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SK 3314.550

Liquid Cooling Package

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FRIEDHELM LOH GROUP

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 Control of the server air inlet temperature or (optionally) according to differential pressure 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 UL variant includes a 1- or 2-phase fixed connection with additional cover as standard. The separation of cooling and enclosure prevents the ingress of water into the server enclosure A footprint of max. 0.36 m² 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

Features

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.
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 Racks in height 2200 mm, special colour Condensate management kit including baffle separator plus temperature and humidity sensor 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)
Note	From serial number 2025K000110475 onwards (production date: 16 September 2025), only display 3314.030 may be used as an accessory. The previous display model 3311.030 is no longer compatible as of that date. All newly produced LCPs will be indicated by a green sticker on the packaging.
Total cooling output/Number of fan modules	20 kW/2 31 kW/3 35 kW/4
Total cooling output	20 kW 31 kW 35 kW
Air throughput (unimpeded air flow)	At 50 Hz: 5,000 m³/h

Features

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
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

Features

Options	Automatic server enclosure door opening Direct connection of an additional 16 CMC III sensors possible Racks in height 2200 mm, special colour Condensate management kit including baffle separator plus temperature and humidity sensor Display
Packs of	1 pc(s).
Net weight	240 kg
Gross weight	250 kg
Customs tariff number	84186900
Product description	SK LCP Inline CW/glycol, 35 kW, RAL 7035, WHD: 300x2000x1200 mm

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 1½" external thread
Voltage: 200-240 V AC, 1~ N, PE, 50/60 Hz; 346-415 V AC, 3N~, PE, 50/60 Hz
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, TCP/IP v4 and v6, DHCP, DNS, NTP<(>,<)>
Syslog, SNMP v1, v2c and v3, Traps<(>,<)>
OPC-UA, Modbus/TCP<(>,<)>
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 [l].
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