



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

| General information | |
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| 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 | |

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| • 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 (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 I2t 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 |

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| • Fault current detection | No | |
| Potential separation | | |
| Design of electrical isolation between the outputs | Optocoupler and/or protective impedance between main circuit and PELV | |
| | 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 | |
| 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 | |
| Classifications | | |
| | Version | Classification |
| eClass | 14 | 27-24-40-01 |
| eClass | 12 | 27-24-40-01 |

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| eClass | 9.1 | 27-24-40-01 |
| eClass | 9 | 27-24-40-01 |
| eClass | 8 | 27-24-26-90 |
| eClass | 7.1 | 27-24-26-90 |
| eClass | 6 | 27-24-26-90 |
| ETIM | 10 | EC002982 |
| ETIM | 9 | EC002982 |
| ETIM | 8 | EC002982 |
| ETIM | 7 | EC002982 |
| IDEA | 4 | 3567 |
| UNSPSC | 15 | 32-15-17-05 |

Approvals / Certificates

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| General Product Approval | EMV |
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