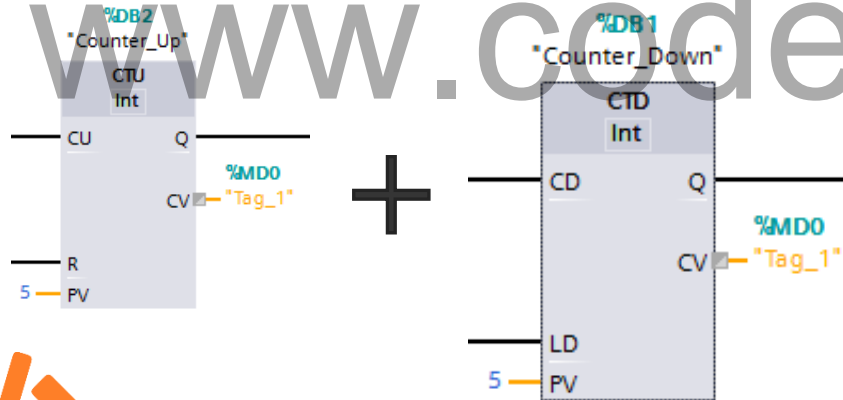


Siemens S7-1200

CPU 1212C AC/DC/Relay

Counter Operations (CTUD)

- Count Up-Down
- **Exercise Example**



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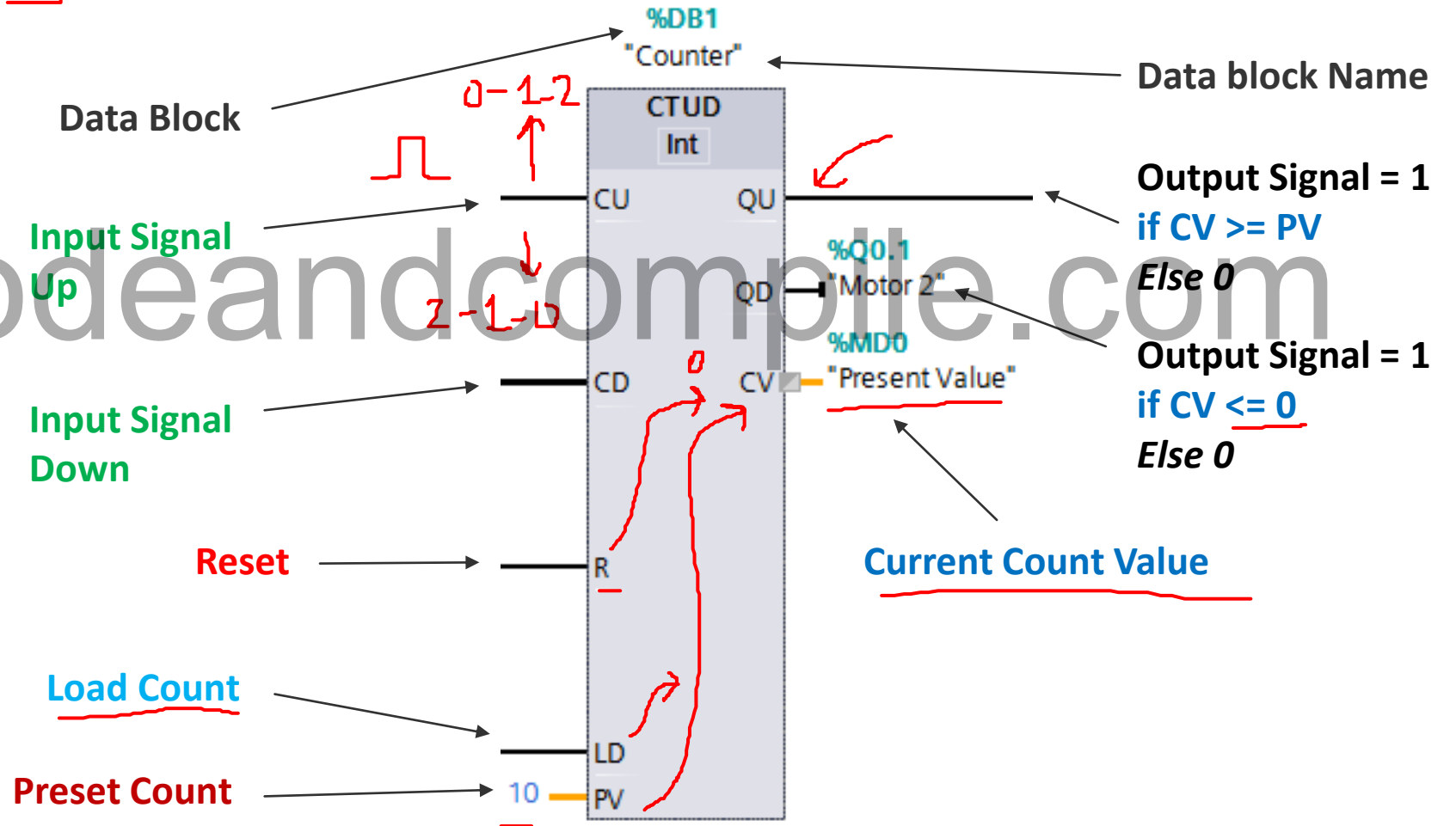


Counter Operations in LAD – CTUD (Count Up Down) </>

Count Up-Down

The "count **up** and **down**" counter (CTUD) counts **up** or **down by 1** on the **0 to 1 transition of the count up (CU) or count down (CD) inputs**.

+1 Counter operations	
CTU	Count up
CTD	Count down
CTUD	Count up and down

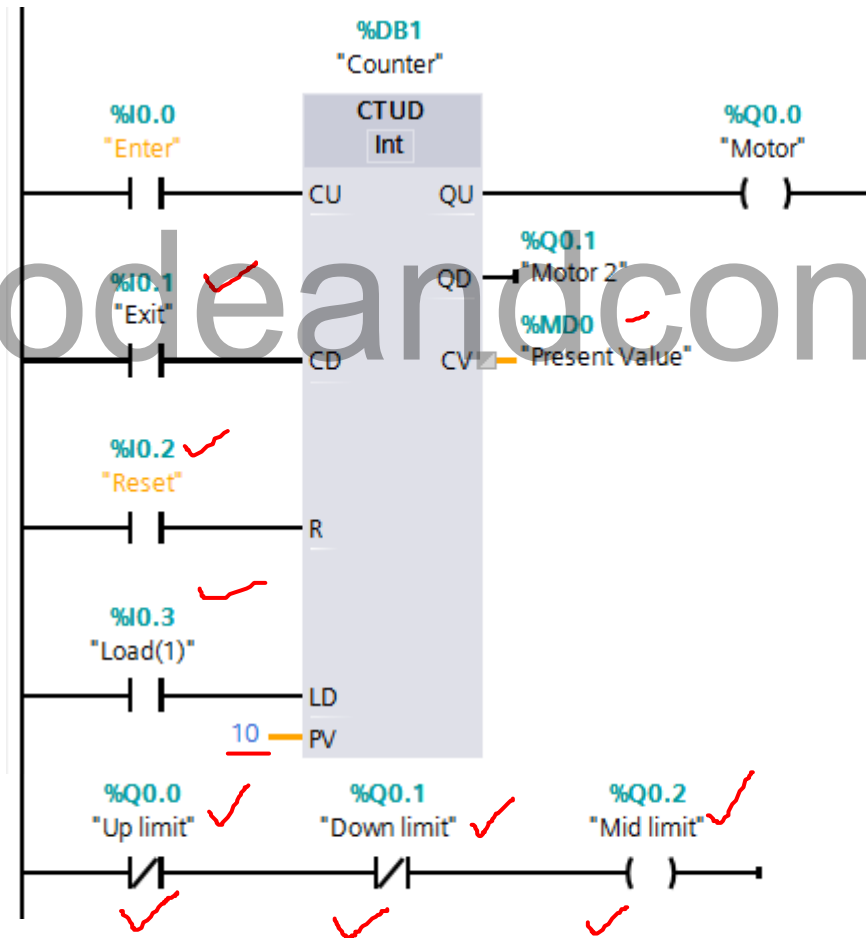


Working Example

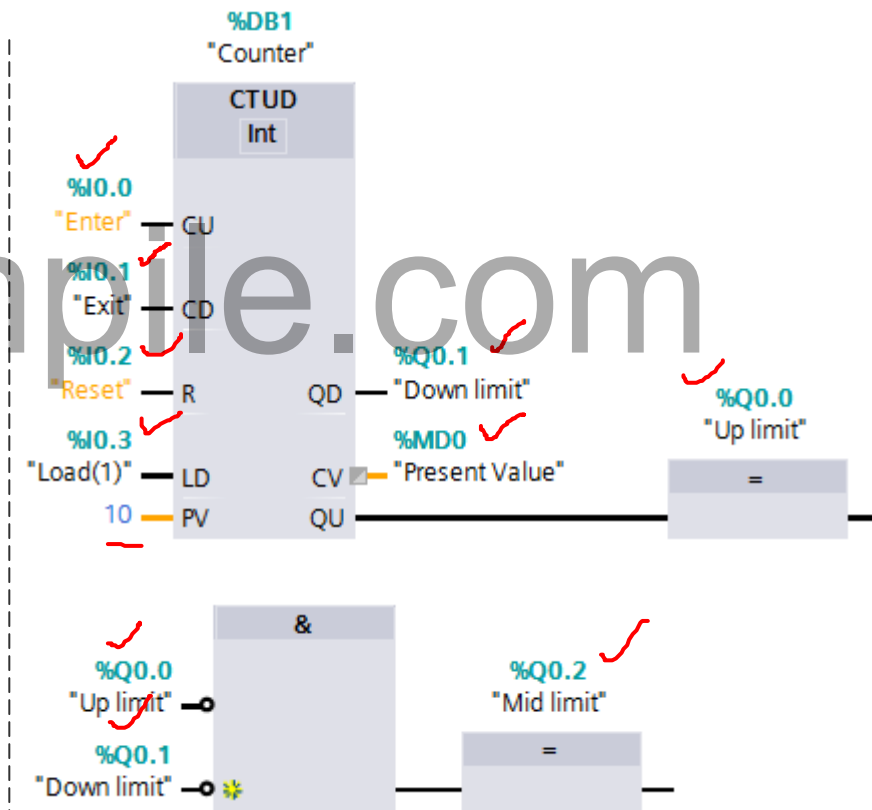


Test the operation of Counter Up/Down using Ladder and FBD. Take PV as 10. Take another output which should be ON if the PV is between 0 ~ 10.

Ladder Solution



FBD Solution



What did we learn in this lesson?

- If the value of **CV (current count value)** is **equal to or greater than** the value of **PV (preset value)**, then the **counter output QU = 1**.
- If the value of **CV** is less than or equal to zero, then the **counter output QD = 1**.
- If the value of **LOAD** changes from 0 to 1, then the value at **PV is loaded to the counter as the new CV**.
- If the value of the reset **R** changes from 0 to 1, **CV is reset to 0**.

Thank you

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