Risks of Automated Trading

There are risks unique to automated trading algorithms that you should know about. A system of continuous monitoring or alerting should be setup to let you know if there is a mechanical failure, such as connectivity issues, power loss, a computer crash, or system quirk. You should also monitor for instances where your automated trading system experiences anomalies that could result in errant, missing, or duplicated orders.

Mechanical failures. The theory behind automated trading makes it seem simple: Set up the software, program the rules and watch it trade. In reality, however, automated trading is a sophisticated method of trading, yet not infallible. Alpaca initially will only support algorithms that run on your own computer, thus your trading system will reside on your computer – and not a server. What that means is that if an internet connection is lost, an order might not be sent to the market. There is also the potential for a power loss, computer crash, or some other system quirk that could stop your algorithm from running or cause an anomaly.

Monitoring. Although it would be great to turn on the computer and leave for the day / week, automated trading systems do require monitoring or an alerting system. This is due to the potential for mechanical failures, such as connectivity issues, power losses or computer crashes, and to system quirks as mentioned above. It is also possible for an automated trading system to experience anomalies that could result in errant orders, missing orders, or duplicate orders. If the system is monitored and/or has an alerting system, these events can be identified and resolved quickly.

Trading Experience. Your level of trading experience with automated trading systems is important in deciding how you should choose your overall trading strategy. Highly complex strategies with many variables make it more difficult to determine whether the trades that will execute are designed to be profitable. Starting with simple automation strategies will allow you to develop experience and learn methods of trading that work best for you.

Over-optimization. Though not specific to automated trading systems, traders who employ backtesting techniques can create systems that look great on paper and perform terribly in a live market. Over-optimization refers to excessive curve-fitting that produces a trading plan that is unreliable in live trading. It is possible, for example, to tweak a strategy to achieve exceptional results on the historical data on which it was tested. Traders sometimes incorrectly assume that a trading plan should have close to 100% profitable trades or should never experience a drawdown to be a viable plan. As such, parameters can be adjusted to create a "near perfect" plan – that completely fails as soon as it is applied to a live market.

Programming discrepancies. There could be a discrepancy between the "theoretical trades" generated by the strategy and the order entry platform component that turns them into real trades. Most traders should expect a learning curve when developing automated trading systems, and it is generally a good idea to start with small trade sizes or conduct “paper trading” while the process is being refined.

No High Frequency Trading. Alpaca’s platform is NOT a high frequency trading platform. While an automated trading strategy can sent trades to the market at a high frequency, Alpaca does not support the necessary speed of either market data flow or trade execution speed necessary for a high frequency trading program to function as intended. Automated trading strategies that have an over-reliance on the speed of market data and speed of execution will not be able to compete effectively with traders who have state of the art equipment and very short high speed connections to the market, in particular when the connection you are using to the internet is via a residential internet service provider.

Reliance on Risk-Reducing Orders or Strategies. With automated trading, substituting manual market monitoring with the placing of certain orders (e.g. ‘stop-loss’ orders or ‘stop-limit’ orders) which are intended to limit losses to certain amounts may not be effective because market conditions may make it impossible to execute such orders. At times, it is also difficult or impossible to liquidate a position without incurring substantial losses and Alpaca’s platform does not provide a readily available manual intervention process.