The DirectNet protocol does not have the ability to write to a discrete bit and this can cause some difficulties when using a visual interface program like InTouch with the DSDDE server to write to Control Relays and Discrete Output points. DirectNet requires all writes to occur in 16-bit words. This technote will demonstrate how to use the *tagname.field* bit reference syntax in InTouch to write to discrete bits without any additional scripting needed.

The example below uses a DL305 discrete output module with addresses IO050 –IO057 as the discrete output points that InTouch will trigger. A **single** tagname **io50_57** is the only tag created. By specifying the bit number desired using the *tagname.field* syntax in the expression field we can trigger an individual discrete output. The usable range for bit referencing is **.00**(least significant) through **.31**(most significant).

Step 1
Use the Wizard tool to select a pushbutton or switch and place it on a blank space of a window.

Step 2
Create a **DDE Integer** Tag named **io50_57** with **R5** as the item name and attach it to the DSDDE Server Access Name. Register **R5** is the 8-bit register within the 305 memory map where outputs IO050 thru IO057 reside. Configure the DSDDE Access Name at this point if you have not previously done so.
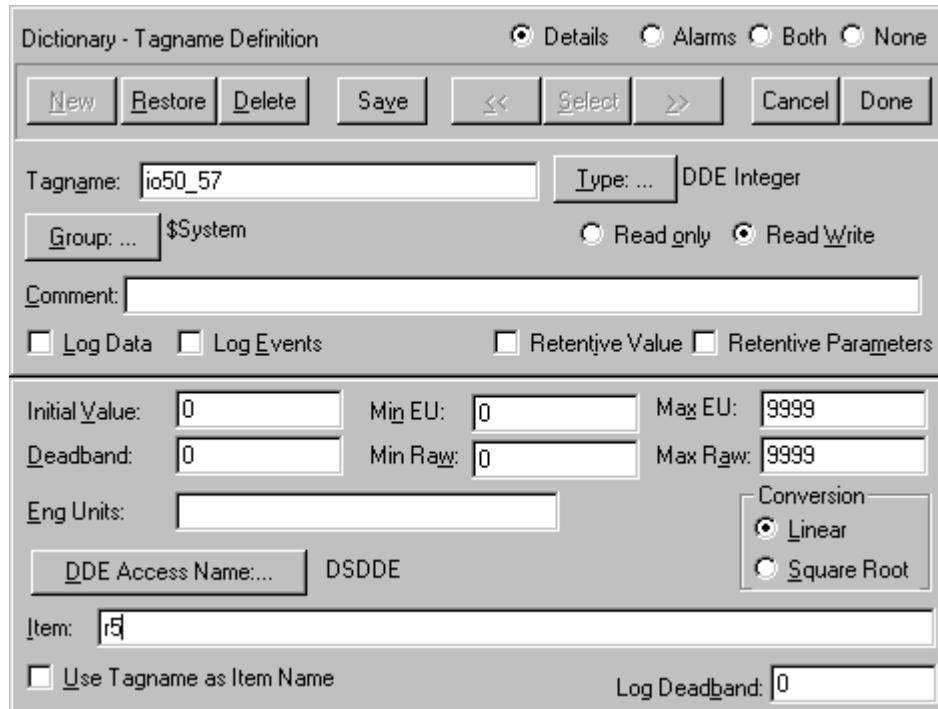
Step 3
Double click on your switch or pushbutton object and enter **io50_57.01** as the tagname as shown below.
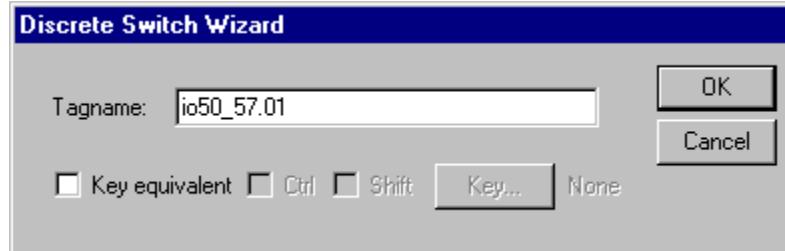
Step 4
Click OK and put InTouch into Runtime and start the DSDDE. Click on your switch or pushbutton and you will see Output 51 activate on your PLC.

Note: Writing to the same register (R5 in this example) somewhere else in a PLC program or within InTouch as a full byte, word or double word will change the status of the discrete bits within that register. When using a read/write DDE Integer tag to access discrete, bits verify that its associated register is **NOT** overwritten by other logic.

Summary
The *tagname.field* bit reference syntax can be used to write to a discrete bit within any field that a discrete tagname would normally be used; expression, scripts, etc. This feature can prove to be useful when adding an InTouch HMI to an existing control system that DirectNet protocol is a requirement, or when interfacing to any 305 family PLCs which coincidentally can only use DirectNet.