

#### **MIAX Pearl Equities Exchange**

### **Risk Protections Guide**

**Modified January 2025** 



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#### 1. Introduction

MIAX Pearl Equities™ created this Risk Protections Guide to assist its Members in understanding the MIAX Pearl Equities risk protections offering.

MIAX Pearl Equities supports both a binary interface (MIAX Express Orders, "MEO") and FIX order entry interface, with parity in functionality supported on both. As such, all risk protections outlined in this guide are available for both the FIX and MEO binary interfaces.

For any protection that is set at multiple levels - for example, different Maximum Order Size thresholds set for an MPID and Session by the member - if an order is received corresponding to the respective session and MPID, the more conservative of the two thresholds will be honored.

Risk protections are latency equalized. There is no latency penalty for a member when opting into and leveraging a risk protection available on the exchange as compared to a member not opting into the risk protection.

Members are able to request changes to their risk configurations via the Member Firm Portal (MFP) Application Programming Interface (API) and the MFP User Interface (UI). Risk configuration changes will be accepted and processed from 3:00 AM to 8:00 PM Eastern Time (5:00 PM Eastern Time on Early Close Days). For access to the MFP API or MFP UI, please contact Trading Operations at <a href="mailto:TradingOperations@miaxglobal.com">TradingOperations@miaxglobal.com</a> or 609-897-7302.



# 2. Per Risk Order Metric ("PERM")

Mandatory Protections							
Protection	Description	Configurability	Default	MFP UI Availability	MFP API Availability		
Maximum Order Size	The Maximum Order Size Protection is the maximum total size of an order in shares permitted by the exchange. If the total size of an order or an Order Modification Request exceeds its Maximum Order Size threshold, the order or Order Modification Request will be rejected.  Optionally members may set custom Maximum Order Size thresholds for each of their sessions or MPIDs.  If an Equity Member does not provide MIAX Pearl Equities with a custom value for the Maximum Order Size protection, the default value established by the Exchange will be applied.	MPID Level Session Level Must be set in full 1 share increments between 1 and 1,000,000	25,000 shares	Available in UI: Yes (All Scopes)  If Yes, Functionality Available: Edit	Available in API: Yes (All Scopes)  If Yes, Functionality Available: Edit		
Limit Order Price Protection	A Limit Order to buy or sell will be rejected if it is priced at or above (below) the greater of a specified dollar and percentage away from the National Best Offer (NBO) for Limit Orders to buy, the National Best Bid (NBB) for Limit Orders to sell. For buy (sell) orders, the Price Limit will be equal to the NBO plus (minus) the greater of the Percentage Based Limit and the Dollar Based Limit.  Members may customize the specified dollar and percentages on a per session or per MPID basis across six different price ranges.  During the Early and Late Trading Sessions, members will be able to specify a "LOPP Extended Hours Multiplier" where the Price Limit will be calculated by multiplying the applicable percentage and dollar values against the Extended Hours Multiplier.	MPID Level Session Level Extended Hours Multiplier must be set in 0.5 increments between 1.0 and 3.0	Extended Hours Multiplier = <b>2.0</b> (for Ranges 1-6)	Available in UI: Yes (All Scopes) If Yes, Functionality Available: Edit	Available in API: Yes (All Scopes)  If Yes, Functionality Available: Edit		

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For buy (sell) orders, the Price Limit will be equal to the NBO (NBB) plus (minus) the greater of the Percentage Based Limit and the Dollar Based Limit multiplied by the Extended Hours Multiplier.  Members may customize the Extended Hours Multiplier on a per session or per MPID basis.  Limit Order Price Protection (LOPP) will be applied when an order is first eligible to trade. A Limit Order entered before the Regular Trading Session that becomes eligible to trade in the Regular Trading Session will become subject to Limit Order Price Protection when the Regular Trading Session commences.			
Range 1: Order's Limit Price < \$1	Percent value must be set in a full percent increment between 1% and 500%  Dollar value must be set in a subpenny increment (\$0.0001) between \$0.0001 and \$1.00	10% and \$0.15	
Range 2: >=\$1 Order's Limit Price <\$10	Percent value must be set in a full percent increment between 1% and 50%  Dollar value must be set in a penny increment (\$0.01) between \$0.01 and \$5.00	10% and \$0.15	



	Range 3: >=\$10 Order's Limit Price <\$50	Percent value must be set in a full percent increment between 1% and 20%  Dollar value must be set in a penny increment (\$0.01) between \$0.01 and \$10.00	10% and \$1.00
	Range 4: >=\$50 Order's Limit Price <\$100	Percent value must be set in a full percent increment between 1% and 20%  Dollar value must be set in a penny increment (\$0.01) between \$0.01 and \$20.00	10% and \$5.00
Range 5: >=\$100 Order's Limit Price <\$500	<b>Range 5</b> : >=\$100 Order's Limit Price <\$500	Percent value must be set in a full percent increment between 1% and 20%  Dollar value must be set in a penny increment (\$0.01) between \$0.01 and \$100.00	5% and \$10.00



	Range 6: Order's Limit Price >=\$500	Percent value must be set in a full percent increment between 1% and 20%  Dollar value must be set in a penny increment (\$0.01) between \$0.01 and \$500.00	3% and \$25.00		
Minimum Order Size Check	Orders and Order Modification Requests must be entered in sizes that are in multiples of 1 share. Order and Order Modification Requests not submitted with a size that is a multiple of 1 share will be rejected. This protection is not configurable.	Not configurable	1	Available in UI: <b>No</b>	Available in API: <b>No</b>
Minimum Order Price Protection	Orders and order modification requests with a limit price that is less than the Exchange-set Minimum Order Price will be rejected. This protection is not configurable.	Not configurable	\$0.0001	Available in UI: <b>No</b>	Available in API:
Maximum Order Price Protection	greater than the Exchange-set Maximum Order Price will be		\$999,999.99	Available in UI: <b>No</b>	Available in API: <b>No</b>
	All orders and order modification requests will be checked against the valid price increments in the security upon entry into the System. This check is not configurable.		N/A		
Price Tick Size Check	Order with price less than \$1.00	Not configurable	\$0.0001	Available in UI: <b>No</b>	Available in API: <b>No</b>
	Order with price equal to or greater than \$1.00		\$0.01		



	On the day of an IPO, members will not be allowed to trade the new security until the IPO is completed at the Primary Listing Exchange.				
IPO Day Order Handling	Any order received at MIAX Pearl Equities before the IPO is complete at the Primary Listing Exchange will be rejected.  The system will automatically detect the point in time at which	Not configurable	N/A	Available in Ul: <b>No</b>	Available in UI: <b>No</b>
	the IPO is complete. After this point in time, orders in the security will begin being accepted and being queued for the MIAX Pearl Equities opening process, which will kick off once all conditions have been met.				



Optional Protections						
Protection	Description	Configurability	Default	MFP UI Availability	MFP API Availability	
Market Order Price Protection	Members may request Market Orders be rejected upon arrival if the contra-side Away Best Bid and Offer (ABBO) price is not available. By default, this protection will not be applied.	MPID Level Session Level	None	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	
Maximum Order Notional Value Protection	Maximum Order Notional Value is the maximum notional value in dollars permitted by the exchange for an order.  For Limit orders, the notional value of an order is calculated by multiplying the order's total size by the order's limit price.  For Market orders, the notional value of an order is calculated by multiplying the order's total size by the contra-side National Best Bid and Offer (NBBO) at the time of the order's arrival.  If the notional value of an order or an Order Modification Request exceeds its Maximum Order Notional Value threshold, the order will be rejected upon entry into the system.  Maximum Order Notional Value is an optional protection for orders. If the member does not set a Maximum Order Notional Value threshold, the notional value check will not be applied to the member's orders.  Members may enable this protection at the session level or MPID level, with the ability to apply independent settings for Market Orders and Limit Orders.	MPID Level – Market Order Value MPID Level – Limit Order Value Session Level – Market Order Value Session Level – Limit Order Value	None	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Edit, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Edit, Disable	



ISO Reject	Members will have the option to reject any orders marked as ISO.	MPID Level Session Level	Allow ISO Orders	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable
Short Sale Reject	Members will have the option to reject any orders marked as short sale. The default behavior will be to allow Short Sale activity.	MPID Level Session Level	Allow Short Sale Orders	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable
Short Sale Exempt Reject	Members will have the option to reject any orders marked as short sale exempt. The default behavior will be to allow sell sale exempt activity.	MPID Level Session Level	Allow Short Sale Exempt Orders	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable
Market Order Reject	Members will have the option to reject any market orders. The default behavior will be to allow market orders	MPID Level Session Level	Allow Market Orders	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable
Average Daily Volume (ADV) Check	Average Daily Volume (ADV) for a security will be determined as an average of all traded volume in the security over the past twenty trading days. The ADV will be adjusted to account for any half-days. This check will still be applied if the security has been trading for less than twenty days; the ADV will be calculated based on the traded days for that security.  If the total size of an order or an Order Modification Request exceeds the ADV size	MPID Level – All Symbols Session Level – All Symbols MPID Level – Symbol Setting Session Level – Symbol Setting	None	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Add, Edit, Delete	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Add, Edit, Delete



	threshold, the order will be rejected upon entry into the system with an appropriate reason code.  If an Order Modification Request is rejected due to exceeding the ADV Size threshold, the original order will remain on the orderbook and will not be cancelled.  The ADV check threshold will be calculated as follows:  • ADV multiplied by a custom percentage, set by the member in 0.0001% increments. Members may enable this protection with a custom percentage set at the session level or MPID level.  • Additionally, when opting into the protection, the member will be required to configure a "minimum ADV" required in the security for the check to be applied. For example, a member may indicate that for any securities with an ADV of 3000 shares or less, the ADV check should not be applied.  Optionally, the member will be able to override any MPID and/or a Session ADV percentage for an individual security. This change will be available to be made intra-day.				
Restricted Security List Check	Members will have the option to individually configure each of their sessions or MPIDs to reject any orders sent in a security on a member's Restricted Security List with an appropriate reason code.  This list will be set up using the Member Firm Portal (MFP) UI or API by the member and	MPID Level Session Level	None	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Add, Delete	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Add, Delete



	may be changed multiple times intra-day by the member.  Intra-day changes made will be immediately effective in the system between the hours of 3:00 AM ET and 8:00 PM ET.				
Regulation SHO Security List Check	Members will have the option to individually configure each of their sessions or MPIDs to reject any orders marked as a Short Sale and Short Sale Exempt with an appropriate reason code, if the order received is in a security that falls within the firm's Regulation SHO Restricted Security List.  This protection will be applied regardless of whether the Short Sale Price Test is currently in effect or not for the security.  This list will be set up using the Member Firm Portal (MFP) UI or API by the member and may be changed multiple times intra-day by the member.  Intra-day changes made will be immediately effective in the system between the hours of 3:00 AM ET and 8:00 PM ET.	MPID Level Session Level	None	Available in UI: <b>Yes</b> (All Scopes) If <b>Yes</b> , Functionality Available: Add, Delete	Available in API: <b>Yes</b> (All Scopes) If <b>Yes</b> , Functionality Available: Add, Delete
Non-Agency Reject	Members will have the option to reject any orders with a capacity of Principal or Riskless Principal. The default behavior will be to allow all orders, regardless of capacity.	MPID Level Session Level	Accept Agency Orders	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable



Override Capacity to Agency	Members will be able to opt into a session configuration to override all orders received via the session to a Capacity of "Agency", regardless of the Capacity stated on the order (Agency, Principal or Riskless Principal).	Session Level	Do not override	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable
Allow Test Securities	Members will have the option to reject any orders sent in a Test Security.	Session Level	Accept orders in Test Securities	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Disable
Locate Account Validation	Members have the ability to opt into a protection that verifies the Locate Account specified on the member's Sell Short and Sell Short Exempt Orders. The Locate Account on the order will be compared to a member-provided list of valid Locate Accounts; the order will then be rejected if the Locate Account provided on the order is not a match to one from the list.  To enable or disable this protection, please reach out to the Trading Operations Team. After enabling the protection, the Locate Account List should be set up using the Member Firm Portal UI by the member and may be changed multiple times intra-day by the member. Any changes to the list will be immediately effective.  If a member sets up Locate Account lists at multiple scopes, an order will be validated	MPID Level Session Level Firm Level	Off	Available in UI: <b>Yes</b> If <b>Yes</b> , Functionality Available: Edit Locate Account List	Available in API: <b>Yes</b> If <b>Yes</b> , Functionality Available: Edit Locate Account List



	against the list set up at each scope. If the Locate Account on the order does not appear on the list at all levels with Locate Account Validation enabled, the order will be rejected.				
Early Trading Session Restriction	Members will have the option to have any new orders rejected during the Early Trading Session. This includes all new orders, with the exception of orders with a TIF of Regular Hours Only (RHO).  Optionally, a Protection End Time can be set in <i>HH:MM:SS</i> format at which point the protection will be disabled. The Protection End Time that is set will have a 1 second tolerance after the protection is disabled where orders may continue to be rejected.	MPID Level Session Level	Disabled	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Edit, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Edit, Disable
Late Trading Session Restriction	Members will have the option to have any open orders cancelled at the start of the Late Trading Session and subsequently have any new orders rejected.  Optionally, a Protection Start Offset Time can be set in <i>HH:MM:SS</i> format at which point the protection will be enabled. This time is an offset from the end of Regular Trading Hours. The Protection Start Offset Time that is set will have a 1 second tolerance before the protection is enabled where orders may start to be rejected/cancelled.	MPID Level Session Level	Disabled	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Edit, Disable	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Enable, Edit, Disable



## 3. Cumulative Risk Metrics ("CRM")

MIAX Pearl Equities will provide members with the ability to limit their notional exposure aggregated across open orders, trades, or both for a Risk Protection Group, for a day, to a specified maximum value, for the following metric:

<u>Warnings</u>: For each of the six protections, warnings will be sent to the MIAX Pearl Equities Trading Operations team if the Risk Protection Group's activity equals or exceeds a specified percentage of the threshold for that group. Warnings will be sent if the member's activity is greater than or equal to the following levels:

- 75% of the threshold
- 90% of the threshold
- Up to 3 optional custom warning levels configured for the Risk Protection Group (must be set in whole percent increments between 10% and 99%)

Reset: The member will not be able to reset with an automated message on the session. Members must contact MIAX Pearl Equities Trading

Operations to reset a Risk Protection Group with a request to update the threshold to a value that is above the Risk Protection Group's current notional value. This request may also be submitted via the Member Firm Portal UI or the Member Firm Portal API - the update and reset will be effective immediately. This will be considered a permanent threshold change and will persist to the next day.

Protection	Description	Configurability	Trigger Action	MFP UI Availability	MFP API Availability
Maximum Gross Notional Trade Value Protection	Gross Notional Trade Value: The sum of the notional values of a member's buy side and sell side trades for the day for that Risk Protection Group. i.e.  Gross Notional Trade Value = (Sum of Notional Value of Sell Side Trades) + (Sum of Notional Value of Buy Side Trades)	MPID Level Session Level Multiple Sessions Level Firm Level	Member chooses one:  Mass Cancel Existing Orders & Block New Orders  or  Block New Orders Only	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset, Pause, Un-	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset



Maximum Net Notional Trade Value Protection	Net Notional Trade Value: The absolute value of the difference between the sum of the notional value of all buy side trades and the sum of the notional value of all sell side trades for the day for that Risk Protection Group. i.e.  Net Notional Trade Value = Absolute Value of [(Sum of Notional Value of Buy Side Trades) – (Sum of Notional Value of Sell Side Trades)]	MPID Level Session Level Multiple Sessions Level Firm Level	Member chooses one:  Mass Cancel Existing Orders & Block New Orders  or  Block New Orders Only	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset, Pause, Un- Pause	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset
Maximum Gross Notional Open Value Protection	Gross Notional Open Value: The sum of the notional values of a member's buy side and sell side open orders for that Risk Protection Group. i.e.  Gross Notional Open Value = (Sum of Notional Value of Sell Side Open Orders) + (Sum of Notional Value of Buy Side Open Orders)	MPID Level Session Level Multiple Sessions Level Firm Level	Member chooses one:  Mass Cancel Existing Orders & Block New Orders  or  Block New Orders Only	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset, Pause, Un-	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset
Maximum Net Notional Open Value Protection	Net Notional Open Value: The absolute value of the difference between, the sum of the notional value of all buy side open orders and the sum of the notional value of all sell side open orders for that Risk Protection Group. i.e.  • Net Notional Open Value = Absolute Value of [(Sum of Notional Value of Buy Side Open Orders) – (Sum of Notional Value of Sell Side Open Orders)]	MPID Level Session Level Multiple Sessions Level Firm Level	Member chooses one:  Mass Cancel Existing Orders & Block New Orders  or  Block New Orders Only	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset, Pause, Un-Pause	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset



Gross Notional Trade + Open Value Protection	Gross Notional Trade Value: The sum of the notional values of a member's buy side and sell side trades and open orders for the day for that Risk Protection Group. i.e.  Gross Notional Trade Value = (Sum of Notional Value of Sell Side Trades) + (Sum of Notional Value of Buy Side Trades) + (Sum of Notional Value of Sell Side Open Orders) + (Sum of Notional Value of Buy Side Open Orders)	MPID Level Session Level Multiple Sessions Level Firm Level	Member chooses one:  Mass Cancel Existing Orders & Block New Orders  or  Block New Orders Only	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset, Pause, Un- Pause	Available in API: <b>Yes</b> (All Scopes) If <b>Yes</b> , Functionality Available: Edit, Reset
Net Notional Trade + Open Value Protection	Net Notional Trade Value: The absolute value of the difference between the sum of the notional value of all buy side trades and open orders and the sum of the notional value of all sell side trades and open orders for the day for that Risk Protection Group. i.e.  • Net Notional Trade Value = Absolute Value of [(Sum of Notional Value of Buy Side Trades) + (Sum of Notional Value of Buy Side Open Orders) – (Sum of Notional Value of Sell Side Trades) - (Sum of Notional Value of Sell Side Open Orders)]	MPID Level Session Level Multiple Sessions Level Firm Level	Member chooses one:  Mass Cancel Existing Orders & Block New Orders  or  Block New Orders Only	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset, Pause, Un- Pause	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Edit, Reset



## 4. Duplicate and Order Rate Checks

Protection	Description	Configurability	MFP UI Availability	MFP API Availability
	Duplicate Order Check will provide all members with the ability to limit potentially erroneous duplicative orders on a session sent from the same MPID from being live on the exchange.  A duplicate order will be identified as a new order with the same signature: with the same MPID, side, price, quantity and security as the order sent before it via the same session.	Session Level		
	The Duplicate Order Check is an optional protection applied at the session level.			
Duplicate Order Check	<b>Duplicate Order Time Window:</b> The rolling time window during which the Duplicate Order Count threshold must be hit	Must be set in milliseconds	Available in UI: <b>Yes</b> (All Scopes)	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Reset
	<b>Duplicate Order Count:</b> The number of duplicate orders received during the Duplicate Order Time Window triggers the protection.	Must be set as an integer	If <b>Yes</b> , Functionality Available: Reset	
	Duplicate Order Trigger Action: The action that would be enforced when the protection is triggered, one of the following must be selected:  Reject: All new orders received on the session for the MPID that triggered the protection will be rejected for the remainder of the rolling Duplicate Order Time Window. Order cancellations and Order Modification Requests will continue to be accepted.  Disable: All new orders received on the session for the MPID that triggered the protection will be rejected until a request is submitted to Trading Operations, either via email or through the	Member chooses one: Reject or Disable		



The Order Rate Check is designed to identify any irregularity in order entry behavior, the source of which could be a malfunctioning system or erroneous business activity.  Members will have the ability to define custom thresholds to monitor the rate at which all incoming new Orders (regardless of Order Type, Routing Strategy, etc.), Order Modification Requests and Cancellation Request are entered on the exchange for a Risk Protection Group.  Order Rate Check with Automatic  Reset  Order Rate Time Window: The rolling time window (or the look-back time period) during which the Order Count threshold must be breached.  Order Count: The Order Rate Protection is triggered when the amount of applicable messages exceeds the Order Count in the Order Rate Time Window.  Order Rate Trigger Action: The action that would be enforced when the Order Rate Protection is triggered.  • Reject: All new Orders and Order Modification Requests received will be rejected for the remainder of the rolling Order Time Window.  Order Cancellation Requests will continue to be accepted. These Order Cancellation Requests will only the order Count while the threshold has been exceeded.  Counting messages for a Session sent for an MPID in a specific security and specific security and session sent for an MPID in a specific security.  Must be set in seconds  Must be set as an integer  Available in UI: Yes (View Only) for Yes, Functionality Available: Pause, Un-Pause  Available: Pause, Un-Pause	Available in API: <b>No</b>



	Exclude Cancels From Count: If set to "Yes", Order Cancellation Requests will not be considered towards the Order Count. Mass Cancel Requests of any type will always be excluded from the Order Count even if this configuration is set to "No".	Member chooses one: Yes or No		
Order Rate Check with Manual Reset	The Order Rate Check is designed to identify any irregularity in order entry behavior, the source of which could be a malfunctioning system or erroneous business activity.  Members will have the ability to define custom thresholds to monitor the rate at which all incoming new Orders (regardless of Order Type, Routing Strategy, etc.), Order Modification Requests and Cancellation Requests are entered on the exchange for a Risk Protection Group.	Counting messages for an MPID  Counting messages for a Session  Counting messages for multiple Sessions  Counting messages for multiple Sessions	Available in UI: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Reset, Pause, Un-Pause	Available in API: <b>Yes</b> (All Scopes)  If <b>Yes</b> , Functionality Available: Reset, Query Count
	Order Rate Time Window: The rolling time window (or the look-back time period) during which the Order Count threshold must be breached.	Must be set in seconds		
	Order Count: The Order Rate Protection is triggered when the amount of applicable messages exceeds the Order Count in the Order Rate Time Window.	Must be set as an integer		



<ul> <li>Order Rate Trigger Action: The action that would be enforced when the Order Rate Protection is triggered.</li> <li>Warning Only: The member will be notified via email and via the Member Firm Portal that the threshold has been breached. There will be no impact to the member's order entry activity or resting orders.</li> <li>Block Only: The system will reject all subsequent new orders received from the Risk Protection Group that triggered the Protection. There will be no impact to the member's resting orders.</li> <li>Block and Mass Cancel: The system will reject all subsequent new orders and cancel all open orders on the exchange for the Risk Protection Group that triggered the Protection.</li> <li>When an Order Rate Protection with a Trigger Action of "Block Only" or "Block and Mass Cancel" has been triggered, all new orders received for the triggered scope will be rejected until a request is submitted to Trading Operations, either via email or through the Member Firm Portal UI or API, to reset the risk control for that scope. A request to reset the protection submitted via the UI or API will be immediately effective.</li> </ul>	Member chooses one: Warning Only Block Only Block and Mass Cancel
Exclude Cancels From Count. If set to "Yes", Order Cancellation Requests will not be considered towards the Order Count. Mass Cancel Requests of any type will always be excluded from the Order Count even if this configuration is set to "No".	Member chooses one:  Yes  or



### 5. Trade Risk Metrics

Protection	Description	Configurability	MFP UI Availability	MFP API Availability
Trading Collar	The Trading Collar prevents incoming orders, including those marked ISO, from executing at a price outside the Trading Collar price range, i.e. prevents buy orders from trading or routing at prices above the collar and prevents sell orders from trading or routing at prices below the collar.  The Trading Collar price range is calculated using either:  1. A Custom Dollar Value optionally specified by the User on the order, or  2. The greater of  a. Numerical Guidelines for Clearly Erroneous Executions, or  b. A specified dollar value established by the Exchange.  Executions are permitted at prices within the Trading Collar price range, inclusive of the boundaries.  Upon entry, any portion of an order to buy (sell) that would execute at a price above (below) the Trading Collar Price is cancelled.  Reference Price: The Reference Price will be equal to the most current of the following:  1. Consolidated last sale price disseminated during the Regular Trading Hours on trade date, or  2. The last trade price for the security on trade date that occurred outside of Regular Trading Hours (Form T, as communicated by the relevant SIP) on trade date which other than for the Form T designation would have been considered a valid last sale price, or  3. Prior day's Official Closing Price if neither of the above are available  The result is added to the Trading Collar Reference Price to determine the Trading Collar Price for buy orders, while the result is subtracted from the Trading Collar Reference Price to determine the Trading Collar Price for sell orders.  The Trading Collar Price is not enforced throughout the life of the order nor re-applied once the order is resting on the MIAX Pearl Equities Book.	On an order by order basis, a User may select a custom dollar value either higher, lower or equal to the specified percentages and dollar values set by the Exchange. In such case, the custom dollar value selected by the User will override the dollar values and specific percentages set by the Exchange.	Available in UI: <b>No</b>	Available in API: <b>No</b>



#### Calculation:

Trading Collar Reference Price	Numerical Guidelines (Subject transaction's % difference from the Reference Price):	Extended Hours Multiplier
Greater than \$0.00 up to and including \$25.00	10%	
Greater than \$25.00 up to and including \$50.00	5%	2.0
Greater than \$50.00	3%	

During the Early and Late Trading Sessions, the MIAX Pearl Equities Exchange will specify an "Extended Hours Multiplier" that will be used in the calculation of the Trading Collar.

For buy (sell) orders, the Trading Collar will be equal to the consolidated last sale plus (minus) the greater of the Percentage Based Limit and the Dollar Based Limit multiplied by the Extended Hours Multiplier.

Market

**Impact** 

Collar



The Market Impact Collar is an optional protection that is designed to prevent limit orders from executing at prices that are too far through the current market upon entry and adversely affecting the security's prices.

• Upon entry, any portion of a limit order to buy (sell) that has a Limit Price above (below) the Upper (Lower) Bound of the Market Impact Collar will be rejected back to the member with an appropriate reason.

Members will be able to configure percentage and dollar limits for the following price ranges for each of their MPID(s) or Session(s):

Reference Price	Custom Percentage Amount	Custom Dollar Amount	Extended Hours Multiplier
Greater than \$3.00	X%	Cannot specify	
\$0.75 up to including \$3.00	Υ%	Cannot specify	X
Less than \$0.75	Z%	\$X.XX	

The Market Impact Collar Reference Price will be calculated as the mean price of eligible reported trades for the security over the immediately preceding five minute period.

The Market Impact Collar will be calculated as follows:

- Market Impact Collar Upper Bound (For a buy order):
  - Market Impact Collar Reference Price plus
  - Higher of
    - Custom Percentage Amount
    - Custom Dollar Amount
- Market Impact Collar Lower Bound (For a sell order);
  - o Market Impact Collar Reference Price minus
  - Higher of
    - Custom Percentage Amount
    - Custom Dollar Amount

During the Early and Late Trading Sessions, members will be able to specify an "Extended Hours Multiplier" where the Market Impact Collar will be calculated by multiplying the applicable percentage and dollar values against the Extended Hours Multiplier.

MPID Level Session Level

When setting up Market Impact Collar, the member must provide all of the custom percentage amounts for each price range as well as the custom dollar amount to set up a full risk profile for the protection.

The custom percentage amounts must be set as a full percent increment (i.e. 30%, 31%, etc.).

The custom dollar must but be set as a full penny increment (i.e. \$0.75, \$0.76).

The Extended
Hours Multiplier
must be set in 0.5
increments
between 0.0 and
5.0. The default
value of the
Extended Hours
Multiplier will be set
to 2.0.

Available in UI: **Yes** 

(All Scopes)

If **Yes**, Functionality Available: Enable, Edit, Disable Available in API:
Yes
(All Scopes)

If **Yes**, Functionality Available: Enable, Edit, Disable

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Self-Trade

**Protection** 



If opted into, Self-Trade Protection will apply during the Opening Process, any Re-Opening Process and during Regular Trading.

Self-Trade Protection Modifiers. Any order designated with an STP modifier will be prevented from executing against a contra-side order also designated with an STP modifier and originating from the same MPID, Exchange Member identifier (Firm), Parent Group or trading group identifier (any such identifier, a "Unique Identifier"). The STP modifier on the order with the most recent timestamp controls the interaction between two orders marked with STP modifiers.

- Cancel Newest. An order marked with the Cancel Newest modifier will not execute
  against a contra-side order marked with any STP modifier originating from the
  same Unique Identifier. The order with the most recent timestamp marked with the
  Cancel Newest modifier will be cancelled back to the originating User(s). The
  contra-side order with the older timestamp marked with an STP modifier will remain
  on the MIAX Pearl Equities Book.
- Cancel Oldest. An order marked with the Cancel Oldest modifier will not execute
  against a contra-side order marked with any STP modifier originating from the
  same Unique Identifier. The order with the older timestamp marked with the STP
  modifier will be cancelled back to the originating User(s). The contra-side order
  with the most recent timestamp marked with the STP modifier will remain on the
  MIAX Pearl Equities Book.
- Decrement and Cancel. An order marked with the Decrement and Cancel modifier will not execute against contra-side interest marked with any STP modifier originating from the same Unique Identifier. If both orders are equivalent in size, both orders will be cancelled back to the originating User(s). If both orders are not equivalent in size, the equivalent size will be cancelled back to the originating User(s) and the larger order will be decremented by the size of the smaller order, with the balance remaining on the MIAX Pearl Equities Book.
- Cancel Both. An order marked with the Cancel Both modifier will not execute
  against contra-side interest marked with any STP modifier originating from the
  same Unique Identifier. The entire size of both orders will be cancelled back to the
  originating User(s).

Order Level Session Level

The STP profile (i.e. Instruction, Scope and Group) provided on the order will override the session's configured STP profile, if any.

Note: Although updates to the STP settings are allowed via the MFP UI and MFP API, removing an STP profile from a session will require a request to the Trading Operations Team. Removing an STP profile once set is not permitted via the MFP UI or MFP API.

Available in UI:

Yes

(Session Only)

Available in API:

Yes (Session
Only)

If Yes,
Functionality
Available:
Enable, Edit,
Disable

If Yes,
Functionality
Available:
Enable, Edit,
Disable

Disable

#### MIAMI INTERNATIONAL HOLDINGS, INC



# 6. Order Cancellation Capabilities

Protection	Description	Configurability	MFP UI Availability	MFP API Availability
Auto Cancel on Disconnect (ACOD) for an Order Entry Session	In the event a member's session with the exchange is disconnected, orders submitted via that session that are open can be cancelled automatically upon disconnect. This protection may be enabled or disabled via the Member Firm Portal UI.  Members must select one of the following actions on a session by session basis which will be enforced when the protection is triggered:  • Cancel All Open Orders. All orders that were sent through this session and are open will be cancelled upon session disconnect.  • Do Not Cancel All Open Orders. This will disable Auto Cancel on Disconnect and MIAX Pearl Equities will not cancel any open orders upon that session's disconnect. This is the default behavior for the session if the member does not opt in for ACOD.  The ACOD feature is provided on a best effort basis. Executions can occur while the ACOD event is being processed.  As the technical circumstances initiating a disconnect may vary, Firms may contact Trading Operations to confirm the status of ACOD eligible open orders remaining at MIAX Pearl Equities that were sent via the session(s) that disconnected. The execution reports resulting from cancels or trades during the disconnect can also be received upon a subsequent reconnect by the Firm on the same day.	Session Level  Member chooses Trigger Action:  Cancel All Open Orders  Or  Do Not Cancel All Open Orders	Available in UI: Yes (View Only)  If <b>Yes</b> , Functionality Available: N/A	Available in API: <b>No</b>
Auto Cancel on Disconnect (ACOD) for a Drop Copy Session	In the event a member's Drop Copy session with the exchange is disconnected, all orders that are open and that were sent through any session for which the Drop is entitled will be cancelled upon the Drop's disconnect.  This protection is available only to Drop Copy sessions that have an	Session Level  Member chooses Trigger Action:  Cancel All Open Orders	Available in UI: Yes (View Only)  If Yes, Functionality Available: N/A	Available in API: <b>No</b>



entitlement of their own sessions; if the Drop Copy has an MPID entitlement, this protection will not be available for that Drop.	Or	
<ul> <li>Members must select one of the following actions on a session by session basis which will be enforced when the protection is triggered:         <ul> <li>Cancel All Open Orders for Order Entry Session(s): All orders that are open and that were sent through any session for which the Drop is entitled will be cancelled upon the Drop's disconnect. Additionally, any new orders or Order Modification Requests received via the entitled sessions will be rejected with an appropriate reason code. Order Cancellation Requests will be accepted.</li> <li>Do Not Cancel All Open Orders for Order Entry Session(s): This will disable this protection. If the member does not opt in to ACOD for the Drop, MIAX Pearl Equities will not cancel any open orders that were sent through any session for which the Drop is entitled upon the Drop's disconnect. Any new orders and Order Modification Requests received via the entitled sessions will continue to be accepted.</li> </ul> </li> </ul>	Do Not Cancel All Open Orders	
<b>Reset</b> : Once the disconnected Drop reconnects, the protection will automatically be reset		
The ACOD feature is provided on a best effort basis. Executions can occur while the ACOD event is being processed.		



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Auto Cancel on System Failure (ACOSF) for a Drop Copy Session	In the event that of a MIAX system failure that affects the Drop, all orders that are open and that were sent through any session for which the Drop is entitled will be cancelled.  This protection is available only to Drop Copy sessions that have an entitlement of their own sessions; if the Drop Copy has an MPID entitlement, this protection will not be available for that Drop.  Members must select one of the following actions on a session by session basis which will be enforced when the protection is triggered:  • Cancel All Open Orders for Order Entry Session(s): All orders that are open and that were sent through any session for which the Drop is entitled will be cancelled. Additionally, any new orders or Order Modification Requests received via the entitled sessions will be rejected with an appropriate reason code. Order Cancellation Requests will be accepted.  • Do Not Cancel All Open Orders for Order Entry Session(s): This will disable this protection. If the member does not opt in to ACOSF for the Drop, MIAX Pearl Equities will not cancel any open orders that were sent through any session for which the Drop is entitled upon the Drop's disconnect. Any new orders and Order Modification Requests received via the entitled sessions will continue to be accepted.  Reset: Once the MIAX Pearl Equities system issue is rectified, the protection will automatically be reset  The ACOSF feature is provided on a best effort basis. Executions can occur while the ACOSF event is being processed.	Session Level  Member chooses Trigger Action:  Cancel All Open Orders  Or  Do Not Cancel All Open Orders	Available in UI: <b>Yes</b> (View Only)  If <b>Yes</b> , Functionality Available: N/A	Available in API: <b>No</b>
Mass Cancel Functionality (via Priority Purge	A member can use the Mass Cancel functionality to manage risk for themselves as well as their sponsored clients. The scope of a Mass Cancel Request or a Mass Cancel Reset request must be one of the following:	Firm Level Session Level	Available in UI: Yes (All Scopes)  If Yes, Functionality Available: 1) Block Only	Available in API: Yes (All Scopes)  If Yes, Functionality Available:
Port, Member Firm Portal API, or Member Firm Portal UI)	Firm Level (available via Member Firm Portal UI and API).  When a Mass Cancel Request is submitted at the Firm Level, all orders submitted from that Firm across the exchange, for any MPID and any Session, will be subject to the Mass Cancel Action.	MPID Level  MPID + Purge Group  Level	2) Mass Cancel Only, 3) Block and Mass Cancel 4) Reset	1) Block Only 2) Mass Cancel Only 3) Block and Mass Cancel 4) Reset



- Session Level (available via Member Firm Portal UI and API). When a Mass Cancel Request is submitted at the Session Level, all orders submitted via that Session across the exchange, for any MPID, will be subject to the Mass Cancel Action.
- MPID Level (available via Purge Port and Member Firm Portal UI and API). When a Mass Cancel Request is submitted at the MPID Level, all orders submitted from that specific MPID across the exchange, from any Session, will be subject to the Mass Cancel Action.
- MPID + Purge Group Level (available via Purge Port and Member Firm Portal UI and API). When a Mass Cancel Request is submitted at the Purge Group Level, all orders submitted from that MPID with that Purge Group specified on the order across the exchange, from any Session, will be subject to the Mass Cancel Action.

The member must select one from amongst the following Mass Cancel Actions:

- Block Only: The system will reject all subsequent new orders received from the specified scope. Existing orders on the book are not impacted. The system will additionally send a warning to Trading Operations indicating the action taken.
- Mass Cancel Only: The system will cancel all open orders on the exchange for the specified scope. However, the system will not reject any subsequent new orders from the specified scope.
- Block and Mass Cancel: The system will reject all subsequent new orders and cancel all open orders on the exchange for the specified scope.
- Note: During a mass cancel event, open orders will be cancelled in a deterministic order on a best efforts basis prioritizing price, notional value, and entry time.



	A block can be reset as follo	ows:				
		Reset via Firm Portal (UI or API)	Reset via Purge Port	Reset via MEO/FOI Port		
	MPID Block via Purge Port	Yes	Yes	No		
	MPID + Purge Group Block via Purge Port	Yes	Yes	No		
	MPID + Purge Group Block via Firm Portal (UI or API)	Yes	No	No		
	MPID Block via Firm Portal (UI or API)	Yes	No	No		
	Session Block via Firm Portal (UI or API)	Yes	No	No		
	Firm Block via Firm Portal (UI or API)	Yes	No	No		
			,			
	A member can use the Aggressive Side Purge Request to "Mass Cancel" orders that are within a submitted scope via the MEO					
	Interface.					
	When sending an ASP Request, the member must provide the MPID, Security, Side, and, optionally, Price. Orders that meet this criteria will					
Aggressive Side Purge ("ASP") Request	be cancelled. Up to a certain number of orders ("X" number) will be cancelled atomically for an individual ASP Request, with "X" being configured by MIAX Pearl Equities.				MPID Level	MPID Level Available in UI: <b>No</b>
	A Buy (Sell) Order will be cancelled when the Price that is provided in the ASP Request is greater (less) than or equal to the Limit Price of the resting order.					/Wanasie 5 115
	<ul> <li>If Price is not provided in the ASP Request, up to "X" number of orders will be cancelled for that MPID, Security and Side.</li> </ul>					
	Once the system processes the order cancels, a response will be sent back to the member via the MEO session indicating the number of					
	orders that were cancelled and if any orders meeting the criteria still remain.					



Cancel if Not NBBO Setter	A member can opt into, on a per order basis, a cancellation feature that will cancel the order back if it does not set the National Best Bid and Offer (NBBO). The order will be evaluated as an NBBO Setter at the following points in time:  • Before posting to the orderbook for the first time; and • After a priority losing Order Modification Request  Any orders submitted that opt into this feature when the Security Status is not Trading will immediately be cancelled back.	Order Level	Available in UI: <b>No</b>	Available in API: <b>No</b>
Cancel if Not NBBO Setter with Size	A member can opt into, on a per order basis, a cancellation feature that will cancel the order back if it does not set the National Best Bid and Offer (NBBO). The order will be evaluated as an NBBO Setter with Size at the following points in time:  • Before posting to the orderbook for the first time; and • After a priority losing Order Modification Request  Any orders submitted that opt into this feature when the Security Status is not Trading will immediately be cancelled back.	Order Level	Available in UI: <b>No</b>	Available in API: <b>No</b>



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