

# KeyMaster<sup>®</sup>

## MOUNTING AND POWER/DATA CONNECTION

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## REVISION HISTORY

Date	Revision	Description	Author
8 Feb 2017	001	Initial Draft	Steven Scott
23 Feb 2017	002	Added Appendix A and B	Steven Scott
28 Jul 2017	1.0	Updated and ready for general release	Steven Scott

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## Introduction

KeyMaster® is an electronic key locker, designed and built by PoolCar® to integrate with the PoolCar® asset booking and management application.

There are three KeyMaster® models, 12-key, 25-key and 49-key. Each unit consists of the following main components:

- Powder-coated steel cabinet with an electronic door strike and manual key lock.
- A 7-inch touchscreen.
- A RFID tag reader.
- An internal lockable door, fitted with slots to accommodate proprietary fobs, which are locked in by electromagnetic solenoids.
- Inside is a computer unit with Ethernet data port, UPS with a 12-volt battery and IEC C14 Type E mains power socket.

## Purpose and Audience

The purpose of this document is to provide information to the installer of KeyMaster electronic key lockers.

The assumed audience is expected to be someone with the required skills to securely mount the KeyMaster on a solid structure (such as a wall) so that it can be used without risk of becoming detached and potentially cause injury or damage.

A qualified electrician is required to provide power for the unit to be connected and so this document is not intended to instruct the reader on how to perform such tasks. Likewise, for data cabling, work should be carried out by qualified personnel.

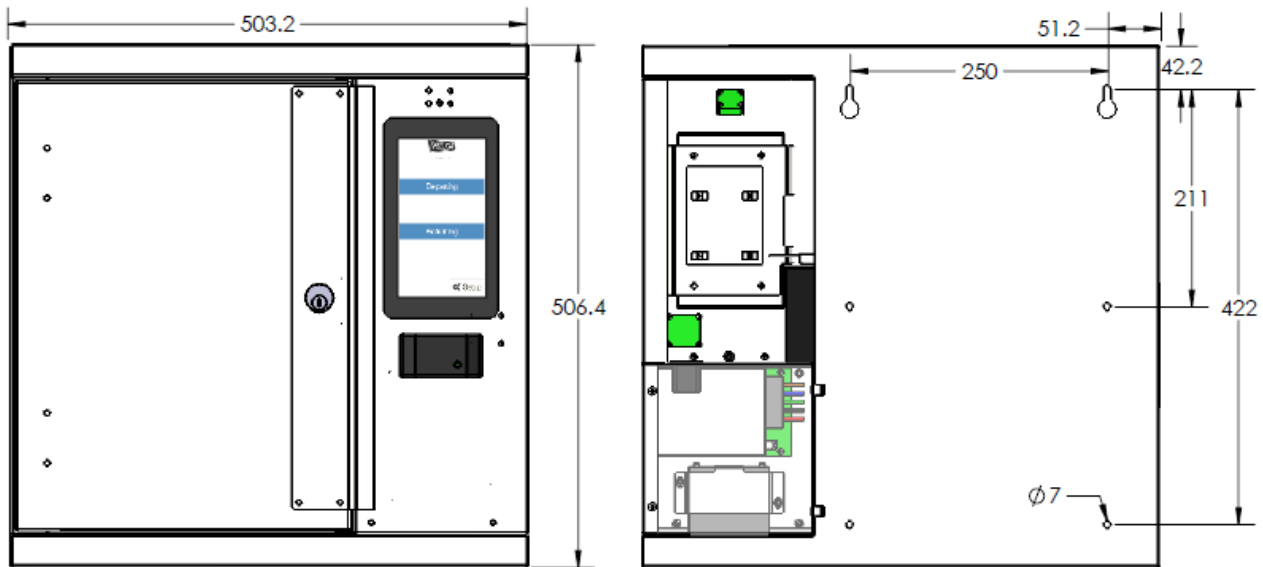
## Power Specifications

Input power	100-240Volt AC @ 50-60Hz
Output power	12Volt DC (15% tolerance). 5 Amp
UPS battery	Sealed maintenance-free rechargeable battery. 12V 2.9Ah/20HR Standby use: 13.6V - 13.8V Cycle use: 14.4V – 15.0V Max. initial current: 0.87A

## Size and Weight

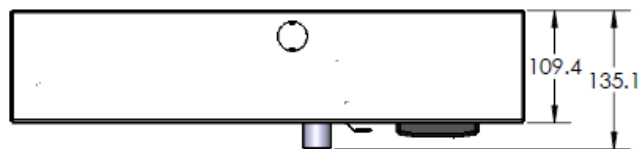
12 and 25-key KeyMaster®

Approximate weight: 15 kilograms (33 pounds)



Front view.

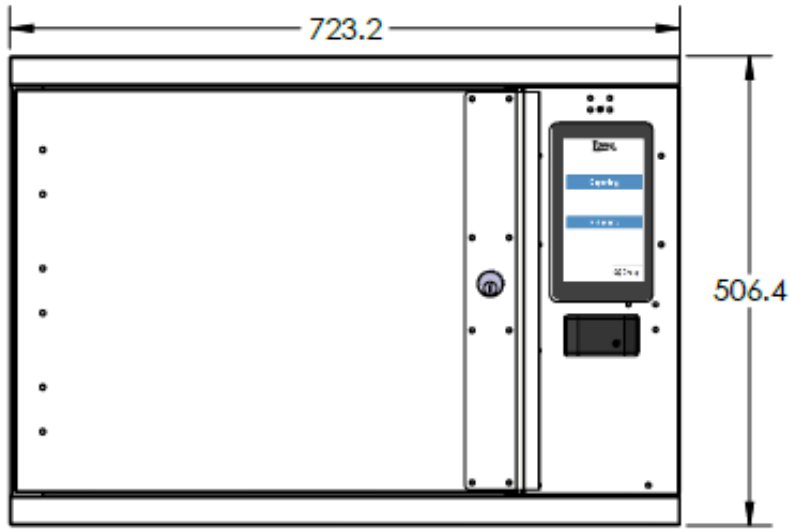
Rear view and mounting point locations:



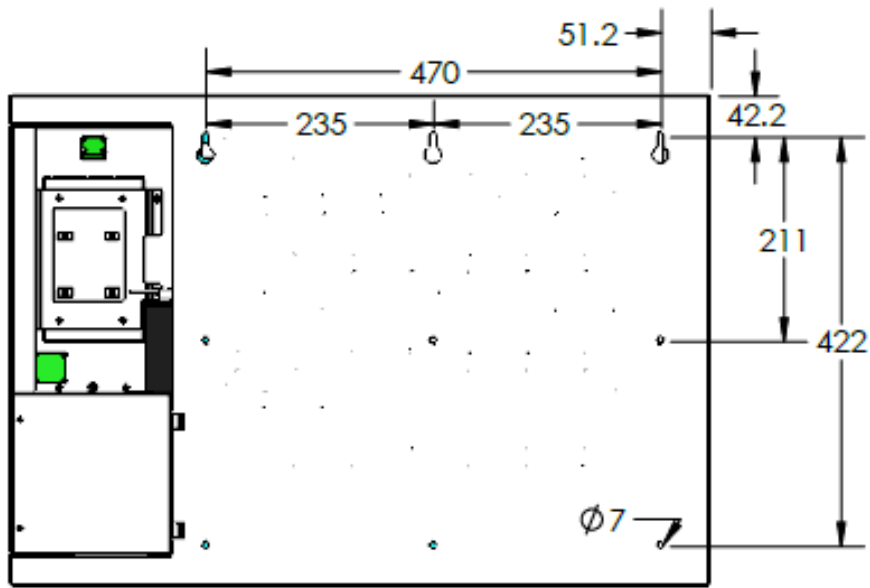
Top view:

# 49-key KeyMaster®

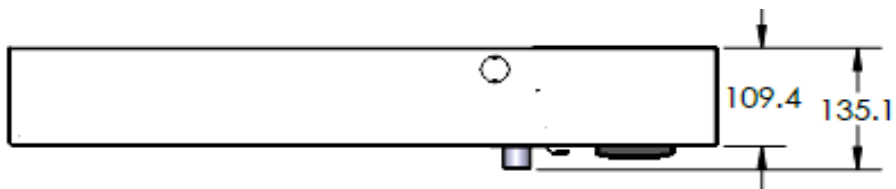
Approximate weight: 20 kilograms (44 pounds)



Front view



Rear view and mounting point locations



Top view

# Connections

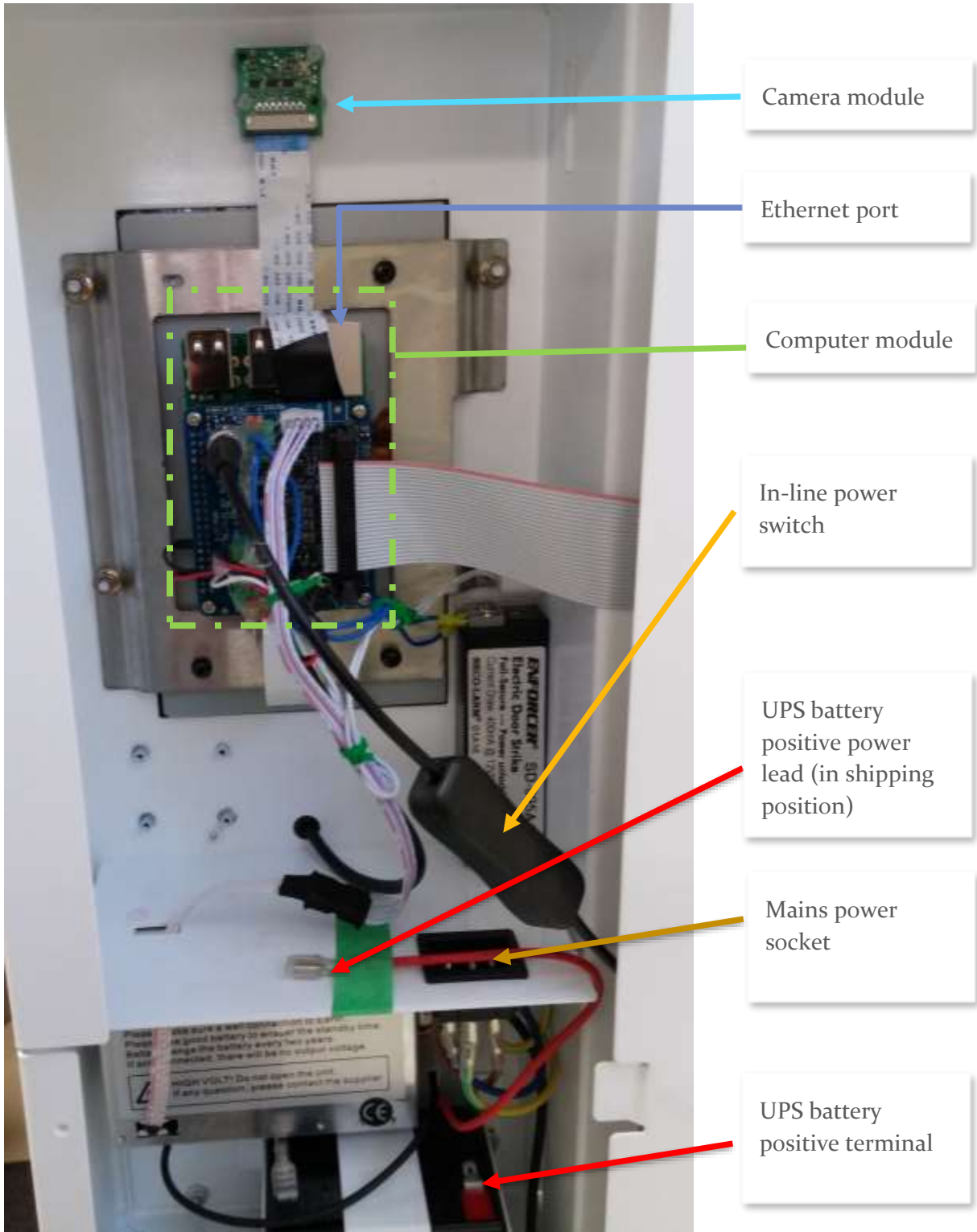


Figure 1. KeyMaster internals.

## Connecting the UPS Battery

For safety during shipping, the Uninterruptible Power Supply (UPS) is disconnected from the battery. The positive power lead (red) is taped to the shelf above the battery compartment (see Figure 2.).

**WARNING: Do not connect mains power before connecting the UPS power lead.**

- Remove the battery compartment cover by unscrewing the two screws holding the cover in place. Slide the cover to the side and away from the cabinet. Retain the screws and cover as they will need to be refitted.
- The positive battery terminal has a plastic cap, remove this and then remove the tape holding down the positive power lead.
- Feed the lead back down to the battery compartment and connect to the positive battery terminal (see Figure 1.).
- Replace the battery compartment cover.

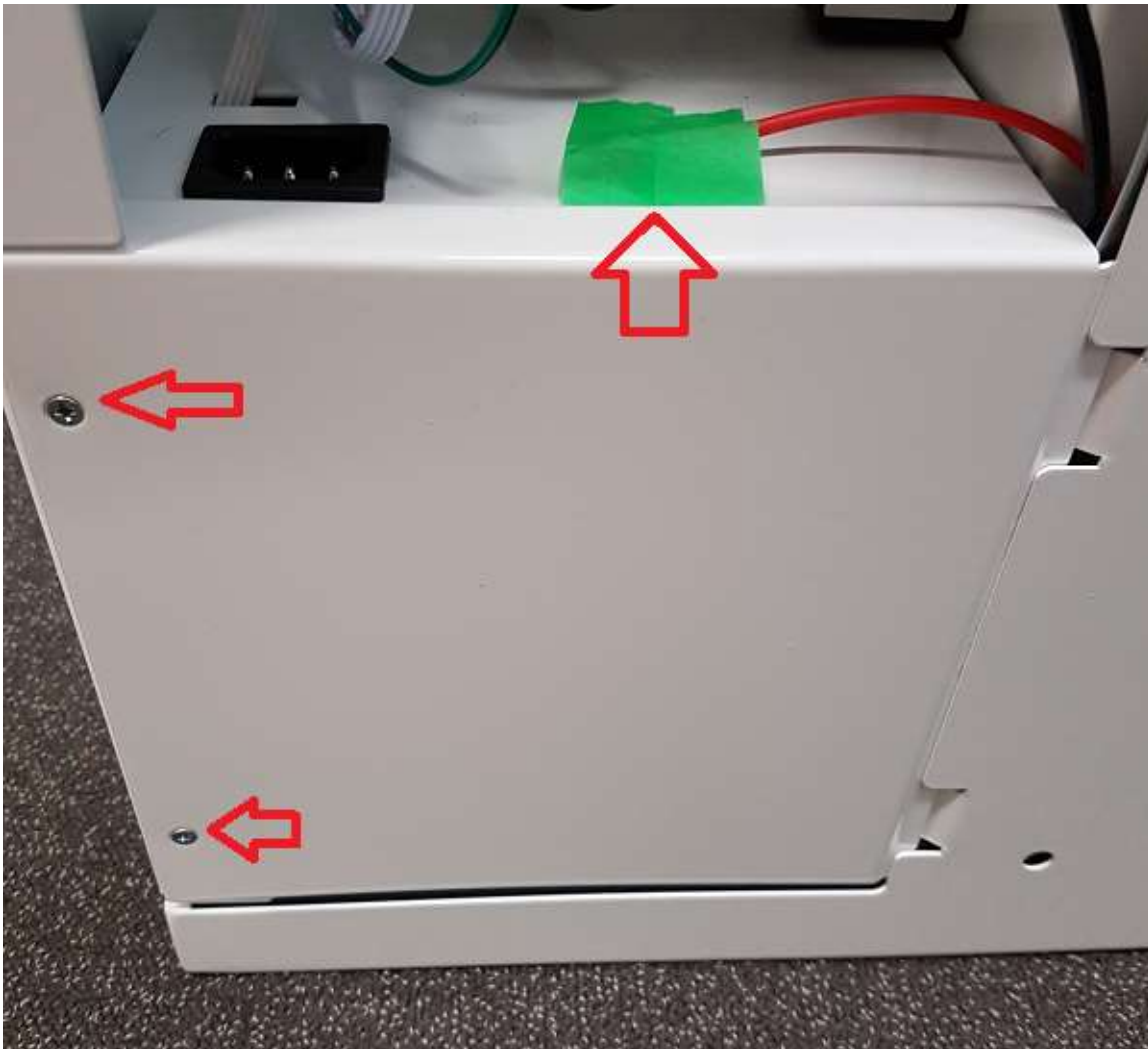


Figure 2. Battery Compartment Cover



## Connecting Data

The Ethernet port is situated at the top of the computer unit.

- Carefully move aside the camera cable.
- Plug a Category 5 or 6 Ethernet cable into the Ethernet Port.



## Connecting Mains Power

- There are knock-outs for conduit at the top and bottom of the KeyMaster cabinet. Use these if using conduit to route cables from the ceiling or floor. Ensure the cables do not rub against the metal frame by using grommets or glands.
- Plug the supplied power cable into the Mains Power socket on the KeyMaster (see note below).
- Connect the other end of the power cable to the mains power outlet.
  - **NOTE:** An alternative IEC C14 Type F plug is supplied, along with the standard cable and fixed IEC C14 Type F plug. This alternative plug is designed to pair with the retention clip on the IEC C14 Type E socket inside the cabinet (this clip will work with the standard connector but not as securely).
  - If using the alternative IEC C14 plug, cut off the standard plug at the desired length and wire in the alternative plug. When cutting the lead, leave enough slack so that the cabinet can be removed from the wall enough to reach a hand to the back and unplug the power, but not so much that excess cable is bunched near the computer module (refer to *Appendix B - Precautions*).



*Standard cable with fixed IEC C14 Type F plug*



*Alternative IEC C14 Type F plug*



*Alternative IEC C14 Type F plug and Type E socket with retention clip*

# Mounting the KeyMaster

## Safety and Environmental Considerations

First, consider the best place to mount the KeyMaster cabinet. The cabinets are heavy, weighing 15 to 20 kilograms (33 to 44 pounds) – depending on the model - and must be securely mounted on a solid vertical surface, such as a fixed wall. Use wall anchors when fixing to brick or concrete and screw into studs when mounting on plasterboard.

The cabinets are not weatherproofed and contain sensitive electronics so should only be mounted inside a building or sheltered car park/garage, where temperatures do not drop below 5 °C (41 °F) or exceed 40 °C (104 °F) and relative humidity is within 40 to 80%.

The cabinet should be situated in an area where users have easy and clear access and are not at risk of injury, or obstruction to other personnel whilst operating the KeyMaster. The cabinet should be mounted at a height suitable for users of all statures, so the top line of key slots can be reached without stretching; generally, 150 to 165 centimetres (60 to 65 inches) to the top of the cabinet.

Examples of preferred areas:	<ul style="list-style-type: none"><li>• Reception lobby.</li><li>• Corridor.</li><li>• Garage/Sheltered car park.</li></ul>
Examples of undesirable areas:	<ul style="list-style-type: none"><li>• A closed off area, not accessible to all staff needing access to the unit.</li><li>• Driveway, or area where there is a risk of being struck by a vehicle while accessing or operating the unit.</li><li>• Exposed car park, or area where the unit is exposed to extreme temperatures, precipitation, condensation or high humidity.</li><li>• Public area, or area where non-authorised persons could tamper with the unit.</li></ul>

## Mounting Procedure

- Unlock the outer cabinet door using the mechanical key lock.
- Unlock the inner door using the two mechanical key locks.
- Insert the top screws into the wall, leaving enough screw protruding to slip the top mounting holes over them.
- Lift the KeyMaster cabinet on to the top screws, allowing the screw heads to pass over the larger cutout.
- Line up the cabinet so that it is level and then tighten the top mounting screws.  
*Note: To screw in the mountings closest to the cabinet hinges it may be necessary to remove the inner door. Refer to APPENDIX A, Removing the Inner Door.*
- Fit screws to remaining mounting holes and tighten.

## Power up the KeyMaster

**IMPORTANT: Before applying power to the KeyMaster. Clean up any metal filings (swarf) that might have accumulated inside the cabinet, especially around electronic or electrical components.**

- With the outer and inner doors open, reach through the gap behind the touch screen and toggle the black inline power switch.



- After the computer boots up, the screen will display the KeyMaster Main page



## APPENDIX A - Removing the Inner Door

1. Open the main cabinet door of your KeyMaster.
2. Unlock the two locks on the inner door.
3. Remove the ribbon cable from the back of the inner door by pushing on the levers on each side of the socket. The cable will pop free.
4. Now swing the inner door open and support it carefully with one hand, or have someone support the door for you (**WARNING: The inner door is heavy, especially on a 49-key KeyMaster**).
5. Reach behind the inner door and pull the top hinge-pin down so that it clears the mounting hole.
6. Angle the door so the top hinge clears the frame of the cabinet.



*Pull down the top-hinge pin*



*Angle the door so the top hinge clears the frame*

7. Lift the door slightly (about 1cm, or ½ inch) as you angle it downward so the bottom hinge-pin clears its mounting hole. There is a small spacer the pin slides into, please retain it for when refitting the inner door.
8. The inner-door is now free to be removed from the cabinet.
9. Reverse the procedure to re-fit the door. Making sure to insert the spacer on the bottom hinge and reconnect the ribbon cable.



*Make sure to replace the spacer on the bottom hinge when re-fitting the door.*

## APPENDIX B - Precautions

- Do not bunch cables or electrical points into the rear cavity. This could cause damage to the computer module or UPS, resulting in a short-circuit and/or fire.
- Keep network cables clear of electrical cables to avoid electromagnetic interference.
- Do not drill holes in the cabinet housing near the computer module, UPS or battery.

