

Trillium® and ADVANCE Trillium® Locks

User Manual

1 Product Overview

This document covers Trillium®, ADVANCE Trillium®, and Trillium® with DirectKey™ lock product specification, operation, maintenance, and regulatory information.

1.1 Optional DirectKey™ Technology

Trillium with DirectKey and ADVANCE Trillium series locks are available with a DirectKey module (Bluetooth®), a mobile key solution. With a hotel-provided (or Onity DirectKey) smartphone app, guests can download their assigned key to access their room and other access-controlled areas.



1.2 Advanced Credential Security

Trillium RFID locks include the option to use MIFARE Plus® technology, an enhanced credential security for RFID cards.

1.3 Features

- Compatible with Onity HT22 and HT24 electronic locking systems
- Supports MIFARE Classic®, MIFARE Plus, MIFARE Ultralight®, and MIFARE Ultralight C cards
- Optional on-board DirectKey module provides secure wireless communication of credentials from a smartphone to a locking device using Bluetooth Smart communications
- Non-volatile memory records last 500 openings including date, time, and card used
- NXP CRYPTO1 or AES-128 card encryption

1.4 General Product Specifications

These general product specifications depend on the features of the Onity lock.

Basic Specs	
Reading technologies	Contactless RFID (ISO14443A, NFC)
Size	Trillium: 11.48x3.1x1.82 inch, 292x79x46mm, ADVANCE Trillium: 11.48x3.1x1.82 inch, 292x79x46mm
Power supply	4 alkaline 1.5-volt AA batteries, or lithium batteries (for non-fire rated doors only)
Environmental Ratings	
Operating temperature	Alkaline batteries: -20C to +55C, Lithium batteries: -40C to +75C
Humidity	95% non-condensing (at 55C)
ESD	16kV indirect, 8kV direct contact



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DirectKey				
Bluetooth	Bluetooth Core Specification V4.0 (Bluetooth Smart)			
Rating	Unless noted, all specification are at 25°C and Vcc = 3.0V			
Interface	UART, 115200 Baud Rate, No start bits			
RFID				
Card types	MIFARE Classic		MIFARE Plus	
	MIFARE Classic 1K	MIFARE Ultralight		MIFARE Plus X 2K
	MIFARE Classic 4K	MIFARE Plus SE		MIFARE Plus X 4K
	MIFARE Classic EV1 1K	MIFARE Plus S 2K		MIFARE Ultralight C
	MIFARE Classic EV1 4K	MIFARE Plus S 4K		
Frequency	13.56 MHz			
Basic security protocol	ISO/IEC 14443A			
Mag Stripe				
Card types	Lo Co and Hi Co			

1.5 Referenced Documentation

For additional information (as required) go to www.ebusiness.onity.com to view marketing and technical documentation.

Nomenclature	Document Number
ADVANCE Trillium RFID ANSI Installation Instructions	10104366P1
ADVANCE Trillium RFID BLA Installation Instructions	10104367P1
ADVANCE Lock with DirectKey Module Retrofit Instructions	10103996P1
Onity HT Series Installation Manual Locks and Safes	Rev. 11/03/05
MIFARE Configuration Instructions	10103998P1

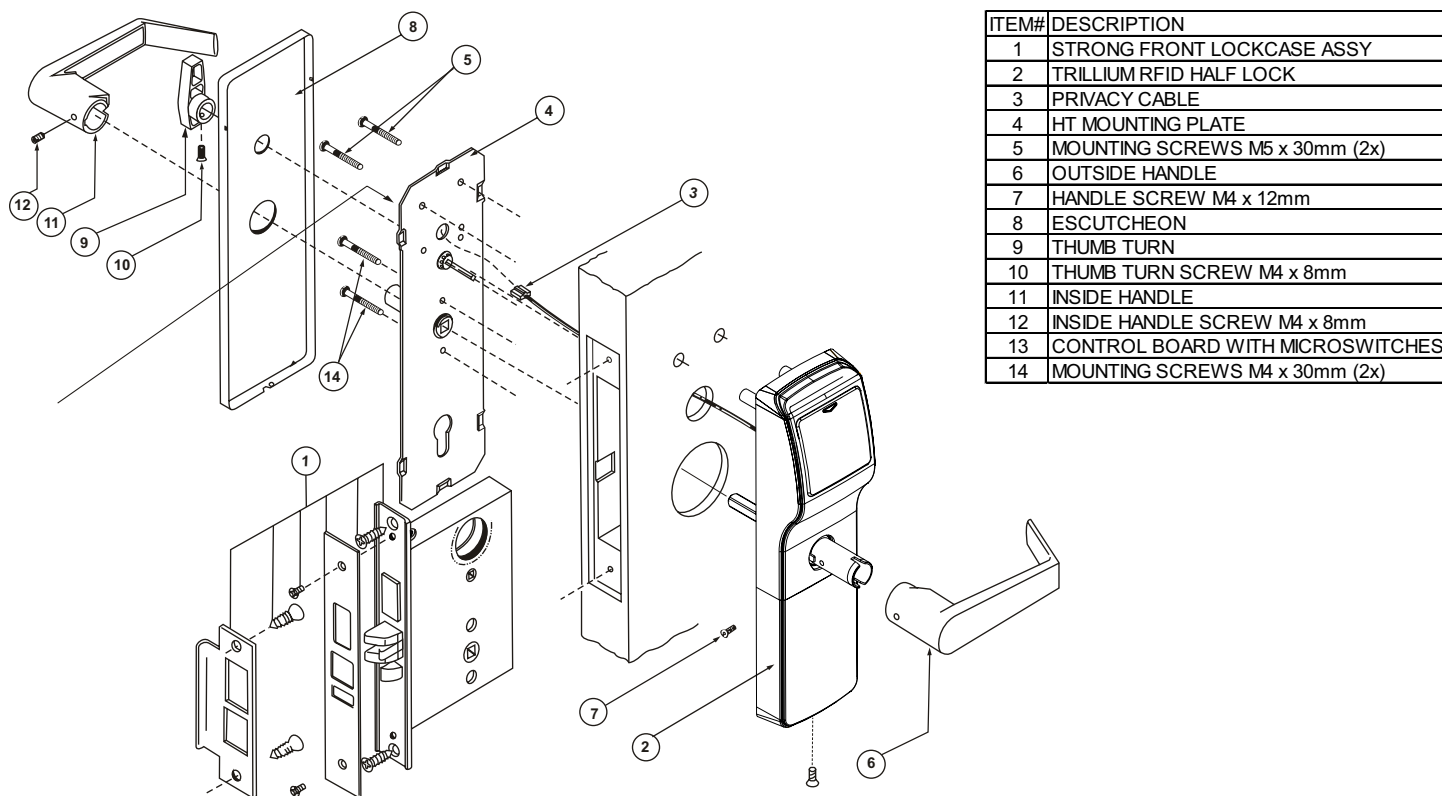
1.6 Light Indicators

Light	Description
 Green	The door is unlocked, enter the room.
 Red	The card is invalid, inserted incorrectly, left in the lock too long, user is not enabled for the lock, or card may be cancelled by a new sequential number.
 Delayed Red	The card cannot be read, may be blank, have an invalid format, or there is a bad readhead.
 Alternating Red and Green	There is no ownership, the card was used before the activation date or time, the card is expired, or the card was used outside it's specified time zone.
 Flashing Green	The door is unlocked and in <i>Office</i> mode.
 Flashing Red	It is out of time shift, the privacy was thrown, or a blocking card was used in the lock.
 Solid Green and Red	It is in <i>Security Mode</i> and requires a PIN.

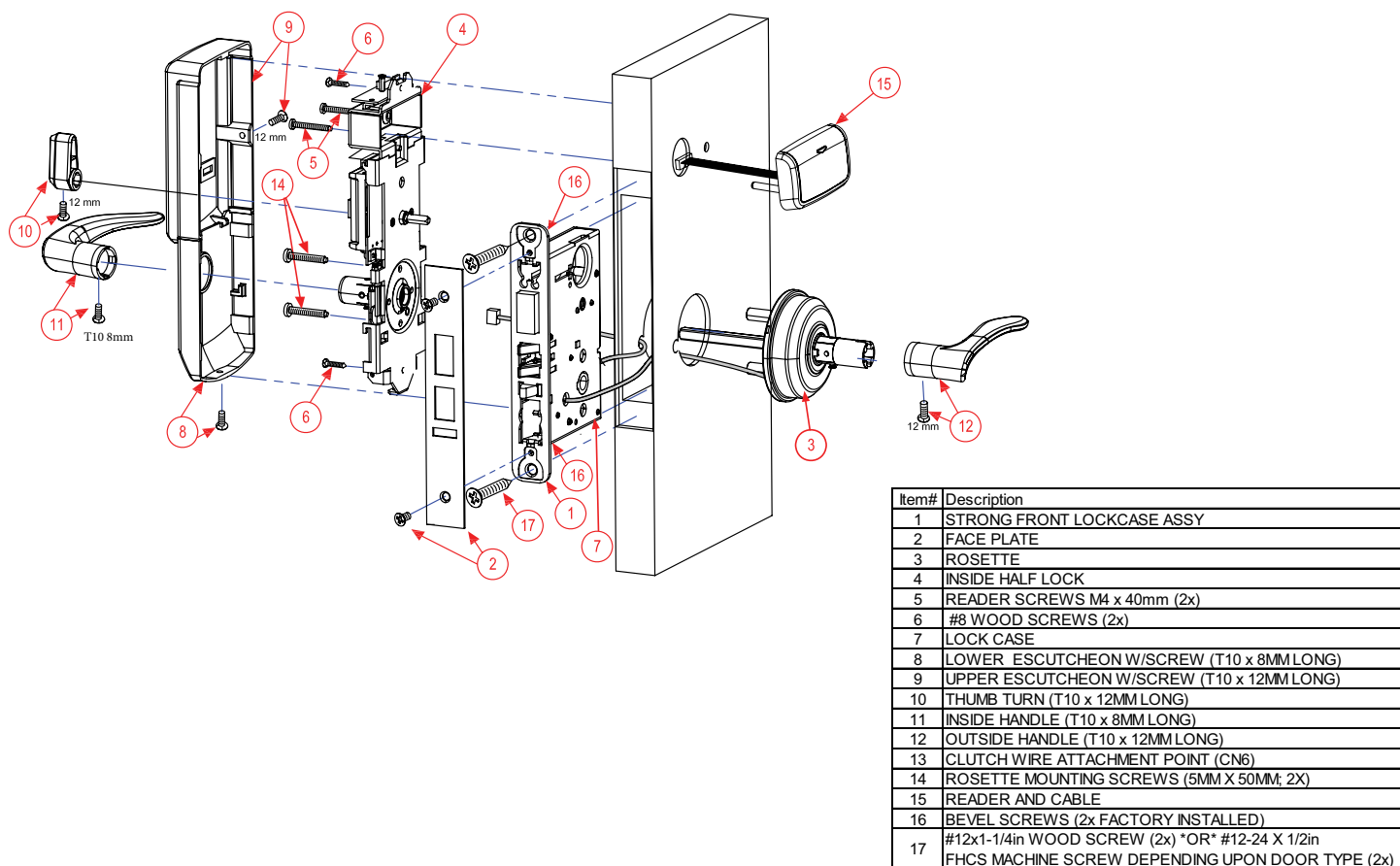
1.7 Technical Support

For technical support call 1-800-248-6189 or contact your sales representative.

2 RFID/Magnetic Stripe Lock Assembly Diagram



3 ADVANCE Trillium RFID Lock Assembly Diagram



4 Open the Lock

Open with DirectKey

Step	Action
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Note: Download the DirectKey™ mobile app or hotel hosted DirectKey app from your mobile app store.

1. Open the DirectKey app.
2. When close to the room, tap the room number.
3. When the green LED light turns on, open the door.

Open with RFID

1. Present the RFID card to the lock.
2. When the green LED light turns on, open the door.

Open with Mag Stripe

1. Insert the magnetic stripe card into the reader and remove.
2. When the green LED light turns on, open the door.

5 General Lock Maintenance

Step	Action
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Caution: Do not use harsh chemicals when cleaning the lock.

1. Visually inspect the lock, handle, privacy lock, and reader face for damage and replace as required.
2. Using a clean cloth, wipe down the lock exterior, handle, privacy lock, and reader face.

6 Battery Replacement

 **Warning!** Use only fresh, approved, high quality batteries with same type and rating. Never mix used and new batteries in the lock. Battery holders with signs of corrosion must be replaced. Dispose of all batteries as required by local ordinances, regulations, and/or the latest WEEE requirements.

Step	Action
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1. Remove battery cover.
2. Remove all batteries.
3. Insert the new batteries to match the polarity markings (+ and -).
4. Replace the battery cover.
5. Dispose of batteries per local and regulatory requirements.

7 Environmental Compliance

Onity Trillium and ADVANCE Trillium locks adhere to environmental regulations established by the current European Union (EU) RoHS, WEEE, and REACH directives.

Onity Inc. declares that our products and packaging do not contain any of the SVHCs, identified by EHCA, in any concentration above 0.1%, and hereby certify that its products are in full compliance with all aspects of Commission Regulation (EU) 2017/999 of 13 June 2017 amending Annex XIV to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

8 Certifications and Label

Certifications	Label Example
- FCC & IC - Directive 2014/30/EU (electromagnetic compatibility) - Radio Equipment Directive (2014/53/EU) - CE Certificate of Conformity under EN14846 (with euro 5470H and 5480H mortises) - BHMA 156.25 & BHMA 156.13 - DIN 18273 Certification (under testing) - UL10C (3 hours)	

9 Regulatory

The product is assigned a Regulatory Model Number. The Regulatory Model Number for Trillium and ADVANCE Trillium locks are listed below. Do not confuse this regulatory number with the marketing name or product part numbers.

Regulatory Model Number (RMN)	Lock Family Name	Description	Commercial Model Number (CMN)
10104679P1	Trillium	Trillium Magnetic Lock with DirectKey	10104331P1
		Trillium RFID Lock	10104332P1
		Trillium RFID Lock with DirectKey	10104333P1
10104680P1	ADVANCE Trillium	ADVANCE Trillium RFID Lock	10104334P1
		ADVANCE Trillium RFID Lock with DirectKey	10104335P1

Note: In the different models of this lock, all versions with an RFID radio include the same RFID radio design, while all versions with a Bluetooth radio (DirectKey) use the same Bluetooth radio design.

Regulatory Statements	
United States (FCC)	This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: - This device may not cause harmful interference. - This device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Canada (IC)	This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions: - This device may not cause interference; and - This device must accept any interference, including interference that may cause undesired operation of the device. Cet équipement est conforme à la (aux) norme(s) canadienne(s) d'exemption de licence RSS Industry Canada. Son opération est sujette aux deux conditions suivantes: (1) cet équipement ne provoquera aucune interférence et (2) cet équipement doit tolérer toute interférence pouvant provoquer une opération indésirable de l'équipement.
European Union (CE)	This Class B digital apparatus conforms to the requirements of the following EU directives: - Radio Equipment Directive (2014/53/EU) - WEEE Directive (2012/19/EC)
Brazil	"Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário."