











 Controller SP15\_04 Controller Fault Handler Power-Up Handler**Tasks** MainTask MainProgram MainRoutine Simulation Simulation Unscheduled**Motion Groups** Ungrouped Axes**Add-On Instructions****Data Types** User-Defined Strings Add-On-Defined Module-Defined AB:1756\_DI:C:0 AB:1756\_DI:I:0 AB:1756\_DO:C:0 AB:1756\_DO:I:0 AB:1756\_DO:O:0 AB:1756\_IF4\_Float:C:0 AB:1756\_IF4\_Float:I:0 AB:1756\_IF8\_Integer:C:0 AB:1756\_IF8\_Integer:I:0 AB:1756\_NII\_Struct:C:0 AB:1756\_OF4\_Integer:C:0 AB:1756\_OF4\_Integer:I:0 AB:1756\_OF4\_Integer:O:0**Trends****I/O Configuration** 1756 Backplane, 1756-A10 [0] 1756-L71 SP15\_04 [1] 1756-IB32/A discrete\_in1 [2] 1756-OB32 DISCRETE\_OUT2 [3] 1756-IF8 analo\_in [4] 1756-OF4 [5] 1756-IB16 TW\_discin

Copyright (c) 2011-2023 Dogwood Valley Press, LLC

\*\*\*\*\* Pressure Check Station Control - With Simulation \*\*\*\*\*

Additional internal memory:

| Tag              | Data Type |                       |
|------------------|-----------|-----------------------|
| Int_Reset        | BOOL      | Internal reset        |
| Step_1 to Step_6 | BOOL      | Step-in-progress bits |
| Wait_Tmr         | TIMER     | Times leak test       |

Conversion formulas

$$HD\_HGT = (HGT\_MEAS/100) * (150-75) + 75$$

$$VLV\_PRES = (PRES\_MEAS/100) * (100-0) + 0$$

Initial start

When on, allow  
pressure check  
station to run. When  
off, pause.

0



Step 1. Wait for valve.

Reflective proximity  
switch that is on  
when valve is in  
position to be  
pressure checked

PROX

<Local:1:I.Data.0>

When on, allow  
pressure check  
station to run. When  
off, pause.

1



Step 2. Head down.

Pressurizing head  
height, in mm (REAL)

LEQ

|          |         |
|----------|---------|
| Source A | HD_HGT  |
|          | 0.0     |
| Source B | VLV_HGT |
|          | 0.0     |

When on, allow  
pressure check  
station to run. When  
off, pause.

2



Step 3. Pressurize.

Pressure, in psi  
(REAL)

GEQ

|          |          |
|----------|----------|
| Source A | VLV_PRES |
|          | 0.0      |
| Source B | DES_PRES |
|          | 0.0      |

When on, allow  
pressure check  
station to run. When  
off, pause.

3



Step 4. Wait for pressure check.

Wait 30 sec to see  
if valve leaks

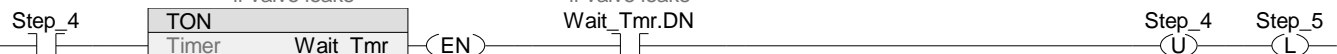
TON

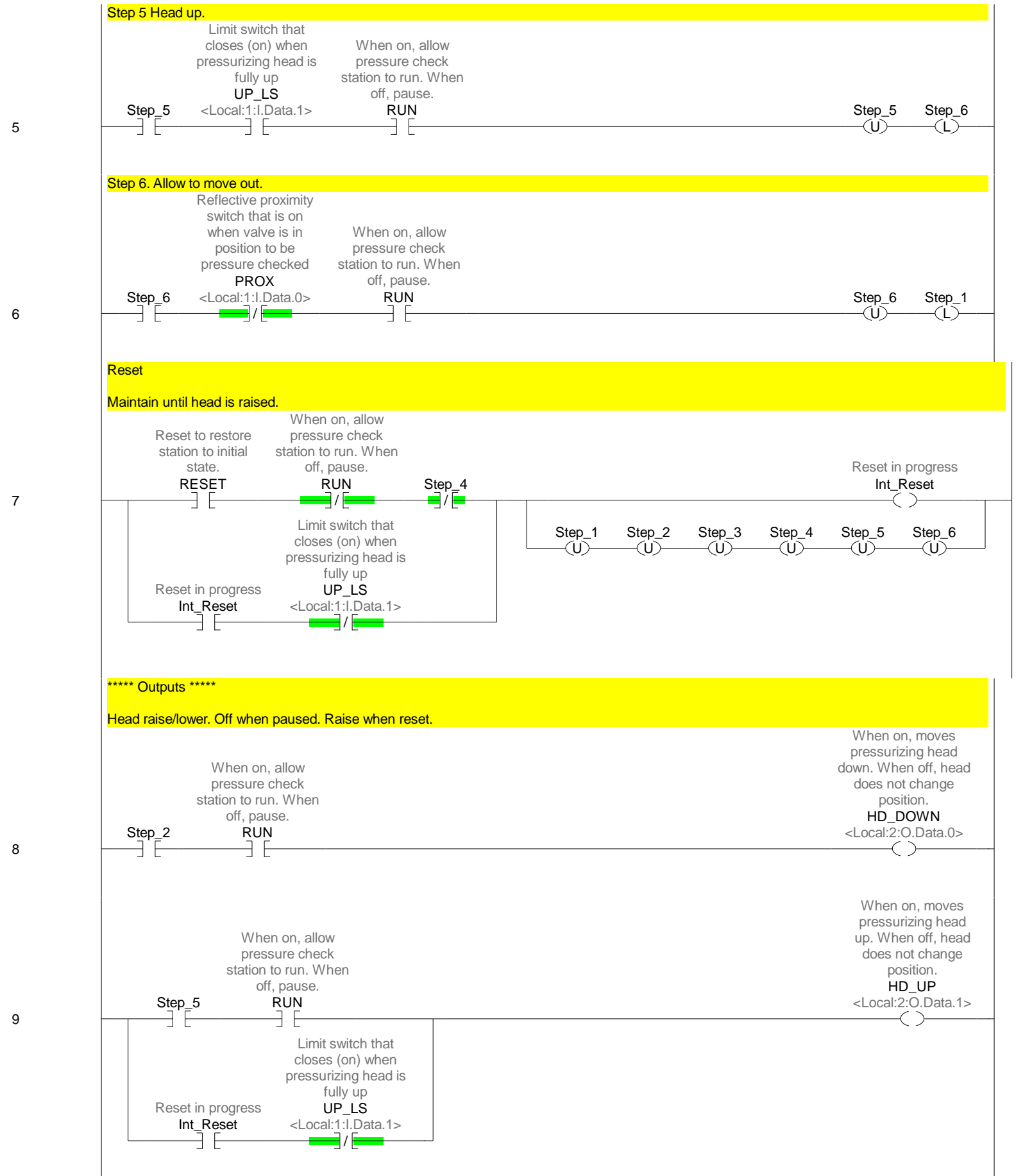
|        |          |
|--------|----------|
| Timer  | Wait_Tmr |
| Preset | 30000    |
| Accum  | 0        |

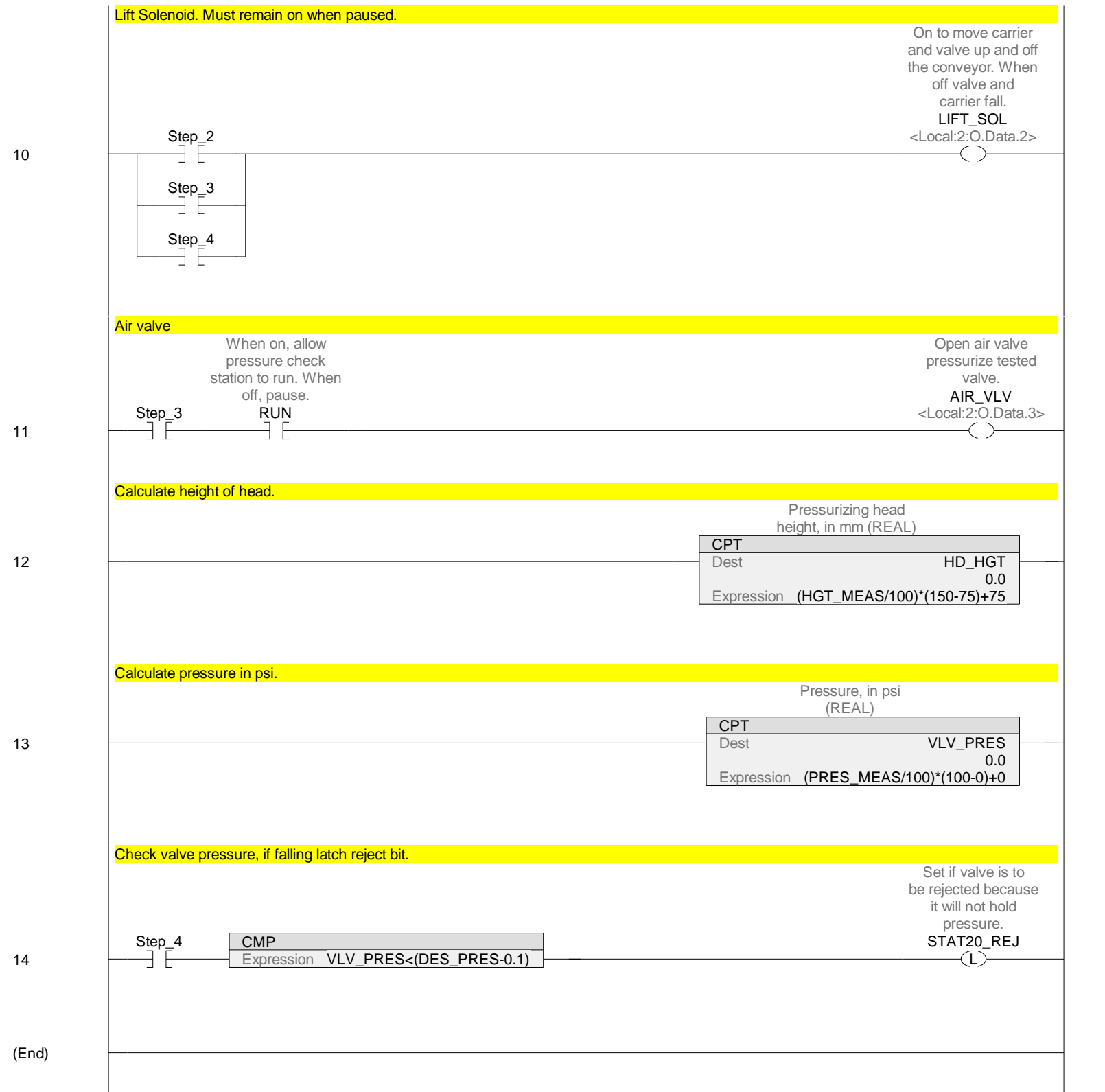
Wait 30 sec to see  
if valve leaks

Wait\_Tmr.DN

4







Copyright (c) 2011-2023 Dogwood Valley Press, LLC

### Pressure Check Station Simulation

When reset, forget there is anything in station

Reset to restore station to initial state.

**RESET**

Reflective proximity switch that is on when valve is in position to be pressure checked

**PROX**

<Local:1:I.Data.0>

(U)

Simulate next valve by delaying 6 secs after LIFT\_SOL is off and running. Unlatch PROX 2 sec after LIFT\_SOL is on.

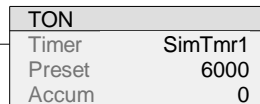
On to move carrier and valve up and off the conveyor. When off valve and carrier fall.

**LIFT\_SOL**

<Local:2:O.Data.2>

When on, allow pressure check station to run. When off, pause.

**RUN**



(EN)

(DN)

SimTmr1.DN

Reflective proximity switch that is on when valve is in position to be pressure checked

**PROX**

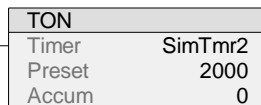
<Local:1:I.Data.0>

(L)

On to move carrier and valve up and off the conveyor. When off valve and carrier fall.

**LIFT\_SOL**

<Local:2:O.Data.2>



(EN)

(DN)

SimTmr2.DN

Reflective proximity switch that is on when valve is in position to be pressure checked

**PROX**

<Local:1:I.Data.0>

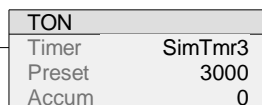
(U)

Simulate head up limit switch.

When on, moves pressurizing head up. When off, head does not change position.

**HD\_UP**

<Local:2:O.Data.1>



(EN)

(DN)

SimTmr3.DN

Limit switch that closes (on) when pressurizing head is fully up

**UP\_LS**

<Local:1:I.Data.1>

(L)

When on, moves pressurizing head down. When off, head does not change position.

**HD\_DOWN**

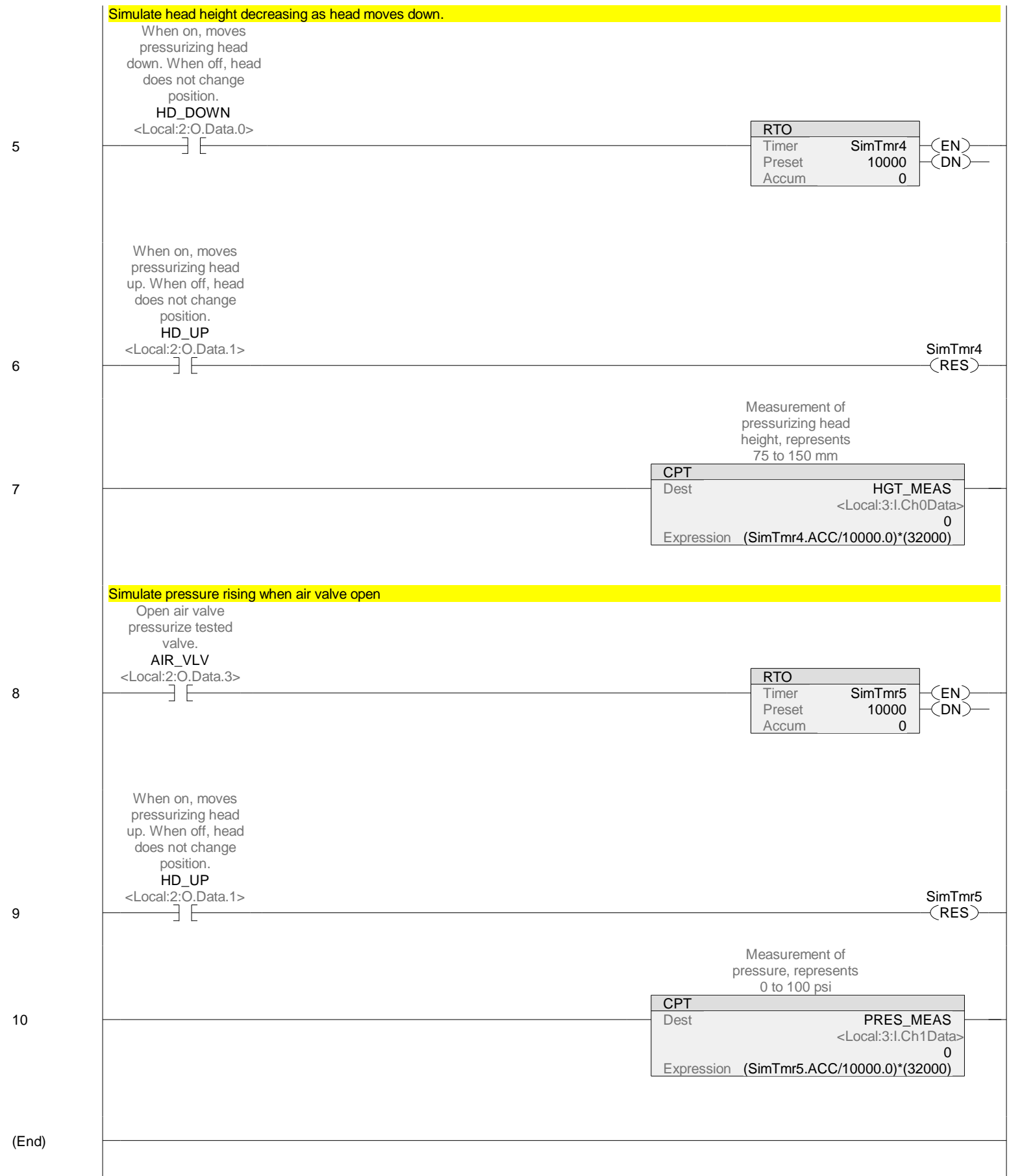
<Local:2:O.Data.0>

Limit switch that closes (on) when pressurizing head is fully up

**UP\_LS**

<Local:1:I.Data.1>

(U)



**SP15\_04**

|                            |   |
|----------------------------|---|
| Label does not exist ..... | 1 |
| <b>MainTask</b>            |   |
| <b>MainProgram</b>         |   |
| <b>MainRoutine</b>         |   |
| Ladder Diagram .....       | 2 |
| <b>Simulation</b>          |   |
| <b>Simulation</b>          |   |
| Ladder Diagram .....       | 5 |