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| Logotipo Sozinho.jpg | **Fast Trader**  **DSA FIX Specification** |

**Versão 1.1.0**

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# Introduction

This document main objective is to provide all the necessary information for a FIX client application to properly connect to the Fast Trader Algorithmic platform and use the strategies available to trade. All the supported messages and features are listed and explained, as well as their related fields.

## About Fast Trader

Fast Trader is an Algorithmic platform for automated strategy execution developed by Plug and Trade for Brazilian brokers and its main objective is to provide fast and reliable order execution for the national exchange BM&FBovespa and its negotiation systems. The platform implemented strategies are now being available via FIX protocol.

## About the FIX protocol

The FIX (Financial Information eXchange) Protocol is a series of messaging [specifications](http://www.fixprotocol.org/specifications/) for the electronic communication of trade-related messages. It has been developed through the collaboration of banks, broker-dealers, exchanges, industry utilities and associations, institutional investors, and information technology providers from around the world. These market participants share a vision of a common, global language for the automated trading of financial instruments.

FIX is the industry-driven messaging standard that is changing the face of the global financial services sector, as firms use the protocol to transact in an electronic, transparent, cost efficient and timely manner. FIX is open and free, but it is not software. Rather, FIX is a specification around which software developers can create commercial or open-source software, as they see fit. As the market's leading trade-communications protocol, FIX is integral to many order management and trading systems. Yet, its power is unobtrusive, as users of these systems can benefit from FIX without knowing the language itself.

For further information please refer to:

<http://www.fixprotocol.org/>

# FIX Sessions

This chapter compiles the necessary information to establish a successful FIX session between the client application and the Plug and Trade Fast Trader, and so allowing the client to route strategy orders to the system.

## Version

The system only accepts FIX 4.4 because of its more suitable adhesion to the strategies needs. Nonetheless some new tags where introduced.

Request our custom FIX44.xml dictionary and replace it in your quickfix/dictionaries folder.

## Connection Type

Fast Trader DSA accepts FIX sessions of both Initiator and Acceptor type. In the latter case, client IP and port must be informed so that Fast OMS can create a FIX session to properly connect to the client.

## SenderCompID (49)

For each client application registered in Fast Trader a unique identification is granted. This ID is used to establish the FIX session and must be set to field SenderCompID <49> in the FIX standard header on every FIX message sent by the client application.

## TargetCompID (56)

It will also be given a FIX session ID for Fast OMS itself. This ID is also used to establish the FIX session and must be set to field TargetCompID <56> in the FIX standard header on every FIX message sent by the client application.

## OnBehalfOfCompID (115)

Currently not supported.

## OnBehalfOfSubID (116)

May optionally be used to receive the username of the trader that placed the order. If the trader is a broker, mandatory fields have to be sent to the Exchange, so this field becomes important and must match a user on DSA’s user database.

## SenderSubID (50) and TargetSubID (57)

Currently not supported by default. DSA may be configured to send or receive the current username / Trader ID on these fields instead of the default one, OnBehalfOfSubID (116).

DSA may also be configured to store and return the received value on these fields.

## NoHops

The NoHops field and its related fields are not accepted nor returned to the client by the current version of Fast Trader.

# Administrative FIX Messages

Administrative messages are used to manage the FIX session life cycle. These are the administrative messages used by Fast Trader:

* Logon <A>
* Logout <5>
* HeartBeat <0>
* TestRequest <1>
* ResendRequest <2>
* Reject <3>
* SequenceReset <4>

Their use strictly follows the rules defined in the FIX Protocol.

# Fix Application Messages

This chapter lists all messages used to send orders to Bovespa and BM&F and that are exchanged between Fast OMS and a client application.

The application messages are responsible for exchanging the trade information. These are the application messages supported:

* NewOrderSingle <D>
* ExecutionReport <8>
* OrderCancelRequest <F>
* OrderModificationRequest <G>
* OrderCancelReject <9>

Note that the definitions below will omit the fields corresponding to the Header and Trailer of any FIX Message. Those will be standard.

## New Algorithmic supporting Tags

To support the operation with strategies some new tags where created to reflect the functionalities needed so they will have to be included to the FIX dictionary. The proper FIX dictionary can be obtained directly from us by request. The fields are:

|  |  |  |  |
| --- | --- | --- | --- |
| **Tag** | **Name** | **Type** | **Description** |
| 20768 | CountCrossOrders | Boolean | Used to indicate that the strategy is considering cross orders for trading volume accounting. *Recommended default: N.* |
| 20769 | BidAskOnTheBook | Boolean | Indicates if the strategy will place offers on the book attempting to generate executions. (not just closing standing opportunities). *Recommended default: Y.* |
| 20770 | ForceCompletion | Boolean | Indicates if the strategy has to execute all the quantity set for the order before its end time. *Recommended default: Y.* |
| 20771 | MaxReplaces | Int | Indicates how many replaces made without managing to execute an order before sending a warning. Warning is not sent on FIX channel, and only shown on PnT FastTrader Interface. It is recommended that this field is omitted or is filled with a large value, such as 1.000. *Accepted values: 1..N* |
| 20772 | OfferInterval | Int | How many seconds between offer sendings/replaces for a specific order. *Accepted values: 0..N* |
| 20773 | ResetOrder | Boolean | Indicates if order state is to be reset upon replace. *Recommended default: Y.* |
| 20774 | IgnoredQuantity | Int | Indicates how many lots should be taken off the top of the book. *Accepted values: 0..N (Respecting RoundLot, value will be rounded otherwise)* |
| 20775 | MaxParticipationRate | Percentage | The maximum volume participation that the strategy may have from the market during the execution. *Accepted values: 0..1, where 1 corresponds to 100% participation.* |
| 20776 | MinParticipationRate | Percentage | The minimum volume participation that the strategy must have from the market during the execution. *Accepted values: 0..1, where 1 corresponds to 100% participation.* |
| 20777 | LegMaxParticipationRate | Percentage | The maximum volume participation that the strategy may have from the market during the execution of the order for the specific leg. *Accepted values: 0..1, where 1 corresponds to 100% participation.* |
| 20778 | LegIgnoredQuantity | Int | Indicates how many lots should be taken off the top of the book of the specific leg. *Accepted values: 0..N (Respecting RoundLot, value will be rounded otherwise).* |
| 20779 | LegBidAskOnTheBookDepth | Int | Indicates if the strategy will place offers on the book attempting to generate executions. (not just closing standing opportunities) for the specific leg. Some values have special behaviours:  -1 - Don’t place bid/offer, and only take this leg after the execution confirmation for other legs are received.  0 – Don’t place bid/offer  1 – Place bid/offer only if best offer  2 – Place bid/offer only if best offer or 2nd offer  3 – Place bid/offer only if best offer or up to 3rd offer  4 – Place bid/offer only if best offer or up to 4th offer. Robot won`t prevent placing of offer if it’s execution would cause an auction as it does on other depths.  *Accepted values: -1..4.* |
| 20780 | LegCashOrdQty | Float | Notional value specified for the leg. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 20781 | SpreadMethod | Int | Indicates what strategy is going to be used. *Accepted values: 0..10, as explained on each individual strategies below.* |
| 20782 | TargetSpread | Float | Indicates the value that is going to be used as a reference for the strategies to trade. *Accepted values: -N..N or 0..N, as explained in individual strategies below.* |
| 20783 | WaitLeg | Boolean | Indicates if the server should not close lost legs in pair trading automatically. *Recommended default: N.* |
| 20784 | CompensateCoefficient | Boolean | Indicates if the algo server will try to compensate any execution off the specified parameter. *Recommended default: Y.* |
| 20785 | CancelOffersOutsideDepth | Boolean | Indicates if the server is to cancel a offer if it falls behind the selected book position limit. *Recommended default: N.* |
| 20786 | BidAskOnTheBookWithMargin | Boolean | Indicates if the server is going to consider the average price needed to trade the whole lot needed in pair tradings with out of proportion quantities. *Recommended default: Y.* |
| 20787 | MaxLostLegPriceDiff | Price | Indicates the maximum price difference from the needed price that the server can roam from to close a needed leg from a multileg order. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.* |
| 20788 | StartLimit | Price | The price monitored for start gain orders. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.* |
| 20789 | StartPx | Price | The price of triggered start gain orders. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.* |
| ~~20790~~ | ~~MarketValue~~ | Float | The current market value. *Not used in current implementation.* |
| ~~20791~~ | ~~ExecutedValue~~ | Float | The current executed value of the order. *Not used in current implementation.* |
| ~~20792~~ | ~~UsedValue~~ | Float | The current used value in the order as a parameter. *Not used in current implementation.* |
| ~~20793~~ | ~~MarketVolume~~ | Float | The current total market volume for the symbol since last reset. *Not used in current implementation.* |
| ~~20794~~ | ~~IsShort~~ | Boolean | Indicates if leg is short. *Not used in current implementation.* |
| ~~20795~~ | ~~ShortQty~~ | Int | Indicates the amount needed to fill the pair. *Not used in current implementation.* |
| ~~20796~~ | ~~ShortPrice~~ | Price | Indicates the price needed to fill the áir properly. *Not used in current implementation.* |
| ~~20797~~ | ~~IsOverrun~~ | Boolean | Indicates if the order has executed a quantity bigger than specified originally. *Not used in current implementation.* |
| 20798 | LegLastQty | Int | Quantity of last leg trade. *Sent values: 0..N (Respecting RoundLot, value will be rounded otherwise)* |
| 20799 | LegLastPx | Price | Price of last leg trade. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 20800 | LegCumQty | Qty |  |
| 20801 | LegAvgPx | Price |  |
| 20802 | LegOpenQty | Qty |  |
| 20803 | LegOpenPx | Price |  |
| 20804 | MultipleOffers | Boolean | f true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order.  Default: False  **Caption in en-US:** Place mult. orders  **Caption in pt-BR:** Apregoar mult. ordens |
| 20805 | WaitLargerSide | Boolean | If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side.    **Caption in en-US:** Wait for larger lot  **Caption in pt-BR:** Esperar lotes maiores |
| 20806 | OpenPx | Price | Average price or orders open / placed at market for this order. |
| 20807 | OpenQty | Qty | Quantity of orders open / placed at market for this order. |
| 20810 | ParticipateOwnVolume | Boolean | If ‘Y’, the volume executed by the own strategy is added to calculate the market executed volume. *Recommended default: Y.* |
| 20811 | AcumulateOutOfPriceLimit | Boolean | When ‘No’ is supplied, trades with a 'worst' price (above for buying operations or below for selling operations) than the limite price are not summed to the total market volume/quantity. *Recommended default: Y.* |
| 20812 | NoParticipationRateLevels | Int | Always >= 2, two levels are always required. *Accepted values: 2..N* |
| 20813 | => ParticipationRateLevel | Float | Resulting rate if price is within the range defined. The volume selected at a certain level is used if last trade price is equal or smaller than current level and larger than the next level. Prices must be decreasing. *Accepted values: 0..1 where 1 corresponds to 100% participation.* |
| 20814 | => ParticipationPriceLevel | Price | Price for this level. Mandatory for all levels except for last one, where it should be omitted. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.* |
| 20815 | LastPriceMaxPercentVar | Percentage | Robot limits the price of sent orders to a percentage calculated over the last trade price of the traded security (The last close price is used if it is unavailable)  Values should be 0 or more. A value of 1.5 indicates 1.5 % over the reference price.  If both LastPriceMaxIncVar (20819) and LastPriceMaxPercentVar (20815) are supplied, only LastPriceMaxIncVar (20819) is kept.  **Caption in en-US:** Take px limit (% from last)  **Caption in pt-BR:** Limite p/ tomar (% últ) |
| 20816 | AskBidMaxPercentVar | Percentage | Robot limits the price of sent orders to a percentage of the bid or ask price (bid if placing a buy offer, ask if placing a sell offer)  Values should be 0 or more. A value of 1.5 indicates 1.5 % over the reference price.  **Caption in en-US:** Take px lim. (% from bid/ask)  **Caption in pt-BR:** Limite p/ tomar (% bid/ask) |
| ~~20817~~ | ~~PlacePxEstimation~~ | Price | Price at which robot will place an offer, only informed if price is calculated correctly and strategy is single leg. *Not used in current implementation.* |
| ~~20818~~ | ~~LegPlacePxEstimation~~ | Price | Price at which robot will place an offer, only informed if price is calculated correctly and strategy is multi leg. *Not used in current implementation.* |
| 20819 | LastPriceMaxIncVar | Price | Robot limits the price of sent orders to a difference calculated over the last trade price of the traded security (The last close price is used if it is unavailable).  If both LastPriceMaxIncVar (20819) and LastPriceMaxPercentVar (20815) are supplied, only LastPriceMaxIncVar (20819) is kept.  **Caption in en-US:** Take px limit ($ from last)  **Caption in pt-BR:** Limite p/ tomar ($ últ) |
| 20836 | StopTriggerSpread | Float | Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in ‘StopSendSpread’.  **Caption in en-US:** Trigger ratio / Trigger difference  **Caption in pt-BR:** Razão disp / Diferença disp |
| 20837 | StopSendSpread | Float | The new assigned coefficient if market reaches StopTriggerSpread  **Caption in en-US:** Stop ratio / Stop difference  **Caption in pt-BR:** Razão stop / Diferença stop |
| 20840 | WouldPx | Price | Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'.  The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order.  **Caption in en-US:** Would\conc. px |
| 20841 | WouldQty | Qty | Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled.  **Caption in en-US:** Would\conclusion qty |
| 20842 | WouldBestOffQty | Qty | If filled, serts the Would order as a Best Offer above the best offer and not as a Sniper, if thjis price is inside the defined Would Price.  **Caption in en-US:** Would best-offer qty  **Caption in pt-BR:** Qtd would best-offer |
| 20843 | WouldQtyReset | Boolean | If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again.  **Caption in en-US:** Reset would/concl. Qty  **Caption in pt-BR:** Reset. qtd would/concl. |
| 20844 | SpreadCloseInterval |  |  |
| 20845 | TargetRevertSpread |  |  |
| 20846 | BestOfferPxIncrement |  |  |
| 20847 | PlaceBidOnAuction |  |  |
| 20848 | ExecutedCoefficient | Float | The executed spread coefficient, as calculated by Robot  **Caption in en-US:** Executed coefficient  **Caption in pt-BR:** Coeficiente executado |
| 20849 | MarketCoefficient | Float | The current market coefficient, as calculated by Robot. This is the exact coefficient that would be needed to execute this Spread immediately.  **Caption in en-US:** Market coef  **Caption in pt-BR:** Coef merc |
| 20850 | WorkingCoefficient | Float | The working spread coefficient, as calculated by Robot.  **Caption in en-US:** Used coef  **Caption in pt-BR:** Coef usad |
| 20852 | ManualLegOpenQty | Qty | Total quantity of manual offers currently on book.  Manual offers can have it’s price modified using ‘Sent order modify’ variation of Order Cancel / Replace Request (G) or Multileg Order Cancel/Replace Request (AC) |
| 20853 | ManualLegOpenPx | Price | Average price of all manual offers currently on book. |
| 20851 | LegIsShort | Bool | Leg is missing, it has a pending execution for this Spread / Multileg Operation.  **On FastTrader:** Is sent when a leg is painted yellow on our own screen |

## Tags supported on all order creation messages

Tags below are supported on all Algorithm creation messages, NewOrderSingle <D>, NewOrderMultiLeg <AB> and OrderCancelReplaceRequest <G>.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Req.** | **Type** | **Repl** | **Remarks** |
| 150 | ExecType | Yes | char | N | If informed, specifies that an order should be placed in suspended state. Accepted values:  0 – Suspended  Supported on NewOrderSingle <D>, NewOrderMultiLeg <AB> and OrderCancelReplaceRequest <G> |
| 142 | SenderLocationID |  |  |  | The IP address of the machine of the operator originating the order. |
| 453 | NoPartyIDs | No | Int | N | Number of PartyID entries. |
| → 448 | PartyID | Cond | String | N | Party identifier/code, as defined by PartyRole (452). |
| → 447 | PartyIDSource | Cond | Int | N | Accepted values:  D – Propertary/Custom code |
| → 452 | PartyRole | Cond | Char | N | Accepted values:  5 – Investor ID – Only necessary if PnT DSA Server is matching the informed Investor ID with it’s local database |

## NewOrderSingle (D)

The NewOrderSingle (D), also known as Order, is used by the client application to send a new strategy order to Fast Trader for strategies that work in only one leg. The received order is validated and then sent to the Fast Trader Algo Server. Below we show a more detailed view of the fields and accepted values for each strategy support with this type of message.

Fields that may be replaced/changed on a subsequent OrderCancelReplaceRequest (G) are market with ‘Y’ on the column ‘Repl’. All strategy fields must be included on the replace request, even the fixed ones.

### VWAP (1)

To create VWAP orders the following fields take part in the message:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Type** | **Repl** (Replace) | **Remarks** |
| 35 | MsgType | Yes | String | - | NewOrderSingle (D) |
| 847 | TargetStrategy | Yes | Int | N | The Strategy to be used:  1 - VWAP |
| 1 | Account | Yes | String | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | String | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | String | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | Int | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 40 | OrdType | Yes | Int | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Price (Float) | Y | Price per share or contract. Required when order type is Limit, should not be sent if OrderType is Market. Indicates the maximum or minimum price the algo can execute orders in. If market is beyond the specified limit It does not send offers to the exchange waiting for a good price. *Accepted values: 0..N, respecting Security`s MinPriceIncrement.* |
| 54 | Side | Yes | char | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | String | N | The symbol of the traded instrument in B3 Exchange’s Symbol format. As in PETR4, VALE3, BOVA11, INDM22, DOLM22, SLCM22. |
| 207 | Security  Exchange | No | String | N | Market used to help identify a security. |
| 38 | OrderQty | Conditional | Qty (Float) | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Qty (Float) | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* | |
| 210 | MaxShow | No | Qty (Float) | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* | |
| 59 | TimeInForce | No | char | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | UTCTimestamp | Y | Date and time when order was created by client. UTC format. |
| 126 | ExpireTime | Conditional | UTCTimestamp | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 168 | EffectiveTime | No | UTCTimestamp | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 847 | TargetStrategy | Yes | Int | N | The Strategy to be used:  1 – VWAP |
| 58 | Text | No | String | Y | Free text, will be shown on ticket for Algorithm supervisor but will not be returned on ExecutionReport as this field is used for other purposes. |
| 20768 | CountCross  Orders | No | Boolean | Y | If true, cross orders are added to calculate total market volume. Defaults to False.  **en-US name:** Sum cross trades |
| 20811 | AcumulateOut  OfPriceLimit | No | Boolean | Y | When true, trades with a 'worst' price (above for buying operations or below for selling operations) than the limit price are not summed to the total market volume/quantity. Defaults to True  **en-US name:** Sum trades out of $ lim |
| 20769 | BidAskOn  TheBook | No | Boolean | Y | Defines if the strategy should place a bid or ask or take/trade when price conditions are met. Placing bid/ask is specially recommended for less liquid symbols. (Optional). Defaults to True.  **en-US name:** Place bid/ask |
| 20770 | Force  Completion | No | Boolean | Y | When active, all the specified quantity will execute, even if the selected strategy does not have favorable market conditions during its configured interval. On the other hand, this option is bound to the configured 'Price limit'. That is, if 'Force execution' is on and a 'Price limit' is set, the specified quantity will not execute if it violates the Price Limit. Defaults to True.  **en-US name:** Force execution |
| 20771 | MaxReplaces | No | int | Y | Maximum number of replacements for each execution. If this value is exceeded, a warning is shown to the user. Defaults to 100.  **en-US name:** Replacement alert |
| 20772 | OfferInterval | No | Float | Y | Interval in seconds between replaces of places offers. The configured interval is waited to reposition the offer on the new top of book. If the order is taken, it is replaced immediately, ignoring any remaining time. If the strategy’s period passes and the strategy becomes late, Robot will take an existing offer from the market, ignoring any configured interval.  Configuring this value for 5 or more seconds is recommended to avoid replacements in excess of sent orders. If the interval configured is too short, resulting in a calculated quantity that is below the minimum round lot, Robot will place a bid/ask or take the round lot quantity in factors of this interval. On the T-WAP strategy, Robot will always place a bid/ask with the minimum round lot size. For an example: An order with total quantity 100.00 configured to execute in 125 minutes with an interval of 5 seconds: 125 \* 60 / 5 results in 1.500 periods. As 100.000 / 1.500 = 66,66, which is less than the round lot of 100, Robot will replace the places bid/ask in intervals alternating from 5 s and 10 s.  **en-US name:** Interval (s) |
| 20774 | IgnoredQuantity | No | Qty (Float) | Y | This quantity is ignored the book when calculating the bid/ask placing price. Useful to avoid that Robot's price is manipulated by other Robots. Defaults to 0.  **en-US name:** Ignored qty. |
| 20775 | MaxParticipation  Rate | No | Float | Y | Maximum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask.  Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate.  **en-US name:** Max. % (lot qty) |
| 20776 | MinParticipation  Rate | No | Float | Y | Minimum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask.  Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MaxParticipationRate.  **en-US name:** Min. % (lot qty) |
| 20810 | ParticipateOwn  Volume | No | Boolean | Y | If checked, the volume executed by the own strategy is added to calculate the market executed volume. Defaults to true.  **en-US name:** Participate own volume |
| 20811 | AcumulateOut  OfPriceLimit | No | Boolean | Y | Robot limits the price of sent orders to a percentage calculated over the last trade price of the traded security (The last close price is used if it is unavailable). Accepted values: 0 or greater.  **en-US name:** Take px limit (% from last) |
| 20815 | LastPriceMax  PercentVar | No | Percentage | Y | Accepted values: 0 or greater |
| 20816 | AskBidMax  PercentVar | No | Percentage | Y | Robot limits the price of sent orders to a price difference calculated over the last trade price of the traded security (The last close price is used if last price is unavailable). Accepted values: Any, above or below 0. (Optional).  **en-US name:** Take px limit ($ from last) |
| 20819 | LastPriceMax  IncVar | No | Price | Y | If true, cross orders are added to calculate total market volume. Defaults to False.  **en-US name:** Sum cross trades |
| 20840 | WouldPx | No | Price | Y | Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'.  The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order.  **Caption in en-US:** Would\conc. px |
| 20841 | WouldQty | No | Qty | Y | Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled.  **Caption in en-US:** Would\conclusion qty |
| 20842 | WouldBestOffQty | No | Qty | Y | If filled, serts the Would order as a Best Offer above the best offer and not as a Sniper, if thjis price is inside the defined Would Price.  **Caption in en-US:** Would best-offer qty  **Caption in pt-BR:** Qtd would best-offer |
| 20843 | WouldQtyReset | No | Boolean | Y | If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again.  **Caption in en-US:** Reset would/concl. Qty  **Caption in pt-BR:** Reset. qtd would/concl. |
| 5149 | UserMemo | No | String | Y | If supplied, is copied on orders sent to Exchange on field 5149.  **Caption in en-US:** Sent to Memo (5149)  **Caption in pt-BR:** Env p/ Memo (5149) |

Field added to FIX specification

**Message example:**

8=FIX.4.4|9=151|35=D|52=20130715-12:40:45.324|1=10|11=20130715094030|21=4|38=1000|40=2|44=30|54=2|55=PETR4|59=0|60=20130715-12:40:458|847=1|116=plugntrade|5149=Teste memo|20770=Y

8=FIX.4.4|9=151|35=G|52=20130715-12:40:45.324|1=10|11=a|21=4|38=1000|40=2|44=30|54=2|55=PETR4|59=0|60=20130715-12:40:458|847=1|116=plugntrade|5149=Teste memo 2|20770=Y|37=dsa.137|41=20130715094030

BeginString=FIX.4.4 BodyLength=151 MsgType=NewOrderSingle SendingTime=2013-07-15 12:40:45.324 Account=10 ClOrdID=20130715094030 HandlInst=4 OrderQty=1000 OrdType=Limit Price=30 Side=Sell Symbol=PETR4 TimeInForce=Day TransactTime=2013-07-15 12:40:45.000 TargetStrategy=1 OnBehalfOfSubID=plugntrade 5149=Teste memo 20770=Y

BeginString=FIX.4.4 BodyLength=151 MsgType=OrderCancelReplaceRequest SendingTime=2013-07-15 12:40:45.324 Account=10 ClOrdID=a HandlInst=4 OrderQty=1000 OrdType=Limit Price=30 Side=Sell Symbol=PETR4 TimeInForce=Day TransactTime=2013-07-15 12:40:45.000 TargetStrategy=1 OnBehalfOfSubID=plugntrade 5149=Teste memo 20770=Y OrderID=dsa.137 OrigClOrdID=20130715094030

### TWAP (1000)

To create VWAP orders the following fields take part in the message:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Type** | **Repl** | **Remarks** |
| 847 | TargetStrategy | Yes | UTCTimestamp | N | The Strategy to be used:  1000 – TWAP |
| 1 | Account | Yes | String | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | String | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | String | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | Int | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 40 | OrdType | Yes | Int | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Price (Float) | Y | Price per share or contract. Required when order type is Limit, should not be sent if OrderType is Market. Indicates the maximum or minimum price the algo can execute orders in. If market is beyond the specified limit It does not send offers to the exchange waiting for a good price. |
| 54 | Side | Yes | Int | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | String | N | The symbol of the traded instrument in B3 Exchange’s Symbol format. As in PETR4, VALE3, BOVA11, INDM22, DOLM22, SLCM22. |
| 207 | Security  Exchange | No | String | N | Market used to help identify a security. |
| 38 | OrderQty | Conditional | Qty (Float) | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Qty (Float) | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 210 | MaxShow | No | Qty (Float) | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 59 | TimeInForce | No | char | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | String | Y | Date and time when order was created by client. UTC format. |
| 168 | EffectiveTime | No | UTCTimestamp | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 126 | ExpireTime | Conditional | char | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 20768 | CountCrossOrders | No | Boolean | Y | If true, cross orders are added to calculate total market volume. Defaults to False.  **en-US name:** Sum cross trades |
| 20811 | AcumulateOut  OfPriceLimit | No | Int | Y | When true, trades with a 'worst' price (above for buying operations or below for selling operations) than the limit price are not summed to the total market volume/quantity. Defaults to True  **en-US name:** Ignore trades out of $ lim |
| 20769 | BidAskOnTheBook | No | String | Y | Defines if the strategy should place a bid or ask or take/trade when price conditions are met. Placing bid/ask is specially recommended for less liquid symbols. (Optional). Defaults to True.  **en-US name:** Place bid/ask |
| 20770 | ForceCompletion | No | Boolean | Y | When active, all the specified quantity will execute, even if the selected strategy does not have favorable market conditions during its configured interval. On the other hand, this option is bound to the configured 'Price limit'. That is, if 'Force execution' is on and a 'Price limit' is set, the specified quantity will not execute if it violates the Price Limit. Defaults to True.  **en-US name:** Force execution |
| 20771 | MaxReplaces | No | Boolean | Y | Maximum number of replacements for each execution. If this value is exceeded, a warning is shown to the user. Defaults to 100.  **en-US name:** Replacement alert |
| 20772 | OfferInterval | No | Boolean | Y | Interval in seconds between replaces of places offers. The configured interval is waited to reposition the offer on the new top of book. If the order is taken, it is replaced immediately, ignoring any remaining time. If the strategy’s period passes and the strategy becomes late, Robot will take an existing offer from the market, ignoring any configured interval.  Configuring this value for 5 or more seconds is recommended to avoid replacements in excess of sent orders. If the interval configured is too short, resulting in a calculated quantity that is below the minimum round lot, Robot will place a bid/ask or take the round lot quantity in factors of this interval. On the T-WAP strategy, Robot will always place a bid/ask with the minimum round lot size. For an example: An order with total quantity 100.00 configured to execute in 125 minutes with an interval of 5 seconds: 125 \* 60 / 5 results in 1.500 periods. As 100.000 / 1.500 = 66,66, which is less than the round lot of 100, Robot will replace the places bid/ask in intervals alternating from 5 s and 10 s.  **en-US name:** Interval (s) |
| 20774 | IgnoredQuantity | No | Boolean | Y | This quantity is ignored the book when calculating the bid/ask placing price. Useful to avoid that Robot's price is manipulated by other Robots. Defaults to 0.  **en-US name:** Ignored qty. |
| 20775 | MaxParticipationRate | No | int | Y | Maximum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask.  Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate.  **en-US name:** Max. % (lot qty) |
| 20776 | MinParticipationRate | No | Float | Y | Minimum accepted participation limits, according to quantity of configured symbol traded on market. Avoid using values that are too near for minimum and maximum percentages, as this will make Robot miss price opportunities and make it more difficult for it to place bid/ask.  Default: Empty. Accepts values between 0.00 and 1.00. Must be bigger than MaxParticipationRate.  **en-US name:** Min. % (lot qty) |
| 20810 | Participate  OwnVolume | No | Qty (Float) | Y | If checked, the volume executed by the own strategy is added to calculate the market executed volume. Defaults to true.  **en-US name:** Participate own volume |
| 20815 | LastPriceMax  PercentVar | No | Float | Y | Robot limits the price of sent orders to a percentage calculated over the last trade price of the traded security (The last close price is used if it is unavailable). Accepted values: 0 or greater.  **en-US name:** Take px limit (% from last) |
| 20816 | AskBidMax  PercentVar | No | Float | Y | Accepted values: 0 or greater |
| 20819 | LastPriceMaxIncVar | No | Price | Y | Robot limits the price of sent orders to a price difference calculated over the last trade price of the traded security (The last close price is used if last price is unavailable). Accepted values: Any, above or below 0. (Optional).  **en-US name:** Take px limit ($ from last) |
| 20840 | WouldPx | No | Price | Y | Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'.  The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order.  **Caption in en-US:** Would\conc. px |
| 20841 | WouldQty | No | Qty | Y | Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled.  **Caption in en-US:** Would\conclusion qty |
| 20842 | WouldBestOffQty | No | Qty | Y | If filled, serts the Would order as a Best Offer above the best offer and not as a Sniper, if thjis price is inside the defined Would Price.  **Caption in en-US:** Would best-offer qty  **Caption in pt-BR:** Qtd would best-offer |
| 20843 | WouldQtyReset | No | Boolean | Y | If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again.  **Caption in en-US:** Reset would/concl. Qty  **Caption in pt-BR:** Reset. qtd would/concl. |

Field Added to FIX specification

### Volume Participation (2)

To create Volume Participation orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Y | Price per share or contract. Required when order type is Limit, should not be sent if OrderType is Market. Indicates the maximum or minimum price the algo can execute orders in. If market is beyond the specified limit It does not send offers to the exchange waiting for a good price. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 152 | CashOrdQty | Conditional | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  2 – Volume Participation |
| 20768 | CountCrossOrders | No | Y | Defaults to False |
| 20769 | BidAskOnTheBook | No | Y | Defaults to True |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20774 | IgnoredQuantity | No | Y | Defaults to 0 |
| 20775 | MaxParticipationRate | Yes | Y | Default: 0. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate |
| 20776 | MinParticipationRate | Yes | Y | Default: 0. Accepts values between 0.00 and 1.00. Must be smaller than MaxParticipationRate |
| 20810 | ParticipateOwnVolume | No | Y | If checked, the volume executed by the own strategy is added to calculate the market executed volume .  Defaults to true.  pt-BR name: Participar próp. volume  en-US name: Iceberg qty (exchange) |
| 20811 | AcumulateOutOfPriceLimit | No | Y | Defaults to true. |
| 20815 | LastPriceMaxPercentVar | No | Y | Accepted values: 0 or greater |
| 20816 | AskBidMaxPercentVar | No | Y | Accepted values: 0 or greater |
| 20819 | LastPriceMaxIncVar | No | Y | Accepted values: Any |
| ~~20772~~ | ~~OfferInterval~~ | ~~No~~ | ~~Y~~ | ~~Never should be sent to a Volume Participation~~ |
| 20840 | WouldPx | No | Y | Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'.  The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order.  **Caption in en-US:** Would\conc. px |
| 20841 | WouldQty | No | Y | Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled.  **Caption in en-US:** Would\conclusion qty |
| 20843 | WouldQtyReset | No | Y | If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again.  **Caption in en-US:** Reset would/concl. Qty  **Caption in pt-BR:** Reset. qtd would/concl. |

Field Added to FIX specification

**Message example**

8=FIX.4.49=17435=D34=6749=TESTER152=20130715-12:52:29.06556=PNT\_DSA1=35411=2013071509520621=438=100040=244=2854=155=PETR459=060=20130715-12:52:29847=220775=0.1820776=0.1210=029

BeginString=FIX.4.4 BodyLength=174 MsgType=NewOrderSingle MsgSeqNum=67 SenderCompID=TESTER1 SendingTime=15/07/2013 12:52:29 TargetCompID=PNT\_DSA Account=354 ClOrdID=20130715095206 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=28 Side=Buy Symbol=PETR4 TimeInForce=Day TransactTime=15/07/2013 12:52:29 TargetStrategy=2 MaxParticipationRate=0.18 MinParticipationRate=0.12 CheckSum=29

### Sniper (1011)

To create Volume Sniper orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit |
| 44 | Price | Yes | Y | Price per share or contract. The Algo will monitor the market and only send orders when price limit specified is available for trade. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 135 | OfferSize | No | Y | Maximum number of shares the algo server will send to the exchange at a time. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1011 – Sniper |
| 20774 | IgnoredQuantity | No | Y | Defaults to 0 |
| 20815 | LastPriceMaxPercentVar | No | Y | Accepted values: 0 or greater |
| 20816 | AskBidMaxPercentVar | No | Y | Accepted values: 0 or greater |
| 20819 | LastPriceMaxIncVar | No | Y | Accepted values: Any |

Field Added to FIX specification

### Best-Offer (1009)

To create Best-Offer orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Y | Price per share or contract. Required if OrdType is 2 (limit). The Algo will monitor the market and won´t go beyond the set price. In those cases it will keep its offer at the price limit specified. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | Y | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | Y | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 135 | OfferSize | Yes | Y | Maximum number of shares the algo server will send to the exchange at a time. Mandatory in Best Offer Strategy. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1009 – Best Offer |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20772 | OfferInterval | No | Y | If not supplied, defaults to 5. Value is in seconds and can range from 0 to N. Passing 0 may lead to an excess of replacements, which could be taxed by BM&F Bovespa exchange. With 0 configured, all top of book price changes will generate a new order/replace by the algo – Given the size of the offer is bigger than “Ignored Quantity” field. |
| 20774 | IgnoredQuantity | No | Y | Defaults to 0. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 20846 | BestOfferPxIncrement | No | Y | The difference between the placed order and the top best offer on the book on the same side of this operation. In buy tickets, this difference will be added to the bid / best buy price, and in sell tickets, this difference will be subtracted from the ask / best sell price. The difference may be set to 0, which will cause the Robot to place it’s order alongside the best buy bid, or to a negative value, which will make it place orders behind the best sell offer.  **Caption in en-US:** Pr. increment (best offer)  **Caption in pt-BR:** Pr. incremento (best offer) |

Field Added to FIX specification

**Message example:**

8=FIX.4.49=16235=D34=2849=TESTER152=20130715-12:35:46.87856=PNT\_DSA1=1011=2013071509264821=438=100040=244=3054=155=PETR459=060=20130715-12:35:46135=500847=100910=221

BeginString=FIX.4.4 BodyLength=162 MsgType=NewOrderSingle MsgSeqNum=28 SenderCompID=TESTER1 SendingTime=15/07/2013 12:35:46 TargetCompID=PNT\_DSA Account=10 ClOrdID=20130715092648 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=30 Side=Buy Symbol=PETR4 TimeInForce=Day TransactTime=15/07/2013 12:35:46 OfferSize=500 TargetStrategy=1009 CheckSum=221

### Best-Offer/Sniper (2009)

To create Best-Offer/Sniper orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  2009 – Best Offer / Sniper |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Y | Price per share or contract or Best Offer sub-strategy. Required if OrdType is 2 (limit). The Algo will monitor the market and won´t go beyond the set price. In those cases it will keep its offer at the price limit specified. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 640 | Price2 | Yes | Y | Price per share or contract of Sniper sub-strategy. Indicates the price that will be monitored in the market. Will send offers in that price if an offer shows up at the market in that value. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | Y | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 135 | OfferSize | No | Y | Maximum number of shares the algo server will send to the exchange at a time. Acts on the Best Offer side of the algo. For the Sniper point of view the algo will execute as much as possible in one order. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Also applies to the Best offer side of the strategy. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20772 | OfferInterval | No | Y | If not supplied, defaults to 5. Value is in seconds and can range from 0 to N. Passing 0 may lead to an excess of replacements, which could be taxed by BM&F Bovespa exchange. With 0 configured, all top of book price changes will generate a new order/replace by the algo – Given the size of the offer is bigger than “Ignored Quantity” field. |
| 20774 | IgnoredQuantity | No | Y | Defaults to 0. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 20846 | BestOfferPxIncrement | No | Y | The difference between the placed order and the top best offer on the book on the same side of this operation. In buy tickets, this difference will be added to the bid / best buy price, and in sell tickets, this difference will be subtracted from the ask / best sell price. The difference may be set to 0, which will cause the Robot to place it’s order alongside the best buy bid, or to a negative value, which will make it place orders behind the best sell offer.  **Caption in en-US:** Pr. increment (best offer)  **Caption in pt-BR:** Pr. incremento (best offer) |

Field Added to FIX specification

### Stop Loss / Start Gain (1014)

To create Stop Loss / Start Gain orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1013 – Stop Loss / Start Gain |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | Y | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| ~~432~~ | ~~ExpireDate~~ | No | N | Not currently supported. Strategy will execute for multiple days if a different final date is supplied on ExpireTime (126) field, in association with the desired expiration time. |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Also applies to the Best offer side of the strategy. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.*  pt-BR name: Considerar diretos  en-US name: Iceberg qty (exchange) |
| 20828 | PriceStopLoss | Conditional | Y | Trigger price of the stop order. In sell operations, a sell order (stop) will be sent if the last trade price is equal or lower than this value. In buy operations, it will be the opposite. (Optional if PriceStartGain / 'Start gain trigger ($)' is informed.)  en-US name: Stop loss trigger ($)  pt-BR name: Disparo do stop loss ($) |
| 20829 | PriceSendOrderLoss | Conditional | Y | Price of the order sent if stop loss is triggered. (Mandatory if PriceStopLoss / 'Stop loss trigger ($)' is informed.)  en-US name: Stop loss limit ($)  pt-BR name: Limite do stop loss ($) |
| 20830 | PriceStartGain | Conditional | Y | Trigger price of start gain orders. In sell operations, a (start gain) sell order will be sent if a trade occurs at a price equal or above this value. On buy operations, the opposite occurs. (Optional if 'Stop loss trigger ($)' is informed.)  en-US name: Start gain trigger ($)  pt-BR name: Disparo do start gain (R$) |
| 20831 | PriceSendOrderGain | Conditional | Y | Limit price of the order that will be sent when the start gain is triggered. (Mandatory if PriceStartGain / 'Start gain trigger ($)' is informed.)  en-US name: Start gain limit ($)  pt-BR name: Limite do start gain ($) |
| 20832 | PriceInitOrderLossInc | Conditional | Y | Starting stop loss price. *(Optional, can’t be combined with PriceStartGain / ‘Start gain trigger ($)’.)*  en-US name: Trailling stop $ increment  pt-BR name: Inicio stop móvel ($) |
| 20833 | OrderLossIncMoney | Conditional | Y | Price to increment on the parameters of the stop loss. In a buy operation, if a trade price happens below this value, all stop parameters are subtracted by this value. In a sell order, the opposite will happen. (Mandatory if PriceInitOrderLossInc / ‘Inicio stop móvel ($)’)  en-US name: Trailling stop $ increment  pt-BR name: Incremento $ stop móvel |
| 20834 | OrderLossIncPerc | Conditional | Y | Price to increment on the parameters of the stop loss. In a buy operation, if a trade price happens below this value, all stop parameters are decreased by this percentage. In a sell order, the opposite will happen. (Mandatory if PriceInitOrderLossInc / ‘Inicio stop móvel ($)’)  en-US name: Trailling stop % increment  pt-BR name: Incremento % stop móvel |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20774 | IgnoredQuantity | No | Y | Defaults to 0. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 20768 | CountCrossOrders | No | Y | If checked, cross orders are added to calculate total market volume. Defaults to False.  en-US name: Sum cross trades  pt-BR name: Considerar diretos |

Field Added to FIX specification

**Message example:**

**Today Order with explicit ExpireTime (126):**

9=355|35=D|52=20190820-21:59:55.383|1=1382|11=190820185952cbdde|21=4|22=8|38=200|40=1|44=21.99|54=2|55=PETR4|59=6|60=20190820-18:59:54.649|116=hb|126=20190822-21:00:00.000|207=BVMF|581=39|847=1014|20828=22|20829=21.99|20832=22|20834=1|453=4|448=BVMF|447=D|452=54|448=735|447=D|452=7|448=|447=D|452=36|448=1382|447=D|452=5|10=090

**Today Order with no ExpireTime (126):**

9=355|35=D|52=20190820-21:59:55.383|1=1382|11=190820185952cbdde|21=4|22=8|38=200|40=1|44=21.99|54=2|55=PETR4|59=6|60=20190820-18:59:54.649|116=hb|207=BVMF|581=39|847=1014|20828=22|20829=21.99|20832=22|20834=1|453=4|448=BVMF|447=D|452=54|448=735|447=D|452=7|448=|447=D|452=36|448=1382|447=D|452=5|10=090

**Multiday Order with explicit ExpireTime (126) and ExpireDate (432):**

8=FIX.4.4 | 9=355 | 35=D | 52=20190820-21:59:55.383 | 1=1382 | 11=190820185952cbdde | 21=4 | 22=8 | 38=200 | 40=1 | 44=21.99 | 54=2 | 55=PETR4 | 59=6 | 60=20190820-18:59:54.649 | 116=hb | 126=20190822-21:00:00.000 | 207=BVMF | 432=20190822 | 581=39 | 847=1014 | 20828=22 | 20829=21.99 | 20832=22 | 20834=1 | 453=4 | 448=BVMF | 447=D | 452=54 | 448=735 | 447=D | 452=7 | 448= | 447=D | 452=36 | 448=1382 | 447=D | 452=5 | 10=090

BeginString=FIX.4.4 BodyLength=355 MsgType=NewOrderSingle MsgSeqNum=3409 SenderCompID=TESTER SendingTime=2019-08-20 21:59:55.383 TargetCompID=PNT Account=1382 ClOrdID=190820185952cbdde HandlInst=4 SecurityIDSource=ExchangeSymbol OrderQty=200 OrdType=Market Price=21.99 Side=Sell Symbol=PETR4 TimeInForce=GoodTillDate TransactTime=2019-08-20 18:59:54.649 OnBehalfOfSubID=hb ExpireTime=2019-08-22 21:00:00.000 SecurityExchange=BVMF ExpireDate=20190822 581=39 TargetStrategy=1014 20828=22 20829=21.99 20832=22 20834=1 NoPartyIDs=4 PartyID=BVMF PartyIDSource=Proprietary PartyRole=54 PartyID=735 PartyIDSource=Proprietary PartyRole=EnteringFirm PartyID= PartyIDSource=Proprietary PartyRole=EnteringTrader PartyID=1382 PartyIDSource=Proprietary PartyRole=InvestorID CheckSum=90

**Multiday Order with no ExpireTime (126) and with ExpireDate (432):**

8=FIX.4.4 | 9=355 | 35=D | 52=20190820-21:59:55.383 | 1=1382 | 11=190820185952cbdde | 21=4 | 22=8 | 38=200 | 40=1 | 44=21.99 | 54=2 | 55=PETR4 | 59=6 | 60=20190820-18:59:54.649 | 116=hb | 126=20190822-21:00:00.000 | 207=BVMF | 432=20190822 | 581=39 | 847=1014 | 20828=22 | 20829=21.99 | 20832=22 | 20834=1 | 453=4 | 448=BVMF | 447=D | 452=54 | 448=735 | 447=D | 452=7 | 448= | 447=D | 452=36 | 448=1382 | 447=D | 452=5 | 10=090

BeginString=FIX.4.4 BodyLength=355 MsgType=NewOrderSingle SendingTime=2019-08-20 21:59:55.383 Account=1382 ClOrdID=190820185952cbdde HandlInst=4 SecurityIDSource=ExchangeSymbol OrderQty=200 OrdType=Market Price=21,99 Side=Sell Symbol=PETR4 TimeInForce=GoodTillDate TransactTime=2019-08-20 18:59:54.649 OnBehalfOfSubID=hb SecurityExchange=BVMF ExpireDate=20190822 581=39 TargetStrategy=1014 20828=22 20829=21.99 20832=22 20834=1 NoPartyIDs=4 PartyID=BVMF PartyIDSource=Proprietary PartyRole=54 PartyID=735 PartyIDSource=Proprietary PartyRole=EnteringFirm PartyID= PartyIDSource=Proprietary PartyRole=EnteringTrader PartyID=1382 PartyIDSource=Proprietary PartyRole=InvestorID CheckSum=90

### Shortfall (1013)

To create Shortfall orders the following fields take part in the message:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Type** | **Repl** | **Remarks** |
| 35 | MsgType | Yes | String | N | NewOrderSingle (D) |
| 847 | TargetStrategy | Yes | int | N | 1013 - Shortfall |
| 1 | Account | Yes | String | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | String | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | String | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | int | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Qty (Float) | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | int | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | ~~Price~~ | Not allowed | Price (Float) | Y | Do not send this field on this strategy. Send only the price ranges on ParticipationRateLevel |
| 54 | Side | Yes | int | Y | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | String | N | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | String | N | Market used to help identify a security. |
| 59 | TimeInForce | No | int | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | UTCTimestamp | Y | Date and time when order was created by client. UTC format. |
| 126 | ExpireTime | Conditional | UTCTimestamp | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 152 | CashOrdQty | Conditional | Qty (Float) | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | UTCTimestamp | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 847 | TargetStrategy | Yes | int | N | The Strategy to be used:  1013 – Shortfall |
| 20771 | MaxReplaces | No | int | Y | Defaults to 100 |
| 20772 | OfferInterval | No | int | Y | If not supplied, defaults to 5. Value is in seconds and can range from 0 to N. Passing 0 may lead to an excess of replacements, which could be taxed by BM&F Bovespa exchange. With 0 configured, all top of book price changes will generate a new order/replace by the algo – Given the size of the offer is bigger than “Ignored Quantity” field. |
| 20774 | IgnoredQuantity | No | Qty (Float) | Y | Defaults to 0 |
| 20768 | CountCrossOrders | No | Boolean | Y | Defaults to False |
| 20810 | ParticipateOwnVolume | No | Boolean | Y | Defaults to True |
| 20811 | AcumulateOutOfPriceLimit | No | Boolean | Y | When ‘No’ is supplied, trades with a 'worst' price (above for buying operations or below for selling operations) than the limite price are not summed to the total market volume/quantity. |
| 20815 | LastPriceMaxPercentVar | No | Percentage | Y | Accepted values: 0 or greater |
| 20816 | AskBidMaxPercentVar | No | Percentage | Y | Accepted values: 0 or greater |
| 20819 | LastPriceMaxIncVar | No | Price | Y | Accepted values: Any |
| 20812 | NoParticipationRateLevels | Yes | int | Y | Always >= 2, two levels are always required. |
| 20813 | => ParticipationRateLevel | Yes | Float | Y | Resulting participation rate if price is within the range defined. The volume selected at a certain level is used if last trade price is equal or smaller than current level and larger than the next level. Prices must be decreasing. Participation is always more than 0 and less than 1. A participation of 10% should be represented as 0.1. |
| 20814 | => ParticipationPriceLevel | Yes, unless last level | Price (Float) | Y | Price for this level. |

Field Added to FIX specification

**Message example:**

Two participation levels, notice that we have two percentagens and a single price level

8=FIX.4.4|9=162|35=D|34=28|49=TESTER1|52=20130715-12:35:46.878|56=PNT\_DSA|1=10|11=20130715092648|21=4|38=1000|40=2|44=30|54=1|55=PETR4|59=0|60=20130715-12:35:46|135=500|847=1013| 20812=2| 20813=20|20814=22.35 | 20813=30 |10=221

BeginString=FIX.4.4 BodyLength=162 MsgType=NewOrderSingle MsgSeqNum=28 SenderCompID=TESTER1 SendingTime=15/07/2013 12:35:46 TargetCompID=PNT\_DSA Account=10 ClOrdID=20130715092648 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=30 Side=Buy Symbol=PETR4 TimeInForce=Day TransactTime=15/07/2013 12:35:46 OfferSize=500 TargetStrategy=1013 NoParticipationRateLevels=2 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 CheckSum=221

Three participation levels, notice that we have three percentagens and two price levels

8=FIX.4.4|9=162|35=D|34=28|49=TESTER1|52=20130715-12:35:46.878|56=PNT\_DSA|1=10|11=20130715092648|21=4|38=1000|40=2|44=30|54=1|55=PETR4|59=0|60=20130715-12:35:46|135=500|847=1013| 20812=3| 20813=20|20814=23.45 | 20813=30|20814=22.35 | 20813=20 |10=221

BeginString=FIX.4.4 BodyLength=162 MsgType=NewOrderSingle MsgSeqNum=28 SenderCompID=TESTER1 SendingTime=15/07/2013 12:35:46 TargetCompID=PNT\_DSA Account=10 ClOrdID=20130715092648 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=30 Side=Buy Symbol=PETR4 TimeInForce=Day TransactTime=15/07/2013 12:35:46 OfferSize=500 TargetStrategy=1013 NoParticipationRateLevels=3 ParticipationRateLevel=20 ParticipationPriceLevel=23.45 ParticipationRateLevel=30 ParticipationPriceLevel=22.35 ParticipationRateLevel=20 CheckSum=221

**Examples of valid/invalid NoParticipationRateLevels (20812) repeatings groups:**

|  |  |
| --- | --- |
| NoParticipationRateLevels=2 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 | Valid |
| NoParticipationRateLevels=3 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 ParticipationPriceLevel=21.35 ParticipationRateLevel=40 | Valid |
| NoParticipationRateLevels=**1** ParticipationRateLevel=20 ParticipationPriceLevel=22.35 | Invalid, must have 2 items. |
| NoParticipationRateLevels=2 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 ParticipationPriceLevel=**21.35** | Invalid, last level must not have a Price, only a Rate. |
| NoParticipationRateLevels=3 ParticipationRateLevel=20 ParticipationPriceLevel=22.35 ParticipationRateLevel=30 ParticipationPriceLevel=**23.35** ParticipationRateLevel=40 | Invalid, prices must always decrease. |

### Iceberg (1026)

To create Iceberg orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 - Limit |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 135 | OfferSize | No | Y | Maximum number of shares the algo server will send to the exchange at a time. This is the Robot managed Iceberg quantity. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.*  **Caption in en-US:** Iceberg qty (Robot)  **Caption in pt-BR:** Lote ap. robô (Iceberg) |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. This is the Exchange managed Iceberg quantity. To use a value managed by robot, see OfferSize (135) field. *Accepted values: 5..N \* RoundLot (500, 600, 700... for BVSP Equities*), respecting Security’s RoundLot.Minimum of 5x RoundLots is a limitation from the exchange. Orders will be accepted by it and MaxShow effect will be ignored ifj it is not respected. *Other values will be rounded.*  **Caption in en-US:** Iceberg qty (exchange)  **Caption in pt-BR:** Lote ap. bolsa (Iceberg) |
| 44 | Price | Conditional | Y | Price per share or contract. Required if OrdType is 2 (limit). The Algo will monitor the market and won´t go beyond the set price. In those cases, it will keep its offer at the price limit specified. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. |
| 152 | CashOrdQty | Conditional | Y | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1026 - Iceberg |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20772 | OfferInterval | No | Y | Defaults to 0 if not supplied. Delay to wait until existing order is replaced (quantity is creased) when part of it is taken. |
| 20840 | WouldPx | No | Y | Everytime a counteroffer is created at this price, Robot will launch a sniper order with the remainning leftover quantity to execute, marked so that all the quantity that does not execute is cancelled automatically by the Exchange. The total quantity executed by this method is configured on field 'Would\conclusion qty'.  The sent order, if executed, may exceed the participation set in field 'Max. % (lot qty)'. The quantity executed by this method is not used when calculating the total volume executed by the order.  **Caption in en-US:** Would\conc. px |
| 20841 | WouldQty | No | Y | Maximum quantity to execute if 'Would\conc. px' is reached. Leave it blank to execute all the order's quantity. This quantity is never reset and the would part won't execute anymore if all quantity configured on this field is filled.  **Caption in en-US:** Would\conclusion qty |
| 20843 | WouldQtyReset | No | Y | If active, resets the executed would quantity back to zero, allowing the quantity configured in 'Would/conclusion qty' to be executed again.  **Caption in en-US:** Reset would/concl. Qty  **Caption in pt-BR:** Reset. qtd would/concl. |

Field Added to FIX specification

**Message example:**

8=FIX.4.49=16235=D34=2849=TESTER152=20130715-12:35:46.87856=PNT\_DSA1=1011=2013071509264821=438=100040=244=3054=155=PETR459=060=20130715-12:35:46135=500847=101310=221

BeginString=FIX.4.4 BodyLength=162 MsgType=NewOrderSingle MsgSeqNum=28 SenderCompID=TESTER1 SendingTime=15/07/2013 12:35:46 TargetCompID=PNT\_DSA Account=10 ClOrdID=20130715092648 HandlInst=Algo OrderQty=1000 OrdType=Limit Price=30 Side=Buy Symbol=PETR4 TimeInForce=Day TransactTime=15/07/2013 12:35:46 OfferSize=500 TargetStrategy=1013 CheckSum=221

### VWAP – Volume history (1027)

Exactly the same parameters and restrictions as VWAP, but with TargetStrategy (847)=1027. If used, but Robot will use the security’s recent volume history to optimize it’s operation during the day.

Differente fields:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 35 | MsgType | Yes | N | NewOrderSingle (D) |
| 847 | TargetStrategy | Yes | N | Use value 1027 |

### Auction Order (1030)

To create Auction Orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. Field name: Client (en) / Cliente (pt). |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. Field name: Quantity (en) / Quantidade (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Y | Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price, when informed. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt). |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time). Field name: Start time (en) / Hora inicial (pt). |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. Field name: End time (en) / Hora final (pt). |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 152 | CashOrdQty | Conditional | Y | Financial value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. Field name: Cash qty (en) / Financeiro (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1030 – Auction Order |

### Scheduled Order (1031)

To create Iceberg orders the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1031 – Scheduled Order |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit – Price must be informed on Scheduled Order |
| 44 | Price | Yes | Y | Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt). |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time). Field name: Start time (en) / Hora inicial (pt). |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. Field name: End time (en) / Hora final (pt). |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |

Field Added to FIX specification

### Cross Sniper (1032)

To create a Cross Sniper order the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. Field name: Client (en) / Cliente (pt). |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. Field name: Quantity (en) / Quantidade (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  1 – Market  2 – Limit |
| 44 | Price | Conditional | Y | Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price, when informed. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt). |
| 207 | Security  Exchange | No | N | Market used to help identify a security. |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time). Field name: Start time (en) / Hora inicial (pt). |
| 59 | TimeInForce | No | Y | Specifies order time limit. Default value is Day when not specified. Accepted values:  0 – Day  6 – Good Till Date |
| 126 | ExpireTime | Conditional | Y | Time when order is no longer valid. Its Required if TimeInForce = 6. Only sets the time of day when order will end. Field name: End time (en) / Hora final (pt). |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 152 | CashOrdQty | Conditional | Y | Financial value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. Field name: Cash qty (en) / Financeiro (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1032 – Cross Sniper |

### Routed Order (3001)

To create a Routed Order the following fields take part in the message: This order will be routed to another executing system, and may contain more fields as agreed with the target executing system.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Conditional | Y | Order type as agreeded with target system. Probably accepted values:  1 – Market – Price is not required.  2 – Limit – Price must be informed on Exchange Simple Order |
| 44 | Price | Conditional | Y | Price per share or contract as agreeded with target system. Orders will be sent to the exchange at this exact price. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Conditional | N | Order side as agreeded with target system. Proably accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt). |
| 207 | SecurityExchange | No | N | Market used to help identify a security. |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 111 | MaxFloor | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers, if accepted by the target system. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  3001 – Routed Order |

Field Added to FIX specification

### Simple Exchange Order (1033)

**Not yet implemented on DSA.**

To create a Simple Exchange Order the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 1 | Account | Yes | N | Client account number registered at BM&FBovespa. Must be sent with the validation digit without separator char. |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Ordered quantity of shares or contracts. Required if CashOrdQty not set. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit – Price must be informed on Exchange Simple Order |
| 44 | Price | Yes | Y | Price per share or contract. Required if OrdType is 2 (limit). Orders will be sent to the exchange at this exact price. Field name: Price limit (en) / Preco limite (pt). *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 54 | Side | Yes | N | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. Field name: Symbol (en) / Ativo (pt). |
| 207 | SecurityExchange | No | N | Market used to help identify a security. |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 210 | MaxShow | No | Y | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 5x the lot size. Tag is managed by exchange, to use a value managed by robot, see OfferSize (135) field. Field name: Iceberg qty (exchange) (en) / Lote ap. (bolsa) (pt). *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1033 – Simple Exchange Order |

Field Added to FIX specification

### Simple Exchange Cross Order (1034)

This strategy is not yet fully supported in DSA. Please, contact Plug and Trade before implementing.

### Linear Gradient (1035)

This strategy is not yet fully supported in DSA. Please, contact Plug and Trade before implementing.

## New Order Multileg (AB)

The NewOrderMultileg <AB>, also known as Multileg Order, is used by the client application to send a new strategy order to Fast Trader for strategies that work in two or more instruments. The received order is validated and then sent to the Fast Trader Algo Server. Below we show a more detailed view of the fields and accepted values for each strategy support with this type of message:

### Multileg message flow and rules

The Multileg orders for strategies work in a special way. For our system we are considering that we are not using product specification. This means that the trade report will be made by leg for trades. But we will for practical purposes send a n Execution Report at the end of the algo order to consolidate the result.

Therefore the message flow is:

1. Fix Client sends a new multileg order to Algo System
2. Algo system sends an execution report with tag MultiLegReportingType (442) = 3 indicating that the answer is treating the whole algo order. It will mirror all fields sent and actually taken in consideration by the system. **In some cases the system may change some values making auto-corrections.**
   1. If the order has errors in it, the order tag OrderStatus (39) will indicate ‘8’ Rejected and the text field will have the reason.
   2. If the order passed the first validation it may be sent for approval by a system administrator. In this case OrderStatus (39) will be ‘A’ – PendingNew and the text field will display the approval step. When accepted each leg will receive a specific LegRefId.
   3. If the order is accepted it will return the OrderStatus (39) = 0 New
3. The algo system sends in an execution report for trade. It will be reported by leg. So the MultiLegReportingType Tag (442) will have the value 2 and the respective Symbol, LegRefId and all the other fields will carry values for the leg. ClOrdId will be used to tie the legs with the main algo order.
4. At the end of the order the Algo system will send an execution report for the whole algo order informing the final state of it. This execReport will have all the legs and MultiLegReportingType =3.

### Bull Call/Bear Put Spread - Difference or Weighted Difference (1002)

To create a Bull Call Spread or a Bear Put Spread the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Sum of all leg qtys or base proportion if using leg ratio field. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit |
| 54 | Side | Yes | N | Order side. Accepted values:  B – ‘As defined’ |
| 55 | Symbol | Yes | N | "[N/A]" or the conjunction of symbols: PETR4;PETRC21;PETRC22 |
| 59 | TimeInForce | No | Y | Specifies order time limit. Accepted values:  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Yes | Y | Time when order is no longer valid. Format: YYYY-MM-DD HH:MM:SS |
| 20822 | ~~SuspendTime~~ | No | Y | If supplied, suspends the order while keeping any missing leg’s orders active for the user to take action. Usually configured to the time just before the last auction, so the user may decide to active or resolve the order on the After Market.  *Supported by Robot, but not yet supported on DSA.* |
| 135 | OfferSize | No | Y | Maximum number of shares the algo server will send to the exchange at a time. In two leg spreads it is the value for the sell side of the spread, the max pffer size for the buy side will be calculated according to the leg quantity ratio. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Y | Sum of all leg cash ord qtys. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1002 – Spread |
| 555 | NoLegs | Yes | N | 2 |
| → 600 | LegSymbol | Yes | N | Symbol being traded. Must always be the first tag on each leg. |
| → 616 | LegSecurityExchange | Yes | N | XBMF or XBSP according the symbol |
| → ~~623~~ | ~~LegRatioQty~~ | Conditional | N | Can be used to determine the leg quantitiy be multiplying this number by the OrdQty value of the order. *Not used or supported in current implementation.* |
| → 624 | LegSide | Yes | N | List of accepted Values:  1 – Buy (Always on 2nd leg)  2 – Sell (Always on 1st leg)  Values cannot be the same for both legs. |
| → 687 | LegQty | Conditional | Y | The order quantity for this leg of the order. Must be filled if not using LegRatioQty. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| → 670 | NoLegAllocs | Yes | N | Usually one. |
| →→ 671 | LegAllocAccount | Yes | N | Client account number |
| → 20777 | LegMaxParticipationRate | No | Y | Indicates the maximum market participation rate for this leg during the execution of the spread order, Value ranges from: 0.000 to 1.000 |
| → 20778 | LegIgnoredQuantity | No | Y | The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 \* Lot Size. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| → 20779 | LegBidAskOnTheBookDepth | Conditional | Y | Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true.  Accepted Values:  -1 : Wait Other Leg  0: Wait Price  1: Top of book  2: 2nd position  3: 3rd position  4: 4th position  *Recommended default: 0* |
| → 20780 | LegCashOrdQty | Conditional | Y | The Cash order quantity of the leg. Must be filled if LegRatio and LegOrdQty are not sent. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| → 20787 | MaxLostLegPriceDiff | Conditional | Y | May only be sent if WaitLeg is true. The amoun in cents or basis points that the algo is allowed to close missed legs. Default: 0.00 |
| 20768 | CountCrossOrders | Conditional | Y | Must be sent if LegMaxParticipationRate is set. Defaults to False. |
| 20769 | BidAskOnTheBook | No | Y | Indicates if algo will place orders on the book. Defaults to True. |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20781 | SpreadMethod | Yes | N | Accepted Values  0 – WeightedDifference : Robot will trade on the difference weighted by the LegQtyRatio  3 – PriceDifference: Robot will trade on the fixed difference between the leg prices.  5 – CashDifference – Robot will trade on the cash difference over all legs |
| 20782 | TargetSpread | Yes | Y | The price difference betwwen the legs when entering the operation. **Always Buy entry leg – Sell entry Leg.** |
| 20845 | TargetRevertSpread | No | Y | The price difference between the legs when exiting the operation. **Always Buy entry leg – Sell entry Leg.** Which is equivalent to Sell exit leg – Buy exit leg. |
| 20836 | StopTriggerSpread | Float | N | Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in ‘StopSendSpread’.  **Caption in en-US:** Trigger ratio / Trigger difference  **Caption in pt-BR:** Razão disp / Diferença disp |
| 20837 | StopSendSpread | Float | N | The new assigned coefficient if market reaches StopTriggerSpread  **Caption in en-US:** Stop ratio / Stop difference  **Caption in pt-BR:** Razão stop / Diferença stop |
| 20783 | WaitLeg | Yes | Y | Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed.  Default: False |
| 20784 | CompensateCoefficient | Yes | Y | Indicates if the algo should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True |
| 20785 | CancelOffersOutsideDepth | No | Y | Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag. |
| 20786 | BidAskOnTheBookWithMargin | No | Y | Indicates if the algo should  Keep a margin for offers on proportionally larger lot sizes in case these are partially taken. Default: False |
| 20804 | MultipleOffers | No | Y | If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order.  Default: False |
| 20805 | WaitLargerSide | No | Y | If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side.  **Caption in en-US:** Wait for larger lot  **Caption in pt-BR:** Esperar lotes maiores |

Field Added to FIX specification

**Two leg Spread order creation request and response, plain FIX**

8=FIX.4.4|9=399|35=AB|34=2|49=TESTER|52=20190731-13:16:03.071|56=PNT\_DSA|1=4000|11=1-999|21=4|40=2|54=B|55=PETR3;PETR4|59=0|60=20190731-13:16:03.055|116=user|135=500|847=1002|20781=3|20782=-3.36|20783=Y|20784=Y|453=1|448=123|447=D|452=5|

555=2|

600=PETR3|616=XBSP|624=2|687=200.0|670=1|671=4000|20778=500|20779=0|

600=PETR4|616=XBSP|624=1|687=200.0|670=1|671=4000|20778=500|20779=0|10=008|

8=FIX.4.4|9=561|35=8|34=295|49=PNT\_DSA|56=TESTER|116=user|52=20190731-13:33:26.973|37=dsa.369|11=1-999 |17=PendNew\_539.1FN6|150=A|39=A|55=PETR4;PETR3|54=B|38=400|40=2|847=1002|168=20190731-03:00:01|126=20190731-19:55:00|151=400|14=0|6=0|555=2|600=PETR4|616=XBSP|624=2|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR3|616=XBSP|624=1|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20782=1.0900000333786|20783=Y|20784=Y|20786=N|20804=N|135=500|20781=3|10=146|

8=FIX.4.4|9=644|35=8|34=296|49=PNT\_DSA|56=TESTER|116=user|52=20190731-13:33:27.833|37=dsa.369|198=T-603|11=1-999 |41=1-999 |17=Susp\_540.1FN7|150=0|39=0|378=99|55=PETR4;PETR3|54=B|38=400|40=2|847=1002|168=20190731-13:34:26|126=20190731-19:55:00|151=400|14=0|6=0|58=Paused order (No prev status)|555=2|600=PETR4|616=XBSP|624=2|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR3|616=XBSP|624=1|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20782=1.0900000333786|20783=Y|20784=Y|20786=N|20804=N|135=500|20781=3|10=169|

**Two leg Spread order creation request and response, translated FIX**

13:16:03.071 BeginString=FIX.4.4 BodyLength=399 MsgType=NewOrderMultileg MsgSeqNum=2 SenderCompID=TESTER SendingTime=2019-07-31 13:16:03.071 TargetCompID=PNT\_DSA Account=4000 ClOrdID=1-999 HandlInst=4 OrdType=Limit Side=AsDefined Symbol=PETR3;PETR4 TimeInForce=Day TransactTime=2019-07-31 13:16:03.055 OnBehalfOfSubID=user OfferSize=500 TargetStrategy=1002 SpreadMethod (20781)=PriceDifference (3) TargetSpread (20782)=-3.36 WaitLeg (20783)=Y CompensateCoefficient (20784)=Y NoPartyIDs=1 PartyID=123 PartyIDSource=Proprietary PartyRole=InvestorID

NoLegs=2

LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=Sell (2) LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 LegIgnoredQuantity=500 BidAskDepth (20779)=0

LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=Buy (1) LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 LegIgnoredQuantity=500 BidAskDepth (20779)=0 CheckSum=8

13:33:26.973 BeginString=FIX.4.4 BodyLength=561 MsgType=ExecutionReport MsgSeqNum=295 SenderCompID=PNT\_DSA TargetCompID=TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:33:26.973 OrderID=dsa.369 ClOrdID=1-999 ExecID=PendNew\_539.1FN6 ExecType=PendingNew OrdStatus=PendingNew Symbol=PETR4;PETR3 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1002 EffectiveTime=2019-07-31 03:00:01.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0

NoLegs=2

LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=0 20778=500 BidAskDepth (20779)=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000

LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=1 20778=500 BidAskDepth (20779)=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 TargetSpread (20782)=-3.36 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 SpreadMethod (20781)=PriceDifference (3) CheckSum=146

13:33:27.833 BeginString=FIX.4.4 BodyLength=644 MsgType=ExecutionReport MsgSeqNum=296 SenderCompID=PNT\_DSA TargetCompID=TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:33:27.833 OrderID=dsa.369 SecondaryOrderID=T-603 ClOrdID=1-999 OrigClOrdID=1-999 ExecID=Susp\_540.1FN7 ExecType=New OrdStatus=New ExecRestatementReason=99 Symbol=PETR4;PETR3 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1002 EffectiveTime=2019-07-31 13:34:26.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 Text=Paused order (No prev status)

NoLegs=2

LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000

LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 TargetSpread (20782)=-3.36 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 SpreadMethod (20781)=PriceDifference (3) CheckSum=169

**Two leg Spread order creation request and response, minimal recommended parameters, translated FIX**

13:16:03.071 BeginString=FIX.4.4 BodyLength=399 MsgType=NewOrderMultileg (AB) MsgSeqNum=2 SenderCompID=TESTER SendingTime=2019-07-31 13:16:03.071 TargetCompID=PNT\_DSA Account=4000 ClOrdID=1-999 HandlInst=4 OrdType=Limit Side=AsDefined Symbol=PETR3;PETR4 TimeInForce=Day TransactTime=2019-07-31 13:16:03.055 OnBehalfOfSubID=user OfferSize=500 TargetStrategy=1002 SpreadMethod (20781)=PriceDifference (3) TargetSpread (20782)=-3.36 WaitLeg (20783)=Y CompensateCoefficient (20784)=Y NoPartyIDs=1 PartyID=123 PartyIDSource=Proprietary PartyRole=InvestorID

NoLegs=2

LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=Sell (2) LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 LegIgnoredQuantity=500

LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=Buy (1) LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 LegIgnoredQuantity=500 CheckSum=8

### Spread – (1002)

To create a Spread the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit |
| 59 | TimeInForce | No | Y | Specifies order time limit. Accepted values:  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Yes | Y | Time when order is no longer valid. Format: YYYY-MM-DD HH:MM:SS |
| 20822 | ~~SuspendTime~~ | No | Y | If supplied, suspends the order while keeping any missing leg’s orders active for the user to take action. Usually configured to the time just before the last auction, so the user may decide to active or resolve the order on the After Market.  *Supported by Robot, but not yet supported on DSA.* |
| 135 | OfferSize | Yes | Y | Maximum number of shares the algo server will send to the exchange at a time. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Y | Sum of all leg cash ord qtys. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$)* |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1002 – Spread |
| 555 | NoLegs | Yes | N | 2 |
| → 600 | LegSymbol | Yes | N | Symbol being traded. Must always be the first tag on each leg. |
| → 616 | LegSecurityExchange | Yes | N | XBMF or XBSP according the symbol |
| → 623 | LegRatioQty | Conditional | N | Can be used to determine the leg quantitiy be multiplying this number by the OrdQty value of the order. |
| → 624 | LegSide | Yes | N | List of accepted Values:  1 – Buy (Always on 2nd leg)  2 – Sell (Always on 1st leg)  Values cannot be the same for both legs. |
| → 687 | LegQty | Conditional | Y | The order quantity for this leg of the order. Must be filled if not using LegRatioQty. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| → 670 | NoLegAllocs | Yes | N | Usually one. |
| →→ 671 | LegAllocAccount | Yes | N | Client account number |
| → 20777 | LegMaxParticipationRate | No | Y | Indicates the maximum market participation rate for this leg during the execution of the spread order, Value ranges from: 0.000 to 1.000 |
| → 20778 | LegIgnoredQuantity | No | Y | The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 \* Lot Size. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| → 20779 | LegBidAskOnTheBookDepth | Conditional | Y | Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true.  Accepted Values:  -1 : Wait Other Leg  0: Wait Price  1: Top of book  2: 2nd position  3: 3rd position  4: 4th position |
| → 20780 | LegCashOrdQty | Conditional | Y | The Cash order quantity of the leg. Must be filled if LegRatioQty and LegOrdQty are not sent. *Accepted values: 1..N, in security’s currency (Usually BRL, R$).* |
| → 20787 | MaxLostLegPriceDiff | Conditional | Y | May only be sent if WaitLeg is true. The amount in cents or basis points that the algo is allowed to close missed legs. Default: 0.00 |
| 20768 | CountCrossOrders | Conditional | Y | Must be sent if LegMaxParticipationRate is set. Defaults to False. |
| 20769 | BidAskOnTheBook | No | Y | Indicates if algo will place orders on the book. Defaults to True. |
| 20771 | MaxReplaces | No | Y | Defaults to 100. *Accepted values: 1..N.* |
| 20781 | SpreadMethod | Yes | N | Accepted Values  0 – Weighted Difference: Robot will trade below the price difference weighted by both symbol’s quantities.  1 – Ratio: Robot will trade on a fixed ratio between leg prices.  2 – Vol – Robot will trade over the VOL difference of each leg that is of type option.  3 – Difference: Robot will trade on the price difference between both symbol’s direct prices.  5 – CashDifference : Robot will trade on the difference between the leg’s executed cash quantity.  7 – RateDifference: Robot will trade on a difference calculated over leg symbol’s tax rate, as in DI1’s FRA Tax Rate.  8 – ManualDifference: Robot will trade on a difference calculated by multiplying each leg symbol’s prices by the multiplier informed on LegPxMultiplier (20827).  9 – FinancialRatio: Robot will calculate the coefficient by dividing the Buy Cash Quantities by the Sell Cash Quantities. |
| 20782 | TargetSpread | Yes | Y | The ratio between the legs when entering the operation. **Always Buy entry leg / Sell entry Leg** for SpreadMethod ratio.  The difference between legs when entering the operation. **Always** **Buy leg** – **Sell leg** for SpreadMethod difference**.** |
| 20845 | TargetRevertSpread | No | Y | For SpreadMethod ratio, the ratio between the legs when exiting the operation with profit. **Always Buy entry leg / Sell entry Leg.** Which is equivalent to Sell exit leg / Buy exit leg.  For SpreadMethod difference, the price difference between the legs when exiting the operation. **Always Buy entry leg – Sell entry Leg.** Which is equivalent to Sell exit leg – Buy exit leg. |
| 20836 | StopTriggerSpread | Float | Y | Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in ‘StopSendSpread’.  **Caption in en-US:** Trigger ratio / Trigger difference  **Caption in pt-BR:** Razão disp / Diferença disp |
| 20837 | StopSendSpread | Float | Y | The new assigned coefficient if market reaches StopTriggerSpread  **Caption in en-US:** Stop ratio / Stop difference  **Caption in pt-BR:** Razão stop / Diferença stop |
| 20783 | WaitLeg | No | Y | Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed.  Default: False |
| 20784 | CompensateCoefficient | No | Y | Indicates if the algorithm should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True |
| 20785 | CancelOffersOutsideDepth | No | Y | Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag. *Recommended default: False.* |
| 20786 | BidAskOnTheBookWithMargin | No | Y | Indicates if the algo should  Keep a margin for offers on proportionally larger lot sizes in case these are partially taken. Default: False |
| 20804 | MultipleOffers | No | Y | If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order.  Default: False |
| 20805 | WaitLargerSide | No | Y | If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side. *Recommended default: True.* |
| 20844 | SpredCloseInterval | No | Y | Time in seconds to take at market price the missing leg |
| 20855 | SpreadCloseIncrement | No | Y | Price increase when the SpreadCloseInterval is reached |
| 20857 | SpreadStopInterval | No | Y | When the StopTrigger value is reached, the countdown begins for the order to be placed with the StopSendSpread |
| 20856 | ActivateErrorStateStrategy | No | N | If true, the order will be automatically activated upon entering in error status |

Field Added to FIX specification

### Multileg Spread – 2+ Legs (1029)

To create a Multileg Spread, the following fields take part in the message:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 38 | OrderQty | Conditional | Y | Sum of all leg qtys or base proportion if using leg ratio field. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit |
| 54 | Side | Yes | N | Order side. Accepted values:  B – ‘As defined’ |
| 55 | Symbol | Yes | N | "[N/A]" or the conjunction of symbols: PETR4;PETRC21;PETRC22 |
| 59 | TimeInForce | No | Y | Specifies order time limit. Accepted values:  6 – Good Till Date |
| 60 | TransactTime | Yes | Y | Date and time when order was created by client. UTC format. |
| 168 | EffectiveTime | No | Y | Order start time. If not sent it will be set to first valid time. (market open time) |
| 432 | ExpireDate | No | Y | Order expiration date. UTC format. If value is different than current day, order will remain active on the server on next trading sessions. Check retuned value on the 1st ExecutionReport (u) with ExecType=New, usually our RobotServer will only allow the order to execute for 30 days and won’t allow this value to be modified after insertion. |
| 126 | ExpireTime | Yes | Y | Time when order is no longer valid. Format: YYYY-MM-DD HH:MM:SS |
| 20822 | ~~SuspendTime~~ | No | Y | If supplied, suspends the order while keeping any missing leg’s orders active for the user to take action. Usually configured to the time just before the last auction, so the user may decide to active or resolve the order on the After Market.  *Supported by Robot, but not yet supported on DSA.* |
| 135 | OfferSize | No | Y | Maximum number of shares the algo server will send to the exchange at a time. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 847 | TargetStrategy | Yes | N | The Strategy to be used:  1029 – Multileg Spread. |
| 20768 | CountCrossOrders | Conditional | Y | Must be sent if LegMaxParticipationRate is set. Defaults to False. |
| 20769 | BidAskOnTheBook | No | Y | Indicates if algo will place orders on the book. Defaults to True. |
| 20771 | MaxReplaces | No | Y | Defaults to 100 |
| 20781 | SpreadMethod | Yes | N | Accepted Values  0 – Weighted Difference: Robot will trade below the price difference weighted by both symbol’s quantities.  2 – Vol – Robot will trade over the VOL difference of each leg that is of type option.  3 – Difference: Robot will trade on the price difference between both symbol’s direct prices.  5 – CashDifference - Robot will trade on the difference between the leg’s executed cash quantity.  7 – RateDifference – Robot will trade on a difference calculated over leg symbol’s tax rate, as in DI1’s FRA Tax Rate.  8 – ManualDifference – Robot will trade on a difference calculated by multiplying each leg symbol’s prices by the multiplier informed on LegPxMultiplier (20827).  9 – FinancialRatio – Robot will calculate the coefficient by dividing the Buy Cash Quantities by the Sell Cash Quantities. |
| 20782 | TargetSpread | Yes | N | The coefficient calculated from leg prices. **Always Buy leg – Sell Leg.** |
| 20845 | TargetRevertSpread | No | Y | The coefficient between the legs when exiting the operation with profit. Always Buy entry leg - Sell entry Leg. Which is equivalent to Sell exit leg - Buy exit leg. |
| 20836 | StopTriggerSpread | Float | N | Defines a stop coefficient. If the market coefficient reaches a value equal or 'worst' than this value, Robot will automatically replace the 'Selected Coefficient' with the value typed in ‘StopSendSpread’.  Caption in en-US: Trigger ratio / Trigger difference  Caption in pt-BR: Razão disp / Diferença disp |
| 20837 | StopSendSpread | Float | N | The new assigned coefficient if market reaches StopTriggerSpread  Caption in en-US: Stop ratio / Stop difference  Caption in pt-BR: Razão stop / Diferença stop |
| 20783 | WaitLeg | No | Y | Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed.  Default: False  **Caption in en-US:** Wait leg px  **Caption in pt-BR:** Esperar preço da perna |
| 20784 | CompensateCoefficient | No | Y | Indicates if the algo should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True |
| 20785 | CancelOffersOutsideDepth | No | Y | Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag. |
| 20786 | BidAskOnTheBookWithMargin | No | Y | Indicates if the algo should keep a margin for offers on proportionally larger lot sizes in case these are partially taken.  In operations with different lot sizes, it is recommended to always proclaim on the leg with smaller lot. The only safe way to proclaim on the other legs without 'Wait for leg px' is keeping this option on so that, in case only part of the lot is taken, it is still viable to take the rest of the lot on the market. This option is on by default.Ex.: In a Spread operation of AAAA/BBBB with quantities 4000/2000, if Robot proclaims on both legs with 200 and 100 and only 100 is taken on the leg of AAAA, this would have to take 100 from an existing counteroffer of BBBB. With this option on, the place on bid/ask price of AAAA is calculated considering that it may need to take BBBB. *(Optional.* Default: False)  **Caption in en-US:** Place bid/ask with margin on larger lot  **Caption in pt-BR:** Apregoar com margem nos lotes maiores |
| 20804 | MultipleOffers | No | Y | If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order.  Default: False  **Caption in en-US:** Place mult. orders  **Caption in pt-BR:** Apregoar mult. ordens |
| ~~20824~~ | ~~KeepMultipleOffer~~ | No | Y | If active, Robot won't cancel the offers on more conservative prices if these are in a privileged position on the book. *(Optional)*  *Supported by Robot, but not yet supported by DSA.*  **Caption in en-US:** Keep placed old px.  **Caption in pt-BR:** Manter apreg. pr. antigo |
| 20805 | WaitLargerSide | No | Y | If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side.    **Caption in en-US:** Wait for larger lot  **Caption in pt-BR:** Esperar lotes maiores |
| ~~20825~~ | ~~PlaceOnlyTopOffer~~ | No | Y | If active, Robot will only place the best bid/ask on the book, cancelling the offer if another offer becomes the top offer. (Optional)  *Supported by Robot, but not yet supported by DSA*  **Caption in en-US:** Place best bid/ask only  **Caption in pt-BR:** Apreg. apenas mel. oferta |
| ~~20826~~ | ~~AutoResolveInterval~~ | No | Y | If informed, will define the interval in seconds after which Robot will close any unmatched legs at market price.  *Supported by Robot, but not yet supported by DSA*  **Caption in en-US:** Auto close leg after (s)  **Caption in pt-BR:** Res. despern. autom. (s) |
| 555 | NoLegs | Yes | N | 3+  2 legs are also accepted, but using the specific Spread (1002) for two legs will make use of more optimized code inside our Robot. |
| → 600 | LegSymbol | Yes | N | Symbol being traded. Must always be the first tag on each leg. |
| → 616 | LegSecurityExchange | Yes | N | XBMF or XBSP according the symbol |
| → ~~623~~ | ~~LegRatioQty~~ | Conditional | N | Can be used to determine the leg quantitiy be multiplying this number by the OrdQty value of the order.  *Not yet used or supported in current implementation.* |
| → 624 | LegSide | Yes | N | List of accepted Values:  1 – Buy  2 – Sell |
| → 687 | LegQty | Conditional | Y | The order quantity for this leg of the order. Must be filled if not using LegRatioQty.  *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| ~~→ 566~~ | ~~LegPrice~~ | Conditional | Y | Limit price for this leg.  *Not supported on Robot for any Multileg Strategies yet. Field will be used only on Multileg-Cross (1036).* |
| → 670 | NoLegAllocs | Yes | N | Usually one. |
| →→ 671 | LegAllocAccount | Yes | N | Client account number |
| ~~→ 20827~~ | ~~LegPxMultiplier~~ | No | Y | Defines a multiplier to be used when calculating the execute coefficient and placing bid/ask orders.  Only accepted when SpreadMethod (20781) = ManualDifference (8).  *Supported by Robot, but not yet supported by DSA.* |
| → 20778 | LegIgnoredQuantity | No | Y | The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 \* Lot Size. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| → 20779 | LegBidAskOnTheBookDepth | Conditional | Y | Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true.  Accepted Values:  -1 : Wait Other Leg  0: Wait Price  1: Top of book  2: 2nd position  3: 3rd position  4: 4th position  *Recommended default: 0* |
| ~~→ 20821~~ | ~~LegMaxMissQty~~ | Conditional | Y | Maximum quantity that may be missing / unmatched on this leg without stopping the order from further executing.  *Not yet supported by DSA.* |
| ~~→ 20820~~ | ~~LegWorkDays~~ | Conditional | Y | Work days used when calculation of the interest rate used on VOL, FRA or for price conversion between price dates, depending on selected strategy. *(Optional)* |
| ~~→ 20823~~ | ~~LegRate~~ | Conditional | Y | Rates used to calculate volatility or used to convert prices between present and future dates, depending on configured strategy. (*Mandatory when the strategy requires it, such as VOL or FRA Rate)* |
| 20844 | SpredCloseInterval | No | Y | Time in seconds to take at market price the missing leg |
| 20857 | SpreadStopInterval | No | Y | When the StopTrigger value is reached, the countdown begins for the order to be placed with the StopSendSpread |
| 20856 | ActivateErrorStateStrategy | No | N | If true, the order will be automatically activated upon entering in error status |
| 20854 | ActivateStatusMultileg | No | N | If true, the order will be placed with 'Active' status |

Field Added to FIX specification

Examples of valid New and Replace messages:

**Multileg order creation request and response, plain FIX**

8=FIX.4.4|9=399|35=AB|34=2|49=TESTER|52=20190731-13:16:03.071|56=PNT\_DSA|1=4000|11=1-999 |21=4|40=2|54=B|55=PETR3;PETR4|59=0|60=20190731-13:16:03.055|116=user|135=500|847=1002|20781=1|20782=1.09|20783=Y|20784=Y|453=1|448=123|447=D|452=5|555=2|600=PETR3|616=XBSP|624=1|687=200.0|670=1|671=4000|20778=500|20779=0|600=PETR4|616=XBSP|624=2|687=200.0|670=1|671=4000|20778=500|20779=0|10=008|

8=FIX.4.4|9=561|35=8|34=295|49=PNT\_DSA|56=TESTER|116=user|52=20190731-13:33:26.973|37=dsa.369|11=1-999 |17=PendNew\_539.1FN6|150=A|39=A|55=PETR4;PETR3|54=B|38=400|40=2|847=1002|168=20190731-03:00:01|126=20190731-19:55:00|151=400|14=0|6=0|555=2|600=PETR4|616=XBSP|624=2|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR3|616=XBSP|624=1|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20782=1.0900000333786|20783=Y|20784=Y|20786=N|20804=N|135=500|20781=1|10=146|

8=FIX.4.4|9=644|35=8|34=296|49=PNT\_DSA|56=TESTER|116=user|52=20190731-13:33:27.833|37=dsa.369|198=T-603|11=1-999 |41=1-999 |17=Susp\_540.1FN7|150=0|39=0|378=99|55=PETR4;PETR3|54=B|38=400|40=2|847=1002|168=20190731-13:34:26|126=20190731-19:55:00|151=400|14=0|6=0|58=Paused order (No prev status)|555=2|600=PETR4|616=XBSP|624=2|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR3|616=XBSP|624=1|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20782=1.0900000333786|20783=Y|20784=Y|20786=N|20804=N|135=500|20781=1|10=169|

**Multileg order creation request and response, translated FIX**

13:16:03.071 BeginString=FIX.4.4 BodyLength=399 MsgType=NewOrderMultileg MsgSeqNum=2 SenderCompID=TESTER SendingTime=2019-07-31 13:16:03.071 TargetCompID=PNT\_DSA Account=4000 ClOrdID=1-999 HandlInst=4 OrdType=Limit Side=AsDefined Symbol=PETR3;PETR4 TimeInForce=Day TransactTime=2019-07-31 13:16:03.055 OnBehalfOfSubID=user OfferSize=500 TargetStrategy=1002 20781=1 20782=1.09 20783=Y 20784=Y NoPartyIDs=1 PartyID=123 PartyIDSource=Proprietary PartyRole=InvestorID

NoLegs=2

LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 CheckSum=8

13:33:26.973 BeginString=FIX.4.4 BodyLength=561 MsgType=ExecutionReport MsgSeqNum=295 SenderCompID=PNT\_DSA TargetCompID=TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:33:26.973 OrderID=dsa.369 ClOrdID=1-999 ExecID=PendNew\_539.1FN6 ExecType=PendingNew OrdStatus=PendingNew Symbol=PETR4;PETR3 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1002 EffectiveTime=2019-07-31 03:00:01.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 NoLegs=2

LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 20782=1.0900000333786 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 20781=1 CheckSum=146

13:33:27.833 BeginString=FIX.4.4 BodyLength=644 MsgType=ExecutionReport MsgSeqNum=296 SenderCompID=PNT\_DSA TargetCompID=TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:33:27.833 OrderID=dsa.369 SecondaryOrderID=T-603 ClOrdID=1-999 OrigClOrdID=1-999 ExecID=Susp\_540.1FN7 ExecType=New OrdStatus=New ExecRestatementReason=99 Symbol=PETR4;PETR3 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1002 EffectiveTime=2019-07-31 13:34:26.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 Text=Paused order (No prev status) NoLegs=2 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 20782=1.0900000333786 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 20781=1 CheckSum=169

**Multileg order replace request and response, plain FIX**

8=FIX.4.4|9=442|35=AC|34=207|49=TESTER|52=20190731-13:57:27.995|56=PNT\_DSA|1=4000|11=1-999 |18=2|21=4|40=2|41=1-999 |54=B|55=PETR3;PETR4|59=0|60=20190731-13:57:27.983|116=user|135=500|150=9|847=1029|20781=5|20782=1.09|20783=Y|20784=Y|453=1|448=123|447=D|452=5|555=2|600=PETR3|616=XBSP|624=1|687=200.0|670=1|671=4000|20778=500|20779=0|600=PETR4|616=XBSP|624=2|687=200.0|670=1|671=4000|20778=500|20779=0|10=036|

8=FIX.4.4|9=542|35=8|34=1043|49=PNT\_DSA|56= TESTER |116=user|52=20190731-13:56:33.143|37=dsa.373|198=T-607|11=1-999 |17=PendRep\_555.1H0H|150=E|39=E|55=PETR3;PETR4|54=B|38=400|40=2|847=1029|168=20190731-13:56:52|126=20190731-19:55:00|151=400|14=0|6=0|555=2|600=PETR3|616=XBSP|624=1|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR4|616=XBSP|624=2|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20783=Y|20784=Y|20786=N|20804=N|135=500|10=020|

8=FIX.4.4|9=687|35=8|34=1044|49=PNT\_DSA|56= TESTER|116=user|52=20190731-13:56:33.440|37=dsa.373|198=T-607|11=1-999 |41=1-999 |17=Rest\_556.1H0H|150=D|39=5|378=4|55=PETR3;PETR4|54=B|38=400|40=2|847=1029|168=20190731-13:56:52|126=20190731-19:55:00|151=400|14=0|6=0|58= Algorithm Order params status='Replaced'). Modified fields: [SecondaryOrderID=T-607 ]|555=2|600=PETR3|616=XBSP|624=1|687=200|654=0|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|600=PETR4|616=XBSP|624=2|687=200|654=1|20778=500|20779=0|20787=0|20800=0|20802=0|20803=0|670=1|671=4000|20768=N|20769=Y|20771=100|20783=Y|20784=Y|20786=N|20804=N|135=500|10=022|

**Multileg order replace request and response, translated FIX**

13:57:27.995 BeginString=FIX.4.4 BodyLength=442 MsgType=MultilegOrderCancelReplaceRequest MsgSeqNum=207 SenderCompID=TESTER SendingTime=2019-07-31 13:57:27.995 TargetCompID=PNT\_DSA Account=4000 ClOrdID=1-999 ExecInst=Work HandlInst=4 OrdType=Limit OrigClOrdID=1-999 Side=AsDefined Symbol=PETR3;PETR4 TimeInForce=Day TransactTime=2019-07-31 13:57:27.983 OnBehalfOfSubID=user OfferSize=500 ExecType=Suspended TargetStrategy=1029 20781=5 20782=1.09 20783=Y 20784=Y NoPartyIDs=1 PartyID=123 PartyIDSource=Proprietary PartyRole=InvestorID NoLegs=2 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200.0 NoLegAllocs=1 LegAllocAccount=4000 20778=500 20779=0 CheckSum=36

13:56:33.143 BeginString=FIX.4.4 BodyLength=542 MsgType=ExecutionReport MsgSeqNum=1043 SenderCompID=PNT\_DSA TargetCompID= TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:56:33.143 OrderID=dsa.373 SecondaryOrderID=T-607 ClOrdID=1-999 ExecID=PendRep\_555.1H0H ExecType=PendingReplace OrdStatus=PendingReplace Symbol=PETR3;PETR4 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1029 EffectiveTime=2019-07-31 13:56:52.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 NoLegs=2 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 CheckSum=20

13:56:33.440 BeginString=FIX.4.4 BodyLength=687 MsgType=ExecutionReport MsgSeqNum=1044 SenderCompID=PNT\_DSA TargetCompID= TESTER OnBehalfOfSubID=user SendingTime=2019-07-31 13:56:33.440 OrderID=dsa.373 SecondaryOrderID=T-607 ClOrdID=1-999 OrigClOrdID=1-999 ExecID=Rest\_556.1H0H ExecType=Restated OrdStatus=Replaced ExecRestatementReason=4 Symbol=PETR3;PETR4 Side=AsDefined OrderQty=400 OrdType=Limit TargetStrategy=1029 EffectiveTime=2019-07-31 13:56:52.000 ExpireTime=2019-07-31 19:55:00.000 LeavesQty=400 CumQty=0 AvgPx=0 Text= Algorithm Order params status='Replaced'). Modified fields: [SecondaryOrderID=T-607 ] NoLegs=2 LegSymbol=PETR3 LegSecurityExchange=XBSP LegSide=1 LegQty=200 LegRefID=0 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 LegSymbol=PETR4 LegSecurityExchange=XBSP LegSide=2 LegQty=200 LegRefID=1 20778=500 20779=0 20787=0 20800=0 20802=0 20803=0 NoLegAllocs=1 LegAllocAccount=4000 20768=N 20769=Y 20771=100 20783=Y 20784=Y 20786=N 20804=N OfferSize=500 CheckSum=22

### Cross-TWAP (1028)

To create a Cross order that trades a configured amount evenly distributed over the configured timespan.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Repl** | **Remarks** |
| 35 | MsgType | Yes | N | NewOrderMultileg (AB) |
| 847 | TargetStrategy | Yes | N | 1028 |
| 11 | ClOrdID | Yes | - | Order identification set by the client. It must be unique throughout the day or the life span of sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | N | Buy side may send it’s own OrderID, if it was already generated. If not supplied, our system will generate an OrderID with the form ‘dsa.###’ |
| 21 | HandlInst | Yes | N | Order Handling Instruction. Accepted values:  4 – AlgoOrder |
| 40 | OrdType | Yes | Y | Order type. Accepted values:  2 – Limit |
| 55 | Symbol | Yes | N | The symbol of the traded instrument. |
| 207 | SecurityExchange | No | N | Market used to help identify a security. |
| 38 | OrderQty | Conditional | Y | Quantity to be traded. *Accepted values: 1..N, respecting Security’s RoundLot. Other values will be rounded.* |
| 152 | CashOrdQty | Conditional | Y | Cash quantity to be traded. *Accepted values: 1..N, in security’s currency (Usually BRL, R$).* |
| 555 | NoLegs | Yes | N | Always 2 |
| → 600 | LegSymbol | Yes | N | Fill with the same value as Symbol (55) tag or “[N/A]”. Value will be ignored on our system, but this tag must be included as the first tag of the repeating group in order to make a valid group as defined on FIX specification. |
| → 624 | LegSide | Yes | N | List of accepted Values:  1 – Buy (mandatory for 2nd leg)  2 – Sell (mandatory for 1st leg) |
| → 566 | LegPrice | Conditional | Y |  |
| → 670 | NoLegAllocs | Yes | N | Always one. |
| →→ 671 | LegAllocAccount | Yes | N | Client account number |
| 20775 | MaxParticipationRate | No | Y | Default: 0. Accepts values between 0.00 and 1.00. Must be bigger than MinParticipationRate |
| 20776 | MinParticipationRate | No | Y | Default: 0. Accepts values between 0.00 and 1.00. Must be smaller than MaxParticipationRate |

Field Added to FIX specification

Message example:

### Multileg-Cross (1036)

Multileg-Cross is supported by Robot but not yet integrated to DSA.

## ExecutionReport (8)

ExecutionReport <8> messages are sent back by the Fast Trader Platform and are used for the following purposes:

* Confirm a new order
* Confirm order modification and cancelation
* Inform current order status
* Inform order fills
* Reject an order

The following fields are used by ExecutionReport messages:

|  |  |  |  |
| --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Remarks** |
| 1 | Account | No | Account number |
| 6 | AvgPx | Yes | Average price |
| 11 | ClOrdID | Yes | Order identifier as assigned by client. |
| 14 | CumQty | Yes | Cumulative quantity already executed for the order. |
| 17 | ExecID | Yes | Execution unique identifier as assigned by Fast Trader. |
| 31 | LastPx | No | Price of this trade. Required when a trade is informed. |
| 32 | LastQty | No | Quantity of this trade. Required when a trade is informed. |
| 37 | OrderID | Yes | Order unique identifier |
| 38 | OrderQty | Yes | Ordered quantity of shares or contracts. |
| 39 | OrdStatus | Yes | Current order status. Valid values:  0 – New  1 – Partially Filled  2 – Filled  4 – Canceled  5 – Replaced  6 – Pending Cancel  8 – Rejected  9 – Suspended  A – Pending New  C - Expired  E – Pending Replace |
| 41 | OrigClOrdID | No | Original order identifier as assigned by the client. Used for order identification during modification/cancelation requests. |
| 44 | Price | No | Price per share or contract. Required if specified on the order. |
| 640 | Price2 | No |  |
| 54 | Side | Yes | Order side. Valid values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | The symbol of the traded instrument. |
| 58 | Text | No | Free format text field. |
| 60 | TransactTime | No | Execution date and time in UTC format. |
| 103 | OrdRejReason | No | Code to identify reason for order rejection. . Required when ExecType=8 (Rejected).  Valid values range from 0 to 999999. |
| 150 | ExecType | Yes | Execution type. Valid Values:  0 – New  4 – Cancel  5 – Replace  8 – Reject  9 – Suspend  C – Expired  D – Restated  F – Trade |
| 151 | LeavesQty | Yes | Order quantity open for further execution. |
| 152 | CashOrdQty | No | Notional Value of the order. The order quantity will vary with the current market conditions. It is required if OrderQty is not set. *Accepted values: 1..N, in security’s currency (Usually BRL, R$).* |
| 168 | EffectiveTime | No | Order start time. If not sent it will be set to first valid time. (market open time) |
| 198 | SecondaryOrderID | No | Exchange-generated order identifier that is changed for each order modification event or quantity replenishment in disclosed orders. |
| 210 | MaxShow | No | Maximum quantity (e.g. number of shares) within an order to be shown to other customers. Must be 10x the lot size. |
| 378 | ExecRestatementReason | No | Indicates reason of restatement if available. |
| 432 | ExpireDate | No | Order expiration date. UTC format. Currently, only a few select strategies support this field. |
| 126 | ExpireTime | Conditional | Time when order is no longer valid. Its Required if TimeInForce = 6. indicates time of day when order will end. |
| 654 | LegRefId | No | Leg identification. Sent outside noLegs group if reporting trade for multileg algo order. |
| 847 | TargetStrategy | Yes | The Strategy being used. |
| 555 | NoLegs | No | Number of legs in message. |
| → 600 | LegSymbol | Yes | Symbol being traded. Cannot be changed. Must always be the first tag on each leg. |
| → 616 | LegSecurityExchange | Yes | XBMF or XBSP according the symbol |
| → 624 | LegSide | Yes | List of accepted Values:  1 – Buy  2 – Sell  Values cannot be the same for both legs. Cannot change a leg side. |
| → 654 | LegRefId | No | Leg identification. Sent in execution reports for acknowledging multileg algo orders. |
| → 687 | LegQty | Conditional | The order quantity for this leg of the order. Must be filled if not using LegRatioQty. |
| → 670 | NoLegAllocs | Yes | Usually one. |
| →→ 671 | LegAllocAccount | Yes | Client account number |
| → 20777 | LegMaxParticipationRate | No | Indicates the maximum market participation rate for this leg during the execution of the spread order, Value ranges from: 0.000 to 1.000 |
| → 20778 | LegIgnoredQuantity | No | The quantity from the top of the book to be the discarded by the algo when making spread difference considerations. Default: 5 \* Lot Size. |
| → 20779 | LegBidAskOnTheBookDepth | Conditional | Indicates the max depth in which the algo should bid/offer. If the offer price calculated is beyond that position the algo won´t send it to the exchange. Should be sent if BidAskOnTheBook is set to true.  Accepted Values:  -1 : Wait Other Leg  0: Wait Price  1: Top of book  2: 2nd position  3: 3rd position  4: 4th position |
| → 20780 | LegCashOrdQty | Conditional | The Cash order quantity of the leg. If not supplied on order creation, Robot’s internal estimation will be sent on this field. |
| → 20787 | LegLegMaxLostPriceDiff | Conditional | May only be sent if WaitLeg is true. The amoun in cents or basis points that the algo is allowed to close missed legs. Default: 0.00 |
| → 20800 | LegCumQty | Yes | Executed quantity on this leg. Only present if NoLegs (555) > 0 |
| → 20802 | LegOpenQty | No | Total quantity of offers currently on book. |
| → 20803 | LegOpenPx | No | Average price of all offers currently on book. |
| → 20852 | ManualLegOpenQty | No | Total quantity of manual offers currently on book.  Manual offers can have it’s price modified using ‘Sent order modify’ variation of Order Cancel / Replace Request (G) or Multileg Order Cancel/Replace Request (AC) |
| → 20853 | ManualLegOpenPx | No | Average price of all manual offers currently on book. |
| → 20851 | LegIsShort | No | Leg is missing, it has a pending execution for this Spread / Multileg Operation.  **On FastTrader:** Is sent when a leg is painted yellow on our own screen |
| 20768 | CountCrossOrders | Conditional | Must be sent if LegMaxParticipationRate is set. Defaults to False. |
| 20769 | BidAskOnTheBook | No | Indicates if order is to bid on the book. |
| 20770 | ForceCompletion | No | Indicates if order is to execute whole quantity in spite of being of price. |
| 20771 | MaxReplaces | No | Defaults to 100 |
| 20772 | OfferInterval | No | Indicates the interval of order change in the algo. |
| 20773 | ResetOrder | No | Indicates if order is to be reset. |
| 20774 | IgnoredQuantity | No | Defaults to 0 |
| 20775 | MaxParticipationRate | No | Indicates the maximum volume of the market that the algo might make. |
| 20776 | MinParticipationRate | No | Indicates the minimum volume of the market that the algo has to make. |
| 20782 | TargetSpread | Yes | Expected / configured spread coefficient in multileg orders. |
| 20844 | ExecutedCoefficient | No | The ecxecuted spread on Multileg operations, as calculated by Robot |
| 20849 | MarketCoefficient | No | The current market coefficient, as calculated by Robot. This is the exact coefficient that would be needed to execute this Spread immediately. |
| 20850 | WorkingCoefficient | No | The working spread coefficient, as calculated by Robot. |
| 20783 | WaitLeg | No | Indicates if algo should closed missed legs in the market or place an offer on the needed price. Even when set to false the maximum price difference allowed is 5 cents or basis points of the original leg price required. If that happens the algo will place a bid/offer in the max difference allowed.  Default: False |
| 20784 | CompensateCoefficient | No | Indicates if the algo should make a TargetSpread correction in case of a miss leg execution that generates a bad result in order to compensate and try to achieve the original requested target spread. Default: True |
| 20785 | CancelOffersOutsideDepth | No | Indicates if algo should cancel the offers placed by it that fall out of the selected LegBidAskOnTheBookDepth tag. |
| 20786 | BidAskOnTheBookWithMargin | No | Indicates if the algo should  Keep a margin for offers on proportionally larger lot sizes in case these are partially taken. Default: False |
| 20788 | StartLimit | No | Indicates the price trigger for a start order |
| 20789 | StartPx | No | Indicates the price to be sent on a triggered start order |
| 20790 | MarketValue | No | The spread value in the market during the time the algo was working |
| 20791 | ExecutedValue | No | The spread values actually executed by the algo. |
| 20792 | UsedValue | No | The spread value actually used by the algo. |
| 20793 | MarketVolume | No | The volume of the market during the order |
| 20794 | IsShort | No | Indicates if order is missing a leg |
| 20795 | ShortQty | No | Indicates the quantity missing on the leg |
| 20796 | ShortPrice | No | Indicates the price needed on the missing leg |
| 20797 | IsOverrun | No | Indicates if order was overrun by the exchange. |
| 20804 | MultipleOffers | No | If true, Robot will create an extra order when increasing Offer Qty. Useful to preserve queue order.  Default: False |
| 20805 | WaitLargerSide | No | If true, Robot will wait for enough trades on the larger side to make a trade on the smaller side. |

Field added to FIX specification

## Order Replace Request (G)

The OrderModificationRequest (G) message is used for modifying a strategy orders with only one leg. It is also known as Order Cancel/Replace Request. The received request is validated and then sent to the Fast Trader platform. Below we show a more detailed view of the fields and accepted values for each strategy support with this type of message.

It is important to notice that only ONE open request is accepted therefore any order modification request received for a already pending replace algo order will be rejected.

All fields supplied on the NewOrderSingle (D) message should be filled again. Fields that may be modified are marked with ‘Y’ on the column ‘Repl’ from the tables shown on previous chapters (4.2 and 4.3).

To resume or suspend an order, an OrderReplaceRequet (G) may be sent with only the minimal identification fields. If no parameters fields are received, only a suspend, ExecInst (18) = Suspend (S),or resume, ExecInst (18) = Work (2), request is sent to the Robot.

For Multileg orders replace requests, this is mandatory, as any replace request will suspend the Robot Order. We call this a “pure status replace”. A pure replace will occur if only the following fields are sent:

**‘Pure status replace’ request to resume order, without parameters, translated FIX**

ReplaceRequest (G): BeginString (8), BodyLength (9), MsgType (35), MsgSeqNum (34), SenderCompID (39), TargetCompID (56), HandlInst (21), SendingTime (52), TransactTime (60), ClOrdID (11), OrigClOrdID (41), OrderID (37), ExecInst (18), CheckSum (10).

**‘Pure status replace’ request to resume order, without parameters, plain FIX**

8=FIX.4.4 | 9=442 | 35=G | 34=207 | 49=TESTER | 52=20190731-13:57:27.995 | 60=20190731-13:57:27.983 | 56=PNT\_DSA | 11=1-999 | 18=2 | 41=1-998

## Multileg Order Cancel/Replace Request (AC)

This message will be used to make any changes in an algo order that has more than one leg. It works very similarly as the OrderCancelReplaceRequest. As was the case in single legged orders, we will have a section for each strategy type.

To resume or suspend an order, a MultilegOrderReplaceRequet (AC) may be sent only with the minimal identification fields. If no parameters fields are received, only a suspend, ExecInst (18) = Suspend (S),or resume, ExecInst (18) = Work (2), request is sent to the Robot.

For Multileg orders replace requests, this is mandatory, as any replace request will suspend the Robot Order. We call this a “pure status replace”. A pure replace will occur if only the following fields are sent:

**‘Pure status replace’ request to resume order, without parameters, translated FIX**

MultilegOrderReplaceRequet (AC): BeginString (8), BodyLength (9), MsgType (35), MsgSeqNum (34), SenderCompID (39), TargetCompID (56), HandlInst (21), SendingTime (52), TransactTime (60), ClOrdID (11), OrigClOrdID (41), OrderID (37), ExecInst (18), CheckSum (10).

**‘Pure status replace’ request to resume order, without parameters, plain FIX**

8=FIX.4.4 | 9=442 | 35=AC | 34=207 | 49=TESTER | 52=20190731-13:57:27.995 | 60=20190731-13:57:27.983 | 56=PNT\_DSA | 11=1-999 | 18=2 | 41=1-998

### Multileg message replace flow and rules

All fields supplied on the NewOrderMultileg (AB) message should be filled again. Fields that may be modified are marked with ‘Y’ on the column ‘Repl’ from the tables shown chapter (4.3).

As the replace of algo orders involve a complex system and possibly a workflow scheme for approval of replaces, the system will not allow order replace chaining. Any replace request received for an order with a status of pending replace will be rejected.

Therefore the message flow is:

1. Fix Client sends a new multileg order replace to the Algo System
2. Algo system sends an execution report with tag MultiLegReportingType (442) = 3 indicating that the answer is treating the whole algo order. It will mirror all fields sent and actually taken in consideration by the system. **In some cases the system may change some values making auto-corrections.**
   1. If the order has errors in it, the order tag OrderStatus (39) will indicate ‘8’ Rejected and the text field will have the reason for the clOrdId of the replaced order. The original order will still be in place
   2. If the order passed the first validation it may be sent for approval by a system administrator. In this case, OrderStatus (39) will be ‘A’ – PendingReplace and the text field will display the approval step.
   3. If the system administrator chose so, the algo order may be suspended while being approved. In these cases the text tag will indicate the status of the order.
   4. If the order is accepted it will return the OrderStatus (39) = 5 Replaced
   5. If the order replace was not approved the FIX client will receive an execution report with the ExecType=’Rejected’

**Replace request to resume order, without parameters, plain FIX**

8=FIX.4.4 | 9=442 | 35=AC | 34=207 | 49=TESTER | 52=20190731-13:57:27.995 | 60=20190731-13:57:27.983 | 56=PNT\_DSA | 21=4 | 11=1-999 | 18=2 | 41=1-998 | 37=dsa.1234

## OrderCancelReject (9)

The OrderCancelReject (9) messages are received as a return from the exchange and indicate that a request for modification or cancelation has been rejected. The following fields take part in the message:

|  |  |  |  |
| --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Remarks** |
| 1 | Account | Yes | Client account number used by the order. |
| 11 | ClOrdID | Yes | The new order identifier assigned by the client. |
| 22 | SecurityIDSource | No | Identifies class or source of the SecurityID field. Required when SecurityID field is sent. Valid Value  8 – Exchange Symbol |
| 37 | OrderID | Yes | Order unique identifier provided by the OMS. It is kept the same throughout the order life span. |
| 39 | OrdStatus | Yes | Current order status. Valid values:  0 – New  1 – Partially Filled  2 – Filled  4 – Canceled  5 – Replaced (only FIX 4.2)  6 – Pending Cancel  8 – Rejected  9 – Suspended  C – Expired  The order status Z (Previous Final State) is not sent by Fast OMS, being replaced by the previous received status. |
| 41 | OrigClOrdID | No | Original client order identifier. Refers to the order that was not modified/canceled. |
| 48 | SecurityID | No | The security ID of the traded instrument as defined by BM&FBOVESPA. |
| 54 | Side | Yes | Order side. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | The symbol of the traded instrument. |
| 58 | Text | No | Text field. Informs more details about this rejection. |
| 102 | CxlRejReason | No | Rejection reason code. Valid values range from 0 to 999999.  Please refer to the error codes document for more information. |
| 434 | CxlRejResponseTo | Yes | Identifies type of request being rejected.  Valid values:  1 – OrderCancelRequest  2 – OrderModificationRequest |
| 453 | NoPartyID | Yes | Number of repeating groups for parties.  Returns groups automatically set by Fast OMS with the client registered data. |
| →448 | PartyID | Yes | Used to identify the source of PartyID. |
| →447 | PartyIDSource | Yes | Identifies class or source of the PartyID.  Accepted value:  D – Proprietary/Custom code |
| →452 | PartyRole | Yes | Identifies the role of the PartyID. Accepted values:  4 – Clearing Firm  5 – Investor ID  7 – Entering Firm  12 – Executing Trader  36 – Entering Trader  40 – Transfer to Firm  46 – Foreign Firm  54 – Sender Location ID  99 – Originating Market  1001 – Order Originating Session |
| 581 | AccountType | No | Type of Account associated with an order.  Valid values:  38 – Remove Account Information  39 – Regular Account  40 – Give Up Link Identifier  Its value was previously sent by Fast OMS to the exchange according the client registered data. |
| 5149 | Memo | No | Free format text string. Sent by the market participant client and limited to 50 characters. |

Field added to EntryPoint FIX specification

Field modified from EntryPoint FIX specification

Field removed from EntryPoint FIX specification

Fast OMS doesn’t change any of the original message fields before sending through to the client connection. Refer to *EntryPoint Message Specification* document for further information.

# OrderCancelRequest

The OrderCancelRequest <F> message is used to cancel a previously sent order. The following fields take part in the message:

|  |  |  |  |
| --- | --- | --- | --- |
| **Tag** | **Name** | **Required** | **Remarks** |
| 1 | Account | No | Client account number used by the order. |
| 11 | ClOrdID | Yes | New client order identifier assigned by the client to the order being canceled. Must be unique throughout a day or during the life span of the sent orders. It has a maximum length of 28 characters. |
| 37 | OrderID | No | Unique order identifier assigned by the OMS. Use this field for a faster order cancel request routing. |
| 38 | OrderQty | No | Ordered quantity of shares or contracts.  Not required. |
| 41 | OrigClOrdID | Yes | The original client order identifier. Refers to the order that is being canceled. |
| 54 | Side | Yes | The side of the order. Accepted values:  1 – Buy  2 – Sell |
| 55 | Symbol | Yes | The symbol of the traded instrument. |
| 58 | Text | No | Text field. Maximum length 255 characters. |
| 60 | TransactTime | Yes | The date and time of the cancelation request in UTC format. |

Field added to EntryPoint FIX specification

Other fields and their values are ignored by Fast OMS, being forwarded to the exchange unchanged. Refer to *EntryPoint Message Specification* document for further information.

# Order Mass Status Request

Orders available in Robot`s memory may be read / requested through an Order Mass Status Request (AF) message. Answer will consist in a sequence of Execution Report (8) messages, one for each found order.

If systems are still starting on the start of the day or after a crash, request will be rejected with a Business Message Reject (j) with BusinessRejectReason (380) = Application not available (4) and a description on field Text (58).

Invalid message formations will also be rejected with the same Business Message Reject (j) and other BusinessRejectReason (380). Always with a description on field Text (58).

|  |  |  |  |
| --- | --- | --- | --- |
| **Tag** | **Name** | **Req** | **Remarks** |
| 35 | MsgType | Yes | Order Mass Status Request (AF) |
| 584 | MassStatusReqID | Yes | Client defined identifier. Will be replied on the same field on all sent Execution Report (8). |
| 585 | MassStatusReqType | Yes | The order selection criteria:  7- Status for all orders (Not yet implemented)  9- Orders for account |
| 1 | Account | Cond | Required if MassStatusReqType (585) = 9 |
| 453 | NoPartyIDs | No | Required if MassStatusReqType (585) = 9 and InvestorID / Brazillian CPF validation is enabled. |
| → 448 | PartyID | Cond | Final client’s InvestorID.(5)  Required if NoPartyIDs (453) is not 0. |
| → 447 | PartyIDSource | Cond | Expected: Proprietary/Custom code (D)  Required if NoPartyIDs (453) is not 0. |
| → 452 | PartyRole | Cond | Expected: InvestorID (5)  Required if NoPartyIDs (453) is not 0. |

# Order Flow examples

## Bear Call/Bull Put Spread

When inserting a bear call spread these are the following messages exchanged between the application. First a new order multiLeg is sent. In this example we are using the leg quantities defined directly into the legs:

FIX Client sends a new order for a Bear Call spread between PETR3 and PETR4

**8=FIX.4.4 9=174 35=D 34=13 49=TESTER1 52=20121003-19:07:51.759 56=PNT\_ROBOT 11=20121003160723 21=4 38=2000 40=2 54=B 55=PETR3;PETR4 59=6 60=20121003-19:07:51 126=20121003-21:07:51 847=1002 555=2 600=PETR3 616=XBSP 624=1 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 10=051**

When the message arrives in the server it will be checked, validated and then set up for approval. If the validations are ok, the FIX client will receive an Execution report confirming the data for the order accepted by the algo trading system and with a pending new status.

**8=FIX.4.4 9=174 35=8 34=20 49=PNT\_ROBOT 52=20121003-19:07:51.759 56=TESTER1 6=0 11=20121003160723 14=0 17=dsa.1 21=4 37=dsa.151 38=2000 39=A 40=2 54=B 55=PETR3;PETR4 58=Order is SUSPENDED and pending approval by AUTHORIZED user or supervisor. 59=6 60=20121003-19:07:51 126=20121003-21:07:51 150=A 151=2000 442=3 847=1002 555=2 600=PETR3 616=XBSP 624=1 654=0 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 654=1 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 10=051**

The message in the text field is dependent on the algo system configuration by its administrators. Once the order is approved the FIX client will receive another execution report indicating that the order is working with the “New” status.

**8=FIX.4.4 9=299 35=8 34=22 49=PNT\_ROBOT 56=TESTER1 52=20121003-19:17:41.508 6=0 11=20121003160723 14=0 17=Accepted\_is.466 21=4 37=dsa.151 38=2000 39=0 40=2 54=B 55= PETR3;PETR4 59=6 60=20121003-19:07:51 126=20121003-22:26:00 150=0 151=2000 442=3 847=1002 555=2 600=PETR3 616=XBSP 624=1 654=0 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 654=1 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 10=051**

From now on the order will receive execution reports for the specific legs when trades occur.

First Leg execution:

**8=FIX.4.4 9=299 35=8 34=24 49=PNT\_ROBOT 56=TESTER1 52=20121003-19:17:41.508 6=25.87 11=20121003161723 14=500 17=23223.0 31=25.87 32=500 37=dsa.151 38=1000 39=1 54=1 55=PETR3 150=F 151=500 442=2 654=0 10=57**

Second leg execution:

**8=FIX.4.4 9=299 35=8 34=25 49=PNT\_ROBOT 56=TESTER1 52=20121003-19:17:41.508 6=25.87 11=20121003161723 14=500 17=23223.1 31=23.36 32=500 37=dsa.151 38=1000 39=1 54=2 55=PETR4 150=F 151=500 442=2 654=1 10=59**

At the end of the order an execution report with exec type=OrderStatus will be sent with the overview of the algo order.

**8=FIX.4.4 9=174 35=8 34=30 49=PNT\_ROBOT 52=20121003-19:07:51.759 56=TESTER1 6=0 11=20121003160723 14=2000 17=Filled\_is.6543 21=4 37=dsa.151 38=2000 39=2 40=2 54=B 55=PETR3;PETR4 58=Order is Filled 59=6 60=20121003-19:07:51 126=20121003-21:07:51 150=I 151=0 847=1002 555=2 600=PETR3 616=XBSP 624=1 654=0 687=1000 670=1 671=10 20778=500 20779=1 600=PETR4 616=XBSP 624=2 654=1 687=1000 670=1 671=10 20778=500 20779=1 20769=Y 20781=3 20782=2.91 20783=N 20784=Y 20786=N 20790=2.89 20791=2.91 20192=2.91 20797=N 10=051**

## Order Mass Status Request

Order status requests are sent in one of the following formats. Each search criteria may be enabled or disabled in server configurations:

8=FIX.4.4|35=AF|49=PNT\_DSA|56=TESTER|584=a|585=9|1=4000

8=FIX.4.4|35=AF|49=PNT\_DSA|56=TESTER|584=a|585=9|1=4000|207=XBSP

8=FIX.4.4|35=AF|49=PNT\_DSA|56=TESTER|584=a|585=9|1=4000|207=XBSP|453=1|448=09876543210|452=5

# Summary of TargetStrategy Values

|  |  |
| --- | --- |
| **Strategy Name** | **TargetStrategy Tag (847) Value** |
| VWAP | 1 |
| TWAP | 1000 |
| Volume Participation | 2 |
| Sniper | 1011 |
| Best-Offer | 1009 |
| Best-Offer/Sniper | 2009 |
| Stop Loss/Take Profit | 1014 |
| Shortfall | 1013 |
| Iceberg | 1026 |
| VWAP (History) | 1027 |
| Auction Order | 1030 |
| Scheduled Order | 1031 |
| Cross-Sniper | 1032 |
| Routed Order | 3001 |
| Simple Order | 1033 |
| Cross order | 1034 |
| Linear Gradient | 1035 |
| Bull/Bear Call/Put Spread (Price or weighted price difference) | 1002 |
| Long/Short | 1002 |
| Multileg Spreader | 1029 |
| Cross TWAP | 1028 |
| Cross MultiLeg | 1036 |