

# **OIT-3165 Demo Kit Notes**

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1/6/98

## **Introduction**

Enclosed you will find your new OIT-3165 Operator Interface Demo Kit. It is designed to be all you need to setup the OIT-3165 and communicate with an EN Drive.

## **OIT Operator Interface Terminals**

The OIT-3165 is a small, inexpensive operator interface solution. It features a 2 line x 20 character high contrast backlit LCD display and 24 key keypad. Up to 500 hundred screens can be configured to function as message, recipe, alarm, menu or help screens. At only 6" x 4" x 1.76" it will fit easily into any panel. The "Emerson Motion Control – Modbus" driver allows the OIT-3165 to communicate with EN drives, FM modules and AXIMA multi-axis controllers (Modbus option required).

## **Included in the OIT-3165 Demo Kit**

1. OIT Demo Kit Notes – (This document)  
Filename: OIT demo notes.doc
2. OIT-3165-A00 - Operator Interface Panel (includes Hardware Install Manual)
3. OITware-200 - Windows Setup Software (includes 1 disk and Reference Manual)
4. OIT-PC-232-005 – Setup Cable
5. D9P-D9P – Adapter, 9-pin male to 9-pin male
6. Power Supply – 12 VDC, 800 mA (P/N: 216112-08)
7. Demo keypad insert – blue background with grey keys  
Filename of JPEG image: OIT-3165 keypad insert – demo.jpg  
Filename of Adobe Photoshop 5.0 file: OIT-3165 keypad insert – demo.psd
8. OIT Price List Page
9. Brochures, OIT-3165 – Quantity: 10
10. OIT Training Presentation printout and disk (OITtrain.ppt)
11. OIT Customer Presentation printout and disk (OIT\_cust.ppt)

## **Example Application**

Your OIT-3165 demo has been programmed with an example application which communicates with an EN base drive. Some screens will not work if an FM-2 module is attached as they refer to parameters which are not found in the FM-2. At power-up the OIT will cycle through some start-up screens and then drop into a group of screens which are "chained" together. To move through the chained screens press the "Page Down" key to go to the next screen or the "Page Up" key to go to the previous screen. To edit a read/write parameter (such as "Preset Velocity 0"), press the "Clear" key and enter the new value using the numeric keypad. You can also bump the number up and down with the "Δ+" and "Δ-" keys. This should provide a good demonstration of the simplicity of the OIT-3165.

The example application can be uploaded from the OIT-3165 using the OITware-200 software. I strongly recommend that you upload the example application and look through the example screens it contains. This will give you a quick overview of the features available in the OIT-3165. The example application uses only 21 of the 500 available screens. For information on how to upload see the Upload Procedure section below.

## **Custom Keypads and Overlays**

The OIT-3165 is extremely flexible in regard to keypad layout. Any key can be programmed to perform any function. New projects created with the OITware-200 setup software will default to match the keypad insert that ships with the units. This default keypad overlay is slightly different than the color one inserted into your demo units. The default keypad insert is included for your reference. It is a black and white printout which has function keys F1 – F10.

A colorful keypad overlay has been installed into your demo unit. The insert was created in Adobe Photoshop and is available as a photoshop file (OIT-3165 keypad insert – demo.psd) or a standard JPEG image file (OIT-3165 keypad insert – demo.jpg). I also have an overlay file which was created in Corel Draw. The Corel Draw file does not look as nice as the Photoshop file, but it may be useful to some customers. These files are available upon request.

In the example program, the “F10” key has been reprogrammed to function as a “Page Up” key. This is the only key that has been changed from the default setting. This change has been reflected in the color keypad overlay inserted into your demo panels.

## **Cables**

A single OIT-PC-232-005 cable has been included with your demo. It can be used to download files from your computer to the OIT panel. It can also be used to communicate with an AXIMA controller (Modbus option required). A male-male gender changer (model number: D9P-D9P) is also included. It can be used along with the OIT-PC-232-005 to connect the OIT panel to an EN drive. For more details available cables, see the OIT Price List.

## **Modbus Driver**

The “Emerson Motion Control – Modbus” driver should be selected as the “PLC Type” when creating a new project in the OITware configuration software. This driver will allow the OIT-3165 to communicate with any Emerson Motion Control product which supports the Modbus communication protocol. These include EN drives and AXIMA controllers (Modbus option required). The “Emerson Motion Control – Modbus” driver supports bits, 16-bit unsigned integers (decimal), 16-bit signed integers (signed) and 32-bit signed integers (Long). It does not support floating point numbers. That is not an issue with EN drives because all variables are stored as integers in that product. When communicating with AXIMA controllers the OIT can only communicate with bits and local integers. This should not be a problem. Customers will simply need to send data to the AXIMA as integers and then scale them into floating point variables before using them for move distances, etc.

## **Auto-Save to Non-Volatile Memory (NVM)**

The “Emerson Motion Control – Modbus” driver can be configured to automatically perform a “Save RAM to NVM” operation every time the OIT changes a parameter. It does this by toggling Modbus address 1002 after every parameter change. The default setting for this option is “Enabled”. If you disable the feature all changed data will be lost when the drive is powered down.

It takes approx. 2-3 seconds to perform the save to NVM. During that time the “Save RAM to NVM” bit is ignored. This is important to know if you are “bumping” a parameter repeatedly. Every “bump” will send down new variable data and try to perform a save to NVM. The save to NVM will only “take effect” every 2-3 seconds. Therefore if you do 5 quick bumps (in less than

2 seconds), only the first bump will be saved to NVM. Bumps 2 through 5 will go down into RAM, but will not be saved to NVM.

The “Auto-Save” feature should be disabled when communicating with an AXIMA controller. The AXIMA will not lose data because it uses battery backed RAM to store variables.

This feature is enabled in the OIT-Controller Settings dialog box under the heading “NVRAM:”.

### **Preparing the OIT-3165 for communication with a PC**

#### **Two Procedures:**

- **At Power-up**

Hold the lower right key (“Enter”) until the unit asks for the “Setup Password:”. Then press the Enter key a few more times until the display reads “Computer Comm. Mode, Computer must log-on”.

- **When the OIT is communicating with a device**

Press the lower right key (“Enter”) repeatedly until the display reads “Computer Comm. Mode, Computer must log-on”. The unit is now ready to communicate with the PC.

### **Upload Procedure**

1. Cable must be connected between the OIT-3165 and the PC.
2. OIT must be made ready to communicate with the PC (see above).
3. Click on the “Read from OIT” icon (contains a red up-arrow).

### **Download Procedure**

1. Cable must be connected between the OIT-3165 and the PC.
2. OIT must be made ready to communicate with the PC (see above).
3. To download the project to the OIT click on the “Send to OIT” icon on the toolbar (contains a blue down-arrow).
4. Press the “Options...” button to select the data to download.

#### **First download to a new unit:**

The first time you download to a new OIT panel you must download the following:

- OIT Operational Software (OIT-3165 firmware)
- OIT PLC Protocol Software (“Emerson Motion Control – Modbus” Driver)
- Project (Application specific data)

Downloading all the above will take about 3 minutes.

#### **All downloads after the first download:**

During all subsequent downloads only the project needs to be downloaded.

This should only take about 30 seconds depending on the size of the project.

### **Power Supply (P/N: 212112-08)**

I have supplied you with a 12 VDC power supply to use with the OIT-3165. It is identical to the power supply you received with your EN demo stand. This power supply does not have a model number and is not intended for sale to customers.

To connect the power supply to your OIT-3165 you will need to cut off the connector at the end of the cable and connect the wires as follows:

- + : black w/ white dashed stripe
- - : black

### **Inserting a New Register Monitor**

Click on the character location (in the screen graphic) in which you want the left end of the new register monitor. Next click on the Register Monitor icon. It looks like a cash register.

### **Editing an Existing Register Monitor**

Double click on the register monitor placeholder (“-##.#####”). That will bring up the register monitor edit dialog box.

### **To Copy Text or Register Monitors**

Select the items to copy by clicking and dragging over them with the mouse. Then use the standard cut (ctrl-x), copy (ctrl-c) and paste (ctrl-v) commands with the keyboard, or use the commands under the edit menu. To cut or copy a register monitor you must select the entire register monitor placeholder (“-##.#####”). I usually use the cut and paste commands to move register monitors around on the screen and get it exactly where I want it. You can also select and copy the contents of an entire screen and paste them into another screen. All the setup data for register monitors is copied and pasted along with the placeholder (“-##.#####”).

### **Chains of Screens**

To chain one screen to another screen select the “Chain” check box in the main screen editor and enter the number of the screen you want to chain to. It is quite easy to create a chain of screens in this fashion. The chained screens do not need to be consecutive. You can create a loop by having the last screen in the chain point to the first screen in the chain.

The operator moves to the next screen in the chain using the “Page Down” key and moves to the previous screen by pressing the “Page Up” key.

### **LCD Contrast**

The OITware-200 software has an option for adjusting the contrast on the OIT-3165. I do **not** recommend that you use this feature. It is found in the *General Settings* dialog box which is accessed via the *Configuration* menu. Setting 1 is the default and this setting works fine. Setting 2 makes the screen very, very dark and unreadable (except at very large angles from the side).

### **Questions?**

If you have any questions, don't hesitate to contact me at 612-401-3077, or via e-mail at: [premde@emersonemc.com](mailto:premde@emersonemc.com). If I am not available, the Applications and Service groups should be able to answer your questions. They have demo units and have been trained in their use.

I hope that you find the OIT-3165 to be as powerful and easy to use as I have. It is a very reasonably priced operator interface solution with an impressive list of features.

OIT Product Manager  
Paul E. Remde