```
[HEADER]
DATE = date #2018-03-19
STANDARD = 'PLCopen    v0.1 1993'
SENDER = 'Schneider Automation S.A. PL7 PRO V4.2 '
NB_BLOCKS = 9
[APPLICATION]
NAME = 'STATION'
DATE = date_and_time#2018-03-19-11:18:05
VERSION = '0.0'
[VENDOR]
SOFT_CONFIGURATION
NB_TM = 64
NB_TIMER = 0
NB_MONO = 8
NB_CPT = 32
NB_REG = 4
NB_DRUM = 4
NB_ACTIVE_STEPS = 20
NB_TRANSITIONS = 24
NB_ACTIVE_TIME = 128
CHART (MAX_PAGES = 8 , MAX_STEP = 128)
NB_MACRO_STEPS = 0
NB_INTERNAL_BITS = 256
NB_INTERNAL_WORDS = 512
NB_CONSTANT_WORDS = 128
END_CONFIGURATION
[SOURCE_UNIT]
SU_TYPE = CONF
NAME = 'STATION'
LANGUAGE = OTHERS
BODY =
CONFIGURATION 'STATION'
RESOURCE 'TSX 3721 V2.0' ON TSX_3721
TASK MAST (INTERVAL := t#0 MS, PRIORITY := 110 ,TMAX := t#250 MS);
TASK FAST (INTERVAL := t#5 MS, PRIORITY := 100 ,TMAX := t#100 MS);
END_RESOURCE
END_CONFIGURATION
[SOURCE_UNIT]
SU_TYPE = PROG
NAME = 'Prl'
LANGUAGE = IL
BODY =
READ_WRITE
ADDRESS = MAST PRL
PROGRAM
END_PROGRAM
[SOURCE_UNIT]
SU_TYPE = PROG
NAME = 'Chart'
LANGUAGE = OTHERS
BODY =
READ_WRITE
ADDRESS = MAST CHART
PROG_LANGAGE = GR7
PROGRAM
MAST
```

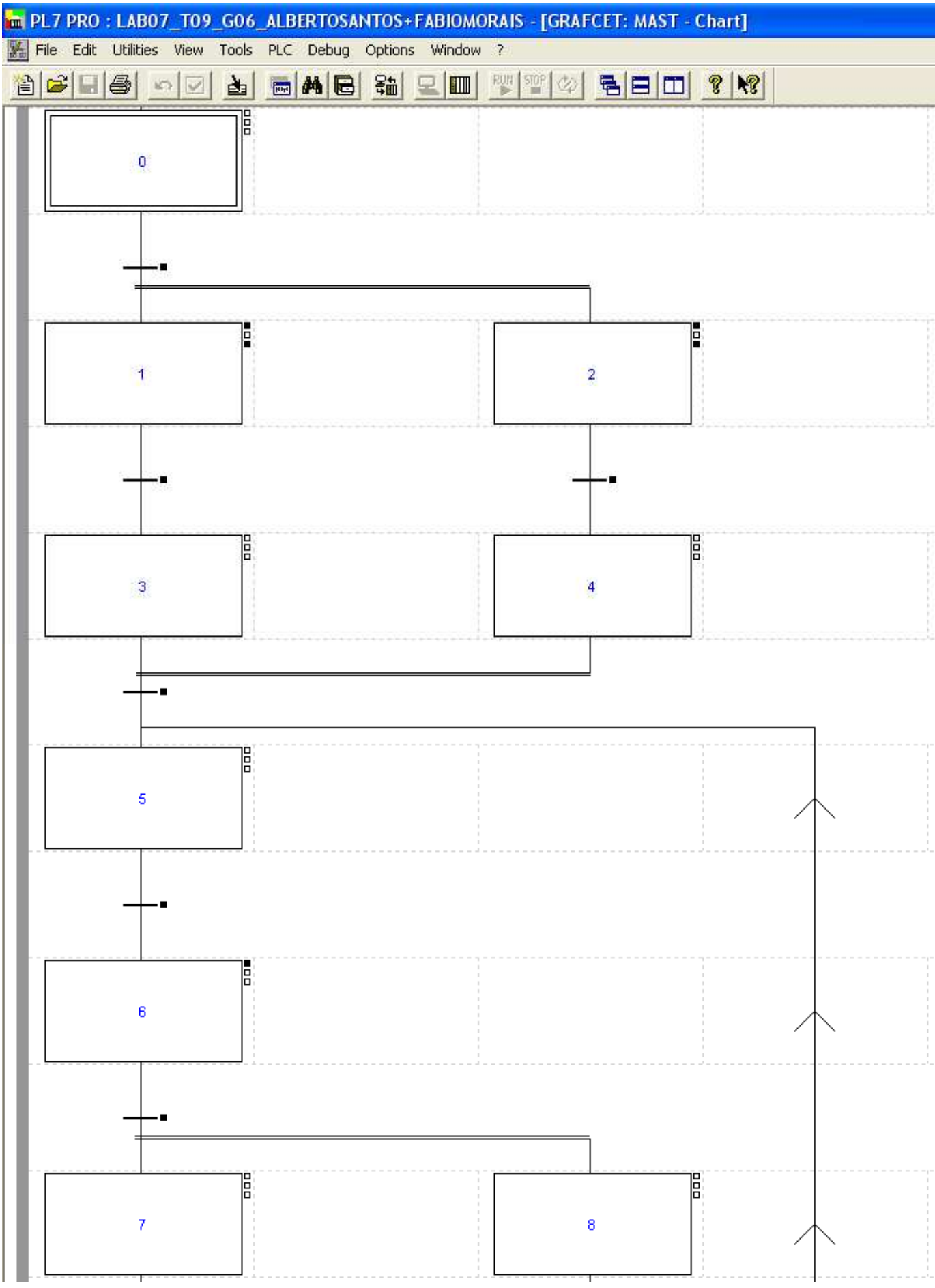
```
'Chart'
NB_PAGES = 8
PAGE 0
INITIAL_STEP 0 AT (C 0,L 1) : END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 0,L 2) :
(*PHRASE*)
%I1.4
(*END_PHRASE*)
END_TRANSITION
STEP 1 AT (C 0,L 3) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.6:=TRUE;
(*END_PHRASE*)
END_ACTION

ACTION (P0,ST) :
(*PHRASE*)
%Q2.6:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 0,L 4) :
(*PHRASE*)
%I1.1
(*END_PHRASE*)
END_TRANSITION
STEP 3 AT (C 0,L 5) : END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 0,L 6) :
(*PHRASE*)
%I1.1
(*END_PHRASE*)
END_TRANSITION
STEP 5 AT (C 0,L 7) : END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 0,L 8) :
(*PHRASE*)
%I1.4
(*END_PHRASE*)
END_TRANSITION
STEP 6 AT (C 0,L 9) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.5:=FALSE;
%Q2.11:=TRUE;
%Q2.9:=TRUE;
%Q2.7:=TRUE;
%Q2.3:=TRUE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 0,L 10) :
(*PHRASE*)
TRUE
(*END_PHRASE*)
END_TRANSITION
STEP 7 AT (C 0,L 11) : END_STEP
```

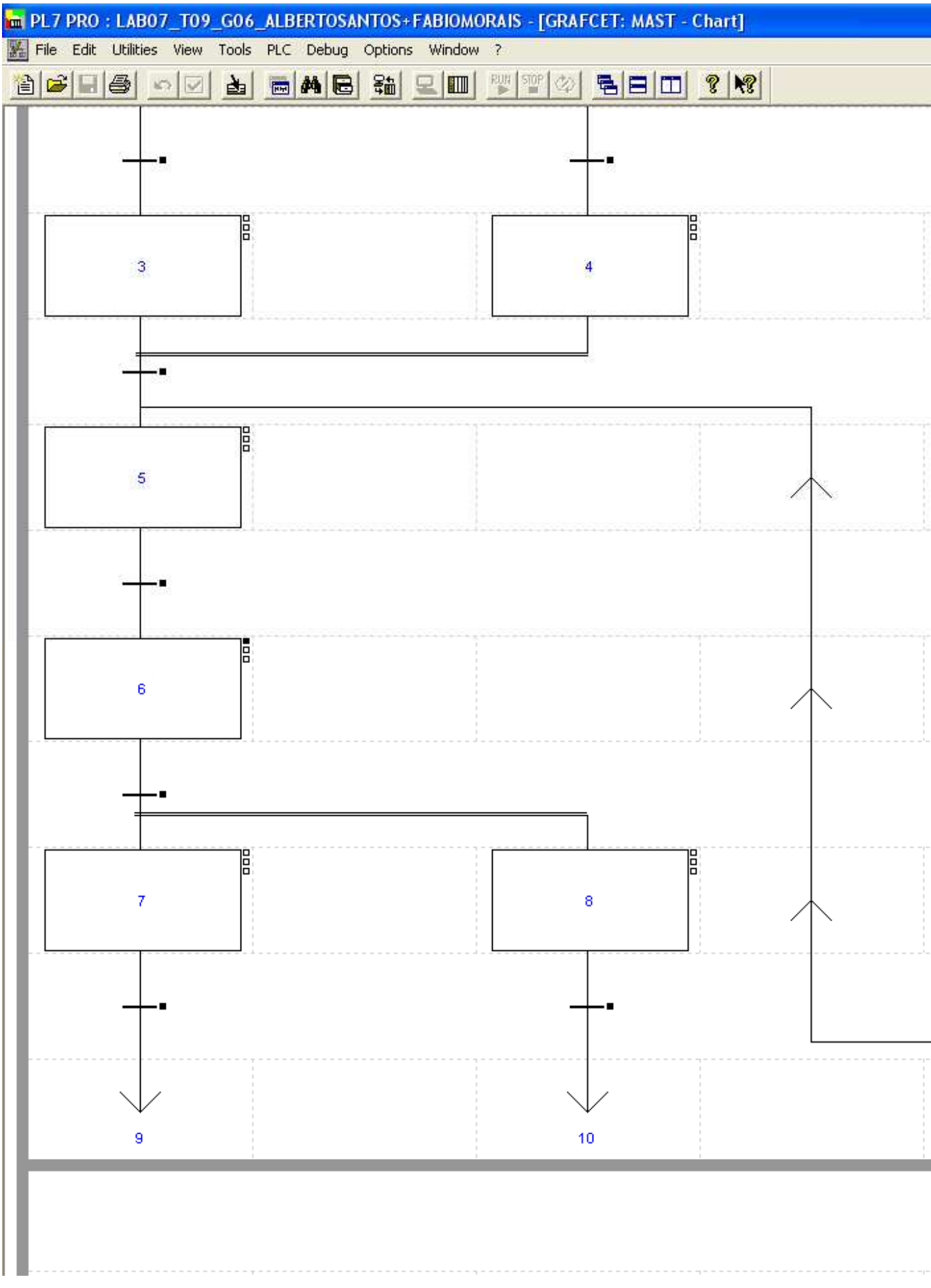
```
TRANSITION (*TOPBOTTOM*) (ST) AT (C 0,L 12) :
(*PHRASE*)
%I1.3
(*END_PHRASE*)
END_TRANSITION
TO 9 AT (C 0,L 13)
STEP 2 AT (C 2,L 3) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.2:=TRUE;
(*END_PHRASE*)
END_ACTION

ACTION (P0,ST) :
(*PHRASE*)
%Q2.2:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 2,L 4) :
(*PHRASE*)
%X2.T>50
(*END_PHRASE*)
END_TRANSITION
STEP 4 AT (C 2,L 5) : END_STEP
STEP 8 AT (C 2,L 11) : END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 2,L 12) :
(*PHRASE*)
%I1.2
(*END_PHRASE*)
END_TRANSITION
TO 10 AT (C 2,L 13)
FROM 7 (*BOTTOM*)   AT (C 4,L 2)
STEP 9 AT (C 4,L 3) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.11:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 4,L 4) :
(*PHRASE*)
%I1.3 AND %I1.2 AND %I1.0
(*END_PHRASE*)
END_TRANSITION
STEP 11 AT (C 4,L 5) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.7:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 4,L 6) :
(*PHRASE*)
NOT %Q2.7
(*END_PHRASE*)
```

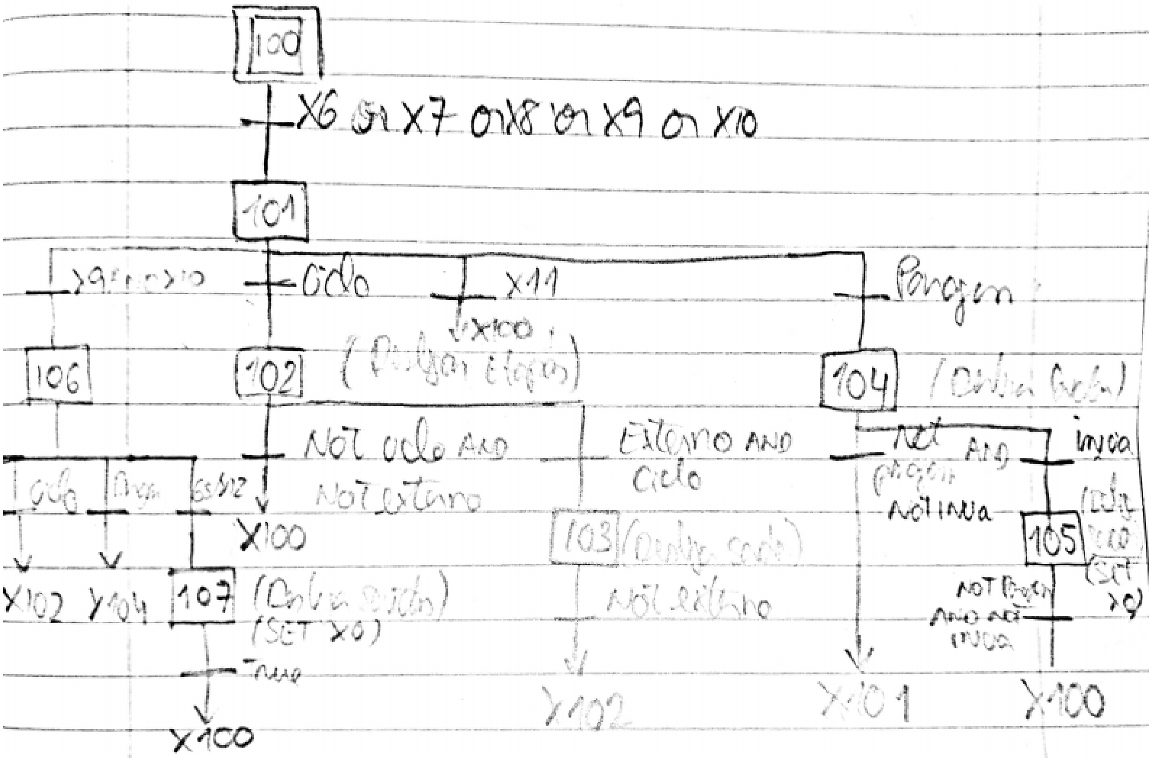
```
END_TRANSITION
STEP 12 AT (C 4,L 7) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.4:=TRUE;
(*END_PHRASE*)
END_ACTION

ACTION (P0,ST) :
(*PHRASE*)
%Q2.4:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 4,L 8) :
(*PHRASE*)
%X12.T>30
(*END_PHRASE*)
END_TRANSITION
STEP 14 AT (C 4,L 9) : END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 4,L 10) :
(*PHRASE*)
NOT %Q2.10
(*END_PHRASE*)
END_TRANSITION
STEP 16 AT (C 4,L 11) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.5:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOP*) (ST) AT (C 4,L 12) :
(*PHRASE*)
%I1.1
(*END_PHRASE*)
END_TRANSITION
FROM 8 (*BOTTOM*)   AT (C 6,L 2)
STEP 10 AT (C 6,L 3) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.9:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
STEP 13 AT (C 6,L 7) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.10:=TRUE;
%Q2.8:=TRUE;
%Q2.1:=TRUE;
(*END_PHRASE*)
END_ACTION

ACTION (P0,ST) :
(*PHRASE*)
```

```
%Q2.1:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
TRANSITION (*TOPBOTTOM*) (ST) AT (C 6,L 8) :
(*PHRASE*)
%X13.T>70
(*END_PHRASE*)
END_TRANSITION
STEP 15 AT (C 6,L 9) :
ACTION (P1,ST) :
(*PHRASE*)
%Q2.10:=FALSE;
%Q2.8:=FALSE;
(*END_PHRASE*)
END_ACTION
END_STEP
T_S_AND_LINK FROM (C 0,L 2) TO (C 2,L 3) := [H_LINK FROM (C 0,L 2) TO (C 2,L 2)]
S_T_AND_LINK FROM (C 6,L 3) TO (C 4,L 4) := [H_LINK FROM (C 6,L 4) TO (C 4,L 4)]
S_T_AND_LINK FROM (C 2,L 5) TO (C 0,L 6) := [H_LINK FROM (C 2,L 6) TO (C 0,L 6)]
T_S_OR_LINK FROM (C 4,L 12) TO (C 0,L 7) := [H_LINK FROM (C 4,L 12) TO (C 3,L 12), V_LINK
FROM (C 3,L 12) TO (C 3,L 6), H_LINK FROM (C 3,L 6) TO (C 0,L 6)]
T_S_AND_LINK FROM (C 4,L 6) TO (C 6,L 7) := [H_LINK FROM (C 4,L 6) TO (C 6,L 6)]
S_T_AND_LINK FROM (C 6,L 9) TO (C 4,L 10) := [H_LINK FROM (C 6,L 10) TO (C 4,L 10)]
T_S_AND_LINK FROM (C 0,L 10) TO (C 2,L 11) := [H_LINK FROM (C 0,L 10) TO (C 2,L 10)]
END_PAGE
PAGE 1
END_PAGE
PAGE 2
END_PAGE
PAGE 3
END_PAGE
PAGE 4
END_PAGE
PAGE 5
END_PAGE
PAGE 6
END_PAGE
PAGE 7
END_PAGE
END_PROGRAM
[SOURCE_UNIT]
SU_TYPE = PROG
NAME = 'Post'
LANGUAGE = IL
BODY =
READ_WRITE
ADDRESS = MAST POST
PROGRAM
END_PROGRAM
[DATA_UNIT]
DA_TYPE =
LOCATION =
NAME =
BODY =
VAR_GLOBAL
```

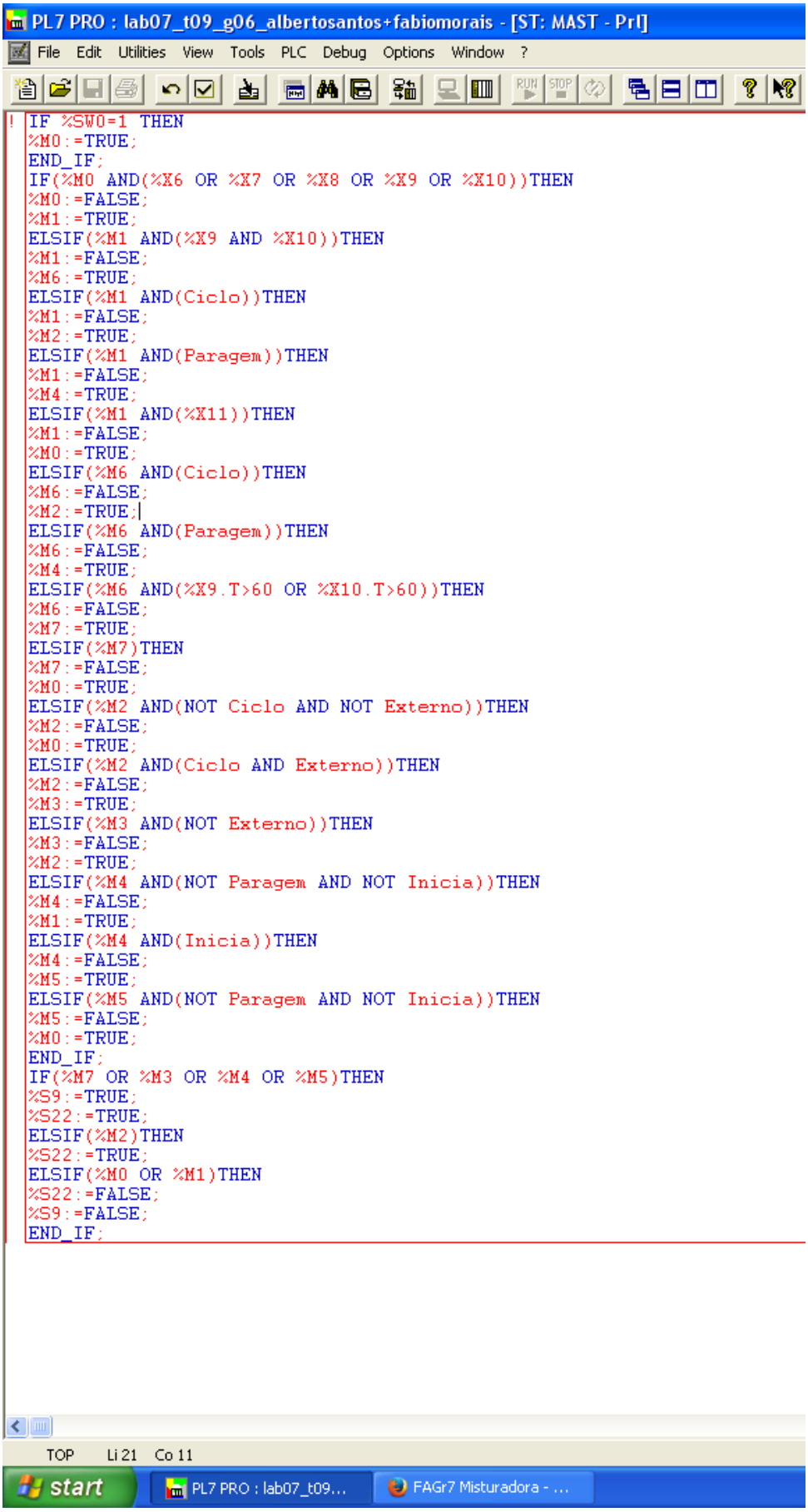
```
M_max AT %I1.0 : EBOOL;
M_min AT %I1.1 : EBOOL;
Prato2 AT %I1.2 : EBOOL;
Prato1 AT %I1.3 : EBOOL;
Inicia AT %I1.4 : EBOOL;
Paragem AT %I1.5 : EBOOL;
Ciclo AT %I1.6 : EBOOL;
Esquerda AT %Q2.1 : EBOOL;
Direita AT %Q2.2 : EBOOL;
Bomba AT %Q2.3 : EBOOL;
Motor_pá AT %Q2.4 : EBOOL;
V7 AT %Q2.5 : EBOOL;
V6 AT %Q2.6 : EBOOL;
V5 AT %Q2.7 : EBOOL;
V4 AT %Q2.8 : EBOOL;
V3 AT %Q2.9 : EBOOL;
V2 AT %Q2.10 : EBOOL;
V1 AT %Q2.11 : EBOOL;
END_VAR
[DATA_UNIT]
DA_TYPE = 'TABLE'
LOCATION =
NAME = 'Misturador'
VERSION = '1.0'
BODY =
VAR_GLOBAL
AT %Q2.1 := (1,DECI);
AT %Q2.2 := (2,DECI);
AT %Q2.3 := (3,DECI);
AT %Q2.4 := (4,DECI);
AT %Q2.5 := (5,DECI);
AT %Q2.6 := (6,DECI);
AT %Q2.7 := (7,DECI);
AT %Q2.8 := (8,DECI);
AT %Q2.9 := (9,DECI);
AT %Q2.10 := (10,DECI);
AT %Q2.11 := (11,DECI);
AT %I1.0 := (12,DECI);
AT %I1.1 := (13,DECI);
AT %I1.2 := (14,DECI);
AT %I1.3 := (15,DECI);
AT %I1.4 := (16,DECI);
AT %I1.5 := (17,DECI);
AT %I1.6 := (18,DECI);
END_VAR
[EOF]
```


PL7 PRO : LAB07_T09_G06_ALBERTOSANTOS+FABIOMORAIS - [GRAFCET: MAST - Chart]
File Edit Utilities View Tools PLC Debug Options Window ?
0
1
2
3
4
5
6
7
8


PL7 PRO : LAB07_T09_G06_ALBERTOSANTOS+FABIOMORAIS - [GRAFCET: MAST - Chart]
File Edit Utilities View Tools PLC Debug Options Window ?
3
4
5
6
7
8
9
10



100
X6 or X7 or X8 or X9 or X10
101
Ciclo
X11
X100
Paragem
106
102
104
NOT ciclo AND
NOT externo
Externo AND
ciclo
AND
X100
103
105
X102
107
NOT externo
X101
X100
(SET X0)
True
X100


PL7 PRO : lab07_t09_g06_albertosantos+fabiomorais - [ST: MAST - Prl]
File Edit Utilities View Tools PLC Debug Options Window ?
IF %SW0=1 THEN
%M0:=TRUE;
END_IF;
IF(%M0 AND(%X6 OR %X7 OR %X8 OR %X9 OR %X10))THEN
%M0:=FALSE;
%M1:=TRUE;
ELSIF(%M1 AND(%X9 AND %X10))THEN
%M1:=FALSE;
%M6:=TRUE;
ELSIF(%M1 AND(Ciclo))THEN
%M1:=FALSE;
%M2:=TRUE;
ELSIF(%M1 AND(Paragem))THEN
%M1:=FALSE;
%M4:=TRUE;
ELSIF(%M1 AND(%X11))THEN
%M1:=FALSE;
%M0:=TRUE;
ELSIF(%M6 AND(Ciclo))THEN
%M6:=FALSE;
%M2:=TRUE;
ELSIF(%M6 AND(Paragem))THEN
%M6:=FALSE;
%M4:=TRUE;
ELSIF(%M6 AND(%X9.T>60 OR %X10.T>60))THEN
%M6:=FALSE;
%M7:=TRUE;
ELSIF(%M7)THEN
%M7:=FALSE;
%M0:=TRUE;
ELSIF(%M2 AND(NOT Ciclo AND NOT Externo))THEN
%M2:=FALSE;
%M0:=TRUE;
ELSIF(%M2 AND(Ciclo AND Externo))THEN
%M2:=FALSE;
%M3:=TRUE;
ELSIF(%M3 AND(NOT Externo))THEN
%M3:=FALSE;
%M2:=TRUE;
ELSIF(%M4 AND(NOT Paragem AND NOT Inicia))THEN
%M4:=FALSE;
%M1:=TRUE;
ELSIF(%M4 AND(Inicia))THEN
%M4:=FALSE;
%M5:=TRUE;
ELSIF(%M5 AND(NOT Paragem AND NOT Inicia))THEN
%M5:=FALSE;
%M0:=TRUE;
END_IF;
IF(%M7 OR %M3 OR %M4 OR %M5)THEN
%S9:=TRUE;
%S22:=TRUE;
ELSIF(%M2)THEN
%S22:=TRUE;
ELSIF(%M0 OR %M1)THEN
%S22:=FALSE;
%S9:=FALSE;
END_IF;
TOP Li 21 Co 11
start
PL7 PRO : lab07_t09...
FAGr7 Misturadora - ...