# US Equity Trade and Quote Minute Bar Guide

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## CONTACT US

We are here to help you do great things with our market and reference data. For questions, feedback, and other concerns, you may reach our team of experts using the following contact information:

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# INTRODUCTION

algoseek Trade and Quote (TAQ) Minute Bar data is built from top-of-book intraday quotes and trades for all listed stocks, ETNs, ETFs, ADRs, and funds from 15+ US exchanges and marketplaces.

algoseek provides two versions of the US Equity Trade and Quote Minute Bar dataset: a standard version and a version without FINRA/TRF events. In this document, they are collectively referred to as TAQ Minute Bar datasets.

With 61 data fields, algoseek TAQ Minute Bar datasets are the most comprehensive and detailed TAQ minute bar products in the financial industry. They are designed for quantitative trading, backtesting, machine learning, and other advanced applications.

Data files are in CSV (Comma-Separated Values) format. An individual CSV file is created for each active ticker on each trading day, and these data files are arranged in a flat-file database by date and then by ticker.

# DATA SOURCE

algoseek TAQ Minute Bar datasets are built from "as-is" tick data collected from live SIP feed algoseek's co-located ticker plant servers in Equinix NY2 and NY4 data centers, connected with 10Gb fiber for low latency.

The Securities Information Processor (SIP) includes Tape A and Tape B covered by the Consolidated Tape Association (CTA) plan and Tape C covered by the Unlisted Trading Privileges (UTP) plan. The SIP links the US markets by processing and consolidating all protected bid/ask quotes and trades from every trading venue into a single and easily consumable data feed.

The SIP disseminates and calculates critical regulatory information, including the National Best Bid and Offer (NBBO) and Limit Up Limit Down (LULD) price bands, among other important regulatory information such as short sale restrictions and regulatory halts. In the highly fragmented world of US equities, the SIP is an easy way for people to get a view of the current state of the market.

# STANDARD AND NO-FINRA/TRF VERSIONS

Two versions of TAQ Minute Bar datasets are available for algoseek clients:

**Standard Minute Bar:** includes all trades and quotes from the SIP feed

**No-FINRA/TRF and Odd Lots:** includes only trades executed on public exchanges and excludes all FINRA/TRF reports and odd lot (less than 100 shares) trades

## FINRA TRF

Equity trades are executed on Public Exchanges (e.g. NASDAQ, BATS, NYSE, ARCA, etc.) and off the public exchanges in Dark Pools, Broker-Dealer internal crossing, and as Block Trades. Regulation National Market System (NMS) requires all trades to be reported. There are currently three FINRA Trade Reporting Facilities (TRF) that are affiliated with registered national securities exchanges and provide FINRA members with a mechanism for the reporting of transactions affected otherwise than on an exchange.

Regulation NMS allows up to 10 seconds after the Trade execution time for the trade report to be sent to an exchange's TRF for publication. The delay can result in TRF Trade reports printed on the market data feed being out of the current NBBO.

## Round Lot and Odd Lot

A round lot (or board lot) is a normal unit of trading of a security, which currently is 100 shares of stock in the US. Any quantity less than 100 shares is referred to as an odd lot. Odd lots are not subject to the Regulation NMS rules requiring execution to be within the current NBBO. Broker-dealers send odd lots to the exchange paying the most rebate per share and not the best execution price.

**Note:** Odd lot executions can create unrealistic high/low trade prices in an OHLC bar.

## The No FINRA and Odd Lots Minute Bars

By excluding TRF trades and odd-lot trades, the no-FINRA/TRF and Odd Lots TAQ Minute Bar dataset provides "clean" and easy-to-use data for hedge funds and market makers to trade and backtest trading algorithms based on the trades from Public Exchanges.

# MINUTE BAR CALCULATIONS

## Aggregated NBBO Bid/Ask Size

The Bid/Ask size in a bar field is the total aggregate from all the exchanges that have a matching price to the NBBO Bid/Ask price.

## Continuous Bar Time

algoseek TAQ Minute Bar datasets provide continuous bars from pre-market opening (4 am EST), regular market hours, and post-market until the last exchange closes, which means there will always be a bar even if there are no events during the bar period.

## Carrying Forward of Current NBBO Bid/Ask

If there are no changes to the Bid/Ask in the NBBO during a bar period, the current NBBO Bid/Ask from the previous bar period will be carried forward and all Bid/Ask values will remain the same from Open to Close.

**Bid:**

```
OpenBarTime = HighBidTime = LowBidTime  = CloseBarTime =
                    OpenBarTime
```

```
OpenBidPrice = HighBidPrice = LowBidPrice = CloseBidPrice = Current
        NBBO Bid carried from the previous bar period
```

**Ask:**

```
 OpenBarTime = HighAskTime = LowAskTime = CloseAskTime
```

```
OpenAskPrice = HighAskPrice = LowAskPrice = CloseAskPrice = Current
        NBBO Ask carried from the previous bar period
```

## Quote Price Filter

When trading and quoting activities are inactive, for example, during extended trading hours or with an illiquid stock, bid prices can be extremely low, and ask prices can be extremely high. An exchange can also send a bad price, for example, a stock has a bid of $12.05 then an exchange sends a bid of $212.05.

To make TAQ Minute Bar datasets usable for illiquid stocks and ETFs/ETNs, algoseek filters out extreme quotes by the following two criteria:

```
Bid price < (0.05 x average price of last 10 days)
```

```
Ask price > (10 x average price of last 10 days)
```

## Separating Exchange and Finra Volume

The bars have trade volume separated into fields:

**Volume:** Trades done on the listed exchanges

**FinraVolume:** Trades done in Dark Pools, internally by Broker-Dealers, or on an Over-the-Counter (OTC) market reporting to FINRA

The **total Trade volume** for a bar is then **Volume + FinraVolume**

The Volume data is separated to make it easy to understand the trading in a bar period for either the public-listed exchanges or private non-public trading.

# DATA ORGANIZATION AND FILE FORMAT

algoseek provides Equity market data in plain text CSV files. The first row of CSV file is a fixed header and then rows of data corresponding to individual bars. By default, data is

organized into one file per symbol per trading day. For example, all trade and quote bars for ticker AAPL on Mar 3, 2020, are stored in one CSV file.

Due to the large data size, CSV files are gzip-compressed (having a csv.gz extension) with a compression ratio of about 8:1.

Table 1 (below) provides the name, base event, default value, brief description, and data type for each data field (column) in Equity TAQ Minute Bar CSV file.

Table column "Missing" indicates a default behavior in case the data field value is not present or cannot be calculated. The column value "Never" means that the data field value is always present.

**Table 1: CSV File Fields Schema**

| Field | Base Event | Type (Format) | Missing | Description |
|---|---|---|---|---|
| Date | - | string (yyyymmdd) | Never | Trading date in yyyymmdd format |
| Ticker | - | string | Never | Symbol name |
| TimeBarStart | - | string (time) | Never | Start time of the bar. For a minute bar, the format is HH:MM. For a second bar, the format is HH:MM:SS |
| OpenBarTime | Quote | string (timestamp) | Never | Open Time of the Bar, for example, one minute bar: 11:03:00.000000000 |
| OpenBidPrice | Quote | decimal | Never | NBBO Bid Price as of bar Open, (e.g. current price as of bar start) |
| OpenBidSize | Quote | integer | Never | Total Size from all exchanges with OpenBidPrice |
| OpenAskPrice | Quote | decimal | Never | NBBO Ask Price as of bar open (e.g. current price as of bar start) |
| OpenAskSize | Quote | integer | Never | Total Size from all Exchanges with NBBO OpenAskPrice |
| FirstTradeTime | Trade | string (timestamp) | Blank | Time of the first trade |
| FirstTradePrice | Trade | decimal | Blank | Price of the first trade |
| FirstTradeSize | Trade | integer | Blank | Number of shares of the first trade |
| HighBidTime | Quote | string (timestamp) | Never | Time of highest NBBO bid price |

| HighBidPrice | Quote | decimal | Never | Highest NBBO bid price |
|---|---|---|---|---|
| HighBidSize | Quote | integer | Never | Total size from all exchanges with HighBidPrice |
| HighAskTime | Quote | string (timestamp) | Never | Time of highest NBBO ask price |
| HighAskPrice | Quote | decimal | Never | Highest NBBO ask price |
| HighAskSize | Quote | integer | Never | Total size from all exchanges with HighAskPrice |
| HighTradeTime | Trade | string (timestamp) | Blank | Time of the highest rade |
| HighTradePrice | Trade | decimal | Blank | Price of the highest trade |
| HighTradeSize | Trade | integer | Blank | Number of shares of the highest trade |
| LowBidTime | Quote | string (timestamp) | Never | Time of the lowest bid |
| LowBidPrice | Quote | decimal | Never | Lowest NBBO bid price of a bar |
| LowBidSize | Quote | integer | Never | Total Size from all exchanges with LowBidPrice |
| LowAskTime | Quote | string (timestamp) | Never | Time of the lowest ask |
| LowAskPrice | Quote | decimal | Never | Lowest NBBO Ask price of a bar |
| LowAskSize | Quote | integer | Never | Total size from all exchanges with LowAskPrice |
| LowTradeTime | Trade | string (timestamp) | Blank | Time of the lowest trade |
| LowTradePrice | Trade | decimal | Blank | Price of the lowest trade |
| LowTradeSize | Trade | integer | Blank | Number of shares of the lowest trade |
| CloseBarTime | Quote | string (timestamp) | Never | Close Time of the Bar, for example, one minute bar: 11:03:59.999999999 |
| CloseBidPrice | Quote | decimal | Never | NBBO Bid Price at bar Close |
| CloseBidSize | Quote | integer | Never | Total Size from all Exchange with CloseBidPrice |
| CloseAskPrice | Quote | decimal | Never | NBBO Ask Price at bar Close |
| CloseAskSize | Quote | decimal | Never | Total Size from all Exchange with CloseAskPrice |

| LastTradeTime | Trade | string (timestamp) | Blank | Time of the last Trade |
|---|---|---|---|---|
| LastTradePrice | Trade | decimal | Blank | Price of last Trade |
| LastTradeSize | Trade | integer | Blank | Number of shares of last trade |
| MinSpread | Quote | decimal | Never | Minimum Bid-Ask spread size. This may be 0 if the market was crossed during the bar. If there is a negative spread due to back quote, make it zero |
| MaxSpread | Quote | decimal | Never | Maximum NBBO Bid-Ask spread in a bar |
| CancelSize | Trade | integer | Blank | Total shares canceled |
| VolumeWeight Price | Trade | decimal | Blank | Trade Volume weighted average price excluding FINRA/TRF Trades. For FINRA reported trades see field "FinraVolumeWeightPrice". **Note:** Blank if no trades. Excludes FINRA reported trades. |
| NBBOQuoteC ount | Quote | integer | 0 | Number of Bid and Ask NNBO quotes during the bar period |
| TradeAtBid | Quote Trade | integer | 0 | Sum of trade volume that occurred at or below the bid (a trade reported/ printed late can be below the current bid) |
| TradeAtBidMid | Quote Trade | integer | 0 | Sum of trade volume that occurred between the bid and the midpoint: TradeAtBidMid = (Trade Price > NBBO Bid) & (Trade Price < NBBO Mid) |
| TradeAtMid | Quote Trade | integer | 0 | Sum of trade volume that occurred at mid. TradePrice = NBBO MidPoint |
| TradeAtMidAsk | Quote Trade | integer | 0 | Sum of ask volume that occurred between the mid and ask. TradeAtMidAsk = (Trade Price > NBBO Mid) & (Trade Price < NBBO Ask) |
| TradeAtAsk | Quote Trade | integer | 0 | Sum of trade volume that occurred at or above the Ask |
| TradeAtCrossO rLocked | Quote Trade | integer | 0 | Sum of trade volume for the bar when NBBO is locked or crossed. Locked is Bid = Ask Crossed is Bid > Ask |

| Volume | Trade | integer | 0 | Total number of shares traded **Excluding** FINRA/TRF reported trades, see field "FinraVolume" for FINRA trades.<br>TotalVolume = Volume + FinraVolume |
|---|---|---|---|---|
| TotalTrades | Trade | integer | 0 | Total number of trades |
| FinraVolume | Trade | integer | 0 | Number of shares traded reported by FINRA/TRF. Trades reported by FINRA are from broker-dealer internalization, dark pools, over-the-counter, etc.  FINRA trades represent volume that is hidden or not publicly available to trade |
| FinraVolume WeightPrice | Trade | decimal | Blank | FINRA Trade Volume weighted average price. Trades reported by FINRA are from broker-dealer internalization, dark pools, over-the-counter, etc.  FINRA trades represent volume that is hidden or not publicly available to trade. |
| UptickVolume | Trade | Integer | 0 | Total number of shares traded with upticks during the bar.<br>Uptick = (Trade Price > Last Trade Price) |
| DowntickVolume | Trade | Integer | 0 | Total number of shares traded with downticks during the bar.<br>Downtick = (Trade Price < Last Trade Price) |
| RepeatUptick Volume | Trade | Integer | 0 | Total number of shares where trade price is the same (repeated) and last price change was up during the bar.<br>Repeat Uptick = (Trade Price == Last Trade Price) & (Last Tick Direction == Up) |
| RepeatDowntick Volume | Trade | Integer | 0 | Total number of shares where trade price is the same (repeated) and last price change was down during the bar.<br>Repeat Downtick = (Trade Price == Last Trade Price) & (Last Tick Direction == Down) |
| UnknownVolume | Trade | Integer | 0 | When the first trade of the day takes place, the tick direction is "unknown" as there is no previous trade to compare it to. This field is the volume of the first trade after 4 AM and acts as an initiation value for the tick volume directions.<br><br>**Note:** In the future, this bar will be renamed to UnknownTickVolume |

| TradeToMidVol Weight | Quote Trade | decimal | Blank | Indicator for the bar period showing the sum difference between each trade's price and NBBO midpoint at the time of the trade weighted by volume. It returns a positive or negative number indicating buying or selling pressure.<br><br>**Note:** Blank if no Trades. FINRA reported trades are not included |
|---|---|---|---|---|
| TradeToMidVol WeightRelative | Quote Trade | decimal | Blank | Indicator for the bar period showing the sum difference between each trade's price and NBBO midpoint at the time of the trade relative to the spread and weighted by volume. It returns a positive or negative number indicating buying or selling pressure.<br><br>**Note:** Blank if no trades. FINRA reported trades are not included. |
| TimeWeightBid | Quote | decimal | Blank | Time-weighted average price of National Best Bid during the bar period |
| TimeWeightAsk | Quote | decimal | Blank | Time-weighted average price of National Best Ask during the bar period |

## Time Range

The TAQ Minute Bar datasets cover the entire trading day from the start of pre-market trading to the end of after-hours trading (EST time):

**Pre-Market Hours:** 04:00:00 to 09:29:59

**Market Hours:** 09:30:00 to 16:00:00

**Post-Market Hours:** 16:00:01 to 20:00:00

**Note:** Occasionally minute bars are extended several minutes past 20:00.

## Market Holidays and Early Closes

The stock market is closed for trading on most US holidays. For reference, algoseek publishes a list of historical holidays which is available at `s3://us-equity-market-holidays/holidays.csv` (direct download link: https://us-equity-market-holidays.s3.amazonaws.com/holidays.csv).

Markets sometimes close early at 13:00:00 on the day before holidays such as Independence Day and Thanksgiving. You can download algoseek's early close date and time list from AWS S3 storage at

`s3://us-equity-market-holidays/earlycloses.csv` (or use a direct link [us-equity-market-holidays.s3.amazonaws.com/earlycloses.csv](us-equity-market-holidays.s3.amazonaws.com/earlycloses.csv)).

## Timestamp

The event timestamp has a nanosecond resolution, and the time zone is EST. Timestamp field takes the format of HH:MM:SS.mmmuuunnn, for example, 09:31:01.723317846, where

> **HH:** Hour
>
> **MM:** Minute
>
> **SS:** Seconds
>
> **mmm:** Milliseconds
>
> **uuu:** Microseconds
>
> **nnn:** Nanoseconds

Before 2016 events were published with millisecond timestamps (HH:MM:SS.mmm format). For example, 09:32:00.321.

**Timestamps in Excel.** Excel fails when importing timestamp fields as Excel automatically tries to convert milliseconds and nanoseconds to Excel time format. When importing timestamp, you can import as Text fields instead.

## Bar Notes

**Time Bar Start Format:** One-second bar 13:03:01 is from time greater than 13:03:01 to less than 13:03:02. One-minute bar 11:04 is from time greater than 11:04 to less than 11:05.

**Empty Fields:** an empty field has no value and is "Blank." For example, FirstTradeTime and there are no trades during the bar period. The field "Volume" measuring the total number of shares traded in a bar will be "0" if there are no Trades. Look at the "Missing" column above for each field.

**No Bid/Ask/Trade OHLC:** There may not be a change in the NBBO or an actual trade during a bar timeframe. For example, there can be a bar with OHLC Bid/Ask but no Trade OHLC.

**Single Event:** For bars with only one trade, one NBBO bid or one NBBO ask then Open/High/Low/Close price, size, and time will be the same.

**VolumeWeightPrice and FinraVolumeWeightPrice:** volume-weighted price and FINRA Volume-weighted price are calculated as a dollar volume sum of all trades divided by the total number of shares traded

```
sum(Trade_Shares x Trade_Price) / sum(Trade_Shares)
```

For the "VolumeWeightPrice" column FINRA trades are excluded and only FINRA Trades are included for "FinraVolumeWeightPrice".

**TradeToMidVolWeight, TradeToMidVolWeightRelative:** volume-weighted trade to the midpoint is calculated as the following sum over all trades during the bar

```
sum(Trade_Shares x (Trade_Price – NBBOMidpoint)) /
                sum(Trade_Shares)
```

Similarly, volume-weighted relative trade to the midpoint

```
sum(Trade_Shares x (Trade_Price – NBBOMidpoint) / max(1,
            NBBOSpread)) / sum(Trade_Shares)
```

where midpoint and spread values are calculated based on the last NBBO

```
NBBOMidpoint = (NBBOBid_InPennies + NBBOAsk_InPennies) / 2
```

```
NBBOSpread = NBBOAsk_InPennies - NBBOBid_InPennies
```

If Bid == Ask, then it is assumed the midpoint of the Bid/Ask is that price. If the market is crossed (NBBO Bid > NBBO Ask), then it is not possible to know what the correct price is so the last good NBBO Bid and Ask (including the Bid == Ask case) will be used.

**TimeWeightBid, TimeWeightAsk:** time-weighted bid and ask are calculated with

```
sum(Price_{n} x (Price_{n+1}_Time - Price_{n}_Time))/Bar_Duration
```

where `Price_0` is the bar open price.

# APPENDIX A. FREQUENTLY ASKED QUESTIONS

### Why are Trade Prices often inside the Bid Price to Ask Price range?

The Low/High Bid/Ask is the low and high NBBO price for the bar range. Very often, a trade may not occur at these prices, as the price may only last a few seconds or executions are being crossed at mid-point due to hidden order types that execute at mid-point or as price improvement over current Bid/Ask.

### Why are time-based columns not properly recognized when I try importing data to Excel?

Older versions of Excel will automatically convert the TimeBarStart field into an Excel format timestamp, but this fails when TimeBarStart is HHMMSSmmm (millisecond) or HHMMSSmmmiiinnn (nanosecond). For timestamp with the nanosecond (millisecond) format, import the data using Excel "From Text" option and set the data type for column "TimeBarStart" to "Text", so Excel does not automatically try to convert it.

# APPENDIX B. BAR CALCULATIONS FROM TRADE AND QUOTE EVENTS

This section describes logic for minute bar calculations based on events from Trade and Quote dataset. Please also refer to Equity Trade and Quote Guide for more details of data fields and condition flags used.

There is a separate logic for the Standard Bars dataset and Bars with FINRA/TRF and Odd Lots Excluded.

## Standard Trade and Quote Minute Bar

### Excluded data

- Exclude any trade with Price = 0 (not applied to Trade Cancel)
- Exclude any trade with Quantity = 0
- Exclude any quote with Price = 0
- Exclude any quote with Quantity = 0

You should also exclude any event with one or more flags listed in Table 2.

**Table 2: Flags for Trade and Quote Events to be Excluded During Bar Calculations**

| Trade Events | | Quote Events | |
|---|---|---|---|
| **Bit Mask Position** | **Flags** | **Bit Mask Position** | **Flags** |
| 14 | tOutOfSequence | 3 | qClosing |
| 20 | tAveragePrice | 4 | qNewsDissemination |
| 22 | tPriceVariation | 5 | qNewsPending |
| 23 | tRule155 | 6 | qTradingRangeIndication |
| 24 | tOfficialClose | 7 | qOrderImbalance |
| 25 | tPriorReferencePrice | 13 | qResume |
| 26 | tOfficialOpen | | |

## Included data

- Include only NBBO quotes
- Include both NBBO and exchange trades
- Include Trade Cancel events only for the CancelSize field (no price or flag filter applied)

You should only include events with one or more flags listed in Table 3. If the event has any of the exclude flags enabled, it is not included. If the event does not contain any flags from the include list, it is not included in bar calculations.

**Table 3: Flags for Trade and Quote Events to be Included During Bar Calculations**

| Trade Events | | Quote Events | |
|---|---|---|---|
| **Bit Mask Position** | **Flags** | **Bit Mask Position** | **Flags** |
| 0 | tRegular | 0 | qRegular |
| 1 | tCash | 1 | qSlow |
| 2 | tNextDay | 2 | qGap |
| 5 | tIntermarketSweep | 11 | qOpeningQuote |
| 6 | tOpeningPrints | 21 | qFastTrading |
| 7 | tClosingPrints | | |
| 10 | tFormT | | |
| 13 | tExtendedHours | | |
| 21 | tCross | | |
| 29 | tTradeThroughExempt | | |
| 31 | tOddLot | | |

## Price validation

Additionally, you should filter out test quote events using the following approach:

1) For symbols with price history (last 10 trading days):

$$MinPrice = 0.05 * AveragePrice$$
$$MaxPrice = 10 * AveragePrice$$

2) For new symbols (no price history):

$$MinPrice = 0.03$$
$$MaxPrice = 19998$$

If a Quote price is lower than MinPrice or higher than MaxPrice - the event is excluded.
**Note:** we do not recommend applying price filtering for Trade events.

# No-FINRA/TRF and Odd Lots Trade and Quote Minute Bar

## Excluded data

- Exclude any trade with Price = 0 (not applied to Trade Cancel)
- Exclude any trade with Quantity = 0
- Exclude any quote with Price = 0
- Exclude any quote with Quantity = 0
- Exclude any trade or quote with Exchange = FINRA

You should also exclude any event with one or more flags listed in Table 4.

**Table 4: Flags for Trade and Quote Events to be Excluded During Bar Calculations (No-FINRA/TRF Dataset)**

| Trade Events | | Quote Events | |
|---|---|---|---|
| **Bit Mask Position** | **Flags** | **Bit Mask Position** | **Flags** |
| 14 | tOutOfSequence | 3 | qClosing |
| 20 | tAveragePrice | 4 | qNewsDissemination |
| 22 | tPriceVariation | 5 | qNewsPending |
| 23 | tRule155 | 6 | qTradingRangeIndication |
| 24 | tOfficialClose | 7 | qOrderImbalance |
| 25 | tPriorReferencePrice | 13 | qResume |
| 26 | tOfficialOpen | | |
| 31 | tOddLot | | |

## Included data

- Include only NBBO quotes
- Include both NBBO and exchange trades
- Include Trade Cancel events only for the CancelSize field (no price or flag filter applied)

You should only include events with one or more flags listed in Table 5. If the event has any of the exclude flags enabled, it is not included. If the event does not contain any flags from the include list, it is not included in bar calculations.

**Table 5: Flags for Trade and Quote Events to be Included During Bar Calculations (No-FINRA/TRF Dataset)**

| Trade Events | | Quote Events | |
|---|---|---|---|
| **Bit Mask Position** | **Flags** | **Bit Mask Position** | **Flags** |
| 0 | tRegular | 0 | qRegular |
| 1 | tCash | 1 | qSlow |
| 2 | tNextDay | 2 | qGap |
| 5 | tIntermarketSweep | 11 | qOpeningQuote |
| 6 | tOpeningPrints | 21 | qFastTrading |
| 7 | tClosingPrints | | |
| 10 | tFormT | | |
| 13 | tExtendedHours | | |
| 21 | tCross | | |
| 29 | tTradeThroughExempt | | |

## Price validation

Additionally, you should filter out test quote events using the following approach:

1) For symbols with price history (last 10 trading days):
$$MinPrice = 0.05 * AveragePrice$$
$$MaxPrice = 10 * AveragePrice$$
2) For new symbols (no price history):
$$MinPrice = 0.03$$
$$MaxPrice = 19998$$

If a Quote price is lower than MinPrice or higher than MaxPrice - the event is excluded.
**Note:** we do not recommend applying price filtering for Trade events.