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#### **Login**

Summary of	TTL 6.5/8.5 ACS	Reg. No.	011-1W0062
Certificate Holder			
Name	tecalor GmbH		
Address	Fürstenbergerstr. 77	Zip	37603
City	Holzminden	Country	Germany
Certification Body	DIN CERTCO Gesellschaft für Konfo	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH	
Subtype title	TTL 6.5/8.5 ACS		
Heat Pump Type	Outdoor Air/Water		
Refrigerant	R410A		
Mass of Refrigerant	2 kg		
Certification Date	13.10.2017		
Testing basis	HP KEYMARK certification scheme rules rev. no. 6		

# Model: TTL 6.5 ACS + TSBC 200 ECO, TSBB 200 S

Configure model		
Model name	TTL 6.5 ACS + TSBC 200 ECO, TSBB 200 S	
Application	Heating + DHW + low temp	
Units	Indoor + Outdoor	
Climate Zone	n/a	
Reversibility	Yes	
Cooling mode application (optional) n/a		

General Data		
Power supply	1x230V 50Hz	

## Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	4.86 kW	4.31 kW
El input	1.02 kW	1.58 kW
СОР	4.76	2.73

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	27 dB(A)	27 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	177 %	125 %
Prated	6.80 kW	7.55 kW
SCOP	4.50	3.21
Tbiv	-7 °C	-5 °C
TOL	-10 °C	-7 °C
Pdh Tj = -7°C	6.02 kW	5.10 kW
COP Tj = -7°C	2.90	1.97
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	3.89 kW	4.10 kW
COP Tj = +2°C	4.35	3.25
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	3.50 kW	2.60 kW
COP Tj = +7°C	6.60	4.56
Cdh Tj = +7 °C	0.90	0.90





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Pdh Tj = 12°C	3.39 kW	3.30 kW
COP Tj = 12°C	6.78	5.98
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	6.02 kW	6.10 kW
COP Tj = Tbiv	2.90	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.30 kW	5.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80	1.97
WTOL	60 °C	60 °C
Poff	17 W	17 W
РТО	30 W	30 W
PSB	17 W	17 W
PCK	5 W	5 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.50 kW	7.55 kW
Annual energy consumption Qhe	3120 kWh	4865 kWh

Domestic Hot Water (DHW)



EN 16147	
Declared load profile	L
Efficiency ηDHW	113 %
СОР	2.70
Heating up time	01:50 h:min
Standby power input	35.0 W
Reference hot water temperature	52.5 °C
Mixed water at 40°C	245 I



# Model: TTL 8.5 ACS + TSBC 200 ECO, TSBB 200 S

Configure model		
Model name	TTL 8.5 ACS + TSBC 200 ECO, TSBB 200 S	
Application	Heating + DHW + low temp	
Units	Indoor + Outdoor	
Climate Zone	n/a	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

General Data		
Power supply	1x230V 50Hz	

## Heating

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	4.86 kW	4.31 kW	
El input	1.02 kW	1.58 kW	
СОР	4.76	2.73	

EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	27 dB(A)	27 dB(A)
Sound power level outdoor	57 dB(A)	57 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	177 %	125 %
Prated	9.19 kW	7.55 kW
SCOP	4.50	3.21
Tbiv	-7 °C	-5 °C
TOL	-10 °C	-7 °C
Pdh Tj = -7°C	8.13 kW	5.10 kW
COP Tj = -7°C	2.72	1.97
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.22 kW	4.10 kW
COP Tj = +2°C	4.35	3.25
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	3.50 kW	2.60 kW
COP Tj = +7°C	6.60	4.56
Cdh Tj = +7 °C	0.90	0.90





Pdh Tj = 12°C	3.39 kW	3.30 kW
COP Tj = 12°C	6.78	5.98
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.13 kW	6.10 kW
COP Tj = Tbiv	2.72	2.28
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.92 kW	5.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.64	1.97
WTOL	60 °C	60 °C
Poff	17 W	17 W
РТО	30 W	30 W
PSB	17 W	17 W
PCK	5 W	5 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.27 kW	7.55 kW
Annual energy consumption Qhe	4218 kWh	4865 kWh

Domestic Hot Water (DHW)



EN 16147		
Declared load profile	L	
Efficiency ηDHW	113 %	
СОР	2.70	
Heating up time	01:50 h:min	
Standby power input	35.0 W	
Reference hot water temperature	52.5 °C	
Mixed water at 40°C	245 I	



# Model: TTL 6.5 ACS, low temperature, all climates

Configure model		
Model name	TTL 6.5 ACS, low temperature, all climates	
Application	Heating (low temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

General Data		
Power supply	1x230V 50Hz	

### Heating

EN 14511-2		
	Low temperature	
Heat output	4.86 kW	
El input	1.02 kW	
СОР	4.76	

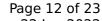
EN 14511-4		
Shutting off the heat transfer medium flow	passed	
Complete power supply failure	passed	
Defrost test	passed	
Starting and operating test	passed	

### Warmer Climate



EN 12102-1	
	Low temperature
Sound power level outdoor	57 dB(A)

EN 14825		
	Low temperature	
$\eta_{s}$	213 %	
Prated	6.30 kW	
SCOP	5.41	
Tbiv	2 °C	
TOL	2 °C	
Pdh Tj = +2°C	6.30 kW	
$COP Tj = +2^{\circ}C$	3.60	
Cdh Tj = +2 °C	0.90	
Pdh Tj = +7°C	4.10 kW	
$COP Tj = +7^{\circ}C$	5.25	
Cdh Tj = +7 °C	0.90	
Pdh Tj = 12°C	3.37 kW	
COP Tj = 12°C	6.61	
Cdh Tj = +12 °C	0.90	
Pdh Tj = Tbiv	6.30 kW	



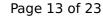


COP Tj = Tbiv	3.60
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.60
WTOL	60 °C
Poff	17 W
РТО	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	1556 kWh

### Colder Climate

EN 12102-1	
	Low temperature
Sound power level outdoor	57 dB(A)

EN 14825	
	Low temperature
$\eta_{s}$	151 %
Prated	5.80 kW





SCOP	3.85
Tbiv	-15 °C
TOL	-20 °C
Pdh Tj = -7°C	3.51 kW
COP Tj = -7°C	3.30
Cdh Tj = -7 °C	0.90
Pdh Tj = +2°C	2.28 kW
COP Tj = +2°C	4.55
Cdh Tj = +2 °C	0.90
Pdh Tj = $+7^{\circ}$ C	2.79 kW
$COP Tj = +7^{\circ}C$	5.81
Cdh Tj = +7 °C	0.90
Pdh Tj = 12°C	3.39 kW
COP Tj = 12°C	6.71
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	5.80 kW
COP Tj = Tbiv	2.70
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.50 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.40
WTOL	60 °C
Poff	17 W



РТО	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	5.80 kW
Annual energy consumption Qhe	3713 kWh
Pdh Tj = -15°C (if TOL<-20°C)	5.80
COP Tj = -15°C (if TOL<-20°C)	2.70
Cdh Tj = -15 °C	0.90

EN 12102-1	
	Low temperature
Sound power level outdoor	57 dB(A)

EN 14825	
Low temperature	
177 %	
6.80 kW	
4.50	
-7 °C	
-	





TOL	-10 °C
Pdh Tj = -7°C	6.02 kW
COP Tj = -7°C	2.90
Cdh Tj = -7 °C	0.90
Pdh Tj = +2°C	3.89 kW
COP Tj = +2°C	4.35
Cdh Tj = +2 °C	0.90
Pdh Tj = $+7^{\circ}$ C	3.50 kW
$COP Tj = +7^{\circ}C$	6.60
Cdh Tj = +7 °C	0.90
Pdh Tj = 12°C	3.39 kW
COP Tj = 12°C	6.78
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	6.02 kW
COP Tj = Tbiv	2.90
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.80
WTOL	60 °C
Poff	17 W
РТО	30 W
PSB	17 W



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PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.50 kW
Annual energy consumption Qhe	3120 kWh

# Model: TTL 8.5 ACS, low temperature, all climates

Configure model		
Model name	TTL 8.5 ACS, low temperature, all climates	
Application	Heating (low temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

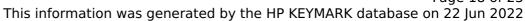
General Data		
Power supply	1x230V 50Hz	

## Heating

EN 14511-2		
	Low temperature	
Heat output	4.86 kW	
El input	1.02 kW	
СОР	4.76	

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

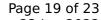
### Warmer Climate





EN 12102-1	
	Low temperature
Sound power level outdoor	57 dB(A)

EN 14825	
	Low temperature
$\eta_{s}$	215 %
Prated	7.60 kW
SCOP	5.44
Tbiv	2 °C
TOL	2 °C
Pdh Tj = +2°C	7.60 kW
COP Tj = +2°C	3.44
Cdh Tj = +2 °C	0.90
Pdh Tj = +7°C	4.89 kW
COP Tj = +7°C	5.15
Cdh Tj = +7 °C	0.90
Pdh Tj = 12°C	3.37 kW
COP Tj = 12°C	6.61
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	7.60 kW



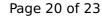


COP Tj = Tbiv	3.44
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.60 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44
WTOL	60 °C
Poff	17 W
РТО	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	0.00 kW
Annual energy consumption Qhe	1867 kWh

### Colder Climate

EN 12102-1	
	Low temperature
Sound power level outdoor	57 dB(A)

EN 14825	
	Low temperature
$\eta_{s}$	147 %
Prated	8.70 kW





SCOP	3.75
Tbiv	-15 °C
TOL	-20 °C
Pdh Tj = -7°C	5.27 kW
$COP Tj = -7^{\circ}C$	3.17
Cdh Tj = -7 °C	0.90
Pdh Tj = +2°C	3.21 kW
COP Tj = +2°C	4.46
Cdh Tj = +2 °C	0.90
Pdh Tj = $+7$ °C	2.79 kW
$COPTj = +7^{\circ}C$	5.81
Cdh Tj = +7 °C	0.90
Pdh Tj = 12°C	3.39 kW
COP Tj = 12°C	6.71
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	7.10 kW
COP Tj = Tbiv	2.54
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	5.80 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.19
WTOL	60 °C
Poff	17 W



PTO	30 W
PSB	17 W
PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	8.70 kW
Annual energy consumption Qhe	5722 kWh
Pdh Tj = -15°C (if TOL<-20°C)	7.10
COP Tj = -15°C (if TOL<-20°C)	2.54
Cdh Tj = -15 °C	0.90

EN 12102-1	
	Low temperature
Sound power level outdoor	57 dB(A)

EN 14825		
		Low temperature
$\eta_{S}$		177 %
Prated		9.19 kW
SCOP		4.50
Tbiv		-7 °C





TOL	-10 °C
Pdh Tj = -7°C	8.13 kW
COP Tj = -7°C	2.72
Cdh Tj = -7 °C	0.90
Pdh Tj = +2°C	5.22 kW
COP Tj = +2°C	4.35
Cdh Tj = +2 °C	0.90
Pdh Tj = +7°C	3.50 kW
$COP Tj = +7^{\circ}C$	6.60
Cdh Tj = +7 °C	0.90
Pdh Tj = 12°C	3.39 kW
COP Tj = 12°C	6.78
Cdh Tj = +12 °C	0.90
Pdh Tj = Tbiv	8.13 kW
COP Tj = Tbiv	2.72
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.92 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.64
WTOL	60 °C
Poff	17 W
РТО	30 W
PSB	17 W
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PCK	5 W
Supplementary Heater: Type of energy input	Electricity
Supplementary Heater: PSUP	1.27 kW
Annual energy consumption Qhe	4218 kWh