

This information was generated by the HP KEYMARK database on 7 Jul 2022

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|---------------------|---|----------|------------|
| Summary of | AQUATOP T22H | Reg. No. | 011-1W0309 |
| Certificate Holder | | | |
| Name | ELCO GmbH | | |
| Address | Hohenzollernstrasse 31 | Zip | 72379 |
| City | Hechingen | Country | Germany |
| Certification Body | DIN CERTCO Gesellschaft für Konformitätsbewertung mbH | | |
| Subtype title | AQUATOP T22H | | |
| Heat Pump Type | Brine/Water and Water/Water | | |
| Refrigerant | R407c | | |
| Mass of Refrigerant | 4.1 kg | | |
| Certification Date | 04.05.2019 | | |

Model: AQUATOP T22H

| Configure model | |
|-------------------------------------|---------------------------------|
| Model name | AQUATOP T22H |
| Application | Heating (medium temp) |
| Units | Indoor |
| Climate Zone | Colder Climate + Warmer Climate |
| Reversibility | No |
| Cooling mode application (optional) | n/a |

| General Data | |
|--------------|-------------|
| Power supply | 3x230V 50Hz |

Brine/Water Heat Pump

Heating

| EN 14511-4 | |
|--|--------|
| Operating range outdoor exchanger/indoor exchanger upper limit/upper limit | passed |
| Operating range outdoor exchanger/indoor exchanger lower limit/lower limit | passed |
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure | passed |

| EN 14511-2 | | |
|-------------|-----------------|--------------------|
| | Low temperature | Medium temperature |
| Heat output | 21.00 kW | 20.40 kW |
| El input | 4.60 kW | 7.00 kW |
| COP | 4.60 | 2.90 |

Warmer Climate

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EN 12102-1

| | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 54 dB(A) | 54 dB(A) |

EN 14825

| | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| η_s | 202 % | 169 % |
| Prated | 21.00 kW | 20.00 kW |
| SCOP | 5.25 | 4.42 |
| Tbiv | 2 °C | 2 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = +2°C | 21.00 kW | 20.40 kW |
| COP Tj = +2°C | 4.60 | 2.90 |
| Pdh Tj = +7°C | 21.63 kW | 21.83 kW |
| COP Tj = +7°C | 5.06 | 3.86 |
| Pdh Tj = 12°C | 22.26 kW | 23.87 kW |
| COP Tj = 12°C | 5.57 | 5.37 |
| Pdh Tj = Tbiv | 21.00 kW | 20.40 kW |
| COP Tj = Tbiv | 4.60 | 2.90 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 21.00 kW | 20.40 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.60 | 2.90 |

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| | | |
|---|-------------|-------------|
| $C_{dh} T_j = TOL$ or $P_{dh} T_j = T_{designh}$ if $TOL < T_{designh}$ | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 0 W | 0 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Q_{he} | 5341 kWh | 6160 kWh |

Colder Climate

| EN 12102-1 | | |
|--------------------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 54 dB(A) | 54 dB(A) |

| EN 14825 | | |
|-----------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| η_s | 206 % | 174 % |
| Prated | 21.00 kW | 20.00 kW |
| SCOP | 5.35 | 4.54 |
| Tbiv | -22 °C | -22 °C |

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| | | |
|---|-------------|-------------|
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 21.84 kW | 22.24 kW |
| COP Tj = -7°C | 5.24 | 4.09 |
| Pdh Tj = +2°C | 22.26 kW | 23.46 kW |
| COP Tj = +2°C | 5.47 | 4.96 |
| Pdh Tj = +7°C | 22.47 kW | 24.28 kW |
| COP Tj = +7°C | 5.70 | 5.63 |
| Pdh Tj = 12°C | 22.68 kW | 24.89 kW |
| COP Tj = 12°C | 5.80 | 6.09 |
| Pdh Tj = Tbiv | 21.00 kW | 20.40 kW |
| COP Tj = Tbiv | 4.60 | 2.90 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 21.00 kW | 20.40 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.60 | 2.90 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 0 W | 0 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |

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| | | |
|------------------------------------|----------|-----------|
| Annual energy consumption Q_{he} | 9677 kWh | 11077 kWh |
|------------------------------------|----------|-----------|

Average Climate

| EN 12102-1 | | |
|--------------------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 54 dB(A) | 54 dB(A) |

| EN 14825 | | |
|-----------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| η_s | 201 % | 167 % |
| Prated | 21.00 kW | 20.00 kW |
| SCOP | 5.23 | 4.38 |
| Tbiv | -10 °C | -10 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 21.21 kW | 21.01 kW |
| COP Tj = -7°C | 4.69 | 3.16 |
| Pdh Tj = +2°C | 21.84 kW | 22.64 kW |
| COP Tj = +2°C | 5.24 | 4.35 |
| Pdh Tj = +7°C | 22.26 kW | 23.46 kW |
| COP Tj = +7°C | 5.47 | 5.10 |
| Pdh Tj = 12°C | 22.68 kW | 24.48 kW |

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| | | |
|---|-------------|-------------|
| COP $T_j = 12^{\circ}\text{C}$ | 5.80 | 5.97 |
| P _{dh} $T_j = T_{biv}$ | 21.00 kW | 20.40 kW |
| COP $T_j = T_{biv}$ | 4.60 | 2.90 |
| P _{dh} $T_j = TOL$ or P _{dh} $T_j = T_{designh}$ if $TOL < T_{designh}$ | 21.00 kW | 20.40 kW |
| COP $T_j = TOL$ or COP $T_j = T_{designh}$ if $TOL < T_{designh}$ | 4.60 | 2.90 |
| C _{dh} $T_j = TOL$ or P _{dh} $T_j = T_{designh}$ if $TOL < T_{designh}$ | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| P _{off} | 0 W | 0 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Q _{he} | 8297 kWh | 9624 kWh |

Water/Water Heat Pump

Heating

| EN 14511-4 | |
|--|--------|
| Operating range outdoor exchanger/indoor exchanger upper limit/upper limit | passed |
| Operating range outdoor exchanger/indoor exchanger lower limit/lower limit | passed |
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure | passed |

| EN 14511-2 | | |
|-------------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| Heat output | 25.90 kW | 25.60 kW |
| El input | 4.70 kW | 7.30 kW |
| COP | 5.50 | 3.90 |

Warmer Climate

| EN 12102-1 | | |
|--------------------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 54 dB(A) | 54 dB(A) |

| EN 14825 | | |
|-----------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| η_s | 241 % | 195 % |
| Prated | 26.00 kW | 26.00 kW |

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| | | |
|---|-------------|-------------|
| SCOP | 6.22 | 5.08 |
| Tbiv | 2 °C | 2 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = +2°C | 25.90 kW | 25.56 kW |
| COP Tj = +2°C | 5.55 | 3.52 |
| Pdh Tj = +7°C | 26.53 kW | 26.99 kW |
| COP Tj = +7°C | 6.00 | 4.48 |
| Pdh Tj = 12°C | 27.16 kW | 29.03 kW |
| COP Tj = 12°C | 6.51 | 5.99 |
| Pdh Tj = Tbiv | 25.90 kW | 25.56 kW |
| COP Tj = Tbiv | 5.55 | 3.52 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 25.90 kW | 25.56 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 5.55 | 3.52 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 0 W | 0 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |

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|------------------------------------|----------|----------|
| Annual energy consumption Q_{he} | 5566 kWh | 6720 kWh |
|------------------------------------|----------|----------|

Colder Climate

| EN 12102-1 | | |
|--------------------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 54 dB(A) | 54 dB(A) |

| EN 14825 | | |
|-----------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| η_s | 244 % | 197 % |
| Prated | 26.00 kW | 26.00 kW |
| SCOP | 6.29 | 5.12 |
| Tbiv | -22 °C | -22 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 26.74 kW | 27.40 kW |
| COP Tj = -7°C | 6.19 | 4.71 |
| Pdh Tj = +2°C | 27.16 kW | 28.62 kW |
| COP Tj = +2°C | 6.42 | 5.58 |
| Pdh Tj = +7°C | 27.37 kW | 29.44 kW |
| COP Tj = +7°C | 6.64 | 6.25 |
| Pdh Tj = 12°C | 27.58 kW | 30.05 kW |

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| | | |
|---|-------------|-------------|
| COP Tj = 12°C | 6.74 | 6.71 |
| Pdh Tj = Tbiv | 25.90 kW | 25.56 kW |
| COP Tj = Tbiv | 5.55 | 3.52 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 25.90 kW | 25.56 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 5.55 | 3.52 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 0 W | 0 W |
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Qhe | 10151 kWh | 12316 kWh |

Average Climate

| EN 12102-1 | | |
|--------------------------|------------------------|---------------------------|
| | Low temperature | Medium temperature |
| Sound power level indoor | 54 dB(A) | 54 dB(A) |

| EN 14825 |
|-----------------|
|-----------------|

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| | Low temperature | Medium temperature |
|---|------------------------|---------------------------|
| η_s | 240 % | 193 % |
| Prated | 26.00 kW | 26.00 kW |
| SCOP | 6.20 | 5.03 |
| Tbiv | -10 °C | -10 °C |
| TOL | -22 °C | -22 °C |
| Pdh Tj = -7°C | 26.11 kW | 26.17 kW |
| COP Tj = -7°C | 5.64 | 3.78 |
| Pdh Tj = +2°C | 26.74 kW | 27.80 kW |
| COP Tj = +2°C | 6.19 | 4.97 |
| Pdh Tj = +7°C | 27.16 kW | 28.62 kW |
| COP Tj = +7°C | 6.42 | 5.72 |
| Pdh Tj = 12°C | 27.58 kW | 29.64 kW |
| COP Tj = 12°C | 6.74 | 6.59 |
| Pdh Tj = Tbiv | 25.90 kW | 25.56 kW |
| COP Tj = Tbiv | 5.55 | 3.52 |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 25.90 kW | 25.56 kW |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 5.55 | 3.53 |
| Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 1.00 | 1.00 |
| WTOL | 60 °C | 60 °C |
| Poff | 0 W | 0 W |

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| | | |
|--|-------------|-------------|
| PTO | 10 W | 10 W |
| PSB | 10 W | 10 W |
| PCK | 0 W | 0 W |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP | 0.00 kW | 0.00 kW |
| Annual energy consumption Q _{he} | 8634 kWh | 10501 kWh |