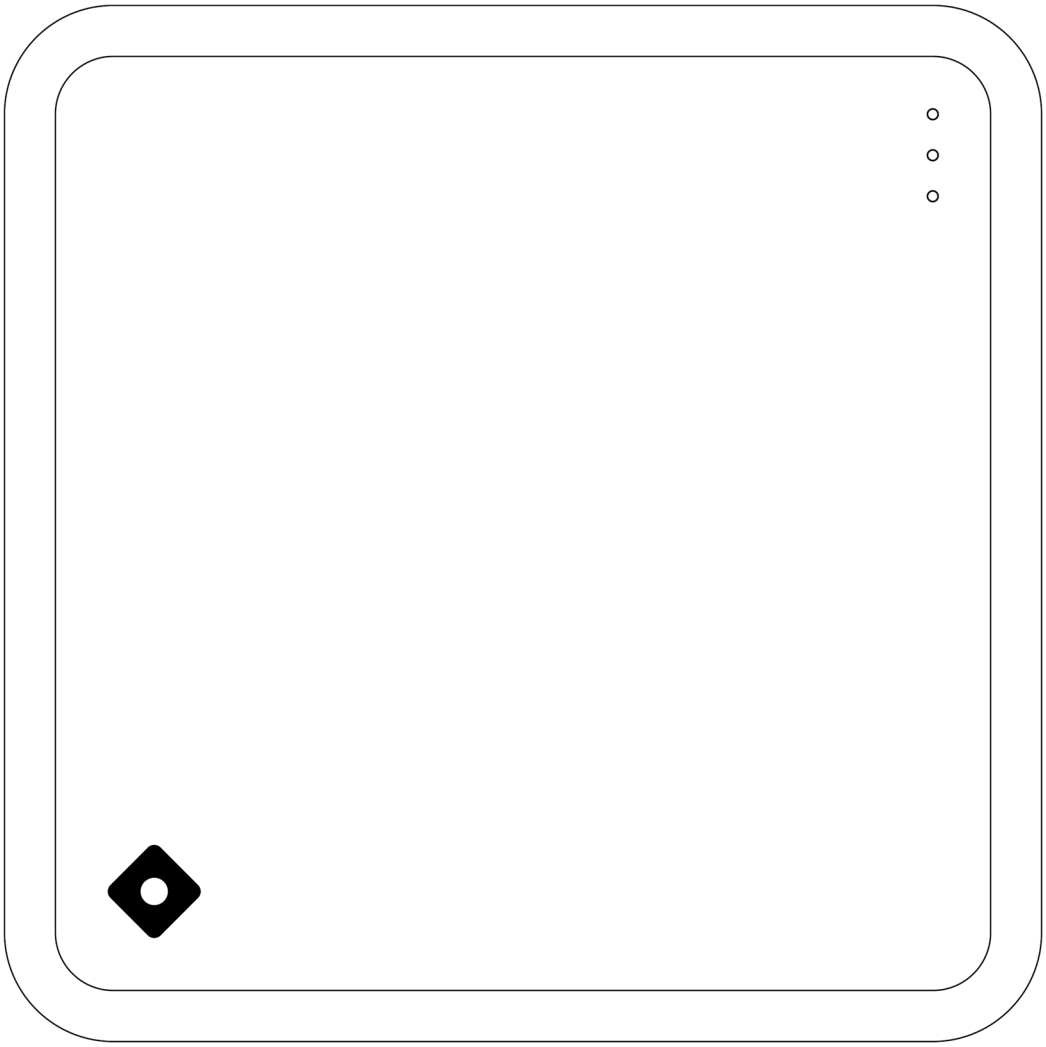
DC10 1-Door Controller

User Manual



260826 REV EA.2

Contents

Date	Revision	Notes
8/26/2026	EA.2	Early Access Release

Service and installation shall only be performed by trained personnel. All wiring methods used shall be in accordance with the National Electrical Code, ANSI/NFPA 70. All wiring of the DC10 shall be performed prior to connecting power. Power should be removed before attempting to service the DC10 or any of its connected devices.

Rhombus Systems, Inc. shall not be liable for any damage, injury, loss, or other consequences arising from installation, operation, or maintenance not performed in accordance with the instructions set forth in this user manual.

EN: WARNING messages will be fully boxed as shown here. Failure to follow instructions may result in damage to the DC10 or other connected components.

FR: Les encadrés « **AVERTISSEMENT** » apparaîtront comme illustré ici. Le non-respect des instructions peut entraîner des dommages au DC10 ou à d'autres composants connectés.

UL 294 Compliance

The DC10 1-Door Controller is intended for indoor operation.

The equipment is defined for these performance levels:

Attack Level: Level I
Endurance Level: Level I
Line Security Level: Level I
Standby Power Level: Level I

FACP, Rhombus App, and Cloud-managed functionalities are not evaluated by UL.

The DC10 shall be powered by UL 294 / ULC 60839-11-1 listed PoE/PoE+/PoE++ or by an external UL 294 / ULC 60839-11-1 listed AC to 12 VDC power supply capable of 3.75 A. All connected devices and wiring must be UL/ULC Listed.
The following power supplies were used during UL testing:

PoE Supply: Altronix NetWay4BT UL File: BP5864, E329542
AC/DC 12 VDC Power Supply: Altronix AL400ULX UL File: S4707

ULC 60839-11-1 Compliance

Grade assignment: Grade 1
Environmental class: Indoor
The DC10 shall be installed within a protected or controlled area, as defined in ULC 60839-11-1.

UL 62368-1 Compliance

This device is for indoor PoE networks only. Do not route cables outdoors.

FCC Compliance (USA)

FCC Part 15 Statement
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.

FCC Caution
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement (Class B)
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 residential installations. 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 or more 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 Exposure Statement
This equipment complies with FCC 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 your body.

ISED Compliance (Canada)

EN: This device complies with Industry Canada's license-exempt RSSs. 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.

Radiation Exposure Statement
This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 20cm between the radiator and your body.

FR: 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.

Déclaration d'exposition aux radiations
Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 20 cm entre le radiateur et votre corps.

Europe
CE Declaration of Conformity: Rhombus declares that the radio equipment type DC10 is in compliance with Directive 2014/53/EU.

WEEE Disposal: The symbol on the product signifies that the product must be disposed of separately from ordinary household wastes at its end of life. Please accurately dispose of this product at your local community waste collection/recycling center.

United Kingdom
UKCA Declaration of Conformity: Rhombus declares that the radio equipment type DC10 is in compliance with the Radio Equipment Regulations 2017.

Australia / New Zealand
RCM Compliance: This device complies with the requirements of the ACMA (Australian Communications and Media Authority) for safety and electromagnetic compatibility (EMC)

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

AVERTISSEMENT : Ce produit contient des produits chimiques, y compris du plomb, reconnus par l'État de Californie comme pouvant causer le cancer, des malformations congénitales ou d'autres troubles de la reproduction. Pour plus d'information, consultez le site www.P65Warnings.ca.gov.

Registration

Getting Started
To get started, scan the QR code or visit http://www.rhombus.com/setup/dc10.

Support
For more information, go to www.rhombus.com/support or email us at support@rhombus.com.

Specifications

General
- 1-Door Controller
- Rhombus Cloud Connected
- Secured Outer Cover
- Dimensions:
  190 x 190 x 41 mm [7.5 x 7.5 x 1.7 in]
- Weight:
  1.25 kg [2.76 lb]
- 10-Year Warranty

Connectivity/Power
- 4.3 W Power Consumption (Standby)
- PoE Input:
  PoE, 15.4 W: IEEE 802.3af
  PoE+, 30 W: IEEE 802.3at
  PoE++, 60 W: IEEE 802.3bt (Type 3)
  PoE++, 90 W: IEEE 802.3bt (Type 4)
- PoE Output:
  PoE: IEEE 802.3af
  PoE+: IEEE 802.3at
- DC Input:
  12 VDC, 3.75 A
- BLE for Mobile Registration
- Rhombus Sensor Network
- USB 2.0:
  250 mA @ 5 VDC
- Wi-Fi and BLE (100 m with line-of-sight)

Environmental
- Operating Temperature:
  32 ˚F - 122 ˚F (0 ˚C - 50 ˚C)
- Operating Humidity:
  5% - 85% relative humidity, non-condensing
- IK08

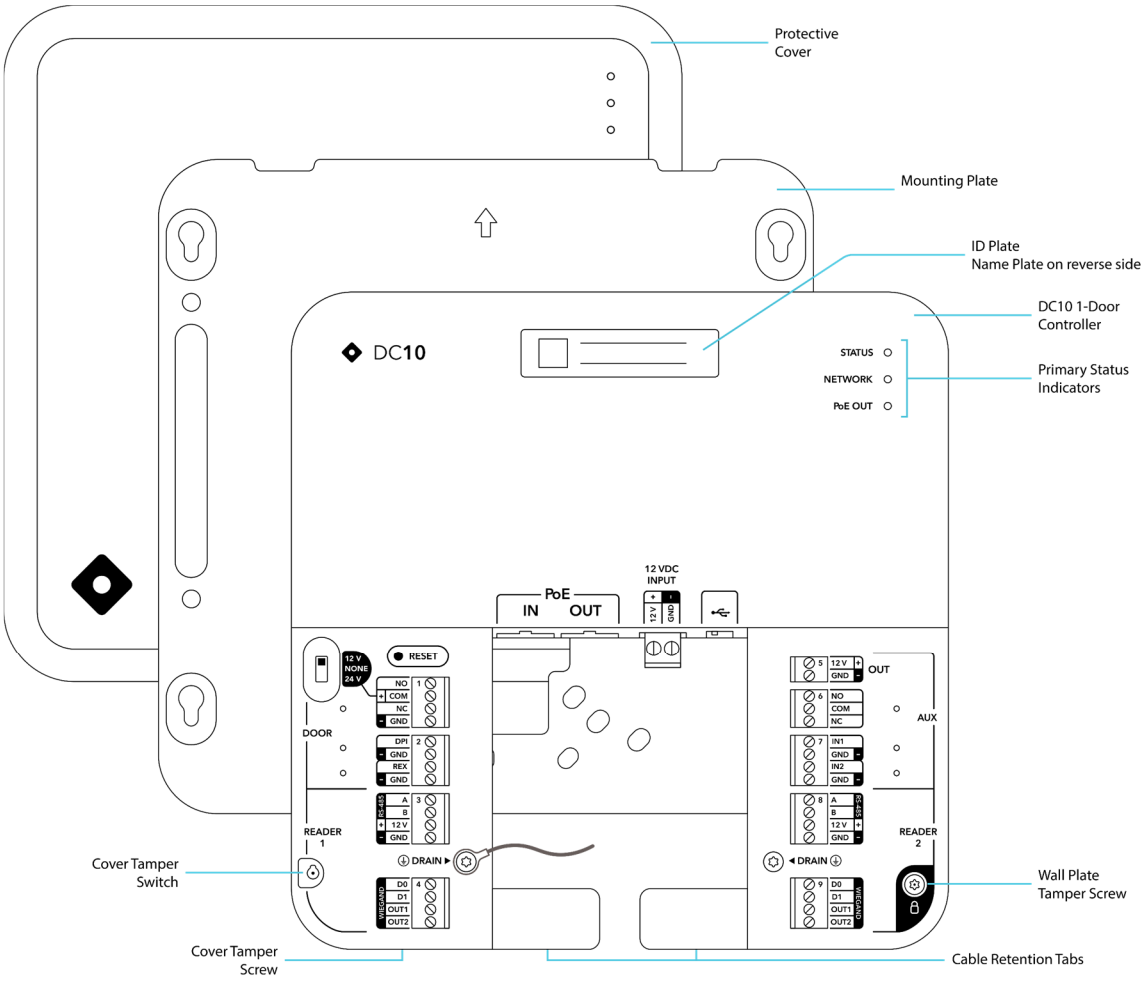
Hardware
- (1) Wet or Dry Form C Door Lock Relay:
  830 mA @ 12 VDC*,
  415 mA @ 24 VDC, or
  3 A @ 24 VDC (resistive) dry contact
- (1) Dry Form C Auxiliary Relay:
  3 A @ 24 VDC (resistive) dry contact
- (1) Power Supply for Auxiliary Devices:
  100 mA @ 12 VDC*
- (4) Inputs (Supervised or Unsupervised):
  (1) REX, (1) DPI, (2) Auxiliary
- (2) Power Supplies for Readers:
  540 mA @ 12 VDC*
- (2) RS-485 Reader Ports
- (2) Wiegand Reader Ports
- Accelerometer/Cover Tamper Sensors
- Status LEDs

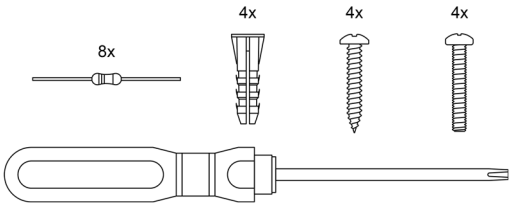
Compliance
- FCC, IC, NDAA, UL 294, UL 2043, UL 62368-1, ULC 60839-11-1, CE, UKCA, RCM

* See DC Input Mode (UL 294 Special Application) in the Appendix for 12 VDC supply usage when the DC10 is powered with the 12 VDC Input.

DC10 Overview

The DC10 is a 1-Door Access Controller that is cloud-managed, secure by default, and built for enterprise scalability. The DC10 pairs seamlessly with Rhombus cameras and door readers, as well as existing door hardware.





Included in the box

- Controller
- Cover
- Mounting plate
- #6-32 x 1” Machine screws (for common outlet boxes), 4 pcs
- #8 x 1” Wall screw and anchors for wallboard mounting (wood, drywall, masonry), 4 pcs
- T10 Security screwdriver for tamper screws
- 4.7 kΩ Supervision resistors, 8 pcs

Tools required

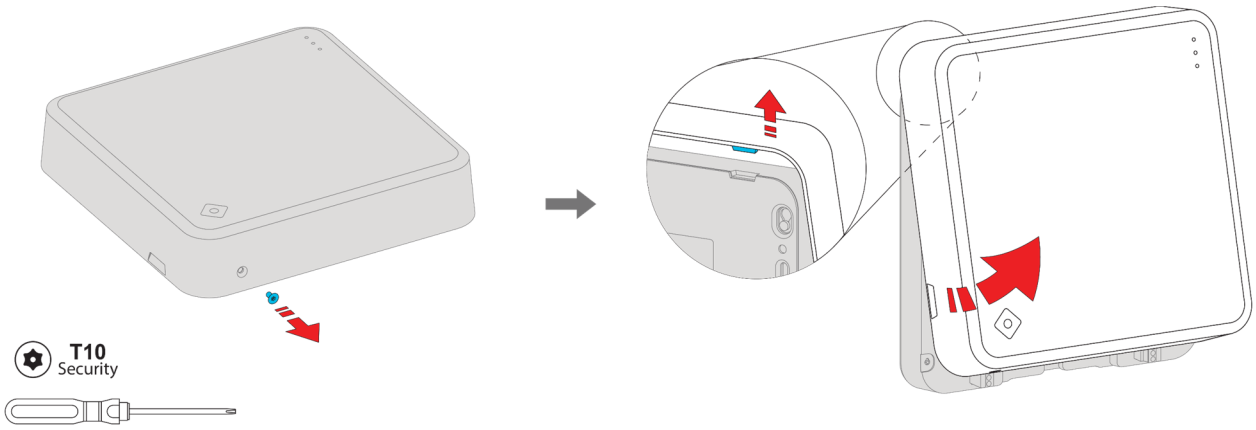
- Precision flathead screwdriver (3/32” or 2.5 mm) for terminal block screws
- Pen or pencil for marking drill locations
- Power drill and 1/4" [6 mm] drill bit for wall anchors or 1/8” [3mm] drill bit for screw pilot hole

Mounting Instructions

The DC10 is intended for indoor use only and can be wall, ceiling, or plenum mounted. The controller should be installed in a secured area.

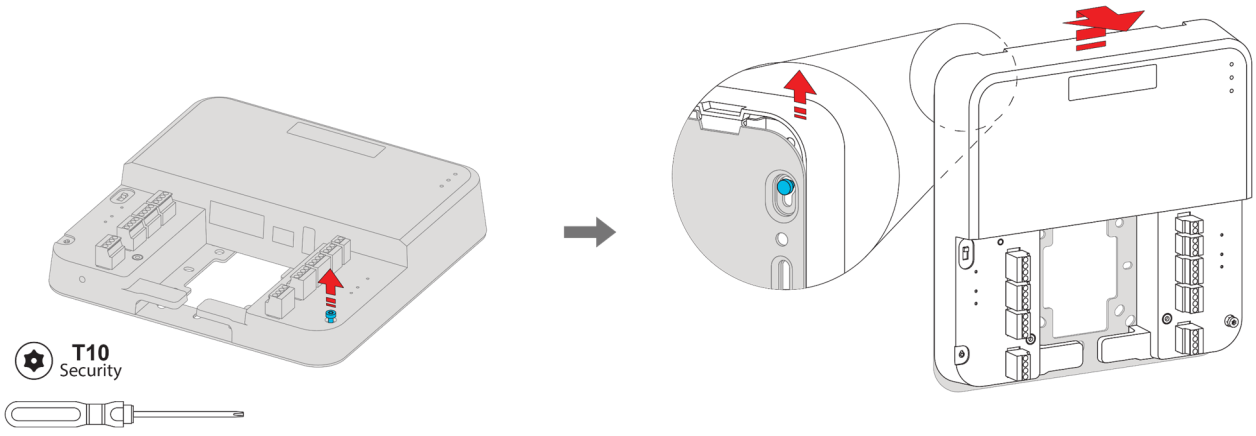
Removing/Assembling the DC10 Cover

Using the included T10 Security Screwdriver, unscrew and remove the cover tamper screw at the corner of the cover, closest to the Rhombus logo. With the screw removed, swing the bottom edge of the cover forward (away from the controller) and lift the cover up and away from the controller clearing the retention hooks over the back edge. Assembly of the cover follows the same steps in reverse order.



Removing/Assembling the Mounting Plate

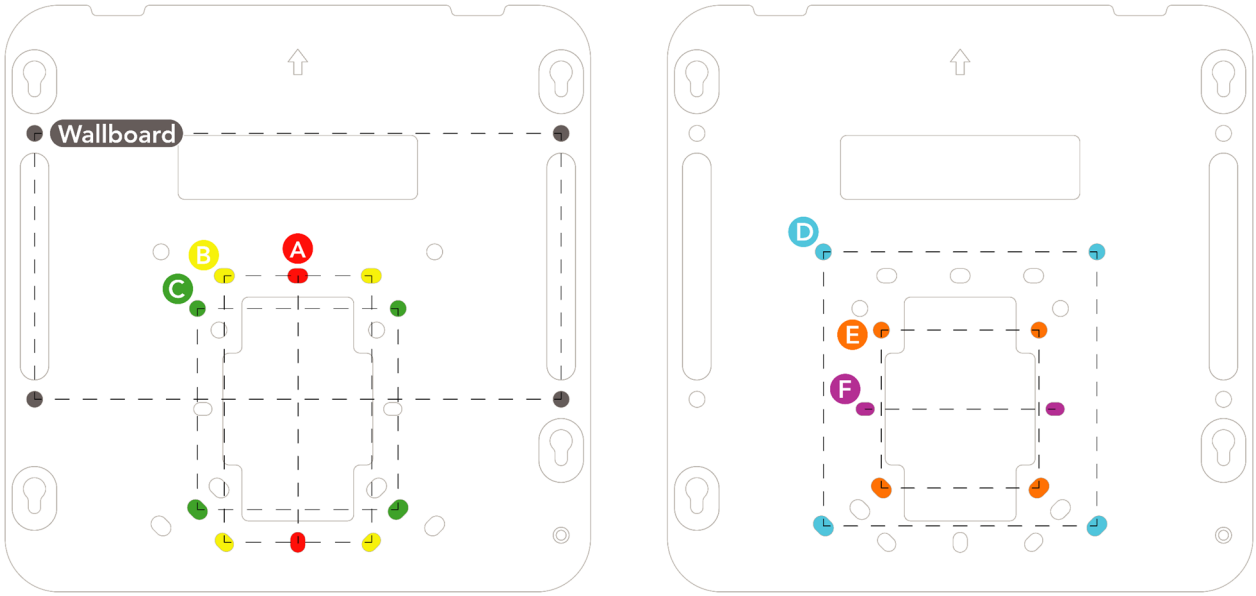
Using the included T10 Security Screwdriver, release the mounting plate tamper screw (captive) at the bottom right face of the controller. With the screw released, slide the controller up and away from the mounting plate to disengage the locking posts from the keyhole slots of the mounting plate. Assembly of the mounting plate follows the same steps in reverse.



Installing the Mounting Plate
The included #6-32 machine screws can be used with many standard 1-gang and 2-gang wall boxes. The DC10 mounting plate is compatible with the following standard wall outlet boxes:

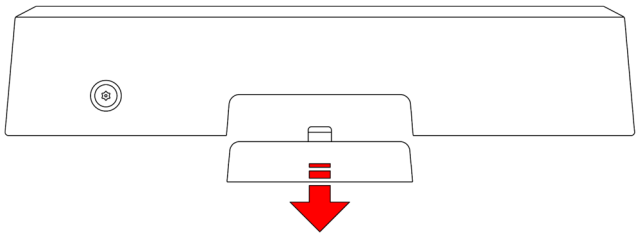
- A 1-Gang
- B 2-Gang
- C Round (4 in)
- D Square (4 in)
- E Round (3-1/2 in)
- F European Style

In situations where passing wire through a wall is not practical, the DC10 can be mounted directly to a wall or ceiling using the included wall screws and anchors (wood, drywall/plaster, and masonry).



Cable Management
The DC10 mounting plate includes a wire access hole for routing all wiring through a wall into an outlet box. This is the most secure mounting option that both conceals and protects wiring from the environment.

If through-wall wiring is not practical, such as with structural beams or masonry walls, the cable access tab can be removed to route cabling through the external cover. Be sure to tuck wiring under the cable retention tabs prior to assembling the outer cover to the DC10. In this case, it is recommended to use a cable raceway to secure and protect wiring.



Recommended Wiring

Wiring methods used shall be in accordance with the National Electrical Code, ANSI/NFPA 70. Consult Federal, State and, local authorities for applicable regulations relating to access control service and installation. Service and installation should only be performed by trained personnel.

All wiring of the DC10 should be performed prior to applying power. Power should be removed before attempting to service the DC10 or any of its connected devices.

WARNING: Failure to remove power prior to servicing the DC10 may result in damage to connected devices.

AVERTISSEMENT : Le fait de ne pas couper l'alimentation avant toute intervention sur le DC10 peut endommager les dispositifs connectés.

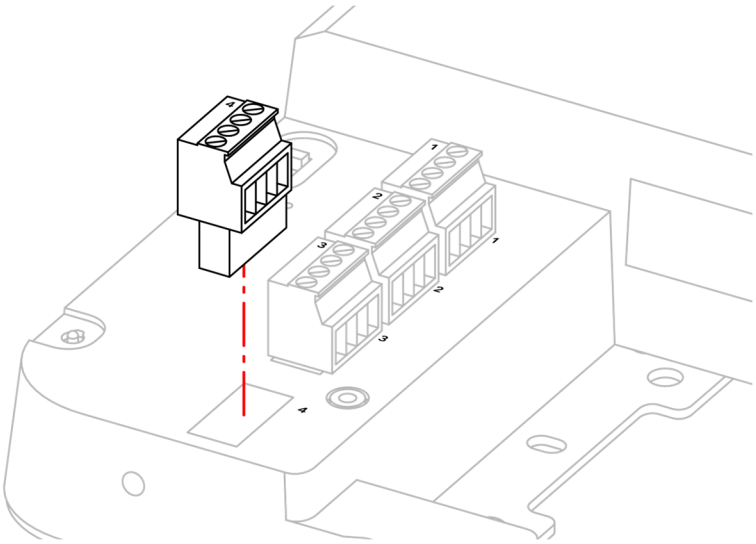
Wire Type and Size

	Wire Type	Twisted Pair	Shielded	Minimum Size	Maximum Length
12 VDC Input Power	Solid or Stranded	–	–	18 AWG	9.8 ft
Lock Power	Solid or Stranded	–	–	18 AWG	300 ft
Reader Power	Solid or Stranded	–	Recommended	18 AWG	100 ft
Reader Data	Solid or Stranded	Recommended	Recommended	24 AWG	300 ft
Inputs	Solid or Stranded	–	Recommended	24 AWG	300 ft

100 m total for PoE IN + PoE OUT Ethernet cable limit.

Removeable Wire Connectors

Wire connectors can be removed to facilitate wiring. The connectors are marked with numbers corresponding to their location on the controller.



Readers

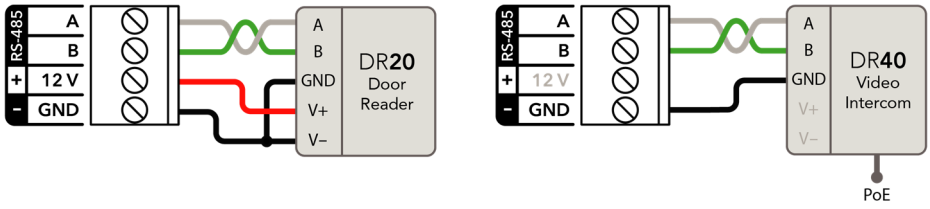
The DC10 is compatible with Rhombus Readers, certified third-party readers using OSDP protocol over RS-485, and third-party legacy Wiegand readers.

The 12 VDC continuous power supply in the **READER** sections can provide up to 540 mA each. When powering the DR20 by the DC10, the V- and GND wires should be electrically bonded together at the reader before wiring to the **[GND]** terminal of the DC10. The DR40 should only be powered by PoE or an external DC supply as its power requirements exceed the 12 VDC reader power supply of the DC10.

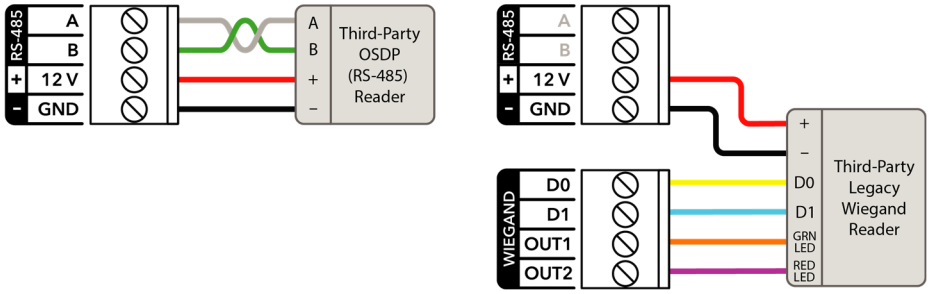
See *DC Input Mode (UL 294 Special Application)* in the Appendix for reader supply usage when the DC10 is powered with the 12 VDC Input.

Readers should be wired in one of the following ways based on the type of reader:

Rhombus Readers

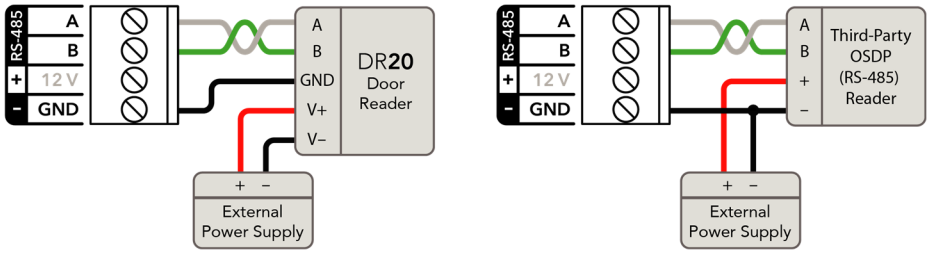


Third-Party Readers



Using External Power Suppliers with Readers

In the case that an RS-485 reader is not powered by the DC10, a ground wire must still be wired back to a **[GND]** terminal on the **READER** section of the DC10.

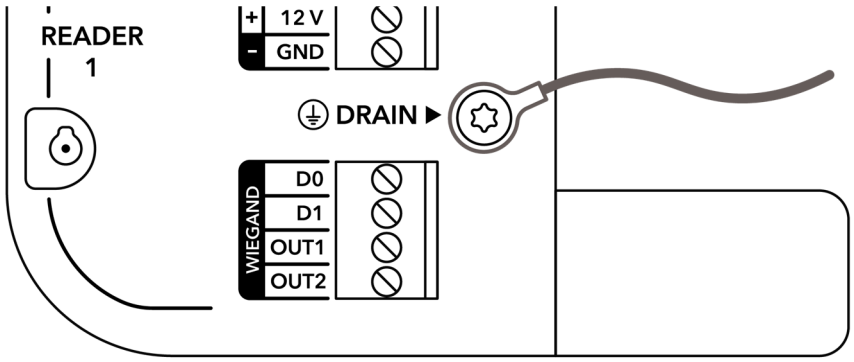


Drain Wire Connection

A drain wire screw is located between the RS-485 and Wiegand terminals on both sides of the controller. Connect the drain wire from the reader cable to each of the corresponding drain wire screws. Leave the reader end of the drain wire unconnected.

CAUTION: To ensure robust electromagnetic immunity (EMI), the reader drain wire and earth ground wire must be connected to the DC10 drain screws marked with the earth ground symbol.

ATTENTION : Pour assurer une bonne immunité électromagnétique (EMI), le fil de drain du lecteur et le fil de terre doivent être reliés aux vis de drain du DC10 marquées du symbole de terre.



Relays

DC10 is equipped with two Form C relays with Normally Open (NO) and Normally Closed (NC) contacts that can be used to control door locks and auxiliary devices.

The door lock relay in the **DOOR** section can be used as a wet (powered) relay to distribute power to connected locking hardware. Control the supply voltage of the wet relay by setting the voltage selector switch (adjacent to the door relay) to the corresponding value of either **[12V]** or **[24V]**. The door relay supply is limited to 10 W, 830 mA at 12 VDC and 415 mA at 24 VDC.

Setting the voltage selector switch to **[NONE]** will disable the door relay power supply, returning that relay to a dry (unpowered) state. The auxiliary relay in the **AUX** section can only be used as a dry relay. The dry relays can switch loads of up to 3 A at 24 VDC (resistive) per relay.

For all electromagnetic lock (maglock) installations, Rhombus recommends adding a REX inline with the power supply to the lock, isolated from the DC10, as a measure of redundancy. This is a building code requirement in most regions.

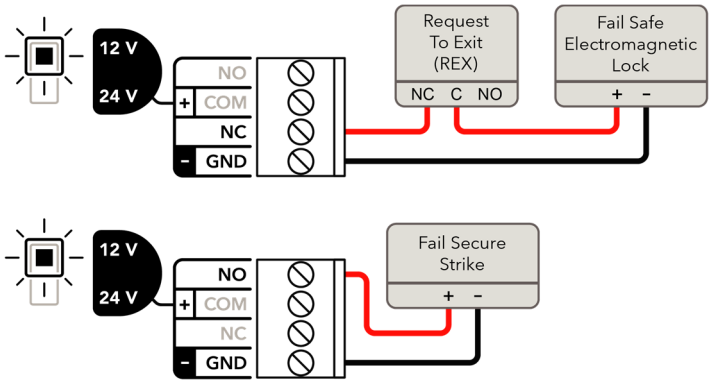
See *DC Input Mode (UL 294 Special Application)* in the Appendix for relay supply usage when the DC10 is powered with the 12 VDC Input.

Before powering the DC10, check that the appropriate voltage **[12 V]**, **[NONE]**, or **[24 V]** for your end device is selected using the voltage selector switch.

WARNING: Failure to select the appropriate voltage for the door power supply may result in damage.

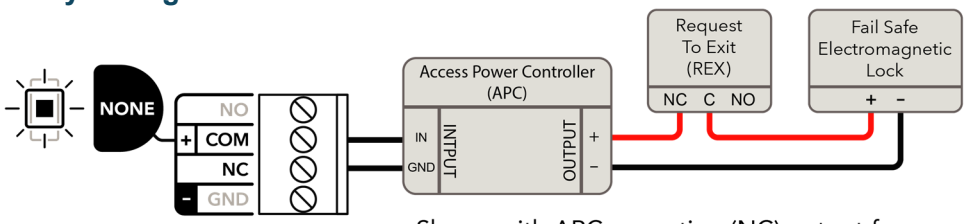
AVERTISSEMENT : Le choix d'une tension inappropriée pour l'alimentation de la porte peut entraîner des dommages.

Wet Relay Wiring

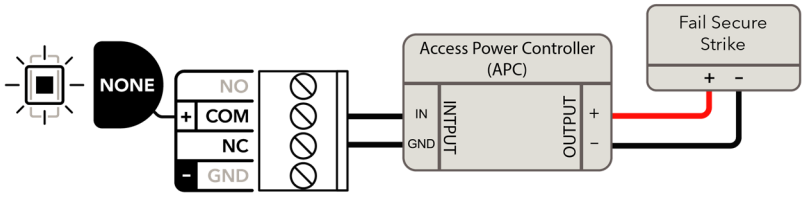


Dry relay wiring example is shown on the next page.

Dry Relay Wiring



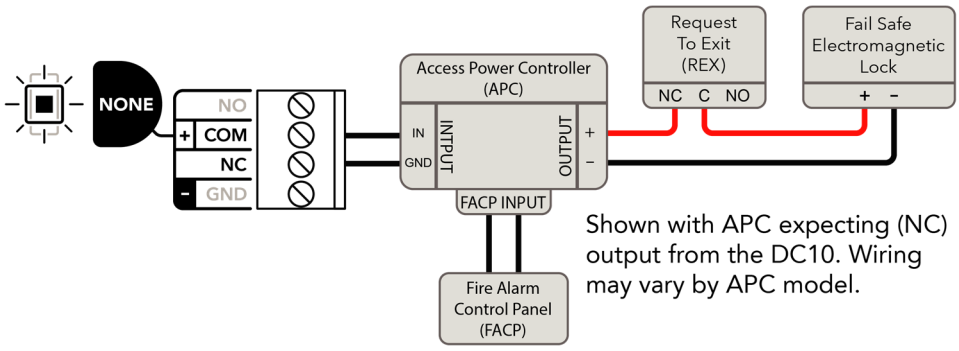
Shown with APC expecting (NC) output from the DC10. Wiring may vary by APC model.



Fire Alarm Control Panel Applications

With the addition of an Access Power Controller (APC), the DC10 can be deployed in applications with an existing Fire Alarm Control Panel (FACP) by means of the door relay in the dry state, with the voltage selector switch set to **[NONE]**. In the event of a fire alarm, the FACP sends a signal to the APC, which immediately disconnects the power supply of all locking hardware connected to the APC. In the absence of power, doors that are wired as fail-safe will unlock.

Once the alarm has been dismissed, the APC will restore power to locking hardware. Refer to the documentation provided with the APC and follow all manufacturer instructions related to your specific application. Consult Federal, State, and local authorities for applicable regulations related to access control integration with fire alarm systems.



Shown with APC expecting (NC) output from the DC10. Wiring may vary by APC model.

DPI, REX, and Auxiliary Inputs

DC10 inputs detect Normally Open (NO) or Normally Closed (NC) states of contact-type devices.

Door Position Indicator (DPI) and Request to Exit (REX) inputs are in the **DOOR** section. By default, triggering a configured REX input will unlock the associated door.

Two auxiliary inputs labeled **[IN1]** and **[IN2]** in the **AUX** section, are available for contact-type inputs from devices such as intercoms or intrusion alarm panels and can be used to trigger events in the Rhombus Console.

To connect a device to an input, simply connect either of the two output wires of the end device to the terminals of the input. The default state (NO or NC) can be configured through the Rhombus App or Console.

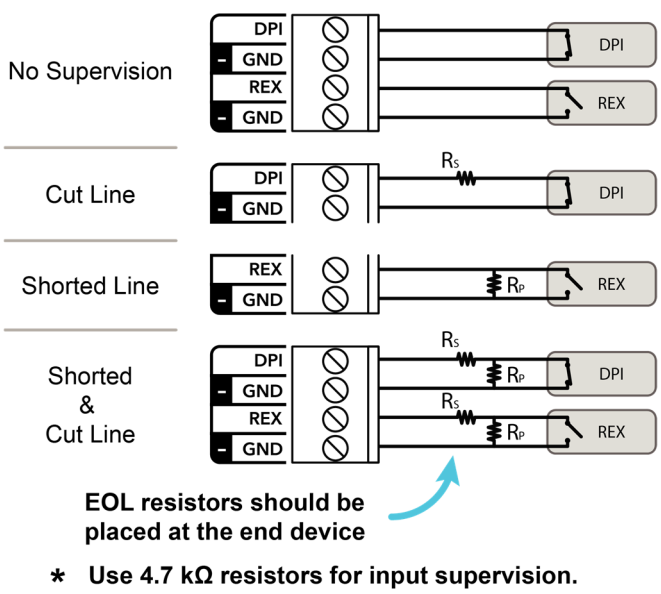
Some devices, such as motion REX, have 4 wires and require a continuous power supply to operate. See the section on Auxiliary Power Supply for more detail on powering other devices.

Supervised Inputs

All inputs including REX, DPI, IN1, and IN2 support single and double end-of-line (EOL) supervision configurations with the use of user installed EOL resistors.

Physical wire runs of input circuits are monitored for faults including cuts, shorts, and invalid resistance. When a fault is detected, events are created in the Rhombus Console.

EOL resistors should be placed as close as possible to end devices to maximize coverage. Eight 4.7 kΩ resistors are included with the DC10. For double EOL supervision, the series resistor (R_S) must be placed between the DC10 and the parallel resistor (R_P), as depicted below.



Network

The DC10 supports 10/100BASE-TX ethernet and Wi-Fi. For networking over ethernet, use a CAT5 or CAT6 cable with RJ45 connector and plug the network connected ethernet cable into the RJ45 jack labeled **PoE IN**. For networking over Wi-Fi, the DC10 can be configured during registration with the Rhombus App.

PoE Passthrough

DC10 supports PoE and Network Passthrough to a device connected to **PoE Out**. IEEE 802.3af/at is supported depending on the type of power provided. See the table in the Power section below for PoE Supply requirements.

Power

The DC10 can be powered by PoE/PoE+/PoE++ or an external 12 VDC power supply capable of 3.75A. Only one power supply is supported at a time. Ensure that all other connections have been made and terminal contacts are screwed firmly in place prior to powering on.

Power with PoE

Connect a PoE powered cable into the RJ45 jack labeled **PoE IN**. The table below lists the feature availability based on the PoE type provided. An example power budget calculation is available in the appendix.

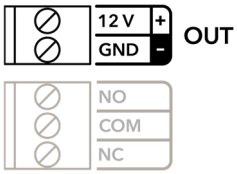
	PoE++, 90 W 802.3bt (Type 4)	**PoE++, 60W** 802.3bt (Type 3)	**PoE+, 30 W** 802.3at (Type 2)	**PoE, 15.4 W** 802.3af (Type 1)	**DC IN, 45W** 12 VDC
Reader Power 1	•	•	•	•	•
Reader Power 2	•	•	—	—	•
Lock Power	•	•	•	—	•
USB Port Power	•	•	—	—	•
Power Out Aux	•	•	•	—	•
PoE Passthrough	PoE+	PoE	Data Only	Data Only	Data Only

Enabled • Disabled –

Power with 12 VDC

An external 12 VDC power source can be connected to the DC10 module by the removeable terminal block marked **12 VDC INPUT**. Ensure the power supply is unpowered prior to connecting to the DC10. After connecting the power supply to DC10, power can be restored. The **STATUS** Indicator will illuminate on boot up. See the Status Indicators section for more detail on LED meaning. See *DC Input Mode (UL 294 Special Application)* in the Appendix for reader / relay / auxiliary supply usage when the DC10 is powered with the 12 VDC Input.

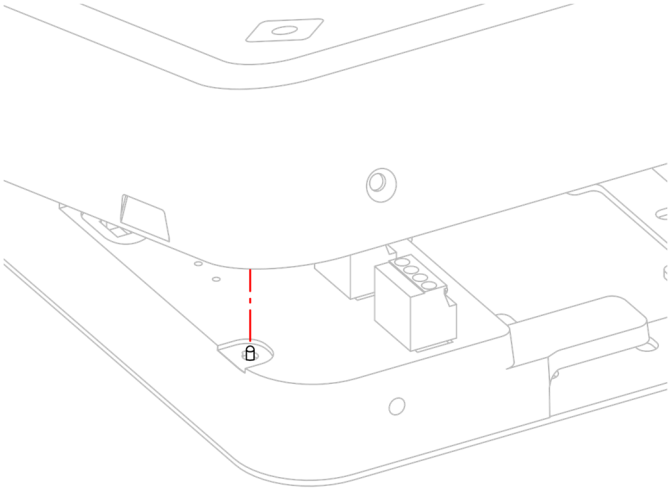
Auxiliary Power Supply



The 12 VDC continuous power supply in the AUX section can be used to provide up to 100 mA to auxiliary devices. See *DC Input Mode (UL 294 Special Application)* in the Appendix for auxiliary supply usage when the DC10 is powered with the 12 VDC Input.

Tamper

An onboard accelerometer and cover sensor will detect significant movement of the DC10 and removal of the outer cover respectively. Activity detected by either of the sensor types can be configured to generate an event in the Rhombus Console. Before powering up the DC10, ensure cables are not obstructing the cover sensor.



USB

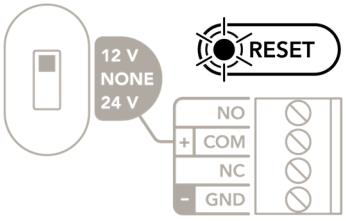
A USB 2.0 port is provided for future feature expansion. USB power is limited to 250 mA @ 5 VDC.

Troubleshooting

The device serial number (S/N) and Media Access Control (MAC) address are listed on the front and back of the DC10. Record this information with the installation location to facilitate registration and support.

Reset Button

Press the RESET button when indicated by the LED meaning tables below or when instructed by a technical support representative to reset the DC10.



Status Indicators

Device Status, Network, and PoE Out states can be determined by the multicolor LED indicators on the front of the DC10. See the table below for the LED color and pattern meaning of each device state.

STATUS
NETWORK
PoE OUT

STATUS

White Pulse	Starting up
Blue Blink	Waiting for registration
Blue Solid	Normal operation
Red Solid	Insufficient input power
Fast Red Blink	System error
Amber Solid	Lockdown active
Amber Solid + Blue Blink	Lockdown test active

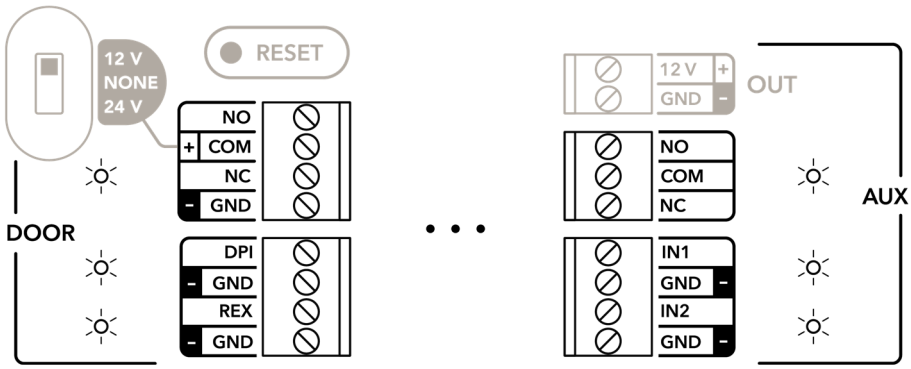
NETWORK

Blue	Normal operation - Ethernet only
Green	Normal operation - Wi-Fi only
Blue Solid+ Green Blink	Normal operation - Wi-Fi & Ethernet
Green/Red Blink	WiFi: failed to connect to WiFi network
Green Fast Blink	WiFi: setting change applied
Red Slow Blink	Error connecting to internet
Amber Slow Blink	Error connecting to rhombus server
Blue Solid + Red Blink	Fallback: Ethernet ok, WiFi failed to connect
Green Solid + Red Blink	Fallback: WiFi ok, ethernet failed to connect

PoE OUT

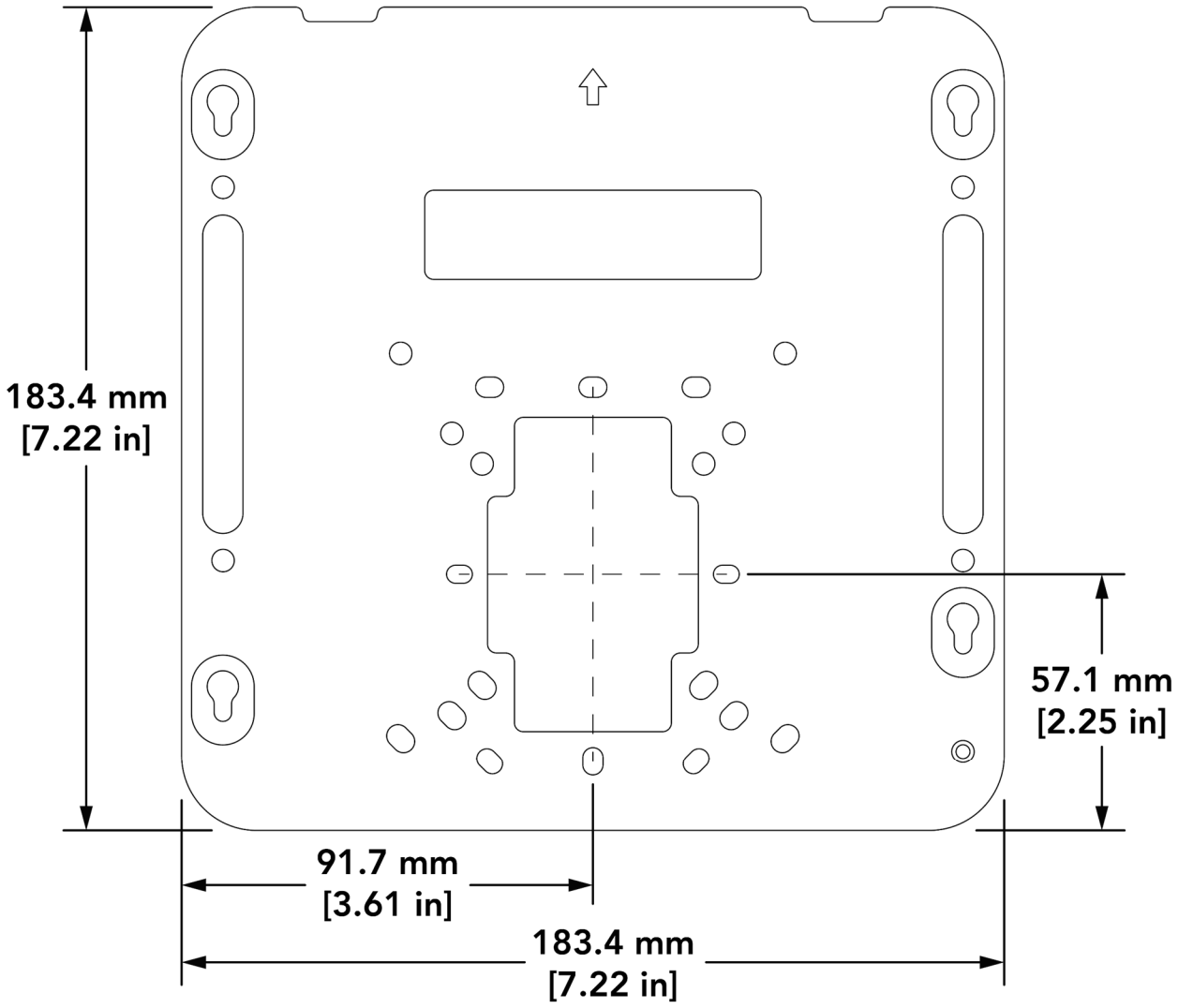
Red Dim	PoE & data disabled
Off	PoE Out data only
Green Dim	PoE Out enabled, PoE
Blue Dim	PoE Out enabled, PoE+

In addition to the device status LEDs, each relay and input on the DC10 has a white status LED indicator. When triggered (relay energized or input circuit closed) the corresponding device status indicator will illuminate. With input supervision enabled, trouble states (cut/shorted circuit or invalid resistance) will be represented by a blinking action.



Appendix

Mounting Plate Dimensions



Power Budget Calculation Example

	Max Allowable Power Consumption	
DC10 Controller (W)	4.3	
Reader Power 1 (W)	6.5	Supported Reader (1)
Reader Power 2 (W)	6.5	Supported Reader (1)
Lock Power (W)	10.0	Locking Hardware (1)
Aux Power Out (W)	1.2	Motion Sensor (1)
PoE at & Data Passthrough (W)	30.0	Camera (1)
Total Power Usage (W)	58.5	

Inefficiency and Aging Loss (W)	11.7	85% Efficiency with 5% Aging
Total Power Usage (W) After Loss Adjustment	70.2	

Power Input: IEEE 802.3bt (Type 4) PoE++ 90 W

Power Limit at PD (W)	71.3	90 W at PSE, 71.3 W at PD with 100 m cable length
Power Budget Margin (W)	1.1	

(1) Including cable loss

DC Input Mode (UL 294 Special Application)

When the DC10 is powered with the 12 VDC input, the wet relay, reader, and auxiliary power supplies are bypassed from the input power supply with electronic load switch protections. The output rating is 11.77 VDC to 12 VDC. Measurements of the output voltages are highly recommended to ensure compatibility in installation of the devices intended to be powered by these ports. The following devices have been tested and found to be compatible with this mode:

- Rhombus Door Reader (DR20)
- Rhombus Video Intercom (DR40)
- Wavelynx Ethos Keypad Reader (KEYPAD-WLA)


rhombus