

Subtype HPS.Z 12-16kW/400 V

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|---------------------|---|
| Certificate Holder | Kospel SP. z o.o. |
| Address | ul. Olchowa 1 |
| ZIP | 75-136 |
| City | Koszalin |
| Country | PL |
| Certification Body | DIN CERTCO Gesellschaft für Konformitätsbewertung mbH |
| Subtype title | HPS.Z 12-16kW/400 V |
| Registration number | 011-1W0439 |
| Heat Pump Type | Outdoor Air/Water |
| Refrigerant | R410A |
| Mass of Refrigerant | 2.5 kg |
| Certification Date | 15.12.2021 |
| Testing basis | HP KEYMARK certification scheme rules rev. 9 |

Model HPSO-12/400 + HPSI-9

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|-------------------------------------|-----------------------|
| Model name | HPSO-12/400 + HPSI-9 |
| Application | Heating (medium temp) |
| Units | Indoor, Outdoor |
| Climate zone (for heating) | n/a |
| Heat Source | Outdoor Air |
| Cooling mode application (optional) | n/a |
| Any additional heat sources | n/a |

General data

| | |
|------------------|-------------|
| Power supply | 3x400V 50Hz |
| Off-peak product | Yes |

Outdoor Air/Water

EN 14511-4 | Heating

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|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure | passed |
| Defrost test | passed |
| Starting and operating test | passed |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor | 41 dB(A) | 41 dB(A) |
| Sound power level outdoor | 64 dB(A) | 64 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| η_s | 156 % | 110 % |
| Prated | 9.00 kW | 8.79 kW |
| SCOP | 3.98 | 2.83 |
| Tbiv | -7 °C | -7 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 7.98 kW | 7.70 kW |
| COP Tj = -7°C | 2.87 | 1.93 |
| Cdh Tj = -7 °C | 0.99 | 0.99 |
| Pdh Tj = +2°C | 5.63 kW | 5.17 kW |
| COP Tj = +2°C | 3.90 | 3.50 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 5.78 kW | 8.52 kW |
| COP Tj = +7°C | 4.86 | 3.66 |
| Cdh Tj = +7 °C | 0.99 | 0.99 |
| Pdh Tj = 12°C | 14.35 kW | 6.41 kW |
| COP Tj = 12°C | 6.08 | 4.84 |
| Cdh Tj = +12 °C | 0.99 | 0.99 |
| Pdh Tj = Tbiv | 7.98 kW | 7.70 kW |

| | | |
|---|-------------|-------------|
| COP $T_j = T_{biv}$ | 2.87 | 1.93 |
| $P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 7.54 kW | 6.94 kW |
| COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$ | 2.80 | 1.75 |
| $C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 0.99 | 0.99 |
| WTOL | 55 °C | 55 °C |
| P _{off} | 15 W | 15 W |
| PTO | 0 W | 0 W |
| PSB | 0 W | 0 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 1.48 kW | 1.85 kW |
| Annual energy consumption Q _{he} | 4696 kWh | 6362 kWh |

EN 14825 | Colder Climate

| | Low temperature | Medium temperature |
|--------------------------------|-----------------|--------------------|
| COP $T_j = +2^{\circ}\text{C}$ | 3.50 | |

EN 14825 | Warmer Climate

| | Low temperature | Medium temperature |
|-----------------------------------|-----------------|--------------------|
| COP $T_j = +2^{\circ}\text{C}$ | 1.93 | |
| $C_{dh} T_j = +2^{\circ}\text{C}$ | 0.99 | |

Model HPSO-16/400 + HPSI-9

| | |
|-------------------------------------|-----------------------|
| Model name | HPSO-16/400 + HPSI-9 |
| Application | Heating (medium temp) |
| Units | Indoor, Outdoor |
| Climate zone (for heating) | n/a |
| Heat Source | Outdoor Air |
| Cooling mode application (optional) | n/a |
| Any additional heat sources | n/a |

General data

| | |
|------------------|-------------|
| Power supply | 3x400V 50Hz |
| Off-peak product | Yes |

Outdoor Air/Water

EN 14511-4 | Heating

| | |
|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure | passed |
| Defrost test | passed |
| Starting and operating test | passed |

EN 12102-1 | Average Climate

| | Low temperature | Medium temperature |
|---------------------------|-----------------|--------------------|
| Sound power level indoor | 41 dB(A) | 41 dB(A) |
| Sound power level outdoor | 64 dB(A) | 64 dB(A) |

EN 14825 | Average Climate

| | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| η_s | 151 % | 111 % |
| Prated | 12.80 kW | 10.83 kW |
| SCOP | 3.85 | 2.85 |
| Tbiv | -7 °C | -4 °C |
| TOL | -20 °C | -20 °C |
| Pdh Tj = -7°C | 11.33 kW | 9.20 kW |
| COP Tj = -7°C | 2.46 | 1.89 |
| Cdh Tj = -7 °C | 0.99 | 0.99 |
| Pdh Tj = +2°C | 7.16 kW | 6.61 kW |
| COP Tj = +2°C | 3.70 | 2.77 |
| Cdh Tj = +2 °C | 0.99 | 0.99 |
| Pdh Tj = +7°C | 5.98 kW | 5.08 kW |
| COP Tj = +7°C | 5.17 | 3.74 |
| Cdh Tj = +7 °C | 0.99 | 0.99 |
| Pdh Tj = 12°C | 7.17 kW | 6.41 kW |
| COP Tj = 12°C | 6.92 | 4.84 |
| Cdh Tj = +12 °C | 0.99 | 0.99 |
| Pdh Tj = Tbiv | 11.33 kW | 8.33 kW |

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|---|-------------|-------------|
| COP $T_j = T_{biv}$ | 2.46 | 2.06 |
| $P_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 10.68 kW | 9.51 kW |
| COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$ | 2.41 | 1.88 |
| $C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 0.99 | 0.99 |
| WTOL | 55 °C | 55 °C |
| P _{off} | 15 W | 15 W |
| PTO | 0 W | 0 W |
| PSB | 0 W | 0 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 2.12 kW | 1.32 kW |
| Annual energy consumption Q _{he} | 26449 kWh | 22384 kWh |