

LITTELFUSE INC /DE

FORM 10-Q (Quarterly Report)

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Address	8755 WEST HIGGINS ROAD CHICAGO, IL, 60631
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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 September 30 , 2017

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:

<u>Title of Each Class</u>	<u>Name of Each Exchange On Which Registered</u>
Common Stock, \$0.01 par value	NASDAQ Global Select Market SM

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," "small er 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 October 27, 2017, the registrant had outstanding 22,713,384 shares of Common Stock, net of Treasury Shares.

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LITTELFUSE, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS

(in thousands)	September 30, 2017 7 (Unaudited)	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 372,828	\$ 275,124
Short-term investments	35	3,690
Trade receivables, less allowances (September 30, 2017 - \$30,658 December 31, 2016 - \$25,874)	197,539	176,032
Inventories	136,505	114,063
Prepaid income taxes	6,658	11,671
Prepaid expenses and other current assets	45,799	31,501
Total current assets	759,364	612,081
Property, plant, and equipment:		
Land	9,690	9,268
Buildings	86,111	80,553
Equipment	493,361	439,542
Accumulated depreciation and amortization	(344,288)	(312,188)
Net property, plant, and equipment	244,874	217,175
Intangible assets, net of amortization:		
Patents, licenses and software	84,455	83,607
Distribution network	20,329	18,995
Customer relationships, trademarks and tradenames	104,738	110,425
Goodwill	451,131	403,544
Investments	10,582	13,933
Deferred income taxes	17,806	20,585
Other assets	8,913	10,849
Total assets	\$ 1,702,192	\$ 1,491,194
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	\$ 103,849	\$ 90,712
Accrued payroll	42,131	42,810
Accrued expenses	52,786	36,138
Accrued severance	1,734	2,785
Accrued income taxes	16,281	8,846
Current portion of long-term debt	9,375	6,250
Total current liabilities	226,156	187,541
Long-term debt, less current portion	492,272	447,892
Deferred income taxes	7,719	7,066
Accrued post-retirement benefits	16,571	13,398
Other long-term liabilities	26,230	20,366
Shareholders' equity:		
Common stock, par value \$0.01 per share	229	228
Treasury stock, at cost	(41,260)	(36,510)
Additional paid-in capital	306,118	291,258
Accumulated other comprehensive income	(73,343)	(74,579)
Retained earnings	741,363	634,391
Littelfuse, Inc. shareholders' equity	933,107	814,788
Non-controlling interest	137	143
Total equity	933,244	814,931
Total liabilities and equity	\$ 1,702,192	\$ 1,491,194

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 Nine Months Ended	
	September 30 , 2017	October 1 , 2016	September 30 , 2017	October 1 , 2016
Net sales	\$ 317,889	\$ 280,331	\$ 916,685	\$ 771,641
Cost of sales	184,238	166,572	536,776	472,861
Gross profit	133,651	113,759	379,909	298,780
Selling, general, and administrative expenses	56,759	56,589	156,899	150,047
Research and development expenses	11,991	10,403	36,872	30,884
Amortization of intangibles	6,292	4,432	18,407	13,384
Impairment of goodwill and intangible assets	—	14,809	—	14,809
Total operating expenses	75,042	86,233	212,178	209,124
Operating income	58,609	27,526	167,731	89,656
Interest expense	3,467	2,571	9,868	6,286
Foreign exchange loss (gain)	632	(4,700)	(1,483)	(7,114)
Other income, net	(1,013)	(778)	(962)	(1,040)
Income before income taxes	55,523	30,433	160,308	91,524
Income taxes	12,715	(369)	29,970	14,281
Net income	<u>\$ 42,808</u>	<u>\$ 30,802</u>	<u>\$ 130,338</u>	<u>\$ 77,243</u>
Income per share:				
Basic	<u>\$ 1.88</u>	<u>\$ 1.36</u>	<u>\$ 5.75</u>	<u>\$ 3.43</u>
Diluted	<u>\$ 1.87</u>	<u>\$ 1.35</u>	<u>\$ 5.69</u>	<u>\$ 3.41</u>
Weighted-average shares outstanding:				
Basic	22,713	22,578	22,678	22,515
Diluted	22,953	22,734	22,906	22,675

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 Nine Months Ended	
	September 30 , 2017	October 1 , 2016	September 30 , 2017	October 1 , 2016
Net income	\$ 42,808	\$ 30,802	\$ 130,338	\$ 77,243
Other comprehensive income (loss):				
Pension liability adjustments (net of tax of \$ 89 and \$30 for the three months ended 2017 and 2016, and \$144 and \$395 for the nine months ended 2017 and 2016, respectively)	58	(138)	(142)	(183)
Pension and post -retirement reclassification adjustments	(118)	68	(299)	212
Unrealized (loss) gain on investments	(1,710)	927	(1,235)	(559)
Foreign currency translation adjustments	1,531	(5,771)	2,912	(8,951)
Comprehensive income	\$ 42,569	\$ 25,888	\$ 131,574	\$ 67,762

See accompanying Notes to Condensed Consolidated Financial Statements.

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

(in thousands)	For the Nine Months Ended	
	September 30 , 2017	October 1 , 2016
OPERATING ACTIVITIES		
Net income	\$ 130,338	\$ 77,243
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	28,228	24,841
Amortization of intangibles	18,407	13,384
Impairment of goodwill and intangible assets	—	14,809
Provision for bad debts	1,586	—
Impairment of long-lived assets	—	1,391
Non-cash inventory charge	1,607	7,456
Loss on sale of property, plant, and equipment	584	440
Stock-based compensation	12,437	9,166
Excess tax benefit on share-based compensation	—	(2,272)
Deferred income taxes	1,863	—
Changes in operating assets and liabilities:		
Trade receivables	(26,792)	(17,973)
Inventories	(17,159)	4,505
Accounts payable	9,448	7,845
Accrued expenses (including post-retirement)	1,757	6,497
Accrued payroll and severance	(3,788)	1,388
Accrued income taxes	7,267	(23,613)
Prepaid expenses and other current assets	15,537	(25,092)
Net cash provided by operating activities	181,320	100,015
INVESTING ACTIVITIES		
Acquisitions of businesses, net of cash acquired	(38,610)	(468,636)
Proceeds from maturities of short-term investments	3,739	345
Decrease in entrusted loan	3,599	4,056
Purchases of property, plant, and equipment	(48,470)	(34,501)
Proceeds from sale of property, plant, and equipment	541	255
Net cash used in investing activities	(79,201)	(498,481)
FINANCING ACTIVITIES		
Proceeds of revolving credit facility	15,000	258,000
Proceeds of term loan	—	234,000
Proceeds of senior notes payable	125,000	—
Payments of term loan	(4,687)	(119,125)
Payments of revolving credit facility	(112,500)	(97,500)
Net (payments) proceeds related to stock-based award activities	(2,336)	14,581
Payments of entrusted loan	(3,599)	(4,056)
Debt issuance costs	(2)	(1,701)
Cash dividends paid	(23,367)	(20,405)
Excess tax benefit on share-based compensation	—	2,272
Purchases of common stock	—	(3,685)
Net cash (used in) provided by financing activities	(6,491)	262,381
Effect of exchange rate changes on cash and cash equivalents	2,076	1,793
Increase (decrease) in cash and cash equivalents	97,704	(134,292)
Cash and cash equivalents at beginning of period	275,124	328,786
Cash and cash equivalents at end of period	\$ 372,828	\$ 194,494
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 one of the world’s leading designer, manufacturer and supplier of circuit protection products, with expanding platforms in sensors and power control components and modules. In addition to circuit protection products and solutions, the Company offers electronic reed switches and sensors, automotive sensors for comfort and safety systems and a comprehensive line of highly reliable electromechanical and electronic switch and control devices for commercial and specialty vehicles, as well as protection relays and power distribution centers for the safe control and distribution of electricity. 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. The Company’s products protect products in virtually every market that uses electrical energy, from consumer electronics to automobiles to industrial equipment.

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 sheet, 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 31, 2016, 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. Certain reclassifications of prior year amounts for *Trade receivables, net* and *Prepaid expenses and other current assets* were made to conform to the 2017 presentation.

Goodwill and Indefinite-Lived Intangible Assets

The Company annually tests goodwill and indefinite-lived intangible assets for impairment on the first day of its fiscal fourth quarter or at other dates if there is an event or change in circumstances that indicates the asset may be impaired. Management determines the fair value of each of its reporting units by using a discounted cash flow model (which includes forecasted five-year income statement and working capital projections, a market-based weighted average cost of capital and terminal values after five years) to estimate market value. In addition, the Company compares its derived enterprise value on a consolidated basis to the Company’s market capitalization as of its test date to ensure its derived value approximates the market value of the Company when taken as a whole.

Factors the Company considers important when performing the impairment tests, which could result in changes to its estimates, include underperformance relative to historical or projected future operating results and declines in acquisitions and trading multiples. Due to the diverse end user base and non-discretionary product demand, the Company does not believe its future operating results will vary significantly relative to its historical and projected future operating results. However, it is possible that impairment charges could be recognized for the Relays reporting unit if there are declines in profitability or projected future operating results and cash flows due to changes in volume, market pricing, cost, or the business environment. As of the most recent annual test conducted on October 2, 2016, the Company concluded the fair value of the Relays reporting unit exceeded its carrying value of invested capital and therefore, no potential goodwill impairment existed. As of the 2016 annual test date, the Relays reporting unit had \$41.4 million of goodwill and intangible assets and the excess of fair value over the carrying value of invested capital was 15%. As of September 30, 2017, there were no events or circumstances that indicate the Relays intangible assets were impaired.

In the third quarter of 2016, due to continued declines in the potash market the Company conducted a goodwill impairment analysis of the Custom Products reporting unit and concluded that the reporting unit was impaired. The fair value of the unit was estimated using the expected present value of future cash flows over a seven year forecast period and appraisal of certain assets. This analysis required a write down of the reporting unit’s carrying value of \$14.8 million. A goodwill impairment loss of \$8.8 million and intangible assets impairments aggregating \$6.0 million were recognized during the third quarter, including a \$3.8 million reduction of the custom products trade names to a \$0.7 million remaining value and a \$2.2 million reduction of the reporting unit’s customer relationships to zero value.

Recently Adopted Accounting Standards

In July 2015, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2015-11 – “Inventory (Topic 330): Simplifying the Measurement of Inventory,” which simplifies the measurement of inventory by requiring inventory to be measured at the lower of cost and net realizable value. The update is effective for financial statements issued for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. The Company adopted the new standard on January 1, 2017. The adoption of the update did not have a material impact on the Company’s consolidated financial position and results of operations. As a result of the adoption of the update, inventories are stated at the lower of cost or net realizable value. Cost is principally determined using the first-in, first-out method. The Company maintains excess and obsolete allowances against inventory to reduce the carrying value to the expected net realizable value. These allowances are based upon a combination of factors including historical sales volume, market conditions, lower of cost or market analysis and expected realizable value of the inventory.

In March 2016, the FASB issued ASU No. 2016-09 – “Improvements to Employee Share-Based Payment Accounting,” which amends ASC 718, “Compensation – Stock Compensation.” The update simplifies several aspects of the accounting for employee share-based payment transactions, including accounting for income taxes, forfeitures, and statutory withholding requirements, as well as classification in the Condensed Consolidated Statements of Cash Flows. The update is effective for financial statements issued for fiscal years beginning after December 15, 2016, and interim periods within those fiscal years. The Company adopted the new standard on January 1, 2017. As a result of the adoption, on a prospective basis, the Company recognized \$0.1 million and \$1.9 million of excess tax benefits from stock-based compensation as a discrete item in income tax expense for the three and nine months ended September 30, 2017, respectively. Historically, these amounts were recorded as additional paid-in capital. The Company also elected to apply the change prospectively to the Condensed Consolidated Statement of Cash Flows. As a result, on a prospective basis, share-based payments will be reported as operating activities in the Condensed Consolidated Statement of Cash Flows. The Company elected not to change its policy on accounting for forfeitures and will continue to estimate a requisite forfeiture rate. Additional amendments to the accounting for income taxes and minimum statutory withholding requirements had no impact on the results of operations.

Recently Issued Accounting Standards

In March 2017, the FASB issued 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 changes the presentation of net periodic pension and post-retirement benefit cost (net benefit cost) within the Statement of Income. Under the current guidance, net benefit cost is reported as an employee cost within operating income. The amendment requires 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 will be effective for the first quarter of 2018 and is required to be retrospectively adopted. Had this guidance been adopted as of January 1, 2017, operating income within the Condensed Consolidated Statements of Income for the three months and nine months ended September 30, 2017 would have not changed by a material amount.

In January 2017, the FASB issued ASU No. 2017-04, “Intangibles-Goodwill and Other” (Topic 350). This ASU modifies the concept of impairment from the condition that exists when the carrying amount of goodwill exceeds its implied fair value to the condition that exists when the carrying amount of a reporting unit exceeds its fair value. An entity no longer will determine goodwill impairment by calculating the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit had been acquired in a business combination. Because the update will eliminate Step 2 from the goodwill impairment test, it should reduce the cost and complexity of evaluating goodwill for impairment. This ASU is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2020, with early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The Company expects to adopt the new standard in 2017.

In January 2016, the FASB issued ASU No. 2016-01, “Financial Instruments-Recognition and Measurement of Financial Assets and Financial Liabilities” which addresses certain aspects of the recognition, measurement, presentation and disclosure of financial instruments. The ASU will require the Company to recognize any changes in the fair value of certain equity investments in net income. These changes are currently recognized in other comprehensive income (“OCI”). This guidance is effective for interim and fiscal years beginning after December 15, 2017.

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. In August, 2015, the FASB issued ASU No. 2015-14, which postponed the effective date of ASU No. 2014-09 to fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, with early adoption permitted on the original effective date of fiscal years beginning after December 15, 2016. The Company is in the process of performing its assessment of the potential impact on its consolidated financial statements, and anticipates adopting this standard using the modified retrospective method. While the Company is currently assessing the impact of the new standard, the Company’s revenue is primarily generated from the sale of finished products to customers. Those sales predominantly contain a single delivery element and revenue is recognized at a single point in time when ownership, risks, and rewards transfer. These are largely un-affected by the new standard. The Company does not expect this new guidance to have a material impact on the amount of overall sales recognized; however, the timing of sales on certain projects may be affected. The Company has not yet quantified this potential impact.

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, however the Company plans to adopt the standard in the first quarter of 2019. The Company is currently evaluating the impact of ASU 2016-02.

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. These acquisitions were recorded by allocating the cost of the acquisition to the assets acquired, including other intangible assets, based on their estimate fair values at the acquisition date. The excess of the cost over the net amounts assigned to the fair value of the assets acquired was recorded as goodwill. The goodwill associated with these acquisitions is primarily attributable to the synergies expected to arise as a result of these acquisitions. The operating results of the acquired business are included in the Company's condensed consolidated financial statements from the date of the acquisition.

2017 Acquisitions

IXYS Corporation

On August 28, 2017, the Company announced that it had entered in a definitive agreement to acquire 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 salesforce and global distribution partners.

The Company will acquire all outstanding shares of common stock of IXYS in exchange for a combination of cash and shares of common stock of the Company. Each IXYS stockholder will be entitled to elect to receive, per IXYS share, either \$23.00 in cash or 0.1265 of a share of Littelfuse common stock, subject to proration. In total, 50% of IXYS stock will be converted into the cash election option and the remaining will be converted into the stock election option. The equity value of the transaction at the announcement was approximately \$750 million. The exchange ratio is fixed and will not be adjusted for changes in the market value of shares of Littelfuse or IXYS common stock. The market values of Littelfuse common stock and number of outstanding shares of IXYS common stock and equity-based awards will continue to fluctuate until the acquisition is completed. As a result, the final purchase price will differ from the initially announced purchase price, and that difference may be material.

The transaction is expected to close in the first calendar quarter of 2018 and is subject to the satisfaction of customary closing conditions, including regulatory approvals and approval by IXYS stockholders. The Company expects to finance the cash portion of the transaction consideration through a combination of existing cash and additional debt.

U.S. Sensor

On July 7, 2017, the Company acquired the assets of U.S. Sensor Corporation ("U.S. Sensor") for \$24.4 million. The Company funded the acquisition with available cash. The final purchase price is subject to adjustment for finalization of income tax gross up which is expected to be settled in the fourth quarter of 2017. 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.

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The following table summarizes the preliminary 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	\$ 24,439
Allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 4,755
Patented and unpatented technologies	1,090
Trademarks and tradenames	200
Non-compete agreement	50
Customer relationships	2,830
Goodwill	16,054
Current liabilities	(540)
	<u>\$ 24,439</u>

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.

Monolith

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 and conditioned on Monolith achieving a product development milestone and other provisions, the Company acquired approximately 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. Consideration for the additional investment(s) will range from \$1.0 million to \$10 million and will be paid no later than June 30, 2019.

The additional investment 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 condensed consolidated statement 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 condensed consolidated balance sheet. Changes in the fair value of the non-controlling interest are recognized in the Company's condensed consolidated statements of net income.

Commencing March 1, 2017, Monolith was reflected as a consolidated subsidiary within the Company's condensed 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.

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The following table summarizes the preliminary 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
Fair value of commitment to purchase non-controlling interest	9,000
Total purchase consideration	<u>\$ 26,672</u>
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)
	<u>\$ 26,672</u>

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.

The purchase price allocations for U.S. Sensor and Monolith are 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 independent valuations of other intangible assets.

2016 Acquisitions

ON Portfolio

On August 29, 2016, the Company acquired certain assets of select businesses (the "ON Portfolio") of ON Semiconductor Corporation for \$104.0 million. The Company funded the acquisition with available cash and proceeds from its credit facility. The acquired business, which is included in the Electronics segment, consists of a product portfolio that includes transient voltage suppression ("TVS") diodes, switching thyristors and insulated gate bipolar transistors ("IGBTs") for automotive ignition applications. The acquisition expands the Company's offerings in power semiconductor applications as well as increases its presence in the automotive electronics market. The ON Portfolio products have strong synergies with the Company's existing circuit protection business and will strengthen its channel partnerships and customer engagement.

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

(in thousands)	Purchase Price Allocation
Total purchase consideration:	
Cash	\$ 104,000
Allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 4,816
Customer relationships	31,800
Patented and unpatented technologies	8,800
Non-compete agreement	2,500
Goodwill	56,084
	<u>\$ 104,000</u>

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All the ON Portfolio business goodwill and other assets were recorded in the Electronics segment and are reflected in the Americas and Europe geographic areas. The customer relationships are being amortized over 13.5 years. The patented and unpatented technologies are being amortized over 6-8.5 years. The non-compete agreement is being amortized over 4 years. The goodwill resulting from this acquisition consists largely of the Company's expected future product sales and synergies from combining the ON Portfolio products with the Company's existing power semiconductor product portfolio. \$7.3 million of goodwill for the above acquisition is expected to be deductible for tax purposes.

As required by purchase accounting rules, the Company recorded a \$0.7 million step-up of inventory to its fair value as of the acquisition date based on the preliminary valuation. All of the step-up was amortized as a non-cash charge to cost of goods sold during 2016, as the acquired inventory was sold, and reflected as other non-segment costs.

Member 's

On April 4, 2016, the Company completed the acquisition of Member's S.p.A. ("Member's") headquartered in Legnago, Italy for \$19.2 million, net of acquired cash and after settlement of a working capital adjustment. The Company funded the acquisition with cash on hand and borrowings under the Company's revolving credit facility. The acquired business is part of the Company's commercial vehicle product business within the Automotive segment and specializes in the design, manufacturing, and selling of manual and electrical high current switches and trailer connectors for commercial vehicles. The acquisition expands the Company's commercial vehicle products business globally.

The following table summarizes the final purchase price allocation of the fair value of assets acquired and liabilities assumed in the Member's acquisition:

(in thousands)	Purchase Price Allocation
Total purchase consideration:	
Cash, net of acquired cash	\$ 19,162
Preliminary allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 12,919
Property, plant, and equipment	1,693
Customer relationships	3,050
Patented and unpatented technologies	224
Trademarks and tradenames	1,849
Goodwill	8,091
Current liabilities	(7,220)
Other non-current liabilities	(1,444)
	<u>\$ 19,162</u>

All Member's goodwill and other assets and liabilities were recorded in the Automotive segment and reflected in the Europe geographic area. The customer relationships are being amortized over 10 years. The patented and unpatented technologies are being amortized over 5 years. The trademarks and tradenames are being amortized over 10 years. The goodwill resulting from this acquisition consists largely of the Company's expected future product sales and synergies from combining Member's products with the Company's existing automotive product portfolio. Goodwill for the above acquisition is not expected to be deductible for tax purposes.

As required by purchase accounting rules, the Company recorded a \$0.2 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 2016, as the acquired inventory was sold, with the charge reflected as other non-segment costs.

PolySwitch

On March 25, 2016, the Company acquired 100% of the circuit protection business ("PolySwitch") of TE Connectivity Ltd. for \$348.3 million, net of acquired cash and after settlement of certain post-closing adjustments. In the second quarter of 2017, the Company paid the final consideration of \$3.8 million. The Company funded the acquisition with available cash on hand and borrowings under the Company's revolving credit facility. The PolySwitch business, which is split between the Automotive and Electronics segments, has a leading position in polymer based resettable circuit protection devices, with a strong global presence in the automotive, battery, industrial, communications and mobile computing markets. PolySwitch has manufacturing facilities in Shanghai and Kunshan, China and Tsukuba, Japan. The acquisition allows the Company to strengthen its global circuit protection product portfolio, as well as strengthen its presence in the automotive electronics and battery end markets. The acquisition also significantly increases the Company's presence in Japan.

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

(in thousands)	Purchase Price Allocation
Total purchase consideration:	
Original consideration	\$ 350,000
Post closing consideration adjustment received	(1,708)
Acquired cash	(3,810)
Acquired cash returned to seller	3,810
Total purchase consideration	<u>\$ 348,292</u>
Allocation of consideration to assets acquired and liabilities assumed:	
Current assets, net	\$ 60,228
Property, plant, and equipment	51,613
Land lease	4,290
Patented and unpatented technologies	56,425
Customer relationships	39,720
Goodwill	165,088
Other long-term assets	11,228
Current liabilities	(35,280)
Other non-current liabilities	(5,020)
	<u>\$ 348,292</u>

All PolySwitch goodwill and other assets and liabilities were recorded in the Electronics and Automotive segments and reflected in all geographic areas. The customer relationships are being amortized over 15 years. The patented and unpatented technologies are being amortized over 10 years. The goodwill resulting from this acquisition consists largely of the Company's expected future product sales and synergies from combining PolySwitch products with the Company's existing automotive and electronics product portfolio. \$103.8 million and \$61.3 million of the goodwill for the above acquisition has been assigned to the Electronics and Automotive segments, respectively, with \$64.9 million expected to be deductible for tax purposes.

As required by purchase accounting rules, the Company recorded a \$6.9 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 second quarter of 2016, as the acquired inventory was sold, and reflected as other non-segment costs.

Pro Forma Results

The following table summarizes, on a pro forma basis, the combined results of operations of the Company and the acquired PolySwitch and the ON Portfolio businesses for the three months and nine months ended October 1, 2016 as though the acquisitions had occurred as of January 3, 2016. The Company has not included pro forma results of operations for Member's, Monolith, or U.S. Sensors 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 PolySwitch or ON Portfolio acquisitions occurred as of January 3, 2016 or of future consolidated operating results.

(in thousands)	Three Months Ended October 1 , 2016	Nine Months Ended October 1 , 2016
Net sales	\$ 290,377	\$ 846,127
Income before income taxes	32,760	110,982
Net income	33,119	96,819
Net income — basic	1.47	4.30
Net income — diluted	1.46	4.27

Pro forma results presented above primarily reflect: (i) incremental depreciation relating to fair value adjustments to property, plant, and equipment; (ii) amortization adjustments relating to fair value estimates of intangible assets; (iii) incremental interest expense on assumed indebtedness; and (iv) additional cost of goods sold relating to the capitalization of gross profit as part of purchase accounting recognized for purposes of the pro forma as if it was recognized during the Company's first quarter of 2016. Pro forma adjustments described above have been tax affected using the Company's effective rate during the respective periods.

3 . Inventories

The components of inventories at September 30, 2017 and December 31, 2016 were as follows:

(in thousands)	September 30 , 2017	December 31, 2 016
Raw materials	\$ 38,320	\$ 32,231
Work in process	28,477	23,354
Finished goods	69,708	58,478
Total	<u>\$ 136,505</u>	<u>\$ 114,063</u>

4 . Debt

The carrying amounts of debt at September 30, 2017 and December 31, 2016 were as follows:

(in thousands)	September 30 , 2017	December 31, 2016
Revolving credit facility	\$ 15,000	\$ 112,500
Term loan	115,625	120,313
Entrusted loan	—	3,522
Euro Senior Notes, Series A due 2023	137,670	122,313
Euro Senior Notes, Series B due 2028	111,784	99,314
USD Senior Notes, Series A due 2022	25,000	—
USD Senior Notes, Series B due 2027	100,000	—
Unamortized debt issuance costs	(3,432)	(3,820)
Total debt	<u>501,647</u>	<u>454,142</u>
Less: Current maturities	(9,375)	(6,250)
Total long-term debt	<u>\$ 492,272</u>	<u>\$ 447,892</u>

Revolving Credit Facility / Term Loan

On October 13, 2017, the Company amended its existing Credit Agreement to increase the unsecured revolving credit facility from \$575.0 million to \$700.0 million and increase the unsecured term loan credit facility 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 facility 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 occurring on October 13, 2017 and the second advance, in the aggregate amount not to exceed \$75.0 million, to occur in the first quarter of 2018.

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 consists 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 has 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. For the term loan credit facility, the Company is required to make quarterly principal payments of \$1.6 million through March 31, 2018 and \$3.1 million from June 30, 2018 through December 31, 2020 with the remaining balance due on March 4, 2021.

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 0.30%, based on the Consolidated Leverage Ratio, as defined. 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 2.73% at September 30, 2017.

As of September 30, 2017, the Company had \$0.1 million outstanding in letters of credit and had available \$559.9 million of borrowing capacity under the revolving credit facility. At September 30, 2017, the Company was in compliance with all covenants under the credit agreement and expects to remain in compliance based on management's estimates of operating and financial results for 2017 and the foreseeable future.

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.

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 September 30, 2017, the Company was in compliance with all covenants under the revolving credit facility and 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.

Entrusted Loan

During 2014, the Company entered into an entrusted loan arrangement (“Entrusted Loan”) of Chinese renminbi 110.0 million (approximately U.S. \$17.9 million) between two of its China legal entities, Littelfuse Semiconductor (“Wuxi”) Company (the “lender”) and Suzhou Littelfuse OVS Ltd. (the “borrower”), utilizing Bank of America, N.A., Shanghai Branch as agent. Direct borrowing and lending between two commonly owned commercial entities was strictly forbidden at the time under China’s regulations requiring the use of a third party agent to enable loans between Chinese legal entities. As a result, the Entrusted Loan was reflected as both a long-term asset and long-term debt on the Company’s Condensed Consolidated Balance Sheets and was reflected in the investing and financing activities in its Condensed Consolidated Statements of Cash Flows. Interest expense and interest income are recorded between the lender and borrower with no net impact on the Company’s Condensed Consolidated Statements of Income since the amounts were offsetting. The loan interest rate per annum is 5.25%. The Entrusted Loan was used to finance the operation and working capital needs of the borrower and was scheduled to mature in November 2019. The balance of the Entrusted Loan was paid off as of September 30, 2017.

5 . Fair Value of Assets and Liabilities

Applicable accounting literature establishes a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Applicable accounting literature defines levels within the hierarchy based on the reliability of inputs 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

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

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There were no changes during the quarter ended September 30, 2017 to the Company's valuation techniques used to measure asset and liability fair values on a recurring basis. As of September 30, 2017 and December 31, 2016, 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 September 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)	
Investment in Polytronics	\$ 10,582	\$ —	\$ —	\$ 10,582

The following table presents assets measured at fair value by classification within the fair value hierarchy as of December 31, 2016:

(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)	
Investment in Polytronics	\$ 10,435	\$ —	\$ —	\$ 10,435

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 September 30, 2017 and December 31, 2016, 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 September 30, 2017 and December 31, 2016 were as follows:

(in thousands)	September 30, 2017		December 31, 2016	
	Carrying Value	Estimated Fair Value	Carrying Value	Estimated Fair Value
Euro Senior Notes, Series A due 2023	\$ 137,670	\$ 137,581	\$ 122,313	\$ 122,586
Euro Senior Notes, Series B due 2028	111,784	110,550	99,314	99,230
USD Senior Notes, Series A due 2022	25,000	24,938	—	—
USD Senior Notes, Series B due 2027	100,000	99,884	—	—

6. 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 components of net periodic benefit cost for the three and nine months ended September 30, 2017 and October 1, 2016 were as follows:

(in thousands)	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2017	October 1, 2016	September 30, 2017	October 1, 2016
Components of net periodic benefit cost:				
Service cost	\$ 408	\$ 332	\$ 1,224	\$ 997
Interest cost	360	496	1,080	1,489
Expected return on plan assets	(476)	(520)	(1,428)	(1,560)
Amortization, net	84	74	252	220
Net periodic benefit cost	\$ 376	\$ 382	\$ 1,128	\$ 1,146

The expected return on pension assets is 4.5% and 4.9% in 2017 and 2016, respectively. The Company does not expect to make cash contributions to its pension plans in 2017.

7. Accumulated Other Comprehensive Income (Loss)

The following table sets forth the changes in the components of Accumulated Other Comprehensive Income (Loss) by component for the nine months ended September 30, 2017:

(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 31, 2016	\$ (11,983)	\$ 10,769	\$ (73,365)	\$ (74,579)
Activity in the period	(441)	(1,235)	2,912	1,236
Balance at September 30, 2017	<u>\$ (12,424)</u>	<u>\$ 9,534</u>	<u>\$ (70,453)</u>	<u>\$ (73,343)</u>

(a) The balances at September 30, 2017 and December 31, 2016 are net of taxes of \$1.2 million and \$1.1 million, respectively.

8. Income Taxes

The effective tax rates for the three and nine months ended September 30, 2017 was 22.9% and 18.7%, respectively, compared to effective tax rates for the three and nine months ended October 1, 2016 of (1.2%) and 15.6%, respectively. The effective tax rates for the 2017 periods are lower than the U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions, partially offset by a forecasted accrual for taxes on undistributed current year-earnings of certain non-US affiliates. The effective tax rate for the 2016 periods are lower than the U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions and a one-time deduction with respect to the stock of one of the company's affiliates partially offset by the impact of the impairment of goodwill for which no tax benefit was recorded.

9. 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 Nine Months Ended	
	September 30, 2017	October 1, 2016	September 30, 2017	October 1, 2016
Numerator:				
Net income as reported	\$ 42,808	\$ 30,802	\$ 130,338	\$ 77,243
Denominator:				
Weighted average shares outstanding				
Basic	22,713	22,578	22,678	22,515
Effect of dilutive securities	240	156	228	160
Diluted	<u>22,953</u>	<u>22,734</u>	<u>22,906</u>	<u>22,675</u>
Earnings Per Share:				
Basic earnings per share	\$ 1.88	\$ 1.36	\$ 5.75	\$ 3.43
Diluted earnings per share	\$ 1.87	\$ 1.35	\$ 5.69	\$ 3.41

Potential shares of common stock relating to stock options excluded from the earnings per share calculation because their effect would be anti-dilutive were 30,579 and 76,845 for the three months ended September 30, 2017 and October 1, 2016, respectively, and 35,858 and 45,591 for the nine months ended September 30, 2017 and October 1, 2016, respectively.

10 . 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.

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* : Provides circuit protection components for overcurrent and overvoltage protection, as well as power control products and sensor components and modules to leading global manufacturers of a wide range of electronic products. The segment covers a broad range of end markets, including consumer electronics, telecommunications equipment, medical devices, lighting products, and white goods. The Electronics segment supplies circuit protection, sensing and control products to various leading manufacturers. The Electronics segment has one of the broadest product offerings in the industry including fuses and protectors, positive temperature coefficient (“PTC”) resettable fuses, varistors, polymer electrostatic discharge (“ESD”) suppressors, discrete TVS diodes, TVS diode arrays protection and switching thyristors, gas discharge tubes, power switching components, fuseholders, reed switch and sensor assemblies, IGBT blocks, and related accessories.
- *Automotive Segment*: Provides circuit protection and sensor products to the worldwide automotive original equipment manufacturers (“OEM”) and parts distributors of passenger automobiles, trucks, buses, and off-road equipment. In addition, the Company supplies heavy duty power distribution modules, switches and relays to the commercial vehicle industry. The Company also sells its fuses, including blade fuses and high current fuses, battery cable protectors, and varistors, in the automotive replacement parts market. The Company also supplies wiring harness manufacturers and auto parts suppliers worldwide.
- *Industrial Segment*: Provides circuit protection products for industrial and commercial customers. Products include power fuses and other circuit protection devices, including protection and time delay relays, which are used in commercial and industrial buildings and large equipment such as HVAC systems, elevators, and machine tools. The Company also supplies industrial ground fault protection in mining and other large industrial operations.

Segment information is summarized as follows:

(in thousands)	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2017	October 1, 2016	September 30, 2017	October 1, 2016
Net sales				
Electronics	\$ 175,899	\$ 147,730	\$ 499,052	\$ 378,696
Automotive	113,797	106,341	338,094	309,644
Industrial	28,193	26,260	79,539	83,301
Total net sales	\$ 317,889	\$ 280,331	\$ 916,685	\$ 771,641
Depreciation and amortization				
Electronics	\$ 8,986	\$ 7,694	\$ 26,080	\$ 20,783
Automotive	5,622	4,627	16,572	12,881
Industrial	1,338	1,733	3,982	4,561
Other	—	(937)	—	—
Total depreciation and amortization	\$ 15,946	\$ 13,117	\$ 46,634	\$ 38,225
Operating income (loss)				
Electronics	\$ 44,345	\$ 34,571	\$ 122,518	\$ 82,246
Automotive	16,821	15,032	47,599	48,997
Industrial	3,757	57	5,769	3,758
Other ^(a)	(6,314)	(22,134)	(8,155)	(45,345)
Total operating income	58,609	27,526	167,731	89,656
Interest expense	3,467	2,571	9,868	6,286
Foreign exchange loss (gain)	632	(4,700)	(1,483)	(7,114)
Other income, net	(1,013)	(778)	(962)	(1,040)
Income before income taxes	\$ 55,523	\$ 30,433	\$ 160,308	\$ 91,524

(a) Included in “Other” Operating income (loss) for the 2017 third quarter is \$4.8 million (\$6.6 million year-to-date) of acquisition-related and integration charges associated with the company’s acquisitions, including \$1.6 million (\$1.6 million year-to-date) of purchase accounting inventory charges related to the company’s 2017 acquisition of US Sensor as described in Note 2 and \$1.5 million (\$1.5 million year-to-date) of charges related to restructuring and production transfers in our Asia operations.

Included in “Other” Operating income (loss) for the 2016 third quarter is \$14.8 million (14.8 million year-to-date) of charges related to the impairment of goodwill and other intangible assets within the custom products reporting unit, \$5.9 million (\$18.2 million year-to-date) of acquisition-related and integration charges associated with the company’s 2016 acquisitions, \$0.6 million (\$7.5 million year-to-date) of non-cash inventory charges relating to the company’s 2016 acquisitions as described in Note 2, \$1.9 million year-to-date in charges related to the closure of the company’s manufacturing facility in Denmark, \$1.7 million year-to-date related to the company’s transfer of its reed sensor manufacturing operations from the U.S. and China to the Philippines and \$0.9 million (\$1.3 million year-to-date) related to internal legal restructuring costs.

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

(in thousands)	For the Three Months Ended		For the Nine Months Ended	
	September 30, 2017	October 1, 2016	September 30, 2017	October 1, 2016
Net sales				
United States	\$ 103,233	\$ 92,475	\$ 290,538	\$ 270,659
China ^(a)	82,986	70,215	240,731	181,134
Other countries	131,670	117,641	385,416	319,848
Total net sales	\$ 317,889	\$ 280,331	\$ 916,685	\$ 771,641

(a) Included in China are net sales in China and Hong Kong.

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The Company's long-lived assets by country, as of September 30, 2017 and December 31, 2016, were as follows:

(in thousands)	September 30 , 2017	December 31, 2016
Long-lived assets		
United States	\$ 23,922	\$ 23,731
China ^(a)	80,616	65,345
Mexico	61,664	52,262
Philippines	30,760	33,345
Other countries	47,912	42,492
Total long-lived assets	\$ 244,874	\$ 217,175

(a) Included in China are long-lived assets in China and Hong Kong.

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

(in thousands)	For the Nine Months Ended	
	September 30, 2017	October 1 , 2016
Additions to long-lived assets		
United States	\$ 2,752	\$ 4,485
China ^(a)	22,165	8,272
Mexico	15,041	12,312
Philippines	2,018	4,054
Other countries	6,494	5,378
Total additions to long-lived assets	\$ 48,470	\$ 34,501

(a) Included in China are additions to long-lived assets in China 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 ability to satisfy the conditions to closing of the Company's proposed acquisition of IXYS Corporation ("IXYS"), on the expected timing or at all; the occurrence of any event that could give rise to the termination of the merger agreement entered into by the Company and IXYS; the risk of stockholder litigation relating to the proposed transaction, including resulting expense or delay; higher than expected or unexpected costs associated with or relating to the proposed transaction; the risk that expected benefits, synergies and growth prospects of the proposed transaction 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 following the closing of the transaction; the risk that the Company and IXYS will be unable to retain and hire key personnel; and the risk that disruption from the proposed transaction 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 31, 2016. 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 31, 2016.

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

Littelfuse, Inc. and subsidiaries (the "Company") is one of the world's leading designer, manufacturer and supplier of circuit protection products, with expanding platforms in sensors and power control components and modules. In addition to circuit protection products and solutions, the Company offers electronic reed switches and sensors, automotive sensors for comfort and safety systems and a comprehensive line of highly reliable electromechanical and electronic switch and control devices for commercial and specialty vehicles, as well as protection relays and power distribution centers for the safe control and distribution of electricity. The Company has a network of global engineering centers and labs that develop new products and product enhancements, provide customer application support and test products for safety, reliability, and regulatory compliance. The Company's devices protect products in virtually every market that uses electrical energy, from various electronic devices to automobiles to industrial equipment.

The Company conducts its business through three reportable segments, which are defined by markets and consist of Electronics, Automotive, and Industrial. The Company's customer base includes OEMs, Tier One automotive suppliers, and distributors.

Executive Summary

The Company had strong performance in the third quarter of 2017 compared to the third quarter of 2016. For the third quarter of 2017, the Company recognized net sales of \$317.9 million compared to \$280.3 million in the third quarter of 2016 representing an increase of \$37.6 million, or 13.4%. The increase was primarily driven by the Electronics and Automotive segments. Net sales for Electronics increased \$28.2 million, or 19.1%, due to strong growth across all the segment's business units and geographic regions as well as the ON Portfolio and U.S. Sensor acquisitions in August 2016 and July 2017, respectively. Net sales for the Automotive segment increased \$7.5 million, or 7.0% primarily due to growth in the passenger car fuse and commercial vehicle products businesses. Net sales in the Industrial segment increased \$1.9 million or 7.4% due to growth in the fuse and relay businesses, partially offset by the divestiture of the JRS business in October 2016. The Company recognized net income of \$42.8 million, or \$1.87 per diluted share, in the third quarter of 2017 compared to net income of \$30.8 million, or \$1.35 per diluted share in the third quarter of 2016. The increase in net income reflects the impacts of the acquisitions on the current year results as well as a decrease in operating expenses driven by a \$14.8 million goodwill and other intangible impairment charge recorded for the Custom Products reporting unit in the third quarter of 2016 and lower acquisition-related costs partially offset by higher income tax expense.

Net sales for the first nine months of 2017 were \$916.7 million compared to \$771.6 million in the first nine months of 2016. The increase of \$145.1 million, or 18.8%, reflects increased net sales of \$120.4 million, or 31.8%, in the Electronics segment and \$28.5 million, or 9.2%, in the Automotive segment, partially offset by lower net sales of \$3.8 million, or 4.5%, in the Industrial segment. The increase in net sales for the Electronics segment was due to strong growth across all the segment's business units as well as the ON Portfolio, PolySwitch and U.S. Sensor acquisitions. The increase in net sales for the Automotive segment was primarily due to the impact of the prior year acquisitions of PolySwitch and Member's as well as volume growth in the passenger car and commercial vehicle businesses. The Company recognized net income of \$130.3 million, or \$5.69 per diluted share, in the first nine months of 2017 compared to net income of \$77.2 million, or \$3.41 per diluted share in the first nine months of 2016. Net income increased due to the impacts of the aforementioned acquisitions, higher gross profit driven largely driven by a favorable mix within the Electronics segment, a \$14.8 million goodwill and other intangible assets impairment charge recorded in the Custom Products reporting unit in the third quarter of 2016 and lower acquisition-related costs partially offset by higher income tax expense.

Net cash provided by operating activities was \$181.3 million for the nine months ended September 30, 2017 as compared to \$100.0 million for the nine months ended October 1, 2016. The increase in net cash provided by operating activities reflected higher cash earnings, lower cash taxes and the timing of supplier payments partially offset by the timing of customer payments and increased inventory.

On August 28, 2017, the Company announced that it had entered into a definitive agreement to acquire 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 salesforce and global distribution partners. IXYS reported revenues of \$322 million in its fiscal year ended March 31, 2017.

The Company will acquire all of the outstanding shares of IXYS common stock in exchange for a combination of cash and shares of Company common stock. Each IXYS stockholder will be entitled to elect to receive, per IXYS share, either \$23.00 in cash or 0.1265 of a share of Littelfuse common stock, subject to proration so that 50% of the shares of IXYS common stock outstanding immediately prior to the effective time of the merger of the subsidiary of the Company with and into IXYS will be converted into the cash election option and the remaining shares of IXYS common stock will be converted into the stock election option. The exchange ratio is fixed and will not be adjusted for changes in the market value of Littelfuse common stock or IXYS common stock and IXYS equity-based awards will continue to fluctuate until the acquisition is completed. As a result, the final purchase price will differ from the initially announced purchase price, and that difference may be material. The transaction is subject to customary closing conditions, including approval by IXYS stockholders.

On October 13, 2017, the Company amended its existing Credit Agreement to increase the unsecured revolving credit facility from \$575.0 million to \$700.0 million and increase the unsecured term loan credit facility 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 facility 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 occurring on October 13, 2017 and the second advance, in the aggregate amount not to exceed \$75.0 million, to occur in the first quarter of 2018.

Results of Operations

The following table summarizes the Company's consolidated results of operations for the periods presented. The third quarter of 2017 includes approximately \$6.3 million of non-segment charges (\$8.2 million year-to-date). These charges were primarily attributable to acquisition-related and integration costs related to legal, accounting and other expenses associated with completed or contemplated acquisitions of approximately \$4.8 million (\$6.6 million year-to-date), including \$1.6 million (\$1.6 million year-to-date) of purchase accounting inventory charges related to the company's 2017 acquisition of U.S. Sensor as described in Note 2 and \$1.5 million (\$1.5 million year-to-date) of charges related to restructuring and production transfers in our Asia operations.

The third quarter of 2016 includes \$22.1 million of other non-segment charges (\$45.3 million year-to-date). These charges included \$14.8 million (\$14.8 million year-to-date) of charges related to the impairment of the Custom Products reporting unit, \$5.9 million (\$18.2 million year-to-date) of acquisition-related and integration costs associated with the company's 2016 acquisitions, \$0.6 million (\$7.5 million year-to-date) of non-cash inventory charges relating to the company's 2016 acquisitions as described in Note 2, \$1.9 million year-to-date in charges related to the closure of the company's manufacturing facility in Denmark, \$1.7 million year-to-date related to the company's transfer of its reed sensor manufacturing operations from the U.S. and China to the Philippines and \$0.9 million (\$1.3 million year-to-date) related to internal legal restructuring costs.

(in thousands)

	Third Quarter				First Nine Months			
	2017	2016	Change	% Change	2017	2016	Change	% Change
Net sales	\$ 317,889	\$ 280,331	\$ 37,558	13.4%	\$ 916,685	\$ 771,641	\$ 145,044	18.8%
Gross profit	133,651	113,759	19,892	17.5%	379,909	298,780	81,129	27.2%
Operating expenses	75,042	86,233	(11,191)	(13.0%)	212,178	209,124	3,053	1.5%
Operating income	58,609	27,526	31,083	112.9%	167,731	89,656	78,075	87.1%
Income before income taxes	55,523	30,433	25,090	82.4%	160,308	91,524	68,784	75.2%
Income taxes	12,715	(369)	13,084	(3,545.8%)	29,970	14,281	15,689	109.9%
Net income	\$ 42,808	\$ 30,802	\$ 12,006	39.0%	\$ 130,338	\$ 77,243	\$ 53,095	68.7%

Net Sales

Net sales increased \$37.6 million, or 13.4%, for the third quarter of 2017 compared to the third quarter of 2016 with increases of \$8.5 million and \$2.9 million resulting from incremental net sales related to the ON Portfolio and U.S. Sensor acquisitions, respectively. The remaining increase in net sales was driven by higher volume across all product lines in the Electronics segment and in the passenger car and commercial vehicle businesses within the Automotive segment.

Net sales for the first nine months of 2017 increased \$145.0 million, or 18.8% compared to the first nine months of 2016 with \$85.9 million resulting from the prior year acquisitions of PolySwitch, ON Portfolio, and Member's and \$2.9 million from the current year U.S. Sensor acquisition. The remaining increase in net sales was primarily due to higher volume across all product lines in the Electronics segment and passenger car and commercial vehicle businesses within the Automotive segment partially offset by the divestiture of a core product line in the fourth quarter of 2016 and lower volume in the custom products operations within the Industrial segment.

Gross Profit

Gross profit was \$133.7 million, or 42.0% of net sales, in the third quarter of 2017, compared to \$113.8 million, or 40.6% of net sales in the third quarter of 2016. The increase in gross profit and gross margin reflects the incremental net sales and improved leverage in expenses and profits related to the prior year acquisitions.

Gross profit for the first nine months of 2017 was \$379.9 million, or 41.4% of net sales compared to \$298.8 million, or 38.7% of net sales for the first nine months of 2016. The increase in gross profit and gross margin reflects the incremental net sales and improved leverage in expenses and profits related to the prior year acquisitions primarily in the Electronics segment.

Operating Expenses

Total operating expenses were \$75.0 million, or 23.6% of net sales, for the third quarter of 2017 compared to \$86.2 million, or 30.8% of net sales, for the third quarter of 2016. The decrease in operating expenses of \$11.2 million was primarily due to the \$14.8 million goodwill and other intangible asset impairment charges related to the Custom Products reporting unit recognized in the third quarter of 2016 that was partially offset by increased amortization expense associated with recent acquisitions of \$1.9 million and higher research and development expenses of \$1.6 million. Selling, general and administrative expenses increased slightly by \$0.2 million to \$56.8 million, but decreased from 20.2% to 17.9% as a percentage of net sales, for the three months ended September 30, 2017 versus the three months ended October 1, 2016 primarily as a result of cost control initiatives and lower acquisition and integration charges.

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Total operating expenses for the first nine months of 2017 were \$212.2 million, or 23.1% of net sales compared to \$209.1 million, or 27.1% of net sales, for the first nine months of 2016. The increase in operating expenses of \$3.1 million was primarily due to acquisitions, higher selling costs, higher research and development costs of \$6.0 million and an increase of \$5.0 million in amortization expense of intangible assets due to the acquisitions, partially offset by the \$14.8 million of goodwill and other intangible asset impairment charges recognized in 2016 and lower acquisition-related expenses and integration costs of \$9.2 million. Selling, general and administrative expenses increased by \$6.9 million to \$156.9 million, but decreased from 19.4% to 17.1% as a percentage of net sales for the nine months ended September 30, 2017 versus the same period in 2016 primarily as a result of lower acquisition-related expenses and integration costs of \$9.2 million and cost control initiatives partially offset by the acquisitions.

Operating Income

Operating income was \$58.6 million, an increase of \$31.1 million or 113.0% for the third quarter of 2017 compared to \$27.5 million for the third quarter of 2016. The increase in operating income was due to the acquisitions and higher Electronics volume and associated gross margin increases along with the \$14.8 million goodwill and other intangible assets impairment charges recorded in the third quarter of 2016. Operating margins increased from 9.8% for the three months ended October 1, 2016 to 18.4% for the three months ended September 30, 2017. The 2016 goodwill and other intangible asset impairment charge improved margins by 5.3% while the remaining increase was due to higher volume, improvements in gross margin percentage, lower acquisition costs and operational efficiencies.

Operating income for the first nine months of 2017 was \$167.7 million, an increase of \$78.1 million or 87.1% compared to \$89.7 million for the first nine months of 2016. The increase in operating income was the result of acquisitions and higher volume in the Electronics and Automotive segments. Operating margins increased from 11.6% to 18.3% for the nine months ended September 30, 2017 due to the acquisitions, improvement in gross margins, lower acquisition and integration related costs, the prior year goodwill and other intangible asset impairment charge and operational efficiencies.

Income Before Income Taxes

Income before income taxes was \$55.5 million, or 17.5% of net sales, for the third quarter of 2017 compared to \$30.4 million, or 10.9% of net sales, for the third quarter of 2016. Income before income taxes was impacted by higher operating income as described above, partially offset by an unfavorable increase in foreign exchange losses of \$5.3 million primarily in the euro and Philippine peso against the U.S. dollar and higher interest expense of \$0.9 million, reflecting increased borrowings.

Income before income taxes for the first nine months of 2017 was \$160.3 million, or 17.5% of net sales compared to \$91.5 million, or 11.9% of net sales, for the first nine months of 2016. Income before income taxes was impacted by an increase in operating income described above, partially offset by unfavorable changes in foreign exchange rates of \$5.6 million primarily as a result of fluctuations in the euro and Philippine peso against the U.S. dollar and higher interest expense of \$3.6 million due to higher borrowings.

Income Taxes

Income tax expense was \$12.7 million, or an effective tax rate of 22.9% , for the third quarter of 2017 compared to income tax benefit of \$0.4 million, or an effective tax rate of negative 1.2%, for the third quarter of 2016. The effective tax rates for both the third quarter of 2017 and the third quarter of 2016 are lower than the U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions. The effective tax rate for the third quarter of 2017 reflected a forecasted accrual for taxes on undistributed current year-earnings of certain non-US affiliates. The effective tax rate for the third quarter of 2016 reflected a one-time deduction with respect to the stock of one of the company's affiliates partially offset by the impact of the impairment of goodwill for which no tax benefit was recorded.

Income tax expense for the first nine months of 2017 was \$30.0 million, or an effective tax rate of 18.7% compared to income tax expense of \$14.3 million, or an effective tax rate of 15.6%, for the first nine months of 2016. The effective tax rates for both the first nine months of 2017 and the first nine months of 2016 are lower than the U.S. statutory tax rate primarily due to income earned in lower tax jurisdictions. The effective tax rate for the first nine months of 2017 reflected a forecasted accrual for taxes on undistributed current year-earnings of certain non-US affiliates. The effective tax rate for the first nine months of 2016 reflected the third quarter one-time deduction with respect to the stock of one of the company's affiliates partially offset by the impact of the impairment of goodwill for which no tax benefit was recorded.

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 10, *Segment Information* , of the Notes to the Condensed Consolidated Financial Statements included in this Quarterly Report.

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

(in thousands)

	Third Quarter				First Nine Months			
	2017	2016	Change	% Change	2017	2016	Change	% Change
Electronics	\$ 175,899	\$ 147,730	\$ 28,169	19.1%	\$ 499,052	\$ 378,696	\$ 120,356	31.8%
Automotive	113,797	106,341	7,456	7.0%	338,094	309,644	28,450	9.2%
Industrial	28,193	26,260	1,933	7.4%	79,539	83,301	(3,762)	(4.5%)
Total	\$ 317,889	\$ 280,331	\$ 37,558	13.4%	\$ 916,685	\$ 771,641	\$ 145,044	18.8%

Electronics Segment

The Electronics segment net sales increased \$28.2 million, or 19.1%, in the third quarter of 2017 compared to the third quarter of 2016 due to incremental net sales related to the ON Portfolio and U.S. Sensor acquisitions, higher volume across all product lines and favorable foreign exchange impacts of \$0.8 million.

The Electronics segment net sales increased \$120.4 million, or 31.8%, in the first nine months of 2017 compared to the first nine months of 2016 primarily due to the PolySwitch, ON Portfolio and U.S. Sensor acquisitions, higher volume across all product lines that were partially offset by unfavorable foreign exchange impacts of \$1.3 million.

Automotive Segment

The Automotive segment net sales increased \$7.5 million, or 7.0%, in the third quarter of 2017 compared to the third quarter of 2016 primarily due to increased volume in the passenger car and commercial vehicle products businesses and favorable changes in foreign exchange rates of \$1.7 million that were partially offset by a decrease in net sales from the automotive sensor business.

The Automotive segment net sales increased \$28.5 million, or 9.2%, in the first nine months of 2017 compared to the first nine months of 2016 primarily due to the incremental net sales associated with the PolySwitch and Member's acquisitions, higher volume in passenger car and commercial vehicle products that were partially offset by unfavorable foreign exchange impacts of \$1.7 million and lower volume in automotive sensor products.

Industrial Segment

The Industrial segment net sales increased \$1.9 million, or 7.4%, in the third quarter of 2017 compared to the third quarter of 2016 primarily due to higher volume in the power fuse and relay operations partially offset by the divestiture of a non-core product line in the custom products business.

The Industrial segment net sales decreased \$3.8 million, or 4.5%, in the first nine months of 2017 compared to the first nine months of 2016 primarily due to the divestiture of two non-core product lines, one in the fourth quarter of 2016 and the other in the first quarter of 2016, and lower volume in the custom products 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)

	Third Quarter				First Nine Months			
	2017	2016	Change	% Change	2017	2016	Change	% Change
Americas	\$ 115,499	\$ 106,112	\$ 9,387	8.9%	\$ 328,563	\$ 313,231	\$ 15,332	4.9%
Europe	63,365	52,200	11,165	21.4%	182,534	149,417	33,117	22.2%
Asia-Pacific	139,025	122,019	17,006	13.9%	405,588	308,993	96,595	31.3%
Total	\$ 317,889	\$ 280,331	\$ 37,558	13.4%	\$ 916,685	\$ 771,641	\$ 145,044	18.8%

Americas

Net sales in the Americas increased \$9.4 million, or 8.9%, in the third quarter of 2017 compared to the third quarter of 2016 driven by incremental sales from acquisitions and increased volume in the passenger car and commercial vehicle businesses in the Automotive segment and all product lines in the Electronics segment that were partially offset by lower volume in sensor products within the Automotive segment and the divestiture of a non-core product line in our Industrial segment.

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Net sales in the Americas increased \$15.3 million, or 4.9%, in the first nine months of 2017 compared to the first nine months of 2016 resulting from acquisitions and higher volume in the passenger car and commercial vehicle businesses in the Automotive segment and all product lines in the Electronics segment that were partially offset by lower volume in sensor products and the divestiture of a non-core product line in our Industrial segment.

Europe

European net sales increased \$11.2 million, or 21.4%, in the third quarter of 2017 compared to the third quarter of 2016. The increase in net sales was primarily due to the prior year ON Portfolio acquisition and higher volumes in the passives business in the Electronics segment and the passenger car and commercial vehicle businesses in the Automotive segment and \$3.0 million in favorable foreign currency effects.

European net sales increased \$33.1 million, or 22.2%, in the first nine months of 2017 compared to the first nine months of 2016. The increase in net sales was primarily due to acquisitions and increased net sales in the passives business in the Electronics segment and the passenger car business in the Automotive segment and higher volume

Asia-Pacific

Asia-Pacific net sales increased \$17.0 million, or 13.9%, in the third quarter of 2017 compared to the third quarter of 2016 primarily due to incremental net sales from the prior year ON Portfolio acquisition and higher net sales in all of the Electronics segment's business.

Asia-Pacific net sales increased \$96.6 million, or 31.3%, in the first nine months of 2017 compared to the first nine months of 2016, primarily due to incremental net sales from prior year acquisitions and increased volume in the passive and semiconductor businesses in the Electronics segment.

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.

Revolving Credit Facility/Term Loan

On October 13, 2017, the Company amended its existing Credit Agreement to increase the unsecured revolving credit facility from \$575.0 million to \$700.0 million and increase the unsecured term loan credit facility 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 facility 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 occurring on October 13, 2017 and the second advance, in the aggregate amount not to exceed \$75.0 million, to occur in the first quarter of 2018.

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 consists 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 has 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. For the term loan credit facility, the Company is required to make quarterly principal payments of \$1.6 million through March 31, 2018 and \$3.1 million from June 30, 2018 through December 31, 2020 with the remaining balance due on March 4, 2021.

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 0.30%, based on the Consolidated Leverage Ratio, as defined. The effective interest rate on outstanding borrowings under the credit facility was 2.73% at September 30, 2017. As of September 30, 2017, the Company had \$0.1 million outstanding in letters of credit and had available \$559.9 million of borrowing capacity under the revolving credit facility. Further information regarding the Company's credit agreement is provided in Note 4, 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 4, *Debt*, of the Notes to the Condensed Consolidated Financial Statements included in this Quarterly Report.

Cash Flow Overview

(in thousands)	First Nine Months	
	2017	2016
Net cash provided by operating activities	\$ 181,320	\$ 100,015
Net cash used in investing activities	(79,201)	(498,481)
Net cash (used in) provided by financing activities	(6,491)	262,381
Effect of exchange rate changes on cash and cash equivalents	2,076	1,793
Increase (decrease) in cash and cash equivalents	97,704	(134,292)
Cash and cash equivalents at beginning of period	275,124	328,786
Cash and cash equivalents at end of period	\$ 372,828	\$ 194,494

The following describes the Company’s cash flows for the nine months ended September 30, 2017 and October 1, 2016.

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 \$181.3 million for the first nine months of 2017, compared to \$100.0 million during the nine months ended October 1, 2016. The increase in net cash provided by operating activities was primarily driven by higher cash earnings, lower cash taxes and the timing of supplier payments partially offset by the timing of customer payments and inventory.

Cash Flow from Investing Activities

Net cash used in investing activities was \$79.2 million for the nine months ended September 30, 2017, compared to \$498.4 million during the nine months ended October 1, 2016. Net cash used for acquisitions of \$38.6 million in the nine months ended September 30, 2017 primarily related to the acquisition of a majority stake in Monolith Semiconductor (\$14.2 million) and the acquisition of U.S. Sensor (\$24.4 million). Net cash used for acquisitions of \$468.6 million for the nine months ended October 1, 2016 primarily related to the acquisitions of Polyswitch (\$344.5 million), the ON portfolio business (\$104.0 million) and Member’s (\$19.2 million). Capital expenditures was \$48.5 million, representing an increase of \$14.0 million compared to 2016.

Cash Flow from Financing Activities

Net cash used in financing activities was \$6.5 million for the nine months ended 2017 compared to net cash provided by financing activities of \$262.4 million for the nine months ended 2016. The Company had \$140.0 million of proceeds from the credit facility and senior notes payable and \$117.2 million of payments on the term loan and credit facility in 2017 as compared to \$492.0 million of proceeds from the credit facility and term loan and \$216.6 million of payments on the term loan and credit facility. Additionally, dividends paid increased \$3.0 million from \$20.4 million in 2016 to \$23.4 million for the nine months ended September 30, 2017.

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, 2017 to April 30, 2018 (“Share Repurchase Program”). The Company did not repurchase any shares of its common stock during the third quarter of 2017.

Off-Balance Sheet Arrangements

As of September 30, 2017, 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.

Recent Accounting Pronouncements

In March 2017, the FASB issued 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 changes the presentation of net periodic pension and post-retirement benefit cost (net benefit cost) within the Statement of Income. Under the current guidance, net benefit cost is reported as an employee cost within operating income. The amendment requires 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 will be effective for the first quarter of 2018 and is required to be retrospectively adopted. Had this guidance been adopted as of January 1, 2017, operating income within the Condensed Consolidated Statements of Income for the three months and nine months ended September 30, 2017 would have not changed by a material amount.

In January 2017, the FASB issued ASU No. 2017-04, "Intangibles-Goodwill and Other" (Topic 350). This ASU modifies the concept of impairment from the condition that exists when the carrying amount of goodwill exceeds its implied fair value to the condition that exists when the carrying amount of a reporting unit exceeds its fair value. An entity no longer will determine goodwill impairment by calculating the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit had been acquired in a business combination. Because the update will eliminate Step 2 from the goodwill impairment test, it should reduce the cost and complexity of evaluating goodwill for impairment. This ASU is effective for annual or any interim goodwill impairment tests in fiscal years beginning after December 15, 2020, with early adoption is permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. The Company expects to adopt the new standard in 2017.

In January 2016, the FASB issued ASU No. 2016-01, "Financial Instruments-Recognition and Measurement of Financial Assets and Financial Liabilities" which addresses certain aspects of the recognition, measurement, presentation and disclosure of financial instruments. The ASU will require the Company to recognize any changes in the fair value of certain equity investments in net income. These changes are currently recognized in other comprehensive income ("OCI"). This guidance is effective for interim and fiscal years beginning after December 15, 2017.

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, however the Company plans to adopt the standard in the first quarter of 2019. The Company is currently evaluating the impact of ASU 2016-02.

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. In August, 2015, the FASB issued ASU No. 2015-14, which postponed the effective date of ASU No. 2014-09 to fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, with early adoption permitted on the original effective date of fiscal years beginning after December 15, 2016. The Company is in the process of performing its assessment of the potential impact on its consolidated financial statements and has not concluded on its adoption methodology. While the Company is currently assessing the impact of the new standard, the Company's revenue is primarily generated from the sale of finished products to customers. Sales predominantly contain a single delivery element and revenue is recognized at a single point in time when ownership, risks, and rewards transfer. These are largely un-affected by the new standard. The Company does not expect this new guidance to have a material impact on the amount of overall sales recognized; however, the timing of sales on certain projects may be affected. The Company has not yet quantified this potential impact.

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 31, 2016. During the three months ended September 30, 2017, there were no significant changes in the application of critical accounting policies.

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 31, 2016. During the three months ended September 30, 2017, 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 September 30, 2017. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of the quarter ended September 30, 2017, our disclosure controls and procedures were effective.

(b) Changes in Internal Control over Financial Reporting

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 September 30, 2017 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 three months ended September 30, 2017, there have been no material changes from the risk factors disclosed in our Annual Report on Form 10-K for our year ended December 31, 2016.

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.

ITEM 4. MINE SAFETY DISCLOSURES

None.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

<u>Exhibit</u>	<u>Description</u>
2.1	Agreement and Plan of Merger, dated August 25, 2017, by and among IXYS Corporation, Littelfuse, Inc. and Iron Merger Co., Inc. (filed as Exhibit 2.1 to the Company's Current Report on Form 8-K filed August 28, 2017, Commission File No. 20388). ⁺
10.1	Employment offer letter between Littelfuse, Inc and Jeffrey Gorski, dated June 28, 2017. (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed August 14, 2017, Commission File No. 20388).
10.2	Form of Change in Control Agreement (Jeffrey Gorski). (filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed August 14, 2017, Commission File No. 20388).
10.3	First Amendment to Credit Agreement, dated as of November 1, 2016, among Littelfuse, Inc., certain subsidiaries of the company, as designated borrowers, certain subsidiaries of the company, as guarantors, the lenders party thereto and Bank of America, N.A., as agent. (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.4	Second Amendment to Credit Agreement, dated as of October 13, 2017, among Littelfuse, Inc., certain subsidiaries of the company, as designated borrowers, certain subsidiaries of the company, as guarantors, the lenders party thereto and Bank of America, N.A., as agent. (filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.5	Joinder Agreement, dated as of October 13, 2017, by and between Iron Merger Co., Inc. and Bank of America, N.A., as agent. (filed as Exhibit 10.3 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.6	Joinder Agreement, dated as of October 13, 2017, by and between IXYS Merger Co., LLC and Bank of America, N.A., as agent. (filed as Exhibit 10.4 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.7	U.S. Subsidiary Guarantor Supplement, dated as of October 13, 2017, made by Iron Merger Co., Inc. in favor of the note purchasers and the other holders. (filed as Exhibit 10.5 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.8	U.S. Subsidiary Guarantor Supplement, dated as of October 13, 2017, made by IXYS Merger Co., LLC in favor of the note purchasers and the other holders. (filed as Exhibit 10.6 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.9	Cross Border Subsidiary Guarantor Supplement, dated as of October 13, 2017, made by Iron Merger Co., Inc. in favor of the note purchasers and the other holders. (filed as Exhibit 10.7 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
10.10	Cross Border Subsidiary Guarantor Supplement, dated as of October 13, 2017, made by IXYS Merger Co., LLC in favor of the note purchasers and the other holders. (filed as Exhibit 10.8 to the Company's Current Report on Form 8-K filed October 16, 2017, Commission File No. 20388).
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 supplementally 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 September 30, 2017, 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

By: /s/ Jeffrey G. Gorski

Jeffrey G. Gorski

Vice President and Chief Accounting Officer

Date: November 1, 2017

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: November 1, 2017

/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: November 1, 2017

/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 September 30, 2017 (“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: November 1, 2017

Dated: November 1, 2017