

# ROBO-STOX®

#### The ROBO-STOX® Global Robotics and Automation UCITS Index

as of September 14, 2015

## **Description**

The world is in the early stages of a transformational new economic era, driven by the increasing adoption of sophisticated Robotics and Automation technologies across all aspects of industry and day-to-day life. After the rise of the internet age, rapid advances in technology such as machine vision, motion sensors and navigation algorithms are enabling robots to perform increasingly sophisticated and delicate knowledge-based work. This widens their use to an incredible array of industries and applications that we are only just beginning to appreciate.

ROBO-STOX® is the first company to provide a platform for investors and other interested parties to understand and track this Robotics and Automation industry on a global basis. The ROBO-STOX® Global Robotics and Automation UCITS Index benchmarks the entire value chain of robotics, automation, and enabling technologies. This value chain captures not only the traditional industrial robotics hardware, but also those companies developing the latest technologies and software in robotics and deploying those technologies into new applications.

Today, the Index is comprised of 80 companies with headquarters and listings in over 15 different countries around the world. To create and maintain the Index ROBO-STOX has assembled a group of industry analysts comprised of leaders from both the academic and financial research world who work closely with our management team.

#### Performance Chart<sup>1</sup>

ROBO-STOX® Index Performance Past 10 Years - Rebased 100 = September 2005



<sup>&</sup>lt;sup>1</sup>The index criteria were modified with effect from 1 October 2014 as per the published index guidelines. For the period prior to 1 October 2014, the data shown is derived from the published index values which, prior to 16 June 2014, are based on simulated back-tested data.

#### **Index Facts**

| Go Live Date         | 16 <sup>th</sup> June 2014 |  |
|----------------------|----------------------------|--|
| Index Components     | 80                         |  |
| Bellwether compani   | es (BW)                    | 20                                     |
| Non Bellwether con   | npanies (NBW)              | 60                                     |
| Eligible Universe    | All companies within th    | e ROBO-STOX Industry<br>Classification |
| Weighting            | Equal weighting approa     | nch within BW (40%) and<br>NBW (60%)   |
| Rebalance Frequen    | ісу                        | quarterly                              |
| Additions / Deletion | quarterly                  |  |

| Calculation Frequency | every 15 seconds 9.30am to 4.30pm GMT  |
|-----------------------|--|
| Dividend treatment    | Price return and total return versions are available. The total return version of the index is calculated with gross dividends reinvested. |
| History availability  | available daily back to December 31st 2003   |
| Base Value            | 100  |
| Base Date             | December 31st 2003   |
| Bloomberg Ticker      | ROBOT Index  |
| Reuters Ticker        | .ROBOT   |

## **Key Statistics**

|                    | 1M     | 6M      | YTD     | 1Y      | 2003 <sup>2</sup> |
|--------------------|--------|---------|---------|---------|-------------------|
| Performance (eff.) | -5.99% | -12.37% | -11.81% | -15.25% | 325.92%           |
| Volatility (p.a.)  | 21.41% | 13.25%  | 12.42%  | 12.15%  | 18.38%            |
| Max. Drawdown      | -8.72% | -19.44% | -19.44% | -19.44% | -58.36%           |
| Sharpe Ratio       | -2.41  | -1.64   | -1.31   | -1.24   | 0.59              |

### Fundamentals<sup>3</sup>

| 21.96x |
|--------|
| 2.82x  |
| 1.89x  |
| 17.76x |
|        |

<sup>3</sup>as of June 22, 2015. The calculation is based on the median

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Since

<sup>&</sup>lt;sup>2</sup>Including back-tested data prior to 16 June 2014.



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### **Index Methodology**

The ROBO-STOX® Global Robotics and Automation UCITS Index is maintained by a team of financial and robotics experts to ensure that it remains a leading indicator of the industry. The Index is global, deliberately broad and built for the long term which reflects the early stages of the Robotics and Automation industry. Including all players in a proportionate and equally weighted fashion ensures that we capture the overall growth trend while minimizing company-specific risk.

The Index is made up of "bellwether" (40%) and "non-bellwether" (60%) companies. Bellwether companies (BWs) are well established leading players, whose core business is directly related to Robotics and Automation. Non-bellwether companies (NBWs) have a distinct portion of their business and revenue in Robotics and Automation and have the potential to grow through innovation and/or market adoption of their products and/or services. Within BW and NBW each constituent is equally weighted. This approach avoids the large capitalisation and "buy high, sell low" biases of market capitalisation indices and ensures that the Index provides exposure to companies in the early stages of new innovation and technologiesas well as the more established players. The 40/60 weighting results in each BW having roughly twice the weight of each NBW.

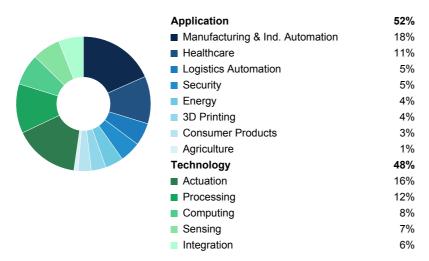
Index constituents are initially selected from the ROBO-STOX® Industry Classification in accordance with predetermined rules and objective criteria including minimum market capitalisation and average daily value traded. At each quarterly rebalance the Index constituents are reweighted and any additions or deletions are made as determined by the Advisory Index Committee at ROBO-STOX®.

#### **Index Classification**

In the absence of a benchmark industry classification system for identifying companies engaged in the global Robotics and Automation industry, the ROBO-STOX® Industry Classification was created in consultation with leading academic and industry experts. The ROBO-STOX® Industry Classification provides an industry analysis framework for investment research, portfolio management and asset allocation.

Companies included are publicly listed on bourses around the world, and derive a substantial portion of revenues from Robotics and Automation related activities. ROBO-STOX® is responsible for the classification of companies within the ROBO-STOX® Industry Classification and maintenance of the database. Within the ROBO-STOX® Industry Classification, companies are classified as either BW or NBW and then further organised into sub-sectors which are expected to increase in number as the industry continues to evolve. Currently, the Classification Committee at ROBO-STOX® has identified 13 sub-sectors which fall under either Technology or Applications.

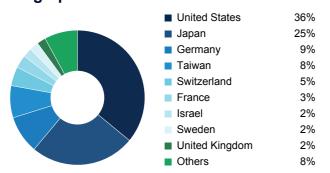
### Technology and Applications Classification<sup>4</sup>



Applications - highlights all index companies that incorporate multiple robotic and automation technologies into their product or manufacturing process to improve efficiency in traditional business lines as well as the development of entirely new business propositions.

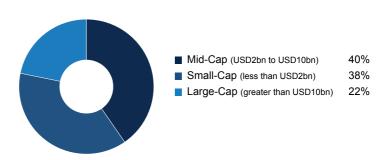
Technology - captures all index companies that manufacture or provide services related to any machinery, equipment, devices or sensors supporting a robot performing its task. It also includes those companies that provide keyenabling software and processing technologies used to advance the conversion to autonomous systems. Essentially, we are looking at the companies that enable robots to sense, process and act.

#### Geographic Breakdown<sup>4</sup>



#### <sup>4</sup>Charts are presented based on the daily weightings of the positions in each category.

#### Market Capitalization Breakdown<sup>4</sup>





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## **Securities** (BOLDED companies are BW's)

|                                  |                                 | Perfor | mance            |
|----------------------------------|---------------------------------|--------|------------------|
|                                  | Sub-Sector                      | 6M⁵    | 12M <sup>5</sup> |
| 3D SYSTEMS CORP                  | 3D Printing                     | -54.0% | -75.9%           |
| ABB LTD-REG                      | Integration                     | -10.7% | -15.7%           |
| ACCURAY INC                      | Healthcare                      | -27.4% | -24.2%           |
| ADLINK TECHNOLOGY INC            | Computing                       | 7.8%   | -                |
| ADVANTECH CO LTD ORD             | Computing                       | -13.2% |                  |
| AEROVIRONMENT INC                | Security                        | -19.0% | -33.8%           |
| AIDA ENGINEERING LTD             | Manufacturing & Ind. Automation | -16.0% | 12.0%            |
| AIRTAC INTERNATIONAL GROUP       | Actuation                       | -35.7% | -37.2%           |
| ARCAM AB                         | 3D Printing                     | -18.4% | -31.2%           |
| ATMEL CORP                       | Computing                       | -4.0%  | -6.1%            |
| ATS AUTOMATION TOOLING SYSTEMS   | Manufacturing & Ind. Automation | -1.6%  | 0.3%             |
| BROOKS AUTOMATION INC            | Manufacturing & Ind. Automation | -12.4% | -4.2%            |
| CARGOTEC OYJ-B SHARE             | Logistics Automation            | -20.6% | -1.4%            |
| COGNEX CORP                      | Processing                      | -23.9% | -12.4%           |
| CYBERDYNE INC                    | Healthcare                      | -55.0% |                  |
| DAIFUKU CO LTD                   | Logistics Automation            | -      |                  |
| DAIHEN CORP                      | Manufacturing & Ind. Automation | -10.2% | 24.7%            |
| DASSAULT SYSTEMES SA             | Processing                      | -0.8%  | 19.1%            |
| DEERE & CO                       | Agriculture                     | -11.0% | -2.8%            |
| DELTA ELECTRONICS INC            | Actuation                       | -14.9% | -11.4%           |
| DENSO CORP ORD                   | Manufacturing & Ind. Automation | -4.1%  | 12.0%            |
| E2V TECHNOLOGIES PLC             | Processing                      | 24.1%  |                  |
| ELBIT SYSTEMS LTD ORD            | Security                        | 11.1%  | 37.8%            |
| ELEKTA AB                        | Healthcare                      | -30.2% | -25.6%           |
| FANUC CORP                       | Manufacturing & Ind. Automation | -29.1% | 2.1%             |
| FARO TECHNOLOGIES INC            | Processing                      | -37.7% | -34.8%           |
| FLIR SYSTEMS INC                 | Processing                      | -9.6%  | -15.6%           |
| FMC TECHNOLOGIES INC             | Energy                          | -9.9%  |                  |
| HARMONIC DRIVE SYSTEMS INC       | Actuation                       | -16.6% |                  |
| HELIX ENERGY SOLUTIONS GROUP     | Energy                          | -55.2% | -75.8%           |
| HIWIN TECHNOLOGIES               | Actuation                       | -29.6% | -37.9%           |
| HOLLYSYS AUTOMATION TECHNOLO     | Computing                       | 1.2%   | -19.8%           |
| IMMERSION CORPORATION            | Sensing                         | 47.2%  | 22.2%            |
| INTUITIVE SURGICAL INC           | Healthcare                      | 3.5%   | 6.2%             |
| IPG PHOTONICS CORP               | Actuation                       | -15.7% |                  |
| IROBOT CORP                      | Consumer Products               | -9.5%  | -3.8%            |
| JENOPTIK AG                      | Actuation                       | -9.5%  | 23.7%            |
| JOHN BEAN TECHNOLOGIES CORP      | Logistics Automation            | 7.9%   | 24.9%            |
| JOHNSON ELECTRIC HOLDINGS LTD OR | D Actuation                     | -1.6%  | -10.0%           |
| KARDEX AG-REG                    | Logistics Automation            | 25.1%  |                  |
|                                  |                                 |        |                  |

|                                  | Sub-Sector                      | 6M <sup>5</sup> | 12M <sup>5</sup> |  |
|----------------------------------|---------------------------------|-----------------|------------------|--|
| KEYENCE CORP ORD                 | Sensing                         | -21.1%          | 13.7%            |  |
| KONGSBERG GRUPPEN ASA            | Energy                          | -12.7%          | -                |  |
| KRONES                           | Manufacturing & Ind. Automation | 2.0%            | 37.6%            |  |
| KUKA                             | Manufacturing & Ind. Automation | -4.5%           | 50.7%            |  |
| LEONI                            | Processing                      | -11.0%          | 15.5%            |  |
| LINCOLN ELECTRIC HOLDINGS        | Actuation                       | -12.4%          | -20.8%           |  |
| MACDONALD DETTWILER & ASSOC COM  | Security                        | -21.0%          | -11.7%           |  |
| MICROCHIP TECHNOLOGY INC         | Computing                       | -11.3%          | -7.9%            |  |
| MITSUBISHI ELECTRIC CORP         | Computing                       | -18.7%          | -16.9%           |  |
| MOBILEYE NV                      | Processing                      | 13.6%           | -                |  |
| NABTESCO CORP ORD                | Actuation                       | -33.6%          | -9.7%            |  |
| NACHI-FUJIKOSHI CORP ORD         | Manufacturing & Ind. Automation | -21.4%          | -30.0%           |  |
| NATIONAL INSTRUMENTS CORP        | Processing                      | -10.9%          | -14.7%           |  |
| NORDSON CORP                     | Manufacturing & Ind. Automation | -12.9%          | -17.3%           |  |
| NORTHROP GRUMMAN CORP            | Security                        | 6.5%            | 29.1%            |  |
| NUANCE COMMUNICATIONS INC        | Processing                      | 24.9%           | 8.6%             |  |
| OCEANEERING INTL INC             | Energy                          | -18.6%          | -38.7%           |  |
| OMRON CORP ORD                   | Sensing                         | -22.9%          | -15.9%           |  |
| PARROT SA                        | Consumer Products               | -               | -                |  |
| QIAGEN N.V.                      | Healthcare                      | 13.9%           | 45.0%            |  |
| RENISHAW PLC                     | Sensing                         | -18.6%          | 21.9%            |  |
| ROCKWELL AUTOMATION INC          | Integration                     | -5.9%           | -9.1%            |  |
| SCHNEIDER ELECTRIC SA            | Integration                     | -25.4%          | -14.7%           |  |
| SFA ENGINEERING CORP             | Logistics Automation            | -14.6%          | 1.7%             |  |
| SIEMENS                          | Integration                     | -17.7%          | -12.4%           |  |
| SLM SOLUTIONS GROUP AG           | 3D Printing                     | -               | -                |  |
| SMC CORP ORD                     | Actuation                       | -29.0%          | -8.9%            |  |
| STRATASYS LTD                    | 3D Printing                     | -47.8%          | -75.7%           |  |
| TECAN GROUP AG-REG               | Healthcare                      | 17.3%           | 29.8%            |  |
| TECO ELECTRIC & MACHINERY CO LTD | Actuation                       | -14.9%          | -30.2%           |  |
| TELEDYNE TECHNOLOGIES INC        | Sensing                         | -2.8%           | -3.1%            |  |
| TERADYNE INC                     | Manufacturing & Ind. Automation | -               | -                |  |
| THK CO LTD ORD                   | Actuation                       | -35.7%          | -26.6%           |  |
| TOPCON CORP                      | Computing                       | -37.4%          | -30.7%           |  |
| TOSHIBA MACHINE CO LTD           | Manufacturing & Ind. Automation | -21.9%          | -16.7%           |  |
| TRIMBLE NAVIGATION LTD           | Processing                      | -31.6%          | -46.8%           |  |
| VARIAN MED.SYS.                  | Healthcare                      | -15.5%          | -7.5%            |  |
| YASKAWA ELECTRIC CORP ORD        | Manufacturing & Ind. Automation | -25.3%          | -10.2%           |  |
| YOKOGAWA ELECTRIC CORP ORD       | Computing                       | 1.8%            | -6.3%            |  |
| YUSHIN PRECISION EQUIPMENT       | Manufacturing & Ind. Automation | -               | -                |  |

## **Monthly Performance**

|      | Jan    | Feb   | Mar   | Apr   | May    | Jun    | Jul    | Aug    | Sep    | Oct    | Nov   | Dec    | YTD     |
|------|--------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|--------|---------|
| 2015 | -2.95% | 5.16% | 0.95% | 0.48% | -0.18% | -2.82% | -5.16% | -5.56% | -1.95% |        |       |        | -11.81% |
| 2014 |        |       |       |       |        | 6.93%  | -3.90% | 0.71%  | -3.98% | -0.69% | 1.35% | -1.32% | -1.31%  |

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 $<sup>{}^{5}\</sup>mbox{Performance}$  of the components based on net price data.



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