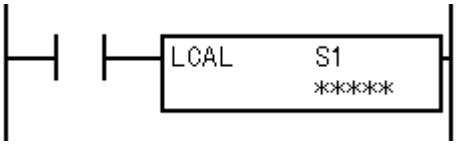
LCAL (Label Call)



When input is on, the address with label 0 through 255 designated by S1 is called. When input is off, no call takes place, and program execution proceeds with the next instruction.

The LCAL instruction calls a subroutine, and returns to the main program after the branch is executed. A LRET instruction (see below) must be placed at the end of a program branch which is called, so that normal program execution resumes by returning to the instruction following the LCAL instruction.

Note: The END instruction must be used to separate the main program from any subroutines called by the LCAL instruction.

A maximum of 10 LCAL instructions can be nested.

Valid Operand

Operand	I	Q	M	R	T	C	D	L	Constant	Repeat
S1	X	X	X	X	X	X	X	X	0-255	—

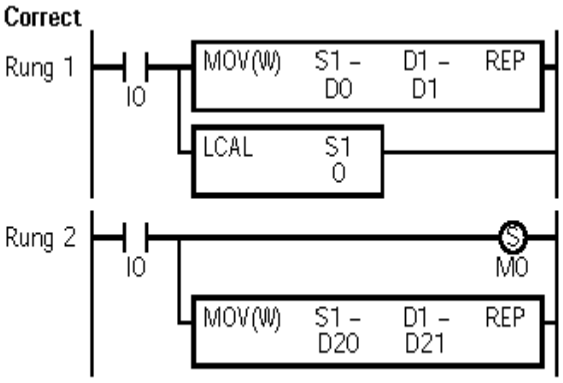
When T (timer) or C (counter) is used as S1, the timer/counter current value is read out.

Since the LJMP instruction is executed in each scan while input is on, a pulse input from a SOTU or SOTD instruction should be used as required.

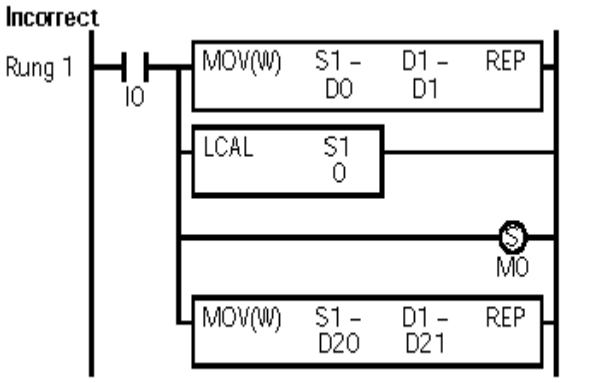
Correct Structure for Calling Subroutine

When a LCAL instruction is executed, the remaining program instructions on the same rung may not be executed upon return, if input conditions are changed by the subroutine. After the LRET instruction of a subroutine, program execution begins with the instruction following the LCAL instruction, depending on current input condition.

When instructions following a LCAL instruction must be executed after the subroutine is called, make sure the subroutine does not change input conditions unfavorably. In addition, include subsequent instructions in a new rung, separated from the LCAL instruction.



Separate the rung for each LCAL instruction.

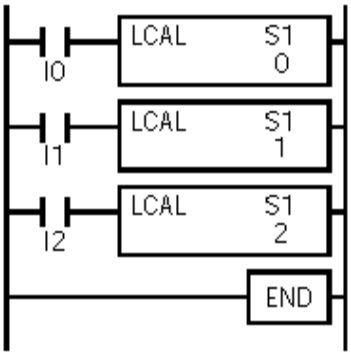


I0 status may be changed by the subroutine upon return.

Example: LCAL and LRET

The following example demonstrates a program to call three different portions of program depending on the input. When

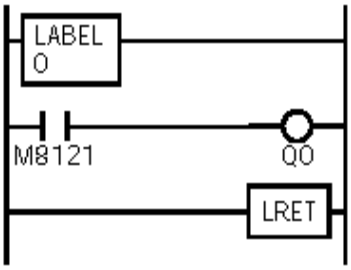
the subroutine is complete, program execution returns to the instruction following the LCAL instruction.



When input I0 is on, program execution jumps to label 0.

When input I1 is on, program execution jumps to label 1.

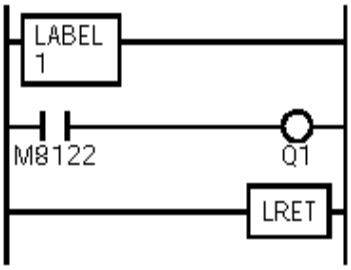
When input I2 is on, program execution jumps to label 2.



M8121 is the 1-sec clock special internal relay.

When jump occurs to label 0, output Q0 oscillates in 1-sec increments.

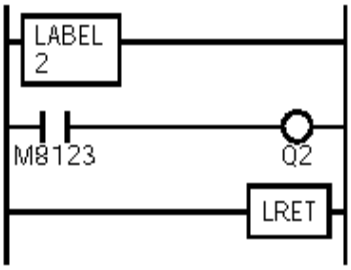
Program execution returns to rung 1, input I1.



M8122 is the 100-msec clock special internal relay.

When jump occurs to label 1, output Q1 oscillates in 100-msec increments.

Program execution returns to rung 1, input I2.



M8123 is the 10-msec clock special internal relay.

When jump occurs to label 2, output Q2 oscillates in 10-msec increments.

Program execution returns to rung 1, END.