PLC

TRATAMIENTO DE SEÑALES ANÁLOGAS

ESCALAMIENTO

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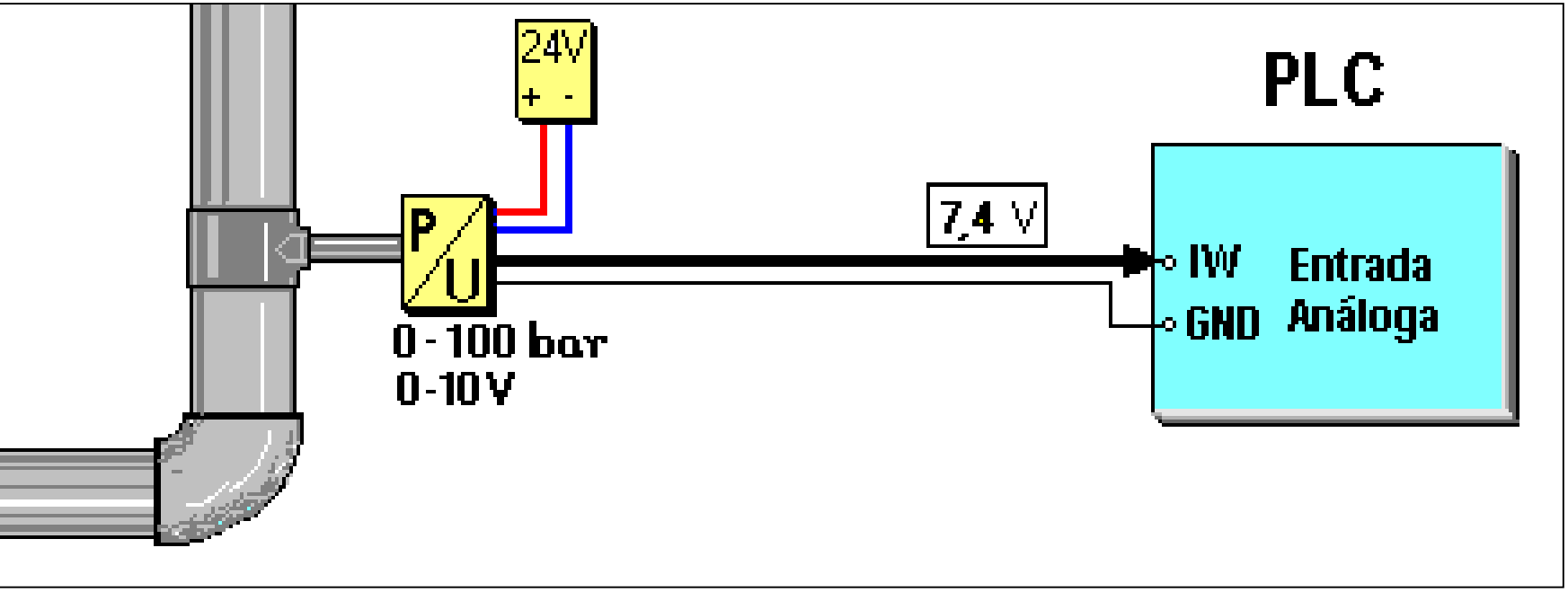
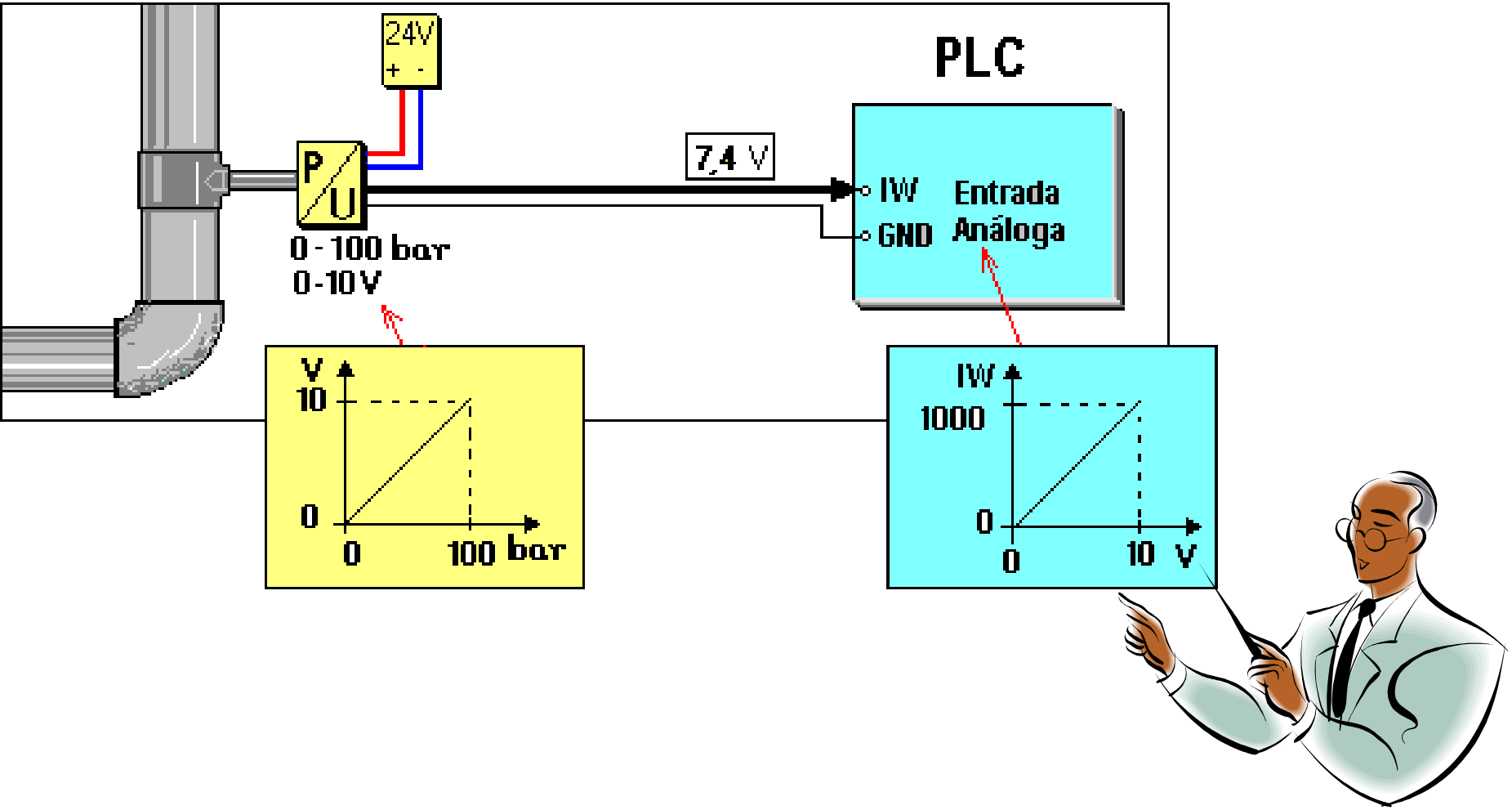
OBJETIVO:

Interpretar y desarrollar programas de PLC con aplicaciones de señales análogas

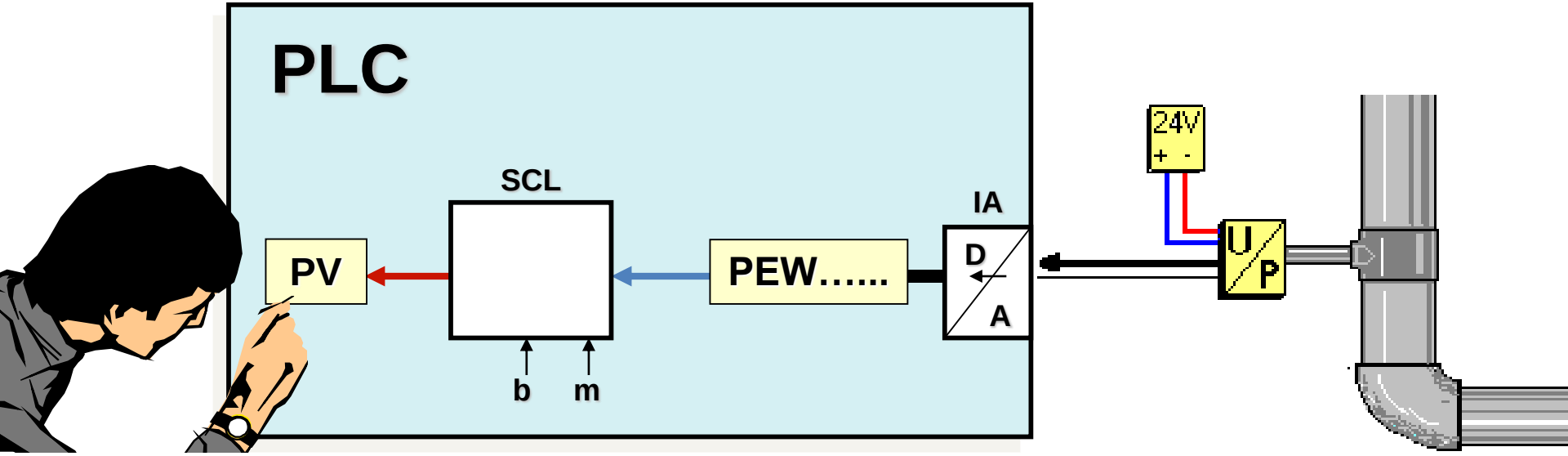
SEÑALES ANÁLOGAS - ESCALAMIENTO



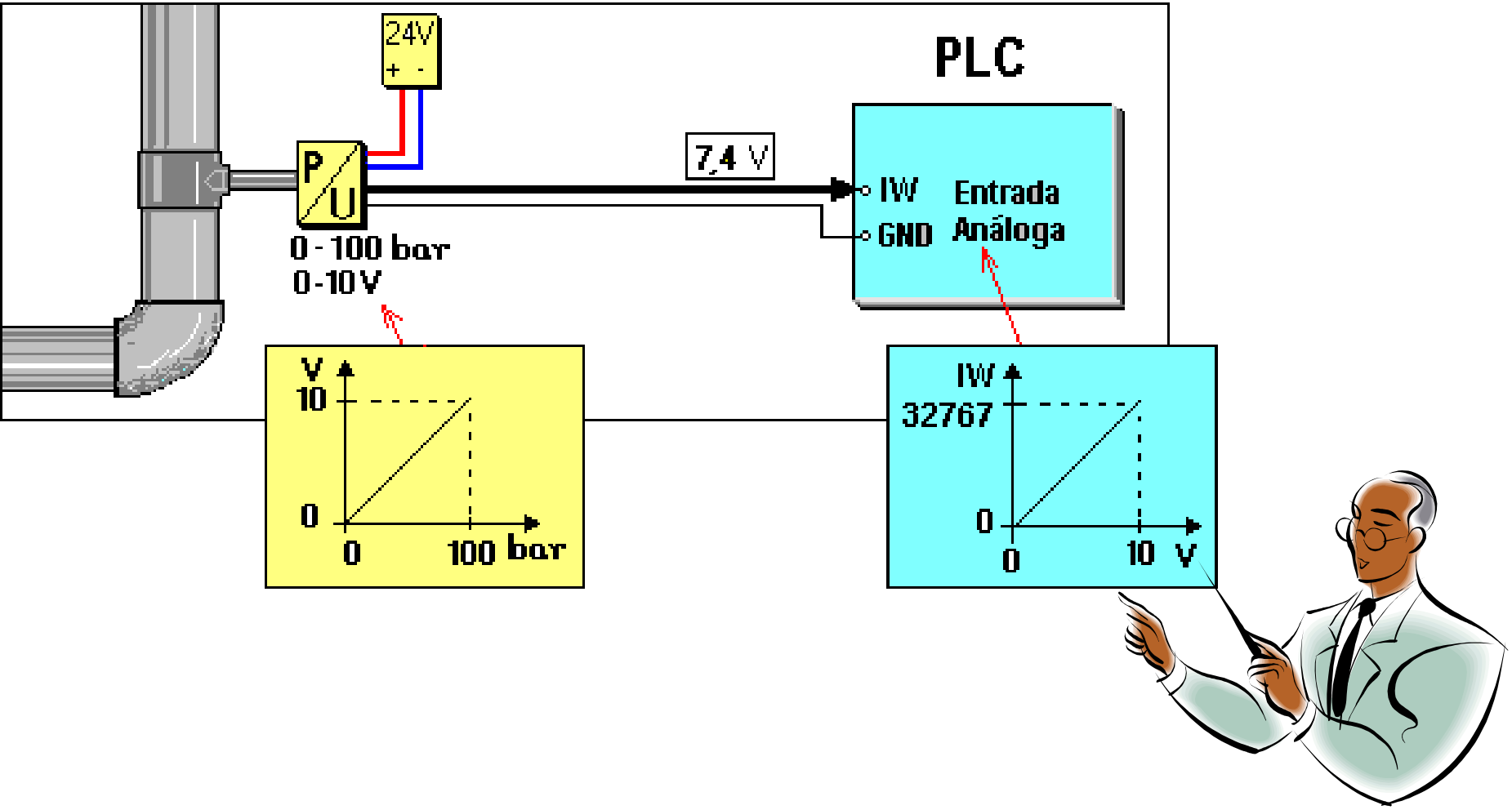
ESCALAMIENTO A VALORES DE INGENIERÍA, PRESIÓN



MONITOREO DE PRESIÓN



ESCALAMIENTO A VALORES DE INGENIERÍA, PRESIÓN



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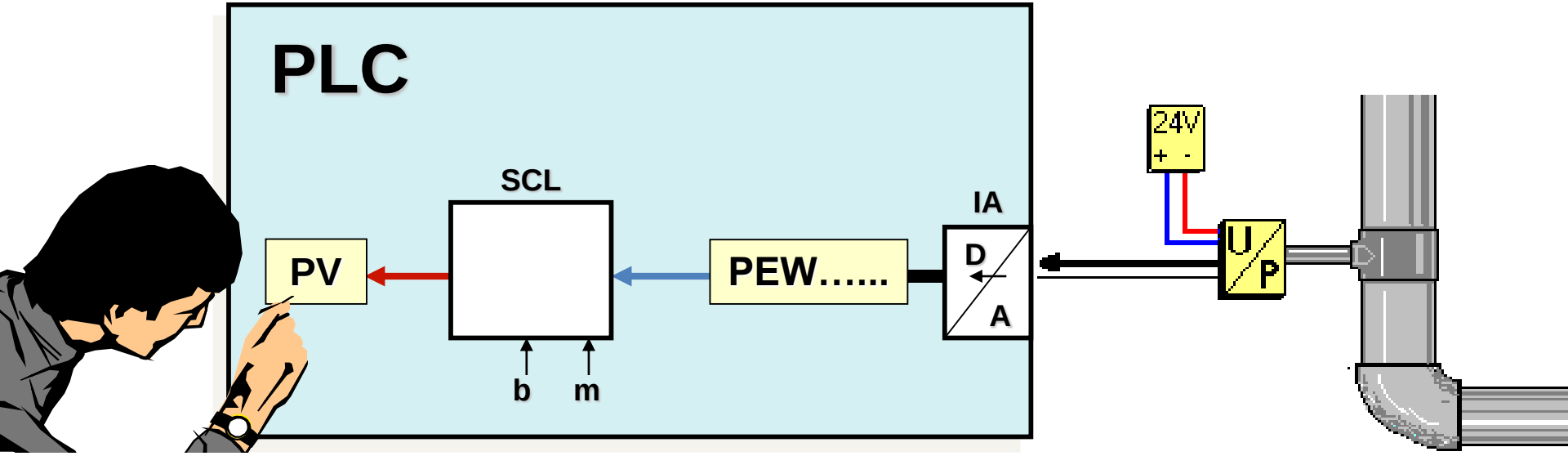
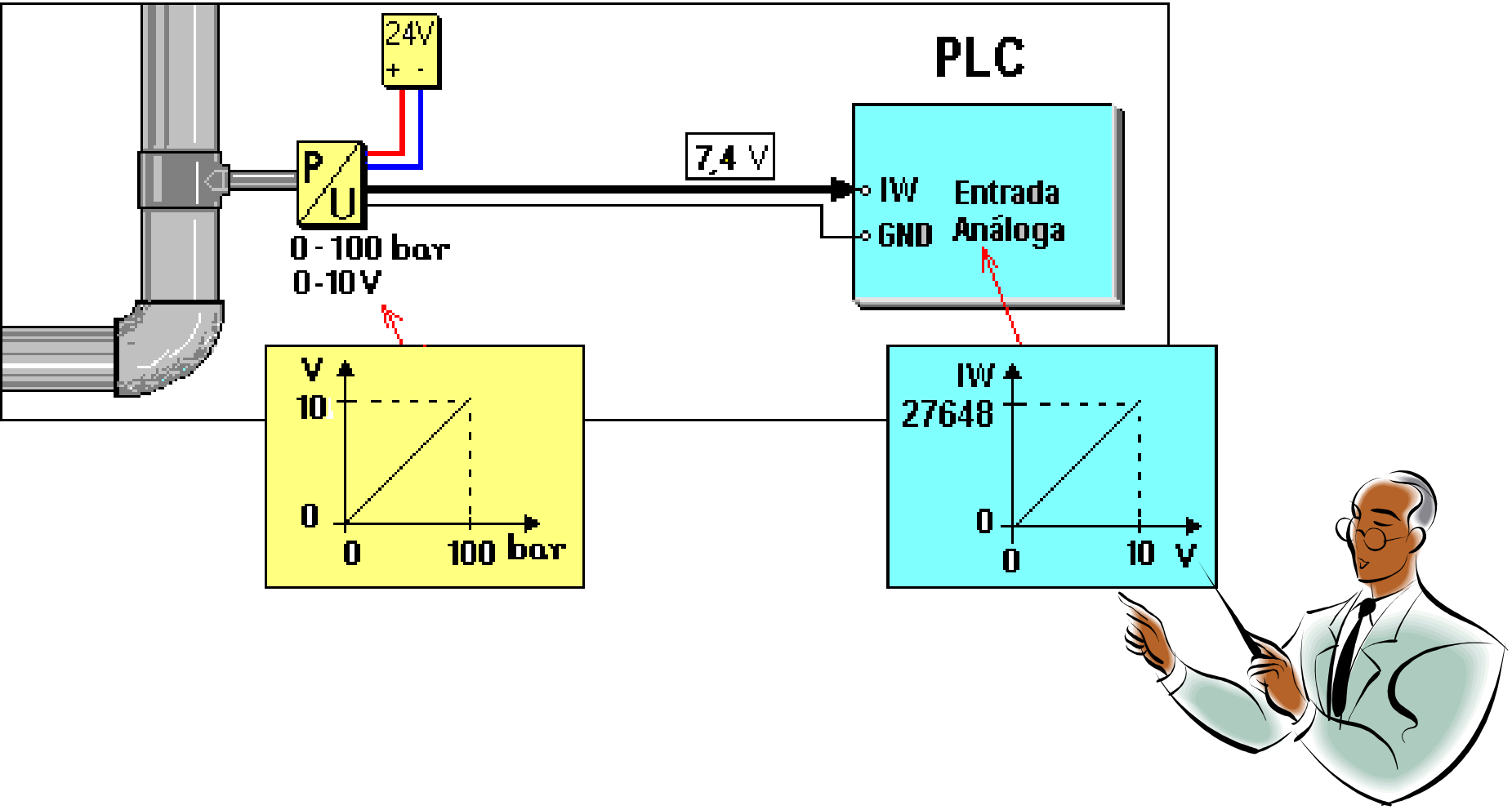
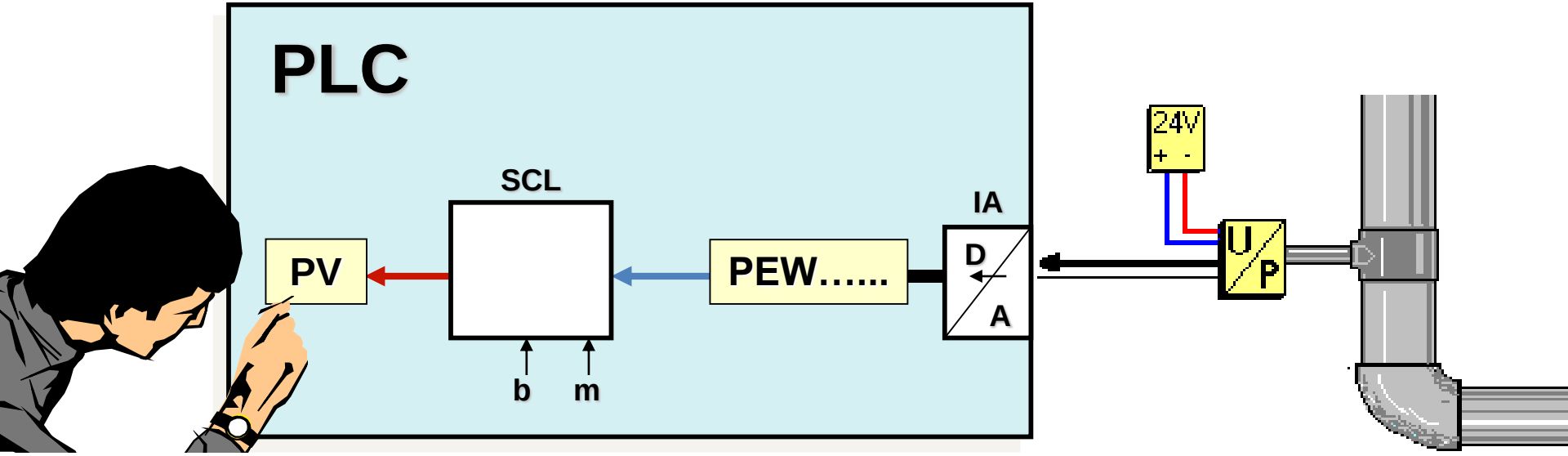


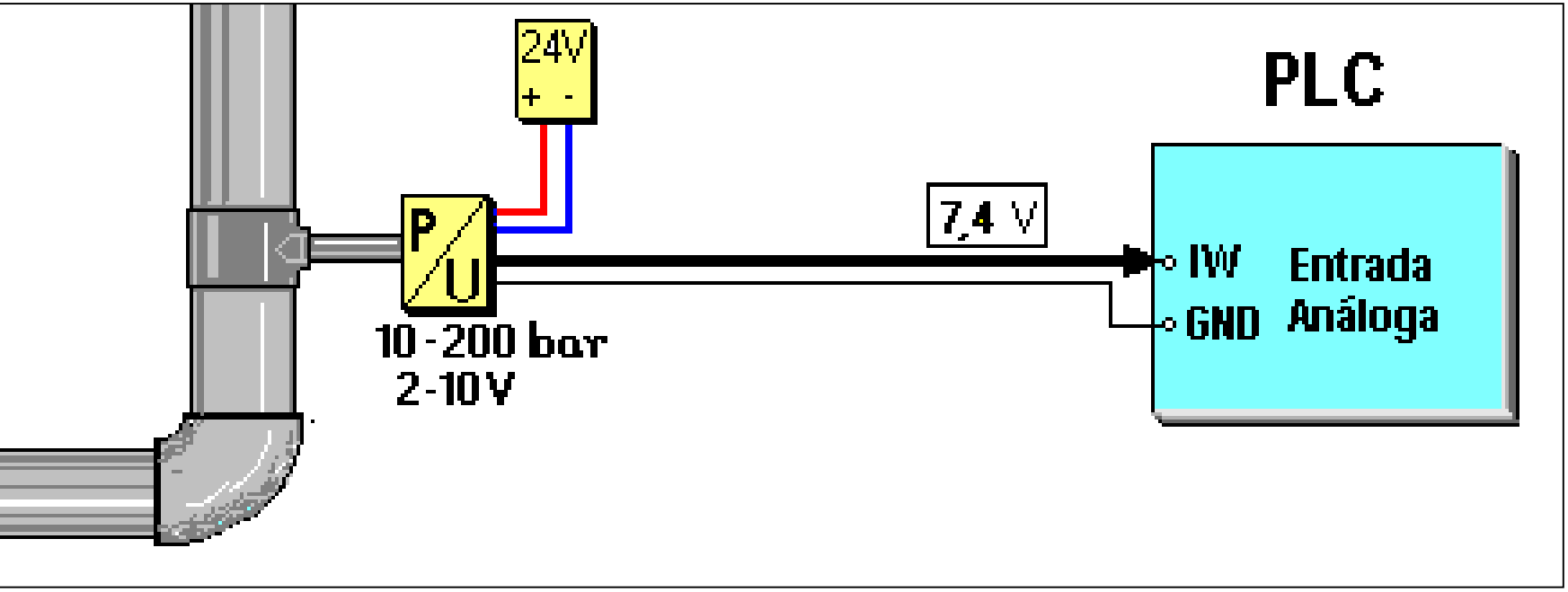
ESCALAMIENTO A VALORES DE INGENIERÍA, PRESIÓN



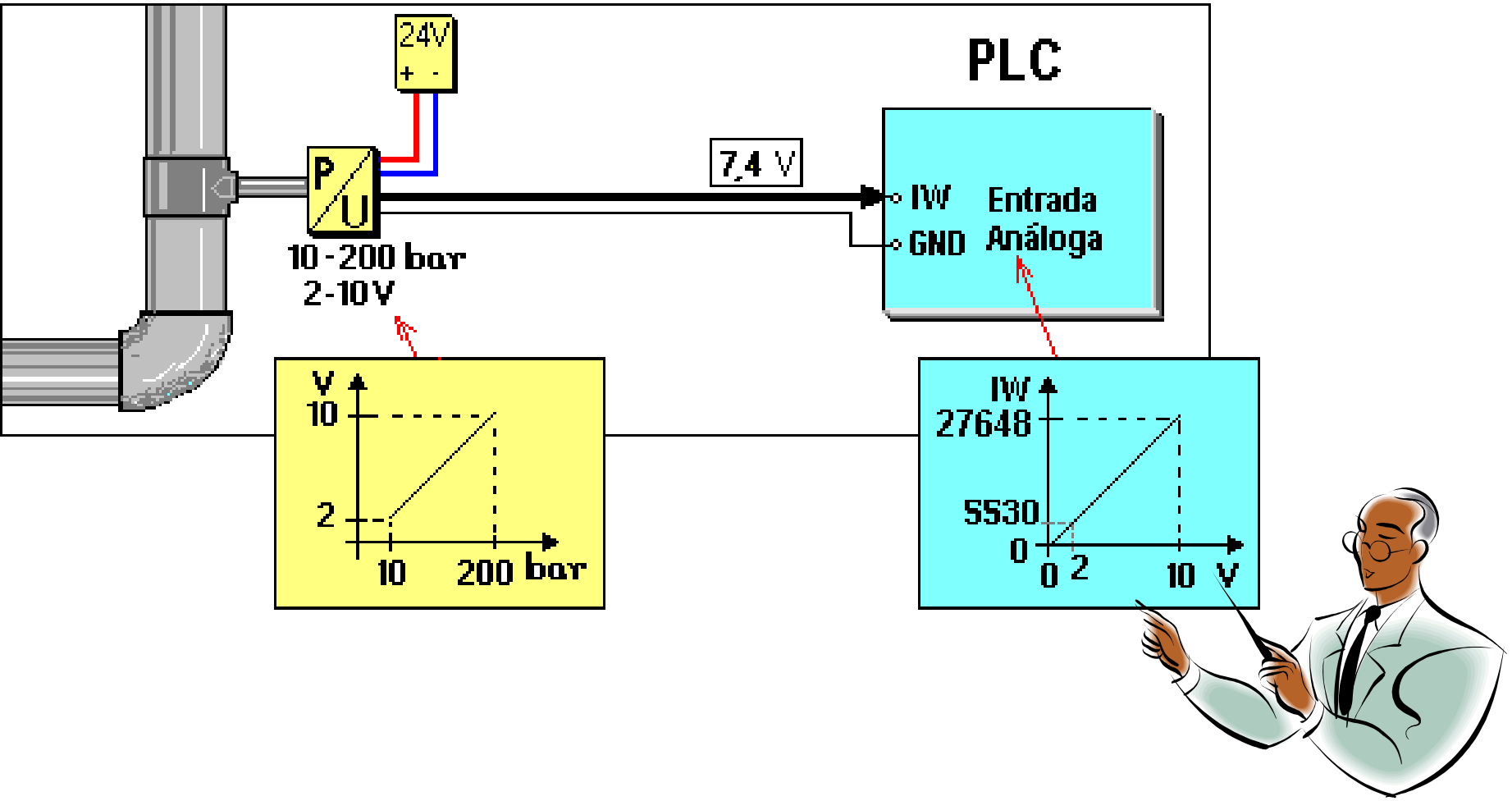
MONITOREO DE PRESIÓN



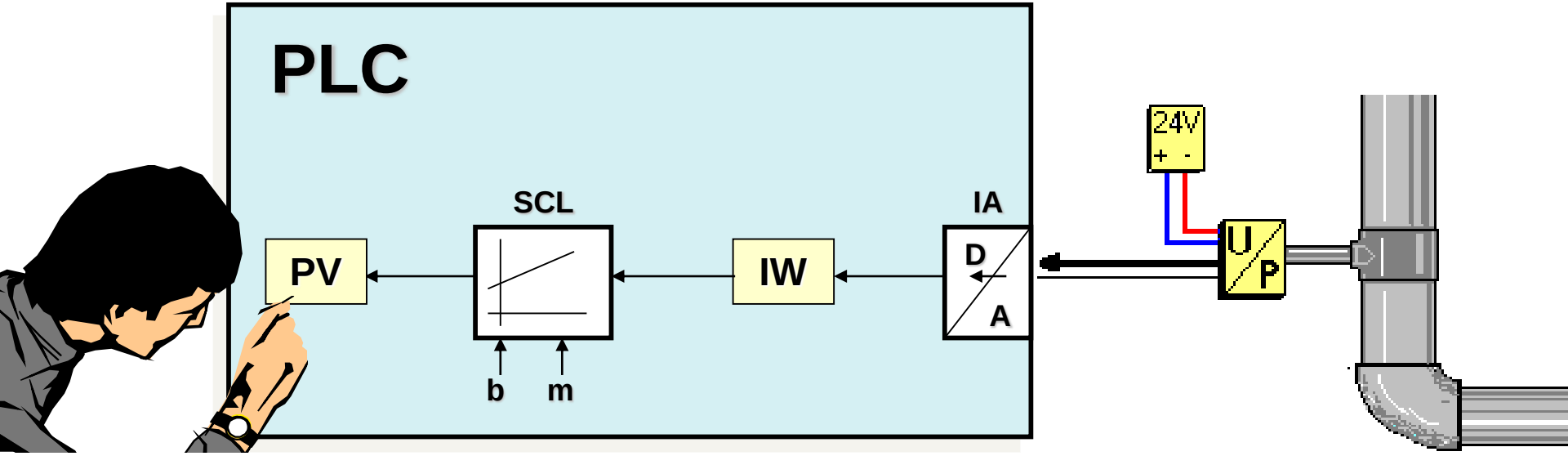
ESCALAMIENTO A VALORES DE INGENIERÍA, PRESIÓN



ESCALAMIENTO A VALORES DE INGENIERÍA, PRESIÓN

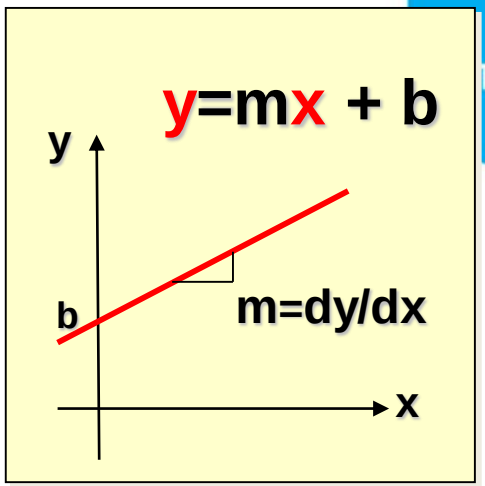


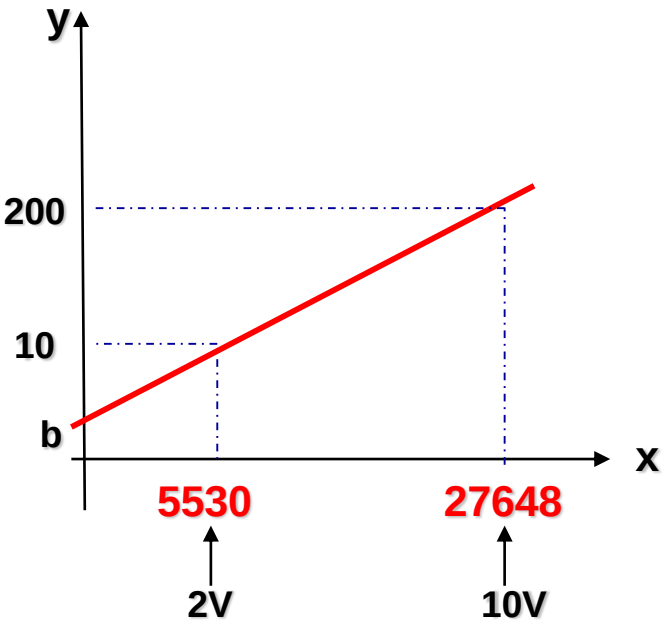
MONITOREO DE PRESIÓN

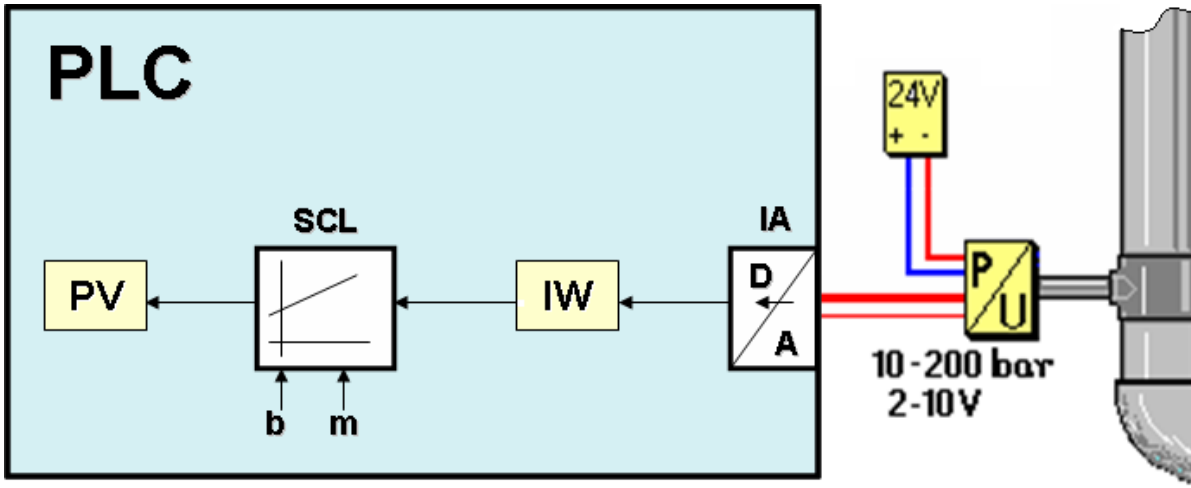


ESCALAMIENTO

$$y = \frac{x}{\frac{1}{m}} + b$$







$$m = \frac{dy}{dx} = \frac{200-10}{27648 - 5530}$$

$$m = 0.00859$$

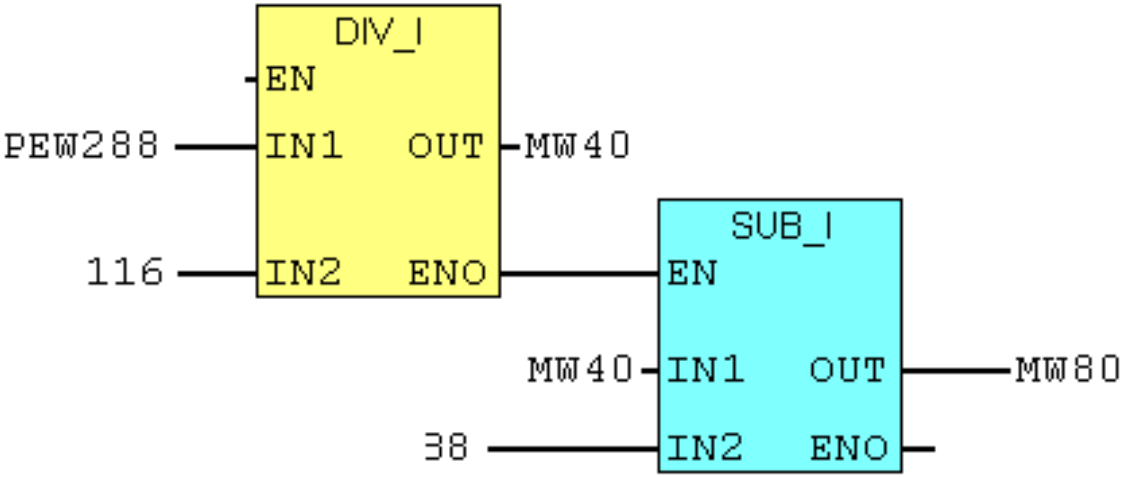
$$\frac{1}{m} = 116$$

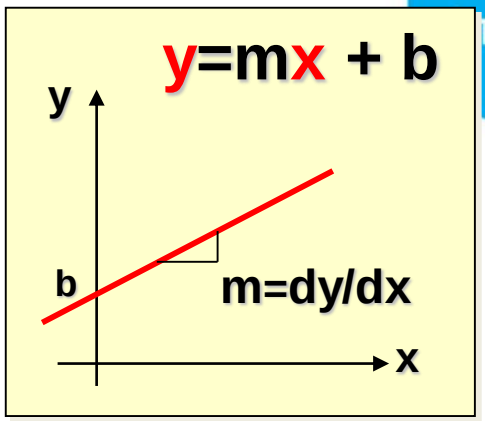
$$y = \frac{x}{116} + b$$

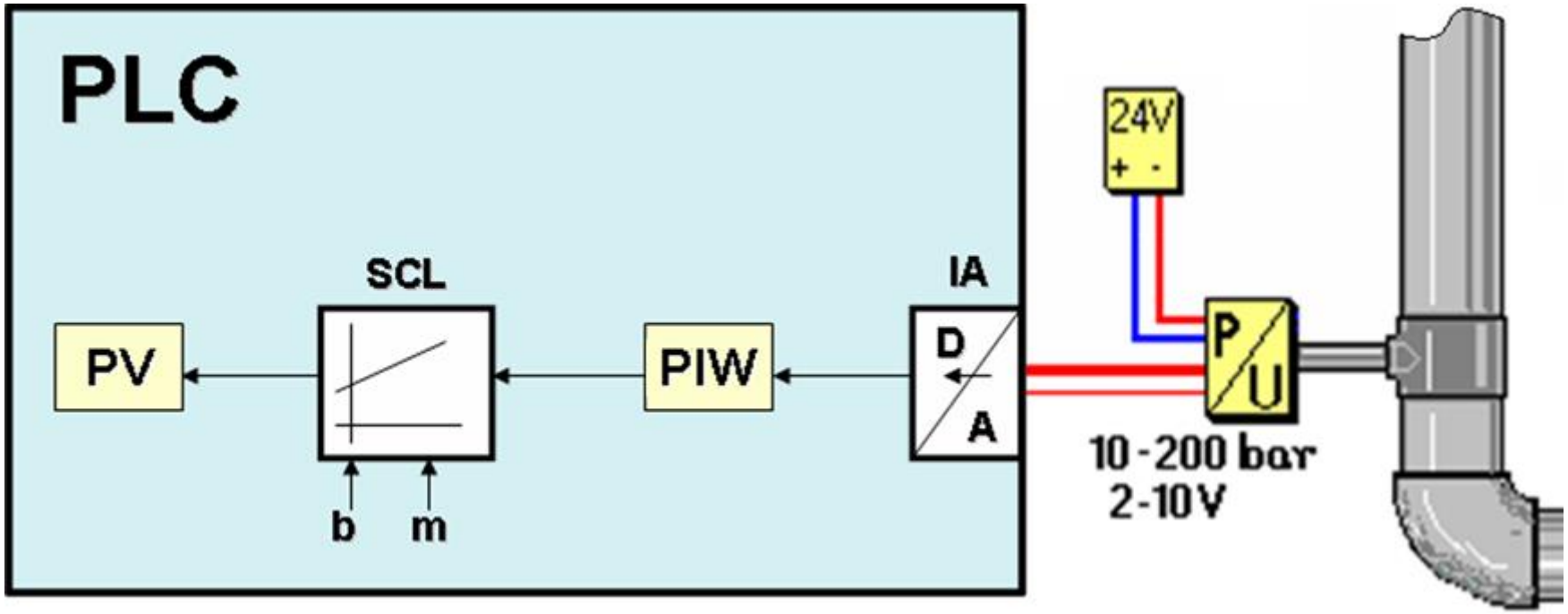
x=5530
y=10

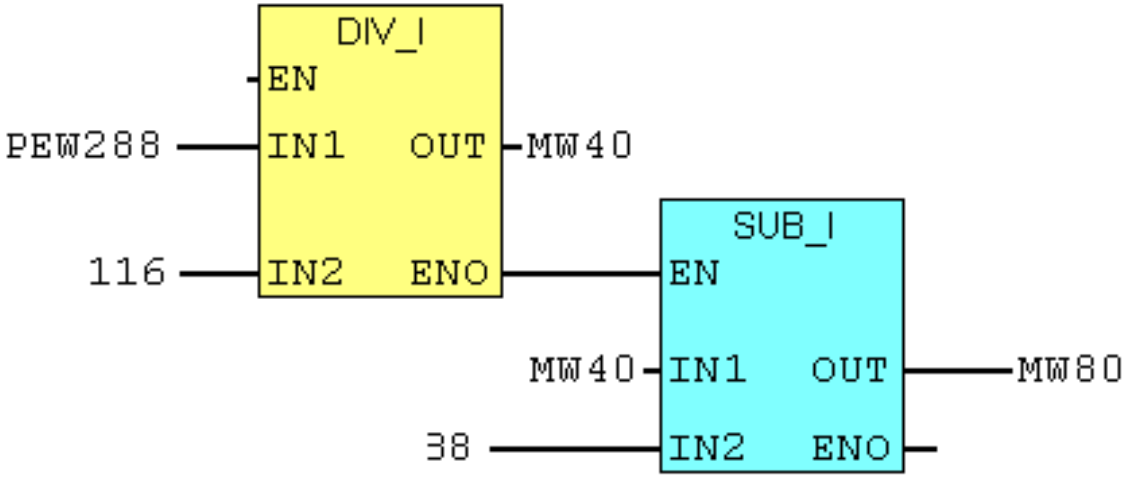
$$10 = \frac{5530}{116} + b$$

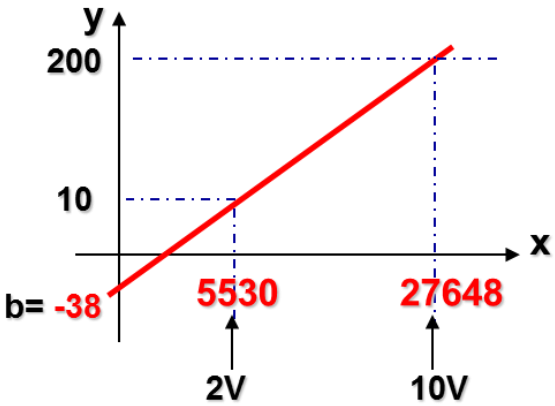
$$b = -38$$

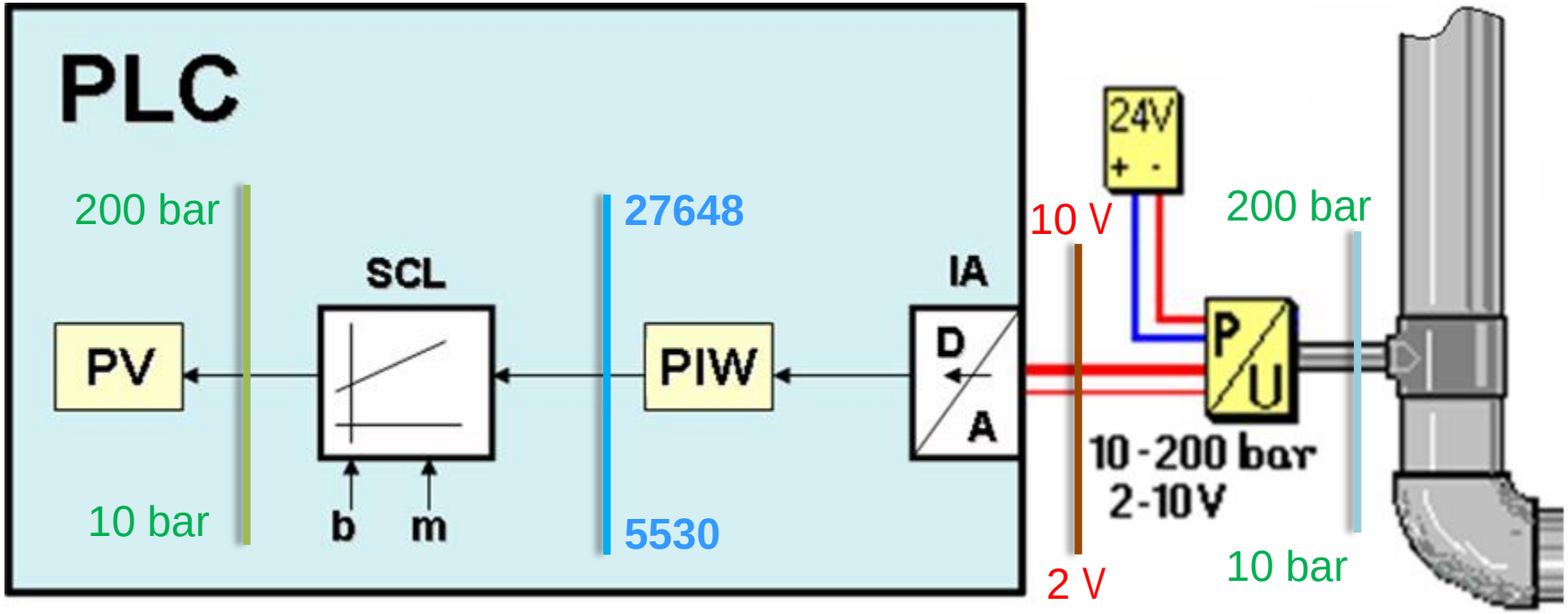

DIV_I
EN
PEW288
IN1
OUT
MW40
116
IN2
ENO
SUB_I
EN
MW40
IN1
OUT
MW80
38
IN2
ENO


y=mx + b
y
b
m=dy/dx
x

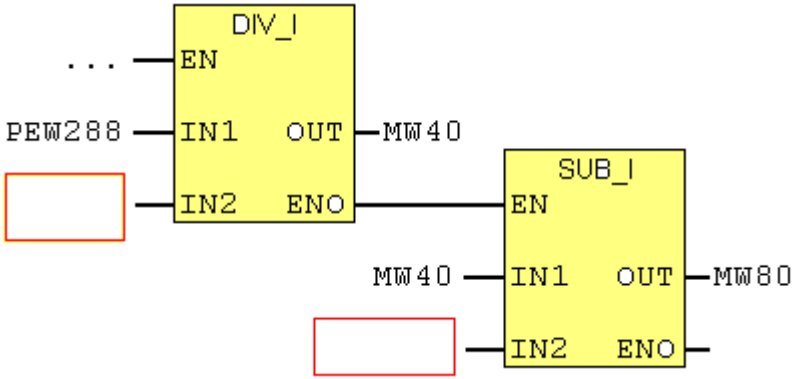

PLC
SCL
IA
PV
PIW
D
A
b
m
24V
+ -
P
U
10-200 bar
2-10V

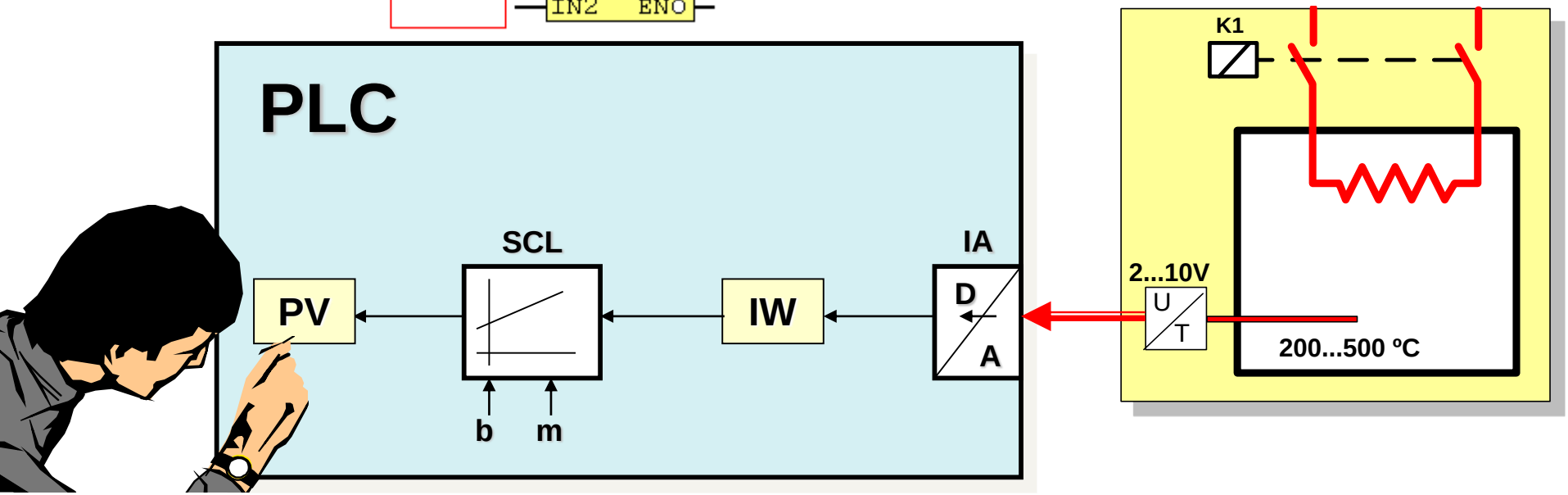

DIV_I
EN
PEW288
IN1
OUT
MW40
116
IN2
ENO
SUB_I
EN
MW40
IN1
OUT
MW80
38
IN2
ENO


y
200
10
x
b= -38
5530
27648
2V
10V

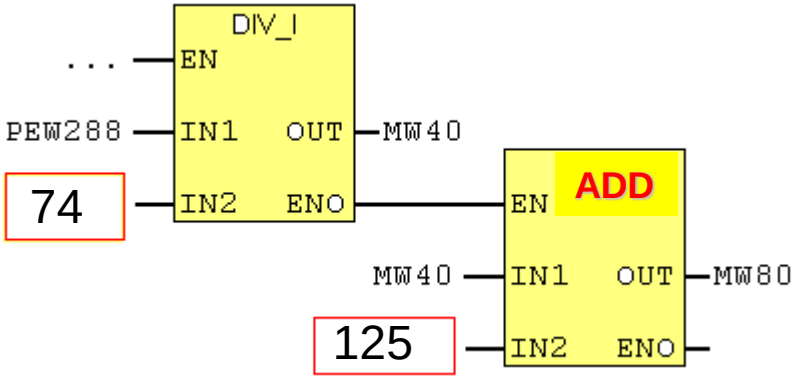

PLC
200 bar
27648
SCL
IA
PV
PIW
D
A
10 bar
b
m
5530
24V
+ -
10 V
200 bar
P
U
10 - 200 bar
2 - 10 V
2 V
10 bar

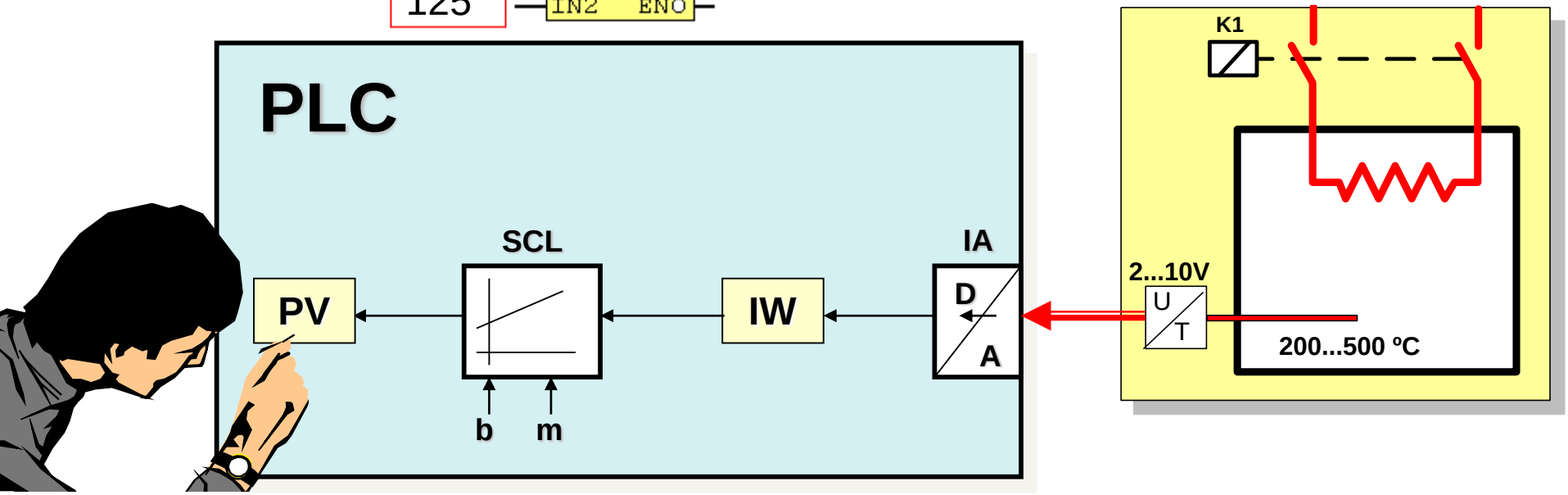
MONITOREO DE TEMPERATURA





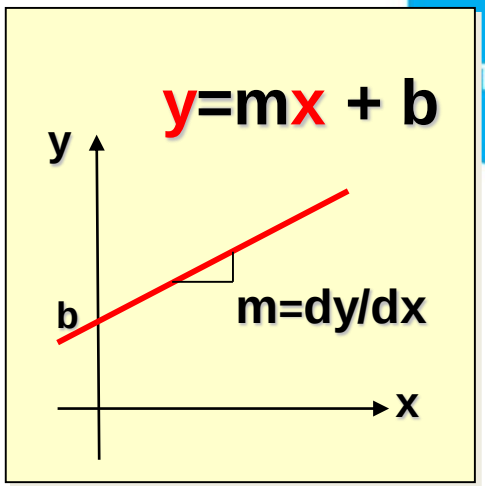
MONITOREO DE TEMPERATURA

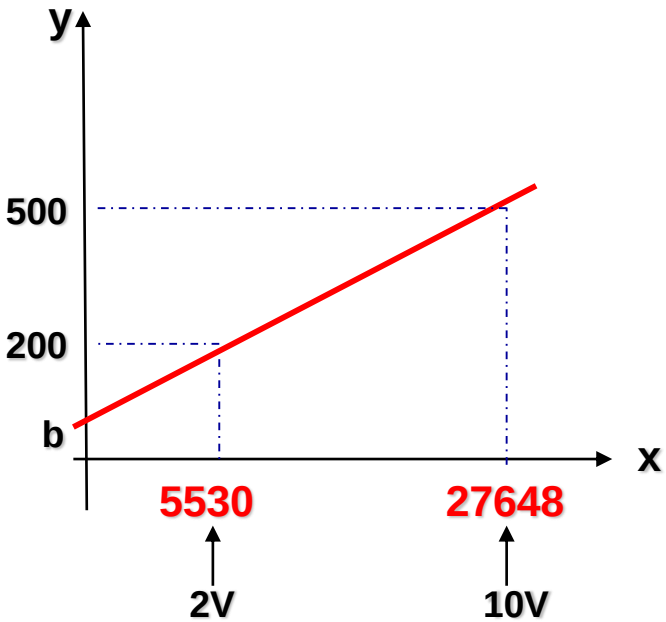


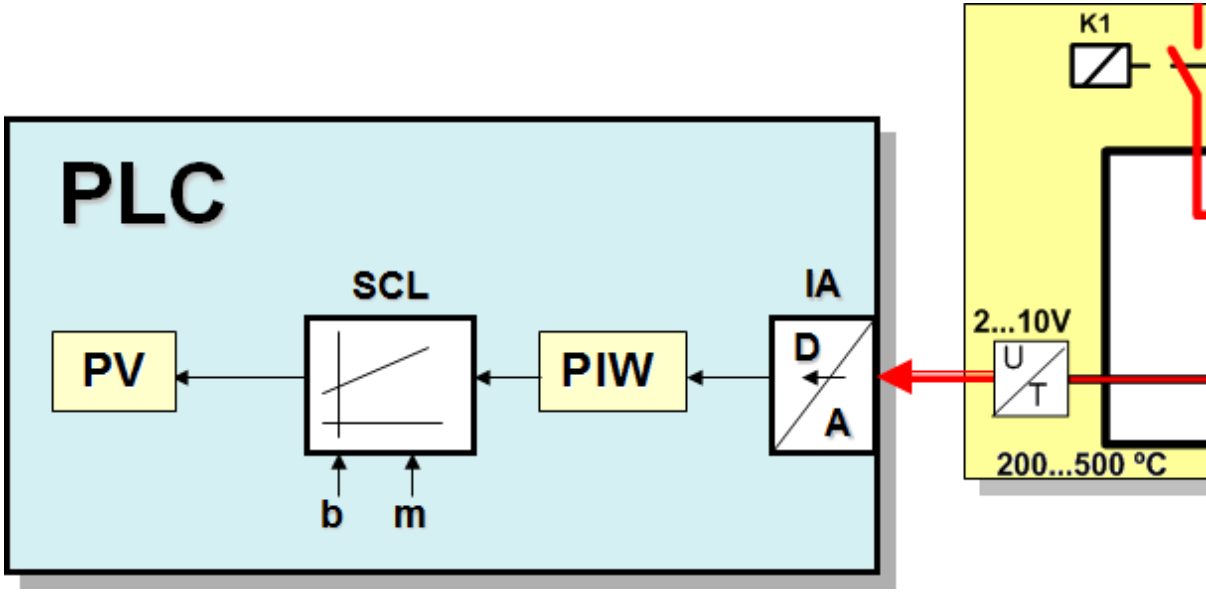


ESCALAMIENTO

$$y = \frac{x}{\frac{1}{m}} + b$$







$$m = \frac{dy}{dx} = \frac{500-200}{27648 - 5530}$$

$$m = 0.01356$$

$$\frac{1}{m} = 74$$

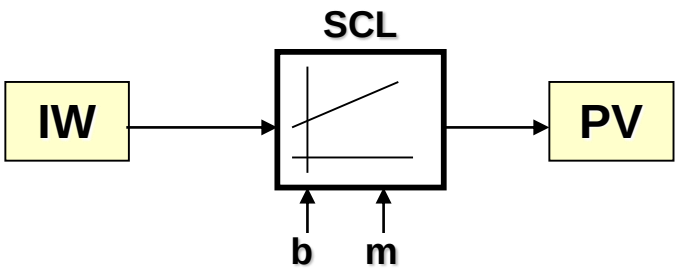
$$y = \frac{x}{74} + b$$

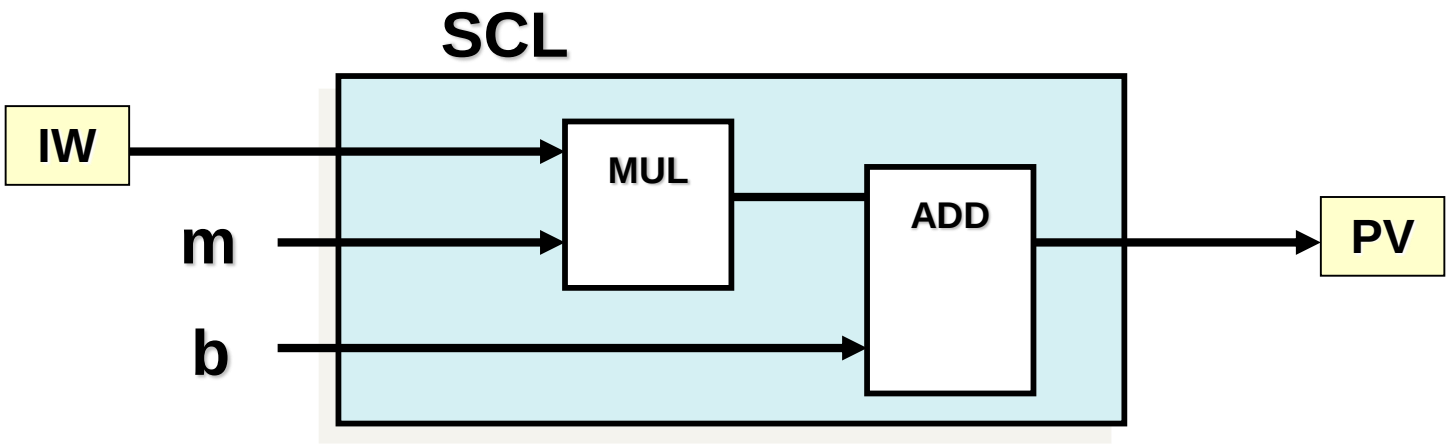
x=5530
y=200

$$200 = \frac{5530}{74} + b$$

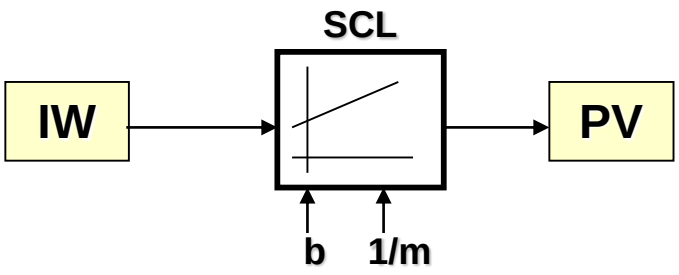
$$b = 125$$

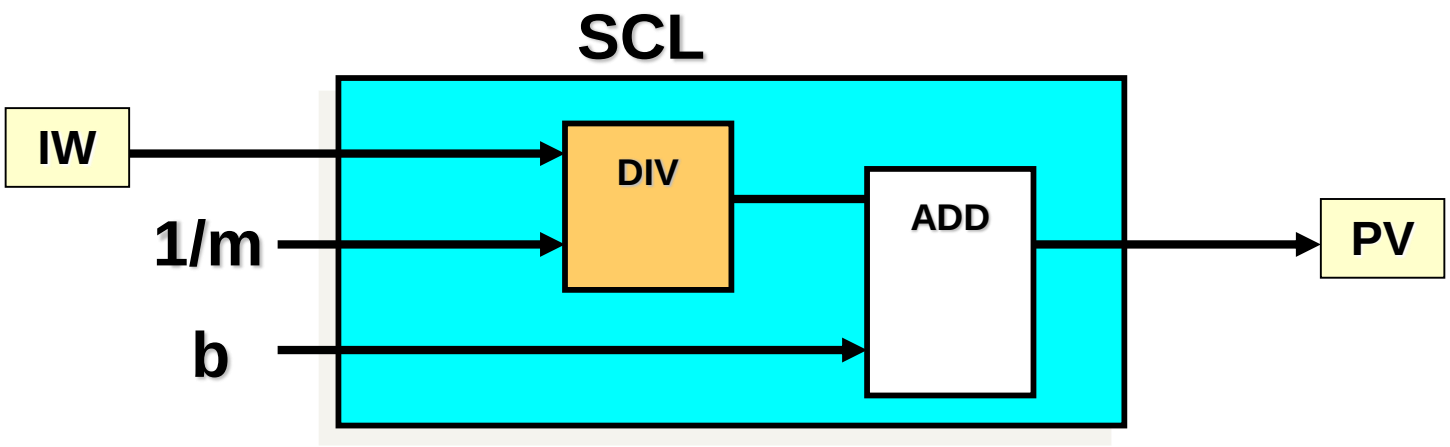
Bloque de ESCALAMIENTO

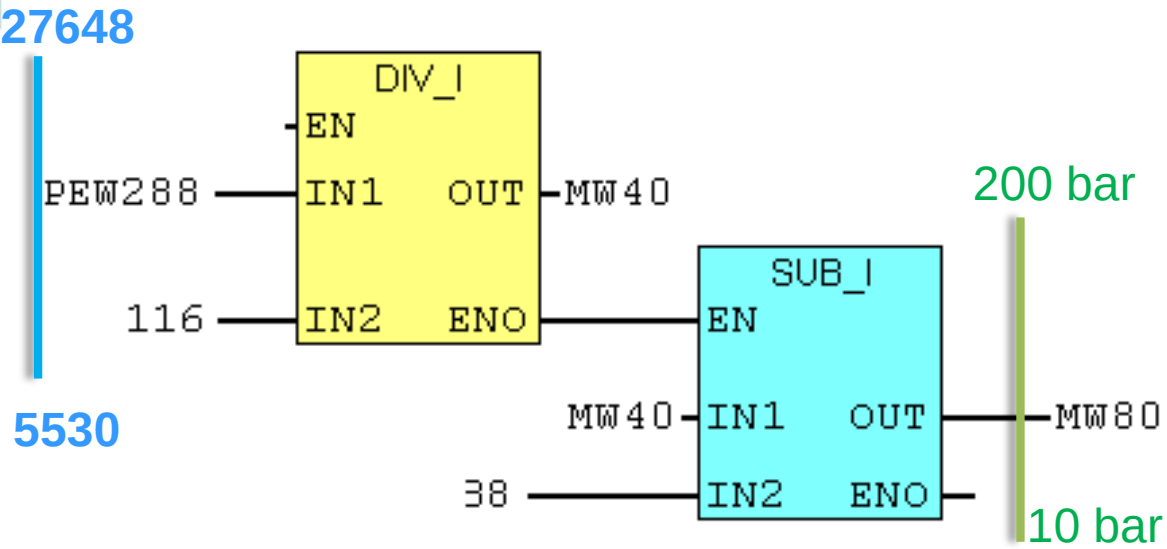


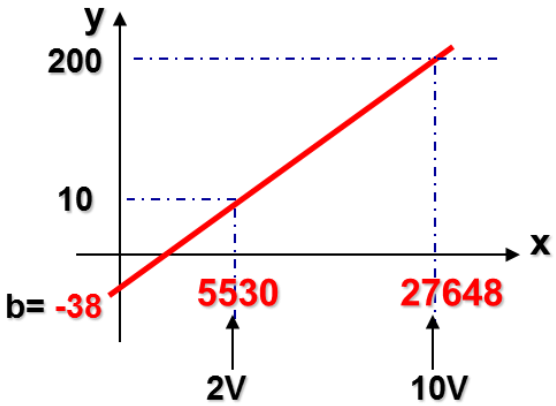


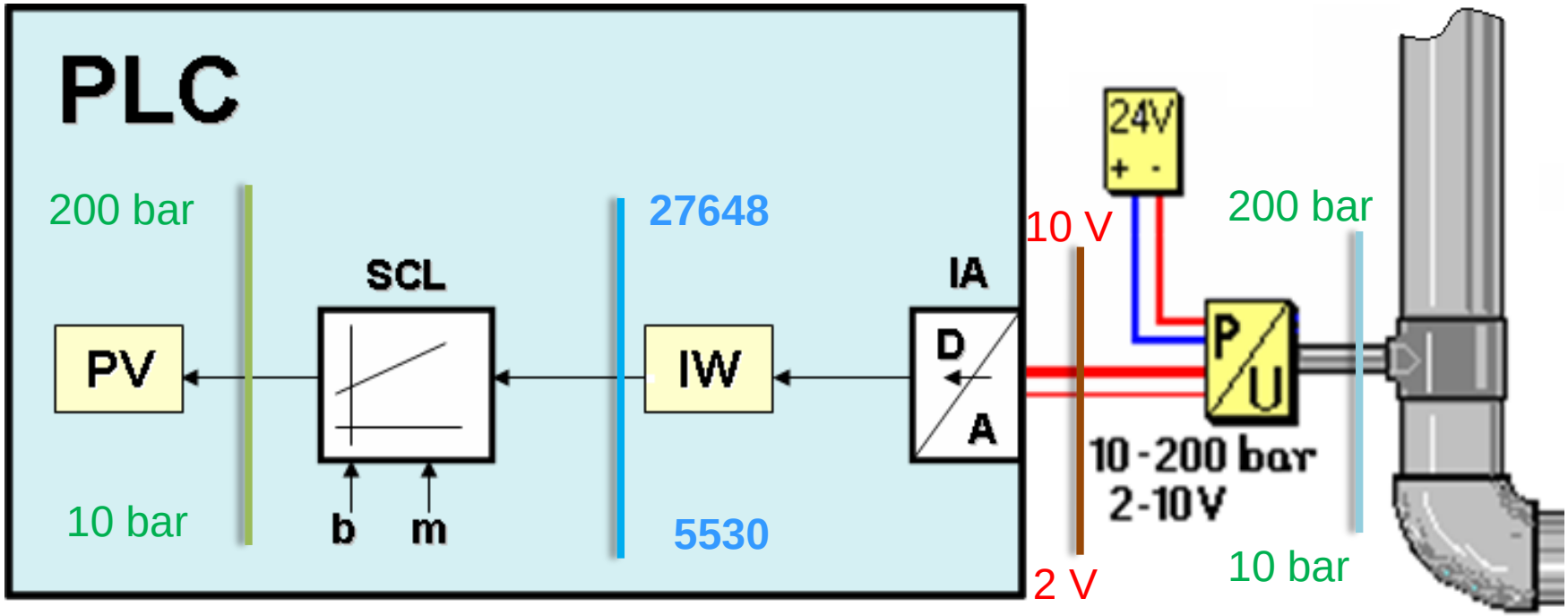
Bloque de ESCALAMIENTO



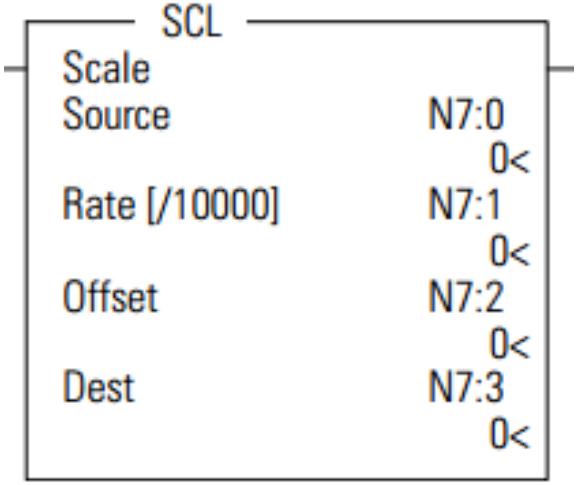


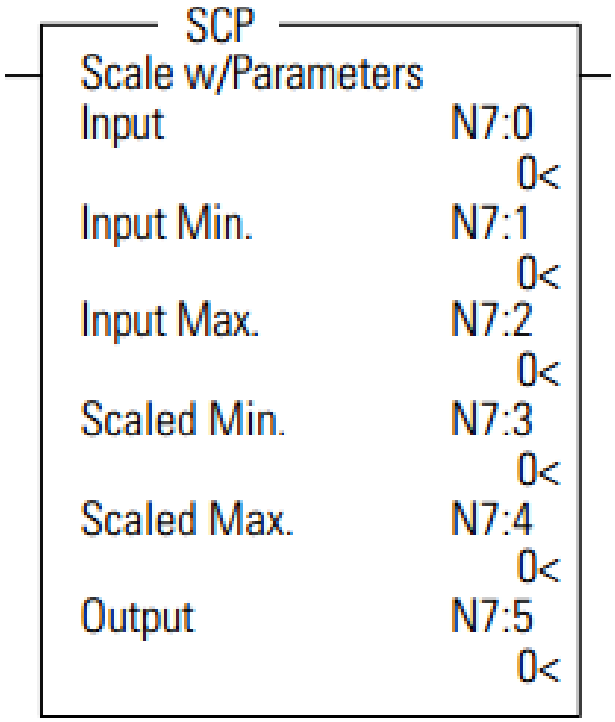

27648
DIV_I
EN
PEW288
IN1
OUT
MW40
116
IN2
ENO
SUB_I
EN
200 bar
MW40
IN1
OUT
MW80
38
IN2
ENO
5530
10 bar


y
200
10
x
b= -38
5530
27648
2V
10V


PLC
200 bar
27648
SCL
IA
PV
IW
D
A
b
m
10 bar
5530
24V
+ -
10 V
200 bar
P
U
10-200 bar
2-10V
2 V
10 bar

OUT = [((IN – IL)/(IH–IL)) * (OH–OL)] + OL





scaled value = [(rate x source)/10000] + offset, where

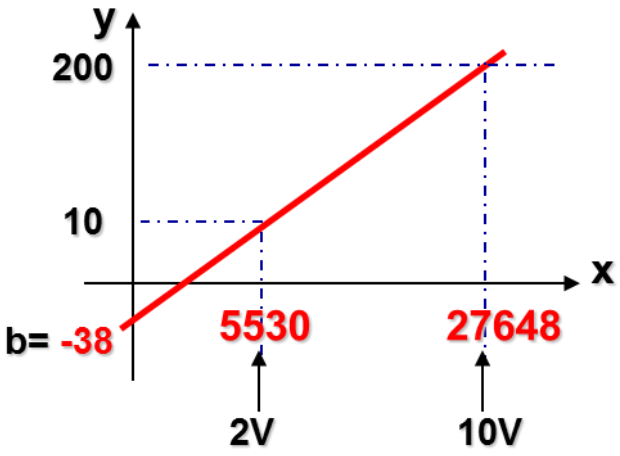
- rate = (scaled max. - scaled min.)/(input max. - input min.)
- offset = scaled min. - (input min. x rate)

Rate and Offset can both be immediate values. The data range for rate and offset is -32768 to 32767.

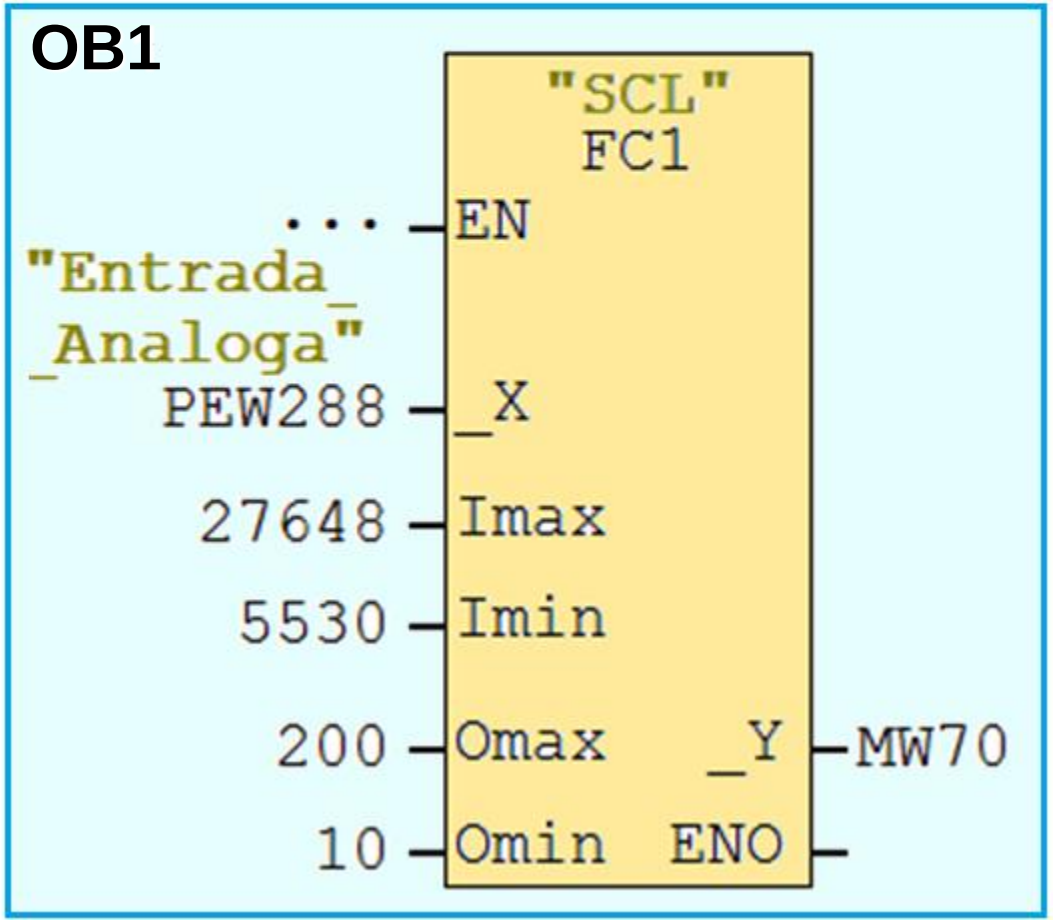
FC1

- Interface
  - IN
    - _X
    - Imax
    - Imin
    - Omax
    - Omin
  - OUT
    - _Y
  - IN_OUT
  - TEMP
    - D_I
    - D_O
    - _m
    - _x_Imin
    - _x_Imin_m
  - RETURN

	Nombı	Tipo
	_X	Int
	Imax	Int
	Imin	Int
	Omax	Int
	Omin	Int



OB1



FC1

OUT = [(IN – Imin)/((Omax–Omin)/(Imax–Imin))] + Omin

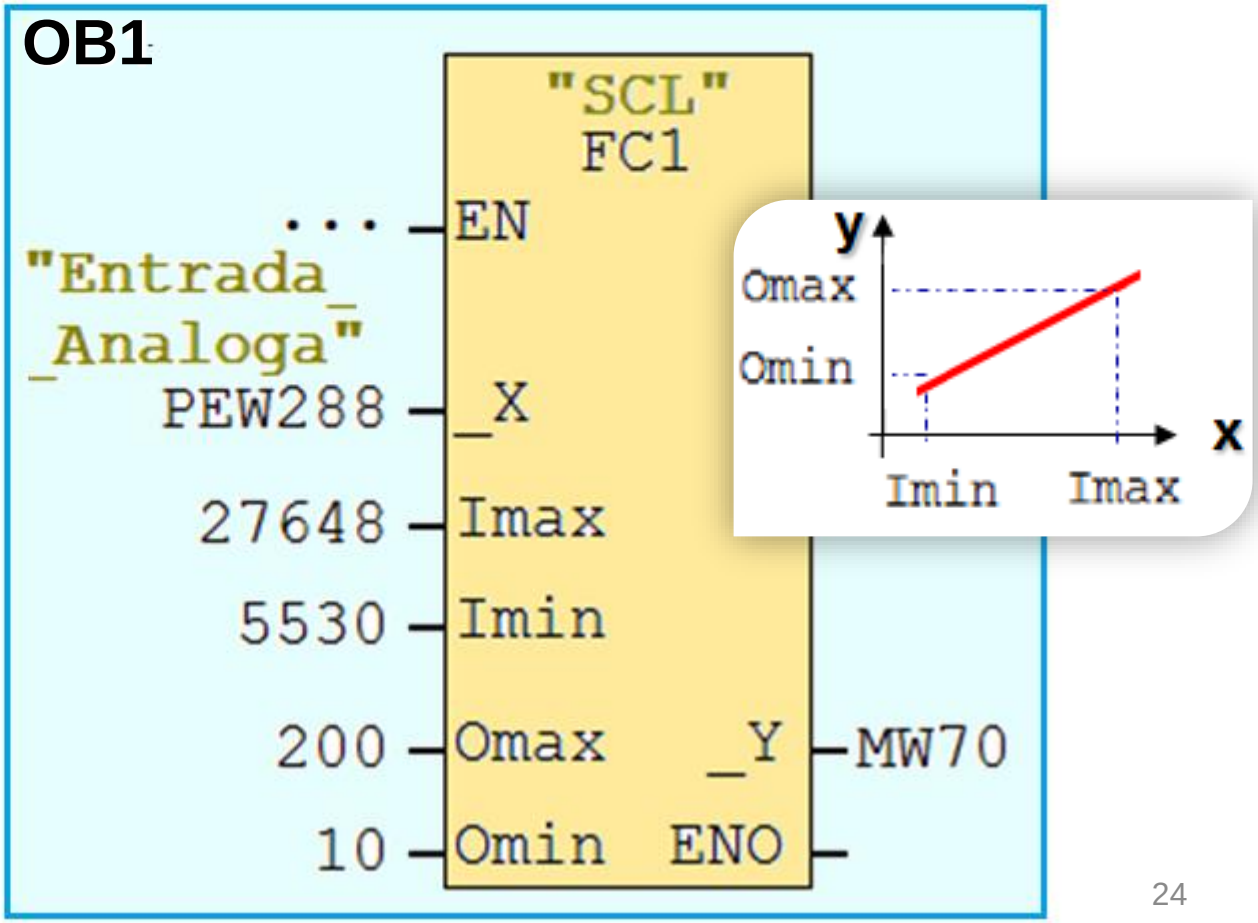
- Interface
  - IN
    - _X
    - Imax
    - Imin
    - Omax
    - Omin
  - OUT
    - _Y
  - IN_OUT
  - TEMP
    - D_I
    - D_O
    - _m
    - _x_Imin
    - _x_Imin_m
  - RETURN

Nombı	Tipo
_X	Int
Imax	Int
Imin	Int
Omax	Int
Omin	Int

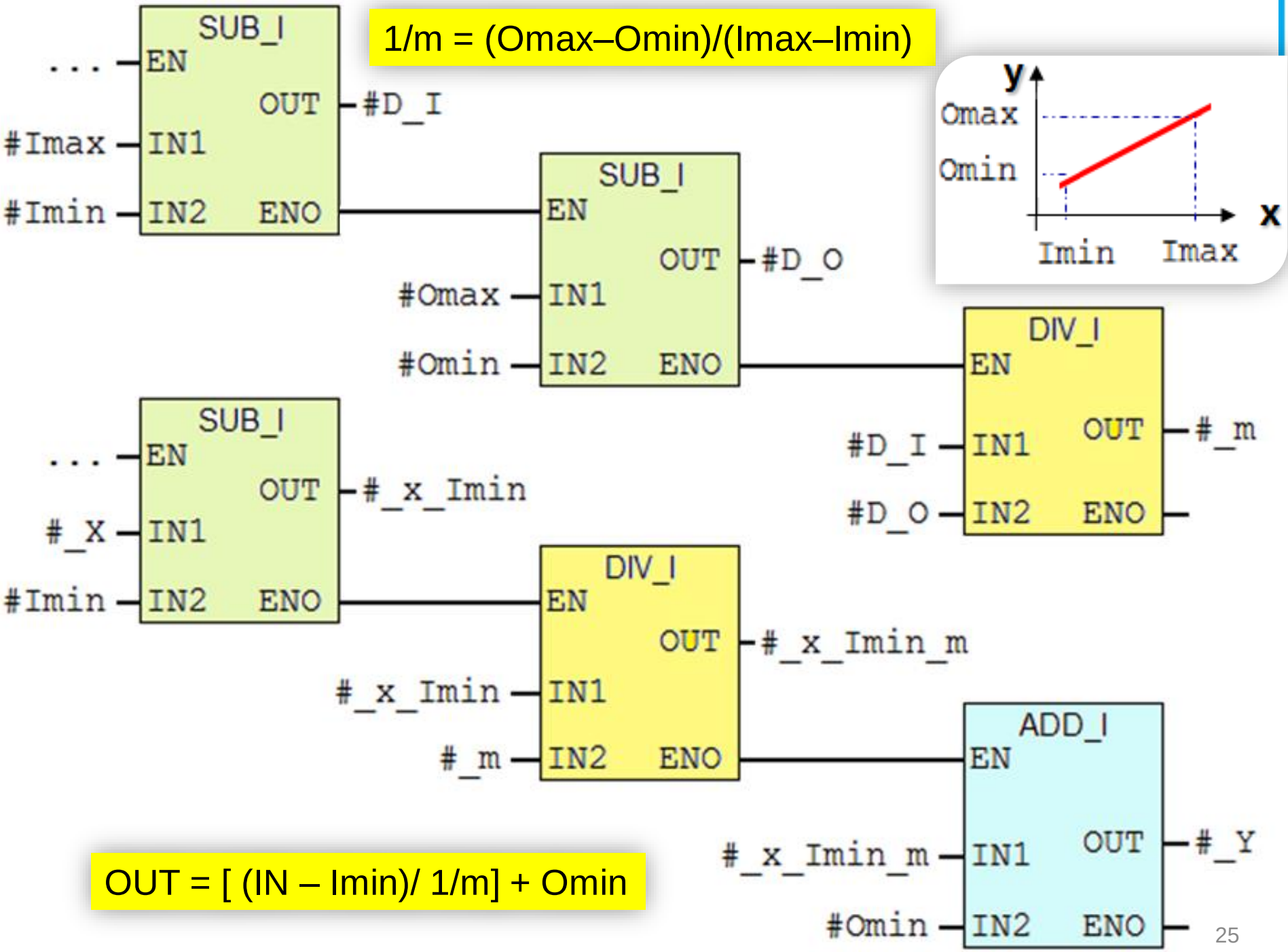
1/m = (Omax–Omin)/(Imax–Imin)

OUT = [(IN – Imin)/ 1/m] + Omin

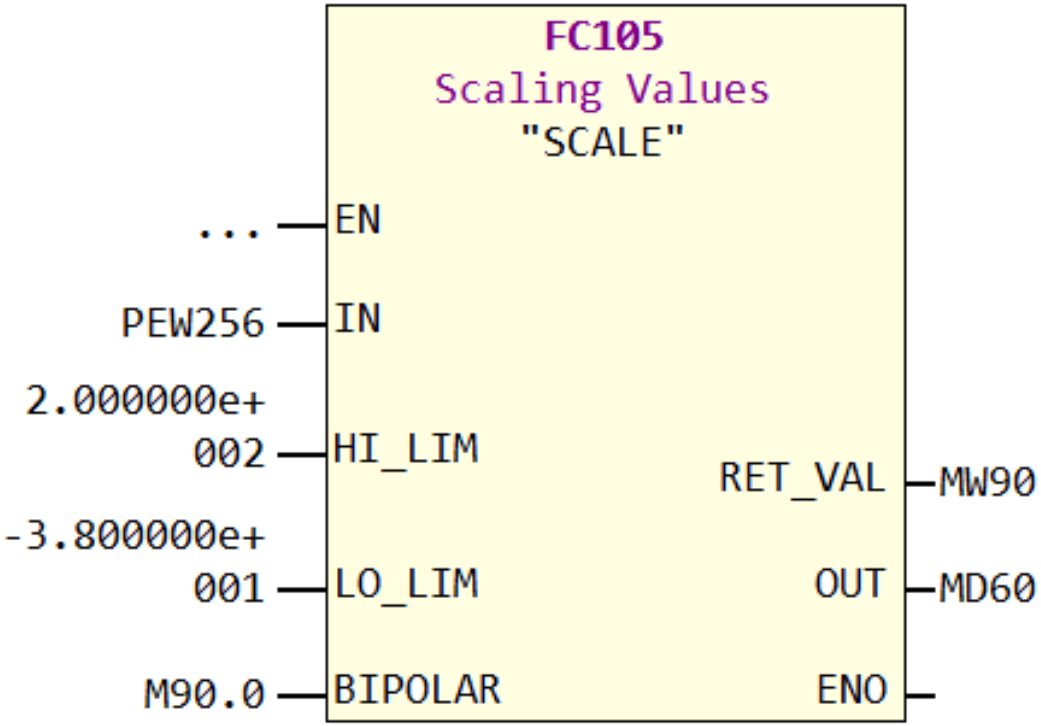
OB1

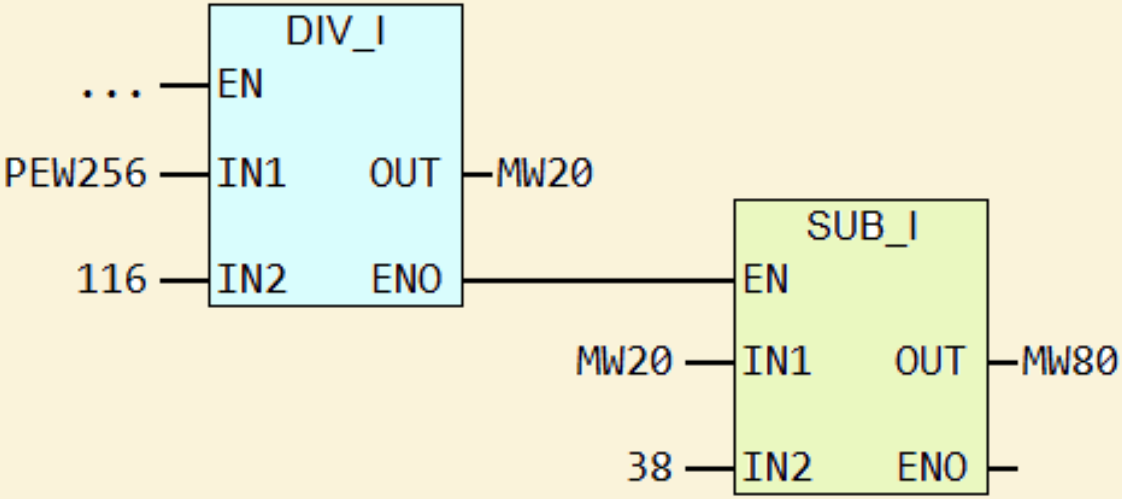


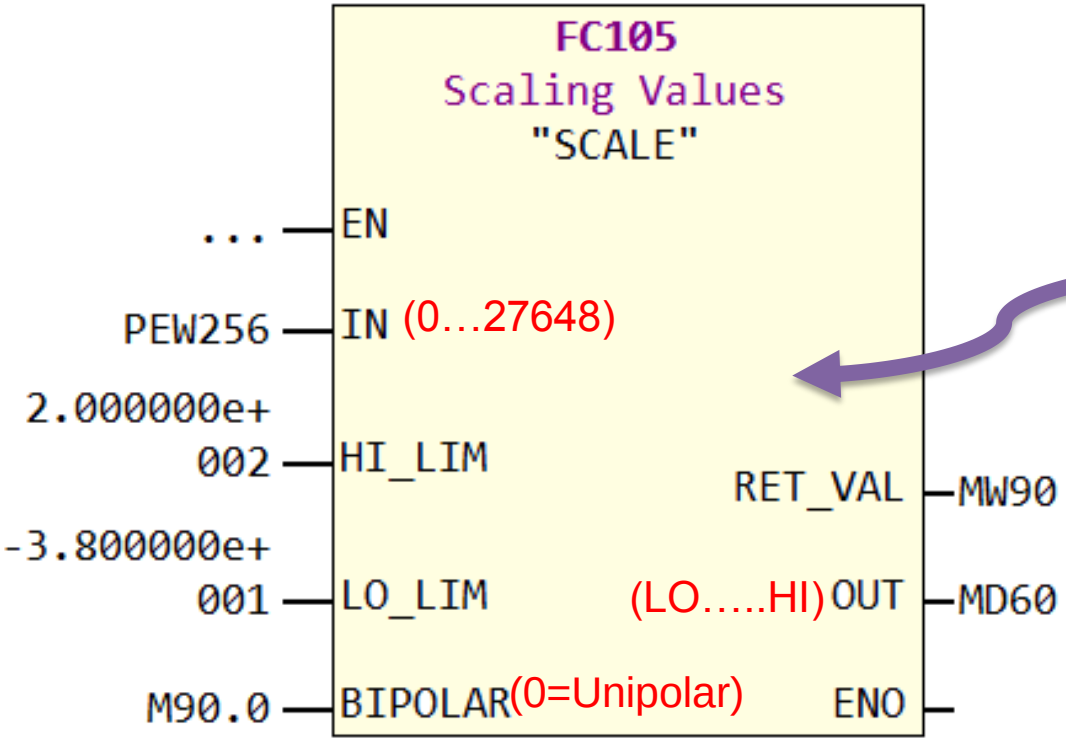
1/m = (Omax–Omin)/(Imax–Imin)

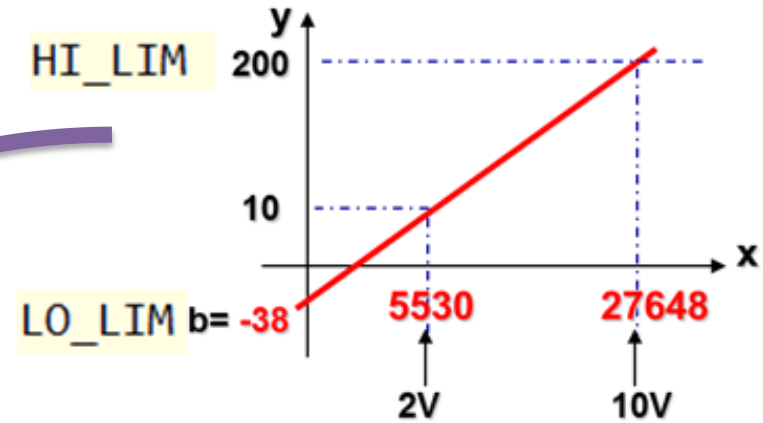


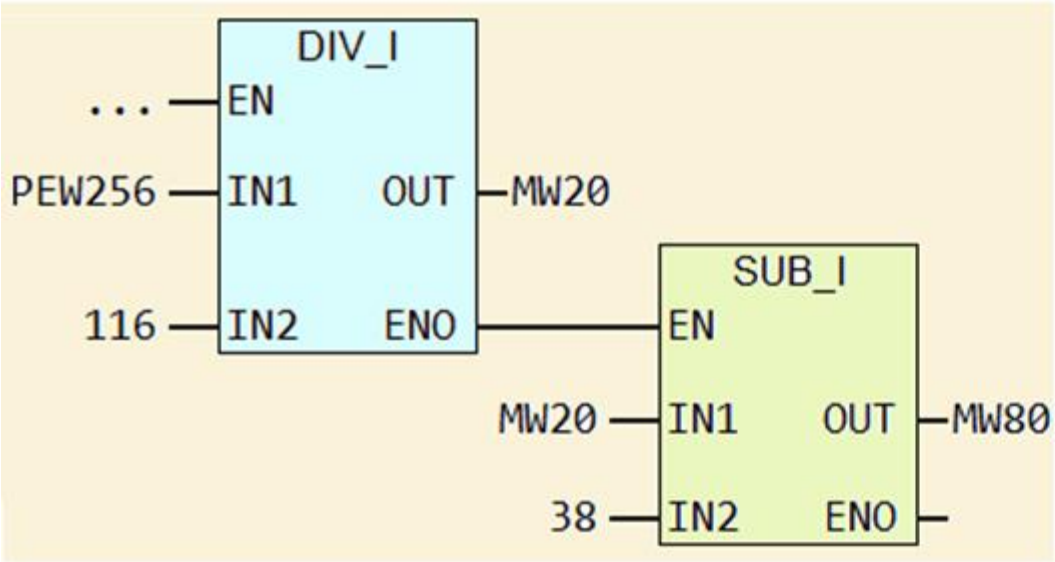
OUT = [(IN – Imin)/ 1/m] + Omin

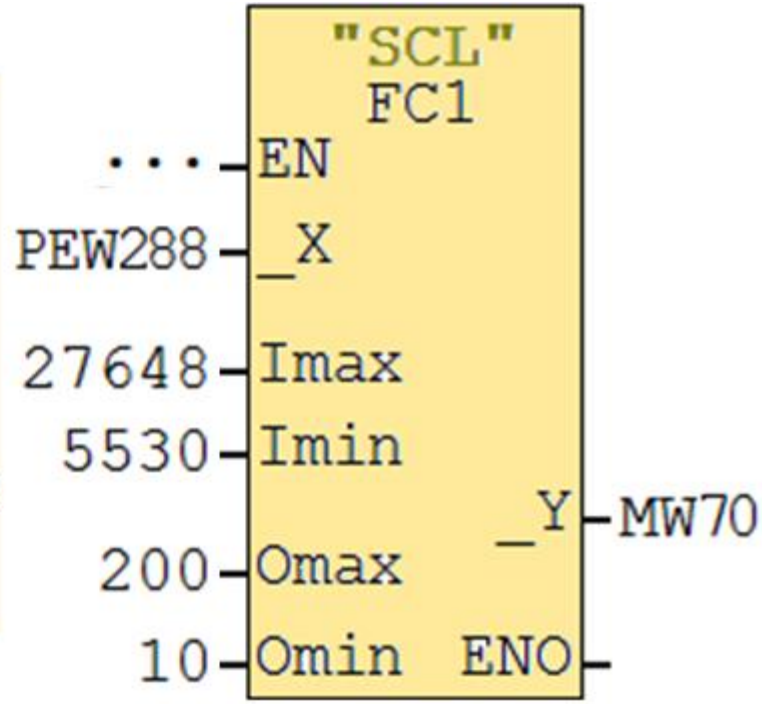

FC105
Scaling Values
"SCALE"
...
EN
PEW256
IN
2.000000e+
002
HI_LIM
RET_VAL
MW90
-3.800000e+
001
LO_LIM
OUT
MD60
M90.0
BIPOLAR
ENO

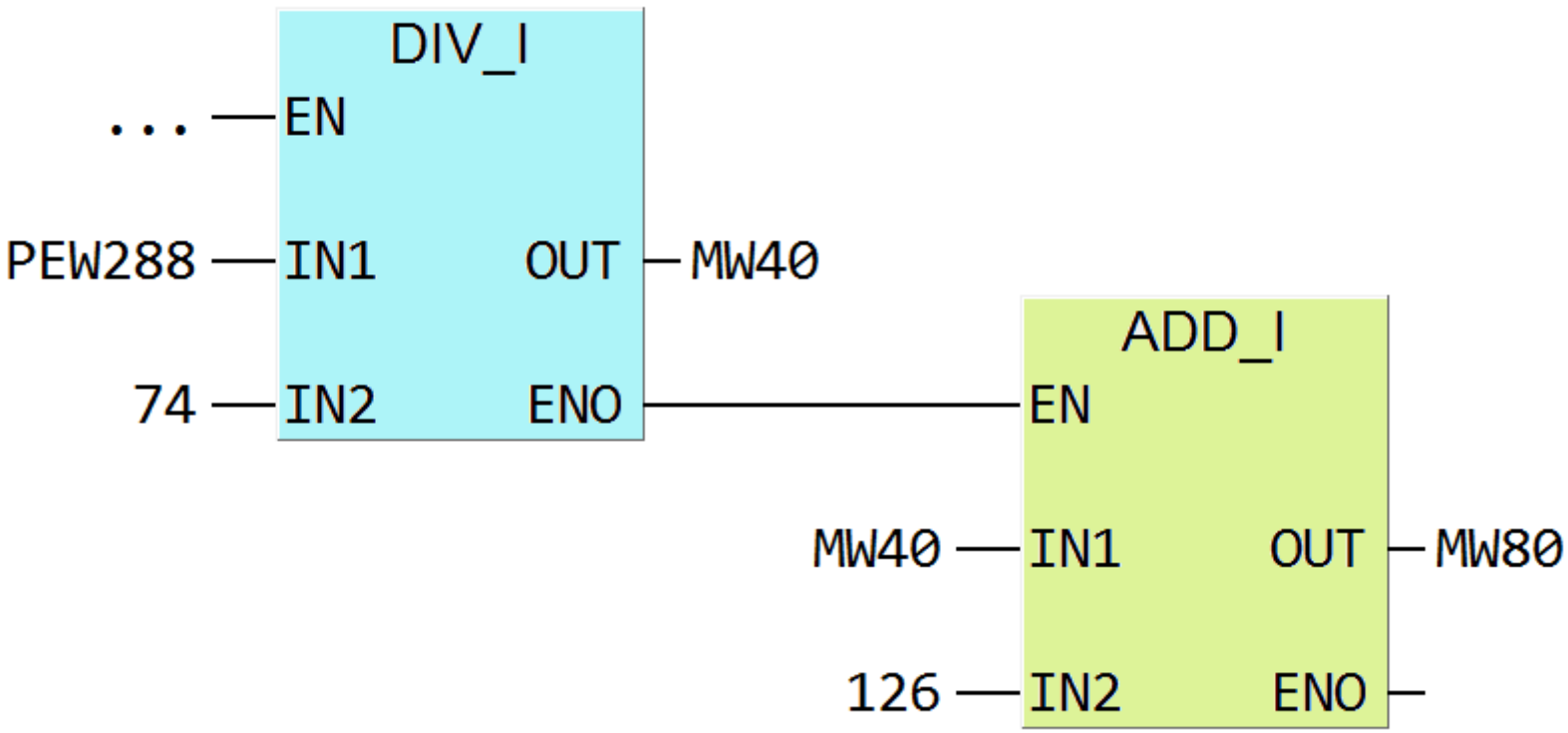

DIV_I
...
EN
PEW256
IN1
OUT
MW20
116
IN2
ENO
SUB_I
EN
MW20
IN1
OUT
MW80
38
IN2
ENO

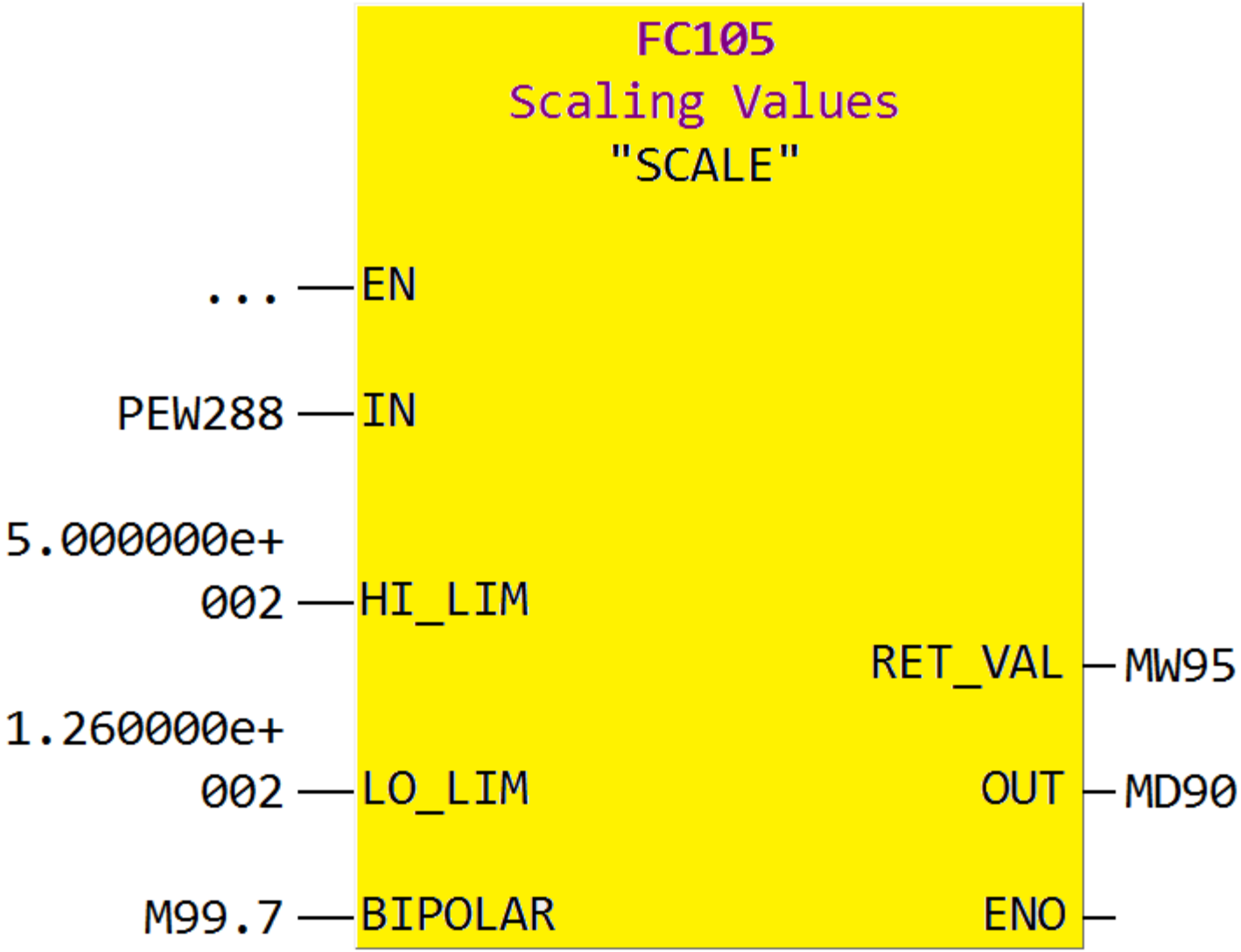

FC105
Scaling Values
"SCALE"
...
EN
PEW256
IN
(0…27648)
2.000000e+002
HI_LIM
RET_VAL
MW90
-3.800000e+001
LO_LIM
(LO…..HI)
OUT
MD60
M90.0
BIPOLAR
(0=Unipolar)
ENO

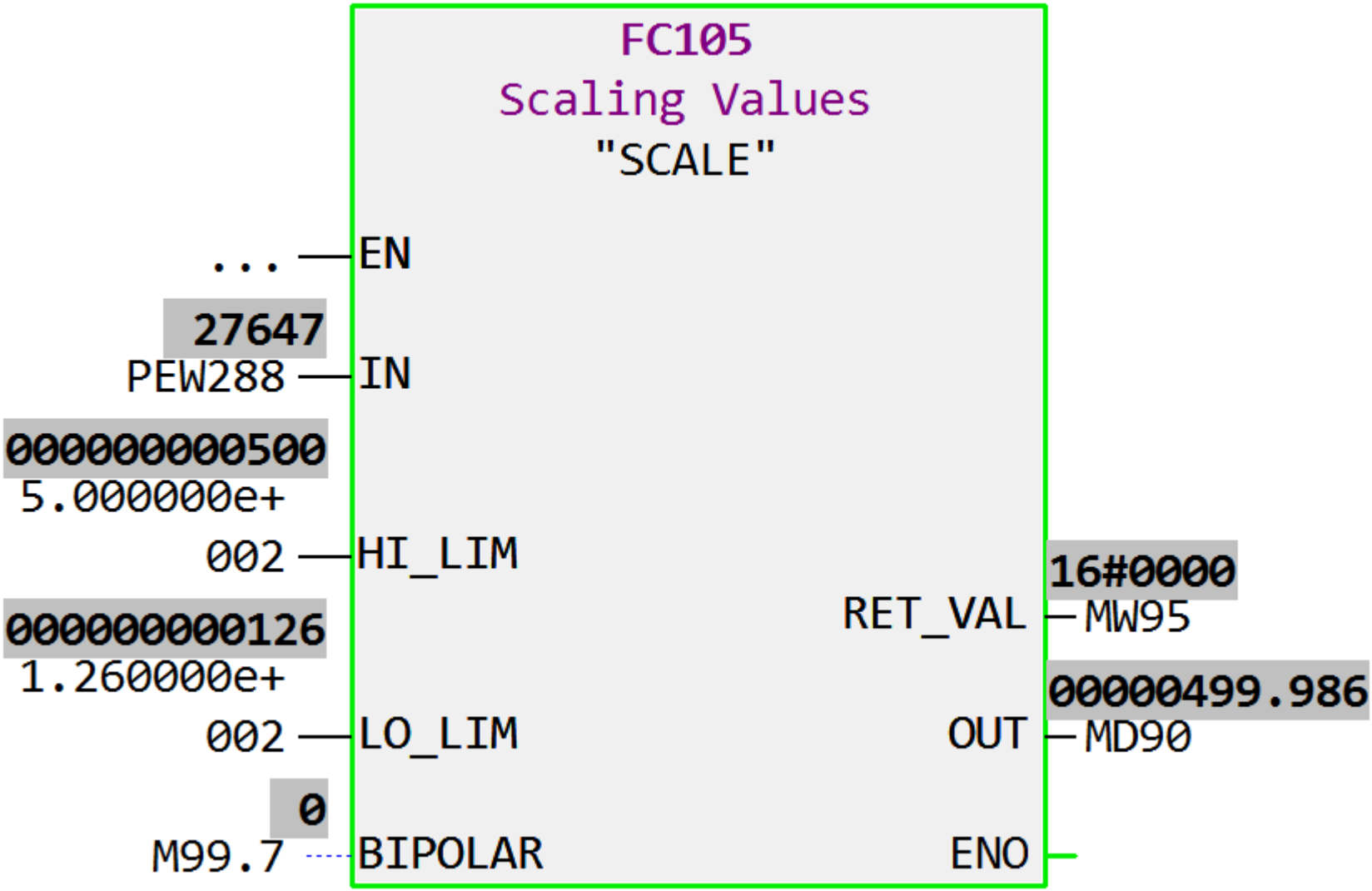

y
HI_LIM
200
10
x
LO_LIM
b= -38
5530
27648
2V
10V


DIV_I
...
EN
PEW256
IN1
OUT
MW20
116
IN2
ENO
SUB_I
EN
MW20
IN1
OUT
MW80
38
IN2
ENO

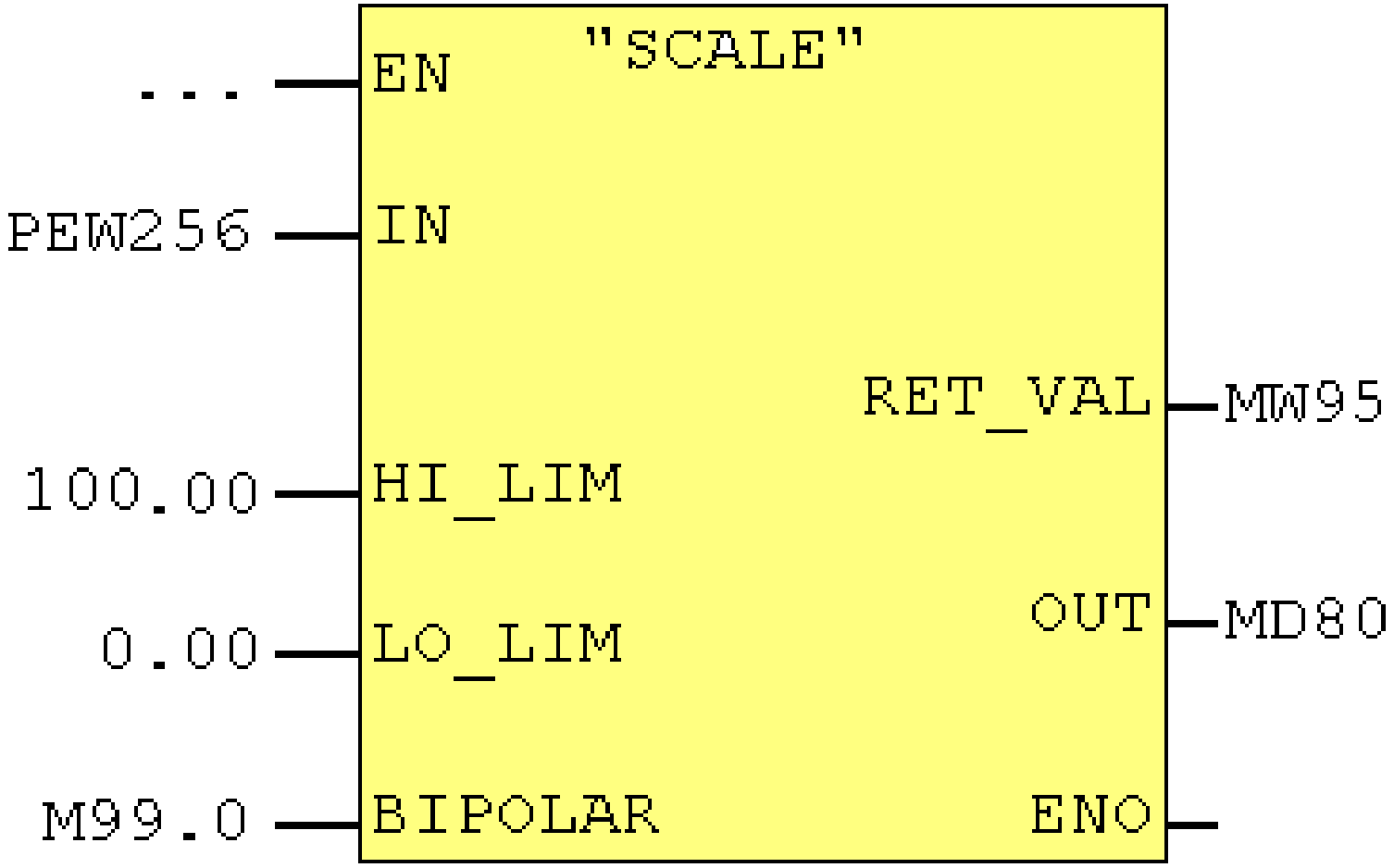

"SCL"
FC1
...
EN
PEW288
_X
27648
Imax
5530
Imin
_Y
MW70
200
Omax
10
Omin
ENO

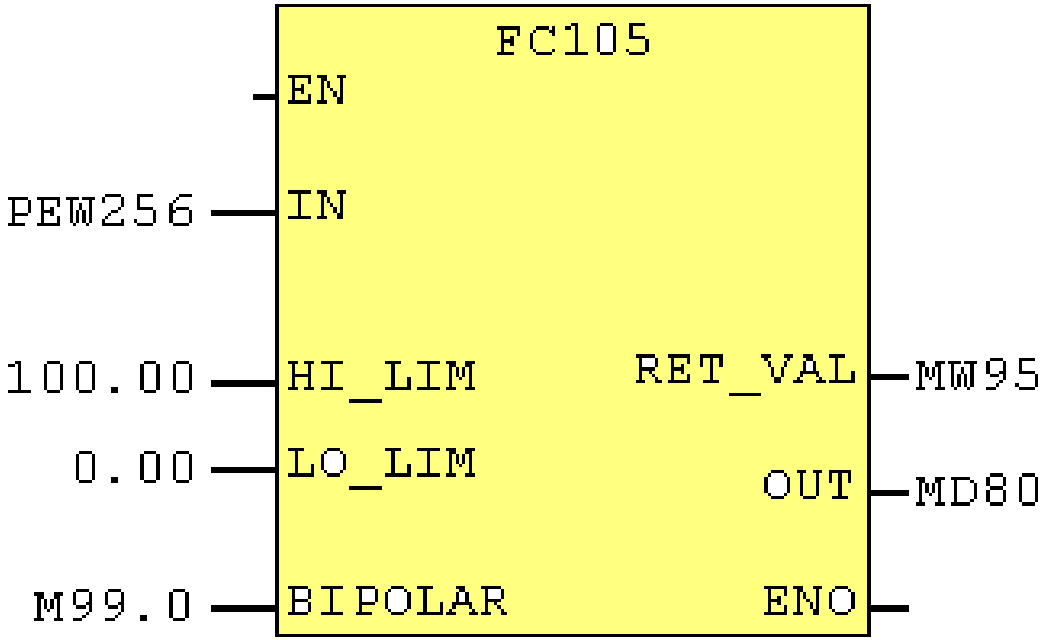

DIV_I
...
EN
PEW288
IN1
OUT
MW40
74
IN2
ENO
ADD_I
EN
MW40
IN1
OUT
MW80
126
IN2
ENO

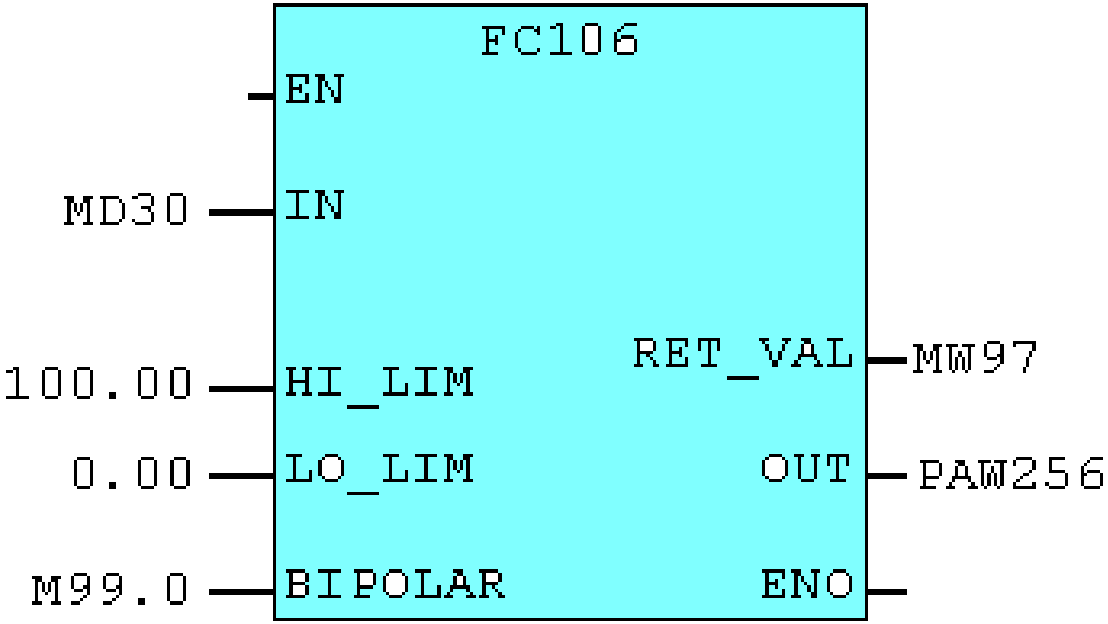

FC105
Scaling Values
"SCALE"
...
EN
PEW288
IN
5.000000e+
002
HI_LIM
RET_VAL
MW95
1.260000e+
002
LO_LIM
OUT
MD90
M99.7
BIPOLAR
ENO


FC105
Scaling Values
"SCALE"
...
EN
27647
PEW288
IN
000000000500
5.000000e+
002
HI_LIM
000000000126
1.260000e+
002
LO_LIM
0
M99.7
BIPOLAR
16#0000
RET_VAL
MW95
00000499.986
OUT
MD90
ENO

Bloque de ESCALAMIENTO

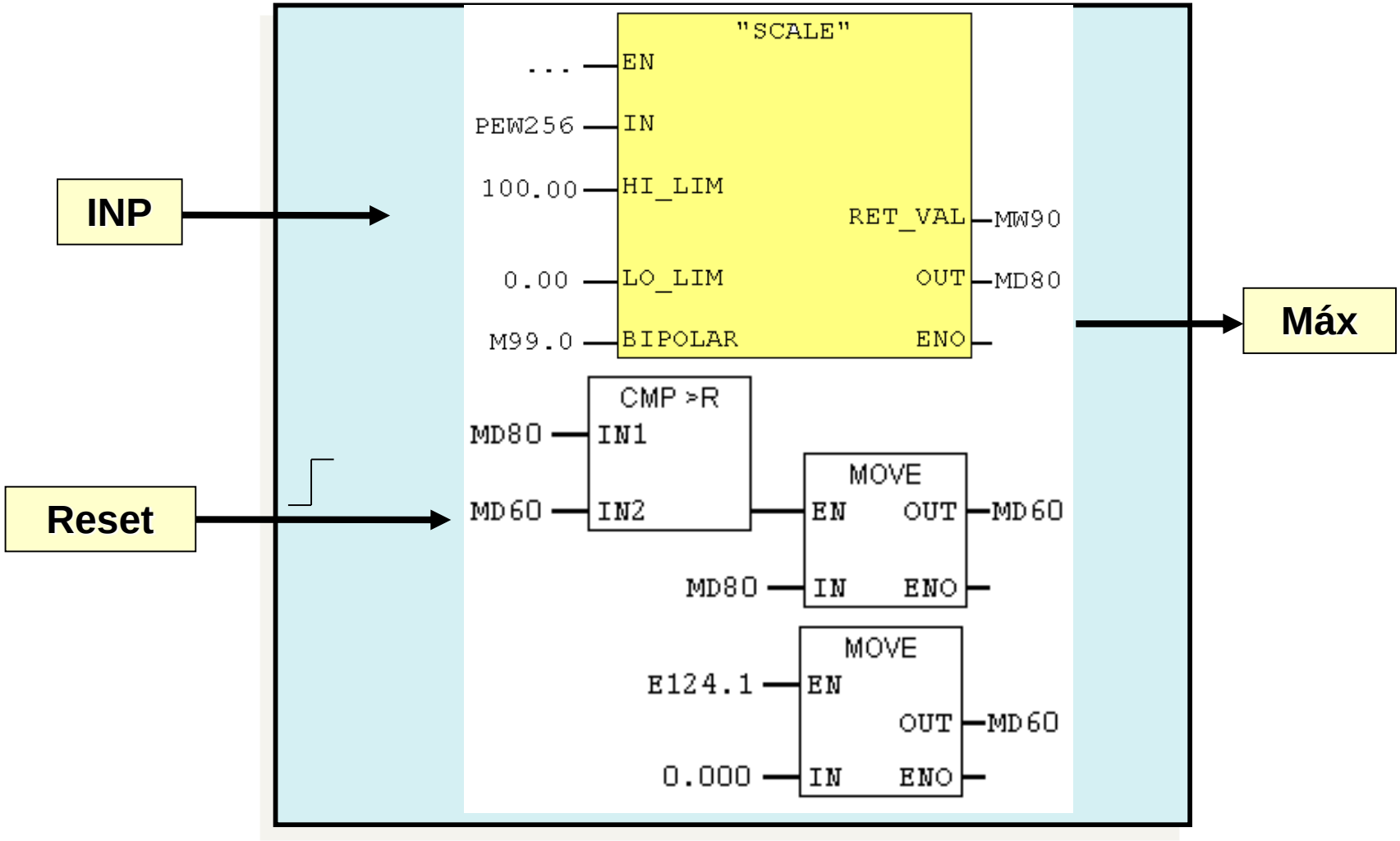



FC105
EN
PEW256
IN
100.00
HI_LIM
RET_VAL
MW95
0.00
LO_LIM
OUT
MD80
M99.0
BIPOLAR
ENO

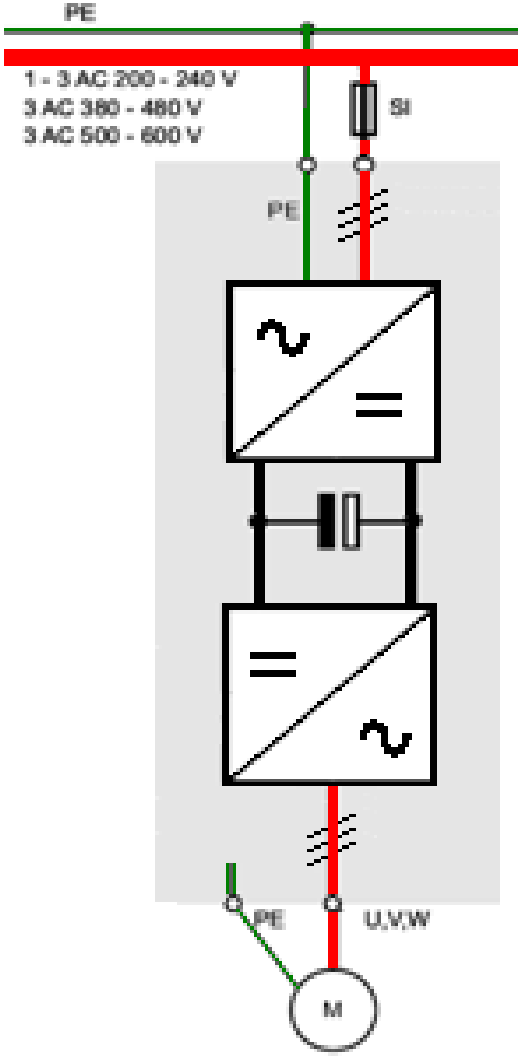

FC106
EN
MD30
IN
100.00
HI_LIM
RET_VAL
MW97
0.00
LO_LIM
OUT
PAW256
M99.0
BIPOLAR
ENO

Indicar el valor Máximo.

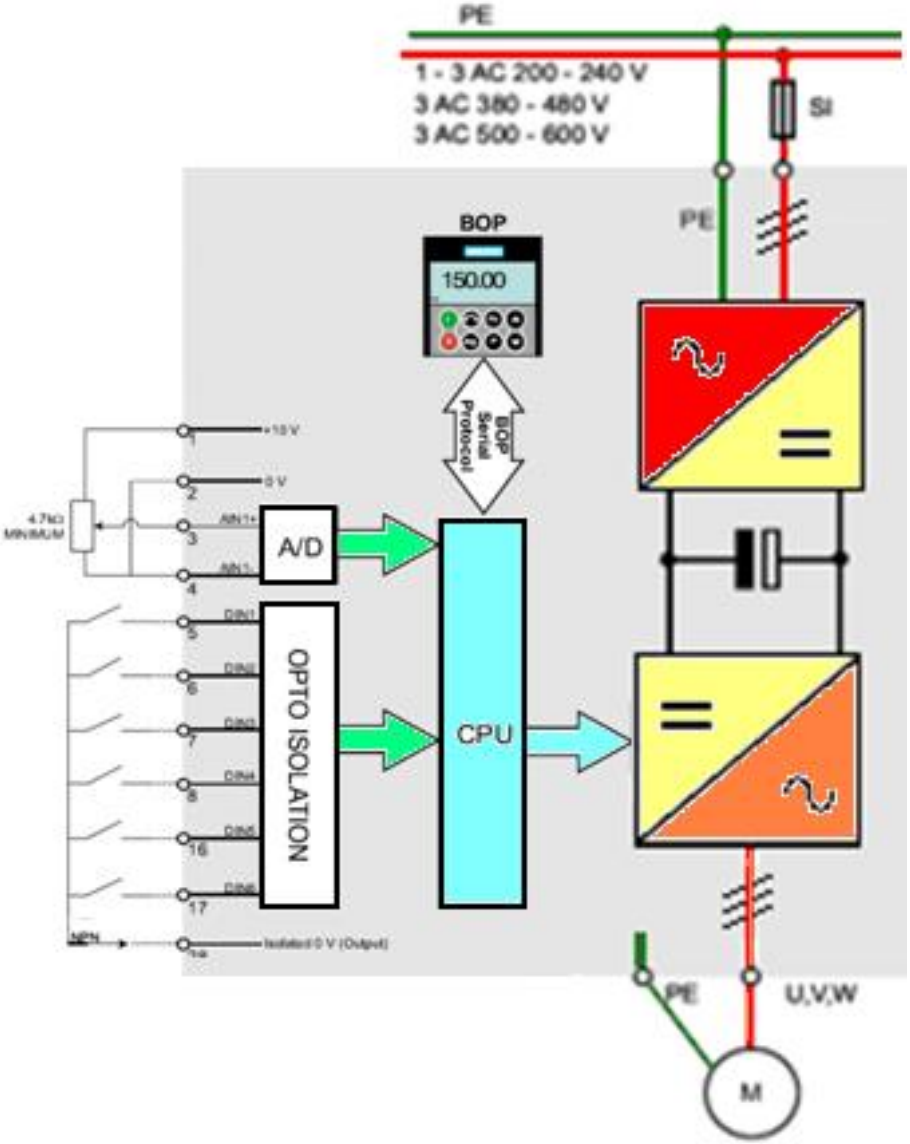
Máximo

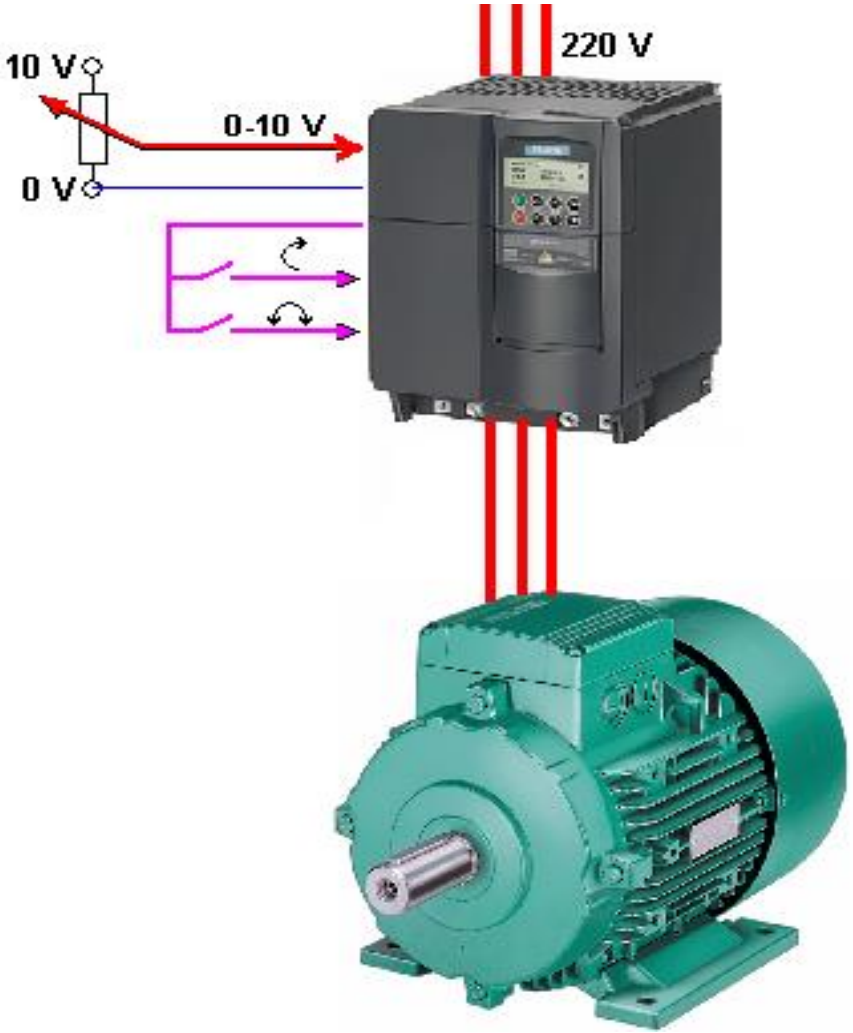


MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

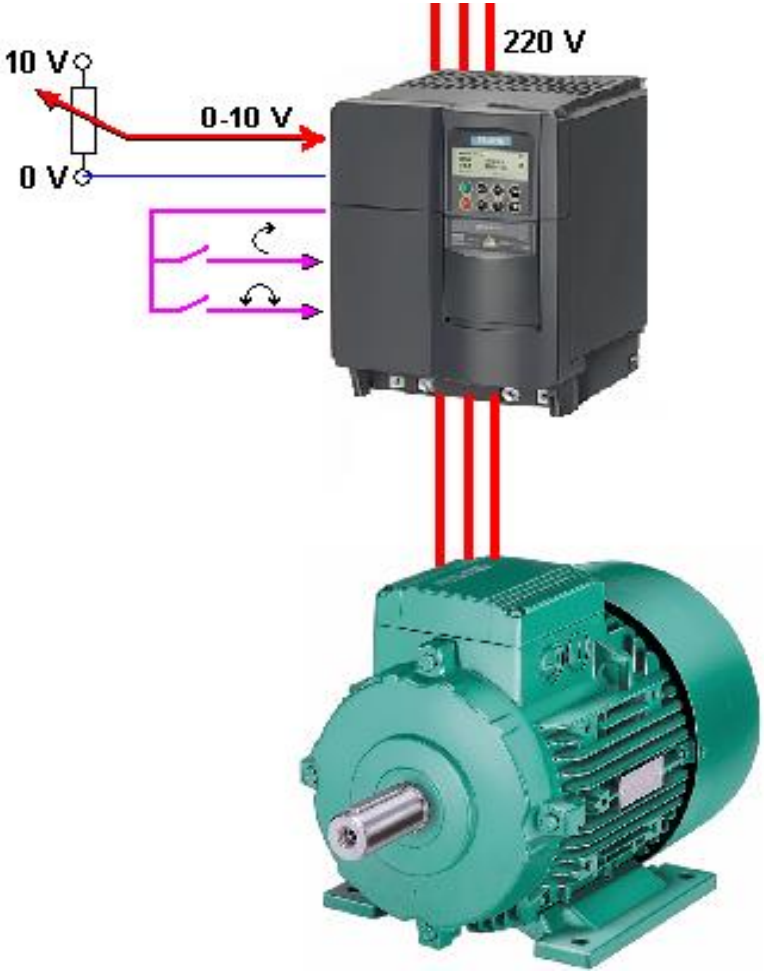


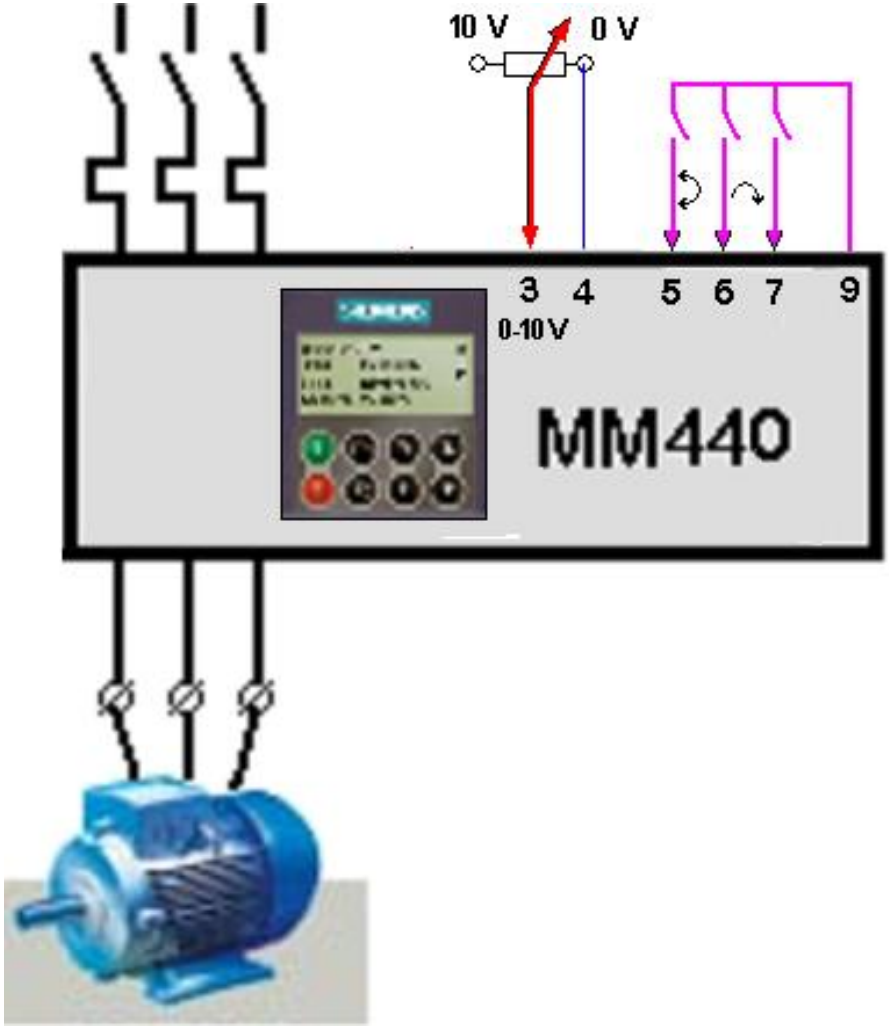
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

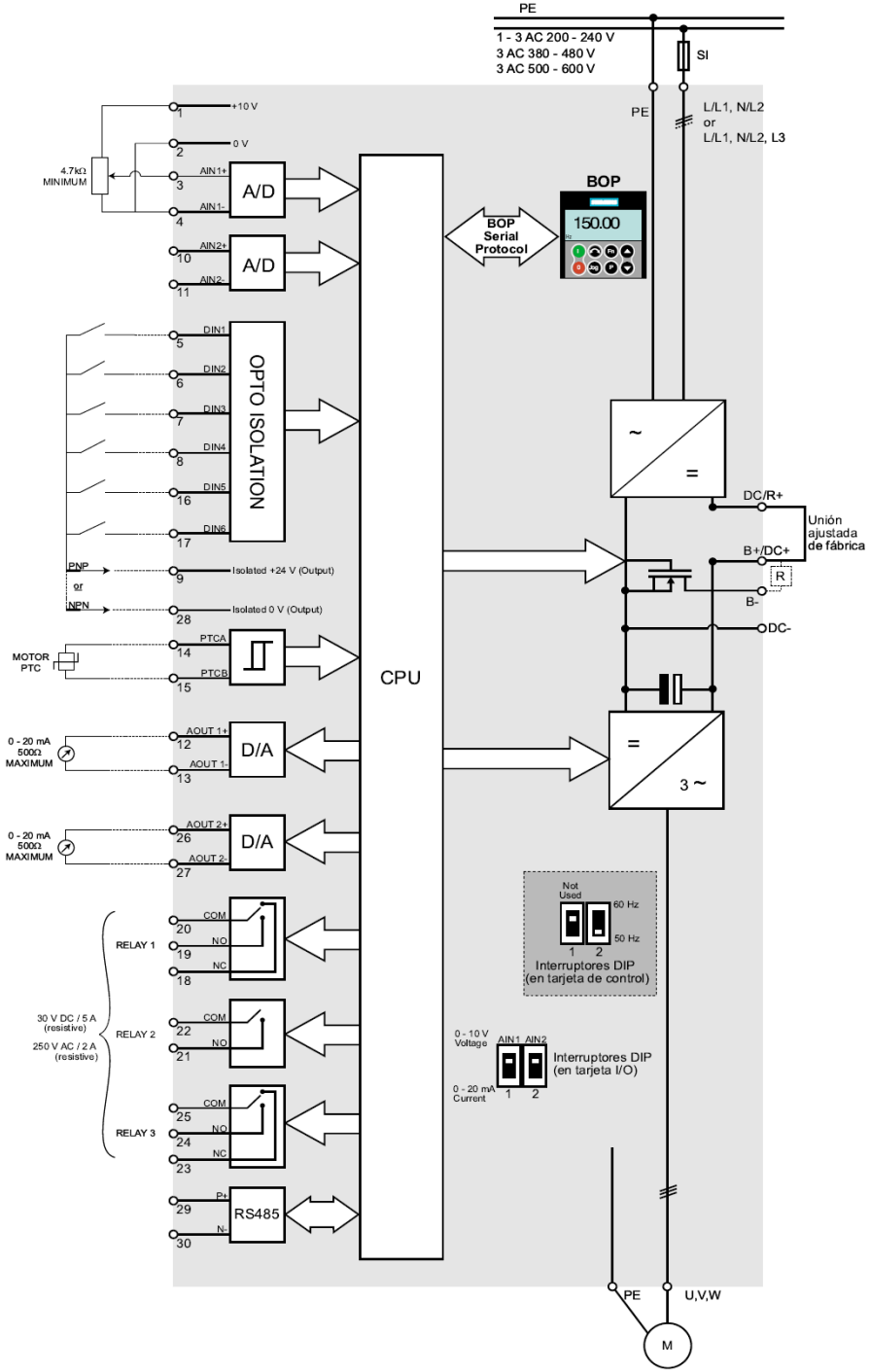


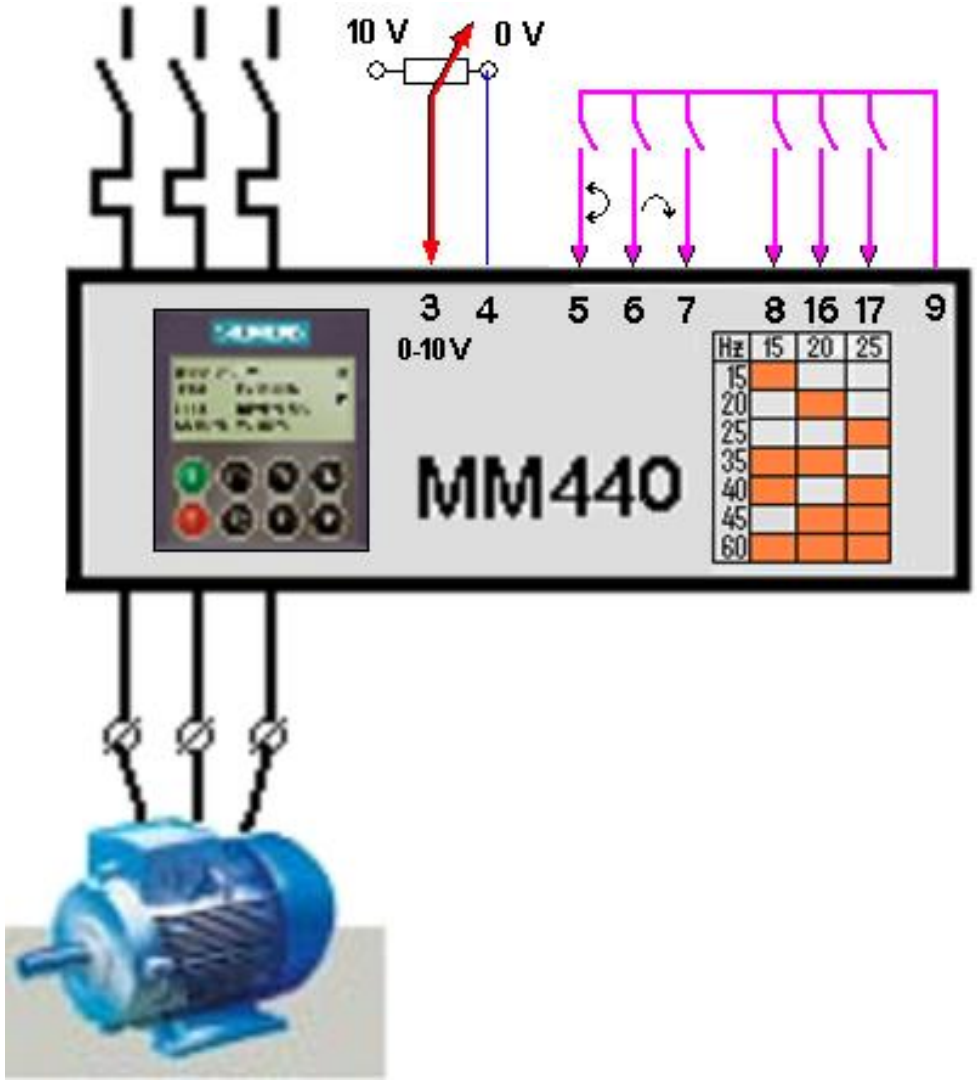


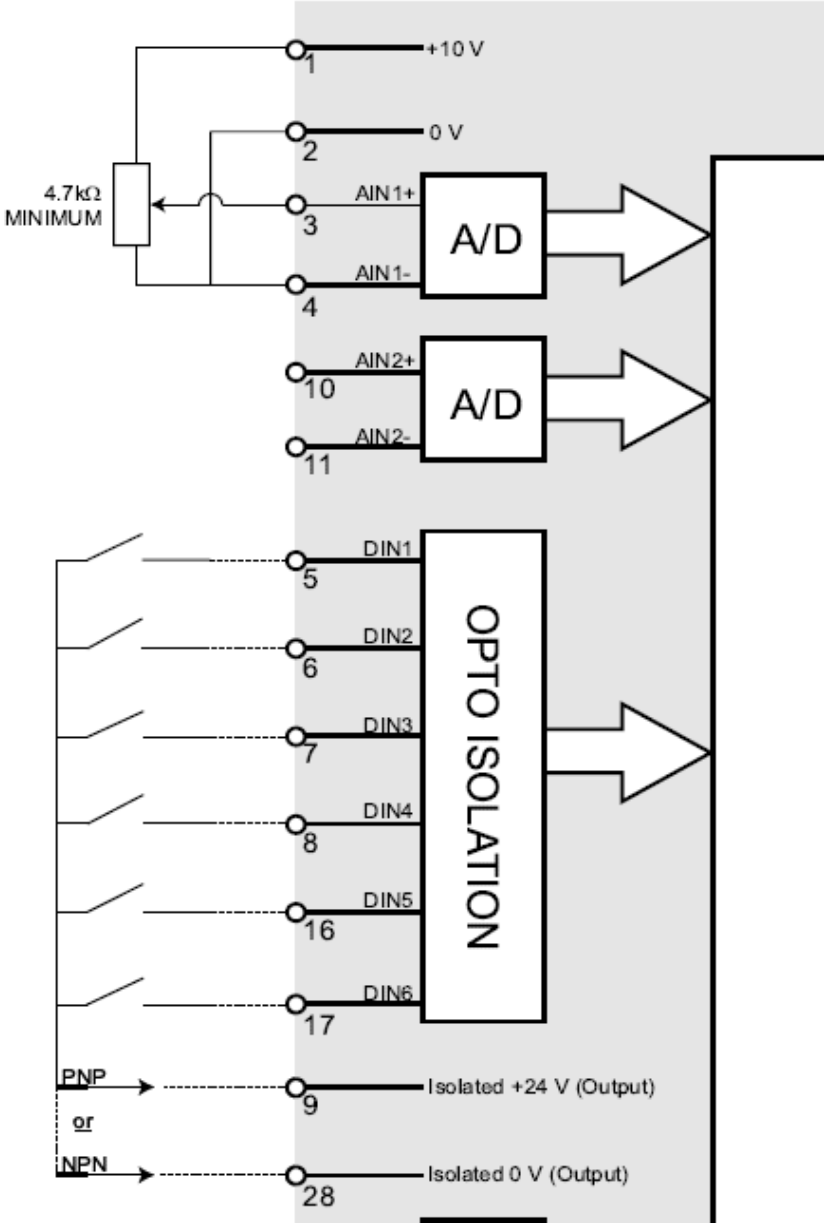
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO




10 V
0 V
3 4 5 6 7 9
0-10 V
MM440


PE
1 - 3 AC 200 - 240 V
3 AC 380 - 480 V
3 AC 500 - 600 V
SI
PE
L/L1, N/L2
or
L/L1, N/L2, L3
+10 V
0 V
4.7kΩ
MINIMUM
AIN1+
AIN1-
A/D
AIN2+
AIN2-
A/D
BOP
Serial
Protocol
BOP
150.00
DIN1
DIN2
DIN3
DIN4
DIN5
DIN6
OPTO ISOLATION
PNP
or
NPN
Isolated +24 V (Output)
Isolated 0 V (Output)
DC/R+
Unión
ajustada
de fábrica
B+/DC+
R
B-
DC-
MOTOR
PTC
PTCA
PTCB
CPU
AOUT 1+
AOUT 1-
D/A
0 - 20 mA
500Ω
MAXIMUM
AOUT 2+
AOUT 2-
D/A
3 ~
Not
Used
60 Hz
50 Hz
Interruptores DIP
(en tarjeta de control)
RELAY 1
COM
NO
NC
RELAY 2
RELAY 3
30 V DC / 5 A
(resistive)
250 V AC / 2 A
(resistive)
0 - 10 V
Voltage
AIN1 AIN2
0 - 20 mA
Current
Interruptores DIP
(en tarjeta I/O)
P+
N-
RS485
PE
U,V,W
M


10 V
0 V
3 4 5 6 7 8 16 17 9
0-10 V
MM440
Hz 15 20 25
15
20
25
35
40
45
60


+10 V
0 V
4.7kΩ
MINIMUM
AIN1+
AIN1-
A/D
AIN2+
AIN2-
A/D
DIN1
DIN2
DIN3
DIN4
DIN5
DIN6
OPTO ISOLATION
PNP
or
NPN
Isolated +24 V (Output)
Isolated 0 V (Output)
1
2
3
4
10
11
5
6
7
8
16
17
9
28

P0010 Comenzar puesta en servicio rápida

0 Listo para Marcha
1 Puesta en servicio rápida
30 Ajustes de fábrica

Nota

Hay que volver a poner el P0010 a '0' antes de arrancar el motor. Sin embargo, si está ajustado P3900 = 1 después de la puesta en servicio, esto se realiza automáticamente.

P0100 Funcionamiento para Europa/ Norteamérica

0 Potencia en kW; f por defecto 50 Hz
1 Potencia en hp; f por defecto 60 Hz
2 Potencia en kW; f por defecto 60 Hz

Nota

Los ajustes a 0 y 1 se deberían cambiar mediante los interruptores DIP para que el ajuste sea permanente.

P0304 Tensión nominal del motor[1)]

10 V - 2000 V
Tensión nominal del motor (V) de la placa de características

P0305 Corriente nominal del motor[1)]

0 - 2 x corriente nominal del convertidor (A)
Corriente nominal del motor (A) de la placa de características

P0307 Potencia nominal del motor[1)]

0 kW - 2000 kW
Potencia nominal del motor (kW) de la placa de características.
Si P0100 = 1, los valores serán en hp

P0310 Frecuencia nominal del motor[1)]

12 Hz - 650 Hz
Frecuencia nominal del motor (Hz) de la placa de características

P0311 Velocidad nominal del motor[1)]

0 - 40000 1/min
Velocidad nominal del motor (rpm) de la placa de características

P0700 Selección de la fuente de comandos
(on / off / reverse)

0 Ajuste de fábrica
1 Panel BOP
2 Bornes / entradas digitales
3
4 Panel AOP
5
6 **PROFIBUS DP**

P1000 Selección de la consigna de frecuencia

0 Sin consigna de frecuencia
1 Control de frecuencia BOP/AOP ↑↓
2 Consigna analógica
3 Bornes / entradas digitales **Consigna fija**
4
5
6 **PROFIBUS DP**

P1080 Frecuencia mínima del motor
Ajusta la frecuencia mínima del motor (0-650Hz) a la que girará el motor con independencia de la consigna de frecuencia. El valor aquí ajustado es válido tanto para giro a derechas como a izquierdas.

P1082 Frecuencia máxima del motor
Ajusta la frecuencia máxima del motor (0-650Hz) a la que girará el motor con independencia de la consigna de frecuencia. El valor aquí ajustado es válido tanto para giro a derechas como a izquierdas.

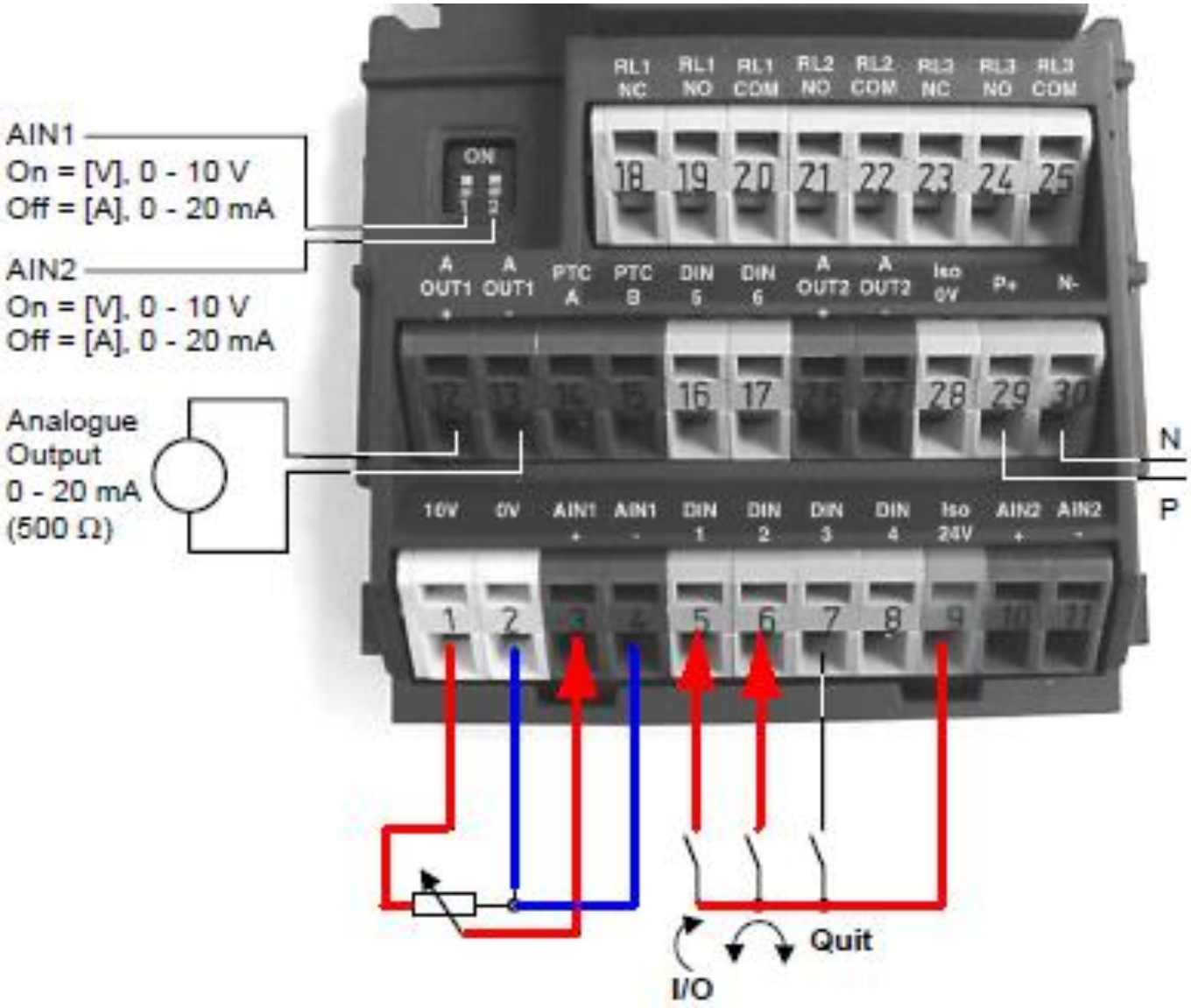
P1120 Tiempo de aceleración
0 s - 650 s
Tiempo que tarda el motor para acelerar desde el estado de reposo hasta la frecuencia máxima del motor.

P1121 Tiempo de deceleración
0 s - 650 s
Tiempo que tarda el motor para decelerar desde la máxima frecuencia del motor hasta el estado de reposo.

P3900 Fin de la puesta en servicio rápida

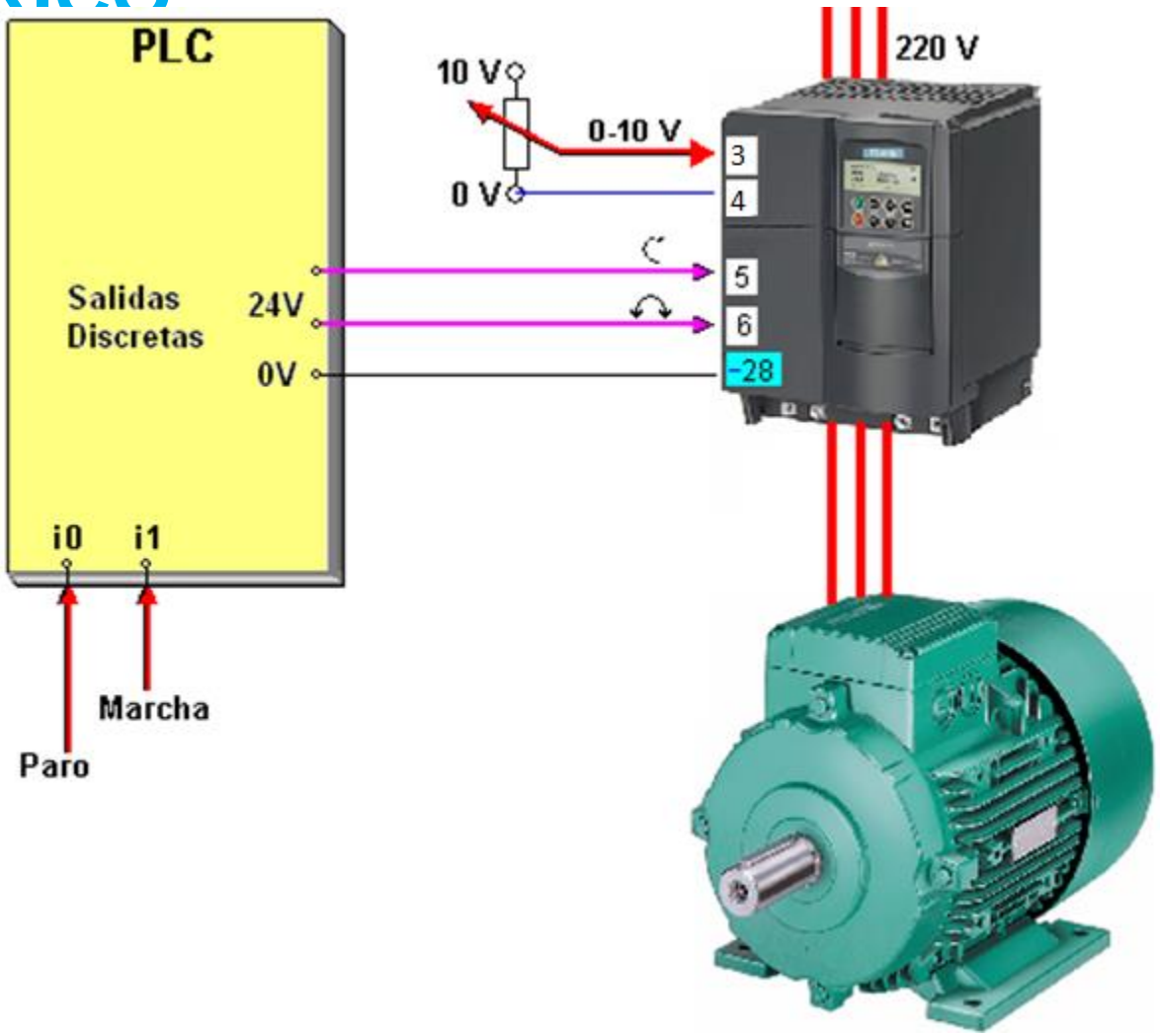
0 Fin de la puesta en servicio rápida sin cálculo del motor ni reajuste de fábrica.
1 Fin de la puesta en servicio rápida con cálculo del motor y reajuste de fábrica (recomendado)
2 Fin de la puesta en servicio rápida con cálculo del motor y reajuste de E/S.
3 Fin de la puesta en servicio rápida con cálculo del motor pero sin reajuste de E/S.

CONEXION de mando del MM440 de

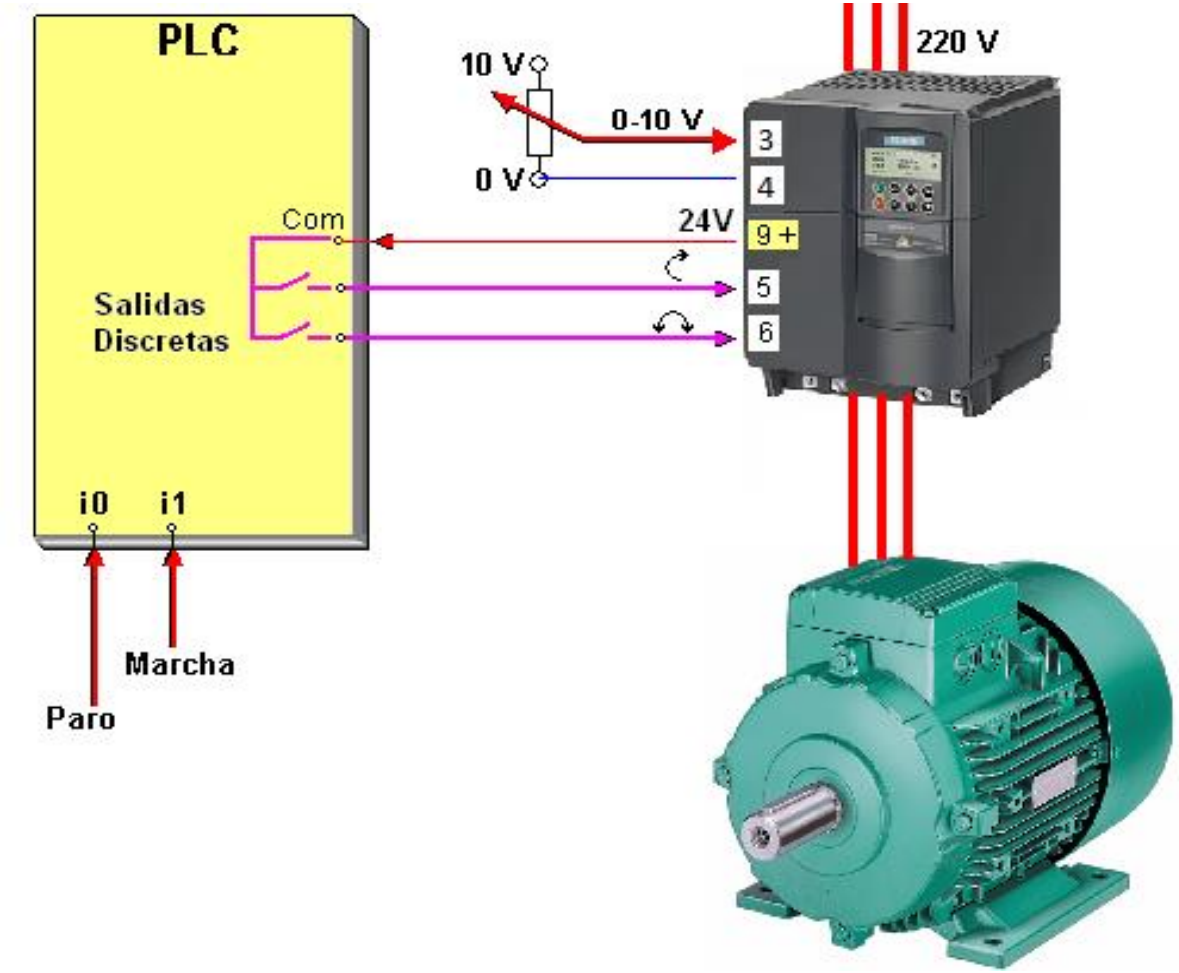


- Características del Motor: Tensión, Corriente y Potencia acordes al equipo
- DIN1: Marcha a derecha
- DIN2: Inversión de giro
- DIN3: Reseteo de falla
- DIN4: Frecuencia Fija 15 Hz
- DIN5: Frecuencia Fija 20 Hz
- DIN6: Frecuencia Fija 25 Hz
- DOUT1: Señalización de falla
- DOUT2: Señalización de alarma
- DOUT3: Sin función
- AIN1: (0 -10) V ⇒ (0 - 50/60) Hz
- AIN2: Sin función
- AOUT1: (0 -20)mA ⇒ (0 -50/60) Hz
- AOUT2: (0 -20)mA ⇒ (0 -50/60) Hz
- Tasc= 10seg / Tdesac= 10seg

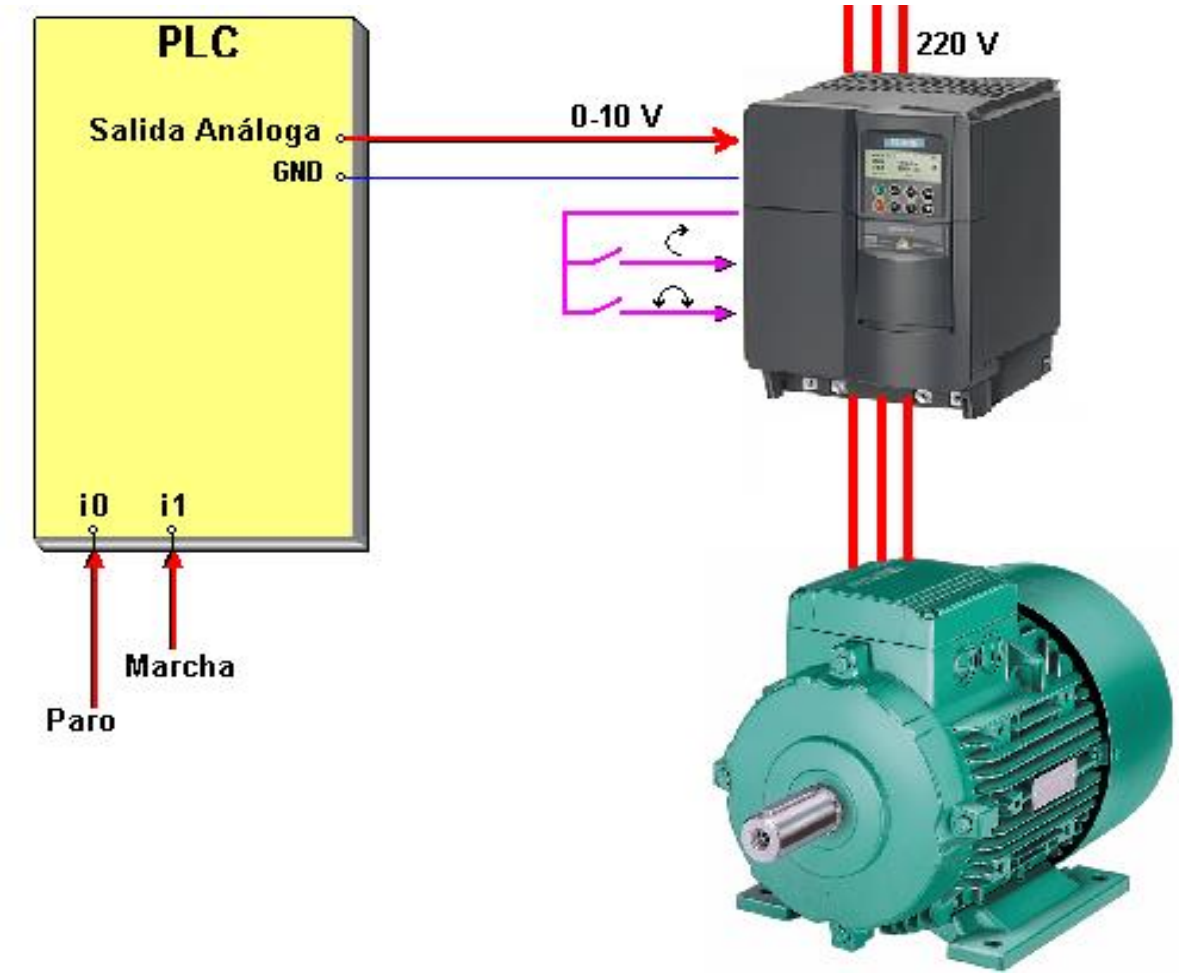
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



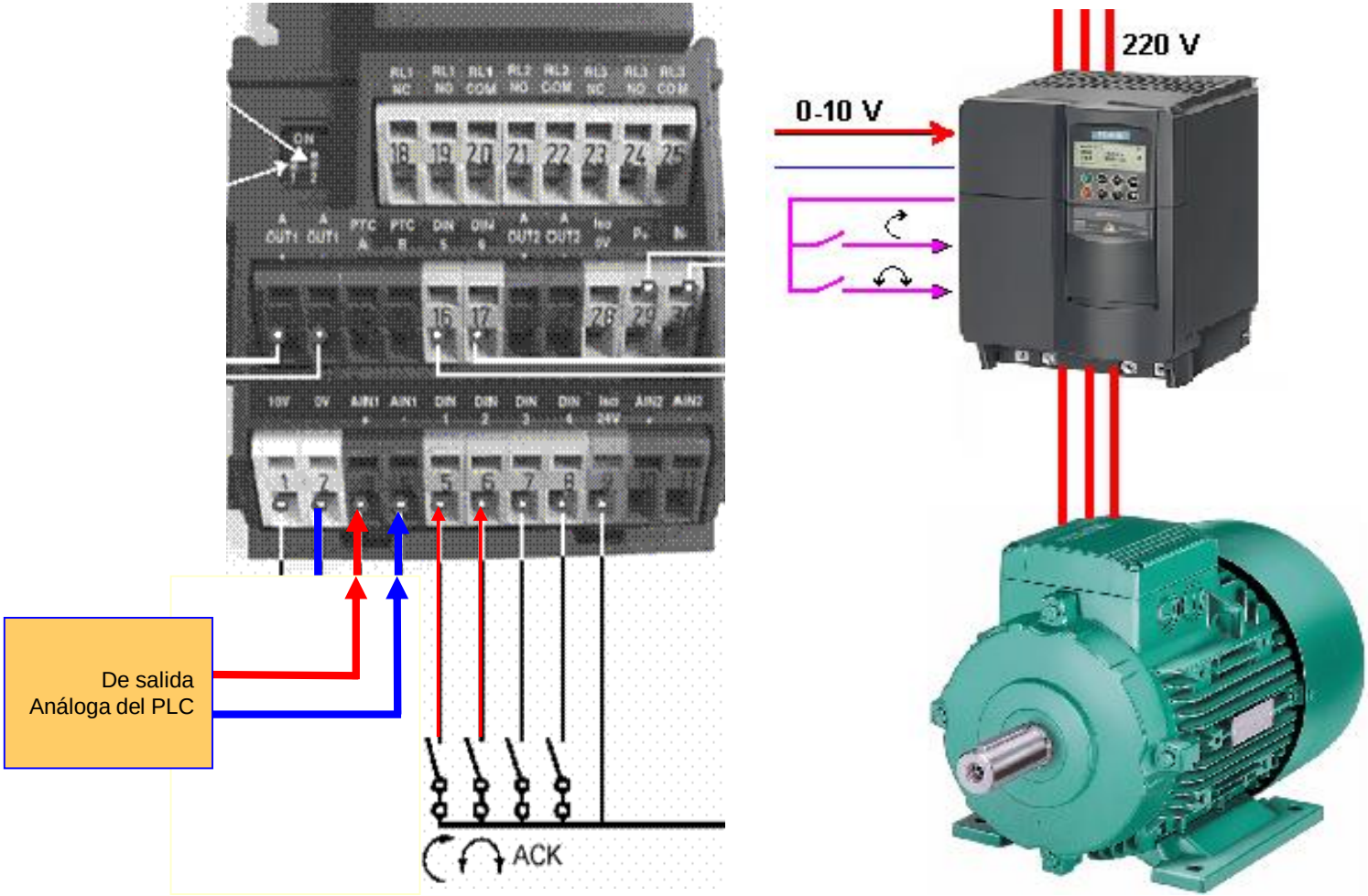
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



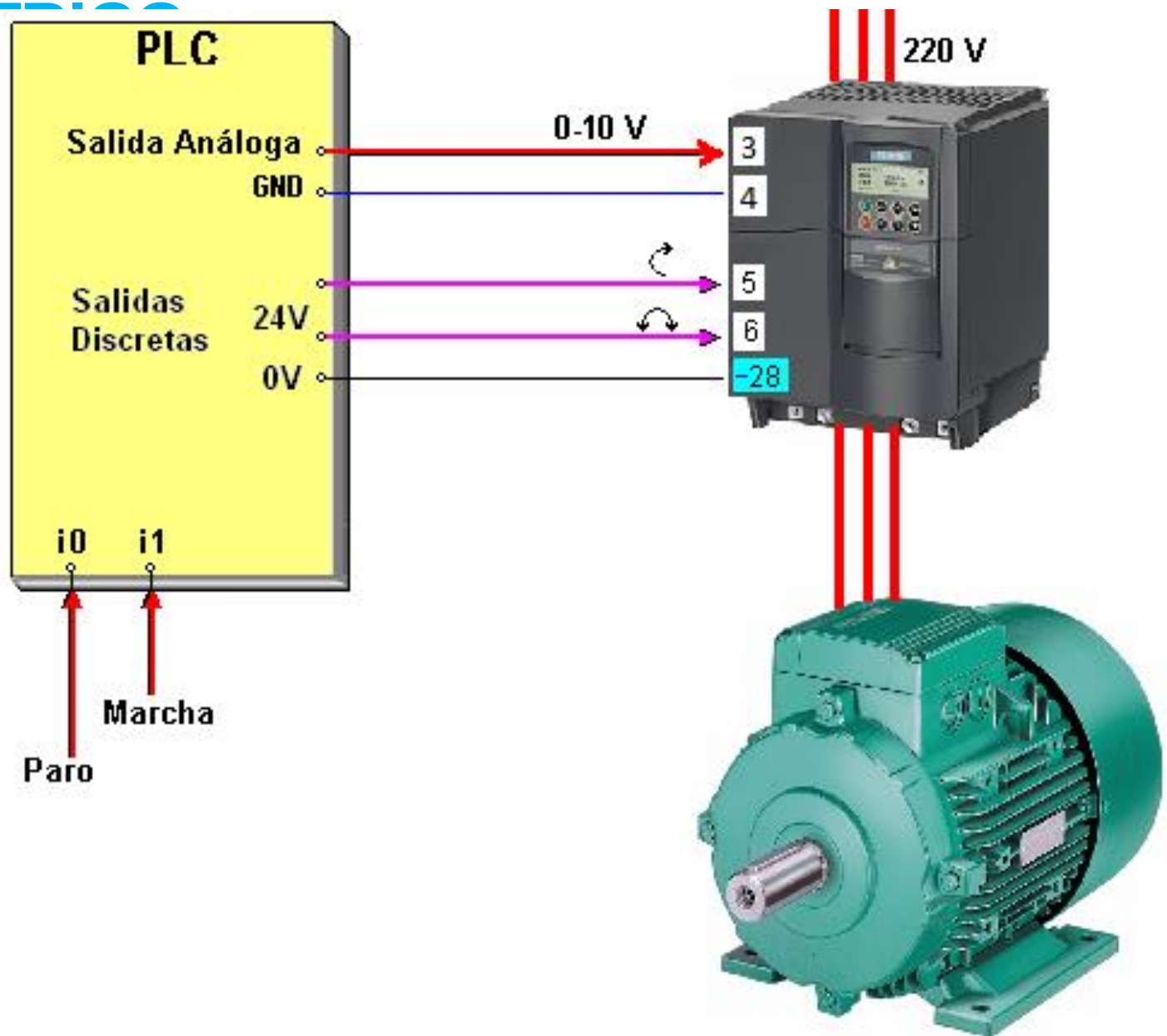
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



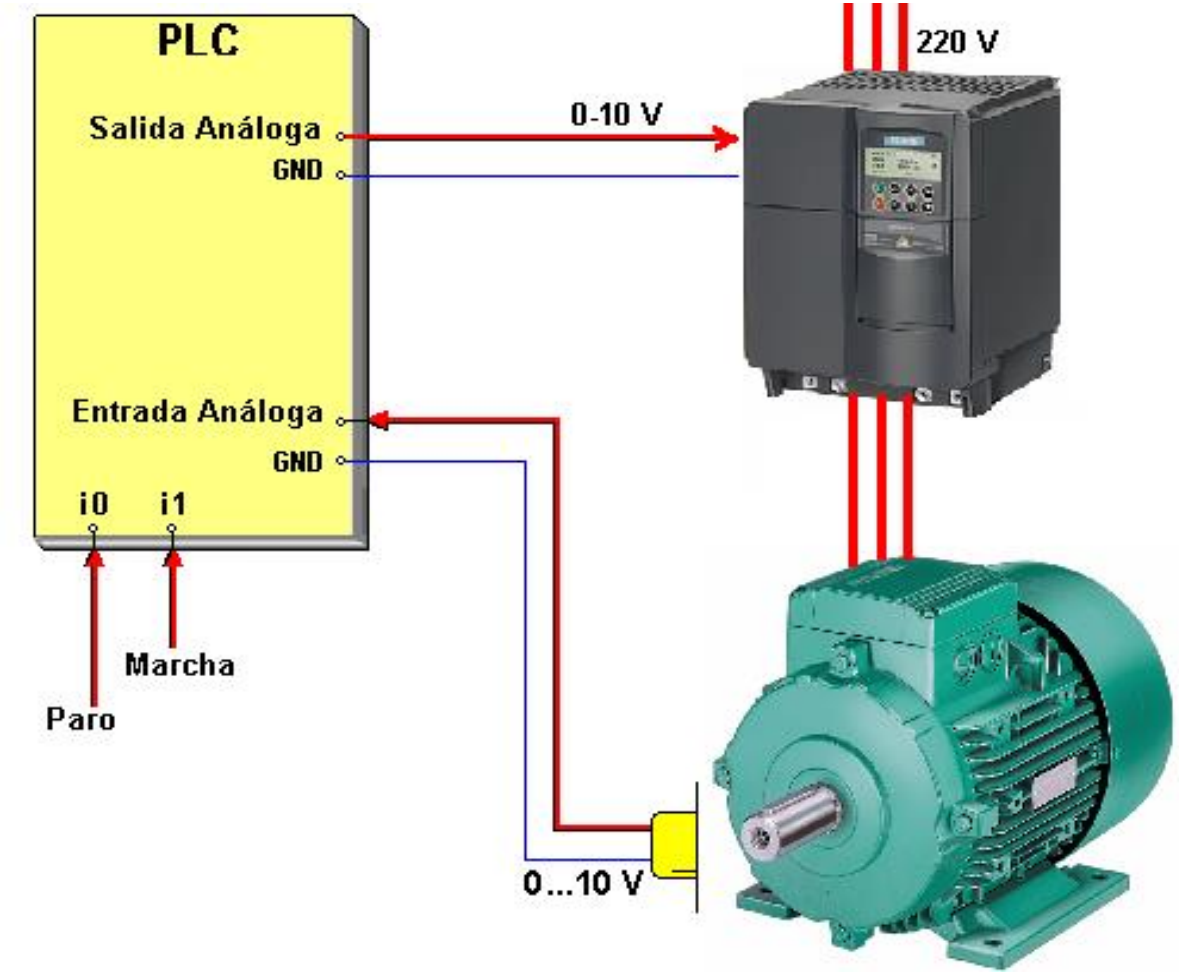
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

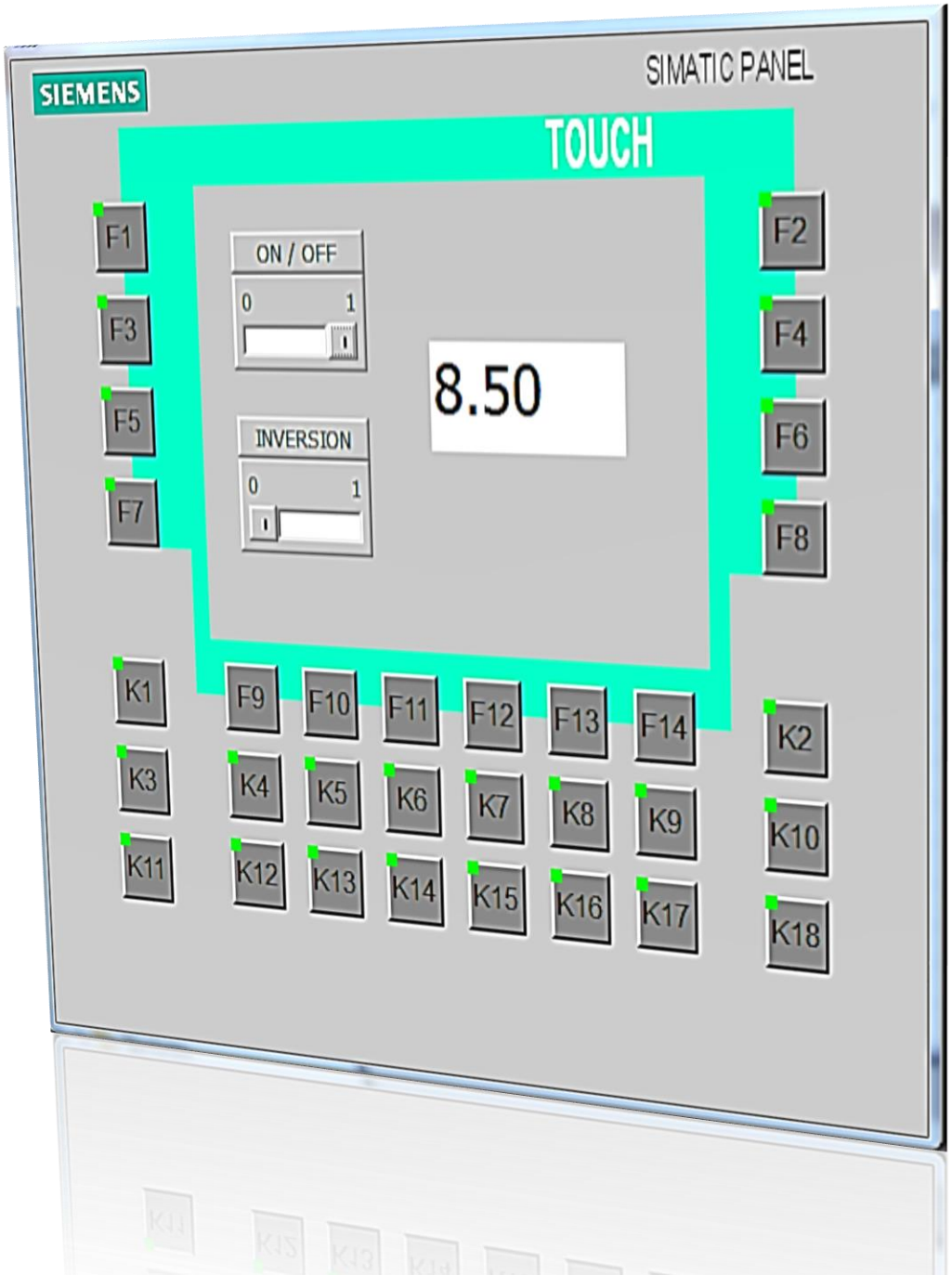


MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



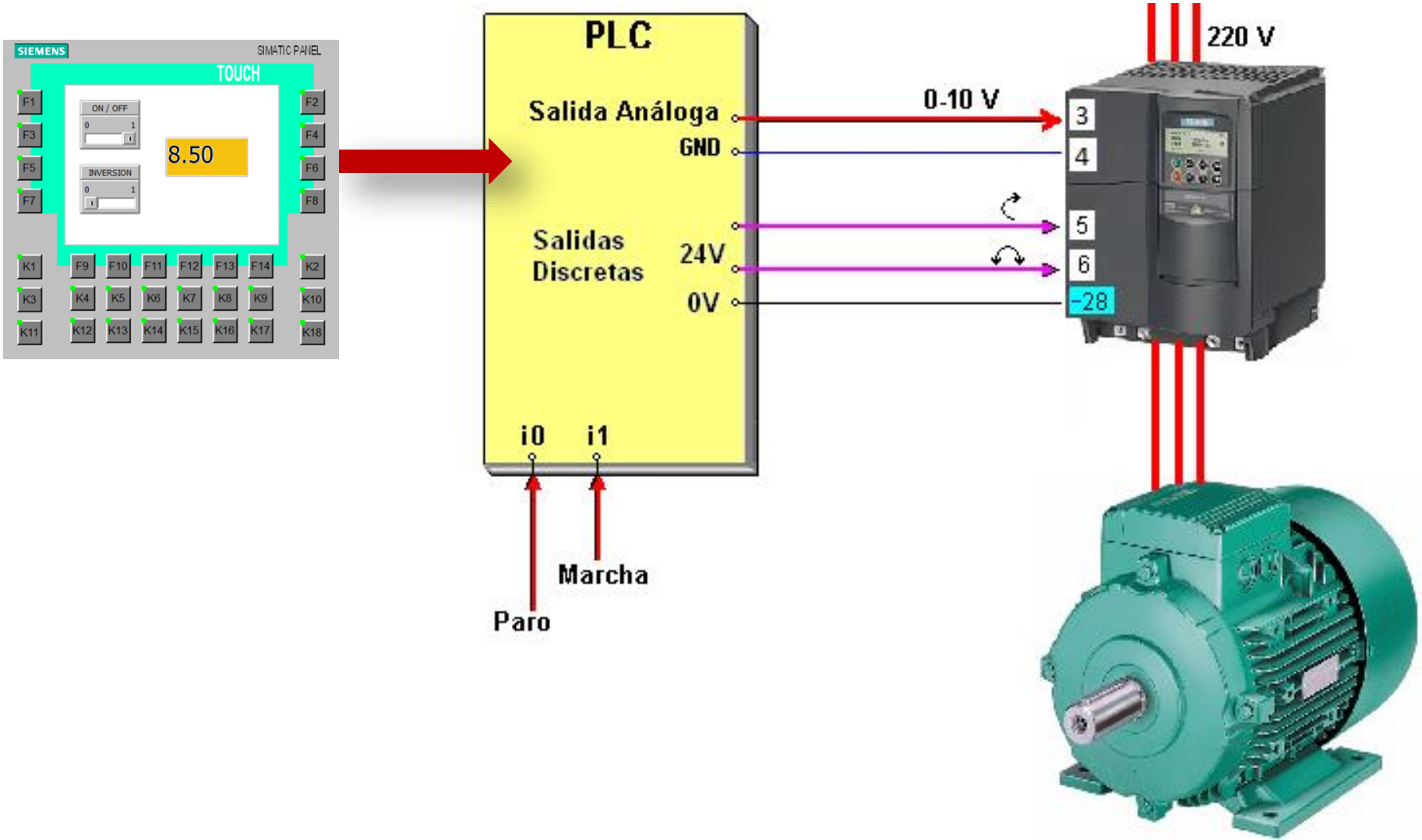
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



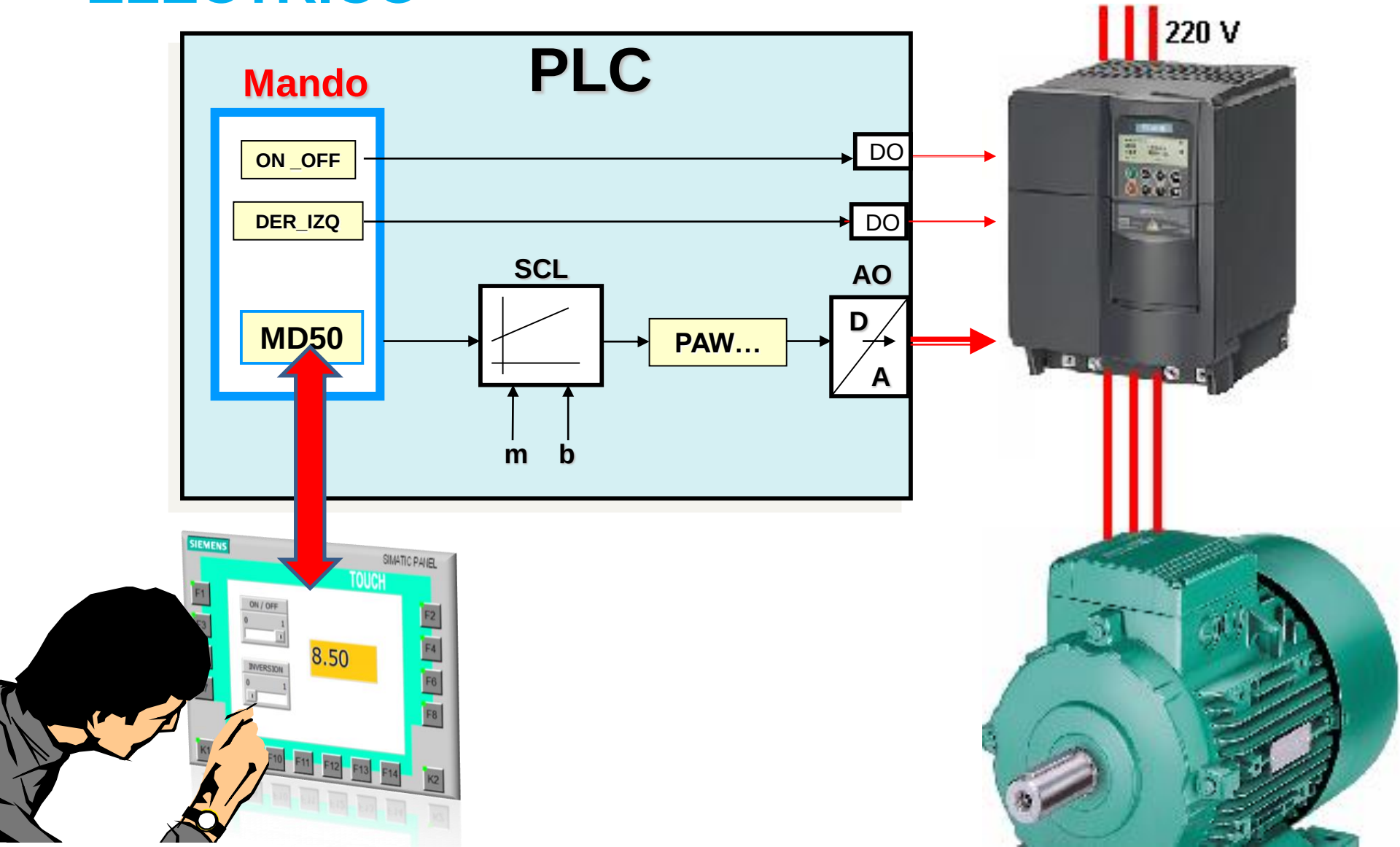

SIEMENS
SIMATIC PANEL
TOUCH
F1
F2
F3
F4
F5
F6
F7
F8
ON / OFF
0
1
INVERSION
0
1
8.50
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
K11
K12
K13
K14
K15
K16
K17
K18
F9
F10
F11
F12
F13
F14

Control y Monitoreo en Paneles de Operador

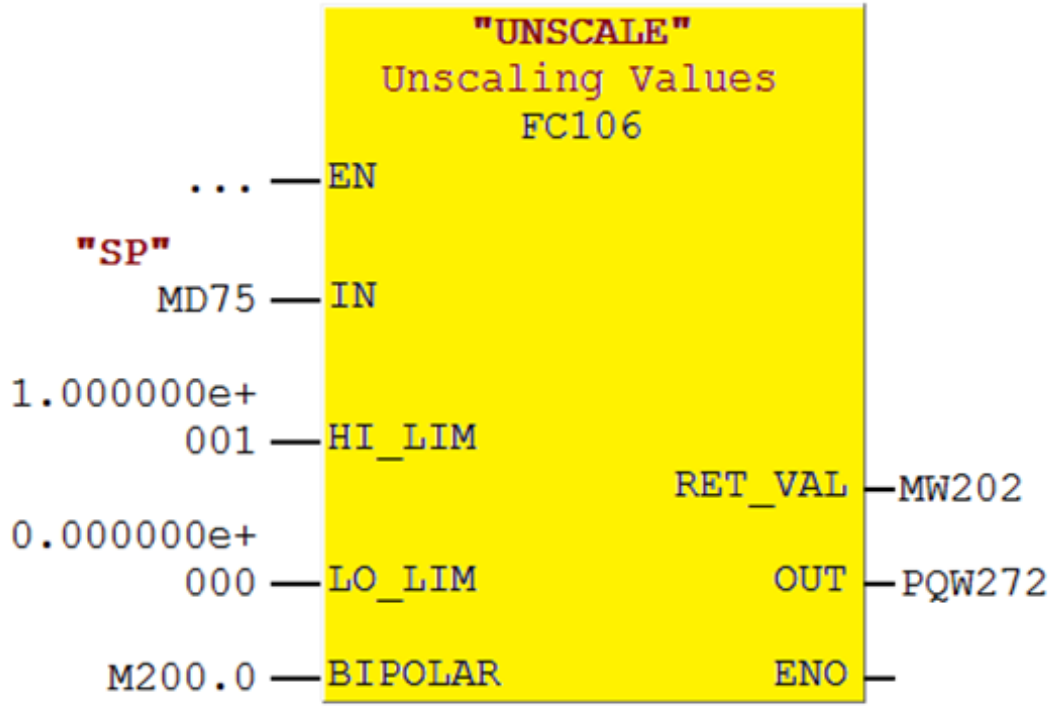
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

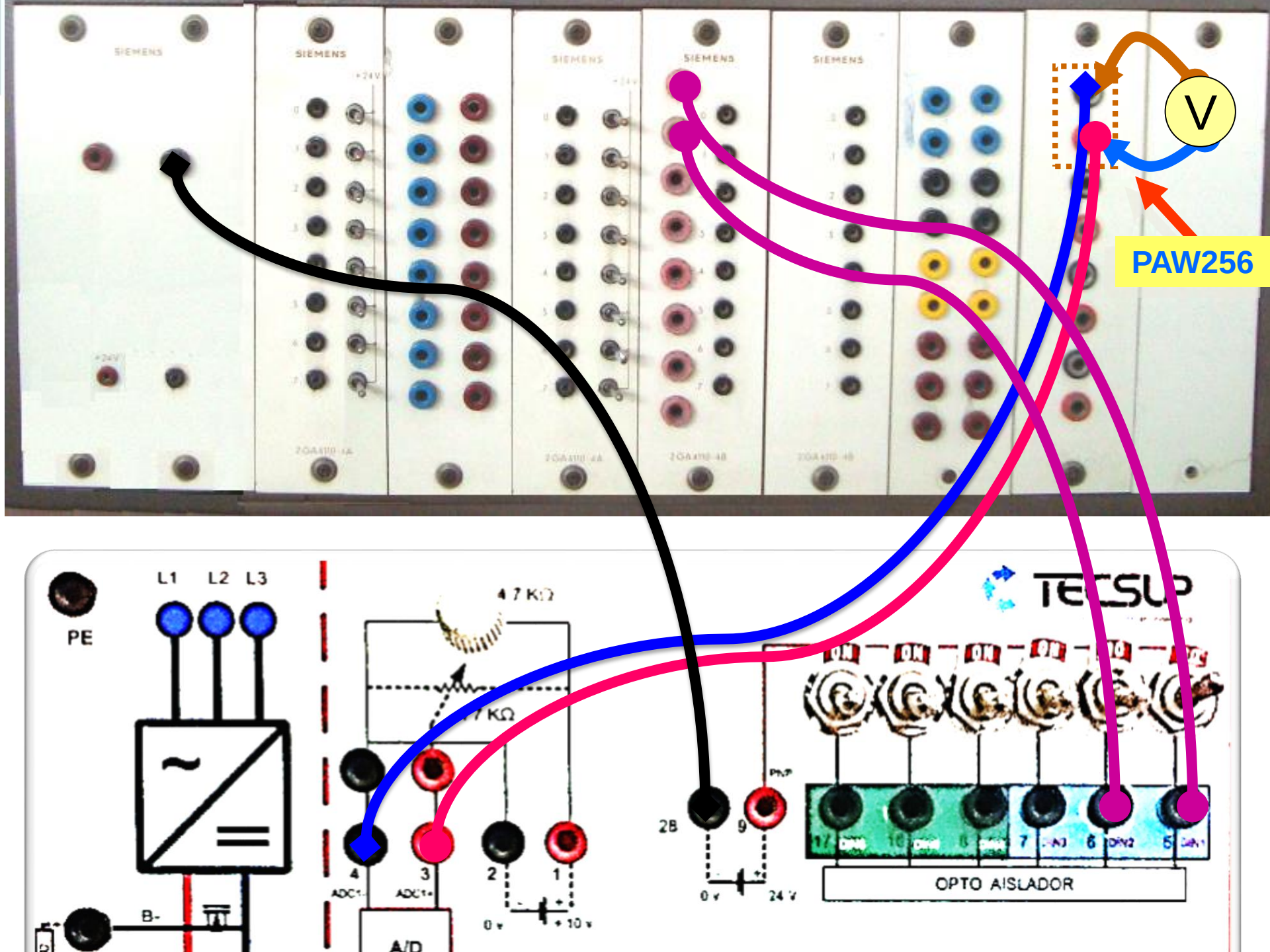


Network 1: SALIDA ANALOGICA



Network 2: MARCHA

Network 3: INVERTIR


SIEMENS
V
PAW256
PE
L1
L2
L3
B-
4.7 KΩ
4
3
2
1
ADC1-
ADC1+
A/D
0 v
+ 10 v
2B
9
PNP
0 v
24 V
TECSUP
ON
OPTO AISLADOR

WinCC flexible Advanced - plc_variador - SIMATIC HMI-Station(1)

Project Edit View Insert Format Faceplates Options Window Help

New <Undefined>

English (United States)

Project

- Project
  - SIMATIC HMI-Station(1)(OP 177B 6
    - Screens
      - Add Screen
      - Template
      - Screen_1
      - Screen_2
    - Communication
      - Tags
      - Connections
      - Cycles
    - Alarm Management
      - Analog Alarms
      - Discrete Alarms
      - Settings
    - Recipes
    - Reports
    - Text and Graphics Lists
    - Runtime User Administration
    - Device Settings
  - Language Settings
    - Project Languages
    - Graphics
    - Project Texts
    - Dictionaries
  - Structures
  - Version Management

Screen_1 | **Connections** | Tags | Screen_2

CON

Name	Active	Communication driver	Station	Partner	Node	O...	Comment
Connection_1	On	SIMATIC S7 300/400	\plc_...	CPU 313C-2 DP	CPU 313C-2 DP	On	

Parameters | Area pointer

OP 177B 6" color PN/DP

Interface: IF1B MPI/DP

Station

HMI device

Type: TTY / RS232 / RS422 / RS485 / Simatic

Baud rate: 187500

Address: 1

Access point: S7ONLINE

☑ Only master on the bus

Network

Profile: MPI

Highest station address (HSA): 31

Number of masters: 1

PLC device

Address: 2

Expansion slot: 2

Rack: 0

☑ Cyclic operation

Name	Active	Communication driver	Station	Partner	Node	O...
Connection_1	On	SIMATIC S7 300/400	\plc_...	CPU 313C-2 DP	CPU 313C-2 DP	On

Parameters | Area pointer

OP 177B 6" color
PN/DP

Interface

IF1B MPI/DP

Station

HMI device

Type

- TTY
- RS232
- RS422
- RS485
- Simatic

Baud rate

187500

Address 1

Access point S7ONLINE

☑ Only master on the bus

Network

Profile MPI

Highest station address (HSA)

31

Number of masters 1

PLC device

Address 2

Expansion slot 2

Rack 0

☑ Cyclic operation

OP 177B 6" color PN/DP

Interface

IF1B MPI/DP

Station

HMI device

Type

TTY

RS232

RS422

Baud rate

187500

Address 1

Network

Profile MPI

Highest station address (HSA)

PLC device

Address 2

Expansion slot 2

NetPro - [plc_variador (Network) -- C:\Program Files\...\s7proj\plc_vari]

Network Edit Insert PLC View Options Window Help

Find:

Selection of the network

- PROFIBUS DP
- PROFIBUS-PA
- PROFINET IO
- Stations
- Subnets

MPI(1) 1

MPI

SIMATIC 300(1)

CPU 313C-2 DP | DP

2 2

SIMATIC HMI-Station(1)

WinCC flexible RT | IF1B MPI/DP | HMI IE

1

WinCC flexible Advanced - plc_variador - SIMATIC HMI-Station(1)

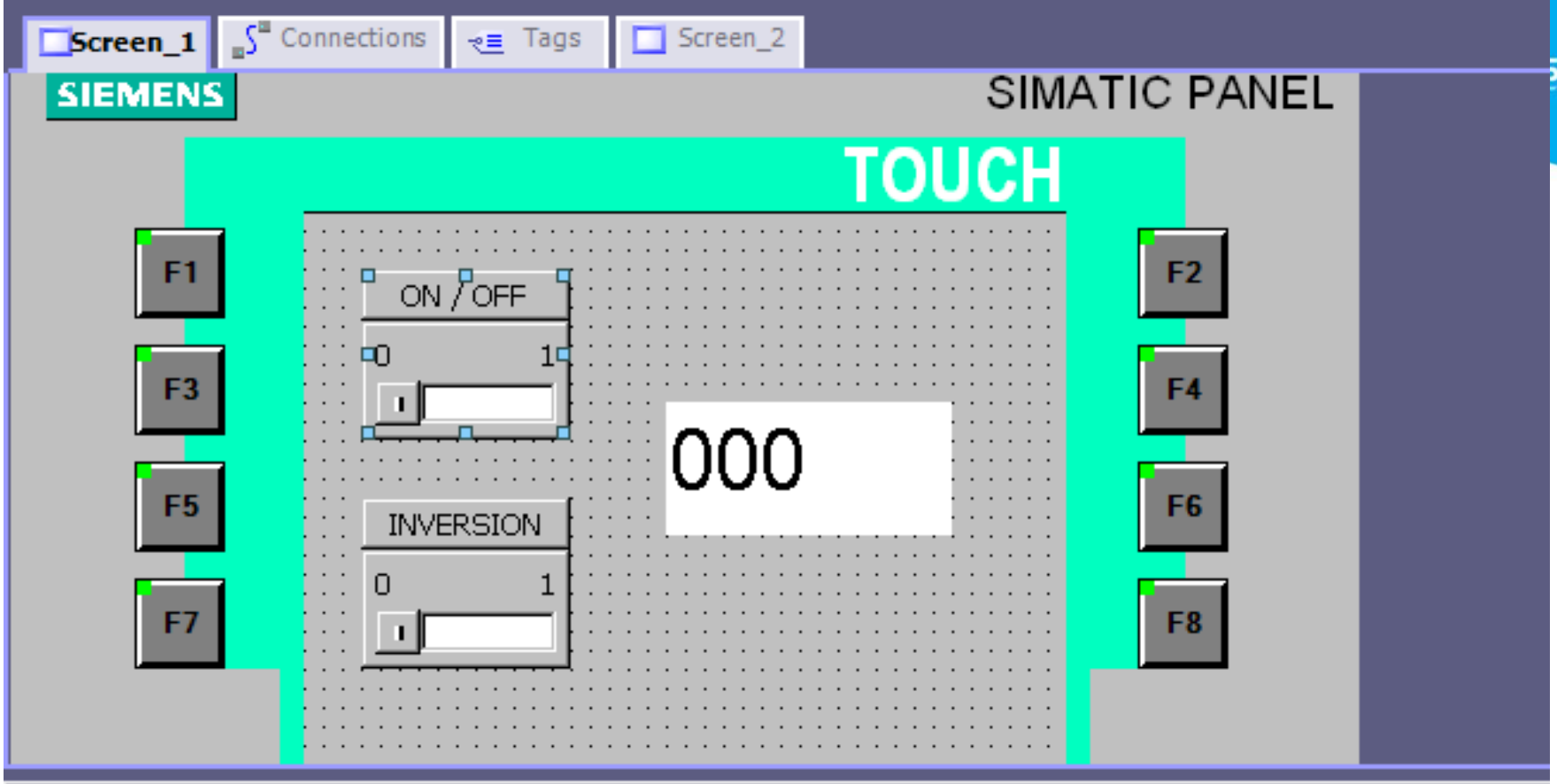
Project Edit View Insert Format Faceplates Options Window Help

New <Undefined>

English (United States)

Screen_1 | Connections | **Tags** | Screen_2

Name	Connection	Data type	Address	Symbol	Array elements
START_HMI	Connection_1	Bool	M 8.0	START_HMI	1
INV_HMI	Connection_1	Bool	M 8.1	INV_HMI	1
SP	Connection_1	Real	MD 75	SP	1



Switch_1 (Switch)

- General
- Properties
- Animations
- Events

Settings

Type	Switch
Label	ON / OFF

Text

Text ON	1
Text OFF	0

Process

Tag	START_HMI
Cycle	1 s
Value ON	1

Screen_1 | Connections | Tags

TOUCH

F1 F2 F3 F4 F5 F6 F7 F8

ON / OFF

0 1

INVERSION

0 1

00.00

IO Field_1 (IO Field)

- General
- Properties
- Animations
- Events

Type

Mode: Input/output

Process tag

SP

Cycle: 1 s

Format

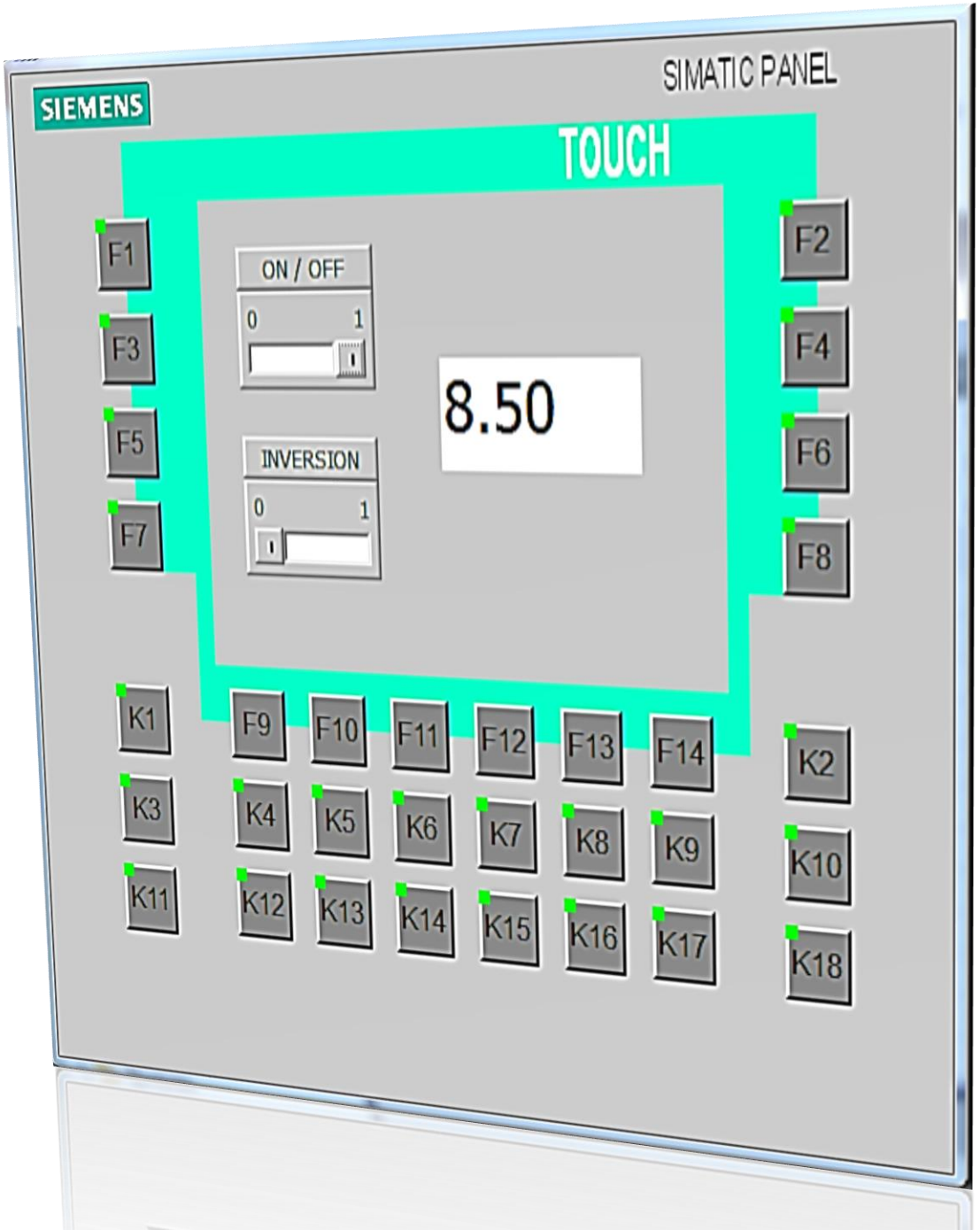
Format type: Decimal

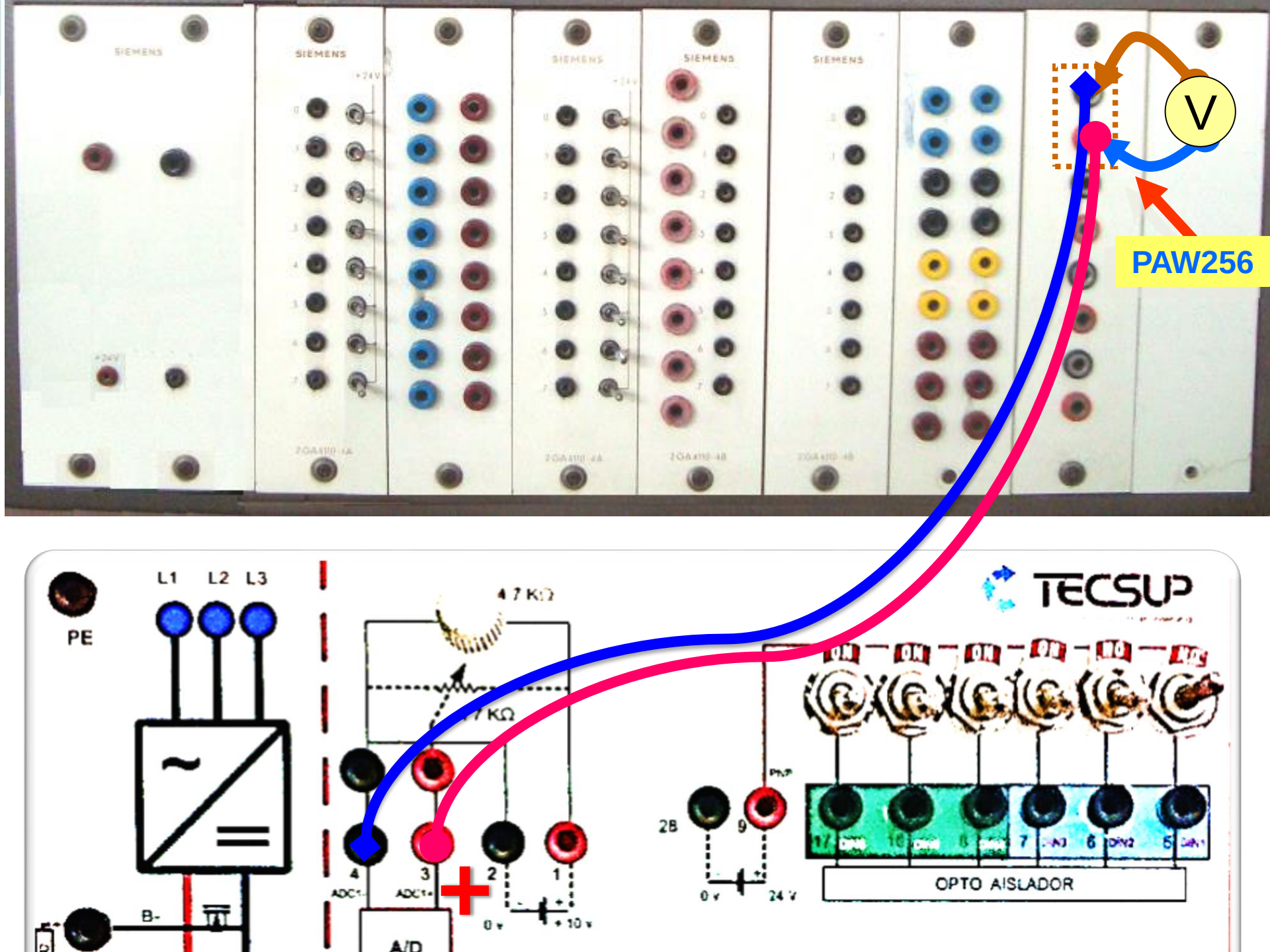
Format pattern

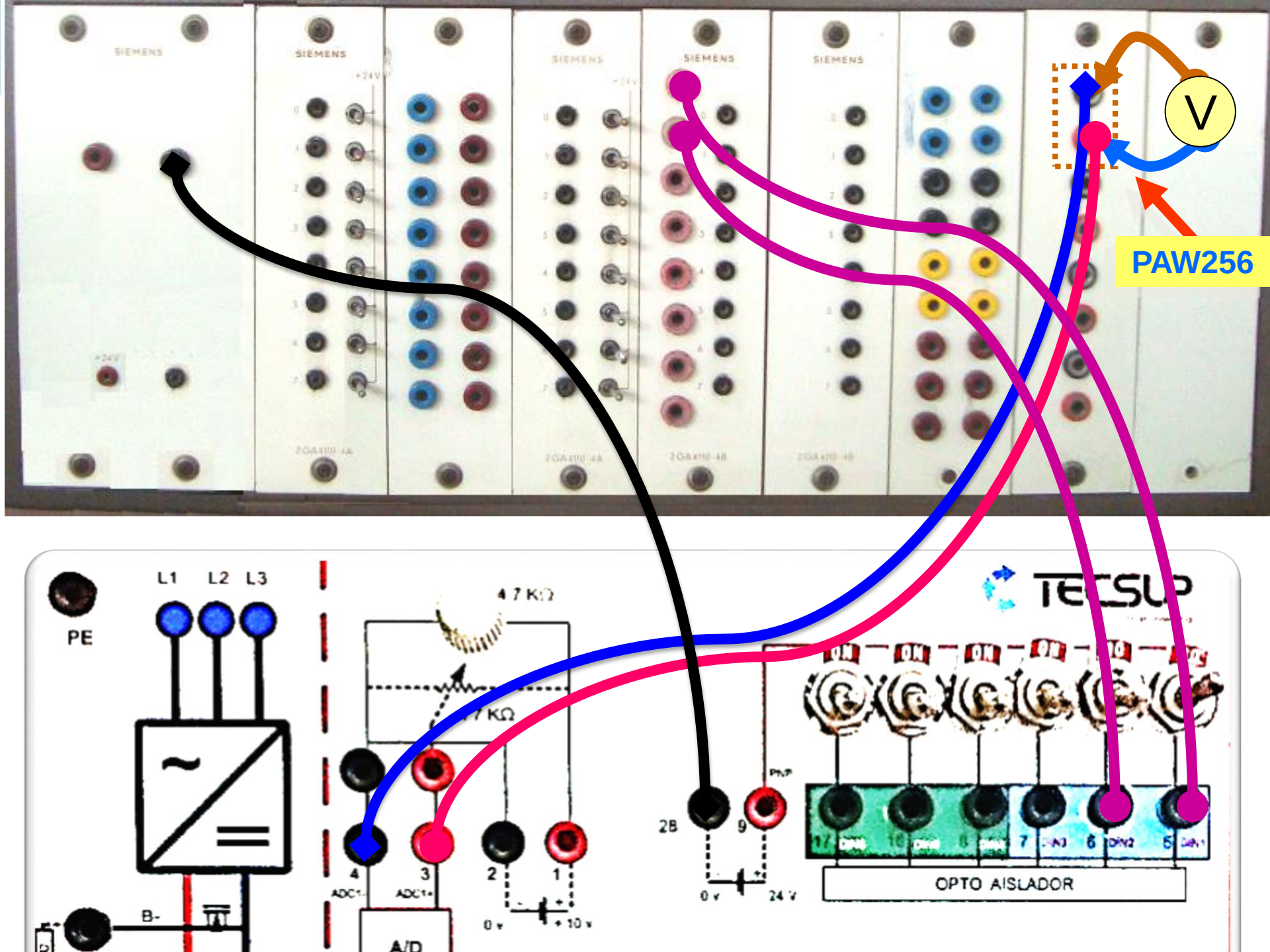
99.99

Shift decimal point: 0

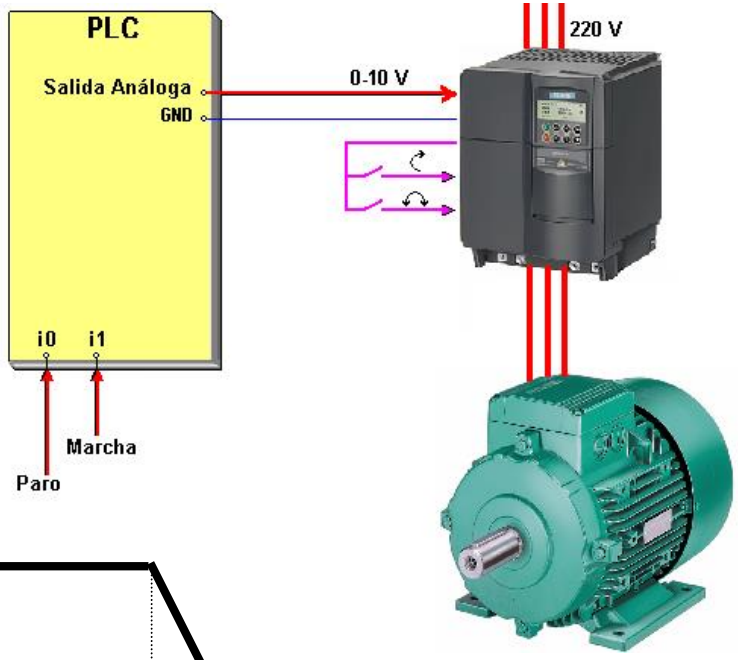
String field length: 5

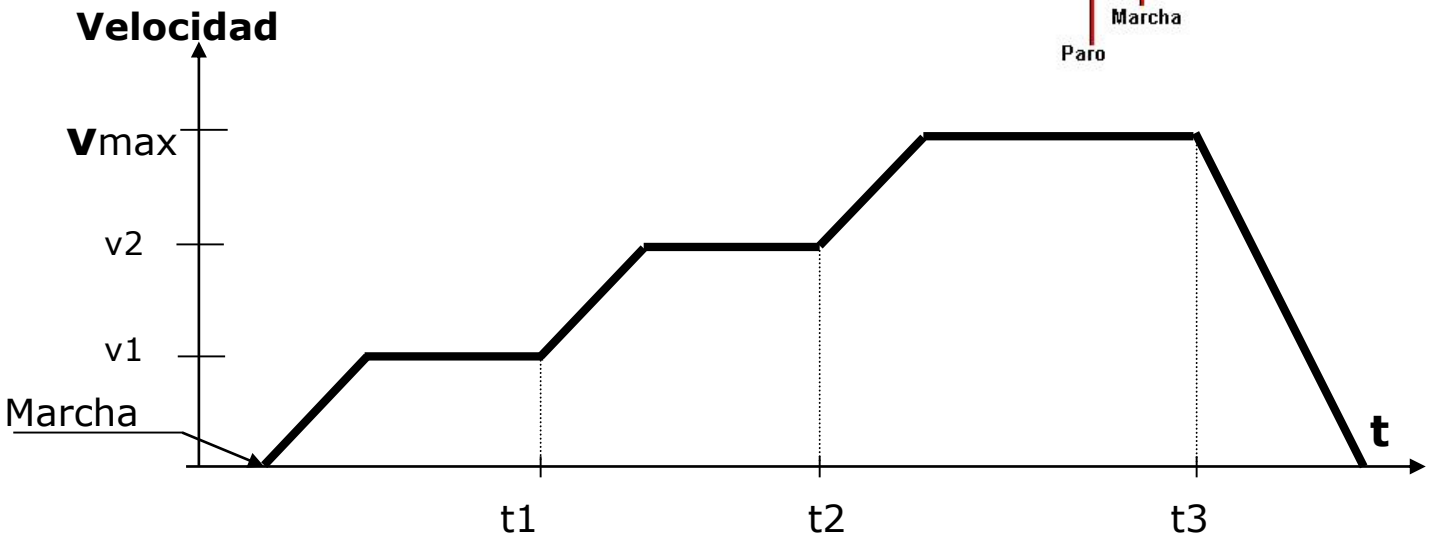

SIEMENS
SIMATIC PANEL
TOUCH
F1
F2
F3
F4
F5
F6
F7
F8
ON / OFF
0
1
INVERSION
0
1
8.50
K1
K2
K3
K4
K5
K6
K7
K8
K9
K10
K11
K12
K13
K14
K15
K16
K17
K18
F9
F10
F11
F12
F13
F14


SIEMENS
V
PAW256
PE
L1
L2
L3
B-
4.7 KΩ
4.7 KΩ
4
3
2
1
ADC1-
ADC1+
0 v
+ 10 v
A/D
TECSUP
2B
9
0 v
24 V
OPTO AISLADOR


SIEMENS
V
PAW256
PE
L1
L2
L3
B-
4.7 KΩ
4
3
2
1
ADC1-
ADC1+
A/D
0 v
+ 10 v
2B
9
PNP
0 v
24 V
TECSUP
ON
OPTO AISLADOR

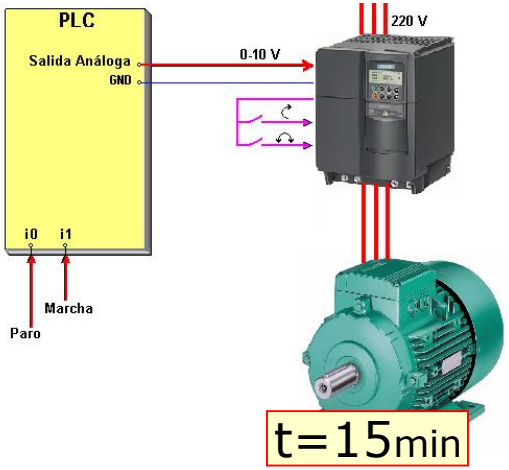
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

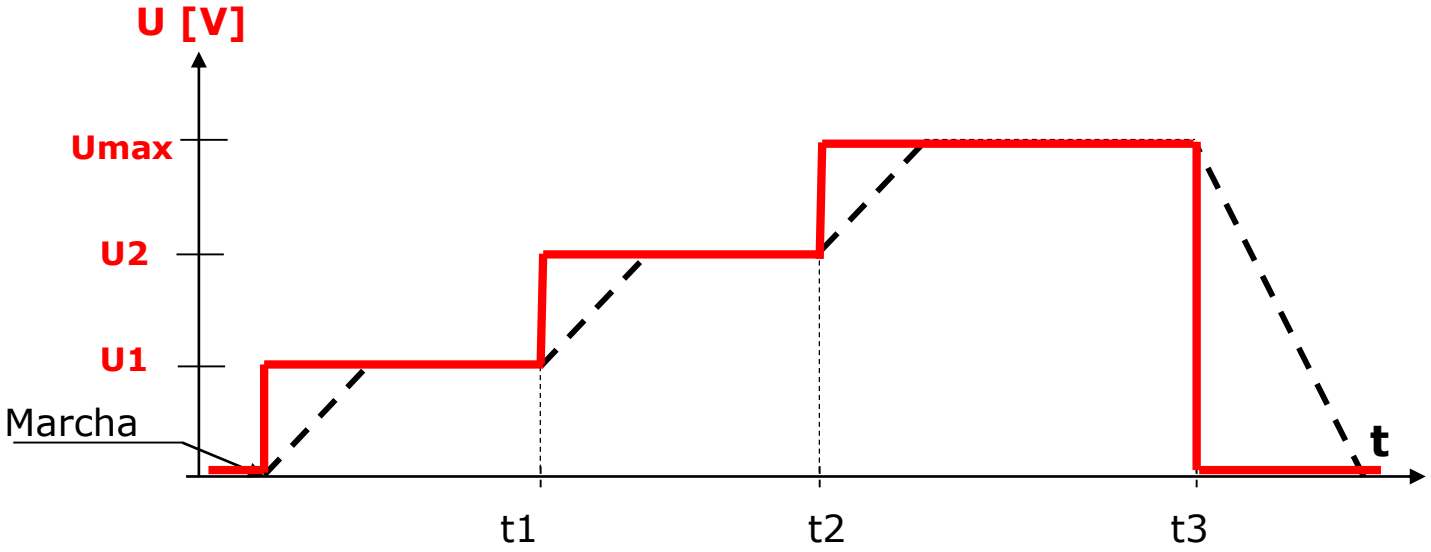




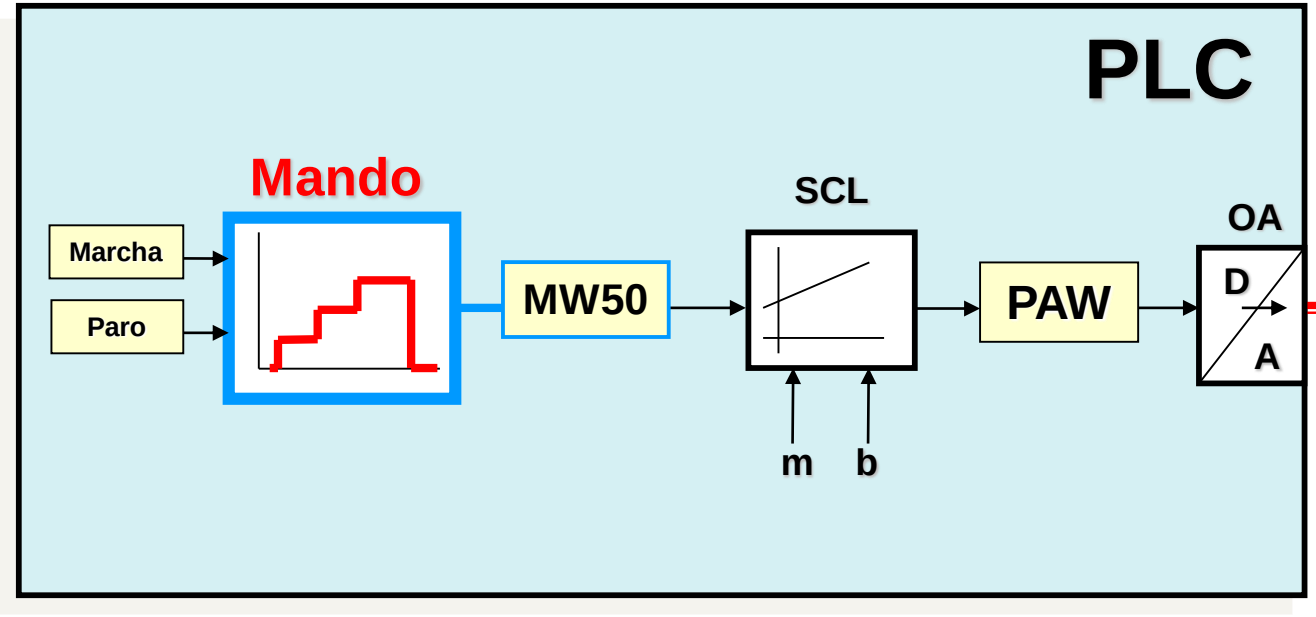
t=15min

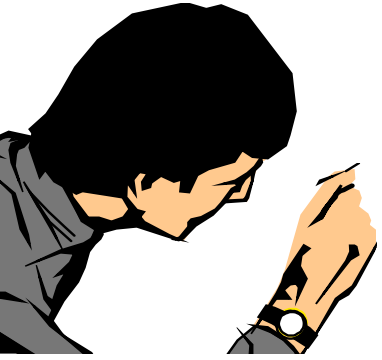
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

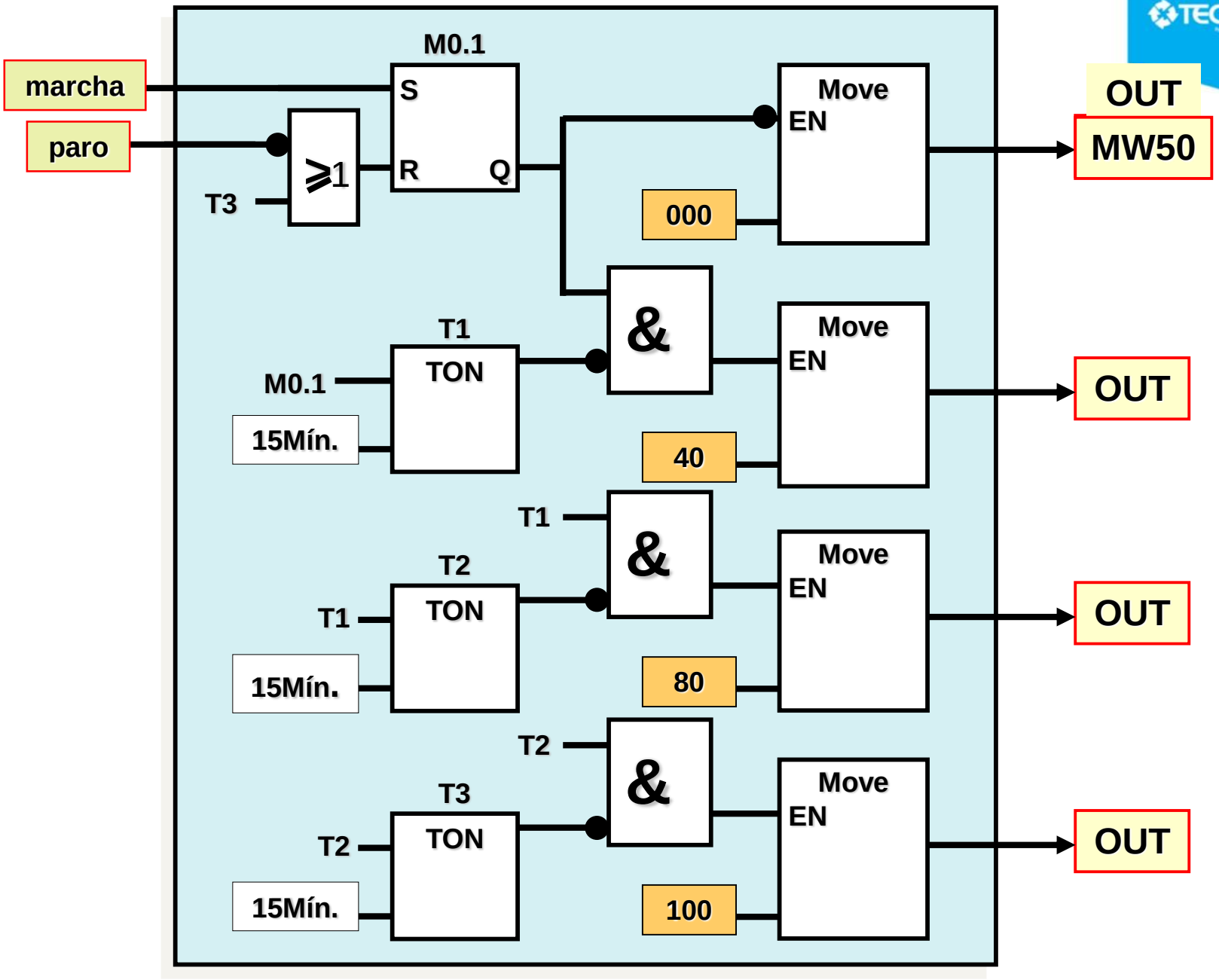


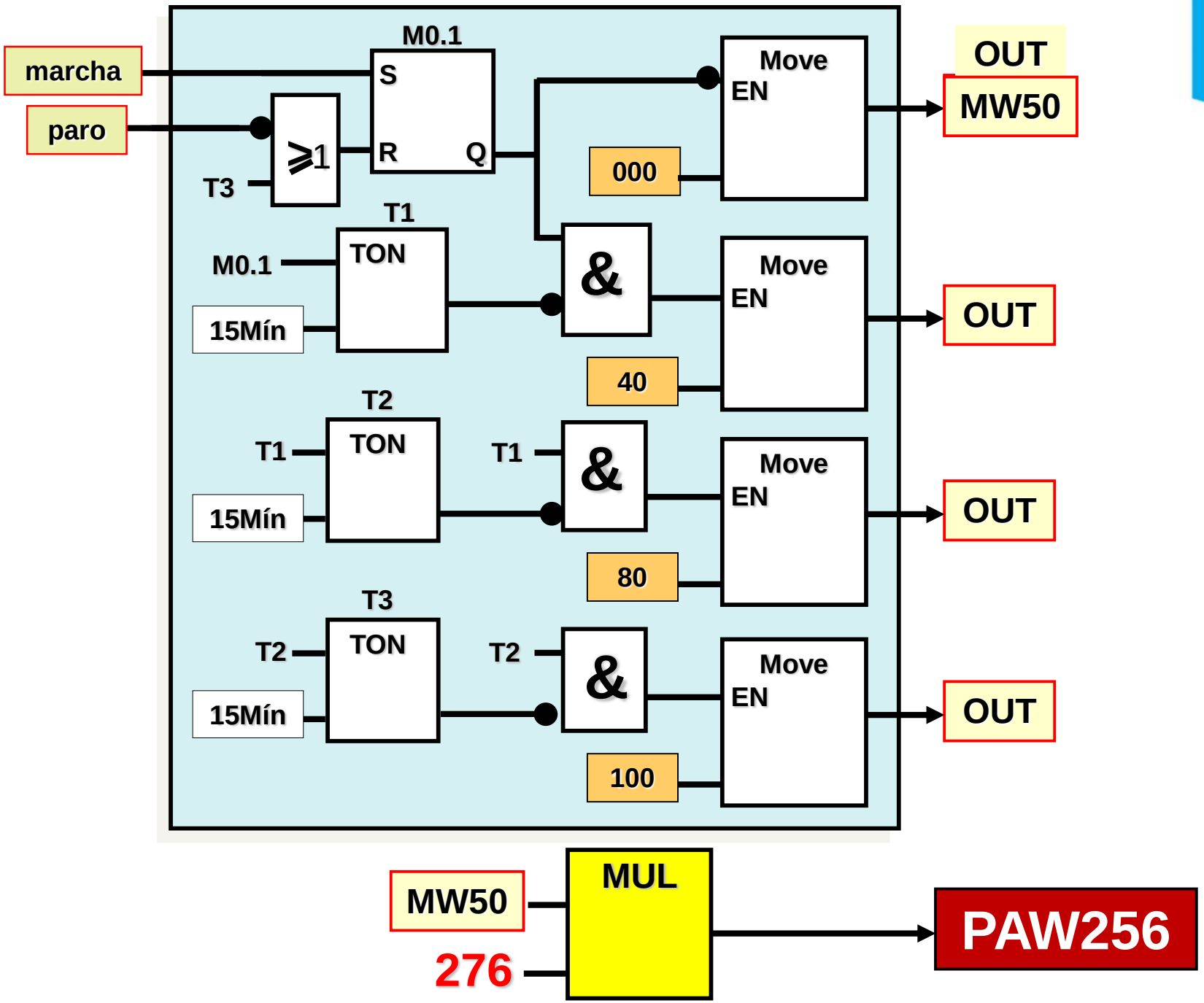


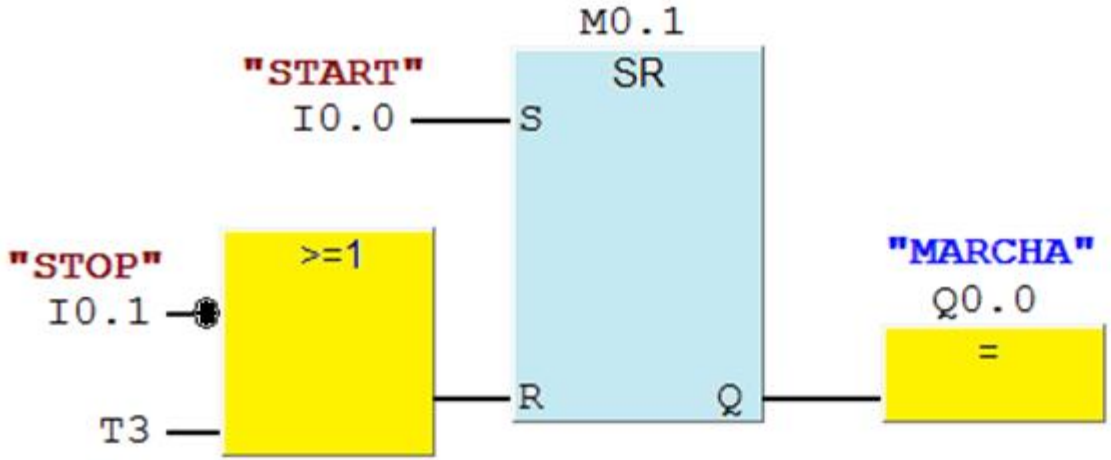
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

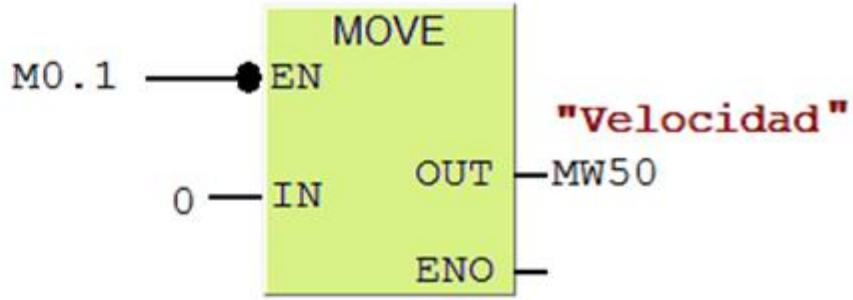


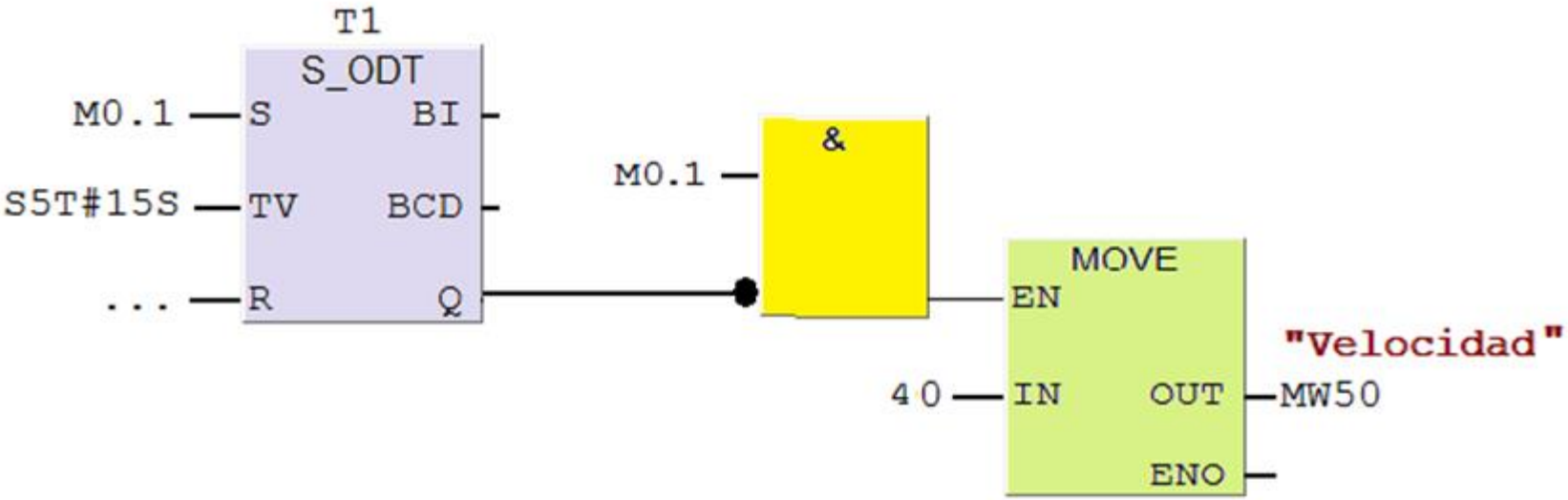


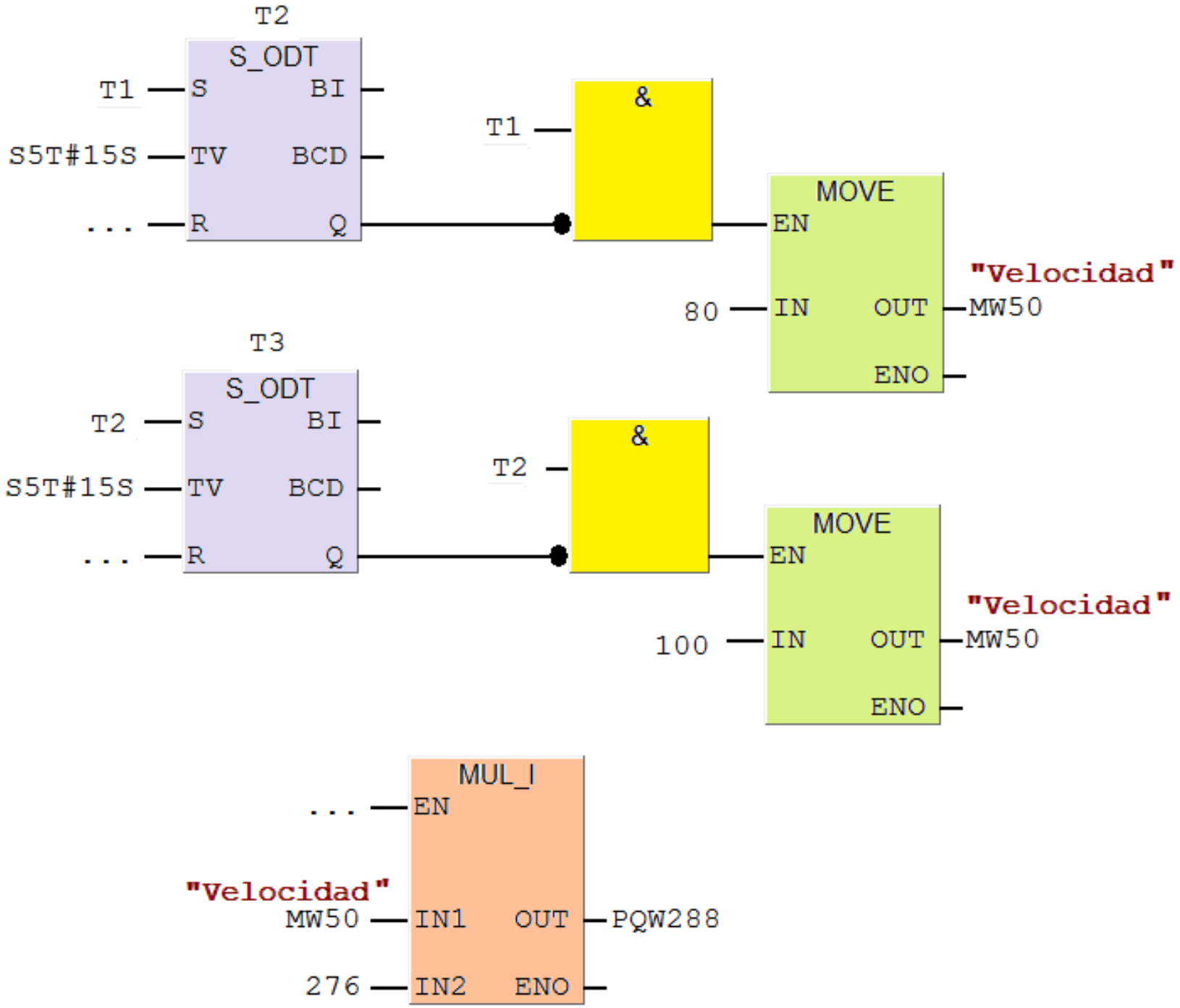

M0.1
marcha
S
paro
≥1
R
Q
T3
Move
EN
OUT
MW50
000
&
T1
TON
M0.1
15Mín.
Move
EN
OUT
40
T1
&
T2
TON
T1
15Mín.
Move
EN
OUT
80
T2
&
T3
TON
T2
15Mín.
Move
EN
OUT
100


marcha
paro
M0.1
S
R
Q
≥1
T3
T1
TON
M0.1
15Mín
&
Move
EN
000
OUT
MW50
40
T2
TON
T1
15Mín
T1
&
80
T3
TON
T2
15Mín
T2
&
100
MUL
MW50
276
PAW256

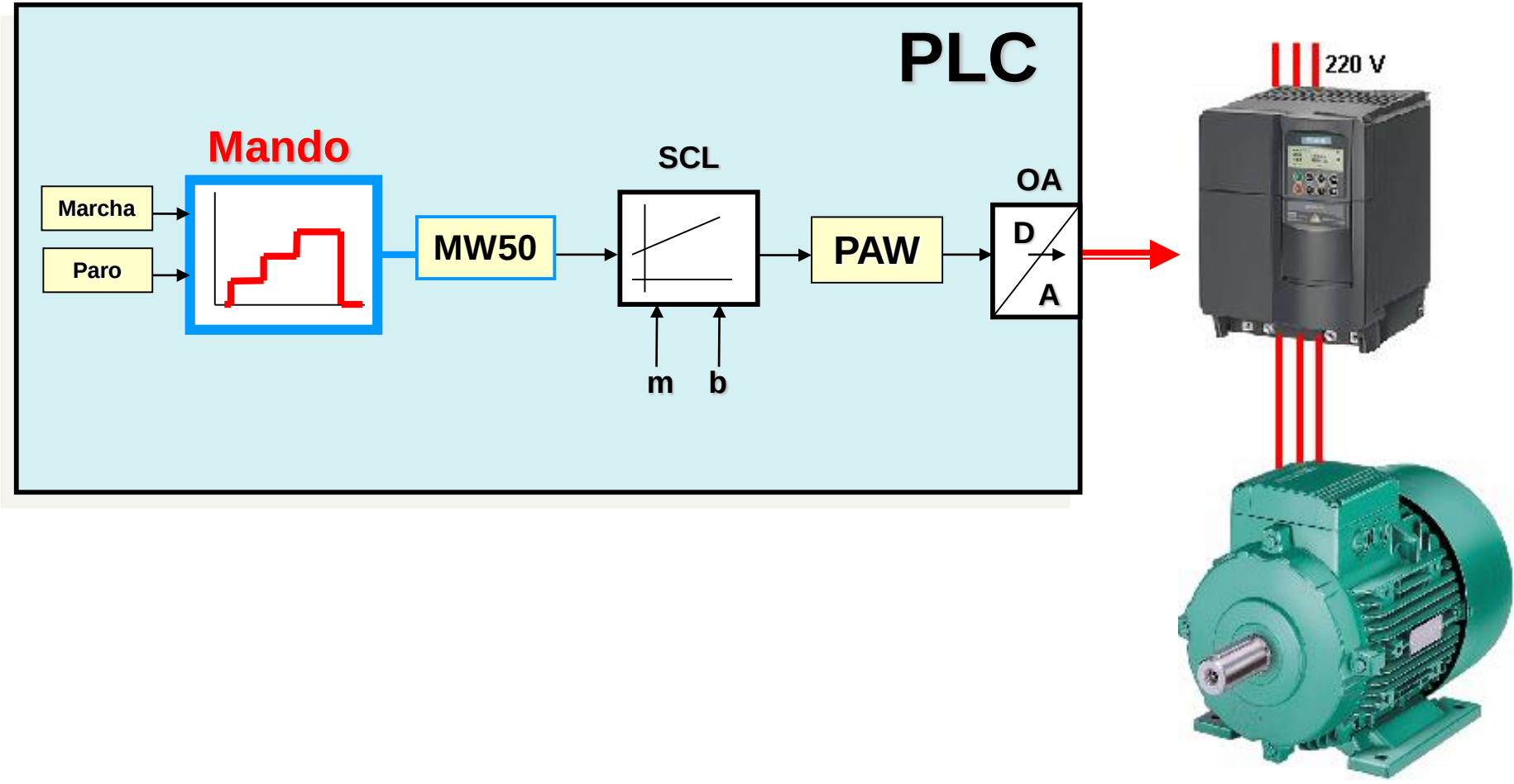

M0.1
SR
"START"
I0.0
S
"STOP"
I0.1
>=1
T3
R
Q
"MARCHA"
Q0.0
=


MOVE
M0.1
EN
"Velocidad"
OUT
MW50
0
IN
ENO

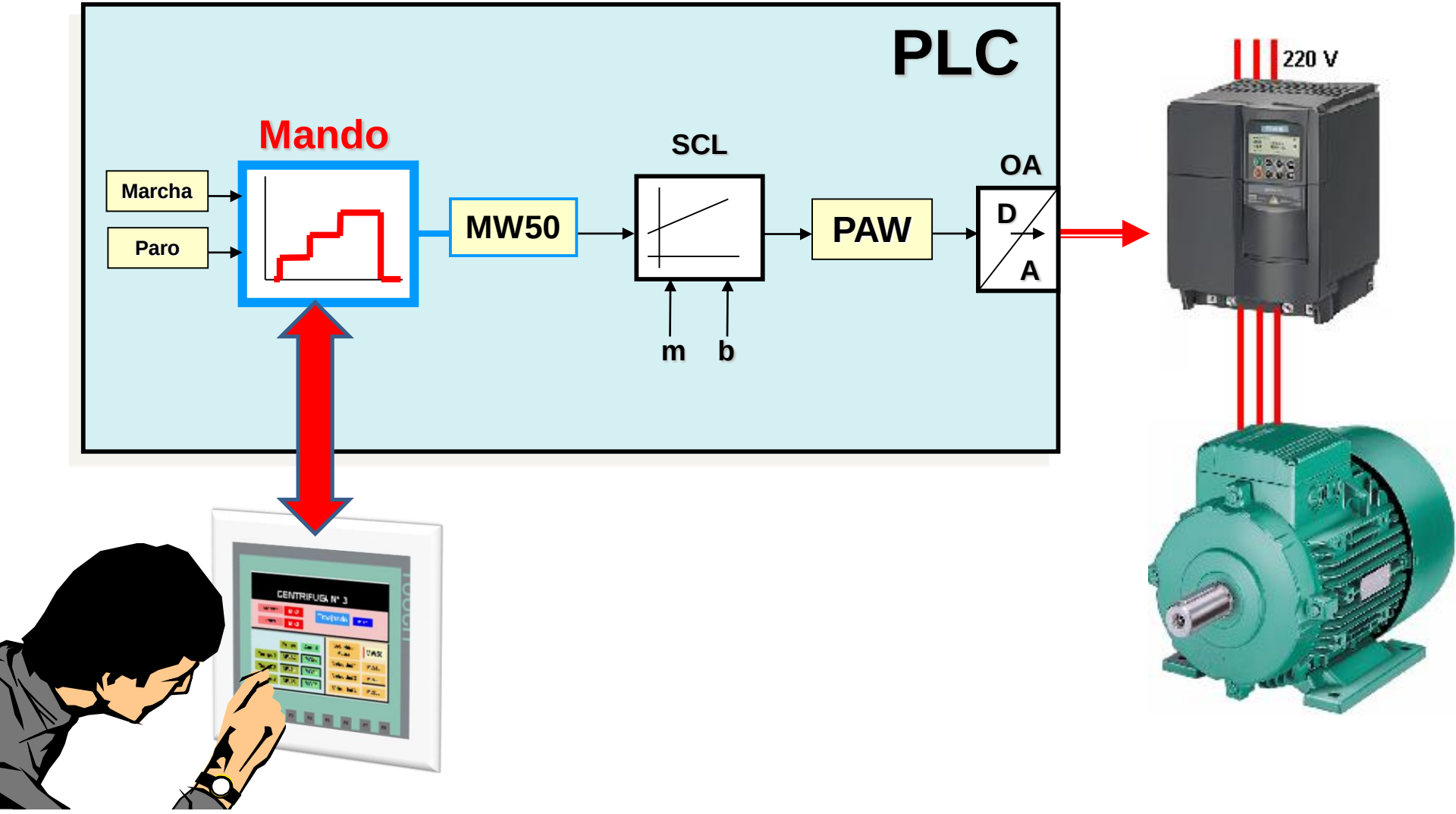

T1
S_ODT
M0.1
S
BI
S5T#15S
TV
BCD
...
R
Q
M0.1
&
MOVE
EN
"Velocidad"
40
IN
OUT
MW50
ENO

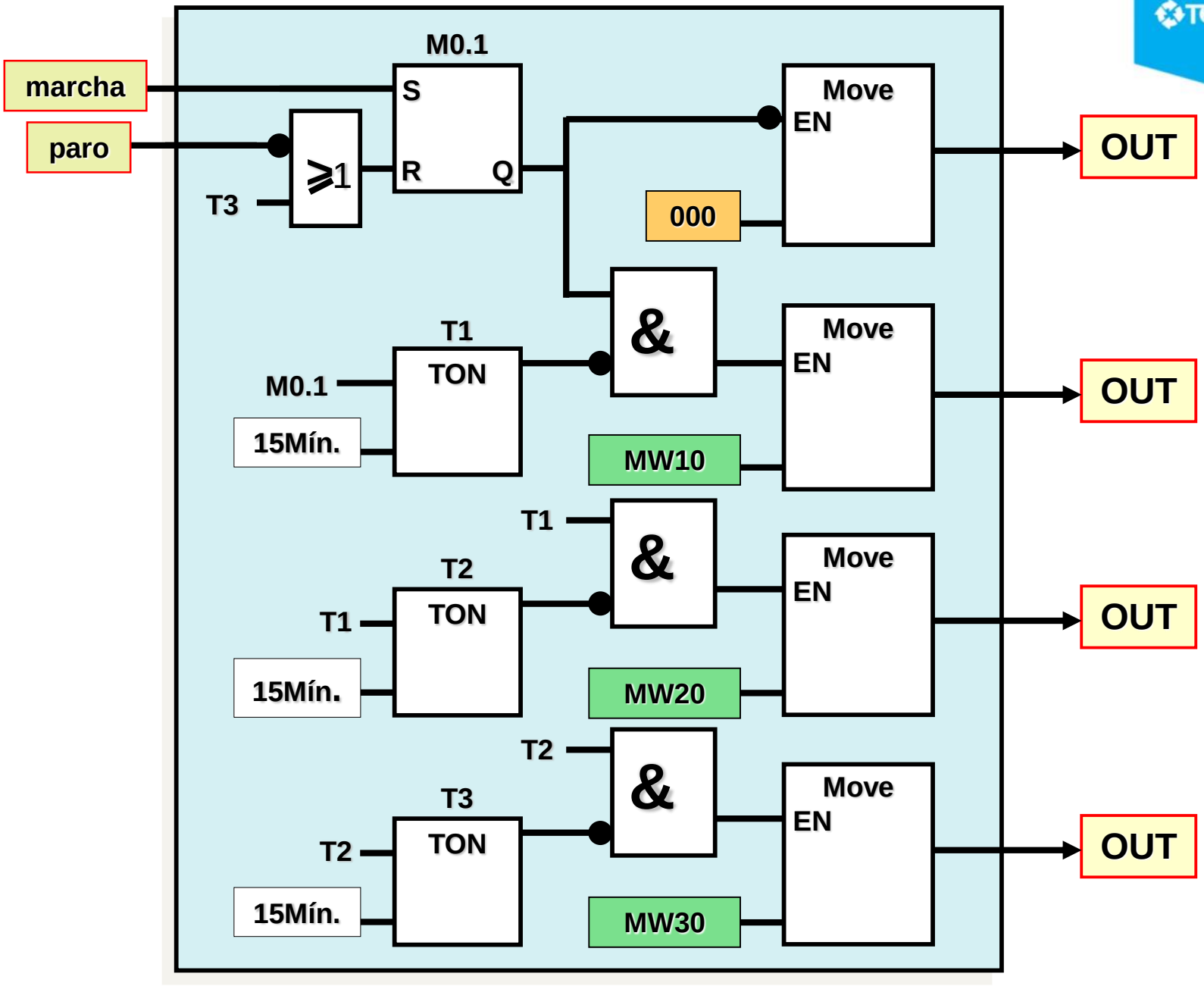

T2
S_ODT
T1
S
BI
S5T#15S
TV
BCD
...
R
Q
T1
&
MOVE
EN
"Velocidad"
80
IN
OUT
MW50
ENO
T3
S_ODT
T2
S
BI
S5T#15S
TV
BCD
...
R
Q
T2
&
MOVE
EN
"Velocidad"
100
IN
OUT
MW50
ENO
MUL_I
...
EN
"Velocidad"
MW50
IN1
OUT
PQW288
276
IN2
ENO

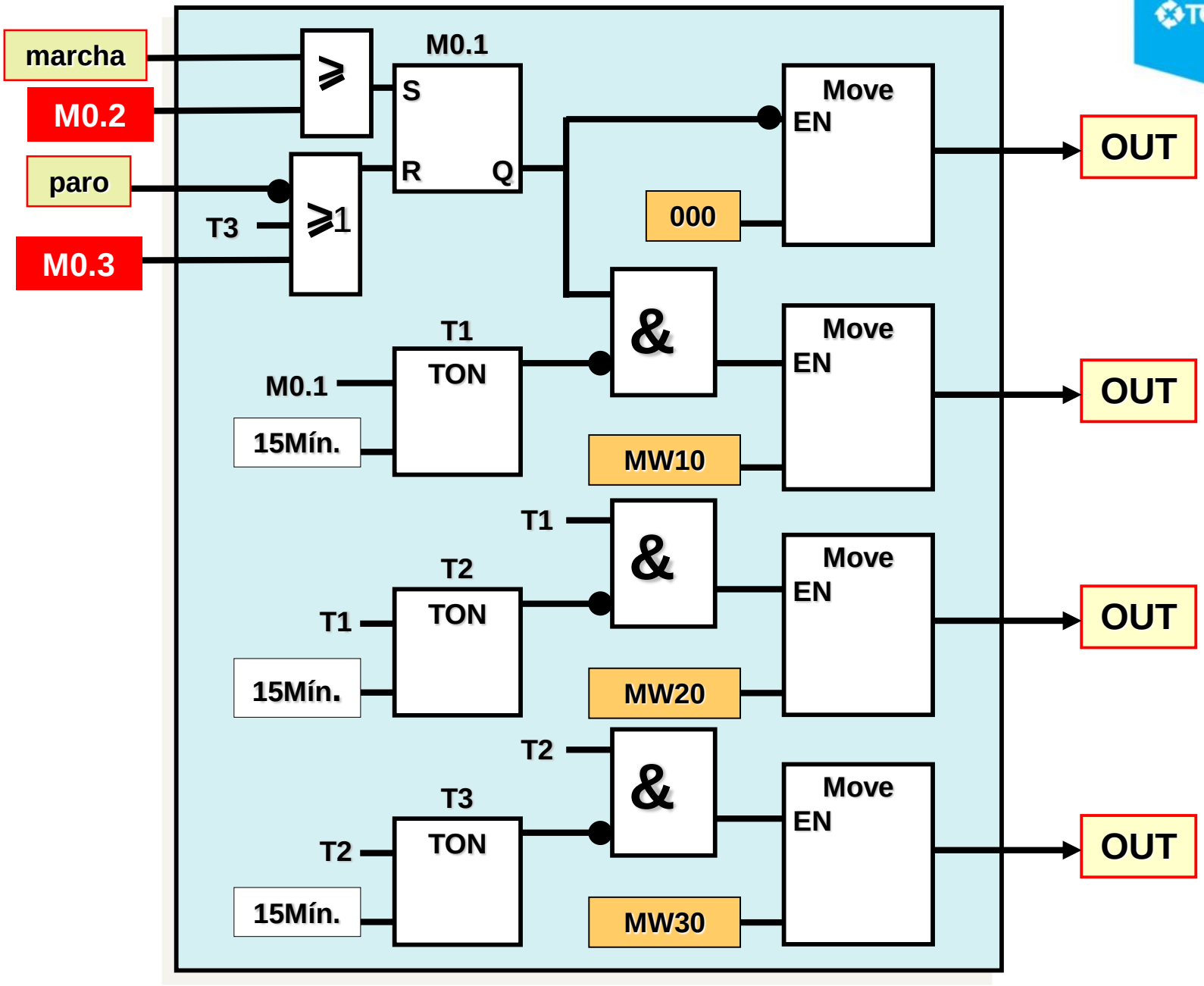
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

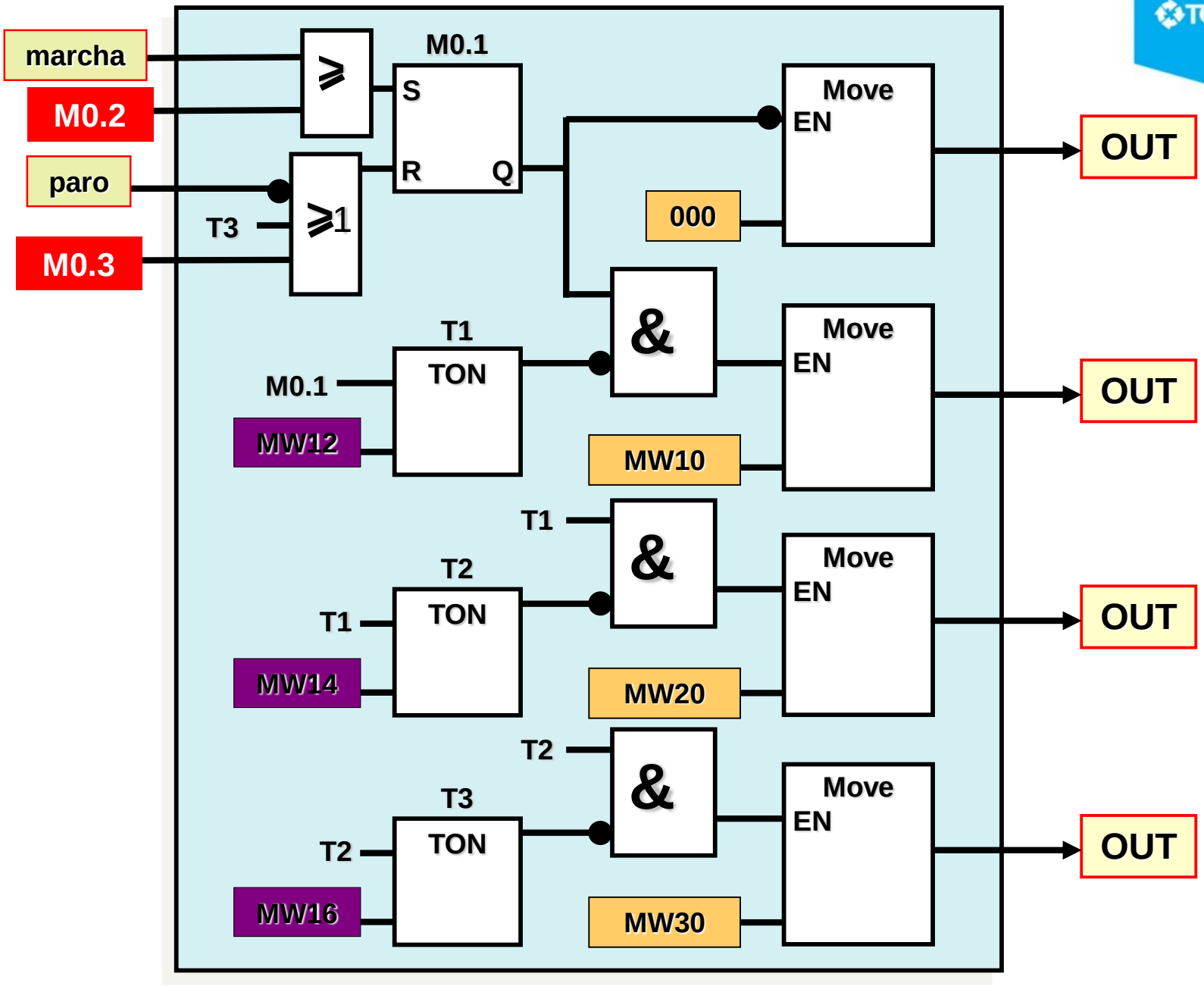


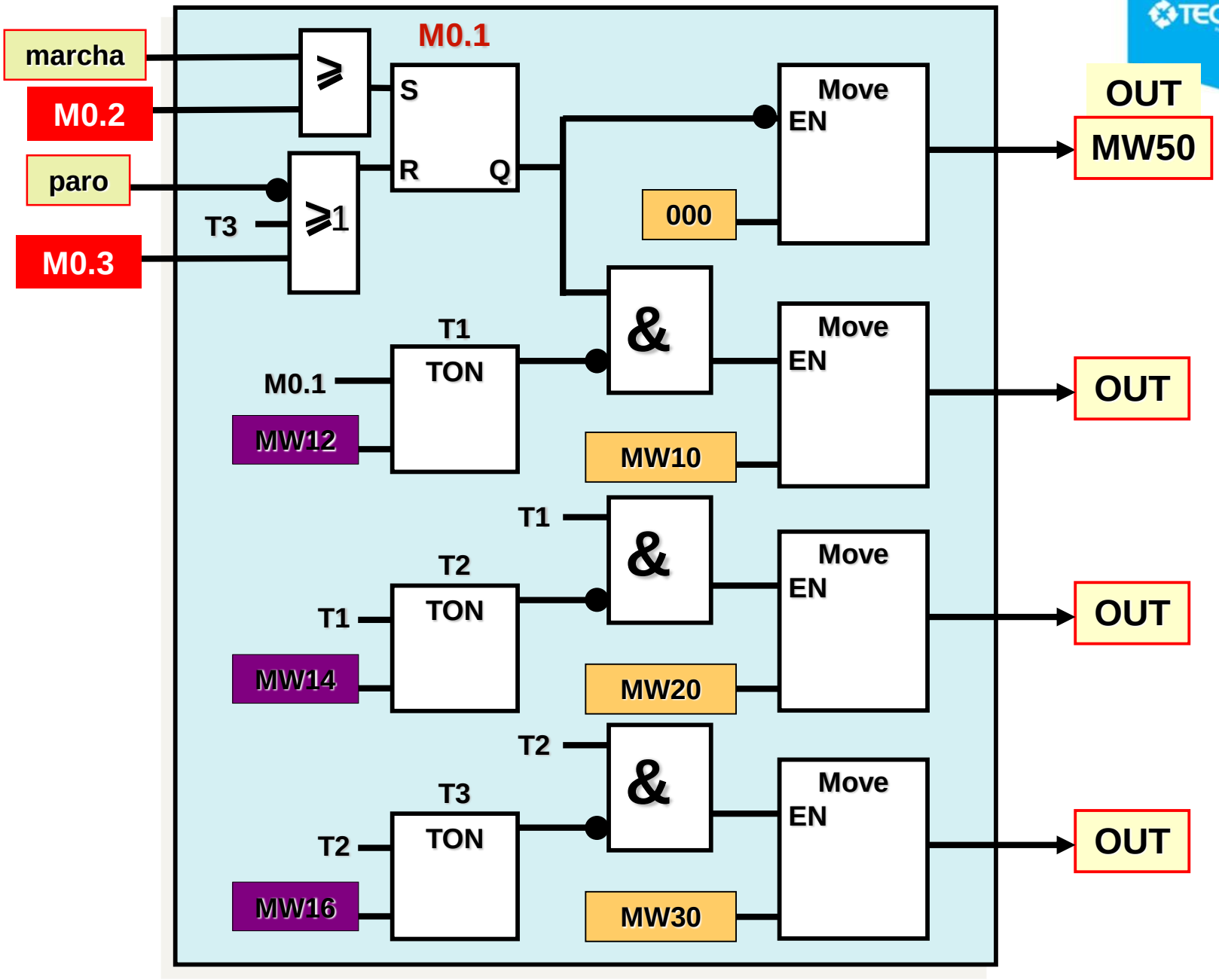
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

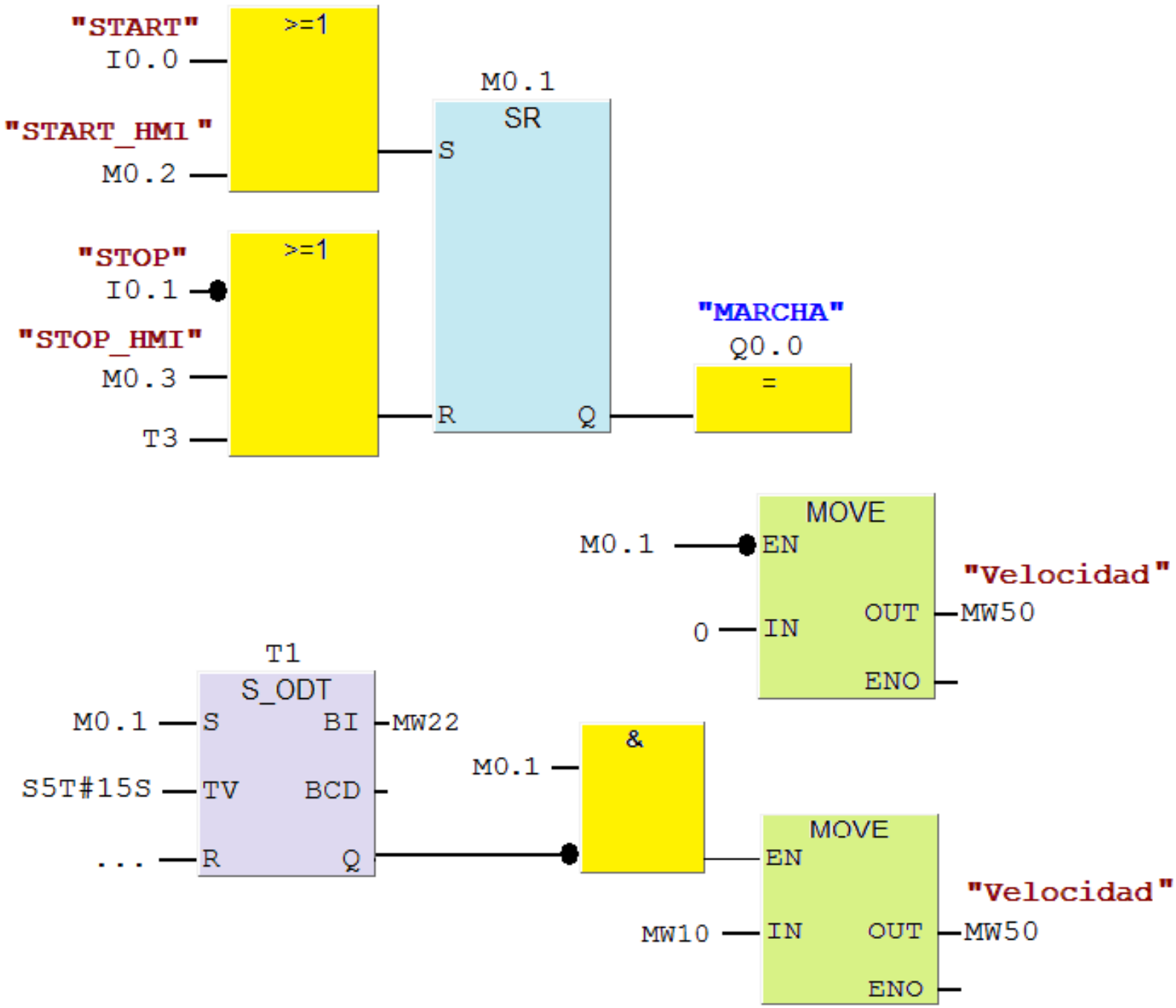


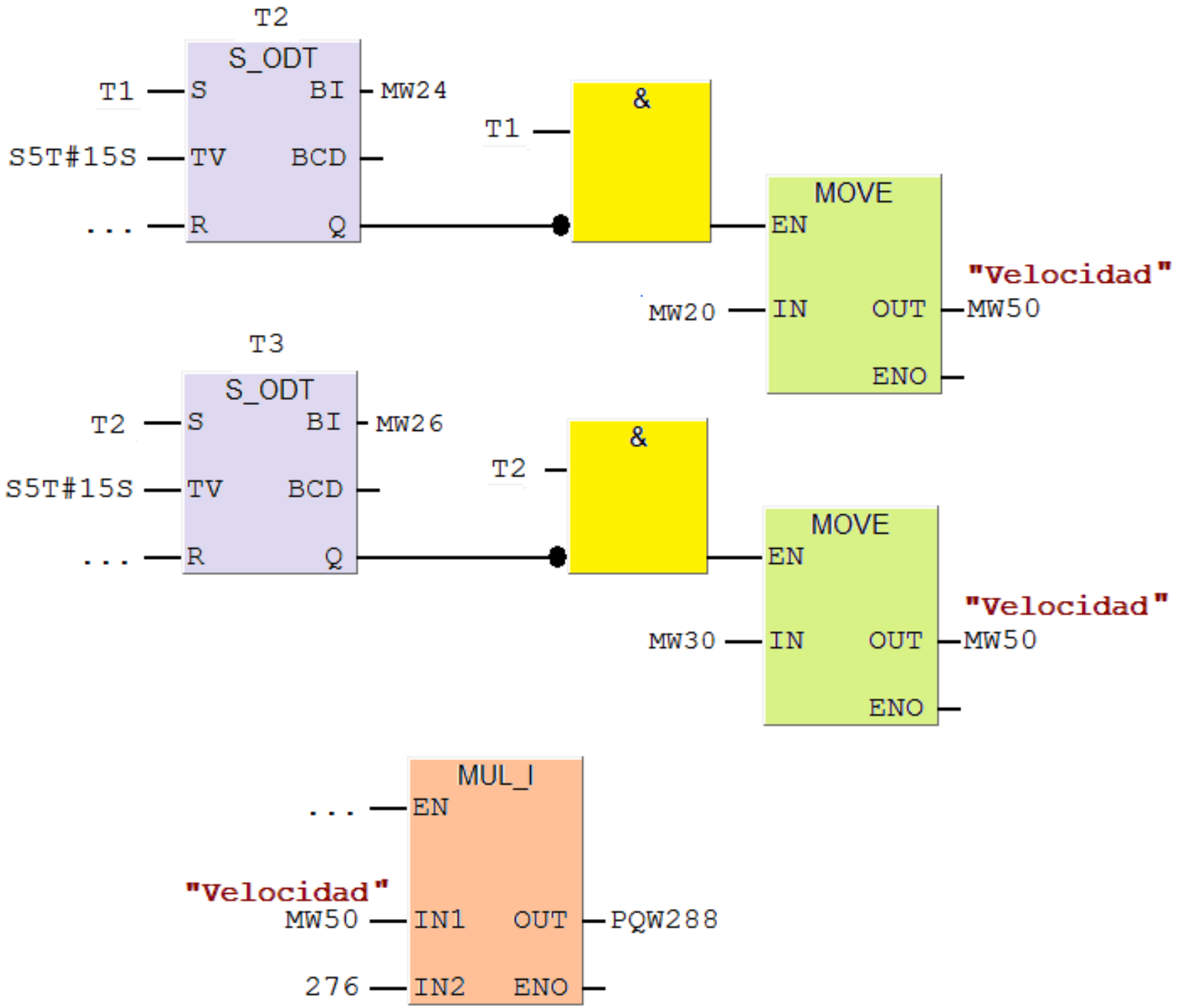

M0.1
marcha
S
paro
≥1
R
Q
T3
Move
EN
000
OUT
&
T1
TON
M0.1
15Mín.
Move
EN
MW10
OUT
T1
&
T2
TON
T1
15Mín.
Move
EN
MW20
OUT
T2
&
T3
TON
T2
15Mín.
Move
EN
MW30
OUT

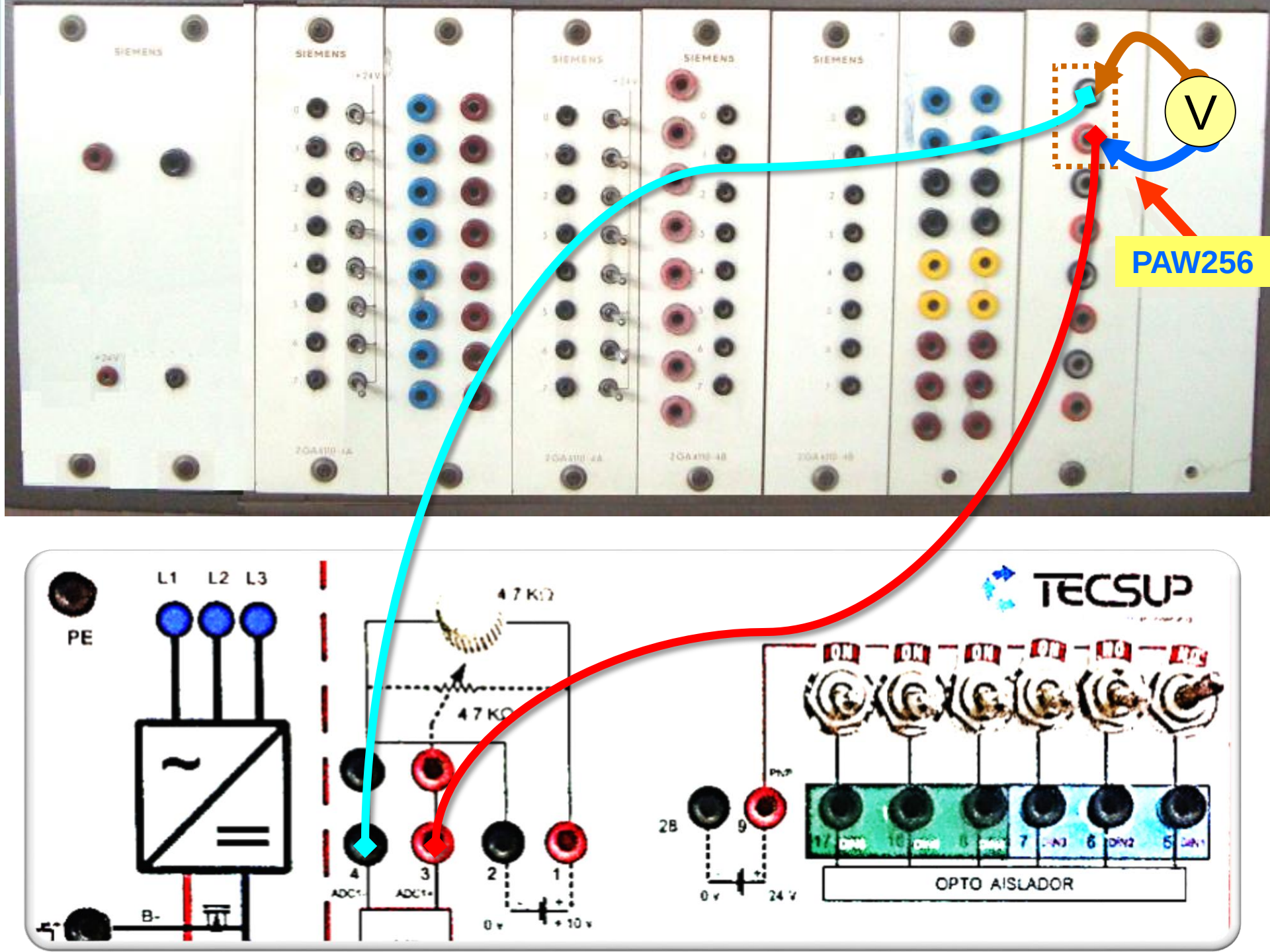

marcha
M0.2
paro
T3
M0.3
≥
≥1
M0.1
S
R
Q
Move
EN
000
OUT
&
T1
TON
M0.1
15Mín.
MW10
T2
TON
T1
15Mín.
MW20
T3
TON
T2
15Mín.
MW30


marcha
M0.2
paro
T3
M0.3
≥
≥1
M0.1
S
R
Q
Move
EN
000
OUT
&
T1
TON
M0.1
MW12
MW10
Move
EN
OUT
T1
&
T2
TON
T1
MW14
MW20
Move
EN
OUT
T2
&
T3
TON
T2
MW16
MW30
Move
EN
OUT

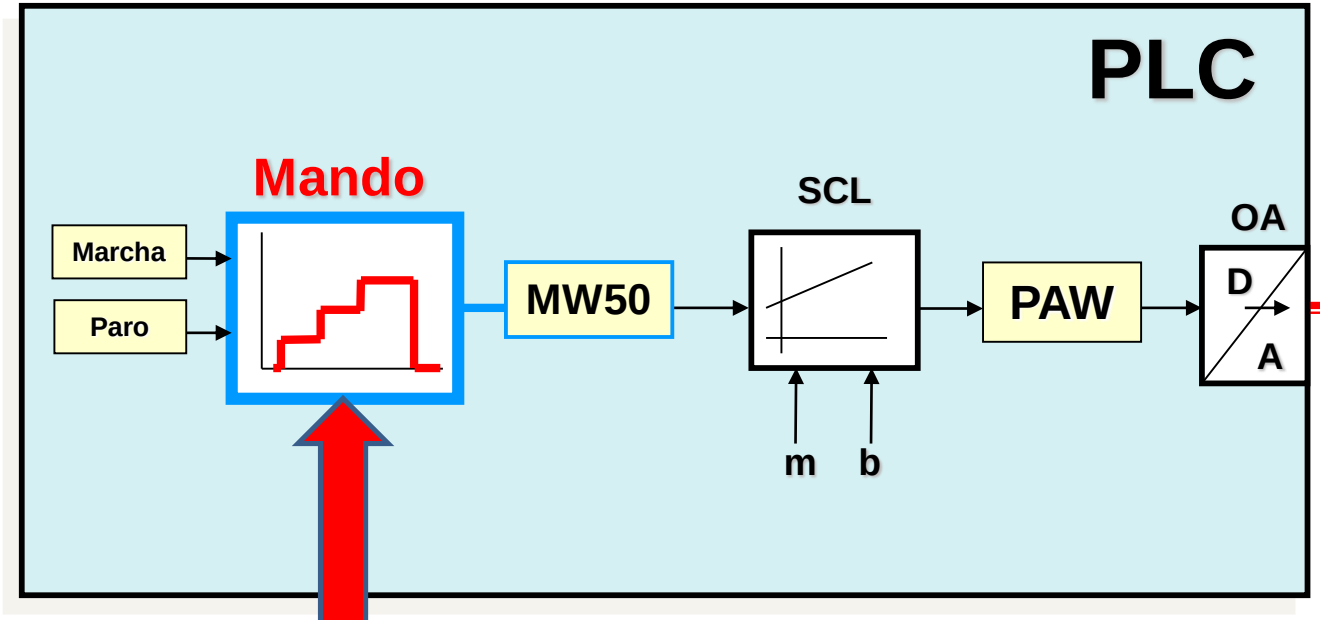

marcha
M0.2
paro
T3
M0.3
≥
≥1
M0.1
S
R
Q
Move
EN
000
OUT
MW50
&
T1
TON
M0.1
MW12
MW10
OUT
T1
&
T2
TON
T1
MW14
MW20
OUT
T2
&
T3
TON
T2
MW16
MW30
OUT


"START"
I0.0
>=1
"START_HMI"
M0.2
M0.1
SR
S
"STOP"
I0.1
>=1
"STOP_HMI"
M0.3
T3
R
Q
"MARCHA"
Q0.0
=
MOVE
M0.1
EN
"Velocidad"
OUT
MW50
0
IN
ENO
T1
S_ODT
M0.1
S
BI
MW22
S5T#15S
TV
BCD
...
R
Q
M0.1
&
MOVE
EN
"Velocidad"
MW10
IN
OUT
MW50
ENO


T2
S_ODT
T1
S
BI
MW24
S5T#15S
TV
BCD
...
R
Q
T1
&
MOVE
EN
"Velocidad"
MW20
IN
OUT
MW50
ENO
T3
S_ODT
T2
S
BI
MW26
S5T#15S
TV
BCD
...
R
Q
T2
&
MOVE
EN
"Velocidad"
MW30
IN
OUT
MW50
ENO
MUL_I
...
EN
"Velocidad"
MW50
IN1
OUT
PQW288
276
IN2
ENO


SIEMENS
V
PAW256
PE
L1
L2
L3
B-
4.7 KΩ
4.7 KΩ
4
3
2
1
ADC1-
ADC1+
0 v
+ 10 v
TECSUP
2B
9
0 v
24 V
OPTO AISLADOR

MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO

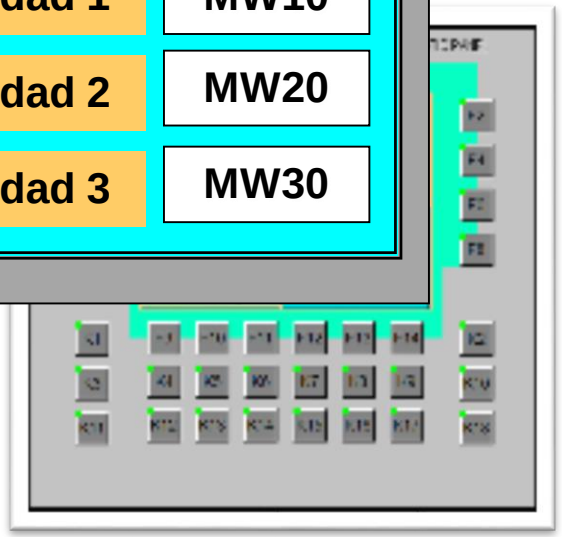


CENTRIFUGA N° 3

Marcha	M0.2
Paro	M0.3
Trabajando	M0.1

	Preset	Actual
Tiempo 1	MW12	MW22
Tiempo 2	MW14	MW24
Tiempo 3	MW16	MW26

Velocidad Actual	MW50
Velocidad 1	MW10
Velocidad 2	MW20
Velocidad 3	MW30



Screen_1 | Tags | **Connections**

	Name	Active	Communication driver	Station	Partner	Node	O...	Commen
	CPU 315-2 DP	On	SIMATIC S7 300/400	\vari...	CPU 315-2 DP	CPU 315-2 DP	On	

Parameters | Area pointer

OP 177B 6" color PN/DP

Interface

IF1B MPI/DP

Station

HMI device

Type

- TTY
- RS232
- RS422
- RS485
- Simatic

Baud rate

187500

Address 1

Access point S7ONLINE

☑ Only master on the bus

Network

Profile MPI

Highest station address (HSA)

31

Number of masters 1

PLC device

Address 2

Expansion slot 2

Rack 0

☑ Cyclic operation

Screen_1 | **Tags** | Connections

Name	Connection	Data type	Address	Symbol
VELOCI_	CPU 315-2 DP	Int	MW 50	VELOCI_
VEL3_HMI	CPU 315-2 DP	Int	MW 30	VEL3_HMI
VEL2_HMI	CPU 315-2 DP	Int	MW 20	VEL2_HMI
VEL1_HMI	CPU 315-2 DP	Int	MW 10	VEL1_HMI
START_HMI	CPU 315-2 DP	Bool	M 0.2	STOP_HMI
STOP_HMI	CPU 315-2 DP	Bool	M 0.3	START_HMI
MARCHA	CPU 315-2 DP	Bool	Q 0.0	MARCHA
T2_ACTUAL	CPU 315-2 DP	Int	MW 24	<Undefined>
TIEMPO1_HMI	CPU 315-2 DP	Timer	MW 12	<Undefined>
T3_ACTUAL	CPU 315-2 DP	Int	MW 26	<Undefined>
TIEMPO3_HMI	CPU 315-2 DP	Timer	MW 16	<Undefined>
T1_ACTUAL	CPU 315-2 DP	Int	MW 22	<Undefined>
TIEMPO2_HMI	CPU 315-2 DP	Timer	MW 14	<Undefined>

Screen_1 | Tags | Connections | Screen_2 | Screen_3 | Template

Name	Connection	Data type	Address	Symbol	Array el
TIEMPO1_HMI	CPU 315-2 DP	Timer	MW 12	<Undefined>	1
TIEMPO2_HMI	CPU 315-2 DP	Timer	MW 14	<Undefined>	1
TIEMPO3_HMI	CPU 315-2 DP	Timer	MW 16	<Undefined>	1

TIEMPO1_HMI (Tag)

- General
- Properties
  - Addressing
  - Limits
  - Linear Scaling
  - Base Values
  - Comment
  - Multiplexing
- Events

☑ Enable

PLC

Upper value: 10000

Lower value: 0

HMI device

Upper value: 10

Lower value: 0

Screen_1 | Tags | Connections | Screen_2 | Screen_3 | Templ

Name	Connection	Data type	Address	Symbol
T1_ACTUAL	CPU 315-2 DP	Int	MW 22	<Undefined>
T2_ACTUAL	CPU 315-2 DP	Int	MW 24	<Undefined>
T3_ACTUAL	CPU 315-2 DP	Int	MW 26	<Undefined>

T1_ACTUAL (Tag)

- General
- Properties
  - Addressing
  - Limits
  - Linear Scaling
  - Base Values
  - Comment

☑ Enable

PLC

Upper value: 100

Lower value: 0

HMI device

Upper value: 10

Lower value: 0

Screen_1 | Tags | Connections | Screen_2 | Screen_3 | Template

Name	Connection	Data type	Address	Symbol	Array elements	Acqu
TIEMPO1_HMI	CPU 315-2 DP	Timer	MW 12	<Undefined>	1	1 s
TIEMPO2_HMI	CPU 315-2 DP	Timer	MW 14	<Undefined>	1	1 s
TIEMPO3_HMI	CPU 315-2 DP	Timer	MW 16	<Undefined>	1	1 s

TIEMPO1_HMI (Tag)

- General
- Properties
  - Addressing
  - Limits
  - Linear Scaling
  - Base Values
  - Comment
  - Multiplexing
- Events

☑ Enable

PLC		HMI device	
Upper value	10000	Upper value	10
Lower value	0	Lower value	0

Screen_1 | Tags | Connections | Screen_2 | Screen_3

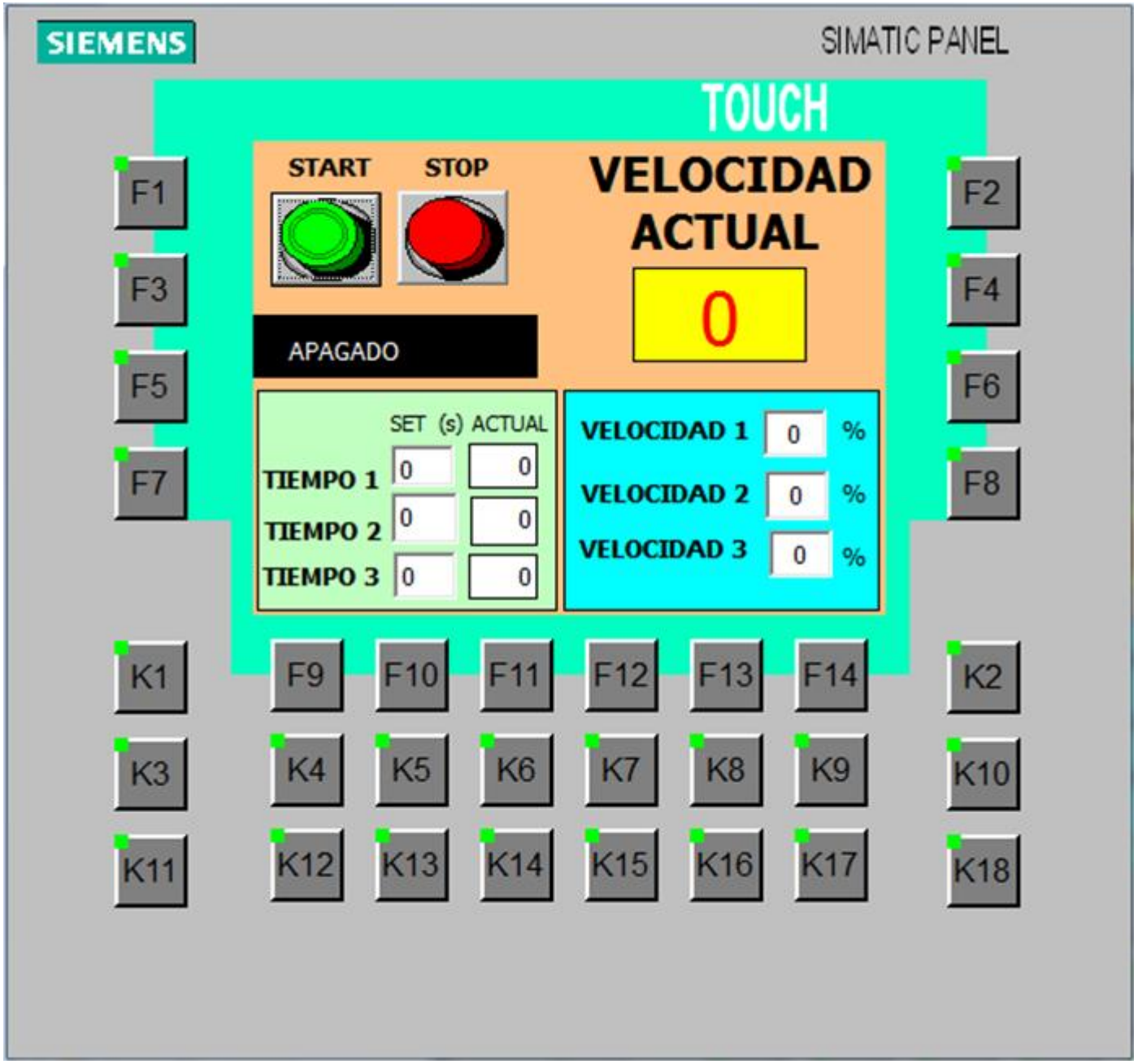
Name	Connection	Data type	Address	Symbol
T1_ACTUAL	CPU 315-2 DP	Int	MW 22	<Undefined>
T2_ACTUAL	CPU 315-2 DP	Int	MW 24	<Undefined>
T3_ACTUAL	CPU 315-2 DP	Int	MW 26	<Undefined>

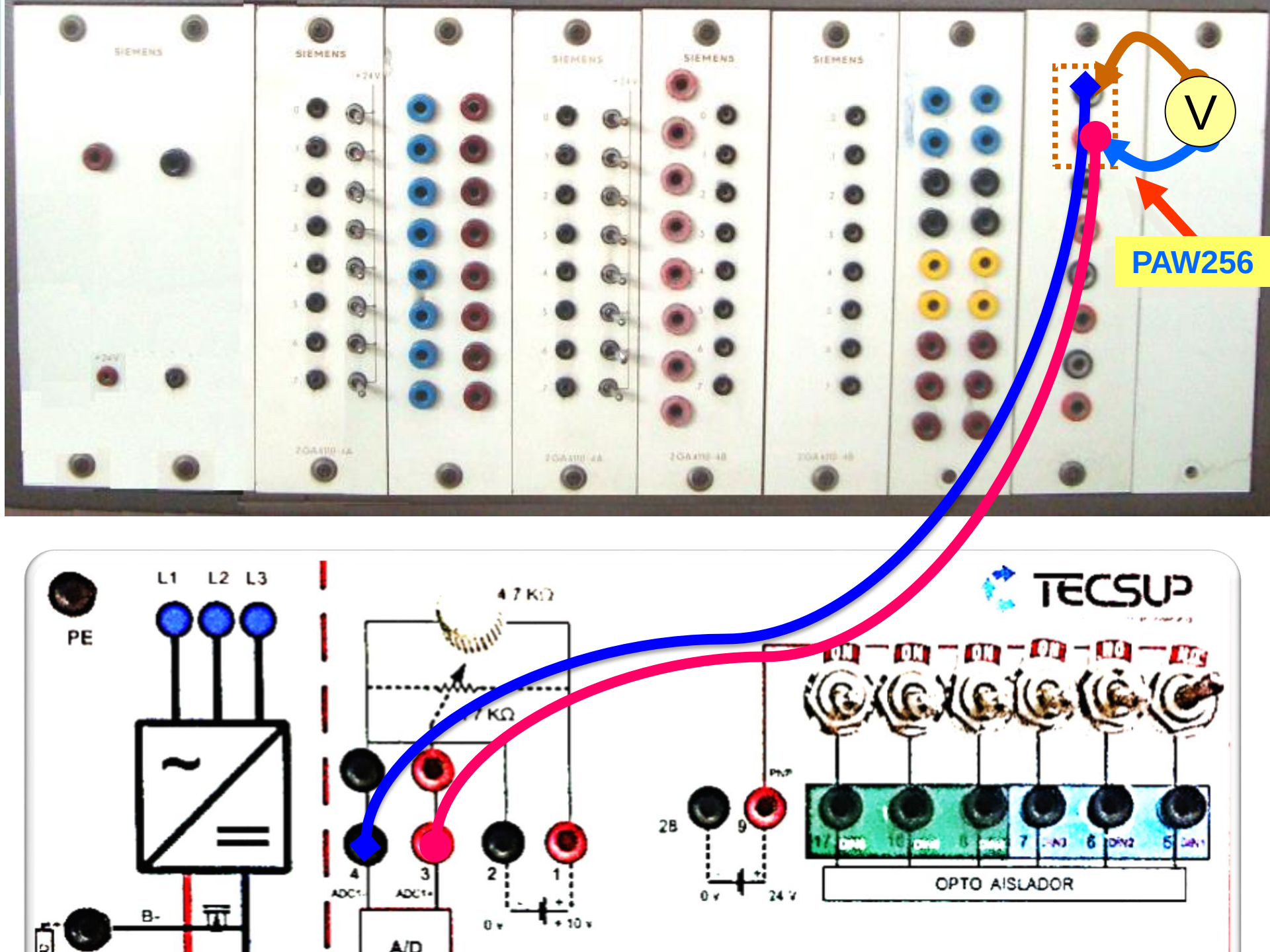
T1_ACTUAL (Tag)

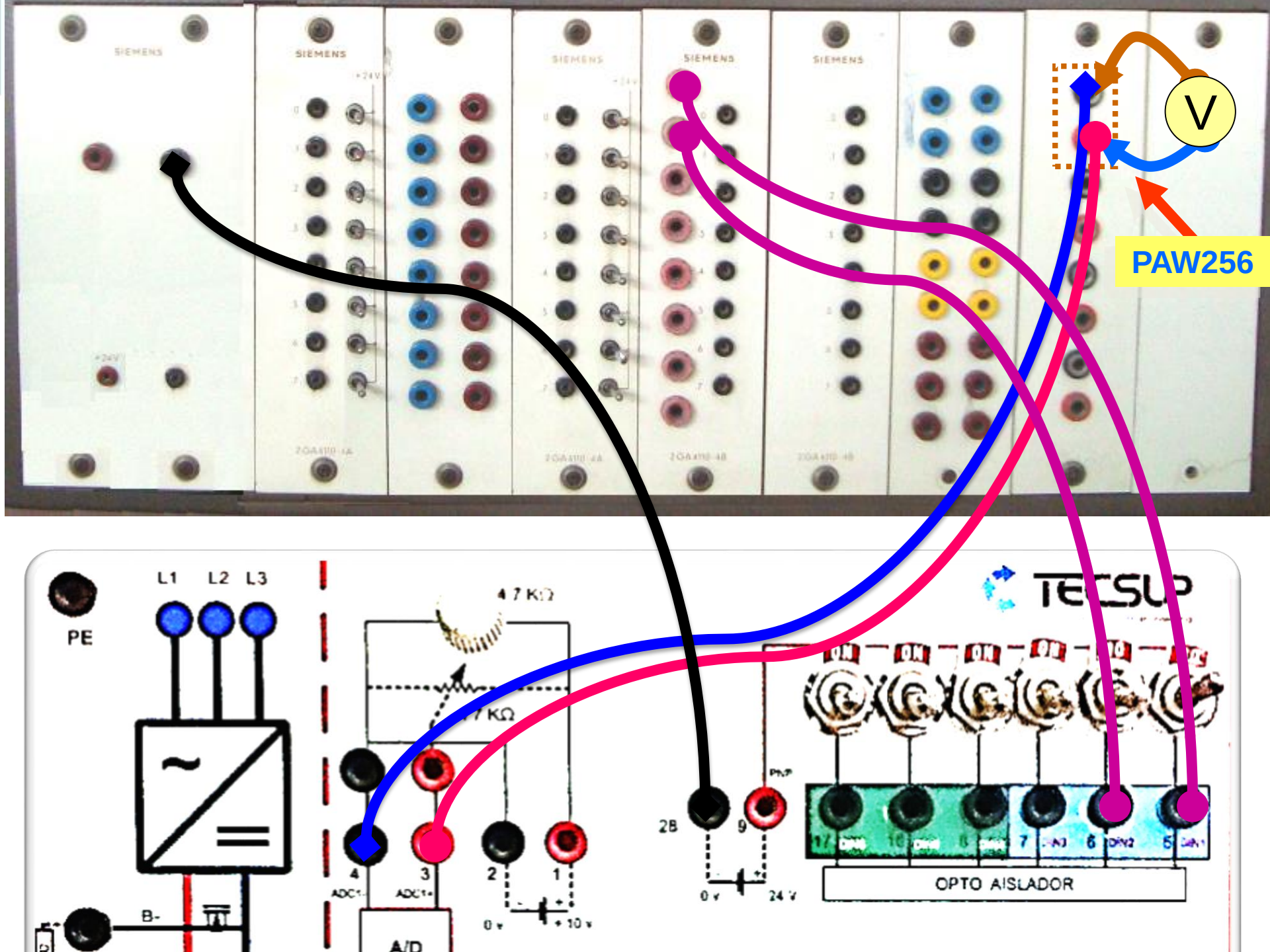
- General
- Properties
  - Addressing
  - Limits
  - Linear Scaling
  - Base Values
  - Comment

☑ Enable

PLC		HMI device	
Upper value	100	Upper value	10
Lower value	0	Lower value	0


SIEMENS
SIMATIC PANEL
TOUCH
START
STOP
VELOCIDAD ACTUAL
0
APAGADO
SET (s) ACTUAL
TIEMPO 1 0 0
TIEMPO 2 0 0
TIEMPO 3 0 0
VELOCIDAD 1 0 %
VELOCIDAD 2 0 %
VELOCIDAD 3 0 %
F1 F2 F3 F4 F5 F6 F7 F8
K1 F9 F10 F11 F12 F13 F14 K2
K3 K4 K5 K6 K7 K8 K9 K10
K11 K12 K13 K14 K15 K16 K17 K18


SIEMENS
V
PAW256
PE
L1
L2
L3
B-
4.7 KΩ
4
3
2
1
ADC1-
ADC1+
A/D
0 v
+ 10 v
2B
9
PNP
0 v
24 V
TECSUP
OPTO AISLADOR


SIEMENS
V
PAW256
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L1
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B-
4.7 KΩ
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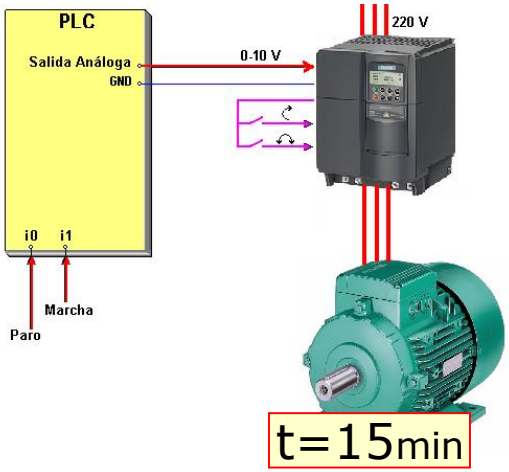
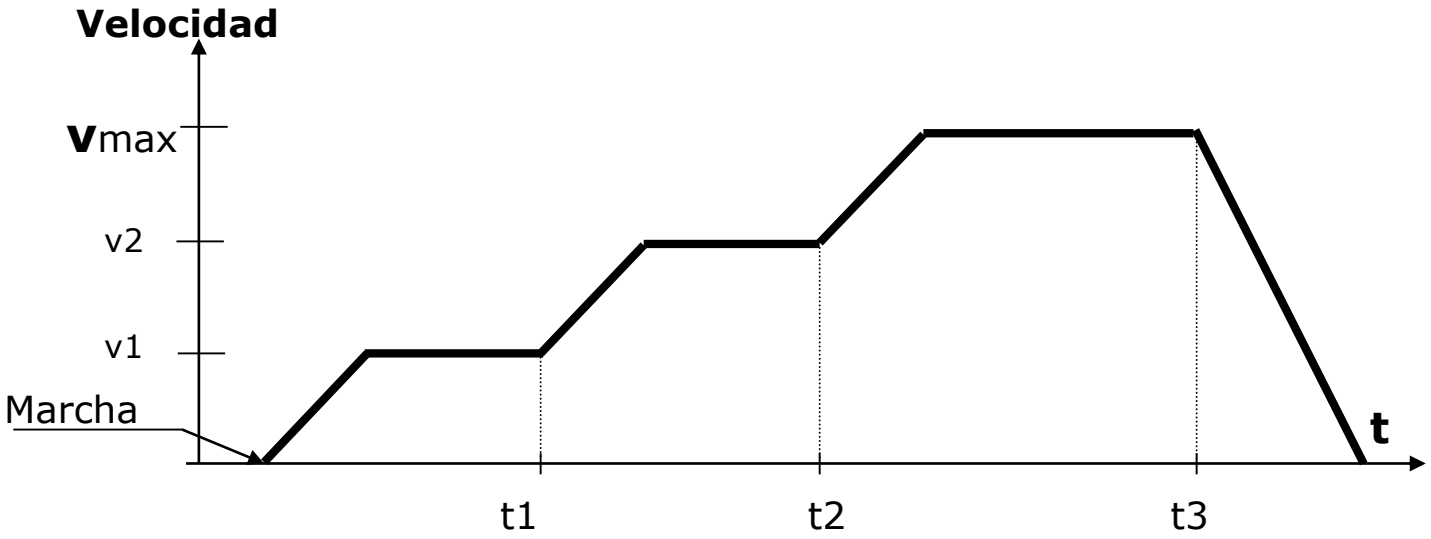
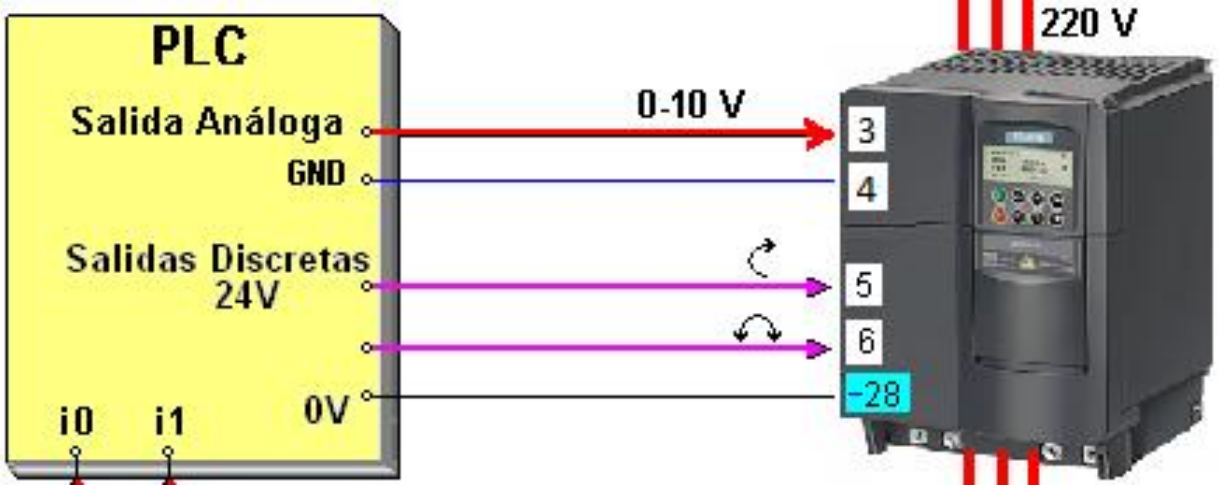
ADC1-
ADC1+
A/D
0 v
+ 10 v
2B
9
PNP
0 v
24 V
TECSUP
ON
OPTO AISLADOR

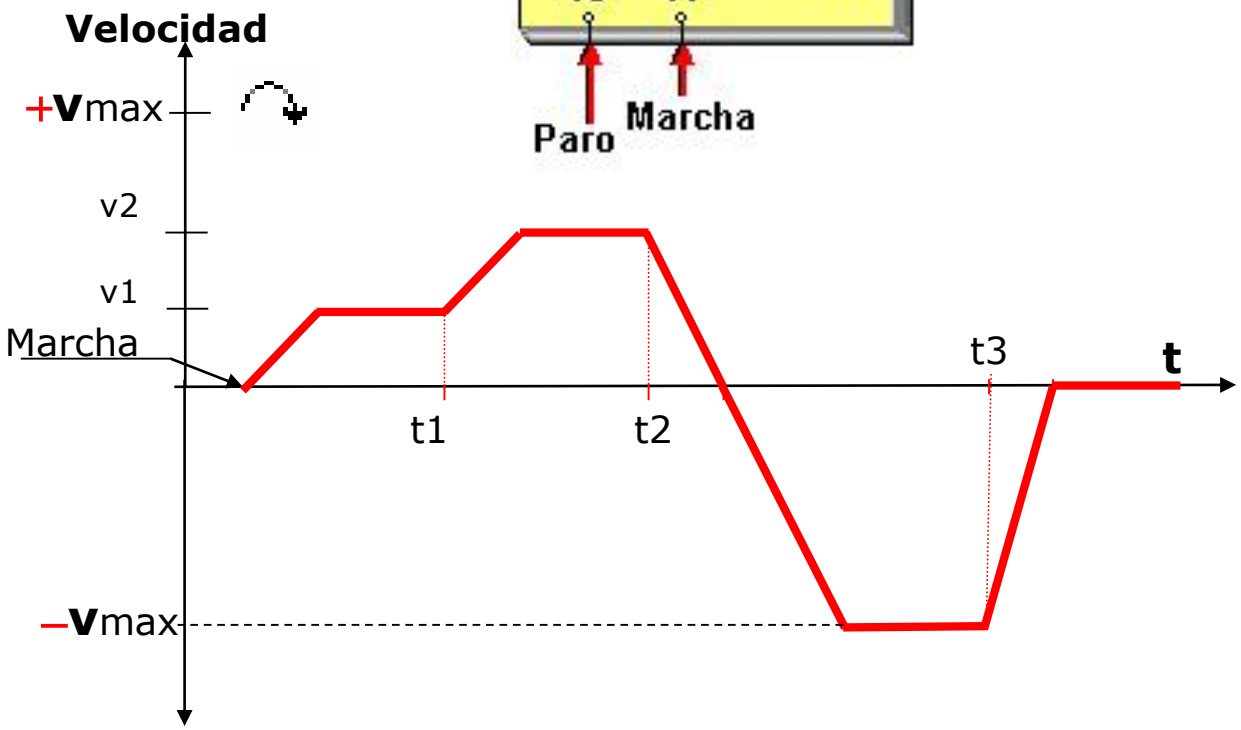
MANDO DE VELOCIDAD DE UN MOTOR ELÉCTRICO



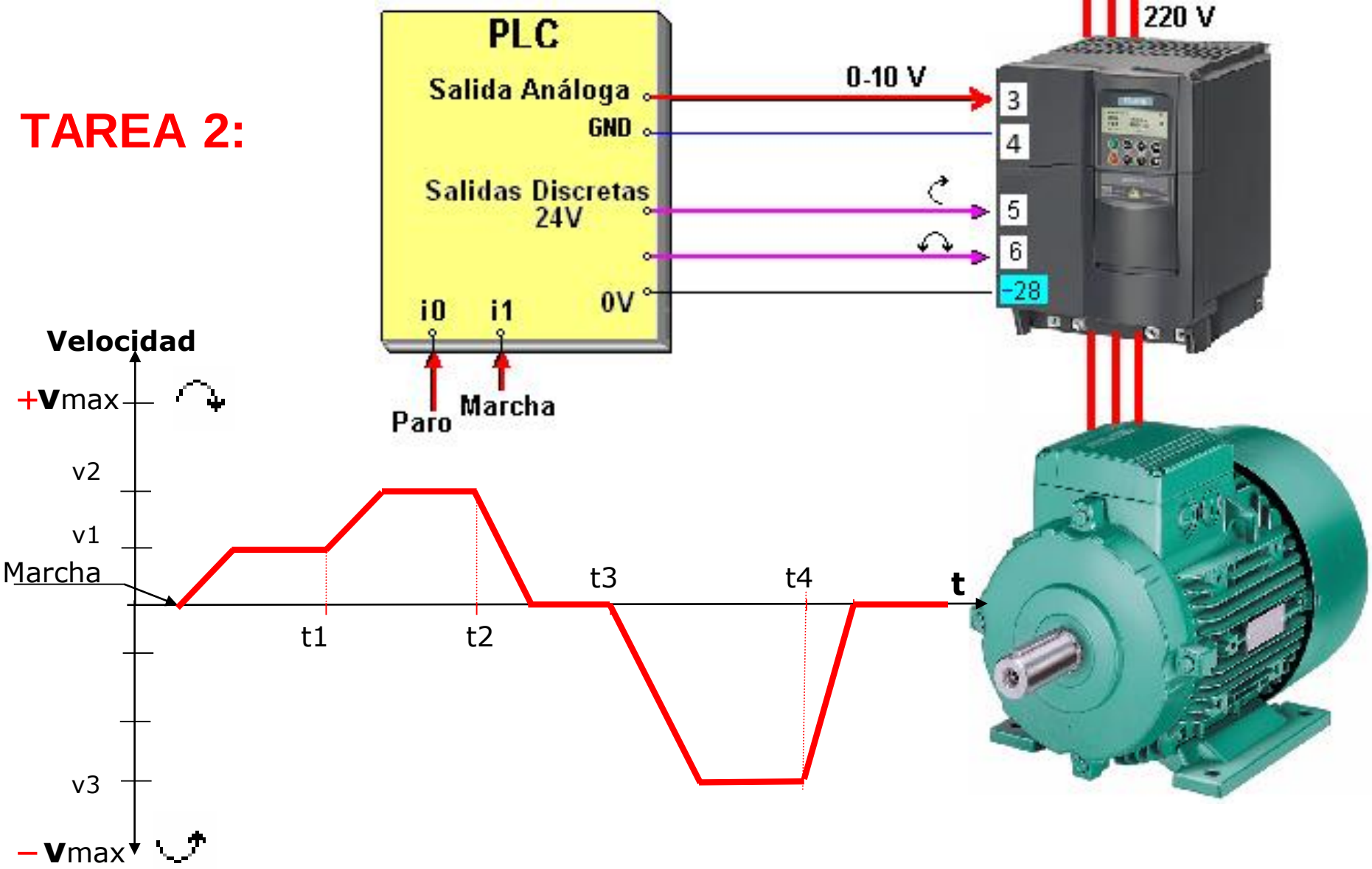


TAREA 1:


PLC
Salida Análoga
GND
Salidas Discretas
24V
0V
i0
i1
Paro
Marcha
0-10 V
220 V
3
4
5
6
-28


Velocidad
+Vmax
v2
v1
Marcha
t1
t2
t3
t
–Vmax

TAREA 2:


PLC
Salida Análoga
GND
Salidas Discretas
24V
0V
i0
i1
Paro
Marcha
0-10 V
220 V
3
4
5
6
-28
Velocidad
+Vmax
v2
v1
Marcha
t1
t2
t3
t4
t
v3
−Vmax