This information was generated by the HP KEYMARK database on 17 Dec 2020

Summary of	SWCV 162 Inverter	Reg. No.	041-K001-14
Certificate Holder			
Name	ait-deutschland GmbH		
Address	Industriestr. 3	Zip	95359
City	Kasendorf	Country	Germany
Certification Body	BRE Energy & Communications Division		
Name of testing laboratory	WPZ		
Subtype title	SWCV 162 Inverter		
Heat Pump Type	Brine/Water		
Refrigerant	R407c		
Mass Of Refrigerant	2.2 kg		
Certification Date	12.05.2017		
Testing basis	HP Keymark Scheme Transition Rules		

Model: SWCV 162(H)(K)3

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	9.42 kW	9.06 kW
El input	1.91 kW	1.88 kW
COP	4.92	3.22
Indoor water flow rate	1.35 m³/h	1.60 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	199 %	154 %
Prated	15.90 kW	16.00 kW
SCOP	5.17	4.05
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.20 kW	14.20 kW
COP Tj = -7°C	4.19	3.00
Cdh	1.00	1.00
Pdh Tj = +2°C	8.70 kW	8.70 kW
COP Tj = +2°C	5.26	4.10
Cdh	1.00	1.00
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.06	4.90
Cdh	1.00	1.00
Pdh Tj = 12°C	5.80 kW	5.50 kW

COP Tj = 12°C	5.88	5.00
Cdh	0.98	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.90	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6355 kWh	8154 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825

	Low temperature	**Medium temperature**
η_s	197 %	151 %
Prated	15.90 kW	16.00 kW
SCOP	5.12	3.98
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	15.90 kW	15.40 kW
COP Tj = +2°C	3.89	2.80
Cdh	1.00	1.00
Pdh Tj = +7°C	10.40 kW	10.40 kW
COP Tj = +7°C	4.93	3.61
Cdh	1.00	1.00
Pdh Tj = 12°C	5.80 kW	5.50 kW
COP Tj = 12°C	6.05	4.92
Cdh	0.97	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.89	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.89	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C

Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4150 kWh	5365 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	210 %	160 %
Prated	15.90 kW	16.00 kW
SCOP	5.44	4.19
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.80 kW	9.80 kW

COP Tj = -7°C	5.10	3.80
Cdh	1.00	1.00
Pdh Tj = +2°C	6.00 kW	6.00 kW
COP Tj = +2°C	6.10	4.70
Cdh	1.00	1.00
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.10	5.00
Cdh	0.97	0.97
Pdh Tj = 12°C	5.70 kW	5.60 kW
COP Tj = 12°C	5.60	5.00
Cdh	0.97	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.90	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W

Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	7198 kWh	9415 kWh

Model: WZSV 162(H)(K)3M

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	9.42 kW	9.06 kW
El input	1.91 kW	1.88 kW
COP	4.92	3.22
Indoor water flow rate	1.35 m³/h	1.60 m³/h

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

Average Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	199 %	154 %
Prated	15.90 kW	16.00 kW
SCOP	5.17	4.05
Tbiv	-10 °C	-10 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	14.20 kW	14.20 kW
COP Tj = -7°C	4.19	3.00
Cdh	1.00	1.00
Pdh Tj = +2°C	8.70 kW	8.70 kW
COP Tj = +2°C	5.26	4.10
Cdh	1.00	1.00
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.06	4.90
Cdh	1.00	1.00
Pdh Tj = 12°C	5.80 kW	5.50 kW

COP Tj = 12°C	5.88	5.00
Cdh	0.98	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.90	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6355 kWh	8154 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825

	Low temperature	**Medium temperature**
η_s	197 %	151 %
Prated	15.90 kW	16.00 kW
SCOP	5.12	3.98
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	15.90 kW	15.40 kW
COP Tj = +2°C	3.89	2.80
Cdh	1.00	1.00
Pdh Tj = +7°C	10.40 kW	10.40 kW
COP Tj = +7°C	4.93	3.61
Cdh	1.00	1.00
Pdh Tj = 12°C	5.80 kW	5.50 kW
COP Tj = 12°C	6.05	4.92
Cdh	0.97	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.89	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.89	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C

Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4150 kWh	5365 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825		
	Low temperature	**Medium temperature**
η_s	210 %	160 %
Prated	15.90 kW	16.00 kW
SCOP	5.44	4.19
Tbiv	-22 °C	-22 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	9.80 kW	9.80 kW

COP Tj = -7°C	5.10	3.80
Cdh	1.00	1.00
Pdh Tj = +2°C	6.00 kW	6.00 kW
COP Tj = +2°C	6.10	4.70
Cdh	1.00	1.00
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.10	5.00
Cdh	0.97	0.97
Pdh Tj = 12°C	5.70 kW	5.60 kW
COP Tj = 12°C	5.60	5.00
Cdh	0.97	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.90	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W

Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	7198 kWh	9415 kWh

Model: PWZSV 162H3S

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	**Medium temperature**
Heat output	9.42 kW	9.06 kW
El input	1.91 kW	1.88 kW
COP	4.92	3.22
Indoor water flow rate	1.35 m³/h	1.60 m³/h

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

Average Climate

EN 12102-1		
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COP Tj = +7°C	6.06	4.90
Cdh	1.00	1.00
Pdh Tj = 12°C	5.80 kW	5.50 kW

COP Tj = 12°C	5.88	5.00
Cdh	0.98	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.90	2.80
Cdh	1.00	1.00
WTOL	65 °C	65 °C
Poff	2 W	2 W
PTO	20 W	20 W
PSB	7 W	7 W
PCK	30 W	30 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	6355 kWh	8154 kWh

Warmer Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

EN 14825

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Prated	15.90 kW	16.00 kW
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Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.89	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
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Cdh	1.00	1.00
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PTO	20 W	20 W
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PCK	30 W	30 W
Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	4150 kWh	5365 kWh

Colder Climate

EN 12102-1		
	Low temperature	**Medium temperature**
Sound power level indoor	44 dB(A)	44 dB(A)

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COP Tj = -7°C	5.10	3.80
Cdh	1.00	1.00
Pdh Tj = +2°C	6.00 kW	6.00 kW
COP Tj = +2°C	6.10	4.70
Cdh	1.00	1.00
Pdh Tj = +7°C	5.70 kW	5.60 kW
COP Tj = +7°C	6.10	5.00
Cdh	0.97	0.97
Pdh Tj = 12°C	5.70 kW	5.60 kW
COP Tj = 12°C	5.60	5.00
Cdh	0.97	0.97
Pdh Tj = Tbiv	15.90 kW	15.40 kW
COP Tj = Tbiv	3.90	2.80
Pdh Tj = TOL	15.90 kW	15.40 kW
COP Tj = TOL	3.90	2.80
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Supplementary Heater: Type of energy input	electricity	electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	7198 kWh	9415 kWh