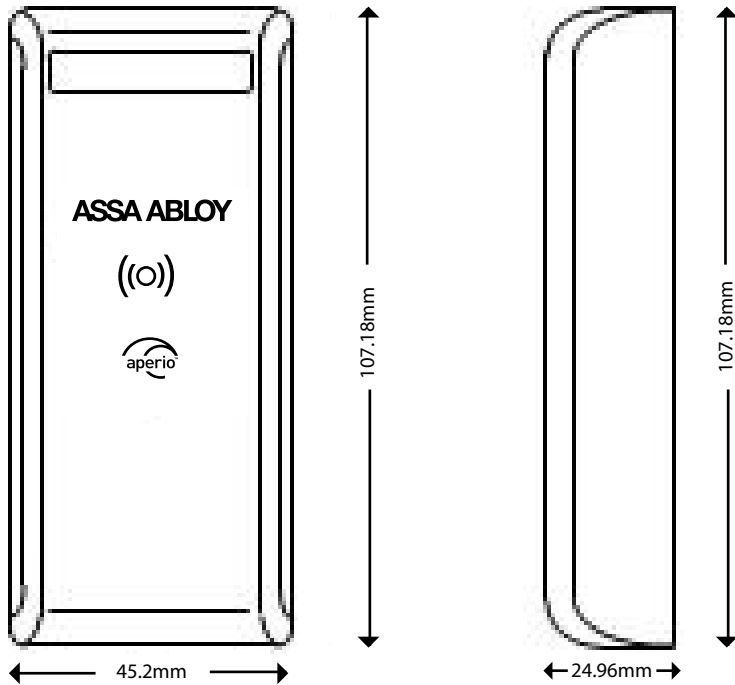
Key Features

- Wireless online access control
- Authorisation changes in real time
- High security Grade 1 asset protection with audit control
- Fast, easy to install wireless reader tied to existing electronic access control system infrastructure
- Low maintenance with 35,000 cycles of operation with a single CR2 battery
- Store up to 10 override credentials on lock locally
- LED Status
- Battery low warning sent to EAC system

Applications

- Glass Door Entryways
- Granite or Marble Facades

Local wireless communication eliminates the cost and inconvenience of wiring in and around the door, without the hassle of complex site surveys.

Typical configuration with electromagnetic lock

R100 Surface Mount Reader

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107.18mm

107.18mm

45.2mm

24.96mm

K100 Technical Information

Battery type	Cr123A Lithium
Battery Lifetime	35000 operations
Radio Standard	IEEE 802.15.4 (2.4Ghz)
Encryption	AES128 Bit
Wireless range	5-25m depending on location of hub & environment
RFID Technology	iClass, Mifare and 125 Khz Prox (prox separate model)
Card read range	<3cm
Operating Temperature	0-50°
Approvals	CE Ctick & ANSI A156.11-2003 Grade 1
Finishes	Black

Ordering Information

Product Description	Part Number
R100 Wireless Surface Mount Reader	R102MB
R100 Wireless Surface Mount Reader & Wiegand Hub	R102MBH

Accessories

Product Description	Part Number
Aperio Hub 1:8 RS485	AH30-3-0
Aperio USB Dongle	APRD1/PAP1

Communication Hub and EAC Interface

General Description

The communication Hub is the link between Aperio Locks and the access control system. Depending on the type of Hub used, up to 8 locks can be paired with one Hub.

The hub communicates directly with the locks over an encrypted 2.4ghz wireless.

There are four communication hub types, Depending on the access control system you are connecting the hubs to will depend on the type of hub selected.

AH15

The AH15 utilises a standard Wiegand interface between the Hub and the access control system and is designed to communicate over a range of 5m to the lock it is paired with.

AH20

The AH20 utilises a standard Wiegand interface between the Hub and the existing access control system and in addition provides 4 relays to provide a low level interface to report, low battery, Lock Jamb, Unlocked and Lock Offline. The hub is designed to communicate with a lock within a 25m range.
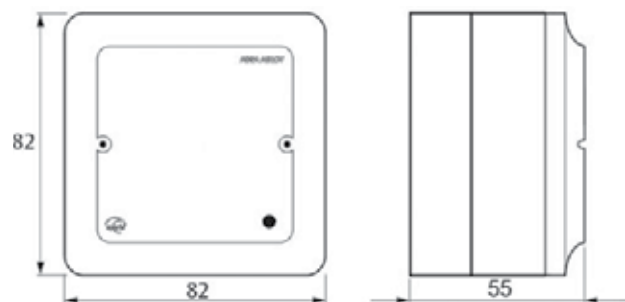
AH30

The AH30 utilises a RS-485 connection between the Hub and the access control system. The hub is designed to communicate with up to 8 locks within a 25m range.

AH40

The AH40 utilises an IP (Ethernet) connection between the Hub and the access control system. The is designed to communicate with up to 8 locks within a 25m range. The AH40 can be powered via both an external power supply and POE 3.5w

Key Features

- Connect up to 8 Aperio Devices to a single hub
- Different interfaces allowing connection to a wide range of access control systems
- Encrypted Radio Communications
- Integrated antenna
- Led Status for visual indication
- Applications – Same as

AH30 1:8 RS485 Hub

AH40 IP(ethernet) Hub

Communication Hub Technical

Hub Version	Interface	Max. No. of Locks
AH15	Weigand	1
AH20	Advanced Weigand	1
AH30	RS-485	8
AH40	IP (Ethernet)	8

Ordering Information

Product Description	Part Number
AH15 Aperio 1:1 Standard Wiegand Hub	AH15-1-0
AH20 Aperio 1:1 Advance Wiegand Hub	AH20-2-0
AH30 Aperio 1:8 RS485 Hub	AH30-3-0
AH40 Aperio 1:8 IP(Ethernet) Hub	AH40-4-0

Software & USB Radio Dongle

General Description

The Aperio Programming Application is the software tool used to set up and programme Aperio based products.

Using the software the installer simply plugs in the USB radio dongle to the PC to communicate directly to the Aperio lock via the Communication Hub.

The software has an encrypted installation data base that can be used to manage any number of sites.

Key Features

Software

- Multilingual installation tool
- Encrypted installation database
- Installation management:
  – Unit configuration
  – Firmware update
  – Pair/Un-pair
  – Override credentials
  – Wireless status link
  – RS485 settings

Radio Dongle

- Provides communication to Aperio based products
- Encrypted radio communication

Applications

- Tools designed for the installer to set up and program Aperio based products

Ordering Information

Product Description	Part Number
USB Dongle	APRD1/PAP1

ASSA ABLOY is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience.

ASSA ABLOY is represented in all major regions, in both mature and emerging markets, with leading positions in Australia, Europe and North America.

As the world's leading lock group, ASSA ABLOY offers a more complete product range of door opening solutions than any other company on the market.

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