# INDICADORES TÉCNICOS

* **Chaikin A/D Line, 'ad', 1**: Mide el flujo de dinero que entra y sale el mercado. Sirve para identificar si al tendencia es fuerte ( si el indicador acompaña al precio) o si es posible que se revierta (si diverge del precio). <https://www.metatrader5.com/es/terminal/help/indicators/volume_indicators/ad>
* **'Chaikin A/D Oscillator', 'adosc', 3**: La señal más importante del oscilador de Chaikin se forma cuando los precios alcanzan un nuevo máximo o mínimo (especialmente en el nivel de sobrecompra o sobreventa) y el oscilador no puede superar su valor extremo anterior y se da la vuelta. <https://www.metatrader5.com/es/terminal/help/indicators/oscillators/chaikin#:~:text=El%20oscilador%20de%20Chaikin%20se%20calcula%20restando%20la%20media%20m%C3%B3vil,3%20per%C3%ADodos%20del%20mismo%20indicador.>
* **'Average Directional Index', 'adx', 4:** El indicador técnico Índice de Movimiento Direccional Medio (Average Directional Movement Index, ADX) ayuda a determinar si hay alguna tendencia o no en los precios. <https://www.metatrader5.com/es/terminal/help/indicators/trend_indicators/admi>
* **'Average Directional Movement Index Rating', 'adxr', 5:** El Average Directional Index Rating emplea el valor de la barra o periodo actual y calcula la suma promedio de este valor y el generado por el ADX para un periodo anterior (por defecto se utiliza el ADX de 14 periodos atrás con respecto al periodo actual, sin embargo esto queda a gusto del analista). Como resultado, el valor del ADX se suaviza.Si se compara el ADX con el ADXR, el ADXR más suavizado no depende no depende tanto de rápidos giros y reveses del mercado a corto plazo, lo que permite disminuir riesgos para el trader cuando este utiliza este indicador para analizar el mercado a largo plazo. <https://www.tecnicasdetrading.com/2013/04/indicador-average-directional-movement-index-rating-adxr.html>
* **'Absolute Price Oscillator', 'apo', 6:** The Absolute Price Oscillator displays the difference between two exponential moving averages of a security's price and is expressed as an absolute value. APO crossing above zero is considered bullish, while crossing below zero is bearish. <https://www.fidelity.com/learning-center/trading-investing/technical-analysis/technical-indicator-guide/apo#:~:text=The%20Absolute%20Price%20Oscillator%20displays,expressed%20as%20an%20absolute%20value.>
* **'Aroon Indicator', ‘aroon’, 7:** The Aroon indicator is a [technical indicator](https://www.investopedia.com/terms/t/technicalindicator.asp) that is used to identify trend changes in the price of an asset, as well as the strength of that trend. In essence, the indicator measures the time between highs and the time between lows over a time period. The idea is that strong uptrends will regularly see new highs, and strong downtrends will regularly see new lows. The indicator signals when this is happening, and when it isn't. <https://www.investopedia.com/terms/a/aroon.asp>
* **'Aroon Oscillator',’aroonosc’, 8:** The Aroon Oscillator is a trend-following indicator that uses aspects of the [Aroon Indicator](https://www.investopedia.com/terms/a/aroon.asp) (Aroon Up and Aroon Down) to gauge the strength of a current trend and the likelihood that it will continue. <https://www.investopedia.com/terms/a/aroonoscillator.asp>
* **'Average True Range', 'atr', 11:** El indicador de rango verdadero se toma como el mayor de los siguientes: máximo actual menos mínimo actual; el [valor absoluto](https://www.investopedia.com/terms/a/absolute-value.asp) del máximo actual menos el cierre anterior; y el valor absoluto del mínimo actual menos el cierre anterior. El ATR es entonces un [promedio móvil](https://www.investopedia.com/terms/m/movingaverage.asp) , generalmente usando 14 días, de los rangos verdaderos. El rango verdadero promedio (ATR) es un indicador de volatilidad del mercado utilizado en el análisis técnico. Por lo general, se deriva del promedio móvil simple de 14 días de una serie de indicadores de rango verdadero. <https://www.investopedia.com/terms/a/atr.asp#:~:text=The%20average%20true%20range%20(ATR)%20is%20a%20market%20volatility%20indicator,to%20all%20types%20of%20securities.>
* '**Average', ‘avg’, 12:** volumen medio de los últimos 9 días.
* **'Average Price', ‘avgprice’, 13**: precio medio del dia
* **'Bollinger Bands®', 'bbands', 14**: Bollinger Bands®(BBANDS) are volatility bands located above and below a moving average. The volatility size parameter depends on standard deviation.<https://www.fidelity.com/learning-center/trading-investing/technical-analysis/technical-indicator-guide/bollinger-bands#:~:text=Bollinger%20Bands%20are%20envelopes%20plotted,Period%20and%20Standard%20Deviations%2C%20StdDev.>
* **'Balance of Power', 'bop', 16:** The Balance of Power (BOP) indicator uses price to measure buying and selling pressure. It determines the strength of the buyers and sellers by looking at how strongly the price has changed, rather than using volume. Zero-line crossovers of the BOP indicator can be used as a signal for trend reversals. In addition, indicator trends, divergences with price, and extreme overbought/oversold levels can give clues about the current price trend and the possibility of a price trend reversal. <https://school.stockcharts.com/doku.php?id=technical_indicators:balance_of_power#:~:text=The%20Balance%20of%20Power%20(BOP,a%20signal%20for%20trend%20reversals.>
* **'Commodity Channel Index', ‘cci’, 17:** The Commodity Channel Index​ (CCI) is a momentum-based [oscillator](https://www.investopedia.com/terms/o/oscillator.asp) used to help determine when an [investment vehicle](https://www.investopedia.com/terms/i/investmentvehicle.asp) is reaching a condition of being overbought or oversold. The Commodity Channel Index (CCI) is a technical indicator that measures the difference between the current price and the historical average price. When the CCI is above zero, it indicates the price is above the historic average. Conversely, when the CCI is below zero, the price is below the historic average. <https://www.investopedia.com/terms/c/commoditychannelindex.asp>
* **'Chande Momentum Oscillator', ‘cmo’, 19**: 'Chande Momentum Oscillator(CMO) is used to show overbought and oversold conditions.' <https://www.investopedia.com/terms/c/chandemomentumoscillator.asp>
* **"Pearson's Correlation Coefficient", ‘correl’, 21**: correlacion de Pearson para el periodo qe tu le digas
* **'Cosine', ‘cos’, 22:** coseno.
* **'Hyperbolic Cosine', ‘cosh’, 23:** hyperboli coseno.
* **'ConnorsRSI', ‘crsi’, 24**: *Es un indicador compuesto por tres componentes individuales: el conocido****RSI****(Índice de Fuerza Relativa), el valor de la racha alcista/bajista del mercado y el indicador****ROC****(Tasa de Cambio). Todos estos componentes funcionan en combinación para crear un oscilador de impulso del precio que se puede utilizar para tomar decisiones de negociación en los mercados a corto plazo.* [*https://www.tecnicasdetrading.com/2020/08/indicador-connorsrsi.html*](https://www.tecnicasdetrading.com/2020/08/indicador-connorsrsi.html)
* **'Double Exponential Moving Average', ‘dema’, 25:** As its name implies, the DEMA uses two [exponential moving averages](https://www.investopedia.com/terms/e/ema.asp) (EMAs) in order to eliminate [lag](https://www.investopedia.com/terms/l/laggingindicator.asp) in the charts.<https://www.investopedia.com/terms/d/double-exponential-moving-average.asp#:~:text=What%20Is%20a%20Double%20Exponential,movements%20on%20a%20price%20chart.>
* **'Detrended Price Oscillator', ‘dpo’, 27:** The detrended price oscillator seeks to help a trader identify an asset's price cycle. It does this by comparing an SMA to a historical price that is near the middle of the look-back period. <https://www.investopedia.com/terms/d/detrended-price-oscillator-dpo.asp>
* **Directional Movement Index, ‘dx’, 28:** The directional movement index (DMI) is a technical indicator that measures both the strength and direction of a price movement and is intended to reduce false signals. <https://www.investopedia.com/terms/d/dmi.asp>
* **'Exponential Moving Average', ‘ema’, 29**: 'Exponential Moving Average(EMA) places greater importance on recent data points than the normal Moving Average **USAR VARIOS PERIODOS**.
* **'Heikin-Ashi Candles’, 'heikinashicandles', 32**: The Heikin-Ashi technique is used with candlestick charts to help traders identify and analyze trends. <https://www.investopedia.com/trading/heikin-ashi-better-candlestick/> TE DA LOS 4 PRECIOS DE LA VELA HEIKIN
* **'High, Low, Close Average Values', 'hlc3', 33:** 'High, Low, Close Average Values(HLC3) give alternative candlesticks patter. Every element is defined as follows: (high + low + close) / 3.'
* **Hilbert Transform Dominant Cycle Period, 'ht\_dcperiod'**'ht\_dcperiod','ht\_dcphase','ht\_phasor','ht\_sine','ht\_trendline','ht\_trendmode',**, 34,35,36,37,38,39**:. <https://www.motivewave.com/studies/hilbert_transform_indicator.htm>
* **Ichimoku Kinkō Hyō, 'ichimoku', 40:** The Ichimoku Kinko Hyo, or Ichimoku for short, is a [technical indicator](https://www.investopedia.com/terms/t/technicalindicator.asp) that is used to gauge [momentum](https://www.investopedia.com/terms/m/momentum.asp) along with future areas of support and resistance. The all-in-one technical indicator is comprised of five lines called the tenkan-sen, kijun-sen, senkou span A, senkou span B and chikou span. <https://www.investopedia.com/terms/i/ichimokuchart.asp>
* **Kaufman's Adaptive Moving Average, 'kama', 41**: When market volatility is low, Kaufman’s Adaptive Moving Average remains near the current market price, but when volatility increases, it will lag behind. What the KAMA indicator aims to do is filter out “market noise” – insignificant, temporary surges in price action. One of the primary weaknesses of traditional moving averages is that when used for trading signals, they tend to generate many false signals. The KAMA indicator seeks to lessen this tendency – generate fewer false signals – by not responding to short-term, insignificant price movements. <https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/kaufmans-adaptive-moving-average-kama/>
* **'Keltner Channels', ‘keltner’, 42**: Keltner Channels are [volatility](https://www.investopedia.com/terms/v/volatility.asp)-based bands that are placed on either side of an asset's price and can aid in determining the direction of a trend. The Keltner channel uses the average-true range (ATR) or volatility, with breaks above or below the top and bottom barriers signaling a [continuation](https://www.investopedia.com/terms/c/continuationpattern.asp). USAR EMA Y TRUE CHANNEL <https://www.investopedia.com/terms/k/keltnerchannel.asp>
* **'Know Sure Thing', ‘kst’, 43:** The Know Sure Thing (KST) is a momentum oscillator intended to interpret rate-of-change price data. The KST is calculated by taking the [simple moving average](https://www.investopedia.com/terms/s/sma.asp) (SMA) of four different [rate-of-change](https://www.investopedia.com/terms/r/rateofchange.asp) (ROC) periods, adding them together to come up with the KST, and creating a signal line by taking the 9-period SMA of the KST. <https://www.investopedia.com/terms/k/know-sure-thing-kst.asp>
* **'Linear Regression', 'linearreg'**: regresión lineal tiempo precio, default 9 periodos.
* **'Linear Regression Angle', 'linearregangle', 45**: angulo
* **'Linear Regression Angle','linearregintercept', 46**: constante
* **'Linear Regression Slope', 'linearregslope', 47**: pendiente.
* **'Moving Average', ‘ma’, 50:** media móvil
* **'Moving Average Convergence Divergence', ‘macd’, 51:** Moving average convergence divergence (MACD) is a [trend-following](https://www.investopedia.com/terms/t/trendtrading.asp) [momentum](https://www.investopedia.com/terms/m/momentum.asp) indicator that shows the relationship between two [moving averages](https://www.investopedia.com/terms/m/movingaverage.asp) of a security’s price. The MACD is calculated by subtracting the 26-period [exponential moving average](https://www.investopedia.com/terms/e/ema.asp) (EMA) from the 12-period EMA. <https://www.investopedia.com/terms/m/macd.asp>
* **'Moving Average Convergence Divergence Regression Slope', 'macd\_slope', 52**: pendiente macd.
* **'MESA Adaptive Moving Average', 'mama', 54:** The MESA Adaptive Moving Average (MAMA) is an indicator characterized by its ability to adapt to the price movement of the asset in question. Unlike normal moving averages which are curvy, this indicator comprises two moving averages, has edges, and moves in a staircase pattern. <https://phemex.com/academy/what-is-mesa-adaptive-moving-average#:~:text=The%20MESA%20Adaptive%20Moving%20Average,value%20and%20signals%20market%20trends.>
* **'Highest value over period', 'max', 56:** máximo precio de un periodo, default 9 días.
* **McGinley Dynamic, 'mcginley\_dynamic', 58**: McGinley Dynamic indicator is a type of [moving average](https://www.investopedia.com/terms/m/movingaverage.asp#:~:text=In%20statistics%2C%20a%20moving%20average,commonly%20used%20in%20technical%20analysis.) that was designed to track the market better than existing moving average indicators. It is a technical indicator that improves upon moving average lines by adjusting for shifts in market speed. John R. McGinley, a market technician, is the inventor of the eponymous indicator. <https://www.investopedia.com/terms/m/mcginley-dynamic.asp>
* **'Median Price', 'medprice', 59:** mediana del precio del día
* **Money Flow Index', ‘mfi’, 60:** The Money Flow Index (MFI) is a technical [oscillator](https://www.investopedia.com/terms/o/oscillator.asp) that uses price and volume data for identifying [overbought](https://www.investopedia.com/terms/o/overbought.asp) or [oversold](https://www.investopedia.com/terms/o/oversold.asp) signals in an asset. It can also be used to spot [divergences](https://www.investopedia.com/terms/d/divergence.asp) which warn of a trend change in price. The oscillator moves between 0 and 100. Unlike conventional oscillators such as the [Relative Strength Index](https://www.investopedia.com/terms/r/rsi.asp) (RSI), the Money Flow Index incorporates both price and [volume](https://www.investopedia.com/terms/v/volume.asp) data, as opposed to just price. For this reason, some analysts call MFI the volume-weighted RSI. <investopedia.com/terms/m/mfi.asp>
* **'MidPoint over period', ‘midpoint’, 61**: máxima + mínimo /2 de un periodo. Default 9 precio de dl día 4.5
* **'Midpoint Price over period', ‘midprice’, 62:** Midpoint Price over period(MIDPRICE) is calculated as (highest high + lowest low) / 2.'
* **'Lowest value over period', ‘min’, 63**: precio mínimo alcanzado en un periodo.
* **Minus Directional Indicator, 'minus\_di', 67:** The Negative Directional Indicator (-DI) measures the presence of a [downtrend](https://www.investopedia.com/terms/d/downtrend.asp)and is part of the [Average Directional Index](https://www.investopedia.com/terms/a/adx.asp) (ADX). If -DI is sloping upward, it's a sign that the price downtrend is getting stronger. <https://www.investopedia.com/terms/n/negativedirectionalindicator.asp#:~:text=What%20is%20the%20Negative%20Directional,price%20downtrend%20is%20getting%20stronger.>
* **'Minus Directional Movement', ‘minus\_dm’, 68:** Minus Directional Movement(MINUS\_DM) is calculated as Previous Low - Low.
* **Momentum, ‘mom’, 69**: Momentum(MOM) compares the current price with the previous price N timeperiods ago.
* **Normalized Average True Range, ‘natr’, 71:** Normalized Average True Range(NATR) is used to compare and analyze across different price levels due to its normalized quality, which might be more effective than the original ATR.
* **On Balance Volume, ‘obv’, 72:** On-balance volume (OBV) is a technical indicator of momentum, using volume changes to make price predictions. On-balance volume provides a running total of an asset's trading volume and indicates whether this volume is flowing in or out of a given security or currency pair. The OBV is a cumulative total of volume (positive and negative). There are three rules implemented when calculating the OBV. They are:

1. If today's closing price is higher than yesterday's closing price, then: Current OBV = Previous OBV + today's volume

2. If today's closing price is lower than yesterday's closing price, then: Current OBV = Previous OBV - today's volume

3. If today's closing price equals yesterday's closing price, then: Current OBV = Previous OBV

* **%B Indicator, ‘percent\_b’, 73**: %B Indicator(PERCENT\_B) measures the position of an asset price relative to upper and lower Bollinger Bands.'
* **Pivot Points (High/Low), ‘ pivot\_points\_hl’, 74:** A pivot point is a technical analysis indicator, or calculations, used to determine the overall trend of the market over different time frames. The pivot point itself is simply the average of the intraday high and low, and the [closing price](https://www.investopedia.com/terms/c/closingprice.asp) from the previous trading day. On the subsequent day, trading above the pivot point is thought to indicate ongoing [bullish](https://www.investopedia.com/terms/b/bull.asp) sentiment, while trading below the pivot point indicates bearish sentiment. <https://www.investopedia.com/terms/p/pivotpoint.asp>
* **'Plus Directional Indicator', ‘plus\_di’**, **75**: Plus Directional Indicator(PLUS\_DI) is a component of the Average Directional Index(ADX), and it measures the existence of uptrend.'
* **Plus Directional Movement, ‘plus\_dm’ 76:** 'Plus Directional Movement(PLUS\_DM) is calculated as High - Previous High
* **Percentage Price Oscillator, ‘ppo’, 77:** The percentage price oscillator (PPO) is a technical [momentum indicator](https://www.investopedia.com/investing/momentum-and-relative-strength-index/) that shows the relationship between two moving averages in percentage terms. The moving averages are a 26-period and 12-period [exponential moving average](https://www.investopedia.com/terms/e/ema.asp) (EMA). GUAL QUE MCD PERO EN PRCENTAGE <https://www.investopedia.com/terms/p/ppo.asp#:~:text=What%20Is%20the%20Percentage%20Price,exponential%20moving%20average%20(EMA).>
* **'Rate of change', ‘roc’, 78:** 'Rate of change(ROC) calculates the rate of change between the current price and price n timeperiods ago. Formula: ((price / prevPrice) - 1) \* 100.

* **'Rate of change percentage', ‘rocp’, 79:** 'Rate of change percentage(ROCP) calculates the rate of change in % between the current price and price n timeperiods ago. Formula: (price - prevPrice) / prevPrice.'
* **'Rate of change ratio', ‘rocr’, 80**: 'Rate of change ratio(ROCR) calculates the ratio between the current price and price n timeperiods ago. Formula: (price / prevPrice)
* **'Rate of change ratio 100 scale', ‘rocr100’,81**: 'Rate of change ratio 100 scale(ROCR100) calculates the ratio with 100 scale between the current price and price n timeperiods ago. Formula: (price / prevPrice) \* 100.
* **'Relative Strength Index', ‘rsi’, 82:** The relative strength index (RSI) is a [momentum indicator](https://www.investopedia.com/investing/momentum-and-relative-strength-index/) used in technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of a stock or other asset. <https://www.investopedia.com/terms/r/rsi.asp>
* **'Relative Volume Indicator', ‘rvol’, 83**: 'Relative Volume Indicator(RVOL) shows how the current trading volume is compared to past volume over a given period.'
* **'Parabolic SAR', ‘sar’, 84:**The parabolic SAR attempts to give traders an edge by highlighting the direction an asset is moving, as well as providing entry and exit points. In this article, we'll look at the basics of this indicator and show you how you can incorporate it into your trading strategy. We'll also look at some of the drawbacks of the indicator. <https://www.investopedia.com/trading/introduction-to-parabolic-sar/>
* **'Standard Deviation',’std’, 90:** default 9 periodos:
* **'Stochastic Oscillator', 'stoch', 91:** A stochastic oscillator is a momentum indicator comparing a particular [closing price](https://www.investopedia.com/terms/c/closingprice.asp) of a security to a range of its prices over a certain period of time. The sensitivity of the oscillator to market movements is reducible by adjusting that time period or by taking a [moving average](https://www.investopedia.com/terms/m/movingaverage.asp) of the result. It is used to generate [overbought](https://www.investopedia.com/terms/o/overbought.asp) and oversold trading signals, utilizing a 0–100 bounded range of values. <https://www.investopedia.com/terms/s/stochasticoscillator.asp>
* **'Stochastic Fast', ‘stochf’, 92**: is more sensitive to price changes; therefore, it changes direction more quickly <https://www.investopedia.com/ask/answers/05/062405.asp>
* **'Stochastic RSI', ‘stochrsi’, 93:** The StochRSI oscillator was developed to take advantage of both momentum indicators in order to create a more sensitive indicator that is attuned to a specific security's historical performance rather than a generalized analysis of price change. <https://www.investopedia.com/terms/s/stochrsi.asp>
* **'SuperTrend Indicator’, ‘supertrend’, 96:** trend indicator. is mostly used on intraday timeframes to detect the price upward or downward direction in the trending market.

<https://www.tradingfuel.com/supertrend-indicator-formula-and-calculation/>

* **SuperTrendHeikinAshiCandles Indicator, 'supertrend\_heikinashicandles', 97:** sueprtend con velas heikin
* **'Triple Exponential Moving Average', ‘t3ma’, 98:** The triple exponential moving average (TEMA) was designed to smooth price fluctuations, thereby making it easier to identify trends without the [lag](https://www.investopedia.com/terms/l/laggingindicator.asp) associated with traditional moving averages (MA). It does this by taking multiple [exponential moving averages](https://www.investopedia.com/terms/e/ema.asp) (EMA) of the original EMA and subtracting out some of the lag. <https://www.investopedia.com/terms/t/triple-exponential-moving-average.asp>
* **'Tangent', ‘tan’, 99:** tangente
* **'Hyperbolic Tangent', ‘tanh’, 100:** tangente hiperbólica.
* **'True Range', ‘trange’, 102:** True Range(TRANGE) is usually used as the base when calculating other indicators. TRANGE determines the normal trading range of an asset.
* **Triangular Moving Average, ‘trima’, 103:** The TMA can also be expressed as: TMA = SUM (SMA values) / N <https://www.thebalance.com/triangular-moving-average-tma-description-and-uses-1031203#:~:text=The%20triangular%20moving%20average%20(TMA)%20shows%20the%20average%20price%20of,a%20simple%20moving%20average%20would.>
* **Time Series Forecast, ‘tsf’, 104:** Time Series Forecast(TSF) calculates trend based on the last points of multiple regression trendlines.
* **Typical Price, 'typprice', 105:** The typical price of an asset is calculated by adding the high, low and closing prices for a particular time period, and dividing the total by three
* **Ultimate Oscillator, ‘ultosc’, 106:** The indicator uses three timeframes in its calculation: seven, 14, and 28 periods.The shorter timeframe has the most weight in the calculation, while the longer timeframe has the least weight.Buy signals occur when there is [bullish](https://www.investopedia.com/terms/b/bull.asp) divergence, the divergence low is below 30 on the indicator, and the oscillator then rises above the divergence high.A sell signal occurs when there is [bearish](https://www.investopedia.com/terms/b/bear.asp) divergence, the divergence high is above 70, and the oscillator then falls below the divergence low. <https://www.investopedia.com/terms/u/ultimateoscillator.asp>
* **'Variance', ‘var’, 107:** varianza ddefault 9
* **Volume Weighted Average Price, ‘vwap’, 108**: The volume-weighted average price (VWAP) is a technical analysis indicator used on intraday charts that resets at the start of every new trading session.It's a trading [benchmark](https://www.investopedia.com/terms/b/benchmark.asp) that represents the average price a security has traded at throughout the day, based on both [volume](https://www.investopedia.com/terms/v/volume.asp) and price. <https://www.investopedia.com/terms/v/vwap.asp#:~:text=The%20volume%2Dweighted%20average%20price%20(VWAP)%20is%20a%20technical,on%20both%20volume%20and%20price.>
* **Weighted Close Price: ‘wclprice’,109:** is usually used as the base for other indicators for smoothness. Formula: (high + low + close \* 2) / 4.
* **Williams %R, ‘willr’, 110:** Williams %R, also known as the Williams Percent Range, is a type of momentum indicator that moves between 0 and -100 and measures [overbought](https://www.investopedia.com/terms/o/overbought.asp) and [oversold](https://www.investopedia.com/terms/o/oversold.asp) levels. The Williams %R may be used to find entry and exit points in the market. The indicator is very similar to the [Stochastic oscillator](https://www.investopedia.com/video/play/stochastic-oscillator/) and is used in the same way. <https://www.investopedia.com/terms/w/williamsr.asp>
* **'Weighted Moving Average','wma',111:** 'Weighted Moving Average(WMA) smooths out price fluctuations, and puts more weight on recent data points and less on past.