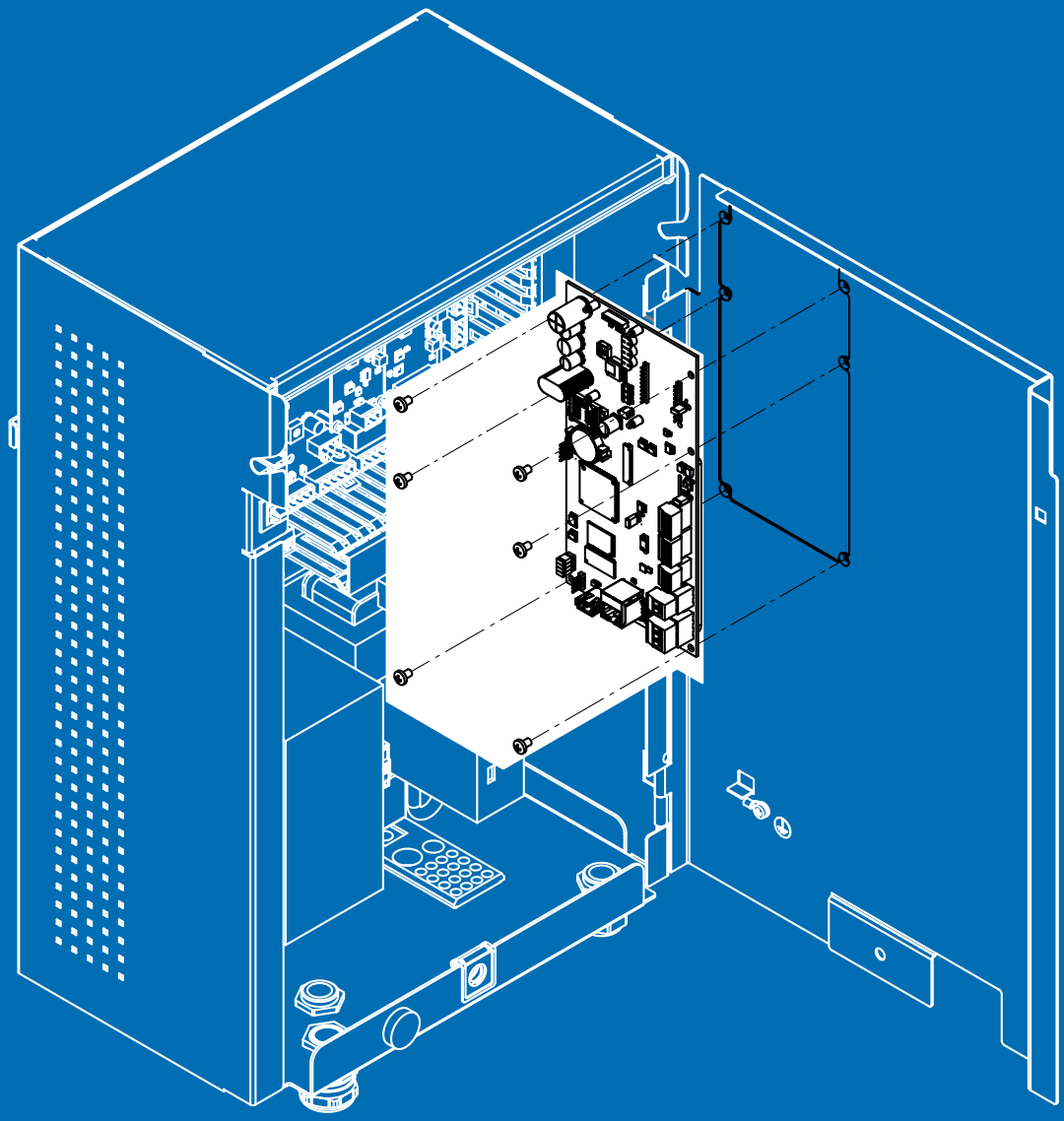
Condair innovation report

The Making of IC 2



The Integrated Controller IC 2 by Condair is inconspicuous to the eye, yet this little hardware innovation opens up a new world for the company.

Tucked away in a corner of Condair's test lab at the headquarters in Pfäffikon SZ, Switzerland under cable trays and ventilation ducts, hangs a 35 by 49 by 22 centimeters, matte grey box. Insignificant as it may appear, the enclosure actually houses the exciting new controller technology by Condair: the IC 2 Integrated Controller for Condair's DL Hybrid Air Humidifier.

Perpetual innovation

How do innovations get started? What are their origins? It was 2018 when two departments at Condair expressed their reservations about the current controller platform. Product management thought the technology was no longer consistent with current state of the art technology, and feared the competition could overtake them. At the same time, the purchasing department could no longer source several electronic components, a sure indication of a product having reached the end of its lifespan.

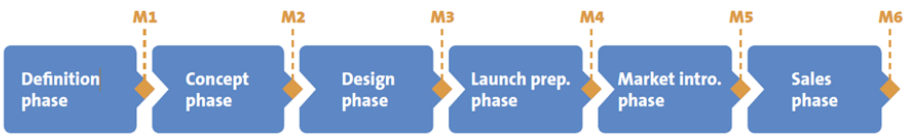
The Integrated Controller 2 (right) wires into the system behind the display on the DL control unit .The printed board is equipped with state-of-the-art electronic components.

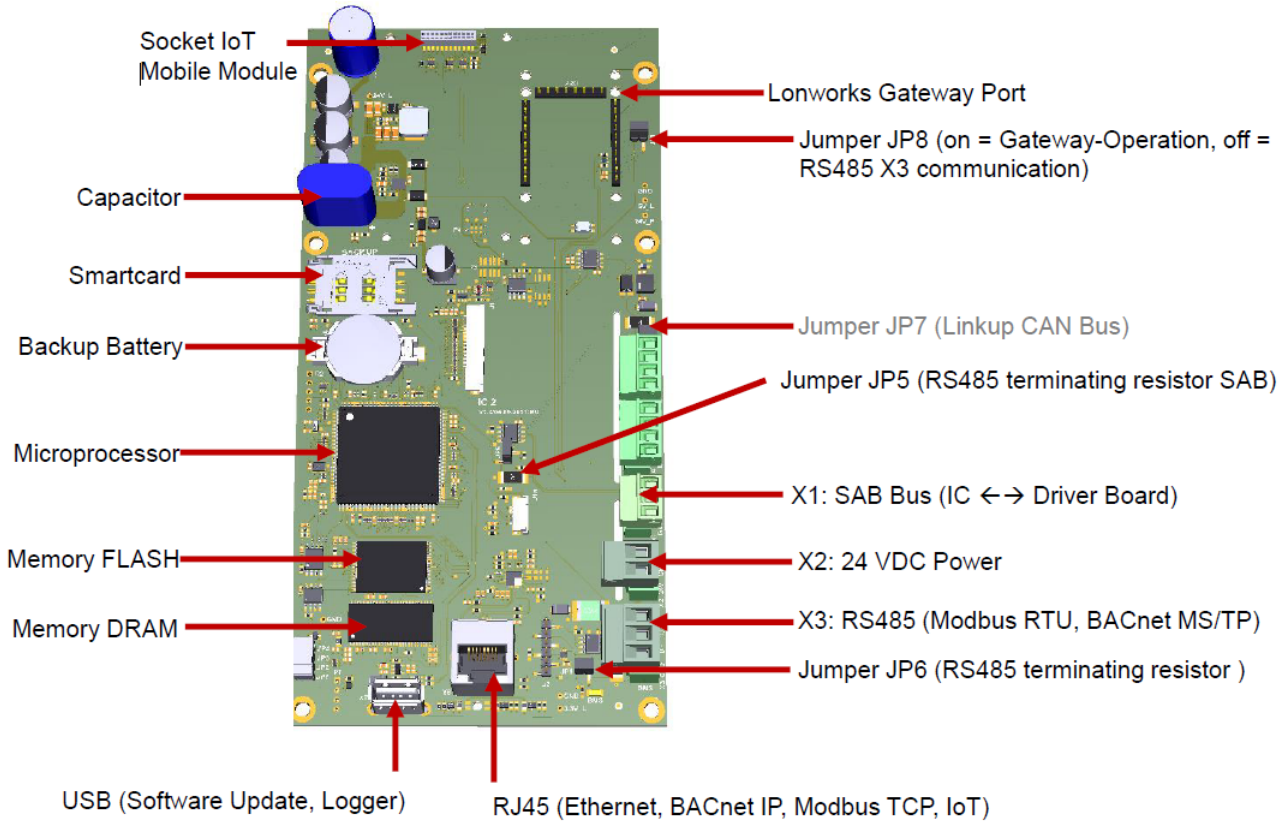
Project manager Erhard Gwerder pauses at the control unit and taps on the illuminated display, which is the size of smart phone, in the upper right corner of the unit. The Integrated Controller 2 connects into the back of the screen. Gwerder and his interdisciplinary team spent several years engineering the design of this product.

Continuously changing customer needs, technologies, regulatory demands, procurement prices and the competition are what drive Condair's ceaseless innovation. Perpetual innovation is the key to Condair's survival, as it is essential to maintaining and expanding market leadership. Condair is aware that there are available alternatives, even copies that are cheaper. For this reason, Condair must remain a step ahead of the competition in quality and function, in order to provide customers with measurable added value when all costs are considered. Investing in Condair products pays.

Milestones

Once Condair has identified the demand for an innovation, the six-stage product development process begins. It includes definition, concept, design, testing, market launch and sales. Each stage is a specific milestone. The project team has the opportunity to present the progress at each milestone to the steering committee and important stakeholders. The project committee decides if the objectives of a given stage have been achieved in order to proceed to the next phase or if changes are necessary, or if the project should even be discontinued.



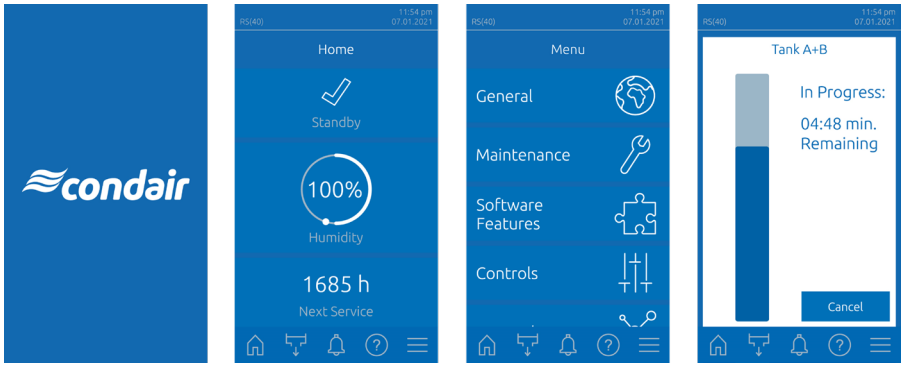


Board with state-of-the-art components

After months of work on the Integrated Controller 2 concept, it was apparent that the market failed to offer reasonably priced hardware that could satisfy all the new controller's requirements. After all, the new controller platform would integrate into not just one, but all Condair industrial air humidifiers. Thus, Condair had no other choice than to design the hardware itself. That meant developing electronic circuits and integrating them on a printed circuit board. That, too, took months. A whole year passed in the project before we had a prototype on the table.

Next step: The software, which Condair also implemented itself, had to operate the hardware components properly. This was the most grueling of all engineering work because the search for the errors in code often took days. Another hurdle appeared in the first prototype testing when the touchscreen failed to perform as planned. It was necessary to replace the originally specified resistive touchscreen with a capacitive one, i.e. a touchscreen that reacts to light finger taps and swipes instead of pressure, like the function of a smartphone. Consequentially, the overall project costs were higher than projected. But the change adds significantly to the product's value, so the steering committee greenlighted the additional costs for the improvement. 'It's like with all product development, the key is to find the right balance between innovative features and competitive pricing,' summarizes Gwerder.

After the final tests and nearly three years of work, the Integrated Controller 2 is market-ready. Not only do its dimensions and more sensitive touchscreen distinguish it from its predecessor, but also its more powerful electronics, intuitive menu navigation, new software features and cloud connectivity clearly set it apart. With this new product, Condair is now in the middle of the Fourth Industrial Revolution (4IR) and the Internet of Things (IoT).



Flatty Blue, the controller software's user interface, prevailed in competition with two other designs, thanks to its intuitive operation.

Up, up into the Cloud

In the Internet of Things, devices don't stand around idle, rather they connect via communication networks, generate data and send it to the Cloud. Christian Walser, Global Product Manager Controls & IoT shares responsibility for Condair's digital transformation, prompted by IC 2 and its IoT interfaces. One day, data and remote access will optimize service and save trips to customer premises, which would improve efficiency while being better for the environment.

As soon as Condair has collected enough data, we can offer predictive maintenance, which utilizes data analysis tools capable of determining and notifying of anomalies in equipment operation before failure occurs. This saves costs on periodic preventive maintenance and repairs that Condair would be responsible to pay during the warranty period.

In addition, knowledge gained from the collected data will improve the efficiency of equipment operation as concerns water and energy usage, saving customers' money. Thanks to intelligent air humidifiers, they don't have to keep track of the periodic maintenance dates and can operate their equipment remotely via app.

Project manager Erhard Gwerder

A question of style

Oh, and then there was the question of style! Aesthetics is increasingly important in the HVAC market. Erhard Gwerder caresses the sheet steel housing of the DL control unit. It is the first unit to feature the Condair's new controller. To distinguish the new generation from the old, Condair trimmed the new DL with not just functional value but optical and haptic merits, as well. Rather than adhered, the Condair logo has been stamped into housing, the corners of the control unit angled instead of rounded, so the cover fits more firmly in the hand. Condair has always been innovative, but seldom have the innovations looked as good as they do today.