

Application story

Druck provides cost effective pressure sensors for next generation TV display technology



Druck business
Configurable modular pressure sensors



Application
Encapsulation ink spread processing for television display screens



Customer type
Manufacturer of display screens for consumer electronics (including televisions)



Product/service
UNIK 5000 Configurable Silicon Pressure Sensing Platform



Benefits
Configured specifically to application's requirements

Employs Druck's piezo resistive technology

Short lead-time and local support

Druck's customer

Based in Korea, Druck's customer is a market leader in the production of display screens for consumer electronics, including televisions.

Druck's customer's challenge

The manufacture of market leading light emitting diode screens requires the quantum dots to be ink jet printed on to the substrate of the display screen.

In addition to maintaining a pure process environment, the process equipment is critical for device performance and yield. For example, as part of the encapsulation of ink spread there is a requirement for monitoring pressure changes of less than 10 pascals (Pa) in a range of 6KPa to 7KPa. This means that a high accuracy pressure sensor is required. Furthermore, there needs to be a precise monitoring of the resolution to 4Pa.

Optimizing the processes to produce leading technology display screens requires high uptime, as well as stable production equipment with the ability to reproduce to exacting quality standards at very high production volumes. All the aforementioned factors must be achieved whilst manufacturing at a competitive, yet economically viable cost.

Druck's solution

Accurately and repeatably measuring pressure is at the core of Druck's technology, with nearly fifty years' experience in designing and manufacturing pressure sensors. With volume display production in turn requiring a large number of sensors, Druck was mindful of the customer's need to find an economical solution, which did not mean having to compromise on performance. Druck proposed a premium accuracy version of its UNIK 5000 Configurable Modular Pressure Sensing Platform to meet the customer's needs. This allowed the customer to procure a high accuracy performance pressure sensor, which would otherwise not be available at 'standard' industrial pricing levels.



Picture 1: UNIK 5000 Pressure Sensing Platform

Designed to be customized from standard components, UNIK 5000 allowed Druck to offer a cost-effective pressure sensor, leveraging a high-volume product line and short product lead-time thus allowing the customer to order pressure sensors as they developed their equipment to ensure maximum compatibility with their production process.

The UNIK 5000 employs Druck's piezo resistive technology, renowned for its performance, low hysteresis/thermal hysteresis and excellent long-term repeatability, ensuring accurate, stable and repeatable pressure measurement across the sensor's entire pressure range. These features and benefits were key to ensuring the customer could accurately and repeatedly monitor pressure changes of less than 10Pa. In this case the customer opted for the $\pm 0.04\%$ FS BSL accuracy version of the pressure sensors.

Robust design, construction and overall product quality provided by the UNIK 5000 Pressure Sensors ensured no sensor failures during installation and operation within the customer's high volume and quality driven production process.

Druck's added value

Drucks' local presence in having application engineering and technical sales specialists in the same region as the customer, ensured that the customers' requirements could be reviewed in detail to ensure to direct them to the precise pressure sensor that would meet their technical requirements, whilst staying within their budget for pressure sensors.

Druck's technical 'know-how' provided by staff from the local regional office also helped the customer interface with the equipment display and I/O module for the required resolution as well as electrical compatibility.

For more information

To learn more about this product and Druck, please visit:

Datasheet: <https://bit.ly/3fXerkC>

Online: <https://bit.ly/3dUCY84>

LinkedIn: [linkedin.com/company/druckcompany](https://www.linkedin.com/company/druckcompany)