

Subtype TTL 8.5 ICS, TTL 8.5 IKCS

Certificate Holder	tecalor GmbH
Address	Fürstenbergerstr. 77
ZIP	37603
City	Holzminden
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	TTL 8.5 ICS, TTL 8.5 IKCS
Registration number	011-1W0226
Heat Pump Type	Outdoor Air/Water
Refrigerant	R410A
Mass of Refrigerant	2.6 kg
Certification Date	03.04.2018
Testing basis	HP KEYMARK certification scheme rules rev. no. 3

Model TTL 8.5 IKCS

Model name	TTL 8.5 IKCS
Application	Heating (medium temp)
Units	Indoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

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

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	4.22 kW	3.75 kW
El input	0.92 kW	1.49 kW
COP	4.60	2.51

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	40 dB(A)	44 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	161 %	126 %
Prated	9.20 kW	7.10 kW
SCOP	4.11	3.21
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.93 kW	6.28 kW
COP Tj = -7°C	2.61	2.13
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.16 kW	4.73 kW
COP Tj = +2°C	4.03	3.04
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.20 kW	4.20 kW
COP Tj = +7°C	5.25	4.44

Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.39 kW	3.14 kW
COP Tj = 12°C	8.03	6.21
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.93 kW	6.28 kW
COP Tj = Tbiv	2.61	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.29 kW	2.77 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.55	1.83
WTOL	60 °C	60 °C
Poff	56 W	56 W
PTO	21 W	21 W
PSB	56 W	56 W
PCK	26 W	26 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.91 kW	4.43 kW
Annual energy consumption Qhe	4621 kWh	4564 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	126 %	105 %
Prated	13.20 kW	12.70 kW
SCOP	3.23	2.69
Tbiv	-7 °C	-7 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	7.96 kW	7.69 kW
COP Tj = -7°C	2.73	2.26
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.29 kW	4.89 kW
COP Tj = +2°C	4.24	3.49
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.19 kW	4.21 kW
COP Tj = +7°C	5.45	4.82
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.39 kW	3.23 kW
COP Tj = 12°C	8.03	6.75
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.96 kW	7.69 kW
COP Tj = Tbiv	2.73	2.26
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.13 kW	5.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.27	1.00
WTOL	60 °C	60 °C
Poff	56 W	56 W

PTO	21 W	21 W
PSB	56 W	56 W
PCK	26 W	26 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.38 kW	6.79 kW
Annual energy consumption Q _{he}	10074 kWh	11651 kWh
P _{dh} T _j = -15 °C (if TOL	6.21	6.18
COP T _j = -15 °C (if TOL	2.43	1.48
C _{dh} T _j = -15 °C	0.90	0.90

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	207 %	142 %
Prated	4.95 kW	4.30 kW
SCOP	5.24	3.63
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	4.95 kW	4.34 kW
COP T _j = +2 °C	3.70	2.21
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7 °C	4.21 kW	3.96 kW
COP T _j = +7 °C	4.90	3.21
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12 °C	3.31 kW	2.98 kW
COP T _j = 12 °C	7.35	5.30
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	4.95 kW	4.34 kW
COP T _j = T _{biv}	3.70	2.21
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	4.95 kW	4.34 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.70	2.21
WTOL	60 °C	60 °C
P _{off}	56 W	56 W
PTO	21 W	21 W
PSB	56 W	56 W
PCK	26 W	26 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	1262 kWh	1584 kWh

Model TTL 8.5 ICS

Model name	TTL 8.5 ICS
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	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 14511-4 | Heating

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

EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	4.27 kW	3.81 kW
El input	0.90 kW	1.48 kW
COP	4.74	2.58

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	48 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	167 %	129 %
Prated	9.00 kW	7.20 kW
SCOP	4.24	3.30
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.98 kW	6.39 kW
COP Tj = -7°C	2.65	2.17
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.25 kW	4.81 kW
COP Tj = +2°C	4.19	3.14
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.26 kW	4.25 kW
COP Tj = +7°C	5.44	4.56
Cdh Tj = +7 °C	0.90	0.90

Pdh Tj = 12°C	3.43 kW	3.18 kW
COP Tj = 12°C	8.21	6.33
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	7.98 kW	6.39 kW
COP Tj = Tbiv	2.65	2.17
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.35 kW	2.77 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.83
WTOL	60 °C	60 °C
Poff	56 W	56 W
PTO	21 W	21 W
PSB	56 W	56 W
PCK	26 W	26 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.65 kW	4.43 kW
Annual energy consumption Qhe	4387 kWh	4506 kWh

EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	130 %	112 %
Prated	13.40 kW	13.00 kW
SCOP	3.33	2.86
Tbiv	-7 °C	-7 °C
TOL	-20 °C	-20 °C
Pdh Tj = -7°C	8.13 kW	7.84 kW
COP Tj = -7°C	2.81	2.31
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.39 kW	4.96 kW
COP Tj = +2°C	4.42	3.61
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.26 kW	4.27 kW
COP Tj = +7°C	5.65	4.98
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.43 kW	3.26 kW
COP Tj = 12°C	8.21	6.88
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.13 kW	7.84 kW
COP Tj = Tbiv	2.81	2.31
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.24 kW	5.24 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.33	2.33
WTOL	60 °C	60 °C
Poff	56 W	56 W
PTO	21 W	21 W

PSB	56 W	56 W
PCK	26 W	26 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	7.45 kW	7.08 kW
Annual energy consumption Q _{he}	9919 kWh	11197 kWh
P _{dh} T _j = -15 °C (if TOL	6.29	6.24
COP T _j = -15 °C (if TOL	2.47	2.32
C _{dh} T _j = -15 °C	0.90	0.90

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
η _s	212 %	145 %
Prated	5.02 kW	4.40 kW
SCOP	5.38	3.69
T _{biv}	2 °C	2 °C
TOL	2 °C	2 °C
P _{dh} T _j = +2 °C	5.02 kW	4.42 kW
COP T _j = +2 °C	3.83	2.27
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7 °C	4.27 kW	4.02 kW
COP T _j = +7 °C	5.06	3.30
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12 °C	3.35 kW	3.01 kW
COP T _j = 12 °C	7.50	5.35
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	5.02 kW	4.42 kW
COP T _j = T _{biv}	3.83	2.27
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	5.02 kW	4.42 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	3.83	2.27
WTOL	60 °C	60 °C
P _{off}	56 W	56 W
PTO	21 W	21 W
PSB	56 W	56 W
PCK	26 W	26 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Q _{he}	1247 kWh	1592 kWh