



CAPTAINS OF THE INDUSTRY

The Top 50 biggest process control and automation suppliers worldwide and in North America navigate today's economic and technological hurricanes.

by Allen Avery, Larry O'Brien and Jim Montague

**TOP 50
GLOBAL
AUTOMATION VENDORS**

2014 Worldwide Revenue (US \$ millions)

1. Siemens	13,403.23
2. ABB	11,168.11
3. Emerson	9,538.20
4. Schneider Electric	7,511.00
5. Rockwell Automation	6,296.57
6. GE	3,840.16
7. Mitsubishi Electric	3,805.10
8. Danaher	3,525.80
9. Honeywell	3,493.68
10. Yokogawa Electric	3,373.73
11. Endress+Hauser	2,720.91
12. Omron	2,439.01
13. Phoenix Contact	2,391.89
14. Ametek EIG	2,276.72
15. IMI	2,183.05
16. Cameron	2,125.00
17. Fanuc	2,014.48
18. Spectris	1,937.90
19. Flowserve	1,615.70
20. Festo	1,615.68
21. FMC	1,502.20
22. Yaskawa	1,296.17
23. Advantech	1,280.33
24. National Instruments	1,243.86
25. Teledyne Instruments	1,125.18
26. Mettler-Toledo	1,107.00
27. Wika	1,081.08
28. azbil Group (Yamatake)	935.75
29. Weidmuller	909.46
30. IFM	895.95
31. Wago	893.24
32. Metso	854.87
33. Bosch Rexroth	830.40
34. Roper Industries	827.14
35. Samson	825.68
36. Hitachi	823.06
37. Fuji Electric	813.70
38. Eaton	785.94
39. MKS Instruments	780.87
40. Harting	739.19
41. B&R	722.97
42. Pepperl+Fuchs	709.46
43. Beckhoff	689.19
44. Belden	682.37
45. Toshiba	671.00
46. Krohne	639.19
47. Turck	635.14
48. Burkert	556.76
49. Thermo Fisher Scientific	528.35
50. Pilz	442.14

TOTAL 113,103.56

CONTROL/ARC AUTOMATION TOP 50

Sometimes it's full speed ahead. Other times it's batten down the hatches. But mostly it's a combination of both. The trick is knowing when and where to steer process manufacturing applications and facilities to achieve the greatest efficiency, productivity and profitability—not to mention finding safe harbors from the onslaught of economic, technological and other potentially damaging elemental forces.

These days, the main financial storm is a rain of oversupply and declining oil and gas prices, which are halting many upstream projects even as they spur downstream process industries. Meanwhile, the main technical downpour is the continuing emergence of digital technologies, including software and microprocessors, Ethernet and Internet protocol (IP) networking, virtual and cloud computing, and the Internet of Things (IoT) and smart manufacturing.

Steady hands and growth

Of course, some of the most astute navigators are the Top 50 worldwide and North American process control and automation suppliers because they can see farthest ahead, respond before most maelstroms arrive, acquire helpful firms and tools, and even change course for unexpected squalls. This steady-as-she-goes capability is why the same cornerstone vendors perennially occupy the top spots in both Top 50 lists—even through the rare instances when they combine to form new vessels.

The most recent and significant of these mergers—Schneider Electric's acquisition of Invensys in January 2014—finally showed up in its results for the year, bumping it up from fifth to fourth on both the global and North American lists. This might seem like a tectonic shift among rankings that have been static for years, but it's logical when Invensys' more than \$2 billion in global revenue including \$630 million in North American revenue are added to Schneider's more than \$5.5 billion in global revenue including \$1.4 billion in North American revenue.

New members of the global Top 50 are Belden with more than \$682 million in revenue and Pilz with just over \$442 million in revenue. New members of the North American Top 50 include Aspen Technology with \$168 million in rev-

CONTROL/ARC AUTOMATION TOP 50

enue, Cashco with \$96 million in revenue, and Beckhoff Automation with almost \$69 million in revenue.

Likewise, several Top 50 members also achieved double-digit percentage revenue growth in both the global and North American sectors. They include Ametek EIG, Endress+Hauser, MKS Instruments, Advantech, FMC, Toshiba, Thermo Fisher Scientific, Eaton, OSISOft, Aspen Technology, Metso, B&R, Harting, Beckhoff and Pilz.

Overall, the global Top 50's earnings continued their traditional and steady increase—5.4% per year this time—from over \$107 billion in 2013 to just over \$113 billion in 2014. Meanwhile, the North American Top 50's earnings increased by almost 7.3% from just over \$28 billion in 2013 to just over \$30 billion in 2014.

Over-production and pullback

Much of the Top 50's growth has been due to the ongoing economic recovery following the 2008 recession and the fracking-aided gas and oil boom beginning in 2010-11. More recent growth has likely been muted by the subsequent oil and gas oversupply, glut, price drop, production pullback and employment reduction, especially during the second half of 2014 and into this year.

In addition, even though low energy costs boost many industries consuming them, such as chemicals, mining, pulp and paper, food and beverage, automotive, discrete manufacturing and others, the continued slide in oil and gas revenues is still likely to rein in the Top 50's revenues to a bit less than 5% growth during 2015. In fact, quarterly reports by ARC Advisory Group found that automation revenues were down 0.5% in the first quarter of 2015 (1Q15), down 2-3% in 2Q15, and down about 5% in 3Q15, which is expected to add up to a 7% annual revenue decline for 2015 compared to the year before.

Many of these conditions will probably persist through 2016, but some will also begin to moderate or even turnaround in the second half of next year, and then a growth path will likely begin in 2017 that will be closer to the process industries' typical 3% annual growth rate.

Regional forces have obviously shaped these trends differently in different places. For example, Alberta's oil sands region and expected arctic projects have been especially hard hit by falling oil prices. In Brazil, investment by Petrobras in ultra-deepwater oil drilling in its offshore, pre-salt area has been scaled back. Similarly, the push to renewable power generation in the Europe, Middle East, Africa (EMEA) region has reduced the distributed control system (DCS) market because wind and solar systems don't need as much sophisticated automation.

Year of acquisitions

To cope with present and future upheavals, many of the Top 50 routinely acquire technologies and other companies that can help them fill gaps in their portfolios, and shed ones that aren't as necessary or can perform better on their own. This activity is often prevalent in slower production years.

Beyond the Schneider Electric and Invensys merger, several other Top 50 suppliers like Honeywell and Yokogawa have reportedly

TOP 50 NORTH AMERICAN AUTOMATION VENDORS

2014 North American Revenue (US\$ millions)	
1. Emerson	4,121.45
2. Rockwell Automation	3,512.90
3. ABB	2,313.67
4. Schneider Electric	2,027.97
5. Danaher	1,586.61
6. GE	1,480.92
7. Siemens	1,293.82
8. Ametek EIG	1,257.10
9. Teledyne Instruments	899.02
10. Honeywell	890.77
11. Cameron	691.68
12. Spectris	614.31
13. Roper Industries	613.70
14. Endress+Hauser	590.44
15. Flowserve	581.65
16. National Instruments	495.96
17. IMI	480.83
18. MKS Instruments	421.67
19. Belden	388.95
20. Advantech	384.10
21. FMC	375.55
22. Toshiba	366.79
23. Mettler-Toledo	334.24
24. Badger Meter	321.74
25. Yokogawa Electric	320.99
26. Omron	292.68
27. Yaskawa	292.06
28. Thermo Fisher Scientific	271.05
29. Festo	242.35
30. Turck	229.28
31. Mitsubishi Electric	222.74
32. Eaton	190.20
33. Weidmuller	178.25
34. OSISOft	168.74
35. Aspen Technology	168.00
36. Metso	162.43
37. IFM	134.39
38. Wago	133.99
39. Vega	121.62
40. Phoenix Contact	119.59
41. Parker	114.90
42. Bosch Rexroth	111.30
43. B&R	108.45
44. Wika	108.11
45. Cashco	96.15
46. SPX	92.09
47. Pepperl+Fuchs	83.72
48. Krohne	70.31
49. Harting	70.27
50. Beckhoff	68.92
TOTAL	50,218.42

strengthened their positions and solutions for the natural gas industry. Likewise, Emerson Process Management reported Oct. 21 that it acquired IntelliSAW Inc., a provider of systems that protect electric power transmission and distribution equipment; announced on Sept. 8 that it acquired Spectrex Inc., a fire and gas detection supplier; and reported in June that it's purchased leak-detection supplier Energy Solutions International (ESI). Meanwhile, back in June, Emerson's parent company reported that it's planning to spin off its network power business, and is considering selling parts of its industrial automation business that includes its Control Techniques drives division.

Some other significant purchases and mergers during 2015 include:

- GE Oil and Gas agreed in October to acquire Norway-based Advantec, a provider of subsea intervention equipment and services;
- Schlumberger reported in August that it's buying Cameron for almost \$15 billion;
- Pepperl+Fuchs announced in August that it's buying MACtek, a supplier of WirelessHART adapters, modems and other components;
- ABB added on Aug. 24 that it's acquired full ownership of CGM, which provides advanced control room design and furniture solutions for the process industries; and
- Honeywell reported in July that it's acquired Elster, the gas-metering division of Melrose Industries.

[For more information, visit Larry O'Brien's blog at <http://automation2.com>.]

Lookout from the crow's nest

Once they're outfitted with new tools and capabilities, the Top 50 can not only scan the horizon for more approaching bad weather, but be more confident that they're prepared to handle it.

"Since Q4 of last year, since oil prices have changed and capital investments have been reduced," said Vimal Kapur, president of Honeywell Process Solutions (HPS), during Honeywell Users Group Americas 2015 in June. He added that investments were up about 20% in 2010 and 2011, and remained flat through 2014, but so far, 2015 is down about 12%. Operational expense spending is also off. "We're highly sensitive to this, and understand the business chal-

lenges. Different experts offer different future scenarios, but for now and for the foreseeable future, we're in a challenging time when it's harder to justify investment and spending is reduced."

To help owner/operators do more with less, operate safely and in compliance, leverage technology to stay relevant and manage the rising skills gap, Kapur added that HPS is expanding the role of the DCS, employing cloud computing, improving safety and cybersecurity capabilities, adopting standardized and pre-engineered controls, and refining its field devices with smart instrumentation.

Steve Sonnenberg, president, Emerson Process Management, speaking at Emerson Global Users Exchange 2015 in

October, reported, "There's a tremendous opportunity for all of us. Oil and gas companies can increase efficiencies, reduce costs and come out stronger. Industries that can take advantage of lower feedstock and energy prices can raise productivity and make the most of their assets.

"How are your companies reacting? Traveling around the world, the executives I talk with feel a need for transformative improvements. Pressed by their boards of directors, they're saying this is not a time to be satisfied with being as good as everyone else." ■

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How the Top 50 lists are derived and assembled

ARC Advisory Group analysts and Control editors discover new firms to add to the Top 50 lists each year. If you find one that should be listed but isn't, let us know, so it can be evaluated for potential inclusion. Though companies with increased sales are added and those with decreased sales relative to the others or those that have been acquired are removed, the Top 50's basic analysis methodology hasn't changed for years. If anything, its scope and focus on revenue generated by process control and automation activities have grown tighter.

Technologies included in the Top 50 definition:

- Process automation systems and related hardware, software and services;
- PLC and related hardware, software, services, I/O and bundled HMI;
- Other control hardware components, such as third-party I/O, signal conditioners, intrinsic safety barriers, networking hardware, unit controllers, and single- and multi-loop controllers;
- Process safety systems;
- SCADA systems for oil and gas, water and wastewater, and power distribution;
- AC drives;
- Motion control systems;
- Computer numerical control (CNC) systems;
- Process field instrumentation, such as temperature and pressure transmitters, flowmeters, level transmitters and associated switches;
- Analytical equipment, including process electrochemical, all types of infrared technology, gas chromatographs for industrial manufacturing, and related and support products;
- Control valves, actuators and positioners;
- Discrete sensors and actuators;

- All kinds of automation-related software from advanced process control, simulation and optimization to third-party HMI, plant asset management, production management (MES), ERP integration packages from automation suppliers, and similar software.
- Other automation-related services provided by automation suppliers;
- Condition-monitoring equipment and systems;
- Ancillary systems, such as burner management systems, quality control systems for pulp and paper, etc.

Technologies not included in the Top 50 definition:

- Pumps and motors;
- Robotics;
- Material-handling systems;
- Supply chain management software;
- Building automation systems;
- Fire and security systems;
- Processing equipment such as mixers, vessels, heaters, as well as process design licenses from suppliers that have engineering divisions;
- Electrical equipment, such as low-voltage switchgear, etc.