

Coverage Report for pmsm_sensorless_control

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Analysis Information

Coverage Data Information

Collected in version (R2021a)

Model Information

Model version 1.3
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Last saved Sat Mar 26 16:27:31 2022

Harness information

Harness model(s) pmsm_sensorless_control_Harness2
Harness model owner pmsm_sensorless_control

Simulation Optimization Options

Default parameter behavior tunable
Block reduction forced off
Conditional branch optimization on

Coverage Options

Analyzed model pmsm_sensorless_control
Logic block short circuiting off

Tests

Test	Started execution	Ended execution
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Summary

Model Hierarchy/Complexity	Run 1 - Harness Inputs			
	Decision		Execution	
1. pmsm_sensorless_control	4	100% <div></div>	100% <div></div>	
2. . . . PWM Inverter	3	100% <div></div>	100% <div></div>	
3. . . . Subsystem	NA		100% <div></div>	
4. Idq_e to Iabc	NA		100% <div></div>	
5. Subsystem	NA		100% <div></div>	
6. de-qe to ds-qd	NA		100% <div></div>	
7. PMSM dynamic model	NA		100% <div></div>	
8. Inverse Park Transform	NA		100% <div></div>	
9. Park Transform	NA		100% <div></div>	
10. Subsystem	NA		100% <div></div>	
11. Subsystem1	NA		100% <div></div>	
12. Subsystem3	NA		100% <div></div>	
13. Subsystem1	NA		100% <div></div>	
14. Subsystem2	NA		100% <div></div>	
15. Vabc to Vdq_e	NA		100% <div></div>	
16. Vabc to Vdq_s	NA		100% <div></div>	
17. ds-s to de-qe	NA		100% <div></div>	
18. sin_cos_calculator	NA		100% <div></div>	

Details

1. Model "pmsm_sensorless_control"

Child Systems:		PWM Inverter , Subsystem	
Metric	Coverage (this object)	Coverage (inc. descendants)	
Cyclomatic Complexity	1	4	
Decision	NA	100% (6/6) decision outcomes	
Execution	NA	100% (119/119) objective outcomes	

2. SubSystem block "[PWM Inverter](#)"

Justify or Exclude	
Parent:	/pmsm_sensorless_control

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	3
Decision	NA	100% (6/6) decision outcomes
Execution	NA	100% (13/13) objective outcomes

Full Coverage

Model Object	Metric
Fcn block " Vab "	Execution
Fcn block " Van "	Execution
Fcn block " Vao "	Execution
Fcn block " Vbc "	Execution
Fcn block " Vbn "	Execution
Fcn block " Vbo "	Execution
Fcn block " Vca "	Execution
Fcn block " Vcn "	Execution
Fcn block " Vco "	Execution
Switch block " S1 "	Decision, Execution
Switch block " S3 "	Decision, Execution
Switch block " S5 "	Decision, Execution
Gain block " Gain "	Execution

3. SubSystem block "[Subsystem](#)"

[Justify or Exclude](#)

Parent: [/pmsm_sensorless_control](#)
Child Systems: [Idq_e to Iabc](#), [PMSM dynamic model](#), [Vabc to Vdq_e](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (106/106) objective outcomes

Full Coverage

Model Object	Metric
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Math block " mod "	Execution
Constant block " Constant1 "	Execution
Step block " Step "	Execution

4. SubSystem block "[Idq_e to Iabc](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem](#)
Child Systems: [Subsystem](#), [de-qe to ds-qe](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (22/22) objective outcomes

Full Coverage

Model Object	Metric
Constant block " Constant2 "	Execution

5. SubSystem block "[Subsystem](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/Idq_e to Iabc](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (15/15) objective outcomes

Full Coverage

Model Object	Metric
Fcn block " Fcn "	Execution
Fcn block " Fcn1 "	Execution
Fcn block " Fcn2 "	Execution
Fcn block " Fcn4 "	Execution
Fcn block " Fcn5 "	Execution
Product block " Product "	Execution

Product block " Product1 "	Execution
Product block " Product2 "	Execution
Product block " Product3 "	Execution
Sum block " Sum "	Execution
Sum block " Sum1 "	Execution
Sum block " Sum2 "	Execution
Sum block " Sum3 "	Execution
Constant block " K1 "	Execution
Constant block " K2 "	Execution

6. SubSystem block "[de-qe to ds-qe](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/Idq_e to Iabc](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (6/6) objective outcomes

Full Coverage

Model Object	Metric
Product block " Product "	Execution
Product block " Product1 "	Execution
Product block " Product2 "	Execution
Product block " Product3 "	Execution
Sum block " Add "	Execution
Sum block " Add1 "	Execution

7. SubSystem block "[PMSM dynamic model](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem](#)

Child Systems: [Inverse Park Transform](#), [Park Transform](#), [Subsystem](#), [Subsystem1](#), [Subsystem3](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (52/52) objective outcomes

Full Coverage

Model Object	Metric
Gain block " Gain "	Execution
Gain block " Gain1 "	Execution
Gain block " Gain2 "	Execution
Gain block " Gain3 "	Execution
Sum block " Add "	Execution
Sum block " Add1 "	Execution
Sum block " Add2 "	Execution
Sum block " Add3 "	Execution
Constant block " Constant "	Execution
Constant block " Constant1 "	Execution
Constant block " Constant2 "	Execution
Integrator block " Integrator "	Execution
Integrator block " Integrator1 "	Execution

8. SubSystem block "[Inverse Park Transform](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM_dynamic_model](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (4/4) objective outcomes

Full Coverage

Model Object	Metric
Fcn block " a "	Execution
Fcn block " b "	Execution

Fcn block " c "	Execution
Gain block " Gain1 "	Execution

9. SubSystem block "[Park Transform](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM_dynamic_model](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (4/4) objective outcomes

Full Coverage

Model Object	Metric
Fcn block " 0 "	Execution
Fcn block " d "	Execution
Fcn block " q "	Execution
Gain block " Gain1 "	Execution

10. SubSystem block "[Subsystem](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM_dynamic_model](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (9/9) objective outcomes

Full Coverage

Model Object	Metric
Gain block " Gain "	Execution
Gain block " Gain1 "	Execution
Gain block " Gain4 "	Execution
Gain block " Gain5 "	Execution

Gain block " Gain6 "	Execution
Sum block " Sum1 "	Execution
Integrator block " Integrator "	Execution
Integrator block " Integrator1 "	Execution
Integrator block " Integrator2 "	Execution

11. SubSystem block "[Subsystem1](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM dynamic model](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (8/8) objective outcomes

Full Coverage

Model Object	Metric
Gain block " Gain "	Execution
Product block " Product "	Execution
Product block " Product2 "	Execution
Product block " Product3 "	Execution
Sum block " Add "	Execution
Constant block " Constant1 "	Execution
Constant block " Constant2 "	Execution
Constant block " Constant3 "	Execution

12. SubSystem block "[Subsystem3](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM dynamic model](#)

Child Systems: [Subsystem1](#), [Subsystem2](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (14/14) objective outcomes

13. SubSystem block "[Subsystem1](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM_dynamic_model/Subsystem3](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (8/8) objective outcomes

Full Coverage

Model Object	Metric
Gain block " 1/lq ."	Execution
Gain block " ld/lq ."	Execution
Gain block " rs/lq "	Execution
Product block " Product "	Execution
Product block " Product1 "	Execution
Sum block " Add "	Execution
Constant block " Constant "	Execution
Integrator block " Integrator "	Execution

14. SubSystem block "[Subsystem2](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/PMSM_dynamic_model/Subsystem3](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (6/6) objective outcomes

Full Coverage

Model Object	Metric
Gain block " Gain "	Execution
Gain block " Gain1 "	Execution
Gain block " Gain2 "	Execution

Product block " Product "	Execution
Sum block " Add "	Execution
Integrator block " Integrator "	Execution

15. SubSystem block "[Vabc to Vdq_e](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem](#)
Child Systems: [Vabc to Vdq_s](#), [ds-s to de-qe](#), [sin_cos_calculator](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (29/29) objective outcomes

Full Coverage

Model Object	Metric
Constant block " Constant "	Execution

16. SubSystem block "[Vabc to Vdq_s](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/Vabc to Vdq_e](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (20/20) objective outcomes

Full Coverage

Model Object	Metric
Fcn block " Fcn "	Execution
Fcn block " Fcn1 "	Execution
Fcn block " Fcn2 "	Execution
Fcn block " Fcn3 "	Execution
Gain block " Gain1 "	Execution
Product block " Product "	Execution

Product block " Product1 "	Execution
Product block " Product2 "	Execution
Product block " Product3 "	Execution
Product block " Product4 "	Execution
Product block " Product5 "	Execution
Product block " Product6 "	Execution
Product block " Product7 "	Execution
Sum block " Sum "	Execution
Sum block " Sum1 "	Execution
Sum block " Sum2 "	Execution
Sum block " Sum3 "	Execution
Sum block " Sum4 "	Execution
Constant block " K1 "	Execution
Constant block " K2 "	Execution

17. SubSystem block "[ds-s to de-qe](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/Vabc to Vdq_e](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (6/6) objective outcomes

Full Coverage

Model Object	Metric
Product block " Product "	Execution
Product block " Product1 "	Execution
Product block " Product2 "	Execution
Product block " Product3 "	Execution
Sum block " Add "	Execution
Sum block " Add1 "	Execution

18. SubSystem block "[sin_cos_calculator](#)"

[Justify or Exclude](#)

Parent: [pmsm_sensorless_control/Subsystem/Vabc to Vdq_e](#)

Metric	Coverage (this object)	Coverage (inc. descendants)
Cyclomatic Complexity	0	0
Execution	NA	100% (2/2) objective outcomes

Full Coverage

Model Object	Metric
Fcn block " Fcn "	Execution
Fcn block " Fcn1 "	Execution