

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

FORM 10-Q

(Mark one)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Quarterly Period Ended June 30, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES ACT OF 1934
For the transition period from ___ to ___

Commission file number 0-20388

LITTELFUSE, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

36-3795742
(I.R.S. Employer Identification No.)

8755 West Higgins Road, Suite 500
Chicago, Illinois
(Address of principal executive offices)

60631
(ZIP Code)

Registrant's telephone number, including area code: 773-628-1000

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class
Common Stock, \$0.01 par value

Name of Each Exchange
On Which Registered
NASDAQ Global Select MarketSM

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (Section 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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 (Check one): Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

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 13(a) of the Exchange Act. Yes No

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of July 27, 2018, the registrant had outstanding 25,080,569 shares of Common Stock, net of Treasury Shares.

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LITTELFUSE, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands)	June 30, 2018	December 30, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 408,147	\$ 429,676
Short-term investments	34	35
Trade receivables, less allowances (June 30, 2018 - \$34,724; December 30, 2017 - \$27,516)	260,444	182,699
Inventories	239,201	140,789
Prepaid income taxes and income taxes receivable	4,648	1,689
Prepaid expenses and other current assets	45,727	37,452
Total current assets	958,201	792,340
Property, plant, and equipment:		
Land	29,198	9,547
Buildings	118,432	86,599
Equipment	558,855	505,838
Accumulated depreciation and amortization	(367,730)	(351,407)
Net property, plant, and equipment	338,755	250,577
Intangible assets, net of amortization	390,052	203,850
Goodwill	832,227	453,414
Investments	31,326	10,993
Deferred income taxes	10,320	11,858
Other assets	27,113	17,070
Total assets	<u>\$ 2,587,994</u>	<u>\$ 1,740,102</u>
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 127,290	\$ 101,844
Accrued payroll	43,047	49,962
Accrued expenses	66,341	48,994
Accrued severance	1,049	1,459
Accrued income taxes	19,376	16,285
Current portion of long-term debt	10,060	6,250
Total current liabilities	267,163	224,794
Long-term debt, less current portion	687,538	489,361
Deferred income taxes	53,996	17,069
Accrued post-retirement benefits	33,210	18,742
Other long-term liabilities	76,067	62,580
Shareholders' equity:		
Common stock, par value \$0.01 per share: 34,000,000 shares authorized; shares issued, June 30, 2018– 25,070,738; December 30, 2017 –22,713,198	253	229
Treasury stock, at cost: 475,061 and 439,598 shares, respectively	(48,336)	(41,294)
Additional paid-in capital	815,826	310,012
Accumulated other comprehensive income	(89,684)	(63,668)
Retained earnings	791,831	722,140
Littelfuse, Inc. shareholders' equity	1,469,890	927,419
Non-controlling interest	130	137
Total equity	1,470,020	927,556
Total liabilities and equity	<u>\$ 2,587,994</u>	<u>\$ 1,740,102</u>

See accompanying Notes to Condensed Consolidated Financial Statements.

LITTELFUSE, INC.
CONDENSED CONSOLIDATED STATEMENTS OF NET INCOME
(Unaudited)

(in thousands, except per share data)	For the Three Months Ended		For the Six Months Ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Net sales	\$ 459,183	\$ 313,355	\$ 876,996	\$ 598,797
Cost of sales	290,196	180,747	558,386	352,539
Gross profit	168,987	132,608	318,610	246,258
Selling, general, and administrative expenses	73,244	53,438	150,758	100,139
Research and development expenses	22,748	12,729	45,288	24,881
Amortization of intangibles	13,373	6,171	25,371	12,115
Total operating expenses	109,365	72,338	221,417	137,135
Operating income	59,622	60,270	97,193	109,123
Interest expense	5,782	3,281	11,205	6,401
Foreign exchange loss (gain)	3,200	(558)	(7,354)	(2,115)
Other (income) expense, net	(1,678)	190	(3,621)	52
Income before income taxes	52,318	57,357	96,963	104,785
Income taxes	9,992	8,719	18,609	17,255
Net income	<u>\$ 42,326</u>	<u>\$ 48,638</u>	<u>\$ 78,354</u>	<u>\$ 87,530</u>
Income per share:				
Basic	<u>\$ 1.69</u>	<u>\$ 2.13</u>	<u>\$ 3.18</u>	<u>\$ 3.84</u>
Diluted	<u>\$ 1.67</u>	<u>\$ 2.11</u>	<u>\$ 3.12</u>	<u>\$ 3.80</u>
Weighted-average shares and equivalent shares outstanding:				
Basic	25,004	22,822	24,671	22,785
Diluted	25,401	23,023	25,086	23,005

See accompanying Notes to Condensed Consolidated Financial Statements.

LITTELFUSE, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

(in thousands)	For the Three Months Ended		For the Six Months Ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Net income	\$ 42,326	\$ 48,638	\$ 78,354	\$ 87,530
Other comprehensive income (loss):				
Pension and postemployment liability adjustments (net of tax expense (benefit) of \$42 and \$23 for the three months ended 2018 and 2017, and (\$18) and \$55 for the six months ended 2018 and 2017, respectively)	590	(19)	402	(200)
Pension and postemployment reclassification adjustments (net of tax expense (benefit) of (\$5) and \$28 for the three months ended 2018 and 2017, and (\$11) and \$64 for the six months ended 2018 and 2017, respectively)	176	(80)	361	(181)
Unrealized gain (loss) on investments	-	(472)	-	475
Foreign currency translation adjustments	(16,708)	(3,582)	(16,984)	1,380
Comprehensive income	\$ 26,384	\$ 44,485	\$ 62,133	\$ 89,004

See accompanying Notes to Condensed Consolidated Financial Statements.

LITTELFUSE, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

(in thousands)	For the Six Months Ended	
	June 30, 2018	July 1, 2017
OPERATING ACTIVITIES		
Net income	\$ 78,354	\$ 87,530
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	24,431	18,575
Amortization of intangibles	25,371	12,115
Provision for bad debts	(2)	1,895
Deferred revenue	1,921	—
Non-cash inventory charges	36,927	—
Impairment charges	1,125	—
Loss on sale of property, plant, and equipment	780	593
Stock-based compensation	15,883	8,590
Unrealized gain on investments	(3,311)	—
Deferred income taxes	2,434	1,514
Changes in operating assets and liabilities:		
Accounts receivables	(33,481)	(32,039)
Inventories	(1,502)	(8,739)
Accounts payable	13,684	7,985
Accrued expenses (including post-retirement)	3,773	3,912
Accrued payroll and severance	(13,745)	(13,190)
Accrued taxes	(6,411)	515
Prepaid expenses and other	(5,316)	4,317
Net cash provided by operating activities	140,915	93,573
INVESTING ACTIVITIES		
Acquisitions of businesses, net of cash acquired	(310,487)	(14,172)
Proceeds from maturities of short-term investments	—	3,739
Decrease in entrusted loan	—	2,416
Purchases of property, plant, and equipment	(40,315)	(28,278)
Proceeds from sale of property, plant, and equipment	68	178
Net cash used in investing activities	(350,734)	(36,117)
FINANCING ACTIVITIES		
Proceeds of revolving credit facility	60,000	—
Proceeds of term loan	75,000	—
Net proceeds from senior notes payable	175,000	125,000
Payments of term loan	(40,025)	(3,125)
Payments of revolving credit facility	(60,000)	(112,500)
Net proceeds (payments) related to stock-based award activities	5,568	(2,074)
Payments of entrusted loan	—	(2,416)
Debt issuance costs	(878)	(1)
Cash dividends paid	(18,458)	(14,963)
Net cash provided by (used in) financing activities	196,207	(10,079)
Effect of exchange rate changes on cash and cash equivalents	(7,917)	(608)
Increase (decrease) in cash and cash equivalents	(21,529)	46,769
Cash and cash equivalents at beginning of period	429,676	275,124
Cash and cash equivalents at end of period	\$ 408,147	\$ 321,893
Supplemental disclosure of non-cash investing activities:		
Fair value of commitment to purchase non-controlling interest of Monolith	\$ —	\$ 9,000

See accompanying Notes to Condensed Consolidated Financial Statements.

1. Summary of Significant Accounting Policies and Other Information***Nature of Operations***

Littelfuse, Inc. and subsidiaries (the “Company”) is a global leader in circuit protection products with advancing platforms in power control and sensor technologies, serving customers in the electronics, automotive, and industrial markets. With a diverse and extensive product portfolio of fuses, semiconductors, polymers, ceramics, relays and sensors, the Company works with its customers to build safer, more reliable and more efficient products for the connected world in virtually every market that uses electrical energy, ranging across consumer electronics, IT and telecommunication applications, industrial electronics, automobiles and other transportation, and heavy industrial applications. The Company has a network of global engineering centers and labs that develop new products and product enhancements, provides customer application support and test products for safety, reliability, and regulatory compliance.

Basis of Presentation

The Company’s accompanying unaudited Condensed Consolidated Financial Statements have been prepared in accordance with U.S. Generally Accepted Accounting Principles (“GAAP”) for interim financial information, the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, certain information and disclosures normally included in the consolidated balance sheets, statements of net income and comprehensive income and cash flows prepared in conformity with U.S. GAAP have been condensed or omitted as permitted by such rules and regulations, although the Company believes that the disclosures made are adequate to make the information not misleading. They have been prepared in accordance with accounting policies described in the Company’s Annual Report on Form 10-K for the year ended December 30, 2017, which should be read in conjunction with the disclosures therein. In the opinion of management, all adjustments considered necessary for a fair presentation have been included and are of a normal, recurring nature. Operating results for interim periods are not necessarily indicative of annual operating results.

Revenue Recognition***Adoption***

On December 31, 2017, the Company adopted new guidance on revenue from contracts with customers using the modified retrospective method. The adoption did not have a significant impact on the Company’s consolidated financial statements.

Revenue Disaggregation

The following table disaggregates the Company’s revenue by primary business units for the three and six months ended June 30, 2018:

(in thousands)	For the three months ended June 30, 2018			
	Electronics Segment	Automotive Segment	Industrial Segment	Total
Electronics – Passive Products and Sensors	\$ 128,321	\$ —	\$ —	\$ 128,321
Electronics – Semiconductor	171,036	—	—	171,036
Passenger Car Products	—	63,581	—	63,581
Automotive Sensors	—	30,729	—	30,729
Commercial Vehicle Products	—	32,862	—	32,862
Industrial Products	—	—	32,654	32,654
Total	\$ 299,357	\$ 127,172	\$ 32,654	\$ 459,183

(in thousands)	For the six months ended June 30, 2018			
	Electronics Segment	Automotive Segment	Industrial Segment	Total
Electronics – Passive Products and Sensors	\$ 242,816	\$ —	\$ —	\$ 242,816
Electronics – Semiconductor	320,952	—	—	320,952
Passenger Car Products	—	127,160	—	127,160
Automotive Sensors	—	62,052	—	62,052
Commercial Vehicle Products	—	64,090	—	64,090
Industrial Products	—	—	59,926	59,926
Total	<u>\$ 563,768</u>	<u>\$ 253,302</u>	<u>\$ 59,926</u>	<u>\$ 876,996</u>

See Note 12, *Segment Information* for net sales by segment and countries.

Revenue Recognition

The Company recognizes revenue on product sales in the period in which the Company satisfies its performance obligation and control of the product is transferred to the customer. The Company's sales arrangements with customers are predominately short term in nature and generally provide for transfer of control at the time of shipment as this is the point at which title and risk of loss of the product transfers to the customer. At the end of each period, for those shipments where title to the products and the risk of loss and rewards of ownership do not transfer until the product has been received by the customer, the Company adjusts revenues and cost of sales for the delay between the time that the products are shipped and when they are received by the customer. The amount of revenue recorded reflects the consideration to which the Company expects to be entitled in exchange for goods and may include adjustments for customer allowance, rebates and price adjustments. The Company's distribution channels are primarily through direct sales and independent third-party distributors.

The Company has elected the practical expedient under ASC 340-40-25-4 to expense commissions when incurred as the amortization period of the commission asset the Company would have otherwise recognized is less than one year.

Revenue and Billing

The Company generally accepts orders from customers through receipt of purchase orders or electronic data interchange based on written sales agreements and purchasing contracts. Contract pricing and selling agreement terms are based on market factors, costs, and competition. Pricing is often negotiated as an adjustment (premium or discount) from the Company's published price lists. The customer is invoiced when the Company's products are shipped to them in accordance with the terms of the sales agreement. As the Company's standard payment terms are less than one year, the Company has elected the practical expedient under ASC 606-10-32-18 to not assess whether a contract has a significant financing component. The Company also elected the practical expedient provided in ASC 606-10-25-18B to treat all product shipping and handling activities as fulfillment activities, and therefore recognize the gross revenue associated with the contract, inclusive of any shipping and handling revenue. This is similar to the Company's prior practice and therefore the effect of the new guidance is immaterial.

Ship and Debit Program

Some of the terms of the Company's sales agreements and normal business conditions provide customers (distributors) the ability to receive price adjustments on products previously shipped and invoiced. This practice is common in the industry and is referred to as a "ship and debit" program. This program allows the distributor to debit the Company for the difference between the distributors' contracted price and a lower price for specific transactions. Under certain circumstances (usually in a competitive situation or large volume opportunity), a distributor will request authorization for pricing allowances to reduce its price. When the Company approves such a reduction, the distributor is authorized to "debit" its account for the difference between the contracted price and the lower approved price. The Company establishes reserves for this program based on historic activity and actual authorizations for the debit and recognizes these debits as a reduction of revenue.

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Return to Stock

The Company has a return to stock policy whereby certain customers, with prior authorization from Littelfuse management, can return previously purchased goods for full or partial credit. The Company establishes an estimated allowance for these returns based on historic activity. Sales revenue and cost of sales are reduced to anticipate estimated returns.

Volume Rebates

The Company offers volume based sales incentives to certain customers to encourage greater product sales. If customers achieve their specific quarterly or annual sales targets, they are entitled to rebates. The Company estimates the projected amount of rebates that will be achieved by the customer and recognizes this estimated cost as a reduction to revenue as products are sold.

Recently Adopted Accounting Standards

In March 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2017-07 "Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Post-Retirement Benefit Cost," which changed the presentation of net periodic pension and post-retirement benefit cost (net benefit cost) within the Statement of Income. Under the previous guidance, net benefit cost was reported as an employee cost within operating income. The amendment required the bifurcation of net benefit cost, with the service cost component to be presented with other employee compensation costs in operating income while the other components will be reported separately outside of income from operations. ASU No. 2017-07 was effective for the first quarter of 2018 with the Company adopting the new standard on December 31, 2017.

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments-Recognition and Measurement of Financial Assets and Financial Liabilities" which addressed certain aspects of the recognition, measurement, presentation and disclosure of financial instruments. The ASU requires the Company to recognize any changes in the fair value of certain equity investments in net income. Previously these changes were recognized in other comprehensive income ("OCI"). The Company adopted the new standard on December 31, 2017, on a modified retrospective basis, recognizing the cumulative effect as a \$9.8 million increase to retained earnings. As a result of the adoption of the new standard and change in fair value of our equity investments, for the six months ended June 30, 2018, the Company recognized an unrealized gain of \$2.8 million in Other (income) expense, net in the Condensed Consolidated Statements of Net Income.

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers" (Topic 606) which supersedes the revenue recognition requirements in ASC 605, "Revenue Recognition." This ASU provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and will supersede most current revenue recognition guidance. The guidance permits two implementation approaches, one requiring retrospective application of the new standard with restatement of prior years and one requiring prospective application of the new standard with disclosure of results under old standards. The Company adopted the new standard on December 31, 2017 using the modified retrospective method, however, no adjustment to retained earnings was needed. The new guidance did not have a material effect on the Company's Condensed Consolidated Statements of Income. See the *Revenue Recognition* section above for further discussion.

In October 2016, the FASB issued ASU No. 2016-16, "Income Taxes" (Topic 740). This ASU update requires entities to recognize the income tax consequences of many intercompany asset transfers at the transaction date. The seller and buyer will immediately recognize the current and deferred income tax consequences of an intercompany transfer of an asset other than inventory. The tax consequences were previously deferred. The Company adopted the new standard on December 31, 2017 and it did not have a material impact.

Recently Issued Accounting Standards

In February 2016, the FASB issued ASU No. 2016-02, "Leases" (Topic 842). This ASU requires lessees to recognize, on the balance sheet, assets and liabilities for the rights and obligations created by leases of greater than twelve months. The accounting by lessors will remain largely unchanged. The ASU is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, with early adoption permitted. Adoption will require a modified retrospective transition. The Company will adopt the standard in the first quarter of 2019. The Company has made progress on assessing the Company's portfolio of leases and compiling a central repository of all active leases. We are in the process of assessing the design of the future lease process and drafting a policy to address the new standard requirements. Key lease data elements are being evaluated including developing a methodology for determining the incremental borrowing rate across all countries where we have operations. While the Company has not yet completed its evaluation of the impact the new lease accounting standard will have on its Consolidated Financial Statements, the Company expects to recognize right of use assets and lease liabilities for its operating leases in the Consolidated Balance Sheet upon adoption.

In January 2018, the FASB released guidance on the accounting for tax on the global intangible low-taxed income ("GILTI") provisions of the 2017 U.S. Tax Cuts and Jobs Act (the "Tax Act"). The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The guidance indicates that either accounting for deferred taxes related to GILTI inclusions or treating any taxes on GILTI inclusions as period cost are both acceptable methods subject to an accounting policy election. The Company has not yet completed its assessment and therefore has not yet elected an accounting policy.

In February 2018, the FASB issued ASU No. 2018-02 "Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which permits the reclassification of tax effects stranded in accumulated other comprehensive income to retained earnings as a result of the Tax Act. The standard also requires entities to disclose whether or not they elected to reclassify the tax effects related to the Tax Act as well as their policy for releasing income tax effects from accumulated other comprehensive income. The standard allows the option of applying either a retrospective adoption, meaning the standard is applied to all periods in which the effect of the Tax Act is recognized, or applying the amendments in the period of adoption, meaning an adjustment is made to shareholder's equity as of the beginning of the reporting period. ASU 2018-02 will be effective in the first quarter of 2019; however early adoption is permitted for interim and annual periods, including the reporting period in which the Tax Act was enacted. The Company is currently evaluating the impact of ASU 2018-02 on the Consolidated Financial Statements.

2. Acquisitions

The Company accounts for acquisitions using the acquisition method in accordance with ASC 805, "Business Combinations," in which assets acquired and liabilities assumed are recorded at fair value as of the date of acquisition. The operating results of the acquired business are included in the Company's Consolidated Financial Statements from the date of the acquisition.

IXYS Corporation

On January 17, 2018, the Company acquired IXYS Corporation ("IXYS"), a global pioneer in the power semiconductor and integrated circuit markets with a focus on medium to high voltage power control semiconductors across the industrial, communications, consumer and medical markets. IXYS has a broad customer base, serving more than 3,500 customers through its direct sales force and global distribution partners. The acquisition of IXYS is expected to accelerate the Company's growth across the power control market driven by IXYS's extensive power semiconductor portfolio and technology expertise. With IXYS, the Company will be able to diversify and expand its presence within industrial electronics markets, leveraging the strong IXYS industrial OEM customer base. The Company also expects to increase long-term penetration of its power semiconductor portfolio in automotive markets, expanding its global content per vehicle.

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Upon completion of the acquisition, at IXYS stockholders' election and subject to proration, each share of IXYS common stock, par value \$0.01 per share, owned immediately prior to the effective time was cancelled and extinguished and automatically converted into the right to receive: (i) \$23.00 in cash (subject to applicable withholding tax), without interest (referred to as the cash consideration), or (ii) 0.1265 of a share of common stock, par value \$0.01 per share, of Littelfuse (referred to as the stock consideration). IXYS stockholders received cash in lieu of any fractional shares of Littelfuse common stock that the IXYS stockholders would otherwise have been entitled to receive. Additionally, each outstanding option to purchase shares of IXYS common stock granted under an IXYS equity plan were assumed by Littelfuse and converted into an option to acquire (i) a number of shares of Littelfuse common stock equal to the number of shares of IXYS common stock subject to such option immediately prior to the effective time multiplied by 0.1265, rounded down to the nearest whole share, with (ii) an exercise price per share of Littelfuse common stock equal to the exercise price of such IXYS stock option immediately prior to the effective time divided by 0.1265, rounded up to the nearest whole cent.

Based on the \$207.5 per share opening price of Littelfuse common stock on January 17, 2018, the consideration IXYS stockholders received in exchange of their IXYS common stock in the acquisition had a value of \$814.8 million comprised of \$380.6 million of cash and \$434.2 million of Littelfuse stock. In addition to the consideration transferred related to IXYS common stock, the value of consideration transferred, and included in the purchase price, related to IXYS stock options that were converted to Littelfuse stock options, or cash settled, had a value of \$41.7 million. As a result, total consideration was valued at \$856.5 million.

The total purchase price of \$856.5 million has been allocated, on a preliminary basis, to assets acquired and liabilities assumed, as of the completion of the acquisition, based on preliminary estimated fair values. The purchase price allocation is preliminary because the evaluations necessary to assess the fair values of the net assets acquired are still in process. The primary areas that are not yet finalized relate to the completion of the valuations of certain acquired income tax assets and liabilities, including the impact of the adoption of the Tax Act. As a result, these allocations are subject to change during the purchase price allocation period as the valuations are finalized.

The following table summarizes the purchase price allocation of the fair value of assets acquired and liabilities assumed in the IXYS acquisition:

(in thousands)	Purchase Price Allocation
Total purchase consideration:	
Cash, net of cash acquired	\$ 302,865
Cash settled stock options	3,622
Littelfuse stock	434,192
Converted stock options	38,109
Total purchase consideration	<u>\$ 778,788</u>
Allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 155,959
Property, plant, and equipment	77,442
Intangible assets	212,720
Goodwill	382,317
Other non-current assets	31,570
Other non-current liabilities	(81,220)
	<u>\$ 778,788</u>

Included in IXYS's current assets, net was approximately \$49.1 million of receivables. All IXYS goodwill, other assets and liabilities were recorded in the Electronics segment and primarily reflected in the Americas and European geographic areas. The goodwill resulting from this acquisition consists largely of the Company's expected future product sales and synergies from combining IXYS's products and technology with the Company's existing electronics product portfolio. Goodwill resulting from the IXYS acquisition is not expected to be deductible for tax purposes.

Included in the Company's Condensed Consolidated Statements of Net Income for the three and six months ended June 30, 2018 are net sales of approximately \$100.2 million and \$186.5 million, respectively and a loss before income taxes of \$13.9 million and \$31.7 million, respectively since the January 17, 2018 acquisition of IXYS. The Company recognized approximately \$1.6 million and \$7.5 million of stock compensation expense related to IXYS stock options converted to Littelfuse stock options during the three and six months ended June 30, 2018, of which \$4.5 million was recognized immediately as it related to prior services periods.

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As required by purchase accounting rules, the Company recorded a \$36.9 million step-up of inventory to its fair value as of the acquisition date based on the preliminary valuation. The step-up was amortized as a non-cash charge to cost of goods sold during the first and second quarters of 2018, as the acquired inventory was sold, and reflected as other non-segment costs. During the three and six months ended June 30, 2018, the Company recognized a charge of \$19.0 million and \$36.9 million, respectively, for the amortization of this fair value inventory step-up.

During the three and six months ended June 30, 2018, the Company incurred approximately \$0.8 million and \$11.0 million, respectively, of legal and professional fees related to this acquisition which were primarily recognized as *selling, general, and administrative expenses*. These costs were reflected as other non-segment costs.

2017 Acquisitions

U.S. Sensor

On July 7, 2017, the Company acquired the assets of U.S. Sensor Corporation (“U.S. Sensor”). The acquisition purchase price of \$24.3 million, net of the finalization of an income tax gross up which was settled in the fourth quarter of 2017, was funded with available cash. The acquired business expands the Company’s existing sensor portfolio in several key electronics and industrial end markets. U.S. Sensor manufactures a variety of high quality negative temperature coefficient thermistors as well as thermistor probes and assemblies. Product lines also include thin film platinum resistance temperature detectors (“RTDs”) and RTD assemblies.

The following table summarizes the purchase price allocation of the fair value of assets acquired and liabilities assumed in the U.S. Sensor acquisition:

(in thousands)	Purchase Price Allocation
Total purchase consideration:	
Cash	\$ 24,340
Allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 4,635
Patented and unpatented technologies	1,090
Trademarks and tradenames	200
Non-compete agreement	50
Customer relationships	2,830
Goodwill	16,075
Current liabilities	(540)
	<u>\$ 24,340</u>

Included in U.S. Sensor’s current assets, net was approximately \$1.5 million of receivables. All U.S. Sensor goodwill, other assets and liabilities were recorded in the Electronics segment and reflected in the United States geographic area. The goodwill resulting from this acquisition consists largely of the Company’s expected future product sales and synergies from combining U.S. Sensor’s products and technology with the Company’s existing electronics product portfolio. Goodwill for the above acquisition is expected to be deductible for tax purposes.

As required by purchase accounting rules, the Company recorded a \$1.6 million step-up of inventory to its fair value as of the acquisition date based on the preliminary valuation. The step-up was amortized as a non-cash charge to cost of goods sold during the third quarter of 2017, as the acquired inventory was sold, and reflected as other non-segment costs.

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In December 2015, the Company invested \$3.5 million in the preferred stock of Monolith Semiconductor Inc. (“Monolith”), a U.S. start-up Company developing silicon carbide technology, which represented approximately 12% of the common stock of Monolith on an as-converted basis. The Company accounted for its investment in Monolith under the cost method with any changes in value recorded in other comprehensive income. The value of the Monolith investment was \$3.5 million at December 31, 2016.

On February 28, 2017, pursuant to a Securities Purchase Agreement between the Company and the stockholders of Monolith (“Securities Purchase Agreement”) and conditioned on Monolith achieving a product development milestone and other provisions, the Company acquired 62% of the outstanding common stock of Monolith for \$15 million. The Securities Purchase Agreement includes provisions whereby the Company will acquire the remaining outstanding stock of Monolith (“non-controlling interest”) at a time or times based on Monolith meeting certain technical and sales targets. During the first quarter of 2018, Monolith met the next set of technical and sales targets. As a result, and pursuant to the Securities Purchase Agreement, in April 2018 the Company acquired an additional 19% of the outstanding common stock of Monolith for \$5 million, of which \$4 million was paid to the stockholders of Monolith. Consideration for the purchase of the remaining 19% outstanding common stock will be either \$0.5 million or \$5 million, based on Monolith meeting the remaining technical and sales targets, and will be paid no later than June 30, 2019.

The additional investment, in the first quarter of 2017, resulted in the Company gaining control of Monolith and was accounted for as a step-acquisition with the fair value of the original investment immediately before the acquisition estimated to be approximately \$3.5 million. As the fair value of the investment immediately prior to the transaction equaled the carrying value, there was no impact on the Company’s Consolidated Statements of Net Income. As the Securities Purchase Agreement includes an obligation of the Company to mandatorily redeem the non-controlling interest for cash, the fair value of the non-controlling interest was recognized as a liability on the Company’s Consolidated Balance Sheets. The original investment of \$3.5 million, additional cash consideration of \$14.2 million (net of cash acquired), and the non-cash consideration of the fair value of the commitment to purchase the non-controlling interest of \$9.0 million resulted in a purchase price of \$26.7 million. Changes in the fair value of the non-controlling interest are recognized in the Company’s Consolidated Statements of Net Income.

Commencing March 1, 2017, Monolith was reflected as a consolidated subsidiary within the Company’s Consolidated Financial Statements. Had the acquisition occurred as of January 1, 2017, the impact on the Company’s consolidated results of operations would not have been material.

The following table summarizes the purchase price allocation of the fair value of assets acquired and liabilities assumed in the Monolith acquisition:

(in thousands)	Purchase Price Allocation
Total purchase consideration:	
Original investment	\$ 3,500
Cash, net of cash acquired	14,172
Non-cash, fair value of commitment to purchase non-controlling interest	9,000
Total purchase consideration	\$ 26,672
Allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 891
Property, plant, and equipment	789
Patented and unpatented technologies	6,720
Non-compete agreement	140
Goodwill	20,641
Current liabilities	(639)
Other non-current liabilities	(1,870)
	\$ 26,672

Included in Monolith’s current assets, net was approximately \$0.7 million of receivables. All Monolith goodwill, other assets and liabilities were recorded in the Electronics segment and reflected in the United States geographic area. The goodwill resulting from this acquisition consists largely of the Company’s expected future product sales and synergies from combining Monolith’s products and technology with the Company’s existing electronics product portfolio. Goodwill for the above acquisition is not expected to be deductible for tax purposes.

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Pro Forma Results

The following table summarizes, on a pro forma basis, the combined results of operations of the Company and IXYS as though the acquisition had occurred as of January 1, 2017. The Company has not included pro forma results of operations for U.S. Sensor or Monolith as these results were not material to the Company. The pro forma amounts presented are not necessarily indicative of either the actual consolidated results had the IXYS acquisition occurred as of January 1, 2017 or of future consolidated operating results.

	For the Three Months Ended
	July 1, 2017
(in thousands, except per share amounts)	
Net sales	\$ 396,897
Income before income taxes	40,312
Net income	37,442
Net income per share — basic	1.50
Net income per share — diluted	1.48

	For the Six Months Ended	
	June 30, 2018	July 1, 2017
(in thousands, except per share amounts)		
Net sales	\$ 893,709	\$ 765,710
Income before income taxes	134,227	51,546
Net income	106,247	55,043
Net income — basic	4.26	2.21
Net income — diluted	4.22	2.18

Pro forma results presented above primarily reflect the following adjustments:

	For the Three Months Ended	For the Six Months Ended	
	July 1, 2017	June 30, 2018	July 1, 2017
(in thousands)			
Amortization ^(a)	\$ (6,305)	\$ 5,185	\$ (12,601)
Depreciation	139	—	278
Transaction costs ^(b)	—	9,976	(9,976)
Amortization of inventory step-up ^(c)	(14,771)	36,927	(36,927)
Stock compensation ^(d)	(767)	4,689	(5,780)
Interest expense ^(e)	(2,582)	—	(5,164)
Income tax impact of above items	7,596	(13,329)	22,896

- (a) The amortization adjustment for the six months ended June 30, 2018 primarily reflects the reduction of amortization expense in the period related to the Order backlog intangible asset. The Order backlog has a useful life of twelve months and will be fully amortized in the fiscal 2017 pro forma results. The amortization adjustment for the three and six months ended July 1, 2017 reflects incremental amortization resulting for the measurement of intangibles at their fair values.
- (b) The transaction cost adjustments reflect the reversal of certain bank and attorney fees from the six months ended June 30, 2018 and recognition of those fees during the six months ended July 1, 2017.

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- (c) The amortization of inventory step-up adjustment reflects the reversal of the amount recognized during the six months ended June 30, 2018 and the recognition of the full amortization during the six months end July 1, 2017. The inventory step-up was amortized over five months as the inventory is sold.
- (d) The stock compensation adjustment reflects the reversal of the portion of stock compensation for IXYS stock options that were converted to Littelfuse stock options and expensed immediately during the six months ended June 30, 2018. The adjustment for the six months ended July 1, 2017 reflect the incremental stock compensation for the converted stock options.
- (e) The interest expense adjustment reflects incremental interest expense related to the financing of the transaction.

3. Inventories

The components of inventories at June 30, 2018 and December 30, 2017 are as follows:

(in thousands)	June 30, 2018	December 30, 2017
Raw materials	\$ 65,607	\$ 39,030
Work in process	81,448	27,454
Finished goods	92,146	74,305
Total	<u>\$ 239,201</u>	<u>\$ 140,789</u>

4. Goodwill and Other Intangible Assets

The amounts for goodwill and changes in the carrying value by segment for the six months ended June 30, 2018 are as follows:

(in thousands)	Electronics	Automotive	Industrial	Total
As of December 30, 2017	\$ 278,959	\$ 135,829	\$ 38,626	\$ 453,414
Additions ^(a)	382,317	—	—	382,317
Currency translation	(1,558)	(1,748)	(198)	(3,504)
As of June 30, 2018	<u>\$ 659,718</u>	<u>\$ 134,081</u>	<u>\$ 38,428</u>	<u>\$ 832,227</u>

(a) The additions resulted from the acquisition of IXYS.

The components of other intangible assets at June 30, 2018 are as follows:

(in thousands, except weighted average useful life)	Weighted Average Useful Life	Gross Carrying Value	Accumulated Amortization	Net Book Value
Patents, licenses and software	10.6	\$ 192,326	\$ 67,528	\$ 124,798
Distribution network	12.6	44,001	33,567	10,434
Customer relationships, trademarks, and tradenames	18.1	311,333	63,326	248,007
Order backlog	1.0	12,420	5,607	6,813
Total		<u>\$ 560,080</u>	<u>\$ 170,028</u>	<u>\$ 390,052</u>

During the six months ended June 30, 2018, the Company recorded additions to other intangible assets of \$212.7 million, related to the IXYS acquisition, the components of which were as follows:

(in thousands, except weighted average useful life)	Weighted Average Useful Life	Amount
Patents, licenses and software	8.0	\$ 51,500
Customer relationships, trademarks, and tradenames	17.2	148,800
Order backlog	1.0	12,420
Total		<u>\$ 212,720</u>

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During the three and six months ended June 30, 2018 and July 1, 2017, the Company recorded amortization expense of \$13.4 million and \$6.2 million and \$25.4 million and \$12.1 million, respectively for intangible assets with definite lives.

Estimated annual amortization expense related to intangible assets with definite lives as of June 30, 2018 is as follows:

(in thousands)	Amount
2018	\$ 53,440
2019	40,511
2020	40,240
2021	38,457
2022	37,456
2023 and thereafter	206,466
Total	<u>\$ 416,570</u>

5. Debt

The carrying amounts of debt at June 30, 2018 and December 30, 2017 are as follows:

(in thousands)	June 30, 2018	December 30, 2017
Revolving Credit Facility	\$ —	\$ —
Term Loan	157,500	122,500
Euro Senior Notes, Series A due 2023	135,335	139,623
Euro Senior Notes, Series B due 2028	109,887	113,369
U.S. Senior Notes, Series A due 2022	25,000	25,000
U.S. Senior Notes, Series B due 2027	100,000	100,000
U.S. Senior Notes, Series A due 2025	50,000	—
U.S. Senior Notes, Series B due 2030	125,000	—
Other	60	—
Unamortized debt issuance costs	(5,184)	(4,881)
Total debt	<u>697,598</u>	<u>495,611</u>
Less: Current maturities	(10,060)	(6,250)
Total long-term debt	<u>\$ 687,538</u>	<u>\$ 489,361</u>

Revolving Credit Facility / Term Loan

On March 4, 2016, the Company entered into a five-year credit agreement (“Credit Agreement”) with a group of lenders for up to \$700.0 million. The Credit Agreement consisted of an unsecured revolving credit facility (“Revolving Credit Facility”) of \$575.0 million and an unsecured term loan credit facility (“Term Loan”) of up to \$125.0 million. In addition, the Company had the ability, from time to time, to increase the size of the Revolving Credit Facility and the Term Loan by up to an additional \$150.0 million, in the aggregate, in each case in minimum increments of \$25.0 million, subject to certain conditions and the agreement of participating lenders.

On October 13, 2017, the Company amended the Credit Agreement to increase the Revolving Credit Facility from \$575.0 million to \$700.0 million and increase the Term Loan from \$125.0 million to \$200.0 million and to extend the expiration date from March 4, 2021 to October 13, 2022. The Credit Agreement also includes the option for the Company to increase the size of the Revolving Credit Facility and the Term Loan by up to an additional \$300.0 million, in the aggregate, subject to the satisfaction of certain conditions set forth in the Credit Agreement. Term Loans may be made in up to two advances. The first advance of \$125.0 million occurred on October 13, 2017 and the second advance of \$75.0 million occurred on January 16, 2018. For the Term Loan, the Company is required to make quarterly principal payments of 1.25% of the original term loan (\$2.5 million with the second advance on January 16, 2018) through maturity, with the remaining balance due on October 13, 2022. In addition to the quarterly principal payments, the Company paid \$35.0 million of principal on the term loan during the three months ended June 30, 2018.

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Outstanding borrowings under the Credit Agreement bear interest, at the Company's option, at either LIBOR, fixed for interest periods of one, two, three or six-month periods, plus 1.00% to 2.00%, or at the bank's Base Rate, as defined, plus 0.00% to 1.00%, based upon the Company's Consolidated Leverage Ratio, as defined. The Company is also required to pay commitment fees on unused portions of the credit agreement ranging from 0.15% to 0.25%, based on the Consolidated Leverage Ratio, as defined in the agreement. The credit agreement includes representations, covenants and events of default that are customary for financing transactions of this nature. The effective interest rate on outstanding borrowings under the credit facility was 3.59% at June 30, 2018.

As of June 30, 2018, the Company had \$0.1 million outstanding in letters of credit and had available \$699.9 million of borrowing capacity under the Revolving Credit Facility. At June 30, 2018, the Company was in compliance with all covenants under the Credit Agreement.

Senior Notes

On December 8, 2016, the Company entered into a Note Purchase Agreement, pursuant to which the Company issued and sold €212 million aggregate principal amount of senior notes in two series. The funding date for the Euro denominated senior notes occurred on December 8, 2016 for €117 million in aggregate amount of 1.14% Senior Notes, Series A, due December 8, 2023 ("Euro Senior Notes, Series A due 2023"), and €95 million in aggregate amount of 1.83% Senior Notes, Series B due December 8, 2028 ("Euro Senior Notes, Series B due 2028") (together, the "Euro Senior Notes"). Interest on the Euro Senior Notes is payable semiannually on June 8 and December 8, commencing June 8, 2017.

On December 8, 2016, the Company entered into a Note Purchase Agreement, pursuant to which the Company issued and sold \$125 million aggregate principal amount of senior notes in two series. On February 15, 2017, \$25 million in aggregate principal amount of 3.03% Senior Notes, Series A, due February 15, 2022 ("U.S. Senior Notes, Series A due 2022"), and \$100 million in aggregate principal amount of 3.74% Senior Notes, Series B, due February 15, 2027 ("U.S. Senior Notes, Series B due 2027") (together, the "U.S. Senior Notes due 2022 and 2027") were funded. Interest on the U.S. Senior Notes due 2022 and 2027 is payable semiannually on February 15 and August 15, commencing August 15, 2017.

On November 15, 2017, the Company entered into a Note Purchase Agreement pursuant to which the Company issued and sold \$175 million in aggregate principal amount of senior notes in two series. On January 16, 2018, \$50 million aggregate principal amount of 3.48% Senior Notes, Series A, due February 15, 2025 ("U.S. Senior Notes, Series A due 2025") and \$125 million in aggregate principal amount of 3.78% Senior Notes, Series B, due February 15, 2030 ("U.S. Senior Notes, Series B due 2030") (together the "U.S. Senior Notes due 2025 and 2030" and with the Euro Senior Notes and the U.S. Senior Notes 2022 and 2027, the "Senior Notes") were funded. Interest on the U.S. Senior Notes due 2025 and 2030 will be payable on February 15 and August 15, commencing on August 15, 2018.

The Senior Notes have not been registered under the Securities Act, or applicable state securities laws. The Senior Notes are general unsecured senior obligations and rank equal in right of payment with all existing and future unsecured unsubordinated indebtedness of the Company.

The Senior Notes are subject to certain customary covenants, including limitations on the Company's ability, with certain exceptions, to engage in mergers, consolidations, asset sales and transactions with affiliates, to engage in any business that would substantially change the general business of the Company, and to incur liens. In addition, the Company is required to satisfy certain financial covenants and tests relating to, among other matters, interest coverage and leverage. At June 30, 2018, the Company was in compliance with all covenants under the Senior Notes.

The Company may redeem the Senior Notes upon the satisfaction of certain conditions and the payment of a make-whole amount to noteholders, and are required to offer to repurchase the Senior Notes at par following certain events, including a change of control.

6. Fair Value of Assets and Liabilities

For assets and liabilities measured at fair value on a recurring and nonrecurring basis, a three-level hierarchy of measurements based upon observable and unobservable inputs is used to arrive at fair value. Observable inputs are developed based on market data obtained from independent sources, while unobservable inputs reflect the Company's assumptions about valuation based on the best information available in the circumstances. Depending on the inputs, the Company classifies each fair value measurement as follows:

Level 1—Valuations based on unadjusted quoted prices for identical assets or liabilities in active markets;

Level 2—Valuations based upon quoted prices for similar instruments, prices for identical or similar instruments in markets that are not active, or model-derived valuations, all of whose significant inputs are observable, and

Level 3—Valuations based upon one or more significant unobservable inputs.

Following is a description of the valuation methodologies used for instruments measured at fair value and their classification in the valuation hierarchy.

Investments in Equity Securities

Investments in equity securities listed on a national market or exchange are valued at the last sales price and classified within Level 1 of the valuation hierarchy and recorded in other noncurrent assets.

Mutual Funds

The Company has a non-qualified Supplemental Retirement and Savings Plan which provides additional retirement benefits for certain management employees and named executive officers by allowing participants to defer a portion of their annual compensation. The Company maintains accounts for participants through which participants make investment elections. The marketable securities are classified as Level 1 under the fair value hierarchy as they are maintained in mutual funds with readily determinable fair value and recorded in other noncurrent assets.

There were no changes during the quarter ended June 30, 2018 to the Company's valuation techniques used to measure asset and liability fair values on a recurring basis. As of June 30, 2018, and December 30, 2017, the Company did not hold any non-financial assets or liabilities that are required to be measured at fair value on a recurring basis.

The following table presents assets measured at fair value by classification within the fair value hierarchy as of June 30, 2018:

	Fair Value Measurements Using			Total
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
(in thousands)				
Investments in equity securities	\$ 15,328	\$ —	\$ —	\$ 15,328
Mutual funds	9,950	—	—	9,950

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The following table presents assets measured at fair value by classification within the fair value hierarchy as of December 30, 2017:

(in thousands)	Fair Value Measurements Using			Total
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
Investments in equity securities	\$ 10,993	\$ —	\$ —	\$ 10,993
Mutual funds	7,962	—	—	7,962

In addition to the methods and assumptions used for the financial instruments recorded at fair value as discussed above, the following methods and assumptions are used to estimate the fair value of other financial instruments that are not marked to market on a recurring basis. The Company's other financial instruments include cash and cash equivalents, short-term investments, accounts receivable and its long-term debt. Due to their short-term maturity, the carrying amounts of cash and cash equivalents, short-term investments and accounts receivable approximate their fair values. The Company's revolving and term loan debt facilities' fair values approximate book value at June 30, 2018 and December 30, 2017, as the rates on these borrowings are variable in nature.

The carrying value and estimated fair values of the Company's Euro Senior Notes, Series A and Series B and USD Senior Notes, Series A and Series B, as of June 30, 2018 and December 30, 2017 were as follows:

(in thousands)	June 30, 2018		December 30, 2017	
	Carrying Value	Estimated Fair Value	Carrying Value	Estimated Fair Value
Euro Senior Notes, Series A due 2023	\$ 135,335	\$ 134,332	\$ 139,623	\$ 138,294
Euro Senior Notes, Series B due 2028	109,887	107,963	113,369	111,579
USD Senior Notes, Series A due 2022	25,000	24,154	25,000	24,737
USD Senior Notes, Series B due 2027	100,000	95,711	100,000	99,992
USD Senior Notes, Series A due 2025	50,000	47,769	—	—
USD Senior Notes, Series B due 2030	125,000	117,300	—	—

7. Benefit Plans

The Company has company-sponsored defined benefit pension plans covering employees in the U.K., Germany, the Philippines, China, Japan, and France. The amount of the retirement benefits provided under the plans is based on years of service and final average pay.

The Company recognizes interest costs, expected return on plan assets, and amortization, net within *Other (income) expense, net* in the Condensed Consolidated Statements of Net Income. The components of net periodic benefit cost for the three and six months ended June 30, 2018 and July 1, 2017 were as follows:

(in thousands)	For the Three Months Ended		For the Six Months Ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Components of net periodic benefit cost:				
Service cost	\$ 533	\$ 408	\$ 1,066	\$ 816
Interest cost	501	360	1,002	720
Expected return on plan assets	(540)	(476)	(1,080)	(952)
Amortization of prior service (credit)	74	84	148	168
Net periodic benefit cost	\$ 568	\$ 376	\$ 1,136	\$ 752

The Company expects to make approximately \$2.3 million of cash contributions to its pension plans in 2018.

8. Shareholders' Equity

The following table sets forth the changes in shareholders' equity for the six months ended June 30, 2018:

(in thousands)	Littelfuse, Inc. Shareholders' Equity	Non- controlling Interest	Total
Balance at December 30, 2017	\$ 927,419	\$ 137	\$ 927,556
Net income	78,354	—	78,354
Other comprehensive income (loss)	(16,221)	—	(16,221)
Stock-based compensation	15,883	—	15,883
Withheld shares on restricted share units for withholding taxes	(7,042)	—	(7,042)
Stock options exercised	17,654	—	17,654
Issuance of common stock ^(a)	472,301	—	472,301
Cash dividends paid (\$0.37 per share)	(18,458)	—	(18,458)
Non-controlling interest	—	(7)	(7)
Balance at June 30, 2018	<u>\$ 1,469,890</u>	<u>\$ 130</u>	<u>\$ 1,470,020</u>

(a) The issuance of common stock (2,092,491 shares) during the six months ended June 30, 2018 relates to the acquisition of IXYS. See Note 2, *Acquisitions* for further discussion.

The following table sets forth the changes in the components of Accumulated Other Comprehensive Income (Loss) by component for the three months ended June 30, 2018:

(in thousands)	Pension and postretirement liability and reclassification adjustments ^(a)	Unrealized gain/(loss) on investments	Foreign currency translation adjustment	Accumulated other comprehensive income (loss)
Balance at December 30, 2017	\$ (10,836)	\$ 9,795	\$ (62,627)	\$ (63,668)
Cumulative effect adjustment ^(b)	—	(9,795)	—	(9,795)
Activity in the period	763	—	(16,984)	(16,221)
Balance at June 30, 2018	<u>\$ (10,073)</u>	<u>\$ —</u>	<u>\$ (79,611)</u>	<u>\$ (89,684)</u>

(a) The balances at June 30, 2018 and December 30, 2017 are net of taxes of \$0.4 million and \$1.4 million, respectively.

(b) The Company adopted ASU 2016-01 on December 31, 2017 on a modified retrospective basis, recognizing the cumulative effect as a \$9.8 million increase to retained earnings. See Note 1, *Summary of Significant Accounting Policies and Other Information*, for further discussion.

9. Income Taxes

The effective tax rates for the three and six months ended June 30, 2018 were 19.1% and 19.2%, respectively, compared to effective tax rates for the three and six months ended July 1, 2017 of 15.2% and 16.5%, respectively.

The effective tax rates for the 2018 periods are higher than the effective tax rates for the 2017 periods primarily due to the impact of U.S. tax reform and the acquisition of IXYS. The effective tax rates for the 2017 periods were lower than the then applicable 35% U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions.

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On December 22, 2017, the U.S. enacted legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). Among other things, the Tax Act reduces the U.S. corporate federal income tax rate from 35% to 21%, adds base broadening provisions which limit deductions and address excessive international tax planning, imposes a one-time tax (the "Toll Charge") on accumulated earnings of certain non-U.S. subsidiaries and enables repatriation of earnings of non-U.S. subsidiaries free of U.S. federal income tax. Other than the Toll Charge (which, except for the IXYS impact, is applicable to the Company for 2017), the provisions will generally be applicable to the Company in 2018 and beyond.

In accordance with the guidance provided in SEC Staff Accounting Bulletin ("SAB") No. 118, in the fourth quarter of 2017 the Company recorded a charge of \$47 million as a provisional reasonable estimate of the impact of the Tax Act, including \$49 million for the Toll Charge net of \$2 million for other net tax benefits. The Company did not adjust the provisional reasonable estimate in the first six months of 2018. In addition, the Company recorded a preliminary estimate of \$10 million for the Toll Charge associated with IXYS as part of the IXYS acquisition purchase price allocation. This adjustment was reflected in the opening balance sheet as an increase to goodwill and other long-term liabilities. The Company is continuing to analyze the Tax Act and plans to finalize the 2017 provisional reasonable estimate within the measurement period outlined in SAB No. 118 and the IXYS Toll Charge estimate during the purchase price allocation period. The final charges may differ from the estimates if provisions of the Tax Act, and their interaction with other provisions of the U.S. Internal Revenue Code, are interpreted differently than interpretations made by the Company in determining the estimates, whether through issuance of administrative guidance, or through further review of the Tax Act by the Company and its advisors. Aside from these interpretation issues, the final charges may differ from the estimates due to refinements of accumulated non-U.S. earnings and tax pool data.

The Company will elect to pay the 2017 (Littelfuse) and 2018 (IXYS) Toll Charges over the eight-year period prescribed by the Tax Act. The long-term portion of these Toll Charges totaling \$38.5 million (which includes the 2017 Littelfuse provisional reasonable estimate and the 2018 IXYS provisional reasonable estimate, partially offset by foreign tax credits, the first annual installment payment and the anticipated second annual installment) is recorded in the Other long-term liabilities and the short-term portion of \$3.4 million is recorded in the Accrued income taxes on the Condensed Consolidated Balance Sheet as of June 30, 2018.

The Company recognized deferred tax liabilities of \$12.0 million (\$11.8 million for non-U.S. taxes and \$0.2 million for U.S. state taxes) as of December 30, 2017 related to taxes on certain non-U.S. earnings which are not considered to be permanently reinvested. Some of these taxes may provide a U.S. federal income tax benefit as a foreign tax credit. However, due to uncertainty in regard to the Tax Act's provisions, no such tax benefit was recorded as of December 30, 2017, and no such tax benefit was recorded in the first six months of 2018. The Company will reconsider this provisional conclusion when it finalizes its 2017 preliminary reasonable estimate of the impact of the Tax Act, based upon interpretations and administrative guidance as of that time.

One of the base broadening provisions of the Tax Act is commonly referred to as the "GILTI" provisions. In accordance with guidance issued by the FASB staff, the Company has not adopted an accounting policy for GILTI. Thus, deferred taxes were computed without consideration of the possible future impact of the GILTI provisions. The Company intends to adopt an accounting policy for GILTI within the measurement period outlined in SAB 118. Although such an accounting policy has not been adopted, the Company considered GILTI when determining the current portion of income tax expense recorded for the second quarter and first six months of 2018.

Although certain administrative guidance has been issued, the appropriate application of many provisions of the Tax Act remain uncertain. The Company used its best judgement as to the application of these provisions in determining its income tax expense for the second quarter and first half of 2018. Adjustments to income tax expense related to the first half of 2018 may be necessary if provisions of the Tax Act, and their interaction with other provisions of the U.S. Internal Revenue Code, are interpreted differently than interpretations made by the Company in determining its estimates, whether through issuance of administrative guidance, or through further review of the Tax Act by the Company and its advisors.

10. Earnings Per Share

The following table sets forth the computation of basic and diluted earnings per share:

(in thousands, except per share amounts)	For the Three Months Ended		For the Six Months Ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Numerator:				
Net income as reported	\$ 42,326	\$ 48,638	\$ 78,354	\$ 87,530
Denominator:				
Weighted average shares outstanding				
Basic	25,004	22,822	24,671	22,785
Effect of dilutive securities	397	201	415	220
Diluted	<u>25,401</u>	<u>23,023</u>	<u>25,086</u>	<u>23,005</u>
Earnings Per Share:				
Basic earnings per share	\$ 1.69	\$ 2.13	\$ 3.18	\$ 3.84
Diluted earnings per share	\$ 1.67	\$ 2.11	\$ 3.12	\$ 3.80

Potential shares of common stock relating to stock options excluded from the earnings per share calculation because their effect would be anti-dilutive were 47,849 and 46,100 for the three months ended June 30, 2018 and July 1, 2017, respectively, and 23,659 and 21,896 for the six months ended June 30, 2018 and July 1, 2017, respectively.

11. Related Party Transactions

As a result of the Company's acquisition of IXYS, the Company has equity ownerships in various investments that are accounted for under the equity method. The following is a description of the investments and related party transactions.

Powersem GmbH: The Company owns 45% of the outstanding equity of Powersem GmbH ("Powersem"), a module manufacturer based in Germany. During the three and six months ended June 30, 2018, the Company recorded revenues of \$0.3 million and \$0.4 million, respectively from sales of products to Powersem for use as components in their products. During the three and six months ended June 30, 2018, the Company purchased \$1.0 million and \$2.1 million, respectively of products from Powersem. At June 30, 2018, the accounts receivable balance from Powersem was \$0.1 million and the accounts payable balance to Powersem was \$0.3 million.

EB Tech Ltd.: The Company owns approximately 20% of the outstanding equity of EB Tech Ltd. ("EB Tech"), a company with expertise in radiation technology based in South Korea. During the three and six months ended June 30, 2018 EB Tech rendered processing services for the Company totaling approximately \$0.1 million and \$0.2 million, respectively. As of June 30, 2018, the Company's accounts payable balance to EB Tech was immaterial.

Automated Technology, Inc.: The Company owns approximately 24% of the outstanding common shares of Automated Technology, Inc ("ATEC"), a supplier located in the Philippines that provides assembly and test services. During the three and six months ended June 30, 2018, ATEC rendered assembly and test services to the Company totaling approximately \$2.8 million and \$5.2 million, respectively. As of June 30, 2018, the Company's accounts payable balance to ATEC was \$0.7 million.

12. Segment Information

The Company and its subsidiaries design, manufacture and sell components and modules for circuit protection, power control and sensing throughout the world. The Company reports its operations by the following segments: Electronics, Automotive, and Industrial. An operating segment is defined as a component of an enterprise that engages in business activities from which it may earn revenues and incur expenses, and about which separate financial information is regularly evaluated by the Chief Operating Decision Maker ("CODM") in deciding how to allocate resources. The CODM is the Company's President and Chief Executive Officer ("CEO"). The CODM allocates resources to and assesses the performance of each operating segment using information about its revenue and operating income (loss) before interest and taxes, but does not evaluate the operating segments using discrete balance sheet information.

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Sales, marketing, and research and development expenses are charged directly into each operating segment. Manufacturing, purchasing, logistics, customer service, finance, information technology, and human resources are shared functions that are allocated back to the three operating segments. The Company does not report inter-segment revenue because the operating segments do not record it. Certain expenses, determined by the CODM to be strategic in nature and not directly related to segments current results, are not allocated but identified as “Other”. Additionally, the Company does not allocate interest and other income, interest expense, or taxes to operating segments. These costs are not allocated to the segments, as management excludes such costs when assessing the performance of the segments. Although the CODM uses operating income (loss) to evaluate the segments, operating costs included in one segment may benefit other segments. Except as discussed above, the accounting policies for segment reporting are the same as for the Company as a whole.

- *Electronics Segment:* Consists of one of the broadest product offerings in the industry, including fuses and fuse accessories, positive temperature coefficient (“PTC”) resettable fuses, polymer electrostatic discharge (“ESD”) suppressors, varistors, gas discharge tubes; semiconductor and power semiconductor products such as discrete transient voltage suppressor (“TVS”) diodes, TVS diode arrays, protection and switching thyristors, silicon carbide, metal-oxide-semiconductor field-effect transistors (“MOSFETs”) and silicon carbide diodes; and insulated gate bipolar transistors (“IGBT”) technologies. The segment covers a broad range of end markets, including consumer electronics, automotive electronics, IT and telecommunications equipment, medical devices, lighting products, and white goods.
- *Automotive Segment:* Consists of a wide range of circuit protection, power control and sensing technologies for global original equipment manufacturers (“OEMs”), Tier-I suppliers and parts distributors in the automotive, commercial vehicle, and agricultural and construction equipment industries. Passenger car fuse products include fuses and fuse accessories, including blade fuses, battery cable protectors, varistors, high-current fuses, and high-voltage fuses for hybrid and electric vehicles. Commercial vehicle products include fuses, switches, relays, and power distribution modules for the commercial vehicle industry. Automotive sensor products include a wide range of automotive and commercial vehicle sensors designed to monitor the passenger compartment occupants and environment as well as the vehicle’s powertrain, emissions, speed and suspension.
- *Industrial Segment:* Consists of power fuses, protection relays and controls and other circuit protection products for use in heavy industrial applications such as mining, oil and gas, energy storage, construction, HVAC systems, elevator and other industrial equipment.

Segment information is summarized as follows:

(in thousands)	For the Three Months		For the Six Months	
	Ended		Ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Net sales				
Electronics	\$ 299,357	\$ 169,387	\$ 563,768	\$ 323,154
Automotive	127,172	116,457	253,302	224,297
Industrial	32,654	27,511	59,926	51,346
Total net sales	<u>\$ 459,183</u>	<u>\$ 313,355</u>	<u>\$ 876,996</u>	<u>\$ 598,797</u>
Depreciation and amortization				
Electronics	\$ 15,651	\$ 8,707	\$ 29,329	\$ 17,095
Automotive	5,969	5,580	11,939	10,950
Industrial	1,467	1,330	2,927	2,645
Other	3,103	-	5,607	-
Total depreciation and amortization	<u>\$ 26,190</u>	<u>\$ 15,617</u>	<u>\$ 49,802</u>	<u>\$ 30,690</u>
Operating income (loss)				
Electronics	\$ 67,311	\$ 42,967	\$ 121,275	\$ 78,173
Automotive	15,711	15,713	34,102	30,778
Industrial	5,279	1,905	9,988	2,012
Other ^(a)	(28,679)	(315)	(68,172)	(1,840)
Total operating income	59,622	60,270	97,193	109,123
Interest expense	5,782	3,281	11,205	6,401
Foreign exchange loss (gain)	3,200	(558)	(7,354)	(2,115)
Other expense (income), net	(1,678)	190	(3,621)	52
Income before income taxes	<u>\$ 52,318</u>	<u>\$ 57,357</u>	<u>\$ 96,963</u>	<u>\$ 104,785</u>

(a) Included in “Other” Operating income (loss) for the 2018 second quarter is \$24.4 million (\$63.2 million year-to-date) of charges primarily related to IXYS acquisition and include \$19.0 million (\$36.9 million year-to-date) of purchase accounting inventory charges, \$2.3 million (\$14.1 million year-to-date) in acquisition-related and integration costs primarily related to legal, accounting and other expenses associated with the acquisition of IXYS, \$3.1 million (\$5.6 million year-to-date) in backlog amortization costs, stock compensation expense recognized immediately upon close for converted IXYS options related to prior services periods \$4.5 million year-to-date and other charges of \$2.1 million year-to-date. In addition, there were \$3.2 million (\$3.9 million year-to-date) of severance and other restructuring charges and \$1.1 million of impairment charges (\$1.1 million year-to-date) associated with the exit of the Radio Pulse and Custom businesses, respectively.

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Included in “Other” Operating income (loss) for the 2017 second quarter is of \$0.3 million (\$1.8 million year-to-date) of acquisition and integration costs associated with the Company’s 2016 acquisitions (included in Cost of sales (“COS”) and Selling, general, and administrative expenses (“SG&A”)).

The Company’s net sales by country are as follows:

(in thousands)	For the Three Months Ended		For the Six Months Ended	
	June 30, 2018	July 1, 2017	June 30, 2018	July 1, 2017
Net sales				
United States	\$ 137,236	\$ 100,648	\$ 261,112	\$ 187,306
China ^(a)	127,776	86,891	234,284	165,111
Other countries ^(b)	194,171	125,816	381,600	246,380
Total net sales	<u>\$ 459,183</u>	<u>\$ 313,355</u>	<u>\$ 876,996</u>	<u>\$ 598,797</u>

(a) Includes mainland China, Taiwan, and Hong Kong.

(b) Each country included in Other countries are less than 10% of net sales.

The Company’s long-lived assets by country, as of June 30, 2018 and December 30, 2017, were as follows:

(in thousands)	June 30, 2018	December 30, 2017
Long-lived assets		
United States	\$ 59,097	\$ 23,490
China ^(a)	92,832	86,866
Mexico	66,063	62,510
Germany	35,013	1,082
Philippines	31,481	31,129
Other countries	54,269	45,500
Total long-lived assets	<u>\$ 338,755</u>	<u>\$ 250,577</u>

(a) Includes mainland China, Taiwan, and Hong Kong.

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The Company's additions to long-lived assets by country were as follows:

(in thousands)	For the Six Months Ended	
	June 30, 2018	July 1, 2017
Additions to long-lived assets		
United States	\$ 4,234	\$ 1,149
China ^(a)	14,711	10,200
Mexico	8,874	10,925
Germany	5,182	-
Philippines	4,241	1,345
Other countries	3,073	5,259
Total additions to long-lived assets	<u>\$ 40,315</u>	<u>\$ 28,878</u>

(a) Includes mainland China, Taiwan, and Hong Kong.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

Cautionary Statement Regarding Forward-Looking Statements Under the Private Securities Litigation Reform Act of 1995 ("PSLRA").

Certain statements in this section and other parts of this Quarterly Report on Form 10-Q may constitute "forward-looking statements" within the meaning of the federal securities laws and are entitled to the safe-harbor provisions of the PSLRA. These statements include statements regarding the Company's future performance, as well as management's expectations, beliefs, intentions, plans, estimates or projections relating to the future. Such statements can be identified by the use of forward-looking terminology such as "believes," "expects," "may," "estimates," "will," "should," "plans" or "anticipates" or the negative thereof or other variations thereon or comparable terminology, or by discussions of strategy, although not all forward-looking statements contain such terms. The Company cautions that forward-looking statements, which speak only as of the date they are made, are subject to risks, uncertainties and other factors, and actual results and outcomes may differ materially from those indicated or implied by the forward-looking statements. These risks, uncertainties and other factors include, but are not limited to, risks relating to product demand and market acceptance; economic conditions; the impact of competitive products and pricing; product quality problems or product recalls; capacity and supply difficulties or constraints; coal mining exposures reserves; failure of an indemnification for environmental liability; exchange rate fluctuations; commodity price fluctuations; the effect of the Company's accounting policies; labor disputes; restructuring costs in excess of expectations; pension plan asset returns less than assumed; uncertainties related to political or regulatory changes; the risk that expected benefits, synergies and growth prospects of the Company's completed acquisition of IXYS Corporation ("IXYS") may not be achieved in a timely manner, or at all; the risk that IXYS' business may not be successfully integrated with the Company's; the risk that the Company and IXYS will be unable to retain and hire key personnel; and the risk that disruption from the acquisition may adversely affect the Company's or IXYS' business and their respective relationships with customers, suppliers or employees; and other risks which may be detailed in the Company's other Securities and Exchange Commission filings, including those set forth under Item 1A. "Risk Factors" of the Company's Annual Report on Form 10-K for the year ended December 30, 2017. The Company does not undertake any obligation to update or revise any forward-looking statements to reflect future events or circumstances, new information or otherwise.

This report, including the Management's Discussion and Analysis of Financial Condition and Results of Operations, should be read in conjunction with information provided in the consolidated financial statements and the related Notes thereto appearing in the Company's Annual Report on Form 10-K for the year ended December 30, 2017.

Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is designed to provide information that is supplemental to, and should be read together with, the consolidated financial statements and the accompanying notes. Information in MD&A is intended to assist the reader in obtaining an understanding of (i) the consolidated financial statements, (ii) the changes in certain key items within those financial statements from year-to-year, (iii) the primary factors that contributed to those changes, and (iv) any changes in known trends or uncertainties that we are aware of and that may have a material effect on future performance. In addition, MD&A provides information about the Company's segments and how the results of those segments impact the results of operations and financial condition as a whole.

Executive Overview

Founded in 1927, Littelfuse is a global leader in circuit protection products with advancing platforms in power control and sensor technologies, serving customers in the electronics, automotive, and industrial markets. With a diverse and extensive product portfolio of fuses, semiconductors, polymers, ceramics, relays and sensors, the Company works with its customers to build safer, more reliable and more efficient products for the connected world in virtually every market that uses electrical energy, ranging across consumer electronics, IT and telecommunication applications, industrial electronics, automobiles and other transportation, and heavy industrial applications.

The company maintains a network of global laboratories and engineering centers that develop new products and product enhancements, provide customer application support and test products for safety, reliability, and regulatory compliance. The Company conducts its business through three reportable segments: Electronics, Automotive, and Industrial. For each of these segments, the Company designs, manufactures and sells circuit protection products that protect against electrostatic discharge, power surges, short circuits, voltage spikes and other harmful occurrences; power control products that safely and efficiently control power to mitigate equipment damage, minimize electrical hazards and improve productivity; and sensor products used to identify and detect temperature, proximity, flow speed and fluid level in various applications. The Company's customer base includes OEMs, Tier One automotive suppliers, and distributors.

Executive Summary

For the second quarter of 2018, the Company recognized net sales of \$459.2 million compared to \$313.4 million in the second quarter of 2017 representing an increase of \$145.8 million, or 46.5%. The increase was primarily driven by the acquisition of IXYS, which added \$100.2 million in sales along with higher volume across all three segments. Net sales for Electronics increased \$130.0 million, or 76.7%, primarily due to the acquisition of IXYS and strong growth across all the business units and favorable changes in foreign exchange rates of \$8.0 million. Net sales for the Automotive segment increased \$10.7 million, or 9.2% due to volume growth across all the segment's business units. Net sales in the Industrial segment increased \$5.1 million or 18.7% due to volume growth across all the segment's business units. The Company recognized net income of \$42.3 million, or \$1.67 per diluted share, in the second quarter of 2018 compared to net income of \$48.6 million, or \$2.11 per diluted share in the second quarter of 2017. The decrease in net income reflects the impact of \$19.0 million of purchase accounting inventory charges, higher amortization expense of \$7.2 million and foreign exchange losses of \$3.2 million that were partially offset by the acquisition of IXYS and operating income increases across the Electronics and Industrial segments. Additionally, the per share results reflect an increase in the weighted average diluted shares outstanding of 2.1 million resulting from the shares issued in conjunction with the acquisition of IXYS.

Net cash provided by operating activities was \$140.9 million for the six months ended June 30, 2018 as compared to \$93.6 million for the six months ended July 1, 2017. The increase in net cash provided by operating activities reflected higher earnings and favorable working capital management that more than offset higher payments related to acquisition and integration costs and higher cash taxes.

During the second quarter of 2018, the Company announced as part of its strategic assessment and cost savings initiatives, the exit of the Custom business within the Industrial segment and the Radio Pulse business within the IXYS acquisition. The Company does not expect the exit of these businesses to have a material impact on the Company's future net sales and net earnings. The exit of the Custom business resulted in total impairment charges of \$1.1 million for the tradename and real property. The exit of the Radio Pulse business resulted in restructuring charges of \$2.1 million, of which \$1.4 million was for severance charges and \$0.7 million of other restructuring charges. The Company expects to realize future cost savings resulting from these restructuring activities.

On July 6, 2018, the Trump administration imposed Section 301 tariffs on products that are imported into the United States where the country of origin is China. This tariff primarily impacts our Electronics segment and to a lesser extent our Automotive and Industrial segments. The Company is currently evaluating the impact on our future results of operations.

Results of Operations

The following table summarizes the Company's consolidated results of operations for the periods presented. The second quarter of 2018 includes \$28.7 million of non-segment charges. The charges related to the IXYS acquisition total \$24.4 million (\$63.2 million year-to-date) and include \$19.0 million (\$36.9 million year-to-date) of purchase accounting inventory charges, \$2.3 million (\$14.1 million year-to-date) in acquisition-related and integration costs primarily related to legal, accounting and other expenses associated with the acquisition of IXYS, \$3.1 million (\$5.6 million year-to-date) in backlog amortization costs, stock compensation expense recognized immediately upon close for converted IXYS options related to prior services periods of \$4.5 million year-to-date and other charges of \$2.1 million year-to-date. In addition, there were \$3.2 million (\$3.9 million year-to-date) of severance and other restructuring charges and \$1.1 million of impairment charges (\$1.1 million year-to-date) associated with the exit of the Radio Pulse and Custom businesses, respectively.

The second quarter of 2017 includes approximately \$0.3 million of non-segment charges (\$1.8 million year-to-date). These were primarily attributable to acquisition-related costs primarily related to legal and integration costs associated with the Company's acquisitions in 2016 of the ON Portfolio.

(in thousands)	Second Quarter				First Six Months			
	2018	2017	Change	% Change	2018	2017	Change	% Change
Net sales	\$ 459,183	\$ 313,355	\$ 145,828	46.5%	\$ 876,996	\$ 598,797	\$ 278,199	46.5%
Gross profit	168,987	132,608	36,379	27.4%	318,610	246,258	72,352	29.4%
Operating expenses	109,365	72,338	37,027	51.2%	221,417	137,135	84,282	61.5%
Operating income	59,622	60,270	(648)	(1.1%)	97,193	109,123	(11,930)	(10.9%)
Income before income taxes	52,318	57,357	(5,039)	(8.8%)	96,963	104,785	(7,822)	(7.5%)
Income taxes	9,992	8,719	1,273	14.6%	18,609	17,255	1,354	7.8%
Net income	\$ 42,326	\$ 48,638	\$ (6,312)	13.0%	\$ 78,354	\$ 87,530	\$ (9,176)	(10.5%)

Net Sales

Net sales increased \$145.8 million, or 46.5%, for the second quarter of 2018 compared to the second quarter of 2017 with increases of \$100.2 million and \$3.4 million resulting from incremental net sales related to the IXYS and U.S. Sensor acquisitions, respectively. The remaining increase in net sales was driven by higher volume across all businesses in the Electronics, Automotive and Industrial segments and \$8.0 million of favorable changes in foreign exchange rates.

Net sales for the first six months of 2018 increased \$278.2 million, or 46.5%, compared to the first six months of 2017 with increases of \$186.5 million and \$6.5 million resulting from incremental net sales related to the IXYS and U.S. Sensor acquisitions, respectively. The remaining increase in net sales was driven by higher volume across all businesses in the Electronics, Automotive and Industrial segments and \$21.1 million of favorable changes in foreign exchange rates.

Gross Profit

Gross profit was \$169.0 million, or 36.8% of net sales, in the second quarter of 2018, compared to \$132.6 million, or 42.3% of net sales, in the second quarter of 2017. The increase in gross profit reflects the impact of the IXYS acquisition and volume growth across all segments. The decrease in gross margin is primarily due to the purchase accounting inventory charges of \$19.0 million which negatively impacted the second quarter of 2018 gross margin by 4.1 percentage points and unfavorable mix in products from the IXYS acquisition.

Gross profit was \$318.6 million, or 36.3% of net sales, in the first six months of 2018, compared to \$246.3 million, or 41.1% of net sales in the first six months of 2017. The increase in gross profit reflects the IXYS acquisition and volume growth across all segments and expense leverage across all segments. The decrease in gross margin is primarily due to the purchase accounting inventory charges of \$36.9 million which negatively impacted the first six months of 2018 gross margin by 4.2 percentage points.

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Operating Expenses

Total operating expenses were \$109.4 million, or 23.8% of net sales, for the second quarter of 2018 compared to \$72.3 million, or 23.1% of net sales, for the second quarter of 2017. The increase in operating expenses of \$37.1 million is primarily due to incremental operating expenses related to the IXYS and U.S. Sensor acquisitions, an increase in amortization expense of \$7.2 million resulting from the acquisition of IXYS, higher acquisition-related and integration costs of \$2.0 million, and higher restructuring and impairment charges.

Total operating expense for the first six months of 2018 was \$221.4 million, or 25.2% of net sales, compared to \$137.1 million, or 22.9% of net sales, for the first six months of 2017. The increase in operating expenses of \$84.3 million is primarily due to incremental operating expenses related to the IXYS and U.S. Sensor acquisitions, an increase in amortization expense of \$13.3 million resulting from the acquisition of IXYS as well as higher acquisition-related and integration costs of \$12.3 million. Total operating expenses as a percent of net sales increased from 22.9% for the first six months of 2017 to 25.2% for the first six months of 2018 primarily due to the higher amortization expense and acquisition-related and integration charges noted above.

Operating Income

Operating income was \$59.6 million, a decrease of \$0.6 million, or 1.1%, for the second quarter of 2018 compared to \$60.3 million for the second quarter of 2017. Increases in operating income across the Electronics segment were more than offset by purchase accounting inventory charges of \$19.0 million, higher amortization charges of \$7.2 million and higher restructuring and impairment charges of \$4.3 million along with the costs associated with the acquisition and integration of the IXYS acquisition as described above. Operating margins decreased from 19.2% in the second quarter of 2017 to 13.0% in the second quarter of 2018. The purchase accounting inventory charge negatively impacted margins by 4.1% with the remaining decrease driven by the above charges partially offset by higher volume across all segments.

Operating income for the first six months of 2018 was \$97.2 million, or 11.1% of net sales, compared to \$109.1 million, or 18.2% of net sales, for the first six months of 2017. The decrease in operating income is primarily due to the purchase accounting inventory charges of \$36.9 million along with the costs associated with the acquisition and integration of IXYS as described above. The purchase accounting inventory charges, higher acquisition and integration charges and higher amortization expense negatively impacted margins by 4.2%, 1.3% and 0.8%, respectively.

Income Before Income Taxes

Income before income taxes was \$52.3 million, or 11.4% of net sales, for the second quarter of 2018 compared to \$57.4 million, or 18.3% of net sales, for the second quarter of 2017. In addition to the factors impacting comparative results for operating income discussed above, income before income taxes was impacted by increased unfavorable foreign exchange losses of \$3.8 million primarily due to fluctuations in the Euro and Mexican peso against the U.S. dollar and increased interest expense of \$2.5 million associated with the increased borrowings for the IXYS acquisition. Additionally, partially offsetting the previously mentioned expense increases was an increase in other income of \$1.9 million during the three months ended June 30, 2018 as compared to the three months ended July 1, 2017 primarily as a result of unrealized investment gains associated with our equity investments.

Income before income taxes for the first six months of 2018 was \$97.0 million, or 11.1% of net sales compared to \$104.8 million, or 17.5% of net sales, for the first six months of 2017. In addition to the factors impacting comparative results for operating income discussed above income before income taxes was favorably impacted by foreign exchange gains of \$5.2 million and increases in other income of \$3.7 million primarily due to unrealized investment gains in our equity investments partially offset by higher interest expense of \$4.8 million resulting from increased borrowings for the IXYS acquisition.

Income Taxes

Income tax expense was \$10.0 million, or an effective tax rate of 19.1%, for the second quarter of 2018 compared to \$8.7 million, or an effective tax rate of 15.2%, for the second quarter of 2017. The effective tax rate for the second quarter of 2017 was lower than the then applicable 35% U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions. The effective tax rate for the second quarter of 2018 was higher than the effective tax rate for the second quarter of 2017 primarily due to the impact of U.S. tax reform and the acquisition of IXYS.

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Income tax expense for the first six months of 2018 was \$18.6 million, or an effective tax rate of 19.2%, compared to income tax expense of \$17.3 million, or an effective tax rate of 16.5%, for the first six months of 2017. The effective tax rate for the first six months of 2017 was lower than the then applicable 35% U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions. The effective tax rate for the first six months of 2018 was higher than the effective tax rate for the first six months of 2017 primarily due to the impact of U.S. tax reform and the acquisition of IXYS.

Segment Results of Operations

The Company reports its operations by the following segments: Electronics, Automotive and Industrial. Segment information is described more fully in Note 12, *Segment Information*, of the Notes to Condensed Consolidated Financial Statements included in this Quarterly Report.

The following table is a summary of the Company's net sales by segment:

(in thousands)	Second Quarter				First Six Months			
	2018	2017	Change	% Change	2018	2017	Change	% Change
Electronics	\$ 299,357	\$ 169,387	\$ 129,970	76.7%	\$ 563,768	\$ 323,154	\$ 240,614	74.5%
Automotive	127,172	116,457	10,715	9.2%	253,302	224,297	29,005	12.9%
Industrial	32,654	27,511	5,143	18.7%	59,926	51,346	8,580	16.7%
Total	\$ 459,183	\$ 313,355	\$ 145,828	46.5%	\$ 876,996	\$ 598,797	\$ 278,199	46.5%

Electronics Segment

The Electronics segment net sales increased \$130.0 million, or 76.7%, in the second quarter of 2018 compared to the second quarter of 2017 due to incremental net sales related to the IXYS and U.S. Sensor acquisitions of \$100.2 million and \$3.4 million, respectively, higher volume across all businesses driven by the strong electronics cycle and favorable foreign exchange impacts of \$3.2 million.

The Electronics segment net sales increased \$240.6 million, or 74.5%, in the first six months of 2018 compared to the first six months of 2017 due to incremental net sales related to the IXYS and U.S. Sensor acquisitions of \$186.5 million and \$6.5 million, respectively, higher volume across all businesses driven by the continued strong electronics cycle and favorable foreign exchange impacts of \$8.5 million.

Automotive Segment

The Automotive segment net sales increased \$10.7 million, or 9.2%, in the second quarter of 2018 compared to the second quarter of 2017 due to increased volume across all businesses with the commercial vehicle business having the most growth as well as favorable changes in foreign exchange rates of \$4.5 million.

The Automotive segment net sales increased \$29.0 million, or 12.9%, in the first six months of 2018 compared to the first six months of 2017 due to increased volume across all businesses with the commercial vehicle and sensor businesses having the most growth as well as favorable changes in foreign exchange rates of \$11.9 million.

Industrial Segment

The Industrial segment net sales increased \$5.1 million, or 18.7%, in the second quarter of 2018 compared to the second quarter of 2017 primarily due to higher volume across the power fuse and relay businesses.

The Industrial segment net sales increased \$8.6 million, or 16.7%, in the first six months of 2018 compared to the first six months of 2017 due to higher volume primarily in the power fuse and relay operations.

Geographic Net Sales Information

Net sales by geography represent net sales to customer or distributor locations. The following table is a summary of the Company's net sales by geography:

(in thousands)	Second Quarter				First Six Months			
	2018	2017	Change	% Change	2018	2017	Change	% Change
Americas	\$ 146,619	\$ 115,039	\$ 31,580	27.5%	\$ 285,348	\$ 213,064	\$ 72,284	33.9%
Europe	108,983	60,263	48,720	80.8%	208,795	119,168	89,627	75.2%
Asia-Pacific	203,581	138,053	65,528	47.5%	382,853	266,565	116,288	43.6%
Total	\$ 459,183	\$ 313,355	\$ 145,828	46.5%	\$ 876,996	\$ 598,797	\$ 278,199	46.5%

Americas

Net sales in the Americas increased \$31.6 million, or 27.5%, in the second quarter of 2018 compared to the second quarter of 2017 driven by incremental net sales related to the IXYS and U.S. Sensor acquisitions of \$22.7 million and \$2.9 million, respectively and increased volume in the Electronics and Industrial segments partially offset by decreased volume in the Automotive segment.

Net sales in the Americas increased \$72.3 million, or 33.9%, in the first six months of 2018 compared to the first six months of 2017 driven by incremental net sales related to the IXYS and U.S. Sensor acquisitions of \$43.8 million and \$5.5 million, respectively and increased volume in the Electronics, Automotive and Industrial segments.

Europe

European net sales increased \$48.7 million, or 80.8%, in the second quarter of 2018 compared to the second quarter of 2017. The increase in net sales was primarily due to incremental net sales related to the IXYS acquisition of \$28.8 million and higher volumes in the Electronics and Automotive segments with strong growth especially in the passive business in the Electronics segment and across all businesses in the Automotive segment as well as favorable foreign currency effects of \$5.2 million.

European net sales increased \$89.6 million, or 75.2%, in the first six months of 2018 compared to the first six months of 2017. The increase in net sales was primarily due to incremental net sales related to the IXYS acquisition of \$55.7 million and higher volumes in the Electronics and Automotive segments with strong growth especially in the passive business in the Electronics segment and across all businesses in the Automotive segment as well as favorable foreign currency effects of \$14.7 million.

Asia-Pacific

Asia-Pacific net sales increased \$65.5 million, or 47.5%, in the second quarter of 2018 compared to the second quarter of 2017. The increase in net sales was primarily due to incremental net sales related to the IXYS acquisition of \$48.7 million and higher volumes in the Electronics and Automotive segments with strong growth across all businesses in the Electronics segment and in the passenger car business in the Automotive segment as well as favorable foreign currency effects of \$2.5 million.

Asia-Pacific net sales increased \$116.3 million, or 43.6%, in the first six months of 2018 compared to the first six months of 2017. The increase in net sales was primarily due to incremental net sales related to the IXYS acquisition of \$87.0 million and higher volumes in the Electronics and Automotive segments with strong growth across all businesses in the Electronics segment and in the passenger car business in the Automotive segment as well as favorable foreign currency effects of \$5.6 million.

Liquidity and Capital Resources

The Company has historically supported its liquidity needs through cash flows from operations. Management expects that the Company's (i) current level of cash, cash equivalents, and marketable securities, (ii) current and forecasted cash flows from operations, (iii) availability under existing funding arrangements, and (iv) access to capital in the capital markets will provide sufficient funds to support the Company's operations, capital expenditures, investments, and debt obligations on both a short-term and long-term basis.

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Revolving Credit Facility/Term Loan

On March 4, 2016, the Company entered into a new five-year credit agreement with a group of lenders for up to \$700.0 million. The new credit agreement consisted of an unsecured revolving credit facility of \$575.0 million and an unsecured term loan credit facility of up to \$125.0 million. In addition, the Company had the ability, from time to time, to increase the size of the revolving credit facility and the term loan facility by up to an additional \$150.0 million, in the aggregate, in each case in minimum increments of \$25.0 million, subject to certain conditions and the agreement of participating lenders.

On October 13, 2017, the Company amended the Credit Agreement to increase the Revolving Credit Facility from \$575.0 million to \$700.0 million and increase the Term Loan from \$125.0 million to \$200.0 million and to extend the expiration date from March 4, 2021 to October 13, 2022. The Credit Agreement also includes the option for the Company to increase the size of the Revolving Credit Facility and the Term Loan by up to an additional \$300.0 million, in the aggregate, subject to the satisfaction of certain conditions set forth in the Credit Agreement. Term Loans may be made in up to two advances. The first advance of \$125.0 million occurred on October 13, 2017 and the second advance of \$75.0 million occurred on January 16, 2018. For the Term Loan, the Company is required to make quarterly principal payments of 1.25% of the original term loan (\$2.5 million with the second advance on January 16, 2018) through maturity, with the remaining balance due on October 13, 2022. In addition to the quarterly principal payments, the Company paid \$35.0 million of principal on the term loan during the three months ended June 30, 2018.

Outstanding borrowings under the Credit Agreement bear interest, at the Company's option, at either LIBOR, fixed for interest periods of one, two, three or six-month periods, plus 1.00% to 2.00%, or at the bank's Base Rate, as defined, plus 0.00% to 1.00%, based upon the Company's Consolidated Leverage Ratio, as defined. The Company is also required to pay commitment fees on unused portions of the credit agreement ranging from 0.15% to 0.25%, based on the Consolidated Leverage Ratio, as defined in the agreement. The credit agreement includes representations, covenants and events of default that are customary for financing transactions of this nature. The effective interest rate on outstanding borrowings under the credit facility was 3.59% at June 30, 2018. As of June 30, 2018, the Company had \$0.1 million outstanding in letters of credit and had available \$699.9 million of borrowing capacity under the Revolving Credit Facility. At June 30, 2018, the Company was in compliance with all covenants under the Credit Agreement. Further information regarding the Company's credit agreement is provided in Note 5, *Debt*, of the Notes to the Condensed Consolidated Financial Statements included in this Quarterly Report.

Senior Notes

On December 8, 2016, the Company entered into a Note Purchase Agreement, pursuant to which the Company issued and sold €212 million aggregate principal amount of senior notes in two series. The funding date for the Euro denominated senior notes occurred on December 8, 2016 for €117 million in aggregate amount of 1.14% Senior Notes, Series A, due December 8, 2023, and €95 million in aggregate amount of 1.83% Senior Notes, Series B, due December 8, 2028 (together, the "Euro Senior Notes"). Interest on the Euro Senior Notes is payable semiannually on June 8 and December 8, commencing June 8, 2017.

On December 8, 2016, the Company entered into a Note Purchase Agreement, pursuant to which the Company issued and sold \$125 million aggregate principal amount of senior notes in two series. On February 15, 2017, \$25 million in aggregate principal amount of 3.03% Senior Notes, Series A, due February 15, 2022, and \$100 million in aggregate principal amount of 3.74% Senior Notes, Series B, due February 15, 2027 (together, the "U.S. Senior Notes," and together with the Euro Senior Notes, the "Senior Notes") were funded. Interest on the U.S. Senior Notes will be payable semiannually on February 15 and August 15, commencing August 15, 2017. Further information regarding the Company's Senior Notes is provided in Note 5, *Debt*, of the Notes to the Condensed Consolidated Financial Statements included in this Quarterly Report.

On November 15, 2017, the Company entered into a Note Purchase Agreement pursuant to which the Company issued and sold \$175 million in aggregate principal amount of senior notes in two series. On January 16, 2018, \$50 million aggregate principal amount of 3.48% Senior Notes, Series A, due February 15, 2025 ("U.S. Senior Notes, Series A due 2025") and \$125 million in aggregate principal amount of 3.78% Senior Notes, Series B, due February 15, 2030 ("U.S. Senior Notes, Series B, due 2030") (together the "U.S. Senior Notes due 2025 and 2030" and with the Euro Senior Notes and the U.S. Senior Notes 2022 and 2027, the "Senior Notes") were funded. Interest on the U.S. Senior Notes due 2025 and 2030 will be payable on February 15 and August 15, commencing on August 15, 2018.

[Table of Contents](#)*Dividends*

During July 2018, the Company's Board of Directors approved a 16% increase in the quarterly cash dividend from \$0.37 to \$0.43. This equates to an annualized dividend of \$1.72 per share.

Cash Flow Overview

(in thousands)	First Six Months	
	2018	2017
Net cash provided by operating activities	\$ 140,915	\$ 93,573
Net cash used in investing activities	(350,734)	(36,117)
Net cash provided by (used in) financing activities	196,207	(10,079)
Effect of exchange rate changes on cash and cash equivalents	(7,917)	(608)
Increase (decrease) in cash and cash equivalents	(21,529)	46,769
Cash and cash equivalents at beginning of period	429,676	275,124
Cash and cash equivalents at end of period	\$ 408,147	\$ 321,893

Cash Flow from Operating Activities

Operating cash inflows are largely attributable to sales of the Company's products. Operating cash outflows are largely attributable to recurring expenditures for raw materials, labor, rent, interest, taxes and other operating activities.

Net cash provided by operating activities was \$140.9 million for the first six months of 2018, compared to \$93.6 million during the six months ended July 1, 2017. The increase in net cash provided by operating activities was primarily driven by higher earnings and favorable working capital management that more than offset higher payments related to acquisition and integration costs and higher cash taxes.

Cash Flow from Investing Activities

Net cash used in investing activities was \$350.7 million for the six months ended June 30, 2018, compared to \$36.1 million during the six months ended July 1, 2017. Net cash used for the acquisition of IXYS was \$306.5 million for the six months ended June 30, 2018 as compared to net cash used for the acquisition of a majority stake in Monolith of \$14.2 million for the six months ended July 1, 2017. Capital expenditures were \$40.3 million, representing an increase of \$12.0 million compared to 2017.

Cash Flow from Financing Activities

Net cash provided by financing activities was \$196.2 million for the six months ended 2018 compared to net cash used in financing activities of \$10.1 million for the six months ended 2017. The Company had \$310.0 million of proceeds from the credit facility, term loan and senior notes payable partially offset by payments \$100.0 million on the credit facility and term loan during the first six months ended June 30, 2018 as compared to \$125.0 million of proceeds from the senior notes payable and \$115.6 million of payments on the credit facility and term loan during the six months ended July 1, 2017. Additionally, dividends paid increased \$3.5 million from \$15.0 million in 2017 to \$18.5 million for the six months ended June 30, 2018.

Share Repurchase Program

The Company's Board of Directors authorized the repurchase of up to 1,000,000 shares of the Company's common stock under a program for the period May 1, 2018 to April 30, 2019 ("Share Repurchase Program"). The Company did not repurchase any shares of its common stock during the second quarter of 2018.

Off-Balance Sheet Arrangements

As of June 30, 2018, the Company did not have any off-balance sheet arrangements, as defined under SEC rules. Specifically, the Company was not liable for guarantees of indebtedness owed by third parties, the Company was not directly liable for the debt of any unconsolidated entity and the Company did not have any retained or contingent interest in assets. The Company does not participate in transactions that generate relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities.

Critical Accounting Policies and Estimates

The Company's Condensed Consolidated Financial Statements are prepared in accordance with U.S. GAAP. In connection with the preparation of the Condensed Consolidated Financial Statements, the Company uses estimates and makes judgments and assumptions about future events that affect the reported amounts of assets, liabilities, revenue, expenses, and the related disclosures. The assumptions, estimates, and judgments are based on historical experience, current trends, and other factors the Company believes are relevant at the time it prepares the Condensed Consolidated Financial Statements.

The significant accounting policies and critical accounting estimates are consistent with those discussed in Note 1, Summary of Significant Accounting Policies and Other Information, to the consolidated financial statements and the MD&A section of the Company's Annual Report on Form 10-K for the year ended December 30, 2017. During the three months ended June 30, 2018, there were no significant changes in the application of critical accounting policies.

Recent Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, "Leases" (Topic 842). This ASU requires lessees to recognize, on the balance sheet, assets and liabilities for the rights and obligations created by leases of greater than twelve months. The accounting by lessors will remain largely unchanged. The ASU is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018, with early adoption permitted. Adoption will require a modified retrospective transition. The Company will adopt the standard in the first quarter of 2019. The Company has made progress on assessing the Company's portfolio of leases and compiling a central repository of all active leases. We are in the process of assessing the design of the future lease process and drafting a policy to address the new standard requirements. Key lease data elements are being evaluated including developing a methodology for determining the incremental borrowing rate across all countries where we have operations. While the Company has not yet completed its evaluation of the impact the new lease accounting standard will have on its Consolidated Financial Statements, the Company expects to recognize right of use assets and lease liabilities for its operating leases in the Consolidated Balance Sheet upon adoption.

In January 2018, the FASB released guidance on the accounting for tax on the global intangible low-taxed income ("GILTI") provisions of the Tax Act. The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The guidance indicates that either accounting for deferred taxes related to GILTI inclusions or treating any taxes on GILTI inclusions as period cost are both acceptable methods subject to an accounting policy election. The Company has not yet completed its assessment and therefore has not yet elected an accounting policy.

In February 2018, the FASB issued ASU No. 2018-02 "Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which permits the reclassification of tax effects stranded in accumulated other comprehensive income to retained earnings as a result of the Tax Act. The standard also requires entities to disclose whether or not they elected to reclassify the tax effects related to the Tax Act as well as their policy for releasing income tax effects from accumulated other comprehensive income. The standard allows the option of applying either a retrospective adoption, meaning the standard is applied to all periods in which the effect of the Tax Act is recognized, or applying the amendments in the period of adoption, meaning an adjustment is made to shareholder's equity as of the beginning of the reporting period. ASU 2018-02 will be effective in the first quarter of 2019; however early adoption is permitted for interim and annual periods, including the reporting period in which the Tax Act was enacted. The Company is currently evaluating the impact of ASU 2018-02 on the Consolidated Financial Statements.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

See Item 7A, Quantitative and Qualitative Disclosures about Market Risk, of our Annual Report on Form 10-K for the year ended December 30, 2017. During the six months ended June 30, 2018, there have been no material changes in our exposure to market risk.

ITEM 4. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures (as defined in Rules 13a-15(b) and 15d-15(e) under the Exchange Act) are designed to ensure that information required to be disclosed in reports filed or submitted under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC rules and forms, and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosures.

In connection with the preparation of this report, management, under the supervision and with the participation of the Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of June 30, 2018. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of the quarter ended June 30, 2018, our disclosure controls and procedures were effective.

(b) Changes in Internal Control over Financial Reporting

The Company acquired IXYS Corporation on January 17, 2018. IXYS Corporation operated with a different internal control environment than that of Littelfuse, Inc. The Company's evaluation of IXYS' internal controls over financial reporting and integration of IXYS into the Company's internal control structure is ongoing. Otherwise, there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(f) and 15d-15(f) under the Exchange Act that occurred during the quarter ended June 30, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

None.

ITEM 1A. RISK FACTORS

During the six months ended June 30, 2018, there have been no material changes from the risk factors disclosed in our Annual Report on Form 10-K for our year ended December 30, 2017.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

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ITEM 4. MINE SAFETY DISCLOSURES

None.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

<u>Exhibit</u>	<u>Description</u>
10.1*	Consulting Agreement between Nathan Zommer and Littelfuse Inc., effective August 1, 2018
31.1*	Certification of David W. Heinzmann, Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Meenal A. Sethna, Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document
+	Certain schedules and exhibits omitted pursuant to Item 601(b)(2) of Regulation S-K promulgated by the SEC. The registrant agrees to furnish supplementary a copy of any omitted schedule or exhibit to the SEC upon request.
*	Filed herewith.
**	Furnished herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Quarterly Report on Form 10-Q for the quarter ended June 30, 2018, to be signed on its behalf by the undersigned thereunto duly authorized.

Littelfuse, Inc.

By: /s/ Meenal A. Sethna
Meenal A. Sethna
Executive Vice President and Chief Financial Officer

Date: August 1, 2018

By: /s/ Jeffrey G. Gorski
Jeffrey G. Gorski
Vice President and Chief Accounting Officer

CONSULTING AGREEMENT

THIS CONSULTING AGREEMENT (this "Agreement"), effective as of August 1, 2018, is entered into by and between Littelfuse, Inc., a Delaware corporation (the "Company"), and Nathan Zommer (the "Consultant").

WHEREAS, the Consultant currently serves as a member of the Board of Directors of the Company (the "Board") and previously served as an employee of IXYS, LLC (f/k/a IXYS Corporation), a Delaware limited liability company and wholly owned subsidiary of the Company ("IXYS"), until March 31, 2018 (the "Resignation Date");

WHEREAS, the Consultant has invaluable knowledge and expertise regarding the business of IXYS;

WHEREAS, due to the Consultant's knowledge and expertise, the Company wishes to have the cooperation of, and access to, the Consultant following his ceasing to be employed by IXYS; and

WHEREAS, the Company and the Consultant have mutually agreed that the Consultant shall serve as an advisor to the Company on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the Consultant hereby agree as follows:

1. Termination of Employment. The parties affirm that, effective as of the Resignation Date, the Consultant ceased to be an employee of the Company, IXYS, and their respective affiliates.

2. Consulting Period. The Consultant shall render the Services (as defined below) for the period beginning on the date hereof and ending on July 31, 2019 (the "Expiration Date"), unless earlier terminated in accordance with Section 7, or extended by mutual agreement of the parties hereto (the "Consulting Period").

3. Title; Services; Office.

(a) Title. During the Consulting Period, the Consultant shall have the title of Senior Advisor to the Company.

(b) Services. During the Consulting Period, the Consultant shall provide general advisory services as reasonably requested by the Chief Executive Officer of the Company (the "Services"), and shall be available to dedicate up to a maximum of 10 hours per week as the Consultant and the Company mutually deem reasonable for the performance of the Services hereunder; provided that, notwithstanding the foregoing, the Company and the Consultant shall use their reasonable best efforts to ensure that the level of the Consultant's services under this Agreement is consistent with the intent that the Consultant's termination of employment with the Company constitutes a "separation from service" (within the meaning of Section 409A of the Internal Revenue Code of 1986, as amended (the "Code")).

(c) Location; Support Services. The parties agree that the Consultant shall provide the Services remotely, except as may otherwise be determined by the parties from time to time. During the Consulting Period, the Company shall provide the Consultant with reasonable secretarial support in connection with his performance of the Services.

4. Remuneration.

(a) Consulting Fee. In consideration for agreeing to provide the services set forth in Section 3(b), during the Consulting Period, the Consultant shall be paid a fee of \$8,333 per month (the "Consulting Fee"), payable in arrears no later than the fifth business day of each calendar month, with the first and last such payments to be prorated as necessary to reflect a period of service that is less than a full month.

(b) Expenses. The Company shall reimburse the Consultant pursuant to the Company's reimbursement policies for other Senior Advisors as in effect from time to time for reasonable business expenses incurred by the Consultant in connection with the performance of the Services. The Consultant acknowledges and agrees that the Consultant shall not be entitled to expense reimbursements under the Company's reimbursement policies for active employees.

(c) Benefits. The Consultant acknowledges and agrees that the Consultant shall not be entitled to participate in any benefit plans of the Company, IXYS, or their subsidiaries (other than as set forth in the General Release of Claims, dated March 31, 2018 (the "Separation Agreement"), by and between the Company and the Consultant).

5 . Sole Consideration. Except as specifically provided herein, the Consultant shall be entitled to no compensation or benefits from the Company, IXYS, or their respective affiliates with respect to the Services and shall not be credited with any service, age, or other credit for purposes of eligibility, vesting, or benefit accrual under any employee benefit plan of the Company, IXYS, or their respective affiliates.

6 . Status as a Nonemployee. The Company and the Consultant acknowledge and agree that, in performing the Services pursuant to this Agreement, the Consultant shall be acting, and shall act, at all times as an independent contractor only and not as an employee, agent, partner, or joint venturer of or with the Company, IXYS, or their respective affiliates. The Consultant acknowledges and agrees that the Consultant is and shall be solely responsible for the reporting and payment of all federal, state, local, and foreign taxes that are required by applicable laws or regulations to be paid with respect to all compensation and benefits payable or provided hereunder, and that no employee of the Company, IXYS or any of their respective affiliates shall provide any tax reporting, payment or other personal administrative services to the Consultant. Except as set forth in the Separation Agreement, the Consultant shall not be eligible to participate in or accrue benefits under any benefit plan sponsored by the Company, IXYS, or their respective affiliates.

7. Termination of Consulting Period.

(a) Termination. Either the Company or the Consultant may terminate the Consulting Period at any time and for any reason (or no reason) by providing the other party with 30 days' advance written notice of such termination. The termination of the Consulting Period pursuant to this Section 7(a) shall not affect the Consultant's status as a member of the Board if the Consultant is serving on the Board as of such termination.

(b) Payments upon Termination. Upon termination of the Consulting Period for any reason, the Company shall pay to the Consultant any earned but unpaid Consulting Fees for the Services rendered prior to the date of termination and shall reimburse the Consultant for any business expenses incurred prior to such termination and for which the Consultant would be entitled to reimbursement pursuant to Section 4(b).

8. Miscellaneous.

(a) Non-Employee Director Compensation. Notwithstanding anything to the contrary herein, this Agreement shall not impact Consultant's eligibility to receive compensation (including equity awards) to which he would otherwise be entitled as a non-employee member of the Board.

(b) Successors and Assigns. This Agreement shall be binding upon, inure to the benefit of, and be enforceable by, as applicable, the Company and the Consultant and their respective personal or legal representatives, executors, administrators, successors, assigns, heirs, distributees, and legatees. This Agreement is personal in nature and the Consultant shall not, without the written consent of the Company, assign, transfer, or delegate this Agreement or any rights or obligations hereunder.

(c) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of California without giving effect to principles regarding the conflict of laws.

(d) Amendment; Entire Agreement. No provision of this Agreement may be amended, modified, waived, or discharged unless such amendment, modification, waiver, or discharge is agreed to in writing and such writing is signed by the Consultant and the Company. From and after the date hereof, this Agreement shall supersede any other agreement between the parties with respect to the subject matter hereof, except as specifically provided herein.

(e) Notice. All notices and other communications hereunder shall be in writing and shall be given by hand delivery to the other party or by registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

If to the Consultant:

At the address most recently on the books and records of the Company.

If to the Company:

Littelfuse, Inc.
8755 W. Higgins Road, Suite 500
Chicago, Illinois 60631
Attention: General Counsel

or to such other address as either party shall have furnished to the other in writing in accordance herewith. Notice and communications shall be effective when actually received by the addressee.

(f) Headings. The headings of this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

(g) Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.

9. Code Section 409A.

(a) The intent of the parties is that payments and benefits under this Agreement comply with, or be exempt from, Section 409A of the Code and the regulations and guidance promulgated thereunder (collectively "Section 409A") and, accordingly, to the maximum extent permitted, this Agreement shall be interpreted to be in compliance therewith.

(b) With regard to any provision herein that provides for reimbursement of costs and expenses or in-kind benefits, except as permitted by Section 409A, (i) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit, (ii) the amount of expenses eligible for reimbursement, or in-kind benefits, provided during any taxable year shall not affect the expenses eligible for reimbursement, or in-kind benefits to be provided, in any other taxable year, and (iii) such payments shall be made on or before the last day of the Consultant's taxable year following the taxable year in which the expense was occurred.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed and delivered as of the date first above written.

LITTELFUSE, INC.

By: /s/ Ryan K. Stafford
Name: Ryan K. Stafford
Title: Executive Vice President, Chief Legal
and Chief Human Resources Officer

/s/ Nathan Zommer
Nathan Zommer

SECTION 302 CERTIFICATION

I, David W. Heinzmann, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Littelfuse Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 1, 2018

/s/ David W. Heinzmann

David W. Heinzmann
President and Chief Executive
Officer

SECTION 302 CERTIFICATION

I, Meenal A. Sethna, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Littelfuse Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: August 1, 2018

/s/ MEENAL A. SETHNA
Meenal A. Sethna
Executive Vice President and Chief Financial Officer

LITTELFUSE, INC.

Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of title 18, United States Code), each of the undersigned officers of Littelfuse, Inc. ("the Company") does hereby certify that to his knowledge:

The Quarterly Report of the Company on Form 10-Q for the fiscal quarter ended June 30, 2018 ("the Report") fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/S/ DAVID W. HEINZMANN

David W. Heinzmann
President and Chief Executive
Officer

/S/ MEENAL A. SETHNA

Meenal A. Sethna
Executive Vice President and
Chief Financial Officer

Dated: August 1, 2018

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