

Program Flow Control

Nguyen Duc Hoang

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Date: 16.10.2014
File: PROCI_07E.1Information and Training Center
Knowledge for Automation

Jump Functions

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File: PROCI_07E.2Information and Training Center
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Jump Functions

Unconditional jump instructions

JU	<i>label</i>	Jump Unconditional
JL	<i>label</i>	Jump to List (Jump distributor)

Note : *label* : maximum of four characters

Loop control

LOOP	Jump if the contents of Accumulator $1 > 0$
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Jump Functions

Conditional jump instructions, condition based on RLO

JC	<i>label</i>	Jump if RLO = 1
JCN	<i>label</i>	Jump if RLO = 0
JCB	<i>label</i>	Jump if RLO = 1 and save RLO
JNB	<i>label</i>	Jump if RLO = 0 and save RLO

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Jump Functions

Conditional jump instructions, condition based on BR, OV, OS

JBI	<i>label</i>	Jump if BR = 1
JNBI	<i>label</i>	Jump if BR = 0
JO	<i>label</i>	Jump if OV = 1
JOS	<i>label</i>	Jump if OS = 1

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Jump Functions

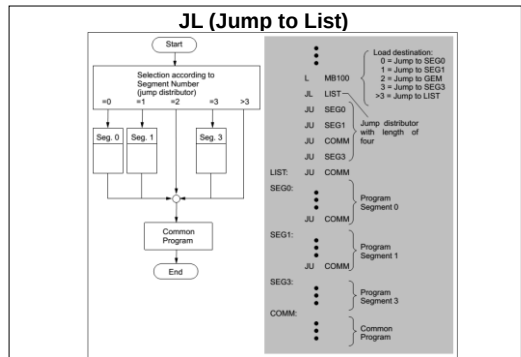
Conditional jump instructions, condition based on CC1, CC0

JZ	<i>label</i>	Jump if Zero
JN	<i>label</i>	Jump if Not Zero
JP	<i>label</i>	Jump if Plus
JM	<i>label</i>	Jump if Minus
JMZ	<i>label</i>	Jump if Minus or Zero
JPZ	<i>label</i>	Jump if Plus or Zero
JUO	<i>label</i>	Jump if result is invalid

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Loop Control

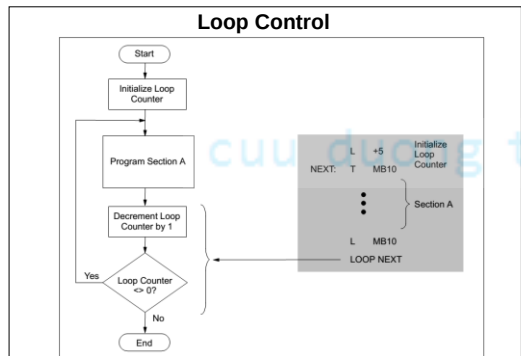
You can use the Loop (LOOP) instruction to call a program segment multiple times. The Loop instruction decrements the low word of accumulator 1 by 1.

Then the value in the low word of accumulator 1 is tested.

If it is not 0, a jump is executed to the label indicated in the address of the Loop instruction; otherwise the next instruction is executed.

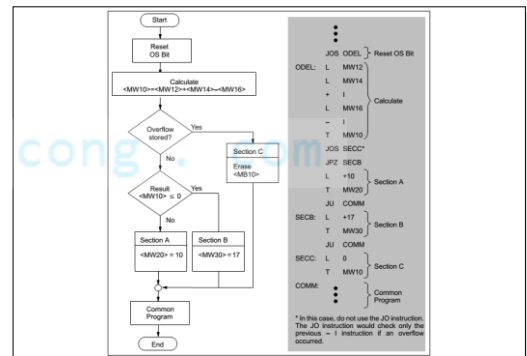
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Jump Functions

STL	Explanation
L MW10	
L 3	
*I	//Multiply contents of MW10 by "3".
JO OVER	//Jump if result exceeds maximum range (OV=1).
T MW10	//Program scan continues here if jump is not executed.
A M 4.0	
R M 4.0	
JU NEXT	
OVER: AN M 4.0	//Program scan resumes here after jump to jump label OVER.
S M 4.0	
NEXT: NOP 0	//Program scan resumes here after jump to jump label NEXT.

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Jump Functions

STL	Explanation
L MW10	
SRW 1	
JZ ZERO	//Jump to jump label ZERO if bit that has been shifted out = 0.
L MW2	
INC 1	//Program scan continues here if jump is not executed.
T MW2	
JU NEXT	
ZERO: L MW4	
INC 1	
T MW4	
NEXT: NOP 0	//Program scan resumes here after jump to jump label NEXT.

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Jump Functions

STL	Explanation
L IWB	
L MW12	
-I	//Subtract contents of MW12 from contents of IWB.
JPE REG0	//Jump if result >=0 (that is, contents of ACCU 1 >= 0).
AN M 4.0	//Program scan continues here if jump is not executed.
S M 4.0	
JU NEXT	
REG0: AN M 4.1	//Program scan resumes here after jump to jump label REG0.
S M 4.1	
NEXT: NOP 0	//Program scan resumes here after jump to jump label NEXT.



Master Control Relay



Master Control Relay

Master Control Relay instructions	
MCRA	Activate MCR Area
MCRD	Deactivate MCR Area
MCR(	Open MCR zone
)MCR	Close MCR zone

Warning
To prevent personal injury or property damage, never use the MCR to replace a hard-wired mechanical master control relay for an emergency stop function.



Master Control Relay

Instructions dependent on MCR and their reactions to the signal state of the MCR

Signal State of MCR	= <bit>	S <bit>, R <bit>	T <byte>, T <word> T <double word>
0 ("OFF")	Writes 0. (Imitates a relay that fails to its quiet state when voltage is removed.)	Does not write. (Imitates a relay that remains in its current state when voltage is removed.)	Writes 0. (Imitates a component that produces a value of 0 when voltage is removed.)
1 ("ON")	Normal processing	Normal processing	Normal processing



Master Control Relay

