

# SENSOR INKXPERIENCE

## KIT QUICK INSTALLATION GUIDE



Henkel Qhesive  
SOLUTIONS

# INKXPERIENCE

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The Sensor INKxperience Kit by Henkel Qhesive Solutions offers you a hands-on experience of four different printed electronics functionalities combined with pre-configured hardware and software for immediate and continuous data read out during prototyping and the engineering of new ideas. By following the step-by-step instructions listed below, you can get your INKxperience started within a few minutes.

After successful installation completion, you can deep dive into the mechanical function of each sensor by utilizing our technical information sheets and you are ready to start prototyping new ideas. For technical support along with the installation please reach out to: [printed.electronics@henkel.com](mailto:printed.electronics@henkel.com)

## First Steps

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### Component Overview & Additional Equipment

Familiarize yourself with the components summarized on the inside of the package lid. Please check whether the set of INKxperience sensors and connectors on the upper and lower level of the package is complete. In order to operate the Sensor INKxperience Kit no further equipment is needed. You simply need to connect the power cables to a power source.



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### Raspberry Pi Setup

Connect the Raspberry Pi with the power plug. After a few seconds the screen of the Raspberry Pi will light up. On the Henkel Qhesive Solutions dashboard you can see in total four applications, one for each sensor technology, which you can select once having connected the sensor(s) for data read out.

To save the data collected throughout future experiments, plug in the supplied USB stick to the Raspberry Pi. Automatic saving only works with the specific drive we provide (filesystem FAT32). The raw data from your test setup will be saved automatically on the USB stick. Each sensor breakout board outputs read data over USB Serial. Further information on how to output and save data can be found in the technical information sheets available on our website.

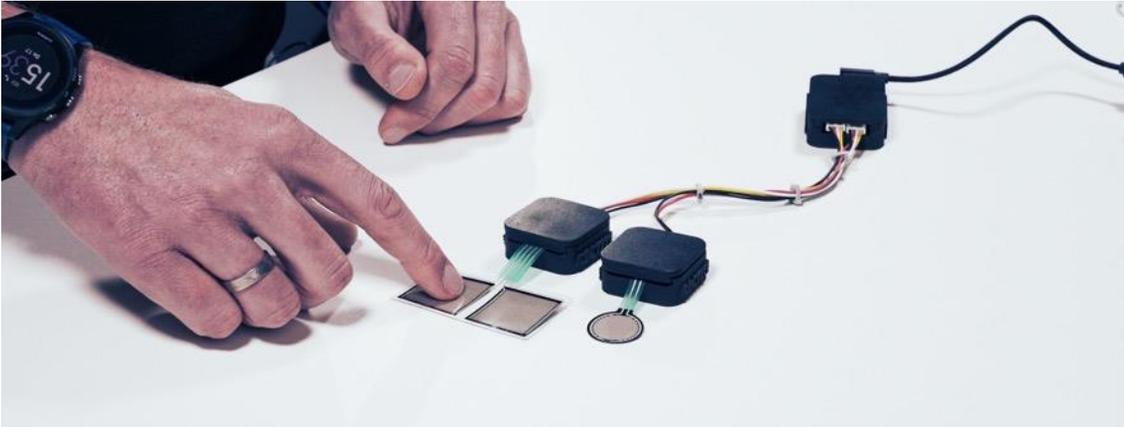


Legal Notification: This product is a B2B product, intended for research and technical feasibility validation only. For installation and application follow the recommended processes carefully. All pieces were selected by and assembled by Henkel. Our Loctite hardware cases are intended for protection only. All hardware components included are sourced and produced by 3rd party vendors. CAUTION: Please keep out of reach of children.

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### Connecting the Sensors

Each sensor [Leak Detection, Non-contact Liquid Level, Single & Multi zone Force Sensitive Resistor [FSR] & Positive Temperature Coefficient [PTC] heater] is equipped with a break-out board and a connector cable. For the PTC heater you also have a power cable. For quick initial sensor usage, connect the sensor to its breakout board, connect the breakout board to the Raspberry Pi and select the respective sensor application on the dashboard of the Raspberry Pi to start the data read out.

Detailed technical information regarding each sensor technology as well as the data output can be found within the technical information sheet. Additional note: All sensors can be plugged into the Raspberry Pi at the same time, if simultaneous measurements are required. In addition, each sensor breakout board can be connected to the computer. For further information please refer to the technical information sheet.

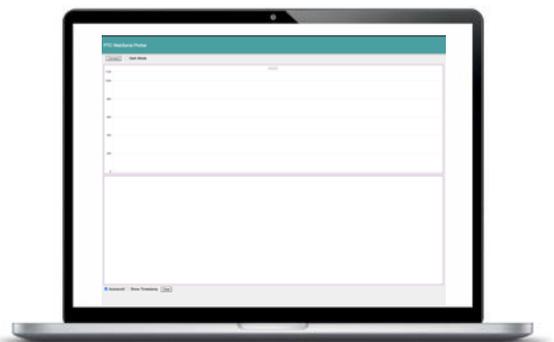
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### Data Read-out

Each sensor breakout board outputs data over USB Serial. USB driver installation information is available here: [wiki.seeedstudio.com/Driver\\_for\\_Seeeduino/](http://wiki.seeedstudio.com/Driver_for_Seeeduino/)

Data can be read out via the Raspberry Pi or via directly connecting the sensor to the computer and opening the web app. Supported browsers are Chrome and Microsoft Edge. After connecting a breakout board to an available USB port, go to [Qhesive WebSerial Plotter \(inkxperiencekit.com\)](http://Qhesive_WebSerial_Plotter(inkxperiencekit.com)) and click on the type of sensor for which you want to see data. Then select "Connect".

For each sensor you can see the data graphically as well as raw text. To save the raw data read from the web app select the download button and save the file to your chosen location.



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### Legal Disclaimer

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All pieces were selected by Henkel. The printed sensors were sourced and produced by Quad Industries and LAIIER. The later including also compatible hardware components. All remaining hardware components were sourced by IOX GmbH. The Loctite hardware cases are intended for protection only. All hardware cases can be opened for review of hardware components.

CAUTION: Please keep out of reach of children.



LAIIER makes wireless connected printed sensors that install like tape and detect leaks, occupancy, and more. They are building a Surface to Cloud™ Industrial IoT solution that is uniquely easy to install and scale in the smart building and smart facility. Their Surface to Cloud Industrial IoT sensor platform addresses critical use cases in the smart building, starting with liquid leaks, liquid level, moisture detection, and much more. LAIIER's solution prevents damage to structures, conserves precious resources, and reduces the release of hazardous chemicals into the environment.



Quad Industries has been at the forefront of printed electronics for more than 25 years, which makes them a reliable partner in the development and manufacturing of user interfaces and control panels for both consumer and industrial applications. In recent years, they have extended our activities in the domain of printed electronics, using their extensive knowledge to develop and manufacture printed, flexible sensor solutions. Their headquarters and production facilities in Europe are certified to the internationally recognized ISO 9001:2015 Quality Management Systems (QMS) standard. The QMS for Quad is the sum of all the processes, resources, properties, and cultural values that support the goal of customer satisfaction and productivity of the organization.



Leading companies have innovative IoT concepts but are challenged when it comes to turning them into reality. IOX LAB helps them and creates prototypes exceptionally fast: In 30 days from idea to prototype. To make this possible, the start-up uses IoT technologies as sensors, motors, 3D printing and artificial intelligence. The team covers the full stack of IoT. Make things, not slides: [ioxlab.de](http://ioxlab.de)

### Summary of components

Component	Subcomponents	Certifications
<b>FSR Sensor Breakout Board</b>	<p><u>PCB:</u></p> <ul style="list-style-type: none"> <li>• Seeeduino</li> <li>• Current sensor INA219</li> <li>• Resistance</li> <li>• Solder</li> </ul>	<p><u>PCB:</u></p> <ul style="list-style-type: none"> <li>• Standard IPC-4101</li> <li>• Flammability class V0</li> </ul> <p><u>Seeeduino:</u></p> <ul style="list-style-type: none"> <li>• Certifications: CE &amp; FCC</li> </ul> <p><u>Connectors:</u></p> <ul style="list-style-type: none"> <li>• Recognized E60389</li> <li>• Certified LR20812</li> <li>• 2R75087</li> </ul> <p><u>Resistance:</u></p> <ul style="list-style-type: none"> <li>• RoHS 2011/65/EU</li> <li>• Solder:</li> <li>• Lead-free</li> <li>• 96.5% Sn, 3.0% Ag, 0.5% Cu</li> </ul>
<b>Leak Detection Breakout Board</b>	<p><u>PCB by LAIIER (Bare Conductive Ltd):</u></p> <p>SKU-8502 - Severn Evaluation Kit (containing Bravo Board PCB)</p>	<p>European Declaration of Conformity (08/02/2023) by Bare Conductive Ltd.:</p> <p>The EMC Directive 2014/30/EU and RoHS 3 Regulation (EU 2015/863). The components contained within the listed PCB boards are compliant with the</p> <ul style="list-style-type: none"> <li>• RoHS 3 Regulation (EU 2015/863) and</li> <li>• EMC Directive 2014/30/EU</li> <li>• Standards EN 55032:2015+A11:2020 and EN 55035:2017</li> </ul>
<b>Non-Contact Liquid Level Breakout Board</b>	<p><u>PCB by LAIIER (Bare Conductive Ltd):</u></p> <p>SKU-8403 - Trent Evaluation Kit (containing Alfa Board PCB)</p>	

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FROM PRINT TO UNBOX.  
FROM IDEATION TO PROTOTYPE.  
**FROM TESTING TO ACCELERATION.**

**FOR FURTHER INFORMATION:**

[INKXPERIENCEKIT.COM](http://INKXPERIENCEKIT.COM)

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