

**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 01810
(Address of Principal Executive Offices)

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

MKS Instruments, Inc. 2014 Stock Incentive Plan
(Full Title of the Plan)

Kathleen F. Burke
Senior Vice President, General Counsel and Assistant 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.

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee
Common Stock, no par value per share	740,467 shares(2)	\$78.27(3)	\$57,956,353.00(3)	\$7,025.00

Common Stock, no par value per share	12,787 shares(4)	\$17.83(5)	\$227,993.00(5)	\$28.00
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- (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 740,467 shares issuable under the MKS Instruments, Inc. 2014 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, and based upon the average of the high and low prices of the Registrant's Common Stock as reported on the Nasdaq Stock Market on January 29, 2019.
- (4) Consists of 12,787 shares issuable under the MKS Instruments, Inc. 2014 Stock Incentive Plan.
- (5) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) of the Securities Act of 1933, as amended, and based upon the weighted average exercise price of the assumed stock appreciation rights.

EXPLANATORY NOTE

On February 1, 2019 EAS Equipment, Inc., a Delaware corporation and a wholly owned subsidiary of MKS Instruments, Inc. (the “Registrant”), merged with and into Electro Scientific Industries, Inc., an Oregon corporation (“ESI”), on the terms and conditions set forth in the Agreement and Plan of Merger among the Registrant, EAS Equipment, Inc. and ESI dated as of October 29, 2018, as may have been amended from time to time (the “Merger Agreement” and such merger, the “Merger”). Pursuant to the Merger Agreement, at the effective time of the Merger, (i) ESI became a wholly owned subsidiary of the Registrant and (ii) the Registrant assumed, on the terms and subject to the conditions set forth in the Merger Agreement::

- each restricted stock unit that vests based solely on the satisfaction of service conditions (a “TRSU”), granted under any stock option or equity compensation plan, arrangement or agreement of ESI (“ESI Plan”), that was outstanding immediately prior to the effective time of the Merger and as to which shares of ESI common stock were not fully distributed in connection with the closing of the Merger;
- each restricted stock unit that was granted subject to vesting based on both the achievement of performance goals and the satisfaction of service conditions (a “PRSU”) granted under an ESI Plan that was outstanding immediately prior to the effective time of the Merger; and
- each stock appreciation right (a “SAR”) granted under an ESI Plan, whether vested or unvested, that was outstanding immediately prior to the effective time of the Merger and held by an individual who was a service provider of ESI as of the date on which the effective time occurred.

As of the effective time of the Merger, based on a formula provided in the Merger Agreement, (a) such TRSUs were converted automatically into restricted stock units with respect to an aggregate of 412,109 shares of the Registrant’s common stock (the “Assumed TRSUs”), (b) such PRSUs were converted automatically into restricted stock units with respect to an aggregate of 328,358 shares of the Registrant’s common stock (the “Assumed PRSUs,” and collectively with the Assumed TRSUs, the “Assumed RSUs”) and (c) such SARs were converted automatically into stock appreciation rights with respect to an aggregate of 12,787 shares of the Registrant’s common stock (the “Assumed SARs”).

The shares of the Registrant’s common stock that are subject to the Assumed SARs and Assumed RSUs are issuable pursuant to the Registrant’s 2014 Stock Incentive Plan (the “Registrant Plan”).

This Registration Statement on Form S-8 is being filed to register the 753,254 shares of the Registrant’s common stock that are issuable pursuant to the Assumed RSUs and Assumed SARs under the Registrant’s Plan. These shares are in addition to (i) the 18,000,000 shares of the Registrant’s common stock reserved for issuance under the Registrant Plan and previously registered under the Securities Act of 1933 on the Registration Statement on Forms S-8 (Registration No. 333-195750) filed by the Registrant on May 7, 2014 and (ii) the 1,260,525 shares of the Registrant’s common stock reserved for issuance under the Registrant Plan and previously registered under the Securities Act of 1933 on the Registration Statement on Forms S-8 (Registration No. 333-211026) filed by the Registrant on April 29, 2016.

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 plan 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 plan 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, including any amendment or report 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 to this registration statement 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 (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.

Exhibit Number	Description
4.1(1)	Restated Articles of Organization of the Registrant.
4.2(2)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 18, 2001.
4.3(3)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 16, 2002.
4.4(4)	Amended and Restated By-Laws of the Registrant.
5.1	Opinion of Wilmer Cutler Pickering Hale and Dorr LLP.
10.1(5)	2014 Stock Incentive Plan.
23.1	Consent of Wilmer Cutler Pickering Hale and Dorr LLP (included in Exhibit 5.1).
23.2	Consent of PricewaterhouseCoopers LLP.
24.1	Power of Attorney (included in the signature pages of this Registration Statement).
(1)	Incorporated herein by reference to the Registrant's Registration Statement on Form S-4 (File No. 333-49738) filed with the Securities and Exchange Commission on November 13, 2000.
(2)	Incorporated herein by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001.
(3)	Incorporated herein by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002.
(4)	Incorporated herein by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on May 6, 2014.
(5)	Incorporated herein by reference to the Registrant's Current Report on Form 8-K 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 of 1933;

(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. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration fee" table in the effective registration statement;

(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 (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 of 1933, 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 of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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 of 1933 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 of 1933 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 of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, 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 1st day of February, 2019.

By: /s/ Gerald G. Colella
Gerald G. Colella
Chief Executive Officer and Director
(Principal Executive Officer)

POWER OF ATTORNEY AND SIGNATURES

We, the undersigned officers and directors of MKS Instruments, Inc., hereby severally constitute and appoint Gerald G. Colella, 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 of 1933, 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 of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURES	TITLE	DATE
<u>/s/ John R. Bertucci</u> John R. Bertucci	Chairman of the Board of Directors	February 1, 2019
<u>/s/ Gerald G. Colella</u> Gerald G. Colella	Chief Executive Officer and Director (Principal Executive Officer)	February 1, 2019
<u>/s/ Seth H. Bagshaw</u> Seth H. Bagshaw	Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	February 1, 2019
<u>/s/ Rajeev Batra</u> Rajeev Batra	Director	February 1, 2019
<u>/s/ Gregory R. Beecher</u> Gregory R. Beecher	Director	February 1, 2019
<u>/s/ Richard S. Chute</u> Richard S. Chute	Director	February 1, 2019
<u>/s/ Peter R. Hanley</u> Peter R. Hanley	Director	February 1, 2019

/s/ Rick D. Hess
Rick D. Hess

Director

February 1, 2019

/s/ Jacqueline F. Moloney
Jacqueline F. Moloney

Director

February 1, 2019

/s/ Elizabeth A. Mora
Elizabeth A. Mora

Director

February 1, 2019

February 1, 2019

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

Re: 2014 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 753,254 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 2014 Stock Incentive Plan (the "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 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 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 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,

WILMER CUTLER PICKERING
HALE AND DORR LLP

By: /s/ Joseph B. Conahan
Joseph B. Conahan, a Partner

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, 2018 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, 2017.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
February 1, 2019