

TECHNICAL DATA SHEET

TC HeatEco MONO 22 kW Air to Water Heat Pump



Model		TC HeatEco MONO 22 kW	
Power Supply / Refrigerant	V/Hz/Ph	380-415/50/3 - R290	
Max. Heating Capacity (1)	kW	21,1	
C.O.P. (1)	W/W	4,29	
Heating Capacity Min./Max. (1)	kW	10,1 ~ 21,1	
Heating Power Input Min./Max. (1)	kW	1,75 ~ 4,9	
C.O.P. Min/Max (1)	W/W	4,29~5,77	
Fan speed	rpm	650	
Max. Heating Capacity (2)	kW	19,42	
C.O.P. (2)	W/W	3,56	
Heating Capacity Min./Max. (2)	kW	9,71 ~ 19,42	
Heating power input Min./Max. (2)	kW	1,87~5,46	
C.O.P. Min./Max. (2)	W/W	3,56~5,2	
Fan speed	rpm	646	
Max. Cooling Capacity (3)	kW	11,2	
E.E.R (3)	W/W	1,91	
Cooling Capacity Min./Max. (3)	kW	7,3 ~ 11,2	
Cooling Power Input Min./Max. (3)	kW	1,9 ~ 4,9	
E.E.R. Min/Max. (3)	W/W	1,91 ~ 4,38	
Fan speed	rpm	700	
Max. Cooling Capacity (4)	kW	7,21	
E.E.R (4)	W/W	2,21	
Cooling Capacity Min./Max. (4)	kW	4,73~7,21	
Cooling Power Input Min./Max. (4)	kW	1,13~4,66	
E.E.R. Min/Max. (4)	W/W	1,53~4,18	
Fan speed	rpm	700	
Recommended circuit breaker	A	16	
IP rating		IPX4	
Max. power consumption	Fan	W	410(205x2)
	Outdoor unit	kW	7,3
	Secondary pump	W	140

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Model		TC HeatEco MONO 22 kW	
Workable Ambient Temperature Range		°C	-25~43
Max. Air intake temperature (Heating/Cooling)		°C	43/43
Min. Air intake temperature (Heating/Cooling)		°C	-25/21
Max. System Water Temperature (Heating / Cooling)		°C	75/35
Min. System Water Temperature (Heating / Cooling)		°C	10/5
Max. Operation High Pressure		MPa	3,0
Max. Operation Low Pressure		MPa	0,8
Compressor	Type		WHP32900VSKTQ9JK
	Oil in compressor		HAF68
	Oil volume in compressor	ml	2000
Refrigerant	Type / Amount	- / kg	R290/1,5
	Global warming potential (GWP)		3
	CO2 equivalent		0
	Max. refrigerant operating pressure	MPa	3
Fan	Quantity	db	2
	Airflow	m ³ /h	7000
	Rated power	W	240(120x2)
Noise Level (sound power)		dB(A)	70
Water Side Heat Exchanger	Type		Plate Heat Exchanger
	Water Pressure Drop	kPa	26
	Piping Connection	Inch	1
Allowable Water Flow	Min./Rated./Max.	L/S	1,13/1,25/1,51
Max. flow temperature		°C	75
SCOP			4,75
Energy efficiency class			A+++
Net Dimension(L×D×H)		mm	1204x515x1362
Net Weight		Kg	140

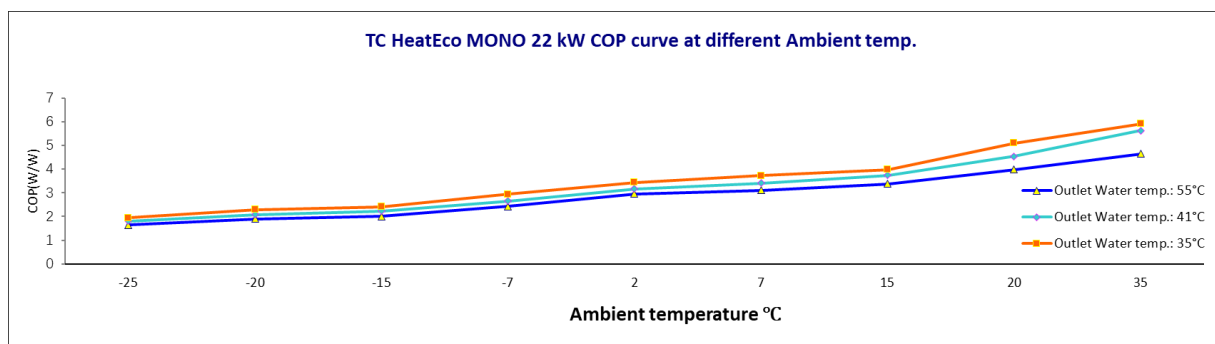
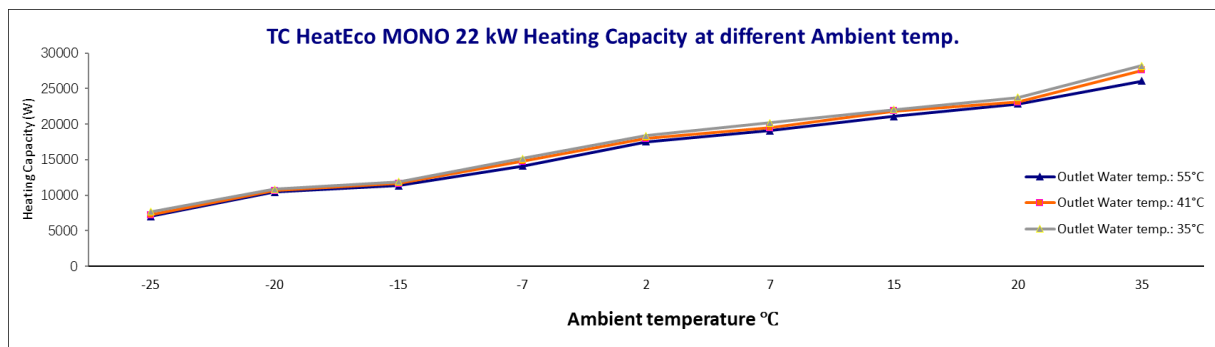
Note:

- (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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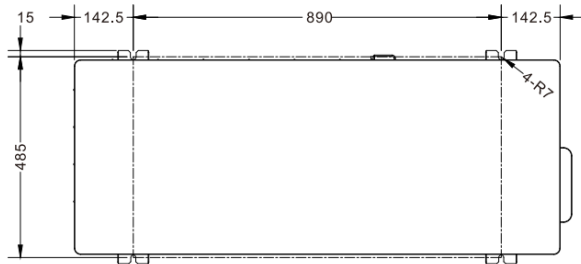
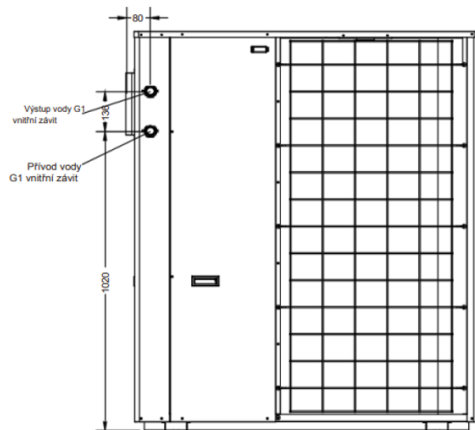
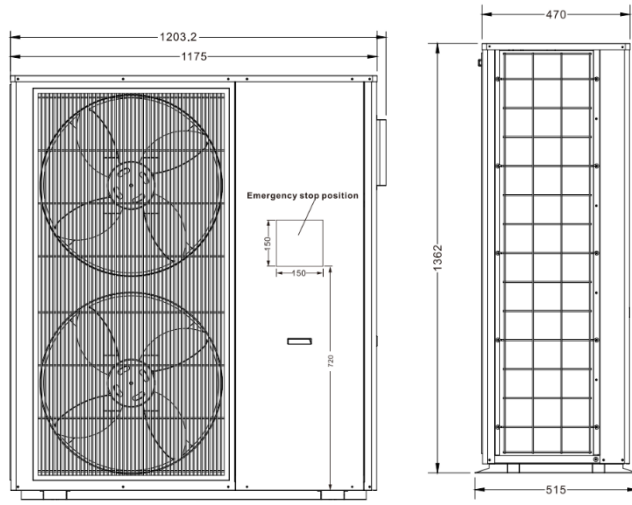
Test report of TC HeatEco MONO 22 kW Heating Capacity, Power Input and COP at different Ambient temperatures

Ambient Temp. (°C)	-25	-20	-15	-7	2	20	35
Heating Capacity (W) (Outlet Water Temp. 55°C)	9288	9957	11367	13962	17546	25849	30068
Heating Capacity (W) (Outlet Water Temp. 41°C)	10215	10499	12437	15122	18173	26914	31742
Heating Capacity (W) (Outlet Water Temp. 35°C)	10654	11643	13754	16382	19019	28176	32580
Power Input (W) (Outlet Water Temp. 55°C)	5026	5131	5393	5789	6352	7330	7241
Power Input (W) (Outlet Water Temp. 41°C)	4724	4976	5179	5439	5718	6209	6579
Power Input (W) (Outlet Water Temp. 35°C)	4589	4614	4837	5162	5339	5681	5916
COP (Outlet Water Temp. 55°C)	1,85	1,94	2,11	2,41	2,76	3,53	4,15
COP (Outlet Water Temp. 41°C)	2,16	2,11	2,40	2,78	3,18	4,33	4,82
COP (Outlet Water Temp. 35°C)	2,32	2,52	2,84	3,17	3,56	4,96	5,51



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TC HeatEco MONO 15 kW dimensions



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Parameters shall be declared for medium temperature application and for low-temperature application.

Item	Symbol	Value	Unit
Rated Heat Output (1)	Prated	15,312	kW
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	Pdh	13,545	kW
Tj=+2°C	Pdh	7,975	kW
Tj=+7°C	Pdh	5,206	kW
Tj=+12°C	Pdh	6,103	kW
Tj=bivalent temperature	Pdh	13,545	kW
Tj= operation limit temperature	Pdh	14,847	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	Ppsych	-	kW
Degradation co-efficient (2)	Cdh	0,9	-
Power Consumption in modes other than active mode:			
Off Mode	POFF	0,022	kW
Thermostat off mode	CTU	0,022	kW
Standby mode	PSB	0,022	kW
Crankcase heater mode	PCK	0,107	kW
Other Items			
Capacity Control		Variable	
Sound power level, indoor/outdoor	LWA	-70	dB
Annual energy consumption	QHE	6661	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	187	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	PERd	88	%
Tj=+2°C	PERd	52	%
Tj=+7°C	PERd	34	%
Tj=+12°C	PERd	40	%
Tj=bivalent temperature	PERd	88	%
Tj= operation limit temperature	PERd	97	%
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	PERd	-	%
For air-to-water heat pumps: Operating limit temperature	TOL	-10	°C
Cycling interval efficiency	COP _{psych}	-	-
Heating water operating limit temperature			
	WTOL	75	°C
Supplementary heater			
Rated heat output	P _{sup}		kW
Type of energy input	Electric		

Parameters shall be declared for medium temperature application and for low-temperature application.

Item	Symbol	Value	Unit
Rated Heat Output (1)	Prated	14,288	kW
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	Pdh	12,586	kW
Tj=+2°C	Pdh	7,885	kW
Tj=+7°C	Pdh	4,964	kW
Tj=+12°C	Pdh	5,934	kW
Tj= bivalent temperature	Pdh	12,586	kW
Tj= operation limit temperature	Pdh	15,433	kW
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	Pdh	-	kW
Bivalent Temperature	T _{biv}	-7	°C
Cycling interval capacity for heating	P _{psych}	-	kW
Degradation co-efficient (2)	Cdh	0,9	-
Power Consumption in modes other than active mode			
Off Mode	POFF	0,022	kW
Thermostat off mode	CTU	0,022	kW
Standby mode	PSB	0,022	kW
Crankcase heater mode	PCK	0,107	kW
Other Items			
Capacity Control		Variable	
Sound power level, indoor/outdoor	LWA	-70	dB
Annual energy consumption	QHE	7640	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	150,9	%
Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj:			
Tj=-7°C	PERd	88	%
Tj=+2°C	PERd	55	%
Tj=+7°C	PERd	35	%
Tj=+12°C	PERd	42	%
Tj= bivalent temperature	PERd	88	%
Tj= operation limit temperature	PERd	108	%
For air-to-water heat pumps: Tj= -15°C (if TOL<-20°C)	PERd	-	%
For air-to-water heat pumps: Operating limit temperature	TOL	-10	°C
Cycling interval efficiency	COP _{psych}	-	-
Heating water operating limit temperature			
	WTOL	75	°C
Supplementary heater			
Rated heat output	P _{sup}		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.