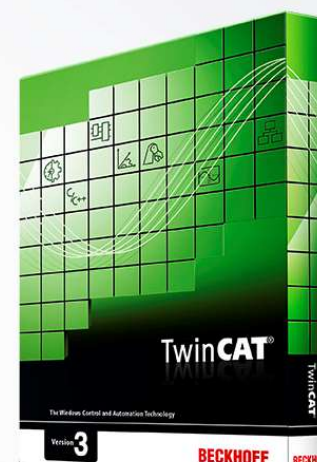
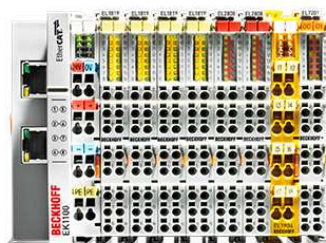


BECKHOFF



- A Function Block is a re-useable piece of code that can have multiple inputs and multiple outputs. Function Blocks are instantiated, therefore each time a Function Block is used it must be assigned a unique instance name. Each instance receives its own space in memory and therefore will retain its values from one PLC scan to the next.
- TON, CTU, R_Trig, FB_FileOpen, ADSREAD, these are just a few examples of Function Blocks
- The programmer can also create their own Function Blocks to perform a variety of tasks.

Function Block

Function block FB

- Called by: Programs or other FBs
- Calls: Function Blocks, Functions

Function Block

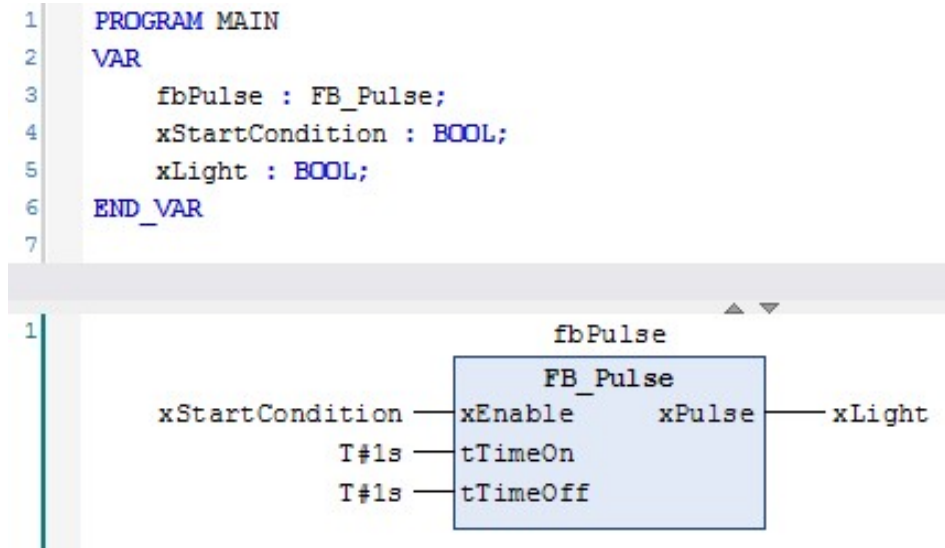
- Local variable: static, i.e. the local data are available again in the next cycle. Each FB call has its own local data.
- Inputs: 0, 1, 2, 3,..n VAR_INPUT
- Outputs: 0, 1, 2, 3,..n VAR_OUTPUT
- Transfer by reference: 0,1,2,3,..n VAR_IN_OUT
- Monitoring: In the online mode of the PLC control the instance of the call concerned must first be specified. The local data are then visible for each call.
- Use Example: multiple-used modules, each of which requires its own data area. Timers, Counters, Axis Commands, Alarms, etc.

ST

```
1 PROGRAM MAIN
2 VAR
3     fbPulse : FB_Pulse;
4     xStartCondition : BOOL;
5     xLight : BOOL;
6 END_VAR

1 fbPulse(
2     xEnable:= xStartCondition,
3     tTimeOn:= T#1S,
4     tTimeOff:= T#1S,
5     xPulse=> xLight);
6
```

FBD

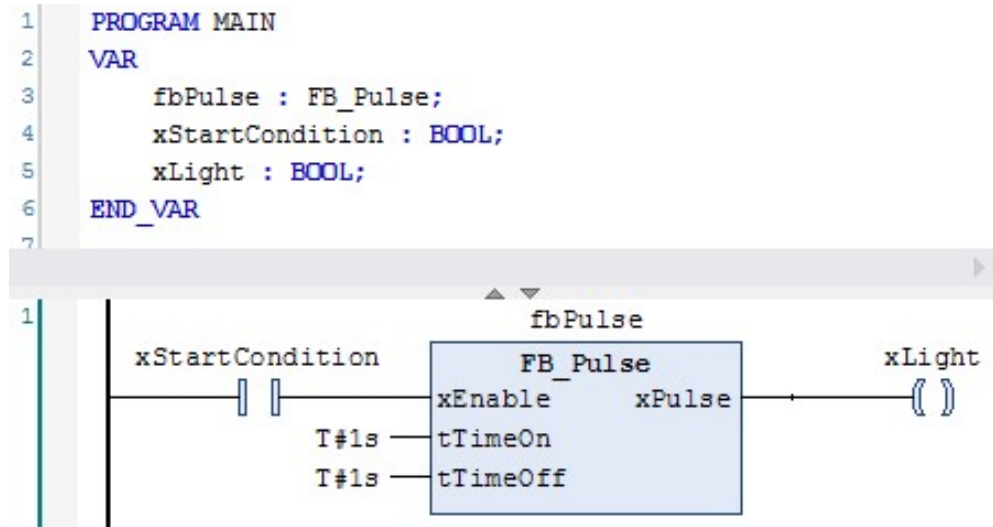


IL

```
1 PROGRAM MAIN
2 VAR
3     fbPulse : FB_Pulse;
4     xStartCondition : BOOL;
5     xLight : BOOL;
6 END_VAR
7
```

```
1 CAL fbPulse(
2     xEnable:= xStartCondition,
3     tTimeOn:= T#1s,
4     tTimeOff:= T#1s,
5     xPulse=> xLight)
6
```

LD



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