Tech Note 856
Getting Started with the Remote Response Object (RRO)

Topic#: 002653
Created: April 2012

Introduction

Remote Response Objects monitor alarm conditions of other Galaxy objects, send notification messages when an alarm transition occurs, and allow users to respond to alarm notifications by acknowledging alarms.

This *Tech Note* provides detailed procedures to configure Remote Response objects to trigger an alarm and acknowledge it via Email or SMS.

Assumptions

- Your network allows **SMTP** and **POP3** traffic out to the Internet. You may need a dedicated outside connection.
- These objects are not available for download on WDN. They are purchased from your local Wonderware distributor.

Application Versions

- RemoteResponseObjects 1.0
- Wonderware Application Server 3.0 and later

Creating a Platform, Engines, Areas and Analog Device

For single node setup

1. Create Platform **P001** with two engines, **E001** & **E002**,
2. Each engine has its own area, **A001** & **A002** respectively (Figure 1 below).

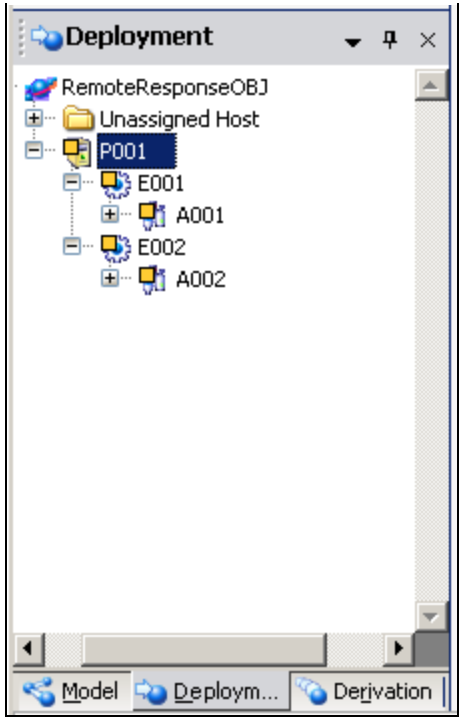

FIGURE 1: PLATFORM, ENGINES AND AREAS

2. Create a new instance of an AnalogDevice object or UDO called **AD1** and place it under area **A002** (Figure 2 below). You can use a UserDefined Object (instead of an AnalogDevice Object) but the settings will be different than that of Figures 3, 4 and 5.

   Leave all settings as default values unless otherwise noted.

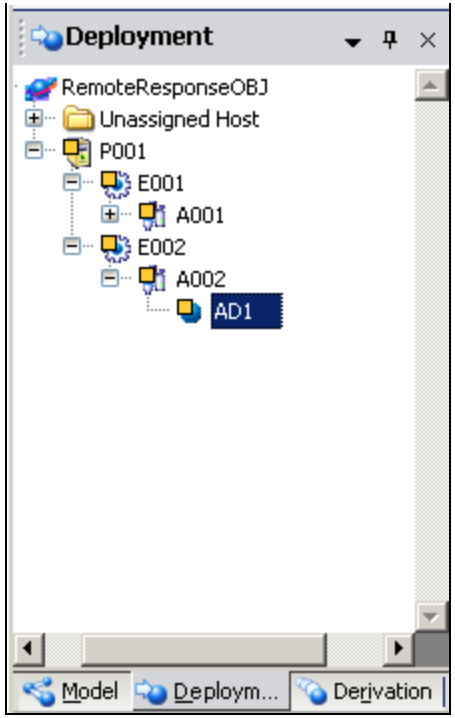

FIGURE 2: ANALOG DEVICE

3. In the **AD1 Alarms** Tab, do the following (Figure 3 below):

- Check **Detect PV level(limit) alarms**
- Check **Hi**
- Set the limit to **75.0**
- Set the Priority to **500**
- Set the AlarmMessage to **me.ShortDesc**

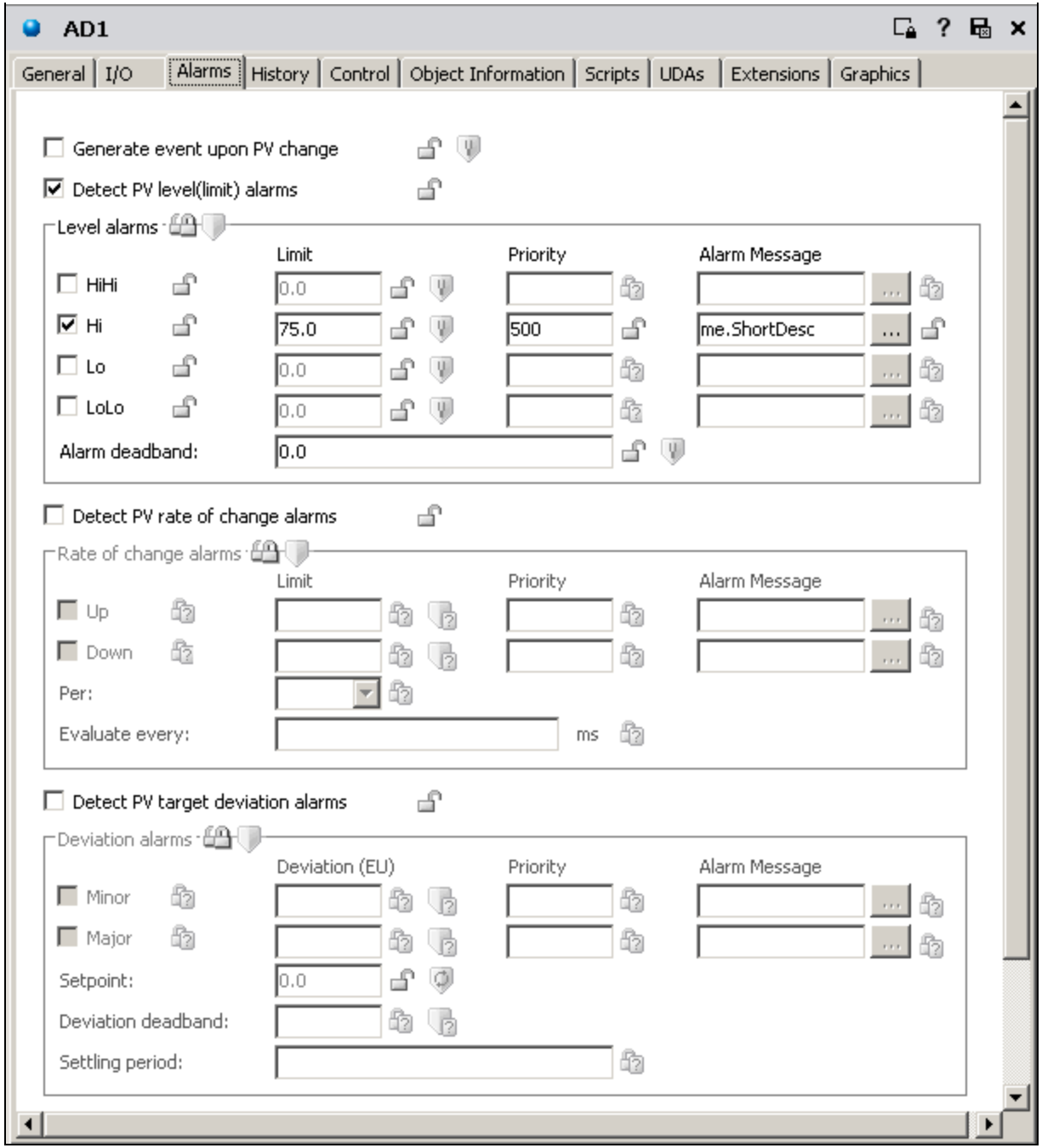

FIGURE 3: CONFIGURING HI ALARM IN ANALOG DEVICE AD1

4. In the **UDAs** tab, create a new UDA with type **Double** and call it **UDA1** (Figure 4 below).

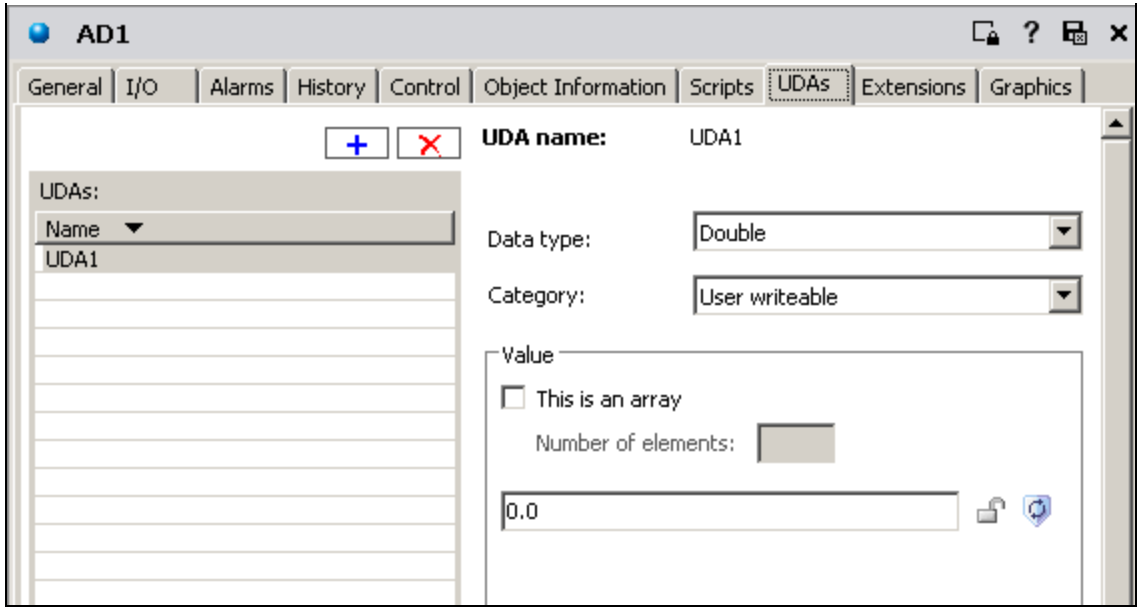

Figure 4: Create The UDA in Analog Device AD1

5. In the AD1 **I/O** tab, set the input source as AD1.UDA1 (Figure 5 below).

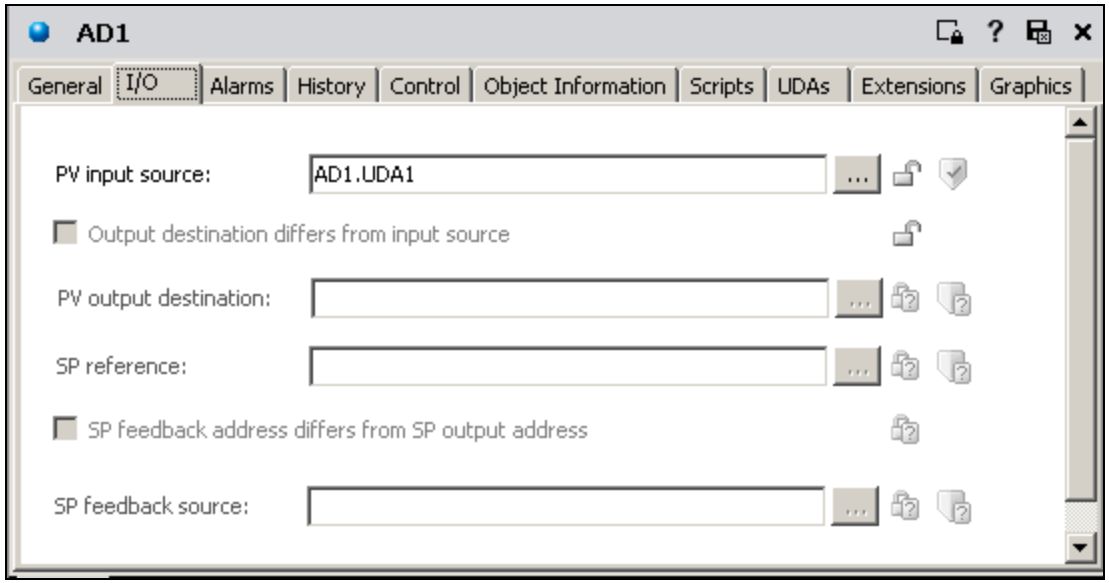

Figure 5: Assign PV Input Source to Analog Device AD1

Configuring the Objects

Configuring the RemoteResponse Object

1. Import the RemoteResponse objects into this Galaxy. The **RemoteNotifier** object detects that alarm has occurred and **RemoteCommunicator** relays it to the "outside" using SMS or Email.

2. Create derived templates from the base object instance of both the **RemoteNotifier** and the **RemoteCommunicator** objects called **RC** and **RN** respectively (Figure 6 below).

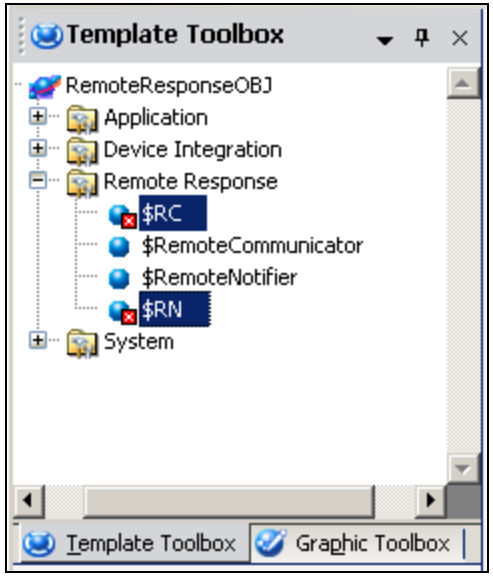

FIGURE 6: CREATING $RC AND $RN DERIVED TEMPLATES

3. From the derived templates, create a new instance of the RN called **RN1** and a new instance of RC called **RC1**. Put RC1 and RN1 under area **A001** (Figure 7 below).

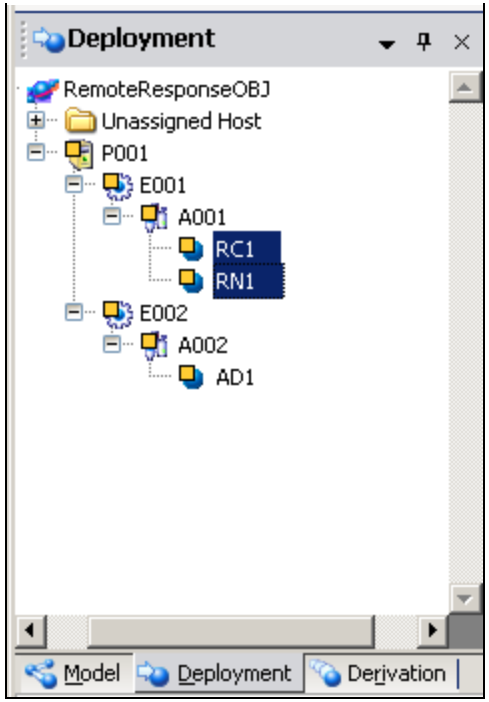

FIGURE 7: CREATING RC1 AND RN1 INSTANCES

Configuring the RemoteCommunicator (RC1) Object

1. Opent the **RC1** Object and click the **General** Tab.
2. Create a **From** email address for the **RemoteCommunicator**. This example uses: **gmailRC1@gmail.com**.
3. Create the **To** email address to receive alarm notifications. This example uses: **gmailOper1@gmail.com**.
4. Open **RC1** and do the following.

   In the RC1 **General** tab (Figure 8 below)

- In the email address box enter the **From** email address.
- In the password field enter the password associated with that account.
- Configure **Outgoing Mail Server** settings (this example uses Gmail):
  - Outgoing mail server (SMTP): **smtp.gmail.com**
  - Outgoing mail server port: **587**
  - Check **This Server requires an encrypted connection (SSL)**
- Use the following for **Incoming Mail Server** settings (This example uses Gmail):
  - Incoming mail server (POP3): **pop.gmail.com**
  - Outgoing mail server port: **995**
  - Check **This Server requires an encrypted connection (SSL)**

- Leave rest of the settings at default on this tab.

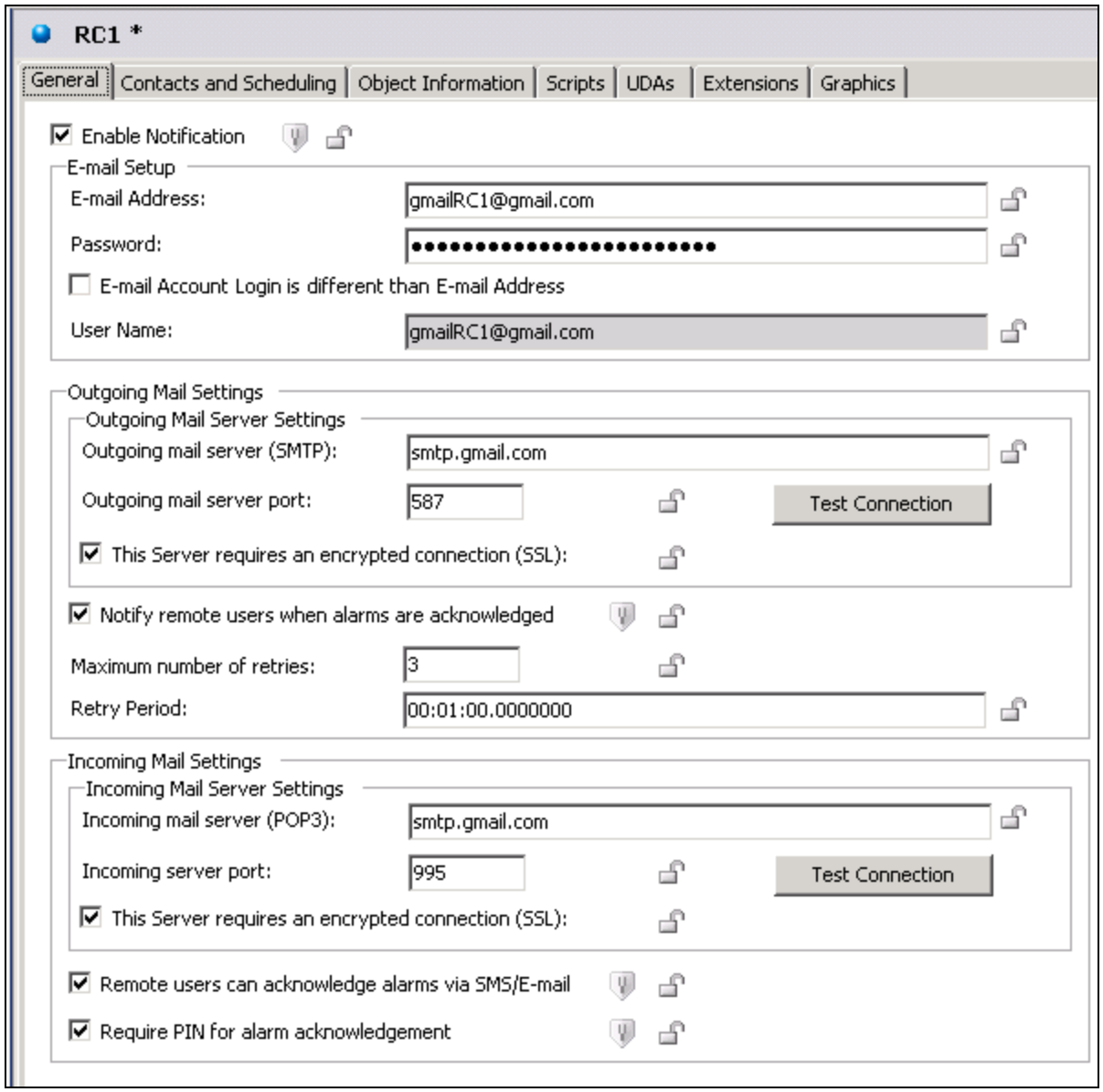

FIGURE 8: CONFIGURATIONS ON RC1 GENERAL TAB

In RC1 **Contacts and Scheduling Tab** (Figure 9 below), in the Contacts setup grid,

1. Type the user name under the First Name column. This example uses **user1**.
2. Type the email address under the E-mail Address column. This example uses “gmailOper1@gmail.com”
3. Type a four-digit PIN number (0000-9999)under the PIN column. This example uses **1111**.

4. Check the **Always Notify** option.
5. Type **User2** under the **First Name** column.
6. Type the Mobile number to which the alarm notification SMS needs to be sent under the **Mobile Phone** column. This example uses **9497273200**.
7. Type a four-digit PIN number (0000-9999)under the PIN column. This example uses **2222**.
8. Type the SMS Gateway for that mobile number in the SMSGateway column.

   - For AT&T Mobile: **txt.att.net**
   - For T-Mobile: **tmomail.net**
   - For Verizon: **vtext.com**

9. Check the **Always Notify** option.
10. Leave the default settings.
11. Save and close **RC1**.

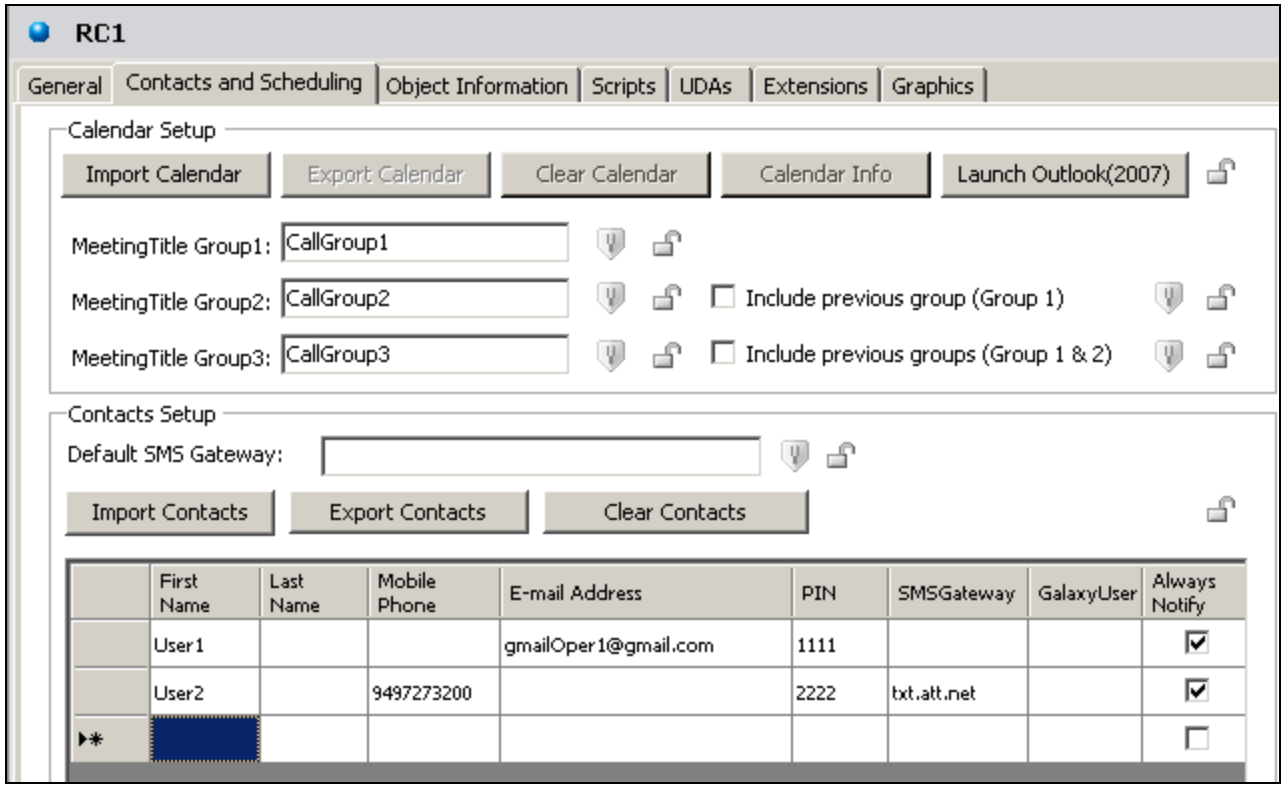

FIGURE 9: CONFIGURATION ITEMS ON RC1 CONTACTS AND SCHEDULING TAB

Configuring the RemoteNotifier (RN1) Object

Open **RN1** and do the following.

1. In the RN1 **General** tab configure the following attributes (Figure 10 below)
   - Set the **Communicator Object Name** as **RC1**.
   - Set the **Notification Type** to **Both**.
   - Leave the remaining settings at default on this tab.

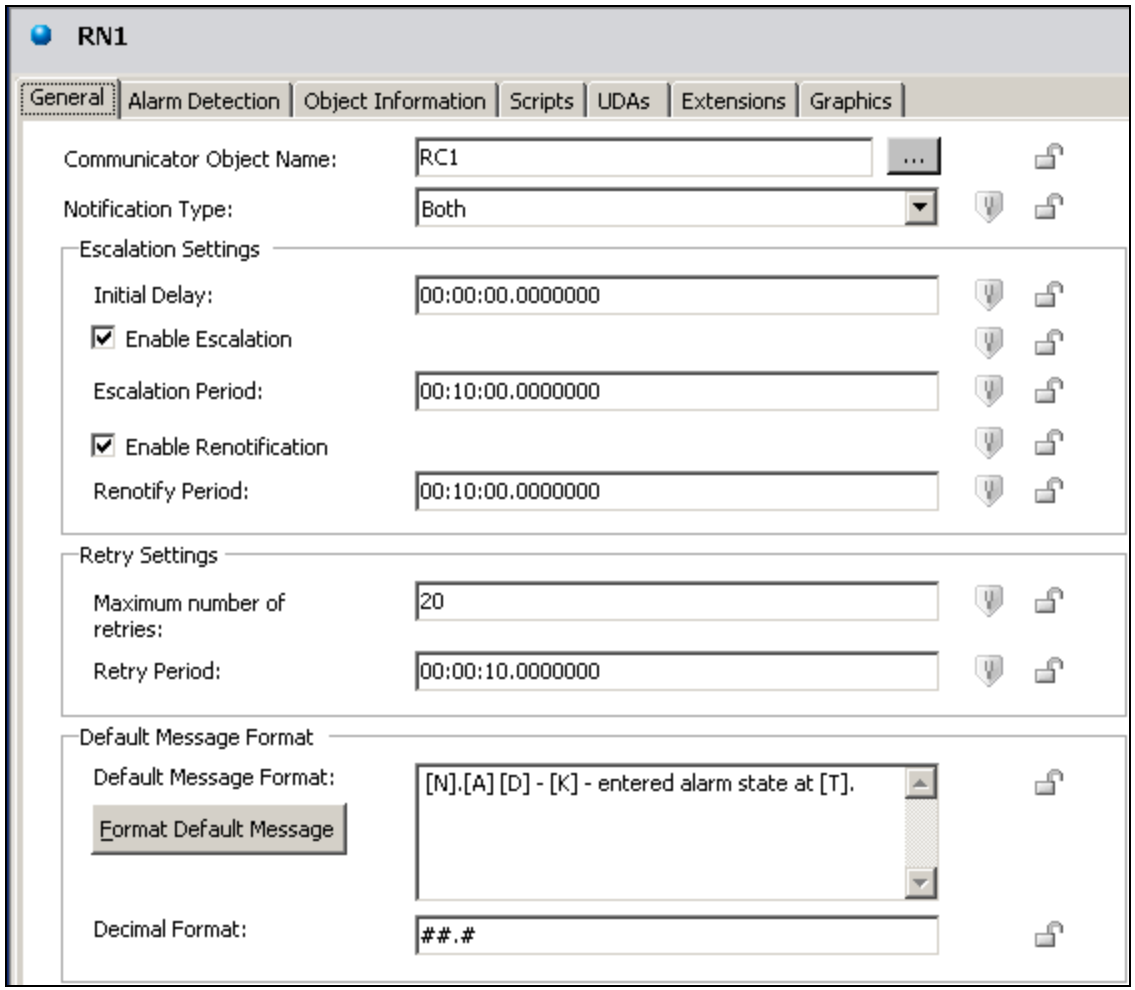

FIGURE 10: CONFIGURATIONS ON RN1 GENERAL TAB

2. In the RN1 **Alarm Detection** tab (Figure 11 below)
   - Create a new Detector by clicking the blue **+** button located at the right of the **Detector List** item.
   - Call the newly-created detector **det1**.
   - Type **AD1.Hi.InAlarm** in the **Source** field.
   - Leave all other attributes as default.
   - Save and close **RN1**.

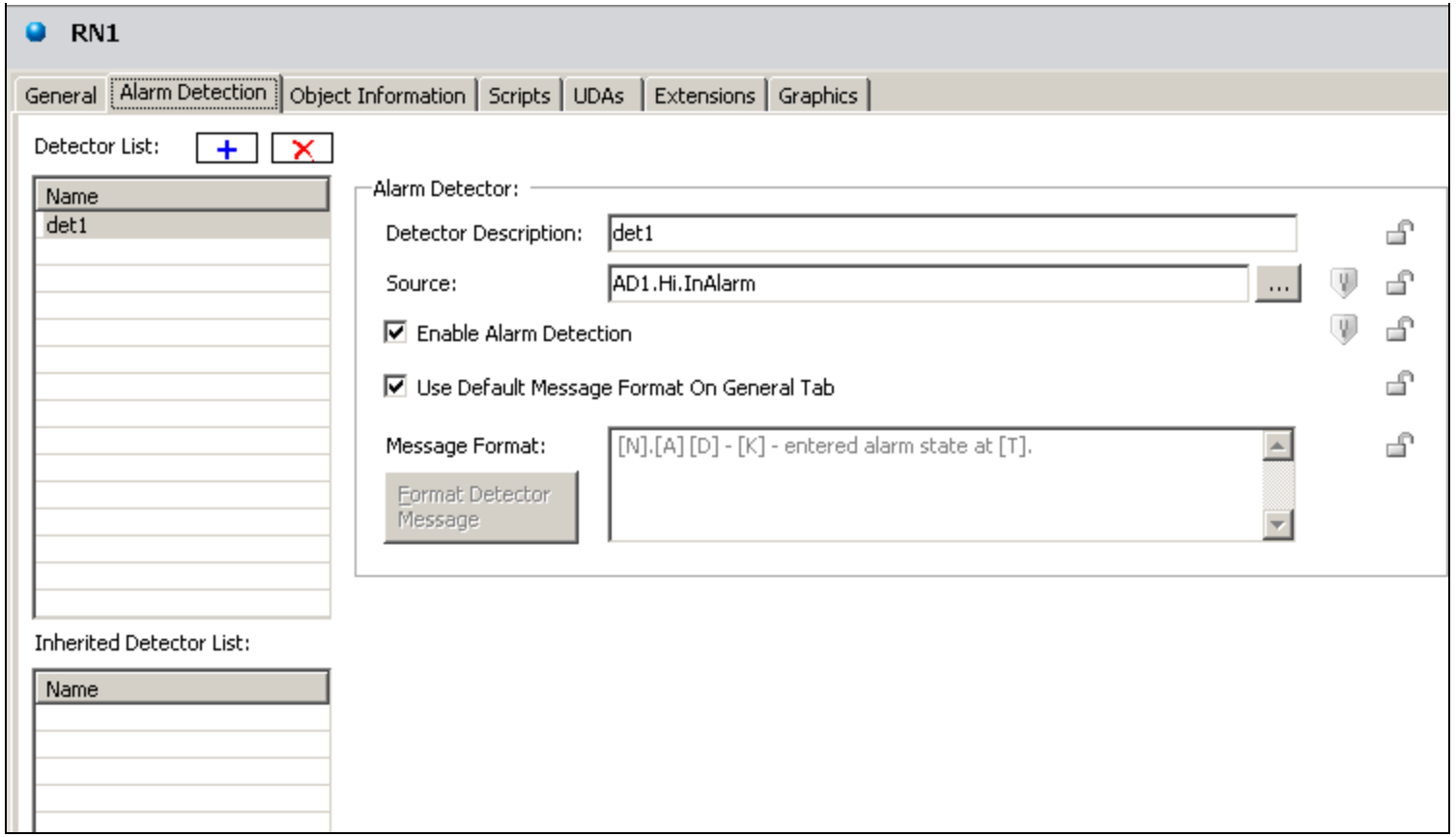

FIGURE 11: CONFIGURATIONS ON RN1 ALARM DETECTION TAB

Deploying the Platform and Triggering an Alarm

1. Right-click **P001** and click **Deploy**, then **OK**.
2. Right-click the **AD1** object and click **View in Object Viewer**.
3. Locate the **UDA1** attribute in the Object Viewer.
4. Change the value to a value greater than **75** to trigger the alarm (Figure 12 below).

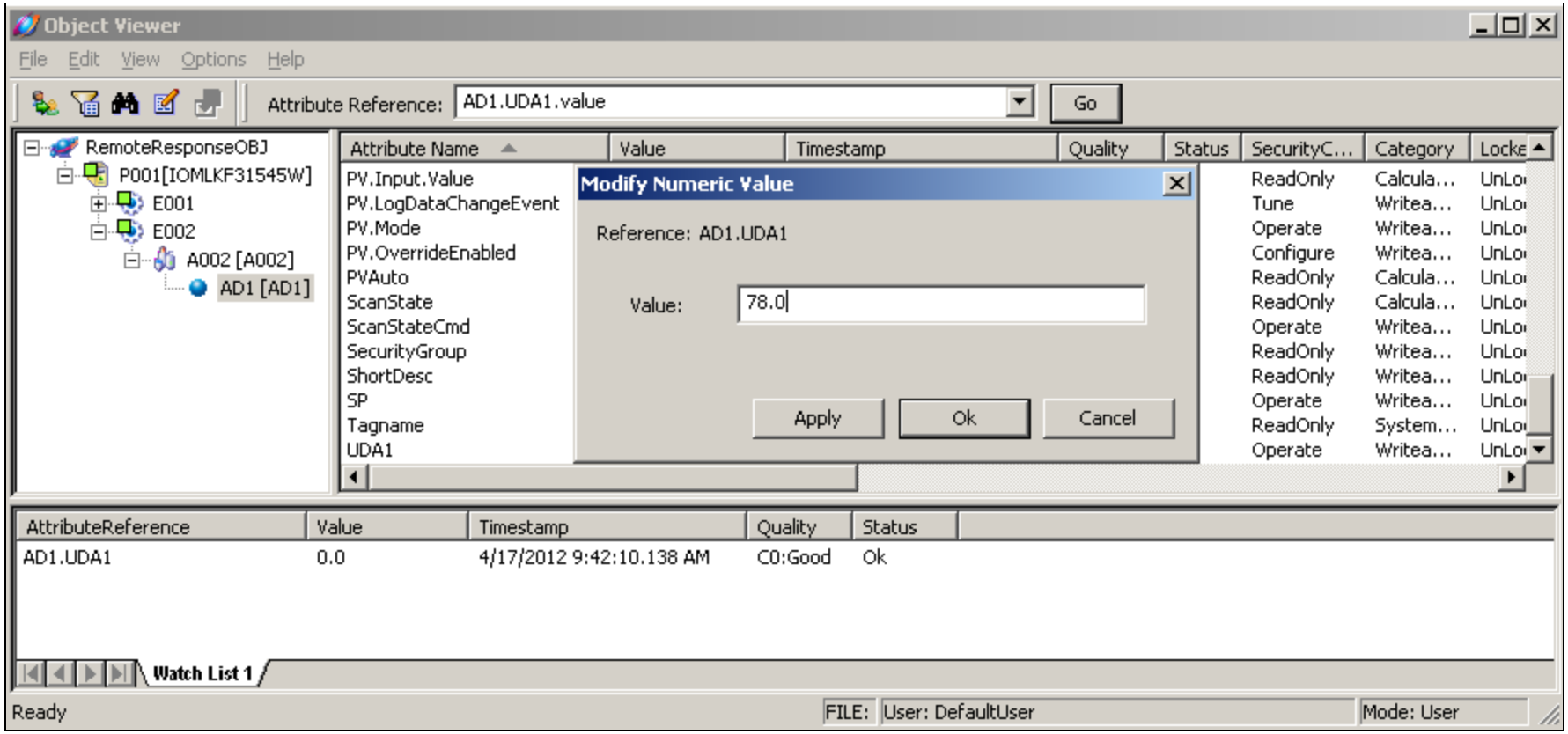

FIGURE 12: CHANGE THE VALUE OF UDA AND TRIGGER AN ALARM IN OBJECT VIEWER

When the alarm is triggered, you see the following in Object Viewer (Figure 13 below):

- ADI.InAlarm attribute will turn **true.**
- AD1.HI.Acked attribute will be **false**.
- Check the email and the Mobile phone of the contacts configured in the **RC1** object.

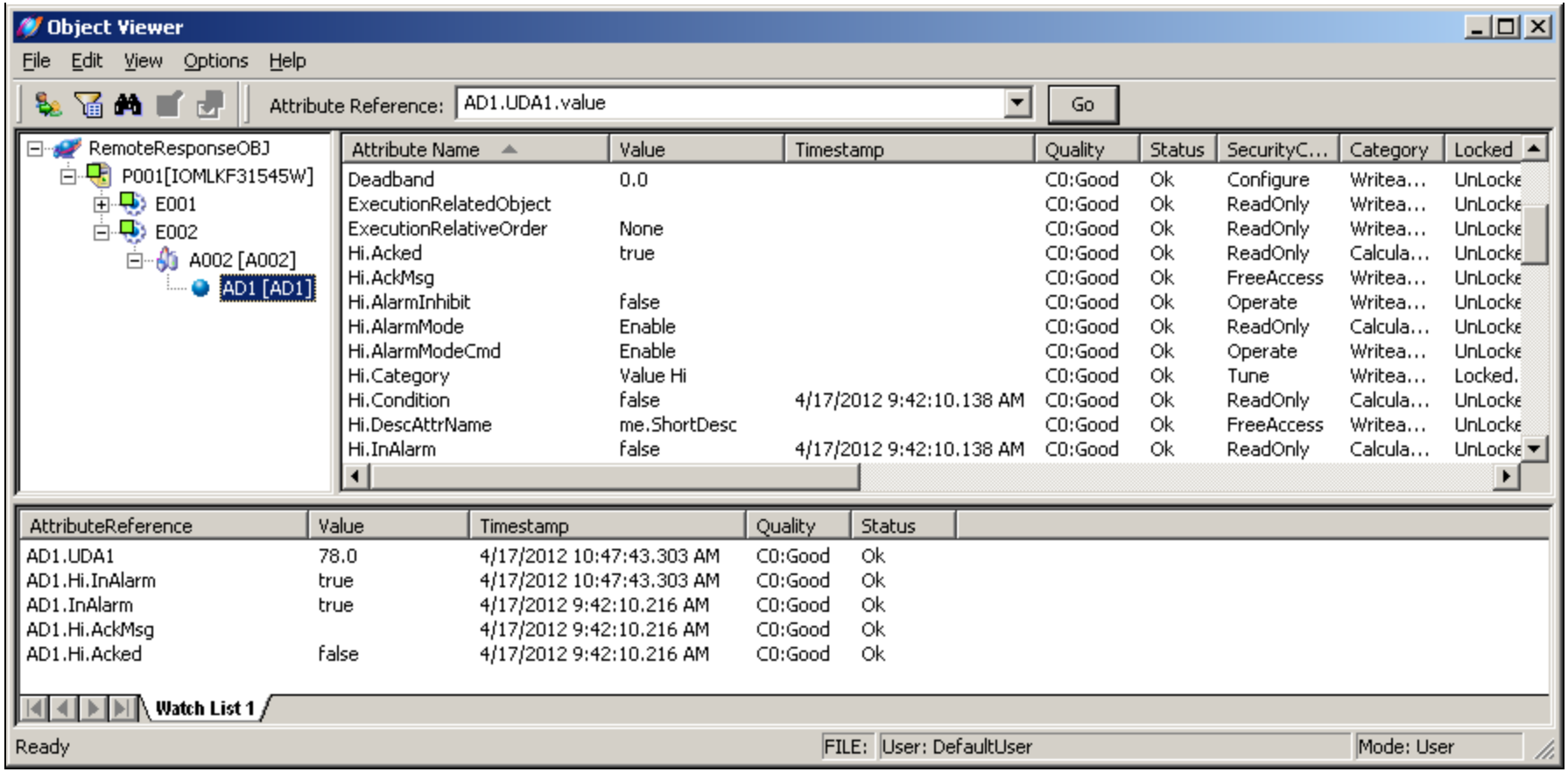

FIGURE 13: OBJECT VIEWER WATCH WINDOW WITH ATTRIBUTES SHOWING THAT AN ALARM WAS TRIGGERED

Alarm Message Examples

```
(#AD1.Hi# Alarm G1)AD1.Hi The AnalogDevice provides supervisory control capabilities for instruments or equipment that have a key continuous variable.
- UnAcked - entered alarm state at 4/7/2012 10:47:43.303 AM.

AD1.Hi The AnalogDevice provides supervisory control capabilities for instruments or equipment that have a key continuous variable. - UnAcked -
entered alarm state at 4/7/2012 10:50:12.145 AM
```

Acknowledging Alarms via Email

You can acknowledge the alarm by replying to the email as follows.

- If the RemoteCommunicator object requires a PIN number, the required format of the message body is as follows:
  For a PIN of 1111:

  1111

- Optionally, you can add a message to your alarm acknowledgement by adding a space *after* the PIN, followed by your desired message. For example:

1111 my optional alarm comment is here

- If the RemoteCommunicator object does not require PIN number, the format of the message body is as follows:

  ACK

- Optionally, you can add a message to your alarm acknowledgement by adding a space *after* the ACK followed by your desired message. For example:

  ACK my optional alarm comment is here

- **Note:** ACK is not case sensitive.

Acknowledging Alarms via SMS

After receiving the alarm notification on your cell phone, the alarm can be acknowledged by replying to that SMS as follows.

- If the RemoteCommunicator object requires a PIN number, the required format of the message Subject and body is as follows:

  Subject : **(#AD1.Hi# Alarm G1)**
  Body : **2222**

- Optionally, you can add a message to your alarm acknowledgement by adding a space *after* the PIN followed by your desired message. For example:

  2222 my optional alarm comment is here

- If the RemoteCommunicator object does not require PIN number, the required format of the message Subject and Body is as follows:

  Subject : **(#AD1.Hi# Alarm G1)**
  Body : **ACK**

- Optionally, you can add a message to your alarm acknowledgement by adding a space *after* the PIN followed by your desired message. For example:

  ACK my optional alarm comment is here

Notes:
• The SMS Gateway must retain the Subject line text format (**#TIC101.PV.Hi# Alarm G1**) in the response message that is converted from SMS into an E-mail. This is because the Remote Response Objects key off this Subject line to determine which alarm is being acknowledged.

• Acknowledgement will not work if SMS Gateway does not support a **Subject** line. Refer to page **50** of the **RemoteResponseObject User Guide** for more information.

After the alarm is acknowledged, you see the following in Object Viewer (Figure 14 below).

- **AD1.Hi.Acked** attribute should turn **True**
- **AD1.Hi.AckMsg** should display the optional alarm comment.

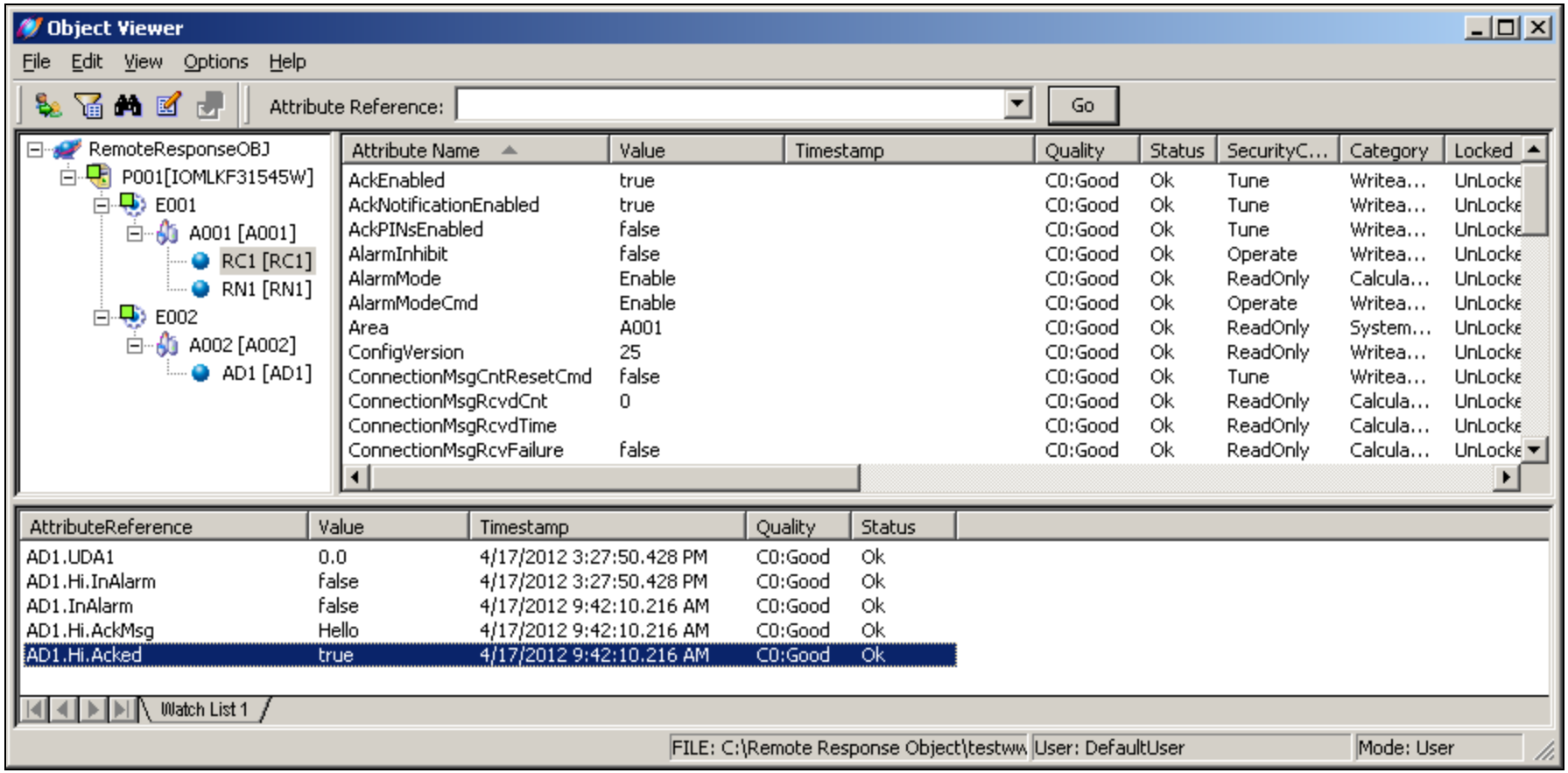

FIGURE 14: OBJECT VIEWER WATCH WINDOW WITH ATTRIBUTES SHOWING THAT AN ALARM WAS ACKNOWLEDGED

Reference

For more details refer the **RemoteResponseObject User Guide**.

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