



# FOREX OSCILLATOR

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EBOOK 02

## What is a Forex Oscillator?

An oscillator is an indicator that any object or data that moves between two points on a graph backward and forwards to show you when securities are overbought or oversold. The oscillators are calculated by indicators, using the moving average (MA). The asset is believed to be overbought when the oscillator value increases to upper value and is oversold when it approaches towards lower value.

## Average True Range (ATR) Indicator

The Average True Range is an indicator developed by J Welles Wilder. ATR is a tool for measuring volatility. The volatility of gaps and limit moves are also included in the role of ATR. It is an important reminder to know that ATR does not give an indication of price direction, only provides volatility. The ATR is a moving average, used with generally 14 days of the true ranges.



## Average True Range (ATR) Indicator Calculation

The ATR consists of three values. They assist identifying the volatility of a security.

Current Day's Range

1. Current High – Current Low

Security increased from the previous day's close

Current High – Previous Close

Security decreased from the previous day's close

Current Low – Previous Close

## Bears/Bulls Power Indicator

The Bear and Bull power indicator is developed by Alexander Elder. It is designed to measure the power of buyers (Bull) and sellers (Bears) in the market. When the market is in a strong trend, bull powers are usually positive and bear powers are negative. But being the other way around, if the bull powers turn negative and the bear powers turn positive, this indicates a strong move to the downside in the markets.



## Bears/Bulls Power Indicator calculation

Bears Power = Low Price – Exponential Moving Average

Bulls Power = High Price – Exponential Moving Average

## DeMarker Indicator

This indicator developed by Tom Demarker measures the demand for the underlying currency pair. It compares the maximum price of the recent period with the previous periods.



This oscillator shows movement between a range of 0 to 1 made up of a single line.

### Demarker Indicator Calculation

Predetermined period “x” (Standard value of 14)

1. Calculate DeMax = High – Previous High if >0, otherwise DeMax = 0
2. Calculate DeMin = Previous Low – Low if >0, otherwise DeMin = 0
3. DeM = MA of DeMax/(MA of DeMax +MA of DeMin)

## Force Index Indicator

The force index indicator developed by Alexander Elder, is invented to measure the power behind every price move based on three elements, which are direction, extent, and volume.

The Force Index combines all three as an oscillator that oscillates in the positive and negative area as the power shifts. The Force Index reinforces the overall trend and identifies playable corrections or reversals with divergences.



## Force Index Calculation

Force Index (1) = [Close (current period) – Close (prior period)] x Volume

Force Index(13) = 13-period EMA of Force Index(1)

## Moving-Average Convergence/Divergence (MACD) Indicator

MACD indicator developed by Gerald Appel, combines signals from three-time series of MA curves to reveal changes in the direction and strength of the trend. The MACD fluctuates above and below the zero line as the moving averages converge, cross and diverge.

The three major components are MACD line, a signal line, and MACD Histogram.

The MACD line is a result of taking a longer-term EMA and subtracting it from a shorter term EMA. The values that are most commonly used are, 26 days for the longer term EMA and 12 days for the shorter term EMA.

The EMA of the MACD line is called the Signal line. Traders can decide on what period length EMA to use for the signal line.

The MACD Histogram takes the differences of MACD line and the Signal line and places it into a readable histogram. The differences oscillate around a zero line.



### MACD Calculation

MACD line = 12-period EMA – 26-period EMA

Signal line = 9-period EMA

Histogram = MACD line – Signal line



## Momentum Indicator

The Momentum indicator compares the position of the current price to where the price was previously. The indicator line is shown and oscillates around 100.

They say it's a bullish signal when the indicator goes over 100, and bearish signal when it falls under 100.

Overbought and oversold conditions are about to occur when the curve reaches maximum or minimum values.



## Momentum Indicator Calculation

$$\text{Momentum} = (\text{Close}_{\text{Today}} - \text{Close}_{x \text{ Days ago}})$$

## Relative Vigor Index (RVI) Indicator

Relative Vigor Index indicator is made to determine price trend direction developed by John Ehlers. Its based on assuming that closing prices tend to be higher than open prices in a bullish situation and lower in the bearish situation.

The RVI identifies the reinforcement of price changes. Generally when the indicator increases, the stronger the current relative price increase with it. And works opposed to the increasing situation, when the indicator falls, the current relative price also drops.



## Relative Vigor Index Indicator Calculation

Relative Vigor Index =  $(\text{Close} - \text{Open}) / (\text{High} - \text{Low})$



## Relative Strength Index (RSI) Indicator

The Relative Strength Index Indicator is designed to assess the strength and the weakness of the current price movement. It also analyses any price increases with its losses over a certain period of time and measures the velocity of price change based on the information it gathered.

The RSI identifies possible overbought and oversold areas. Usually, they say the asset may be overbought if the indicator goes over 70, and oversold if it's below 30.

Two different situations of overbought and oversold shows possible opportunities as well. When crossing the overbought area, the indicator signals a possible sell opportunity, whereas when crossing the oversold area it signals a possible buy opportunity.



## Relative Strength Index Indicator Calculation

$$RSI = 100 - 100 / (1 + RS)$$

$$RS = \text{Average gain} / \text{Average Loss}$$

## Stochastic Indicator

The Stochastic Indicator developed by George Lane, shows the location of the close relative to the high/low range over a set number of periods.

The Stochastic oscillator also identifies possible overbought and oversold areas. Generally, when the indicator reaches above 75, the asset is said to be overbought, and when it drops under 25 the asset is oversold.

When crossing the overbought area from above, the stochastic signals a possible sell opportunity. On the other hand, when it crosses the oversold area from below, it signals a possible buy opportunity.



## Williams Percent Range Indicator

Williams percent range indicator developed by Larry Williams, is designed to determine any possible turning points by identifying if an asset is overbought or oversold.

As mentioned before, WPR indicators main goal is to find possible overbought and oversold areas. The asset may be overbought if the indicator goes above -20 and if it drops under -80, the asset may be oversold.



## William Percent Range Indicator Calculation

$$R\% = 100 \times [(H-C)/(H-L)]$$

H = Highest price

C = Current closing price

L = Lowest price