Simulink Report: HR_Conv_

Christian Müller

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Model - HR_Conv_
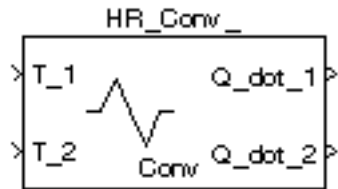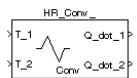

Tabelle 1.1. HR_Conv_ Simulation Parameters

Solver ode14x	*ZeroCross* on	*StartTime* 0.0*StopTime* 10.0
RelTol 1e-3	*AbsTol* auto	*Refine* 1
InitialStep auto	*FixedStep* auto	*MaxStep* auto

Tabelle 1.2. HR_Conv_ Summary Information

NumModelInputs	N/A	*NumModelOutputs*	N/A
NumVirtualSubsystems	N/A	*NumNonvirtSubsystems*	N/A
NumNonVirtBlocksInModel	N/A	*NumBlockTypeCounts*	N/A
NumBlockSignals	N/A	*NumBlockParams*	N/A
NumZCEvents	N/A	*NumNonsampledZCs*	N/A

Systems

Name	Parent	Snapshot	Blocks	Signals
HR_Conv_	<root>		HR_Conv_	HR_Conv_<1> HR_Conv_<2>

Blocks

Tabelle 1.3. Block Type Count

BlockType	Count	Block Names
Inport	6	T_1, T_2, A, alpha, T_1, T_2
Outport	4	Q_dot_1, Q_dot_2, Q_dot_1, Q_dot_2
Constant	2	A, alpha
Terminator	1	Terminator
SubSystem	1	HR_Conv_
Stateflow (m)	1	Embedded MATLA Function
S-Function	1	SFunction

BlockType	Count	Block Names
Demux	1	Demux

Data and Functions

Tabelle 1.4. Model Functions

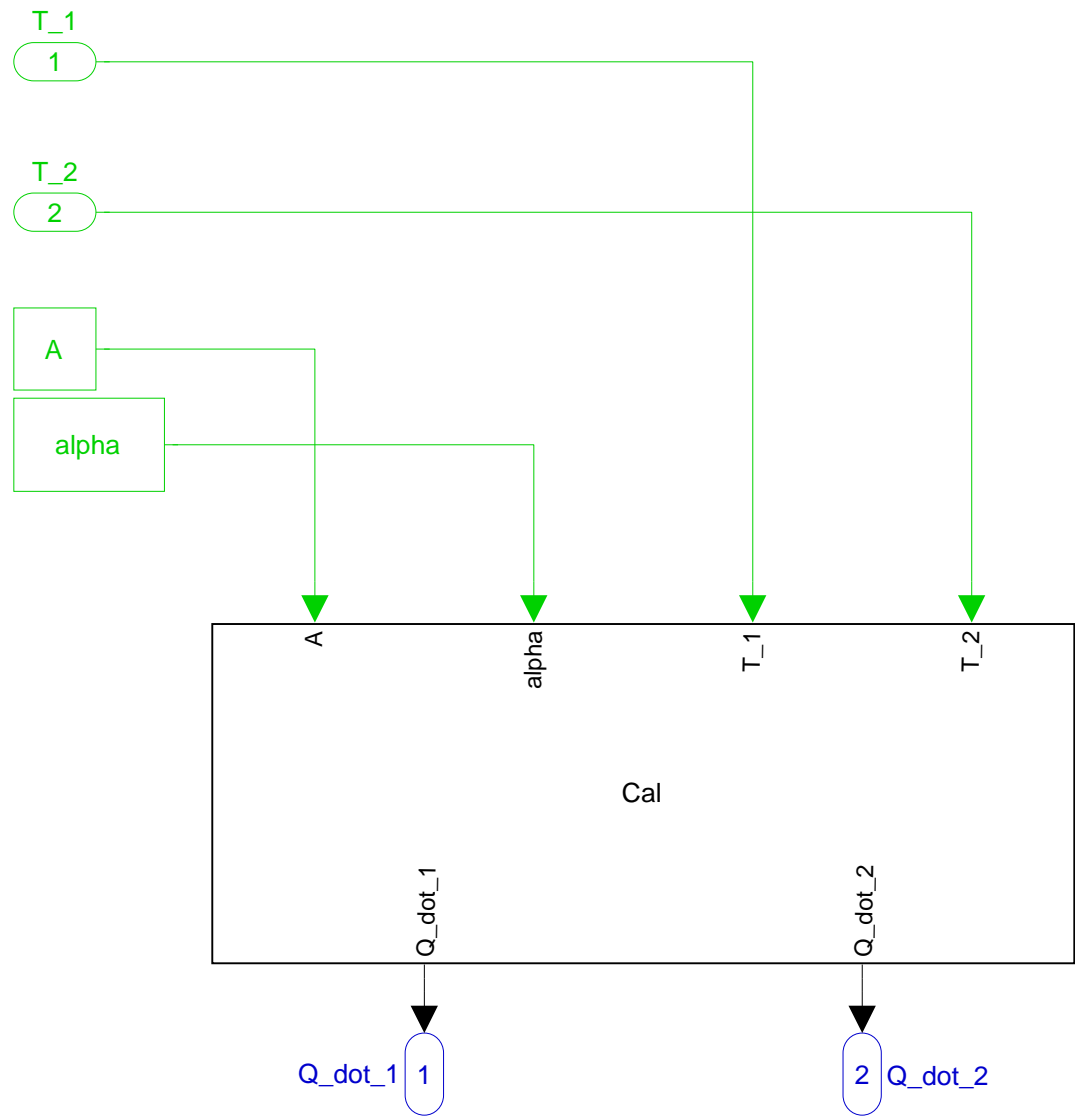| Function Name	Parent Blocks	Calling string
NaN	HR_Conv_ HR_Conv_	NaN NaN

Function Block Parameters: HR_Conv_

Subsystem (mask)

Parameters

Surface [m²]

NaN

Convection Heat Transfer Coefficient [W/m² K]

NaN

[OK] [Cancel] [Help] [Apply]

```matlab
function [Q_dot_1,Q_dot_2] = Cal(A,alpha,T_1,T_2)

% ********************************************************************
% * Definition of a Heat Resistance
% *
% * Number of inputs:                                          2
% *
% * Parameter: Surface:                                        A
% *            Convection heat transfer coefficient via surface: alpha
% *
% *
% * Relevant input variables of HR
% *
% * Temperature:                                               T_in
% *
% *
% * Relevant output variables of HR
% *
% * Heat flow:                                                 Q_dot
% *
% ********************************************************************
% * Embedded Matlab Function Cal:
% *
% * Calculations:
% * 1. Calculation heat flow.
% *
% *
% * Assumptions:
% * 1. Heat Transfer process = convection
% *
% *
% * Last modification : 15.03.2008
% * Author : Christian Müller(HAW)
% *
% ********************************************************************

% * 1. Calculation heat flow
Q_dot_1 = -alpha*A*(T_1-T_2);
Q_dot_2 = -alpha*A*(T_2-T_1);
% ********************************************************************
```