

# Operating Panels

Ethernet, USB, Pokeys, Wired/Wireless Pendants

- [Ethernet](#)
  - [Ethernet Operator Panel Installation and Setup](#)
  - [Pokeys Operating Panel Troubleshooting](#)
- [USB](#)
  - [USB Operator Panel Installation - Mach3](#)
- [Pendants](#)
  - [X15-20-01 Pendant Pin-Out Diagram](#)
  - [X15-41-01 Wireless MPG Pendant](#)
  - [Pendant DB-25 Connector](#)
- [ModIO or Modbus](#)
  - [ModBus Operator Panel Setup Guide](#)
  - [Mod-IO User Manual](#)
  - [Operator Panel Drawing](#)
- [Pokeys Lost Connection](#)
- [X15-10-01](#)
- [X15-10-02](#)
- [X15-10-03](#)
- [X15-10-04](#)
- [X15-12-01](#)
- [X15-12-02](#)
- [X15-14-21](#)
- [X15-14-22](#)
- [X15-20-01](#)
- [X15-20-02](#)
- [X15-21-01](#)
- [X15-31-01](#)
- [X15-41-01](#)

# Ethernet

# Ethernet Operator Panel Installation and Setup



## Installation Guide

Depending on the reasoning for the change and your existing equipment this documentation may not match exactly for your application/setup. This is a general guide that should assist in making the changes and MachMotion support is available to assist further if needed.

Below is an overview of your Ethernet operator panel upgrade kit.



Figure 1 - Ethernet PoKeys kit components

Follow the steps below to install the Ethernet device.

Step 1: Remove the existing operator panel by taking out the six screws.



Figure 2 - Removing the operator panel

Step 2: Remove the USB device on the back of the operator panel by carefully wobbling it back and forth. It is very important to remove it evenly so none of the pins get bent. This can be difficult, a little prying from different places a bit at a time can help.



Figure 3 - Installing the PoKeys board

Step 3: Replace the USB device with the Ethernet device.

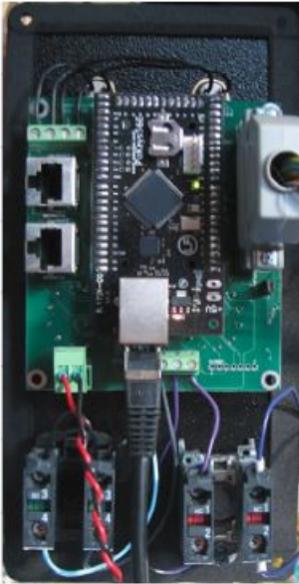


Figure 4 - The back of the operator panel with Ethernet PoKeys installed

Step 4: Connect the small connector side of the red/black wire pair to the operator panel as shown below.

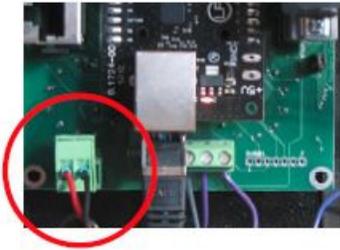


Figure 5 - 5V power input for PoKeys board

Step 6: Place the switch in the hole where the operator panel mounts. Then run the spare Cat5 (Ethernet) cable, the red/black wire pair, and black Ethernet switch wire through the back of the control. If you have an internet cable that you want to connect, make sure to connect it to the switch at this time.

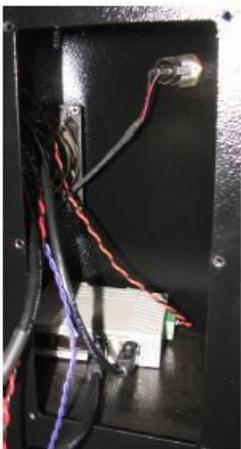


Figure 6 - Ethernet switch installed behind the operator panel

Step 7: Connect the Cat5 cable to the Ethernet port on the control, the red/black wire pair to the 5V connector, and the black Ethernet switch wire to the 12V as shown below.

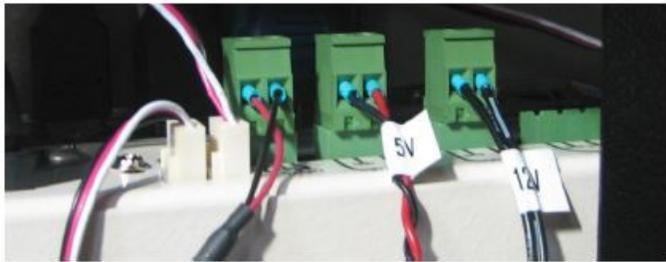


Figure 7 - Computer power output ports

Step 8: Mount the operator panel back on the control.

## Setup

Step 1: If Mach3 is open, close it. Run the MachMotion PoKeys installer.

Step 2: Start Mach3 and enable the Pokeys plugin:

1. "Config"->"Config Plugins"
2. Uncheck the old PoKeys0 plugin and enable the new PoKeys-PoLabs-v0.01 one.

When the correct plugin is completed restart Mach3.

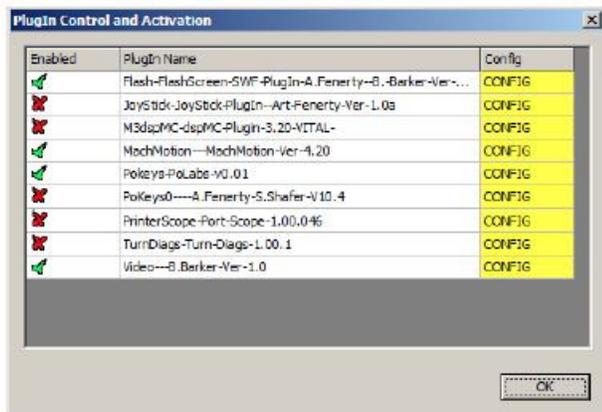


Figure 8 - Mach3 PlugIn Control Window

Step 3: Open the pokeys plugin in Mach3:

1. "Config"->"Config Plugins"
2. Press the yellow "CONFIG" button

Step 4: In the new window that opens select "Add new"

Step 5: Choose PoKeys board from the drop down list, hit "OK" and then restart Mach3.

Step 6: Open the PoKeys plugin as before and select the PoKeys board from the list and press "Configure"

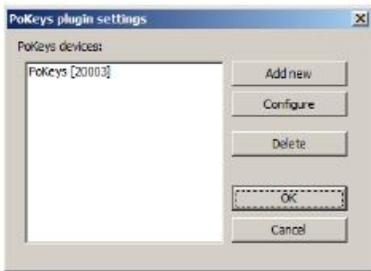


Figure 9 - PoKeys Plugin Settings

Step 7: Go to the “Import/Export settings” tab and check the “PoKeys pin mapping” and “Encoder settings and mapping” check boxes. Next hit the “Import” button and navigate to the location of the XML file needed:

- Apollo I (or IO6) board: PokeysConfig.xml
- Apollo III (or Interpreter): MotionControllerPokeysConfig.xml
  - Either of these files are likely located in the c:\mach3 folder or in the MachMotion Programs and Drivers Folder (shortcut on desktop or look in the C:\ drive)
  - Files are also attached to the online version of this document

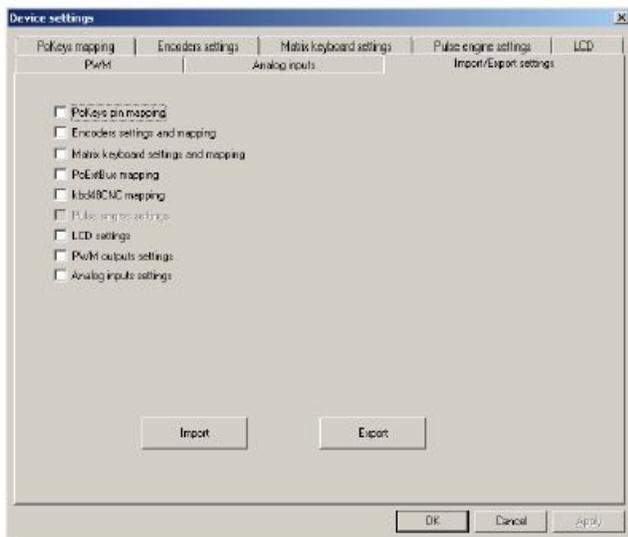


Figure 10 - PoKeys import settings tab

Step 8: Close the configuration window then restart Mach3 one last time.

## Warranty Information

MachMotion warranty policy is subject to change. Updated information is available at our website:  
<https://machmotion.com/warranty>

The MachMotion Team

<http://www.machmotion.com>

14518 County Road 7240, Newburg, MO 65550

(573) 368-7399 • Fax (573) 341-2672

# Pokeys Operating Panel Troubleshooting

| File Type   | Document Name  | View / Download / Print |
|---|--|-------------------------|
|  | <a href="#">Pokeys Operating Panel<br/>Troubleshooting</a> | <a href="#">Launch</a>  |

Keywords: jogging, operating panel, x15-10-01, 02, 03, 04

USB

# USB Operator Panel Installation - Mach3



## 1. Introduction

### 1.1 Overview

System Components:

- X15-10-01 Operator Panel
- X15-20-01 MPG Pendant (Optional)

### 1.2 Tools Required

- Small flat head screw driver
- 1/16" Allen Wrench

## 2. Hardware Startup

### 2.1 Operator Panel Wiring

1. The USB cable runs from the back of the operator panel (see Figure 1) to the control (see Figure 2).

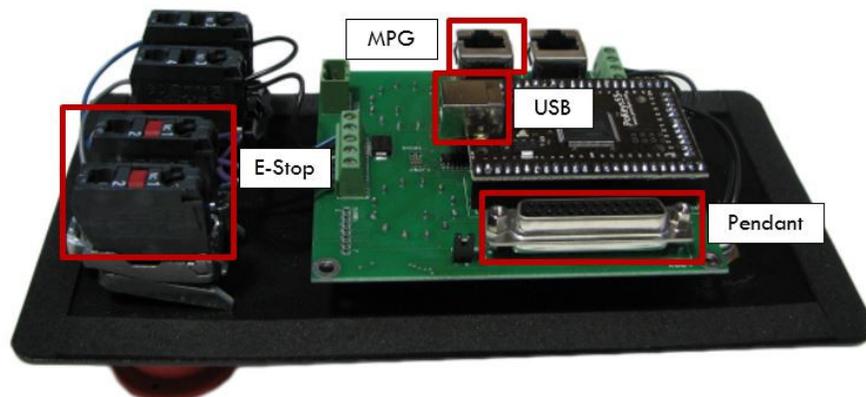


Figure 1 - Back of Operator Panel



Figure 2 - Control USB Wiring Connections

2. The E-Stop circuit goes from the back of the mushroom E-Stop button (see Figure 1) to the motion controller E-Stop connection (see Figure 3 for an example).

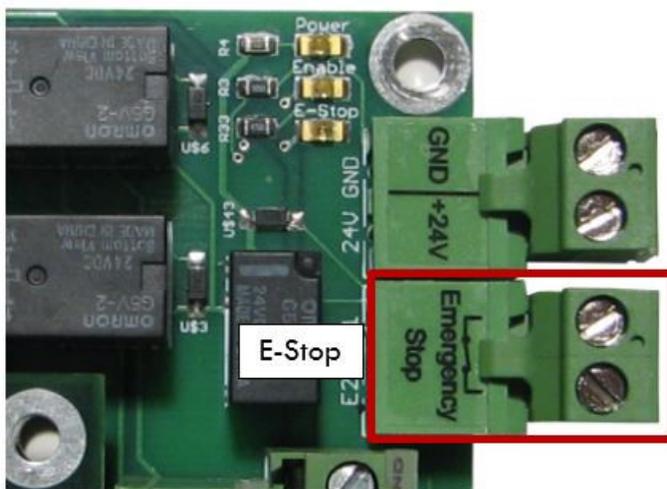


Figure 3 - Apollo E-Stop Connection

## 2.2 Pendant Wiring

1. The 25 pin pendant cable plugs into the back of the operator panel (see Figure 1).
2. If a motion controller being used in the system the MPG signal must be passed back to it for the pendant to work.
  1. Apollo I: There is no additional wiring beyond the pendant plug necessary.
  2. Apollo III: An Ethernet cable must be run from the MPG plug on the operator panel (see Figure 1) to MPG #1 on the Apollo III board (see Figure 4).

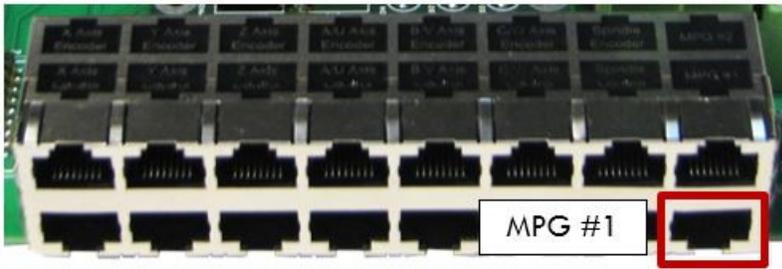


Figure 4 - Apollo III MPG Socket

1. Interpreter 1000: An Ethernet cable must be run from the MPG socket on the operator panel (see Figure 1) to an open encoder on the Interpreter 1000 (see Figure 6). See Figure 5 for the cable pin out.

| MPG Mod-Jacks |          |              |
|---------------|----------|--------------|
| Pin #         | Function | Color        |
| 1             | A+       | White/Orange |
| 2             | A-       | Orange       |
| 3             | B+       | White/Green  |
| 4             | +5VDC    | Blue         |
| 5             | GND      | White/Blue   |
| 6             | B-       | Green        |
| 7             | Unused   | White/Brown  |
| 8             | Unused   | Brown        |

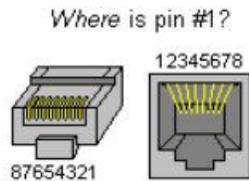


Figure 5 - MPG Ethernet Cable Pinout



Figure 6 - Interpreter 1000 Encoder Input

## 3. Software Setup

### 3.1 PoKeys Setup

The X15-10-01 Operator panel and the X15-20-01 Pendant use PoKeys interface software to communicate between the hardware and Mach3. To set up the PoKeys software follow the steps below.

1. Install and run the PoKeys Setup executable
2. Open Mach3
3. Go to Config->Config Plugins
4. Enable the PoKeys plugin
5. Close Mach3 and open it again
6. Go to Config->Config Plugins
7. Press the CONFIG button on the PoKeys-PoLabs-vX.XX line

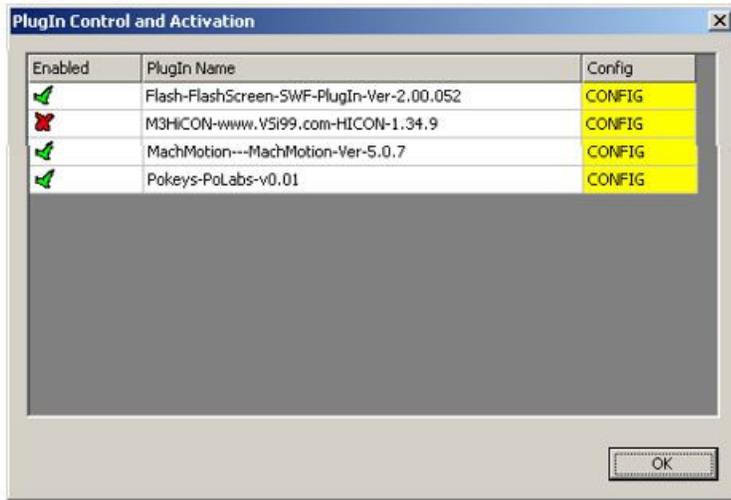


Figure 7 - Plugin Control

8. Press the [**Add new**] button



Figure 8 - Pokeys Plugin Settings

9. Select the correct device from the drop down list (There will probably only be one)
10. Press [**OK**]

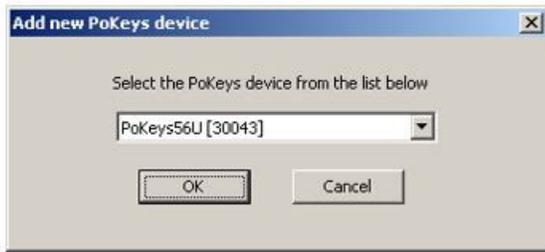


Figure 9 - Pokeys Device Selection

11. Close out of the windows and Mach3 and then open Mach3 again
12. Go to PlugIn Control->Configure PoKeys

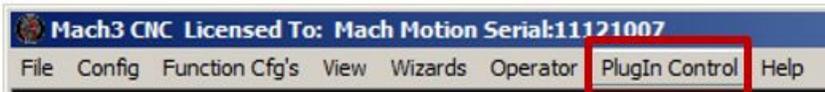


Figure 10 - Plugin Control

13. Go to the Import/Export Settings tab
14. Check PoKeys pin mapping and Encoders settings and mapping (see Figure 11)
15. Press the [**Import**] button
16. Go to the Programs and Drivers folder on the desktop
17. Choose the correct PokeysConfig file and press [**OK**]
  1. Apollo I: PokeysConfig.XML
  2. Apollo III or Interpreter 1000: MotionControllerPokeysConfig.XML

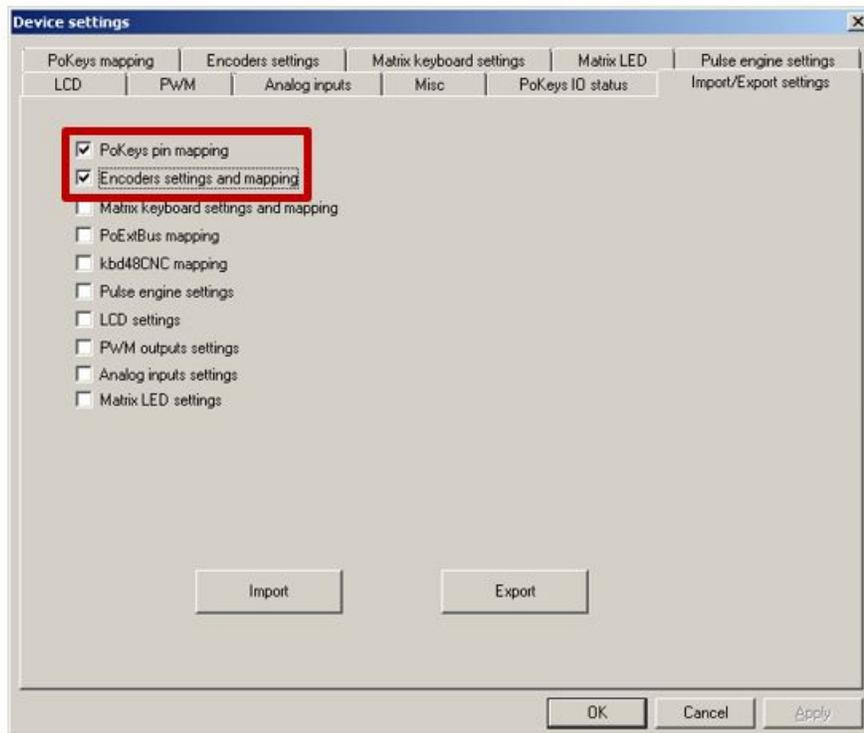


Figure 11 - Pokeys Settings Import

### 3.2 Operator Panel Setup

Once the PoKeys software is installed and configured the operator panel can be enabled in the software.

1. Select PlugIn Control->MachMotion Config
2. Go to the Control Panels tab
3. Check the box for X15-10-01 Pendant (see Figure 12)
4. Set the PoKeys LED Offset to 1700 (see Figure 12)
5. Press the [**Save**] button

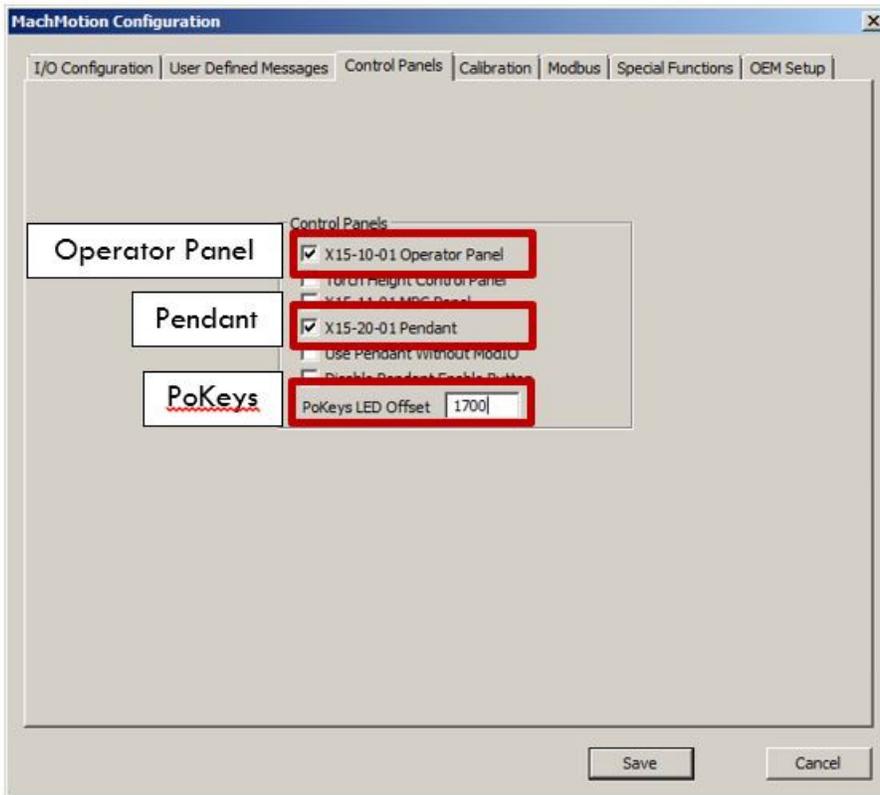


Figure 12 - Machmotion Plugin Control Panel Options

### 3.3 Pendant Setup

To set up the X15-20-01 Pendant, do the following.

1. Select PlugIn Control->MachMotion Config
2. Go to the Control Panels tab
3. Check the box for X15-20-01 Operator Panel (see Figure 12)
4. Press the [**Save**] button

If the system has a motion controller continue.

5. Go to Config->Config Plugins
6. Press the CONFIG button on the motion controller plugin line (M3HiCON or M3DSPMC)
7. In the MPG #1 box select the type of input and the index of MPG input used
  1. Apollo III: For MPG #1 use index 7 (MPG #2 is index 8)
  2. Interpreter 1000: Use the index of the axis the CAT5 cable is wired into

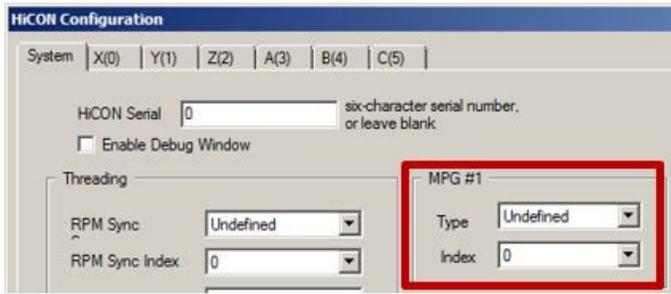


Figure 13 - Motion Controller MPG Setup

## Warranty Information

MachMotion warranty policy is subject to change. Updated information is available at our website: <https://machmotion.com/warranty>

The MachMotion Team

<http://www.machmotion.com>

14518 County Road 7240, Newburg, MO 65550

(573) 368-7399 • Fax (573) 341-2672

# Pendants

# X15-20-01 Pendant Pin-Out Diagram

| File Type   | Document Name                                     | View / Download / Print               |
|---|---|---------------------------------------|
|  | <a href="#">X15-20-01 Pendant Pin-Out Diagram</a> | <input type="button" value="Launch"/> |

# X15-41-01 Wireless MPG Pendant

## Connecting the Pendant

Each pendant consists of a handheld pendant and a USB receiver. These items are paired based on their ID number, which can be found on a sticker on both devices. The USB receiver must be plugged into the control in order for the pendant to work. If the pendant cannot find the receiver when it is powered on, then a "Lost Rf" message will be printed on the pendant screen. This can be caused by the receiver not being plugged in to the control, the control being turned off, or by the distance between the pendant and receiver being too great.

## Configuring the Pendant

 \*Note: May have to update the Mach4 Software and MachMotion Plugin.

To use the pendant with the control, go to Configure -> Plugins -> MachMotion -> User Interface through the menu system. On 1000 series controls, this menu is available on the Settings tab by clicking the 'Configure' button. On 2000 controls, it is available on the Service/Maintenance tab by clicking on the 'Interface Config' button.

In the Operator Panels section, select X15-41-01 Wireless MPG Pendant from the top list and press 'Add'. The pendant will load with its default configuration.

The pendant has an axis selector for the MPG. The axes to jog while '4', '5', or '6' are selected is configurable here.

The checkbox for 'Require Confirmation' will force the user to press some buttons twice in order to perform their functionality, such as 'Zero Axis'. Unchecking this box will allow the user to perform these actions with only one press.

The pendant has four configurable function buttons. The options for these buttons are shown in the pressed and released options. First select which button should be configured, then select which command it should do. To create custom commands, see documentation for User Commands.

Press 'Save' to save changes and leave the configuration window.

## Pendant Functionality

The pendant must be turned on for any functionality to work. The pendant can be turned off at any time. The pendant is turned on and off by the large silver button on the front of the pendant.

The 'Zero Axis' button will zero the axis currently selected by the axis selector knob.

The 'Feed +/-' and 'Rapid +/-' increment and decrement the overrides by 10%, unless the overrides are within 0-10%, in which case they increment and decrement by 2%.

# Screen Display

There are four lines displayed on the pendant screen. The top line shows the enabled state of the control. If there is an alarm on the control, it will display that instead of the enabled state. The second line is the state of the control, such as 'Idle' or 'File Run'. The third line is the name and position of the axis currently selected by the axis selector. If no axis is selected, then this line will be blank. The fourth line will briefly show the name of the last button pressed.

If the pendant is waiting for a confirmation press, then the message about waiting for confirmation and which function is being confirmed will be displayed on lines three and four.

If the pendant cannot communicate with its USB receiver, then the screen will be cleared and a message "Lost Rf" will be displayed.

# Pendant DB-25 Connector

| File Type   | Document Name                           | View / Download / Print               |
|---|---|---------------------------------------|
|  | <a href="#">Pendant DB-25 Connector</a> | <input type="button" value="Launch"/> |

# ModIO or Modbus

# ModBus Operator Panel Setup Guide

| File Type   | Document Name                                     | View / Download / Print               |
|---|---|---------------------------------------|
|  | <a href="#">ModBus Operator Panel Setup Guide</a> | <input type="button" value="Launch"/> |

# Mod-IO User Manual

| File Type   | Document Name                 | View / Download / Print               |
|---|-------------------------------|---------------------------------------|
|  | <a href="#">ModIO_User092</a> | <input type="button" value="Launch"/> |

# Operator Panel Drawing

| File Type   | Document Name                          | View / Download / Print               |
|---|--|---------------------------------------|
|  | <a href="#">Operator Panel Drawing</a> | <input type="button" value="Launch"/> |

# Pokeys Lost Connection

Restoring factory defaults - quick resetting the device configuration  
(or recovering bad firmware update)

If configuration editor cannot be used to reconfigure the device because of endless key presses from the device, simple reset procedure should be executed.

1. Disconnect PoKeys device from USB (unplug the power for the PoKeys56E/57E device)
2. Find pin labeled 'RST' on the PoKeys device (otherwise use pin numbered 54)
3. Short this pin to ground (GND) and reconnect the PoKeys device to USB (or reconnect power)
4. Green light should start flashing rapidly and PoKeys device will connect in recovery mode
5. Open PoKeys configuration application
6. PoKeys configuration application should detect PoKeys device in recovery mode.
  - a. To reset the device configuration, use the option 'Clear settings'. By clicking this button and confirming your decision on the next dialog, settings will be erased.
  - b. To recover from bad firmware update, click 'Recover'.
7. After completing the operation, unplug PoKeys device and disconnect 'RST' pin from ground
8. If resetting the configuration, ensure the device is properly cleared – replugin PoKeys device, connect to it and execute Device > Clear settings in device. PoKeys configuration software is backing up current configuration state (except keyboard macro sequences) on each connection start.

These configuration files can be found in the local application folder (system folder – usually c:\Documents and settings\{username}\Local Settings\Application Data\PoKeys\ on Windows 2000, XP or C:\Users\{username}\AppData\Local\PoKeys\), named backup1.pkc, backup2.pkc and backup3.pkc with backup3.pkc being the oldest configuration.

Keywords: Pokeys missing, Unable to connect pokeys, lost IP address. missing

X15-10-01

X15-10-02

X15-10-03

X15-10-04

X15-12-01

X15-12-02

X15-14-21

X15-14-22

X15-20-01

X15-20-02

X15-21-01

X15-31-01

X15-41-01