☆☆☆ Updating of FBs OS V4.50

06/14/2007

- If the main unit detects the ROM PACK to download the application program while every power up, it will do the detailed verification of the program content before download operation; if it passes the verification, then the main unit will download the program from ROM PACK; if it can't pass the verification, it wouldn't download the program, and let bit-12 of R4139 (b0~b15) be ON for indication.
- Supports HT1381 or ISL1208 RTC chip
  Low byte of D4053: =0, without RTC; =1, RTC is HT1381; =2, RTC is ISL1208
- Power on delay can be adjustable from 0.1 ~ 5 seconds, it means 10 $\leqq$ R4150 $\leqq$ 500
- Enhance the communication protection for the main unit with customer identification code (CIC); also, the ROM PACK must match the protection environment with the main unit for operation.
- The communication buffer can be 1024 bytes for FUN151 MD1/MD2 instruction
- The RX time-out span can be in the unit of 0.01 or 0.1 second for communication instructions FUN151 MD0 (Master of FATEK CPU Link), FUN151 MD1 (Master of user defined communication protocol), and FUN150 (Master of MODBUS communication protocol).

RX time-out span : The communication master employs this time-out timer to detect whether the slave station on line or not.
When the master sent out the communication command to the slave, the slave couldn't reply within this period, it had the RX time-out error.

	Port 1	Port 2	Port 3	Port 4
Setting of RX Time-out Span	Low byte of R4147	Low byte of R4159	Low byte of R4045	Low byte of R4048

D4043：Setting the time unit in 0.01 or 0.1 second for RX time-out detection

High Byte				Low Byte				
56H	b7	b6	b5	b4	b3	b2	b1	b0

High byte of D4043≠56H (Hex), time unit is in 0.01 second
High byte of D4043=56H (Hex), Low byte of D4043 defines the time unit;

b1=0, Time-out timer in 0.01 second (Port 1)
=1, Time-out timer in 0. 1 second (Port 1)

b2=0, Time-out timer in 0.01 second (Port 2)
=1, Time-out timer in 0. 1 second (Port 2)

b3=0, Time-out timer in 0.01 second (Port 3)
=1, Time-out timer in 0. 1 second (Port 3)

b4=0, Time-out timer in 0.01 second (Port 4)
=1, Time-out timer in 0. 1 second (Port 4)

For example, D4043=560AH, it means time unit in 0.1 second for Port 1 & 3 ;
but in 0.01 second for Port 2 & 4

If low byte of R4147=50, it means Port 1 has 5 seconds for RX time-out detection;
if low byte of R4159=50, it means Port 2 has 0.5 second for RX time-out detection

● Enhance the communication efficiency of instructions FUN151 MD0, FUN151 MD1, and FUN150 when it is working one edge trigger to execute one communication transaction.

Low byte of D4044：Setting to improve communication efficiency

High Byte	Low Byte							
00H	b7	b6	b5	b4	b3	b2	b1	b0

High byte of D4044 =00H (Hex), Low byte of D4044 defines the communication port;

b1=0, Minimum 3 scan time to execute one communication transaction (Port 1)

=1, Minimum 2 scan time to execute one communication transaction (Port 1)

b2=0, same as the description of b1=0 (Port 2)

=1, same as the description of b1=1 (Port 2)

b3=0, same as the description of b1=0 (Port 3)

=1, same as the description of b1=1 (Port 3)

b4=0, same as the description of b1=0 (Port 4)

=1, same as the description of b1=1 (Port 4)

For example, D4044=0006H, it means 2 scan time minimum to execute one communication transaction for Port 1 & 2;
but 3 scan time minimum for Port 3 & 4.

● Supports one edge trigger to execute one communication transaction or only one edge trigger then make continuous execution of communication transactions for instructions FUN151 MD0 (Master of FATEK CPU Link), FUN151 MD1 (Master of user defined communication protocol), and FUN150 (Master of MODBUS communication protocol).

D4044：Setting of one edge trigger to execute one communication transaction or only one edge trigger then make continuous execution of communication transactions

High Byte	Low Byte							
56H	b7	b6	b5	b4	b3	b2	b1	b0

High byte of D4044≠56H, one edge trigger to execute one communication transaction

High byte of D4044=56H (Hex), Low byte of D4044 defines the communication port;

b1=0, One edge trigger to execute one communication transaction (Port 1)

=1, Only one edge trigger then make continuous execution of communication transactions (Port 1)

b2=0, same as the description of b1=0 (Port 2)

=1, same as the description of b1=1 (Port 2)

b3=0, same as the description of b1=0 (Port 3)

=1, same as the description of b1=1 (Port 3)

b4=0, same as the description of b1=0 (Port 4)

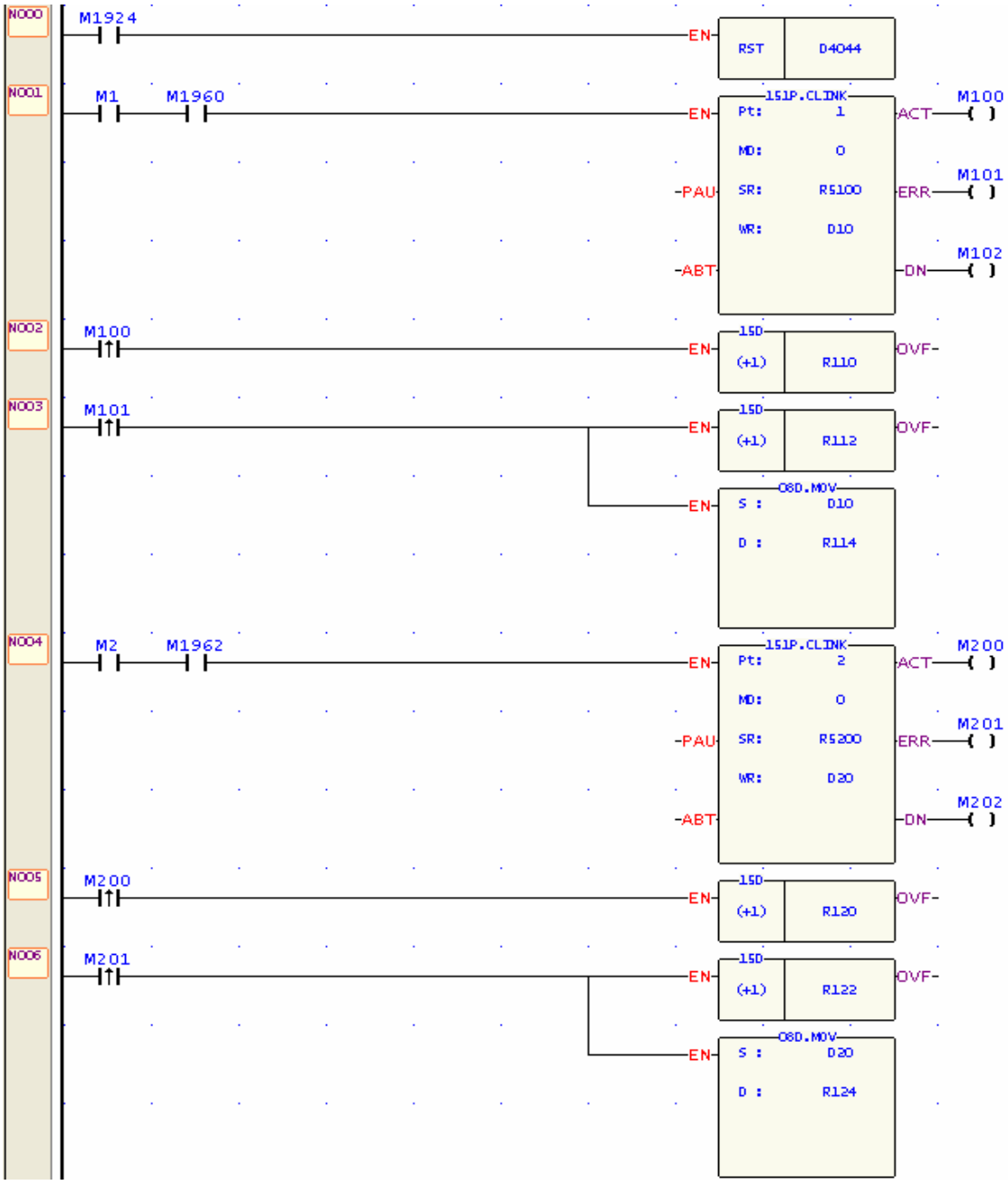
=1, same as the description of b1=1 (Port 4)

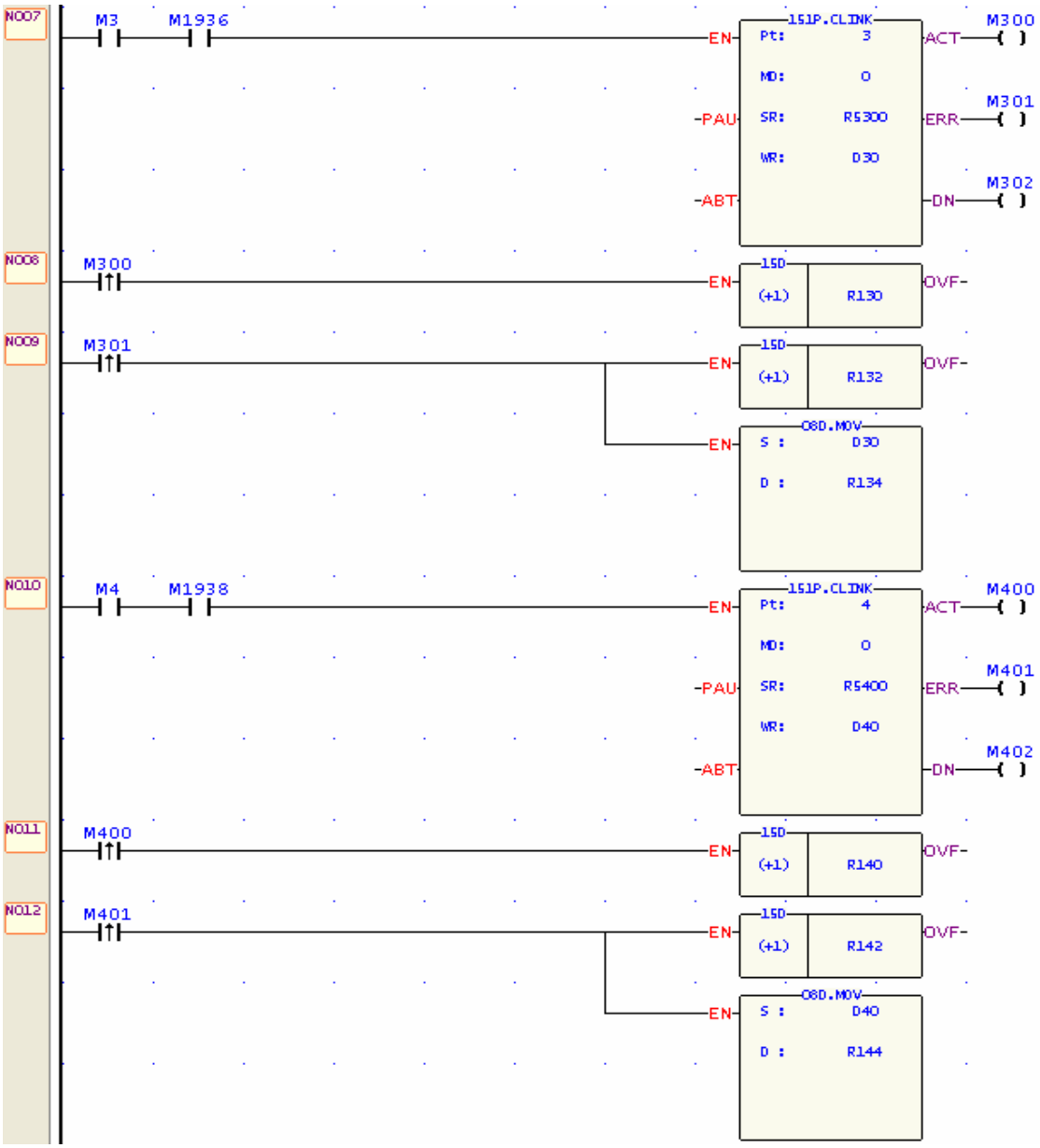
For example, D4044=5618H, it means one edge trigger to execute one communication transaction for Port 1 & 2;
but only one edge trigger then make continuous execution of communication transactions for Port 3 & 4

. WR+0 & WR+1 of communication instruction will tell the communication result for each communication transaction if it is one edge trigger to execute one communication transaction

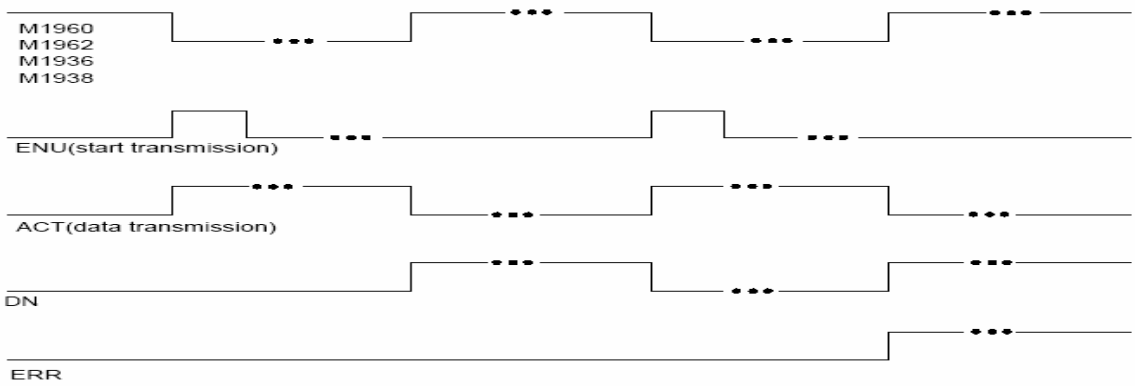
. If it is only one edge trigger then make continuous execution of communication transactions, the following registers will tell the communication result:
D4045 & D4046 : Communication result of Port 1 (Same with above WR+0 & WR+1)
D4047 & D4048 : Communication result of Port 2 (Same with above WR+0 & WR+1)
D4049 & D4050 : Communication result of Port 3 (Same with above WR+0 & WR+1)
D4051 & D4052 : Communication result of Port 4 (Same with above WR+0 & WR+1)
Let the control input ABT be ON if it wants to stop the communication transaction

. Sample program for one edge trigger to execute one communication transaction





Waveform of Input and Output signals

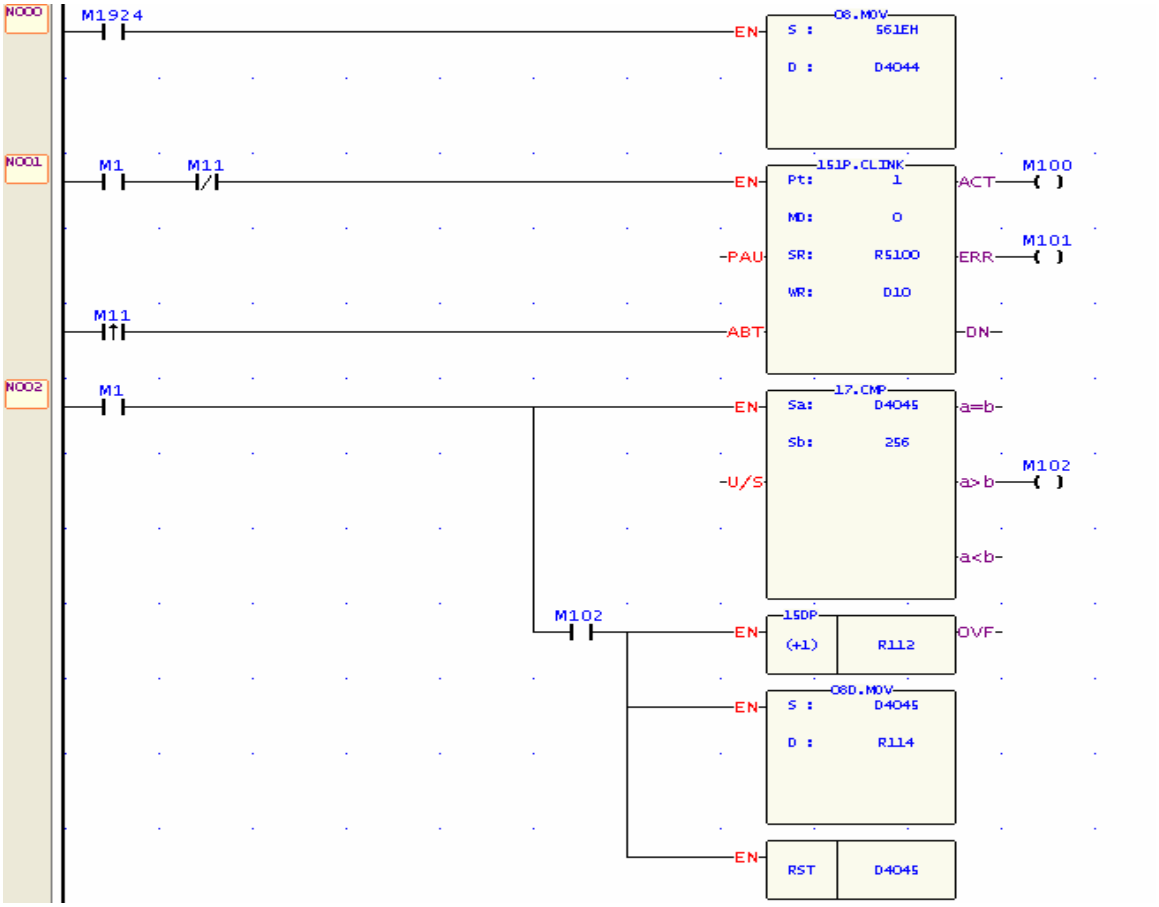


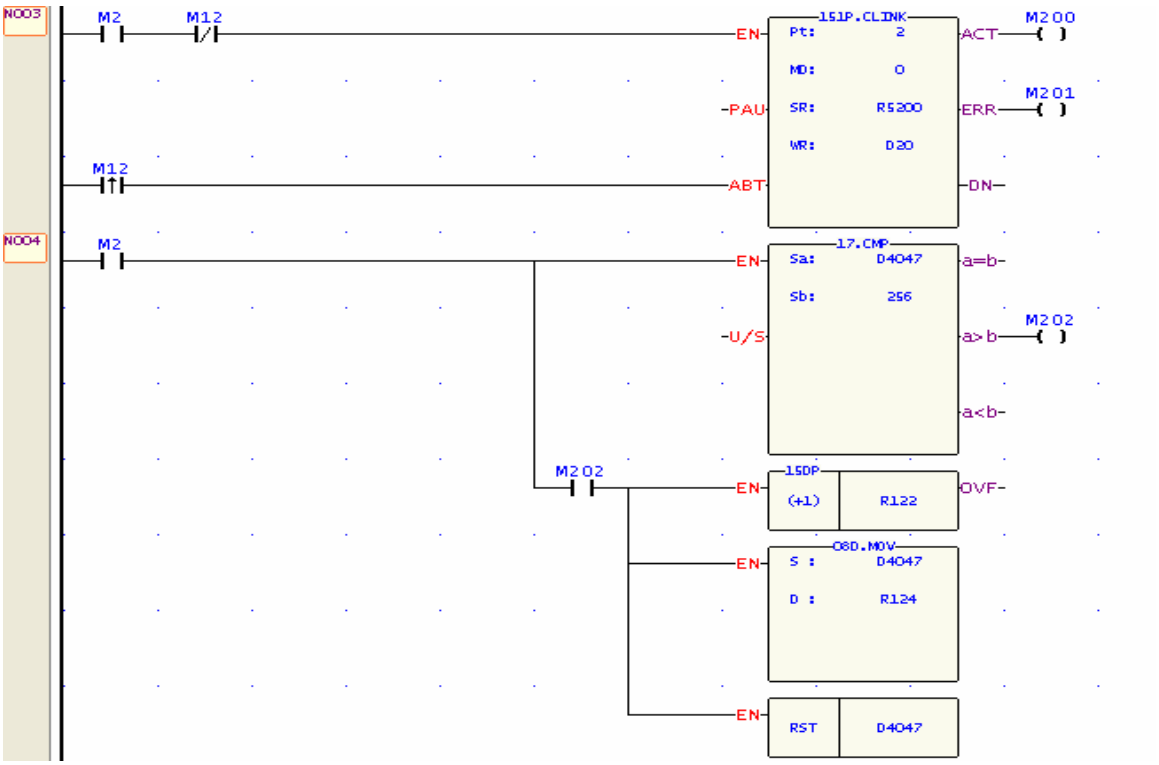
Note : 1. Only "DN" will be ON if one transaction finished without error.

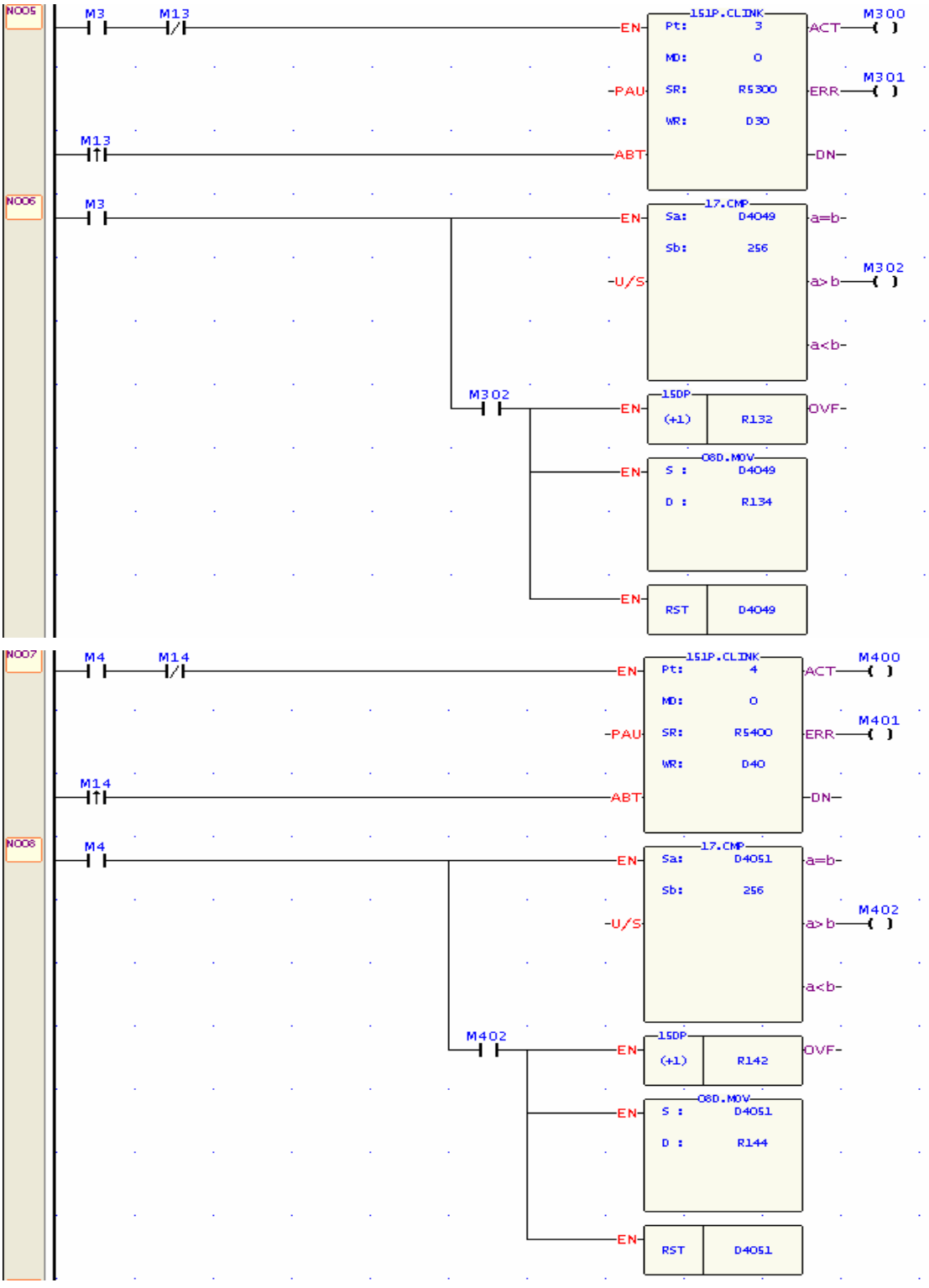
2. "ERR" & "DN" will be ON at the same time if one transaction finished with error.

3. M1961/M1963/M1937/M1939 will be ON one scan time while the last packet of transaction finished.

- Sample program for only one edge trigger then make continuous execution of communication transactions






NO05
M3
M13
EN
151P.CLINK
Pt: 3
MD: 0
PAU
SR: R5300
WR: D30
ACT
M300
ERR
M301
M13
ABT
DN
NO06
M3
EN
17.CMP
Sa: D4049
Sb: 256
a=b
U/S
a>b
M302
a<b
M302
EN
15DP
(+1)
R132
OVF
EN
O8D.MOV
S : D4049
D : R134
EN
RST
D4049
NO07
M4
M14
EN
151P.CLINK
Pt: 4
MD: 0
PAU
SR: R5400
WR: D40
ACT
M400
ERR
M401
M14
ABT
DN
NO08
M4
EN
17.CMP
Sa: D4051
Sb: 256
a=b
U/S
a>b
M402
a<b
M402
EN
15DP
(+1)
R142
OVF
EN
O8D.MOV
S : D4051
D : R144
EN
RST
D4051

Waveform of input control and output indication