Tech Note 587
Monitoring Communication Between InTouch®, a DAServer and a PLC

Topic#: 002343
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Introduction

This *Tech Note* discusses two ways to monitor the communication between InTouch and a PLC or other type of end device.

- The first option uses status bits built into InTouch and DAServers to determine connection status.
- The second option uses a heartbeat tag between InTouch and the PLC using InTouch scripts.

This *Tech Note* describes how to use both methods to produce the best results.

Procedure

This example illustrates monitoring the connection between a PLC and an InTouch application using the ABCIP DAServer. The application name and I/O items will differ depending on what DAServer is used. Follow these steps to set up the PLC **SYSSTATUS** bit, InTouch IOStatus bit, and heartbeat so that they can monitor the communication status between InTouch and a PLC.

Configure the SYSStatus Status Bit

DAServers have a Device-Specific System Item called **SYSSTATUS**. This is a binary status indication of the connection to the PLC or end device. Once you have requested items and have received initial data from the PLC, this item changes to **FALSE** if there is an error communicating with the device.

Note: This *Tech Note* assumes that you have already installed and configured a DAServer to get data from a PLC or other end device.

In your InTouch application, create an Access name that points to a device group in your DAServer. If one already exists go on to the next step.

1. Open WindowMaker™, and click **Special/Access Names** on the main menu.
2. Add a new Access Name that will be used to get data from your DAServer.

   In this example (Figure 1 below) the Access Name is **SLC500**, and **DASABCIP** is used along with a device group called **SLC500_Group1**. The **SLC500_Group1** device group has been previously added to the DAServer configuration. **SuiteLink** is the protocol and only active items are advised.

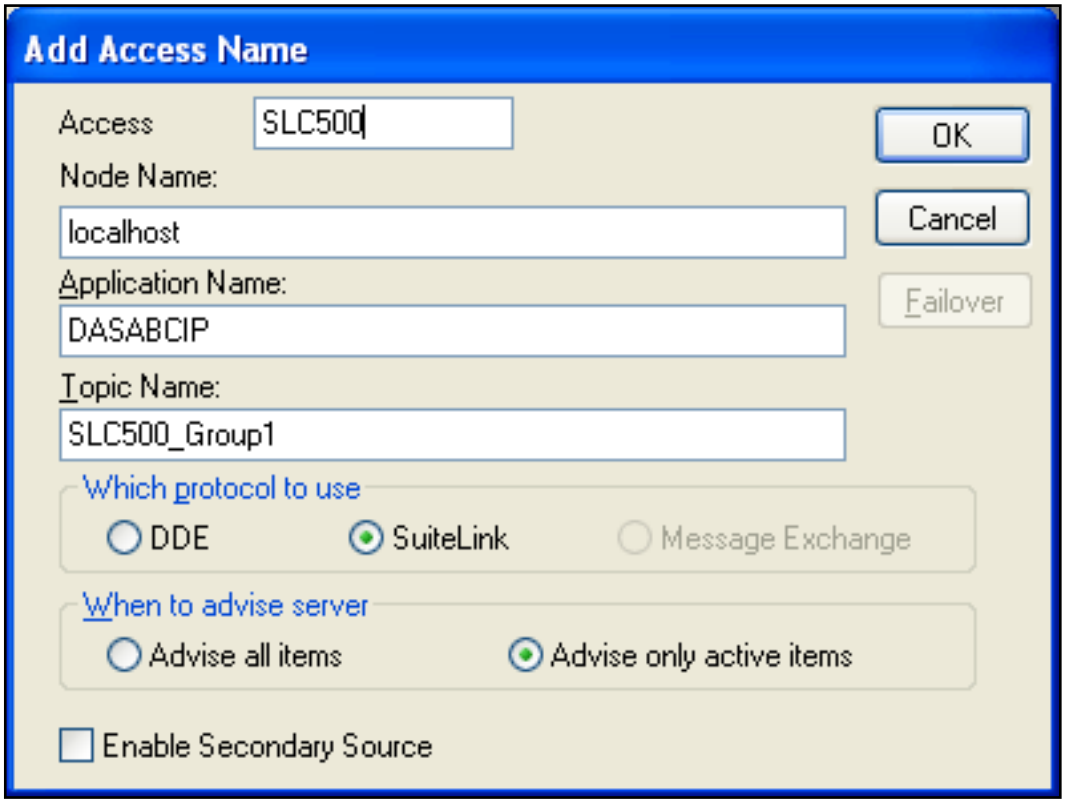

Figure 1: Add and Configure Access Name

3. Click **OK** to save and exit.

4. Click **Special/Tagname Dictionary**.
5. Click the **New** button and create an I/O Discrete tag called **SLC500_PLCStatus**.
6. Set the Access Name to the one created in Step 2.
7. Type **SYSSTATUS** in the **Item** field (Figure 2 below).
8. Conifgure other details to match Figure 2, then click **Save** and **Close**.

Note: If there is more than one Access name in the InTouch application that is configured to get data from the same PLC or end device, only one Access Name/device group per PLC needs to be monitored for connection status.

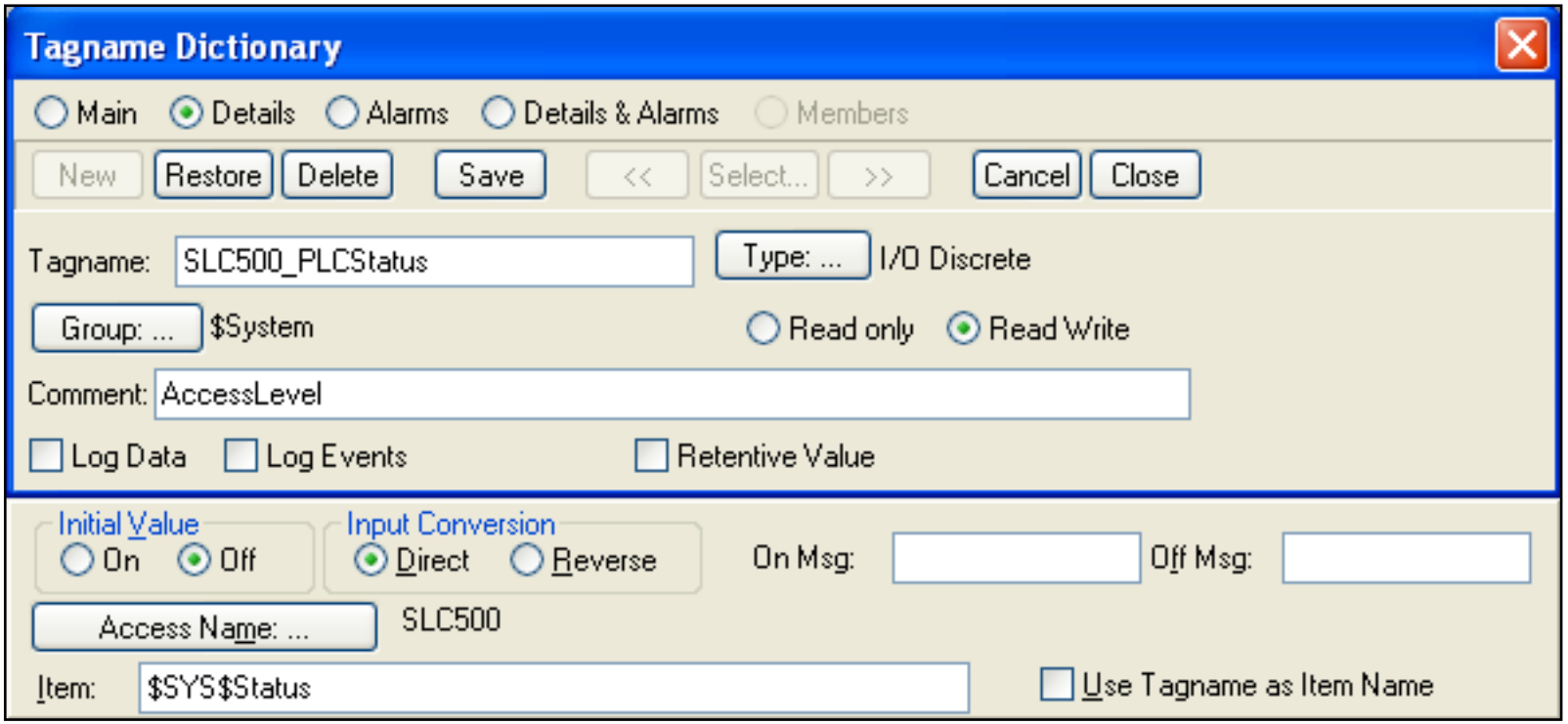

Figure 2: I/O Discrete Tag and Settings

Note: Repeat the procedure in step 1 for each PLC or end device to be monitored.

Configure the IO Status Bit

InTouch has built-in functionality to monitor SuiteLink connections. Configure an Access Name in order to connect to the InTouch View process.

1. In WindowMaker, click **Special / Access Names**.
2. Click the **Add** button and create an Access Name called **IOStatus**.
3. Type **view** for the Application Name and **IOStatus** for the Topic Name.
4. Select **SuiteLink** for the protocol and other settings included in Figure 3 (below):

   This Access Group can be used to monitor the connection to any application. The Access Name is arbitrary, but the Application Name and Topic Name must be **view** and **IOStatus**.

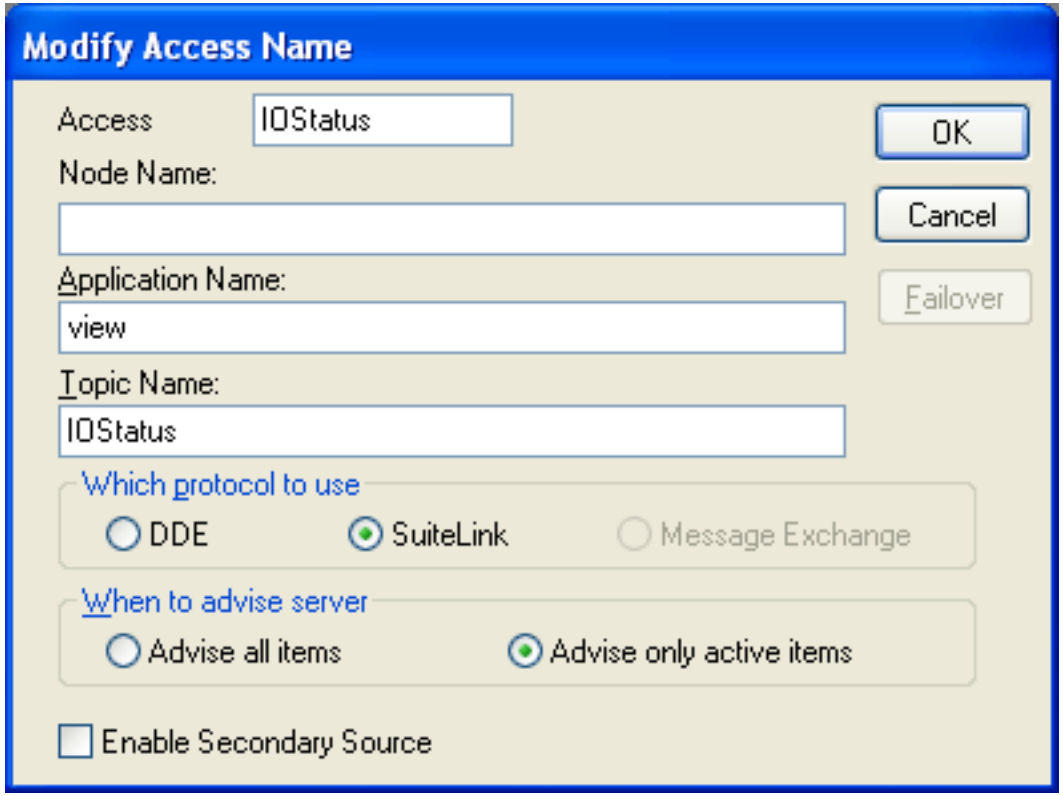

Figure 3: IOStatus Access name

5. Click **OK** to save.

6. Click **Special/Tagname Dictionary**.

7. Click the **New** button and create an I/O Discrete tag. This tag will be used to monitor the SuiteLink connection to your DAServer.

   In this example the tag name is **DASABCIPStatus**.

8. Select **IOStatus** for the Access Name. For the item name, enter the Access name that was created in Step 2 to communicate with the PLC or end device. **SLC500** is used for this example. Repeat this step for each DAServer to be monitored.

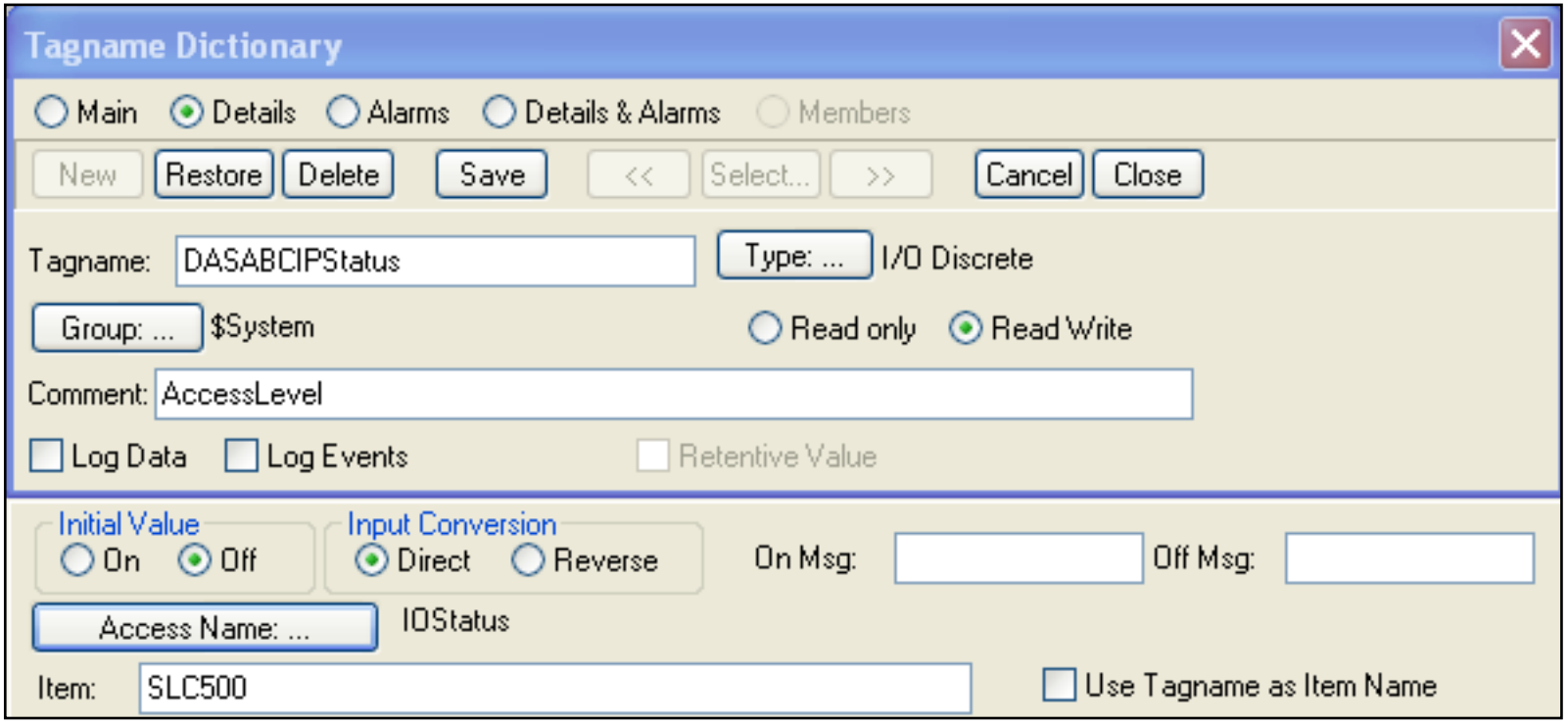

Figure 4: DASABCIP Status Tag

Create a Heartbeat Tag

A heartbeat tag can be used to monitor the connection of InTouch all the way to the PLC or end device.

The heartbeat tag can provide additional information on the status of the PLC. For example, if the PLC program stops, the connection to the PLC is still good so the DAServer **SYSStatus** tag will indicate a **Good** status. However, the heartbeat tag will stop updating. This indicates a problem at the PLC.

1. Create a timer in the PLC.

2. In WindowMaker, click **Special/Tagname Dictionary** from the main menu.

3. Click the **New** button and create an I/O Integer tag. For this example the Item is the **t4:0.acc** counter in the SLC500 PLC, and the tag is called **SLC500Timer** (Figure 5 below).

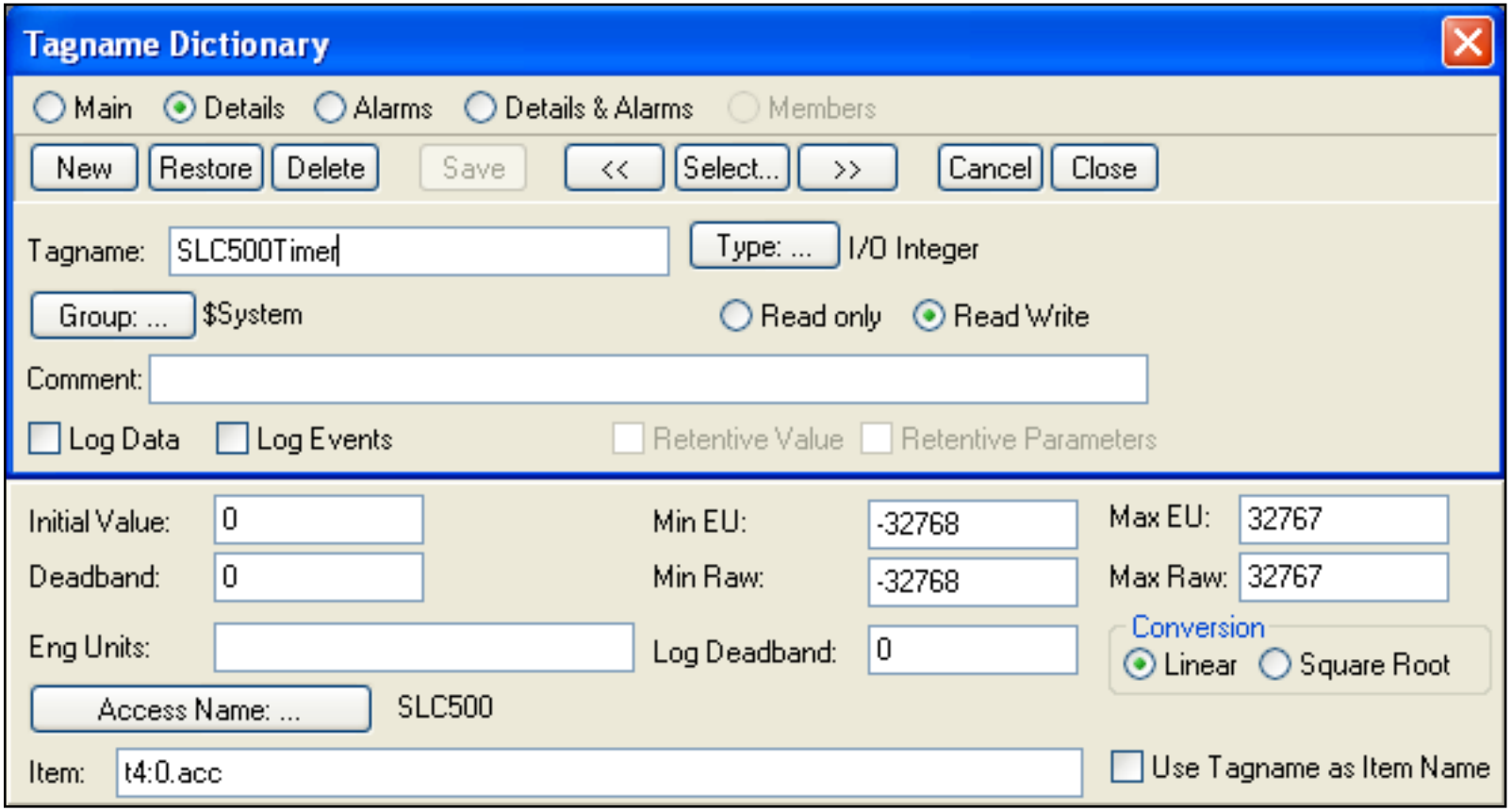

Figure 5: I/O Integer Tag for the PLC Seconds Counter

4. Click **Save** and **Close**.

5. Create and save a Memory Integer tag called **Counter** (Figure 6 below).

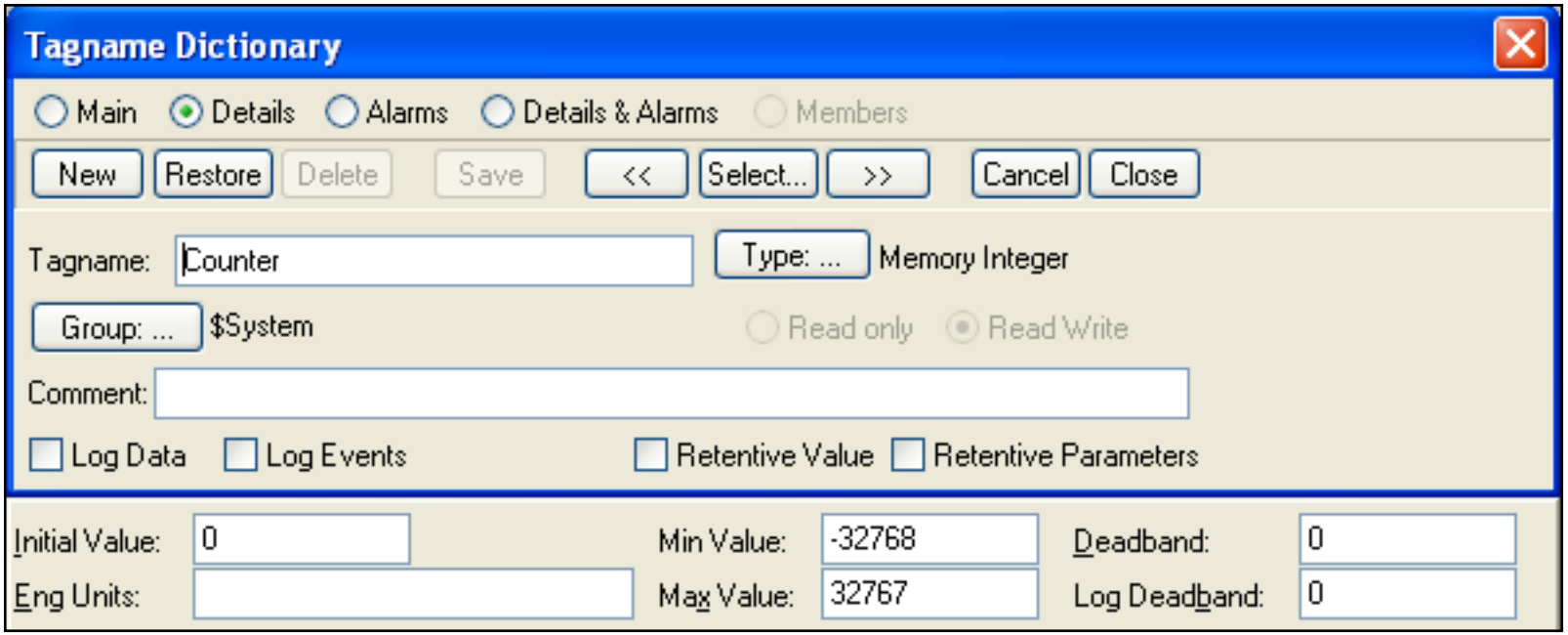

Figure 6: Memory Integer Tag for Counter Display

6. Click **Special > Scripts > Data Change Scripts**. Create a Data Change script for the tag SLC500Timer that resets **Counter** to zero (Figure 7 below).

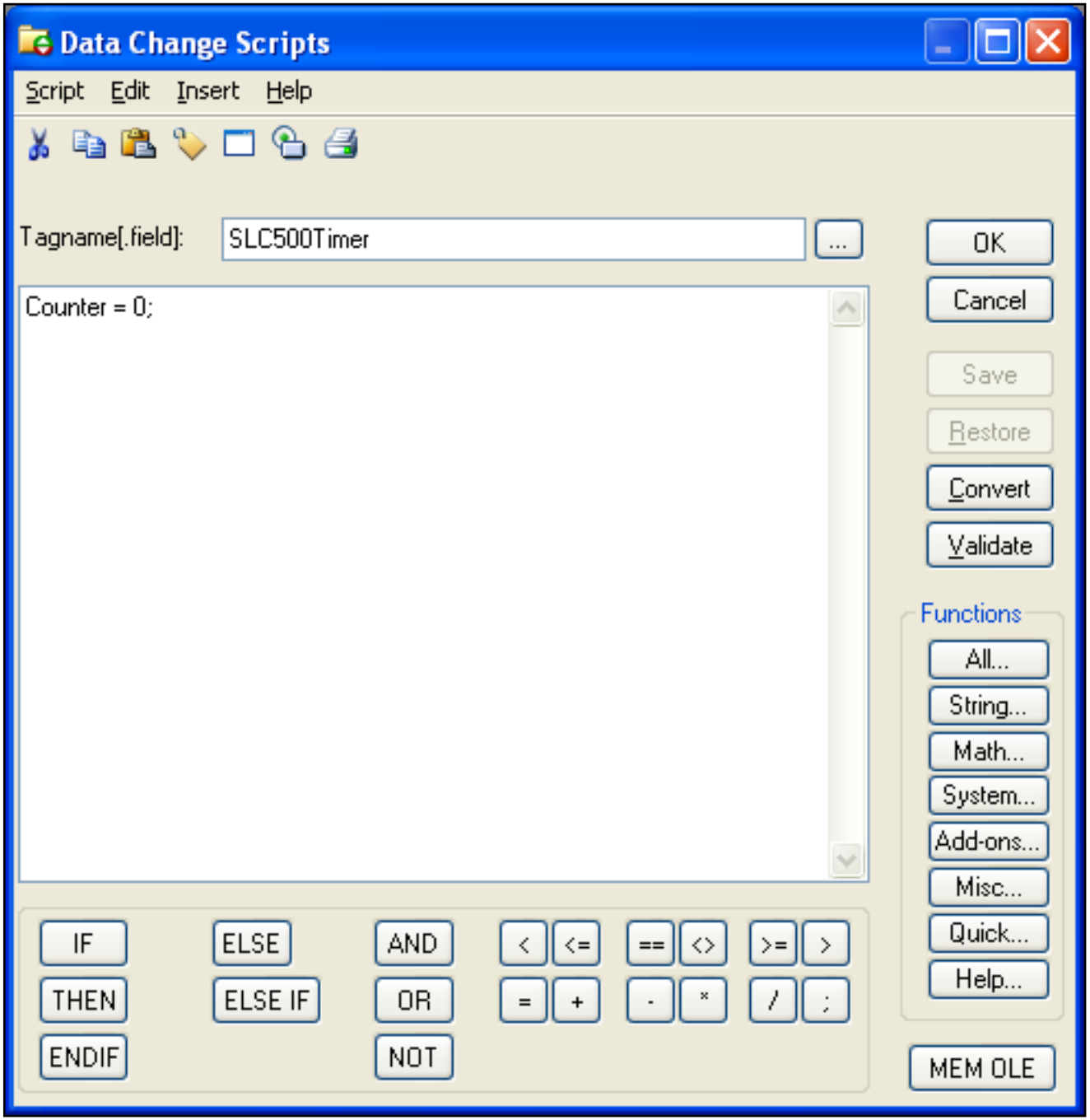

Figure 7: Data Change Script for SLC500 Timer

7. Validate and Save your changes.

8. Create another Data Change script for the InTouch system tag **$Second** that increments **Counter** by one (Figure 8 below).

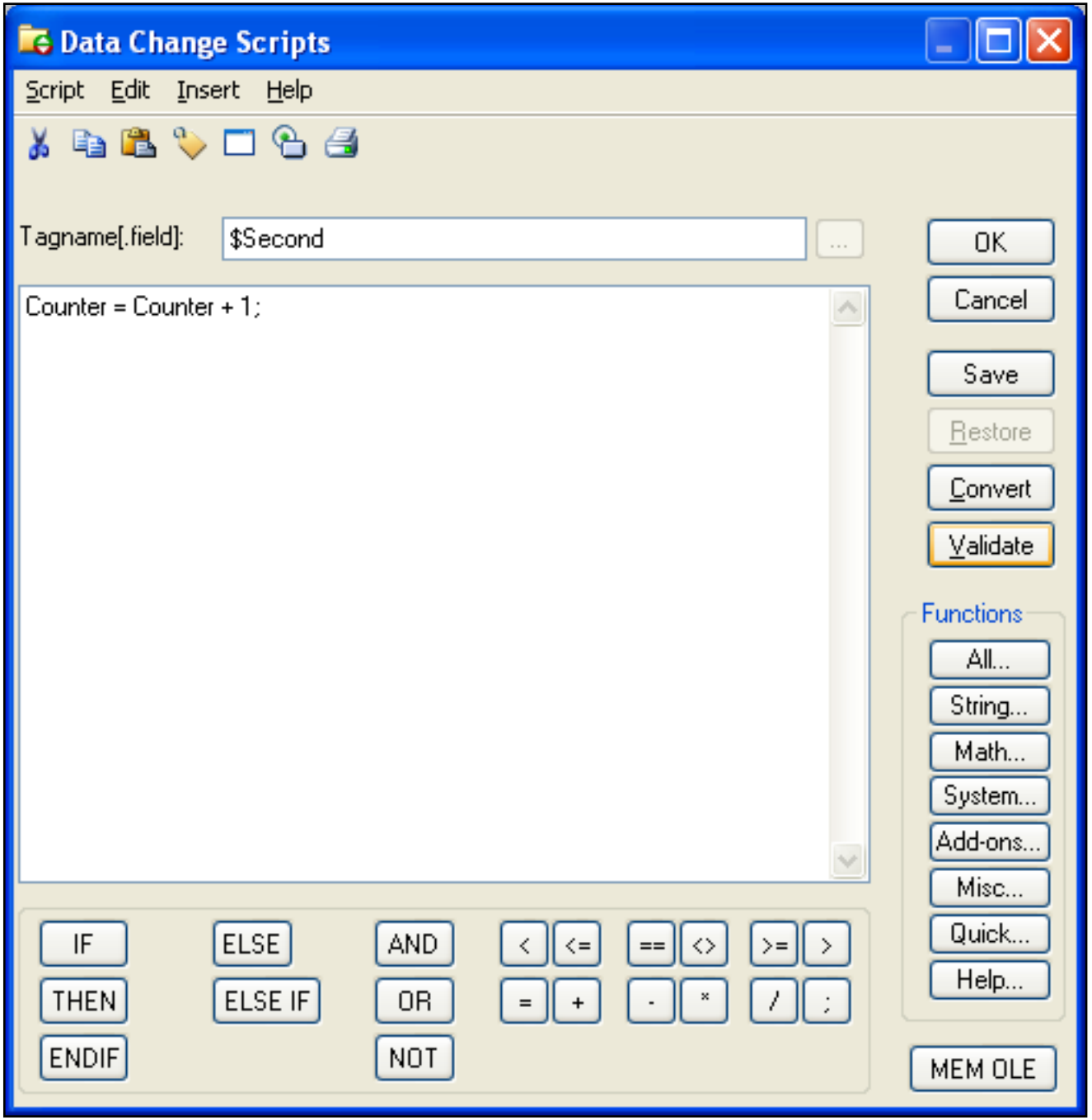

Figure 8: Data Change Script for Incrementing Counter

9. Validate and Save all your changes.

10. In the Tagname Dictionary create a Memory Discrete tag called **WatchdogStatus** and set the initial value to **On** (Figure 9 below).

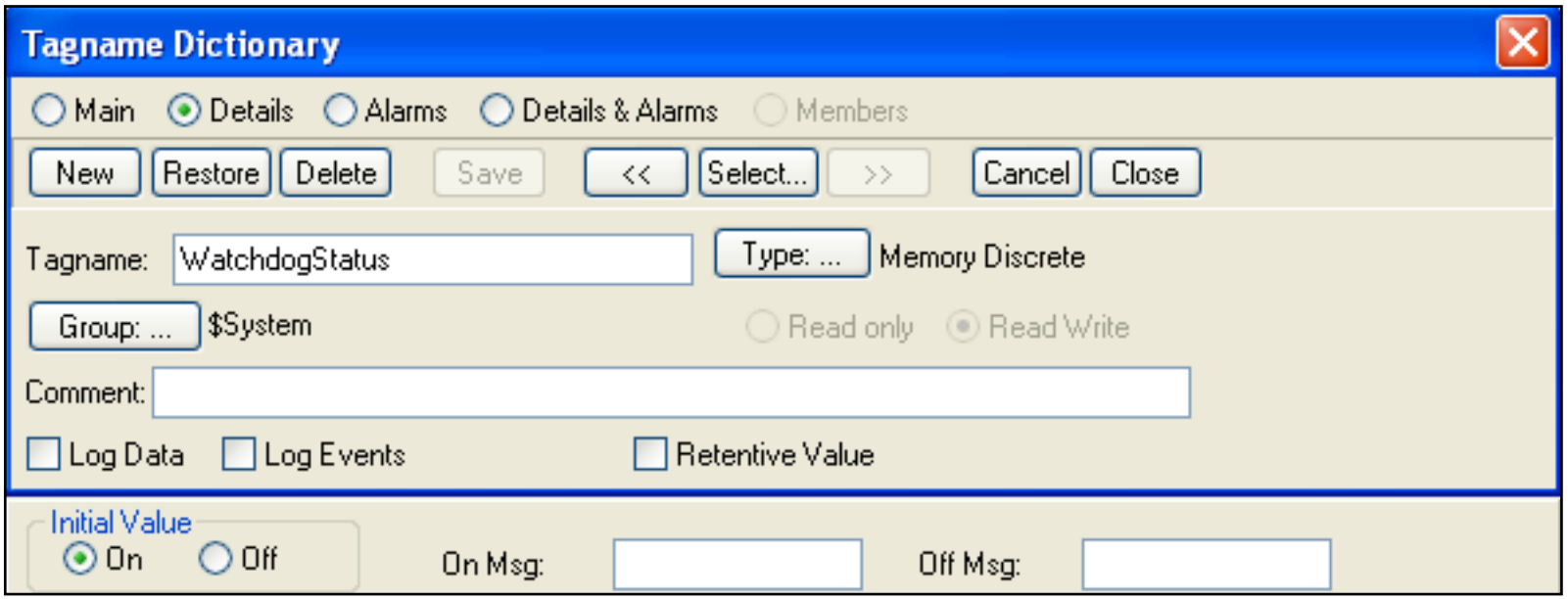

Figure 9: Set WatchdogStatus to On

11. Click **Special > Scripts > Data Change Scripts**.

12. Create an OnTrue Condition Script. If the **Counter** is greater than 9, set the **WatchdogStatus** to **0** (Figure 10 below).

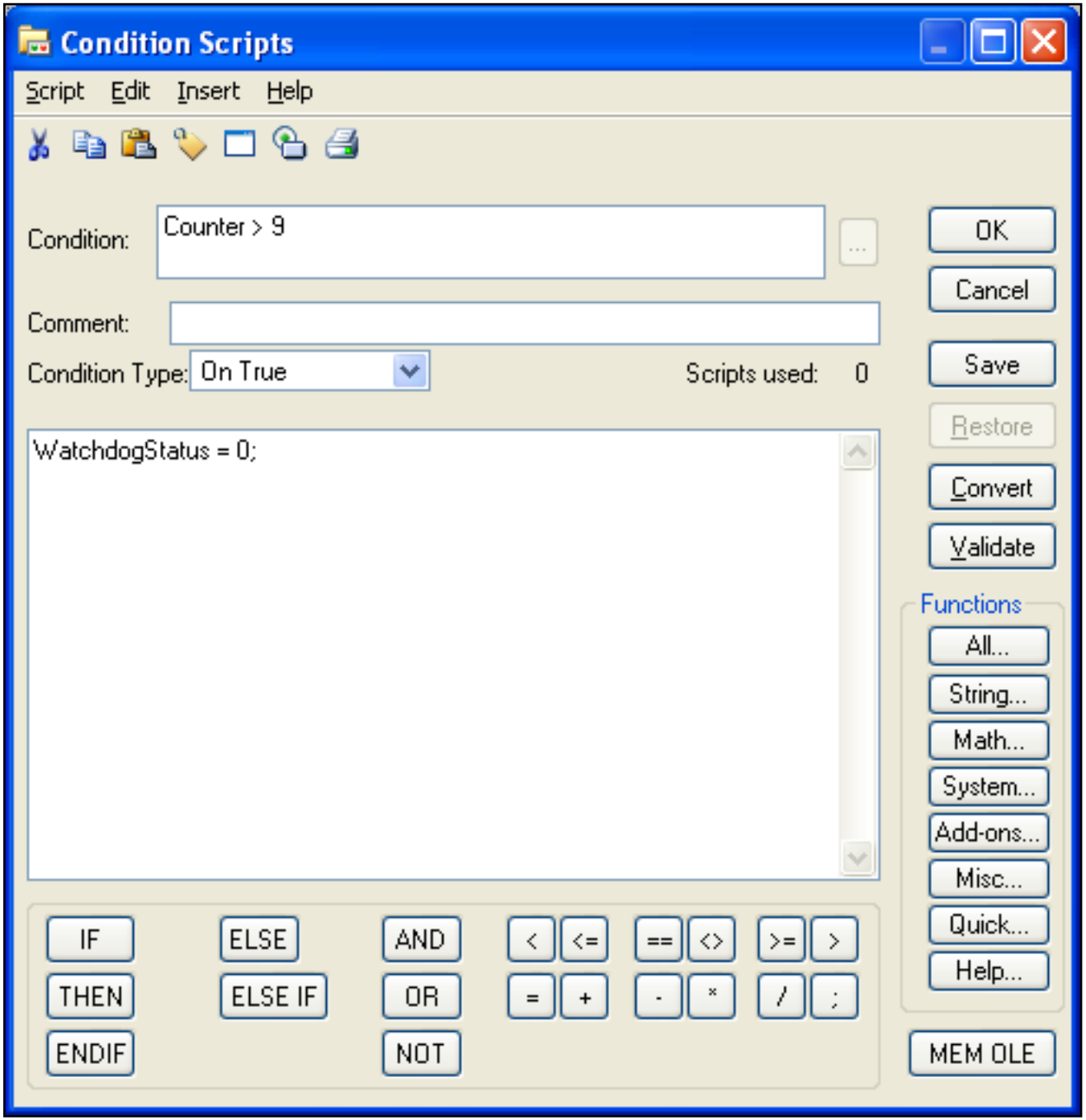

Figure 10: Condition Script for Setting WatchdogStatus to FALSE

13. Validate and Save your changes.

14. Create another **OnTrue** Condition Script: If **Counter** is less than or equal to 9 set it to 1 (Figure 11 below).

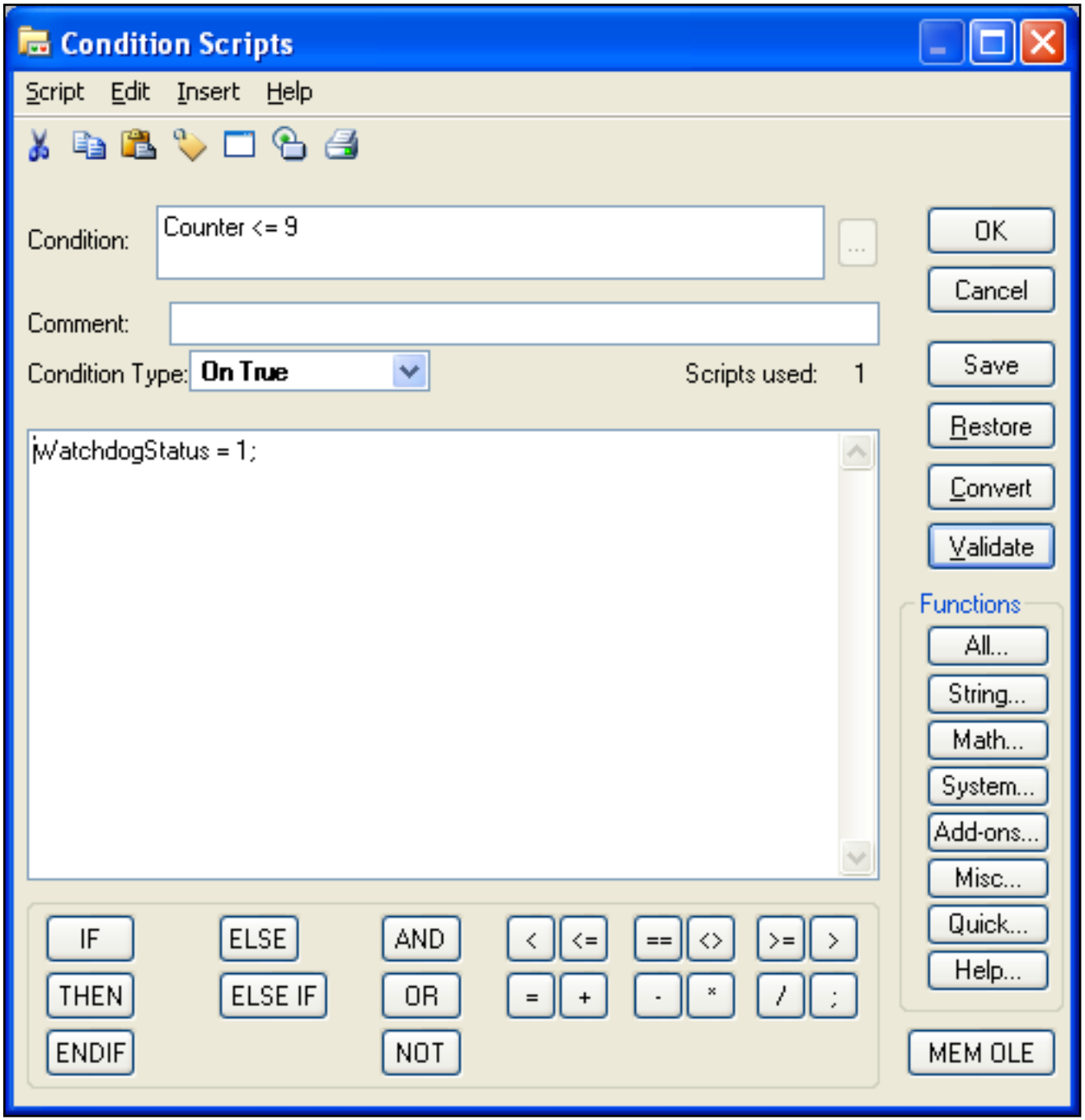

Figure 11: Condition Script for Setting WatchdogStatus to TRUE

The **WatchdogStatus** will be set to **FALSE** if 10 seconds lapse without an updated value from the PLC.

Once the status tags have been configured in the InTouch application, they can be displayed or used in other logic to generate messages to indicate a problem with communications to a PLC or end device.

The following graphic shows an example InTouch window that displays the status indicators (Figure 12 below).

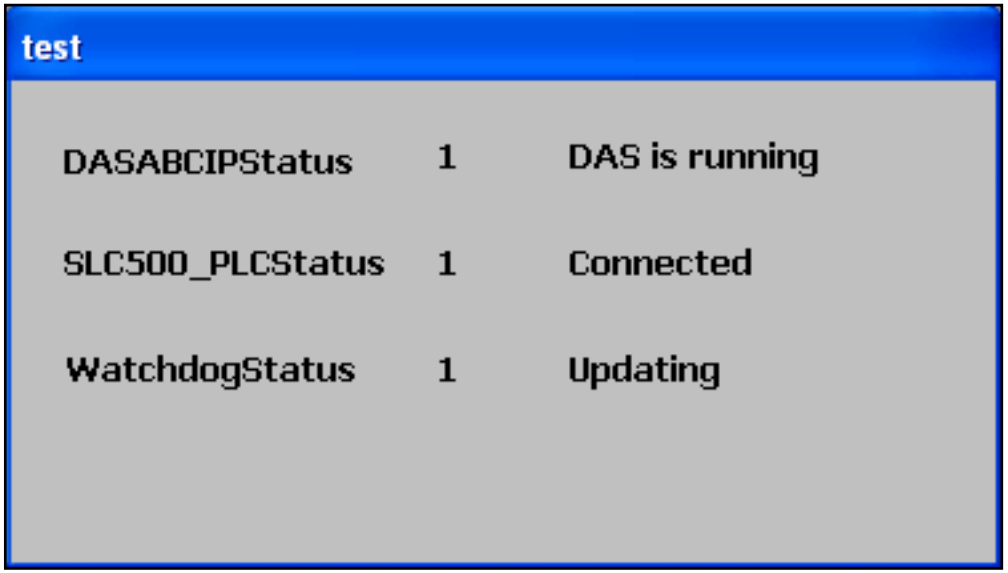

Figure 12: InTouch Monitoring Window Example

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