4R_Veloce_05_June / PLC [CPU 1214C DC/DC/DC] / Program blocks

Operation_cycle [FB24]

Operation_cycle Properties							
General							
Name	Operation_cycle	**Number**	24	**Type**	FB	**Language**	LAD
Numbering	Automatic						
Information							
Title		**Author**		**Comment**		**Family**	
Version	0.1	**User-defined ID**					

Operation_cycle

Name	Data type	Default value	Retain	Accessible from HMI/OPC UA	Writable from HMI/OPC UA	Visible in HMI engineering	Setpoint	Supervision	Comment
▼ Input									
Input_cmd_moc	Int	0	Non-retain	True	True	True	False		
RACK	Bool	false	Non-retain	True	True	True	False		
RACK_EXT	Bool	false	Non-retain	True	True	True	False		
BIN_DETECT	Bool	false	Non-retain	True	True	True	False		
TELESH1	Bool	false	Non-retain	True	True	True	False		
TELESH2	Bool	false	Non-retain	True	True	True	False		
BINC1	Bool	false	Non-retain	True	True	True	False		
BINC2	Bool	false	Non-retain	True	True	True	False		
Lift_reached	Bool	false	Non-retain	True	True	True	False		
Turntable_reached	Bool	false	Non-retain	True	True	True	False		
telescope_reached	Bool	false	Non-retain	True	True	True	False		
fork_reached	Bool	false	Non-retain	True	True	True	False		
Turn Act pos	DInt	0	Non-retain	True	True	True	False		
tele Act pos	DInt	0	Non-retain	True	True	True	False		
TUrntable_correction	DInt	0	Non-retain	True	True	True	False		
reset	Bool	false	Non-retain	True	True	True	False		
STO	Bool	false	Non-retain	True	True	True	False		
Turn_complete _sensor	Bool	false	Non-retain	True	True	True	False		
forks_down	Bool	false	Non-retain	True	True	True	False		
forks_up	Bool	false	Non-retain	True	True	True	False		
TelePick_intdeep1_mm	DInt	0	Non-retain	True	True	True	False		
TelePlace_intdeep1_mm	DInt	0	Non-retain	True	True	True	False		
turn_act_deg	DInt	0	Non-retain	True	True	True	False		
Lateral_offset	DInt	0	Non-retain	True	True	True	False		
TURNATEXT	Bool	false	Non-retain	True	True	True	False		
telepick_exedeep1_extension	DInt	0	Non-retain	True	True	True	False		
telepick_exedeep2_extension	DInt	0	Non-retain	True	True	True	False		
teleplace_exedeep1_extension	DInt	0	Non-retain	True	True	True	False		
teleplace_exedeep2_extension	DInt	0	Non-retain	True	True	True	False		
tele_joglimit_extension_deep1	DInt	0	Non-retain	True	True	True	False		
tele_joglimit_extension_deep2	DInt	0	Non-retain	True	True	True	False		
Tele_cmd_pos	DInt	0	Non-retain	True	True	True	False		
Jog_vel_Operation	DInt	0	Non-retain	True	True	True	False		
Lift_Barcode_pick_offset	Int	0	Non-retain	True	True	True	False		
Lift_Rack_IN_Offset	Int	0	Non-retain	True	True	True	False		
turn_offset	DInt	0	Non-retain	True	True	True	False		
▼ Output									
mOVE_TURN_TARGET	Bool	false	Non-retain	True	True	True	False		
Lift_Rack_offset	Int	0	Non-retain	True	True	True	False		
Lift Position	Int	0	Non-retain	True	True	True	False		
Tele_Pos_reached	Bool	false	Non-retain	True	True	True	False		
Turn_pos_reached	Bool	false	Non-retain	True	True	True	False		
Lift_pick_offset	Int	0	Non-retain	True	True	True	False		
tele_mode	Byte	16#0	Non-retain	True	True	True	False		
Turn_mode	Byte	16#0	Non-retain	True	True	True	False		
Jog_velocity	DInt	0	Non-retain	True	True	True	False		
tURN_CMD_POS	DInt	0	Non-retain	True	True	True	False		
telescope position	DInt	0	Non-retain	True	True	True	False		
Lift_execute	Bool	false	Non-retain	True	True	True	False		
Turntable_execute	Bool	false	Non-retain	True	True	True	False		
Telescope_execute	Bool	false	Non-retain	True	True	True	False		
fork	Int	0	Non-retain	True	True	True	False		
Lift_exePick	Bool	false	Non-retain	True	True	True	False		
lift_exe_picko1	Bool	false	Non-retain	True	True	True	False		
Lift_exePlace	Bool	false	Non-retain	True	True	True	False		
forkuppick	Int	0	Non-retain	True	True	True	False		
forkdownpick	Int	0	Non-retain	True	True	True	False		

Name	Data type	Default value	Retain	Accessible from HMI/OPC UA	Writable from HMI/OPC UA	Visible in HMI engineering	Setpoint	Supervision	Comment
turn_exePick	Bool	false	Non-retain	True	True	True	False		
turn error	DInt	0	Non-retain	False	False	False	False		
tele error	DInt	0	Non-retain	False	False	False	False		
tele_exehome	Bool	false	Non-retain	True	True	True	False		
tele_exehome1	Bool	false	Non-retain	True	True	True	False		
turn_homeexe	Bool	false	Non-retain	True	True	True	False		
lift_homeexe	Bool	false	Non-retain	True	True	True	False		
pick_comp	Bool	false	Non-retain	True	True	True	False		
place_comp	Bool	false	Non-retain	True	True	True	False		
JOG_TELE	Bool	false	Non-retain	True	True	True	False		
enable_jog	Bool	false	Non-retain	True	True	True	False		
disable_jog	Bool	false	Non-retain	True	True	True	False		
move_trgt_jog1	Bool	false	Non-retain	True	True	True	False		
move_trgt_jog2	Bool	false	Non-retain	True	True	True	False		
move_trgt_jog3	Bool	false	Non-retain	True	True	True	False		
Mov_to_pos_mode	Bool	false	Non-retain	True	True	True	False		
Traction_Estop1	Bool	false	Non-retain	True	True	True	False		
Traction_Estop2	Bool	false	Non-retain	True	True	True	False		
home_888	Bool	false	Non-retain	True	True	True	False		
process_error	Word	16#0	Non-retain	True	True	True	False		
Lift_double_place_offset	Int	0	Non-retain	True	True	True	False		
LIFT_EXE_PICK_SINGLE	Bool	false	Non-retain	True	True	True	False		
lift_exe_placeo1	Bool	false	Non-retain	True	True	True	False		
Lift_QR_scan_exe	Bool	false	Non-retain	True	True	True	False		
Lift_Place_QR_CMD	Bool	false	Non-retain	True	True	True	False		
Lift_D_exe	Bool	false	Non-retain	True	True	True	False		
▼ InOut									
PICK	Bool	false	Non-retain	True	True	True	False		
PLACE	Bool	false	Non-retain	True	True	True	False		
telescope_position	Int	0	Non-retain	True	True	True	False		
pick_ext	Bool	false	Non-retain	True	True	True	False		
place_ext	Bool	false	Non-retain	True	True	True	False		
mpv	Bool	false	Non-retain	True	True	True	False		
Correction	DInt	0	Non-retain	True	True	True	False		
home_step	Int	0	Non-retain	True	True	True	False		
▼ Static									
PICKSTEP	Int	0	Non-retain	False	False	False	False		
tele_exePick1	Bool	false	Non-retain	True	True	True	False		
tele_exePick2	Bool	false	Non-retain	True	True	True	False		
tele_exepick3	Bool	false	Non-retain	True	True	True	False		
tele_exepick4	Bool	false	Non-retain	True	True	True	False		
tele_exepick5	Bool	false	Non-retain	True	True	True	False		
tele_exepick6	Bool	false	Non-retain	True	True	True	False		
Tele_Jog_pick	Bool	false	Non-retain	True	True	True	False		
turn_exeplace	Bool	false	Non-retain	True	True	True	False		
tele_exeplace1	Bool	false	Non-retain	True	True	True	False		
tele_exePlace2	Bool	false	Non-retain	True	True	True	False		
tele_exePlace3	Bool	false	Non-retain	True	True	True	False		
tele_exePlace4	Bool	false	Non-retain	True	True	True	False		
tele_exePlace5	Bool	false	Non-retain	True	True	True	False		
tele_exePlace6	Bool	false	Non-retain	True	True	True	False		
Tele_exepick7	Bool	false	Non-retain	True	True	True	False		
tag1	Bool	false	Non-retain	False	False	False	False		
Pick_sto	Bool	false	Non-retain	True	True	True	False		
home_tele_step1	Int	0	Non-retain	True	True	True	False		
Place_movein_sto	Bool	false	Non-retain	True	True	True	False		
Tote_out_of_reach_2d	Bool	false	Non-retain	True	True	True	False		
Place_movein_sto_1	Bool	false	Non-retain	True	True	True	False		
Place_movein_sto_12	Bool	false	Non-retain	True	True	True	False		
Retract_Place_step	Int	0	Non-retain	True	True	True	False		
Place_movein_sto_22	Bool	false	Non-retain	True	True	True	False		
Place_movein_sto_23	Bool	false	Non-retain	True	True	True	False		
tag2	Bool	false	Non-retain	False	False	False	False		
disable_jog1	Bool	false	Non-retain	True	True	True	False		
tote_out of reach	Bool	false	Non-retain	True	True	True	False		
mov_trgt_jog	Bool	false	Non-retain	True	True	True	False		
PLACESTEP	Int	0	Non-retain	False	False	False	False		
turntable_dir	Int	0	Non-retain	False	False	False	False		
tURN_fb_DEGREE	Int	0	Non-retain	True	True	True	False		
t1	Int	0	Non-retain	False	False	False	False		
t2	Int	0	Non-retain	False	False	False	False		
t3	Int	0	Non-retain	False	False	False	False		
t4	Bool	false	Non-retain	False	False	False	False		
t5	Bool	false	Non-retain	False	False	False	False		

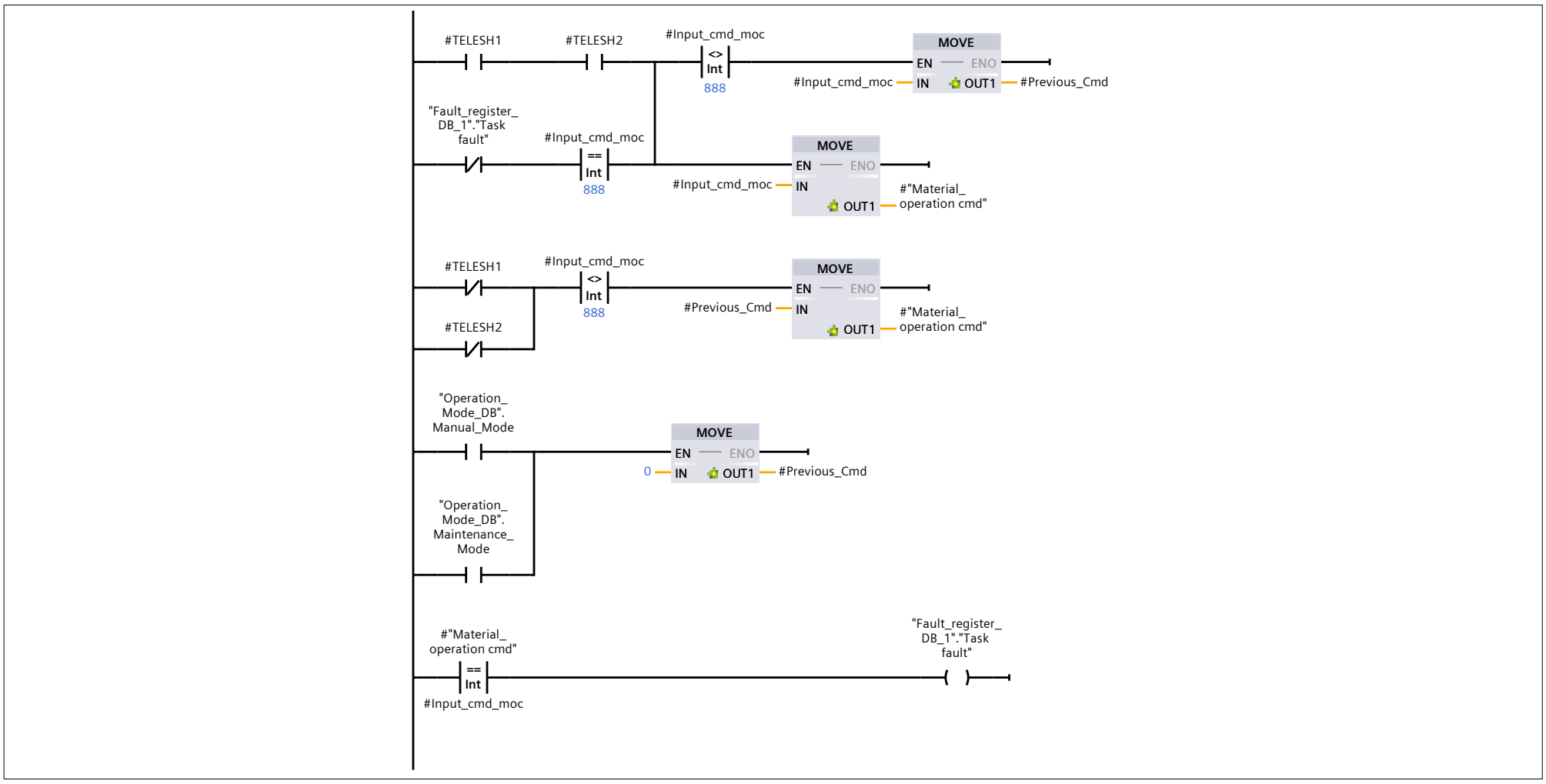
Name	Data type	Default value	Retain	Accessible from HMI/OPC UA	Writable from HMI/OPC UA	Visible in HMI engineering	Setpoint	Supervision	Comment
t6	Bool	false	Non-retain	False	False	False	False		
t7	Bool	false	Non-retain	False	False	False	False		
t8	Bool	false	Non-retain	False	False	False	False		
picked	Bool	false	Non-retain	True	True	True	False		
Deep	Int	0	Non-retain	True	True	True	False		
forkupplace	Int	0	Non-retain	True	True	True	False		
forkdownplace	Int	0	Non-retain	True	True	True	False		
Lif_temp	Int	0	Non-retain	True	True	True	False		
turntable pos	DInt	0	Non-retain	True	True	True	False		
POSITION	DInt	0	Non-retain	True	True	True	False		
Mov_turn_pos	Int	0	Non-retain	True	True	True	False		
jog_count	Int	0	Non-retain	True	True	True	False		
Material_op_temp	Int	0	Non-retain	True	True	True	False		
Ext_Lift_offset	Int	0	Non-retain	True	True	True	False		
Material_operation cmd	Int	0	Non-retain	True	True	True	False		
Static_1	Int	0	Non-retain	True	True	True	False		
Previous_Cmd	Int	0	Non-retain	True	True	True	False		
Lateral_extension_mm	DInt	0	Non-retain	True	True	True	False		
TelePick_extdeep1_mm	DInt	0	Non-retain	True	True	True	False		
TelePick_extdeep2_mm	DInt	0	Non-retain	True	True	True	False		
TelePlace_extdeep1_mm	DInt	0	Non-retain	True	True	True	False		
TelePlace_extdeep2_mm	DInt	0	Non-retain	True	True	True	False		
Telepick_Joglimit_deep2_mm	DInt	0	Non-retain	True	True	True	False		
Telepick_Joglimit_deep1_mm	DInt	0	Non-retain	True	True	True	False		
lateral_shift_doubledeep	DInt	0	Non-retain	True	True	True	False		
Tele_stalled_oper_pick	Bool	false	Non-retain	True	True	True	False		
Tele_fork_contact_pos	DInt	0	Non-retain	True	True	True	False		
tele_exeplace7	Bool	false	Non-retain	True	True	True	False		
tele_exePick8	Bool	false	Non-retain	True	True	True	False		
turn_exePick_1	Bool	false	Non-retain	True	True	True	False		
RACK_CYCLE	Int	0	Non-retain	False	False	False	False		
Rack_Place_Cycle	Int	0	Non-retain	False	False	False	False		
Turn_Corr_Step	Int	0	Non-retain	True	True	True	False		
tele_execute_4	Bool	false	Non-retain	False	False	False	False		
turn_table_offset	DInt	0	Non-retain	True	True	True	False		
turn_offset1	DInt	0	Non-retain	True	True	True	False		
turn_exePlace_1	Bool	false	Non-retain	True	True	True	False		
error_factor	Int	0	Non-retain	True	True	True	False		
Temp									
Constant									

Network 2:

```
0001 IF #Lateral_offset > 40 AND #Deep=1 THEN
0002     #Lateral_extension_mm := 40;
0003 ELSE
0004     IF #Lateral_offset < 0 THEN
0005         #Lateral_extension_mm := 0;
0006         ;
0007
0008     ELSE
0009         IF #Lateral_offset > 0 AND #Lateral_offset < 40 THEN
0010             #Lateral_extension_mm := #Lateral_offset;
0011             ;
0012         END_IF;
0013     END_IF;
0014 END_IF;
0015 IF #Lateral_offset > 30 AND #Deep = 2 THEN
0016     #lateral_shift_doubledeep := 30;
0017 ELSE
0018     IF #Lateral_offset < 0 THEN
0019         #lateral_shift_doubledeep := 0;
0020         ;
0021
0022     ELSE
0023         IF #Lateral_offset > 0 AND #Lateral_offset < 30 THEN
0024             #lateral_shift_doubledeep := #Lateral_offset;
0025             ;
0026         END_IF;
0027     END_IF;
0028 END_IF;
0029 #TelePick_extdeep1_mm := #telepick_exedeep1_extension + #Lateral_extension_mm - 20;
0030 #TelePick_extdeep2_mm := #telepick_exedeep2_extension + #lateral_shift_doubledeep- 20;
0031 #TelePlace_extdeep1_mm := #teleplace_exedeep1_extension + #Lateral_extension_mm- 20;
0032 #TelePlace_extdeep2_mm := #teleplace_exedeep2_extension + #lateral_shift_doubledeep- 20;
0033 #Telepick_Joglimit_deep1_mm  := #tele_joglimit_extension_deep1 + #Lateral_extension_mm - 20;
0034 //#Telepick_Joglimit_deep2_mm := #tele_joglimit_extension_deep2 + #lateral_shift_doubledeep - 20;
```

```
0035
0036 #Telepick_Joglimit_deep2_mm := 1400;
0037 IF #Telepick_Joglimit_deep1_mm >= 800 THEN
0038     #Telepick_Joglimit_deep1_mm := 800;
0039     ;
0040 END_IF;
0041
0042 IF #TelePlace_extdeep2_mm >= 1400 THEN
0043     #TelePlace_extdeep2_mm := 1400;
0044     ;
0045 END_IF;
0046 IF #TelePick_extdeep2_mm >= 1400 THEN
0047     #TelePick_extdeep2_mm := 1400;
0048     ;
0049 END_IF;
0050 IF #Input_cmd_moc = 888 THEN
0051     #Lift_double_place_offset := 0;
0052     ;
0053 END_IF;
```

Network 3:



Network 4:

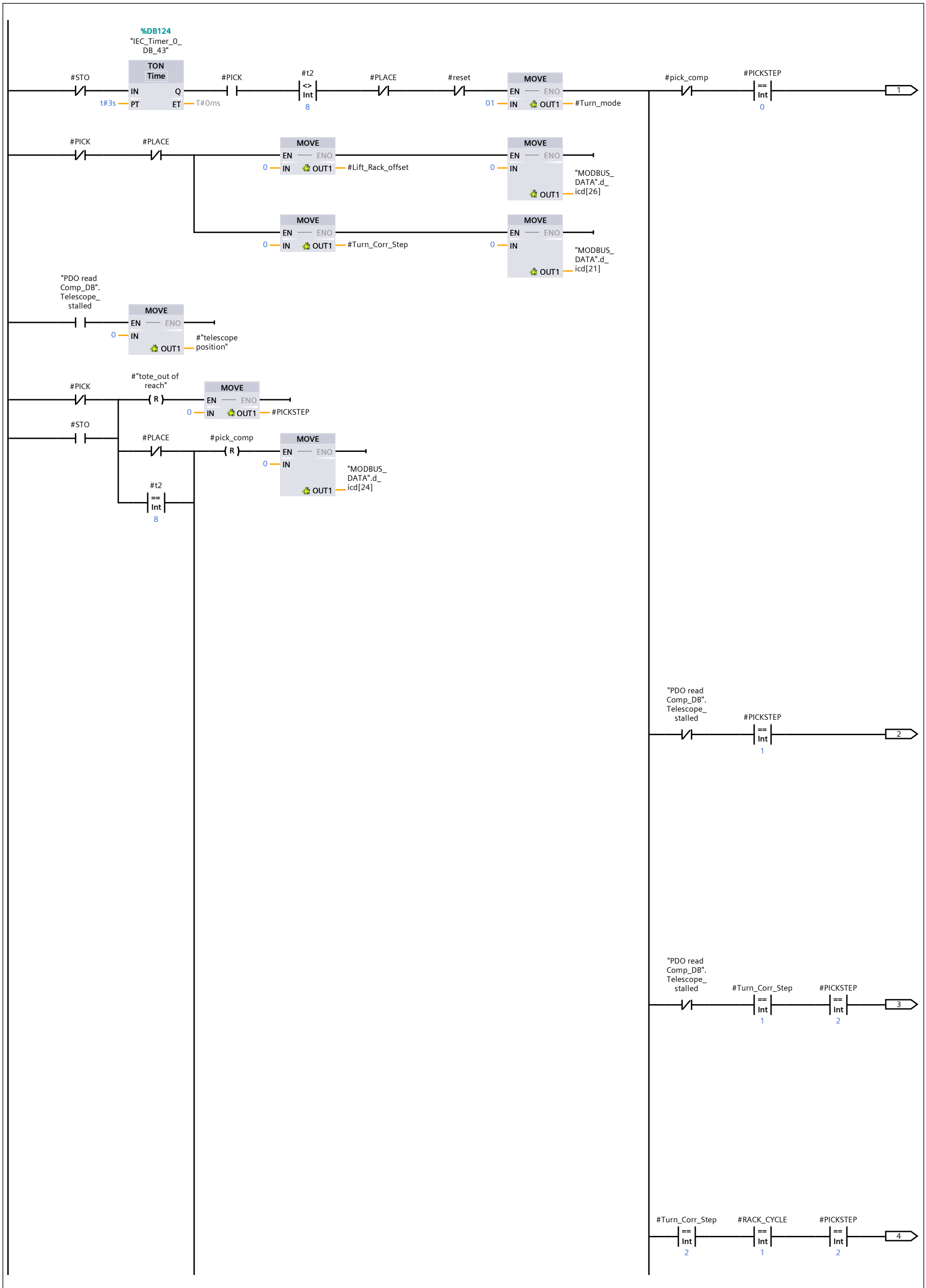
```
0001 #Lif_temp := #Material_op_temp MOD 10;
0002 IF #PICK OR #PLACE THEN
0003     #"Lift Position" := #Lif_temp;
0004 END_IF;
0005 IF #t2 = 8 THEN
0006     #"Lift Position" := 1;
0007     ;
0008 END_IF;
0009 #Deep := #"Material_operation cmd" / 1000;
0010
0011 #Material_op_temp := #"Material_operation cmd" MOD 1000;
0012
0013 #t1:=#Material_op_temp / 10;
0014 #turntable_dir := #t1 MOD 10;
0015
0016 #t2:= #t1/10;
0017 IF (#t2 = 1) THEN
0018     #PICK := 1;
0019
0020 END_IF;
0021 IF (#t2 <>1)THEN
0022     #PICK := 0;
0023 END_IF;
0024 IF (#t2 = 2) THEN
0025     #PLACE := 1;
0026 END_IF;
0027  IF (#t2 <> 2) THEN
0028      #PLACE := 0;
0029  END_IF;
```

```
0030  IF #Material_op_temp=0 THEN
0031      #Mov_turn_pos := 0;
0032      ;
0033  END_IF;
0034
0035
0036  IF #turntable_dir=1 AND #Material_op_temp>0 THEN
0037      #"turntable pos" := -90;
0038      #Mov_turn_pos := 1;
0039
0040      ;
0041  END_IF;
0042
0043  IF #turntable_dir = 2 AND #Material_op_temp>0 THEN
0044      #"turntable pos" := 90;
0045      #Mov_turn_pos := 2;
0046
0047      ;
0048  END_IF;
0049  IF (#turntable_dir = 0 AND #"Lift Position" <> 9) OR ( (#t2 = 8) )THEN
0050      #"turntable pos" := 0;
0051      #Mov_turn_pos := 3;
0052      ;
0053  END_IF;
0054  (*IF #Mov_turn_pos >0 AND #Mov_turn_pos <4 AND #"Material_operation cmd">0 THEN
0055   #mOVE_TURN_TARGET := 1;
0056  ELSE
0057   #mOVE_TURN_TARGET := 0;
0058   ;
0059  END_IF;
0060  *)
0061  IF #PICK AND #PICKSTEP < 1 THEN
0062      #turn_offset := 2000;
0063  END_IF;
0064  IF #turntable_dir = 0 OR (#t2 = 8) THEN
0065      #turn_offset := 2000;
0066  END_IF;
0067  IF #PLACE AND #PLACESTEP < 1 THEN
0068      #turn_offset := 2000;
0069  END_IF;
0070
0071  IF #Turn_Corr_Step < 2 THEN
0072      IF #turn_offset <> 2000 THEN
0073          IF #turn_offset1 >= 1000 THEN
0074              #turn_offset1 := 1000;
0075              ;
0076          END_IF;
0077
0078          IF #turn_offset1 <= 0 THEN
0079              #turn_offset1 := 0;
0080              ;
0081          END_IF;
0082
0083          IF #turn_offset <= 1000 AND #turn_offset >= 0 THEN
0084              #turn_offset1 := #turn_offset;
0085              ;
0086          END_IF;
0087      ELSE
0088          #turn_offset1 := 500;
0089      END_IF;
0090  END_IF;
0091
0092  #turn_table_offset := (#turn_offset1 - 500) * (86231578/10000) /100; // (x-500)/100 becomes int
0093
0094  #POSITION := #"turntable pos" * (86231578/10000) + #turn_table_offset;//7957.0193// 7680.185; //408.8888 //
0095  IF #POSITION > 819200 THEN
0096      #tURN_CMD_POS := 819200;
0097
0098      ;
0099  END_IF;
0100  IF #POSITION < -819200 THEN
0101      #tURN_CMD_POS := -819200;
0102      ;
0103  END_IF;
0104  IF #POSITION >= -819200 AND #POSITION <= 819200 THEN
0105      #tURN_CMD_POS := #POSITION;
0106      ;
0107  END_IF;
0108  #tURN_fb_DEGREE := ABS(#"Turn Act pos" / (86231578/10000));
0109
0110  #error_factor := 20;  // Error_factor value in error = 1 degree
0111
0112  #"turn error":=ABS(((#"Turn Act pos"*10)/(86231578/10000))-#"turntable pos"*10-((#turn_table_offset*10)/
      (86231578/10000))); //Scaling error to turn error 10 factor means 10 = 1 degree error
0113  #"tele error" := ABS(#"tele Act pos" - #"telescope position");
0114  IF #PICK = 1 AND #turntable_dir <> 0 THEN
0115      #pick_ext := 1;
0116      #mpv := 0;
```

```
0117     #place_ext := 0;
0118
0119     ;
0120 END_IF;
0121 IF #PLACE = 1 AND #turntable_dir <> 0 THEN
0122     #place_ext := 1;
0123     #pick_ext := 0;
0124     #mpv := 0;
0125
0126     ;
0127     ;
0128 END_IF;
0129 IF (#PLACE = 1 OR #PICK=1 OR #t2 = 8 ) AND (#turntable_dir =8 OR #turntable_dir =0 ) THEN
0130     #place_ext := 0;
0131     #pick_ext := 0;
0132     #mpv := 1;
0133     ;
0134 END_IF;
0135 "MODBUS_DATA".d_icd[25] := 1;
0136 ;
0137 "MODBUS_DATA".d_icd[18] := #PICKSTEP;
0138 "MODBUS_DATA".d_icd[19] := #PLACESTEP;
0139 #Tele_cmd_pos := (1426253 / 1000) * #"telescope position";
0140
0141 IF #Lift_Barcode_pick_offset >= 250 THEN
0142     #Lift_Barcode_pick_offset := 250;
0143     ;
0144 END_IF;
0145
0146 IF #Lift_Barcode_pick_offset <= 0 THEN
0147     #Lift_Barcode_pick_offset := 0;
0148     ;
0149 END_IF;
0150
0151 IF #Lift_Rack_IN_Offset >= 200 THEN
0152     #Lift_Rack_IN_Offset := 200;
0153     ;
0154 END_IF;
0155
0156 IF #Lift_Rack_IN_Offset <= 0 THEN
0157     #Lift_Rack_IN_Offset := 0;
0158     ;
0159 END_IF;
```

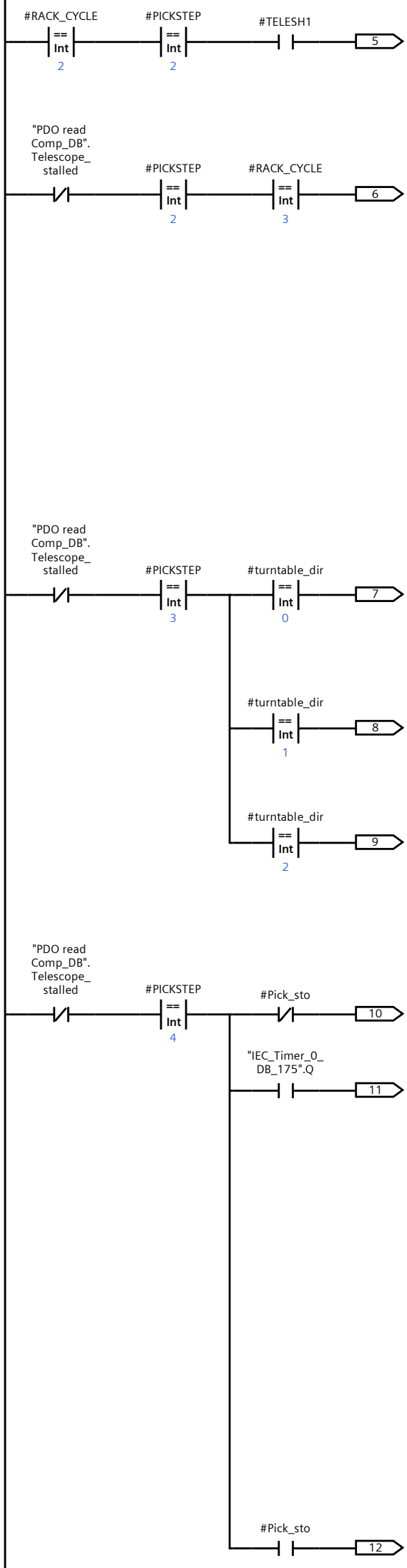
Network 5: pick cycle

Network 5: pick cycle (1.1 / 13.1)



Network 5: pick cycle (2.1 / 13.1)

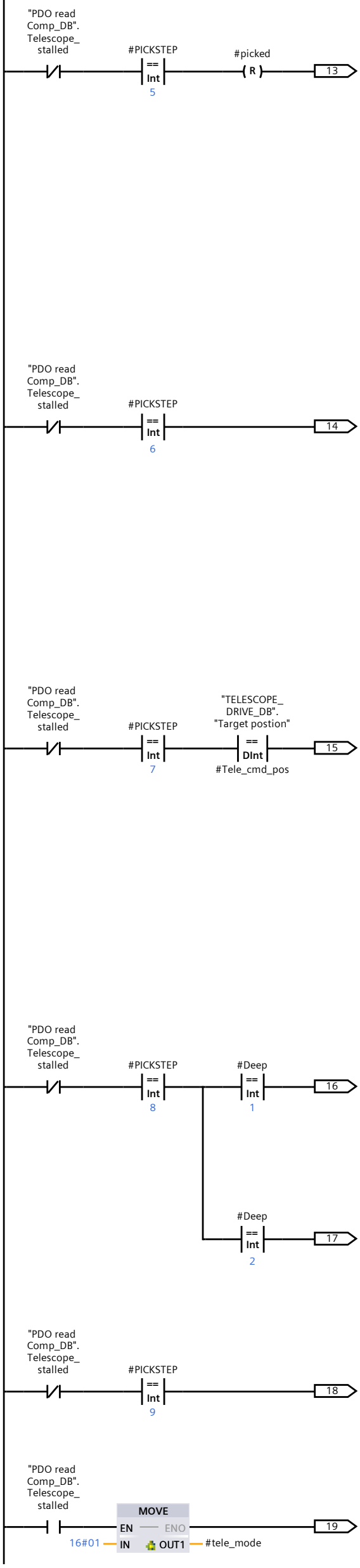
1.1 (Page1 - 7)



3.1 (Page1 - 9)

Network 5: pick cycle (3.1 / 13.1)

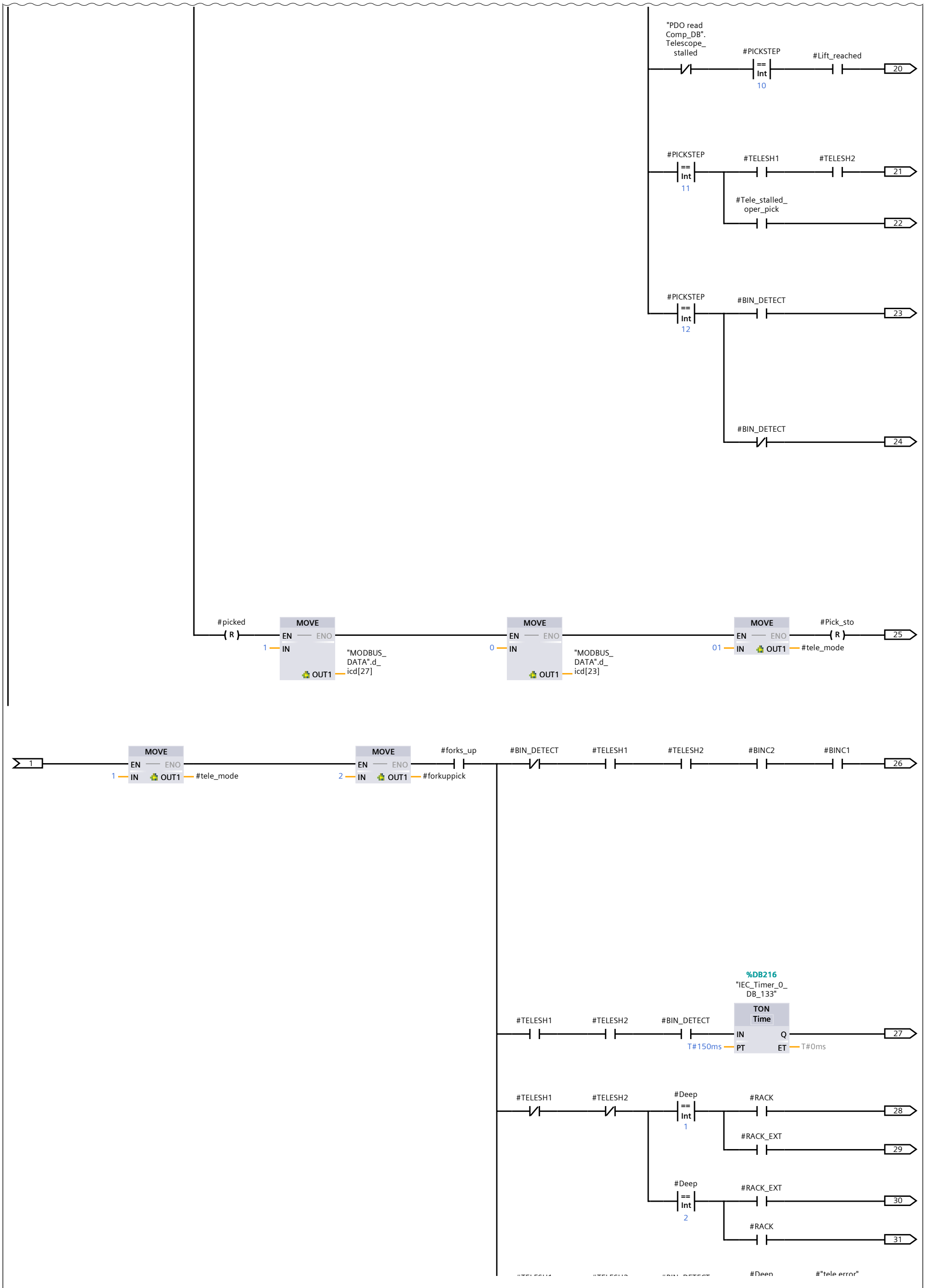
2.1 (Page1 - 8)



4.1 (Page1 - 10)

Network 5: pick cycle (4.1 / 13.1)

3.1 (Page1 - 9)



5.1 (Page1 - 11)

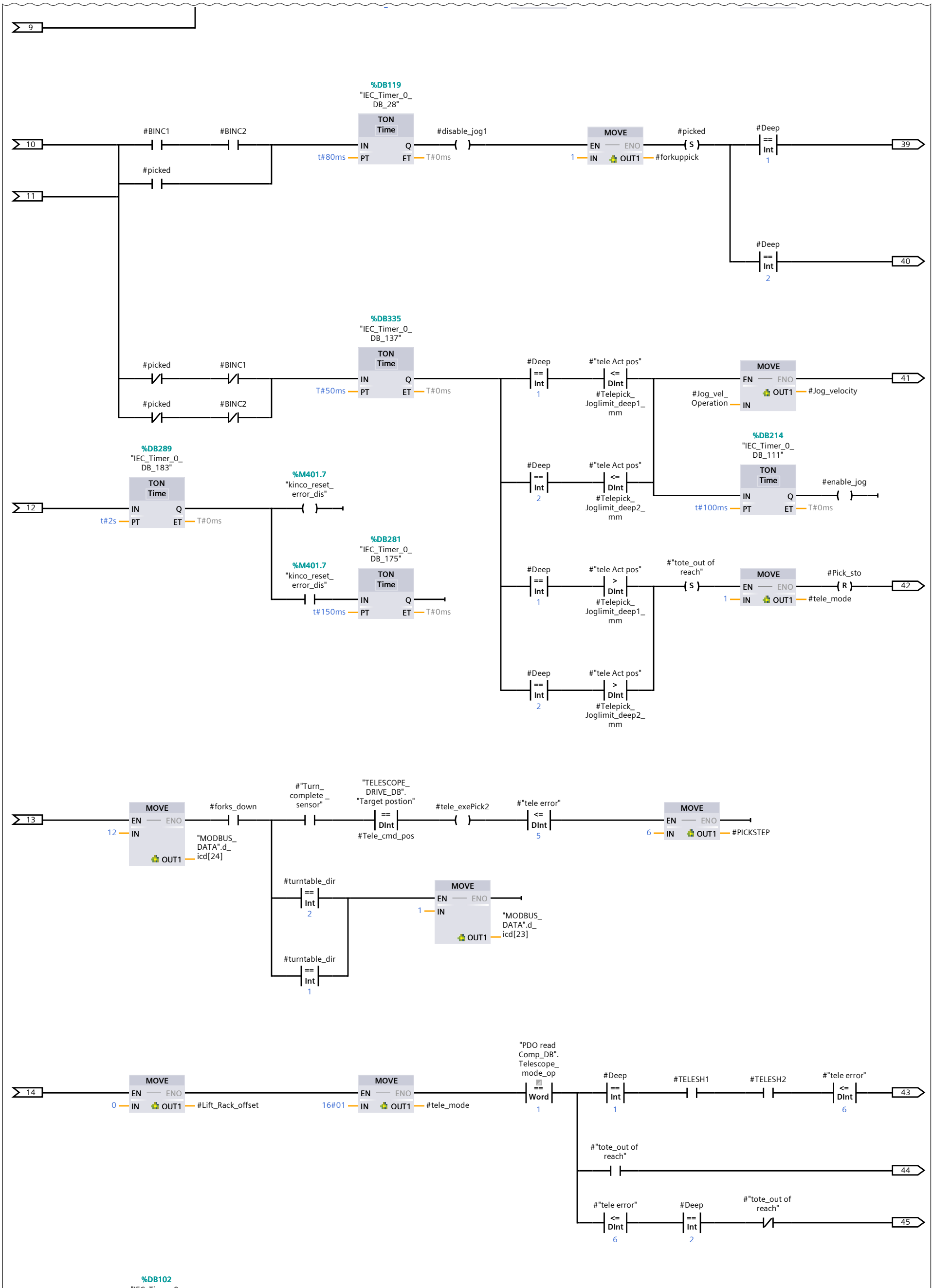
Network 5: pick cycle (5.1 / 13.1)

4.1 (Page1 - 10)

6.1 (Page1 - 12)

Network 5: pick cycle (6.1 / 13.1)

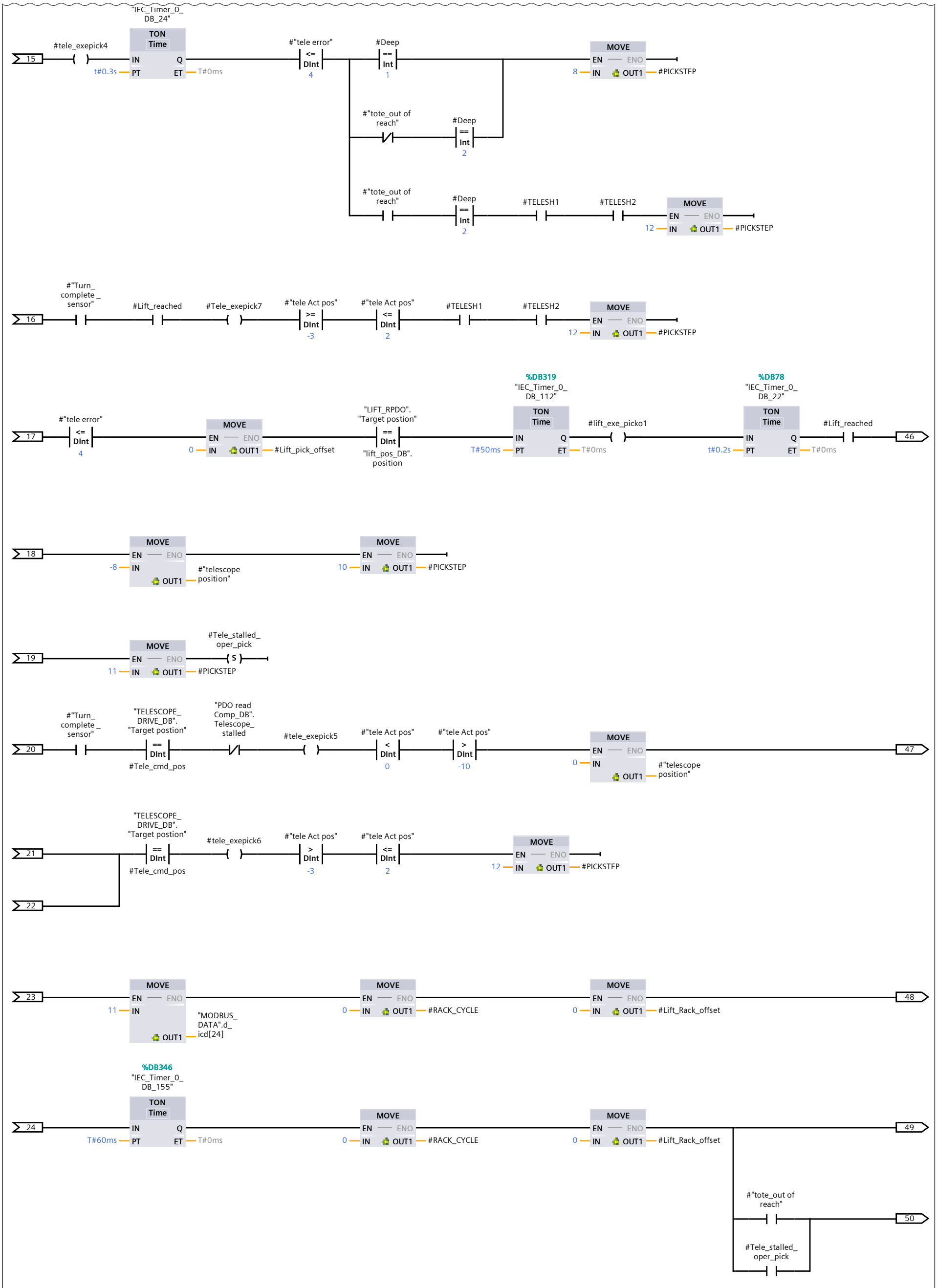
5.1 (Page1 - 11)



7.1 (Page1 - 13)

Network 5: pick cycle (7.1 / 13.1)

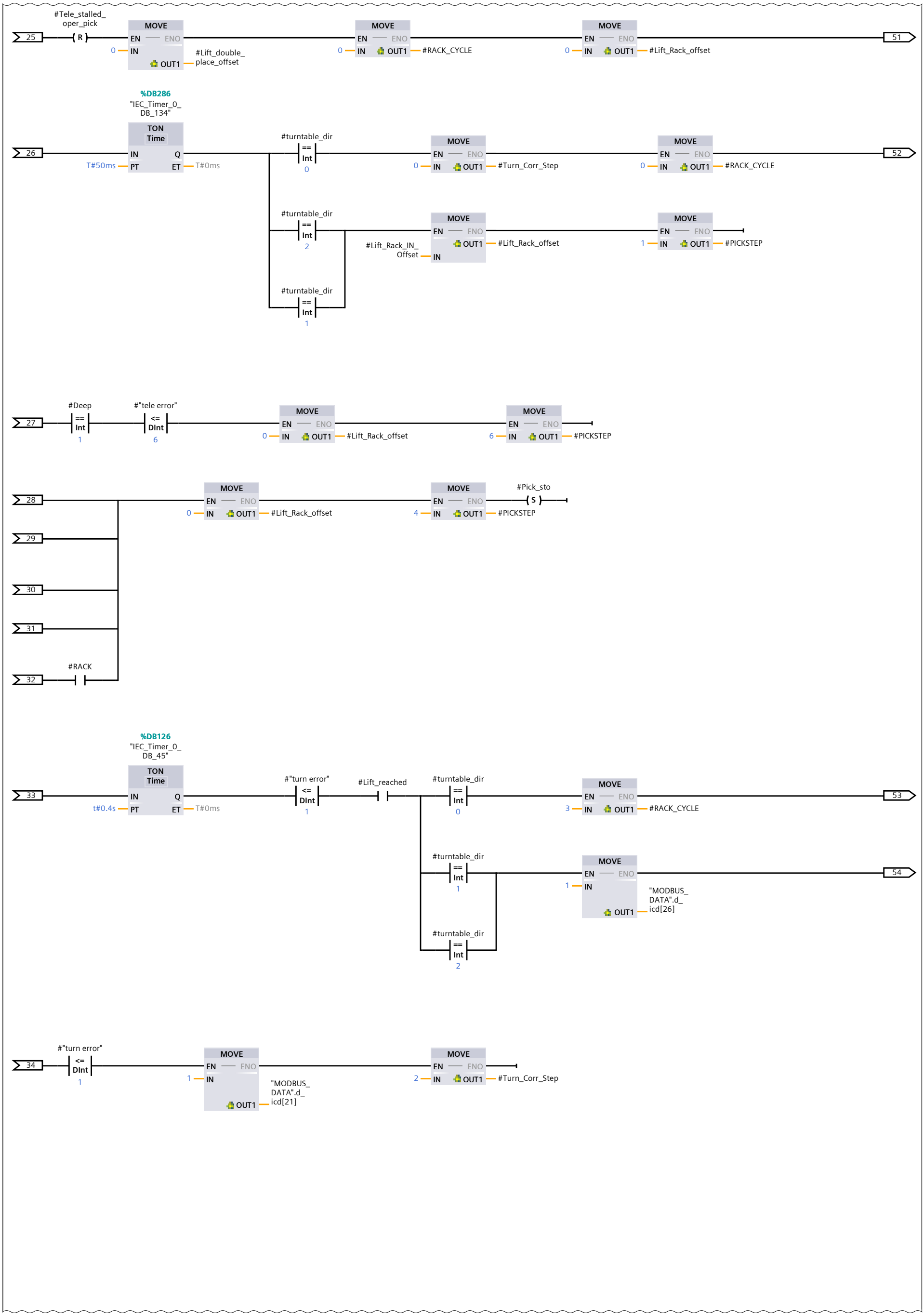
6.1 (Page1 - 12)



8.1 (Page1 - 14)

Network 5: pick cycle (8.1 / 13.1)

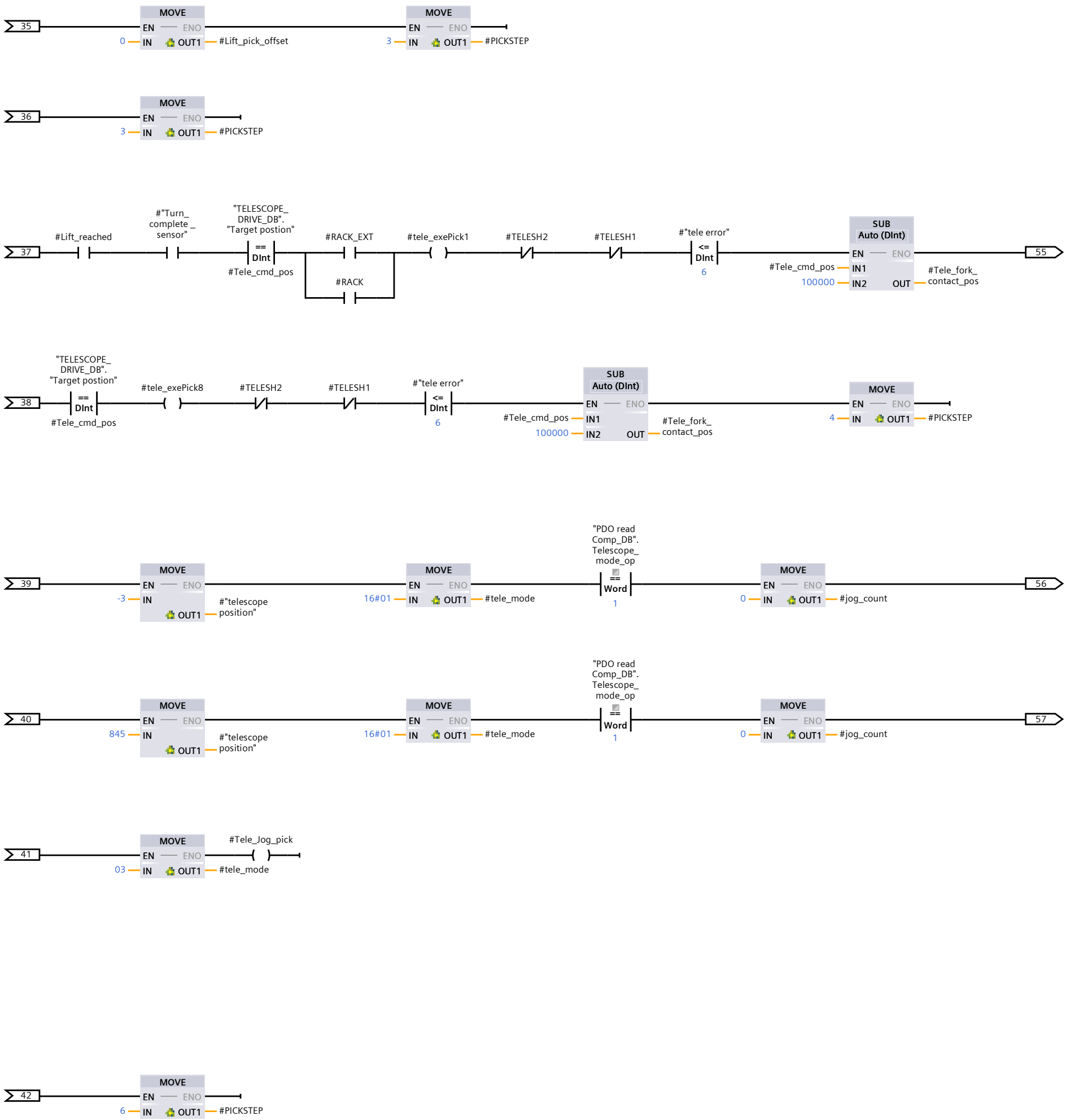
7.1 (Page1 - 13)



9.1 (Page1 - 15)

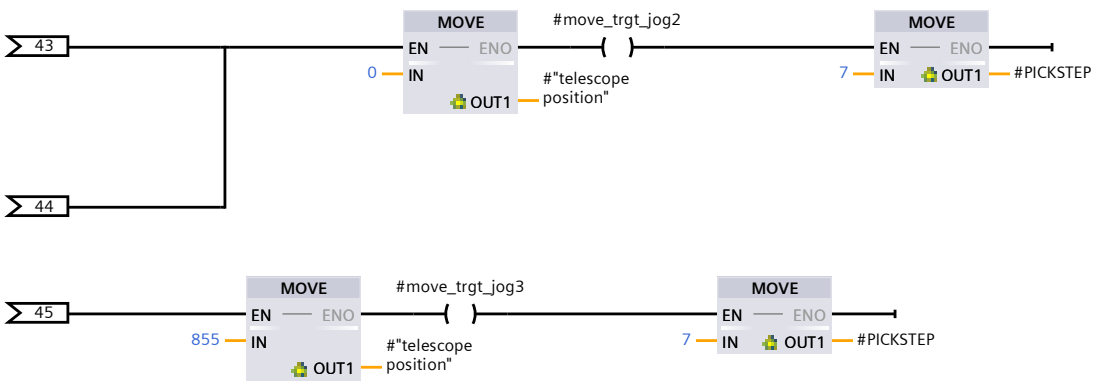
Network 5: pick cycle (9.1 / 13.1)

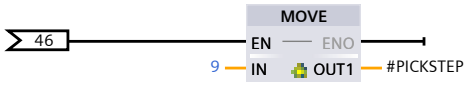
8.1 (Page1 - 14)



10.1 (Page1 - 16)

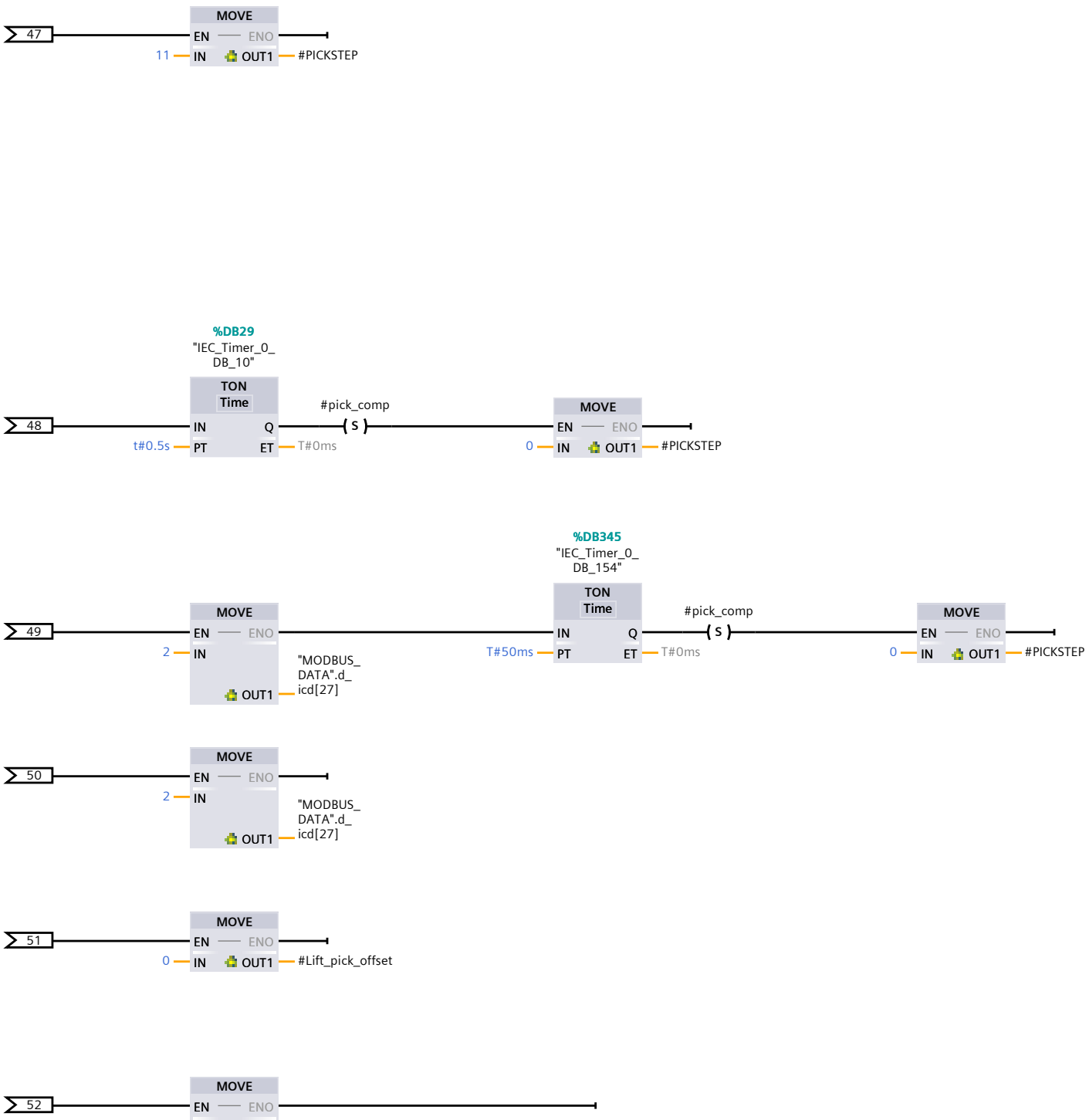
Network 5: pick cycle (10.1 / 13.1)





Network 5: pick cycle (11.1 / 13.1)

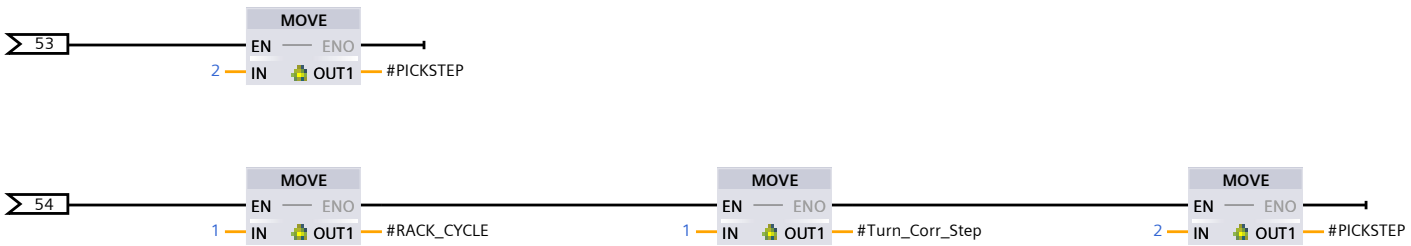
10.1 (Page1 - 16)



12.1 (Page1 - 18)

Network 5: pick cycle (12.1 / 13.1)

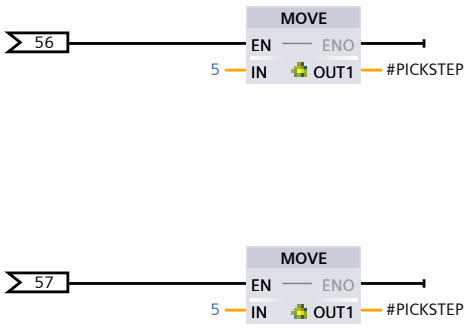
11.1 (Page1 - 17)



13.1 (Page1 - 19)

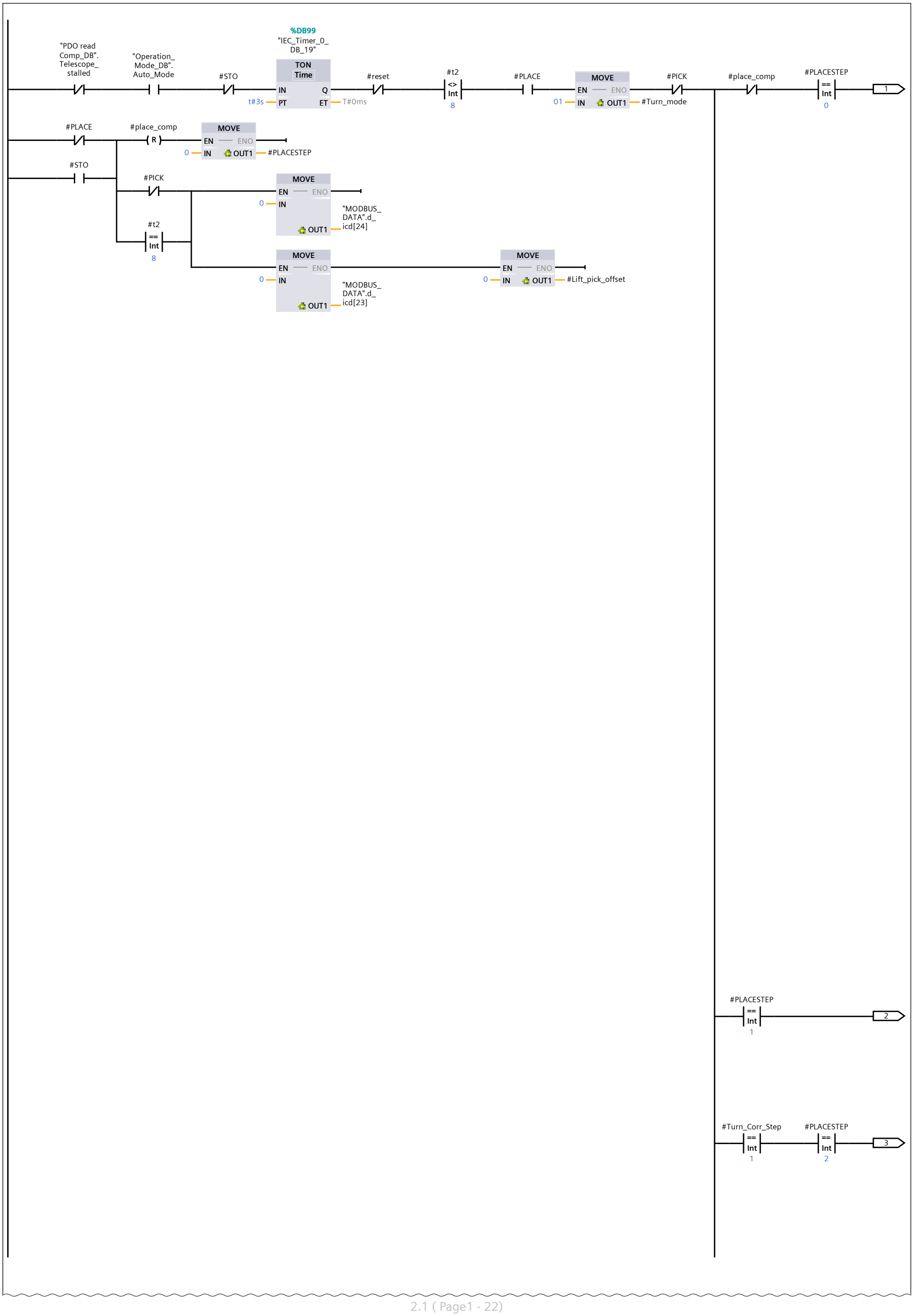
Network 5: pick cycle (13.1 / 13.1)

12.1 (Page1 - 18)



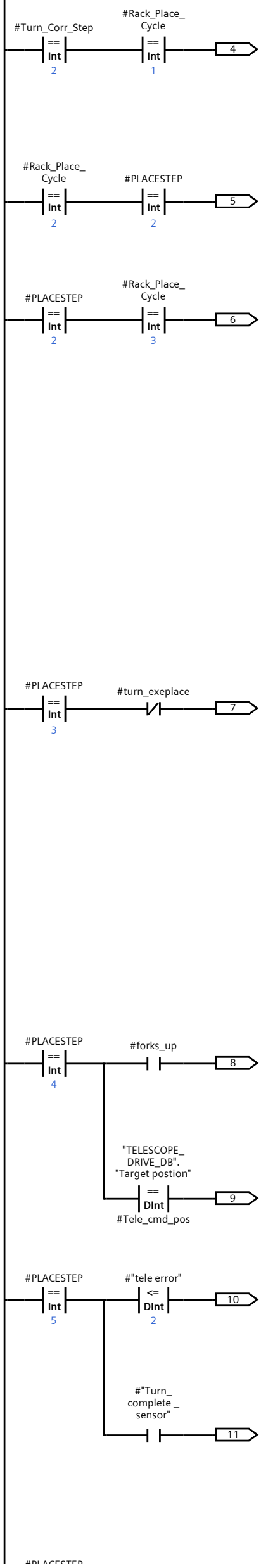
Network 6: place cycle

Network 6: place cycle (1.1 / 9.1)



Network 6: place cycle (2.1 / 9.1)

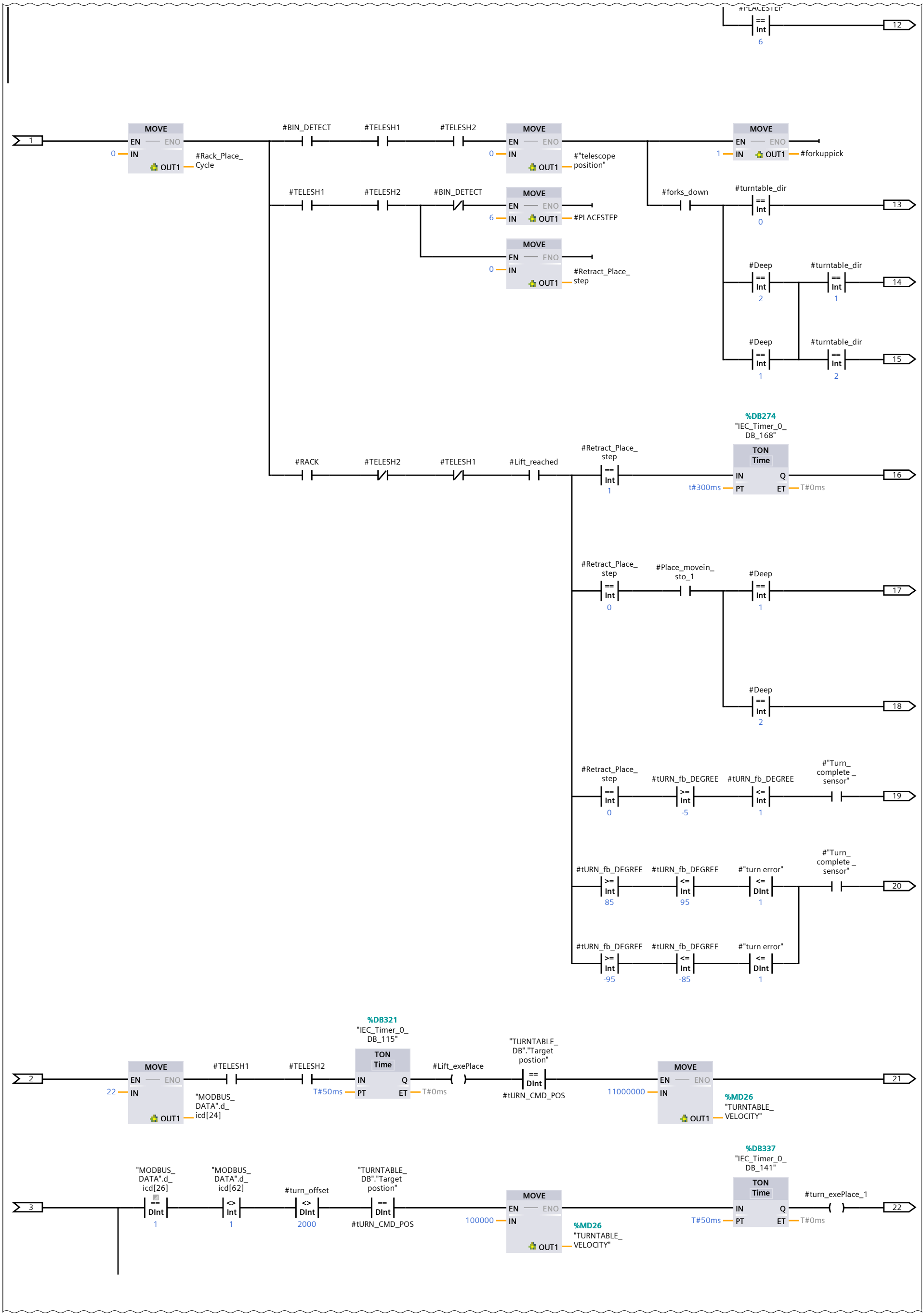
1.1 (Page1 - 21)



3.1 (Page1 - 23)

Network 6: place cycle (3.1 / 9.1)

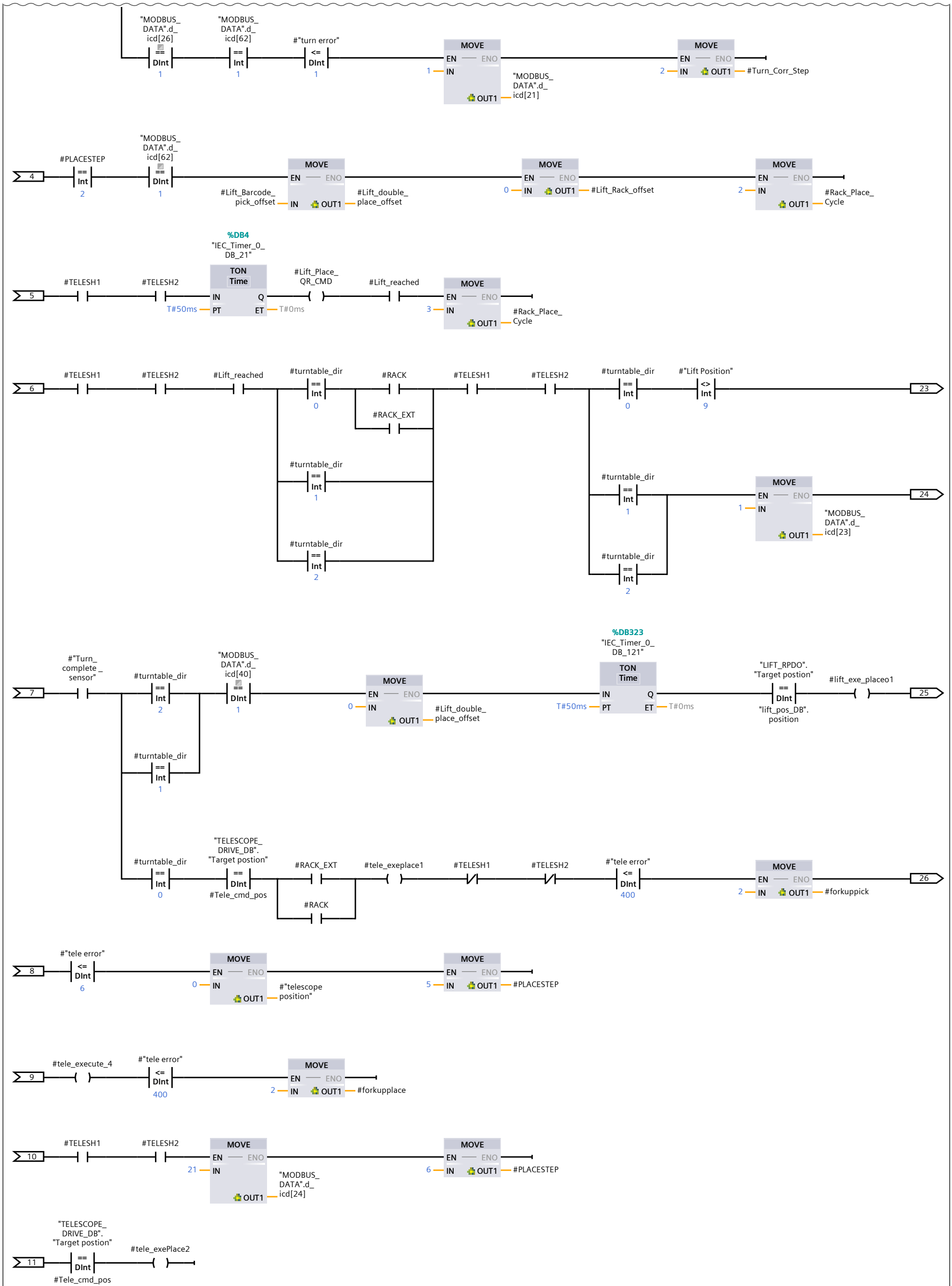
2.1 (Page1 - 22)



4.1 (Page1 - 24)

Network 6: place cycle (4.1 / 9.1)

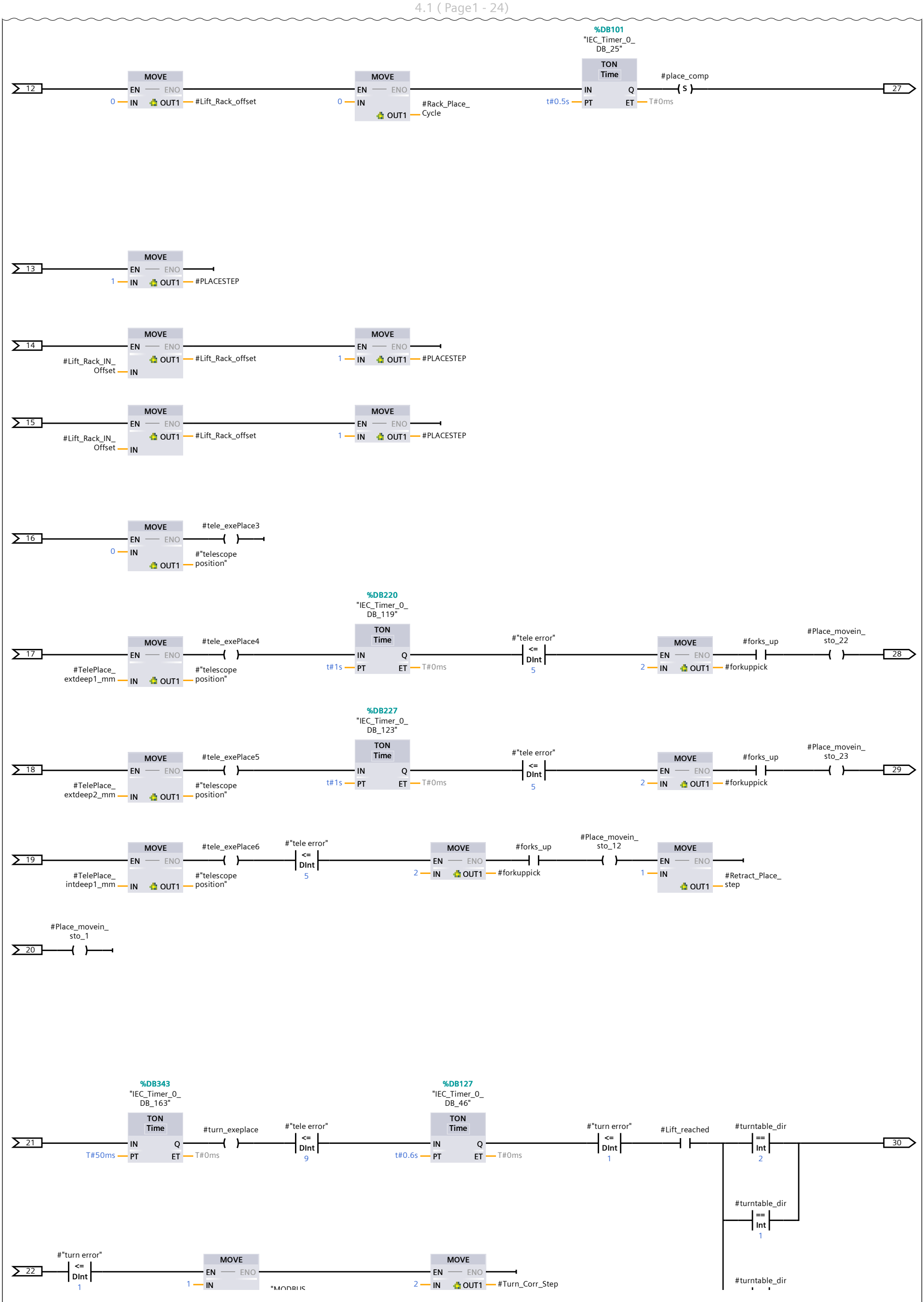
3.1 (Page1 - 23)



5.1 (Page1 - 25)

Network 6: place cycle (5.1 / 9.1)

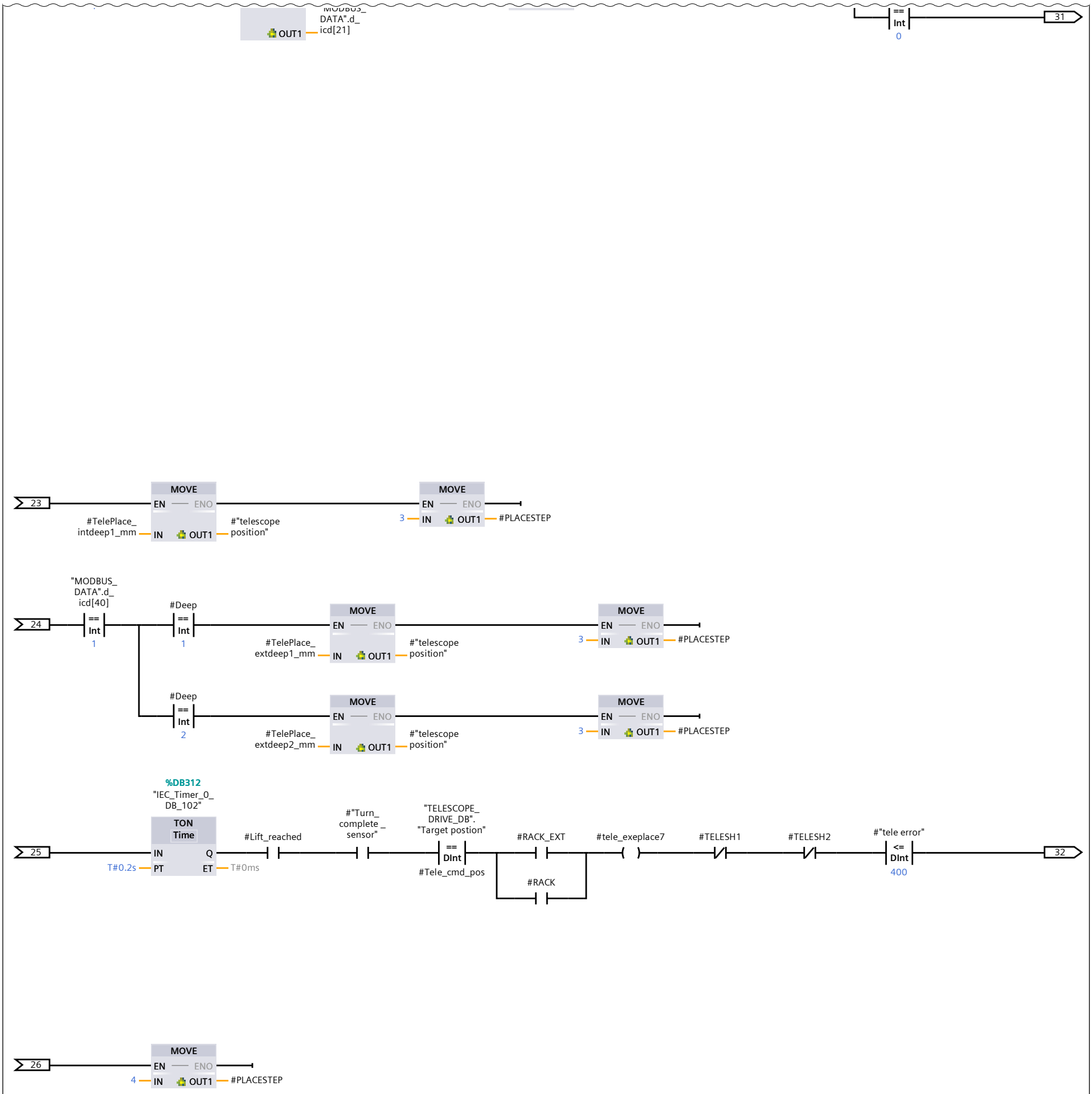
4.1 (Page1 - 24)



6.1 (Page1 - 26)

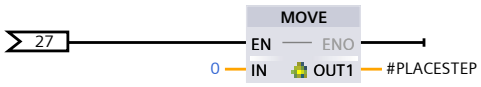
Network 6: place cycle (6.1 / 9.1)

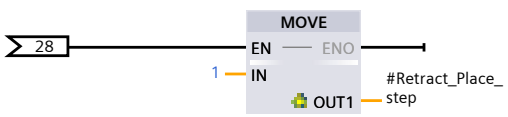
5.1 (Page1 - 25)

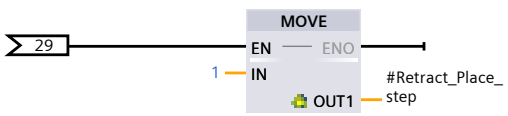


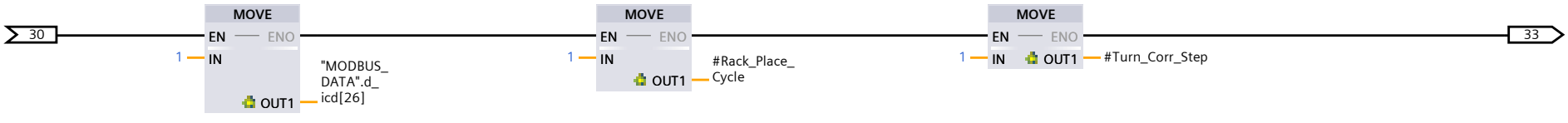
Network 6: place cycle (7.1 / 9.1)

6.1 (Page1 - 26)





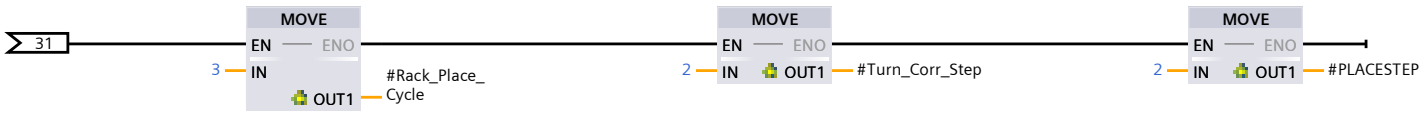


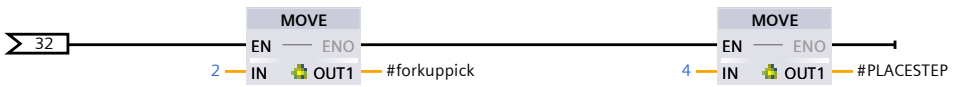


8.1 (Page1 - 28)

Network 6: place cycle (8.1 / 9.1)

7.1 (Page1 - 27)



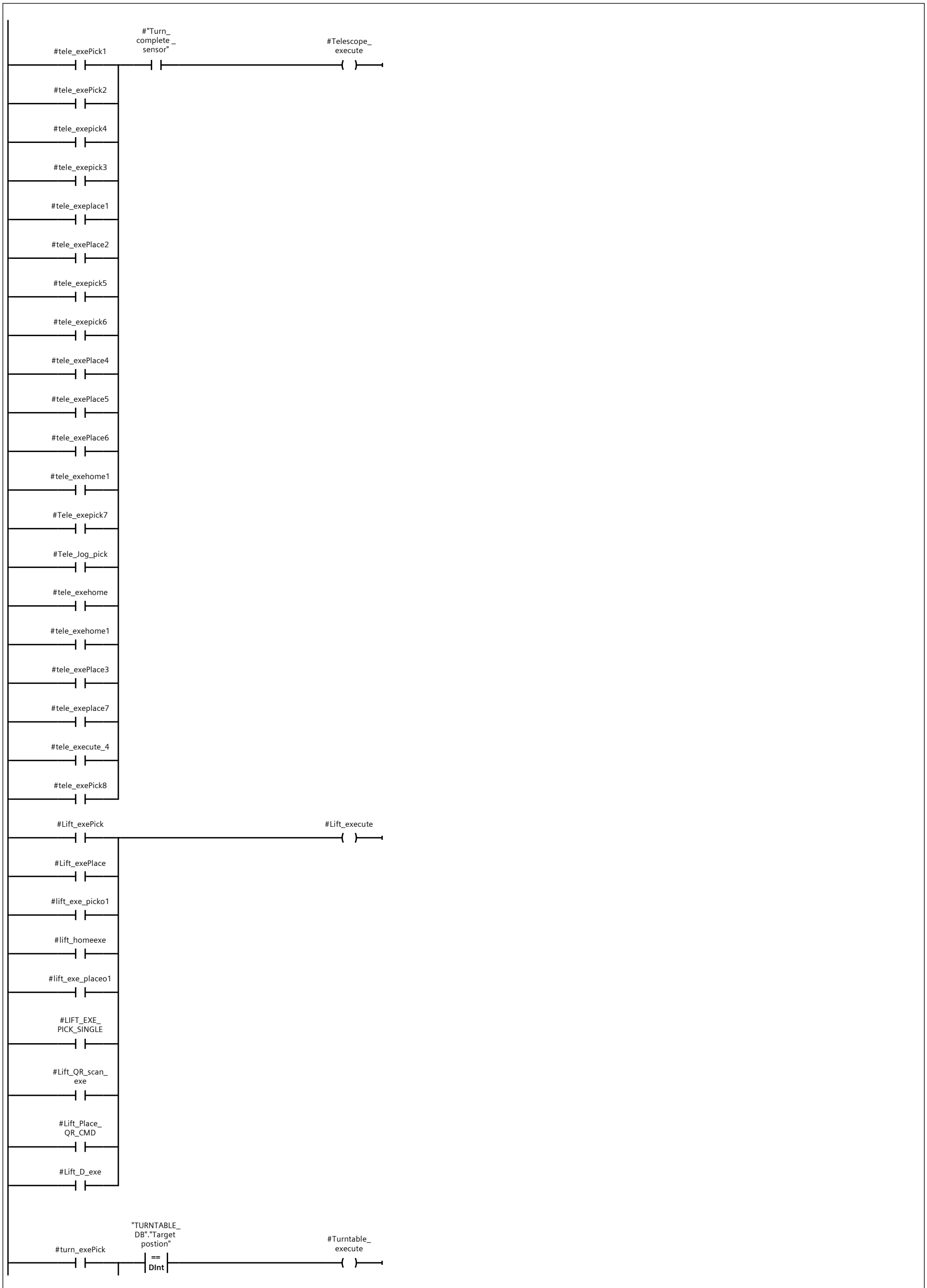


9.1 (Page1 - 29)

Network 6: place cycle (9.1 / 9.1)

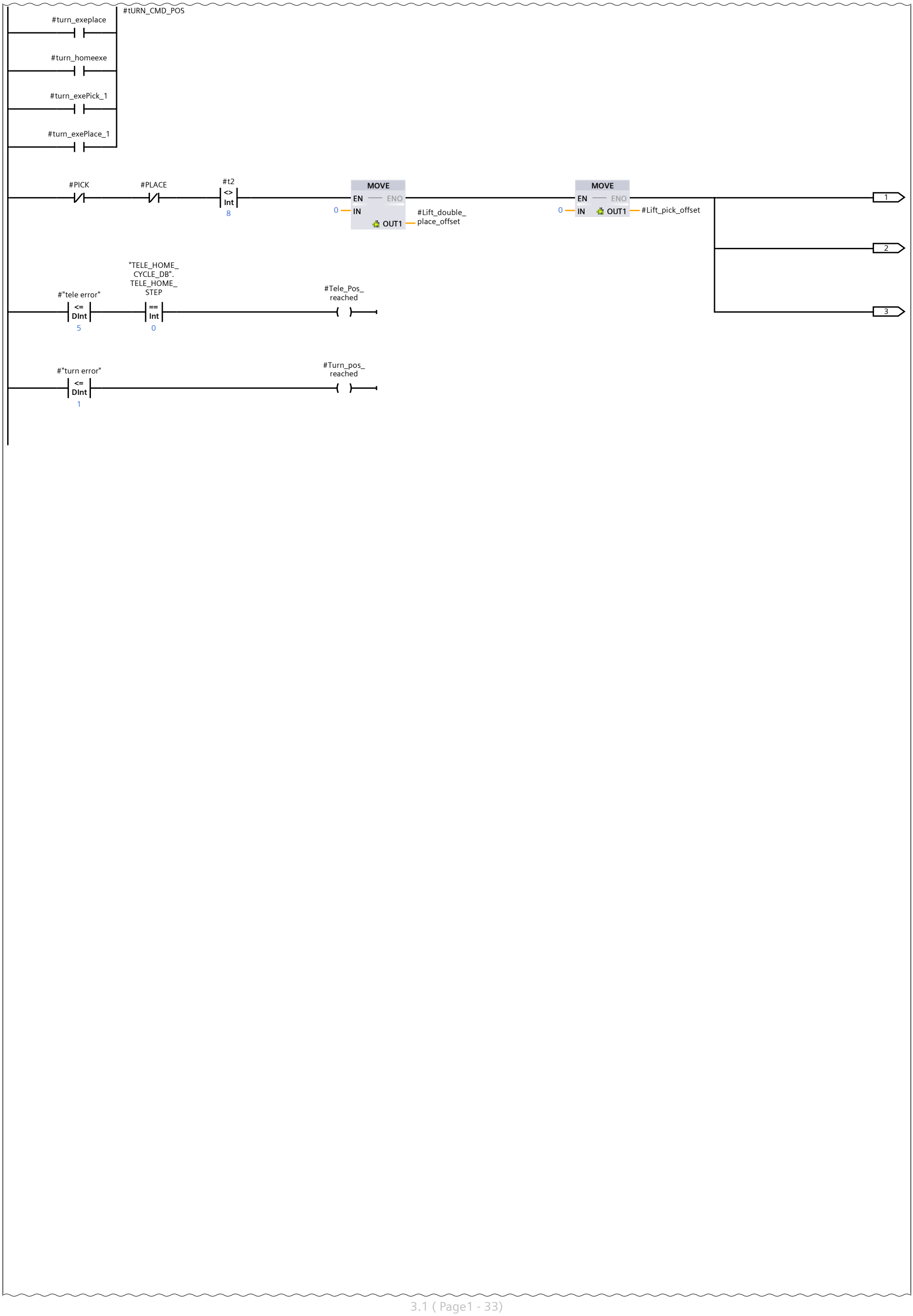
Network 7:

Network 7: (1.1 / 3.1)



Network 7: (2.1 / 3.1)

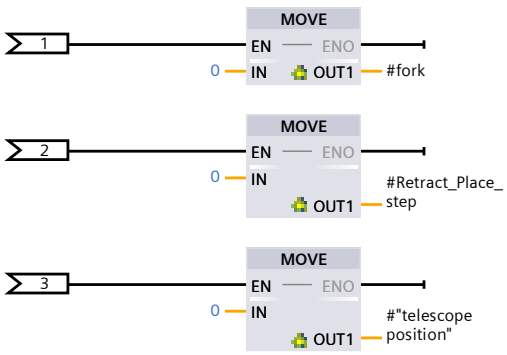
1.1 (Page1 - 31)



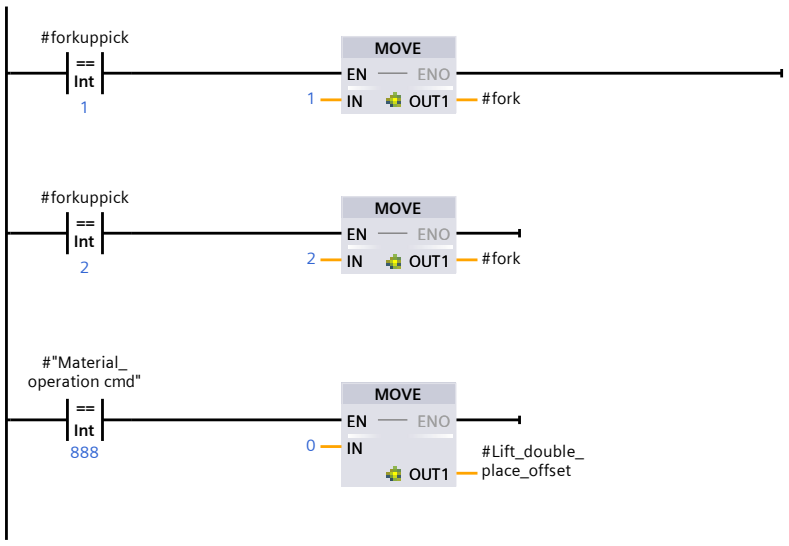
3.1 (Page1 - 33)

Network 7: (3.1 / 3.1)

2.1 (Page1 - 32)

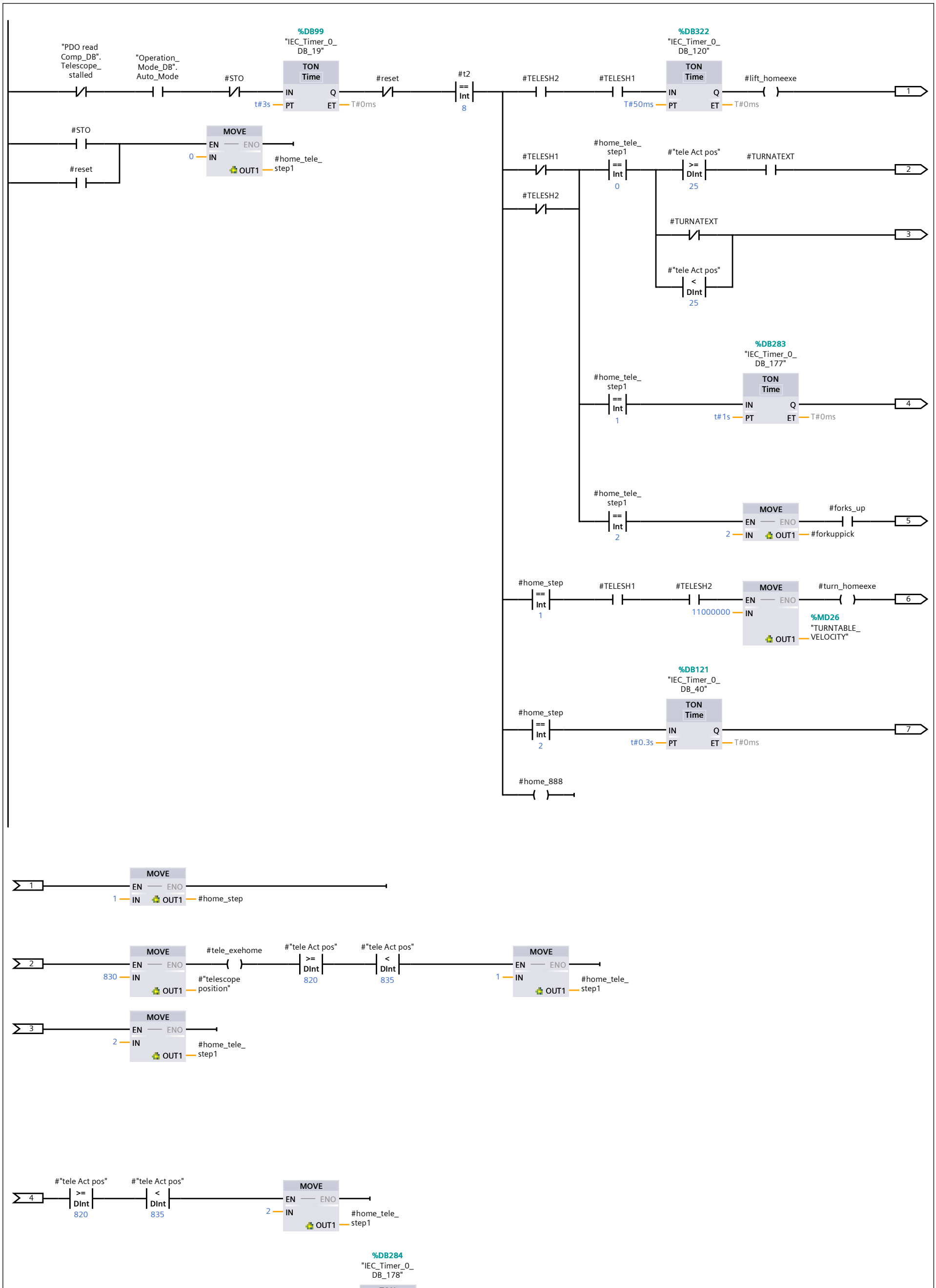


Network 8:



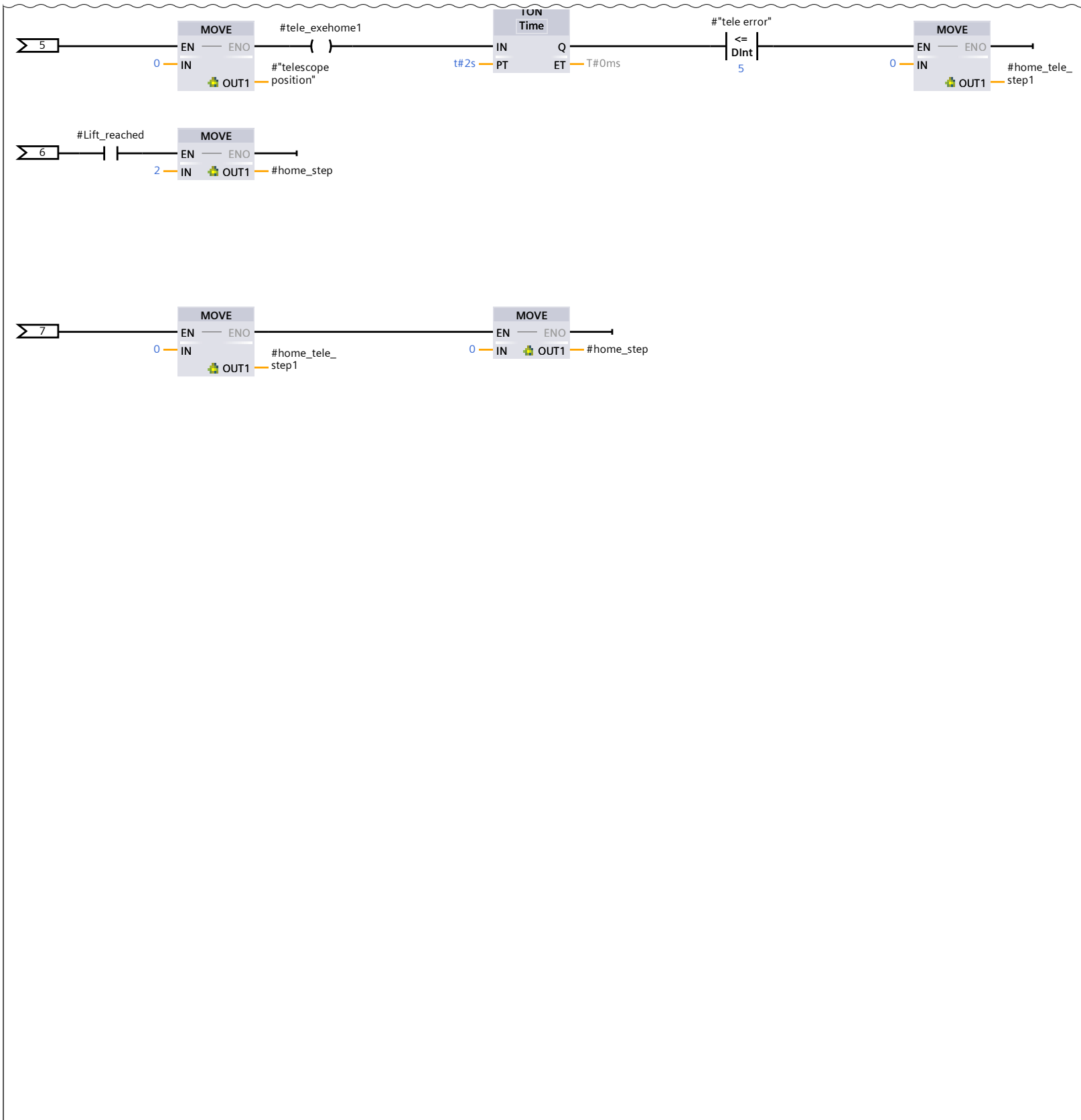
Network 9: Homing

Network 9: Homing (1.1 / 2.1)

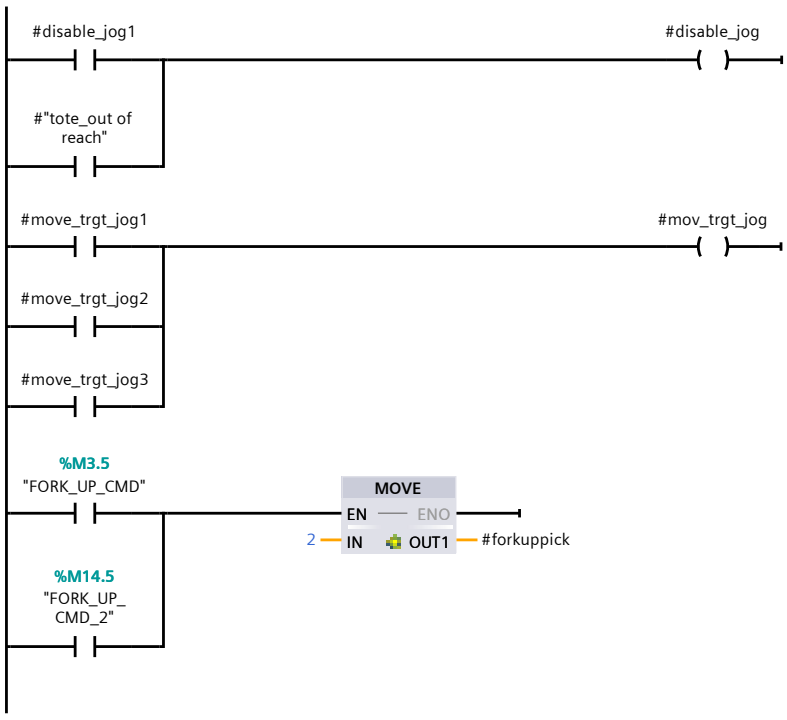


Network 9: Homing (2.1 / 2.1)

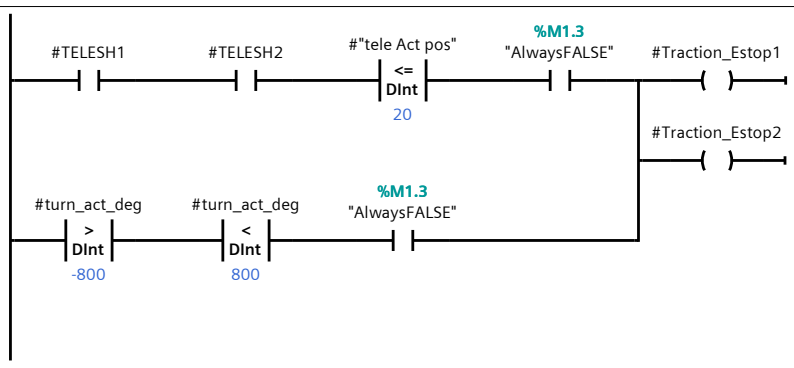
1.1 (Page1 - 35)



Network 10:

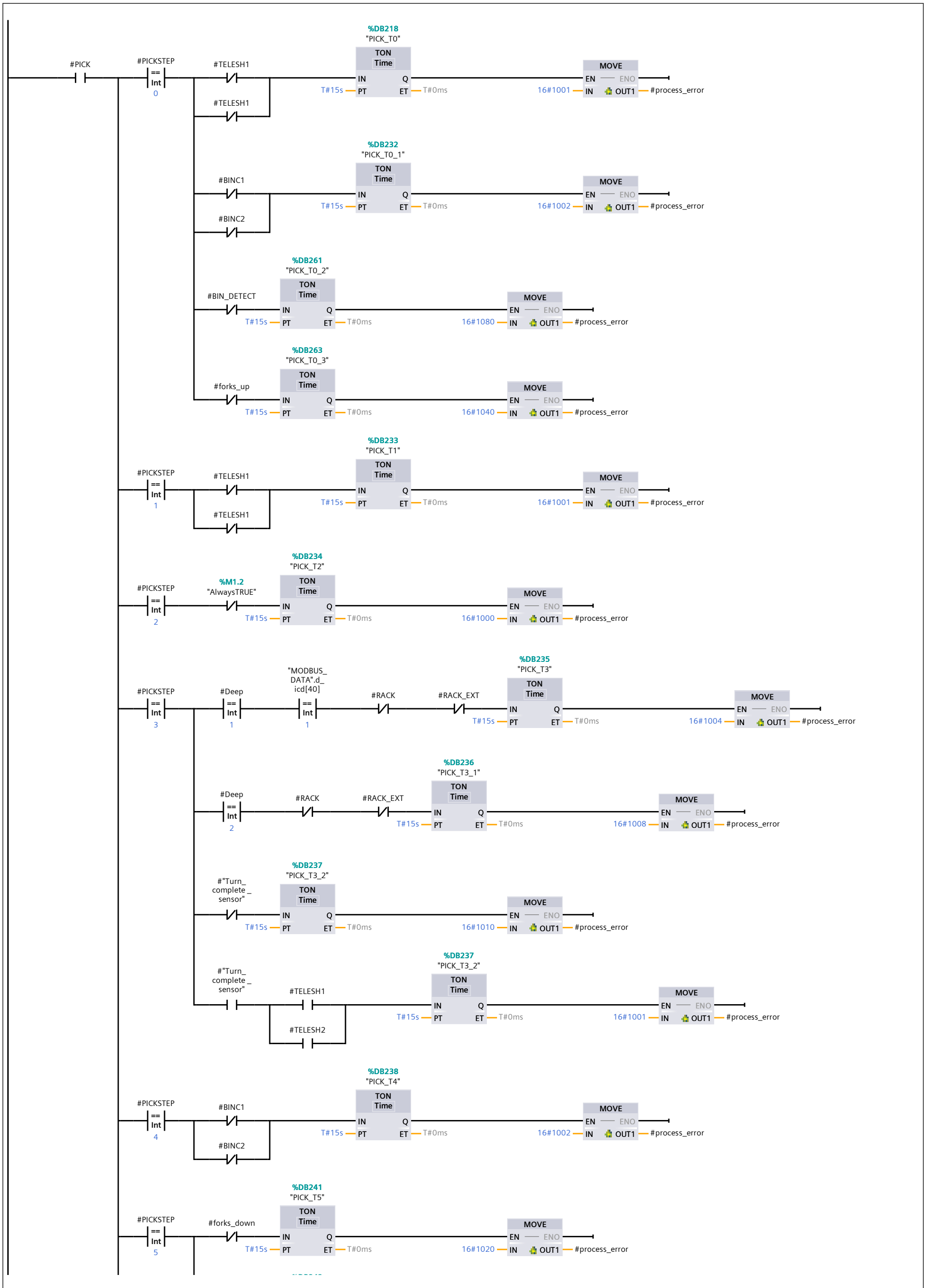


Network 11: Traction_Safety_Stop



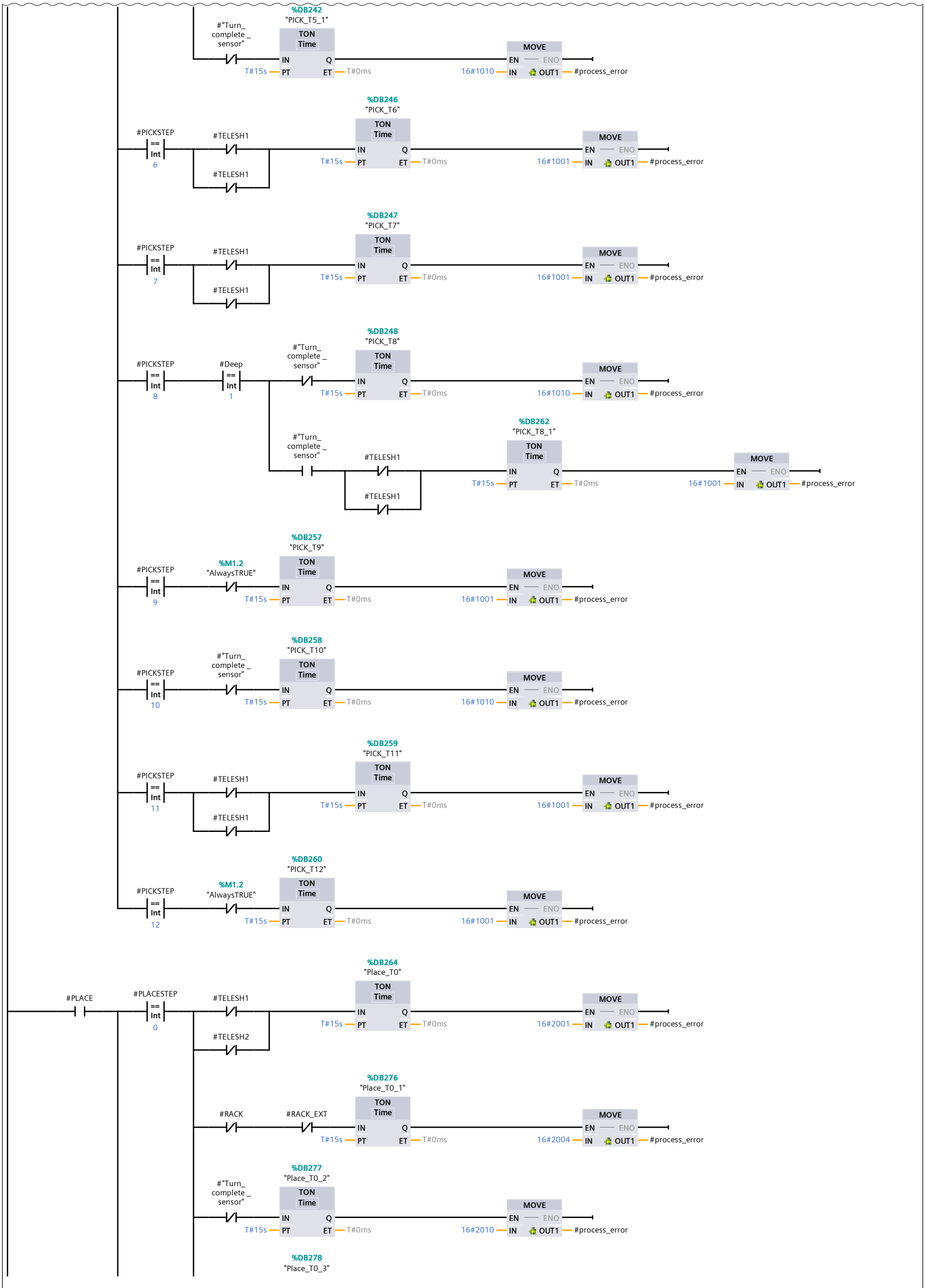
Network 12: Process Error Feedback

Network 12: Process Error Feedback (1.1 / 3.1)



Network 12: Process Error Feedback (2.1 / 3.1)

1.1 (Page1 - 38)



3.1 (Page1 - 40)

Network 12: Process Error Feedback (3.1 / 3.1)

2.1 (Page1 - 39)