


	<b>Heat Pump KEYMARK</b>	 Genau. Richtig.
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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	Brine/Water
Reg. No.	011-1W0039
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Name of testing laboratory	VDE Prüf- und Zertifizierungsinstitut

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

	TTF 05	TTF 05 cool	TTC 05	TTC 05 cool
<b>General data</b>				
Refrigerant	R410 A	R410 A	R410 A	R410 A
Mass of refrigerant [kg]	1,4	1,4	1,4	1,4
GWP according to EU Nr. 517/2014 [CO <sub>2eq</sub> in t]	2,923	2,923	2,923	2,923
Frequency [Hz]	50	50	50	50
Voltage [V]	400	400	400	400
<b>Test points EN 14511-2 Air/Water heat pump (if applicable)</b>				
A7/W35				
heat output [kW]				
El input [kW]				
COP				
A7/W55 (if applicable)				
heat output [kW]				
El input [kW]				
COP				
<b>Test points EN 14511-2 Brine/Water heat pump (if applicable)</b>				
B0/W35				
heat output [kW]	5,82	5,82	5,82	5,82
El input [kW]	1,21	1,21	1,21	1,21
COP	4,8	4,8	4,8	4,8
B0/W55				
heat output [kW]	5,19	5,19	5,19	5,19
El input [kW]	1,85	1,85	1,85	1,85
COP	2,81	2,81	2,81	2,81
<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

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

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Average Climate Low temperature application (if applicable)				
Declared values EN 14825				
$T_{biv}$ [°C]	$T_{biv}$ at low temperature conditions			
heat output [kW]	5,8	5,8	5,8	5,8
El input [kW]	1,2	1,2	1,2	1,2
COP	4,81	4,81	4,81	4,81
Sound power level according EN 12102				
Sound power level indoor if relevant) [dB(A)]	(see 55°C application)	(see 55°C application)	(see 55°C application)	(see 55°C application)
Sound power level outdoor [dB(A)]	-	-	-	-
Declared data regarding ErP regulation				
$\eta_s$	205 %	205 %	205 %	205 %
$P_{rated}$ [kW]	6	6	6	6
SCOP	5,32	5,32	5,32	5,32
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$				
Pdh: $T_j = -7$ °C [kW]	5,8	5,8	5,8	5,8
COPd: $T_j = -7$ °C	4,87	4,87	4,87	4,87
Pdh: $T_j = +2$ °C [kW]	5,9	5,9	5,9	5,9
COPd: $T_j = +2$ °C	5,24	5,24	5,24	5,24
Pdh: $T_j = +7$ °C [kW]	6,0	6,0	6,0	6,0
COPd: $T_j = +7$ °C	5,61	5,61	5,61	5,61
Pdh: $T_j = +12$ °C [kW]	6,0	6,0	6,0	6,0
COPd: $T_j = +12$ °C	6,03	6,03	6,03	6,03
Pdh: $T_j =$ bivalent temperature [kW]	5,8	5,8	5,8	5,8
COPd: $T_j =$ bivalent temperature	4,81	4,81	4,81	4,81
Pdh: $T_j = -15$ °C (if $TOL < -20$ °C) [kW]	5,8	5,8	5,8	5,8
COPd: $T_j = -15$ °C (if $TOL < -20$ °C)	4,81	4,81	4,81	4,81
$T_{biv}$ [°C]	-10	-10	-10	-10
TOL [°C]	-10	-10	-10	-10
WTOL [°C]	65	65	65	65
Annual energy consumption $Q_{HE}$ [kWh]	2262	2262	2262	2262
Power input „compressor off“ [kW]	0	0	0	0
$P_{OFF}$ [W]	0	0	0	0
$P_{TO}$ [W]	54	54	54	54
$P_{SB}$ [W]	9	9	9	9
$P_{CK}$ [W]	0	0	0	0
$P_{SUP}$ [kW]	0,00	0,00	0,00	0,00
Type of energy input (e.g. electricity)	electricity	electricity	electricity	electricity

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Average Climate Medium temperature application (if applicable)				
Declared values EN 14825				
$T_{biv}$ [°C]				
heat output [kW]	5,2	5,2	5,2	5,2
El input [kW]	1,85	1,85	1,85	1,85
COP	2,81	2,81	2,81	2,81
Sound power level according EN 12102				
Sound power level indoor if relevant) [dB(A)]	43	43	43	43
Sound power level outdoor [dB(A)]	-	-	-	-
Declared data regarding ErP regulation				
$\eta_s$	134 %	134 %	134 %	134 %
$P_{rated}$ [kW]	5	5	5	5
SCOP	3,55	3,55	3,55	3,55
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$				
Pdh: $T_j = -7$ °C [kW]	5,3	5,3	5,3	5,3
COPd: $T_j = -7$ °C	2,94	2,94	2,94	2,94
Pdh: $T_j = +2$ °C [kW]	5,5	5,5	5,5	5,5
COPd: $T_j = +2$ °C	3,49	3,49	3,49	3,49
Pdh: $T_j = +7$ °C [kW]	5,6	5,6	5,6	5,6
COPd: $T_j = +7$ °C	3,92	3,92	3,92	3,92
Pdh: $T_j = +12$ °C [kW]	5,7	5,7	5,7	5,7
COPd: $T_j = +12$ °C	4,44	4,44	4,44	4,44
Pdh: $T_j =$ bivalent temperature [kW]	5,2	5,2	5,2	5,2
COPd: $T_j =$ bivalent temperature	2,81	2,81	2,81	2,81
Pdh: $T_j = -15$ °C (if $TOL < -20$ °C) [kW]	5,2	5,2	5,2	5,2
COPd: $T_j = -15$ °C (if $TOL < -20$ °C)	2,81	2,81	2,81	2,81
$T_{biv}$ [°C]	-10	-10	-10	-10
TOL [°C]	-10	-10	-10	-10
WTOL [°C]	65	65	65	65
Annual energy consumption $Q_{HE}$ [kWh]	3017	3017	3017	3017
Power input „compressor off“ [kW] (if applicable)	0	0	0	0
$P_{OFF}$ [W]	0	0	0	0
$P_{TO}$ [W]	54	54	54	54
$P_{SB}$ [W]	9	9	9	9
$P_{CK}$ [W]	0	0	0	0
$P_{SUP}$ [W]	0,00	0,00	0,00	0,00
Type of energy input (e.g. electricity)	electricity	electricity	electricity	electricity

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<b>Warmer Climate (if applicable)</b>				
Declared values EN 14825 – 35°C application				
$T_{biv}$ [°C]				
heat output [kW]	5,8	5,8	5,8	5,8
El input [kW]	1,2	1,2	1,2	1,2
COP	4,81	4,81	4,81	4,81
Sound power level according EN 12102				
Sound power level indoor if relevant [dB(A)]	(see 55°C application)	(see 55°C application)	(see 55°C application)	(see 55°C application)
Sound power level outdoor [dB(A)]	-	-	-	-
Declared data regarding ErP regulation				
$\eta_s$	203	203	203	203
$P_{rated}$ [kW]	6	6	6	6
SCOP	5,28	5,28	5,28	5,28
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$				
$P_{dhT_j = -7\text{ °C}}$ [kW]	5,8	5,8	5,8	5,8
$COP_{d T_j = -7\text{ °C}}$	4,81	4,81	4,81	4,81
$P_{dhT_j = +2\text{ °C}}$ [kW]	5,8	5,8	5,8	5,8
$COP_{d T_j = +2\text{ °C}}$	4,81	4,81	4,81	4,81
$P_{dh T_j = +7\text{ °C}}$ [kW]	5,9	5,9	5,9	5,9
$COP_{d T_j = +7\text{ °C}}$	5,16	5,16	5,16	5,16
$P_{dh T_j = +12\text{ °C}}$ [kW]	6,0	6,0	6,0	6,0
$COP_{d T_j = +12\text{ °C}}$	5,75	5,75	5,75	5,75
$P_{dh T_j = \text{bivalent temperature}}$ [kW]	5,8	5,8	5,8	5,8
$COP_{d T_j = \text{bivalent temperature}}$	4,81	4,81	4,81	4,81
$P_{dh T_j = -15\text{ °C}}$ (if $TOL < -20\text{ °C}$ ) [kW]	5,8	5,8	5,8	5,8
$COP_{d T_j = -15\text{ °C}}$ (if $TOL < -20\text{ °C}$ )	4,81	4,81	4,81	4,81
$T_{biv}$ [°C]	2	2	2	2
TOL [°C]	0	0	0	0
WTOL [°C]	65	65	65	65
Annual energy consumption $Q_{HE}$ [kWh]	1473	1473	1473	1473
Power input „compressor off“ [kW] (if applicable)	0	0	0	0
$P_{OFF}$ [W]	0	0	0	0
$P_{TO}$ [W]	54	54	54	54
$P_{SB}$ [W]	9	9	9	9
$P_{CK}$ [W]	0	0	0	0
$P_{SUP}$ [W]	0,00	0,00	0,00	0,00
Type of energy input (e.g. electricity)	electricity	electricity	electricity	electricity

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<b>Colder Climate (if applicable)</b>				
Declared values EN 14825 – 35°C application				
$T_{biv}/^{\circ}\text{C}$				
heat output [kW]	5,9	5,9	5,9	5,9
El input [kW]	1,11	1,11	1,11	1,11
COP	5,31	5,31	5,31	5,31
Sound power level according EN12102				
Sound power level indoor if relevant [dB(A)]	(see 55°C application)	(see 55°C application)	(see 55°C application)	(see 55°C application)
Sound power level outdoor [dB(A)]	-	-	-	-
Declared date regarding ErP regulation				
$\eta_s$	212	212	212	212
$P_{rated}$ [kW]	7	7	7	7
SCOP	5,49	5,49	5,49	5,49
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature $T_j$				
$P_{dh}: T_j = -7^{\circ}\text{C}$ [kW]	5,9	5,9	5,9	5,9
$COP_d: T_j = -7^{\circ}\text{C}$	5,43	5,43	5,43	5,43
$P_{dh}: T_j = +2^{\circ}\text{C}$ [kW]	6,0	6,0	6,0	6,0
$COP_d: T_j = +2^{\circ}\text{C}$	5,72	5,72	5,72	5,72
$P_{dh}: T_j = +7^{\circ}\text{C}$ [kW]	6,0	6,0	6,0	6,0
$COP_d: T_j = +7^{\circ}\text{C}$	5,97	5,97	5,97	5,97
$P_{dh}: T_j = +12^{\circ}\text{C}$ [kW]	6,0	6,0	6,0	6,0
$COP_d: T_j = +12^{\circ}\text{C}$	6,01	6,01	6,01	6,01
$P_{dh}: T_j = \text{bivalent temperature}$ [kW]	5,9	5,9	5,9	5,9
$COP_d: T_j = \text{bivalent temperature}$	5,31	5,31	5,31	5,31
$P_{dh}: T_j = -15^{\circ}\text{C}$ (if $TOL < -20^{\circ}\text{C}$ ) [kW]	5,9	5,9	5,9	5,9
$COP_d: T_j = -15^{\circ}\text{C}$ (if $TOL < -20^{\circ}\text{C}$ )	5,31	5,31	5,31	5,31
$T_{biv}$ [°C]	-15	-15	-15	-15
TOL [°C]	-22	-22	-22	-22
WTOL [°C]	65	65	65	65
Annual energy consumption $Q_{HE}$ [kWh]	3254	3254	3254	3254
Power input „compressor off“ [kW] (if applicable)	0	0	0	0
$P_{OFF}$ [W]	0	0	0	0
$P_{TO}$ [W]	54	54	54	54
$P_{SB}$ [W]	9	9	9	9
$P_{CK}$ [W]	0	0	0	0
$P_{SUP}$ [W]	1,43	1,43	1,43	1,43
Type of energy input (e.g. electricity)	electricity	electricity	electricity	electricity