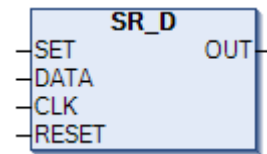


SR_D

Summary

The SR-D function block is an extension to a normal SR trigger with an additional memory input D trigger. The Reset signal overrides all other control signals and clears the internal block state. The Set signal forces the output to the TRUE state.



Connections

Inputs:

Name	Type	Value	Description
SET	BOOL	TRUE, FALSE	Set Input
DATA	BOOL	TRUE, FALSE	Data Input
CLK	BOOL	TRUE, FALSE	Clock, rising edge active
RESET	BOOL	TRUE, FALSE	Reset

Outputs:

Name	Type	Value	Description
OUT	BOOL	TRUE, FALSE	Output signal

Function

The SR-D block implements D trigger with the *SET*, *RESET* controls. The data is stored from D input when the clock changes from 0 to 1. The *SET* signal forces the output to the TRUE state. If R is active, the output is always FALSE. The *RESET* signal overrides all other control signals and clears the internal block state.

When the clock input (*CLK*) is set from 0 to 1, the *DATA* input value is stored to the output (*OUT*).

When *RESET* is set to 1, the output is set to 0.

Truth table:

SET	RESET	DATA	CLK	Previous output	OUT
Any	1	Any	Any	Any	0
1	0	Any	Any	Any	1
0	0	Any	0	Q_{n-1}	Q_{n-1}
0	0	0	0->1	Any	0
0	0	1	0->1	Any	1