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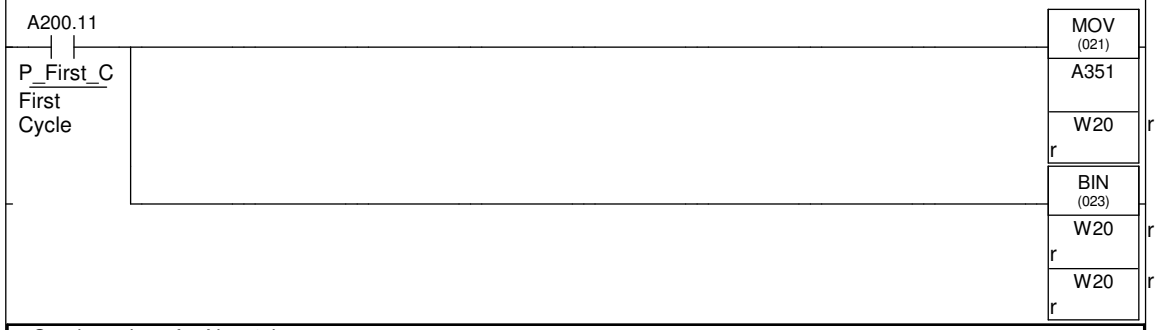
[Program Name : PseudoRandomNumber]

[Section Name : PseudoRandomNumber]

Generates a Pseudo random number using the mixed congrential method.
Formula r(i+1) = (a r + b) MOD N
This will generate a random number between 0 & N-1 with N = 2 (pwr 20) = 1,048,576, a = 1909, b = 221,571
The MOD operation is the integer remainder of (a r + b) / N
U need to provide an initial seed for the function. (eg r0). U can use the real time clock.
Finally, if u want the result between 0 & 1 eg 0.5674 then divide the result by N



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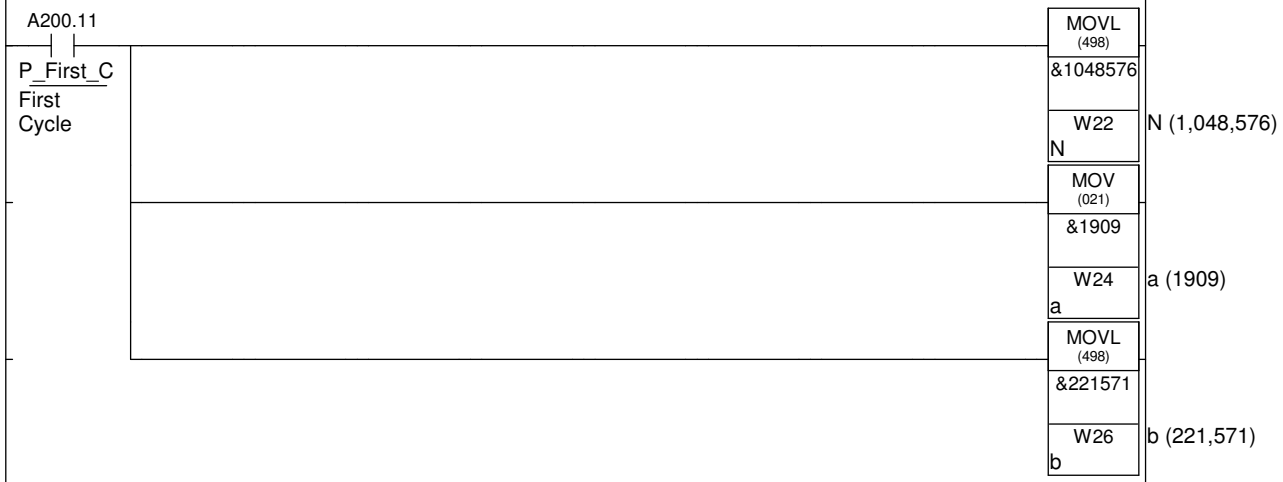
Set the values for N, a & b
In this case:
N = 2(pwr 20) = 1,048,576
a = 1909
b = 221,571



Title	Pseudo Number Generator			Author	Sleepy Wombat	Step Number
Number	1	Revision	0	Date	11/03/03	000000

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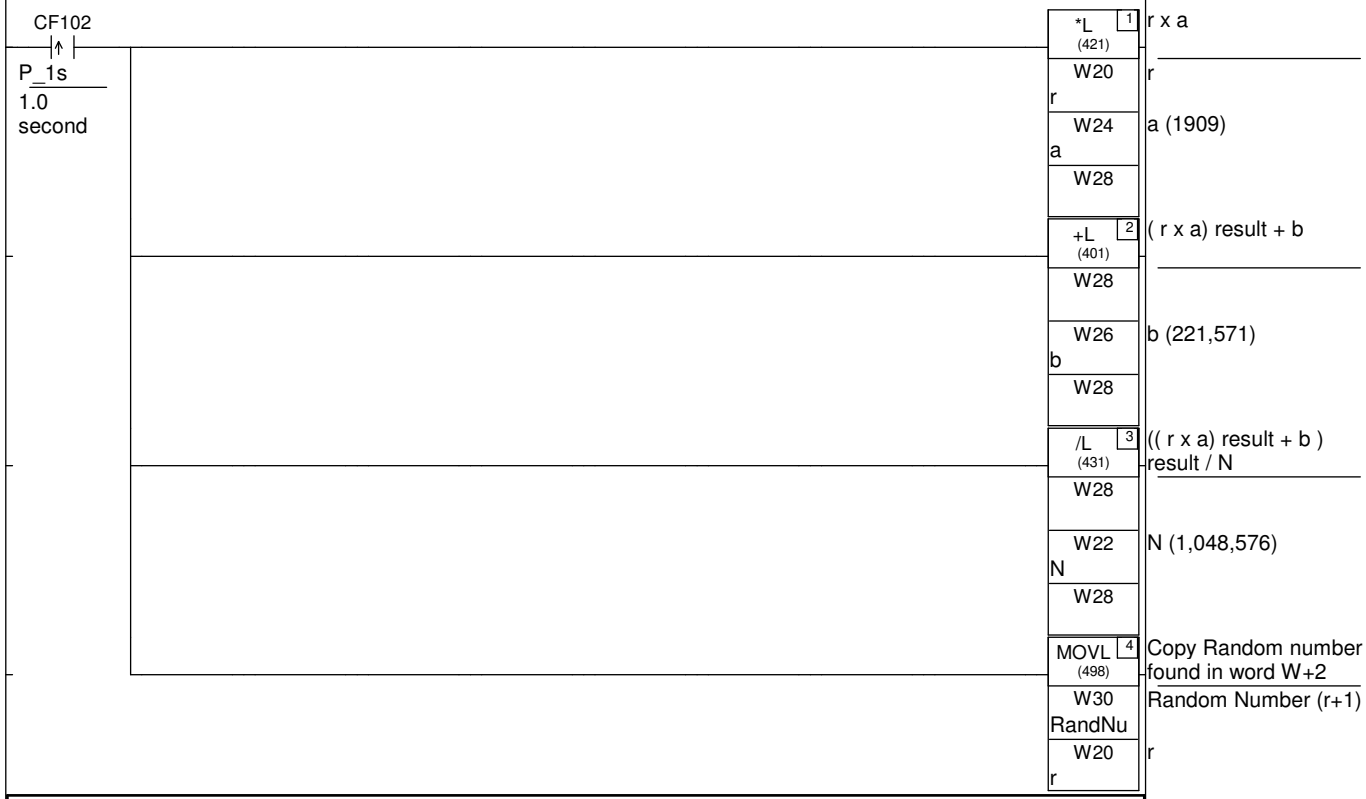
Calculation of r random number
The positive edge of the internal 1 sec clock pulse has being used to trigger the calculation.
So you can see the code working. This could be replaced by an Always On bit (CF113) or triggered by a bit at your control.

1-r x a
2-(r x a) result + b
3-((r x a) result + b) result / N
The quotient result of the /L is placed in word W,W+1 the integer remainder placed in W+2,W+3 (ie MOD result)
4-Copy Random number found in word W+2
and use to generate new random number



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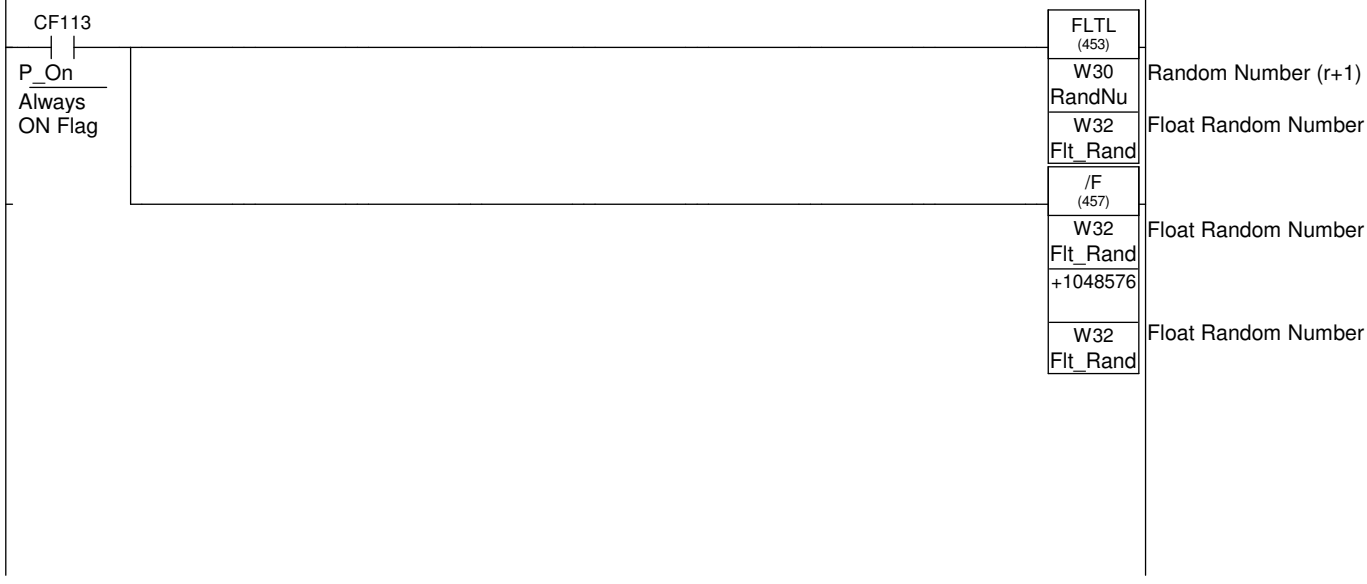
To then make the random number an integer between 0 and 1 then divide above result by N.

You can then use this result to give you a random number for any range ie if u want a random number between 0 a nd 10
then mulltiply the result by 10. Likewise multiply by 100 to give a 0-100 random number result.



Title	Pseudo Number Generator			Author	Sleepy Wombat	Step Number
Number	1	Revision	0	Date	11/03/03	000007

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Example to calculate a random number integer in the range of 0 >= R < 10

CF113
P_On
Always
ON Flag

*F (456)	
W32 Flt_Rand	Float Random Number
+10	
W34	Random Num between 0-100
FIX (450)	
W34	Random Num between 0-100
W34	Random Num between 0-100

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Example to calculate a random number integer in the range of 0 >= R < 1000

CF113
P_On
Always
ON Flag

*F (456)	
W32 Flt_Rand	Float Random Number
+1000	
W36	Random Number between 0 -1000
FIX (450)	
W36	Random Number between 0 -1000
W36	Random Number between 0 -1000

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