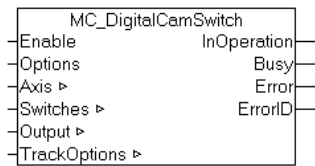


TwinCAT PLC Library: TcMC2_XFC

MC_DigitalCamSwitch

MC_DigitalCamSwitch is a digital cam controller with one or several cams on a digital output track.

Position, time and brake cams can be realised through suitable parameterisation. Further output tracks can be realised with independent instances of the function block.

In addition to the switching state of the digital output the output data structure contains precise time information for the next switching operations. This information is used for the actual output at an XFC output terminal with a downstream function block ([XFC_EL2252](#) or [XFC_EL2262](#)).

Inputs

```

VAR_INPUT
    Enable : BOOL;
    Options : ST_CamSwitchOptions;
END_VAR
  
```

Enable The cam controller is activated via the *Enable* input. The initial state remains unchanged, as long as *Enable*=*FALSE*.

Options Optional parameters

Options. **EncoderIndex** If more than one encoder is connected to the axis, the encoder index [0..9] can be specified here. First encoder is always index 0.

Options. **UseAcceleration** *UseAcceleration* can be enabled to take the axis acceleration into account for position calculations. There will be an advantage if the acceleration set value can be used. If the axis is an encoder axis, the position data may be noisy and the acceleration value will be noisy as well. In this case *UseAcceleration* is supposed to be false.

Outputs

```

VAR_OUTPUT
    InOperation : BOOL;
    Busy : BOOL;
    Error : BOOL;
    ErrorID : UDINT;
END_VAR
  
```

InOperation *InOperation* is TRUE, as long as the cam controller is active and the cam track is calculated according to the cam parameterisation.

Busy *Busy* is TRUE as long as the block function is not completed.

Error Becomes TRUE if an error occurs.

ErrorID If the error output is set, this parameter supplies the [error number](#).

Inputs/outputs

```

VAR_IN_OUT
    Axis : AXIS\_REF;
    Switches : CAMSWITCH\_REF;
    Output : OUTPUT\_REF;
    TrackOptions : TRACK\_REF;
END_VAR
  
```

Axis Axis data structure

Switches The data structure *Switches* contains a reference to the parameterisation of all cams on the cam track.

Output The data structure *Output* contains the calculated state of the digital output and the associated time stamp for the output at a digital XFC output terminal

TrackOptions The data structure *TrackOptions* contains the parameterisation for the cam track.

The axis data structure of type [AXIS_REF](#) addresses an axis uniquely within the system. Among other parameters it contains the current axis status, including position, velocity or error status.

Example with two digital cams

CamSwitchRefTrack1 : CAMSWITCH_REF	
	Value
NumberOfSwitches	3
pSwitches	ADR(CamSwitchArrayTrack1)
SizeOfSwitches	SIZEOF(CamSwitchArrayTrack1)

CamSwitchArrayTrack1 : Array [1..n] OF MC_CamSwitch					
	Switch 1	Switch 2	Switch 3	...	Switch n
FirstOnPosition	2000	2500	4000		
LastOnPosition	3000	3000	1000		
AxisDirection	POSITIVE	NEGATIVE	BOTH		
CamSwitchMode	POSITION	POSITION	POSITION		
Duration [s]	—	—	—		

CamSwitchRefTrack2 : CAMSWITCH_REF	
	Value
NumberOfSwitches	1
pSwitches	ADR(CamSwitchArrayTrack2)
SizeOfSwitches	SIZEOF(CamSwitchArrayTrack2)

CamSwitchArrayTrack2 : Array [1..m] OF MC_CamSwitch			
	Switch 1	...	Switch m
FirstOnPosition	3000		
LastOnPosition	—		
AxisDirection	BOTH		
CamSwitchMode	TIME		
Duration [s]	1,350		

