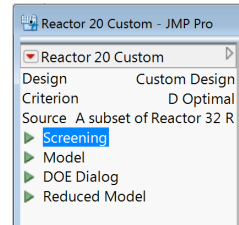


# DOE Screening Experiment Analysis

This page provides information on analyzing screening experiments using the **Fit Two Level Screening** platform (under **Analyze > Specialized Modeling > Specialized DOE Models > Fit Two Level Screening**), which is ideal for analyzing 2-level screening designs (and works best with orthogonal designs). The example below is a 20 run 5 factor (2-level) screening experiment generated from the **Custom Design** platform (**DOE > Custom Design**). The design allows estimation of all main effects and two-factor interactions.

## Specify the Model and Analyze

Most experiments designed in JMP will have **Screening** and **Model** scripts saved to the data table. For this analysis, we use the **Screening** script, which launches the **Screening** analysis platform and automatically fits a saturated model.



1. Click on the **green triangle** next to **Screening** to run the script.
2. JMP fits a saturated model (here, 19 terms plus the intercept). The **Contrasts** table and **Half Normal Plot** identify active factors using **Lenth Pseudo Standard Error (PSE)**.

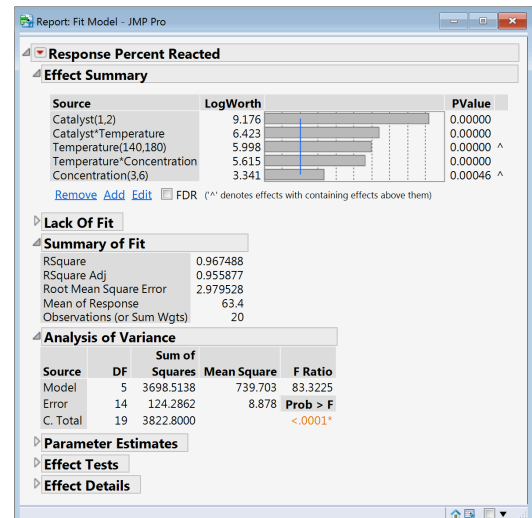
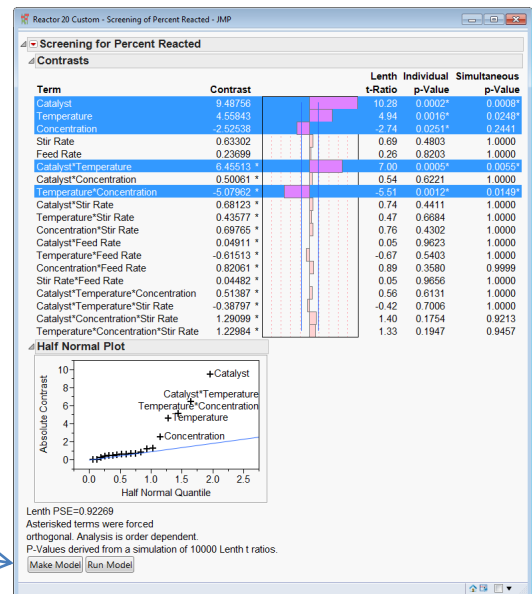
Notes: In screening experiments, we assume that most effects are inactive and their estimates are essentially random noise.

The line in the **Half Normal Plot** is drawn with a slope equal to the **Lenth PSE** (an estimate of the residual standard error). Most effects are inactive and fall close to this line. Effects that deviate substantially from this line are labeled as active.

3. Select **Run Model** (at the bottom) to launch the **Fit Model** platform with only the active effects. Results include: Effect Summary, **Lack of Fit** (if replicated points), Summary of Fit, **ANOVA table** and more.

Other options – such as **residuals or normal plot, profiler and interaction plots** – are available under the **top red triangle**.

Example: Reactor 20 Custom.jmp (Help > Sample Data Library > Design Experiment)



## Tips:

- In the **Fit Two Level Screening** platform, to highlight additional terms hold the **Control** key and click on the term(s) to select.
- **Individual** and **Simultaneous p-Values** in the **Fit Two Level Screening** platform are based on Monte Carlo simulation (and will vary).
- An alternative approach to analyzing screening experiments is to run the **Model** script or use **Analyze > Fit Model** to specify the model. See the page “DOE Full Factorial Analysis” at [jmp.com/learn](http://jmp.com/learn) for information on reducing models.

Notes: For more information on Lenth PSE and analyzing screening designs, search for “**screening**” in the JMP Help or in the **Design of Experiments Guide** (under **Help > Books**).