



Knürr CoolTrans®

The link between water circulation systems
in the building and the server rack

1.72 to 1.74





Primary cooling circulation



Secondary cooling circulation



Knürr CoolTrans® 50/75/100 – The link between building services and data center

Water in a data center makes special demands on the cold water system, and extending the existing cold water circuit in the data center just isn't enough. The CoolTrans® from Knürr separates the primary cold water circulation from the secondary cold water circulation in the data center using high performance water-water heat exchangers. This consequently results in ...

... the cold water prerun temperature being regulated above the dew point. This in turn means that a laborious insulation of the water circuit in the DC is no longer required. Condensation build-up is also ruled out,

and drying-out or re-humidifying the data center is prevented.

... dispensing with the use of glycol with the secondary circuit, as it is operated frost-protected. The cooler can be configured smaller, but with the same power, thereby avoiding higher investment costs.

... the water volume in the data center remaining restricted to the secondary circuit.

... balancing of the temperature and pressure fluctuations in the primary circuit.

... the regulation of the secondary circuit, connected with an alarm management, which ensures constant operation and signals faults in the system. Needless to say all moving parts are provided redundantly.

Furthermore the relatively high prerun temperatures of 12°C and more in many thermal areas enable a high degree of free cooling, which generates significant energy savings. Knürr's CoolTrans® facilitates a mixture of cold water from free cooling and the cold water system.



Knürr CoolTrans® Strong points

Features

- Hydraulic separation of the cold water circulation system in the building from the cooling water in the data center
- Use of top grade quality components of the building technology
- Integration of all thermo-hydraulic components for regulated liquid cooling (pumps, valves, mixers, heat exchanger, expansion tank)
- Redundant components enable uninterrupted operation, even during servicing
- Connection of individual Knürr CoolTherm® and Knürr CoolAdd® to the Knürr CoolTrans®
- Modular design for heat loads in excess of 100 kW
- Automatic leakage detection

Benefits

- Energy savings with high performance high-grade steel heat exchanger
- Constant cooling water temperature with adjustable reference temperature
- Consistent cooling water volume, regardless of the hydraulic conditions in the building
- Operational reliability with system separation (enables leakage monitoring and prevents corrosive and fouling effects with a defined water quality on the secondary side)
- Operational reliability through redundancy
- Operational reliability with recording and central monitoring of the operational parameters, including warning and alarm signals
- Dew point dependent cooling water flow temperature increase to prevent condensation water and for piping without insulation
- Option of controlling the emergency operation
- Flange connection for linking up several Knürr CoolTrans®



Knürr CoolTrans®100 in modular design. Linking allows heat loads of up to 500 kW to be safely diverted.



Knürr CoolTrans® in compact 19" construction. Ideal for installation in data centers or IT rooms.



Distributor for connecting up to 5 consumer units, such as Knürr CoolTherm® or Knürr CoolAdd®

Knürr CoolTrans® 19" upgrade solution

- Hydraulic interface between the building-side primary cold water supply and high density cooling solutions in the secondary circuit
- Provision of constant prerun temperatures - Monitoring of minimum pressure (leakage) and fall below dew point, station in steel base frame, from 100 kW with powder-coated cover, height adjustable, for transport with hand lift truck, forklift, etc., pipes ST 37
- Pipes primary-side and fittings diffusion-tight, insulated against condensation water
- Redundant pump group (100%) with daily run change, emergency run function of the primary regulating valve (power-off open)
- Connection of two separate cold water primary supplies is possible from 100 kW; modular coupling of the distributor bars for configuring higher transmission powers of up to 500 kW, as well as additional redundancies, double-sided connection option for setting up a secondary ring line, with plate heat exchanger, ball cocks, manometer, 4 thermometers, regulating valve, adapter, primary cold water meter (option), 2 wet running pumps, 2 back pressure preventers, 2 dirt filters, membrane expansion tank with safety valve - 2.5 bar, two-stage pressure switch, fill, empty and air bleed valve, leakage tray and automatic leakage detection.

■ Control

Freely programmable control, main switch, pump control, dew point monitoring with shouldered room humidity sensor (sensor mounting in the CoolTherm's installation room/connection cables on-site), temperature control according to reference value specification and automatic increase in the cold water prerun temperature with enthalpy computer for preventing condensation on the basis of the actual air humidity in the data

center.

Centralized alarm with pump failure, valve fault, temperature fault, data backup at least 72 hours, manual control level, optional LON interface and status output as requested with TCP/IP, LAN, warning and fault signals shown via display and potential-free contact, UPS signal reception with potential-free contact. Distributor (only 75 kW, order no. 08.009.504.8) for connecting up to 5 consumers, such as CoolTherm and CoolAdd.

CoolTrans®100 in modular design. Linking allows heat loads to be safely diverted:
Up to 300 kW with order number 08.009.503.8 and 08.009.509.8
Up to 500 kW with order number 08.009.508.8

CoolTrans 100 with free cooling
Order number 08.009.509.8
2 heat exchangers enable free cooling independent of the building's cold water.

- **Electrical connection**
400 VAC, 3-phase, 50 Hz
- **Protection rating**
IP 54
- **Color**
RAL 7021 dark gray
- **How supplied**
Assembled

Power (kW)	W (mm)	H (mm)	D (mm)	Weight (kg)	Pipe connection		Diff. pressure		Cooling water temp.		Water volume		Elec. conn. power (kW)	Order no.	UP
					primary (bar)	secondary (bar)	primary (°C)	external (°C)	primary (°C)	secondary (°C)	primary (m³/h)	external (m³/h)			
50	450	1010	1200	180	1 1/2"	5x 1"	1.00	1.00	6/12	12/18	8.42	7.2	1.80	08.009.504.8	1 unit
75	450	1010	1200	200	1 1/2"	5x 1"	1.00	1.00	6/12	12/18	12.75	10.77	1.80	08.009.504.8	1 unit
100	1620	1840	600	400	4x DN100	4x DN100	1.10	1.30	6/12	12/18	14.3	14.3	1.00	08.009.503.8	1 unit
100	1620	1840	800	450	4x DN125	4x DN125	1.10	1.30	6/12	12/18	14.3	14.3	1.00	08.009.508.8	1 unit
100	2520	1840	800	830	4x DN100	4x DN100	0.20	1.10	13/19	15/21	16.68	14.4	1.00	08.009.509.8	1 unit