



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

GE Publication No.: GET-8393

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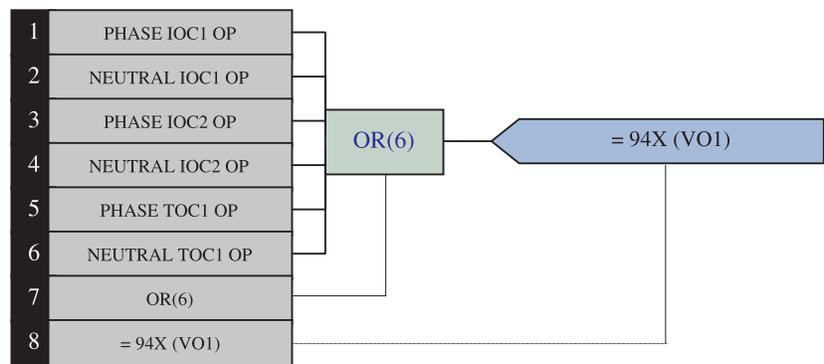
## DESCRIPTION

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.

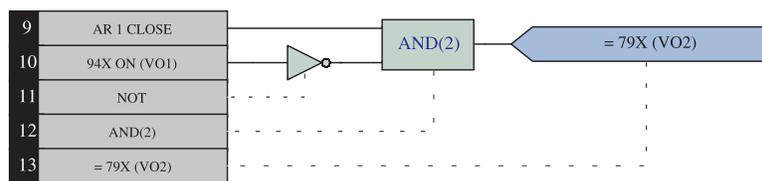
However, in some applications there is no contact available for the manual close signal. In this case a manual close signal can be derived using the following principle: *any close operation that is not an autoreclose must therefore be a manual close*. Utilizing this principle the following scheme can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

## FLEXLOGIC™ SCHEME

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

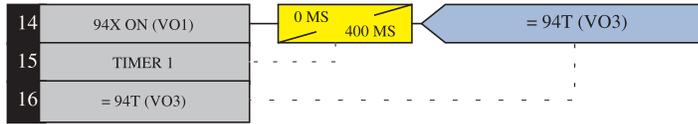


To seal in the trip for 400 ms the following timer can be created:

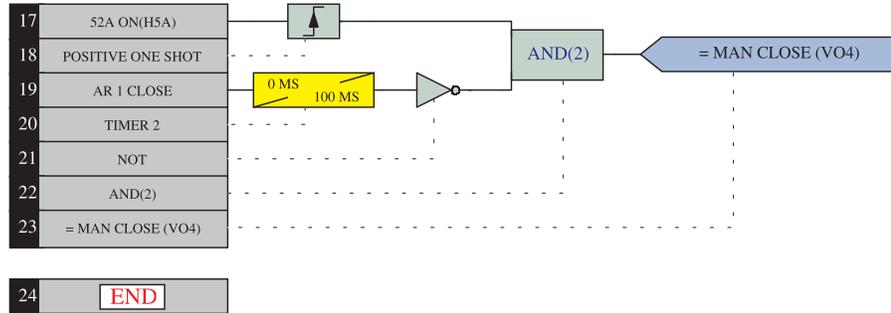


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The autoreclose output can be supervised by the 94 output as shown:



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:

