

# Heating ventilation and air conditioning controls (HVAC)



Rail operators around the world are continuously striving for better passenger comfort and service to increase patronage in order to improve their bottom line.

## Passenger comfort

### Get closer to your ultimate goal

We provide air conditioning sub-system designers and builders with unique insights into the effective control of rail vehicle air conditioners gathered from our 20 years of experience in the design and development of innovative hardware and software specifically designed to ensure passenger comfort is maintained at the highest level.

Rail operators around the world are continuously striving for better customer service to increase patronage in order to improve their bottom line. Our Advanced Temperature Control System has been designed with the comfort of passengers paramount. With its predictive and pre-emptive fuzzy logic control strategies, actions are taken to control refrigeration equipment for ultimate

temperature and humidity performance. The use of multiple HVAC units in the control philosophy allows integrated temperature management across a vehicle or a whole train. For colder climates the system interfaces to the evaporator heaters, heat banks, heat exchangers and boilers to provide adequate heating for passengers.

The incorporation of linear fan control technology reduces noise so passengers can relax on their journey.

It is important that the train comfort control system integrates seamlessly into the total train management system (TMS). This is why our PC3 comes standard with a range of network connectivity options, such as Multi-Vehicle Bus (MVB), CANopen, IPTCom, LONWorks and many more, giving the train manufacturer the confidence that the system will deliver information to the driver as required.



## Industry hardened equipment

Systems that run and run and run...

Our PC3 configurable hardware systems provide our customers with the confidence of a product designed specifically for the rail industry and is compliant to all major rail standards such as EN50155. The equipment will operate in a variety of extreme environmental conditions including temperatures from -40 deg C to + 85 deg C. The incorporation of our intelligent FET digital outputs eliminates the need to incorporate relays and therefore reduces costs for the air conditioning manufacturer. Full short circuit protection ensures that the outputs continue to function after the clearing of the specific fault condition, a feature that increases reliability enormously.

High speed vehicles provide unique challenges for the air conditioning system however the high response inputs and outputs of the OEM system is perfect for pressure wave management and redundancy.

Our IEC61131-3 software development environment gives the customer access to a powerful industry approved programming system to make changes to the operational parameters if required.



## Compressor protection system

Reduce expensive compressor failures

Compressors are a major part of any air conditioning system and cost of failure makes a big impact on the bottom line for rail operators. Our Compressor Protection System operates with all major compressor brands in the industry and provides intelligent compressor wear levelling which balances compressor usage across an HVAC unit, a train carriage or across a total vehicle. This system reduces maintenance and avoids damage to these expensive assets. This combined with variable speed compressor control and our Smart Pressure Management reduces compressor load and resulting pressure faults.

## Smart power management

Minimise energy costs

The HVAC control system incorporates a Smart Power Management System with real-time energy consumption monitoring that staggers the timing of air conditioning unit starts, load sheds for reduced power consumption and uses emergency inverter control if necessary. The full use of dampers for energy efficiency and better use of outside ambient air based on real time passenger load information keeps passengers comfortable while reducing costs.

## Remote management and information

Improve your operational efficiencies

Our systems connect to the "OEM Cloud" through integrated 3G wireless technology. The "OEM Cloud" provides a pay as you go model for the use of the OEM Internet Web portal and data streaming services. The portal provides the customer with the appropriate business intelligence to enable them to make improvements in their operations.

Call +61 2 9966 9424 now to speak with our specialist or alternatively email [sales@oem.net.au](mailto:sales@oem.net.au) for prompt attention.

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