



SIPLUS HCS4200 POM4220 Midrange Phase angle. Power output module (POM) for inserting in a HCS RACK4200. with 12 outputs each max. 4432 W. (for operating mode zero-point switching: depending on the Inrush current of the load limitation to max. 1600 W)

General information	
Product type designation	POM4220 mid-range phase control
Installation type/mounting	
Mounting type	Screw mounting to rack
Mounting position	vertical
Type of ventilation	Self ventilation or forced ventilation
Supply voltage	
Type of supply voltage	AC
Rated value (AC)	230 V
• Relative negative tolerance	10 %
• Relative positive tolerance	30 %
2nd rated value (AC)	277 V
• Relative negative tolerance	25 %
• Relative positive tolerance	8 %
Line frequency	
• Rated value 50 Hz	Yes
• Rated value 60 Hz	Yes
• Relative symmetrical tolerance	5 %

Mains buffering	
• Recovery time after power failure, typ.	1 s
Connection method	
• Design of electrical connection for supply voltage	Connector, 3-pole with spring-loaded connection
— Connectable conductor cross-sections, solid	1x (0.75 ... 16 mm ²)
— Connectable conductor cross-sections, finely stranded with wire end processing	1x (0.75 ... 16 mm ²)
— Connectable conductor cross-sections for AWG cables	1x (18 ... 4)
Input voltage	
Design of the power supply	Power supply via rack
Power	
Active power input, max.	1 W
Power electronics	
Type of load	Ohmic load
Power capacity, max.	23 kW; At 230 V AC
• For phase against neutral with fan at 40 °C, max.	23 kW; At 230 V AC
• For phase against neutral without fan at 40 °C, max.	7.3 kW; At 230 V AC
Switching capacity current per phase, max.	50 A
Short-time withstand current (SCCR) acc. to UL 508A	100 kA
Control of heating elements	
• Half-wave control	Yes
• Soft start	Yes
• Phase control	Yes
Load connection type	
• Star connection with neutral conductor (single-phase)	Yes
• Open delta connection (single-phase)	No
• Closed delta connection (3-phase)	No
• Star connection with neutral conductor (2-phase)	No
• 2-pole switching	No
Setpoint input	
• Percent	Yes
• Watts	No
Heating power	
• Number of digital outputs	12
• Number of heating elements per output, max.	1

• Output voltage for heating power • 2nd output voltage for heating power • Power carrying capacity per output, min. • Power carrying capacity per output, max. — for heating elements with high inrush current, max. • Output current for heating power • Melting I2t value • Design of short-circuit protection per output • Design of overvoltage protection	230 V 277 V 60 W; At 230 V AC 3 680 W; At 230 V AC 1 600 W; At 230 V AC 16 A; max. 20 A²·s Fuse 16 A Transil Diode
Connection method	
• Design of electrical connection at output for heating and fan — Connectable conductor cross-sections, solid — Connectable conductor cross-sections, finely stranded with wire end processing — Connectable conductor cross-sections for AWG cables, stranded	Connector, 6-pole with spring-loaded connection 1x (0.2 ... 10 mm²) 1x (0.25 ... 6 mm²) 1x (24 ... 8)
Interfaces	
Interfaces/bus type	system interface
Interrupts/diagnostics/status information	
Number of status displays	15
LED status display	LED green = ready, LED yellow = heating on/off, LED red = error display, LED red = error for each channel
Diagnostics function	Voltage diagnostics
Diagnostic messages	
• Fuse blown • Load failure • Triac error • Switch-off threshold for internal device temperature • Parallel-connected heating elements • Rotating field fault • Communication error • Supply voltage not connected • Line voltage outside the permissible range • Frequency outside the permissible range • Fault current too high	Yes Yes Yes Yes No Yes Yes Yes Yes Yes No
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes

• Type of temperature monitoring	NTC thermistor
Measuring functions	
• Voltage measurement	No
• Current measurement	No
• Fault current detection	No
Potential separation	
Design of electrical isolation	Optocoupler and/or protective impedance between main circuit and PELV
between the outputs	No
Isolation	
Overvoltage category	III
Degree of pollution	2
EMC	
EMC interference emission	Limit value in accordance with IEC 61000-6-4:2007 + A1:2011
Electrostatic discharge acc. to IEC 61000-4-2	4 kV contact discharge / 8 kV air discharge
Field-related interference acc. to IEC 61000-4-3	10 V/m (80 ... 1 000 MHz), 3 V/m (1.4 ... 2.0 GHz), 1 V/m (2.0 ... 2.7 GHz)
Conducted interference due to burst acc. to IEC 61000-4-4	2 kV power supply lines, 2 kV load lines
Conducted interference due to surge acc. to IEC 61000-4-5	Supply and load lines: 1 kV symmetrical, 2 kV asymmetrical
Conducted interference due to high-frequency radiation acc. to IEC 61000-4-6	10 V (0.15 ... 80 MHz)
Degree and class of protection	
IP degree of protection	IP20
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
China RoHS compliance	Yes
Reference designation according to DIN EN 81346-2	Q
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	55 °C
Ambient temperature during storage/transportation	
• Storage, min.	-25 °C
• Storage, max.	70 °C
• Transportation, min.	-25 °C

• Transportation, max.	70 °C
Air pressure acc. to IEC 60068-2-13	
• Operation, min.	860 hPa
• Operation, max.	1 080 hPa
• Storage, min.	660 hPa
• Storage, max.	1 080 hPa
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m
Relative humidity	
• Operation at 25 °C, max.	95 %
• Operation at 50 °C, max.	50 %; 95 % at 25 °C, decreasing linearly to 50 % at 50 °C
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	10 ... 58 Hz / 0.075 mm, 58 ... 150 Hz / 1 g
• Vibration resistance during storage acc. to IEC 60068-2-6	5 ... 8.5 Hz / 3.5 mm, 8.5 ... 500 Hz / 1 g
Shock testing	
• Shock resistance during operation acc. to IEC 60068-2-27	15 g / 11 ms / 3 shocks/axis
• Shock resistance during storage acc. to IEC 60068-2-29	25 g / 6 ms / 1 000 shocks/axis
Dimensions	
Width	36 mm
Height	285 mm
Depth	281 mm
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