

Fidelity Trading Authorization and Indemnification Form

Customer Information:

Name of Owner (or Trust/Business/Minor)

Owner Social Security Number or Tax I.D. Number

Name of Co-Owner (or Trustee/Authorized Person/Custodian)

Co-Owner Social Security Number or Tax I.D. Number

Fidelity account Number(s) to add Trading Authorization to:

Fidelity account Number(s)

Daytime Phone:

Use this form to enable someone other than the registered owner(s) to have trading authority on the Fidelity account(s) listed above. State law may govern the delegation of trading authority on fiduciary accounts (guardianships, estates, etc.). Note that full trading authority is not permitted on certain registration types, including Fidelity Retirement Plan (Keogh) and defined benefit, non-prototype retirement, custodial, estate, conservator, and escrow registrations. If full trading authorization is requested for these registrations, the request will default to limited trading authorization.

- Read all instructions carefully, and please use a pen and print clearly.
- Complete the Customer Information section above and in section one.
- Your Authorized Agent must complete section 2. Please submit a separate original form for each Authorized Agent added to the account. If your account is registered as a Fidelity Retirement Plan (Keogh), the Employer or Plan Administrator must also complete section 3.

Return the completed form to Fidelity Investments, PO Box 770001, Cincinnati, OH 45277-0002. If you have any questions, call us at 1-800-544-6666 or visit us at Fidelity.com.

1

CUSTOMER AUTHORIZATION – To be completed by Account Owner(s)

Powers You Give Your Authorized Agent – Check one (if a box is not checked, the default is Limited Trading Authorization):

Limited Trading Authorization and Effect of this Power, by checking this box

Limited Trading Authorization allows your Authorized Agent to inquire in, trade, buy, sell (including short sales), exchange, convert, tender, trade, or otherwise acquire or dispose of stocks, bonds, securities, and other investments, on margin or otherwise, including the purchase and/or sale of option contracts, for and at your risk. The Authorized Agent is bound by all terms and conditions set forth in all customer agreements relating to your accounts as they currently exist and as they may be modified in the future: certain powers may not be applicable to certain Fidelity accounts. The Authorized Agent may open new option positions or close existing positions, and exercise options contracts or sell options contracts as either a covered or uncovered writer; however, if the Authorized Agent engages in either margin or option transactions, you, the Account Owner(s), recognize the inherent risks involved and are fully prepared financially to undertake such risks.

Limited Trading Authorization does not allow your Authorized Agent to transfer, withdraw, or disburse money or assets from your account (including the delivery of securities from the account), except as may be permitted pursuant to a separately executed authorization to deduct advisory or management fees. Fidelity assumes no responsibility for reviewing or monitoring any investment decision or activity of the Authorized Agent.

Full Trading Authorization and Effect of this Power, by checking this box

In addition to the authorizations described in Limited Trading Authorization above, this Full Trading Authorization authorizes your Authorized Agent to withdraw assets from the account, regardless of the tax consequences of such a distribution. Such disbursements must be made to you at your address of record or to a bank account pre-authorized by you. The Authorized Agent may initiate rollovers, Roth IRA conversions, IRA recharacterizations or other transfers of assets between and among your accounts. It is acknowledged that this authorization does not permit the Authorized Agent to designate beneficiaries on an IRA or to establish a new IRA, which are actions that generally must be performed by me. To the extent permitted by the applicable taxing authority, the Authorized Agent may exercise any tax election available to you under federal, state, local, or foreign tax law related to my Fidelity accounts.

Please continue

1 CUSTOMER AUTHORIZATION CONTINUED

For Trust accounts:

By signing this Trading Authorization and Indemnification as a trustee, you certify that you have the power and authority under the trust agreement and applicable law to enter into all transactions, including purchases, sales, and exchanges and redemptions of mutual funds, and deliver any documents necessary to open and maintain accounts on behalf of the trust.

Check here if you would like to replace all existing Authorized Agent(s) on the Fidelity account(s) identified above with the Authorized Agent indicated in section 2.

Your Authorized Agent may trade in and view your account at Fidelity.com. Check the following if you wish to have copies of your trade confirmations or periodic account statements sent to your Authorized Agent by mail.

Duplicate confirmations Duplicate statements

Signature of Owner(s) and Indemnification

I, the Account Owner, have been furnished and have carefully read this form in its entirety, including the attached Account Owners Terms and Conditions, agree to be bound by these documents as they currently exist and as they may be modified in the future, and hereby designate the Authorized Agent listed in section 2, below, to act as my agent and attorney-in-fact to exercise all rights and powers set forth herein with respect to my account(s) listed above. I authorize Fidelity, its affiliates, and any other person whom Fidelity may instruct to act in connection with my Authorized Agent's instructions, to rely on my Authorized Agent's instructions without further approval or direction from me. This document may permit my Authorized Agent to receive compensation from me for services performed, and Fidelity will not be responsible for that compensation or for monitoring the acts of my Authorized Agent in this or any other regard. I understand that a commission will be charged to my account(s) each time a trade is effected.

This authorization will terminate if Fidelity is notified in writing of my disability, incapacity, or death. I may revoke this authorization by notifying Fidelity in writing, but such notification will not affect my responsibility for any actions of my Authorized Agent prior to Fidelity's receipt of the notification.

Authorized Agent's Name

This authorization and the affected Fidelity account(s) are governed by a predispute arbitration agreement which is located on the last page of the Customer Agreement and the last page of the attached Account Owner's Terms and Conditions. I acknowledge receipt of the predispute arbitration agreement.

ACCOUNT OWNER'S SIGNATURE
(Trustee/Authorized Person)

X

CO-OWNER'S SIGNATURE, if any (or Trustee)

X

A signature guarantee is required for FULL TRADING AUTHORITY ONLY. A signature guarantee is designed to protect you and Fidelity from fraud. You should be able to obtain a signature guarantee from a bank, broker, broker/dealer, credit union (if authorized under state law), securities exchange or association, clearing agency, or savings association.

A notary public cannot provide a signature guarantee, and a notarization cannot be accepted in lieu of a signature guarantee.

SIGNATURE GUARANTEE STAMP

SIGNATURE GUARANTEE STAMP

2 AUTHORIZED AGENT INFORMATION – TO BE COMPLETED BY AUTHORIZED AGENT

All fields in bold are required.

Full legal name of agent _____ Title _____

Relationship to Account Owner _____

Permanent address _____
(no P.O. boxes) Street City State Zip

Mailing address _____
(if different from above) Street City State Zip

Date of birth (month/day/year) _____

Social Security number _____ or Taxpayer ID number _____

Phone numbers Evening _____ Daytime _____ Ext. _____

U.S. driver's license number (if available) _____ State of issuance _____

Countries of citizenship U.S. Other(s) _____ Country of tax residence U.S. Other _____

GOVERNMENT ID (FOREIGN CITIZENS ONLY) Identification document must have a reference number and photo. Please attach a photocopy.

Place of birth _____
City State/Province Country

Immigration status: Permanent resident Non-permanent resident Non-resident

Check which type of document you are providing:

U.S. driver's license INS permanent resident alien card Passport with U.S. visa Employment Authorization Document (EAD)

Passport without U.S. visa*

Foreign national identity document*

*Bank name required *account number required

*Bank address required *Phone number required

Document number and country of issuance _____
(Number from the document checked above)

Employer _____ Occupation _____

Employer's address _____
(no P.O. boxes) Street City State Zip

I, the Authorized Agent, have been furnished and read this form in its entirety, including the attached Authorized Agent's Terms and Conditions, and agree to be bound by these documents as they currently exist and as they may be modified in the future. **I also agree to be bound by all terms and conditions set forth in any agreements relating to Account Owner's accounts (including the applicable prospectus(es), IRA Custodial Agreement and Disclosure Statement) as they currently exist and as they may be modified in the future, including, in the case of a brokerage account, the predispute arbitration agreement, which governs the account.** I understand the investment objectives and trading plans of the Account Owner and will design my trading strategies to meet those objectives.

This authorization and affected Fidelity account(s) are governed by a predispute arbitration clause which is located on the last page of the Customer Agreement and the attached Authorized Agent Terms and Conditions. I acknowledge receipt of the predispute arbitration agreement.

AUTHORIZED AGENT'S SIGNATURE

DATE

X

3 To be completed if this is a FIDELITY RETIREMENT PLAN (KEOGH)

For Fidelity Retirement Plan (Keogh) accounts:

If this trading authorization applies to a retirement account ("Plan") for which Fidelity Management Trust Company ("FMTC") or its affiliate and/or any successor acts as trustee or custodian, this authorization shall allow the Authorized Agent to provide instructions to Fidelity, to execute such directions with respect to the Plan(s). Such directions shall be limited to purchase, exchange, and sell orders in any investment permitted by the terms of the Plan(s), and any other incidental transactions subject to the limitations described herein provided such transactions do not result in a distribution from the Plan(s). The Authorized Agent shall have no authority to designate a beneficiary or establish a new Plan. It is understood that the consent of the Employer or Plan Administrator must be obtained if this trading authorization involves a Plan account in which the Account Owner is a participant but is not the Employer; however, Fidelity will in no way be responsible for the Account Owner's failure to properly obtain such consent. It is also understood that with respect to the Account Owner's Plan(s), FMTC merely acts as custodian or trustee, and has no discretionary fiduciary authority or responsibility. Accordingly, the suitability of any investments or actions which the Authorized Agent may direct, and any adverse consequences arising from such an investment or action, including, without limitation, the generation of unrelated business taxable income, is the sole and ultimate responsibility of the Account Owner.

EMPLOYER/PLAN ADMINISTRATOR CONSENT (required if you are **not** the owner-employer): The undersigned is the sponsor or Plan Administrator of the Plan for which trading authorization, as described herein, has been requested, and consents to the appointment of the Authorized Agent designated herein.

Name of Employer or Plan Administrator

Title

AUTHORIZED SIGNATURE OF EMPLOYER
OR PLAN ADMINISTRATOR

X



PO Box 770001, Cincinnati OH 45277-0002
Fidelity Brokerage Services LLC, Member NYSE, SIPC

FIDELITY TRADING AUTHORIZATION AND INDEMNIFICATION FORM – ACCOUNT OWNER'S TERMS AND CONDITIONS

This agreement is between me, the Account Owner and Fidelity (“Fidelity” means Fidelity Management Trust Company, Fidelity Brokerage Services LLC, National Financial Services LLC, Fidelity Service Company, Inc., Fidelity Distributors Corporation, and their affiliates).

Please note that a commission will be charged to the account(s) each time a trade is effected.

If I have appointed two or more Authorized Agents, I authorize each of them to act alone (severally) and without the consent of any other Authorized Agent, with respect to each power granted above. In addition, I acknowledge that Fidelity has the right to restrict my account(s) from further activity in the event my Authorized Agents enter conflicting or inconsistent instructions. I understand that my account(s) at Fidelity may remain restricted until written instructions are received from me or until joint written instructions are submitted by all of my Authorized Agents, or until receipt of a court order instructing Fidelity how to proceed. I hereby ratify and confirm any and all transactions, trades, or dealings effected in and for my account(s) by my Authorized Agent.

If I have granted my Authorized Agent Limited Trading Authorization, I have granted my Authorized Agent power to inquire in, trade, buy, sell (including short sales), exchange, convert, tender, trade, or otherwise acquire or dispose of stocks, bonds, securities, and other investments, on margin or otherwise, including the purchase and/or sale of option contracts, for and at my risk. The Authorized Agent is bound by all terms and conditions set forth in all customer agreements relating to my accounts as they currently exist and as they may be modified in the future; certain powers may not be applicable to certain Fidelity accounts. The Authorized Agent may open new option positions or close existing positions, and exercise options contracts or sell options contracts as either a covered or uncovered writer; however, if the Authorized Agent engages in either margin or option transactions, I, the Account Owner(s), recognize the inherent risks involved and are fully prepared financially to undertake such risks.

If I have granted my Authorized Agent Full Trading Authorization, in addition to the authorizations described in Limited Trading Authorization above, this Full Trading Authorization authorizes my agent to withdraw assets from the account, regardless of the tax consequences of such a distribution. Such disbursements must be made to me at my address of record or to a bank account pre-authorized by me. The Authorized Agent may initiate rollovers, Roth IRA conversions, IRA recharacterizations or other transfers of assets between and among your accounts. It is acknowledged that this authorization does not permit the Authorized Agent to designate beneficiaries on an IRA or to establish a new IRA, which are actions that generally must be performed by me. To the extent permitted by the applicable taxing authority, the Authorized Agent may exercise any tax election available to me under federal, state, local, or foreign tax law related to my Fidelity accounts.

If this trading authorization applies to a retirement account (“Plan”) for which Fidelity Management Trust Company (“FMTC”) or its affiliate and/or any successor acts as trustee or custodian, this authorization shall allow the Authorized Agent to provide instructions to Fidelity, to execute such directions with respect to the Plan(s). Such directions shall be limited to purchase, exchange, and sell orders in any investment permitted by the terms of the Plan(s), and any other incidental transactions subject to the limitations described herein provided such transactions do not result in a distribution from the Plan(s). The Authorized Agent shall have no authority to designate a beneficiary or establish a new Plan. It is understood that the consent of the Employer or Plan Administrator must be obtained if this trading authorization involves a Plan account in which I am a participant but not the Employer; however, Fidelity will in no way be responsible for my failure to properly obtain such consent. It is also understood that with respect to my Plan(s), FMTC merely acts as custodian or trustee, and has no discretionary fiduciary authority or responsibility. Accordingly, the suitability of any investments or actions which the Authorized Agent may direct, and any adverse consequences arising from such an investment or action, including, without limitation, the generation of unrelated business taxable income, is my sole and ultimate responsibility.

Fidelity's Role

Fidelity will execute transactions as directed by my Authorized Agent. Fidelity assumes no responsibility for reviewing or monitoring any investment decision or other activity of my Authorized Agent. I alone am responsible for determining whether any investment, security, or strategy is appropriate or suitable for me based on my investment objectives and financial situation, and Fidelity will not give me or my Authorized Agent any tax, legal, or investment advice or recommendations.

I select my Authorized Agent at my own risk. Fidelity has no responsibility for selecting, investigating, or monitoring the activities of my Authorized Agent in connection with my Fidelity account. Fidelity may, but is not obligated to, perform a background check of my Authorized Agent on its own behalf, and has the right to reject my Authorized Agent as a result of such a check or for any other reason at any time.

Release and Indemnification

I agree to indemnify and hold Fidelity, its affiliates, successors, assigns, control persons, officers, directors, agents and employees, harmless from, and to pay Fidelity promptly upon demand for, any and all losses, liabilities, claims, and costs (including reasonable attorney fees) that may arise from the act or omissions of my Authorized Agent with respect to my account. This Limited Trading Authorization and indemnity is in addition to and in no way restricts any rights which may exist at law or under any other agreement(s) between me and Fidelity as they currently exist and as they may be modified in the future.

Governing Law

This Trading Authorization and Indemnification shall be construed, administered, and enforced according to the laws of the Commonwealth of Massachusetts.

Successors and Assigns

This Authorization and Indemnification shall inure to the benefit of Fidelity and of any successor firm or firms, and to the benefit of the affiliates and assigns of Fidelity or any successor firm. This agreement and indemnification will be binding upon my successors, assignees, heirs, executors, and administrators.

Please continue

Authorized Agent's Terms and Conditions

This agreement is between me, the Authorized Agent and Fidelity ("Fidelity" means Fidelity Management Trust Company, Fidelity Brokerage Services LLC, National Financial Services LLC, Fidelity Service Company, Inc., Fidelity Distributors Corporation, and their affiliates).

Fidelity's Role

Fidelity will execute transactions as I direct, consistent with my level of authorization. Fidelity assumes no responsibility for reviewing or monitoring my investment decisions or other activity in connection with the account.

The Account Owner and I are responsible for determining whether any investment, security, or strategy is appropriate or suitable for the Account Owner based on the Account Owner's investment objectives and financial situation, and Fidelity will not give me or the Account Owner any tax, legal, or investment advice or recommendations.

I agree that Fidelity may, but is not obligated to, perform a background check on me or otherwise verify any information I provide, and I authorize Fidelity to obtain a credit report or other financial responsibility report about me at any time. Upon written request, Fidelity will provide the name and address of the reporting agency used. I agree that Fidelity has the right to reject me as Authorized Agent as a result of such a credit report or for any other reason at any time, and that Fidelity may notify the Account Owner of any such rejection.

My Role as Agent

I am solely responsible to the Account Owner for all of my trading and other activities in connection with the account. I agree to act in connection with the account only as specifically authorized by the Account Owner above, and to comply with all applicable laws and regulations in connection with the account. I agree to cease all trading or other activity in connection with the account, and to notify Fidelity in writing, immediately upon the Account Owner's disability, incapacity, death, or upon the occurrence of any other revocation of my authority.

Release and Indemnification

I agree to hold harmless and indemnify Fidelity, its affiliates, successors, assigns, control persons, officers, directors, agents and employees, and to pay Fidelity promptly upon demand for, any and all losses, liabilities, claims, and costs (including reasonable attorney fees) that may arise from my acts or omissions related to the account(s). This Authorization and Indemnification is in addition to and in no way restricts any rights which may exist at law or under any other agreement(s) between me and Fidelity or between the Account Owner and Fidelity as they currently exist and as they may be modified in the future.

Governing Law

This Authorization and Indemnification shall be construed, administered, and enforced according to the laws of the Commonwealth of Massachusetts.

Successors and Assigns

This Authorization and Indemnification shall inure to the benefit of Fidelity and of any successor firm or firms, and to the benefit of the affiliates and assigns of Fidelity or any successor firm. This agreement and indemnification will be binding upon my successors, heirs, executors, and administrators. I agree not to assign this Authorization and Indemnification without the written consent of Fidelity and the Account Owner.

Predispute Arbitration Agreement

This agreement contains a predispute arbitration clause. By signing an arbitration agreement the parties agree as follows:

- (A) All parties to this agreement are giving up the right to sue each other in court, including the right to a trial by jury, except as provided by the rules of the arbitration forum in which a claim is filed.
- (B) Arbitration awards are generally final and binding; a party's ability to have a court reverse or modify an arbitration award is very limited.
- (C) The ability of the parties to obtain documents, witness statements and other discovery is generally more limited in arbitration than in court proceedings.
- (D) The arbitrators do not have to explain the reason(s) for their award.
- (E) The panel of arbitrators will typically include a minority of arbitrators who were or are affiliated with the securities industry.
- (F) The rules of some arbitration forums may impose time limits for bringing a claim in arbitration. In some cases, a claim that is ineligible for arbitration may be brought in court.
- (G) The rules of the arbitration forum in which the claim is filed, and any amendments thereto, shall be incorporated into this agreement.

All controversies that may arise between us (including, but not limited to controversies concerning any account, order or transaction, or the continuation, performance, interpretation or breach of this or any other agreement between us, whether entered into or arising before, on or after the date this account is opened) shall be determined by arbitration in accordance with the rules then prevailing of the New York Stock Exchange, Inc., or the NASD, Inc., as I may designate. If I do not notify you in writing of my designation within five (5) days after I receive from you a written demand for arbitration, then I authorize you to make such designation on my behalf. I understand that judgment upon any arbitration award may be entered in any court of competent jurisdiction.

No person shall bring a putative or certified class action to arbitration, nor seek to enforce any predispute arbitration agreement against any person who has initiated in court a putative class action; or who is a member of a putative class action who has not opted out of the class with respect to any claims encompassed by the putative class action until: (i) the class certification is denied; or (ii) the class is decertified; or (iii) the customer is excluded from the class by the court. Such forbearance to enforce an agreement to arbitrate shall not constitute a waiver of any rights under this agreement except to the extent stated herein.



PO Box 770001, Cincinnati OH 45277-0002
Fidelity Brokerage Services LLC, Member NYSE, SIPC