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(NOP)

EP-EA-001 Changing CMore and CMore Micro Screens From the PLC and Panel

This ladder logic example illustrates a method to insure that the CMore or CMore Micro panel will always change to the screen the PLC commands it to if the CMore project also allows the operator to change the screens directly from the panel. The problem arises because of the way the Switch to Screen Number register is acted upon by the panel. First, in order for the panel to change to a screen commanded by the PLC, the number in the Switch to Screen register must change before the panel will go to the commanded screen number. If the number doesn't change, the panel won't go back to the commanded screen, even if the PLC is re-writing that value into the register. Second, the Switch to Screen number value must be a valid screen number. The number in the Switch to Screen register must change, then the panel will evaluate it to see if it's a valid screen, then it will change screens. In order to insure that this is always the case, this ladder logic makes the Switch to Screen number value follow the panel Current Screen value, unless the PLC changes the Switch to Screen number as part of separate ladder logic code. In that case, this logic waits for the panel to actually display the commanded screen before it reverts back to following the Current Screen value with the Switch to Screen value.

2

(NOP)

This example uses three registers to allow the PLC to command the panel to change to a specified screen in situations where the operator can also change the screens from the panel.

One register is the Switch to Screen Number register the panel monitors to see which screen the PLC commands it to display.

One register is the Current Screen register which the panel writes to to indicate what screen it is displaying.

One register is the Last Called Scrn which the PLC updates at the end of the logic. This register is used by the PLC to test whether the PLC has changed the Switch to Screen Number value or not when the Switch to Screen Number value isn't the same as the Current Screen value.

Basically, if the operator changed the screen the panel is displaying from the panel, the Switch to Screen number and the Last Called Scrn number will be equal, but the Current Screen will not. If the PLC changed the Switch to Screen Number value in order to force the panel to a new screen, the Switch to Screen number will not equal the Last Called Scrn. In this case, the Current Screen number won't equal the Switch to Screen Number value until the panel actually changes to the commanded screen. When the Switch to Screen Number value and the Current Screen value do equal then the logic makes the Last Called Scrn equal to both the other two registers.

3

(NOP)

In the CMore or CMore Micro project, you must have the Setup / PLC <--> Panel / PLC to Panel/ Switch to Screen Number tag set for V2000 as a BCD INT 16 data type.

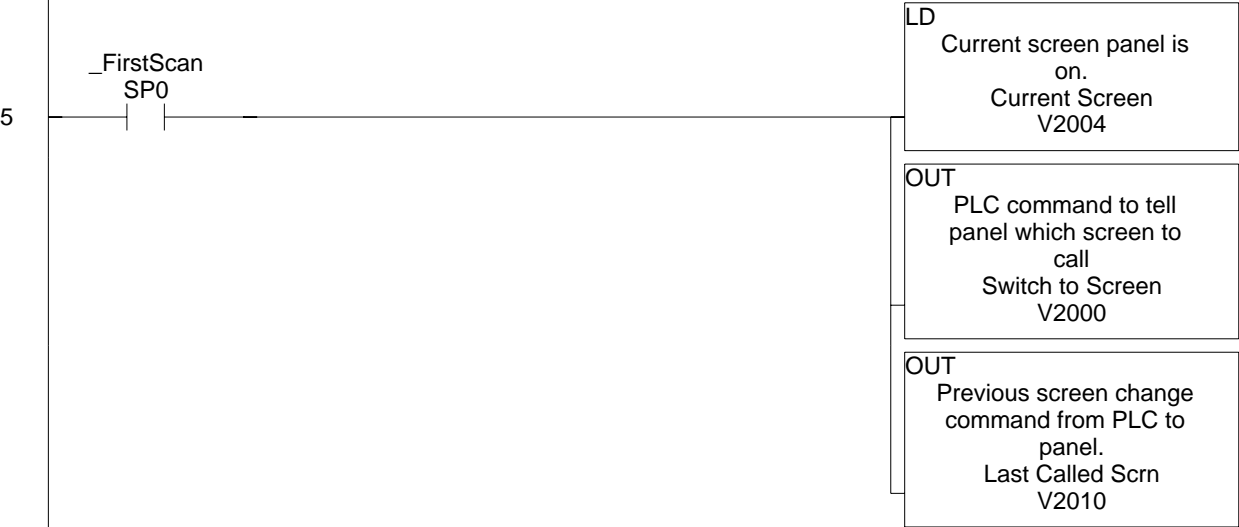
You must have the Setup / PLC <--> Panel / Panel to PLC/ Current Screen tag set to V2004 as a BCD INT 16 data type.

The CMore project should have multiple screens and at least some screens, if not all, should have a Screen Change object to allow the operator at the screen to change which screen the panel is displaying.

To test this code with a CMore or CMore Micro, you can use the CMore to change screens and watch the 3 registers keep the same value together. Then use a Change Value or Dataview edit to change the value in V2000 to a different valid screen number. You should see the panel change to the valid screen number when you do this and all three registers will now have the current screen number. Even if you repeatedly command the CMore or CMore Micro to go back to the same screen, it will always do so regardless of what screen the operator changed it to afterwards because the value in V2000 is always updating to match the current screen number whenever the operator changes the screen from the panel.

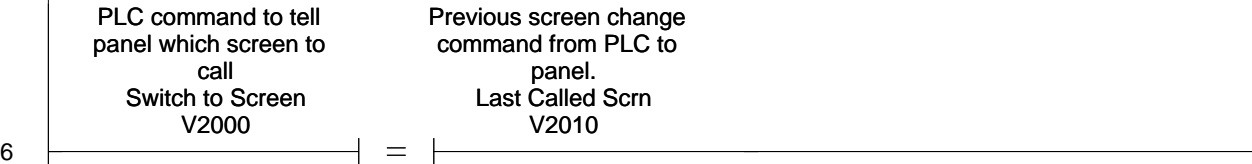
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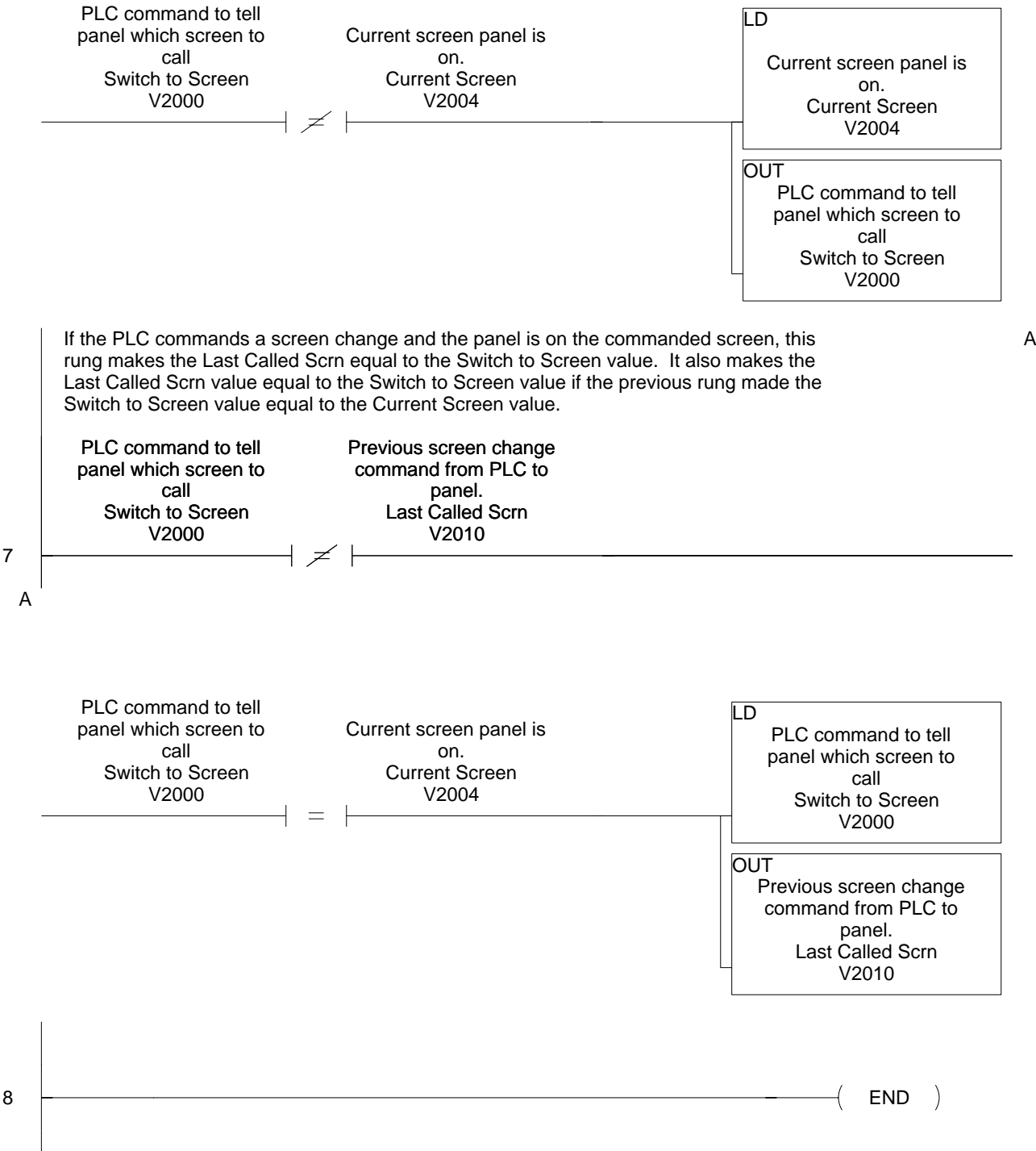
On the first scan of the ladder logic, make the Switch to Screen (V2000) and Last Called Scrn (V2010) equal the Current Screen (V2004).



If the operator changes the screen on the panel instead of the PLC commanding a screen change, this rung makes the PLC 'Switch to Screen' register the same as the screen that the panel is currently displaying. This has no effect on the panel since it's already on the screen number, but if the PLC then writes a new value to the Switch to Screen register, the panel will see the value in that register change and will switch to the commanded screen.

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8/25/2008

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