Programming of GE-Fanuc PLC devices – simple commands

Task 1

You should design a logical circuit in the form of a program of a leader diagram type. This program should change the count of activated inputs into the number of activated output (e.g. if we activate any two inputs, then the second output should be activated – %Q0002, if we activate any three inputs – the third output %Q0003 should be activated.
You should prepare a solution only for three inputs.
The suggested table of variables:

address	*description*
%I0001	input 1
%I0002	input 2
%I0003	input 3
%Q0001	output 1
%Q0002	output 2
%Q0003	output 3

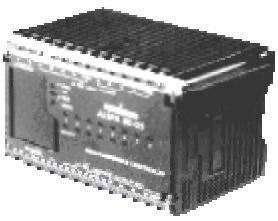
Task 2

Prepare and run the program.
a) The counter of impulses incoming to input %I0004.
The counter should count to three and the fourth impulse should reset it. Additionally the input %I0006 should reset the counter.
b) The second counter of impulses incoming to input %I0005.
The counter should count to three and the fourth impulse should reset it. Next, the values of counters should be added or multiplied together depending on the input %I0001 state (0 - addition, 1 - multiplication). The result should be placed in the %R10 register.
c) Add the logical circuit of relation detection between counters.
If the number in the first counter is greater then the number in the second counter you should activate the output %Q0004 with frequency 1Hz.

Notes:
You can use special system bit variables:
- ALW_ON – always on (1),
- ALW_OFF – always off (0),
- T_SEC – activated every 1 second,
- FST_SCN – the first cycle of automaton,

The input signals %I should be activated either from a debugger or from a switch box.
Each counter use three register in memory. The value of counter is in the first of them.

The report should contain a PLC program with comments.



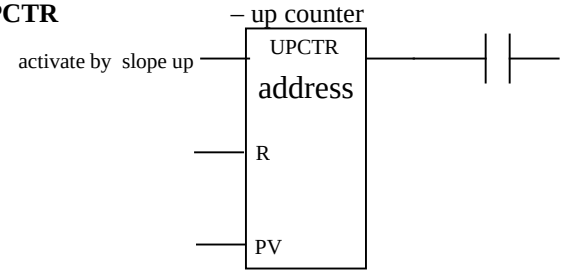
GeFanuc 90 Micro
(compact PLC)

GeFanuc 9030
(modular PLC)

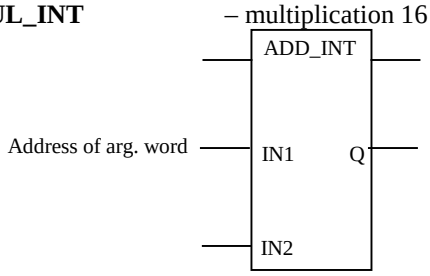
Essential commands:

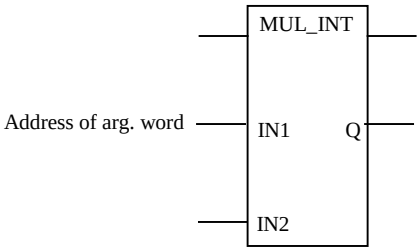
–| |– normal input – relay (Normally Open Contact)
–|/|– negative input (Normally Close Contact)
–( )– normal output – coil (Normally Open Coil)

UPCTR – up counter



ADD_INT – addition 16 bit
MUL_INT – multiplication 16 bit





EQ_INT – comparator