RSLogix® 5000 Configuration
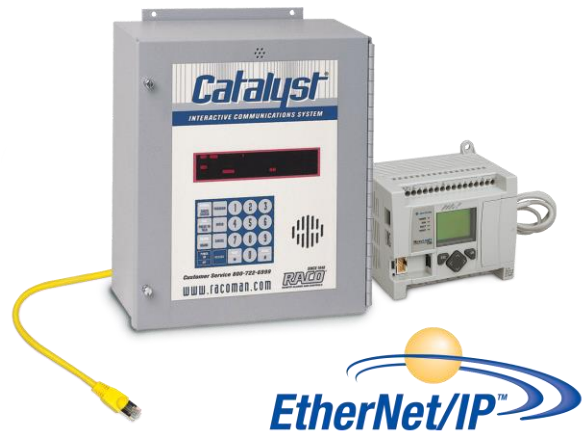
for both the

Verbatim Gateway® and Catalyst®

Autodialer EtherNet Options

Addendum 1.0

Revision History

Rev #	Description	Author/Editor	Date
1.0	Original	Davey Hudson	05/01/2015
1.a2	Edits from original	Davey Hudson	05/26/2015

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It is assumed that the reader of this addendum is already familiar with the basic operation and programming method of the Autodialer® product. If this is not the case, please take the time necessary to familiarize yourself with the Autodialer by reading its Owner's Manual. Only the EtherNet-specific features of the Autodialer are described in this addendum.

1   Introduction

A   Purpose

The information provided in this document helps the user setup the EtherNet communication between a RSLogix 5000 series PLC and software and a RACO Autodialer with the EtherNet Option. This procedure is for both the Catalyst and Verbatim Gateway Autodialers as the process is the same. We use the general term 'Autodialer' here to refer to both. For brevity, the RSLogix 5000 series PLC and software will be referred to as "RSLogix".

While this is specific to the Rockwell RSLogix 5000 PLCs and software, it offers a general guideline of the required steps for other PLCs.

B   Overview

Configuring RSLogix to connect to an Autodialer is a simple four-step process:

1. Add the Autodialer to the RSLogix project (Section 2.1)

2. Configure RSLogix for the Autodialer EtherNet Module (Section 2.2)

3. Verify the Autodialer Tags (Section 2.3)

4. Program RSLogix to trigger an Autodialer alarm channel (Section 2.4)

C   Requirements

Description	Name / Type	Version
Rockwell/Allen-Bradley PLC	RSLogix 5000 series	NA
PC connected to the PLC's subnet	Windows PC	NA
RACO EDS (Electronic Data Sheet) file	RACO_RTU_V1.0.eds	1.0
PLC software	RSLogix 5000	Compatible w/PLC
Autodialer Operator's Manual	Autodialer Operator's Manual	1.87

D   Reference Links for Products and Networking

For further information about the Autodialer EtherNet Option products, please consult the RACO Mfg and Eng web pages at **www.racoman.com.** The latest manuals, software, and the required EDS-files can be downloaded from the online support sections of the web site. These are also included in the CD that is shipped with a new Autodialer.

For more information concerning the EtherNet/IP network the Open EtherNet/IP Vendor Organization has a webpage. Please visit **http://www.odva.org** for more information about EtherNet/IP.

For more information concerning the Modbus TCP network the Open Modbus Organization has a webpage. Please visit **http://www.modbus.org** for more information about Modbus TCP.

For information concerning the Allen Bradley PLC's refer to the Rockwell Automation homepage **www.rockwellautomation.com**

2 Configuring the PLC

The PLC must be configured in order to connect to the Autodialer.

It is recommended to have a single PLC write to the Autodialer. Although up to 16 connections are possible, they would be writing to the same address(s) and may be cause for unnecessary confusion. We recommend a single write connection however, up to 16 connections may listen/read from the Autodialer.

If your existing network uses more than one controller to provide alarm notification, we would encourage messaging all alarms to a single controller (data concentrator) that would, in turn, connect to the Autodialer.

A   Adding the Autodialer EtherNet Module to the RSLogix Project

The RSLogix project must be configured with the proper setting to communicate with the Autodialer EtherNet Module. An Electronic Data Sheet (EDS) file that contains this information needs to be installed onto your system via the EDS Hardware Installation Tool.

a   Adding the Autodialer EtherNet Module to RSLogix

1. Click Start > All Programs > Rockwell Software > RSLinx > Tools > EDS Hardware Installation Tool.
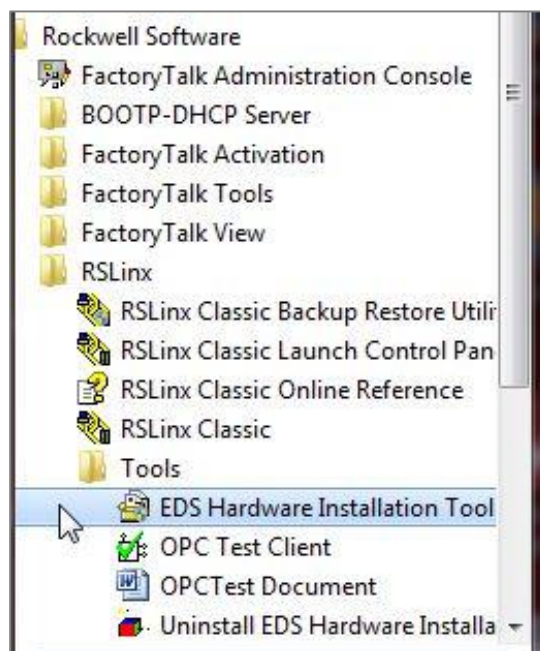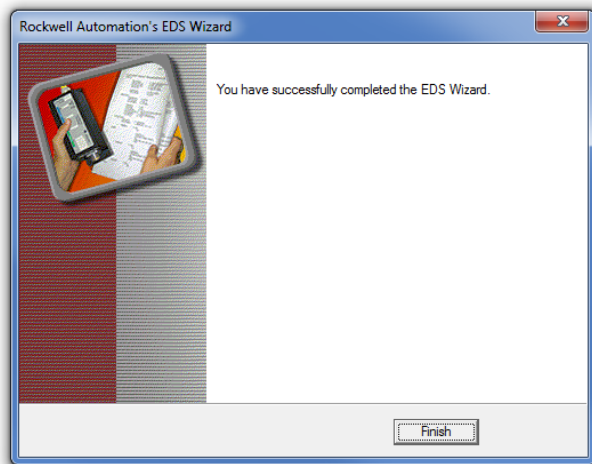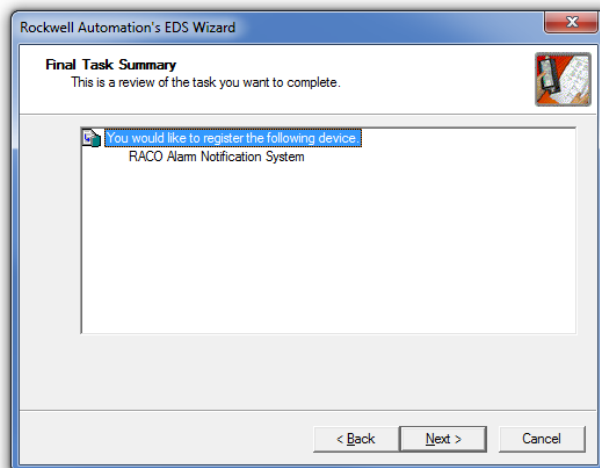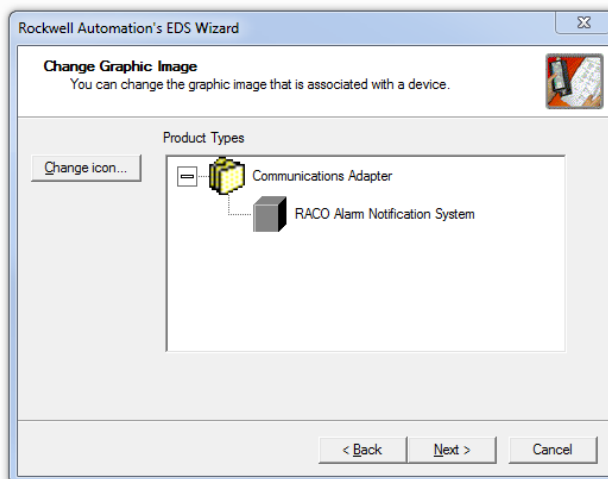
2. Click **Add** to launch the **EDS Wizard** and follow the steps.
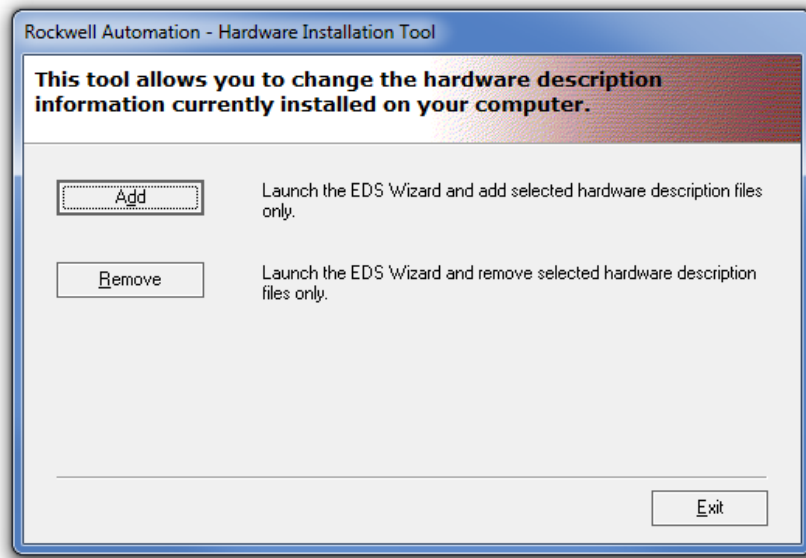
3. Select **Register a single file** then browse to the location of the Autodialer EDS file. The EDS file is located in the root folder of the CD that came with the Autodialer.
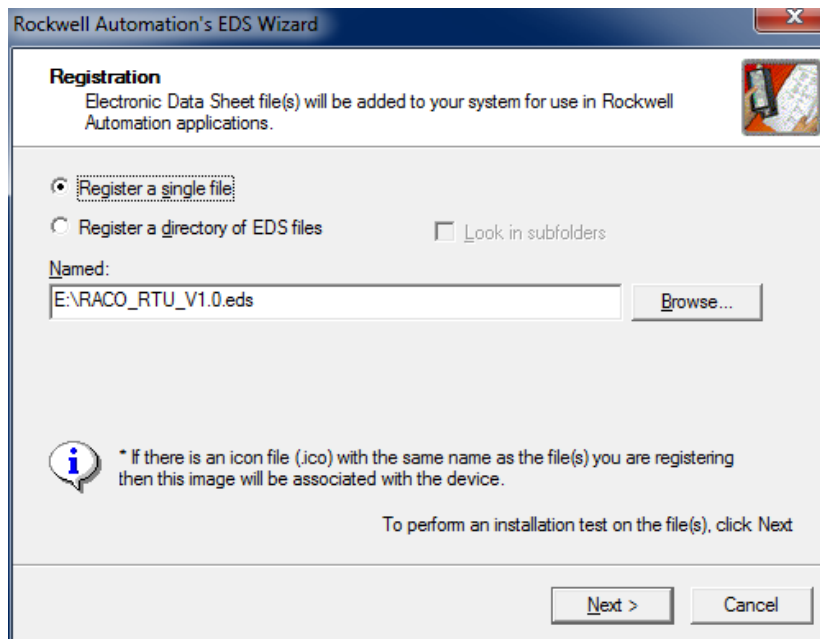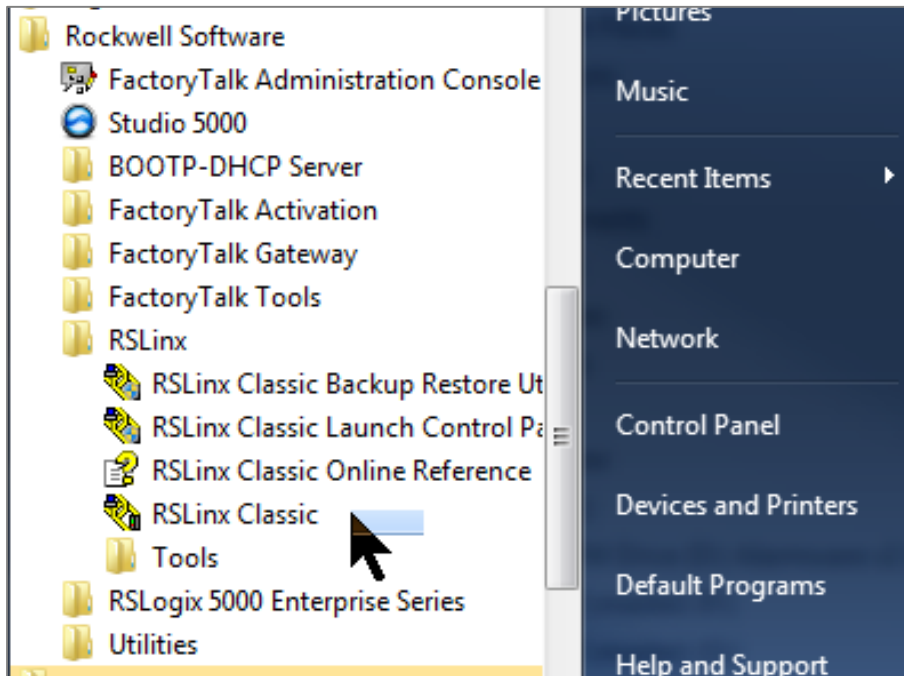
4. Click **Next** at the following windows then **Finish** and **Exit** the Wizard.

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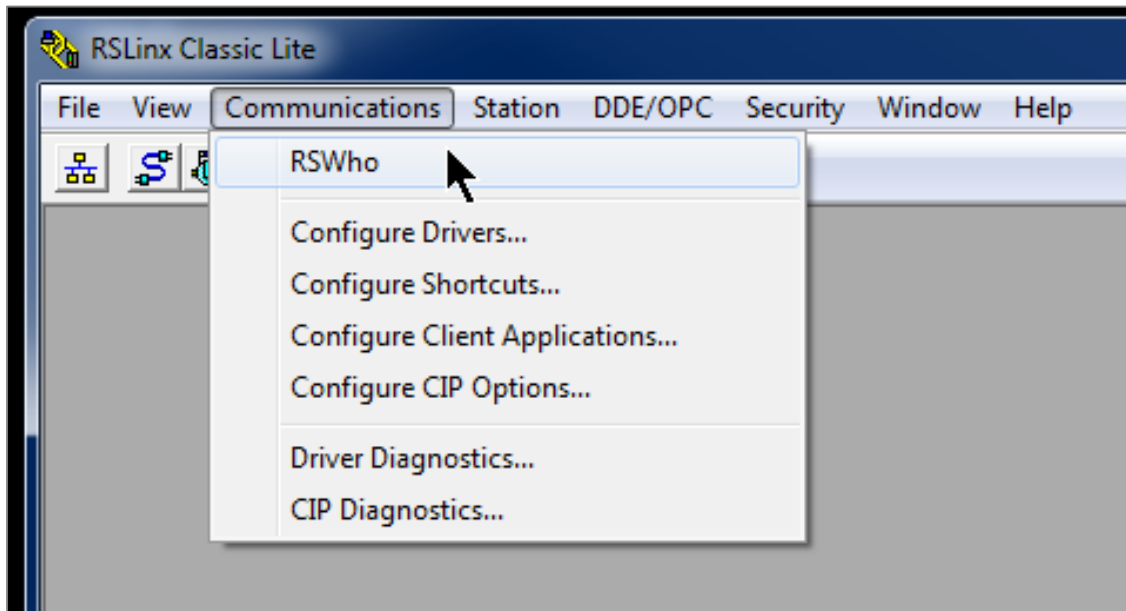
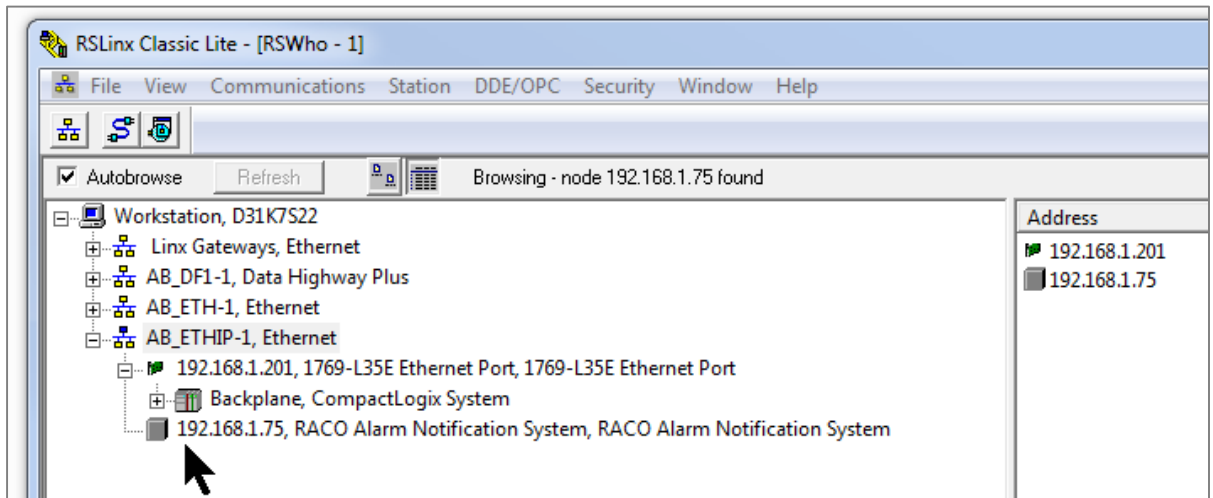## b Verify EtherNet connectivity between the PC, PLC, and Autodialer

1. Click Start > All Programs > Rockwell Software > RSLinx Classic

2. Select the **Communications** menu and then chose **RSWho.**

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3. Expand the **AB_ETHIP-1** branch and you should be able to see the Autodialer IP and the PLC IP.


B   Configuring the RSLogix for the Autodialer EtherNet Module

The RSLogix must be configured to properly work with the Autodialer EtherNet Module

a   Add the Autodialer EtherNet Module to the RSLogix project.

1. Start RSLogix and either start a new project or open an existing project. Refer to the Rockwell documentation for this procedure. For this example we will use Green_Valley_DPW

2. In the RSLogix **Controller Organizer**, expand the **I/O Configuration** until you can see the EtherNet adapter. Right-Click on the EtherNet adapter and choose **New Module**
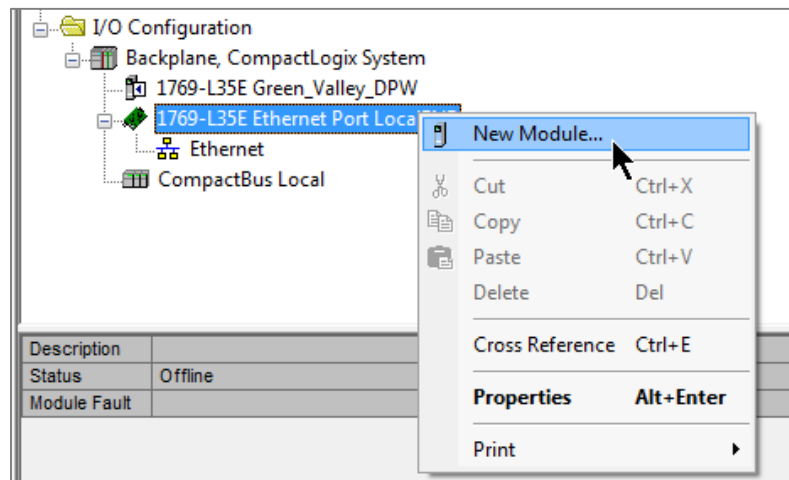
3. Expand the **Communications** branch, then scroll down and select the **Generic EtherNet Module**. This generic module will be configured to match the Autodialer module.

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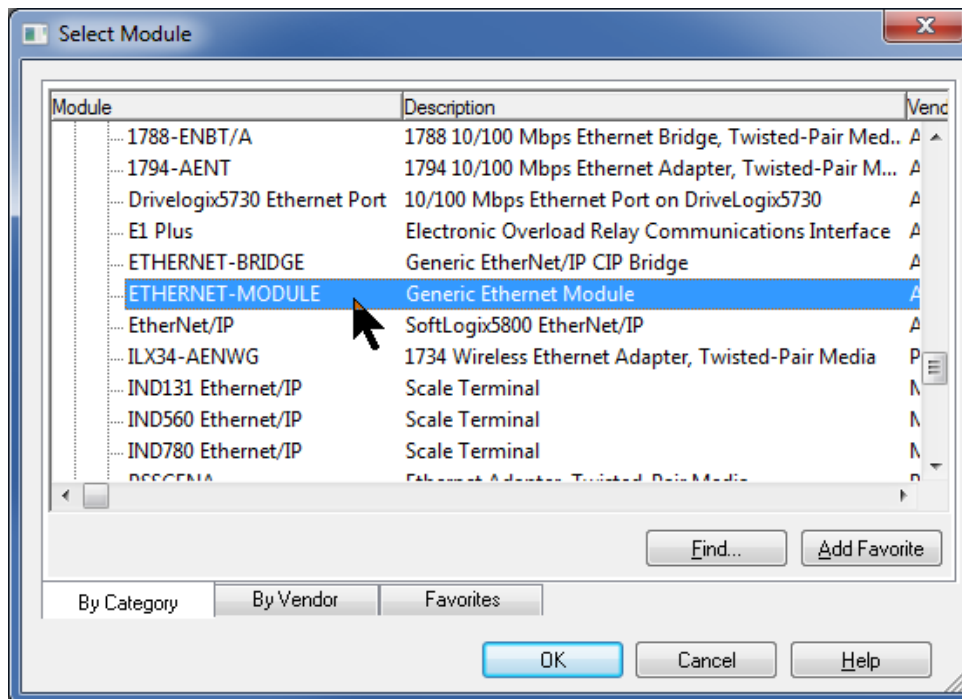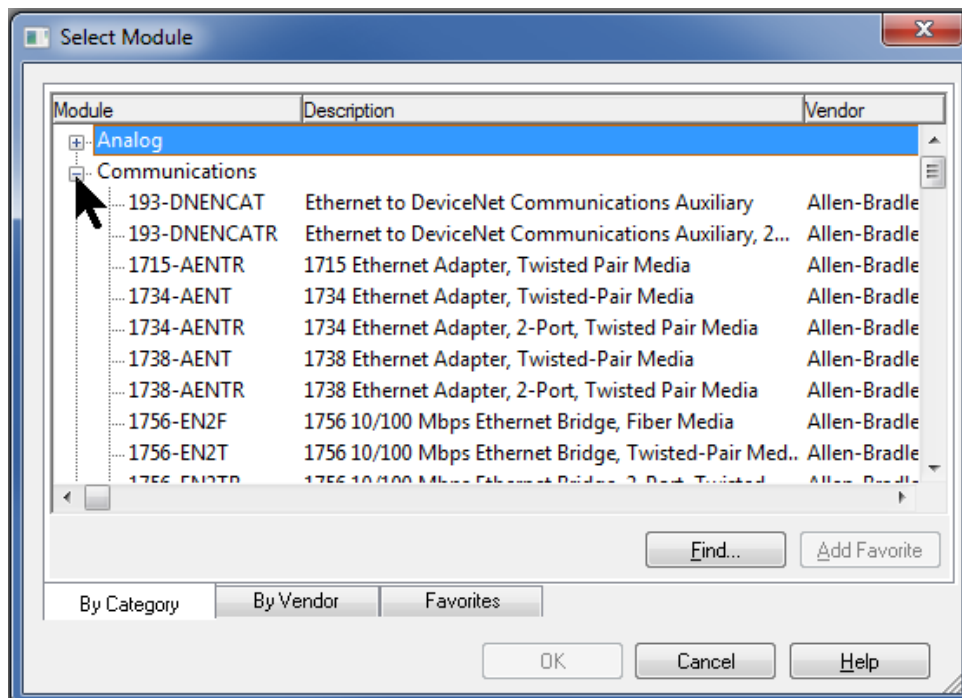
4. Click **OK** to close the window and the **New Module** window will open.

5. Enter the values as shown here. For **Name** you can use whatever you like. Whatever name you enter here will be used as the name for the tags that will be assigned to the Autodialer. Enter the actual **IP address** of your Autodialer.

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Comm Format sets the size and type of the data registers. **Data – INT** is 16-bit integer registers.

Assembly Instance tells the PLC where to access the Autodialer's data. These must be set as shown. **Size** identifies how many registers the Autodialer can adress

The Autodialer does not use a **Configuration** register but RSLogix requires a value greater than zero be entered here.

6. Click **OK** after entering the values. The **Module Properties** window will open. Click the **Connection** tab and enter **50** for the **Requested Packet Interval**. Since the alarm system doesn't require a fast response, we can increase the scan time interval to reduce network traffic. Leave the other setting as shown.
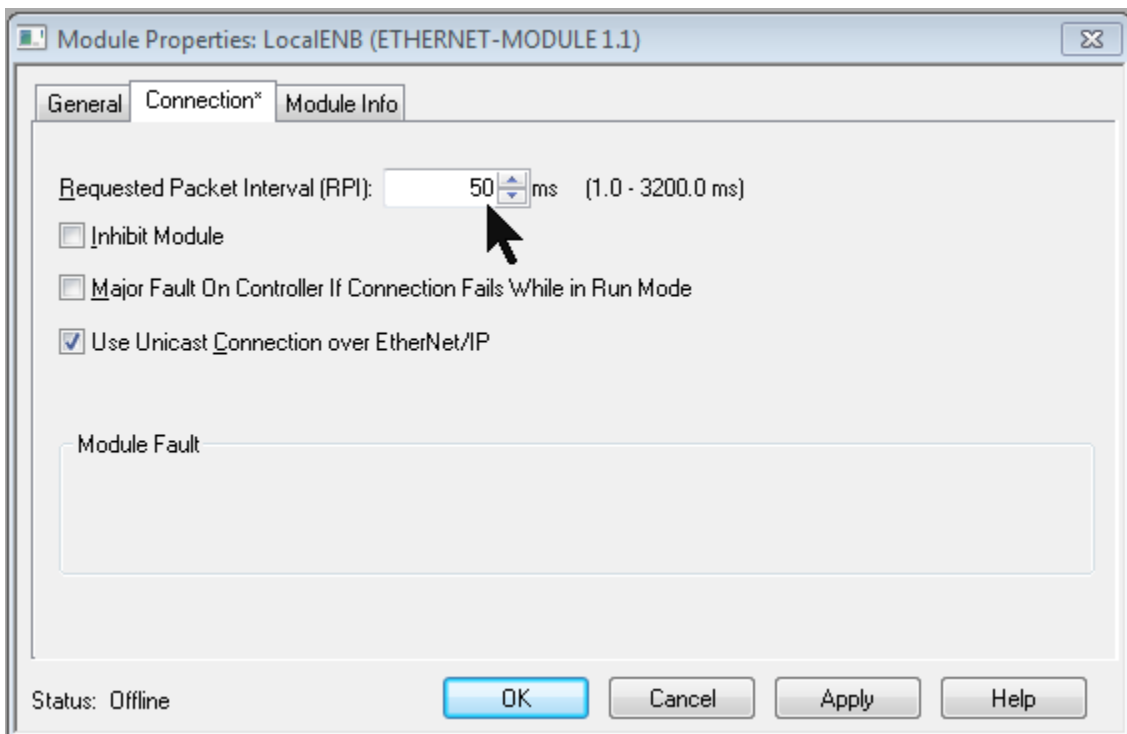
7. The Autodialer has been added to **the I/O configuration** in RSLogix5000. The controller organizer **I/O Configuration** should be similar to this. The name that you entered for the module would appear in place of RACO_Autodialer.
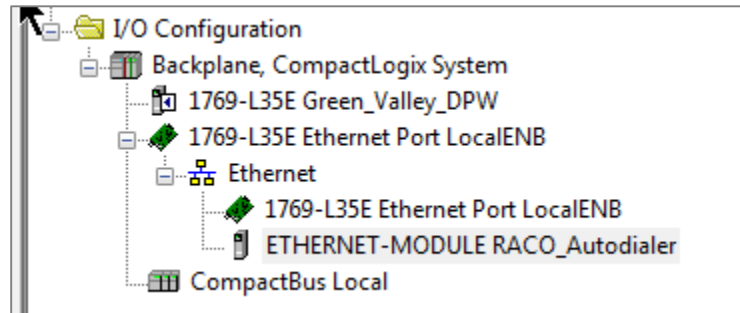
C   Verify the *Autodialer* Tags

The tags are created when the Autodialer EtherNet Module is added. Verify that they were successfully added to the tag library.

a   Display the Tags

1. Open the **Controller Tags** window
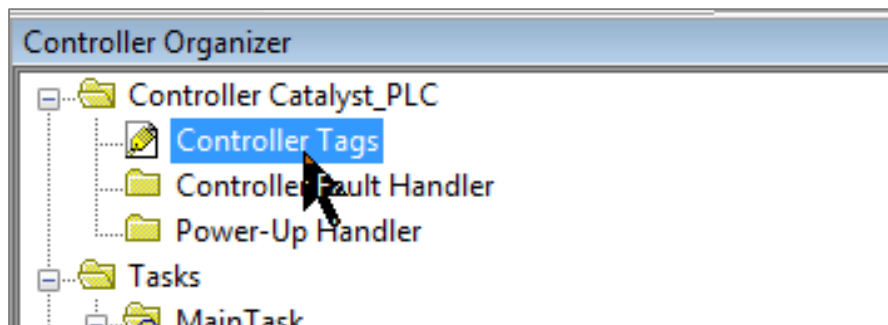
2. Click on the **Monitor Tags** tab at the bottom of the window if it is not already selected.You should be able to see the three tag groups that correspond to the EtherNet Module that you just added, RACO_Autodialer in this example. There are a set of input tags (I), output tags (O) and configuration tags (C). The C tags may not show up in some software versions as they aren't used.

3. Expand the **RACO_Autodialer:O.Data** tag group. RSLogix has created 124 registers (0 to 123) as we defined in the EtherNet Module setup. Each of these **INT** data type tags correspond to a SNA Analog register in the Autodialer:|

RSLogix **Register**   *Autodialer* **Analog Register**
RACO_Autodialer:O.Data[0]   *SNA 1*2*40001*
RACO_Autodialer:O.Data[1]   *SNA 1*2*40002*

…..

RACO_*Autodialer***:O.Data[123]**   **SNA 1*2*40124**

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4. Fully expand **the RACO_Autodialer:O.Data[0]** tag.You can see that **RACO_Autodialer:O.Data[0]** contains 16 tags which correspond to 16 discrete bits in the **RACO_Autodialer:O.Data[0]** register. Each of these tags corresponds to a SNA Discrete register bit in the Autodialer.

RSLogix Bit	**Autodialer Discrete Register**
RACO_Autodialer:O.Data[0].0	**SNA 1*2*00001**
RACO_Autodialer:O.Data[0].1	**SNA 1*2*00002**
….	
RACO_Autodialer:O.Data[123].15	**SNA 1*2*01984**

It's obvious from this view that the **RACO_Autodialer:O.Data[0]** register occupies the same memory space as the discreet bits **RACO_Autodialer:O.Data[0].0** to **RACO_Autodialer:O.Data[0].15** . Similarly, Analog register **SNA 1*2*40001** occupies the same memory space as the 16 discrete SNAs **1*2*00001** to **1*2*00016**. Refer to the Autodialer's EtherNet Addendum for more details on the address mapping scheme.

Catalyst: Section II.C. Catalyst Data Register SNA Addressing
Verbatim Gateway: Section II.C. Gateway Data Register SNA Addressing

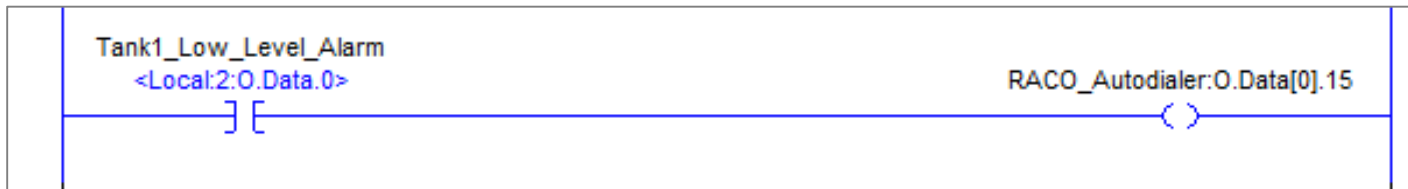| Controller Tags - Green_Valley_DPW(controller)			
Scope: Green_Valley_DI ▾ Show: All Tags ▾ Enter Name Filter... ▾			
Name	Value ←	Force Mask ←	Style
⊞ RACO_Autodialer:C	{...}	{...}	
⊞ RACO_Autodialer:I	{...}	{...}	
⊟ RACO_Autodialer:O	{...}	{...}	
⊟ RACO_Autodialer:O.Data	{...}	{...}	Decimal
⊟ RACO_Autodialer:O.Data[0]	0		Decimal
RACO_Autodialer:O.Data[0].0	0		Decimal
RACO_Autodialer:O.Data[0].1	0		Decimal
RACO_Autodialer:O.Data[0].2	0		Decimal
RACO_Autodialer:O.Data[0].3	0		Decimal
RACO_Autodialer:O.Data[0].4	0		Decimal
RACO_Autodialer:O.Data[0].5	0		Decimal
RACO_Autodialer:O.Data[0].6	0		Decimal
RACO_Autodialer:O.Data[0].7	0		Decimal
RACO_Autodialer:O.Data[0].8	0		Decimal
RACO_Autodialer:O.Data[0].9	0		Decimal
RACO_Autodialer:O.Data[0].10	0		Decimal
RACO_Autodialer:O.Data[0].11	0		Decimal
RACO_Autodialer:O.Data[0].12	0		Decimal
RACO_Autodialer:O.Data[0].13	0		Decimal
RACO_Autodialer:O.Data[0].14	0		Decimal
RACO_Autodialer:O.Data[0].15	0		Decimal
⊞ RACO_Autodialer:O.Data[1]	0		Decimal

5. When the PLC is **Online**, this window can be used to monitor and force the tags. The **Value** column shows the current value of the register. A value can be manually entered in the **Value** column to force the register to that value. Forcing a value for a 16 bit register (e.g. **RACO_Autodialer:O.Data[0]**) will force all of the 16 bits that it contains. (**RACO_Autodialer:O.Data[0].0** to **.15**)

D   Program RSLogix to trigger an Autodialer alarm channel

Programming the PLC logic is the user's responsibility and will not be covered in detail here. These are a couple of simple example of how to trigger an Autodialer alarm channel. You must also configure the Autodialer to assign the SNA that corresponds to that tag to an alarm channel. Refer to the Autodialer's EtherNet Addendum: **Section D. Assigning an SNA to a Channel** for more details.

a   Ladder Logic Example using Coils

1. The simplest way is to add a coil and then use the **Tag Browser** to assign the coil to the desired Autodialer tag, **RACO_Autodialer:O.Data[0].15** as in this example:.

```
Tank1_Low_Level_Alarm
  <Local:2:O.Data.0>                                    RACO_Autodialer:O.Data[0].15
        ] [                                                      ( )
```
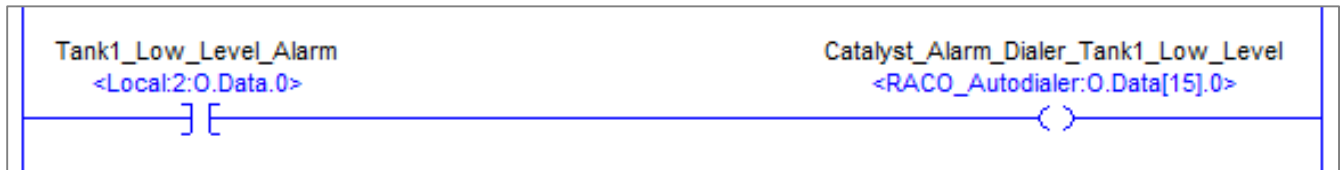
b Ladder Logic Example Using Alias Tags

1. You could also add an alias for the desired alarm and assign it to the RACO_*Autodialer* tag that you wish to use:
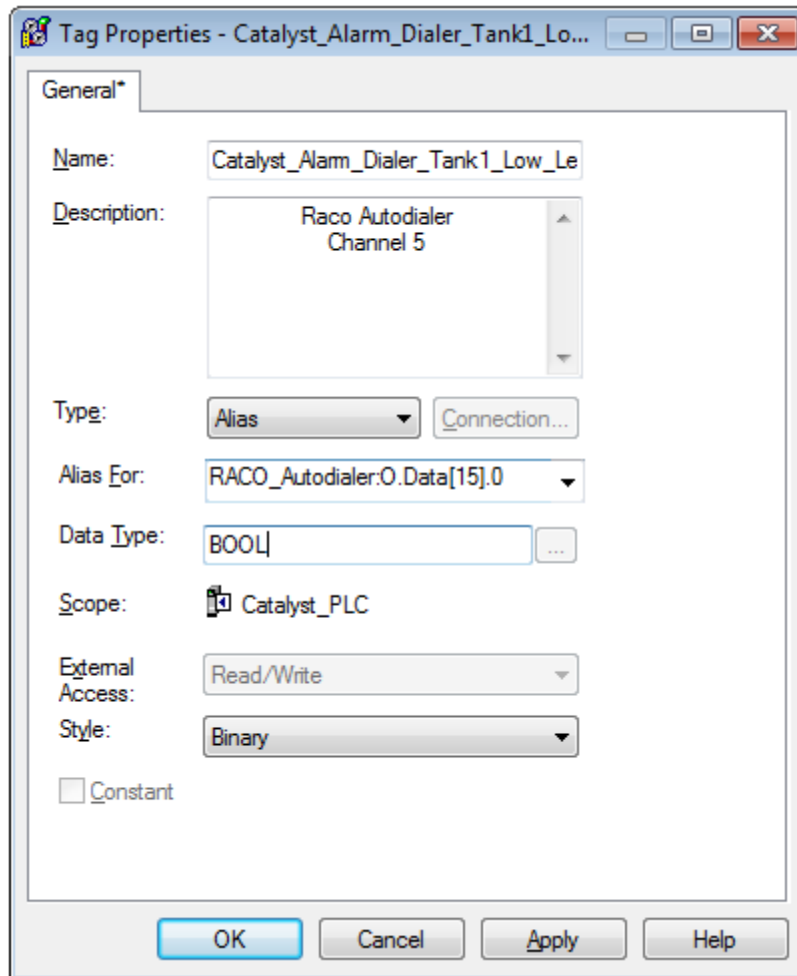
2. Add a rung that sets that alias coil when the desired alarm condition is met:

```
Tank1_Low_Level_Alarm                              Catalyst_Alarm_Dialer_Tank1_Low_Level
  <Local:2:O.Data.0>                                    <RACO_Autodialer:O.Data[15].0>
        ] [                                                           ( )
```

Once the configuration and programming is complete you may go **Online** and download and test the program. Please refer to the Rockwell documentation and resources for assistance with the general procedures for programming and testing your PLC.