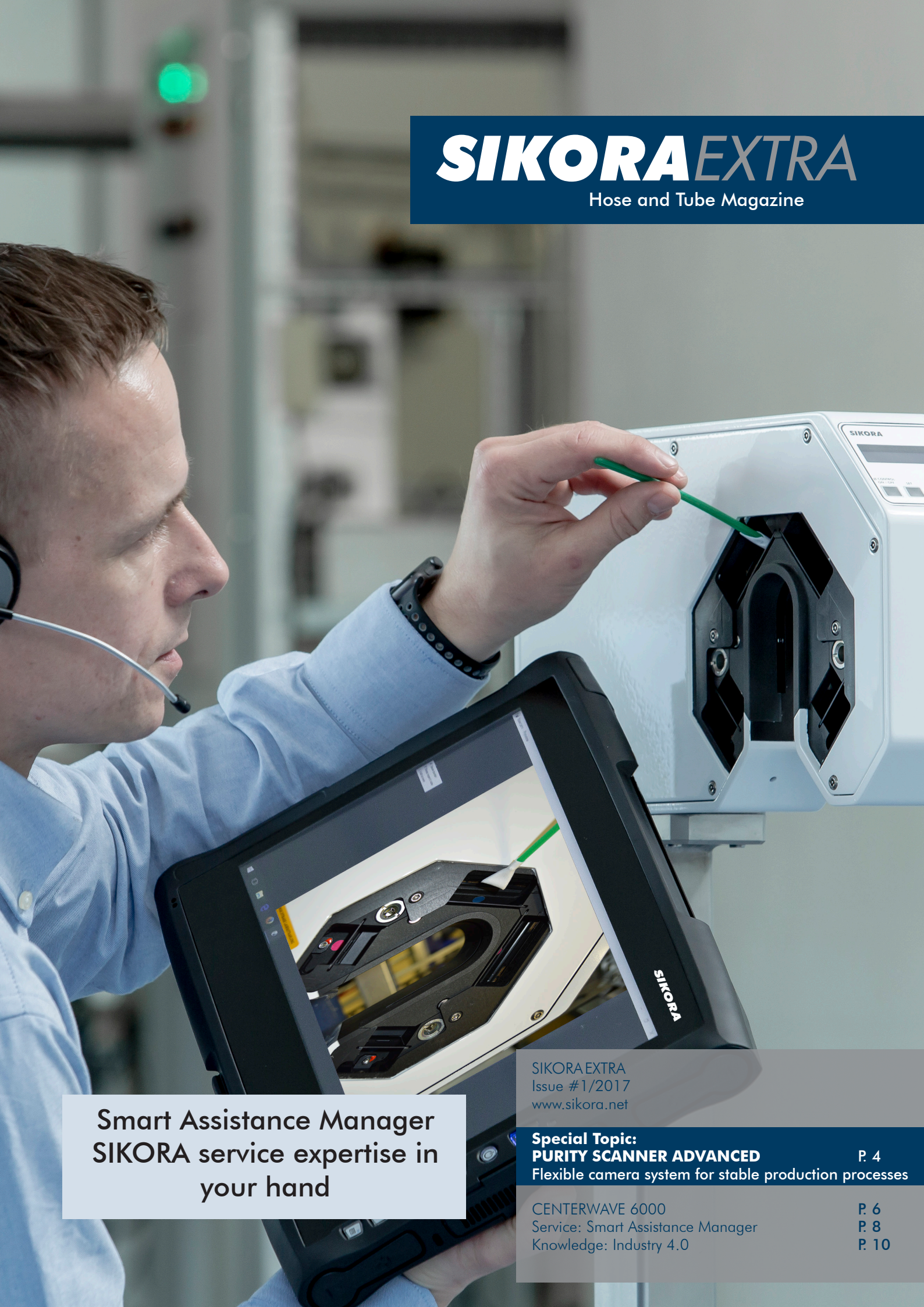
# SIKORA EXTRA

Hose and Tube Magazine




## Smart Assistance Manager SIKORA service expertise in your hand

SIKORA EXTRA
Issue #1/2017
www.sikora.net

# GOOD RESOLUTIONS – DIRECTLY REALIZED.

## Next Events

MD&M East
June, 13 - 15, 2017
New York, USA
Booth 1276

Iran Plast
September, 24 - 27, 2017
Tehran, Iran

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SIKORA AG, Bruchweide 2, 28307 Bremen,
Deutschland/Germany
Tel.:/Phone: +49 421 48900 0
communications@sikora.net, www.sikora.net


f.l.: Dr. Christian Frank, Harry Prunk

Dear customers, partners and business friends,

SIKORA has started a new financial year for the 44th time – naturally, we are aiming again to further optimize processes for our customers and support you as a competent partner for production and service tasks. Just as our measuring devices, SIKORA employees deliver results in real-time and therefore, put good resolutions directly into practice.

For example, the new Smart Assistance Manager (SAM) makes professional service even simpler and more direct. The 13.3" industrial tablet enables the direct connection of your devices with SIKORA service engineers. The result: optimized support as well as a fast and reliable device diagnosis. You are always perfectly secured with the SIKORA service competence in your hand.

SIKORA has been repeatedly classified as an A level supplier and convinces with an efficient production and reliable delivery. In order to keep the resolution to maintain and further develop this standard, we are going to grow – also in floor space. Therefore, mid-2017 we are laying the foundation for the expansion of the SIKORA headquarters in Bremen, Germany, to generate more room for production and logistics.

We are looking forward to supporting you in realizing big plans and good resolutions to optimize your production processes in 2017.

Enjoy reading!
Sincerely,

Dr. Christian Frank
CEO SIKORA AG

Harry Prunk
Executive Board SIKORA AG

# INSPECTION AND SORTING – PURITY SCANNER ADVANCED

## Flexible camera system for all requirements

With the presentation of the PURITY SCANNER at the K 2013, the attention of the SIKORA research and development department was directed to application areas, which have not been in the focus during the development of the system in 2011. Originally aimed at requirements of the cable industry – especially for the manufacturing of high-voltage cables, where crosslinkable PE is mostly used – it became quickly clear at the K 2013 which requirements regarding purity also exist in other industries.

Accordingly, from 2013 to 2016 hundreds of discussions were held with plastic manufacturers, compounders and consumers from different industrial branches and several tons of plastics were tested in SIKORA's own clean room laboratories under near-production conditions.

PE, PA, XLPE etc. are only some examples of materials that have been tested with the optical and X-ray camera system of the PURITY SCANNER. Customers from more than 50 countries came to the SIKORA headquarters in Bremen, Germany, to accompany these tests as well as to support the set-up of the catalogs of requirements. Next to the detectability and sorting of contamination, the documentation of results as images or statistical data was equally important. During the discussions with an experienced and demanding customer base, the idea for the PURITY SCANNER ADVANCED was born.

The concept of the PURITY SCANNER with its optical and X-ray pellet inspection as well as the automatic sorting did undoubtedly open new possibilities and is nowadays, operating successfully worldwide.

The PURITY SCANNER ADVANCED, and its flexible camera system that is concentrated on special applications, was initially presented at the K 2016.


Visualization of detected color deviations on the ECOCONTROL 6000


Visualization of detected contamination inside of transparent pellets on the ECOCONTROL 6000


Visualization of detected contamination inside the pellets and on their surface on the ECOCONTROL 6000

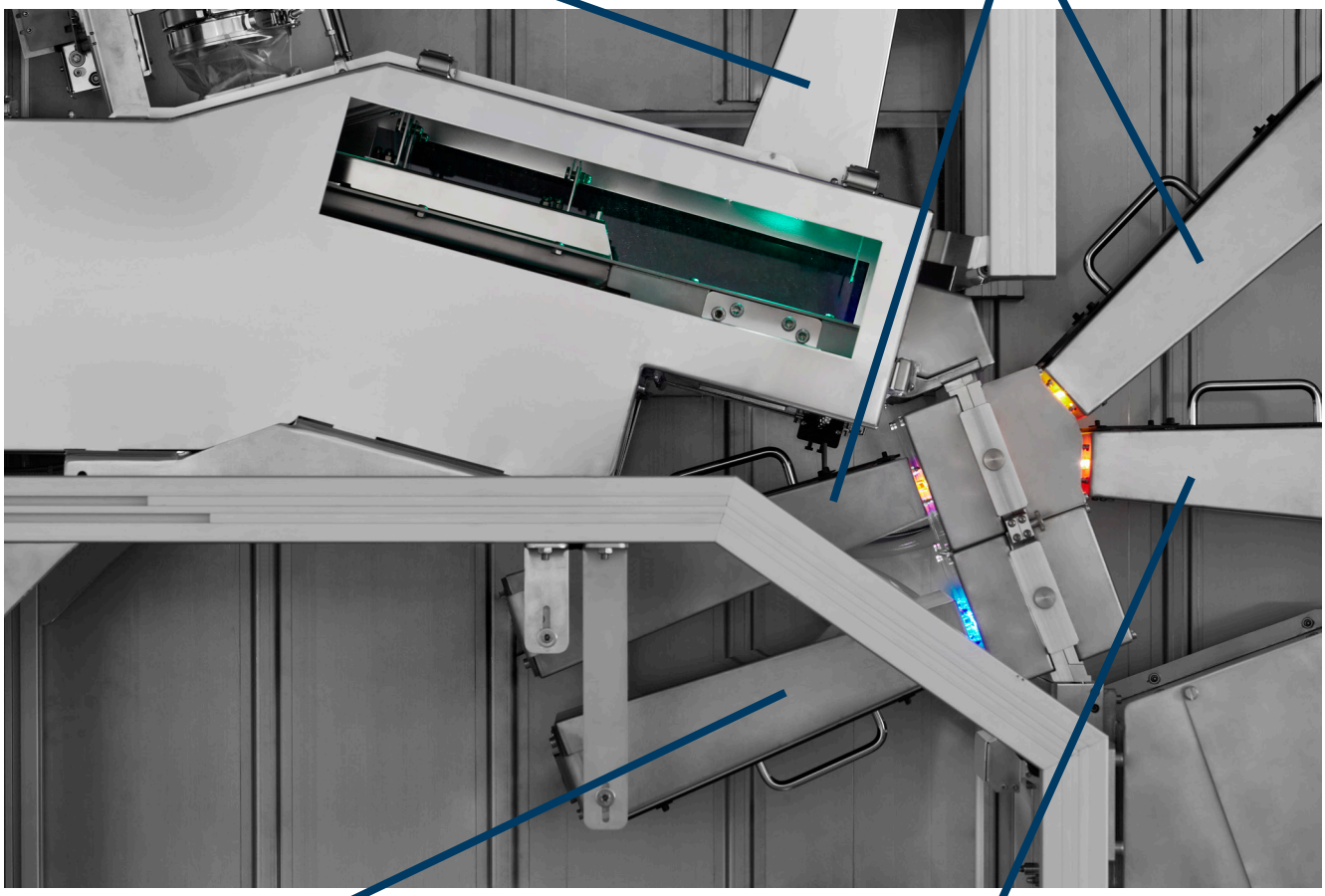
**Optionally, the PURITY SCANNER ADVANCED is equipped with high speed optical cameras as well as X-ray and infrared cameras.**

### X-ray camera

For the detection of contamination inside the pellets, the PURITY SCANNER ADVANCED has an X-ray camera as standard that reliably detects, for example, metallic contamination from 50 $\mu$m.

### Optical camera

Just like the PURITY SCANNER, the PURITY SCANNER ADVANCED offers reliable optical cameras to detect discolorations, scorches and other contamination on the pellet surface.



### Color camera

By using a color camera in the PURITY SCANNER ADVANCED, the device is able to sort out reliably unfamiliar pellets of a different color as well as color deviations.

### Infrared camera

In plants where different materials with similar external characteristics are processed, the usage of an infrared camera is useful. The hyperspectral camera irradiates the pellet flow with a broadband light to subsequently analyze the results of certain frequencies and thus, to detect cross-contamination.

# MEASUREMENT OF PLASTIC TUBES – UP TO 100 %

## CENTERWAVE 6000 – The right system for every requirement

The CENTERWAVE 6000 had its premiere in front of a special audience at the K Show in October 2016. With the innovative millimeter wave technology for the measurement of the diameter, ovality, wall thickness and sagging of large plastic tubes with a diameter from 110 to 3,200 mm, the future-oriented measuring device gained the interest of many visitors of the internationally renowned plastic exhibition.

### Versatility

The different requirements of the extrusion of tubes were already taken into account during the development of the CENTERWAVE 6000. Therefore, SIKORA offers the measuring device primarily as a rotating version and hence, offers a wall thickness measurement at 360 measuring points on the circumference. As an alternative, a multiaxial system with static sensors is available. In comparison to other systems, both SIKORA systems have the advantage to measure absolutely without contact, they do not need any coupling media, nor any calibration and are independent of the material and the temperature of the product.

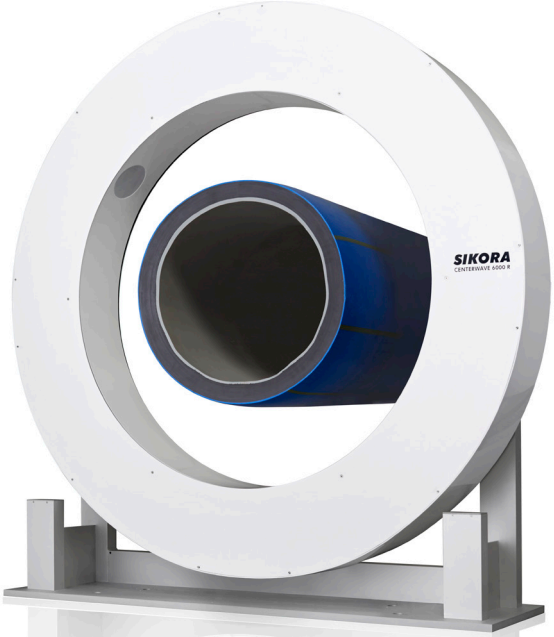
### Rotating CENTERWAVE 6000 R

For manufacturers of large tubes, whose customers demand the inspection of the complete circumference including the sagging values, SIKORA offers the CENTERWAVE 6000 R with a rotating transceiver, which continuously orbits the end product and therefore, covers 100 % of the circumference. The CENTERWAVE 6000 R is combined with the ECOCONTROL 6000, which displays all measuring values numerically and graphically and offers complex trend and statistic functions. Furthermore, the operator receives information regarding the centering of the extrusion tools and thermic control of the line so that an optimal concentricity and minimal wall thickness are ensured.

### Static CENTERWAVE 6000

With a minimum of two fixed transceivers, the static CENTERWAVE 6000 is ideally suited for production lines where it is sufficient to measure the diameter, ovality and wall thickness of the end product at four measuring points. In combination with the display and control device ECOCONTROL 600, the measuring values can be retrieved and regulated to the nominal values at anytime.


Display of the measuring values




**CENTERWAVE 6000**
For the measurement of diameter, wall thickness, ovality and sagging of large plastic tubes up to a diameter of 3,200 mm

# SIKORA EXPANDS COMPANY HEADQUARTER

## More space for production and logistics

**SIKORA AG expands again its production capacities at their headquarters in Bremen, Germany. Only 4 years ago, SIKORA expanded its office space by 2,688 m² for the divisions research and development, service, marketing, sales, purchasing and production. The planned new building, with an effective area of 7,000 m², offers space for the production and logistics departments on three floors as well as a stacked storey for communication purposes. The new and modern building will be built on the area of the production facility, which was built in 1990 and which now will be torn down. Start of construction will be in mid-2017. The completion of the new building is planned for mid-2018.**

Reasons for the expansion are the growth of the company as well as its diversification into new markets leading to new and further developments of technologies and devices over the last years.

Today, SIKORA serves four industries with innovative measurement, control and sorting technology: Wire & Cable, Optical Fiber, Hose & Tube and Plastics. "With the product range for the cable segment, which has grown strongly over the last years, as well as the markets for hose, tube, sheet and plastic industry, we have been working at maximum capacity in the existing buildings", says Peter Früchtenicht, Director Operations at SIKORA AG. "The new building offers us more space for the vast growing businesses in the field of large pipe measurement technology and the inspection and sorting for the plastics industry. This opportunity is also used to restructure jobs according to even leaner processes. The separation of logistics and value-adding activities including Lean Production Concepts are essential elements used to increase the productivity", explains Peter Früchtenicht.

Preceding the new building, an intensive planning phase took place, during which all processes were assessed in order to optimize the material flow from the incoming goods to the production right up until shipment. To never stop challenging our production processes for a most efficient and economic production at increased product quality as well as delivery reliability is a continuous task we work for with focus on our customers' expectations.

There will be no restrictions during the construction phase for SIKORA customers. During this time, the production will be moved to a building only 400 m from SIKORA headquarters, ensuring a very short connection to the main building.

# SIKORA SERVICE: SMART ASSISTANCE MANAGER (SAM)

## The SIKORA service competence in your hand

Fast, competent and reliable support for our customers all over the world – SIKORA meets these requirements with the Smart Assistance Manager (SAM). For our customers, this means a significantly more efficient support and therefore, optimized service processes.

### The device for professional service

SIKORA's Smart Assistance Manager is a 13.3" tablet, optimized for the rough industrial environment.

With the Smart Assistance Manager, you are able to establish a direct connection with a SIKORA support engineer to receive instructions for all maintenance, support and diagnosis tasks via the integrated video chat feature (5 MP camera). SIKORA's support engineer uses the SAM for a direct connection to your SIKORA device to receive an immediate diagnosis in real-time or to upload software updates.

The assignment of the Smart Assistance Manager already starts with the installation of the measuring device. With the SAM, you can show us the environmental conditions as well as the line layout. The SIKORA support is happy to assist you, starting with information on the best possible positioning of the equipment.

Due to diverse connection possibilities, such as USB 3.0, RJ 45 Ethernet, Bluetooth 4.0 and the LTE/UMTS module, as well as various application possibilities, the Smart Assistance Manager is an important tool for modern production lines, for example to support maintenance and diagnosis tasks, as well as every Smart Factory in the era of the Industry 4.0. *Learn more on page 10.*

Our individually designed license module always guarantees the most current version of the SIKORA diagnosis software for a live session for fault detection or as an offline diagnosis system for all SIKORA measuring, control, inspection, analysis and sorting systems.


SIKORA Smart Assistance Manager

# SPARK 6030 HF SELF-TEST MODULE

## Fast and easy exchange of calibrated circuit boards

**Spark testers are used in the hose industry when producing hoses with a metallic braid. A typical example are hydraulic hoses. Spark testers are able to detect single wires of the braid that pierce the insulation. According to European standards, this openly operated measuring and testing equipment has to be checked regularly. Therefore, spark testers are tested with regard to the high-voltage, the short circuit current and function (sensitivity). As already introduced in earlier editions of the SIKORA EXTRA, the SPARK 6030 HF offers (optionally) a 3-step self-test and calibration system including the SIKORA App for the mobile monitoring and analysis of the measuring results. As each probe has to be calibrated, the according testing module has to be controlled regularly as well. In order to support this process, SIKORA developed the module and the SPARK 6030 HF further.**

### Development of the module

The new feature is the easy to change module board that combines all testing contacts and which can easily be removed from an additional opening in the case of the SPARK 6030 HF.

### Calibration of the module

In order to fulfill the requirements of the ISO 9000:2000 norm, SIKORA suggests an annual calibration of the spark tester. Due to the fact that with the update all features are now directly integrated into the module, only the short circuit board has to be exchanged for a calibration – a submission of the complete device to SIKORA as well as the assignment of a service technician is not necessary anymore.

### Safe operation

With this module, the sensitivity and short circuit current test are implemented. During the sensitivity test, 20 breakdowns are simulated in 20 seconds. All of these artifical faults have to be completely detected by the device. For the short circuit current test, the contact of the operator with the bead chain electrode during the operation of the SPARK 6030 HF is simulated. Here, a specified value must not be exceeded in order to guarantee the safety of the user.

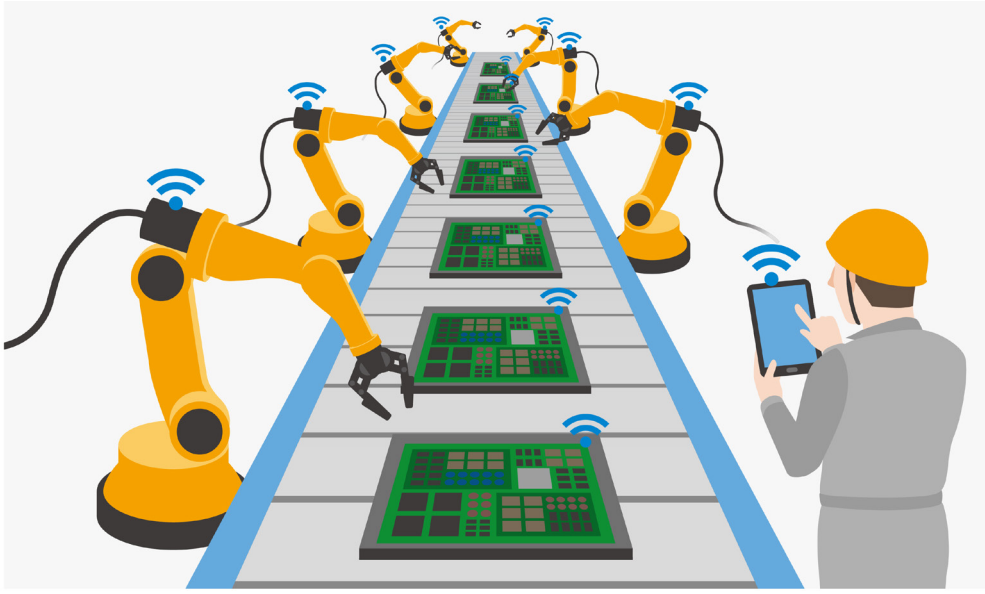
The calibration module measures continuously the accuracy of the test-voltage. The standard for spark testers requires an accuracy of ± 5 %. The test is successful when this criterion is also fulfilled.


SPARK 6030 HF with the easy to change testing module

# INDUSTRY 4.0

## Intelligent and flexible production processes

**In Germany, the term "Industry 4.0" was first introduced in 2011 at the HANNOVER MESSE and defines the digital agenda of the German Federal Government under the leadership of the Federal Ministry of Economics and Technology as well as the Federal Ministry of Education and Research.* It stands for the connection of industrial production with advanced information and communication technology. The result: production processes are independently coordinated by intelligent machines, service robots cooperate in an intelligent way with humans during the assembly and (unoccupied) transportation vehicles complete logistic orders autonomously.**



### "Industry 4.0" – the next (R)Evolutionary Step

Towards the end of the 18th century, "Industry 1.0" was introduced by the launch of mechanic production facilities. With the invention of mass production at the end of the 19th century, "Industry 2.0" was introduced due to the use of conveyor belts and electrical energy. The "Industry 3.0" and the use of electronic engineering and IT for the automation of the production superseded this in 1969. Due to various possibilities of the "Internet of Things" and intelligent machines, we are now on the cusp of the next revolution – the "Industry 4.0".

### Smart Factory – the factory of Industry 4.0

Smart Factories are based on once passive parts, such as tools, machines or means of transport, which have been equipped with "eyes and ears" (sensors) and "hands and feet" (actuators) and are operated centrally via IT systems in real-time. Therefore, the complete lifecycle of a product, from the idea to the development, production, usage and maintenance up to the recycling is monitored and controlled.

### Benefits of the Industry 4.0

The introduction of Industry 4.0 influences working and living environments of humans and enables a more efficient interaction between employees and intelligent production machines. This development opens up chances for reorganization of work, for example, healthy designed workplaces as well as flexible and family-friendly work time regulations.

*Similar programs are for example "Industrial Internet Consortium" (IIC) in the USA or "Industrial Value Chain Initiative" (IVI) in Japan. Also, China, South Korea and several other European countries work on comparable platforms.

**Harry Prunk, Executive Board at SIKORA AG, about SIKORA and the Industry 4.0**

"As an innovative technology company, SIKORA has long focused on the trends and the possibilities resulting from Industry 4.0. Almost every SIKORA device is now built with integrated WiFi (WLAN) or with a network interface to enable a network of several lines and even to connect complete production facilities. Industry 4.0 leads to optimized and reproducible processes. Furthermore, due to the intelligent recording and analysis of production data, our customers are able to produce more efficiently and with reproducible quality."

# RAFFLE

## Find the contamination

**We have hidden a contaminated pellet in one of the pictures of this EXTRA edition.**

**To participate in the raffle, send us the correct page number as well as your name and contact details.**

Send us an e-mail with your solution until July 31st, 2017 to: communications@sikora.net

Your contact details will not be passed on to third parties. Each correct answer takes part in the raffle. Employees of SIKORA AG and SIKORA Holding GmbH & Co. KG and their relatives are excluded from participation. Each player can only participate once. We value the first e-mail, all subsequent e-mails will be considered invalid. The legal process is excluded.

### The prize is one of three Archos VR Glasses 2 (picture similar)

### Good luck!

Congratulations to the winners!

- Martin Kaufmann
- Marius Mihalca
- Djordji Boskoski

SIKORA
Technology To Perfection

**SIKORA AG**
**Bruchweide 2 · 28307 Bremen**
**Germany**
**Phone: +49 421 48900 0**
**www.sikora.net**
**sales@sikora.net**

BRAZIL
sales@sikora-brazil.com

CHINA
sales@sikora-china.com

FRANCE
sales@sikora-france.com

INDIA
sales@sikora-india.com

ITALY
sales@sikora-italia.com

JAPAN
sales@sikora-japan.com

KOREA
sales@sikora-korea.com

MEXICO
sales@sikora-mexico.com

RUSSIA
sales@sikora-russia.com

TURKEY
sales@sikora-turkey.com

UKRAINE
sales@sikora-ukraine.com

USA
sales@sikora-usa.com

UNITED ARAB EMIRATES
sales@sikora-uae.com

KG/SB/DH 05/17 MD 3300