

ACCENTRA
ASSA ABLOY

Multi-Family Management System

NTX700 Controller-Updater
Installation Guide



Multi-Family Management System Controller-Updater Installation Guide

1. Introduction

Used together in a paired relationship, the controller and the credential updater(s) are referred to as the Online Updater. The online updater can operate both as a credential enrollment station and as a door controller to operate an electrified strike, magnetic lock, gate operator, and more.

The ASSA ABLOY ACCENTRA™ Multi-Family Solution requires at least one Online Updater to serve several functions within the ASSA ABLOY ACCENTRA Ecosystem:

- Activates new physical credentials (cards, fobs, vehicle credentials) for residents, guests, and staff
- Transmits current access rights to physical credentials at time of presentation
- Ensures physical credentials are continuously updated through typical daily use
- Reads credential access permissions to grant or deny access to online opening
- Reads audit information including access history, lock battery status, and other lock events from the physical credential and transmits to the Multi-Family Management System cloud service

The ASSA ABLOY ACCENTRA Multi-Family Online Updater consists of two major components:

1. Door Controller (NTX700-CTLR)
2. Credential Updater/Reader
for NTX700 Series Updater (up to two of the following):
 - Credential updater (mini-mullion with pig tail) (capacitive touch keypad optional)
 - Credential updater (mini-mullion with terminal strip) (capacitive touch keypad optional)
 - Credential updater (wall switch with pig tail) (capacitive touch keypad optional)

- Credential updater (wall switch with terminal strip) (capacitive touch keypad optional)
- Credential updater (wall switch with terminal strip) mechanical keypad

for NTX900 Series Reader (one of the following):

- Credential reader (small parking reader)
- Credential reader (large parking reader)

The purpose of this guide is to provide step-by-step instruction for the first-time installation and use of the online updater/reader. Also noted are technical specifications for both the controller and the updaters/readers as well as LED behavior and typical wiring diagrams.

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Things to Consider:

- The maximum cable length between updater and controller is 1600 feet.
For OSDP cable lengths greater than 200 ft (61m) or EMF interference, install 120 Ω resistor across both RS-485 termination ends.
- Use proper cable shield grounding techniques.
- Existing Wiegand wiring may be reused for OSDP. However, standard Wiegand cable may not meet RS-485 twisted pair recommendations. The reuse of cable works best on shorter cable lengths.
- An external power supply (ULC 60839-11-1 (Grade 1 minimum), ULC S319 (Grade 1 minimum), or ULC-3318 Power Supply - power limited/Class 2) is required. Please review total power requirements for controller and updaters/readers in Section 5. This does not include power requirements for locks or strikes.
- For UL294 certification, the NTX700-CTLR is intended to be installed in its own separately UL294 or UL50/50E Listed Enclosure (NEMA Type 1 IP30 Enclosure). Available pre-wired enclosure options:
NTX700-CTLRBOX-4D (4 door control), NTX700-CTLRBOX-8D (8 door control), NTX700-CTLRBOX-16D (16 door control).
Available optional backup battery for the enclosure power supply:
NTX700-BB-5A12V (5 amp hour), NTX700-BB-9A12V (9 amp hour), NTX700-BB-18A12V (18 amp hour).
To calculate the necessary backup battery power requirements, use these online calculators: <https://www.lifesafetypower.com/en/support/calculators>
NOTE: If the power supply is configured for 24V, a minimum of two batteries is required.

Cable Requirements (not supplied)	
Host-Ethernet	CAT-5, 328 ft (100 m)
Readers-OSDP	4 conductor twisted pair over-all shield, Belden 3107A or equivalent. 2000 ft (610 m) maximum. Utilize one pair for data and one pair for power
Readers-Wiegand / C&D	4- conductor, 18 AWG, shielded, 500 ft (150 m) maximum
IO Modules	One twisted pair, shielded, 120 ohm impedance, 24 AWG, 4000 ft (1219 m) maximum
Alarm Inputs	One twisted pair, 30 ohm maximum, typically 22 AWG, 1000 ft (304.8 m)
Power and Relays	2-conductor shielded 18-16 AWG, 500 ft (150 m)

- For the NTX900 Series Parking Reader, to configure the controller (NTX700-CTLR), it is necessary to **first attach** a NTX700 Series Updater, perform configuration, and **then replace** the NTX700 Series Updater with the NTX900 Series Parking Reader.
- When using dual door control (Reader 1 side and Reader 2 side), it is highly recommended to label the controller with the names of the doors/access areas as they are defined in the Multi-Family Management System cloud software.

NOTE: The NTX700-CTLR can be connected to a NTX600 Series Updater. See Section 6 for wiring diagrams.

Firewall Settings:

The controller establishes connections to the ASSA ABLOY ACCENTRA cloud using the ports/protocols in this table. These outgoing connections need to be accepted for normal operation. No incoming connections allowed, only outgoing connections. If controller fails to connect to Multi-Family Management System cloud system, consult site IT professional.

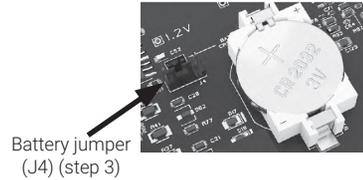
Port Protocol	Domains to Whitelist
80 HTTP	app.accentra-assaabloy.com
443 HTTPS & MQTT	app.accentra-assaabloy.com AND rocketfw.s3-eu-west-1.amazonaws.com AND a2118gv0vua4gp.iot.us-east-1.amazonaws.com
123 NTP	n/a
4460 NTS	time.cloudflare.com ohio.time.system76.com virginia.time.system76.com oregon.time.system76.com sth1.nts.netnod.se sth2.nts.netnod.se
53 DNS	1.1.1.1 8.8.8.8 1.0.0.1 8.8.4.4 208.67.222.222 208.67.220.220

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2. Installation with NTX700 Series Updater

Tools Required:

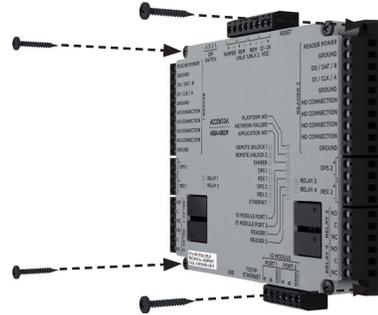
- Small Phillips head screwdriver
- Small flat head screwdriver
- Wire cutters



Procedure:

To install the NTX700-CTRLR Controller and NTX700 Updater, do the following:

1. Remove Controller and Updater 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.

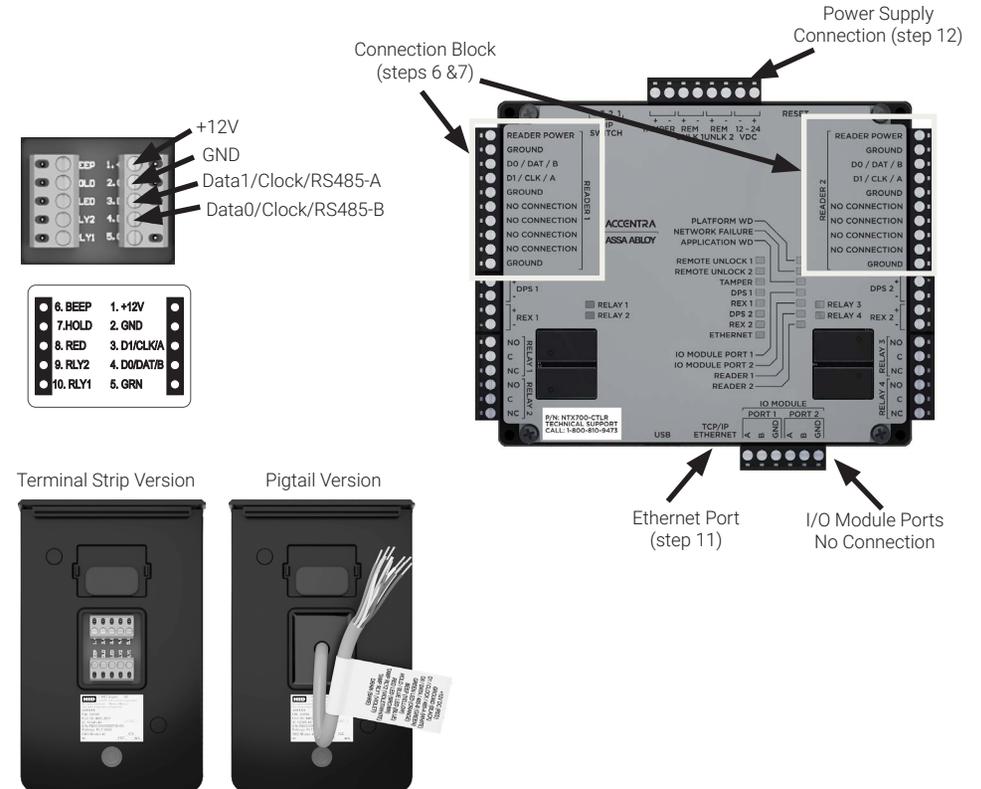


NOTE: The static RAM and the real time clock are backed up by a lithium battery when input power is removed. This battery should be replaced annually.

5. Mount the Controller. Always mount the Controller in a secure area. Mount using the supplied screws 0.138" x 1" (3.5mm x 25mm).
6. With flat head screwdriver, loosen four (4) screws on Controller Reader 1 or Reader 2 connection block labeled READER POWER, GROUND, D0/DAT/B, D1/CLK/A.
7. Insert stripped wires from Updater into holes on connection block as shown in images and table below.

Procedure (con't):

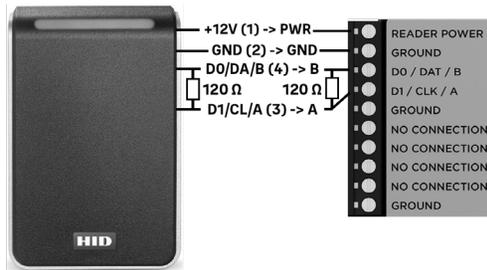
Label on Controller Connector Block	Reader Terminal Strip Connections	Reader Pigtail Wire Colors
READER POWER	+12V (1)	Red
GROUND	GND (2)	Black
D1/CLK/A	D1/CL/A (3)	White
D0/DAT/B	D0/DA/B (4)	Green



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Procedure (con't):

8. If required, insert 120 Ω resistor on reader side terminal strip connector or pigtail wiring and on the Controller side as shown in image to the right.



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

10. For pigtail version, trim stripped ends from remaining wires. These wires are not used and can be tied into a bundle with electrical tape or other appropriate wire insulating material.

11. Connect Ethernet LAN cable to Ethernet Port as shown in image on the previous page.

12. Connect the wires from the power supply to the connection block as shown in the image on the previous page.

NOTE: The boot process is completed when the APPLICATION WD LED is flashing. Controller unit is now ready for configuration into the ASSA ABLOY ACCENTRA Multi-Family Management System using the Configuration app. **The updater connected to the Reader 1 connections MUST be fully configured before the updater connected to the Reader 2 connections is configured.**

WARNING: DO NOT INTERRUPT POWER OR INTERNET DURING THE BOOT PROCESS.

3. Installation with NTX900 Series Reader

Tools Required:

- Small Phillips head screwdriver
- Wrench (13mm)
- Small flat head screwdriver
- Ethernet cable
- Wire cutters

NOTE: To configure the controller (NTX700-CTRL), it is necessary to **first attach** a NTX700 Series Updater, perform configuration, and **then replace** the NTX700 Series Updater with the NTX900 Series Parking Reader.

NOTE: It is recommended that the set-up and configuration of the NTX700-CTRL Controller and NTX900 Series Parking Reader be done on a bench before installing in the desired location.

Procedure:

To install the NTX700-CTRL Controller and NTX900 Series Parking Reader, do the following:

1. Remove Controller and Parking 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.

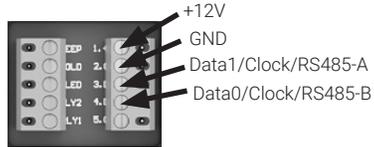


Battery jumper (J4) (step 3)

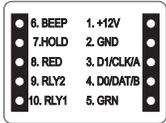
NOTE: The static RAM and the real time clock are backed up by a lithium battery when input power is removed. This battery should be replaced annually.

5. With flat head screwdriver, loosen four (4) screws on Controller Reader 1 or Reader 2 connection block labeled READER POWER, GROUND, D0/DAT/B, D1/CLK/A.
6. Insert stripped wires from NTX700 Series Updater into holes on connection block as shown in images and table below.

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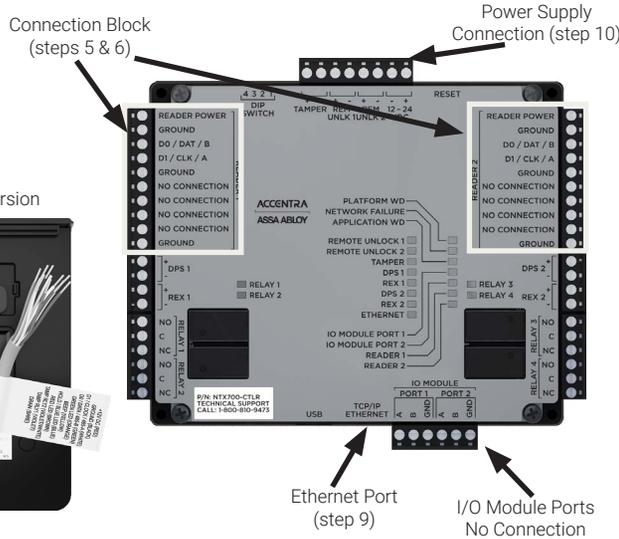
Label on Controller Connector Block	Reader Terminal Strip Connections	Reader Pigtail Wire Colors
READER POWER	+12V (1)	Red
GROUND	GND (2)	Black
D1/CLK/A	D1/CL/A (3)	White
D0/DAT/B	D0/DA/B (4)	Green



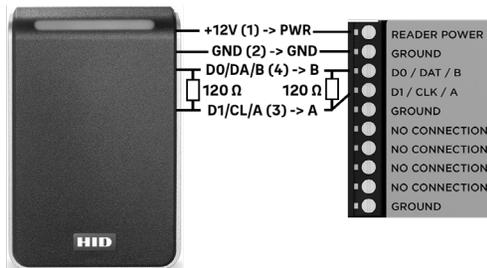
Terminal Strip Version



Pigtail Version



- If necessary, insert 120 Ω resistor on reader side terminal strip connector or pigtail wiring and on the controller side as shown in image to the right.
- Tighten four (4) screws on connection block with flat head screwdriver to secure wires.
- Plug into Ethernet port as shown in image.

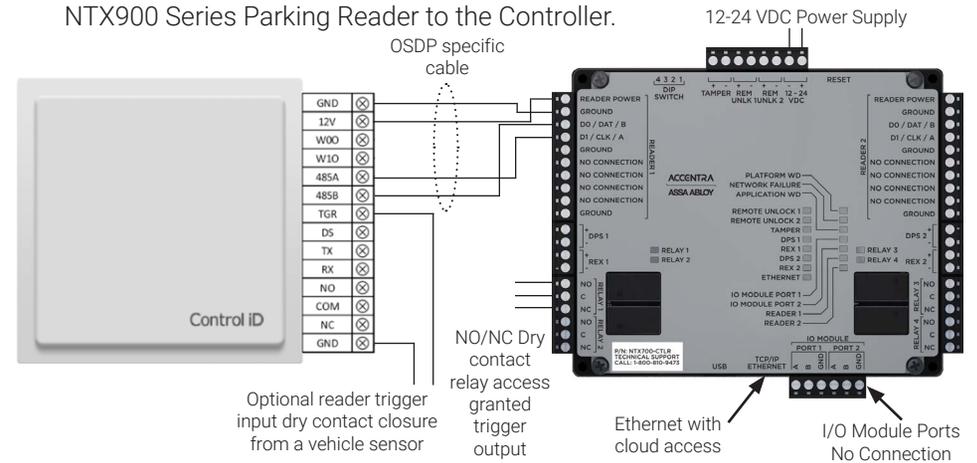


10. Connect the wires from the power supply to the connection block as shown in the image on the previous page.

NOTE: The boot process is completed when the APPLICATION WD LED is flashing. Controller unit is now ready for configuration into the ASSA ABLOY ACCENTRA Multi-Family Management System using the Configuration app. **The updater connected to the Reader 1 connections MUST be fully configured before the updater connected to the Reader 2 connections is configured.**

WARNING: DO NOT INTERRUPT POWER OR INTERNET DURING THE BOOT PROCESS.

11. Once the Controller is configured, power down the Controller and then disconnect the NTX700 Series Updater from the Controller and connect the NTX900 Series Parking Reader to the Controller.



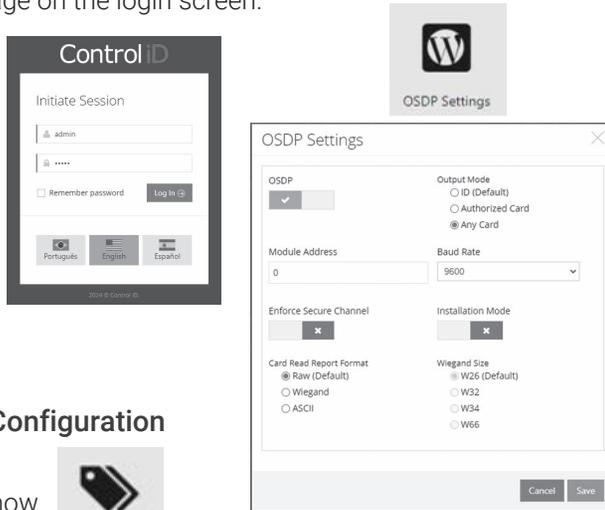
12. After the Controller and Parking Reader power up, connect an ethernet cable from the Parking Reader to a PC. Ensure the PC has an IP address that is on the same network segment as the Parking Reader (Default Reader IP: 192.168.0.129).

Label on Controller Connector Block	Reader Terminal Block Connections
READER POWER	12V
GROUND	GND
D0/DAT/B	485B
D1/CLK/A	485A
N/A	TGR (optional from reader to sensor)

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13. Open a web browser and enter 192.168.0.129 into the search bar. Once the window opens, log in using the default User ID (admin) and password (admin). Select the desired language on the login screen.

14. Click the OSDP Settings icon in the top row on the screen. In the OSDP Settings pop-up, click the box in the upper left corner to enable OSDP (green checkmark). Then select "Any Card" under Output Mode.



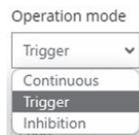
Optional Parking Reader Configuration Settings:

The optional settings affect how the reader operations based on requirements.



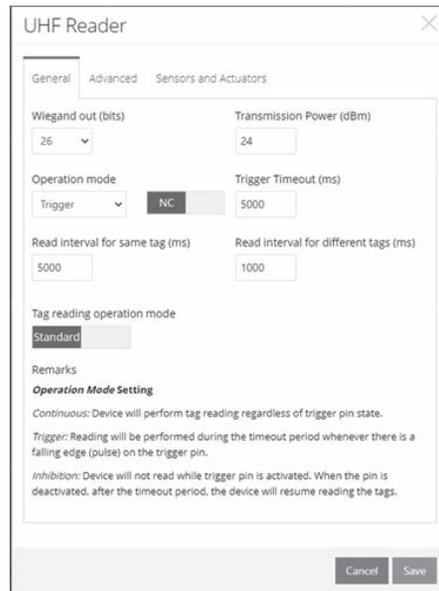
Click the UHF Reader icon in the second row on the screen.

If a trigger/vehicle sensor device is being used, change the Operation mode from Continuous to Trigger. Note that in most cases this will only be used when a sensor is in use.



Then set the contacts to NC. The contact needs to close for the trigger to function.

Set the Trigger Timeout time (in milliseconds) to set how long the reader is active when triggered.

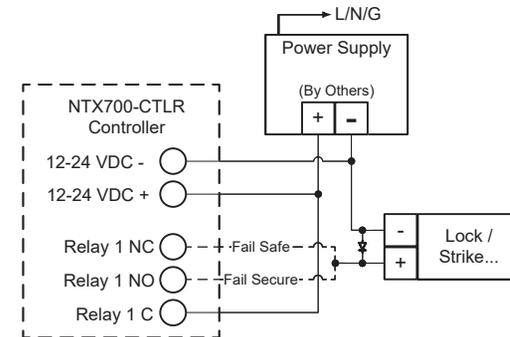


Set the Reader interval for same tag (in milliseconds) to a time that prevents the same credential from being read too frequently (anti-tailgating).

Set the Read interval for different tags (in milliseconds) to a time before the reader can read a different tag.

4. General Controller Settings

Example Connection of Electric Lock via Relay:



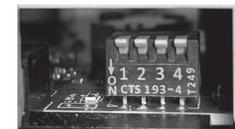
Relay Connections:

- Left side of NTX700-CTLR: Reader 1 / Door 1 - Relay 1 is access; Relay 2 is multifunction
- Right side of NTX700-CTLR: Reader 2 / Door 2 - Relay 3 is access; Relay 4 is multifunction

DIP Switch Configuration:

- All switches come factory defaulted to OFF

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



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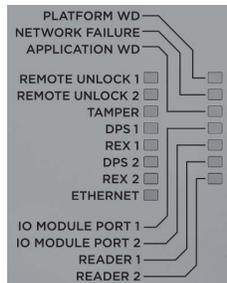
USB Connector:

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. This port is for temporary service connection only.



Status LEDs:

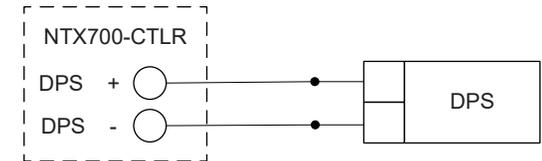
LEDs as shown in the figure below indicate normal system activity. They have the following functions:



Label	Function
PLATFORM WD	Flashes in normal operation
NETWORK FAILURE	Off = normal operation
APPLICATION WD	Flashes in normal operation
REMOTE UNLOCK 1	ON = REM UNLK activated
REMOTE UNLOCK 2	ON = REM UNLK activated
TAMPER	ON = not shorted (tamper active)
DPS 1	ON = DPS not shorted (door open)
REX 1	ON = REX shorted (REX active)
DPS 2	ON = DPS not shorted (door open)
REX 2	ON = REX shorted (REX active)
ETHERNET	Network activity
IO MODULE PORT 1	unused
IO MODULE PORT 2	unused
READER 1	ON = Reader connected
READER 2	ON = Reader connected

Door Position Sensor (DPS):

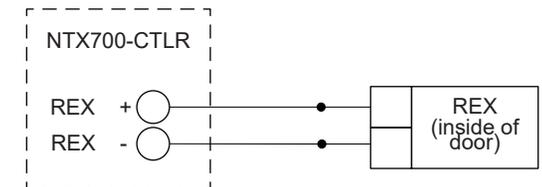
- DPS + / DPS -
- Shorted = Door Closed
- Not Shorted = Door Open



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.

Request to Exit (REX):

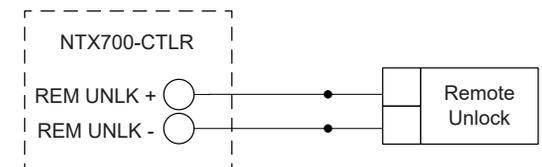
- REX + / REX -
- Shorted = REX



When the door/DPS is opened with the REX in a Non-Shorted state, a DOOR FORCED OPEN notification is sent. If the REX is Shorted prior to the door/DPS opening, then a DOOR OPEN MANUALLY notification is sent.

Remote Unlock:

- REM UNLK + / REM UNLK -
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.

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5. Technical Specifications

Controller (NTX700-CTLR):

Dimensions	6.46" x 5.51" x 1.02" (164mm x 140mm x 26mm)
Input Voltage	12VDC to 24VDC +/- 10%
Maximum Input Current	1.9 A, 550mA excluding readers and USB
Memory & Clock Backup Battery	3 volt Lithium, type CR2032, mfr: Panasonic
Host Communication	Ethernet: 10Base T/100Base-TX Micro-USB port (2.0)
Output	Four relays, Form-C with dry contacts: Normally open contact (NO): 5 A @ 30VDC resistive Normally closed contact (NC): 3 A @ 30VDC resistive
Reader Power	12VDC +/- 10%, 500 mA maximum each reader
Data Inputs	TTL compatible or 2-wire RS-485
Circuit Requirement	All circuits are power limited/Class 2
Operating Temperature	32°F (0°C) to 158°F (70°C)
Operating Humidity	0% to 93% relative humidity non-condensing
OSDP version	2.1.5 or later
Firmware version	7.0.0 or newer
Unlock Time	Default: 5 seconds Configurable from 3 seconds to 300 seconds via Cloud Software interface
Warranty	1 year
Certifications	Certified FCC Part 15
UL294 Access Control Ratings:	Destructive Attack Level 1, Line Security Level 1, Endurance Level 4, Standby Power Level 1

For NTX700-CTLR UL294/ULC60839-11-1 Installation:

- The updaters/readers shall be UL294/ULC60839-11-1 Grade 1 minimum or ULC S319 grade 1 minimum listed and installed in accordance with NFPA70, National Electrical Code and CSA C22.1 - Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.
- NTX600 series and NTX900 Series Readers have not been evaluated by UL.
- Communication circuits are not suitable for outside wiring as covered by article 800 in NFPA 70.
- The NTX700-CTLR is intended to be installed in its own separately UL294 or UL50/50E Listed Enclosure (NEMA Type 1 IP30 Enclosure) that the minimum size is 14 Gauge Steel minimum thickness, with minimum dimensions of 9.84L in. x 7.87W in. x 5.91D in. with separately Listed tamper switch, and keyed cylinder lock.
- The NTX700-CTLR is intended to be mounted/installed inside a protected and secured area, indoor, dry locations only.
- Duress feature not provided.
- The electronic access control system shall not prohibit the free exit granted by other emergency systems (e.g. Fire, Environmental)
- Following a total loss of power, the controller will automatically re-start.
- The controller employs a card reader.
- OSDP protocol only evaluated by UL.
- Only card credential/token option employed.
- Jumpers J5 and J9 are not used.

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Updater (NTX700 Series):

Base Part Number	NTX712	NTX742	NTX752
Typical Read Range	Seos, MIFARE Classic, MIFARE DESFire EV1/ EV2, & ISO14443A Single Technology Cards - 1.6 to 4 in (4 to 10 cm) HID/AWID Proximity, Indala Proximity, EM Proximity & 125 kHz Single Technology Cards - 2.4 to 4 in (6 to 10 cm)	Seos, MIFARE Classic, MIFARE DESFire EV1/ EV2, & ISO14443A Single Technology Cards - 1.6 to 4 in (4 to 10 cm) HID/AWID Proximity, Indala Proximity, EM Proximity & 125 kHz Single Technology Cards - 2.4 to 4 in (6 to 10 cm)	Seos, MIFARE Classic, MIFARE DESFire EV1/ EV2, & ISO14443A Single Technology Cards - 1.6 to 4 in (4 to 10 cm) HID/AWID Proximity, Indala Proximity, EM Proximity & 125 kHz Single Technology Cards - 2.4 to 4 in (6 to 10 cm)
Mounting	Suited for mullion-mount door installation or any flat surface mounting	Suited to mount and cover single gang switch boxes with a slotted mounting plate for alternate back-box spacing	Suited to mount and cover single gang switch boxes with a slotted mounting plate for alternate back-box spacing
Dimensions (width x length x depth)	1.77" x 4.78" . 0.77" 45mm x 121.5mm x 19.5mm	3.15" x 4.78" . 0.77" 80mm x 121.5mm x 19.5mm	3.15" x 4.82" . 0.96" 80mm x 122.5mm x 24.5mm
Product Weight (Pigtail)	3.35 oz (95g)	4.94 oz (140g)	N/A
Product Weight (Terminal Strip)	2.65 oz (75g)	4.23 oz (120g)	5.82 oz (165g)
UL Ref Number	20	40	40T
Operating Voltage Range	12 VDC		
Color	Black bezel with silver trim baseplate		
Current Draw	NSC: 60mA Peak: 250 mA Max. Avg: 70mA IPM: 45mA	NSC: 65mA Peak: 250 mA Max. Avg: 75 mA IPM: 45mA	NSC: 90mA Peak: 250 mA Max. Avg: 120 mA IPM: 75mA
Operating Temperature	-31° to 150°F (-35° to 65°C)		
Operating Humidity	0% to 95% relative humidity non-condensing		
Environmental Rating	UL294 Outdoor and Indoor rated, IP65		
Transmit Frequency	125 kHz, 13.56 MHz, and 2.4 GHz		

Updater (NTX700 Series) (continued):

Base Part Number	NTX712	NTX742	NTX752
13.56 MHz (NFC) Credential Compatibility	Seos, iCLASS SE, iCLASS SR, iCLASS, MIFARE Classic, MIFARE DESFire EV1/ EV2, FeliCa & Contactless e-Purse Application Specification (CEPAS), Mobile Credentials powered by Seos (HID Mobile Access)		
2.4 GHz (Bluetooth) Credential Compatibility	Mobile Credentials powered by Seos (HID Mobile Access)		
Communications	Wiegand, Clock-and-Data and RS485 Half Duplex Open Supervised Device Protocol (OSDP)		
Panel Connection	Pigtail (18in / 0.5m) or Terminal Strip		Terminal Strip
Certifications	UL294/cUL (US), FCC Certification (US), IC (Canada), CE (EU)		
Security Rating	EAL5+ Certified Secure Element Hardware		
Housing Material	UL94 V0 Polycarbonate		
Warranty	Limited Lifetime		

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Parking Reader (NTX900 Series):

Base Part Number	NTX912	NTX942
Typical Read Range (UHF)	up to 12m	up to 15m
Mounting	Adjustable mounting clamp for pole installation allows for height and read angle adjustments	Adjustable mounting clamp for pole installation allows for height and read angle adjustments
Dimensions	10.83" x 10.83" x 2.76" 275mm x 275mm x 70mm	16.54" x 16.54" x 2.36" 420mm x 420mm x 60mm
Product Weight	2.82lb (1280g)	5.0lb (2270g)
Power Input	External 12V power supply (not included)	External 12V power supply (not included)
Total Consumption	3.5W (300mA) rated	3.5W (300mA) rated
Communication:		
Ethernet	1 native 10/100Mbps Ethernet port	
RS-485	1 native RS-485 port with 120 Ohm termination	
RS-232	1 native RS232 port	
Output Relay	1 relay up to 30VAC / 5A	
Wiegand Output	1 native output	
Additional Inputs	Trigger and Door Sensor Inputs	
Operating Temperature	-4°F to 104°F (-20°C to 40°C)	
Operating Humidity	0 to 95% non-condensing	
Environmental Rating	IP65	
Certifications	FCC Certification (US)	

6. NTX600 Series Wiring

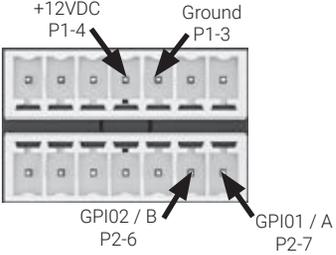
Pigtail Version



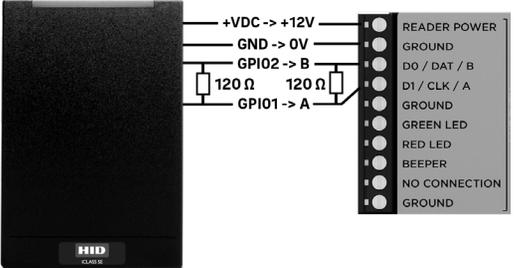
Terminal Strip Version



BEEP		GPI01
GRN		GPI02
GND		OC/TMPR
+VDC		DATA1/CLK
DRAIN		DATA0/DATA
RED		GPI03
HOLD		GPI04



Label on Controller Connector Block	Reader Terminal Strip Connections	Reader Pigtail Wire Colors
+12V	+VDC (P1-4)	Red
A	GPI01 (P2-7)	Red/Green
B	GPI02 (P2-6)	Tan
0V	GND (P1-3)	Black



NOTE: NTX600 Series Updaters have not been evaluated by UL for use with the NTX700-CTRL Controller.

If you are an ASSA ABLOY ACCENTRA Certified Integrator and have any questions regarding these instructions, please contact 1-800-810-9473 or techsupport.accentra@assaabloy.com for details. If you are a system user, please contact your Certified Integrator with any questions.

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