EFFI-CSMT300-M32

EFFI-CSMT500-M32

EFFI-CSMT600-M32

BEST CHOICE FOR ENERGY SAVING

DC INVERTER MEDIUM TEMPERATURE HEAT PUMP

- Highest outlet water temperature up to 60˚C (140˚F)
- Wide working range: -35˚C~50˚C (-31˚F~122˚F)
- Two independent R32 refrigerant circuits for redundancy
- Advanced inverter delivers efficient reliability
- Modular design enables easy expansion
- Intelligent IoT cloud remote management with cellular DTU connectivity
- Weather - UV resistant powder coating

UV PROTECTION

effiQueenc®

effiqueenc.com

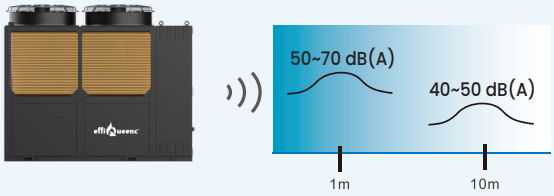
High Heating Efficiency – MT Series R32 low GWP refrigerant

The MT Series DC Inverter Air-to-Water heat pumps using R32 refrigerant are specifically designed to deliver optimal heating efficiency, even in cold climates. They ensure reliable operation at outdoor temperatures down to -35°C (-31˚F).

Thanks to their advanced design and the use of low-GWP R32 refrigerant, they provide excellent energy performance while reducing environmental impact. An integrated refrigerant leak detector ensures enhanced safety and optimal system protection.

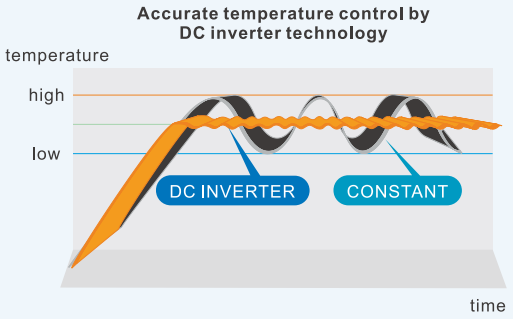
Low Noise Operation

DC inverter high temperature heat pump with 5-fold noise reduction design, the noise level during unit operation is greatly improved.



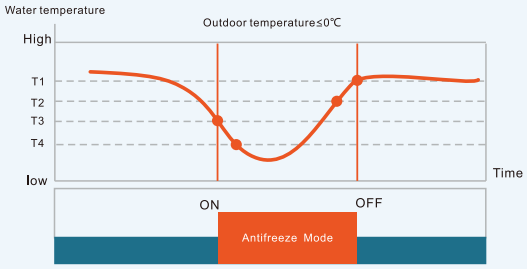
Precise Control, Constant Water Temperature

DC inverter technology to achieve accurate control of water temperature.



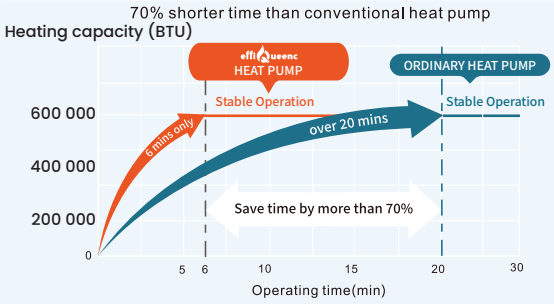
Automatic Antifreeze Protection in Standby Mode

Multi-level antifreeze protection function with automatic antifreeze process according to the change of outdoor temperature and water temperature to ensure the safe operation of the heat pump.



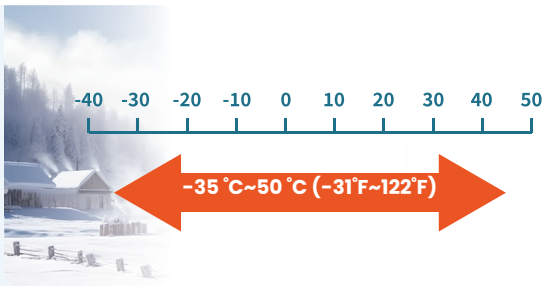
Rapidly Heating Status

Automatic adjustments on working frequency and expansion valve opening according to the change of ambient temperature and water supply temperature. Rapid and high efficient heating to reach the setting temperature.



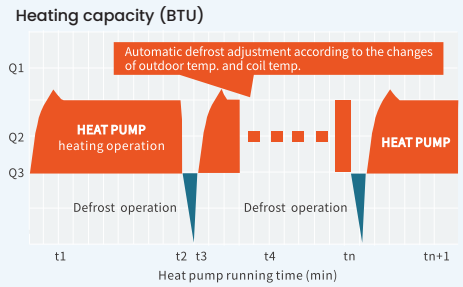
Safe Operation Technology in All Working Conditions

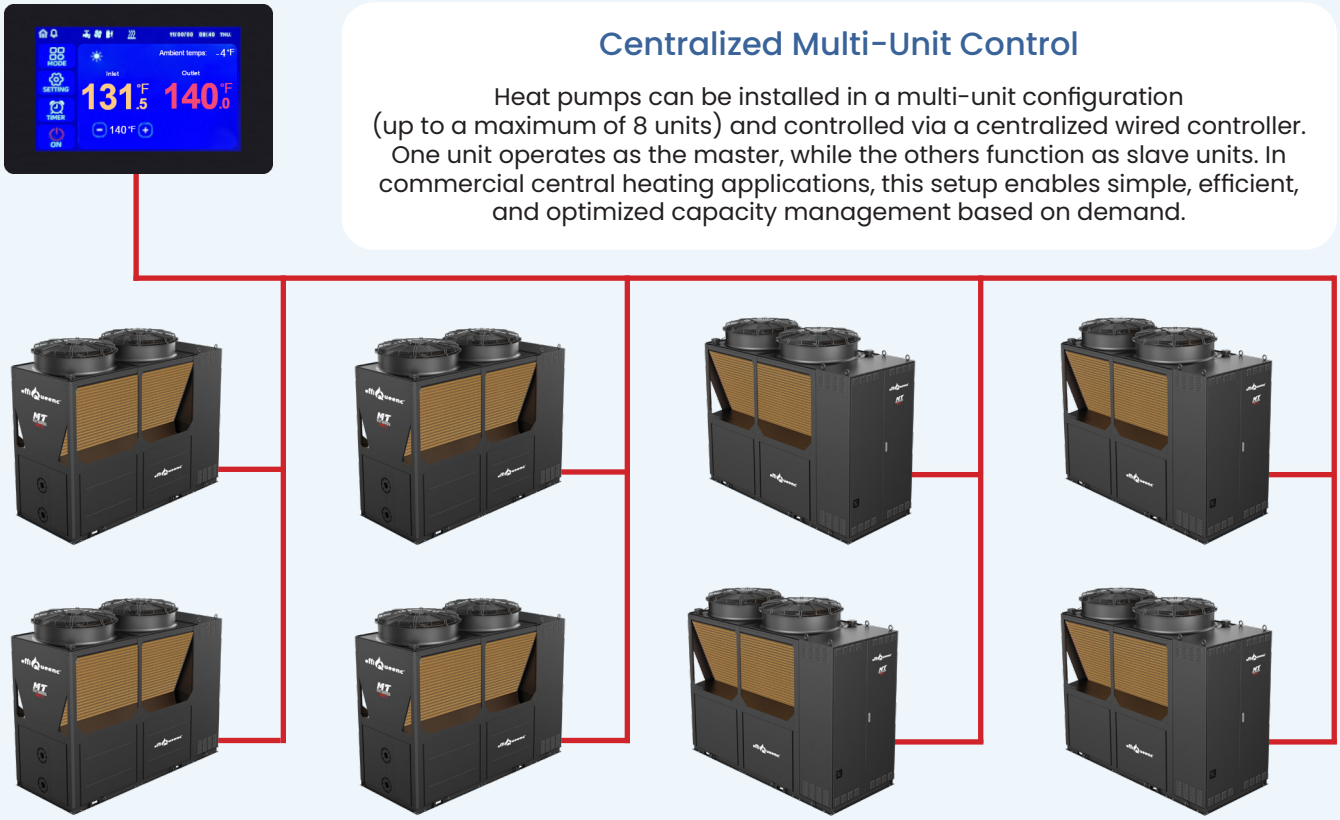
Wide working ambient temperature range : -35˚C~50˚C (-31˚F~122˚F). Safe and reliable operation for all seasons



Intelligent Defrosting Technology

Automatic adjustment on defrost mode according to the changes of outdoor temperature and coil temperature to reduce the defrosting time and thus extend the heating time.





Centralized Multi-Unit Control

Heat pumps can be installed in a multi-unit configuration (up to a maximum of 8 units) and controlled via a centralized wired controller. One unit operates as the master, while the others function as slave units. In commercial central heating applications, this setup enables simple, efficient, and optimized capacity management based on demand.

MT R32 SERIES – DC INVERTER MEDIUM TEMPERATURE AIR-TO-WATER HEAT PUMPS

Engineering Performance Summary (AHRI Reference Conditions)

MODEL		EFFI-CSMT300-M32		EFFI-CSMT500-M32		EFFI-CSMT600-M32	
Parameter		Metric	Imperial	Metric	Imperial	Metric	Imperial
Heating capacity	8°C OA / 40°C LWT	94.1 kW	321 000 BTU/h	140.5 kW	479 000 BTU/h	170.9 kW	583 000 BTU/h
COP	47°F OA / 104°F LWT	3.61		3.37		3.53	
Heating capacity	-8°C OA / 40°C LWT	68.1 kW	232 000 BTU/h	107.9 kW	368 000 BTU/h	131.1 kW	447 000 BTU/h
COP	17°F OA / 104°F LWT	2.58		2.59		2.67	
Heating capacity	-20°C OA / 50°C LWT	52.0 kW	177 000 BTU/h	82.3 kW	281 000 BTU/h	108.8 kW	371 000 BTU/h
COP	-4°F OA / 122°F LWT	1.74		1.65		1.86	
Cooling capacity	43°C Outdoor air	12.8 TR	154 000 BTU/h	22.8 TR	273 000 BTU/h	23 TR	276 000 BTU/h
EER	EWT 23°C / 18°C LWT	6.71		8.02		5.63	
Cooling capacity	35°C Outdoor Air	14.3 TR	171 000 BTU/h	24.2 TR	290 000 BTU/h	29 TR	348 000 BTU/h
EER	EWT 12°C / 7°C LWT	5.35		7.84		6.01	
Operating ambient temperature range		-35°C to +50°C (-31°F to +122°F)					
Maximum leaving water temperature Ambient air -20°C to 50°C (-4°F~122°F)		60°C (140°F)					
Maximum leaving water temperature Ambient air -35°C to -20°C (-31°F~-4°F)		55°C (131°F)					
Electrical power supply		575~600V / 3Ph / 50–60Hz					
Total load (A)		38.4 A		60.4 A		77.4 A	
Minimum Circuit Ampacity (MCA)		48 A		75 A		97 A	
Maximum Overcurrent Protection (MOP)		70 A		110 A		135 A	
Nominal water flow		215 L / min	56.8 GPM	373 L / min	98.5 GPM	430 L /min	113.6 GPM
Pressure drop		40 kPa	13.39 ft H_2O	50 kPa	16.73 ft H_2O	50 kPa	16.73 ft H_2O
Water Inlet/Outlet connections (inch)		2-1/2" Class 150 ASME flange		3" Class 150 ASME flange		3" Class 150 ASME flange	
Unit dimensions (L / W / H)		2536 × 1103 × 2055 mm		2850 × 1200 × 2440 mm		2850 × 1200 × 2285 mm	
Unit weight - kg (lb)		975 kg	2150 lb	1730 kg	3814 lb	1800 kg	3968 lb

MT SERIES R32 REFRIGERANT – CAPACITY

HEATING CAPACITY (kW)															
WATER OUTLET	EFFI-CSMT300-M32					EFFI-CSMT500-M32					EFFI-CSMT600-M32				
	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
35°C (95 °F)	46.3	68.7	78.3	95.1	98.1	69.1	105.6	120.9	138.5	168.2	94.1	132.5	153.2	175.5	181.6
40°C (104 °F)	45.8	68.1	77.6	94.1	96.9	71.6	107.9	123.6	140.5	165.9	98.5	131.1	150.8	170.9	177.1
45°C (113°F)	45.3	67.4	76.8	93.2	95.6	74.2	110.3	126.2	142.4	163.6	92.4	138.7	160.5	187.2	265.2
50°C (122 °F)	46.5	67.8	77.0	93.4	94.1	75.3	108.5	126.1	142.4	153.8	100.9	133.8	154.1	181.9	166.8
55°C (131 °F)	47.5	67.9	76.9	92.6	92.4	79.7	109.5	123.5	139.5	151.9	102.6	138.7	157.1	183.5	158.5
60°C (140 °F)	—	67.8	76.5	90.8	90.6	—	106.4	118.0	134.1	133.7	—	130.7	152.6	173.9	150.8

HEATING CAPACITY (MBTU/h)															
WATER OUTLET	EFFI-CSMT300-M32					EFFI-CSMT500-M32					EFFI-CSMT600-M32				
	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
35°C (95 °F)	157.8	234.6	267.3	324.4	334.8	235.8	360.4	412.5	472.7	573.9	321.0	452.0	522.6	598.7	619.8
40°C (104 °F)	156.3	232.2	264.7	321.1	330.8	244.4	368.3	421.6	479.3	566.1	336.0	447.3	514.7	583.0	604.4
45°C (113°F)	154.7	229.9	262.1	318.0	326.2	253.0	376.3	430.8	485.8	558.3	315.2	473.2	547.5	638.7	904.9
50°C (122 °F)	158.5	231.3	262.7	318.8	321.1	257.0	370.1	430.2	485.8	524.9	344.4	456.4	525.9	620.8	569.0
55°C (131 °F)	162.0	231.8	262.4	316.1	315.4	272.0	373.5	421.6	475.8	518.2	350.1	473.2	535.9	626.0	540.8
60°C (140 °F)	—	231.4	261.1	309.9	309.2	—	363.0	402.8	457.5	456.1	—	446.1	520.6	593.3	514.4

COP (-)															
WATER OUTLET	EFFI-CSMT300-M32					EFFI-CSMT500-M32					EFFI-CSMT600-M32				
	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
35°C (95 °F)	1.97	2.78	3.13	3.80	5.30	1.85	2.73	3.15	3.63	4.92	2.11	2.81	3.17	3.67	5.56
40°C (104 °F)	1.84	2.58	2.90	3.61	4.84	1.75	2.59	2.95	3.37	4.51	1.98	2.67	3.05	3.53	4.87
45°C (113°F)	1.71	2.39	2.69	3.38	4.41	1.65	2.45	2.75	3.10	4.10	1.66	2.41	2.75	3.23	4.52
50°C (122 °F)	1.59	2.22	2.50	3.13	4.02	1.51	2.17	2.51	2.84	3.51	1.68	2.25	2.53	3.00	3.73
55°C (131 °F)	1.48	2.08	2.34	2.83	3.67	1.44	1.98	2.29	2.68	3.21	1.57	2.08	2.31	2.75	3.24
60°C (140 °F)	—	1.95	2.20	2.51	3.36	—	1.88	2.09	2.32	3.08	—	1.91	2.12	2.33	3.13

INPUT POWER (kW)															
WATER OUTLET	EFFI-CSMT300-M32					EFFI-CSMT500-M32					EFFI-CSMT600-M32				
	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17 °F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
35°C (95 °F)	23.5	24.7	25.0	25.0	18.5	37.4	38.7	38.4	38.2	34.2	44.6	47.1	48.3	47.8	32.7
40°C (104 °F)	24.9	26.4	26.7	26.1	20.0	40.9	41.7	41.9	41.7	36.8	49.7	49.0	49.5	48.4	36.3
45°C (113°F)	26.5	28.2	28.6	27.6	21.7	45.0	45.0	45.9	45.9	40.0	55.8	57.6	58.4	58.0	58.7
50°C (122 °F)	29.2	30.5	30.8	29.9	23.4	49.8	50.1	50.2	50.2	43.8	60.0	59.5	60.9	60.6	44.8
55°C (131 °F)	32.1	32.7	32.9	32.7	25.2	55.3	55.3	54.0	52.0	47.0	65.6	66.7	68.0	66.8	49.0
60°C (140 °F)	—	34.8	34.8	36.2	27.0	—	56.5	56.4	57.9	43.4	—	68.5	72.1	74.5	48.1

In accordance with our continuous product improvement policy, effiQueenc reserves the right to modify specifications and design without prior notice.

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