

The Application Note is specific to the VT HMI

VT Terminal Quickstart for the Unidrive SP

The VT terminal is a quick and easy way to gain access to parameters in any of Control Techniques' Modbus RTU or Modbus TCP capable drives. This application note is designed to guide the user through a first-time setup of the terminal. For more advanced applications see the sample files installed with VTWIN software. These sample files will display examples of using all of the features in the VT terminal.

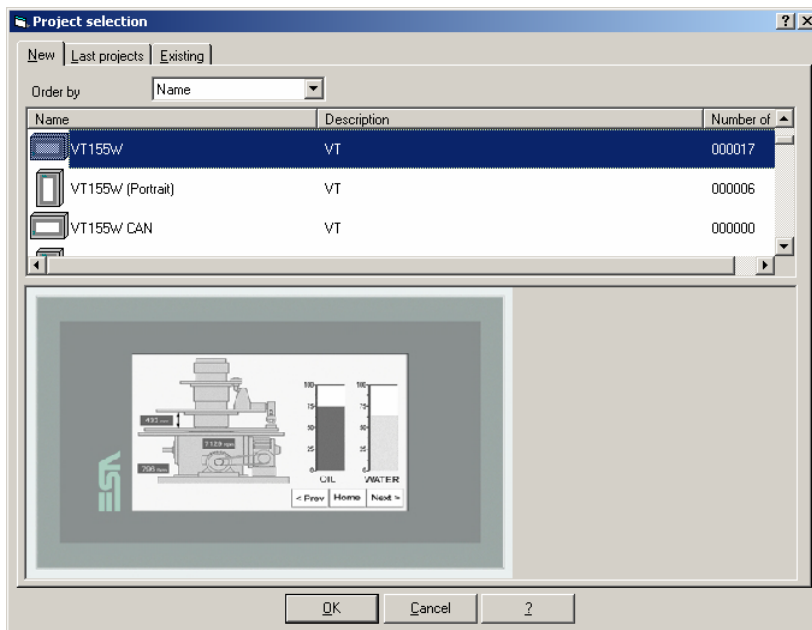
A four-step process is all that is needed to configure the terminal for communications:

1. Configure the VT Hardware Setup
2. Configure Variables to be passed
3. Configure HMI Screens
4. Download the program



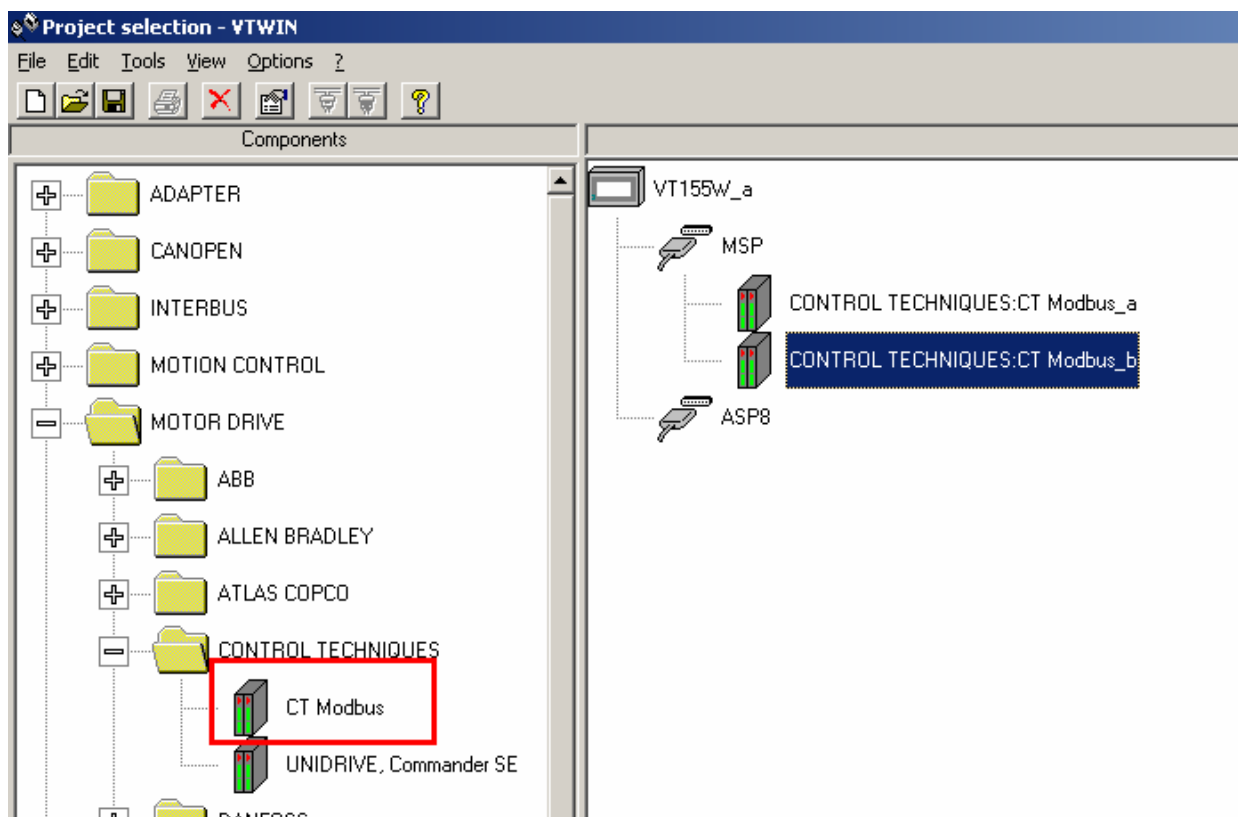
Configure the VT Hardware Setup

Begin by opening the VTWIN software and selecting the hardware that will be used for the application. For this application we will be working with the VT155W.



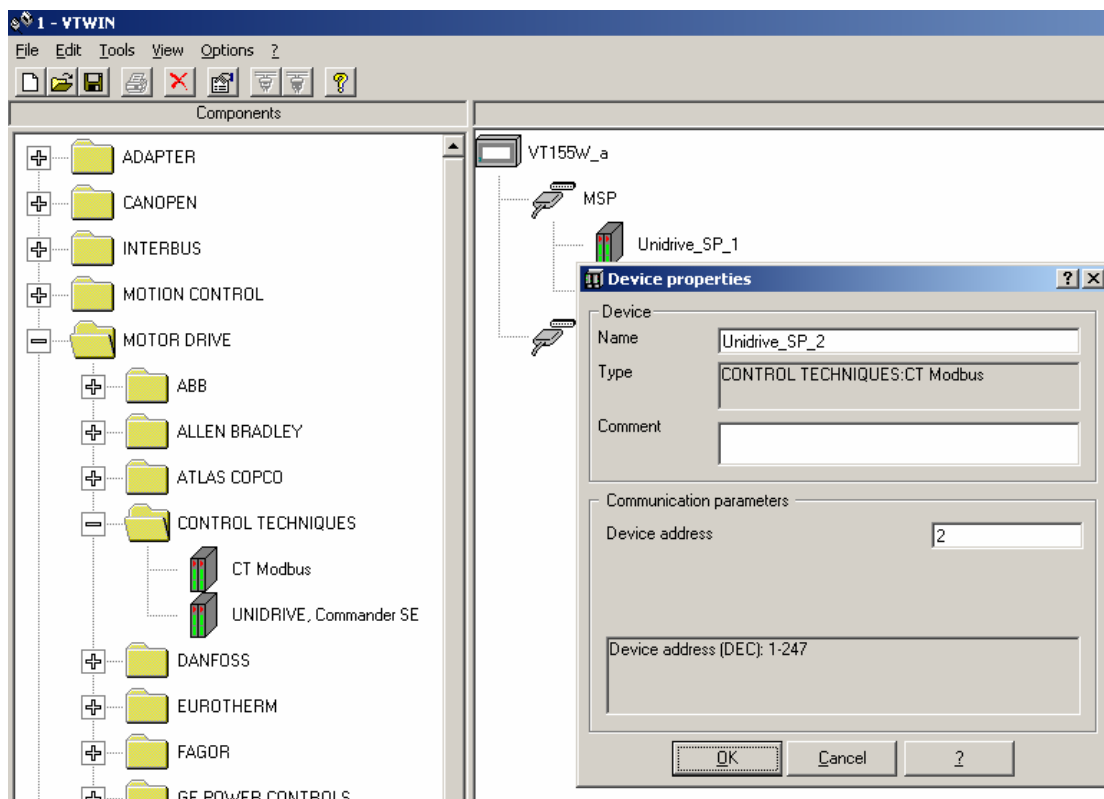
After the hardware is selected the user now needs to configure the hardware communications settings and desired protocols. Simply drag the desired protocol from the left onto the port that will be used for communication. For Modbus RTU with this panel we will use the MSP port.

Choose CT Modbus for communications with the Unidrive SP and Commander SK Series:

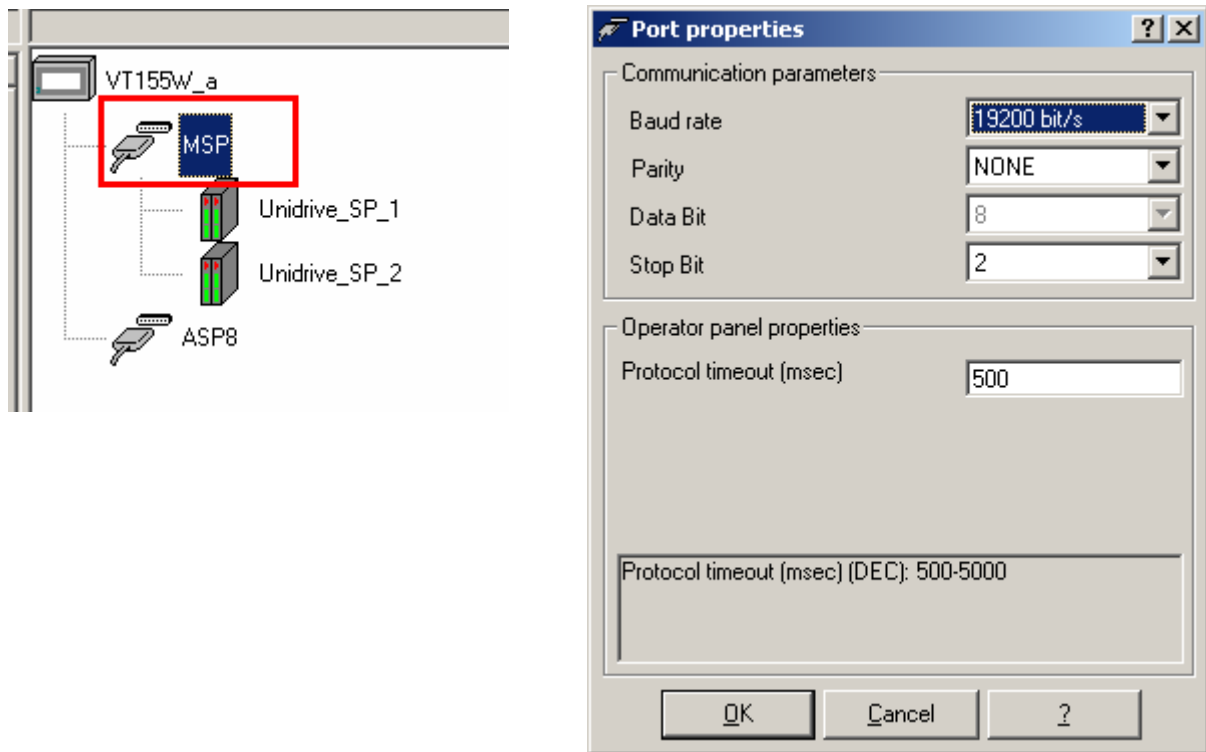


Double Click on the icon for the drive to give it a unique name and network address. This address is the Modbus node number for the drive.

For the Unidrive SP:



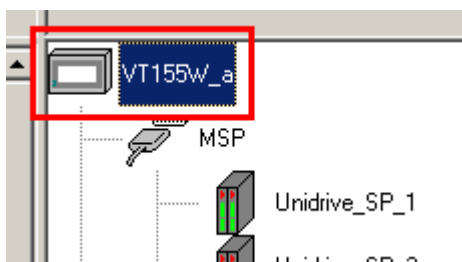
Now double click on the MSP port to configure the communications settings for the network.



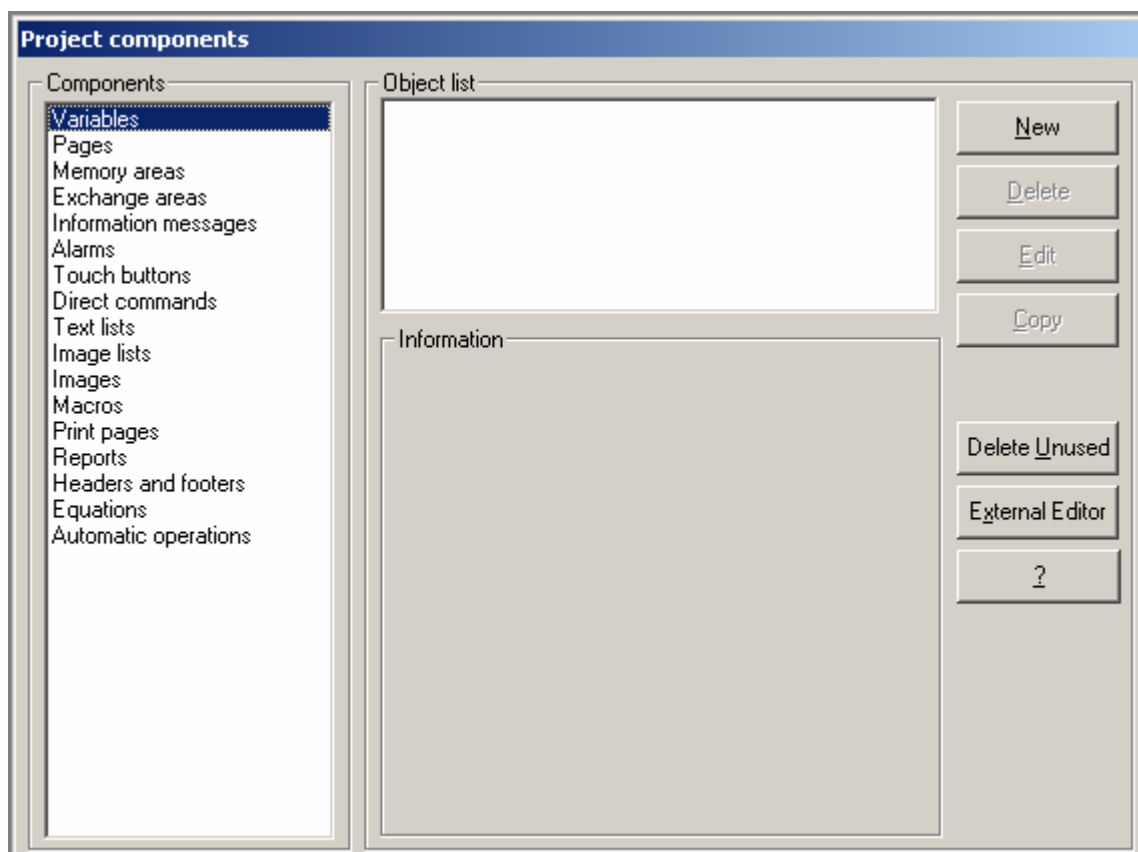
Hardware configuration is now complete. The next step is to configure the software prior to download.

Configure Variables to be passed

Double-Click on the panel to begin programming the desired variables.



The following screen will be displayed:



Variables to read and write will now be added to this panel. With the “**Variables**” component highlighted click on “**New**” to add a variable.

In the pop-up box enter a new name for the parameter desired. In this application Unidrive SP menu 20 parameter 01 will be chosen. The “**Device**” pulldown menu will allow the user to choose which piece of hardware configured above will be polled. The “**Data**” area allows the user to choose between 16 and 32 bit data lengths. Menu 20 parameter 01 is a 16 bit parameter and therefore a “16-bit parameter” is chosen. Simply enter the “**Menu**” and “**Parameter**” for the desired variable.

Project component: Variables

General | Limit values

Name:

Device:

Data area:

Type:

☐ Signed ☐ BCD

Address:

Menu: Parameter:

Valid range:

Menu (DEC): 0 - 99

Parameter (DEC): 0 - 99

After this click “OK” to see the parameter displayed.

Project components

Components:

- Variables
- Pages
- Memory areas
- Exchange areas
- Information messages
- Alarms
- Touch buttons
- Direct commands
- Text lists
- Image lists
- Images
- Macros
- Print pages
- Reports
- Headers and footers
- Equations
- Automatic operations

Object list:

Menu_20_01_UnidriveSP_1

Information:

Unidrive_SP_1

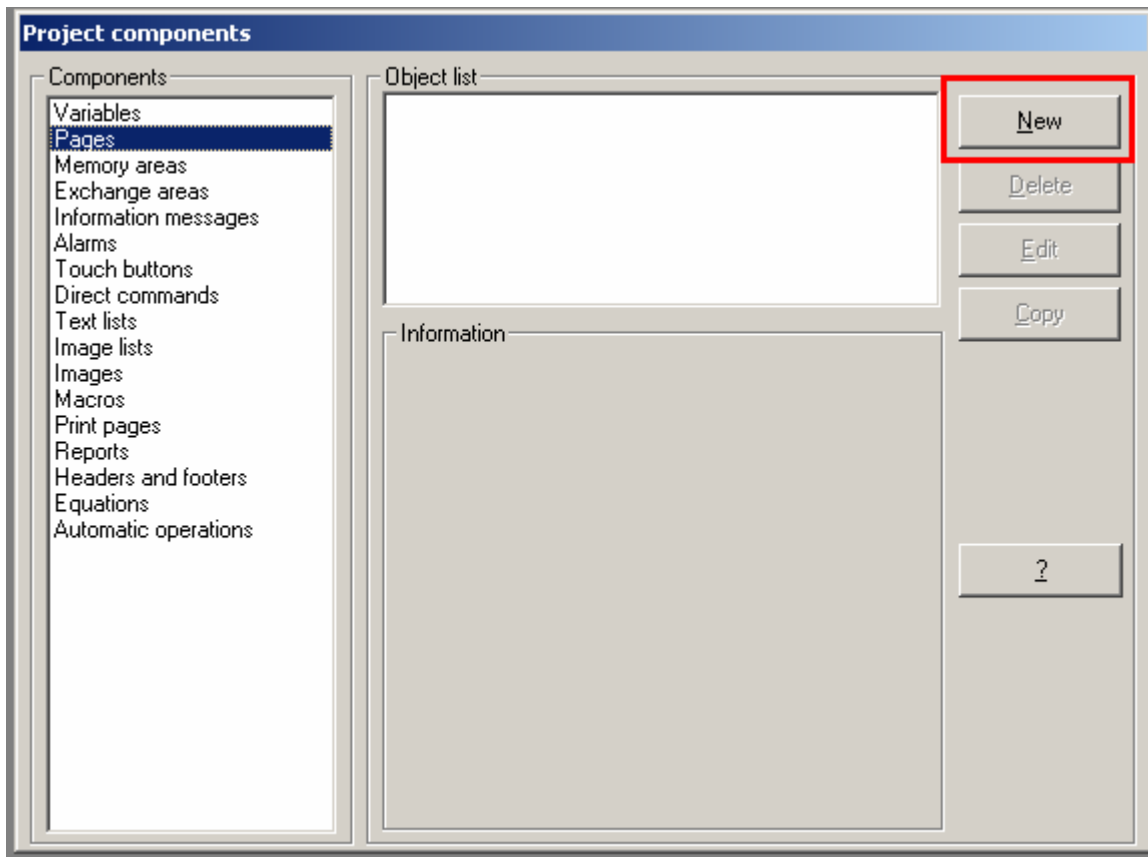
FC 03-16: read/write 16-bit parameter-Word Menu 20

Parameter 1

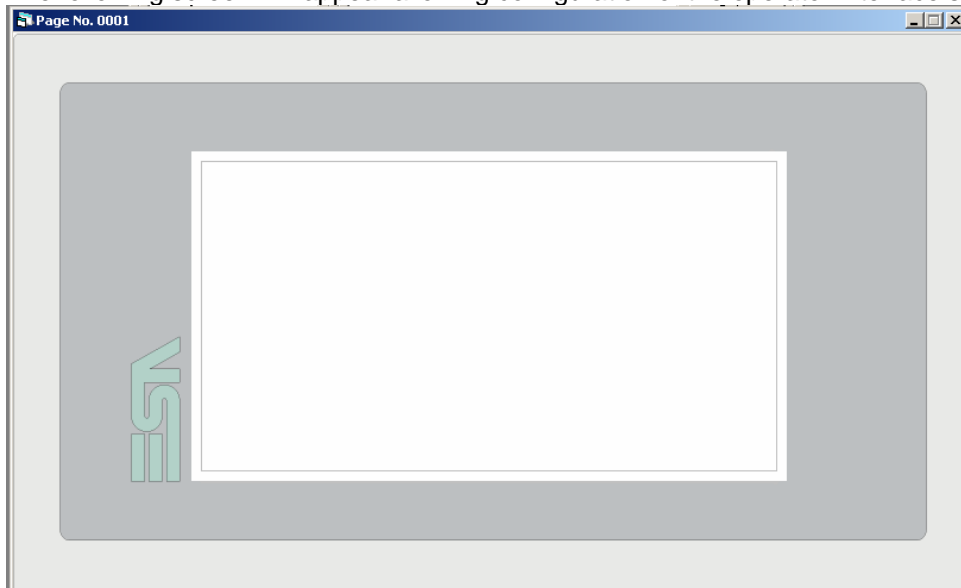
More data may be added using the same procedure. In this way the user may map all of the parameters that he or she needs for the application.

Configure HMI Screens

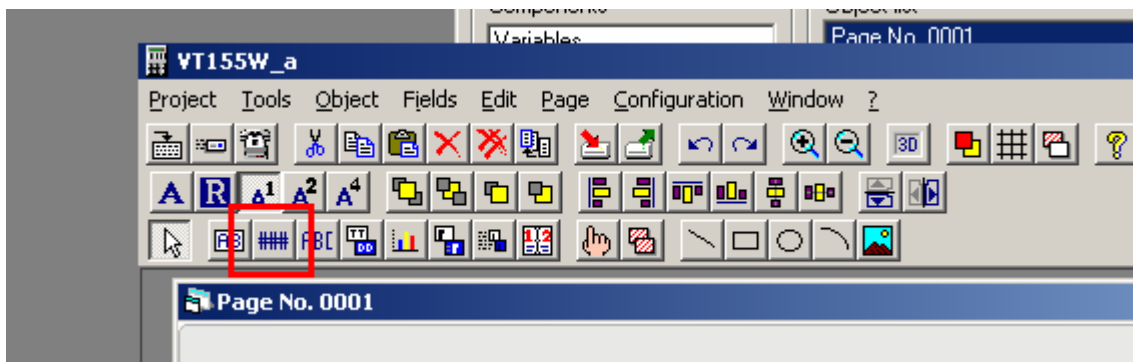
Highlight the “**Pages**” component and select “**New**” to create a new operator interface page.



The following screen will appear allowing configuration of the operator interface screen:

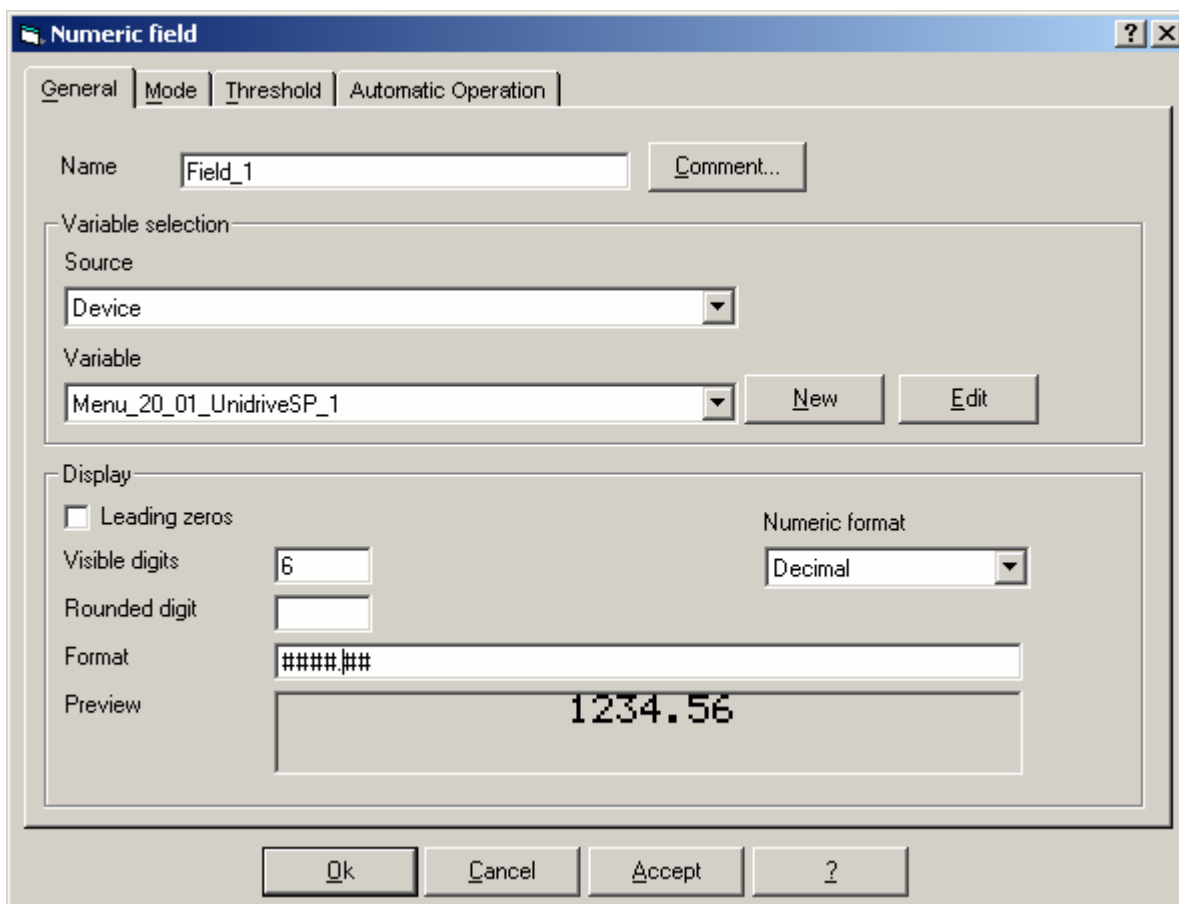


Add new data by clicking on the “**Numeric Field**” icon on the toolbar and then clicking the area of the screen desired to place the data.

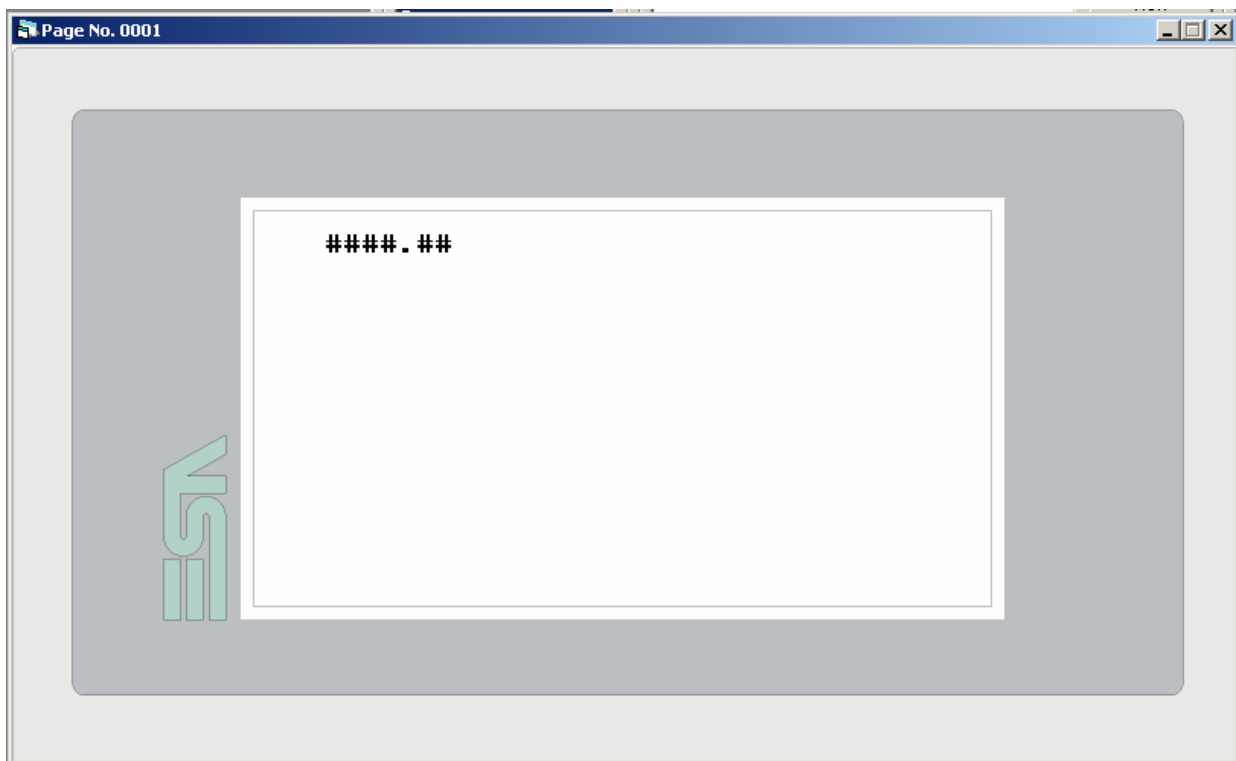


A pop-up box used to configure this data will appear on the screen.

1. Give the numeric field a name (Field_1).
2. Choose a source for the numeric field. A source can be either from one of the drives configured (device) or from the internal memory of the VT panel (internal registers). For this application we will read and write data from the drive (device).
3. Because in previous steps variables were already defined these variables can be chosen now to represent the data in the numeric field. For this example Menu_20_01 from Unidrive SP 1 will be chosen.
4. Choose the number of Visible digits to be displayed (6 for this example).
5. Using a mouse, click in the **"Format"** box and place the decimal point in a suitable location for the piece of data being accessed by typing a ".".



6. Click OK to accept these settings. The new piece of data will be displayed on the screen.



Download the Program

Now the program can be downloaded to the VT operator interface.

(IMPORTANT)

Before compiling or downloading the program the VT operator interface needs to be placed in a mode that will accept the download. To place the operator interface into this mode:

1. Power-up the VT operator interface and allow it to boot to its startup screen
2. Once the VT operator interface is fully powered and finished starting touch the lower left portion of the screen for 1 second and let go.

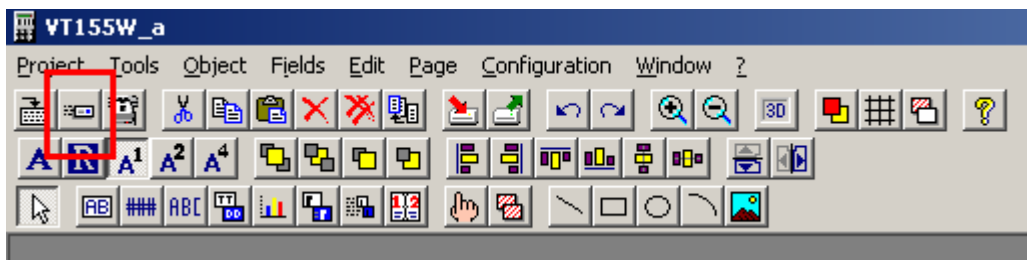


3. Now touch the upper right portion of the VT operator interface for 1 second and let go.

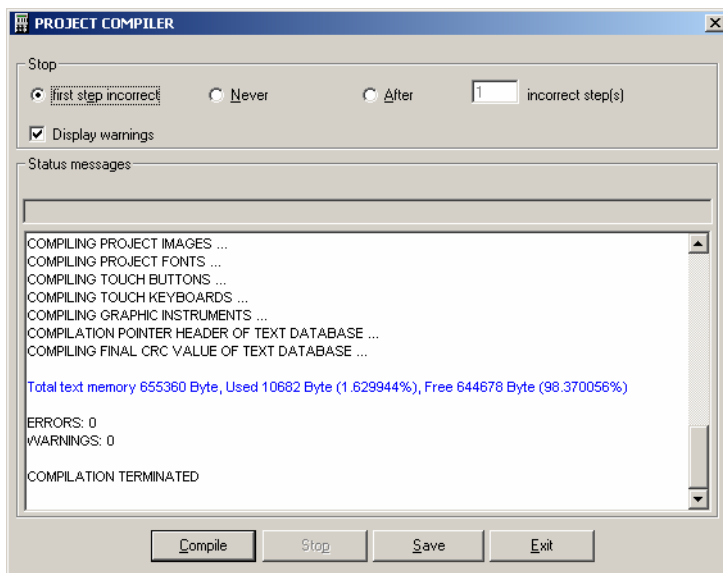


The VT operator interface should now go into a program mode where it will ask the user which port he would like to download to. The user may decide from MSP (Master Serial Port), ASP (Auxiliary Serial Port), or Ethernet depending on which model of VT is being programmed. Choose the proper channel to download to and the screen will wait for the program to be sent to it.

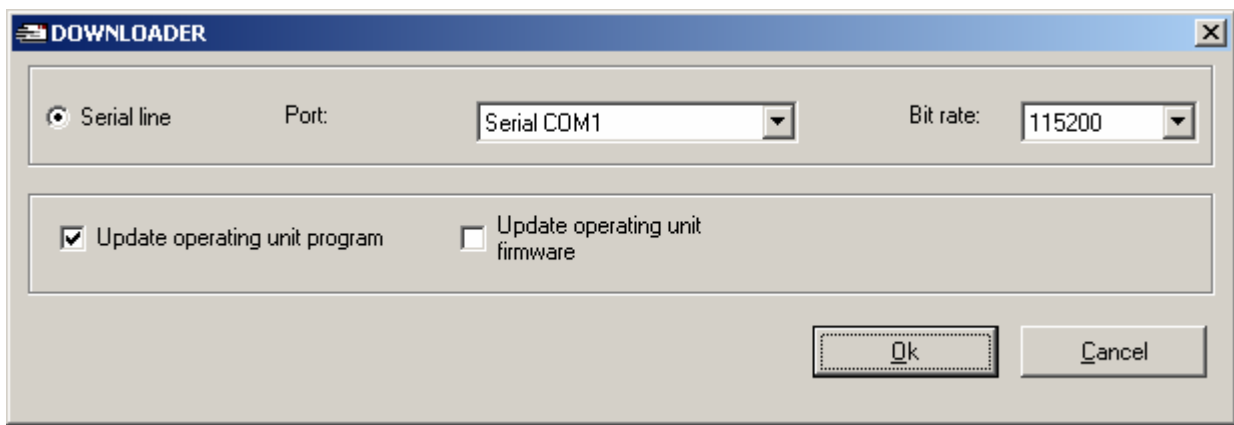
Now that the VT terminal is ready for the download click on the “**download**” icon in VTWIN software.



Once pressed, this function will display the compiler. Click on the “**compile**” button and the compiler will check for errors. If no errors are found, a screen as shown below will be displayed:



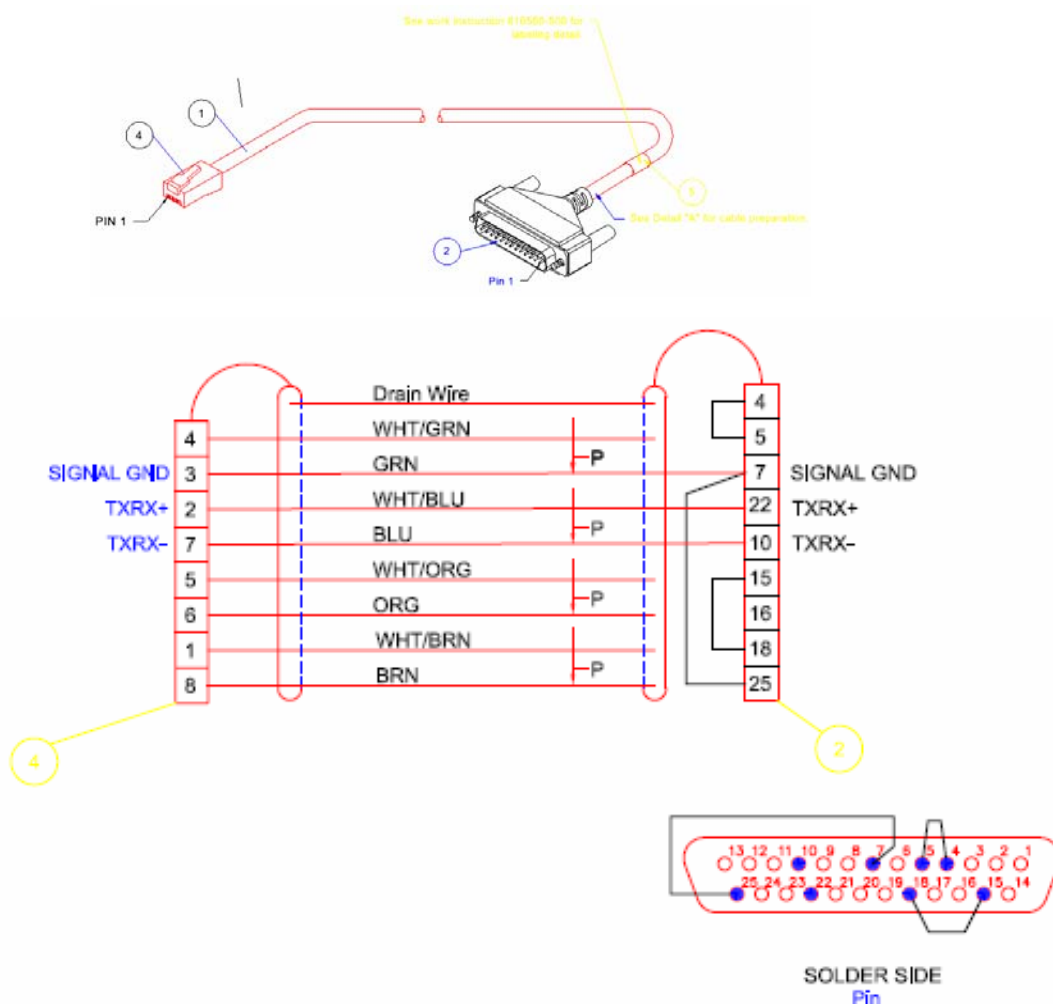
Click on “**Exit**” to reveal the downloader:



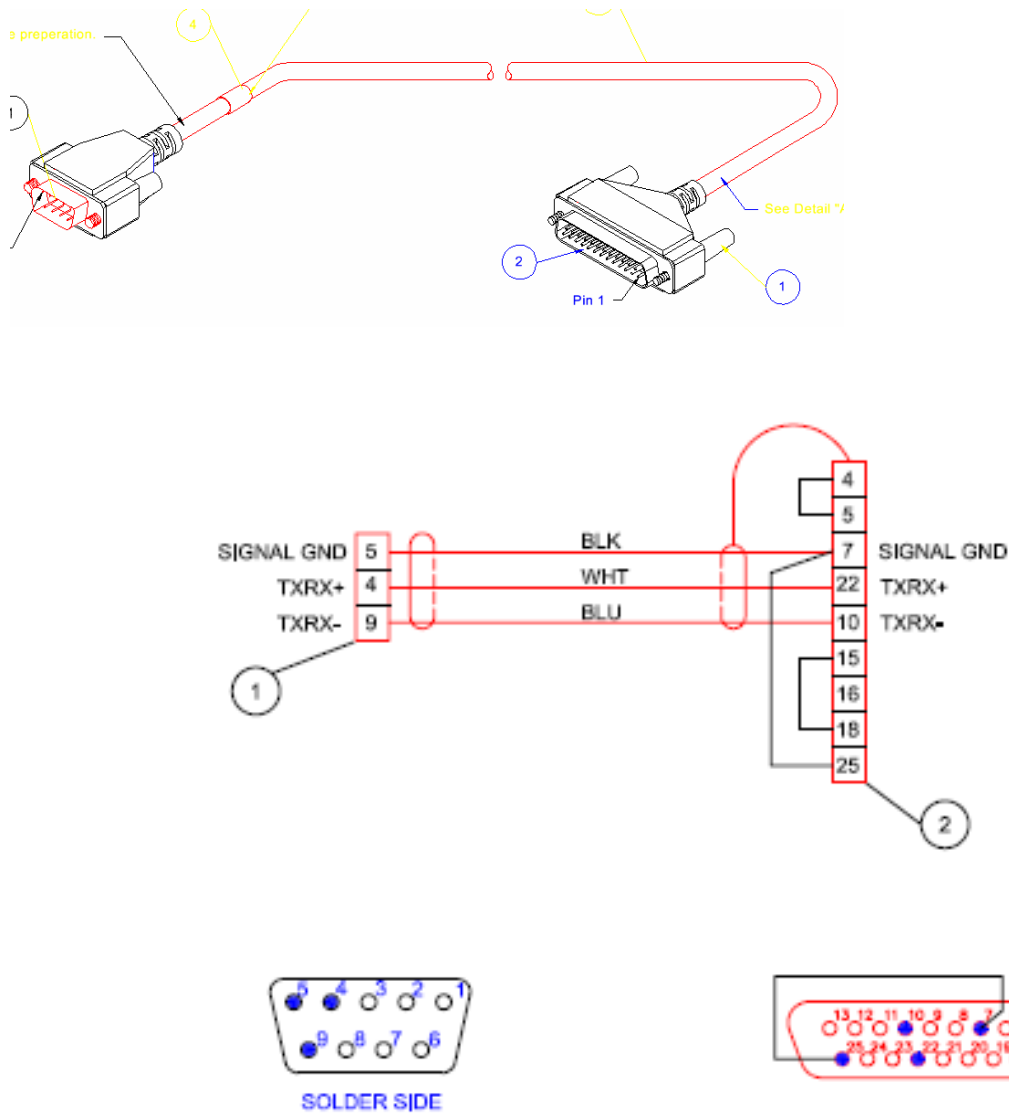
Verify that the serial port or Ethernet IP address is correct and click on “OK”. If the hardware connection is correct the program will download the file and firmware to the drive on the first download. Subsequent downloads will only see the program downloaded.

See cable diagrams below for a list of how to connect the unit to the SP for communications. The **ESA-SP-485-xxx** cable is used for communication between the VT terminal and the Unidrive SP.

ESA-SP-485-xxx



ESA-MME-485-xxx



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