

# TECHNICAL DATA SHEET

## TC HeatPro SPLIT 12 kW Air to Water Heat Pump



Model	TC HeatPro SPLIT 12 kW	
Power Supply / Refrigerant	V/Hz/Ph	220-240/50/1 – R32
Max. Heating Capacity (1)	kW	11,6
C.O.P. (1)	W/W	4,3
Heating Capacity Min./Max. (1)	kW	5,5 ~ 11,6
Heating Power Input Min./Max. (1)	W	1107 ~ 2683
C.O.P. Min/Max (1)	W/W	4,3~ 4,9
Max. Heating Capacity (2)	kW	11,2
C.O.P. (2)	W/W	3,4
Heating Capacity Min./Max. (2)	kW	4,9 ~ 11,2
Heating power input Min./Max. (2)	W	1401 ~ 3263
C.O.P. Min./Max. (2)	W/W	3,4 ~ 3,6
Max. Cooling Capacity (3)	kW	9,8
E.E.R (3)	W/W	3,9
Cooling Capacity Min./Max. (3)	kW	7 ~ 9,8
Cooling Power Input Min./Max. (3)	W	1728 ~ 2510
E.E.R. Min/Max. (3)	W/W	4,05 ~ 3,9
Max. Cooling Capacity (4)	kW	8,5
E.E.R (4)	W/W	2,7
Cooling Capacity Min./Max. (4)	kW	4,9 ~ 8,3
Cooling Power Input Min./Max. (4)	W	1358 ~ 2610
E.E.R. Min/Max. (4)	W/W	2,87 ~ 3,7
Circuit Breaker	A	25

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Model		TC HeatPro SPLIT 12 kW	
Workable Ambient Temperature Range		°C	-25 ~ 43
Min. System Water Temperature (Heating / Cooling)		°C	20/7
Min. Floor Area for installation, operation and storage		m <sup>2</sup>	3,1
Min. Area of Pipe-work		m <sup>2</sup>	3,1
Max. Operation High Pressure		MPa	4,2
Max. Operation Low Pressure		MPa	1,2
Compressor	Type - Quantity		Twin Rotary - 1
Refrigerant	Type / Amount	- / kg	R32/1,8 kg
Fan	Quantity	db	1
	Airflow	m <sup>3</sup> /h	3150
	Rated power	W	45
Noise Level	Indoor/Outdoor	dB(A)	45/52
Water Side Heat Exchanger	Type		Plate Heat Exchanger
	Water Pressure Drop	kPa	26
	Piping Connection	Inch	G1"
Allowable Water Flow	Min./Rated./Max.	L/S	0,4/0,57/0,74
Net Dimension(L×D×H)	Indoor Unit	mm	750x500x300
	Outdoor Unit	mm	1165x370x845
Net Weight	Indoor Unit	Kg	39
	Outdoor Unit	Kg	75

Note:

- (1) Heating condition: water inlet/outlet temperature: 30°C/35°C, Ambient temperature: DB 7°C/WB 6°C;
- (2) Heating condition: water inlet/outlet temperature: 40°C/45°C, Ambient temperature: DB 7°C/WB 6°C;
- (3) Cooling condition: water inlet/outlet temperature: 23°C/18°C, Ambient temperature: DB 35°C/WB 24°C;
- (4) Cooling condition: water inlet/outlet temperature: 12°C/7°C, Ambient temperature: DB 35°C/WB 24°C;
- (5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

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Test report of TC HeatPro SPLIT 12 kW (Heating/Cooling) at different ambient temperatures

## Test report: Heating

Ambient temp. (°C)	Water Outlet temp. (°C)	Compressor Speed (Hz)	Heating Capacity (W)	Input Power (W)	COP (W/W)
DB12/WB10	55,0	79HZ	9671	3459	2,8
		67HZ	8191	2787	2,9
		55HZ	6728	2249	3,0
		43HZ	4848	1756	2,8
	45,0	79HZ	10693	2796	3,8
		67HZ	9069	2260	4,0
		55HZ	7486	1834	4,1
		43HZ	5728	1398	4,1
	35,0	79HZ	11097	2245	4,9
		67HZ	9534	1813	5,3
		55HZ	7976	1442	5,5
		43HZ	6316	1106	5,7
DB7/WB6	55,0	90HZ	9866	3751	2,6
		79HZ	8719	3403	2,6
		67HZ	7218	2753	2,6
		55HZ	5825	2245	2,6
		43HZ	3771	1760	2,1
	45,0	90HZ	11252	3263	3,4
		79HZ	9594	2761	3,5
		67HZ	8032	2275	3,5
		55HZ	6650	1831	3,6
	35,0	43HZ	4883	1401	3,5
		90HZ	11671	2683	4,3
		79HZ	10134	2226	4,6
67HZ		8662	1824	4,7	
55HZ		7171	1461	4,9	
DB2/WB1	55,0	43HZ	5476	1107	4,9
		90HZ	8622	3777	2,3
		79HZ	7510	3315	2,3
		67HZ	6123	2711	2,3
		55HZ	4959	2187	2,3
	45,0	43HZ	3581	1706	2,1
		90HZ	9804	3190	3,1
		79HZ	8362	2705	3,1
		67HZ	6958	2226	3,1
	35,0	55HZ	5653	1810	3,1
		43HZ	3998	1410	2,8
		90HZ	10170	2615	3,9
79HZ		8934	2241	4,0	
67HZ		7384	1842	4,0	
DB-7°C/WB-8°C	55,0	55HZ	5964	1467	4,1
		43HZ	4683	1132	4,1
		90HZ	6519	3755	1,7
		79HZ	5380	3129	1,7
		67HZ	4432	2554	1,7



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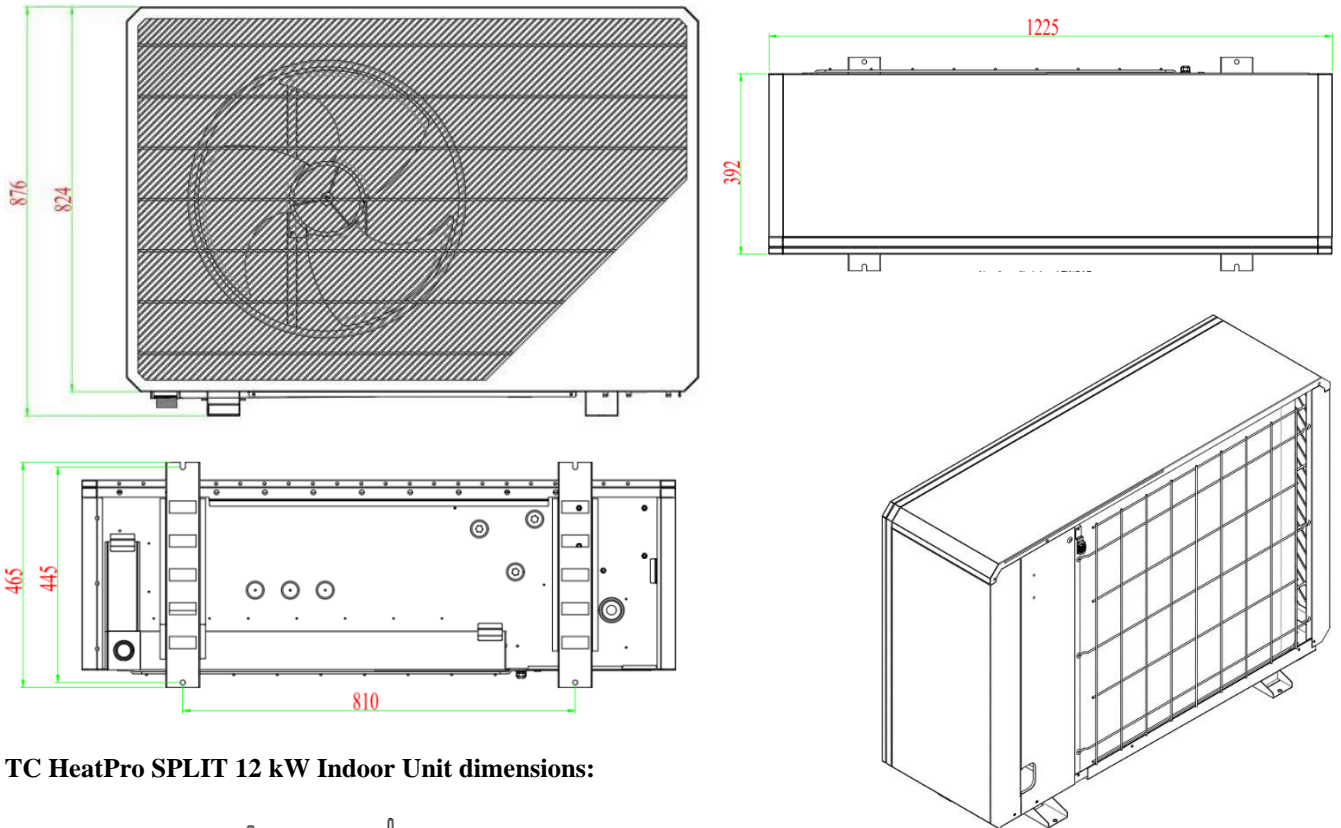
	45,0	55HZ	3479	2047	1,7
		90HZ	7123	2984	2,4
		79HZ	5995	2558	2,3
		67HZ	4938	2088	2,4
		55HZ	3947	1706	2,3
	35,0	90HZ	7647	2469	3,1
		79HZ	6741	2123	3,2
		67HZ	5472	1741	3,1
		55HZ	4418	1420	3,1
		43HZ	3202	1122	2,9
DB-15°C/WB-16°C	55,0	90HZ	4854	3487	1,4
		79HZ	3879	2850	1,4
		67HZ	3223	2397	1,3
	45,0	90HZ	5603	2801	2,0
		79HZ	4563	2398	1,9
		67HZ	3725	1991	1,9
	35,0	90HZ	5927	2328	2,5
		79HZ	4862	1992	2,4
		67HZ	4165	1749	2,4
		55HZ	3162	1408	2,2
DB-25°C/WB-26°C	55,0	90HZ	4029	3291	1,2
		85HZ	3533	2990	1,2
		79HZ	3115	2776	1,1

### Test report: Cooling

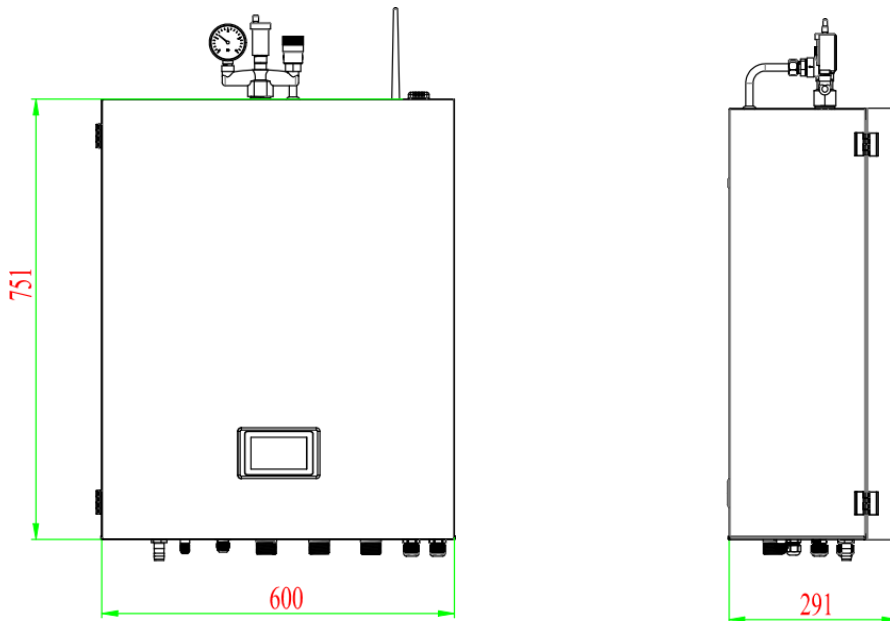
Ambient temp. (°C)	Water Outlet temp. (°C)	Compressor Speed (Hz)	Heating Capacity (W)	Input Power (W)	COP (W/W)
DB35/WB24	7,0	80HZ	8757	3080	2,8
		79HZ	8753	2990	2,9
		78HZ	8491	2996	2,8
		74HZ	7973	2636	3,0
DB35/WB24	18,0	68HZ	9845	2510	3,9

# TECHNICAL DATA SHEET

## TC HeatPro SPLIT 12 kW dimensions



### TC HeatPro SPLIT 12 kW Indoor Unit dimensions:



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The values refer to use at low temperatures in average climatic conditions (W35).

Item	Symbol	Value	Unit
Rated Heat Output (1)	Prated	11,601	kW
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	Pdh	10,263	kW
Tj=+2°C	Pdh	6,298	kW
Tj=+7°C	Pdh	6,129	kW
Tj=+12°C	Pdh	5,968	kW
Tj= bivalent temperature	Pdh	11,229	kW
Tj= operation limit temperature	Pdh	10,263	kW
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	Pdh	-	kW
Bivalent Temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcyc	-	kW
Degradation co-efficient (2)	Cdh	0,9	-
Power Consumption in modes other than active mode:			
Off Mode	POFF	0,013	kW
Thermostat off mode	CTU	0,039	kW
Standby mode	PSB	0,013	kW
Crankcase heater mode	PCK	0,041	kW
Other Items			
Capacity Control		Variable	
Sound power level, indoor/outdoor	LWA	40/57	dB
Annual energy consumption	QHE	5096	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	$\eta_s$	185,1	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	COPd	3,38	-
Tj=+2°C	COPd	4,69	-
Tj=+7°C	COPd	6,29	-
Tj=+12°C	COPd	6,02	-
Tj= bivalent temperature	COPd	2,73	-
Tj= operation limit temperature	COPd	3,58	-
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	COPd	-	-
For air-to-water heat pumps: Operating limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature			
	WTOL	55	°C
Supplementary heater			
Rated heat output	Psup	0,372	kW
Type of energy input		Electric	

The values refer to use at high temperatures in average climatic conditions (W55).

Item	Symbol	Value	Unit
Rated Heat Output (1)	Prated	11,038	kW
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	Pdh	9,764	kW
Tj=+2°C	Pdh	6,107	kW
Tj=+7°C	Pdh	5,934	kW
Tj=+12°C	Pdh	6,915	kW
Tj= bivalent temperature	Pdh	9,133	kW
Tj= operation limit temperature	Pdh	9,764	kW
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	Pdh	-	kW
Bivalent Temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcyc	-	kW
Degradation co-efficient (2)	Cdh	0,9	-
Power Consumption in modes other than active mode			
Off Mode	POFF	0,013	kW
Thermostat off mode	CTU	0,039	kW
Standby mode	PSB	0,013	kW
Crankcase heater mode	PCK	0,041	kW
Other Items			
Capacity Control		Variable	
Sound power level, indoor/outdoor	LWA	35/61	dB
Annual energy consumption	QHE	7039	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	$\eta_s$	126,6	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	COPd	1,89	-
Tj=+2°C	COPd	3,22	-
Tj=+7°C	COPd	4,76	-
Tj=+12°C	COPd	5,8	-
Tj= bivalent temperature	COPd	1,7	-
Tj= operation limit temperature	COPd	1,89	-
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	COPd	-	-
For air-to-water heat pumps: Operating limit temperature	TOL	-10	°C
Cycling interval efficiency	COPcyc	-	-
Heating water operating limit temperature			
	WTOL	55	°C
Supplementary heater			
Rated heat output	Psup	1,905	kW
Type of energy input		Electric	

- (1) For heat pump heaters and combined heat pump heaters, the rated thermal output Prated must equal the design heating load Pdesign, and the rated thermal output Psup of the auxiliary heater must equal the auxiliary heating output sup(Tj).
- (2) If the Cdh value is not determined by measurement, the default degradation coefficient is Cdh= 0.9.