Subtype AQUATOP T28H

Certificate Holder	ELCO GmbH
Address	Hohenzollernstrasse 31
ZIP	72379
City	Hechingen
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	AQUATOP T28H
Registration number	011-1W0310
Heat Pump Type	Brine/Water and Water/Water
Refrigerant	R407c
Mass of Refrigerant	5.7 kg
Certification Date	04.05.2019

Model AQUATOP T28H

Model name	AQUATOP T28H
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	3x230V 50Hz
Off-peak product	n/a

Brine/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
ηs	192 %	155 %
Prated	28.70 kW	24.80 kW
SCOP	5.01	4.08
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	28.99 kW	25.54 kW
COP Tj = -7°C	4.49	2.94
Cdh Tj = -7 °C		
Pdh Tj = +2°C	29.85 kW	27.53 kW
COP Tj = +2°C	5.02	4.05
Cdh Tj = +2 °C		
Pdh Tj = +7°C	30.42 kW	28.52 kW
COP Tj = +7°C	5.24	4.75
Cdh Tj = +7 °C		
Pdh Tj = 12°C	31.00 kW	29.76 kW
COP Tj = 12°C	5.54	5.56
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	28.70 kW	24.80 kW
COP Tj = Tbiv	4.40	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.70 kW	24.80 kW

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.40	2.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	11837 kWh	12560 kWh

EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	197 %	161 %
Prated	28.70 kW	24.80 kW
SCOP	5.13	4.23
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	29.85 kW	27.03 kW
COP Tj = -7°C	5.02	3.81
Cdh Tj = -7 °C		
Pdh Tj = +2°C	30.42 kW	28.52 kW
COP Tj = +2°C	5.24	4.62
Cdh Tj = +2 °C		
Pdh Tj = +7°C	30.71 kW	29.51 kW
COP Tj = +7°C	5.46	5.24
Cdh Tj = +7 °C		
Pdh Tj = 12°C	31.00 kW	30.26 kW
COP Tj = 12°C	5.54	5.67
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	28.70 kW	24.80 kW
COP Tj = Tbiv	4.40	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.70 kW	24.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.40	2.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	13792 kWh	14453 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	193 %	157 %
Prated	28.70 kW	24.80 kW
SCOP	5.03	4.13
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	28.70 kW	24.80 kW
COP Tj = +2°C	4.40	2.70
Cdh Tj = +2 °C		
Pdh Tj = +7°C	29.56 kW	26.54 kW
COP Tj = +7°C	4.84	3.59
Cdh Tj = +7 °C		
Pdh Tj = 12°C	30.42 kW	29.02 kW
COP Tj = 12°C	5.32	5.00
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	28.70 kW	24.80 kW
COP Tj = Tbiv	4.40	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	28.70 kW	24.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	4.40	2.70
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	7630 kWh	8030 kWh

Water/Water

EN 14511-4 | Heating

Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	232 %	189 %
Prated	37.20 kW	34.16 kW
SCOP	6.00	4.92
Tbiv	-10 °C	-10 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	37.49 kW	34.90 kW
COP Tj = -7°C	5.47	3.76
Cdh Tj = -7 °C		
Pdh Tj = +2°C	38.35 kW	36.89 kW
COP Tj = +2°C	5.99	4.87
Cdh Tj = +2 °C		
Pdh Tj = +7°C	38.92 kW	37.88 kW
COP Tj = +7°C	6.22	5.57
Cdh Tj = +7 °C		
Pdh Tj = 12°C	39.50 kW	39.12 kW
COP Tj = 12°C	6.52	6.38
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	37.20 kW	34.16 kW
COP Tj = Tbiv	5.38	3.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	37.20 kW	34.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.38	3.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	12807 kWh	14330 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature

Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	236 %	192 %
Prated	37.20 kW	34.16 kW
SCOP	6.09	5.01
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	38.35 kW	36.39 kW
COP Tj = -7°C	5.99	4.63
Cdh Tj = -7 °C		
Pdh Tj = +2°C	38.92 kW	37.88 kW
COP Tj = +2°C	6.22	5.43
Cdh Tj = +2 °C		
Pdh Tj = +7°C	39.21 kW	38.87 kW
COP Tj = +7°C	6.44	6.05
Cdh Tj = +7 °C		
Pdh Tj = 12°C	39.50 kW	39.62 kW
COP Tj = 12°C	6.52	6.48
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	37.20 kW	34.16 kW
COP Tj = Tbiv	5.38	3.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	37.20 kW	34.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.38	3.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	15056 kWh	16805 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	59 dB(A)	59 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	233 %	191 %

Prated	37.20 kW	34.16 kW
SCOP	6.02	4.98
Tbiv	2 °C	2 °C
TOL	-22 °C	-22 °C
Pdh Tj = +2°C	37.20 kW	34.16 kW
COP Tj = +2°C	5.38	3.52
Cdh Tj = +2 °C		
Pdh Tj = +7°C	38.06 kW	35.90 kW
COP Tj = +7°C	5.82	4.41
Cdh Tj = +7 °C		
Pdh Tj = 12°C	38.92 kW	38.38 kW
COP Tj = 12°C	6.30	5.82
Cdh Tj = +12 °C		
Pdh Tj = Tbiv	37.20 kW	34.16 kW
COP Tj = Tbiv	5.38	3.52
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	37.20 kW	34.16 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	5.38	3.52
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
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	8253 kWh	9170 kWh