

```
>> modelToMPC=setmpcsignals(tf20,'MeasuredDisturbances',1,'Manipulated',[2 3])
```

```
modelToMPC =
```

```
From input "t_e" to output "t_i":
```

```
0.0004579 z^-1
```

```
z^(-1) * -----
          1 - 1.892 z^-1 + 0.8924 z^-2
```

```
From input "RadiatorValve" to output "t_i":
```

```
0.2329
```

```
z^(-1) * -----
          1 - 0.9939 z^-1
```

```
From input "FloorValve" to output "t_i":
```

```
0.2582
```

```
z^(-1) * -----
          1 - 0.992 z^-1
```

```
Input groups:
```

Name	Channels
Measured	1
Manipulated	2,3

```
Output groups:
```

Name	Channels
Measured	1

```
Name: tf20
```

```
Sample time: 1800 seconds
```

```
Discrete-time identified transfer function.
```

```
Parameterization:
```

```
Number of poles: [2 1 1] Number of zeros: [1 0 0]
```

```
Number of free coefficients: 7
```

```
Use "tfdata", "getpvec", "getcov" for parameters and their uncertainties.
```

```
Status:
```

```
Model modified after estimation.
```

```
>> newMPC=mpc(modelToMPC,1800)
```

```
-->Converting linear model from System Identification Toolbox to state-space.
```

```
-->The "PredictionHorizon" property of "mpc" object is empty. Trying PredictionHorizon = 10.
```

```
-->The "ControlHorizon" property of the "mpc" object is empty. Assuming 2.
```

```
-->The "Weights.ManipulatedVariables" property of "mpc" object is empty. Assuming default 0.00000.
```

```
-->The "Weights.ManipulatedVariablesRate" property of "mpc" object is empty. Assuming default 0.10000.
```

```
-->The "Weights.OutputVariables" property of "mpc" object is empty. Assuming default 1.00000.
```

```
MPC object (created on 01-Dec-2018 21:41:04):
```

```
-----
Sampling time:      1800 (seconds)
Prediction Horizon: 10
```

Control Horizon: 2

Plant Model: (max I/O delay = 1)

```
-----  
2 manipulated variable(s)  -->| 4 states |  
                             |          |--> 1 measured output(s)  
1 measured disturbance(s)  -->| 3 inputs |  
                             |          |--> 0 unmeasured output(s)  
0 unmeasured disturbance(s) -->| 1 outputs |  
-----
```

Indices:

```
(input vector)    Manipulated variables: [2 3 ]  
                  Measured disturbances: [1 ]  
(output vector)   Measured outputs: [1 ]
```

Disturbance and Noise Models:

Output disturbance model: default (type "getoutdist(newMPC)" for details)

Measurement noise model: default (unity gain after scaling)

Weights:

```
ManipulatedVariables: [0 0]  
ManipulatedVariablesRate: [0.1000 0.1000]  
OutputVariables: 1  
ECR: 100000
```

State Estimation: Default Kalman Filter (type "getEstimator(newMPC)" for details)

Unconstrained

>>