安仁國際股份有限公司
ANNREN TECHNOLOGIES CO., LTD.
eMail: sales@annren.com
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

Version	Description	Date (dd/mm/yyyy)	Released by	Approved by
0	First edition	14-Apr-2022	Shell Li	Alisa Chen

Specification

Part Name: Battery Thermal Management System(BTMS)

Model No.: ARTJHY-TMS-LR-4

I. Safety precautions

1-1. When the instrument of the whole vehicle reports a thermal management fault, the communication line of the thermal management unit should be unplugged immediately.

1-2. When the thermal management unit is on the roof, personnel must do safety protection work on the roof, wear seat belts, hard hats, insulating shoes, and insulating gloves, and must find a site with seat belts before working.

1-3. When thermal management is running, the system is charged with high voltage. It is strictly forbidden to open the top cover of the unit and touch various parts of the internal system.

1-4. It is strictly forbidden to operate with water in the electrical parts of the air conditioner, and tools with well-insulated handles must be used, and insulating gloves must be worn during live measurement

, It is strictly forbidden to wear jewelry, watches, etc.

1-5. Non-professional maintenance personnel are not allowed to disassemble and assemble air-conditioning components without authorization to prevent safety accidents.

1-6. During live work, it must be ensured that the circuit is not short-circuited and well insulated, otherwise there is a danger of electric shock, so as to avoid serious burns and fires caused by excessive current (over 30 A).

eMail: sales@annren.com
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

1-7. It is strictly forbidden to short-circuit the high and low voltage switches of the system and various insurances, which will cause damage to the compressor and other electrical appliances.

1-8. When the air conditioner is running, ensure that the water circulation is smooth, so as to avoid low pressure alarm in the refrigeration system or frost in the pipeline.

1-9. Regularly check the liquid level of the coolant tank to prevent the air conditioner from not working due to lack of water.

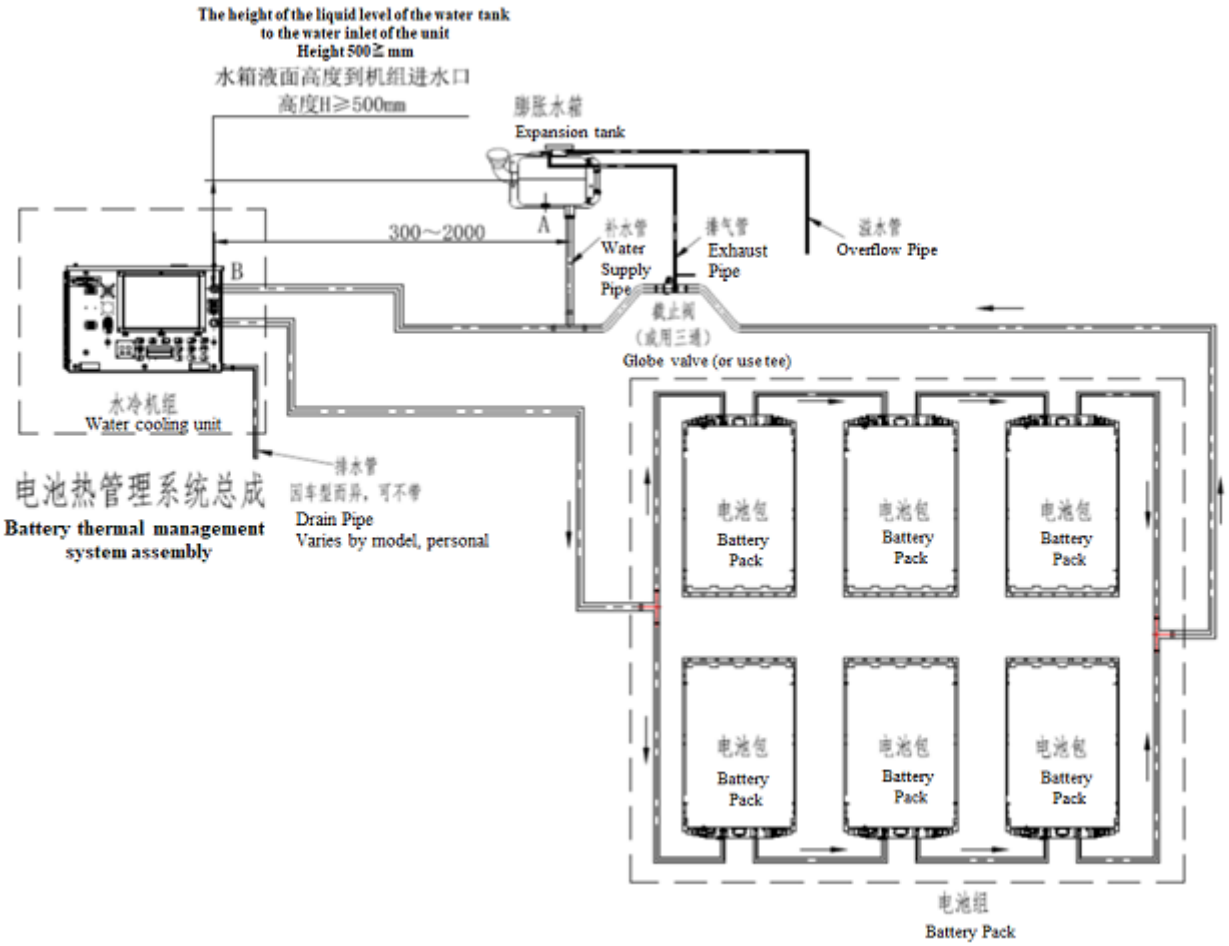
1-10. When the unit is installed for the first time, it needs to be opened several times frequently to allow the waterway to be completely drained.

II. Product features and parameters

Items	Specifications	
1	Model	TJHY-TMS-LR-4
2	Rated cooling capacity	1~4KW Variable frequency adjustable
3	Rated heat capacity	0~5 KW Adjustable (optional)
4	Condensing air volume	2000 m³/h
5	Water pump	DC24V,180W
	Circulating water volume	20 L/min（head >10m）
	Liquid temperature range	10℃～35℃
	Compressor	DC200-720V
6	Refrigerant type	R134a
7	Crew protection	IP66 (high pressure IP67)
8	Nozzle specifications	Φ25
9	Coolant Type	50% Ethylene Glycol
10	Communication	Can
11	Use ambient temperature	-30℃～50℃
12	Use liquid type	Antifreeze (CAN be changed by customer’s demand)
13	Power Type	DC power supply
Basic parameters：		
1	Rated high voltage	DC 450V-720V
2	Rated low voltage	DC 24 V
3	compressor rated power	1800W
4	Fan rated power	130 W(single)
5	Maximum air volume of the fan	1200m³/h（single）

eMail: sales@annren.com
No.196-19, Zhonghua Rd., Yongkang Dist., Tainan City 71069, Taiwan

III. ARTJHY-TMS-LR-4 architecture and installation

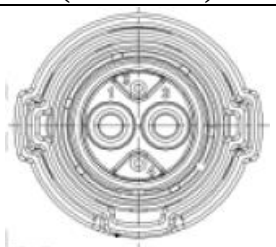
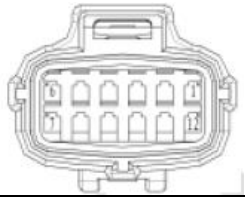
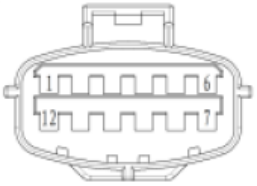
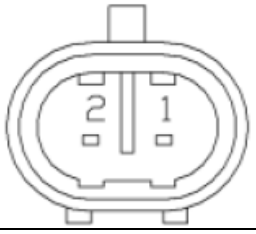


1. The expansion tank must be installed at the highest point of the entire pipeline system to meet the requirements of water system exhaust and thermal expansion and contraction.
2. The exhaust pipe should be placed behind the water supply pipe, and the drain pipe and the water supply pipe should be arranged as vertically as possible.
3. When laying the pipeline, it is necessary to reduce bending and up and down displacement as much as possible, and avoid partial upward bulge, so as to avoid "airbag" and affect the performance of the unit.
4. The connection of the water system pipeline needs to be fixed with (clamp) hoop and the whole pile skeleton (generally, the pipeline is required to be fixed at an interval of 500 mm) to prevent the leakage of coolant caused by vibration.
5. The two ends of the pipe joint should be fixed with a (clamp) hoop at a distance of 100 mm from the joint.
6. When the pipeline has a bend, it should be fixed with a (clamp) hoop at 100 mm from both ends

of the bend.

7. The contact between the water system pipeline and the hard object must be wrapped with friction-resistant rubber to avoid damage to the pipeline.
8. The laying of the pipeline should be carried out in strict accordance with the direction and position negotiated by the supply and demand parties; after the installation of the water system is completed, the air in the system should be removed before starting to avoid damage to components caused by waterless operation.
9. The laying of the pipeline should be carried out in strict accordance with the direction and position negotiated by both the supplier and the buyer; after the installation of the water system is completed, the air in the system should be removed before starting the system to avoid damage to components caused by running without water.
10. The drainage pipes should be connected from the two drainage pipe joints at the bottom of the unit and led out of the whole pile, so that the condensed water can be discharged in time; the pipeline layout should be free from sagging, twisting, rising, and curves, and the pipeline direction should be from high to low to ensure that Flowing water is smooth.
11. The pipe connection is fixed with clamps, and it is strictly forbidden to apply sealant.

IV. pin definition

ITEM	Description	Model Number (Product Side)	Cable Diameter	Pin Define		Model Number (Cable side)	Maker
1	HV Input	HVRC2P30MS106 	6mm²	1	HV+		Amphenol
				2	HV-		
2	LV Control	AMP 174661-2 	0.75mm²	1	CANH	AMP 174663-1 	TE
				2	CANL		
				5	Wake up		
				11	24V+		
				12	24V-		
3	LV Input	/	/	/	/	/	/
4	Liquid Level Switch	AMP 282104-1 	0.75mm²	1	Liquid Level		TE
				2	GND		