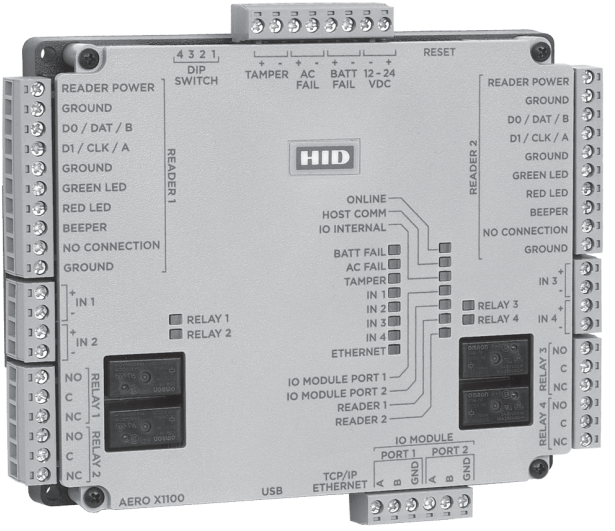


ABLOY® PULSE CONTROLLER

Installation Guide

ABLOY

1. INTRODUCTION

The purpose of this instruction is to help with installing updater and to help in problem situations. The instructions contain the controller's technical data, connection instructions and other necessary information related to commissioning.

The controller is used together with HID Signo readers. In the PULSE locking system, this entity is called an updater. The task of the updater is to:

- Transports information between the key and the cloud service:
  - Time stamp
  - List of lost keys
  - Access rights updates
  - Handing out/in keys
  - Audit trail transferring from keys
- Electric lock, gate or similar devices can be controlled using controller relays

THINGS TO CONSIDER:

- Known cable types such as MHS, CAT-6, JAMAK or other paired cable should be used between the reader and the controller.
- The cable distance between the reader and the controller can be a maximum of 480 meters, but the recommended maximum distance is 100 meters. If the distance approaches 50 meters, it is recommended to install a 120 ohm resistor on the RS-485 termination buses.
- Use well-protected cable grounding.
- Do not install the reader on metal doors (or similar) without a platform piece.
- The controller requires a separate 24 VDC power supply.
  NOTE: POWER OVER ETHERNET (PoE) IS NOT SUPPORTED BY CONTROLLER

FIREWALL SETTINGS:

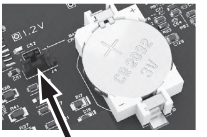
The controller establishes connections to the ASSA ABLOY Access cloud using the HTTPS and MQTT protocol on port 443. It also synchronizes time via NTP by establishing connections on port 123. It looks up domain names using DNS on port 53. These connections need to be accepted in order for normal operation.

Port Protocol	Domains to Whitelist
443 HTTPS & MQTT	accentra.abloy.com/* accentra.assaabloy.com/* rocketfw.s3-eu-west1.amazonaws.com/* a2118gv0vua4gp.iot.us-east-1.amazonaws.com
123 NTP	n/a
53 DNS	n/a

2. INTRODUCTION

TOOLS REQUIRED:

Small Phillips head screwdriver
Small flat head screwdriver
Wire cutters



Battery jumper
(J4) (step 3)

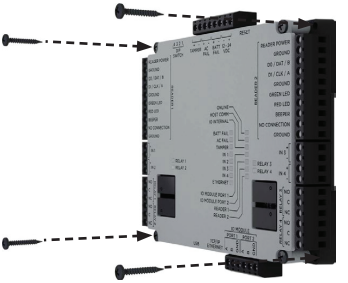
PROCEDURE:

To install the controller and updater, do the following:

1. Remove Controller and Reader from boxes.
2. Remove four (4) Phillips head screws from face of Controller to remove cover.
3. Set Battery Jumper (J4) to the ON position.
4. Replace gray plastic cover onto Controller unit and secure with four (4) Phillips head screws.

NOTE: The static RAM and the real time clock are backed up by a lithium battery when input power is removed. This battery should be replaced annually.

5. Mount the controller. Always mount the controller in a secure area. Mount using the supplied screws 3.5mm x 25mm (0.138" x 1").
6. With flat head screwdriver, loosen four (4)screws on Reader 1 connection block labeled READER POWER, GROUND, DO/ DAT/B, D1/CLK/A.
7. Insert stripped wires from Reader into holes on connection block as shown in images and table on the next page.



PROCEDURE (CON'T):

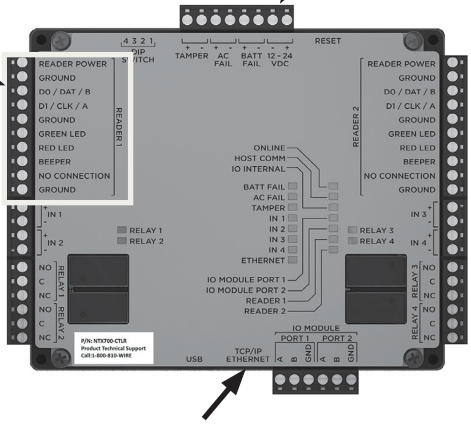
Reader

Keypad

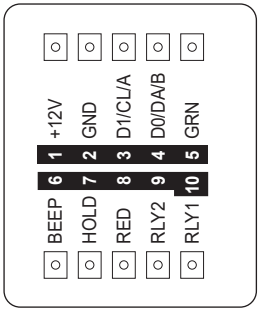
Power Supply Connection (step 11)

Connection Block (steps 6 & 7)

NOTE: Only Reader 1 connections are enabled



Ethernet Port (step 10)



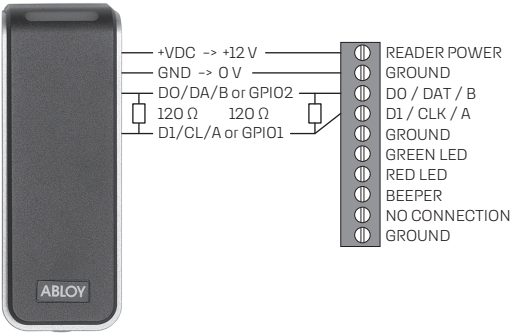
Label on Controller Connector Block	Reader Terminal Strip Connections
READER POWER	+VDC / +12V
GROUND	GND
D0/DAT/B	D0/DA/B or GPIO2
D1/CLK/A	D1/CL/A or GPIO1

PROCEDURE (CON'T):

8. If the cable length between the reader and controller is more than 50 meters, 120 Ohm resistors should be considered to be added. Insert the resistors as shown in image to the right.

9. Tighten four (4) screws on connection block with flat head screwdriver to secure wires.

10. Plug into Ethernet port as shown in image on the previous page.

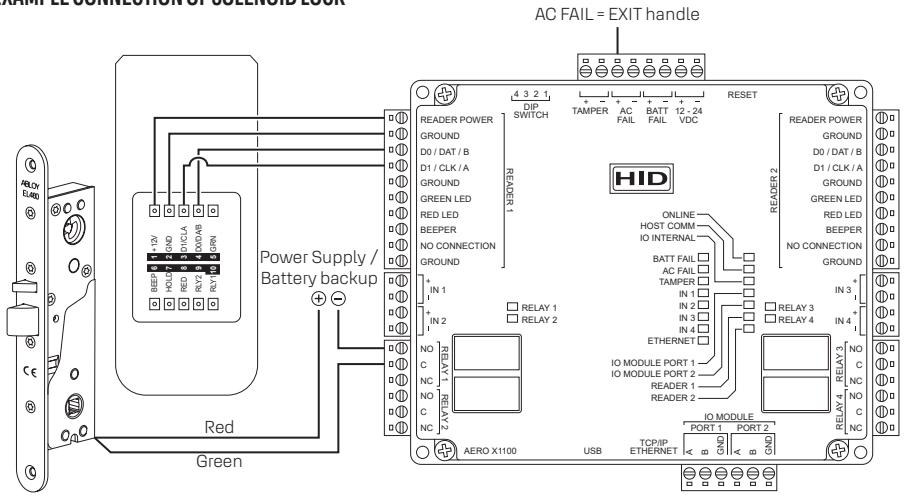


11. Connect the wires from the power supply (24VDC recommended) to the connection block as shown in the image on the previous page.

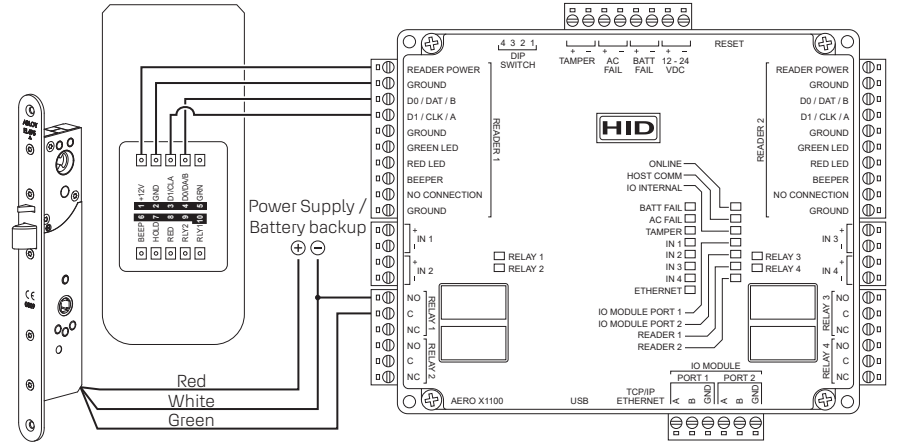
NOTE: The boot process is completed when the IO INTERNAL LED is flashing and reader
LED is stable purple for multiple seconds. Updater is now ready for configuration
into ASSA ABLOY Access locking system.

WARNING: DO NOT INTERRUPT POWER OR INTERNET DURING THIS PROCESS.

EXAMPLE CONNECTION OF SOLENOID LOCK



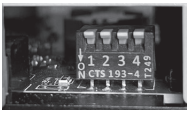
EXAMPLE CONNECTION OF MOTOR LOCK



DIP SWITCH CONFIGURATION:

All switches come factory defaulted to OFF.

DIP Switch	Setting
1 – 4	n/a Should be OFF



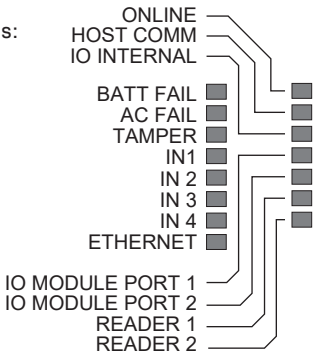
USB CONNECTOR:

The controller offers a direct terminal interface by connecting a computer to the USB micro port. The computer will see the port as a virtual serial device that can be connected to any terminal program. Examples include minicom or screen on a *NIX OS or Putty on Windows. Once connected, a terminal, directly interfacing the controller's OS, will be presented.

STATUS LEDS:

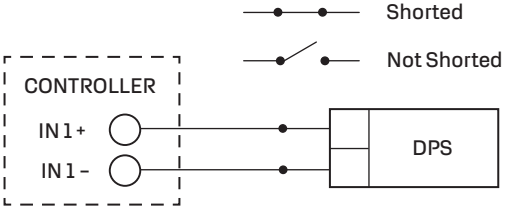
LEDs as shown to the most right in the figure indicate normal system activity. They have the following functions:

Label	Function
ONLINE	Flashes in normal operation
IO INTERNAL	Flashes in normal operation
ETHERNET	Network activity



DOOR POSITION SENSOR (DPS):

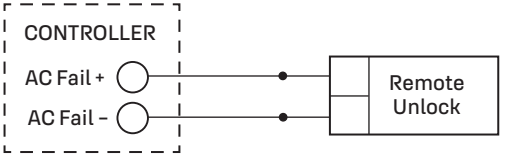
- IN 1 + / IN 1 –
- Shorted = Door Closed
- Not Shorted = Door Open



DPS function must be activated (once) after a controller configuration for the function to report DOOR OPEN or CLOSED state. To activate the DPS function, connect DPS and have door in a closed state. If the door stays open for the defined Door Held time (default = 30 seconds), a DOOR HELD notification is sent. The Door Held time is configurable.

REMOTE UNLOCK:

- AC FAIL +/ AC FAIL –
  This is being repurposed as remote unlock input to the controller.



A momentary Normally Open (NO) switch can be connected to the I/O Connector. When pressed, the relay Shorts to activate a single time to unlock the door. The Default Relock time is 5 seconds. Holding the switch will not continue to keep the door in an unlocked state. The Default Relock time is not configurable.

Remote unlock with EXIT button:
* AC FAIL +/ AC FAIL –
Is used as a remote unlock with EXIT button even though the name indicates different.

3. TECHNICAL SPECIFICATIONS

	READER:	KEYPAD:
13.56 MHz (NFC) Credential Compatibility	Seos, iCLASS	
Typical Read Range	Seos, 4 to 10 cm (1.6 to 4 in)	
Mounting	Suited for mullion-mount door installations or any flat surface mounting	
Color	Black bezel with silver trim baseplate	
Keypad	No	Yes (2 x 6 layout)
Dimensions (width x length x depth)	45 mm x 121.5 mm x 19.5 mm (1.77 in x 4.78 in x 0.77 in)	45 mm x 121.5 mm x 21.5 mm (1.78 in x 4.79 in x 0.85 in)
Product Weight	Terminal: 75 g (2.65 oz)	Terminal: 90 g (3.17 oz)
Operating Voltage	12V DC	
Current Draw	NSC: 60 mA Peak: 250 mA Max. Avg: 70 mA IPM: 45 mA	NSC: 65 mA Peak: 250 mA Max. Avg: 75 mA IPM: 48 mA
Device Input and Output	Input: Tri-color LED, Buzzer, Hold @ Active Low Output: Tamper Relay 0-60V DC @ 100mA Max (Dry Contact)	
Operating Temperature & Humidity	-35 ºC to +66 ºC (-31 ºF to +150 ºF) 0 % to 95 % non-condensing	
Storage Temperature	-40 ºC to +85 ºC (-40º F to +185º F)	
Environmental Rating	UL294 Outdoor and Indoor rated, IP65	
Transmit Frequency	125 kHz, 13.56 MHz, and 2.4 GHz	
Communications & Panel Connection	RS-485 Half Duplex (OSDP) via Terminal Strip	
Device Management	HID Reader Manager / OSDP configuration	
Certifications	UL294/cUL (US), FCC (US), IC (Canada), CE (EU), RCM (Australia, New Zealand), SRRC (China), KCC (Korea), NCC (Taiwan), iDA (Singapore),RoHS, MIC (Japan), GreenCircle, Bluetooth SIG, and additional regions. www.hidglobal.com/certifications	
Security Ratings	EAL 5+ Certified Secure Element Hardware	
Patents	www.hidglobal.com/patents	
Housing Materials	Polycarbonate – UL94 V0	
UL Reference Number	20	20K
Warranty	1 year	

CONTROLLER:

Operating Voltage Range	5-16 VDC
Color	Black
Current Draw – Standard Power Mode2	60mA @ 16V
Peak Current Draw – Standard Power	200mA @ 16V
Operating Temperature	-35º to 65ºC (-31º to 150ºF)
Operating Humidity	5% to 95% relative humidity non-condensing
Environmental Rating	Indoor/Outdoor IP55; IP65 if installed with optional gasket
Transmit Frequency	13.56 MHz
13.56 MHz Card Compatibility	Secure Identity Object™ (SIO) on iCLASS Seos
2.4 GHz Mobile Card Compatibility	Secure Identity Object™ (SIO) on mobile IDs
Communications	Open Supervised Device Protocol (OSDP) via RS485
Panel Connection	Terminal Strip
Certifications	UL294/cUL (US), FCC Certification (US), IC (Canada), CE (EU)
Cryto Processor Hardware Common Criteria Rating	EAL5+
Housing Material	UL94 Polycarbonate
Manufactured with % of recycled content (Terminal Strip)	11.0%
Warranty	1 year

ESD Statement

This product is sensitive to Electrostatic Discharge (ESD). Please note that the product should not be accessible to public users and should only be handled during installation and service by trained operator or a service engineer. Unauthorized access to these surfaces may increase the risk of ESD damage. Failure to follow these guidelines may compromise the integrity and functionality of this product.

Product Security Center

We are committed to rapidly addressing issues as they arise and providing recommendations through security advisories and security notices.
For more information access a security resource topic below.
https://www.abloy.com/global/en/privacy-centre/product-security-center

Declaration of Conformity

https://www.abloy.com/global/en/our-products/declaration-of-conformity

Recycling

This product contains materials, such as electronics, which require specialist recycling techniques. When the product is taken out of use, disassemble it and sort and recycle the different materials as per valid recycling instructions.

We reserve the right to make alterations to the products described in this leaflet.

6002235 | 24.5.2024

ABLOY offers security and locking innovations dedicated to creating more trust in the world. Combining digital and mechanical expertise, Abloy Oy develops industry-leading security solutions that protect people, property and business. Abloy is part of the ASSA ABLOY Group, the global leader in access solutions. Every day, we help billions of people experience a more open world.

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