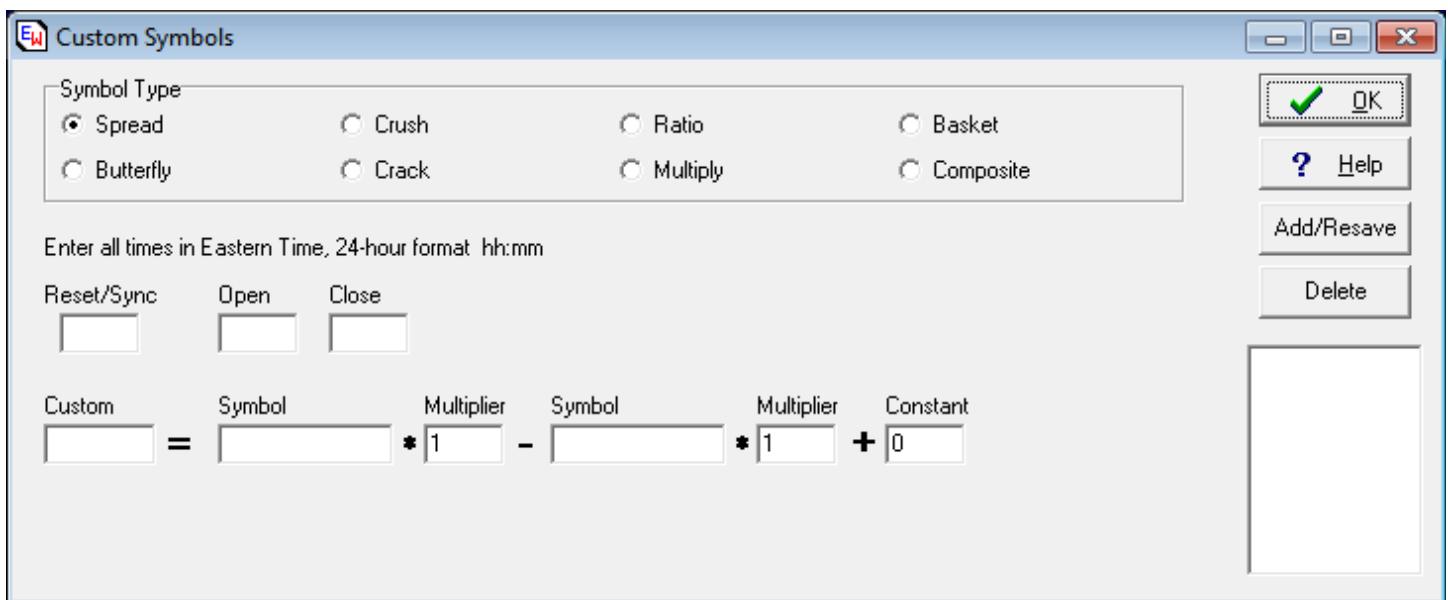


Custom Symbols Set-Up

Select **Set-Up | Custom Symbols** to view the Custom Symbols set-up screen. The Custom Symbols window is used to construct spread, crush, crack, ratios, multiply, butterfly, basket, and composite symbols. The market hours for each custom symbol are also specified. The custom symbols will update on-the-fly as prices are received.

To enter a custom symbol, select the type of symbol to construct from the 'Symbol Type' box. A template that matches the symbol type will appear. Next, enter a reset time in the 'Reset/Synch' box. The reset time is the time of day that the Net Change for the custom symbol will be reset back to zero in preparation for a new trading session. The reset time is often the same as the 'Open' time, and also serves as a 'Synch' time for the chart bars. Enter an 'Open' and 'Close' time to specify the market hours for the custom symbol (ex. 08:30 and 15:00).

Enter the name of the custom symbol in the 'Custom' box (ex. SPREAD, MYSYMBOL, CASH, etc.). Use the displayed template of formula boxes to enter the component symbols and optional multiplier numbers that are necessary to compute the custom symbol. The optional multiplier numbers can be entered to adjust the value of the component symbol.



The screenshot shows the 'Custom Symbols' window with the following elements:

- Symbol Type** section with radio buttons for: Spread (selected), Butterfly, Crush, Crack, Ratio, Multiply, Basket, and Composite.
- Instructions: "Enter all times in Eastern Time, 24-hour format hh:mm".
- Time input fields for: Reset/Synch, Open, and Close.
- Formula template: Custom = Symbol * 1 - Symbol * 1 + Constant.
- Buttons on the right: OK, Help, Add/Resave, and Delete.

Custom Symbol Types

'Spread' subtracts one symbol from another symbol with optional multipliers on each symbol.

'Crush' adds two symbols and subtracts a third symbol with specific multipliers on each symbol. Used for soybean crush.

'Crack' adds two symbols and subtracts a third symbol. Often used for 3-2-1 Crack spread (heating oil, unleaded, crude oil).

'Ratio' can be used to divide two symbols, or to divide the difference between two sets of symbols (blank boxes are ignored).

'Multiply' can be used to multiply up to 3 symbols with optional multipliers on each symbol.

'Butterfly' adds up to four symbols with optional multipliers on each symbol.

'Basket' adds up to six symbols with optional multipliers. The multipliers can be used to weight each symbol in the basket.

'Composite' combines related symbols with different trading hours into one custom symbol. The custom symbol will contain ticks from each component symbol based on the component symbol's 'Open' and 'Close' market hours. For example, US bonds has multiple trading sessions. Some data vendors break each session into separate symbols. The composite symbol will combine all trading session trades into one custom symbol.

Click the **Add/Resave** button to add the new custom symbol to the list of custom symbols. The custom symbol will update with each tick of its component symbols. All custom symbols will be inserted into the 'Futures' quote market group regardless of their origin. Adjust the multiplier values of component symbols if the scale of the custom symbol needs to be adjusted. The custom symbol will generally inherit the scaling of the first symbol in the custom symbol formula. Also, each custom symbol can be used as a component of another custom symbol if desired. Make sure that a circular reference is not created by including two custom symbols in each others formulas.

To edit or change a custom symbol, select the symbol from the custom symbol list box, make the desired changes, then click the **Add/Resave** button to save the changes. To delete a custom symbol, select the symbol from the custom symbol list and then click the **Delete** button.

The Custom Symbols page is a great tool for building some standard custom symbols. If a complicated custom symbol cannot be constructed with this page, then refer to the ESPL programming help. The ESPL programming language can build and process more complex custom symbols. Select **Help | ESPL Contents** from the menu to the help for ESPL.

Scaling

Custom Symbols will use the Scale settings of the first symbol in the calculation. All other symbols are assumed to share the same Scaling. If the first symbol is in the Symbol Properties list, then the scaling settings from the Symbol Properties list will be used. Select **Setup | Symbol Properties** from the menu to view the list.

Accessing Other Data Values

Most custom symbols use the Last price. However, Ensign Windows allows for the following additional data fields to be used in a custom symbol.

Ask	Ask price	Asize	Ask size
Bid	Bid price	Bsize	Bid size
Open	Open price		
High	High price		
Low	Low price		
Net	Last - Yesterday's close		
Yesterday	Yesterday's closing price		
Volume	Volume value		
Interest	Open Interest value		
Up	Up statistics value		
Down	Down statistics value		
Unchanged	Unchanged statistics value		
Total	Sum of Up + Down + Unchanged values		

To access these additional data fields, enclose the name of the field in parenthesis when entering the symbol on a custom symbol template. For example, IBM(ASK) will use the Ask price for IBM instead of the Last price. MSFT(BID) will access the Bid price for Microsoft.

Advance Decline Line Example

The following example will construct the Advance Decline line using the custom symbols page. The difference of the UP issues and DOWN issues on the New York Stock Exchange is calculated. The name of the custom symbol is ADVDEC. The ADVDEC symbol will appear and update in the 'Futures' quote market group. This example uses symbols from the eSignal data-feed.

- 1) Select 'Spread' from the 'Symbol Type' box.
- 2) Enter 08:30 in the 'Reset' time box, 08:30 in the 'Open' time box, and 15:00 in the 'Close' time box.
- 3) Enter ADVDEC as the name of the custom symbol in the 'Custom' box.
- 4) Enter $\$ADV * 1 - \$DECL * 1$
- 5) Click the **Add/Resave** button to add the symbol to the custom symbols list box.

Substituting a Fixed Number in the Place of a Symbol

All of the custom symbol templates can be further customized by entering a fixed Number in the place of a symbol. For example, instead of calculating the difference between 2 symbols, a user could subtract a fixed number from a symbol (IBM - 20). To enter fixed Numbers in the custom symbols templates, enter a pound sign '#' in the 'Symbol' entry box, and then the desired Number (ex. 1000) in the associated 'Multiplier' entry box.

For example, to calculate IBM - 20 as a custom symbol:

- 1) Select 'Spread' as the symbol type,
 - 2) enter the appropriate open and close times,
 - 3) enter a custom symbol name in the 'Custom' box,
 - 4) enter $IBM * 1 - \# * 20$ in the template calculation boxes,
 - 5) save the entry. The resulting custom symbol will equal the IBM price minus 20 for every tick.
- Note: To add 20 (instead of subtracting) to the symbol, enter -20 in the multiplier box.