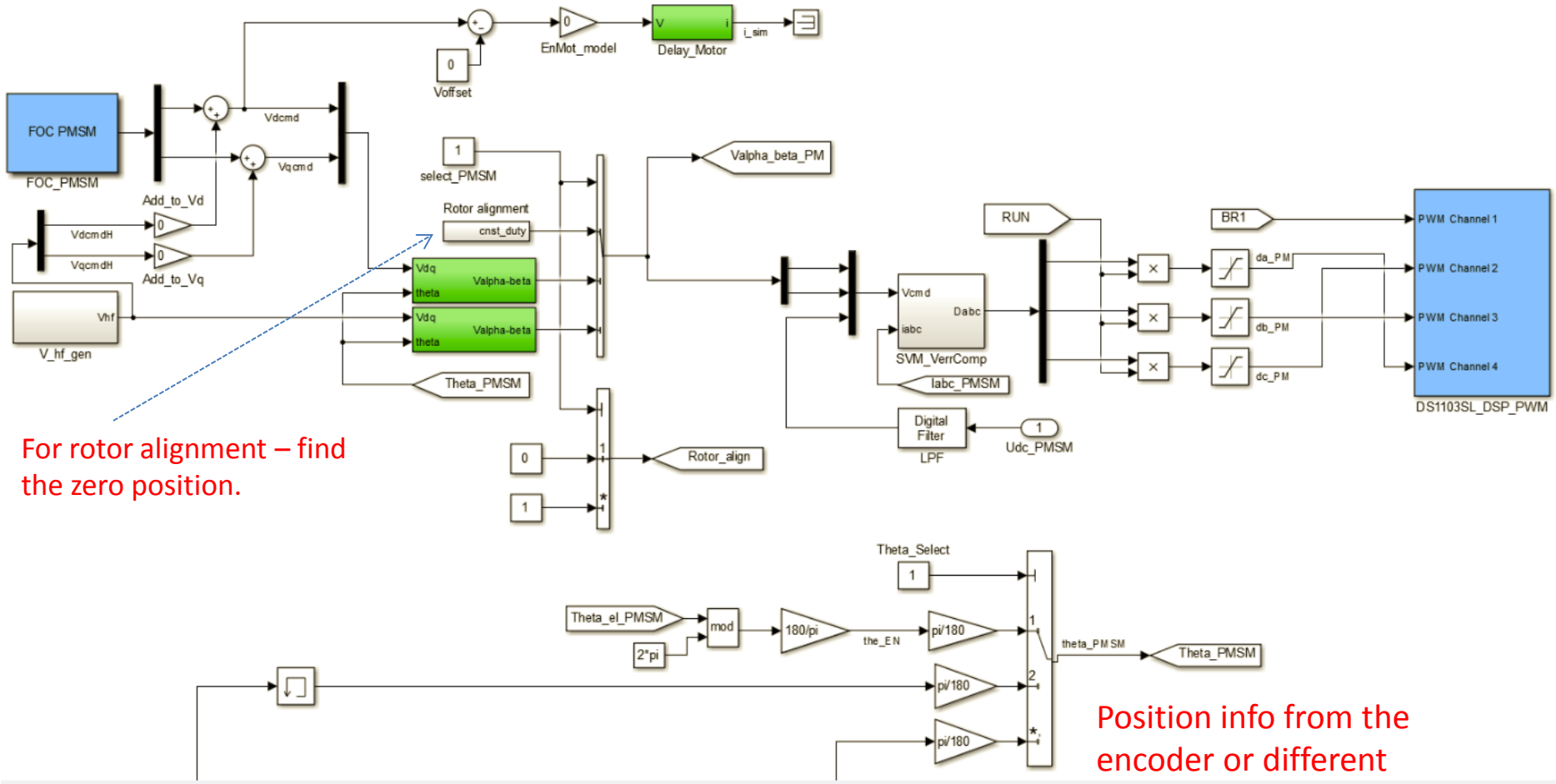
Your block will replace the ‘FOC_PMSM’ block below (marked in blue).

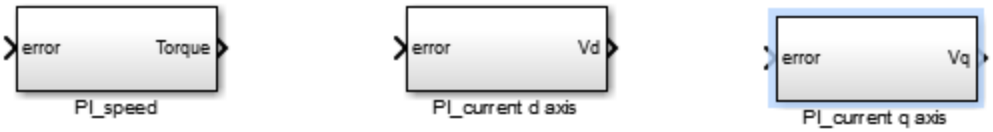


For rotor alignment – find the zero position.

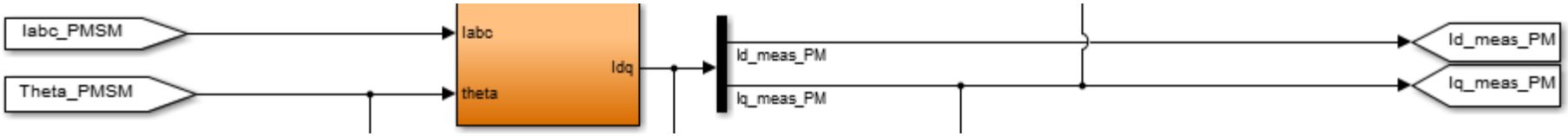
Position info from the encoder or different estimators (sensorless)

In this FOC_PMSM block

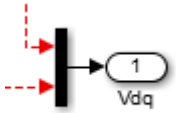
- The three PI controllers for the speed loop, d-axis current loo and q-axis current loop are given, as



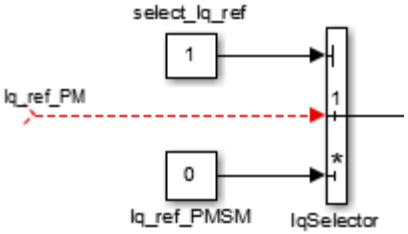
- The measured currents are given, as



- The outputs are the d-, q-axes voltage commands



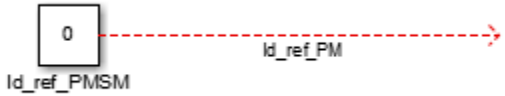
- Iq reference should be linked to ‘Iq_ref_PM’



In this FOC_PMSM block

- Please also use the iq reference current value to calculate the torque of the machine. The signal should be linked to

- Reference d-axis current is given



- Some ‘unresolved Link’ blocks are filters – just keep them.

- Machine parameter variables defined in the model (please use these parameters)

```
L_pm      = 0.002;      % synchronous inductance [H]
lambda_m = 0.123;      % rotor peak flux linkage [Wb*turn]
```