

Case Story | VACON® 20 Cold Plate and VACON® 100 FLOW

Kolmeks integrates **VACON®** **drives** into **VS in-line pump** **family**

Kolmeks pumps are known for reliability and efficiency. Integrating VACON® drives into their family of in-line pumps has brought many benefits, such as ensuring significant improvements in energy efficiency, providing savings in installation, maintenance and service costs, and creating a boost to reliability.



Headquartered in Turenki, Finland, and with factories also in Chuzhou, China, and Viljandi, Estonia, Kolmeks Ltd. manufactures pumps and motors which are typically used in heating and cooling systems, in pressure boosting and, to an increasing extent, also in the process industry. Kolmeks is a branch pioneer, whose success is based on products that meet the highest requirements regarding technology, quality, reliability and efficiency.



VACON® 20 Cold Plate integrated with Kolmeks' updated family of in-line pumps with 7.5 kW (3-phase) motor.



Facelifted single-phase drive (F)

Already in 2014, Kolmeks launched the first wave of VS-series integrated variable speed (VS) pumps. VACON® 20 Cold Plate was integrated with Kolmeks' updated family of in-line pumps in a power range from 0.75 kW to 7.5 kW. Kolmeks also started a

software development project to get the necessary multipump drive features for the small end of VS pumps.

Operating a pump with an AC drive significantly improves the controllability and energy efficiency of

the whole pump system. In the VACON® 20 Cold Plate, heat losses are conducted through an aluminum plate, which the users can mount on their own cooling element or profile and utilize the electric motor's own cooling to also cool the drive system.





Photo courtesy of Kolmek.

Danfoss Drives' customer-friendly and flexible attitude has made it possible for Kolmek to take also IoT options into account already in the design phase of new products.

Markku Hännikäinen, Electrical and Electronics R&D Manager, Kolmek.



Reduced costs and stress, improved operational reliability

Using AC drives to control pumps and pump systems allows the output, pressure and flow in the water piping system to be adjusted in relation to actual needs. This reduces energy consumption and stress on the electrical network and mechanical parts, extends the operating life of the pump, and improves operational reliability.

Thanks to its flexibility and the extensive power range, VACON® 20 Cold Plate is recognized as being the ideal solution for both commercial and residential water treatment services. Ensuring a smooth start and precise differential pressure control based on two transmitter feedback signals, the VACON® 20 Cold Plate AC drive is one

of the key components in Kolmek's in-line pump family.

"This product series received lots of good feedback from customers, especially for its versatile expandability, easy commissioning and wider pumping range compared to earlier products. The opportunity to tailor drive features also helps to differentiate Kolmek's small-end VS pumps from previous-generation products. With its innovative and compact cold plate design for easy handling and integration, VACON® 20 Cold Plate proved to be the perfect match for Kolmek," explains Markku Hännikäinen, Electrical and Electronics R&D Manager, Kolmek.

"We enjoyed fluent collaboration between Vacon's expert team, Kolmek's R&D department and

sub-suppliers. A teamwork of Chinese, Italian and Finnish experts in this case ensured a successful result. The transition to Danfoss Drives was smooth and the fluent collaboration has continued. These experiences, and the opportunity to modify VACON® 20 Cold Plate application software to meet all our needs, encouraged us to introduce new, enhanced and facelifted single-phase drive pumps also with VACON® 20 Cold Plate. Among other reasons, the similar user interface as well as I/O terminology convinced us to use VACON® 100 FLOW for our 11–55 kW integrated VS pumps which have been introduced to market during 2017. Danfoss Drive's customer-friendly and flexible attitude has made it possible for Kolmek to take also IoT options into account already in the design phase of new products," Mr Hännikäinen continues.



11–55 kW pump with integrated VACON® 100 FLOW.

Kolmeks is a growing OEM customer for us, and we expect our successful cooperation to continue.

Olli-Pekka Aalto, Sales Manager,
Danfoss Drives

Perfect match

“This has been a highly successful joint development project between Kolmeks and Danfoss Drives units in China, Italy and Finland. Generally, cooperation with one of the leading drive manufacturers with a true global presence strengthens Kolmeks’ foothold in the field of pumps integrated with AC drives,” describes Kimmo Issakainen, CEO, Kolmeks Finland.

Kolmeks pumps are single impeller centrifugal pumps, directly coupled with a Kolmeks electrical motor. Durable, efficient, silent and simple to maintain and use, Kolmeks pumps are typically used in heating and cooling systems, in clean-water (and other clean liquids) circulating, pressure-boosting and similar applications. Thanks to the use of many different materials and sealing solutions, the pumps are increasingly used in process industry applications. The pumps can also be equipped with separate or integrated

frequency converters (AC drives) to adjust speed as required. In-house design and manufacturing facilitates tailoring of the pumps according to customer needs.

Kolmeks Ltd. is part of the Kolmeks Group, which is owned by the privately owned Brandt Group Oy, Ltd. The turnover of the Brandt Group is approximately EUR 100 million and the group employs approximately 800 persons.