

Generic CiA 402 drive: MC_Power.Status output stays FALSE

Example:

bRegulatorRealState=TRUE

bDriveStartRealState=TRUE

The status- and control-word are correct

The drive can be moved via *MC_MoveVelocity*

Question:

With all the existing Example outputs of the system setup, why does the *MC_Power.Status* output stay FALSE?

Answer:

The generic CiA 402 axis requires the following bits in the status word in order to be ready for motion:

- Bit 0 (ready to switch on)
- Bit 1 (switched on)
- Bit 2 (operation enabled)
- Bit 5 (quick stop)
- Bit 12 (first bit of operation mode specific)

Bit 12 is not always set by every drive and therefore can prevent the axis to report *Axis.SMC3_AxisReadyForMotion()*=TRUE. This, in the end, will cause *MC_Power.Status* to stay FALSE.

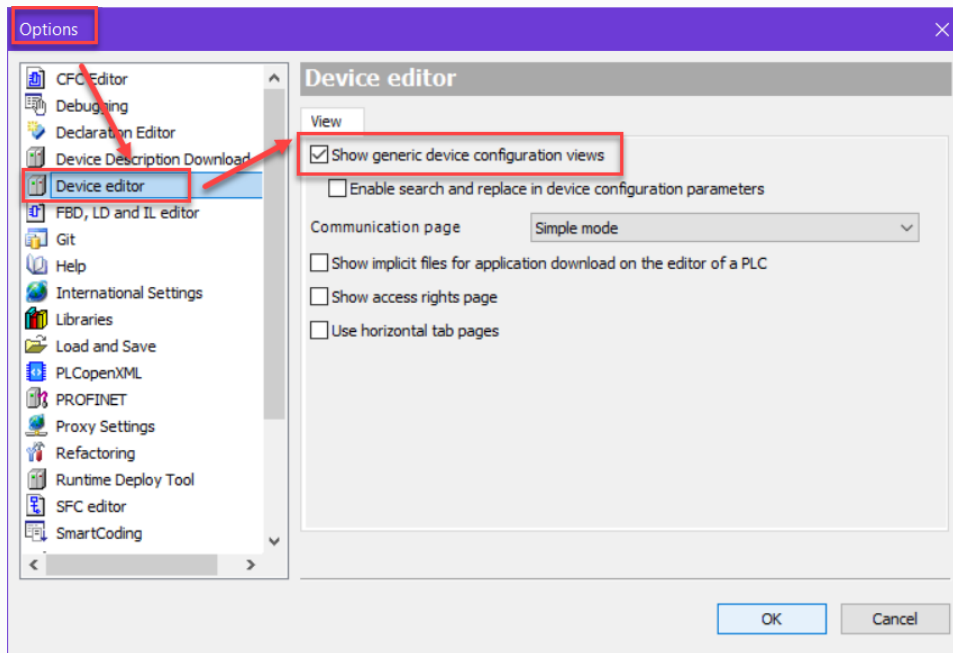
Workaround

The generic Axis can be tweaked, so that Bit 12 is not needed in position mode:

- Set *_bCheckBit12InPositionMode* of the generic drive to FALSE.

Parameter	Type	Value	Default	Unit	Description
AXIS_RFP_Standard	BOOL	FALSE	FALSE		TRUE: when bRegulator is reset to FALSE, disable immediately (go to "Switch on disabled" directly); FALSE: go via "switched on" and "ready to switch on"
AXIS_RFP_Scaling	UINT	10	10		cycles to wait in PRE_HOMING before setting B4
AXIS_RFP_Scaling	UINT	0	0		cycles to wait in HOMING_DONE after homing (precond.: bRegulatorOn=TRUE)
AXIS_RFP_Scaling	UINT	0	0		number of cycles at beginning of HOMING, where done bits are ignored
AXIS_RFP_Scaling	UINT	1000	1000		cycles to wait until detecting an failure and switching back
AXIS_RFP_Scaling	BOOL	FALSE	FALSE		TRUE: before starting the homing procedure (by setting B4) wait that B12 is FALSE
AXIS_RFP_Scaling	BOOL	TRUE	TRUE		TRUE: switch to HOMING_DONE if B12 AND B10 is true (correct acc. DSP402); FALSE: ignore B10
AXIS_RFP_Scaling	BOOL	TRUE	TRUE		FALSE: do not re-read and check if mode has been accepted by the drive
AXIS_RFP_Scaling	BOOL	FALSE	FALSE		only relevant when _bImmediateDisabling=TRUE; TRUE: the drive is then disabled until the drive signals to be in "Ready to switch on"
AXIS_RFP_Scaling	BOOL	FALSE	FALSE		TRUE: AxisReadyForMotion checks bit 12 in CSP or IP, FALSE: AxisReadyForMotion does not check bit 12.
AXIS_RFP_Scaling	BOOL	TRUE	TRUE		TRUE: in HOMING_ACTIVE, vStatusWord.13 = TRUE leads to errorstop and (depending on _bOnStartVHendStopInteruptone) vControlbit
AXIS_RFP_Scaling	BOOL	FALSE	FALSE		TRUE: set bit 4 of status word also in CSP mode. Some drives require this, although it is non-standard.
AXIS_RFP_Scaling	WORD	0	0		In state HOMING_ACTIVE, do not listen to bit 13 during this number of cycles from setting bit 4 (Some drives need some time to reset bit 13.
AXIS_RFP_Scaling	DWORD	0	0		Only relevant when _bImmediateDisabling=FALSE. Bit 13 of the status for which immediate disabling turned on. -- Bit 0: Normal operate
AXIS_RFP_Scaling	BOOL	FALSE	FALSE		Whether bit 4 of the status word, voltage enabled, needs to be TRUE for bRegulatorRealState to become TRUE.
AXIS_RFP_Scaling	BOOL	TRUE	TRUE		Whether bit 2 of the status word, operation enabled, needs to be TRUE for bDriveStartRealState to become TRUE.

- i** To get the list of device parameters displayed (in the 'device editors' of 'parameterizable devices', like for the generic CIA402 device), set the '**Show generic device configuration views**' option in the Dialog for '**Options: Device editor**':



- With this setting, the axis will report `Axis.SMC3_AxisReadyForMotion()`=**TRUE** and therefore also `MC_Power` will work.