



SIPLUS HCS4200 POM4220 Midrange phase angle with 12 outputs each max. 3680 W (at 230 V AC)

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; phase - neutral conductor
<ul style="list-style-type: none"> Relative negative tolerance Relative positive tolerance 	10 % 30 %
2nd rated value (AC)	277 V; phase - neutral conductor
<ul style="list-style-type: none"> Relative negative tolerance Relative positive tolerance 	25 % 8 %
Line frequency	
<ul style="list-style-type: none"> Rated value 50 Hz Rated value 60 Hz Relative symmetrical tolerance 	Yes Yes 5 %
Mains buffering	
<ul style="list-style-type: none"> Recovery time after power failure, typ. 	1 s
Connection method	
<ul style="list-style-type: none"> Design of electrical connection for supply voltage <ul style="list-style-type: none"> Connectable conductor cross-sections, solid Connectable conductor cross-sections, finely stranded with wire end processing Connectable conductor cross-sections for AWG cables 	plug, 3-pole with spring-type terminal, push-in 1x (0.75 ... 16 mm ²) 1x (0.75 ... 16 mm ²) 1x (18 ... 4)
Input voltage	
device version of the power supply for electronics	Power supply via rack
Power	
Active power input, max.	1 W
Power electronics	
Type of load	Ohmic load
Power capacity, max.	29.4 kW; at 230 V AC
<ul style="list-style-type: none"> For phase against neutral with fan at 40 °C, max. For phase against neutral without fan at 40 °C, max. 	29.4 kW; at 230 V AC 7.3 kW; at 230 V AC
Switching capacity current per phase, max.	64 A
Short-time withstand current (SCCR) acc. to UL 508A	100 kA
Control of heating elements	
<ul style="list-style-type: none"> Half-wave control Soft start 	Yes Yes

• Phase control	Yes
Load connection type	
• Star connection with neutral conductor (single-phase)	Yes
• Open delta connection (single-phase)	No
• closed delta connection (2-phase)	No
• Closed delta connection (3-phase)	No
• Star connection with neutral conductor (2-phase)	No
• star connection without neutral conductor (3-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	230 V
• 2nd output voltage for heating power	277 V
• Power carrying capacity per output, min.	60 W; at 230 V AC
• Power carrying capacity per output, max.	3 680 W; at 230 V AC
— for heating elements with high inrush current, max.	1 600 W; at 230 V AC
• Output current for heating power	16 A; max.
• Melting I ² t value	20 A ² ·s
• Design of short-circuit protection per output	Fuse 16 A
• Design of overvoltage protection	Transil Diode
Connection method	
• Design of electrical connection at output for heating and fan	plug, 6-pole with spring-type terminal, push-in
— Connectable conductor cross-sections, solid	1x (0.2 ... 10 mm ²)
— Connectable conductor cross-sections, finely stranded with wire end processing	1x (0.25 ... 6 mm ²)
— Connectable conductor cross-sections for AWG cables, stranded	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
Diagnoses	
• Fuse blown	Yes
• Load failure	Yes
• Triac error	Yes
• Switch-off threshold for internal device temperature	Yes
• Parallel-connected heating elements	No
• Rotating field fault	No
• Communication error	Yes
• Supply voltage not connected	Yes
• Line voltage outside the permissible range	No
• Frequency outside the permissible range	Yes
• Fault current too high	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 IEC 81346-2 (2009)	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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