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SK 3314.550 Liquid Cooling Package

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POWER DISTRIBUTION >> CLIMATE CONTROL

IT INFRASTRUCTURE SOFTWARE & SERVICES

FRIEDHELM LOH GROUP

ENCLOSURES

SK 3314.550 - Liquid Cooling Package LCP Inline CW/ CWG

Bayed climate control designed for siting within a bayed enclosure suite. The hot air is extracted at the rear of the unit, cooled and then expelled forwards to the cold aisle.

Features

Model No.	SK 3314.550
Design	Suite cooling CWG
Benefits	Maximum energy efficiency due to EC fan technology and IT-based control Minimal pressure loss at the air end, which in turn minimises the power consumption of the fans With redundant temperature sensor integrated at the air end as standard Optimum adaptability due to dynamic, continuous control of the cold water volume flow By using high water inlet temperatures, the proportion of indirect free cooling is increased, which in turn reduces operating costs Modular fan units for a demand-based cooling output (fan replacement without tools, also possible during operation) Fan modules configurable as n+1 redundancy Standard 3-phase connection for electrical redundancy The separation of cooling and enclosure prevents the ingress of water into the server enclosure A footprint of max. 0.36 m ² for all cooling services Improved heat recovery, thanks to high water return temperatures when using LCP CW glycol variants, for example in combination with a heat pump Optimum access for maintenance and servicing from the front and rear
Function principle	The hot air is drawn in from the room or hot aisle at the rear of the device and expelled at the front into the cold aisle after cooling. With this product, a raised floor is not necessary.

Features

Material	Enclosure: Sheet steel Front door: Aluminium, anodised/spray-finished
Colour	Enclosure: RAL 7035 Front door: Vertical sections, silver coloured and horizontal sections, RAL 9005
Options	Automatic server enclosure door opening Direct connection of an additional 16 CMC III sensors possible null null Display
Monitoring	Monitoring of all system-relevant parameters such as server air intake temperature, server waste air temperature, water inlet/return temperature, water flow, cooling output, fan speed, leakage Direct connection of the unit via SNMP over Ethernet (2 Ethernet ports for simpler cascading of up to 16 LCPs) Integration into RiZone OTM Suite (extended measuring and management functions, values can be transferred and visualised)
Total cooling output/Number of fan modules	20 kW/2 31 kW/3 35 kW/4
Air throughput (unimpeded air flow)	At 50 Hz: 5,000 m³/h
Number of fan modules in supplied state	2
Dimensions	Width: 300 mm Height: 2,000 mm Depth: 1,200 mm
To fit enclosure type	VX IT TS IT
Installation in bayed enclosure suite	Flush
Rated operating voltage	200 V - 240 V, 1~, 50 Hz/60 Hz 346 V – 415 V, 3~, 50 Hz/60 Hz
Max. cooling output	28 kW
Type of electrical connection	Connector

Features

Duty cycle	100 %
Cooling medium	Water/glycol
Cooling medium note	Water quality according to unit specifications.
EC fan	Yes
Fans may be exchanged with the system operational	Yes
Temperature control	Linear fan control Two-way control valve
Water connections	DN 40 (G 1½" external thread)
Permissible operating pressure (p. max.)	10 bar
Water inlet temperature	15 °C
Protection category to IEC 60 529	IP 10B
Optimized condensate management even at low water flow temperatures	Yes
Options	Automatic server enclosure door opening Direct connection of an additional 16 CMC III sensors possible Display
Packs of	1 pc(s).
Net weight	240
Gross weight	250
Customs tariff number	84186900
EAN	4028177977716

Approvals

Explanations

Declaration of conformity Declaration of conformity UK

Tender text

LCP Inline CW, flush, 3314.550: Regulatory model no.: LCP G 8A2I23SC700C0

The design of the unit is optimised for use in data centres.

The integrated air/water heat exchanger guarantees a sensitive cooling output of 28 kW (water/glycol 67/33) / 35 kW (pure water) and was designed specifically for high cooling outputs when operated with a water/glycol mixture.

Thanks to the heat exchanger design, the unit is ideally suited for the downstream operation of a heat pump and thus for heat recovery.

The air/water heat exchanger is mounted on the side of the rack. The flush LCP Inline unit extracts the hot air from the servers via a vented rear door and returns cooled air to the 19" equipment by blowing it out to the front via a vented front door and thus in front of the vented doors of the server rack.

The LCP Inline is aligned with the server rack at the front and the rear and thus forms a single flush surface.

The use of two integrated EC fan modules (cooling output up to 16 kW, water/glycol 67/33) achieves maximum efficiency and minimises the electrical energy consumption.

The sensitive cooling output can be raised to 28 kW (water/glycol 67/33) by installing two further fan modules (accessories).

This safeguards the value of an investment where the maximum cooling output is not yet required at the time of initial installation.

The unit is prepared for the incorporation of up to four EC fan modules. Configuration with the maximum number of fans can thus also serve to achieve redundancy or to minimise electrical power consumption.

The air/water heat exchanger and server rack are incorporated into a single bayed suite, but nevertheless remain separate from each other. This eliminates the risk of water penetrating into the server rack and simplifies installation and service.

There is no access to the adjacent IT rack via the LCP.

Leakage monitoring is integrated. If a sensor installed in the

condensate tray detects a leakage, the main controller issues an alarm

message and/or interrupts the supply of cooling medium to the unit.

Thanks to a patented condensate management system, the unit can also be operated with water inlet temperatures below the dew point. All components which may come into contact with condensate are made from stainless steel in order to avoid corrosion.

An accessory kit enables the water connection to be realised either at the top or at the bottom (G 1½" external thread).

Fast commissioning of the unit thanks to fast and simple air bleeding. The fans can be replaced in a matter of seconds and without the need for tools or specially qualified personnel, also during continued operation.

An advanced software concept enabling network integration for the monitoring/setting of all technical parameters is implemented as a standard feature.

An integrated fail-safe operating mode maintains reliable cooling in case of a controller failure.

Up to 16 CMC III sensors (temperature/humidity etc.) can be connected to the CAN bus.

Technical data:

Sensitive cooling output with 2/3/4 fans: 16/25/28 kW (water/glycol 67/33)

Sensitive cooling output with 2/3/4 fans: 20/31/35 kW (pure water)

Operating temperature range, ambient: 10 °C - 50 °C

Operating temperature range, cooling medium: 10 °C - 30 °C

Lower inlet temperatures possible after consultation with the manufacturer.

Installed fans: 2 (max. 4 possible) Air throughput: max. 5000 m³/h (4 fans) Air intake temperature: 24 °C Water inlet temperature: 15 °C Medium: Water/glycol (67/33) or pure water Cooling medium throughput (0-80 l/min): approx. 50 l/min, water/glycol 67/33) Pressure loss: approx. 0.8 bar, water/glycol (67/33) Water connection: G 1¹/₂" external thread Voltage: 200-240 V AC, 1~ N, PE, 50/60 Hz; 346-415 V AC, 3N~, PE, 50/60 Ηz Max. connected load (2 fan modules): 1150 W Max. connected load (4 fan modules): 2150 W Server supply air temperature control via flow rate control and continuously variable speed EC fans Noise level at a distance of 1 m: max. 86 dB(A)

Colour:

Enclosure frame, roof plate, side panels and rear door: RAL 7035 Aluminium front door, vertical, aluminium, silver-grey anodised Aluminium front door, horizontal, aluminium, painted in RAL 9005 Aluminium front door, sheet steel panel, painted in RAL 9005 Handle and hinges: RAL 9005 Dimensions: WxHxD: 300 x 2000 x 1200 mm Weight as delivered: 280 kg

Controller/interfaces:

Rear network interfaces at the customer connection panel: 2 pcs.(RJ 45) switched, each 10/100/1000 MBit/s (16 IP addresses) Front USB interfaces: USB 2.0 type C for serial configuration. Power supply for basic configurations, USB 2.0 type A for storage media, status LED, set and reset button Rear CAN bus interface RJ 45: For connection of up to 16 CMC III sensors Rear alarm relay output: changeover contact (NO/NC) (48V DC, 1A, 250 VAC, 2 A) Digital input: 1 x (male) Analog inputs: 2 x (4-20 mA connector) RS232 for display connection Supported protocols: IPv4 / IPv6, integrated web server, HTTP, HTTPS, SSL, SSH, NTP, Telnet, TCP/IP v4 and v6, DHCP, DNS, NTP, Syslog, SNMP v1, v2c and v3, Traps, OPC-UA, Modbus/TCP, FTP/SFTP (update / file transfer), e-mail dispatch (SMTP) User management incl. rights management: Yes LDAP(S) / Radius connection: Yes USB port for firmware update / data logging function: Yes Initial commissioning / mass configuration: Yes, via predefined CSV file

Software

Control according to server supply air temperature or optionally according to differential pressure Automatic or manual control selectable Remote control via SNMP, Modbus/TCP or OPC-UA possible Setpoint setting by external temperature sensor selectable Optional water-side delta T control for efficient chiller operation Programming of logical links (tasks) for automation of specific processes possible Measurements: Thermal and electrical power are measured continuously. Determination and display of current EER, ? fan operating hours, ? valve cycles and ? flow rate [I].

Integration in RiZone OT Suite: Extended measurement and management functions, values can be transferred and visualized

Special features:

Simple maintenance of the unit from the front and back, enabling cable channels and aisle containment to be positioned above the unit. 2 Ethernet interfaces, thus simplified cascading of up to 16 LCPs (saving of ports and switches)

Tool-free fan replacement without interrupting operation. Optional differential pressure control.

Integrated software with water-side ?T control for efficient chiller operation

Patented condensate management integrated

Optional:

Fan module for power extension: 3313.016 Touch screen display, colored: 3311.030 Connection hose, bottom/top: 3311.040 Condensate pump: 3312.012 or 3314.012 Side panel mounting: 3313.089 CMC III temperature sensor: 7030.110 CMC III differential pressure sensor: 7030.150 Connection cable for PSM rail 7856.025 Add-on LCP Flush to VX IT: 5301.310 Add-on LCP Flush to TS IT: 5301.312