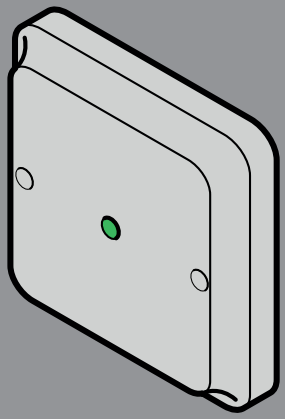
aperio™



Aperio™ Hub
AH15 RS485/Wiegand
Installation Instructions

Covers AAWL-314
21 June 2011

ASSA ABLOY

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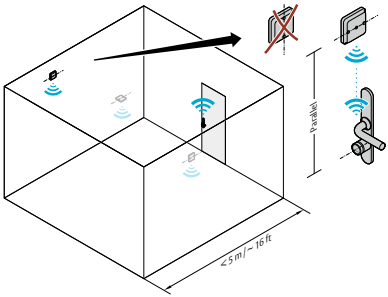
in door opening solutions

AH15 - Table of Contents

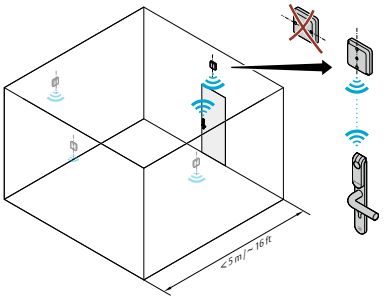
CE

AH15 - Placement of Communication Hub



HUB placement with E-cylinder locks

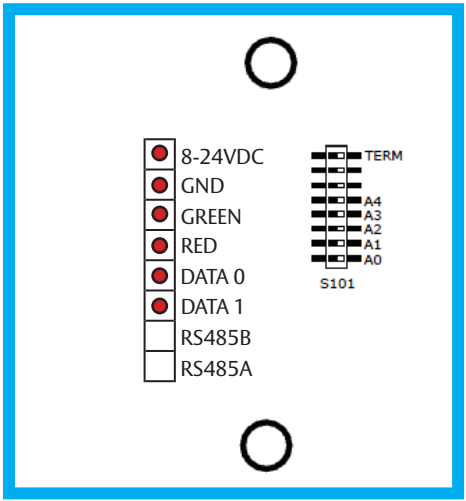
> ***Note:*** *AH15can be installed into an European 2-Gang junction box, Aperio bottom cover or Americas adaptor plate.*



HUB placement with non-cylinder locks

> ***Note:*** *The AH15 shall only be installed with qualified and trained personal. Indoor installation only.*

AH15 - Wiegand Connections



AH15 Wiegand Connectors

Note: *The power supply input to AH15 is 8-24 VDC. The AH15 shall be connected to an external power supply source (SELV) which provides reinforced/double insulation from mains. The equipment shall also be preceded by an appropriate disconnect device. All external circuits connected to AH15 must comply with SELV, as defined in IEC 60950-1.*

Note: *The installation shall comply with national wiring regulations.*

AH15 - Wiegand Connections

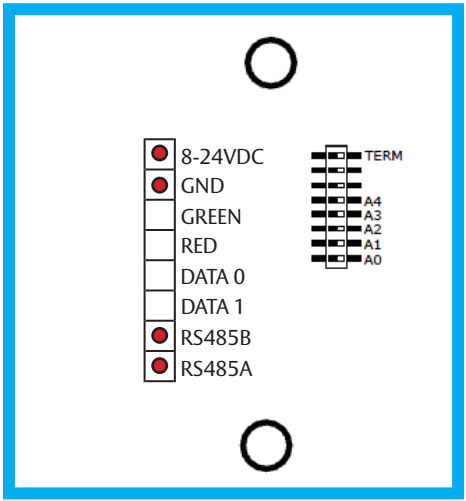
Communication Hub hardware version AH15 has four Wiegand signals plus power supply. The purpose and connection of these signals are described in the table below.

Hub Connector	Description
8-24 VDC	Power supply input, 8-24 V DC. The power supply shall be a Limited Power Source (LPS) according to EN 60950-1.
GND	GND = Signal ground. Should be connected to EAC system GND and power supply GND.
GREEN	Wiegand Green LED signal. Input to communication Hub. Used for access decision. Signal is active low. See DIP 1 for alternate instructions.
RED	Wiegand RED LED signal. Input to Communication Hub. Used for access decision. Leave unconnected if DIP switch 1 is selected “OFF”. Signal is active low.
DATA 0	Wiegand Data 0 signal. Output from Communication Hub. Used to transmit credentials.
DATA 1	Wiegand Data 1 signal. Output from Communication Hub. Used to transmit credentials.

AH15 - Wiegand DIP Switch Configuration Table

DIP Switch Number	Label	Description
1	A0	Controls use of LED Red signal for access decision. ON => LED Red is used. OFF => LED Red is ignored.
2	A1	Set to OFF by default. Reserved for future use.
3	A2	Controls addition of parity bits if required. ON => Addition of parity bits is enabled. OFF => Addition of parity is disabled. Credentials are transmitted as received.
4	A3	Controls byte order of transmitted credentials. ON => The byte order is reversed compared to what is received as input to the Hub Wiegand EAC interface component. OFF => The byte order is left as is.
5	A4	Used in "Pairing Mode" ON => Starts in Pairing Mode OFF => Normal use
6-8		Not used for Wiegand

AH15 - RS485 Connections



AH15 RS485 Connectors

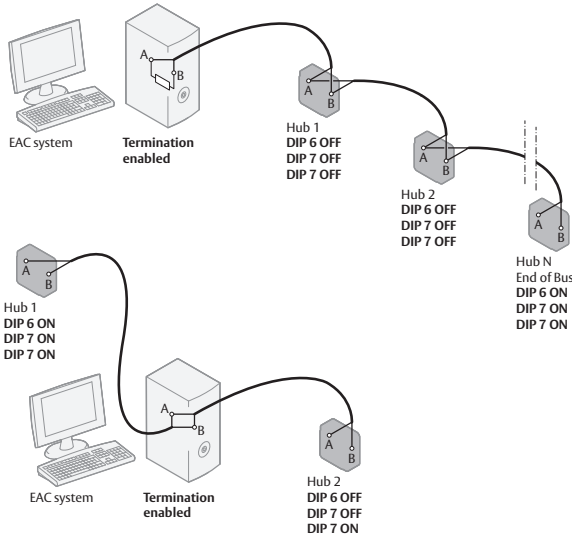
Hub Connector	Description
8-24 VDC	Power supply input, 8-24 V DC. The power supply shall be a Limited Power Source (LPS) according to EN 60950-1.
GND	GND = Signal ground. Should be connected to EAC system GND and power supply GND.
RS485A	RS485 Data A
RS485B	RS485 Data B

AH15 - RS485 DIP Switch Configuration Table

DIP Switch Number	Label	Description
1-5	A0-A4	Controls RS485 addressing BIT 0-BIT 4. ON => Address bit set. OFF => Address bit NOT set. See AH15 - RS485 Addressing Reference on page 11.
6	DOWN	Controls use of RS485 pull down resistor. ON => 620 Ohm pull down connected/enabled. OFF => 620 Ohm pull down disconnected/disabled.
7	UP	Controls use of RS485 and pull up resistor. ON =>620 Ohm pull up connected/enabled. OFF => 620 Ohm pull up disconnected/disabled.
8	TERM	Controls use of termination resistor between RS485 A and RS485 B. ON =>100 Ohm termination resistor connected/ enabled. OFF => 100 Ohm termination resistor disconnected/ disabled.

AH15 - RS485 Bus Connection

Examples of connection of multiple Communication Hubs to a single RS485 bus of an EAC system:



Communication Hub Connections, examples

> ***Note:*** *The RS485 bus cable should be of type twisted pair. The maximum cable length of 1000 meters should not be exceeded.*

AH15 - RS485 Addressing

Address	A0	A1	A2	A3	A4
0	Pairing Active				
1	ON				
2		ON			
3	ON	ON			
4			ON		
5	ON		ON		
6		ON	ON		
7	ON	ON	ON		
8				ON	
9	ON			ON	
10		ON		ON	
11	ON	ON		ON	
12			ON	ON	
13	ON		ON	ON	
14		ON	ON	ON	
15	ON	ON	ON	ON	

Address examples

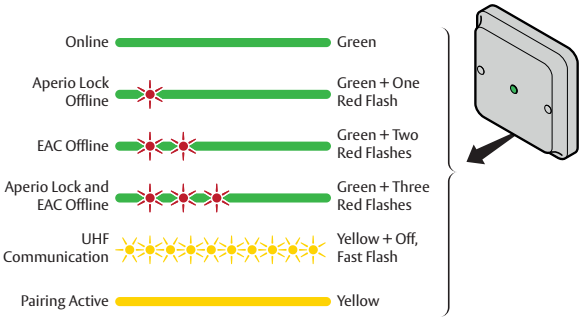
AH15 - RS485 Addressing

Address	A0	A1	A2	A3	A4
16					ON
17	ON				ON
18		ON			ON
19	ON	ON			ON
20			ON		ON
21	ON		ON		ON
22		ON	ON		ON
23	ON	ON	ON		ON
24				ON	ON
25	ON			ON	ON
26		ON		ON	ON
27	ON	ON		ON	ON
28			ON	ON	ON
29	ON		ON	ON	ON
30		ON	ON	ON	ON
31	ON	ON	ON	ON	ON

Address examples

AH15 - Communication Hub LED Indication

The Communication Hub has a single LED that supports an optical scheme with red, green and yellow. The indication scheme is described by the two figures below:



Note: *With the software tool Aperio™ Programming Application and an USB radio dongle, further system installation parameters can be set.*

AH15 - Technical Data

Physical Dimensions	82 mm x 82 mm x 12 mm (H x W x T)
Power Supply	8-24 VDC
Current	250 mA. Minimum 80 mA at 12 VDC.
Radio Standard	IEEE 802.15.4 (2400 – 2483,5MHz) 16 channels (11-26) AES 128 bit encryption
Wireless Transmit Power	- 5 dBm Total Radiated Power, T.R.P.
Wireless Operating Range	Typical wireless range of 5 meters depending upon installed environment.
Internal Antenna	SMD antenna.
Operating Temperature	5°C to 35°C.
Humidity	< 95% non-condensing.
IP Classification	IP20
Safety and Emissions	EN ETSI 301 489-17 v2.1.1 EN ETSI 300 328 v1.7.1 EN 60950-1 ed.2 2007

NOTE

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