12. Reattach the cover with the screws.
13. Connect the DC/DC power supply to the vehicle's electrical system as directed below:

Caution: For installation by trained service personnel only.

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND must be connected to the vehicle chassis ground

Caution: For installation by trained service personnel only.

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND is connected to the vehicle chassis ground, which can also be battery negative

14. While observing the VX6/VX7 Adapter Cable connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in the vehicle fuse panel, after providing proper fusing.

Caution: For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.

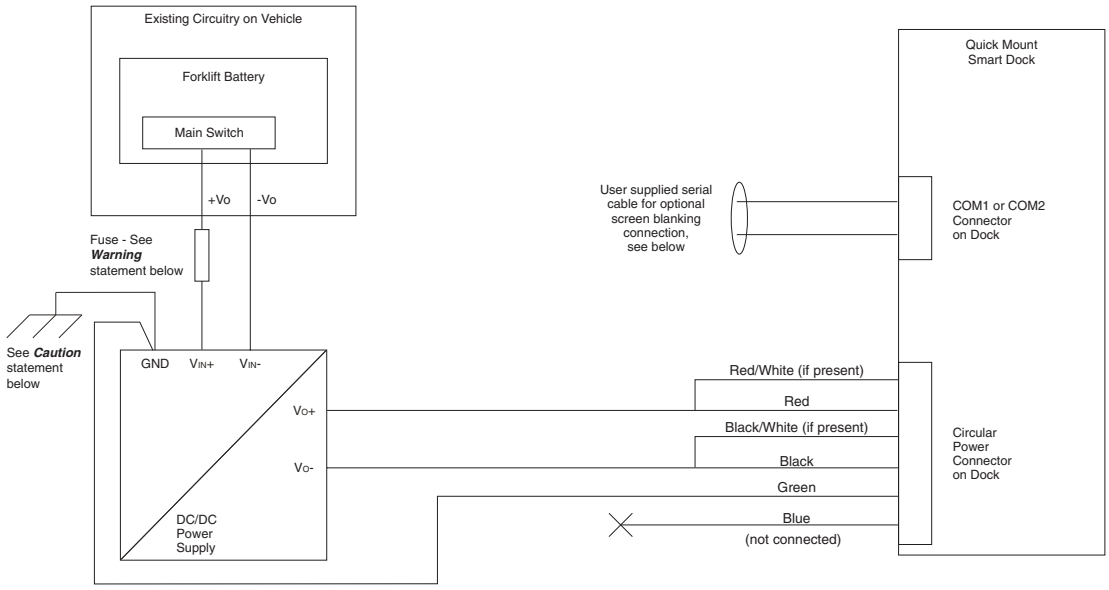
15. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized "crimp" type electrical terminals are an accepted method of termination. Select electrical connectors sized for use with 18AWG ($1mm^2$) conductors.
16. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate the outer cable jacket.
17. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely. Flip the power switch on the back of the dock to On.
18. Secure the power cable to the computer using the Strain Relief Cable Clamps.
19. Place Thor VM1A in the Dock.
20. If using the Screen Blanking feature, install the screen blanking box or switch.
21. Press the Power Switch on the back of the dock.
22. Press the Power Button on the front to turn on the computer.

Once installation is complete, remember to start the computer and configure the Auto-On Behavior.

See the Auto-On control panel.

Note: *Ignition control is not available for trucks over 60VDC.*

Wiring Diagram for 50-150VDC Power Supply, Screws on Side of Lid



Caution: For battery powered vehicles:

- GND must be connected to the vehicle chassis ground.

Caution: For internal combustion engine powered vehicles:

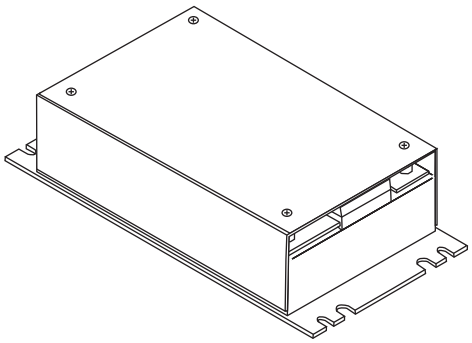
- GND is connected to the vehicle chassis ground, which can also be battery negative.

Warning: For proper and safe installation, follow the Fuse Requirements 50-150VDC Power Supply, Screws on Side of Lid.

60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Top of Lid)

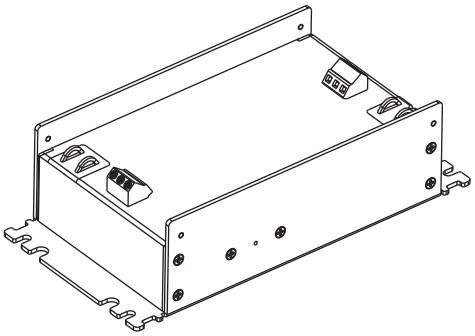
Caution: These instructions are for use with VM1D Standard Dock and VM3D Enhanced Dock only.

This option requires DC/DC power supply Honeywell Part no. VX89303PWRSPLY shown below.



Shown with Lid Attached

Lid is secured with screws on the side of lid.



Shown with Lid Removed

Input and output connector blocks under lid.

Two positive (+), negative (-), and ground (⏚) connection per terminal block.

If the DC/DC power supply does not have screws in the top of the lid, see 60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Side of Lid).

Caution: For installation by trained service personnel only.

Caution: Usage in areas where moisture can affect the power supply connections should be avoided. The power supply should be mounted in a dry location within the vehicle or placed in a suitable protective enclosure.

Caution: Use caution when routing the power cable. See 12-48 VDC Vehicles (10-60 VDC Direct Connection).

Fuse Requirements for 50-150 VDC Power Supply, Screws on Top of Lid

Warning: For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery's positive (+) terminal. Use VM3055FUSE (or equivalent) to install the fuse as shown below:

For all voltages, use the 3A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than the vehicle input voltage.

Note: *For North America, a UL Listed fuse is to be used.*

Power Cable Identification for 50-150 VDC Power Supply, Screws on Top of Lid

The DC power cable is included with the dock and is one of the two styles below:

Power cable with right angle connector and 6 wires:

Caution: Twist the red and red/white wires together and twist the black and black/white wires together before connecting to vehicle power.

Wire Color	Connection
Red	DC + (10-60 VDC)
Red/White	DC + (10-60 VDC)
Black	DC -
Black/White	DC -
Green	Ground
Blue	Ignition Input (optional)

Power cable with straight connector and 4 wires:

Wire Color	Connection
Red	DC + (10-60 VDC)
Black	DC -
Green	Ground
Blue	Ignition Input (optional)

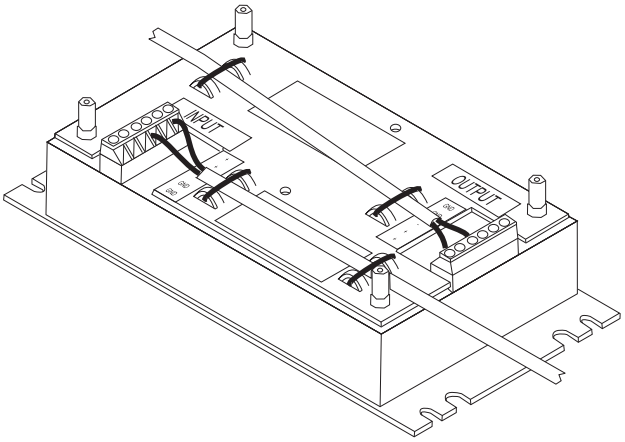
Note: *Correct electrical polarity is required for safe and proper installation. See the Wiring Diagram for 50-150VDC Power Supply, Screws on Side of Lid for additional wire color-coding specifics.*

The Thor VM1A DC input wires (Red, Red/White DC+ and Black, Black/White DC-) and the Blue ignition input wire are galvanically isolated. The Green ground input is used for electrostatic discharge (ESD) protection.

Vehicle 50-150 VDC Power Connection

1. Please review the Wiring Diagram for 50-150 VDC Power Supply, Screws on Top of Lid, before beginning power cable install.
2. The Thor VM1A must not be mounted in the dock. The power switch on the dock must be turned Off. The power cable must be UNPLUGGED from the dock.
3. Route the cable from the computer to the DC/DC power supply. Route the power cable the shortest way possible. The cable is rated for a maximum temperature of 105°C (221°F). When routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
4. Cut the cable to length and strip the wire ends.
5. Remove the lid from the DC/DC power supply.
6. Connect the stripped end of the positive wires (red and red/white twisted together or a single red wire) to the output block. See Power Cable Identification for 50-150 VDC Power Supply, Screws on Top of Lid.
7. Connect the stripped end of the negative wires (black and black/white twisted together or a single black wire) to the output. See Power Cable Identification for 50-150 VDC Power Supply, Screws on Top of Lid.

Note: *The input and output blocks each have two + (positive), two – (negative) and two ⏚ (ground) connectors. Either connector in the block can be used to connect the matching polarity wire.*



8. Route the wiring from the DC/DC power supply to the vehicle's electrical system. Do not connect to vehicle power at this time.
9. Strip the wire ends and connect to the input side of the DC/DC power supply.
10. Use looms and wire ties to secure all wiring as shown.
11. Reattach the cover with the screws.
12. Connect the DC/DC power supply to the vehicle's electrical system as directed below:

Caution: For battery powered vehicles:

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND must be connected to the vehicle chassis ground

Caution: For internal combustion engine powered vehicles:

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND must be connected to the vehicle chassis ground

13. While observing the Fuse Requirements, connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in the vehicle fuse panel, after providing proper fusing.

Caution: For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.

14. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized "crimp" type electrical terminals are an accepted method

of termination. Select electrical connectors sized for use with 18AWG (1mm^2) conductors.

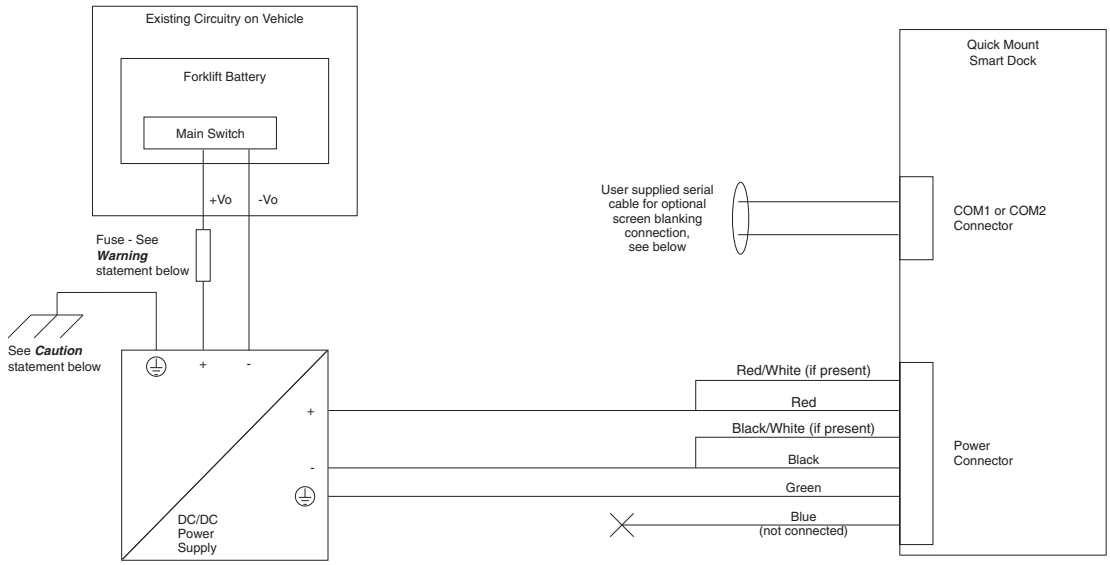
15. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate the outer cable jacket.
16. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely. Flip the power switch on the back of the dock to On.
17. Secure the power cable to the computer using the Strain Relief Cable Clamps.
18. Place Thor VM1A in the Dock.
19. If using the Screen Blanking feature, install the screen blanking box or switch.
20. Press the Power Switch on the back of the dock.
21. Press the Power Button on the front to turn on the computer.

Once installation is complete, remember to start the computer and configure the Auto-On Behavior.

See the Auto-On control panel.

Note: *Ignition control is not available for trucks over 60VDC.*

Wiring Diagram for 50-150 VDC Power Supply, Screws on Top of Lid



Caution: For battery powered vehicles:

- GND must be connected to the vehicle chassis ground.

Caution: For internal combustion engine powered vehicles:

- GND is connected to the vehicle chassis ground, which can also be battery negative.

Warning: For proper and safe installation, follow the Fuse Requirements for 50-150 VDC Power Supply, Screws on Top of Lid.

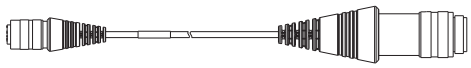
VX6/VX7 Adapter Cable

Caution: These instructions are for use with VM1D Standard Dock and VM3D Enhanced Dock only.

An adapter cable is available to attach the Thor VM1A to a vehicle previously equipped with a VX6/VX7 DC power cable. The adapter cable has a 5-pin connector to match with the VX6/VX7 power supply cable on one end and a 6-pin connector to match to the VM1A on the other end. This section assumes the VX6/VX7 power cable is properly connected to vehicle power. Refer to the VX6 or VX7 Vehicle Mounting Reference Guide for details.

Warning: Because the VX6/VX7 supports 10-60 VDC power input, verify input voltages before using this adapter cable with an existing VX6 or VX7 power connection installation.

To Power Connector on Dock



To VX6/VX7 Power Supply Cable

When this adapter cable is used, there is no provision for an ignition switch input. Therefore the vehicle ignition monitoring function is not available when using this cable.

Connect to VX6/VX7 Power Cable

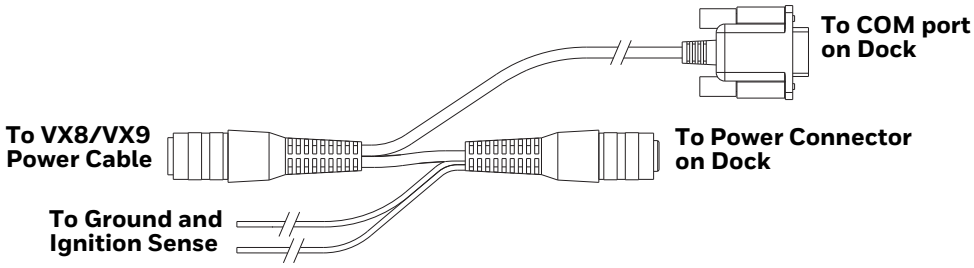
1. Connect the adapter cable to the VM1A power cable by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
2. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.

3. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
4. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. Secure the power cable to the computer using the Strain Relief Cable Clamps.
6. Place Thor VM1A in the Dock
7. If using the Screen Blanking feature, install the screen blanking box or switch.
8. Press the Power Switch on the back of the dock.
9. Press the Power Button on the front to turn on the computer.

Thor VX8/Thor VX9 Adapter Cable

Caution: These instructions are for use with VM1D Standard Dock and VM3D Enhanced Dock only. This cable is not used for the VMXD Enhanced Dock.

An adapter cable is available to attach the Thor VM1A to a vehicle previously equipped with a VX8/VX9 DC power cable. The adapter cable has a 6-pin connector to match the VX8/VX9 power supply cable on one end and a 6-pin connector to match the VM1A on the other end. The cable also has bare wires for ground and ignition sense connection plus a D9 cable to connect to a COM port on the dock to provide a screen blanking signal. This section assumes the VX8/VX9 power cable is properly connected to vehicle power. Refer to the VX8 or VX9 Vehicle Mounting Reference Guide for details.



Connect to Thor VX8/VX9 Power Cable

1. Connect the adapter cable to the Thor VX8/VX9 power cable by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
2. Connect the green wire to vehicle ground.

Caution: For battery powered vehicles:

- GND (green wire) must be connected to the vehicle chassis ground.

Caution: For internal combustion engine powered vehicles:

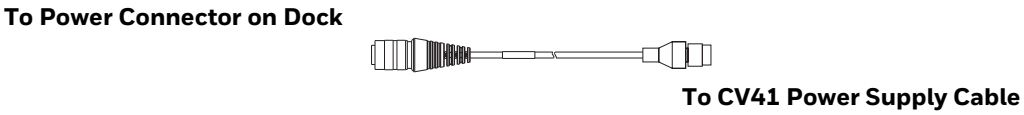
- GND (green wire) is connected to the vehicle chassis ground, which can also be battery negative.

3. If ignition control will be used, connect the blue wire to an ignition switched circuit (less than 1mA over input voltage range). If ignition control is not used, the blue wire can be left disconnected,
4. If the VX8/VX9 cable is connected to a screen blanking box or switch, connect the D9 connector to a COM port on the dock.
5. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, when routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
6. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
7. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
8. Secure the power cable to the computer using the Strain Relief Cable Clamps.
9. Place Thor VM1A in the Dock.
10. If using the Screen Blanking feature, install the screen blanking box or switch if not previously installed.
11. Press the Power Switch on the back of the dock.
12. Press the Power Button on the front to turn on the computer.

CV61 Adapter Cable

Caution: These instructions are for use with VM1D Standard Dock and VM3D Enhanced Dock only.

An adapter cable is available to attach the Thor VM1A to a vehicle previously equipped with a CV61 DC power cable. The adapter cable has a 5-pin connector to match with the CV61 power supply cable on one end and a 6-pin connector to match to the VM1A on the other end. This section assumes the CV61 power cable is properly connected to vehicle power. Refer to the CV61 documentation for details.



When this adapter cable is used, there is no provision for an ignition switch input. Therefore the vehicle ignition monitoring function is not available when using this cable.

Connect to CV61 Power Cable

1. Connect the adapter cable to the CV61 power cable by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
2. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
3. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
4. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. Secure the power cable to the computer using the Strain Relief Cable Clamps.
6. Place Thor VM1A in the Dock
7. If using the Screen Blanking feature, install the screen blanking box or switch.
8. Press the Power Switch on the back of the dock.
9. Press the Power Button on the front to turn on the computer.

Screen Blanking

Screen blanking (blackout) can be enabled when the vehicle is in motion. Once screen blanking is enabled, the display is blanked out (or a preselected zoom area is displayed) any time when the cable sends the signal that the vehicle is in motion. If the cable is removed, screen blanking is disabled and the display remains on.

Prerequisite: The steps outlined in either 12-48 VDC Vehicles (10-60 VDC Direct Connection), 60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Side of Lid) or 60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Top of Lid) have been completed.

Screen blanking is accomplished by either a Screen Blanking Box or a user supplied switch.

Caution: For installation by trained service personnel only.

Fuse Requirements for Screen Blanking

Warning: For proper and safe installation, the input power lead to the Screen Blanking Box requires a 3 Amp maximum time delay (slow blow) high interrupting rating fuse.

Note: *For North America, a UL Listed fuse is to be used.*

Screen Blanking Cable

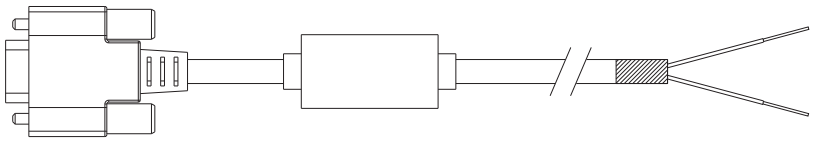
Refer to Screen Blanking to configure the VM1A for screen blanking.

When routing any additional cables for screen blanking:

- Route the cable the shortest way possible removing any left-over cable
- Fuses and cabling are user supplied. Therefore, route these cables so they are protected from physical damage and from surfaces that might exceed the cable's rated temperature threshold.
- Cable should be protected from physical damage from moving parts
- Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate
- Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
- Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.

Honeywell Screen Blanking Box Cable

An optional Honeywell Screen Blanking Box Cable is available.



DB9 Female	Function with Screen Blanking Box	Wire color
1 -6, 9	Not Used	
7 (RTS)	Connected to Screen Blanking Box, unswitched side	Black (see note)
8 (CTS)	Connected to Screen Blanking Box, switched side	Gray (see note)

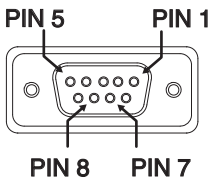
Note: *Wire colors only apply to optional Honeywell Screen Blanking Box Cable, VM1080CABLE. Wire colors may vary in a user-supplied cable.*

The optional Honeywell Screen Blanking Box Cable, VM1080CABLE, is installed as follows:

1. Connect the gray wire of the cable to the switched side of the Screen Blanking Box.
2. Connect the black wire of the cable to the unswitched side of the Screen Blanking Box.
3. Connect the D9 serial connector to either COM1 or COM2 serial port on the dock.

User-Supplied Cable for Screen Blanking

A user-supplied cable can be used as well. Pins 7 and 8 must be connected as detailed below. No other pins are to be connected.



DB9 Female	Function with Screen Blanking Box	Function with Switch
1 -6, 9	Not Used	Not Used
7 (RTS)	Connected to Screen Blanking Box, unswitched side	Connected to Switch
8 (CTS)	Connected to Screen Blanking Box, switched side	Connected to Switch

The user-supplied cable is installed as follows:

1. Connect the wire from Pin 8 of the cable to the switched side of the Screen Blanking Box or to a user-supplied switch.
2. Connect the wire from Pin 7 of the cable to the unswitched side of the Screen Blanking Box or to a user-supplied switch.
3. Connect the D9 serial connector to either COM1 or COM2 serial port on the dock.

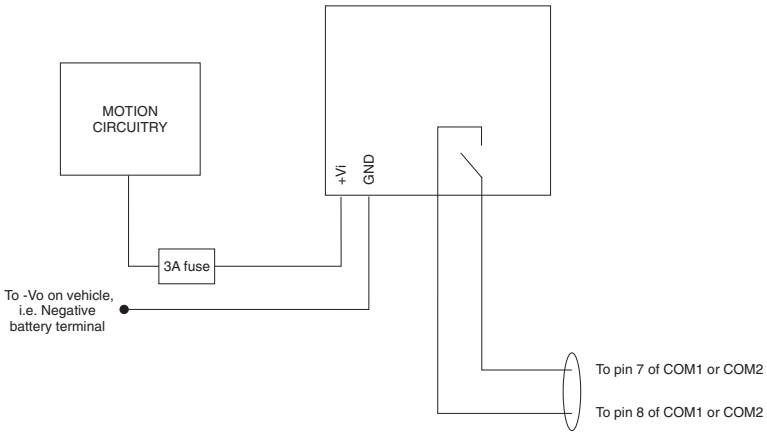
Screen Blanking Box

Screen Blanking Box Terminal	Connection
12-xxV	Input from vehicle motion sensing circuitry. Please refer to label on Screen Blanking Box for allowable voltage input range.
GND	DC -
	These two terminals are for connecting a serial cable: • If using an optional Honeywell screen blanking cable, VM1080CABLE, connect the *gray* wire to the *switched* side of the connection and connect the *black* wire to the *unswitched* side. • If using a user-supplied cable, the cable must be constructed so that Pin 7 (RTS) connects to *switched* side of the connection and Pin 8 (CTS) connects to the *unswitched* side.

It is assumed that the motion sensing circuitry in the illustrations below is powered by internal vehicle circuitry.

Please refer to the appropriate illustration below for Screen Blanking Box wiring diagrams.

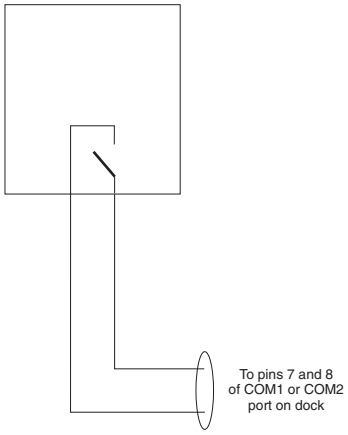
Warning: Do not exceed the maximum input voltage, either 60 or 72VDC, specified on the Screen Blanking Box label when using this configuration.



Note: *The black and gray wire colors in the illustration only apply to the optional Honeywell Screen Blanking Box Cable, VM1080CABLE. The wire colors may be different in a user-supplied cable.*

Screen Blanking with Switch

In applications where it is impractical to use the screen blanking box due to vehicle voltage or lack of a motion sensing signal, screen blanking can be controlled via a user supplied switch or relay that provides an electrical conductive connection on vehicle motion.



Pins 7 and 8 must be connected as shown in the illustration above. No other pins are to be connected.

VMXD Enhanced Dock with Thor VX8/Thor VX9 Power Cable

Caution: This dock is recommended for use when replacing an existing Thor VX8 or Thor VX9 where screen blanking is used. This dock eliminates the need for wiring changes by enabling the existing VX8/VX9 power cable and screen blanking box to be used when the VX8/VX9 is replaced by Thor VM1A These instructions are for this doc model only! The Ignition Control feature is not available when this dock is used.

Warning: The external DC/DC converter previously used with the Thor VX8 or Thor VX9 must be left in place to provide ground isolations. Connecting the dock power input directly to vehicle power could result in a safety hazard or equipment damage.

Warning: The cable shielding must be connected to chassis ground. Consult the instructions later in this section for the respective power supply type.

Caution: COM1 is used for screen blanking (via the power cable connector) and is unavailable when the screen blanking box is attached. When a screen blanking box is attached, any external serial device, such as a scanner, must be connected to the COM2 port on the dock. If a screen blanking box is not connected via the power cable, the COM1 port on the dock is available for a serial device connection.

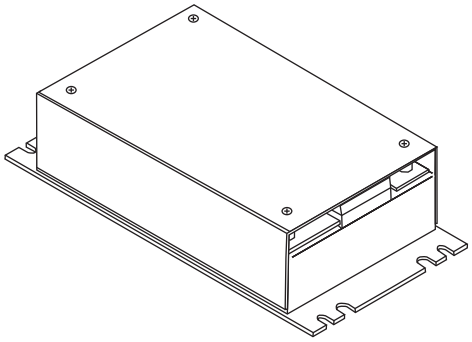
Caution: These instructions for use with VMXD Enhanced Dock only.

Determine the type of power supply used with the previous Thor VX8 or Thor VX9 installation:

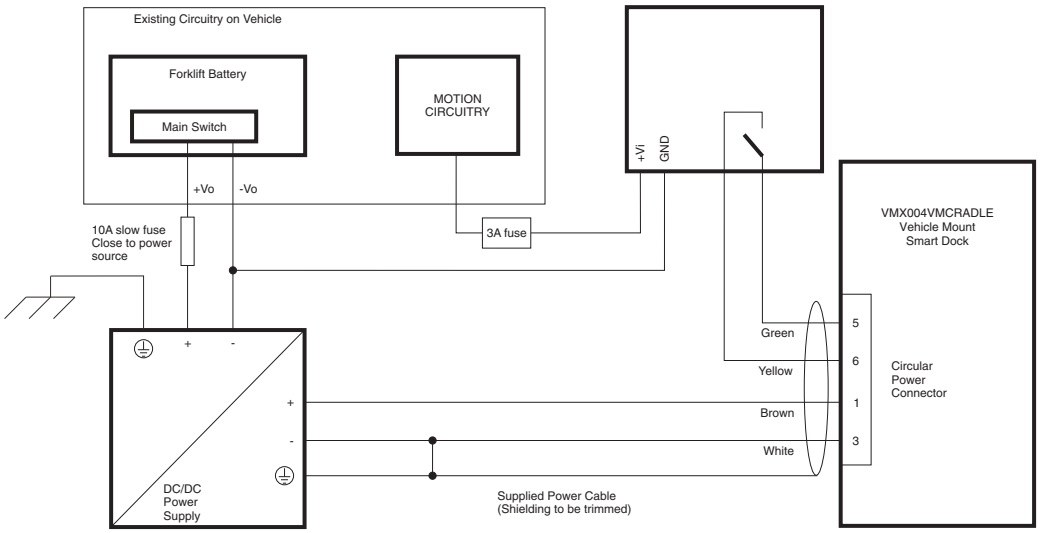
- DC/DC Power Supply with Screws on Top of Lid
- DC/DC Power Supply with Screws on Side of Lid

DC/DC Power Supply with Screws on Top of Lid

Caution: Inspect the cable shield to verify it is connected to chassis ground. If there is no connection from the cable shield to chassis ground, one must be added at this time. Use a jumper wire to connect the cable shield to chassis ground as shown below for the appropriate type of power supply installed on the vehicle. A jumper wire, as shown in the illustrations below, may be present to attach the chassis ground to the white wire of the power cable. This wire is not necessary but can be left in place if present. For proper screen blanking, verify the yellow and green wires are attached to the screen blanking box as shown in the illustrations below.



For this model, follow the diagram below to attach the power cable shield to chassis ground:



Caution: For battery powered vehicles:

- VIN+ is connected to battery positive.
- VIN- must be connected to battery negative.

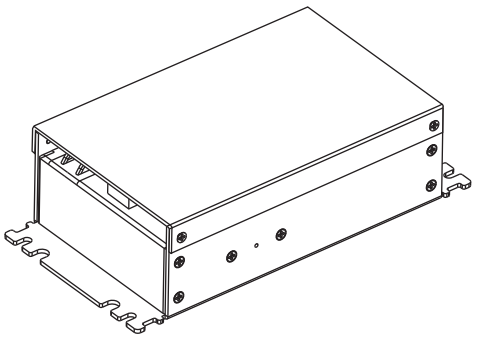
- GND must be connected to the vehicle chassis ground.

Caution: For internal combustion engine powered vehicles:

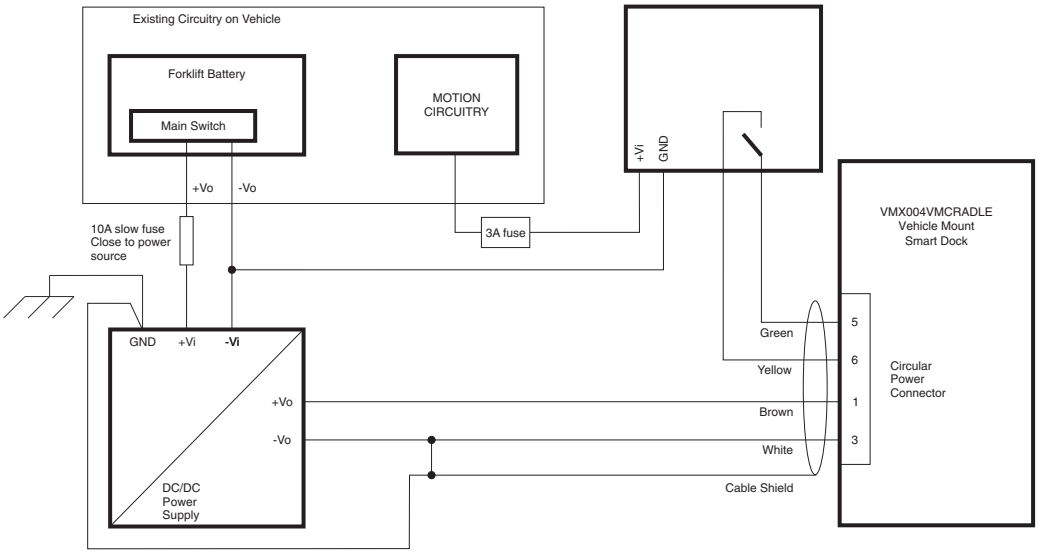
- VIN+ is connected to battery positive.
- VIN- is connected to battery negative.
- GND is connected to the vehicle chassis ground, which can also be battery negative.

DC/DC Power Supply with Screws on Side of Lid

Caution: Inspect the cable shield to verify it is connected to chassis ground. If there is no connection from the cable shield to chassis ground, one must be added at this time. Use a jumper wire to connect the cable shield to chassis ground as shown below for the appropriate type of power supply installed on the vehicle. A jumper wire, as shown in the illustrations below, may be present to attach the chassis ground to the white wire of the power cable. This wire is not necessary but can be left in place if present. For proper screen blanking, verify the yellow and green wires are attached to the screen blanking box as shown in the illustrations below.



For this model, follow the diagram below to attached the power cable shield to chassis ground:



Caution: For battery powered vehicles:

- VIN+ is connected to battery positive.
- VIN- must be connected to battery negative.
- GND must be connected to the vehicle chassis ground.

Caution: For internal combustion engine powered vehicles:

- VIN+ is connected to battery positive.
- VIN- is connected to battery negative.
- GND is connected to the vehicle chassis ground, which can also be battery negative.

External AC/DC Power Supply

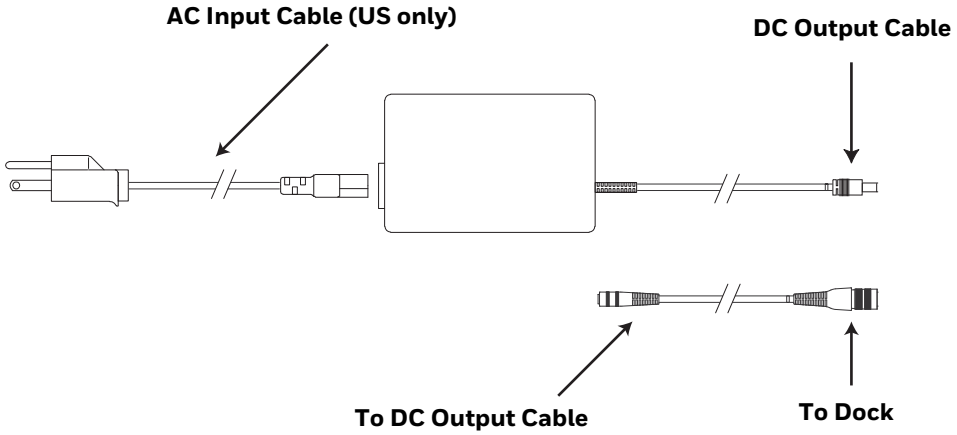
Caution: These instructions for use with VMXD Enhanced Dock for Off-Vehicle Use only.

The optional external AC/DC power supply is for use in environments, such as an office, where DC power is not available.

Note: *The Honeywell-approved AC/DC Power Supply and Adapter Cable are only intended for use in a 40ºC (104ºF) maximum ambient temperature environment.*

In North America, this unit is intended for use with a UL Listed ITE power supply with output rated 15 VDC, 4 Amp (maximum), 60 W (maximum). Outside North America, this unit is intended for use with an IEC certified ITE power supply with output rated 15 VDC, 4 Amp (maximum), 60 W (maximum).

The external power supply may be connected to either a 120V, 60Hz supply or, outside North America, to a 230V, 50Hz supply, using the appropriate detachable cordset. In all cases, connect to a properly grounded source of supply provided with maximum 15 Amp overcurrent protection (10 Amp for 230V circuits).

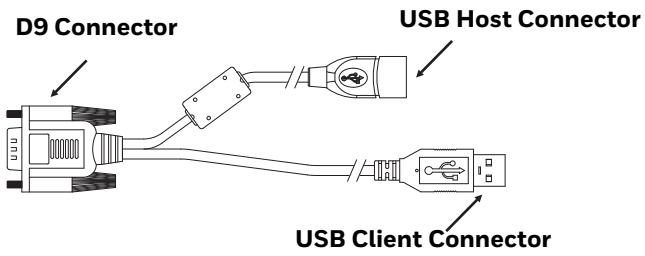


Connect External Power Supply

1. Connect the provided detachable cordset (US only, all others must order cable separately) to the external power supply (IEC 320 connector).
2. Plug cordset into appropriate, grounded, electrical supply receptacle (AC mains).
3. Connect the DC output cable end to the corresponding connector on the adapter cable.
4. Connect the watertight connector end of the Adapter Cable to the VMXD Off-Vehicle Dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. Press the Power Switch on the back of the dock.
6. Press the Power Button on the front to turn on the computer.

Connect USB Host

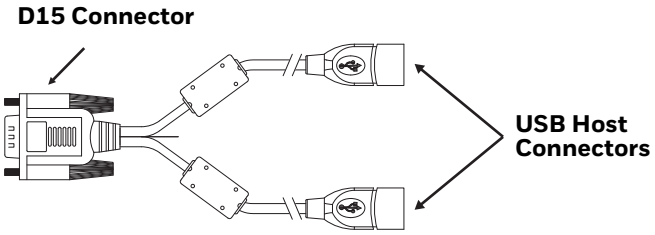
Host/Client Y Cable



See USB and USB1 Connector for connector pinouts.

1. Seat the D9 connector firmly over the USB (Standard Dock) or USB1 (Enhanced Dock) connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. The USB-host connector provides a connector for a USB device such as a USB thumb drive.
4. Secure the cables to the computer with Strain Relief Cable Clamps.

Dual Host Y Cable



See USB2 Connector for connector pinouts.

1. Seat the D15 connector firmly over the USB2 (Enhanced Dock only) connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. The USB-host connectors provide a connector for a USB device such as a USB thumb drive.
4. Secure the cables to the computer with Strain Relief Cable Clamps.

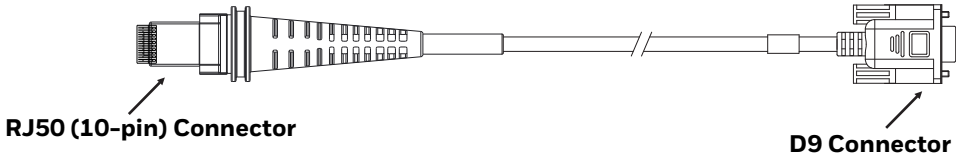
USB Scanner

There are several ways to attach a USB scanner:

- A USB scanner can be attached to the USB host port on the Enhanced Dock.
- A USB scanner can be attached to the host port on either USB adapter Y-cable.

- Certain USB scanners can be attached directly to the USB or USB-1 connector using cable CBL-500-300-S00, as shown below.

To use the CBL-500-300-S00 cable:



1. Seat the D9 connector of the cable over the USB or USB11 connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. Follow the instructions provided with the scanner to attach the RJ50 end of the cable to the scanner.

See USB Host to Scanner Cable for pinout details.

Connect USB Client

Connect Serial Device

Note: *Pin 9 of the COM port is configured to provide +5V.*

See COM1 and COM2 Connector for connector pinouts.

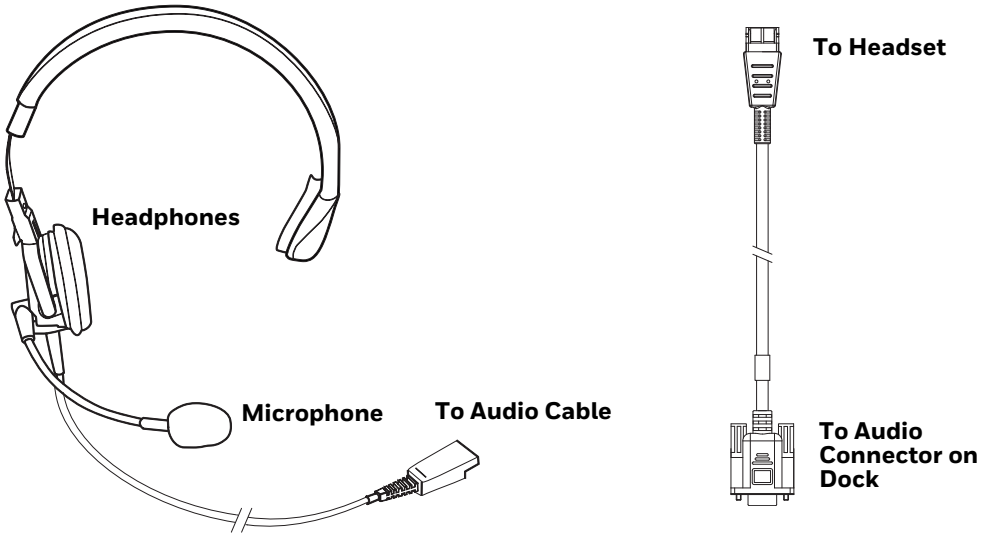
1. Seat the cable end connector firmly over the serial COM port on the dock.
2. Turn the thumbscrews in a clockwise direction. Do not over tighten.
3. Secure the cables to the computer with Strain Relief Cable Clamps.
4. Connect the other cable end to the desired serial device.

Connect a Tethered Scanner

1. The scanner cable is attached to either the COM1 or COM2 port on the dock.
2. Connect the serial cable for the scanner as directed above.
3. When the computer is powered on, it provides power to the serial scanner.
4. Configure the Data Collection (DC) Wedge to manipulate scanned data as desired.

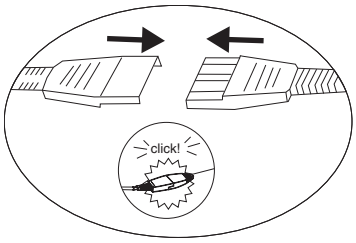
Connect Headset Cable

The Audio connector supports a headset adapter cable.

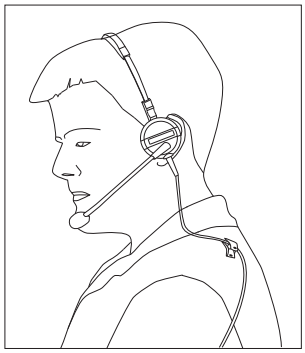


See Audio Connector for connector pinouts.

1. Seat the D15 cable end connector firmly over the Audio Connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. Slide the cable ends together until they click shut. Do not twist or bend the connectors. The internal microphone and speakers are automatically disabled when the headset is connected.



Adjust Headset/Microphone and Secure Cable



The headset consists of an earpiece, a microphone, a clothing clip, and a cable.

1. Do not twist the microphone boom when adjusting the microphone. The microphone should be adjusted to be about two finger widths from your mouth.
2. Make sure the microphone is pointed at your mouth. Note the small “Talk” label near the mouthpiece. Make sure the Talk label is in front of your mouth. The microphone cable can be routed over or under clothing.
3. Follow the safety guidelines below when wearing the headset.

Under Clothing

- Leave the cable exposed only at the top of the collar.
- Be sure to leave a small loop of cable to allow movement of your head.

Over Clothing

- Use clothing clips to hold the cable close to your body.
- Tuck the cable under the belt, but leave a small loop where it goes under the belt.
- Do not wear the cable on the front of your body. It may get in your way or get caught on protruding objects.

Strain Relief Cable Clamps

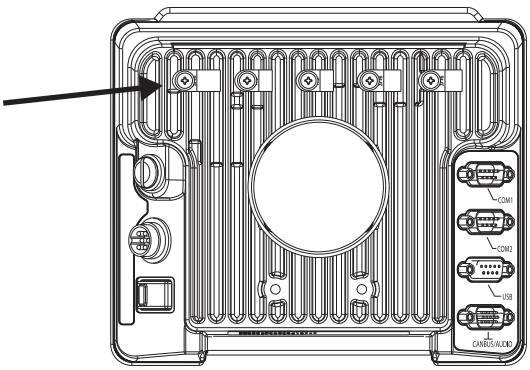
Equipment Required: Phillips screwdriver (not supplied by Honeywell)

There are five strain relief cable clamps secured to the Standard Dock.

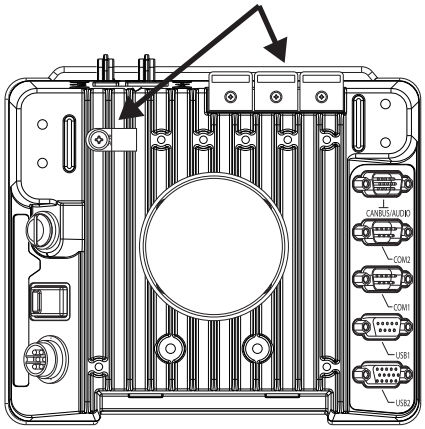
There is one strain relief cable clamp and three strain relief brackets for securing cables to the Enhanced Dock.

Use the strain relief clamps to secure audio, power, and I/O cables attached to the dock.

Use the left-most strain relief clamp for the power cable.



Standard Dock



Enhanced Dock

To use the strain relief clamp(s):

1. Determine the proper strain relief cable clamp. There are three sizes of cable clamps on the Standard Dock which should be matched to the cable to be secured. For example, the largest clamp (on the left when viewing the back of the dock) is designed to secure the power cable. For the Enhanced Dock there is a single cable clamp. Use this clamp for the power cable, Use the brackets for all other cables.
2. Remove the strain relief clamp from the computer by turning the screw counterclockwise. Put the screw aside in a safe location.
3. Slide the strain relief clamp over the cable.
4. Using a Phillips screwdriver and the screw that was removed, refasten the clamp holding the cable to the dock. Do not stretch the cable. Leave enough slack in the cable to allow it to be connected and disconnected easily when needed.
5. Continue in this manner until all cables are secured to the dock.

To use the strain relief brackets (Enhanced Dock only):

1. Secure the cable to the bracket with plastic tie straps (cable ties).
2. If necessary, the cable ties can be trimmed to length after installation. Cut the excess tie length off flush and not at an angle to prevent sharp edges that may cause cuts.

CHAPTER

6 MANAGE AND MAINTAIN THE COMPUTER

Use this chapter to understand how to upgrade software, reset, and maintain the computer.

About Software Updates

Honeywell provides patches and security updates for existing software products at no additional charge. Software upgrades (from one major version to another) may involve additional charges. Some licensed software that Honeywell distributes requires user registration and log in before the software can be downloaded.

Support for Honeywell Safety and Productivity Solutions products is available online through the Technical Support Portal.

Software downloads can be accessed through the Technical Support Downloads Portal.

1. Go to www.honeywellaidc.com.
2. Select **Get Resources** > **Software**.
3. Click on the *Technical Support Downloads Portal* link, https://hsmftp.honeywell.com.
4. Create an account if you have not already created one. You must login to download the software.
5. Install the *Honeywell Download Manager* tool on your workstation (e.g., laptop or desktop computer) prior to trying to download any files.
6. Locate the app or upgrade you want to download in the Software directory tree.
7. Select **Download**. Follow the prompts to download the file.

Install Software Updates with AutoInstall

Important: *The Thor VM1A must have power for the entire length of the upgrade process or it could become unstable.*

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings** > **Provisioning mode** under *Honeywell Settings*.
3. Tap the toggle button to turn Provisioning mode **On**.
4. Save the upgrade file (*.zip or *.apk) in one of the following folders on the VM1A computer:
   - **Internal shared storage\honeywell\autoinstall**
     Software upgrades saved to this folder for installation, do not persist when a Full factory reset or Enterprise data reset is performed.
   - **IPSM card\honeywell\autoinstall**
     Software upgrades saved to this folder, do not persist when a Full factory reset is performed. However, the upgrade does persist if an Enterprise data reset is performed.
5. Swipe up from the bottom of the Home screen to access all apps.
6. Tap **AutoInstall Settings** and verify **Autoinstall** is enabled ☑.
7. Tap **Packages Update** from the AutoInstall Settings screen.

   The computer automatically initiates a reboot and installs the software upgrade. The system update screen appears during the upgrade process. When the update is finished, the lock screen appears.
8. Once installation is complete, turn Provisioning mode **Off**.

Note: *Some updates do not require the computer to reboot before installation.*

Optional SD Card Method

The VM1A comes equipped with a SD card socket. You can install an upgrade from a SD card you insert in the computer.

Important: *The Thor VM1A must have power for the entire length of the upgrade process or it could become unstable.*

1. On the computer, swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings** > **Provisioning mode** under *Honeywell Settings*.
3. Tap the toggle button to turn Provisioning mode **On**.
4. Tap **AutoInstall Settings**. Verify **AutoInstall** is enabled ☑.

5. Press and hold the **Power** button, and then tap **Power off**.
6. On your workstation (e.g., laptop, desktop computer), format the SD card and create a **\honeywell\autoinstall** folder on the root of the card.
7. Save the upgrade file in the **autoinstall** folder.
8. Install the SD card, and then press the **Power** button.

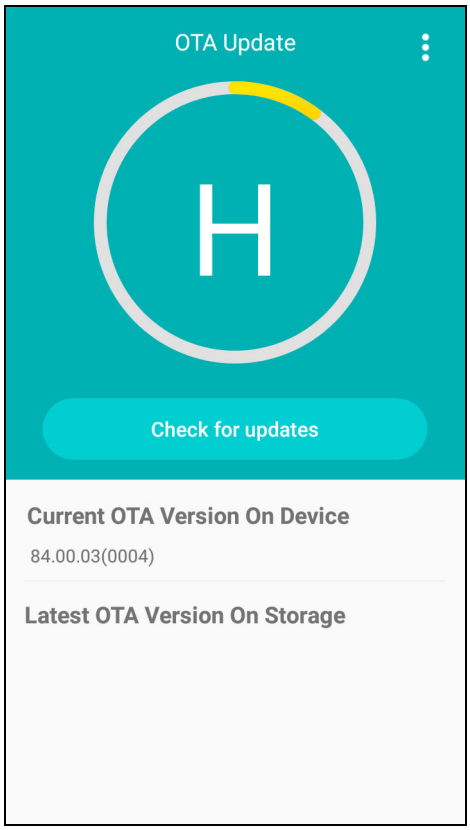
   The computer automatically runs the upgrade found in the autoinstall folder on the card. The system update screen appears during the upgrade process. When the upgrade is finished, the lock screen appears.
9. Once installation is complete, turn Provisioning mode **Off**.

About the Honeywell Upgrader

Use the Honeywell Upgrader app (HUpgrader) to check for and install OTA updates or view the current OTA version installed on the computer.

How to View the Installed OTA Version

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **HUpgrader**  to open the Honeywell Updater app. The OTA version number installed on the computer appears on the screen.

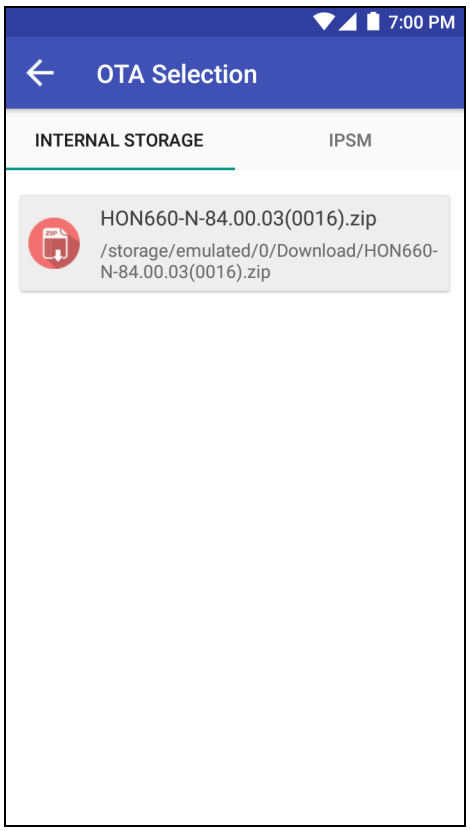


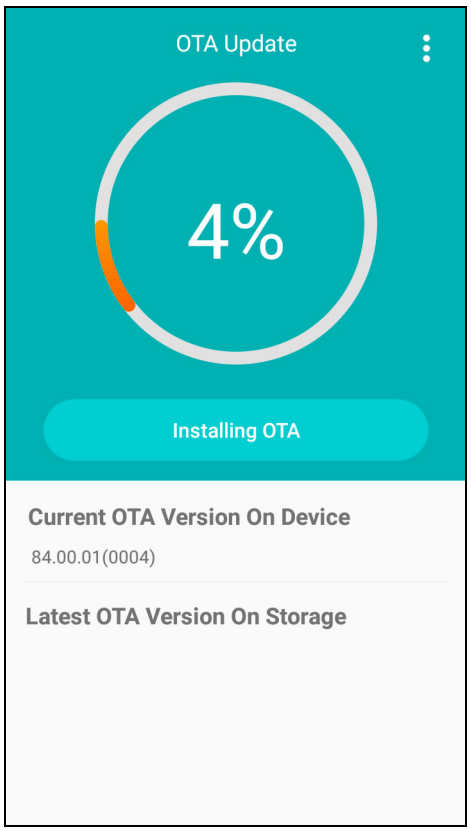
Install OTA Updates

To use the HUpgrader to install an OTA update file downloaded from the Technical Support Downloads Portal:

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings** > **Provisioning mode** under *Honeywell Settings*.
3. Tap the toggle button to turn Provisioning mode **On**.
4. Save the OTA file (*.zip) in the following folder on the VM1A computer:
   - **Internal shared storage\Download**
5. Tap **HUpgrader** to open the Honeywell Updater app.
6. Tap ⋮ in the upper right corner, and then tap **Select OTA from storage**.
7. Select the storage location (i.e., Internal Storage) where you saved the file.

8. Tap the OTA update file. The computer examines the file, and then starts the installation.





9. Once the installation is complete (100%), select **OK** when prompted to **Reboot** the computer. The computer reboots and finishes the update.

Reboot (Restart) the Computer

You may need to reboot (restart) the computer to correct conditions where an application stops responding to the system.

1. Save your files and close any open applications.
2. Press and hold the **Power** button until the options screen appears.
3. Tap **Restart**.
4. Tap **OK** to confirm Restart. The computer restarts.

If the touch panel display is unresponsive:

- Press and hold the **Power** button for approximately 8 seconds until the computer reboots.

About Enterprise Data Reset

You can perform an Enterprise data reset if a Reboot did not improve the condition and all other troubleshooting methods have not resolved the issue. This method provides a clean configuration for troubleshooting by erasing all data from the **Internal shared storage** location on the computer. Data is not erased from the IPSM Card location.

Caution: An Enterprise data reset results in data loss, only perform this procedure if all other recovery methods have failed. All personal content is erased including, but not limited to emails, pictures, contacts, Google account information, system settings and app settings.

Note: *This method of recovery may not be available if your system administrator has set policies to prevent the reset use.*

Before You Begin

- If you recently reset your Google Account password, wait 24 hours before performing a Enterprise data reset.
- Make sure you have your screen lock password, PIN or pattern if you activated one. You will need this to reset the computer.
- If you have a Google Account, back up your data and settings to your Google Account so you can restore them if needed.
- Connect the computer to an external power source or make sure you have a full battery charge.
- Make sure you have an Internet connection.

Enterprise Data Reset the Computer

1. Swipe up from the bottom of the Home screen to access all apps.
2. Select **Settings** > **System** > **Reset Options**.
3. Tap **Enterprise data reset**.
4. Tap **Reset Phone**.
5. If prompted, type your screen lock security pattern, PIN, or password and tap next ( ).
6. Tap **Erase Everything**. A message appears informing you an Enterprise data reset is being performed.

About Full Factory Reset

A Full Factory Reset should only be performed if you have exhausted all other troubleshooting options. This method reverts the computer back to the factory state by erasing all data in **Internal shared storage** and the **IPSM Card** storage locations on the computer.

Caution: A Full factory reset results in data loss. Perform this procedure only if all other recovery methods have failed and have no other option. All personal content is erased including, but not limited to emails, pictures, contacts, Google account information, system settings and app settings.

Note: *This method of recovery may not be available if your system administrator has set policies to prevent the reset use.*

Before You Begin

- If you added a Google Account to the computer, make sure you have your Google username and password associated with the computer. If you do not have the username and password, you will not be able to use the computer after the reset. This is a security measure that prevents unauthorized users from using the device if they try a Full factory reset.
- If you did not add a Google Account to the computer, the extra security level is not enabled and you will not need a Google username and password.
- If you recently reset your Google Account password, wait 24 hours before performing a Full factory reset.
- Connect the computer to an external power source or make sure you have a full battery charge.
- Make sure you have an Internet connection.

Full Factory Reset the Computer

1. Swipe up from the bottom of the Home screen to access all apps.
2. Select **Settings** > **System** > **Reset Options**.
3. Tap **Erase all data (factory reset)**.
4. Tap **Reset Phone**.
5. If prompted, type your screen lock security pattern, PIN, or password and tap next ( ).
6. Tap **Erase Everything**. A message appears informing you an Full factory reset is being performed.

Clean the Computer

To keep the computer in good working order, you may need to clean the touch screen. Clean the touch screen as often as needed for the environment in which you are using the computer. The computer withstands application of the following cleaning agents when applied to a clean soft cloth and removed immediately with a dry soft cloth:

- Acetic acid, 10% in water
- Ethyl alcohol, 10% in water
- Mild soap solutions

1. Press the **Power** button to suspend the computer.
2. Dip a clean cloth towel in the cleaning agent and wring out the excess.
3. Wipe dry.
4. Let the computer completely air dry before using again.

Maintenance - Vehicle Mounted Devices

Check the vehicle mounting hardware frequently and re-tighten if necessary.

If the vehicle mounting hardware and connections become broken, loose or cracked, the assembly must be taken out of service and replaced. Contact Technical Assistance for help.

Replace Front Panel

Front Panel Options

The front panel of the computer is field replaceable. The front panel assembly contains the keypad, touch screen and optional defroster. Should any of these components fail, the front panel assembly can easily be replaced to reduce downtime. The replacement front panel is available in these configurations:

- 64-key ANSI keyboard with standard touch screen or cold storage touch screen

Equipment Required

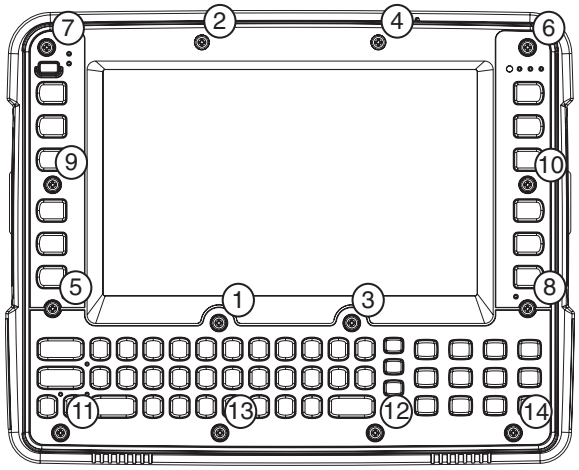
The following equipment is user-supplied:

- Torquing tool capable of measuring inch pounds
- #2 Phillips screwdriver bit

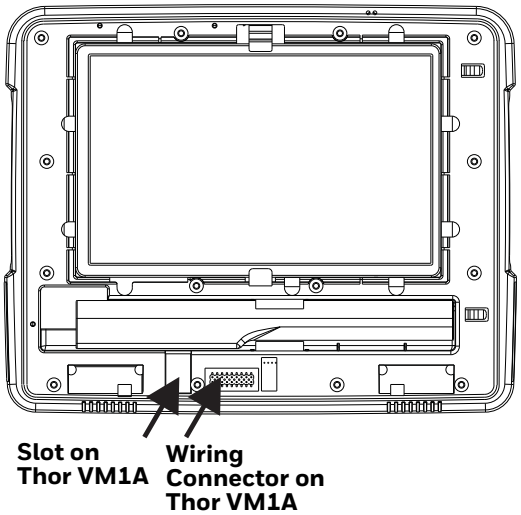
Replacement Procedure

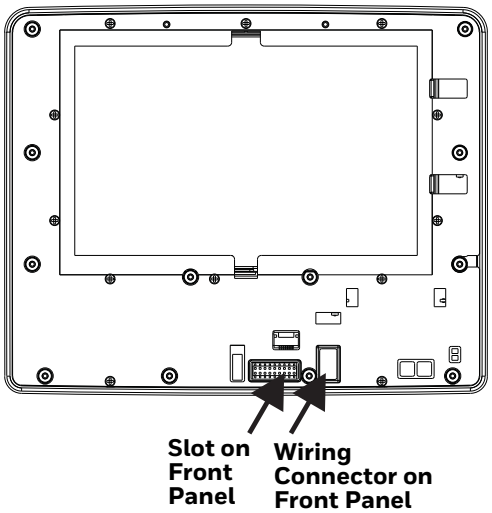
Caution: Before replacing the Thor VM1A front panel, Disconnect UPS Battery.

1. Place the computer on a clean, well-lit surface before performing the front panel replacement.
2. Power Off the computer.
3. Remove the computer from the dock.
4. Disconnect UPS Battery.
5. Loosen the fourteen (14) captive M3 screws holding the front panel. Use a #2 Phillips bit.



6. Carefully lift the front panel away from the device.



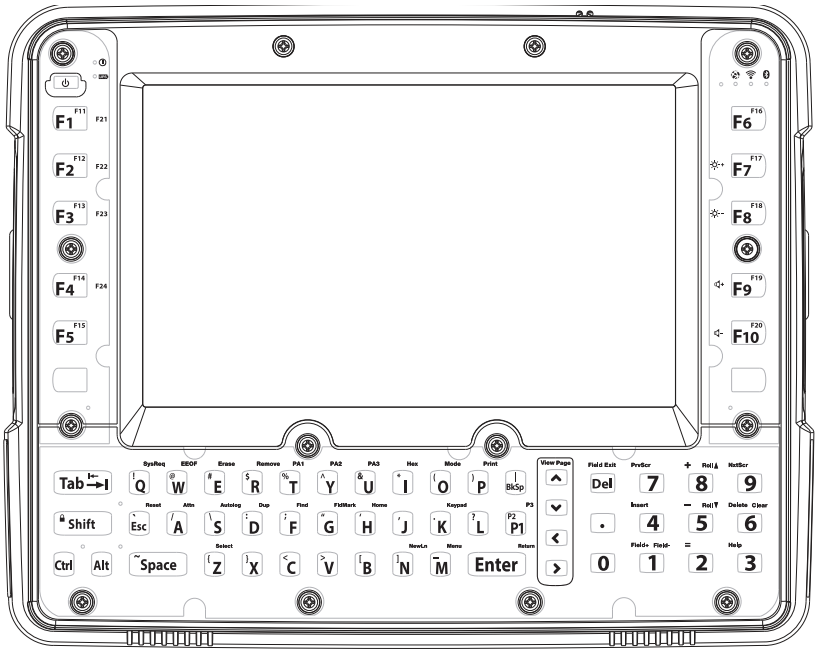


7. Position the replacement front panel so the tab on the back of the front panel lines up with the slot on the VM1A. Be sure the two wiring connectors are also aligned.
8. Position the replacement front panel so wiring connector on the back of the front panel lines up with the connector on the computer.
9. Gently press the front panel into place.
10. Tighten the fourteen (14) captive M3 screws. In the order shown in the top figure above, use a #2 Phillips bit and torque the screws to 6-7 inch pounds.
11. Reinstall the computer in the dock.
12. When the computer is placed in the powered dock, the UPS battery automatically reconnects.
13. Restart the computer.
14. The computer is ready for use.

APPENDIX

A KEY MAPS

64-Key QWERTY Keypad Key Map



- Because the keyboard only has 64 keys, all functions are not visible (or printed on the keyboard). Therefore the Thor VM1A keyboard supports what is called hidden keys -- keys that are accessible but not visible on the keyboard.
- The keyboard does not have a NumLock indicator or key. NumLock is always On.

Note: *When automatic brightness control is enabled for VM1A with an Outdoor display, the manual display brightness controls in the table below have no effect.*

To get this Key/Function	Press These Keys in this Order	
Power On/Suspend/Restart	Power	
Blue Key	Blue Key	
Orange Key	Orange Key	
Volume Up	Blue Key	F9
Volume Down	Blue Key	F10

To get this Key/Function	Press These Keys in this Order	
Display Backlight Brightness Up	Blue Key	F7 (see note above)
Display Backlight Brightness Down	Blue Key	F8 (see note above)
Shift	Shift	
Alt	Alt	
Ctrl	Ctrl	
Esc	Esc	
Space	Space	
Caps Lock	Orange Key	Shift
Enter	Enter	
Delete	Del	
. (VK_DECIMAL)	.	
Back Space	BkSp	
Insert	Orange Key	4
Tab	Tab	
Back Tab	Orange Key	Tab
Up Arrow	Up Arrow	
Down Arrow	Down Arrow	
Right Arrow	Right Arrow	
Left Arrow	Left Arrow	
Page Up	Blue Key	Up Arrow
Page Down	Blue Key	Down Arrow
End	Blue Key	Right Arrow
Home	Blue Key	Left Arrow
F1 - F10	F1 - F10	
F11 - F20	Orange Key	F1 - F10
a	A	
b	B	
c	C	
d	D	
e	E	
f	F	
g	G	
h	H	
i	I	
j	J	
k	K	
l	L	
m	M	
n	N	

To get this Key/Function	Press These Keys in this Order	
o	O	
p	P	
q	Q	
r	R	
s	S	
t	T	
u	U	
v	V	
w	W	
x	X	
y	Y	
z	Z	
A	Shift	A
B	Shift	B
C	Shift	C
D	Shift	D
E	Shift	E
F	Shift	F
G	Shift	G
H	Shift	H
I	Shift	I
J	Shift	J
K	Shift	K
L	Shift	L
M	Shift	M
N	Shift	N
O	Shift	O
P	Shift	P
Q	Shift	Q
R	Shift	R
S	Shift	S
T	Shift	T
U	Shift	U
V	Shift	V
W	Shift	W
X	Shift	X
Y	Shift	Y
Z	Shift	Z
|	Orange Key	Bksp

To get this Key/Function	Press These Keys in this Order	
~	Orange Key	Space
:	Orange Key	D
#	Orange Key	E
;	Orange Key	F
“	Orange Key	G
‘	Orange Key	H
*	Orange Key	I
,	Orange Key	J
. (VK_PERIOD)	Orange Key	K
?	Orange Key	L
_	Orange Key	M
‘	Orange Key	ESC
(	Orange Key	O
)	Orange Key	P
!	Orange Key	Q
$	Orange Key	R
\	Orange Key	S
%	Orange Key	T
&	Orange Key	U
@	Orange Key	W
^	Orange Key	Y
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
0	0	
>	Orange Key	V
[	Orange Key	N
]	Orange Key	B
=	Orange Key	2
{	Orange Key	Z
}	Orange Key	X
/	Orange Key	A
-	Orange Key	5

To get this Key/Function	Press These Keys in this Order	
+	Orange Key	8
<	Orange Key	C
F11	Orange Key	F1
F12	Orange Key	F2
F13	Orange Key	F3
F14	Orange Key	F4
F15	Orange Key	F5
F16	Orange Key	F6
F17	Orange Key	F7
F18	Orange Key	F8
F19	Orange Key	F9
F20	Orange Key	F10
P2	Orange Key	P1
View ^	Orange Key	^
View v	Orange Key	v
View <	Orange Key	<
View >	Orange Key	>
Field Exit	Orange Key	Del
PrvScr	Orange Key	7
Field +	Orange Key	1
NxtScr	Orange Key	9
Delete	Orange Key	6
Help	Orange Key	3
F21	Blue Key	F1
F22	Blue Key	F2
F23	Blue Key	F3
F24	Blue Key	F4
SysReq	Blue Key	Q
EEOF	Blue Key	W
Erase	Blue Key	E
Remove	Blue Key	R
PA1	Blue Key	T
PA2	Blue Key	Y
PA3	Blue Key	U
Hex	Blue Key	I
Mode	Blue Key	O
Print	Blue Key	P
Reset	Blue Key	ESC

To get this Key/Function	Press These Keys in this Order	
Attn	Blue Key	A
Autolog	Blue Key	S
Dup	Blue Key	D
Find	Blue Key	F
FldMrk	Blue Key	G
Home	Blue Key	H
Keypad	Blue Key	K
OK	Blue Key	P1
Select	Blue Key	Z
NewLn	Blue Key	N
Menu	Blue Key	M
Return	Blue Key	Enter
Field-	Blue Key	1
Roll ^	Blue Key	8
Roll v	Blue Key	5
Clear	Blue Key	6

APPENDIX

B SPECIFICATIONS AND REFERENCE MATERIALS

Technical Specifications

Thor VM1A

Processor	2.2 GHz Qualcomm Snapdragon™ 660 octacore processor
Memory	4 GB SDRAM
Storage Expansion	User installable, supports 8GB SD card
Operating System	Android 8, upgradeable through Android R
Radio Modules	802.11 a/b/g/n/ac radio / Bluetooth
Scanner Options	No integrated scanner, Optional serial, USB or Bluetooth scanners
Display Technology	Intel GMA 500 graphics processor, WVGA compatible Active matrix TFT Resolution: 1280x768 pixels 400 NIT (indoor) or 900 NIT (outdoor) brightness 8" (measured horizontal) display Transmissive with LED backlight Automatic brightness control on outdoor display Vehicle motion screen blanking available
Keyboard	Integrated keyboard, 64-key QWERTY
Touch Screen	eGalaxCalibrator Mercury Impact resistive Signature capture capability Optional defroster Field replaceable front panel including touch screen and optional defroster
External Connectors	Optional external 802.11 antenna connectors Additional connectors on dock, see below
Beeper	Minimum loudness greater than 95dBm at 10 cm in front of unit
Power Supply	10 to 60 VDC isolated
Uninterruptible POwer Supply	Internal UPS battery, field replaceable, 30-minute life at -20°C (-4°F)
Backup Battery (RCT)	Internal lithium battery maintains Real Time Clock

VM1D Standard Dock

Caution: This dock is designed for DC power vehicle-mounted applications only.

SKUs	VM1001VMCRADLE (with RAM ball) VM1002VMCRADLE VM1003VMCRADLE
Power Connector	6-pin connector: Direct 10-60 VDC input power Optional external converter for extended range DC (60-150 VDC)
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connetor	15-pin male, CANbus/Audio connector supports either audio/microphone via adapter cable or J1939 Female and J1939 Male connectors via CANbus cable
USB Connector	9-pin female, USB connector supports USB host port via adapter cable
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 10-60 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type o f fuse: • Littlefuse 0215008.MXP • Cooper Bussmann BK1/S506-8-R • Bel Fuse 5HT 8-R • or equivalent
External Power Supply	50-150 VDC DC power supply available for vehicles over 60 VDC ***Note:*** *Use dock VMX005VMCRADLE (VMXD Enhanced Dock of Off-Vehicle Use) in AC power applications.*

VM3D Enhanced Dock

Caution: This dock is designed for DC power vehicle-mounted applications only.

SKUs	VM3001VMCRADLE
Power Connector	6-pin connector: Direct 10-60 VDC input power Optional external converter for extended range DC (60-150 VDC)
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connetor	15-pin male, CANbus/Audio connector supports either audio/microphone via adapter cable or J1939 Female and J1939 Male connectors via CANbus cable
USB1 Connector	9-pin female, USB connector supports USB host port via adapter cable
USB2 Connector	15-pin female, USB connector supports two USB host ports via adapter cable
USB Host Connector	One USB Host connector behind waterproof cap

Ethernet	One RJ45 Ethernet connector behind waterproof cap
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 10-60 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type o f fuse: • Littlefuse 0215008.MXP • Cooper Bussmann BK1/S506-8-R • Bel Fuse 5HT 8-R • or equivalent
External Power Supply	50-150 VDC DC power supply available for vehicles over 60 VDC ***Note:*** *Use dock VMX005VMCRADLE (VMXD Enhanced Dock of Off-Vehicle Use) in AC power applications.*

VMXD Enhanced Dock

Caution: This dock is designed for DC power vehicle-mounted applications only.

SKUs	VMX004VMCRADLE
Power Connector	6-pin connector: 13.2 VDC input power; requires DC power supply Connector is also used for screen blanking via COM1 CTS and RTS signals
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9 Do not use COM1 when screen blanking box is attached to avoid port conflicts
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connetor	15-pin male, CANbus/Audio connector supports either audio/microphone via adapter cable or J1939 Female and J1939 Male connectors via CANbus cable
USB1 Connector	9-pin female, USB connector supports USB host port via adapter cable
USB2 Connector	15-pin female, USB connector supports two USB host ports via adapter cable
USB Host Connector	One USB Host connector behind waterproof cap
Ethernet	One RJ45 Ethernet connector behind waterproof cap
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 13.2 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type o f fuse: • Littlefuse 0215008.MXP • Cooper Bussmann BK1/S506-8-R • Bel Fuse 5HT 8-R • or equivalent
External Power Supply	50-150 VDC DC power supply available for vehicles over 60 VDC ***Note:*** *Use dock VMX005VMCRADLE (VMXD Enhanced Dock of Off-Vehicle Use) in AC power applications.*

VMXD Enhanced Dock for Off-Vehicle Use (QM3AC)

Caution: This dock is designed for AC power (non vehicle-mounted) applications only.

SKUs	VMX005VMCRADLE
Power Connector	6-pin connector: 15 VDC input power via required AC/DC power
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connetor	15-pin male, CANbus/Audio connector supports either audio/microphone via adapter cable or J1939 Female and J1939 Male connectors via CANbus cable
USB1 Connector	9-pin female, USB connector supports USB host port via adapter cable
USB2 Connector	15-pin female, USB connector supports two USB host ports via adapter cable
USB Host Connector	One USB Host connector behind waterproof cap
Ethernet	One RJ45 Ethernet connector behind waterproof cap
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 10-60 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type o f fuse: • Littlefuse 0215008.MXP • Cooper Bussmann BK1/S506-8-R • Bel Fuse 5HT 8-R • or equivalent
External Power Supply	AC Adapter, 120-240 VAC to 15 VDC required ***Note:*** *This dock for use in AC power applications. See other docks for DC power applications.*

Dimensions

Thor VM1A

Width	10.6” (26.8 cm)
Height	8.4” (21.4 cm)
Depth	1.7” (4.3 cm)
Weight	5.6 lb. (2.5 kg)

VM1D Standard Dock

Note: *The RAM ball is not included in the following measurements.*

Length	7.1" (18.0 cm)
Width	6.1" (15.5 cm)
Height	2.5" (6.4 cm), measurement includes strain relief cable clamps
Weight	3.2 lb. (1.5 kg)

VM3D and VMXD Enhanced Dock

Note: *The RAM ball is not included in the following measurements.*

Length	7.1" (18.0 cm)
Width	6.1" (15.5cm)
Height	2.1" (5.4 cm), measurement includes strain relief cable clamps
Weight	2.4 lb. (1.1 kg)

Environmental Specifications

Thor VM1A and Dock

Operating Temperature	Standard: -4°F to 122°F (-20°C to 50°C) [non-condensing] Cold Storage: -22°F to 122°F (-30°C to 50°C) [condensing]
Storage Temperature	Standard and Cold Storage: -22°F to 140°F (-30°C to 60°C) [non-condensing]
ESD	8 KV air, 4kV direct contact
Operating Humidity	Standard: Up to 90% non-condensing at 104°F (40°C) Cold Storage: 100%
Water and Dust	IEC 60529 compliant to IP66
Vibration	MIL-STD-810F, composite wheeled vehciles
Crash	SAE-J1455

Network Card Specifications

WLAN - Summit 802.11 a/b/g/n

Bus Interface	32-bit PCIe Mini Card
Wireless Frequencies (varies by regulatory domain)	2.4 to 2.4895 GHz IEEE 802.11b/802.11g DSSS of OFDM 5.15 to 5.82 GHz IEEE 802.11a DSSS OFDM
RF Data Rates	802.11a (OFDM) 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b (DSSS) 1, 2, 5.5, 11 Mbps 802.11g (OFDM) 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n (OFDM 20 MHz chs) 13, 26, 39, 52, 78, 104, 117, 130 Mbps 802.11n (OFDM 40 MHz chs) 27, 54, 81, 108, 162, 216, 243, 270 Mbps
RF Power Level	50 mW max
Channels	FCC: 1-11, 36, 40, 44, 48, 149, 153, 157, 161 ETSI: 1-13, 36, 40, 44, 48
Connectiivity	TCP/IP, Ethernet, ODI
Diversity	Yes

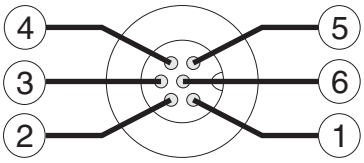
WPAN - Bluetooth

Bus Interface	USB
Enhanced Data Rate	Up to 3.0 Mbit/s over the air
Connection	No less than 32.80 feet (10 meters) line of sight
Bluetooth Version	v5.0 including Bluetooth Low Energy (BLE) support
Operating Frequency	2.402 - 2.480 GHz
QDID	B013455

Port and Connector Pinouts

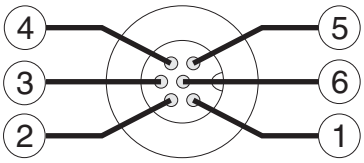
Power Supply Connector

VM1D Standard Dock and VM3D Enhanced Dock



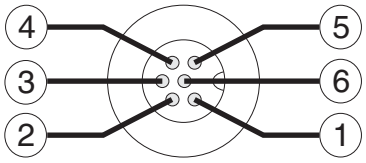
Pin	Signal	Description
1	V In+	10-60V DC Input +
2	V In+	10-60V DC Input +
3	V In-	Input -
4	V In-	Input -
5	GND	Chassis ground
6	Ignition	+0V to 60V to start terminal

VMXD Enhanced Dock



Pin	Signal	Description
1	V In+	13.2V DC input + provided by DC/DC adapter
2	V In+	13.2V DC input + provided by DC/DC adapter
3	V In-	Input -
4	V In-	Input -
5	COM1 RTS	Screen Blanking Box + The green wire in the power cable must be connected to the switched side f the screen blanking box. See the applicable wiring diagram below.
6	COM1 CTS	Screen Blanking Box - The white wire in the power cable must be connected to the unswitched side f the screen blanking box. See the applicable wiring diagram below.
Cable shell provides chassis ground connection.		

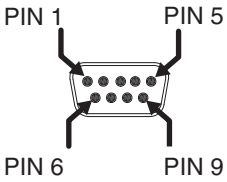
VMXD Enhanced Dock for Off-Vehicle Use (QM3AC)



Pin	Signal	Description
1	V In+	15V DC Input + provided by AC/DC adapter
2	V In+	15V DC Input + provided by AC/DC adapter
3	V In-	Input -
4	V In-	Input -
5	GND	No Connection
6	Ignition	No Connection

VMXD enhanced dock for off-vehicle use requires adapter cable VM1076CABLE to connect the dock to the AC/DC adapter. This cable is included in the AC kit for off-vehicle use.

COM1 and COM2 Connector

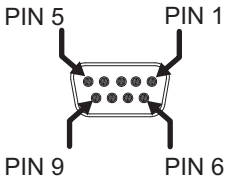


Pin	Signal	Description
1	V In+	15V DC Input + provided by AC/DC adapter
2	V In+	15V DC Input + provided by AC/DC adapter
3	V In-	Input -
4	V In-	Input -
5	GND	No Connection
6	Ignition	No Connection

VMXD Enhanced Dock only: Because the power supply connector port for the VMXD Enhanced Dock contains COM1 RTS and CTS signals, the COM1 port on the dock should not be sued when the power cable is used for screen blanking to avoid port conflicts.

USB and USB1 Connector

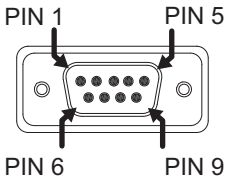
The Standard Dock has a USB connector. The Enhanced Dock has a USB1 connector.



Pin	Signal	Description
1	DCD	Data Carrier Detect - Input
2	RXD	Receive Data - Input
3	TXD	Transmit Data - Output
4	DTR	Data Terminal Ready - Output
5	GND	Signal/Power Ground
6	DSR	Data Set Ready - Input
7	RTS	Request to Send - Output
8	CTS	Clear to Send - Input
9	+5VDC	Bar Code Scanner Power - 500mA max
Shell	CGND	Chassis Ground

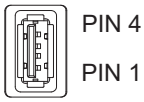
USB Host/Client Y Cable

D9 Male Connector



Pin	Signal	Description
1	GND	Common ground
2	USBC_D+	USB client data signal (not used)
3	USBC_D-	USB client data signal (not used)
4	USB_H1_PWR	USB host 1; 5V output power
5	GND	Common ground
6	GND	Common ground
7	USB_H1_D+	USB host 1 data signal
8	USB_H1_D-	USB host 1 data signal
9	USBC_VBUS	USB client 5V detect from attached host (not used)

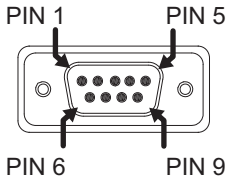
USB Host Connector



Pin	Signal	Description
1	5V_USB	USB Power, Current Limited
2	USB_H1_D-	USB D-
3	USB_H1_D+	USB D+
4	GND	USB Power Return
Shell	CGND	Chassis Ground

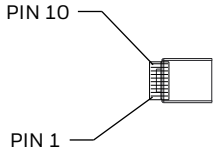
USB Host to Scanner Cable

D9 Male Connector



Pin	Signal	Description
1	Not used	
2	Not used	
3	Not used	
4	USB_H1_PWR	USB host 5V output power
5	GND	Common ground
6	Not used	
7	USB_H1_D+	USB host 1 data signal (twisted pair)
8	USB_H1_D-	USB host 1 data signal (twisted pair)
9	USBC_VBUS	USB client 5V detect from attached host

RJ50 Connector

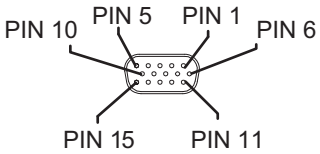


Pin	Signal	Description
1	Drain	To D9 connector shell

Pin	Signal	Description
2	Not used	
3	GND	Common Ground
4	Not used	
5	Not used	
6	Not used	
7	USB_H1_PWR	USB host 5V output power
8	Not used	
9	USB_H1_D+	USB host 1 data signal (twisted pair)
10	USB_H1_D-	USB host 1 data signal (twisted pair)

USB2 Connector

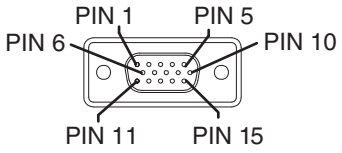
The USB2 connector is only present on the Enhanced Dock.



Pin	Signal	Description
1	Not used	
2	Not used	
3	Not used	
4	Not used	
5	Not used	
6	USB_H2_PWR	USB host 2 5V output power
7	USB_H2_D+	USB host 2 data signal
8	USB_H2_D-	USB host 2 data signal
9	GND	Common ground
10	GND	Common ground
11	USB_H3_PWR	USB host 3 5V output power
12	USB_H3_D+	USB host 3 data signal
13	USB_H3_D-	USB host 3 data signal
14	GND	Common ground
15	GND	Common ground

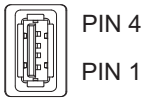
USB Dual Host Y Cable

D15 Male Connector



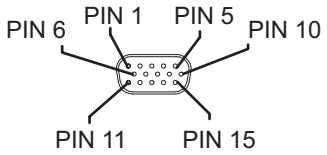
Pin	Signal	Description
1	Not Used	
2	Not Used	
3	Not Used	
4	Not Used	
5	Not Used	
6	USB_H2_PWR	USB host 2 5V output power
7	USB_H2_D+	USB host 2 data signal
8	USB_H2_D-	USB host 2 data signal
9	GND	Common ground
10	GND	Common ground
11	USB_H3_PWR	USB host 3 5V output power
12	USB_H3_D+	USB host 3 data signal
13	USB_H3_D-	USB host 3 data signal
14	GND	Common ground
15	GND	Common ground

USB Host Connectors



Pin	Signal	Description
1	5V_USB	USB Power, Current Limited
2	USB_H2_D-	USB D-
3	USB_H2_D+	USB D+
4	GND	USB Power Return
Shell	CGND	Chassis Ground

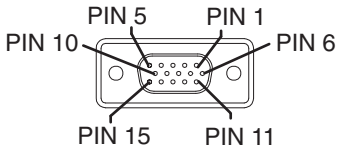
Audio Connector



Pin	Signal	Description
1	-	CAN reserved
2	CAN_L	CAN_L bus line dominant low
3	CAN_GND	CAN Ground
4	-	CAN reserved
5	GND	Optional ground
6	Audio return	Headset return
7	Audio output	Headset output
8	Mic input	Microphone input
9	Mic return	Microphone output
10	Audio return	
11	GND	Optional ground
12	CAN_SHLD	
13	CAN_H	CAN_H bus line dominant high
14	-	CAN reserved
15	CAN_V+	Optional CAN external Power Supply

Headset Adapter Cable

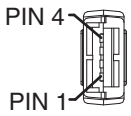
D15 Female Connector



Pin	Signal	Description
1	Not used	
2	Not used	
3	Not used	
4	Not used	
5	Not used	
6	Audio return	Headset return
7	Audio output	Headset output

Pin	Signal	Description
8	Mic input	Microphone input
9	Mic return	Microphone return
10	Not used	
11	Not used	
12	Not used	
13	Not used	
14	Not used	
15	Not used	

Quick Connect Headset Connector



Pin	Signal	Description
1	Mic input	Microphone input
2	Mic return	Microphone return
3	Audio output	Headset output
4	Audio return	Headset return

APPENDIX

C AGENCY INFORMATION

Thor VM1A vehicle-mount computers meet or exceed the requirements of all applicable standards organizations for safe operation. The best way to ensure safe operation is to use the vehicle-mounted computer according to the agency guidelines in this user guide and on the regulatory sheet shipped with the vehicle-mounted computer. Read all guidelines before using your vehicle-mounted computer. To download product documentation for the Thor VM1A computer, go to www.honeywellaidc.com.

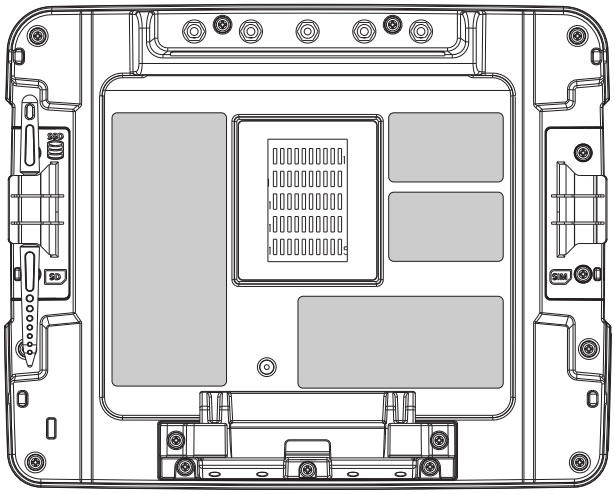
This documentation is relevant for the following Thor models: VM1A-L0N.

The EU declaration of conformity, if applicable, and other publicly downloadable certificates are available at www.honeywellaidc.com/compliance.

Label Locations

Compliance labels are located in the dock well area on the back of the Thor VM1A, as indicated by the shaded areas below. The VM1A must be removed from the dock to view the labels.

Model number, serial number and other identifiers are located on these labels.



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VM1A-A8-EN-UG-AG Rev (a)
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