



Andhra Pradesh State Skill Development Corporation



The image is a composite of two parts. On the left, there is a diagram of a Learning Management System (LMS). It features a central computer monitor displaying the 'LMS' logo. Various icons and text labels are connected by lines to the monitor: 'courses' (top), 'documentation' (top right), 'tracking' (right), 'e-learning management' (bottom right), 'education' (bottom left), 'system' (left), and 'software' (top left). On the right, there is a photograph of three individuals (two men and one woman) wearing headsets and working on desktop computers in what appears to be a call center or customer service environment.

Basics of PLC

Counters - UP Counter



Counters

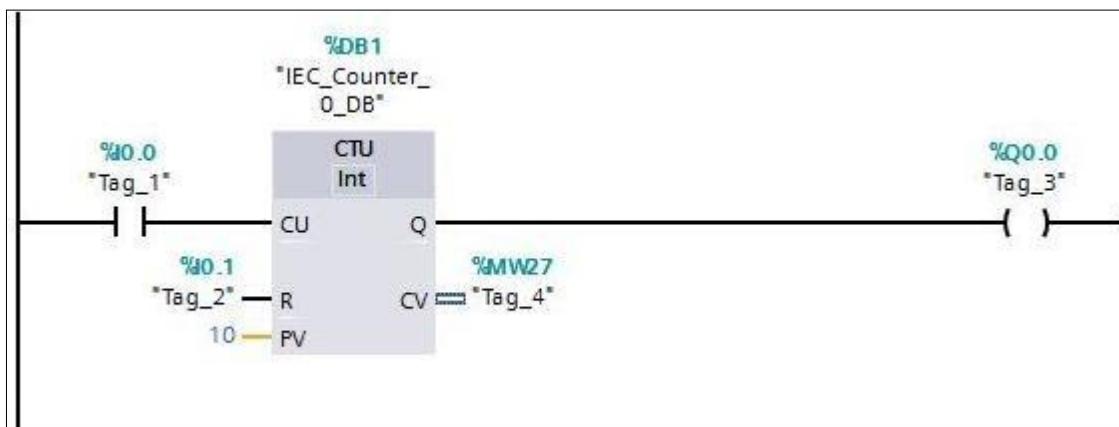
CTU - Counter Up

You can use the "Count up" instruction to increment the value at output CV. When the signal state at the CU input changes from "0" to "1" (positive signal edge), the instruction executes and the current counter value at the CV output is incremented by one. When the instruction executes for the first time, the current counter value at the CV output is set to zero. The counter value is incremented each time a positive signal edge is detected, until it reaches the high limit for the data type specified at the CV output. When the high limit is reached, the signal state at the CU input no longer has an effect on the instruction.

You can scan the counter status at the Q output. The signal state at the Q output is determined by the parameter PV. If the current counter value is greater than or equal to the value of the PV parameter, the Q output is set to signal state "1". In all other cases, the Q output has signal state "0".

The value at the CV output is reset to zero when the signal state at input R changes to "1". As long as the R input has signal state "1", the signal state at the CU input has no effect on the instruction.

When the signal state of the "I0.0" operand changes from "0" to "1", the "Count up" instruction executes and the current counter value of the operand "CV" is incremented by one. With each additional positive signal edge, the counter value is incremented until the high limit value of the data type (INT = 32767) is reached.



The value of the PV parameter is adopted as the limit for determining the "Q0.0" output. The "Q0.0" output has signal state "1" as long as the current counter value is greater than or equal to the value of the "PV" operand. In all other cases, the "Q0.0" output has



signal state "0".

Parameters

Parameter	Declaration	Data type	Description
CU	Input	BOOL	Count up input
R	Input	BOOL	Reset input
PV	Input	Integers	Value at which the output QU is set.
Q	Output	BOOL	Status of the counter up
CV	Output	Integers	Current counter value