
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

MKS INSTRUMENTS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Massachusetts
(State or Other Jurisdiction of Incorporation or Organization)

04-2277512
(I.R.S. Employer Identification No.)

2 Tech Drive, Suite 201
Andover, Massachusetts
(Address of Principal Executive Offices)

01810
(Zip Code)

2022 Stock Incentive Plan
(Full Title of the Plan)

(978) 645-5500
(Telephone Number, including area code, of Agent for Service)

Kathleen F. Burke
Senior Vice President, General Counsel and Secretary
MKS Instruments, Inc.
2 Tech Drive, Suite 201,
Andover, Massachusetts 01810
(Name and Address of Agent For Service)

(978) 645-5500
(Telephone Number, Including Area Code, of Agent for Service)

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

PART I
INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

Item 1. Plan Information.

The information required by Item 1 is included in documents sent or given to participants in the plans covered by this registration statement pursuant to Rule 428(b)(1) of the Securities Act of 1933, as amended (the "Securities Act").

Item 2. Registrant Information and Employee Plan Annual Information.

The written statement required by Item 2 is included in documents sent or given to participants in the plans covered by this registration statement pursuant to Rule 428(b)(1) of the Securities Act.

PART II
INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The registrant is subject to the informational and reporting requirements of Sections 13(a), 14, and 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and in accordance therewith files reports, proxy statements and other information with the Securities and Exchange Commission (the “Commission”). The following documents, which are on file with the Commission, are incorporated in this registration statement by reference:

(a) The registrant’s latest annual report filed pursuant to Section 13(a) or 15(d) of the Exchange Act or the latest prospectus filed pursuant to Rule 424(b) under the Securities Act that contains audited financial statements for the registrant’s latest fiscal year for which such statements have been filed.

(b) All other reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the document referred to in (a) above.

(c) The description of the securities contained in the registrant’s registration statement on Form 8-A filed under the Exchange Act, as the description therein has been updated and superseded by the description of the registrant’s capital stock contained in [Exhibit 4.2](#) to the registrant’s Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2019, as filed with the Commission on February 28, 2020, including any amendments or reports filed for the purpose of updating such description.

All documents subsequently filed by the registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act, prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be part hereof from the date of the filing of such documents. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for the purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this registration statement.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Wilmer Cutler Pickering Hale and Dorr LLP has opined as to the legality of the securities being offered by this registration statement.

Item 6. Indemnification of Directors and Officers.

Section 8.51 of the Massachusetts Business Corporation Act (“MBCA”) authorizes a Massachusetts corporation to indemnify a director of the corporation against liability in such capacity if the director (i) conducted himself in good faith, (ii) reasonably believed his conduct was in, or at least not opposed to, the best interests of the corporation, and (iii) in the case of a criminal proceeding, had no reasonable cause to believe his conduct was unlawful. Section 8.51 of the MBCA also allows for indemnification of a director if the liability in question was eliminated by the corporation’s articles of organization pursuant to Section 2.02(b)(4) of the MBCA. Section 8.52 of the MBCA requires that a Massachusetts corporation indemnify a director who was wholly successful, on the merits or otherwise, in the defense of any proceeding to which such director was a party because he was a director of the corporation.

Section 8.53 of the MBCA authorizes a Massachusetts corporation to pay for, in advance, a director’s reasonable expenses in a proceeding if, among other things, the director delivers to the corporation (i) a written affirmation of his good faith belief that he has met the relevant standard of conduct for indemnification under Section 8.51 of the MBCA or the proceeding involves conduct for which liability has been eliminated under the corporation’s articles of organization as permitted by Section 2.02(b)(4) of the MBCA, and (ii) a written undertaking to repay any funds advanced if he is not entitled to mandatory indemnification under Section 8.52 of the MBCA and it is ultimately determined, pursuant to procedures further laid out in the MBCA, that he has not met the standard of conduct for indemnification under Section 8.51 of the MBCA.

Section 8.56 of the MBCA authorizes a corporation to indemnify, and advance expenses to, an officer of the corporation to the same extent as a director, and if such officer is not a director of the corporation, or if such officer is also a director but the basis on which he is made a party to the proceeding is an act or omission solely as an officer, to such further extent as may be provided in the corporation’s articles of organization, the corporation’s bylaws, a resolution of the corporation’s board of directors or a contract provided that the officer may not be indemnified for acts or omissions not in good faith, intentional misconduct or knowing violation of law. Section 8.56 of the MBCA requires that a Massachusetts corporation indemnify an officer of the corporation who was wholly successful, on the merits or otherwise, in the defense of any proceeding to which such officer was a party because he was an officer of the corporation.

In its Restated Articles of Organization, as amended (the “Articles of Organization”), the registrant has elected to commit to provide mandatory indemnification to its directors and officers in specified circumstances. Generally, Article 6B of the registrant’s Articles of Organization provides that the registrant shall indemnify directors and officers of the registrant against liabilities and expenses arising out of legal proceedings brought against them by reason of their status as directors or officers, by reason of their agreeing to serve, at the request of the registrant, as a director or officer with another organization, or in any capacity with respect to any employee benefit plan. Under this provision, a director or officer of the registrant shall be indemnified by the registrant for all expenses (including attorneys’ fees), judgments and fines, and amounts paid in settlement of such proceedings, even if he is not successful on the merits, unless finally adjudicated not to have acted in good faith in the reasonable belief that his action was in the best interests of the registrant or, to the extent such matter relates to service with respect to an employee benefit plan, in the best interests of the participants or beneficiaries of such employee benefit plan. The registrant shall not indemnify an officer or director who initiates the legal proceeding, unless the initiation was approved by the registrant’s Board of Directors. The registrant shall not indemnify to the extent that directors or officers receive reimbursement from the proceeds of insurance. The registrant’s Board of Directors may authorize advancing litigation expenses to a director or officer at his request upon receipt of an undertaking by any such director or officer to repay such expenses if it is ultimately determined that he is not entitled to indemnification for such expenses. However, the director or officer must notify the registrant of any suit, after which the registrant is entitled to participate and/or assume the defense of the proceeding. If the registrant does assume the defense of the proceeding, the director or officer shall not be entitled to indemnification of expenses.

Section 2.02(b)(4) of the MBCA provides that a Massachusetts corporation may, in its articles of organization, eliminate or limit the personal liability of a director to the corporation for monetary damages for breach of fiduciary duty notwithstanding any law to the contrary, except for liability for (i) any breach of the duty of loyalty to the corporation or to the shareholders, (ii) acts or omissions not in good faith, intentional misconduct or knowing violation of law, (iii) certain improper distributions or (iv) any transaction from which the director derived an improper personal benefit.

The registrant has obtained directors and officers' liability insurance for the benefit of its directors and certain of its officers.

The foregoing summaries are necessarily subject to the complete text of the statute, the Articles of Organization, the registrant's bylaws and the agreements referred to above and are qualified in their entirety by reference thereto.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

The following exhibits are incorporated herein by reference:

<u>Number</u>	<u>Description</u>
3.1(1)	Restated Articles of Organization of the Registrant
3.2(2)	Articles of Amendment to Restated Articles of Organization, as filed with the Secretary of State of Massachusetts on May 18, 2001
3.3(3)	Articles of Amendment to Restated Articles of Organization, as filed with the Secretary of State of Massachusetts on May 16, 2002
3.4(4)	Amended and Restated By-laws of the Registrant
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP, counsel to the Registrant
23.1	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1)
23.2	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm
24	Power of attorney (included on the signature pages of this registration statement)
99.1	2022 Stock Incentive Plan
107	Calculation of Filing Fee Tables

- (1) Incorporated by reference to the Registration Statement on Form S-4 (File No. 333-49738), filed with the Securities and Exchange Commission on November 13, 2000.
- (2) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001 (File No. 000-23621), filed with the Securities and Exchange Commission on August 14, 2001.
- (3) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002 (File No. 000-23621), filed with the Securities and Exchange Commission on August 13, 2002.
- (4) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-23621), filed with the Securities and Exchange Commission on May 6, 2014.

Item 9. Undertakings.

1. Item 512(a) of Regulation S-K. The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i) and (ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

2. Item 512(b) of Regulation S-K. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

3. Item 512(h) of Regulation S-K. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the town of Andover, Commonwealth of Massachusetts, on this 10th day of May, 2022.

By: /s/ Kathleen F. Burke

Kathleen F. Burke

Senior Vice President, General Counsel and Secretary

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of MKS Instruments, Inc., hereby severally constitute and appoint Seth H. Bagshaw and Kathleen F. Burke, and each of them singly, our true and lawful attorneys with full power to them, and each of them singly, to sign for us and in our names in the capacities indicated below, the registration statement on Form S-8 filed herewith and any and all subsequent amendments to said registration statement, and generally to do all such things in our names and on our behalf in our capacities as officers and directors to enable MKS Instruments, Inc. to comply with the provisions of the Securities Act, as amended, and all requirements of the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys, or any of them, to said registration statement and any and all amendments thereto.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURES	TITLE	DATE
<u>/s/ Gerald G. Colella</u> Gerald G. Colella	Chairman of the Board of Directors	May 10, 2022
<u>/s/ John T.C. Lee</u> John T.C. Lee	Chief Executive Officer, President and Director (Principal Executive Officer)	May 10, 2022
<u>/s/ Seth H. Bagshaw</u> Seth H. Bagshaw	Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	May 10, 2022
<u>/s/ Rajeev Batra</u> Rajeev Batra	Director	May 10, 2022
<u>/s/ Peter J. Cannone III</u> Peter J. Cannone III	Director	May 10, 2022
<u>/s/ Joseph B. Donahue</u> Joseph B. Donahue	Director	May 10, 2022
<u>/s/ Jacqueline F. Moloney</u> Jacqueline F. Moloney	Director	May 10, 2022

/s/ Elizabeth A. Mora
Elizabeth A. Mora

Director

May 10, 2022

/s/ Michelle M. Warner
Michelle M. Warner

Director

May 10, 2022

WILMERHALE

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May 10, 2022

MKS Instruments, Inc.
2 Tech Drive, Suite 201
Andover, MA 01810

Re: 2022 Stock Incentive Plan

Ladies and Gentlemen:

We have assisted in the preparation of a Registration Statement on Form S-8 (the "Registration Statement") to be filed with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to an aggregate of 6,200,274 shares of common stock, no par value per share (the "Shares"), of MKS Instruments, Inc., a Massachusetts corporation (the "Company"), issuable under the Company's 2022 Stock Incentive Plan (the "2022 Plan").

We have examined the Articles of Organization and By-Laws of the Company, each as amended and restated to date, and originals, or copies certified to our satisfaction, of all pertinent records of the meetings of the directors and stockholders of the Company, the Registration Statement and such other documents relating to the Company as we have deemed material for the purposes of this opinion.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, photostatic or other copies, the authenticity of the originals of any such documents and the legal competence of all signatories to such documents.

We assume that the appropriate action will be taken, prior to the offer and sale of the Shares in accordance with the 2022 Plan, to register and qualify the Shares for sale under all applicable state securities or "blue sky" laws.

We express no opinion herein as to the laws of any state or jurisdiction other than the state laws of The Commonwealth of Massachusetts and the federal laws of the United States of America.

It is understood that this opinion is to be used only in connection with the offer and sale of the Shares while the Registration Statement is in effect.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters.

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109

Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Palo Alto San Francisco Washington

Based on the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when the Shares are issued and paid for in accordance with the terms and conditions of the 2022 Plan, the Shares will be validly issued, fully paid and nonassessable.

We hereby consent to the filing of this opinion with the Commission in connection with the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act. In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

By: /s/ Wilmer Cutler Pickering Hale and Dorr LLP

WILMER CUTLER PICKERING
HALE AND DORR LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 of MKS Instruments, Inc. of our report dated February 28, 2022 relating to the financial statements, financial statement schedule and the effectiveness of internal control over financial reporting, which appears in MKS Instruments, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2021.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
May 10, 2022

MKS Instruments, Inc.

2022 STOCK INCENTIVE PLAN1. Purpose

The purpose of this 2022 Stock Incentive Plan (the “*Plan*”) of MKS Instruments, Inc., a Massachusetts corporation (the “*Company*”), is to advance the interests of the Company’s stockholders by enhancing the Company’s ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to better align the interests of such persons with those of the Company’s stockholders. Except where the context otherwise requires, the term “*Company*” shall include any of the Company’s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations thereunder (the “*Code*”) and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the “*Board*”).

2. Eligibility

All of the Company’s employees, officers and directors, as well as consultants and advisors to the Company (as the terms consultants and advisors are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the “*Securities Act*”), or any successor form) are eligible to be granted Awards (as defined below) under the Plan. Each person who is granted an Award under the Plan is deemed a “*Participant*.” The Plan provides for the following types of awards, each of which is referred to as an “*Award*”: Options (as defined in Section 5), SARs (as defined in Section 6), Restricted Stock (as defined in Section 7), RSUs (as defined in Section 7), Other Stock-Based Awards (as defined in Section 8) and Cash-Based Awards (as defined in Section 8). Any type of Award may be granted as a Performance Award under Section 9. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award. All actions and decisions by the Board with respect to the Plan and any Awards shall be made in the Board’s discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a “*Committee*”). All references in the Plan to the “*Board*” shall mean the Board or a Committee of the Board to the extent that the Board’s powers or authority under the Plan have been delegated to such Committee.

(c) Awards to Non-Employee Directors. Awards to non-employee directors will be granted and administered by a Committee, all of the members of which are independent directors as defined by Section 5605(a)(2) of the Nasdaq Marketplace Rules.

4. Stock Available for Awards(a) Number of Shares; Share Counting.

(1) Authorized Number of Shares. Subject to adjustment under Section 10, Awards may be made under the Plan (any or all of which Awards may be in the form of Incentive Stock Options, as defined in Section 5(b)) for up to 6,600,000 shares of common stock, no par value per share, of the Company (the “*Common Stock*”); provided, however, that the number of shares of Common Stock that may be issued under the Plan will be reduced, on a one-for-one basis, by the number of shares of Common Stock subject to any equity awards granted by the Company under the Company’s 2014 Stock Incentive Plan after March 2, 2022 but before the Plan is approved by shareholders.

(2) Fungible Share Pool. Subject to adjustment under Section 10, any Award that is not a Full-Value Award (as defined below) shall be counted against the share limit specified in Section 4(a)(1) as one share for each share of Common Stock subject to such Award and any Award that is a Full-Value Award shall be counted against the share limit specified in Section 4(a)(1) as 1.91 shares for each one share of Common Stock subject to such Full-Value Award. “**Full-Value Award**” means any Award of Restricted Stock, RSUs or Other Stock-Based Award with a per share price or per unit purchase price lower than 100% of the fair market value per share of Common Stock (valued in the manner determined or approved by the Board) on the date of grant. To the extent a share that was subject to an Award that counted as one share is returned to the Plan pursuant to Section 4(a)(3), each applicable share reserve will be credited with one share. To the extent that a share that was subject to an Award that counts as 1.91 shares is returned to the Plan pursuant to Section 4(a)(3), each applicable share reserve will be credited with 1.91 shares.

(3) Share Counting. For purposes of counting the number of shares available for the grant of Awards under this Section 4(a) and Section 4(b):

(A) all shares of Common Stock covered by SARs shall be counted against the number of shares available for the grant of Awards under the Plan and against the sublimit in Section 4(b); *provided, however*, that (i) SARs that may be settled only in cash shall not be so counted and (ii) if the Company grants a SAR in tandem with an Option for the same number of shares of Common Stock and provides that only one such Award may be exercised (a “**Tandem SAR**”), only the shares covered by the Option, and not the shares covered by the Tandem SAR, shall be so counted, and the expiration of one in connection with the other’s exercise will not restore shares to the Plan;

(B) to the extent that an RSU may be settled only in cash, no shares shall be counted against the shares available for the grant of Awards under the Plan or the sublimit contained in Section 4(b);

(C) if any Award (i) expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or (ii) results in any Common Stock not being issued (including as a result of a SAR or an RSU that was settleable either in cash or in stock actually being settled in cash), the unused Common Stock covered by such Award shall again be available for the grant of Awards; *provided, however*, that (1) in the case of Incentive Stock Options, the foregoing shall be subject to any limitations under the Code, (2) in the case of the exercise of a SAR, the number of shares counted against the shares available under the Plan and against the sublimit in Section 4(b) shall be the full number of shares subject to the SAR multiplied by the percentage of the SAR actually exercised, regardless of the number of shares actually used to settle such SAR upon exercise and (3) the shares covered by a Tandem SAR shall not again become available for grant upon the expiration or termination of such Tandem SAR;

(D) shares of Common Stock delivered (either by actual delivery, attestation or net exercise) to the Company by a Participant to (i) purchase shares of Common Stock upon the exercise of an Award or (ii) satisfy tax withholding obligations with respect to Awards (including shares retained from the Award creating the tax obligation) shall not be added back to the number of shares available for the future grant of Awards; and

(E) shares of Common Stock repurchased by the Company on the open market using the proceeds from the exercise of an Award shall not increase the number of shares available for future grant of Awards.

(b) Per-Participant Limit. Subject to adjustment under Section 10, the maximum number of shares of Common Stock with respect to which Awards may be granted to any Participant under the Plan shall be 500,000 per calendar year. For purposes of the foregoing limit, the combination of an Option in tandem with an SAR shall be treated as a single Award. For the avoidance of doubt, each share subject to an Award shall be counted as one share for purposes of this sublimit.

(c) Limit on Non-Employee Director Compensation. The maximum aggregate amount of cash earned or paid and value of Awards (calculated based on grant date fair value for financial reporting purposes) granted in any calendar year to any individual non-employee director shall not exceed \$750,000; *provided, however*, that fees paid by the Company on behalf of any non-employee director in connection with regulatory compliance and any amounts paid to a non-employee director as reimbursement of an expense shall not count against the foregoing limit. The Board may make exceptions to this limit for individual non-employee directors in extraordinary circumstances, as the Board may determine in its discretion, *provided* that the non-employee director receiving such additional compensation may not participate in the decision to award such compensation. For the avoidance of doubt, this limitation shall not apply to cash earned or paid or Awards granted to a non-employee director in his or her capacity as an advisor or consultant to the Company.

(d) **Substitute Awards.** In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan. Substitute Awards shall not count against the overall share limit set forth in Section 4(a)(1) or any sublimits contained in the Plan, except as may be required by reason of Section 422 and related provisions of the Code.

5. **Stock Options**

(a) **General.** The Board may grant options to purchase Common Stock (each, an “**Option**”) and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as the Board considers necessary or advisable.

(b) **Incentive Stock Options.** An Option that the Board intends to be an “incentive stock option” as defined in Section 422 of the Code (an “**Incentive Stock Option**”) shall only be granted to employees of MKS Instruments, Inc., any of MKS Instruments, Inc.’s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. An Option that is not intended to be an Incentive Stock Option shall be designated a “**Nonstatutory Stock Option.**” The Company shall have no liability to a Participant, or any other person, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or if the Company converts an Incentive Stock Option to a Nonstatutory Stock Option.

(c) **Exercise Price.** The Board shall establish the exercise price of each Option or specify the formula by which such exercise price will be determined. The exercise price shall be specified in the applicable Option agreement. The exercise price shall be not less than 100% of the Grant Date Fair Market Value (as defined below) of the Common Stock on the date the Option is granted; *provided* that if the Board approves the grant of an Option with an exercise price to be determined on a future date, the exercise price shall be not less than 100% of the Grant Date Fair Market Value on such future date. “**Grant Date Fair Market Value**” of a share of Common Stock for purposes of the Plan will be determined as follows:

(1) if the Common Stock trades on a national securities exchange, the closing sale price (for the primary trading session) on the date of grant; or

(2) if the Common Stock does not trade on any such exchange, the average of the closing bid and asked prices on the date of grant as reported by an over-the-counter marketplace designated by the Board; or

(3) if the Common Stock is not publicly traded, the Board will determine the Grant Date Fair Market Value for purposes of the Plan using any measure of value it determines to be appropriate (including, as it considers appropriate, relying on appraisals) in a manner consistent with the valuation principles under Code Section 409A of the Code or any successor provision thereto, and the regulations thereunder (“**Section 409A**”), except as the Board may expressly determine otherwise.

For any date that is not a trading day, the Grant Date Fair Market Value of a share of Common Stock for such date will be determined by using the closing sale price or average of the bid and asked prices, as appropriate, for the immediately preceding trading day and with the timing in the formulas above adjusted accordingly. The Board can substitute a particular time of day or other measure of “closing sale price” or “bid and asked prices” if appropriate because of exchange or market procedures or can use weighted averages either on a daily basis or such longer period, in each case to the extent permitted by Section 409A.

The Board shall determine the Grant Date Fair Market Value for purposes of the Plan, and all Awards are conditioned on the Participant’s agreement that the Board’s determination is conclusive and binding even though others might make a different determination.

(d) **Duration of Options.** Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable Option agreement; *provided, however*, that no Option will be granted with a term in excess of 10 years.

(e) **Exercise of Options.** Options may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with payment in full (in the manner specified in Section 5(f)) of the exercise price for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company as soon as practicable following exercise.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash or by check, payable to the order of the Company;

(2) except as may otherwise be provided in the applicable Option agreement or approved by the Board, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company funds sufficient to pay the exercise price and any required tax withholding;

(3) to the extent provided for in the applicable Option agreement or approved by the Board, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value (valued in the manner determined or approved by the Board) provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent provided for in the applicable Nonstatutory Stock Option agreement or approved by the Board, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of the Option being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of the Option being exercised divided by (B) the fair market value of the Common Stock (valued in the manner determined or approved by the Board) on the date of exercise;

(5) to the extent permitted by applicable law and provided for in the applicable Option agreement or approved by the Board, by payment of such other lawful consideration as the Board may determine; *provided, however*, that in no event may a promissory note of the Participant be used to pay the Option exercise price; or

(6) by any combination of the above permitted forms of payment.

(g) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 10): (1) amend any outstanding Option granted under the Plan to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option; (2) cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(c)) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-current exercise price per share of the canceled option, (3) cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current fair market value of the Common Stock (valued in the manner determined or approved by the Board); or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of the Nasdaq Stock Market or any other exchange or marketplace on which the Company's stock is listed or traded (the "*Exchange*").

(h) No Reload Options. No Option granted under the Plan shall contain any provision entitling the Participant to the automatic grant of additional Options in connection with any exercise of the original Option.

(i) No Dividend Equivalents. No Option shall provide for the payment or accrual of dividend equivalents.

6. Stock Appreciation Rights

(a) General. The Board may grant Awards consisting of stock appreciation rights ("*SARs*") entitling the holder, upon exercise, to receive an amount of Common Stock or cash or a combination thereof (such form to be determined by the Board) determined by reference to appreciation, from and after the date of grant, in the fair market value of a share of Common Stock (valued in the manner determined or approved by the Board) over the measurement price established pursuant to Section 6(b). The date as of which such appreciation is determined shall be the exercise date.

(b) Measurement Price. The Board shall establish the measurement price of each SAR and specify it in the applicable SAR agreement. The measurement price shall not be less than 100% of the Grant Date Fair Market Value of the Common Stock on the date the SAR is granted; *provided* that if the Board approves the grant of an SAR effective as of a future date, the measurement price shall be not less than 100% of the Grant Date Fair Market Value on such future date.

(c) Duration of SARs. Each SAR shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable SAR agreement; *provided, however*, that no SAR will be granted with a term in excess of 10 years.

(d) Exercise of SARs. SARs may be exercised by delivery to the Company of a notice of exercise in a form (which may be electronic) approved by the Company, together with any other documents required by the Board.

(e) Limitation on Repricing. Unless such action is approved by the Company's stockholders, the Company may not (except as provided for under Section 10): (1) amend any outstanding SAR granted under the Plan to provide a measurement price per share that is lower than the then-current measurement price per share of such outstanding SAR; (2) cancel any outstanding SAR (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan (other than Awards granted pursuant to Section 4(c)) covering the same or a different number of shares of Common Stock and having an exercise or measurement price per share lower than the then-current measurement price per share of the canceled SAR; (3) cancel in exchange for a cash payment any outstanding SAR with a measurement price per share above the then-current fair market value of the Common Stock (valued in the manner determined or approved by the Board) or (4) take any other action under the Plan that constitutes a "repricing" within the meaning of the rules of the Nasdaq Stock Market.

(f) No Reload SARs. No SAR granted under the Plan shall contain any provision entitling the Participant to the automatic grant of additional SARs in connection with any exercise of the original SAR.

(g) No Dividend Equivalents. No SAR shall provide for the payment or accrual of dividend equivalents.

7. Restricted Stock; RSUs

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("**Restricted Stock**"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. The Board may also grant Awards entitling the recipient to receive shares of Common Stock or cash to be delivered at the time such Award vests or on a deferred basis ("**RSUs**").

(b) Terms and Conditions for Restricted Stock and RSUs. The Board shall determine the terms and conditions of Restricted Stock and RSUs, including the conditions for vesting and repurchase (or forfeiture) and the issue price, if any.

(c) Additional Provisions Relating to Restricted Stock.

(1) Dividends. Any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock ("**Unvested Dividends**") shall be paid to the Participant only if and when such shares become free from the restrictions on transferability and forfeitability that apply to such shares. Each payment of Unvested Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the lapsing of the restrictions on transferability and the forfeitability provisions applicable to the underlying shares of Restricted Stock. No interest will be paid on Unvested Dividends.

(2) Stock Certificates/Issuance. The Company may require that any stock certificates issued in respect of shares of Restricted Stock, as well as dividends or distributions paid on such Restricted Stock, shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee) or, alternatively, that such shares be issued in book entry only, in the name of the Participant with appropriate transfer and forfeiture restrictions. At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions (or, to the extent the Restricted Stock was issued in book entry, remove the restrictions) to the Participant or if the Participant has died, to his or her Designated Beneficiary (as defined below).

(d) Additional Provisions Relating to RSUs.

(1) Settlement. Upon the vesting of and/or lapsing of any other restrictions with respect to each RSU, the Participant shall be entitled to receive from the Company (i.e., settlement) the number of shares of Common Stock specified in the Award agreement or (if so provided in the applicable Award agreement or otherwise determined by the Board) an amount of cash equal to the fair market value (valued in the manner determined or approved by the Board) of such number of shares or a combination thereof. The Board may provide that settlement of RSUs shall be deferred, on a mandatory basis or at the election of the Participant, in a manner that complies with Section 409A.

(2) Voting Rights. A Participant shall have no voting rights with respect to any RSUs.

(3) Dividend Equivalents. The Award agreement for RSUs may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock (“*Dividend Equivalents*”). Dividend Equivalents may be credited to an account for the Participant and may be settled in cash and/or shares of Common Stock, in each case to the extent provided in the applicable Award agreement. Dividend Equivalents with respect to RSUs will be subject to the same restrictions on transfer and forfeitability as the RSUs with respect to which paid. No interest will be paid on Dividend Equivalents.

8. Other Stock-Based and Cash-Based Awards

(a) General. The Board may grant other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property (“*Other Stock-Based Awards*”). Such Other Stock-Based Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock-Based Awards may be paid in shares of Common Stock or cash, as the Board shall determine. The Company may also grant Awards denominated in cash rather than shares of Common Stock (“*Cash-Based Awards*”).

(b) Terms and Conditions. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock-Based Award or Cash-Based Award, including any purchase price applicable thereto.

(c) Dividend Equivalents. The Award agreement for an Other Stock-Based Award may provide Participants with the right to receive Dividend Equivalents. Dividend Equivalents may be credited to an account for the Participant and may be settled in cash and/or shares of Common Stock, in each case to the extent provided in the applicable Award agreement. Dividend Equivalents with respect to Other-Stock Based Awards will be subject to the same restrictions on transfer and forfeitability as the Other Stock-Based Award with respect to which paid. No interest will be paid on Dividend Equivalents.

9. Performance Awards

(a) Grants. Awards under the Plan may be made subject to the achievement of performance goals pursuant to this Section 9 (“*Performance Awards*”).

(b) Performance Measures. The Board may specify that the degree of granting, vesting and/or payout of any Performance Award shall be subject to the achievement of one or more performance measures established by the Board, which may be based on the relative or absolute attainment of specified levels of one or any combination of the following, and which may be determined pursuant to generally accepted accounting principles (“*GAAP*”) or on a non-GAAP basis, as determined by the Board: net income, earnings before or after discontinued operations, interest, taxes, depreciation and/or amortization, earnings per share, earnings per share before or after discontinued operations, interest, taxes, depreciation and/or amortization, bookings, bookings growth, revenue, revenue growth, operating profit before or after discontinued operations and/or taxes, operating expenses, gross margin, operating margin, profit margin, cost savings, inventory management, working capital, customer satisfaction, product quality, manufacturing objectives, completion of strategic acquisitions/dispositions, receipt of regulatory approvals, cash position, earnings growth, cash flow or cash position, stock price, market share, return on sales, assets, equity or investment, improvement of financial ratings, achievement of balance sheet, income statement or cash flow objectives, total stockholder return or any other performance measure as the Board may determine. Such goals may reflect absolute entity or business unit performance or a relative comparison to the performance of a peer group of entities or other external measure of the selected performance criteria and may be absolute in their terms or measured against or in relationship to other companies comparably, similarly or otherwise situated. The Board may specify that such performance measures shall be adjusted to exclude any one or more of (i) extraordinary, non-recurring charges or other events, (ii) gains or losses on the dispositions of discontinued operations, (iii) other non-standard gains or losses, (iv) the cumulative effects of changes in accounting principles, (v) the writedown of any asset, (vi) fluctuation in foreign currency exchange rates, (vii) amortization of acquired intangible assets, (viii) acquisition and divestiture related charges or credits, (ix) litigation or claim judgments or settlements (x) gain on sale of assets (xi) excess and obsolete inventory adjustments, (xii) tax effects of adjustments, (xiii) the effect of changes in tax laws or other laws affecting reported results, (xiv) charges for restructuring and reorganization programs and (xv) any other factors as the Board may determine. Such performance measures: (x) may vary by Participant and may be different for different Awards; (y) may be particular to a Participant or the department, branch, line of business, subsidiary or other

unit in which the Participant works and (z) may cover such period as may be specified by the Board. The Board shall have the authority to make equitable adjustments to the performance goals in recognition of unusual or non-recurring events affecting the Company or the financial statements of the Company, in response to changes in applicable laws or regulations or to account for items of gain, loss or expense determined to be extraordinary or unusual in nature or infrequent in occurrence or related to the disposal of a segment of a business or related to a change in accounting principles.

(c) Adjustments. The Board may adjust the cash or number of shares payable pursuant to such Performance Award, and the Board may, at any time, waive the achievement of the applicable performance measures.

(d) Dividends; Dividend Equivalents. Notwithstanding its designation as a Performance Award, no Option or SAR shall provide for the payment or accrual of dividend equivalents in accordance with Sections 5(i) and 6(g), as applicable, any dividends declared and paid by the Company with respect to shares of Restricted Stock shall be subject to Section 7(c)(1) and any right to receive Dividend Equivalents on an award of RSUs and Other Stock-Based Awards shall be subject to Sections 7(d)(3) and 8(c), as applicable.

10. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under the Plan, (ii) the share counting rules and sublimit set forth in Sections 4(a) and 4(b), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the share and per-share provisions and the measurement price of each outstanding SAR, (v) the number of shares subject to and the repurchase price per share subject to each outstanding award of Restricted Stock and (vi) the share and per-share-related provisions and the purchase price, if any, of each outstanding RSU and each Other Stock-Based Award, shall be equitably adjusted by the Company (or substituted Awards may be made, if applicable) in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to an outstanding Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events

(1) Definition. A “**Reorganization Event**” shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is canceled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock

(A) In connection with a Reorganization Event, the Board may take any one or more of the following actions as to all or any (or any portion of) outstanding Awards other than Restricted Stock on such terms as the Board determines (except to the extent specifically provided otherwise in an applicable Award agreement or another agreement between the Company and the Participant): (i) provide that such Awards shall be assumed, or substantially equivalent Awards shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that all of the Participant’s unvested Awards will be forfeited immediately prior to the consummation of such Reorganization Event and/or that all of the Participant’s unexercised Awards will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant (to the extent then exercisable) within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become exercisable, realizable, or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the “**Acquisition Price**”), make or provide for a cash payment to Participants with respect to each Award held by a Participant equal to (A) the number of shares of Common Stock subject to the vested portion of the Award (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise, measurement or purchase price of such Award and any applicable tax

withholdings, in exchange for the termination of such Award, *provided*, that if the Acquisition Price per share (as determined by the Board) does not exceed the exercise price of such Award, then the Award shall be canceled without any payment of consideration therefor; (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing. In taking any of the actions permitted under this Section 10(b)(2)(A), the Board shall not be obligated by the Plan to treat all Awards, all Awards held by a Participant, or all Awards of the same type, identically.

(B) Notwithstanding the terms of Section 10(b)(2)(A)(i), in the case of outstanding RSUs that are subject to Section 409A: (i) if the applicable RSU agreement provides that the RSUs shall be settled upon a “change in control event” within the meaning of Treasury Regulation Section 1.409A-3(i)(5)(i), and the Reorganization Event constitutes such a “change in control event”, then no assumption or substitution shall be permitted pursuant to Section 10(b)(2)(A)(i) and the RSUs shall instead be settled in accordance with the terms of the applicable RSU agreement; and (ii) the Board may only undertake the actions set forth in clauses (iii), (iv) or (v) of Section 10(b)(2)(A) if the Reorganization Event constitutes a “change in control event” as defined under Treasury Regulation Section 1.409A-3(i)(5)(i) and such action is permitted or required by Section 409A; if the Reorganization Event is not a “change in control event” as so defined or such action is not permitted or required by Section 409A, and the acquiring or succeeding corporation does not assume or substitute the RSUs pursuant to clause (i) of Section 10(b)(2)(A), then the unvested RSUs shall terminate immediately prior to the consummation of the Reorganization Event without any payment in exchange therefor.

(C) For purposes of Section 10(b)(2)(A)(i), an Award (other than Restricted Stock) shall be considered assumed if, following consummation of the Reorganization Event, such Award confers the right to purchase or receive pursuant to the terms of such Award, for each share of Common Stock subject to the Award immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); *provided, however*, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise or settlement of the Award to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(D) The Board may impose a limitation on the ability of Participants holding Options and/or SARs to exercise their Awards for the minimum number of days prior to the closing of the Reorganization Event as is reasonably necessary to facilitate the orderly closing of the Reorganization Event. The Company shall provide reasonable notice to Participants of any such limitation on exercise.

(3) Consequences of a Reorganization Event on Restricted Stock. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company with respect to outstanding Restricted Stock shall inure to the benefit of the Company’s successor and shall, unless the Board determines otherwise, apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to such Restricted Stock; *provided, however*, that the Board may either provide for termination or deemed satisfaction of such repurchase or other rights under the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, either initially or by amendment, or provide for forfeiture of such Restricted Stock if issued at no cost. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock or any other agreement between a Participant and the Company, all restrictions and conditions on all Restricted Stock then outstanding shall automatically be deemed terminated or satisfied.

11. General Provisions Applicable to Awards

(a) Transferability of Awards. Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by a Participant, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant; *provided, however*, that, except with respect to Awards subject to Section 409A and Incentive Stock Options, the Board may permit or provide in an Award for the gratuitous transfer of the Award by the Participant to or for the benefit of any immediate family member, family trust or other entity established for the benefit of the Participant and/or an immediate family member thereof if the Company would be eligible to use a Form S-8 under the Securities Act for the registration of the sale of the Common Stock subject to such Award to such proposed transferee; *provided further*, that the Company shall not be required to recognize any such permitted transfer until such time as such permitted transferee shall, as a condition to such transfer, deliver to the Company a written instrument in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees. For the avoidance of doubt, nothing contained in this Section 11(a) shall be deemed to restrict a transfer to the Company.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination or other cessation of employment or service, authorized leave of absence or other change in the employment or other service status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights, or receive any benefits, under an Award. "**Designated Beneficiary**" means (i) the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death or (ii) in the absence of an effective designation by a Participant, the Participant's estate.

(d) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may elect to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise, vesting or release from forfeiture of an Award or at the same time as payment of the exercise or purchase price, unless the Company determines otherwise. If provided for in an Award or approved by the Board, a Participant may satisfy the tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their fair market value (valued in the manner determined or approved by the Company); *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), except that, to the extent that the Company is able to retain shares of Common Stock having a fair market value (determined or approved by the Company) that exceeds the statutory minimum applicable withholding tax without financial accounting implications or the Company is withholding in a jurisdiction that does not have a statutory minimum withholding tax, the Company may retain such number of shares of Common Stock (up to the number of shares having a fair market value equal to the maximum individual statutory rate of tax (determined or approved by the Company)) as the Company shall determine to be necessary to satisfy the tax liability associated with any Award. Shares used to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(e) Amendment of Award. Except as otherwise provided in Sections 5(g) and 6(e) with respect to repricings or Section 12(d) with respect to actions requiring stockholder approval, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option. The Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, does not materially and adversely affect the Participant's rights under the Plan or (ii) the change is permitted under Section 10.

(f) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously issued or delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(g) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in whole or in part, free from some or all restrictions or conditions or otherwise realizable in whole or in part, as the case may be.

12. Miscellaneous

(a) No Right to Employment or Other Status. No person shall have any claim or right to be granted an Award by virtue of the adoption of the Plan, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder; Clawback. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. In accepting an Award under the Plan, the Participant agrees to be bound by any clawback policy that the Company has in effect or may adopt in the future.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date the Plan is approved by the Company's stockholders (the "**Effective Date**"). No Awards shall be granted under the Plan after the expiration of 10 years from the Effective Date, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time provided that (i) neither Section 5(g) nor Section 6(e) requiring stockholder approval of any Option or SAR repricing may be amended without stockholder approval; (ii) no amendment that would require stockholder approval under the rules of the national securities exchange on which the Company then maintains its primary listing may be made effective unless and until the Company's stockholders approve such amendment; and (iii) if the national securities exchange on which the Company then maintains its primary listing does not have rules regarding when stockholder approval of amendments to equity compensation plans is required (or if the Company's Common Stock is not then listed on any national securities exchange), then no amendment to the Plan (A) materially increasing the number of shares authorized under the Plan (other than pursuant to Section 4(d) or 10), (B) expanding the types of Awards that may be granted under the Plan, or (C) materially expanding the class of participants eligible to participate in the Plan shall be effective unless and until the Company's stockholders approve such amendment. In addition, if at any time the approval of the Company's stockholders is required as to any other modification or amendment under Section 422 of the Code or any successor provision with respect to Incentive Stock Options, the Board may not effect such modification or amendment without such approval. Unless otherwise specified in the amendment, any amendment to the Plan adopted in accordance with this Section 12(d) shall apply to, and be binding on the holders of, all Awards outstanding under the Plan at the time the amendment is adopted, provided the Board determines that such amendment, taking into account any related action, does not materially and adversely affect the rights of Participants under the Plan. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan unless the Award provides that (i) it will terminate or be forfeited if stockholder approval of such amendment is not obtained within no more than 12 months from the date of grant and (ii) it may not be exercised or settled (or otherwise result in the issuance of Common Stock) prior to such stockholder approval.

(e) Authorization of Sub-Plans (including for Grants to non-U.S. Employees). The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable securities, tax or other laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to the Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Compliance with Section 409A. If and to the extent (i) any portion of any payment, compensation or other benefit provided to a Participant in connection with his or her employment termination constitutes "nonqualified deferred compensation" within the meaning of Section 409A and (ii) the Participant is a specified employee as defined in Section 409A(a)(2)(B)(i) of the Code, in each case as determined by the Company in accordance with its procedures, by which determinations the Participant (through accepting the Award) agrees to be bound, such portion of the payment, compensation or other benefit shall not be paid before the day that is six months plus one day after the date of "separation from service" (as determined under Section 409A) (the "**New Payment Date**"), except as Section 409A may then permit. The aggregate of any payments that otherwise would have been paid to the Participant during the period between the date of separation from service and the New Payment Date shall be paid to the Participant in a lump sum on such New Payment Date, and any remaining payments will be paid on their original schedule.

The Company makes no representations or warranty and shall have no liability to the Participant or any other person if any provisions of or payments, compensation or other benefits under the Plan are determined to constitute nonqualified deferred compensation subject to Section 409A but do not to satisfy the conditions of that section.

(g) Limitations on Liability. Notwithstanding any other provisions of the Plan, no individual acting as a director, officer, employee or agent of the Company will be liable to any Participant, former Participant, spouse, beneficiary, or any other person for any claim, loss, liability, or expense incurred in connection with the Plan, nor will such individual be personally liable with respect to the Plan because of any contract or other instrument such individual executes in his or her capacity as a director, officer, employee or agent of the Company. The Company will indemnify and hold harmless each director, officer, employee or agent of the Company to whom any duty or power relating to the administration or interpretation of the Plan has been or will be delegated, against any cost or expense (including attorneys' fees) or liability (including any sum paid in settlement of a claim with the Board's approval) arising out of any act or omission to act concerning the Plan unless arising out of such person's own fraud or bad faith.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the Commonwealth of Massachusetts, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the Commonwealth of Massachusetts.

Calculation of Filing Fee Tables

Form S-8
(Form Type)

MKS INSTRUMENTS, INC.
(Exact Name of Registrant as Specified in its Charter)

Table 1—Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered (1)	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, no par value per share	Other	6,200,274 shares ⁽²⁾	\$115.37 ⁽³⁾	\$715,325,611.38 ⁽³⁾	\$92.70 per \$1,000,000	\$66,310.69
Total Offering Amounts					\$715,325,611.38		\$66,310.69
Total Fee Offsets							\$0
Net Fee Due							\$66,310.69

- (1) In accordance with Rule 416 under the Securities Act of 1933, as amended, this registration statement shall be deemed to cover any additional securities that may from time to time be offered or issued to prevent dilution resulting from stock splits, stock dividends or similar transactions.
- (2) Consists of shares issuable under the 2022 Stock Incentive Plan.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rules 457(c) and 457(h) of the Securities Act of 1933, as amended. The price per share and aggregate offering price are calculated on the basis of the average of the high and low sale prices of the registrant's Common Stock on the Nasdaq Global Select Market on May 9, 2022.