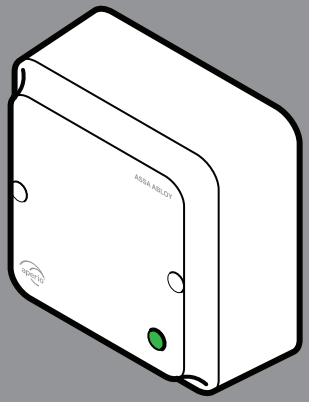
aperio®



Aperio®
AH40 (GEN5)
Hub Installation Guide

ASSA ABLOY

Experience a safer
and more open world

Document No: D001042372 Rev 5 Date: 2024-11-19

AH40 - Table of Contents

UL294 Listed, Level I Destructive
Attack, Line Security, Standby Power,
Level IV Endurance
ULC-60839-11-1 Listed, Security Grade 2

Conforms to EN 62368-1 and UL/CSA 62368-1

Security Equipment BP7098

AH40 - FCC and ISED Canada Statements

FCC Statements

Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the users authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

***Note**: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.*

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of the human body.

ISED Canada Statements

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

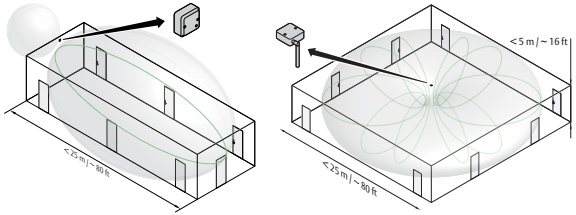
This equipment complies with the ICES RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of the human body.

Cet équipement est conforme aux limites d'exposition aux radiations ICES définies pour un environnement non contrôlé . Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et une partie de votre corps.

AH40 - Placement of Communication Hub

For hubs using the **internal antenna**, it is recommended that the device to hub distance be limited to *25 m (80 ft)*. The internal antenna has an oblong coverage area and is most appropriate for applications where the hub is directly facing the device(s), e.g. mounting on the wall at the end of a hallway of doors.

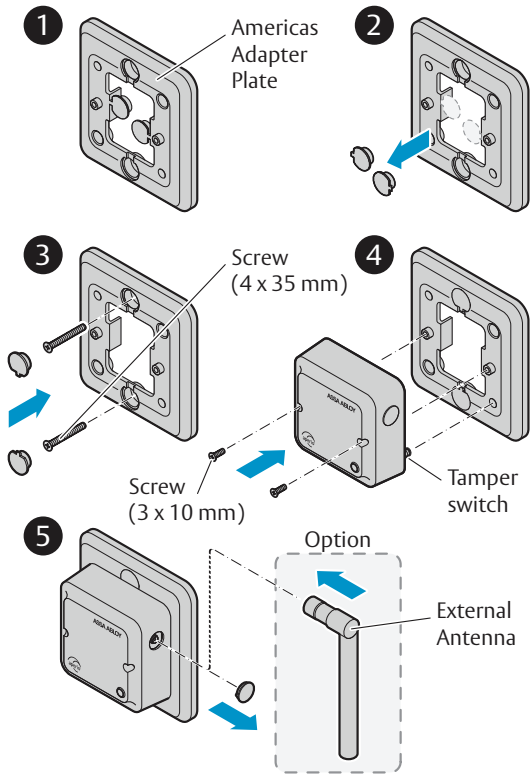
For hubs using the e**xternal antenna**, it is recommended that the device to hub distance be limited to *12.5 m (40 ft)*. The external antenna has a torus shaped coverage area and is most appropriate for applications where the devices are surrounding the hub, e.g. mounting on the ceiling less than 5m/16ft high in a room or hallway.



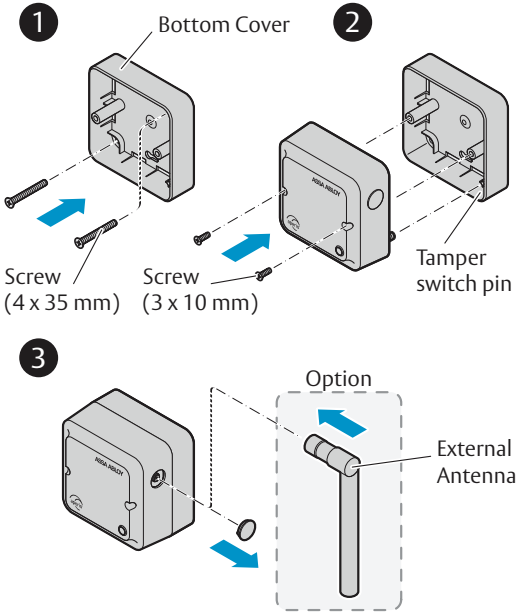
Examples of placement of the Hub with internal and external antenna. AH40 can manage up to 64 locks.

***Note:** AH40 must be installed into a junction box ex European 2-Gang, using Aperio bottom cover or Americas adapter plate connected to junction box. AH40 must be installed by qualified and trained personal. Indoor installation only!*

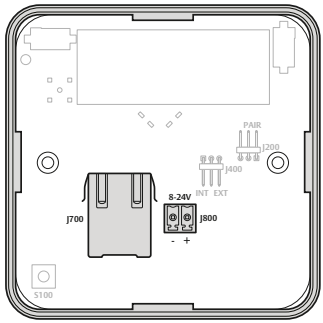
AH40 - Mounting, Americas Adapter Plate (US version)



AH40 - Mounting, Bottom Cover (EU version)



AH40 - Connectors

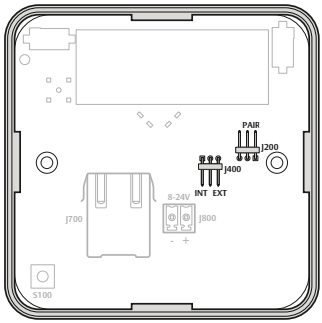


PINS	*J700*
Pin 1	Rx +
Pin 2	Rx -
Pin 3	Tx +
Pin 4	DC +
Pin 5	DC +
Pin 6	Tx -
Pin 7	DC -
Pin 8	DC -

Connectors	Description
J700 PoE Mode B	Ethernet connector. Connection to the Electronic Access Control system through a 10BASE-T / 100BASE-TX Local Area Network. Can also be used for power supply if connected to a IEEE 802.3.af compliant Power Sourcing Device (PSE). Wire requirements CAT5e or higher.
J800	Power supply input, 8-24 VDC, 1.2 W. The power supply shall be 3 A over current protected. Wire requirements 16-22 AWG.

Note: *When PoE (Power over Ethernet) is used, no power supply should be connected to J800. The installation must comply with national wiring regulations.*

AH40 - Jumpers

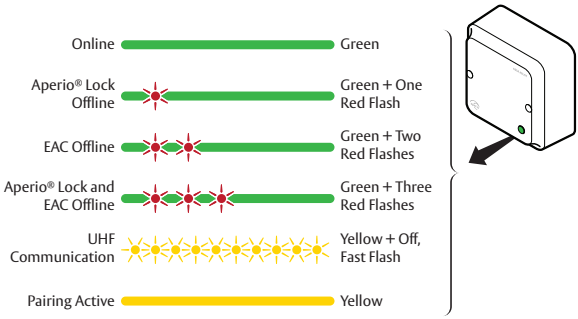


Jumpers	Description
J400 ANTENNA	Select external antenna by connecting the two right pins.Select internal antenna by connecting the two left pins.
J200 PAIR	Select pairing mode by connecting the two right pins.* **Note**: If the pairing jumper if removed within 10 seconds from from boot up and the Hub LED is lit, all paired devices will be unpaired. *Not supported in Aperia Installer mode.

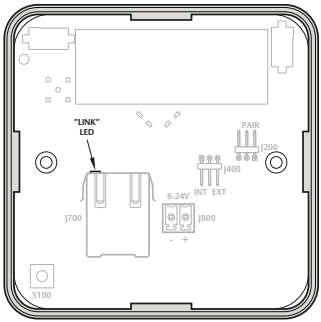
Note: *To install an external antenna use a thin screwdriver and gently bend the antenna cap loose.* ***Be careful****, there are sensitive components behind the cap!*

AH40 - Communication Hub LED Indications

The Communication Hub has a status LED visible through the front cover. It supports optical schemes with red, green and yellow. The indication schemes are described by the figure below:



Note: *With the software tool Aperio® Programming Application and an USB radio dongle or Aperio Installer software, further system installation parameters can be set. Test the system for operation upon completion of the installation.*



The "LINK" LED on the Ethernet connector indicates both status of the Ethernet Link level and if communication is ongoing.

AH40 - Technical Data

Physical Dimensions	82 mm x 82 mm x 37 mm (H x W x T)
Power Supply	8-24 VDC or Power over Ethernet (PoE)
Power Rating	The power supply shall be able to deliver minimum 1.2 W and be 3 A over current protected. Wire requirements 16-22 AWG. PoE IEEE 802.3.af compliant class 1 Powered device (PD)
Ethernet	10BASE-T / 100BASE-TX Local Area Network
Radio	ISM-band (2400 – 2483,5 MHz) AES 128 bit encryption
Receiver Sensitivity	-100 dBm
Wireless Transmit Power	10 dBm/MHz. Peak value from average detector according to EN ETSI 300 328 Maximum spectral density.
Wireless Operating Range	Indoors up to 25 m depending upon installed environment.
Internal Antenna	Two port cross polarized patch antenna.
External Antenna	One reverse polarity SMA external antenna connector. AH40 is certified to be used with ASSA ABLOY external antenna AH ANTENNA 1. If other external antenna is used it must be of same type (dipole) and not have larger antenna gain than 2.15 dBi.
Operating Temperature	5 °C to 35 °C (41°F to 95°F)
Humidity	< 95 % non-condensing
IP Classification	IP20
Safety, Radio and EMC	IEC 62368-1:2014 EN 62368-1:2014 + A11:2017 UL/CSA 62368-1:2014 EN 301 489-1 V2.1.1 EN 301 489-17 V3.2.0 EN 300 328 V2.2.2 EN 50130-4:2011 + A1:2014 EN 62311 FCC 47CFR Part 15 subpart B and subpart C ISED RSS-247 and ICES-003 AS/NZS 4268
Number of supported locks/sensors	64

UL294 Disclaimer

Note: *The below statements are only applicable for UL294 and Americas.*

Applicable Standards
UL294 Listed, Level I Destructive
Attack, Line Security, Standby Power,
Level IV Endurance

For use with UL294/ULC 60839-11-1 Listed Aperio Locks

UL294 compliance with FW version 1.2.0 or higher.

Placement of communcation hub
For additional installation details, see the "Aperio Online Mechanical Installation Manual - Document No D000732079, Rev 6.

For US and Canada, the communication hub must be installed in accordance with NFPA 70, National Electrical Code and CSA C21.1, Canadian Electrical Code.

AH40 Mounting
The minimum conductor gauge shall be 26 AWG (0.13 mm^2) for patch cords; 24 AWG (0.21 mm^2) for horizontal or riser cable.

The equipment is intended to comply with Article 725.121, Power Sources for Class 2 and Class 3 Circuits, NFPA70, National Electrical Code. AH40 is not intended for connection to telephone or outside wiring.

AH40 - Connectors
J700: Compliance with IEEE 802.3(af) is not verified by UL.
J800: All circuits are Power Limited/Class 2.

For UL294 applications, the PoE Injector or switch must be UL294 Listed, Class 2.
For ULC-60839-11-1 applications, the PoE Injector or Switch must be ULC-60839-11-1 Listed (Security Level 2 or better), Class 2, or ULC-S319 Listed (Security Level 2 or better), Class 2 or ULC-S318 Listed, Class 2.
Electrical rating of power supply shall be up to 57Vdc, 350mA.

AH40 - Technical Data

UL294/ULC60839-11-1 testing is done under the following conditions: Operating temperature 0 °C to 49 °C (32°F to 120.2°F). Humidity 93% RH, 32 °C. IP classification according to IP4X, Indoor Dry Use.

NOTE

NOTE

The ASSA ABLOY Group is the global leader in access solutions. Every day we help people feel safe, secure and experience a more open world.

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