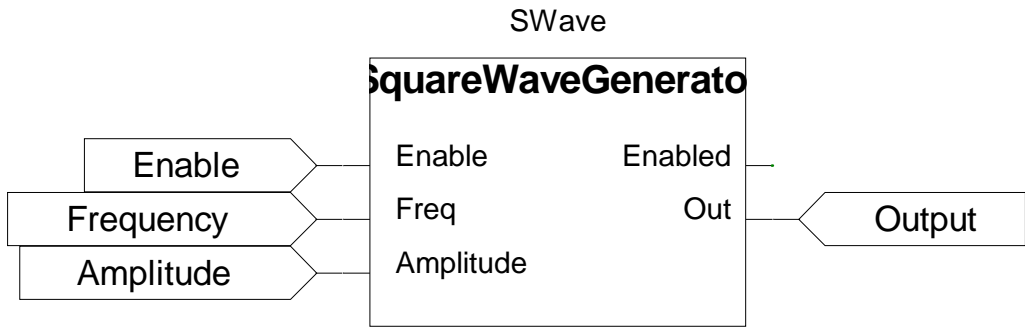


```

VAR
SWave : SquareWaveGenerator;
Enable : BOOL;
Frequency : REAL := 0.1;
Amplitude : REAL := 1;
Output : REAL;
END_VAR
    
```

1



Project : SquareWave	
PROGRAM : SquareWave	
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```

VAR_INPUT
Enable : BOOL; (* Abilita l'esecuzione *)
Freq : REAL; (* Frequenza dell'onda [Hz] *)
Amplitude : REAL; (* Ampiezza dell'onda *)
END_VAR

VAR_OUTPUT
Enabled : BOOL; (* FB Enabled *)
Out : REAL; (* Output value *)
END_VAR

VAR
TimeBf : ARRAY[ 0..1 ] OF UDINT; (* Time buffer (uS) *)
Period : REAL; (* Wave period (uS) *)
Reference : REAL; (* Reference value *)
TimePsd : UDINT; (* Time passed (uS) *)
END_VAR
    
```

```

1 (* ***** *)
2 (* FUNCTION BLOCK "SquareWaveGenerator" *)
3 (* ***** *)
4 (* Questo blocco funzione genera un'onda quadra. *)
5 (* ----- *)
6
7 (* ----- *)
8 (* GESTIONE ABILITAZIONE *)
9 (* ----- *)
10 (* Gestione disabilitazione. *)
11
12 IF NOT(Enable)THEN
13
14     (* One shot disabilitazione FB. *)
15
16     IF (Enabled) THEN
17         Enabled:=FALSE; (* FB Enabled *)
18         Out:=0.0; (* Output value *)
19     END_IF;
20
21     RETURN;
22 END_IF;
23
24 (* Gestione one shot abilitazione. *)
25
26 IF NOT(Enabled)THEN
27     Enabled:=TRUE; (* FB Enabled *)
28     TimeBf[1]:=SysGetSysTime(TRUE); (* Time buffer (uS) *)
29     Period:=(1.0/Freq)*1000000.0; (* Wave period (uS) *)
30 END_IF;
31
32 (* ----- *)
33 (* GENERATORE ONDA IN USCITA *)
34 (* ----- *)
35 (* Calcolo tempo trascorso da ultima esecuzione. *)
36
37 TimeBf[0]:=SysGetSysTime(TRUE); (* Time buffer (uS) *)
38 TimePsd:=TimePsd+(TimeBf[0]-TimeBf[1]); (* Time passed (uS) *)
39 TimeBf[1]:=TimeBf[0]; (* Time buffer (uS) *)
    
```

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FUNCTION BLOCK : SquareWaveGenerator	
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FUNCTION_BLOCK SquareWaveGenerator

```

40
41 (* Riconduco il tempo al periodo definito dell'onda. *)
42
43 IF (TimePsd >= TO_UDINT(Period)) THEN
44     TimePsd:=TimePsd-TO_UDINT(Period); (* Time passed (uS) *)
45 END_IF;
46
47 (* Calcolo valore di riferimento. *)
48
49 IF (TimePsd < TO_UDINT(Period /2.0)) THEN
50     Reference:=0.0; (* Reference value *)
51 ELSE
52     Reference:=1.0; (* Reference value *)
53 END_IF;
54
55 (* Moltiplico per l'ampiezza. *)
56
57 Out:=Reference*Amplitude; (* Output value *)
58
59 (* [End of file] *)
60

```

	Project : SquareWave	
	FUNCTION BLOCK : SquareWaveGenerator	
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