

Knürr® DCD

Passive rear-door heat-exchanger for up to 35 kW



Emerson Network Power Business-Critical Continuity™ – so your success continues!

Core competencies

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- Embedded Power
- Infrastructure Management & Monitoring
- Outside Plant
- Power Switching & Controls
- Thermal Management
- **Racks & Solutions**
- Services
- Surge Protection

No company, no matter how big or small, can afford business-critical system failures.

Over the years we at Emerson Network Power have acquired unique know-how. Our name represents reliable rack systems, power supply, precision cooling, connectivity and integrated solutions. We can therefore ensure that you gain the maximum benefits from your technology investments.

Thanks to Emerson Network Power's range of technology and extensive competencies, the entire bandwidth of company-wide solutions is supported for today's critical business requirements.

Customers all over the world rely on our support for future-proof investments – because they know that we offer specific innovations around the globe and optimized solutions from one single source – supported by reliable local service and support.

We can ensure the stable operation of your network infrastructure – regardless of whether voice, data or multimedia content is to be transmitted.

This is based on a time-proven, comprehensive portfolio of products, services and systems which supports a multitude of computing, telecommunications, health care and industrial applications. This creates a unique foundation of trust that is only possible by working together with Emerson Network Power.

Our task is to prepare you for the unknown and the unexpected. We will guide you through the dynamic changes occurring in your business environment.

We are also on hand to help you master the challenges this entails and take advantage of the greatest possible benefits of your technology investments. This is what we mean by Business-Critical Continuity.



Knürr® DCD

Passive cooling unit for maximum energy efficiency

ENP DCD is an air-water heat exchanger integrated into the rear door of a server rack. The heat exchanger is able to absorb heat loads from server racks of up to 35 kW.

- Compact solution for newly constructed and existing data centers
- Maximum possible energy efficiency due to lack of fans

- Supports cold room concept
- Enables permanent piping of the water circuit through water-bearing hinges.



Open Knürr® DCD



Knürr® DCD: efficient, cooling coil –
server fans drive hot air flow

Benefits



Special water-bearing hinge



Top water connection supports



Condensation discharge supports

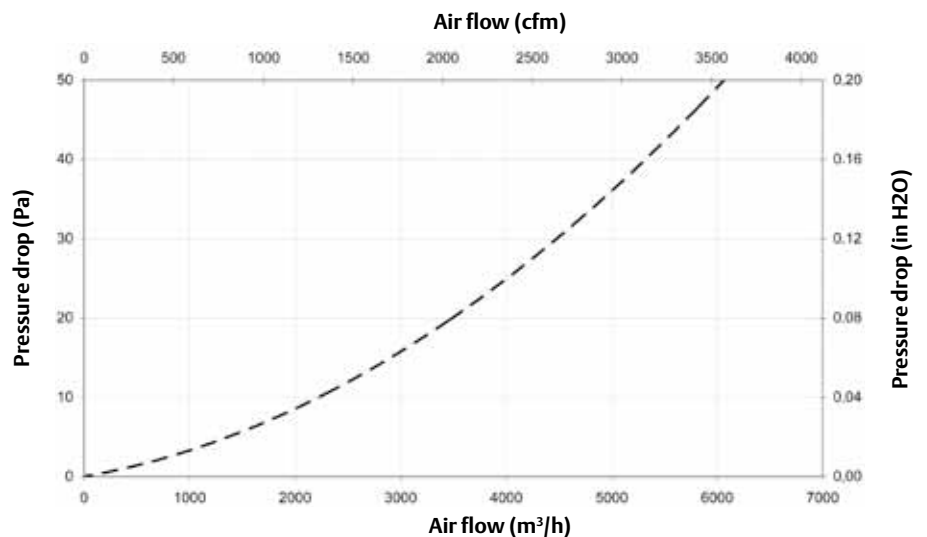
Condensation pan supports

Availability

- No additional fans required for cooling so no risk of failure.
 - Greater system reliability
 - Fewer sources of failure
 - No additional fans so no waste heat load on the room
- Guaranteed 35kW cooling
- Minimal air pressure drop
- Condensation pipe and collector in the event that the temperature falls below the dew point; removed via 5/8" flexible hose on plug nipple.
- The risk of condensate deposit is reduced by vertical orientation of the heat-exchanger fins.

Efficiency

- No additional fans for cooling; option to use existing rack structures for minimized investment
- Optimum space utilization due to ultra compact design and hence very low room costs
- Minimum chilled water pressure drop. Just 54 kPa facilitates minimum energy consumption by the pumps.



35 Pa is no problem for the typical fans in servers



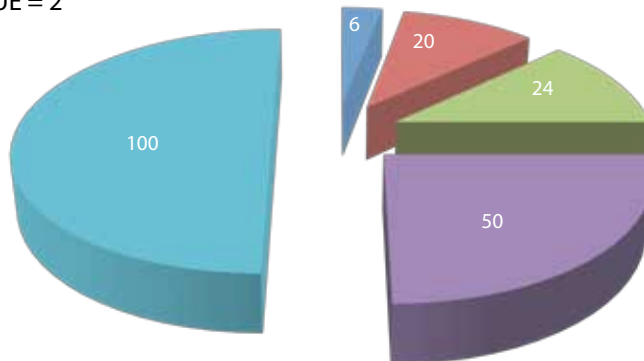
Knürr® DCD open without trim

Adaptability

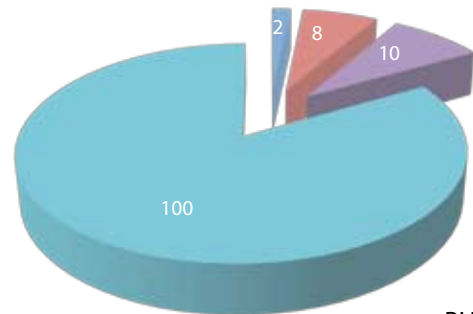
- Standard heights of 2,000 and 2,200 mm (41/47U).
- Standard widths of 600, 700 and 800 mm
- Top or bottom chilled water connection (field changeable)

- Combination of Knürr® DCD cooling door with server racks from other manufacturers is possible by incorporating special adaptor frames.

PUE = 2



Knürr® DCD with adapter frame to third-party rack



PUE = 1,2

- Lighting
- Electrical losses
- Air circulation
- Cooling
- IT equipment

Knürr® DCD Configurations



Knürr® DCD open without trim



Knürr® DCD



Server rack cooling components
with Knürr® DCD cooling door



Server rack air flow with Knürr® DCL
(cross-section)



Knürr® DCD installation in Goethe University Frankfurt (Germany)

Knürr® DCD/DCM basic specification

Cooling air side	
Housing material	Steel plate (powder coated)
Operating ambient temperature	10 °C ÷ 35 °C (50 °F – 95 °F) (other temperatures on request)
Maximum absolute air humidity on site	8 g/kg
Air outlet temperature (in accordance with ASHARE)	18 °C ÷ 27 °C (64.4 °F – 80.6 °F)
Air temperature difference IN - OUT	15 K ÷ 20 K
Chilled water side	
Cooling performance	35 kW
Chilled water temperature inlet	12 °C ÷ 18 °C (53.6 °F – 64.4 °F) (other temperatures on request)
Chilled water temperature outlet	18 °C ÷ 24 °C (64.4 °F – 75.2 °F) (other temperatures on request)
Maximum operating pressure	10 bar (145 psi)
Pipe connection IN / OUT	1" F (on the frame) (DIN ISO 228 - 1)



Knürr® DCD; rear door closed

Knürr® DCD configuration number

Model number - part 1/2										Model details											Part 2/2				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
D	C	D	3	5	A	6	3	3	0	0	0	0	0	0	0	1	0	0	0	0	S	X	0	0	1

1. - 3. Product identification
DCD = ENP DCD

4. - 5. Nominal cooling capacity
35 = 35 kW

6. Rack height
A = 2000 mm (78 - 6/8")
B = 2100 mm (82 - 5/8")
C = 2200 mm (86 - 5/8")
M = modification (custom - SFA only)

7. Rack width
6 = 600 mm (23 - 5/8")
7 = 700 mm (27 - 4/8")
8 = 800 mm (31 - 4/8")
M = modification (custom - SFA only)

8. Rack depth
E = 1000 mm (39 - 3/8")
F = 1100 mm (43 - 3/8")
G = 1200 mm (47 - 2/8")
3 = 3rd part rack adaptor
0 = no rack
M = modification (custom - SFA only)

9. Chilled water connection - hinge position
1 = top - left
2 = top - right
3 = bottom - left
4 = bottom - right

10. Options
0 = No options (Not available at the moment)

11. - 15. Not in use
0 = No options (Not available at the moment)

16. Color
1 = RAL 7035 (light gray)
G = RAL 7021 (dark gray)
2 = non-standard color (SFA)

17. - 20. Not in use
0 = No options (Not available at the moment)

21. Packaging
P = Land freight - short distance (pallet, shrink wrap, cardboard protection)
S = Seaworthy (air freight) - long distance (wooden crate)

22. SFA - special features
X = SFAs included
A = no SFAs

23. - 25. Order identifier

About Emerson Network Power

Emerson Network Power, a business of Emerson (NYSE:EMR), delivers software, hardware and services that maximize availability, capacity and efficiency for data centers, healthcare providers and industrial facilities. A trusted industry leader in smart infrastructure technologies, Emerson Network Power provides innovative data-center infrastructure management solutions that bridge the gap between IT and facility management and deliver efficiency and uncompromised availability regardless of capacity demands. Our solutions are supported around the world by local Emerson Network Power service technicians. Learn more about Emerson Network Power products and services at:

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