



# *HVAC units for tramways, trains and metros*

*Proven performance, high reliability and low life cycle cost*

*Air Conditioning for Passengers*



- *Complete capacity range*
- *Self contained, hermetically sealed units*
- *Standard off the shelf units*
- *Customized to fit the application*
- *Easy maintenance*
- *Controlled via Microprocessor*





*Travelling in air-conditioned, perfectly temperature controlled trains, tramways and metros is key to the travel comfort of today's passengers and drivers.*

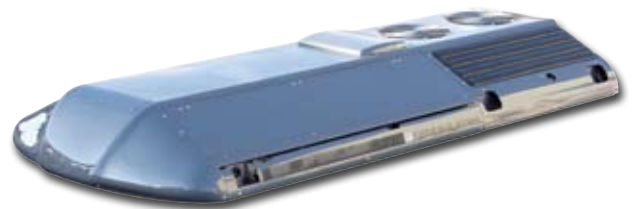
*The heating, ventilation and air-conditioning solutions for rail vehicles from Thermo King are highly reliable and deliver top performance while reducing operating costs.*

*Excellent quality service and maintenance support in every corner of the world is ensured by Thermo King's second-to-none, global dealership network.*

*Since 1938 Thermo King has been a leader in climate control solutions. Through a culture of constant improvement and innovation we strive to provide total customer satisfaction in everything we do.*



Tramway type of unit



LRV type of unit



Low profile saloon unit for metro applications



Tramway type of unit

# Specifications

<b>Specifications</b>		<b>Roof mounted units</b> Tramways, commuter trains, coaches, metros
<b>PERFORMANCE</b>		
Cooling capacity	20 -35 kW	
Heating capacity	Up to 32 kW	
Total air flow rate	3000 - 5300 m <sup>3</sup> /h	
Fresh air flow rate	up to 1250 m <sup>3</sup> /h	
Operating temperature	-30 to + 70 °C	
Weight	up to 800kg	
<b>POWER SUPPLY</b>		
Unit power supply	3x208V, 60Hz • 3x230V, 50/60Hz • 3x380/400V, 50Hz • 3x460/480V, 60Hz • 750V DC	
Heater power supply	AC ; see Unit power supply • DC up to 750V nominal	
<b>CONTROL</b>		
Control voltage	24 to 110V	
Communication	CAN Open, MVB or Ethernet	
Control of external heaters	Yes	
Temperature and humidity control	Yes, by microprocessor	
Air distribution control by dampers	Yes, by fresh, return and supply air dampers	
<b>REFRIGERANT</b>		
Refrigerant circuit	Hermetic	
Refrigerant	R134a or R407C	
<b>NORMS &amp; REGULATIONS</b>		
Shock and vibration	IEC 61373	
Fire and smoke per	NF F 16-101, 102 and 103 • DIN 5510 • NFPA 130	
EMC	EN 50121-3-2	
Electronic components	EN 50155	
Reliability	EN 50126	
Air filters	G2 to G4 per EN 779	
Comfort inside passenger compartment (together with car builder)	EN 14750 • EN 13129 • UIC 553	
Environment	EN 50125-1	
Unit frame	Stainless steel • Aluminum	
Inverter duty		

Specifications are subject to change without notice.



Ingersoll Rand Climate Control Technologies provides equipment and services for:

## HEATING, VENTILATION & AIR CONDITIONING



Rail



Bus

## TRANSPORT REFRIGERATION



Road Cargo



Air Cargo



Sea Cargo

## STATIONARY REFRIGERATION



Commercial Applications



Industrial Applications



**Ingersoll Rand**

*Climate Control Technologies*

Providing equipment and services to manage controlled-temperature environments for public and private transport, food and other perishables, our Climate Control Technologies sector encompasses both transport and stationary refrigeration solutions. Our product brands include Thermo King®, a world leader in transport temperature control systems, and Hussmann®-Koxka®, manufacturers of refrigeration and food merchandising equipment.

[www.thermoking.com](http://www.thermoking.com)

[www.koxka.com](http://www.koxka.com)

[www.hussmann.com](http://www.hussmann.com)

[www.ingersollrand.com](http://www.ingersollrand.com)

For further information please contact:

