

ARIMA Model

Model the time series using **ARMA**, ARIMA, or ARIMAX model.

Inputs

- Time series: Time series as output by **As Timeseries** widget.
- Exogenous data: Time series of additional independent variables that can be used in an ARIMAX model.

Outputs

- Time series model: The ARIMA model fitted to input time series.
- Forecast: The forecast time series.
- Fitted values: The values that the model was actually fitted to, equals to *original values - residuals*.
- Residuals: The errors the model made at each step.

Using this widget, you can model the time series with ARIMA model.

The screenshot shows the ARIMA Model widget interface. It has four numbered callouts: 1 points to the 'Name' field containing 'ARIMA(5,1,1)'; 2 points to the 'Parameters' section containing 'Auto-regression order (p): 2', 'Differencing degree (d): 1', and 'Moving average order (q): 0'; 3 points to the unchecked checkbox 'Use exogenous (independent) variables (ARMAX)'; and 4 points to the 'Forecast' section containing 'Forecast steps ahead: 10' and 'Confidence intervals: 95'. At the bottom are 'Apply' and 'Report' buttons.

1. Model's name. By default, the name is derived from the model and its parameters.
2. ARIMA's **p**, **d**, **q** parameters.

3. Use exogenous data. Using this option, you need to connect additional series on the *Exogenous data* input signal.
4. Number of forecast steps the model should output, along with the desired confidence intervals values at each step.

Example

The workflow consists of four widgets: File, As Timeseries, ARIMA Model, and Data Table. The ARIMA Model widget is highlighted in blue.

The Data Table widget displays the following data:

	Air passengers (forecast)	Air passengers (95%CI low)	Air passengers (95%CI high)
1	463.722	411.478	515.965
2	485.332	409.517	561.148
3	505.845	422.704	588.986
4	517.041		601.275
5	515.979		600.307
6	508.276		593.986
7	499.603		587.019
8	493.697		581.839
9	492.611		580.776
10	496.360		584.774

The ARIMA Model widget settings are as follows:

- Name: ARIMA(5,1,1)
- Parameters:
 - Auto-regression order (p): 5
 - Differencing degree (d): 1
 - Moving average order (q): 1
 - Use exogenous (independent) variables (ARMAX): ☐
- Forecast:
 - Forecast steps ahead: 10
 - Confidence intervals: 95
- Buttons: Apply, Report

See also

VAR Model, Model Evaluation