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# SK 3313.568 Liquid Cooling Package

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

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POWER DISTRIBUTION



FRIEDHELM LOH GROUP

ENCLOSURES

# SK 3313.568 - Liquid Cooling Package LCP Inline CW, LCP Inline 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 3313.568
Design	CW
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
	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 Targeted cooling output due to modular fan units Fan modules configurable as n+1 redundancy
	With redundant temperature sensor integrated at the air end as standard
	The separation of cooling and enclosure prevents the ingress of water into the server enclosure
	A footprint of max. 0.36 m <sup>2</sup> for all cooling services
	Optimum access for maintenance and servicing from the front and rear
	Tool-free replacement of the fan modules
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

Sheet steel, spray-finished
RAL 9005, finely textured matt
RAL 9005
Direct connection of additional CMC III sensors is supported Racks 2200 mm high
Suite cooling
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 Integration into RiZone
48 kW/4 51 kW/5 53 kW/6
At 60 Hz: 8,000 m³/h
6
Width: 300 mm Height: 2,000 mm Depth: 1,200 mm
VX IT TS IT PRO
Set forward
200 V - 240 V, 1~, 50 Hz/60 Hz 200 – 240 V AC
53 kW
Connector
100 %
Water
Water quality according to unit specifications.

### Features

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 20
Options	Direct connection of additional CMC III sensors is supported Racks 2200 mm high
Packs of	1 pc(s).
Net weight	228
Gross weight	240
Customs tariff number	84186900
EAN	4028177962774
ETIM 9	EC002515
ETIM 8	EC002515
ECLASS 8.0	27180712

## Approvals

Approvals

UR + C-UR (recognized)

#### Tender text

LCP Inline CW UL, Protruding, 3313.568: Regulatory model no.: LCP N 7A3P63SC9D000

The design of the unit is optimised for use in data centres. The integrated air/water heat exchanger guarantees a sensitive cooling output of 53 kW with standard server enclosure dimensions, the lowest possible weight and comprehensive possibilities for monitoring.

The air/water heat exchanger is mounted on the side of the rack. The LCP Inline extracts the hot air from the servers via a vented rear door.

The unit is set forward from the front of the server rack by approx. 200 mm and returns cooled air to the 19" equipment by blowing it in front of the vented doors of the server rack from the left and right.

The use of 6 integrated EC fan modules (cooling output up to 53 kW, 180844 BTU/h) achieves maximum efficiency.

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. All components in the condensate area are made of stainless steel to prevent corrosion

The unit was developed for the exclusive purpose of providing a sensitive cooling output.

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 eight additional sensors (temperature/humidity, etc.) can be connected.

Technical data:

Sensitive cooling output with 4/5/6 fans: 48/51/53 kW Operating temperature range, ambient: 10 °C - 50 °C Operating temperature range, cooling medium: 10 °C - 30 °C (non-condensing) Lower inlet temperatures possible after consultation with the manufacturer.

Installed fans: 6 (max. 6 possible) Air throughput: 8,000 m<sup>3</sup>/h (6 fans) Cooling output (six fans): 53 kW (180844 BTU/h) Air intake temperature: 24 °C Water inlet temperature: 15 °C Medium: Water (or water/glycol mixture) Cooling medium throughput (0-140 l/min): approx. 125 l/min (pure water) Pressure loss: approx. 1 bar Water connection: G 11/2" external thread Voltage: 1~ 200-240V, AC50/60Hz, L1, (L2/N), PE Max. connected load (6 fan modules): 3150 W Control according to server air intake temperature, realised by way of throughput regulation and EC fans with infinitely variable speed Noise level at a distance of 1 m: max. 88 dB(A) Colour: Housing frame, roof plate, side panels and rear door: RAL 9005 Dimensions: WxHxD: 300 x 2000 x 1200 mm Weight as delivered: approx. 260 kg Controller/interfaces: Network port (RJ 45): Ethernet to IEEE 802.3 via 10/100BaseT with PoE Front USB port: Mini USB for system setup Rear USB port: For USB thumb drive for data memory up to 32 GB Front SD-HC slot: Data memory up to 32 GB Alarm relay output: Changeover contact for extra-low voltage (24 V DC, 1 A) Digital inputs: 2x (terminal) Protocols, Ethernet: TCP/IPv4, TCP/IPv6, SNMPv1, SNMPv2c, SNMPv3, Modbus TCP, OPC ua, Telnet, SSH, (S)FTP, HTTP (S), NTP, DHCP, DNS, SMTP (S), Syslog Eight additional sensors (temperature, humidity, etc.) can be connected

Software

Control according to server air intake temperature Automatic or manual control can be selected Remote control via SNMP, Modbus TCP, OPC ua is possible Target value specification by way of an external temperature sensor Water-side ?T control can be selected for efficient chiller operation Programming of logic operations (tasks) is possible in order to automate specific processes.

Touch screen display, color, installed

The display shows the user all relevant operating parameters directly on the LCP.

This has the advantage of being able to see the status of the device briefly and at a glance, and to react as quickly as possible if necessary.

The following parameters can be read in different levels:

Display of the supplied cold air temperature to the 19" equipment. Display of the discharged warm air temperature from the 19" equipment Cooling capacity Cooling water supply/return temperature Cooling water flow rate Position of the control valve Overview of all parameters at a glance Display of alarm and warning messages Overview page with IP address of the device, software version and contact person (can be entered individually) Change of the setpoint of the cold air temperature before the 19" level can be done on the display (locking possible if not desired) 4,3" display, 480 x 272 pixel **Resistive touch** type. 280 cd/m<sup>2</sup> Operating temperature: -20°C to +70°C Connecting cable

Special features: Simple maintenance of the unit from the front and back, enabling cable channels and aisle containment to be positioned above the unit. Tool-free fan replacement without interrupting operation Available installation height of the adjacent server rack: free (standard: 42 U)

Optional: Fan module to increase cooling output: 3313.016 Connection hose, bottom/top: 3311.040 Condensate pump: 3312.012 (only for supply voltage 230-240 V) Rear adaptor for LCP CW Inline, Protruding, 3313.530/560/570: 3312.081 Integrated droplet separator on request