



	<b>Heat Pump KEYMARK</b>	 <b>TÜVRheinland®</b>  Genau. Richtig.
<b>Annex D1</b> Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 1 of 7

**Data has to be declared for all Models inside a sub-type.**

**1. AIR/WATER; BRINE/WATER; WATER/WATER HEAT PUMPS (IF APPLICABLE) 2**



<b>Certificate data</b>	
Certificate holder name	tecalor GmbH
Address	Lüchtringer Weg Nr. 3 37603 Holzminden
Type of heat pump	Air/Water
Reg. No.	011-1W0057
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Name of testing laboratory	VDE Prüf- und Zertifizierungsinstitut

	<b>Heat Pump KEYMARK</b>	 TÜVRheinland® DIN CERTCO Genau. Richtig.
Annex D1 Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 2 of 7



## 1. Air/Water; Brine/Water; Water/Water heat pumps (if applicable)

	TTL 23 E		
<b>General data</b>			
Refrigerant	R407 C		
Mass of refrigerant [kg]	3,4		
GWP according to EU Nr. 517/2014 [CO <sub>2eq</sub> in t]	6,031		
Frequency [Hz]	50		
Voltage [V]	400		
<b>Test points EN 14511-2 Air/Water heat pump (if applicable)</b>			
A7/W35			
heat output [kW]	16,56		
El input [kW]	4,15		
COP	3,99		
A7/W55 (if applicable)			
heat output [kW]	16,41		
El input [kW]	5,92		
COP	2,77		
<b>Test points EN 14511-2 Brine/Water heat pump (if applicable)</b>			
B0/W35			
heat output [kW]			
El input [kW]			
COP			
B0/W55			
heat output [kW]			
El input [kW]			
COP			
<b>Test points EN 14511-2 Water/Water heat pump (if applicable)</b>			
W10/W35			
heat output [kW]			
El input [kW]			
COP			
W10/W55			
heat output [kW]			
El input [kW]			
COP			



In case of gas driven heat pump, EN14511 shall be replaced by EN 12309:2015-03

	<b>Heat Pump KEYMARK</b>	 <b>TÜVRheinland®</b> <b>DIN CERTCO</b> Genau. Richtig.
<b>Annex D1</b> Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 3 of 7



<b>Test points EN 14511-4</b>			
operating Range A.../W... lower limit-lower limit (min)			
Please state if the requirement is passed or failed	passed		
operating Range A.../W... upper limit- upper limit (min)			
Please state if the requirement is passed or failed	passed		
Shutting off the heat transfer medium flow			
Please state if the requirement is passed or failed	passed		
Complete power supply failure			
Please state if the requirement is passed or failed	passed		
Defrost test only for AirT Water heat pumps (if applicable)			
Please state if the requirement is passed or failed	passed		

	<b>Heat Pump KEYMARK</b>	 TÜVRheinland® DIN CERTCO Genau. Richtig.
Annex D1 Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 4 of 7



Average Climate Low temperature application (if applicable)			
Declared values EN 14825			
$T_{biv}$ [°C]	$T_{biv}$ at low temperature conditions		
heat output [kW]	13,7		
El input [kW]	4,03		
COP	3,4		
Sound power level according EN 12102			
Sound power level indoor if relevant) [dB(A)]	(See 55 ° C application)		
Sound power level outdoor [dB(A)]	(See 55 ° C application)		
Declared data regarding ErP regulation			
$\eta_s$	148		
$P_{rated}$ [kW]	17		
SCOP	3,77		
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$			
Pdh: $T_j = - 7$ °C [kW]	13,1		
COPd: $T_j = - 7$ °C	3,22		
Pdh: $T_j = +2$ °C [kW]	15,7		
COPd: $T_j = + 2$ °C	3,86		
Pdh: $T_j = +7$ °C [kW]	16,7		
COPd: $T_j = + 7$ °C	4,43		
Pdh: $T_j = +12$ °C [kW]	19,8		
COPd: $T_j = + 12$ °C	4,68		
Pdh: $T_j =$ bivalent temperature [kW]	13,7		
COPd: $T_j =$ bivalent temperature	3,40		
Pdh: $T_j = - 15$ °C (if $TOL < - 20$ °C) [kW]	11,2		
COPd: $T_j = - 15$ °C (if $TOL < - 20$ °C)	2,59		
$T_{biv}$ [°C]	-5		
TOL [°C]	-20		
WTOL [°C]	60		
Annual energy consumption $Q_{HE}$ [kWh]	9268		
Power input „compressor off“ [kW]	0		
$P_{OFF}$ [W]	7		
$P_{TO}$ [W]	7		
$P_{SB}$ [W]	7		
$P_{CK}$ [W]	62		
$P_{SUP}$ [kW]	4,54		
Type of energy input (e.g. electricity)	electricity		

	<b>Heat Pump KEYMARK</b>	 TÜVRheinland® DIN CERTCO Genau. Richtig.
Annex D1 Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 5 of 7

Average Climate Medium temperature application (if applicable)			
Declared values EN 14825			
$T_{biv}$ [°C]			
heat output [kW]		14,6	
El input [kW]		5,89	
COP		2,48	
Sound power level according EN 12102			
Sound power level indoor if relevant) [dB(A)]		58	
Sound power level outdoor [dB(A)]		65	
Declared data regarding ErP regulation			
$\eta_s$		115 %	
$P_{rated}$ [kW]		18	
SCOP		2,96	
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$			
Pdh: $T_j = -7$ °C [kW]		14,4	
COPd: $T_j = -7$ °C		2,32	
Pdh: $T_j = +2$ °C [kW]		15,9	
COPd: $T_j = +2$ °C		3,00	
Pdh: $T_j = +7$ °C [kW]		16,4	
COPd: $T_j = +7$ °C		3,53	
Pdh: $T_j = +12$ °C [kW]		17,1	
COPd: $T_j = +12$ °C		3,79	
Pdh: $T_j =$ bivalent temperature [kW]		14,6	
COPd: $T_j =$ bivalent temperature		2,48	
Pdh: $T_j = -15$ °C (if $TOL < -20$ °C) [kW]		14,0	
COPd: $T_j = -15$ °C (if $TOL < -20$ °C)		1,84	
$T_{biv}$ [°C]		-5	
TOL [°C]		-20	
WTOL [°C]		60	
Annual energy consumption $Q_{HE}$ [kWh]		12656	
Power input „compressor off“ [kW] (if applicable)		0	
$P_{OFF}$ [W]		7	
$P_{TO}$ [W]		7	
$P_{SB}$ [W]		7	
$P_{CK}$ [W]		62	
$P_{SUP}$ [kW]		3,96	
Type of energy input (e.g. electricity)		electricity	

	<b>Heat Pump KEYMARK</b>	 TÜVRheinland® DIN CERTCO Genau. Richtig.
Annex D1 Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 6 of 7

Warmer Climate (if applicable)			
Declared values EN 14825 – 35°C application			
$T_{biv}$ [°C]			
heat output [kW]	15,7		
El input [kW]	4,34		
COP	3,62		
Sound power level according EN 12102			
Sound power level indoor if relevant) [dB(A)]	(See 55 ° C application)		
Sound power level outdoor [dB(A)]	(See 55 ° C application)		
Declared data regarding ErP regulation			
$\eta_s$	157 %		
$P_{rated}$ [kW]	16		
SCOP	4,01		
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$			
$P_{dhTj} = - 7 \text{ °C}$ [kW]	13,2		
$COP_{d Tj} = - 7 \text{ °C}$	3,14		
$P_{dhTj} = +2 \text{ °C}$ [kW]	15,7		
$COP_{d Tj} = + 2 \text{ °C}$	3,62		
$P_{dh Tj} = +7 \text{ °C}$ [kW]	16,6		
$COP_{d Tj} = + 7 \text{ °C}$	4,17		
$P_{dh Tj} = +12 \text{ °C}$ [kW]	19,4		
$COP_{d Tj} = + 12 \text{ °C}$	4,52		
$P_{dh Tj} = \text{bivalent temperature}$ [kW]	15,7		
$COP_{d Tj} = \text{bivalent temperature}$	3,62		
$P_{dh Tj} = - 15 \text{ °C}$ (if $TOL < - 20 \text{ °C}$ ) [kW]	11,0		
$COP_{d Tj} = - 15 \text{ °C}$ (if $TOL < - 20 \text{ °C}$ )	2,69		
$T_{biv}$ [°C]	2		
TOL [°C]	0		
WTOL [°C]	60		
Annual energy consumption $Q_{HE}$ [kWh]	5239		
Power input „compressor off“ [kW] (if applicable)	0		
$P_{OFF}$ [W]	7		
$P_{TO}$ [W]	7		
$P_{SB}$ [W]	7		
$P_{CK}$ [W]	62		
$P_{SUP}$ [kW]	0		
Type of energy input (e.g. electricity)	electricity		

	<b>Heat Pump KEYMARK</b>	 TÜVRheinland® DIN CERTCO Genau. Richtig.
Annex D1 Data sheet template		Rev.-No.: 1 Date: 14.12.2015 Page: 7 of 7

Colder Climate (if applicable)			
Declared values EN 14825 – 35°C application			
$T_{biv}/^{\circ}\text{C}$			
heat output [kW]	12,0		
El input[kW]	3,65		
COP	3,29		
Sound power level according EN12102			
Sound power level indoor if relevant) [dB(A)]	(See 55 ° C application)		
Sound power level outdoor [dB(A)]	(See 55 ° C application)		
Declared date regarding ErP regulation			
$\eta_s$	137		
$P_{rated}$ [kW]	18		
SCOP	3,49		
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$			
Pdh: $T_j = - 7 ^{\circ}\text{C}$ [kW]	12,9		
COPd: $T_j = - 7 ^{\circ}\text{C}$	3,50		
Pdh: $T_j = +2 ^{\circ}\text{C}$ [kW]	15,6		
COPd: $T_j = + 2 ^{\circ}\text{C}$	4,06		
Pdh: $T_j = +7 ^{\circ}\text{C}$ [kW]	16,7		
COPd: $T_j = + 7 ^{\circ}\text{C}$	4,59		
Pdh: $T_j = +12 ^{\circ}\text{C}$ [kW]	19,7		
COPd: $T_j = + 12 ^{\circ}\text{C}$	4,65		
Pdh: $T_j = \text{bivalent temperature}$ [kW]	12,0		
COPd: $T_j = \text{bivalent temperature}$	3,29		
Pdh: $T_j = - 15 ^{\circ}\text{C}$ (if $TOL < - 20 ^{\circ}\text{C}$ ) [kW]	10,7		
COPd: $T_j = - 15 ^{\circ}\text{C}$ (if $TOL < - 20 ^{\circ}\text{C}$ )	2,85		
$T_{biv}$ [°C]	-10		
TOL [°C]	-20		
WTOL [°C]	60		
Annual energy consumption $Q_{HE}$ [kWh]	12373		
Power input „compressor off“ [kW] (if applicable)	0		
$P_{OFF}$ [W]	7		
$P_{TO}$ [W]	7		
$P_{SB}$ [W]	7		
$P_{CK}$ [W]	62		
$P_{SUP}$ [kW]	17,53		
Type of energy input (e.g. electricity)	electricity		