Application Note

Festo_Positioning_Basic library – Point to Point PTP

Commissioning of a selected system with the Festo_Positioning_Basic library is explained step by step, so that it's successfully integrated into the user program.

FPosB

100102

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1 PTP

The prerequisite for this section is a configured, enabled and homed system.
The operating mode is selected for the desired function.

Visualisation	Codesys

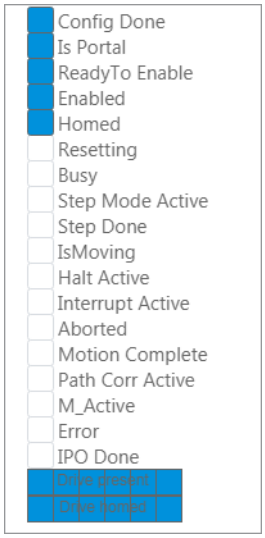
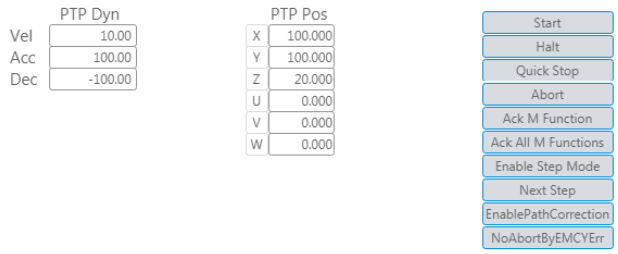
	g_stOut.stSW.xError = FALSE;
	g_stOut.stSW.xConfigDone = TRUE;
	g_stOut.stSW.xIsPortal = TRUE;
	g_stOut.stSW.xReadyToEnable = TRUE;
	g_stOut.stSW.xEnabled = TRUE;
	g_stOut.stSW.xHomed = TRUE;
	g_stOut.stSW.arxMotorPresent[0] = 1;
	g_stOut.stSW.arxMotorPresent[1] = 1;
	g_stOut.stSW.arxMotorPresent[2] = 1;

Table 1: Labelling

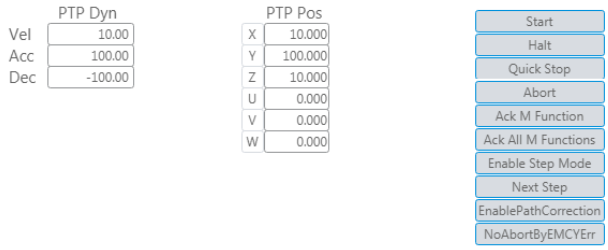
The procedure used to this end can be found in sections/ApplicationNotes XXX.

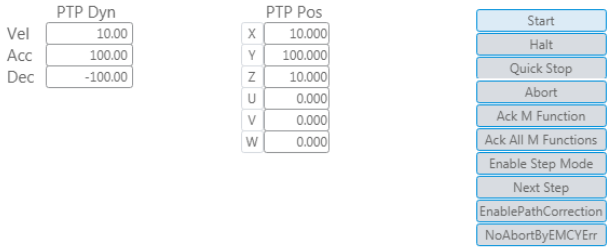
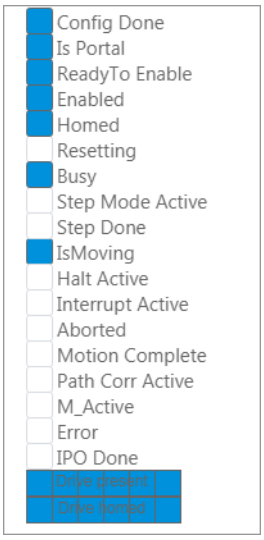
The PTP mode is very well suited for positioning the system from point to point within the working range. Each position is specified individually and travel to them is initiated by means of the start command.

	Visualisation	Codesys
1	The dynamics values can be changed during operation, but not when travel is taking place.	

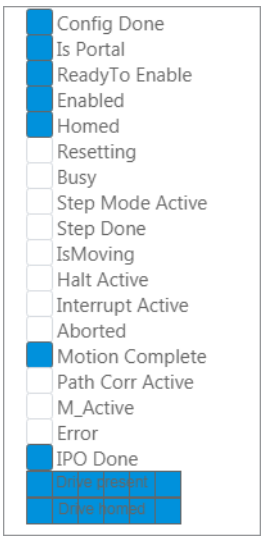
		g_stIn.stDynJogInch.lrVel := 10;
		g_stIn.stDynJogInch.lrAcc := 100;
		g_stIn.stDynJogInch.lrDec := -100;
		g_stIn.stDynJogInch.lrJerk := 0;

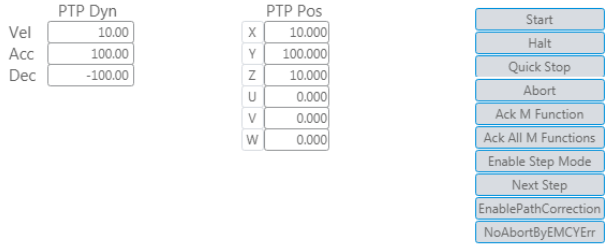
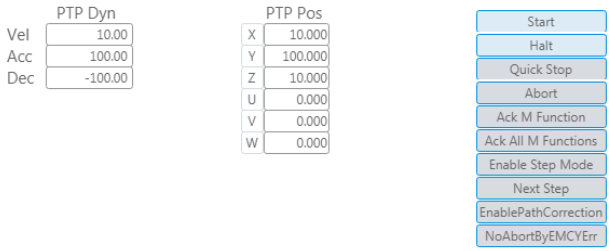
2	The desired position is specified.	

		g_stIn.stPosPtp.lrX := 10;
		g_stIn.stPosPtp.lrY := 100;
		g_stIn.stPosPtp.lrZ := 10;

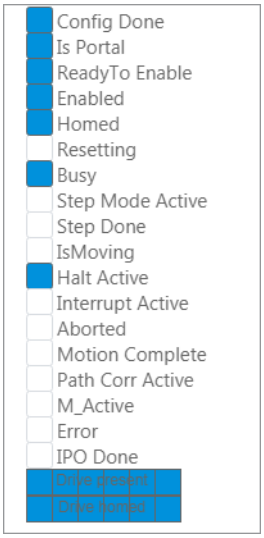
3	Positioning is started by means of a rising edge applied to “Start”.	
		g_stIn.stCW.xStart := TRUE;
4	The “isMoving” and “Busy” outputs are active as long as motion is in progress. Whereas “isMoving” indicates active positioning motion, the “Busy” status indicates an active internal module.	
		g_stOut.stSW.xIsMoving = TRUE; g_stOut.stSW.xBusy = TRUE;

5	Positioning has been successfully completed when Motion Complete is reported back, as long as no errors have occurred. The “isMoving” and “Busy” outputs are inactive.	

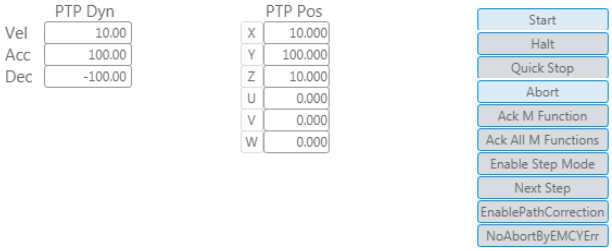
		g_stOut.xError = FALSE;
		g_stOut.stSW.xIsMoving = FALSE;
		g_stOut.stSW.xBusy = FALSE;
		
		g_stOut.stSW.xMotionComplete = TRUE;

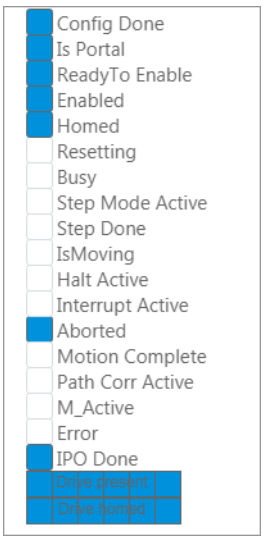
6	The start command is reset.	
		g_stIn.stCW.xStart := FALSE;
7	During the course of travel, positioning motion can be suspended with the “Halt” command. The position set is still active. As soon as the halt command is deactivated, positioning is continued.	
		g_stIn.stCW.xHalt := TRUE;

8	If “Halt” is active during positioning, the system is in the “Busy” status with active “HaltActive”. “isMoving” is inactive. “Motion Complete” is not reported back.	

		g_stOut.stSW.xIsMoving = FALSE;
		g_stOut.stSW.xHaltActive = TRUE;
		g_stOut.stSW.xBusy = FALSE;
		g_stOut.stSW.xMotionComplete = FALSE;

9	A travel command can also be aborted. As opposed to the “Halt” command, the position set is aborted in this case. However, the position set should first be suspended with the halt command if possible, and then aborted.	

		g_stIn.stCW.xStart := TRUE;
		
		g_stIn.stCW.xAbort := TRUE;

10	Abortion is reported back in the status display.	
		g_stOut.stSW.xAborted = TRUE;