

TECHNICAL NOTE

Maple Model(s)

HMI5000 Series
cMT Series

Title

Change HMI Window Using PLC Control Object
(Free Tags-based PLCs)

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Summary

A **PLC Control Object** can be used to change the currently displayed HMI window based on a value in a designated PLC register.

For *Fixed Address-based* PLCs, two consecutive registers are required to use the **Change Window** function.

For *Free Tags-based PLCs* (see ‘Applicable PLCs’ below), a two-element array of INTs is required to use the **Change Window** function.

This Tech Note provides instructions for configuring a **PLC Control Object** to change HMI windows from a *Free Tags-based PLC*.

Solution

Applicable PLCs

This Tech Note pertains specifically to PLCs which are not Address-based, but rather use *Free Tags*, *Memory-Allocated Tags*, or *Symbolic Addressing*. Although this is not an exhaustive list, some Free Tags-based PLCs which are compatible with Maple Systems HMI and cMT Series products include:

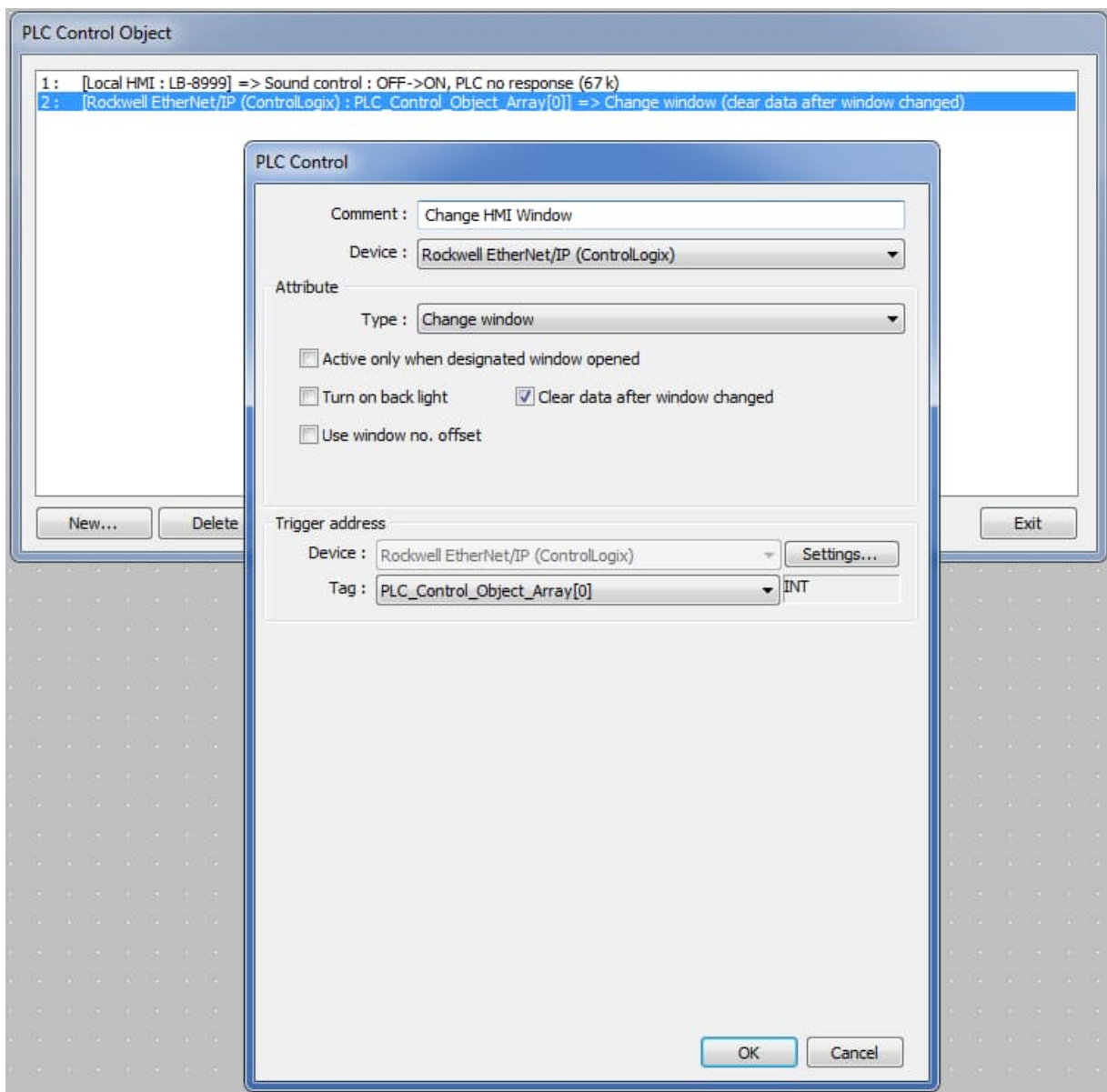
- Allen-Bradley CompactLogix and ControlLogix
- Allen-Bradley Micro820/830/850
- Siemens PLCs that use Symbolic Addressing
- Omron NX/NJ Series
- Beckhoff TwinCAT (Ethernet) – Free Tags
- Emerson ControlWave Micro (BSAP Ethernet) – Free Tags
- Emerson ROC800 Series – Free Tags
- Opto22 PAC (Ethernet) – CONT Protocol
- Bosch Rexroth SIS (Symbolic Addressing)
- CoDeSys V2, V3

Change HMI Windows from a Free Tags-based PLC

You may wish to configure a **PLC Control Object** to change the window displayed on the HMI based on a trigger in the PLC. If your PLC is Free Tags-based, then you will need to have a **two-element array of INTs** configured in advance.

Once you have a two-element array of INTs configured in your PLC, open your HMI project in *EBPro* and follow the instructions below to configure a **PLC Control Object** of the type: **Change Window**:

1. From the *EBPro* **Object** menu, click on **PLC Control**.
2. Click **New** to create a **PLC Control Object**. Set the **Device** to your PLC.
3. Set the Attribute **Type** to: **Change Window**.
4. Under **Trigger Address**, set the **Tag** to the **1st element** of the array of INTs tag that you had configured previously in your PLC. Click **OK**.



5. The **1st element** of the array of INTs (i.e., the Trigger Address) initializes with a default value of '0'.
6. To activate the **Change Window** function, the PLC must write a "Target Window Number" value into the **1st element** of the array of INTs. For example, if you want the HMI to display Window #20, write a value of '20' into the designated **Trigger Address** in the PLC.
7. The HMI continuously monitors the **1st element** of the array of INTs for any change in value. When it sees the value change from the default value of '0' to '20' (the Target Window Number), the HMI then displays the designated window.
8. Subsequently, the HMI moves the previous Target Window Number (e.g., '20') into the **2nd element** of the array of INTs. Once it has moved the Target Window Number into the **2nd element** of the array, it clears the **1st element**, resetting the **Trigger Address** to '0', the default value.
9. The HMI continues to monitor the **1st element** in the array of INTs for any further changes.

For more information on **PLC Control Objects**, please consult Chapter 13, Section 27 of the *EBPro Programming Manual*, available for download from our website, www.maplesystems.com.