# Enhanced Indicator for Tradestation Charts

designed and programmed by Jim Cooper w2jc

# Universal Moving Average Indicator

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# Universal Moving Average

## Introduction



This is a "one does all" Moving Average indicator for use with TradeStation charts.

The same indicator works for simple moving averages and exponential moving averages, plus it provides some very unique features not found in standard moving average indicators.

**Not only does this indicator provide one "universal" indicator for both Simple and Exponential moving averages, it also has an optional feature that extends the moving average line "into the future" at the same slope as the last two bars.**

This indicator provides very descriptive text and audible alerts which will tell you the Company Name (optional), the Ticker, the type of chart, the type and value of the moving average and the action causing the alert. The audible alert ends with a repeat of the Ticker, so that once your attention is drawn to the announcement you are again reminded of which ticker is causing the alert.

For information about Formatting and setting up this indicator, please see **Formatting and Setup** section on page 9.

# Special Features

## Universal Application

This indicator was developed because I did not like to have to use different standard indicators for the simple and exponential moving averages. It has grown since then, with many more features which are described below.

With this indicator, you need only one Moving Average indicator for all of your charts! It can be set for either Simple (**sma**) or Exponential (**ema**) and once on your chart the type can be changed simply by changing one letter in the Format setup.

## Extension "into the future"

A unique feature which I added for myself and have found very useful is to extend the moving average to the right of the last bar on the chart, with the same slope as the current slope. This extension line goes into the blank area on the right and visually shows where the moving average would be if the current slope remains unchanged.

This feature is an excellent way to detect a change in direction of the moving average early. As the moving average begins to roll over, the change is magnified by the extension and is very obvious.

> Note: when using the Extension option, space needs to be provided to the right of the last bar. This is done using the Format Window setup (right click in an open area of the chart, and select Format Window from the drop-down menu). The last option provided is "**Space to the Right**" which can be set to 8 or another value you prefer.
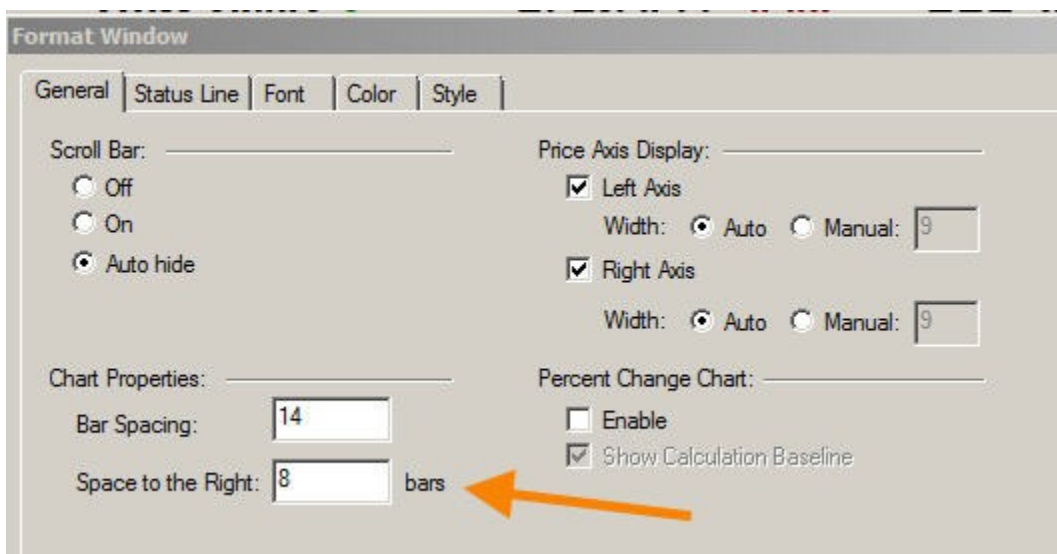


This optional feature can be turned on or off using the "**ExtnSwitch**" setting in the Format Inputs table.

The color of the "future extension" can be set in the Format Inputs table with "**Extn Color**" - see instructions in the User Inputs section of this document. This setting also controls the MA line color.

The extension slope can be set to update intra-bar (while the bar is being formed) using the  Format Indicator / General / Update value intra-bar ...
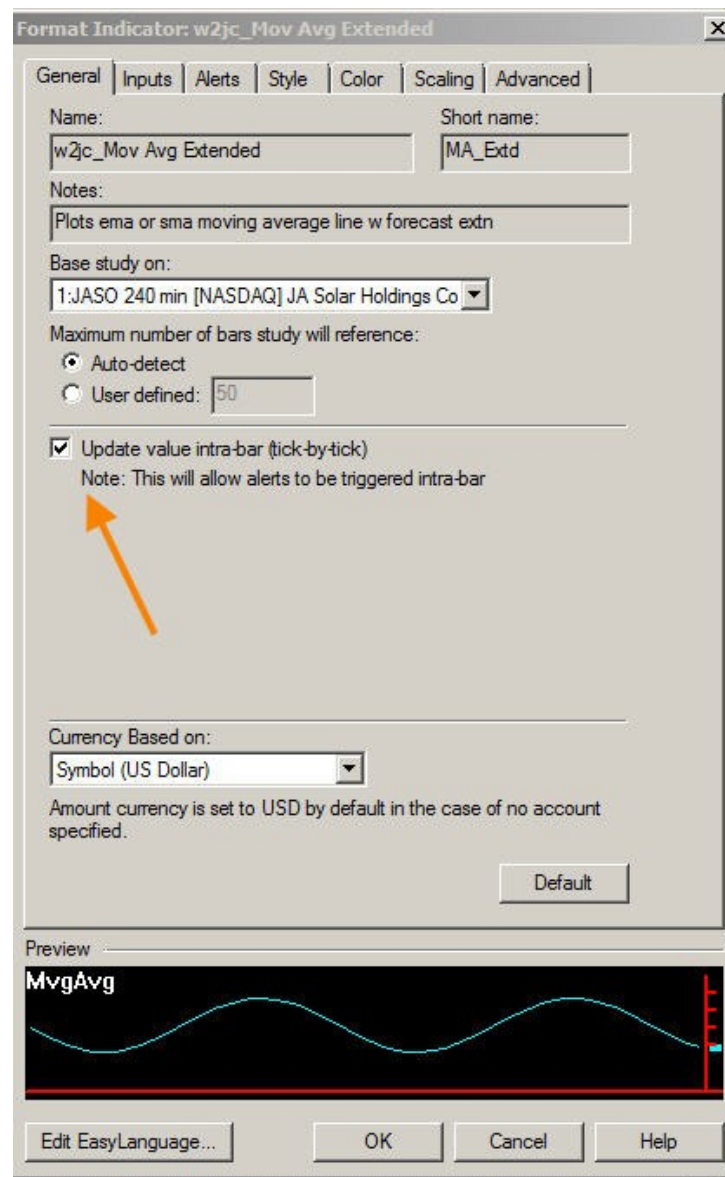


This setting is not recommended, as it sometimes causes the extension lines to not be refreshed properly (use  Ctrl + R  to refresh if this happens).

# Alerts

Very descriptive alerts are included in this indicator, which are configured so that audible alerts will be informative even if you are across the room and cannot see the chart!

The alerts include the company name (optional), the ticker, the time base of the chart ( # ticks, # minutes, daily, weekly or monthly), the type and length of the moving average, the direction of movement, and a repeat of the ticker (in case you missed it at the start of the alert!).

Tickers used in the alerts are generated with a space and a pause between each letter, so that the Windows text-to-voice speaker will pronounce them as individual letters instead of trying to pronounce the ticker as a word.

An example audio alert might be:

**"EYE BEE EM ON THIRTY MINUTE CHART, EXPONENTIAL MOVING AVERAGE EIGHT TURNING UP, ON EYE BEE EM"**

or

**"EYE BEE EM ON DAILY CHART, PRICE CROSSED ABOVE SIMPLE MOVING AVERAGE FIFTY, ON EYE BEE EM"**

Note that the commas shown in the text alerts are used to create a pause in the audible alert, so that the message is more easily understood when spoken.

Each alert message begins with the Ticker (unfortunately, Tradestation uses the standard Microsoft 'text to voice' utility - which tries to pronounce things as words rather than spelling out items that are all capitalized. Maybe some day they will fix that... to overcome this problem, the Universal Moving Average indicator code splits each ticker into individual letters and inserts a pause after each letter, so that the audible alert is much easier to understand.)

Note:  version **02J** and later include a Format Input option to include the company name at the start of each alert message. The default setting is "yes" -- if you do not want this feature, change it to "no" (quote marks are required).

The audible alert then pauses, and next describes the time base of the chart (works for tick charts as well as minutes, daily, weekly and monthly charts).

The action causing the alert is then described in detail, including the type and length of the moving average involved.

The alert message then repeats the ticker symbol, in case you missed it when the alert began to announce!
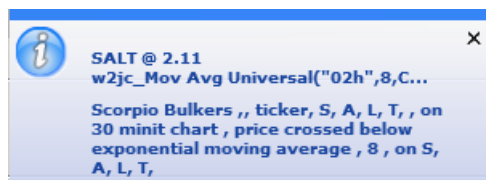
There are four basic conditions that are alerted using this custom indicator --

- Price crossing above the moving average
- Price crossing below the moving average
- The moving average turning up
- The moving average turning down

A very useful feature of the Tradestation visible alert box is that you can mouse-over the alert box and click, and you will be taken directly to the chart and workspace that generated the alert.

## Directional Alert

An alert is generated if the price is above the moving average _and_ the moving average is moving up, or if the price is below the moving average and the moving average is moving down.



To determine if the moving average is turning up, the following logic is used:

- price is above the current moving average, and
- the current moving average is higher than it was one bar ago, and
- the moving average one bar ago is LESS than it was two bars ago (thus indicating a reversal from downward to upward)

Similar but inverse conditions indicate the moving average is turning down.

## Crossover Alert

An alert is generated if the price crosses above or below the moving average.



Note: the spelling of alerts is 'phonetic' so that
the audible 'voice' alerts will be better understood.

A "flag" is included (named "crossing") which can be used to scan for this condition.
If the flag value is  1 then the price has closed above the rising  moving average;
if the flag value is -1 then the price has closed below the falling moving average;
if the flag value is  0 then neither of the above conditions exists on the last bar on chart.
(See the Scanning section for more).

# Over / Under Color Coding

An option is provided to change the color of the moving average and the 'future extension' depending on whether the closing price of the bar is above or below the moving average. This allows the eye to spot trends and reversals much more easily than having to carefully examine each bar that closed near the moving average.

This option can be set in the Format Indicator / Inputs menu. Set the **ExtnSwitch** to **"on"** (quotes needed).

Cyan is used to indicate a close above the moving average.
Magenta indicates a close below the moving average.

When this option is "on" two things happen --

- the color of the main moving average is set to cyan if that bar closed above the moving average; it is set to magenta if the bar closed below the MA.
- the color of the "future extension" is changed based on whether the last bar on the chart closed above or below the moving average. The same colors are used as above.

This color coding over-rides the user-chosen color for the moving average and extension line.
If the option is turned off, the user-chosen colors will return.

An output "flag" is included (named "**over_under**") which can be used to scan for this condition.
If the flag value is 1 then the current bar closed above the moving average; a value of -1 for below, and a value of zero if the close was exactly on the moving average. (See the Scanning section for more).

# Formatting and Setup

## User Inputs
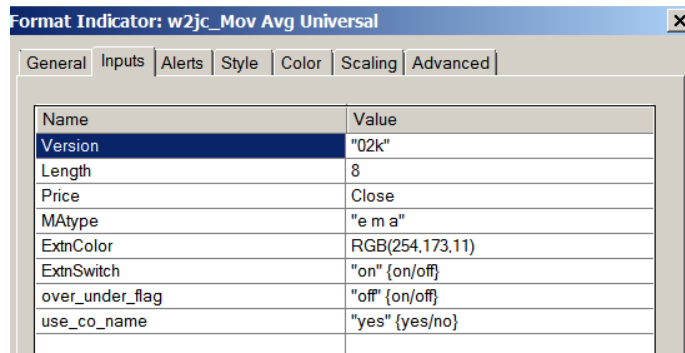


- **Version**

    Although the Version appears as a User Input, it should not be changed; it is here so that the Version will appear on the top line of the chart and the version in use can be easily determined.

    *Note: if you update the Universal Moving Average indicator to a newer version, the Version ID in this menu will NOT update; if you desire, you can manually change it to the new, updated version.*

- **Length**

    This is the number of bars/candles you want averaged.
    The default is eight bars.

- **Price**

    Default is Close. Any value on the bar (H, L, O, C) may be used if you have a special need to do so, but almost everyone uses Close for averages. Formulas such as (H+L)/2 can also be used.

- **MAtype**

    Use either "ema" or "sma" (quotes included) for Exponential or Simple moving average. [This is one of the features that makes this indicator "universal").

- **ExtnColor**

    Allows you to set the color of the 'future extension' line if used. Any of the 16 standard color names may be used, or you may also use the RGB format to select any of 16,000+ colors. (The example shown above is for the color Orange). Also sets color of the MA line.

- **ExtnSwitch**

    Option to turn the 'future extension' line "on" or "off" (use quotes).

- **over_under_flag**

    Option to show moving average as green if bar's close was above the moving average and red if the bar's close was below the moving average. Use either "on" or "off" (with quotes) for this option.

- **use_co_name**

    On / Off toggle to include company name in alert messages.

# Format  Scaling

Normally, the **Universal Moving Average Indicator** should install automatically in the upper Price area of your chart, since it should match the vertical price scale.

Also, insertion of the Universal Moving Average Indicator should not change the appearance or scaling of the price chart (candles, bars, etc.).  If it does, follow the procedure below for properly scaling the Universal Moving Average Indicator.
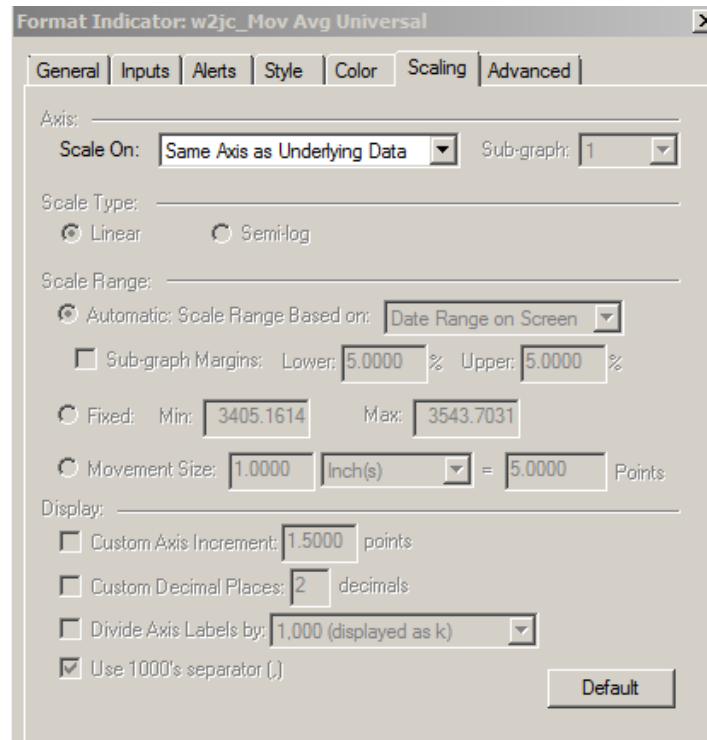


Select the  **Scaling**  tab and be sure the  Axis: Scale On:  window appears as above; if not, use the drop-down menu to select that setting.

# Format Style

The style of your moving averages can be a personal preference, and you might want to change from the default display.  For example, you might want some moving average lines to be dotted, while others are a solid line and others various forms of dashed lines.

Use the **Style** tab of the Format Indicator window to make those changes, just as you would for any other chart indicator.
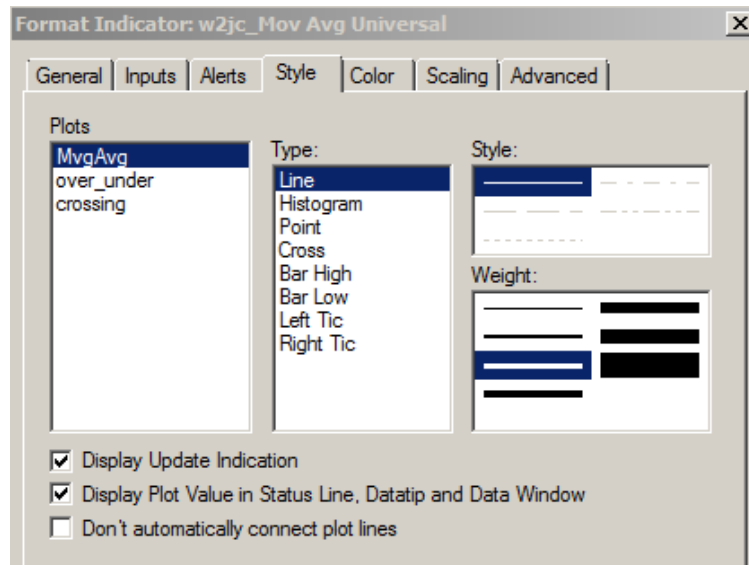


# Format Color

Most users want the various moving averages on their chart to be different colors, so they are easily recognized.  The default color of the Universal Moving Average Indicator is yellow, but you can change that using the **Color** tab of the Format Indicator window.
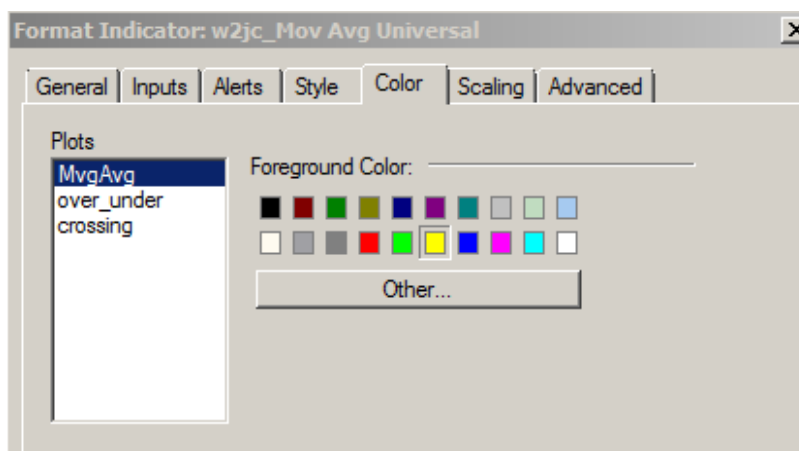


Note:  the Extension line, an important feature of the Universal Moving Average Indicator, is set using the **Inputs** tab, as described .  For Version 02o and later, the main moving average line is automatically set to match the color selected for the Extension line.

# Using the Universal Moving Average Indicator

## Using on charts

The Universal Moving Average Indicator is used just like the standard indicators, except it is the only one you need!  To add it to a Tradestation chart, just right click in an open area of the chart and select "**Insert Analysis Technique...**" from the drop down menu.

Use the "**Indicator**" tab of the "**Insert Analysis Techniques**" window, and scroll to find the "**w2jc_Mov Avg Universal**" indicator. Left click on it and then click the [OK] button.

### Inputs

When the "**Format Indicator**:" window appears, click on the "**Inputs**" tab first.
Using the information in the User Inputs section (page 9), make the appropriate changes
to the Input settings.

### Alerts

If you want to have the advantage of the alerts built into this indicator, click the "**Alerts**" tab of the "**Format Indicator**:" window and then be sure there is a check mark in the "**Enable Alert**" box -- if not, left click once on the box and the check mark should appear.

Our suggestion is to select "**Alert once per bar (interval)**" -- however, you might prefer other options.

You can use "**Custom Settings**" if you have specific requirements for moving average alerts, or you can use the common "**Global Messaging Preferences**" which are used for all other alerts. Our recommended settings for the Global preferences are:

- Audible - Voice (text to speech)
- Visual  -  Pop-up window:  15 seconds

You may, of course, configure the alert preferences any way you prefer.

### Other Tabs

The other tabs of the "**Format Indicator**:" window can be left in their default settings, unless you have particular preferences.  You will, no doubt, want to set a different color for different length moving averages; remember to set the Input value for "**ExtnColor**" to match the line color.

*NOTE:*
*At times, for some unknown reason, Tradestation does not refresh the moving average extension line. In such case, simply select that chart and press  Ctrl + R  to refresh the chart.*

# Scanning with the Universal Moving Average Indicator

The Universal Moving Average Indicator can be used in the Tradestation scanner just like any other indicator.

In addition, as noted previously, there are two 'flags' built into the code for this indicator, which will allow you to easily scan for "last bar closed above/below the moving average" and/or "last bar crossed above/below the moving average."

## Comparing one moving average with another

A scan can be set up to find all stocks where one moving average is above or below another moving average. An example setup to find the 8 ema equal or above the 50 sma is shown below:



## Scanning for close over or under moving average

An example setup for this scan is shown below:

Setting up the criteria:

1. With the TradeStation Scanner window open, click the Insert button at lower left.
2. Enter a **Name** for your scan in the top text window. In bottom selection window, use the drop-down menu to select the category for your scan, or use the [**Add Folder**] button to create a new category. Then click the [**Next >**] button at lower right to continue.
3. Using the drop-down menu at the top, select the categories you want to scan.
   Then click the [**Next >**] button at lower right to continue.
4. In the Scan Criteria window, use the drop-down menu and select Indicator;
   the Select Indicator window should open.
5. Scan to the bottom of the list and select "**w2jc_MovAvgUniversal**" by left click on the name;
   then click the [**OK**] button at upper right.
6. At the top left corner of the Scan Criteria window, be sure there is a green check mark in the first box; then click the + in the box to the right of the check mark to expand the Input/Settings table.
7. Find the line for "**over_under_flag**" and set the value to "on" (include the quote marks).
8. Use the drop-down menu just above the Value column to select "**over_under**" as the value for which the scanner will search.
9. In the "**Operator**" column, use the drop-down menu to select the "=" value. (5th one down)
10. Left click once in the yellow **Field/Value** box and type the search value you want:
    a. Use  1  to find "last bar closed above the moving average"
    b. Use  -1 to find "last bar closed below the moving average"
    c. Use  0  to find "last bar closed exactly on the moving average"
11. If you want to run the scan right away, click the [**Run**] button at the lower right;
    otherwise, click the [**Finish**] button to the left of the [**Run**] button.
12. If you receive an error message saying "The Operand requires more settings" then
    review all of the above steps to be sure they have been done correctly.

This indicator with the settings you select using the above procedure can be combined with any other indicators or scan criteria for a more complex scan.

# Version Updates

If design or coding updates are issued and you install the new version in place of the older version with the same indicator name, *the Version ID* which (in version 02n and later) appears in the statistics line at the top of the chart will automatically be updated.

Any "Universal Moving Average" indicators that you add to charts after the update will automatically show the new version ID in the statistics line.


Updates to this indicator will be emailed to those who have purchased the indicator in the past.

Please review and become familiar with the Tradestation procedure for installing .ELD indicator files.

# Purchasing the
# Universal Moving Average Indicator

At the present time, this indicator is available only from the author. It is more of a hobby than a business - but I decided that since I had done the development work and many enhancements, others might want to benefit from my ideas and work.

If you have not obtained indicators from Jim Cooper in the past, you will need to furnish your Tradestation Customer ID number (this is NOT your account number, and it will not allow access to any of your Tradestation accounts or information). This is used so that you can use this indicator on any computer in the world, as long as you are logged into one of your Tradestation accounts associated with that Customer ID number.

To find your Customer ID number while logged into Tradestation, simply click the Help tab at the right end of the top row of the Tradestation window. Then click the "About Tradestation" selection at the bottom of the drop-down menu. A pop-up window will appear and just below the center you will see your "Customer Number" -- this is the number that will be needed with your order.
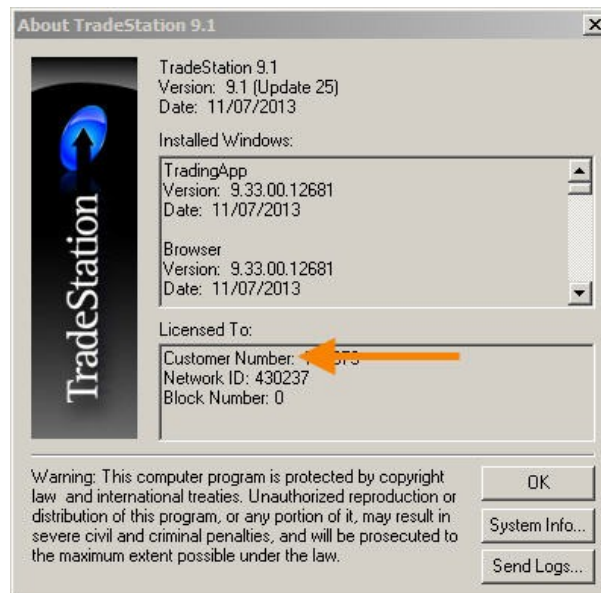


A website has been set up at  http://TSindicators.info  from which this and many other **"w2jc Customized TS Indicators"** can be purchased, using PayPal or credit card (via PayPal).

If you do not want to order using the website set up for the  w2jc Customized Tradestation Indicators, orders can be sent to:          indicators@JimCooper.org

Payment can be made via check or using PayPal (PayPal is much faster!).   List price is $39.95

Support, if needed, can be obtained using the same email address above -- or via Skype at  "jim-w2jc" ...