

# MINI VRF

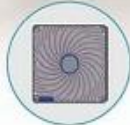


## Ultra Quiet Operation

### Ten Major Ultra-silent Technologies

The scroll heating series adopt the all-round noise-reducing technology and newly-designed fan blade to reduce the airflow noise through the smooth suction structure, and the compressor noise isolation technology to implement ultra-silent operation, creating a high-quality and comfortable environment.

Newly-designed fan air duct with the streamlined distribution of the air discharge grilles can reduce the wind resistance and noise.



The PET (macromolecule acupuncture cotton), which is the kind of cotton specially used by high-speed railway to isolate noise, perfectly absorbs noises of all frequency bands.



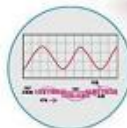
CFD analogue simulation, together with the new fan blade, and the 4-blade axial flow design guarantee a better heat-exchanging performance and lower noise.



The DC brushless motor features stepless speed adjustment and more stable operation, achieving higher energy efficiency and reducing noises.



The 180° sine wave control technology applied to the compressor ensures the smooth and stable operation of compressor and effectively inhibits the abnormal noise during operation.



Advanced reactor can completely eliminate electromagnetic noise.



The compressor noise enclosure effectively avoids the proliferation of compressor noise.



### Smart Night Silent Mode

The system adopts the delay judgment mode based on the outdoor ambient temperature peak. Meanwhile, it will automatically determine whether to enter the night silent mode according to the current ambient temperature and load size. The minimum noise of silent operation can be as low as 45 dB (A).

### Forced Silent Mode

For supporting projects of high-rise buildings or sites with a stricter silent requirement, users can select the forced silent operation mode as required to reduce the operation noise of the unit and create a more quiet and comfortable environment.

### Night Forced Silent Mode

For a higher requirements of quietness and higher requirements for silent mode at night, the night forced silent mode provides a more quiet environment under a variety of conditions.



# Superior Technologies

Are you looking for a cozy room with less electricity used?

All DC Compliant Enhanced Vapor Injection Scroll Compressor

Three Core Technologies for Excellent Performance

Floating sealing ring technology improves compressor's starting performance

Patented enhanced vapor injection (EVI) technology

High-efficiency centralized stator winding improves motor rated efficiency to > 95%

3.4 mm-thick casing design



Variable volume ratio scroll technology substantially improves energy efficiency of compressor with low pressure ratio

6-pole permanent magnet motor Stable operation with 500–7200 RPM

Oil duct reduces oil circulation rate when compressor is working at high speed

Volumetric oil pump Oil pumped does not vary with oil level.

## ● C — All DC Inverter Technology

The secret of high energy efficiency

All DC inverter compressor, the core source of power, is equipped with a 6-pole high-efficiency motor, and the enhancement of part load efficiency is tailored to better suit the operations of low ambient temperature heating units.

### 6-pole reluctance-type DC motor

4-pole



6-pole



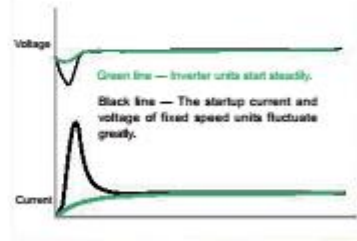
50% Increase in magnetic force  
Higher shaft rotating efficiency

## ● More applicable to regions with voltage fluctuation in power supply

The all DC inverter system starts flexibly, with the rotating speed of the compressor increasing steadily, the current rising slowly, and small impact on the power grid. Even under the condition of 160 V ultra-low voltage or 260 V ultra-high voltage, the system can still start and operate normally, and provide comfortable heating service.

VS

The fixed speed system starts the compressor instantly. The startup current of up to 6–7 times of the operating current may result in a sharp drop in power supply voltage, and lead to a failure of unit startup and the even more serious problems during peak periods.



## ● No heating capability attenuation at -20°C No cooling capability attenuation at 43°C

Enhanced Vapor Injection Technology — Strong Heating Capability Without Electric Auxiliary

Just like the difference between turbo supercharging and normal aspiration (2.0 T = 3.0 L)

The world's most advanced technology for heat pump system dealing with low-temperature heating

The whole series adopt the high-efficiency EVI system and the new variable-frequency control and refrigerant system of TICA, achieving excellent heating performance even at the ultra-low temperature of -30°C. The heating capability is increased by over 45% and won't subside at -20°C. In hot summer, the cooling capability won't decrease even at 43°C, assuring you a cool summer indoors.





### ● Compact design

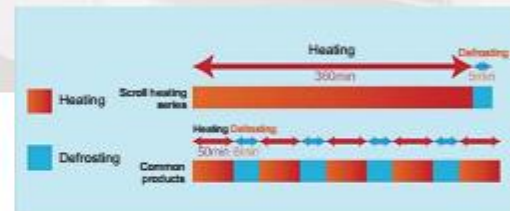
TICA scroll heating series of household central air conditioner feature a compact design with a single fan and three-layer high-efficiency and high-quality heat exchanger.

With a mini body, they can be easily installed in a small space such as a bay window, optimizing the spatial pattern and making your home more beautiful and fashionable.



### ● Smart and Quick Defrosting

The patented smart vapor injection defrosting technology of TICA can increase the refrigerant circulation flow during defrosting, which will shorten the defrosting time, reduce the cold air felt by customers during defrosting, improve the defrosting efficiency, and cut down the power consumption.



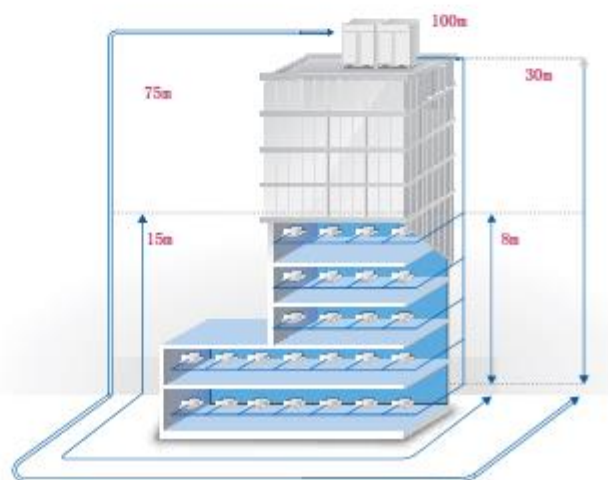
### ● Oil Return When Heating Without Stopping the Unit

Traditional units have to be turned off to achieve oil return, while TICA scroll heating series of household VRF units can implement heating without switching the direction of the refrigerant flow. This series adopt the modes of on-demand oil return and high/low frequency switchover oil return to prevent wild fluctuation of indoor temperature, and provide user with more comfortable experience.



Maximum actual length of single pipe	50m
Maximum equivalent length of single pipe	75 m
Maximum total equivalent pipe length	100m
Maximum drop of indoor/outdoor unit	30 m
Maximum drop of indoor unit	8 m
Maximum permitted length after first branch	15 m

\* Pls consult the detailed technical documentation or other matters with the relative technicians.



# Smart Home

Technology-driven intelligence for smarter life, be a real air conditioning messenger.



## Mini VRF specification (Lengfeng series)

Model			TIMS080AHR	TIMS100AHR	TIMS112AHR	TIMS125AHR	TIMS140AHR	TIMS160AHR	TIMS200AHRA	TIMS224AHRA
Power Supply			220V-50Hz						380-50Hz	
Capacity	Cooling/Heating	kW	8.0/9.0	10.0/11.5	11.2/12.5	12.5/13.5	14.0/16.0	15.5/17.0	20.0/22.4	22.4/25.0
Power consumption	Cooling/Heating	kW	2.5/2.4	3.0/2.9	3.0/3.1	3.55/3.48	4.1/4.03	5.05/4.9	6.6/6.0	7.2/6.7
	EER	kW/kW	3.20	3.33	3.73	3.52	3.41	3.07	3.03	3.11
COP		kW/kW	3.75	3.97	4.03	3.88	3.97	3.47	3.73	3.73
Rated input	Cooling	kW	2.5	3.0	3.0	3.55	4.1	5.05	6.6	7.2
	Heating	kW	2.4	2.9	3.1	3.48	4.03	4.9	6.0	6.7
Rated current	Cooling	A	12	14	14	16	19	23	17	19
	Heating	A	11	13	14	16	18	22	16	18
Refrigerant	Type	/	R410A							
	Charge volume	kg	2	2	2.5	2.5	3	3	4.5	4.5
Compressor	Brand	/	Mitsubishi							
	Type	/	Rotary							
	Quantity	/	1						2	
	Refrigerant oil charge volume	L	1.183							
Fan	Type	/	Axial							
	Quantity	/	1						2	
Airflow rate		m <sup>3</sup> /h	3300	4800	5400	5400	6000	6000	7200	7200
Connecting pipe	Liquid/Gas	mm	9.52/15.88						9.52/19.05	
Sound pressure level	Cooling/Heating	dB (A)	50/55	50/55	50/55	50/55	52/55	53/56	56/58	56/58
Outline dimension		mm	W980*D390*H840						W980*D390*H1260	
Package dimension		mm	W1036*D482*H865						W1036*D482*H1285	
Weight	Net weight	kg	70	70	75	75	92	92	120	120
	Gross weight	kg	73	73	78	78	95	95	123	123
Indoor unit connecting	Capacity ratio	%	50-130							
	Maximum drive IDU.No.	unit	4	5	6	7	8	8	10	11
Equivalent connection pipe length	Max.total equivalent pipe length	m	50			70			100	
	Max.equivalent connection pipe length	m	30			50			75	
	Max. drop of indoor/outdoor unit	m	15						30	
	Max. drop of indoor unit	m	5						10	
Working temp.	Cooling	*C DB	10 ~ 50						10 ~ 48	
	Heating	*C WB	-10 ~ 28						-10 ~ 28	