



# Implementation of the Manual Close Signal for Autoreclose in the F60

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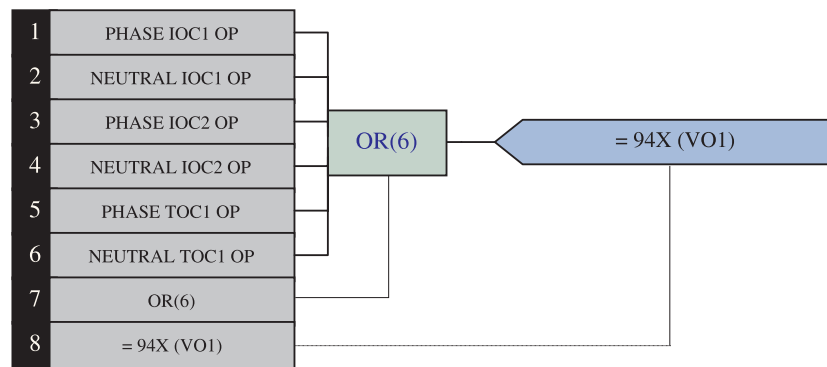
## DESCRIPTION

The Autoreclose element manual close setting inhibits an autoreclose operation when the breaker is closed manually. This is always desirable since a transient fault co-incident with a manual close operation is unlikely.

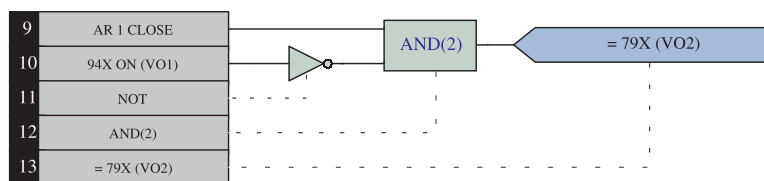
However, in some applications there is no contact available for the manual close signal. In this case a manual close signal can be derived using the following principle: *any close operation that is not an autoreclose must therefore be a manual close*. Utilizing this principle the following scheme can be developed and implemented in FlexLogic™.

## FLEXLOGIC™ SCHEME

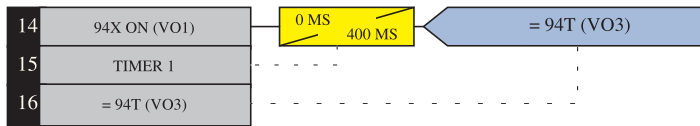
Individual overcurrent elements can be grouped in FlexLogic™ as follows:



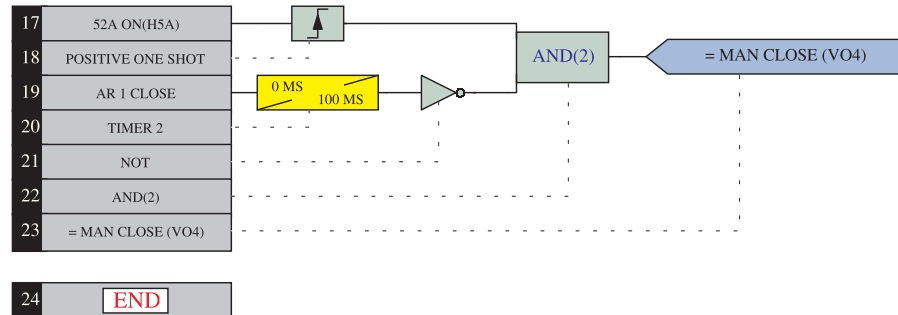
To seal in the trip for 400 ms the following timer can be created:



The autoreclose output can be supervised by the 94 output as shown:



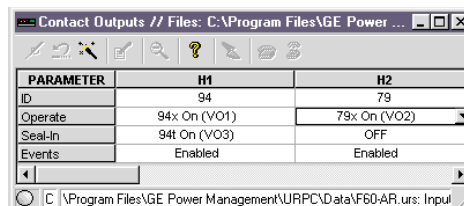
A pulse can be generated which can be used to block AR for a manual close:



The issue of the MAN CLOSE (VO4) signal will be prevented by the close signal coming from the recloser. Adding these inputs to the AR scheme produces the following settings:

| PARAMETER                       | AUTORECLOSE1       |
|---------------------------------|--------------------|
| Function                        | Enabled            |
| Initiate                        | 94T On (VO3)       |
| Block                           | OFF                |
| Max Number Of Shots             | 1                  |
| Reduce Max 1                    | OFF                |
| Reduce Max 2                    | OFF                |
| Reduce Max 3                    | OFF                |
| Manual Close                    | MAN CLOSE On (VO4) |
| Manual Reset from LO            | OFF                |
| Reset Lockout if Breaker Closed | Off                |
| Reset Lockout On Manual Close   | Off                |
| Breaker Closed                  | 52a On(H5a)        |
| Breaker Open                    | 52a Off(H5a)       |
| Block Time Upon Manual Close    | 10.000 s           |
| Dead Time Shot 1                | 1.000 s            |
| Dead Time Shot 2                | 2.000 s            |
| Dead Time Shot 3                | 3.000 s            |
| Dead Time Shot 4                | 4.000 s            |
| Add Delay 1                     | OFF                |
| Delay 1                         | 0.000 s            |
| Add Delay 2                     | OFF                |
| Delay 2                         | 0.000 s            |
| Reset Lockout Delay             | 60.000             |
| Reset Time                      | 60.000 s           |
| Incomplete Sequence Time        | 5.000 s            |
| Events                          | Enabled            |

Finally, assign the appropriate operands to control the output contacts:





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