



Advanced Cooling Solutions for Data Centre Applications

How Concentric can support you in your
data centre cooling needs

Concentric at a glance | 100+ years of know-how with a global footprint and proven solutions for data centres



Concentric highlights

~400€ M Revenue (FY24)

15 Sites globally

10M+ Pumps sold p.a.

100+ Years of experience

Our advanced technology offering



E-Water Pumps



E-Oil Pumps



Fans



Thermal Management Systems



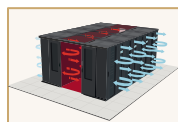
Water Pump Clutch System



EHS

We can serve a broad range of DC cooling technologies...

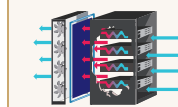
Data centre cooling technology



Traditional air

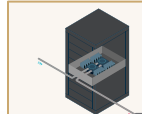
How Concentric supports the cooling technology

Joint-development of fan-integrated pump modules for secondary loops



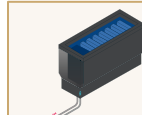
RDHX

Co-engineered rack-mount pump matched to door HX flow



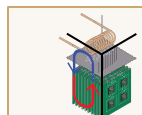
Direct-to-chip

Modular 48V pump and customized specs also available



1-phase immersion

Bespoke dielectric-compatible pumps co-developed to customer specs



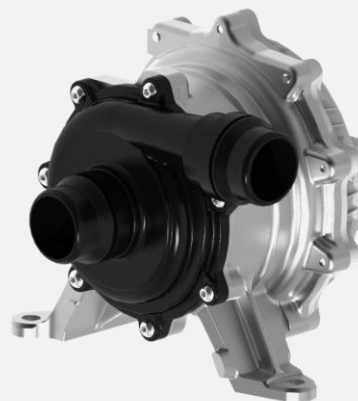
2-phase immersion

Bespoke dielectric-compatible pumps co-developed to customer specs

1. DTC = Direct-to-chip; 2. Over-the-air updates available

... and offer a customizable pump for DTC¹ applications

Pump specs available



See appendix for a specific data centre pump recently deployed with a customer

- Centrifugal, seal-less
- Brushless DC, sensorless, low noise
- Nominal low voltage: 12-48V DC
- Nominal high voltage: 500-850V DC
- Nominal power: 200-1000 Watts (input)
- Flowrate: 50-500LPM
- Ambient temp: -40 to 95 °C
- Fluid temp: -40 to 90 °C
- Fluid type: Can support various
- Dimensions: 173H x 209L x 166W
- Software control configurable, OTA² update

What makes Concentric pumps unique

50k+ hours lifetime

... of our pump that is battle-proven and best-in-class reliability

UL/OCP cert. ready

... with material compatibility of wetted parts per guidelines

Ultra-efficient pump

... that meets required flow/power density while minimizing energy draw

Cross-sector track-record | We are working with global market leaders across industries, including data centres

Non-exhaustive overview

Global industrial & power-train leaders



Heavy equipment & vehicle OEMs



DC & ESS players

Confidential
(Global provider of infrastructure to DCs)



Confidential
(Global provider of liquid cooling solutions to DCs)

Confidential
(Global leading manufacturer of utility-scale battery)



We have a collaborative working style & can adapt to your needs

Typical collaboration style with our customers



Agile design sprints with weekly design-reviews & short test cycles to enable fast time-to-market



Off-the-shelf-to-co-engineered bandwidth - from catalogue pumps to fully joint-designed modules



Production-ready hand-over with UL/OCP support and pilot-run supervision for smooth ramp-up



We propose to set up a joint meeting to showcase our offering and discuss specific requirements



Please do not hesitate to reach out to us!



Brendan Quill

VP of Sales in Europe & Asia

+44 7976 449086

brendan.quill@concentricab.com



Kevin Puszczewicz

VP Sales & Customer Service

+1 269 806 0499

kevin.puszczewicz@emp-corp.com

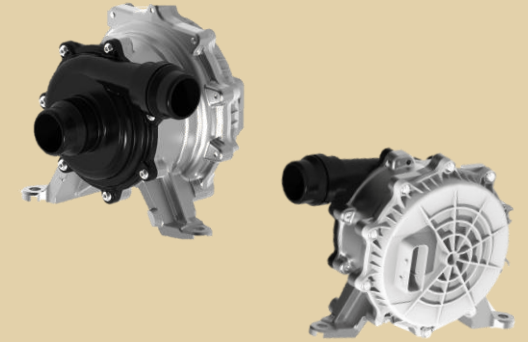
Deployed & proven | We have a co-developed pump now running with a global data centre cooling provider

Specs of recently deployed pump

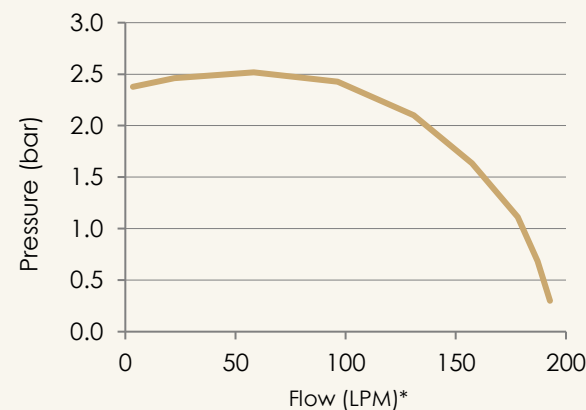
Pump type	Centrifugal, seal-less
Motor type	Brushless DC, sensorless, low noise
Controller type	Integrated
Nominal voltage	48V DC
Nominal power	1000 Watts (input)
Nominal performance	130 LPM
Ambient temperature	-40 to 95 °C
Fluid temperature	-40 to 90 °C
Fluid type	Water / Glycol
Pump dimensions (mm)	173H x 209L x 166W
Communication	Configurable (incl. CANJ1939 & CANopen developed); OTA updates possible

Key advantages of our pump

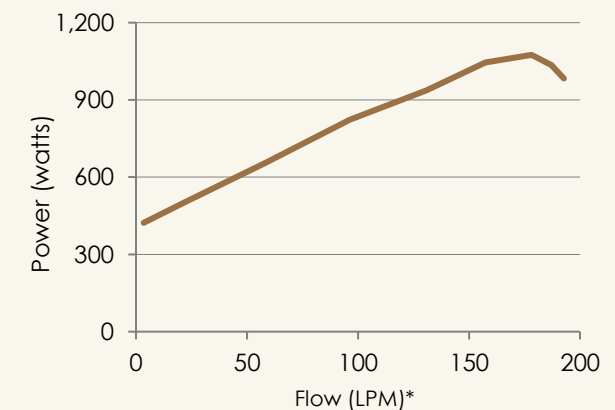
- Ultra-reliable with 50k+ hour design life
- Ultra-compact, seal-less housing
- Best-in-class hydraulic efficiency
- Scalable performance to track loads



Flow vs. pressure



Flow vs. input power



*Tested with supply voltage 50 VDC, 50 °C Fluid Temperature, 6000 RPM 6



**We look forward to
working with you!**