Simulink Design Verifier Report

basictwotanks

YUZEHONG

Simulink Design Verifier Report: basictwotanks

YUZEHONG

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Chapter 1. Summary

Analysis Information.

Model:	basictwotanks
Mode:	Test generation
Model Representation:	Built on 27-Aug-2021 10:53:12
Test generation target:	Model
Status:	Exceeded time limit
PreProcessing Time:	21s
Analysis Time:	300s

Objectives Status.

Number of Objectives:	**142**
Objectives Unsatisfiable:	6
Objectives Undecided:	28
Objectives Satisfied - No Test Case:	99
Objectives Unsatisfiable under Approximation:	9

Chapter 2. Analysis Information

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Model Information

File:	basictwotanks
Version:	1.170
Time Stamp:	Fri Nov 02 22:37:36 2018
Author:	Kerianne

Analysis Options

Mode:	TestGeneration
Rebuild Model Representation:	IfChangeIsDetected
Test generation target:	Model
Test Suite Optimization:	Auto
Maximum Testcase Steps:	10000time steps
Test Conditions:	UseLocalSettings
Test Objectives:	UseLocalSettings
Model Coverage Objectives:	ConditionDecision
Include Relational Boundary Objectives:	off
Maximum Analysis Time:	300s
Block Replacement:	off
Parameters Analysis:	off
Include expected output values:	off
Randomize data that do not affect the outcome:	off
Additional analysis to reduce instances of rational approximation:	on
Save Data:	on
Save Harness:	off
Save Report:	off

Approximations

Simulink Design Verifier performed the following approximations during analysis. These can impact the precision of the results generated by Simulink Design Verifier. Please see the product documentation for further details.

#	Type	Description
1	Rational approximation	The model includes floating-point arithmetic. Simulink Design Verifier approximates floating-point arithmetic with rational number arithmetic. Specifying minimum and maximum values that mimic environmental constraints on root-level Inport blocks may reduce instances of rational approximation.

Chapter 3. Test Objectives Status

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Objectives Unsatisfiable

Simulink Design Verifier found that there does not exist any test case exercising these test objectives. This often indicates the presence of dead logic in the model. Other possible reasons can be inactive blocks in the model due to parameter configuration or test constraints such as given using Test Condition blocks.

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
23	Condition	Controller/Tank1_Controller/Logical Operator	Logic: input port 1 **true**	8	n/a
28	Condition	Controller/Tank1_Controller/Logical Operator1	Logic: input port 1 **false**	8	n/a
30	Condition	Controller/Tank1_Controller/Logical Operator1	Logic: input port 2 **false**	8	n/a
33	Decision	Controller/Tank1_Controller/Switch	logical trigger input **false (output is from 3rd input port)**	8	n/a
86	Condition	Controller/Tank2_Controller/Logical Operator11	Logic: input port 1 **false**	8	n/a
102	Condition	Controller/Tank2_Controller/Logical Operator8	Logic: input port 2 **false**	8	n/a

Objectives Undecided

Simulink Design Verifier was not able to process these objectives with the current options.

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
52	Condition	Environment/Sensor_HI_Tank2/Relational Operator	RelationalOperator: input1 > input2 **false**	-1	n/a
53	Decision	Environment/Sensor_HI_Tank2/Switch	logical trigger input **false (output is from 3rd input port)**	-1	n/a
56	Condition	Environment/Sensor_MD_Tank2/Relational Operator	RelationalOperator: input1 > input2 **false**	-1	n/a

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
57	Decision	Environment/Sensor_MD_-Tank2/Switch	logical trigger input **false (output is from 3rd input port)**	-1	n/a
71	Condition	Environment/Emergency-Valve/Relational Operator	RelationalOperator: input1 > input2 **true**	-1	n/a
76	Decision	Environment/Emergency-Valve/Switch	logical trigger input **true (output is from 1st input port)**	-1	n/a
77	Condition	Controller/Tank2_Controller/Compare To Constant-6/Compare	RelationalOperator: input1 == input2 **true**	-1	n/a
79	Condition	Controller/Tank2_Controller/Logical Operator13	Logic: input port 1 **true**	-1	n/a
82	Condition	Controller/Tank2_Controller/Logical Operator12	Logic: input port 1 **false**	-1	n/a
91	Condition	Controller/Compare To Constant4/Compare	RelationalOperator: input1 == input2 **true**	-1	n/a
95	Condition	Controller/Tank2_Controller/Compare To Constant-4/Compare	RelationalOperator: input1 == input2 **true**	-1	n/a
97	Condition	Controller/Tank2_Controller/Logical Operator9	Logic: input port 1 **true**	-1	n/a
100	Condition	Controller/Tank2_Controller/Logical Operator8	Logic: input port 1 **false**	-1	n/a
103	Condition	Controller/Tank2_Controller/Logical Operator10	Logic: input port 1 **true**	-1	n/a
105	Condition	Controller/Tank2_Controller/Logical Operator10	Logic: input port 2 **true**	-1	n/a
108	Decision	Controller/Tank2_Controller/Switch3	logical trigger input **true (output is from 1st input port)**	-1	n/a
111	Condition	Controller/Tank2_Controller/Compare To Constant-2/Compare	RelationalOperator: input1 == input2 **true**	-1	n/a
113	Condition	Controller/Tank2_Controller/Logical Operator3	Logic: input port 1 **true**	-1	n/a
115	Condition	Controller/Tank2_Controller/Logical Operator3	Logic: input port 2 **true**	-1	n/a
121	Condition	Controller/Tank2_Controller/Logical Operator6	Logic: input port 2 **true**	-1	n/a
129	Condition	Controller/Tank2_Controller/Logical Operator4	Logic: input port 2 **true**	-1	n/a

#	Type	Model Item	Description	Analys-is Time (sec)	Test Ca-se
132	Decisi-on	Controller/Tank2_Controll-er/Switch2	logical trigger input **true** **(output is from 1st input port)**	-1	n/a
133	Conditi-on	Controller/Compare To Co-nstant5/Compare	RelationalOperator: inpu-t1 == input2 **true**	-1	n/a
135	Conditi-on	Controller/Tank2_Controll-er/Logical Operator2	Logic: input port 1 **true**	-1	n/a
137	Conditi-on	Controller/Tank2_Controll-er/Logical Operator1	Logic: input port 1 **true**	-1	n/a
139	Conditi-on	Controller/Tank2_Controll-er/Logical Operator1	Logic: input port 2 **true**	-1	n/a
140	Conditi-on	Controller/Tank2_Controll-er/Logical Operator1	Logic: input port 2 **false**	-1	n/a
142	Decisi-on	Controller/Tank2_Controll-er/Switch	logical trigger input **true** **(output is from 1st input port)**	-1	n/a

Objectives Satisfied - No Test Case

#	Type	Model Item	Description	Analys-is Time (sec)	Test Ca-se
1	Decisi-on	Initializer_and_Update-r/Initial_Height_Tank_-1/Switch	trigger > threshold **false** **(output is from 3rd input port)**	299	n/a
2	Decisi-on	Initializer_and_Update-r/Initial_Height_Tank_-1/Switch	trigger > threshold **true** **(output is from 1st input port)**	299	n/a
3	Conditi-on	Environment/Sensor_Low-_Tank1/Relational Operat-or	RelationalOperator: inpu-t1 > input2 **true**	299	n/a
4	Conditi-on	Environment/Sensor_Low-_Tank1/Relational Operat-or	RelationalOperator: inpu-t1 > input2 **false**	299	n/a
5	Decisi-on	Environment/Sensor_Low-_Tank1/Switch	logical trigger input **false** **(output is from 3rd input port)**	299	n/a
6	Decisi-on	Environment/Sensor_Low-_Tank1/Switch	logical trigger input **true** **(output is from 1st input port)**	299	n/a
7	Conditi-on	Controller/Compare To Co-nstant1/Compare	RelationalOperator: inpu-t1 == input2 **true**	299	n/a

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
8	Condition	Controller/Compare To Constant1/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
9	Condition	Controller/Tank1_Controller/Logical Operator2	Logic: input port 1 **true**	299	n/a
10	Condition	Controller/Tank1_Controller/Logical Operator2	Logic: input port 1 **false**	299	n/a
11	Condition	Environment/Sensor_High_Tank1/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a
12	Condition	Environment/Sensor_High_Tank1/Relational Operator	RelationalOperator: input1 > input2 **false**	299	n/a
13	Decision	Environment/Sensor_High_Tank1/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a
14	Decision	Environment/Sensor_High_Tank1/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
15	Decision	Initializer_and_Updater/Valve_Initial_State/Switch	trigger > threshold **false (output is from 3rd input port)**	299	n/a
16	Decision	Initializer_and_Updater/Valve_Initial_State/Switch	trigger > threshold **true (output is from 1st input port)**	299	n/a
17	Decision	Controller/Tank1_Controller/Switch3	logical trigger input **false (output is from 3rd input port)**	299	n/a
18	Decision	Controller/Tank1_Controller/Switch3	logical trigger input **true (output is from 1st input port)**	299	n/a
19	Condition	Controller/Compare To Constant/Compare	RelationalOperator: input1 == input2 **true**	299	n/a
20	Condition	Controller/Compare To Constant/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
21	Decision	Controller/Tank1_Controller/Switch2	logical trigger input **false (output is from 3rd input port)**	299	n/a
22	Decision	Controller/Tank1_Controller/Switch2	logical trigger input **true (output is from 1st input port)**	299	n/a
24	Condition	Controller/Tank1_Controller/Logical Operator	Logic: input port 1 **false**	299	n/a
25	Condition	Environment/Pump/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a

#	Type	Model Item	Description	Analys-is Time (sec)	Test Ca-se
26	Condition	Environment/Pump/Relational Operator	RelationalOperator: input1 > input2 **false**	299	n/a
27	Condition	Controller/Tank1_Controller/Logical Operator1	Logic: input port 1 **true**	299	n/a
29	Condition	Controller/Tank1_Controller/Logical Operator1	Logic: input port 2 **true**	299	n/a
31	Decision	Environment/Pump/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a
32	Decision	Environment/Pump/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
34	Decision	Controller/Tank1_Controller/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
35	Decision	Initializer_and_Updater/Pump_Initial_State/Switch	trigger > threshold **false (output is from 3rd input port)**	299	n/a
37	Condition	Environment/Valve/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a
38	Condition	Environment/Valve/Relational Operator	RelationalOperator: input1 > input2 **false**	299	n/a
39	Decision	Environment/Valve/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a
40	Decision	Environment/Valve/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
41	Decision	Initializer_and_Updater/Initial_Height_Tank _2/Switch	trigger > threshold **false (output is from 3rd input port)**	299	n/a
42	Decision	Initializer_and_Updater/Initial_Height_Tank _2/Switch	trigger > threshold **true (output is from 1st input port)**	299	n/a
43	Condition	Environment/Sensor_LO_-Tank2/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a
44	Condition	Environment/Sensor_LO_-Tank2/Relational Operator	RelationalOperator: input1 > input2 **false**	299	n/a
45	Decision	Environment/Sensor_LO_-Tank2/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a
46	Decision	Environment/Sensor_LO_-Tank2/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
47	Condition	Controller/Compare To Constant6/Compare	RelationalOperator: input1 == input2 **true**	299	n/a
48	Condition	Controller/Compare To Constant6/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
49	Condition	Controller/Tank2_Controller/Logical Operator15	Logic: input port 1 **true**	299	n/a
50	Condition	Controller/Tank2_Controller/Logical Operator15	Logic: input port 1 **false**	299	n/a
51	Condition	Environment/Sensor_HI_-Tank2/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a
54	Decision	Environment/Sensor_HI_-Tank2/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
55	Condition	Environment/Sensor_MD_-Tank2/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a
58	Decision	Environment/Sensor_MD_-Tank2/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
59	Decision	Controller/Tank2_Controller/Switch4	logical trigger input **false (output is from 3rd input port)**	299	n/a
60	Decision	Controller/Tank2_Controller/Switch4	logical trigger input **true (output is from 1st input port)**	299	n/a
61	Decision	Initializer_and_Updater/E_Valve_Initial_State/Switch	trigger > threshold **false (output is from 3rd input port)**	299	n/a
63	Condition	Environment/Production-Valve/Relational Operator	RelationalOperator: input1 > input2 **true**	299	n/a
64	Condition	Environment/Production-Valve/Relational Operator	RelationalOperator: input1 > input2 **false**	299	n/a
65	Decision	Initializer_and_Updater/P_Valve_Initial_State/Switch	trigger > threshold **false (output is from 3rd input port)**	299	n/a
67	Decision	Environment/Production-Valve/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a
68	Decision	Environment/Production-Valve/Switch	logical trigger input **true (output is from 1st input port)**	299	n/a
69	Condition	Controller/Tank2_Controller/Compare To Constant7/Compare	RelationalOperator: input1 == input2 **true**	299	n/a

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
70	Condition	Controller/Tank2_Controller/Compare To Constant-7/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
72	Condition	Environment/Emergency-Valve/Relational Operator	RelationalOperator: input1 > input2 **false**	299	n/a
73	Condition	Controller/Tank2_Controller/Logical Operator14	Logic: input port 1 **true**	299	n/a
74	Condition	Controller/Tank2_Controller/Logical Operator14	Logic: input port 1 **false**	299	n/a
75	Decision	Environment/Emergency-Valve/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a
78	Condition	Controller/Tank2_Controller/Compare To Constant-6/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
80	Condition	Controller/Tank2_Controller/Logical Operator13	Logic: input port 1 **false**	299	n/a
81	Condition	Controller/Tank2_Controller/Logical Operator12	Logic: input port 1 **true**	299	n/a
83	Condition	Controller/Tank2_Controller/Logical Operator12	Logic: input port 2 **true**	299	n/a
84	Condition	Controller/Tank2_Controller/Logical Operator12	Logic: input port 2 **false**	299	n/a
85	Condition	Controller/Tank2_Controller/Logical Operator11	Logic: input port 1 **true**	299	n/a
87	Condition	Controller/Tank2_Controller/Logical Operator11	Logic: input port 2 **true**	299	n/a
88	Condition	Controller/Tank2_Controller/Logical Operator11	Logic: input port 2 **false**	299	n/a
89	Decision	Controller/Tank2_Controller/Switch1	logical trigger input **false (output is from 3rd input port)**	299	n/a
90	Decision	Controller/Tank2_Controller/Switch1	logical trigger input **true (output is from 1st input port)**	299	n/a
92	Condition	Controller/Compare To Constant4/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
93	Condition	Controller/Tank2_Controller/Compare To Constant-5/Compare	RelationalOperator: input1 == input2 **true**	299	n/a
96	Condition	Controller/Tank2_Controller/Compare To Constant-4/Compare	RelationalOperator: input1 == input2 **false**	299	n/a

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
98	Condition	Controller/Tank2_Controller/Logical Operator9	Logic: input port 1 **false**	299	n/a
99	Condition	Controller/Tank2_Controller/Logical Operator8	Logic: input port 1 **true**	299	n/a
101	Condition	Controller/Tank2_Controller/Logical Operator8	Logic: input port 2 **true**	299	n/a
104	Condition	Controller/Tank2_Controller/Logical Operator10	Logic: input port 1 **false**	299	n/a
107	Decision	Controller/Tank2_Controller/Switch3	logical trigger input **false (output is from 3rd input port)**	299	n/a
109	Condition	Controller/Tank2_Controller/Compare To Constant3/Compare	RelationalOperator: input1 == input2 **true**	299	n/a
112	Condition	Controller/Tank2_Controller/Compare To Constant2/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
114	Condition	Controller/Tank2_Controller/Logical Operator3	Logic: input port 1 **false**	299	n/a
118	Condition	Controller/Tank2_Controller/Logical Operator7	Logic: input port 1 **false**	299	n/a
119	Condition	Controller/Tank2_Controller/Logical Operator6	Logic: input port 1 **true**	299	n/a
122	Condition	Controller/Tank2_Controller/Logical Operator6	Logic: input port 2 **false**	299	n/a
123	Condition	Controller/Tank2_Controller/Compare To Constant1/Compare	RelationalOperator: input1 == input2 **true**	299	n/a
124	Condition	Controller/Tank2_Controller/Compare To Constant1/Compare	RelationalOperator: input1 == input2 **false**	299	n/a
125	Condition	Controller/Tank2_Controller/Logical Operator5	Logic: input port 1 **true**	299	n/a
126	Condition	Controller/Tank2_Controller/Logical Operator5	Logic: input port 1 **false**	299	n/a
127	Condition	Controller/Tank2_Controller/Logical Operator4	Logic: input port 1 **true**	299	n/a
128	Condition	Controller/Tank2_Controller/Logical Operator4	Logic: input port 1 **false**	299	n/a
130	Condition	Controller/Tank2_Controller/Logical Operator4	Logic: input port 2 **false**	299	n/a

#	Type	Model Item	Description	Analys-is Time (sec)	Test Ca-se
131	Decisi-on	Controller/Tank2_Controll-er/Switch2	logical trigger input **false (output is from 3rd input port)**	299	n/a
134	Conditi-on	Controller/Compare To Co-nstant5/Compare	RelationalOperator: inpu-t1 == input2 **false**	299	n/a
136	Conditi-on	Controller/Tank2_Controll-er/Logical Operator2	Logic: input port 1 **false**	299	n/a
138	Conditi-on	Controller/Tank2_Controll-er/Logical Operator1	Logic: input port 1 **false**	299	n/a
141	Decisi-on	Controller/Tank2_Controll-er/Switch	logical trigger input **false (output is from 3rd input port)**	299	n/a

Objectives Unsatisfiable under Approximation

Simulink Design Verifier found that there does not exist any test case exercising these test objectives under the impact of approximations during analysis. This often indicates the presence of dead logic in the model. Other possible reasons can be inactive blocks in the model due to parameter configuration or test constraints such as given using Test Condi-tion blocks. In rare cases, the approximations performed by Simulink Design Verifier can make objectives impossible to achieve.

#	Type	Model Item	Description	Analys-is Time (sec)	Test Ca-se
36	Decisi-on	Initializer_and_Update-r/Pump_Initial_State/Swit-ch	trigger > threshold **true (output is from 1st input port)**	19	n/a
62	Decisi-on	Initializer_and_Update-r/E_Valve_Initial_State/Sw-itch	trigger > threshold **true (output is from 1st input port)**	19	n/a
66	Decisi-on	Initializer_and_Update-r/P_Valve_Initial_State/Sw-itch	trigger > threshold **true (output is from 1st input port)**	19	n/a
94	Conditi-on	Controller/Tank2_Control-ler/Compare To Constant-5/Compare	RelationalOperator: inpu-t1 == input2 **false**	19	n/a
106	Conditi-on	Controller/Tank2_Controll-er/Logical Operator10	Logic: input port 2 **false**	19	n/a
110	Conditi-on	Controller/Tank2_Control-ler/Compare To Constant-3/Compare	RelationalOperator: inpu-t1 == input2 **false**	19	n/a

#	Type	Model Item	Description	Analysis Time (sec)	Test Case
116	Condition	Controller/Tank2_Controller/Logical Operator3	Logic: input port 2 **false**	19	n/a
117	Condition	Controller/Tank2_Controller/Logical Operator7	Logic: input port 1 **true**	19	n/a
120	Condition	Controller/Tank2_Controller/Logical Operator6	Logic: input port 1 **false**	19	n/a

Chapter 4. Model Items

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This section presents, for each object in the model defining coverage objectives, the list of objectives and their individual status at the end of the analysis. It should match the coverage report obtained from running the generated test suite on the model, either from the harness model or by using the sldvruntest command.

Initializer_and_Updater/Initial_Height_Tank_- 1/Switch

#:	Type	Description	Status	Test Case
1	Decision	trigger > threshold false (output is from 3rd input port)	Satisfied - No Test Case	n/a
2	Decision	trigger > threshold true (output is from 1st input port)	Satisfied - No Test Case	n/a

Environment/Sensor_Low_Tank1/Relational Operator

#:	Type	Description	Status	Test Case
3	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a
4	Condition	RelationalOperator: input1 > input2 false	Satisfied - No Test Case	n/a

Environment/Sensor_Low_Tank1/Switch

#:	Type	Description	Status	Test Case
5	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
6	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Compare To Constant1/Compare

#:	Type	Description	Status	Test Case
7	Condition	RelationalOperator: input1 == input2 true	Satisfied - No Test Case	n/a
8	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank1_Controller/Logical Operator2

#:	Type	Description	Status	Test Case
9	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
10	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Environment/Sensor_High_Tank1/Relational Operator

#:	Type	Description	Status	Test Case
11	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a
12	Condition	RelationalOperator: input1 > input2 false	Satisfied - No Test Case	n/a

Environment/Sensor_High_Tank1/Switch

#:	Type	Description	Status	Test Case
13	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
14	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Initializer_and_Updater/Valve_Initial_State/Switch

#:	Type	Description	Status	Test Case
15	Decision	trigger > threshold false (output is from 3rd input port)	Satisfied - No Test Case	n/a
16	Decision	trigger > threshold true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Tank1_Controller/Switch3

#:	Type	Description	Status	Test Case
17	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
18	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Compare To Constant/Compare

#:	Type	Description	Status	Test Case
19	Condition	RelationalOperator: input1 == input2 true	Satisfied - No Test Case	n/a
20	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank1_Controller/Switch2

#:	Type	Description	Status	Test Case
21	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
22	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Tank1_Controller/Logical Operator

#:	Type	Description	Status	Test Case
23	Condition	Logic: input port 1 true	Unsatisfiable	n/a

#:	Type	Description	Status	Test Case
24	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Environment/Pump/Relational Operator

#:	Type	Description	Status	Test Case
25	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a
26	Condition	RelationalOperator: input1 > input2 false	Satisfied - No Test Case	n/a

Controller/Tank1_Controller/Logical Operator1

#:	Type	Description	Status	Test Case
27	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
28	Condition	Logic: input port 1 false	Unsatisfiable	n/a
29	Condition	Logic: input port 2 true	Satisfied - No Test Case	n/a
30	Condition	Logic: input port 2 false	Unsatisfiable	n/a

Environment/Pump/Switch

#:	Type	Description	Status	Test Case
31	Decision	logical trigger input false (output is from 3rd input port)	Satisfied -	n/a

#:	Type	Description	Status	Test Case
			No Test Case	
32	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Tank1_Controller/Switch

#:	Type	Description	Status	Test Case
33	Decision	logical trigger input false (output is from 3rd input port)	Unsatisfiable	n/a
34	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Initializer_and_Updater/Pump_Initial_State/Switch

#:	Type	Description	Status	Test Case
35	Decision	trigger > threshold false (output is from 3rd input port)	Satisfied - No Test Case	n/a
36	Decision	trigger > threshold true (output is from 1st input port)	Unsatisfiable under approximation	n/a

Environment/Valve/Relational Operator

#:	Type	Description	Status	Test Case
37	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a

#:	Type	Description	Status	Test Case
38	Condition	RelationalOperator: input1 > input2 false	Satisfied - No Test Case	n/a

Environment/Valve/Switch

#:	Type	Description	Status	Test Case
39	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
40	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Initializer_and_Updater/Initial_Height_Tank _2/Switch

#:	Type	Description	Status	Test Case
41	Decision	trigger > threshold false (output is from 3rd input port)	Satisfied - No Test Case	n/a
42	Decision	trigger > threshold true (output is from 1st input port)	Satisfied - No Test Case	n/a

Environment/Sensor_LO_Tank2/Relational Operator

#:	Type	Description	Status	Test Case
43	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a
44	Condition	RelationalOperator: input1 > input2 false	Satisfied -	n/a

#:	Type	Description	Status	Test Case
			No Test Case	

Environment/Sensor_LO_Tank2/Switch

#:	Type	Description	Status	Test Case
45	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
46	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Compare To Constant6/Compare

#:	Type	Description	Status	Test Case
47	Condition	RelationalOperator: input1 == input2 true	Satisfied - No Test Case	n/a
48	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator15

#:	Type	Description	Status	Test Case
49	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
50	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Environment/Sensor_HI_Tank2/Relational Operator

#:	Type	Description	Status	Test Case
51	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a
52	Condition	RelationalOperator: input1 > input2 false	Undecided	n/a

Environment/Sensor_HI_Tank2/Switch

#:	Type	Description	Status	Test Case
53	Decision	logical trigger input false (output is from 3rd input port)	Undecided	n/a
54	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Environment/Sensor_MD_Tank2/Relational Operator

#:	Type	Description	Status	Test Case
55	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a
56	Condition	RelationalOperator: input1 > input2 false	Undecided	n/a

Environment/Sensor_MD_Tank2/Switch

#:	Type	Description	Status	Test Case
57	Decision	logical trigger input false (output is from 3rd input port)	Undecided	n/a

#:	Type	Description	Status	Test Case
58	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Switch4

#:	Type	Description	Status	Test Case
59	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
60	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Initializer_and_Updater/E_Valve_Initial_State/Switch

#:	Type	Description	Status	Test Case
61	Decision	trigger > threshold false (output is from 3rd input port)	Satisfied - No Test Case	n/a
62	Decision	trigger > threshold true (output is from 1st input port)	Unsatisfiable under approximation	n/a

Environment/ProductionValve/Relational Operator

#:	Type	Description	Status	Test Case
63	Condition	RelationalOperator: input1 > input2 true	Satisfied - No Test Case	n/a

#:	Type	Description	Status	Test Case
64	Condition	RelationalOperator: input1 > input2 false	Satisfied - No Test Case	n/a

Initializer_and_Updater/P_Valve_Initial_State/Switch

#:	Type	Description	Status	Test Case
65	Decision	trigger > threshold false (output is from 3rd input port)	Satisfied - No Test Case	n/a
66	Decision	trigger > threshold true (output is from 1st input port)	Unsatisfiable under approximation	n/a

Environment/ProductionValve/Switch

#:	Type	Description	Status	Test Case
67	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
68	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Compare To Constant7/Compare

#:	Type	Description	Status	Test Case
69	Condition	RelationalOperator: input1 == input2 true	Satisfied - No Test Case	n/a

#:	Type	Description	Status	Test Case
70	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Environment/EmergencyValve/Relational Operator

#:	Type	Description	Status	Test Case
71	Condition	RelationalOperator: input1 > input2 true	Undecided	n/a
72	Condition	RelationalOperator: input1 > input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator14

#:	Type	Description	Status	Test Case
73	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
74	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Environment/EmergencyValve/Switch

#:	Type	Description	Status	Test Case
75	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
76	Decision	logical trigger input true (output is from 1st input port)	Undecided	n/a

Controller/Tank2_Controller/Compare To Constant6/Compare

#:	Type	Description	Status	Test Case
77	Condition	RelationalOperator: input1 == input2 true	Undecided	n/a
78	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator13

#:	Type	Description	Status	Test Case
79	Condition	Logic: input port 1 true	Undecided	n/a
80	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator12

#:	Type	Description	Status	Test Case
81	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
82	Condition	Logic: input port 1 false	Undecided	n/a
83	Condition	Logic: input port 2 true	Satisfied - No Test Case	n/a
84	Condition	Logic: input port 2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator11

#:	Type	Description	Status	Test Case
85	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
86	Condition	Logic: input port 1 false	Unsatisfiable	n/a
87	Condition	Logic: input port 2 true	Satisfied - No Test Case	n/a
88	Condition	Logic: input port 2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Switch1

#:	Type	Description	Status	Test Case
89	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
90	Decision	logical trigger input true (output is from 1st input port)	Satisfied - No Test Case	n/a

Controller/Compare To Constant4/Compare

#:	Type	Description	Status	Test Case
91	Condition	RelationalOperator: input1 == input2 true	Undecided	n/a
92	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Compare To Constant5/Compare

#:	Type	Description	Status	Test Case
93	Condition	RelationalOperator: input1 == input2 true	Satisfied - No Test Case	n/a
94	Condition	RelationalOperator: input1 == input2 false	Unsatisfiable under approximation	n/a

Controller/Tank2_Controller/Compare To Constant4/Compare

#:	Type	Description	Status	Test Case
95	Condition	RelationalOperator: input1 == input2 true	Undecided	n/a
96	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator9

#:	Type	Description	Status	Test Case
97	Condition	Logic: input port 1 true	Undecided	n/a
98	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator8

#:	Type	Description	Status	Test Case
99	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
100	Condition	Logic: input port 1 false	Undecided	n/a
101	Condition	Logic: input port 2 true	Satisfied - No Test Case	n/a
102	Condition	Logic: input port 2 false	Unsatisfiable	n/a

Controller/Tank2_Controller/Logical Operator10

#:	Type	Description	Status	Test Case
103	Condition	Logic: input port 1 true	Undecided	n/a
104	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a
105	Condition	Logic: input port 2 true	Undecided	n/a
106	Condition	Logic: input port 2 false	Unsatisfiable under approximation	n/a

Controller/Tank2_Controller/Switch3

#:	Type	Description	Status	Test Case
107	Decision	logical trigger input false (output is from 3rd input port)	Satisfied -	n/a

#:	Type	Description	Status	Test Case
			No Te-st Case	
108	Decision	logical trigger input tr-ue (output is from 1st input port)	Undec-ided	n/a

Controller/Tank2_Controller/Compare To Co-nstant3/Compare

#:	Type	Description	Status	Test Case
109	Condition	RelationalOperator: in-put1 == input2 true	Satis-fied - No Te-st Case	n/a
110	Condition	RelationalOperator: in-put1 == input2 false	Unsati-sfiable under appro-ximat-ion	n/a

Controller/Tank2_Controller/Compare To Co-nstant2/Compare

#:	Type	Description	Status	Test Case
111	Condition	RelationalOperator: in-put1 == input2 true	Undec-ided	n/a
112	Condition	RelationalOperator: in-put1 == input2 false	Satis-fied - No Te-st Case	n/a

Controller/Tank2_Controller/Logical Operat-or3

#:	Type	Description	Status	Test Case
113	Condition	Logic: input port 1 true	Undec-ided	n/a
114	Condition	Logic: input port 1 fal-se	Satis-fied -	n/a

#:	Type	Description	Status	Test Case
			No Test Case	
115	Condition	Logic: input port 2 true	Undecided	n/a
116	Condition	Logic: input port 2 false	Unsatisfiable under approximation	n/a

Controller/Tank2_Controller/Logical Operator7

#:	Type	Description	Status	Test Case
117	Condition	Logic: input port 1 true	Unsatisfiable under approximation	n/a
118	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator6

#:	Type	Description	Status	Test Case
119	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
120	Condition	Logic: input port 1 false	Unsatisfiable under approximation	n/a
121	Condition	Logic: input port 2 true	Undecided	n/a

#:	Type	Description	Status	Test Case
122	Condition	Logic: input port 2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Compare To Constant1/Compare

#:	Type	Description	Status	Test Case
123	Condition	RelationalOperator: input1 == input2 true	Satisfied - No Test Case	n/a
124	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator5

#:	Type	Description	Status	Test Case
125	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a
126	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator4

#:	Type	Description	Status	Test Case
127	Condition	Logic: input port 1 true	Satisfied - No Test Case	n/a

#:	Type	Description	Status	Test Case
128	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a
129	Condition	Logic: input port 2 true	Undecided	n/a
130	Condition	Logic: input port 2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Switch2

#:	Type	Description	Status	Test Case
131	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
132	Decision	logical trigger input true (output is from 1st input port)	Undecided	n/a

Controller/Compare To Constant5/Compare

#:	Type	Description	Status	Test Case
133	Condition	RelationalOperator: input1 == input2 true	Undecided	n/a
134	Condition	RelationalOperator: input1 == input2 false	Satisfied - No Test Case	n/a

Controller/Tank2_Controller/Logical Operator2

#:	Type	Description	Status	Test Case
135	Condition	Logic: input port 1 true	Undecided	n/a
136	Condition	Logic: input port 1 false	Satisfied -	n/a

#:	Type	Description	Status	Test Case
			No Test Case	

Controller/Tank2_Controller/Logical Operator1

#:	Type	Description	Status	Test Case
137	Condition	Logic: input port 1 true	Undecided	n/a
138	Condition	Logic: input port 1 false	Satisfied - No Test Case	n/a
139	Condition	Logic: input port 2 true	Undecided	n/a
140	Condition	Logic: input port 2 false	Undecided	n/a

Controller/Tank2_Controller/Switch

#:	Type	Description	Status	Test Case
141	Decision	logical trigger input false (output is from 3rd input port)	Satisfied - No Test Case	n/a
142	Decision	logical trigger input true (output is from 1st input port)	Undecided	n/a