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Summary of	AQUATOP T28H	Reg. No.	011-1W0310
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 T28H		
Heat Pump Type	Brine/Water and Water/Water		
Refrigerant	R407c		
Mass of Refrigerant	5.7 kg		
Certification Date	04.05.2019		

Model: AQUATOP T28H

Configure model	
Model name	AQUATOP T28H
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	28.70 kW	24.80 kW
El input	6.50 kW	9.20 kW
COP	4.40	2.70

Average Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	192 %	155 %
Prated	29.00 kW	25.00 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
Pdh Tj = +2°C	29.85 kW	27.53 kW
COP Tj = +2°C	5.02	4.05
Pdh Tj = +7°C	30.42 kW	28.52 kW
COP Tj = +7°C	5.24	4.75
Pdh Tj = 12°C	31.00 kW	29.76 kW
COP Tj = 12°C	5.54	5.56
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	1.00	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	11837 kWh	12560 kWh

Warmer Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	193 %	157 %
Prated	29.00 kW	25.00 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
Pdh Tj = +7°C	29.56 kW	26.54 kW
COP Tj = +7°C	4.84	3.59
Pdh Tj = 12°C	30.42 kW	29.02 kW
COP Tj = 12°C	5.32	5.00
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	1.00	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	7630 kWh	8030 kWh

Colder Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	197 %	161 %
Prated	29.00 kW	25.00 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
Pdh Tj = +2°C	30.42 kW	28.52 kW
COP Tj = +2°C	5.24	4.62
Pdh Tj = +7°C	30.71 kW	29.51 kW
COP Tj = +7°C	5.46	5.24
Pdh Tj = 12°C	31.00 kW	30.26 kW

COP Tj = 12°C	5.54	5.67
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	1.00	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	13792 kWh	14453 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	35.50 kW	34.20 kW
El input	7.00 kW	9.70 kW
COP	5.10	3.50

Average Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	232 %	189 %
Prated	37.00 kW	34.00 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
Pdh Tj = +2°C	38.35 kW	36.89 kW
COP Tj = +2°C	5.99	4.87
Pdh Tj = +7°C	38.92 kW	37.88 kW
COP Tj = +7°C	6.22	5.57
Pdh Tj = 12°C	39.50 kW	39.12 kW
COP Tj = 12°C	6.52	6.38
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	1.00	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	12807 kWh	14330 kWh

Warmer Climate

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

EN 14825		
	Low temperature	**Medium temperature**
η_s	233 %	191 %
Prated	37.00 kW	34.00 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
Pdh Tj = +7°C	38.06 kW	35.90 kW
COP Tj = +7°C	5.82	4.41
Pdh Tj = 12°C	38.92 kW	38.38 kW

COP Tj = 12°C	6.30	5.82
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	1.00	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	8253 kWh	9170 kWh

Colder Climate

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

EN 14825

	Low temperature	**Medium temperature**
η_s	236 %	192 %
Prated	37.00 kW	34.00 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
Pdh Tj = +2°C	38.92 kW	37.88 kW
COP Tj = +2°C	6.22	5.43
Pdh Tj = +7°C	39.21 kW	38.87 kW
COP Tj = +7°C	6.44	6.05
Pdh Tj = 12°C	39.50 kW	39.62 kW
COP Tj = 12°C	6.52	6.48
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	1.00	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	15056 kWh	16805 kWh