

ARBS 2010 Sneak Preview

EAST MEETS WEST AT ARBS

It's almost ARBS time again and we looking forward to meeting with you when you visit us on our stand in April. It will be your first opportunity to see the entire Temperzone and Hitachi product range displayed together on one stand.

[read more](#)



Why you should be a Temperzone Residential Partner.

Dealer Program

The combination of Hitachi and Temperzone domestic product ranges has meant a rethink of how Temperzone works with contractors who work in the residential market.

[read more](#)



Coal exports keep their cool with Temperzone

When it comes to creating custom designed air conditioning, Temperzone's reputation is unbeatable.

[read more](#)



Temperzone... always the right Selection.

How can you be absolutely certain that you're specifying the right Temperzone equipment for the job?

[read more](#)

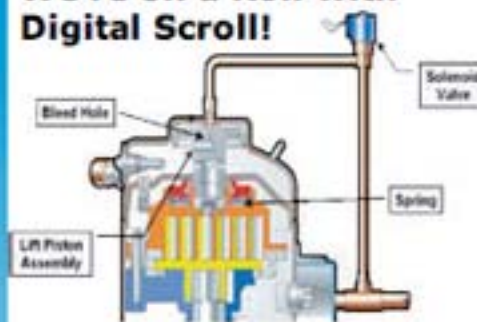


Working in Extreme Heat.

If you work in the ceiling space of a building on a hot day, do you know what's safe?

[read more](#)

We're on a Roll with Digital Scroll!



Why run at 100% of capacity when less than half of that is required?

[read more](#)

Looking forward to seeing you at ARBS 2010!

East Meets West at ARBS

It's almost ARBS time again and we looking forward to meeting with you when you visit us on our stand in April. It will be your first opportunity to see the entire Temperzone and Hitachi product range displayed together on one stand. When you see it you will understand what we mean by saying it is the most comprehensive range of air conditioning product in Australia.

The range includes Wallhung Split systems; Inverter, Digital Scroll and Premium ducted systems; Multihead / Multizone systems; VRF; Rooftop and Plant-room Package units; Air cooled and Water cooled Chillers.

Anyone who visited the Temperzone stand at the last ARBS show will remember the great food and coffee on the stand. This year will continue the tradition of great Temperzone hospitality. In keeping with the mix of Temperzone and Hitachi products on display the catering will be a mix of east and west. We hope you will join us for morning tea, lunch or afternoon tea.

SO WHAT'S NEW ON THE STAND:

You will have a chance to see Temperzone's new Digital Scroll commercial range of split ducted and package units (18-45kW).



There is longer story about this product range in this issue of Temperzone News [Click Here](#)

The show will also see the launch of the Temperzone Residential Partner program.



Temperzone ARBS Stand

NEW Digital Scroll
Commercial Range

Temperzone Residential
Partner Program

Hitachi Chillers

Factory Visits

The Temperzone Residential Partner network is also the subject of a longer article in this issue of Temperzone News

Click Here.

If you are serious about chillers come and talk to us about the range of Hitachi Air and Water Cooled Chillers now available through Temperzone.



Hitachi is one of the leading manufacturers of chillers worldwide and we will have chiller units on the stand.



If you would like to visit the Temperzone Sydney factory while you are at ARBS we will be running bus tours morning and afternoon with pick up and set down in Darling Harbour.

MENU:

Breakfast
 Bacon & Egg Pie or Fresh Waffles & Berries
 Lunch
 Asian Chicken Noodle Salad or Hearty Beef Pie
 Morning/Afternoon Tea
 Chocolate Lamingtons or Coconut Custard Tarts

FACTORY VISITS:

We will be running visits to the Temperzone Sydney factory morning and afternoon on all three days.

If you would like to attend, click here!

We're on a roll with DiGital Scroll

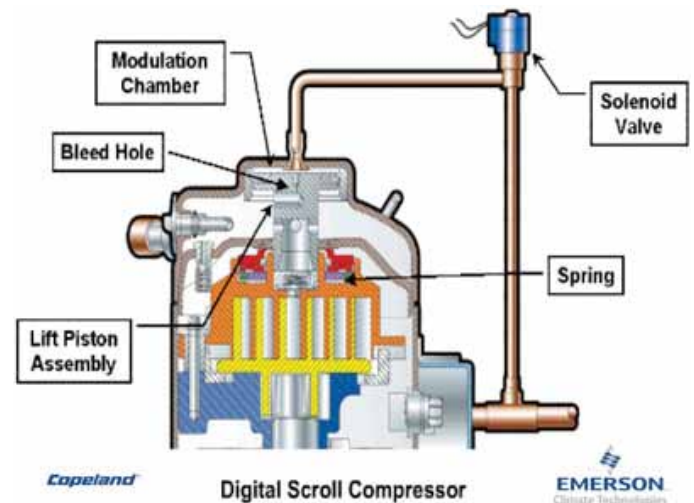
Why run an air conditioning unit at 100% of capacity when less than half of that may be all that is required? Temperzone's DiGital Scroll technology is making its presence felt in a wider number of applications as people in all sorts of home and work environments feel the difference... and enjoy it.

Temperzone's South Australian manager Ryan Wijayasekera says that DiGital Scroll technology allows the unit to sense the amount of capacity required to heat or cool the area and only uses what is necessary. "That's one of the great things about this technology," says Ryan, "If a unit only needs 40% of its capacity to work effectively, it scrolls down to that level of usage." Ryan adds that it's even better when you look at the largest commercial applications where two compressors are deployed. He says, "If only one of the units is needed at 40% capacity and the other isn't needed at all, the equipment can effectively be running at as little as 20% capacity!"

EXCELLENT TEMPERATURE CONTROL

The kinds of applications where DiGital Scroll technology really proves its worth are often those considered to be the most challenging. For example, hotel function rooms are frequently unused for a large part of the day and require very little capacity to be kept at the right temperature level. "Fill the room with 50 or 100 people and it's a different story," Ryan points out.

"WHAT WAS ADEQUATE CAPACITY EARLIER IN THE DAY ISN'T NEARLY ENOUGH. BUT WITH DIGITAL SCROLL TECHNOLOGY, THE ROOM IS KEPT AT A COMFORTABLE AND CONSISTENT TEMPERATURE, EVEN WHEN IT'S FULL OF GUESTS."



The advantages apply to many other applications too. For example, buildings with a large glass area to the west are often quite comfortable in the morning; even if the day is warm the air conditioning will only need to draw on a relatively small percentage of its capacity. Subject the same room to the hot afternoon sun, however, and it can become distinctly uncomfortable. Ryan says that many school buildings built in the sixties and seventies were designed without sufficient thought to their occupants' comfort – designs which often feature walls of glass facing entirely the wrong direction.

SUCCESS IN COMMERCIAL MARKETS

Ryan Wijayasakera reports that the DiGital Scroll range has been meeting with a great deal of success in commercial markets. "Consultants are finding that areas which were previously very difficult to service with one piece of equipment are ideal candidates for these examples of Temperzone's superior technology.

For example, there are many show rooms where a large DiGital Scroll unit can successfully do a job which may have previously required two separate pieces of equipment. This is clearly a considerable advantage.”

KEEPING EVERYTHING UNDER CONTROL

Another of Temperzone’s advantages in commercial applications is the ability to control the unit without a Temperzone controller. “Our products are compatible with most Building Management Systems,” says Ryan, “so they can be run without using our own controllers. This is very useful for building managers who will typically have several different types of equipment to deal with on any given day.”

AT HOME WITH DIGITAL SCROLL

DiGital Scroll is also finding its way into more and more homes, with domestic units of 17.5kW and 21kW capacity available at this stage. The variable capacity feature makes the units extremely suitable for homes with zoned installations, because the ‘intelligent’ unit knows when to cut back on compressor capacity when there isn’t sufficient demand. “As with commercial and industrial applications, the compressor reduces its capacity to match the load,” says Ryan.

Ryan points out that there could be energy savings to consider too. Ryan says, “Not starting and stopping

a compressor when a set point is reached is likely to help, and running a unit at a small percentage of its capacity also has implications for energy use.” Effective air conditioning can work hand-in-hand with insulation to control a room’s temperature, and help prevent over-investment in either area.

A CRITICALLY IMPORTANT ROLE

Ryan reports that the applications for which DiGital Scroll technology is being used continues to grow.

“One of the more interesting installations was a hospital operating theatre. Here, consistent temperature is absolutely critical for both the patient and the sensitive equipment, and it became clear the Temperzone DiGital Scroll equipment was the right answer.”

THE FUTURE FOR DIGITAL SCROLL

Temperzone’s DiGital Scroll range now covers the domestic models mentioned and commercial units up to 45kW. Ryan Wijayasekera says that the technology will find its way into much larger units than available at present. “It really is the way of the future,” he says, “offering the flexibility needed to take care of areas with variable heat loads and spaces where accurate temperature control is important. No wonder these models are finding such wide acceptance. No wonder we’re on a roll with DiGital Scroll!”

Temperzone Residential Partner Program Its simple and it has lots of benefits!

The combination of Hitachi and Temperzone domestic product ranges has meant a rethink of how Temperzone deals with contractors who work in the residential market. After months of assessment and planning Temperzone has come up with a model that is simpler, fairer and more flexible than anything else in the market.

Temperzone National Sales Manager David Staker said recently, “We looked at the other dealer networks in the air conditioning industry and felt that they were very complicated and rigid. Our new Residential Partner Program delivers all the benefits in a much simpler and more flexible framework.”

“We are looking for contractors who like the way we do business, who want a range of high quality product and are keen to grow with us. I am sure the flexibility will interest many contractors who find our competitors systems hard to work with.”

The following points are 7 good reasons why you should consider becoming a Temperzone Residential Partner.

Ducted Air Conditioning
Inverter - Digital - Premium

Why you should be a Temperzone Residential Partner.

Ducted Air Conditioning

A fully ducted system is the ultimate air conditioning solution for your home and lifestyle

Inverter - Digital - Premium

HITACHI Inspire the Next

temperzone

- Extensive product range from both Hitachi and Temperzone.
- Very competitive prices with our flexible buying options.
- You deal direct with the manufacturer, not through layers of distributors.
- National distribution network of branch offices and warehouses. Product and parts are always readily available.
- Temperzone's industry best technical support and training. Technical support is provided by qualified refrigeration mechanics not a call centre.

- Marketing and advertising support at a local, state and national level.
- Partners are automatically invited to join the Travel Club reward program.

In the next few weeks Temperzone will begin the launch of its new Residential Partner Program. If you are interested, call your local Temperzone office and ask to speak to one of the Residential Partner sales team or come and see us at ARBS.

Coal exports keep their cool with Temperzone

When it comes to creating custom designed air conditioning units for the toughest conditions, Temperzone has a reputation that's unbeatable. So even though the conditions at the Abbot Point Coal Loader are amongst the harshest we've encountered, contractors A.E. Smith knew we could handle the job.

It's hot. It's dusty. And it's built over salt water. As a site for an air conditioning unit, they don't come much more challenging. And with Australia's coal exports becoming an increasingly vital resource to underpin our economy, reliability of supply is critical. That's why the Abbot Point Coal Terminal in northern Queensland has such an important role to play. Commissioned in 1984, it has been exporting coal continuously ever since. The original terminal capacity of around 15 million tonnes per annum (mtpa) was first increased to 21 mtpa with the official opening of the \$116 million X21 Expansion in November 2007.

No sooner had work on the first stage of the expansion commenced than it was decided to further expand the facility's capacity to 25 mtpa. Growth continued unabated, so Ports Corporation of Queensland has now responded to commitments from coal exporters to underpin demand for further expansion to 50 mtpa by the end of 2010!

SOPHISTICATED ELECTRONICS KEEPS SUPPLY FLOWING

To handle the anticipated output, the new coal loader relies on a sophisticated switch room which is exposed to the blazing north Queensland sun.

"WE'VE HAD A GOOD RELATIONSHIP WITH TEMPERZONE FOR MANY YEARS," SAYS MICHAEL O'FARRELL, "BASED ON THEIR ABILITY TO DELIVER QUALITY EQUIPMENT THAT'S UP TO THE JOB".



AE Smith, the largest privately owned mechanical services contractor in Australia, was contracted by construction giant John Holland to come up with an engineering solution that would not only keep the switch room equipment at the right temperature level once installed, but also withstand the rigors of the location for years to come.

AE Smith's Project Manager Michael O'Farrell says that Temperzone equipment was a natural choice for the job.

In this case, the job involved custom designing a package unit that would meet the strict specifications insisted on by AE Smith. Michael O'Farrell says that these included constructing the unit from stainless steel and several other upgrades to ensure the unit could perform reliably in all conditions. "The potential cost of down time is huge at a coal loader like Abbott Point", he points out, "so the hydraulics and electronics have to perform at peak efficiency year in, year out."

TEMPERZONE'S CUSTOMISED SOLUTION



The Custom-Built Stainless Steel Temperzone Unit

Temperzone's Queensland Branch manager, Shane McBride, says that the unit customised for the Abbott Point project is based on Temperzone's OPA330RKT-S roof top package. The unit is an ideal starting point for an installation of this size, and uses R410A, the environmentally friendly and thermodynamically efficient refrigerant.

“THE HEAT, THE COAL DUST AND THE CORROSIVE ENVIRONMENT MAKE IT A NIGHTMARE LOCATION FOR ANY EQUIPMENT,” SAYS SHANE MCBRIDE.

“So we started by constructing the unit's outer skin from 316 marine grade stainless steel.” Also the subject of special attention were the drain trays. “When the unit's condensate water is mixed with coal dust, corrosion is a major risk. So again, stainless steel was used,” says Shane, “and the same applied to all the external fixings.”



These weren't the only changes made to protect the unit against corrosion. The OPA330 supply fan, casing and wheel have been powder coated to ensure they could survive the elements. “We also epoxy coated the condenser and evaporator coils,” says Shane McBride, adding, “For further protection against damage by the extreme weather and against on-site damage, condenser coil guards were also fitted to the OPA330 condenser coils. It's an extremely comprehensive protection package.”

Another concern at any coal loading facility is the risk of fine coal dust finding its way into places



it isn't wanted. As a result, the specifications of the unit include an upgraded electrical panel and special gasketing to the unit paneling to keep the coal dust at bay.

“Constructing the coal loader and floating it to Abbot Point is a massive undertaking,” concludes AE Edwards' Michael O'Farrell. “We have every confidence that the stainless steel package extensively customised by Temperzone is the right one for the job.”

FLOATING SOME INNOVATIVE IDEAS

Constructing the huge coal loader – essentially a conveyor belt on a huge scale – called for many innovative solutions. Not the least of these was the decision to construct the loader in a dry dock in Brisbane and float it up to Abbot Point on a barge when completed, making it possible to tap into the engineering expertise and workforce flexibility offered in the Queensland capital.

Getting the completed unit to its new location will not be without its challenges either. The massive steel structure is around 100 metres tall – so tall in fact, that its journey under Brisbane's towering Gateway Bridge will have to be timed to coincide with low tide in the area! With a base approximately 20 metres wide, the effect will be similar to seeing a 15-storey building passing under the bridge.

“Temperzone... always the right Selection.”

How can you be absolutely certain that you're specifying the right Temperzone equipment for the job? Of course, experience plays a large part, but the Temperzone Selection Program makes it a whole lot easier – and more accurate, says Richard Benedetti from Temperzone's Queensland office.

The Selection Program is a unique piece of software developed by Temperzone in New Zealand to help consultants and specifiers select the right Temperzone unit of range of units for each application they're looking at. “By using the Selection Program specifiers can easily compare the performance of different equipment,” says Richard Benedetti. “When you enter the specifications for a job into the software, it doesn't just select one unit from the range. It selects a range of units that could be suitable and compares their performance.” That's one of the program's great strengths. It compares cooling capacity, air flow and static pressure requirements, giving the user a 'big picture' of the performance of different possible units for the job under consideration.

THE RIGHT SELECTION FOR THE ENVIRONMENT

When you rely on Temperzone Selection to help you recommend the right equipment for your clients, the solution will also be right for the environment. Temperzone was at the forefront of the move to R410a refrigerant – and that's what every unit covered by the Selection program uses. Richard Benedetti says the days of environmentally hungry air conditioning are a thing of the past as far as Temperzone is concerned.

“OUR AIM IS ZERO OZONE DEPLETION, AND WE'RE DOING OUR UTMOST TO COMMUNICATE THAT MESSAGE TO THE INDUSTRY”.NOW INCLUDES VERTICAL WATER COOLED

Temperzone's industry leadership in complying with the 2007 MEPS (Minimum Energy Performance Standards) is well known, and every product covered the Selection Program meets or exceeds them. It's important to note that the Program has been extended to cover the in-ceiling and vertical water-cooled package units often specified in larger installations such as hotels, commercial premises and high-rise apartment buildings.

Users who have been taking advantage of the Program for some time will also find that digital scroll units can also be selected where appropriate. “With these units now being covered by the Selection program, it covers equipment of every capacity in the Temperzone range,” says Richard Benedetti.



Until recently, the Selection Program has been widely used internally by Temperzone with limited trial among customers. Now, however, the system is being rolled out to many more specifiers and consultants for whom it should not only save time but also offer the reassurance that the unit they are recommending is the best possible choice for the application. “I use the program all the time,” says Richard, “so I know how effective and useful it is. We hope you take advantage of this excellent piece of software but we are still happy to do the calculations for you and most times we can get the results back to you on the same day.”

EASY TO USE

Users report that the system is extremely easy to operate. “You simply feed the relevant calculations into the program, which then determines the best product options to meet the specs,” says Richard Benedetti. Of course, Temperzone is well known for its ability to customise units for specific applications and the Selection Program has been created with this flexibility in mind. The software has the power to identify if the specification provided exceeds the limits of a particular piece of equipment in standard form,

but can be allowed for during manufacture.

Supplied in convenient CD Rom presentation, the Selection Program can be downloaded onto the consultant's server or onto multiple desktops – that way each company can decide who should be able to access the program within their organisation.

AVAILABLE NOW

The Temperzone Selection program is available now through all Temperzone branches. If you're a consultant or specifier and would like a copy of the CD, contact your local branch, call your usual Temperzone representative or go to www.temperzone.biz

"IT'S A TRUE BREAKTHROUGH FOR SPECIFIERS AND CONSULTANTS," SAYS RICHARD BENEDETTI. "IT'S A FAST, EASY AND ACCURATE WAY TO DETERMINE EXACTLY WHICH ENVIRONMENTALLY FRIENDLY TEMPERZONE UNITS WILL MEET THE NEEDS OF ANY APPLICATION."

Working in Extreme Heat Its not worth dying for.

If you live in Australia you would almost certainly have suffered from some level of heat stress at some time. Profuse sweating, dehydration, heat rash, headache, light headedness, nausea and even fainting are all fairly common symptoms of heat stress, particularly when it's humid as well. These symptoms are your body trying to keep itself cool. If your core body temperature gets too high, heat stress becomes heat stroke which can cause permanent damage or death. So if you work in the ceiling space of a building on a hot day, do you know what's safe, when does it become risky and when does it become outright dangerous?

The death of an insulation installer from heat stroke, after working in extreme temperatures in a roof space in western Sydney, caused sensational headlines around Australia. As this incident was in a similar environment to that which air conditioning contractors often find themselves Temperzone felt it would be good to have a detailed look at heat stress, heat exhaustion and heat stroke and how to maintain safety in very hot work environments.*

Whilst full details of the fatal incident in NSW are not available, what is known provides a good basis to look at heat stress in the work place. The worker was working in an unventilated roof space on a day when outside temperatures reached 41C. There have been some suggestions that the interior temperature in the roof space was around 60 C. It was the workers first day on the job. His condition wasn't noticed until he collapsed in the street just after lunch. By the time he collapsed he already was suffering from heat stroke. He was rushed to hospital but lapsed into a coma and died from heat stroke related organ failure. One obvious question is why did this worker suffer heat stroke and not his co-workers?

When looking at personal factors it is important to understand every worker responds to working in a hot environment differently. People who regularly work in



a hot environment may even have different tolerance on different days. If someone on your team tells you they don't feel OK working in a very hot environment, take notice and take steps to make sure their health is not in danger. **This is not a situation to tell someone to shut up and get back to work.**

THE KEY PERSONAL FACTORS ARE ACCLIMATIZATION, FITNESS, HYDRATION AND STATE OF HEALTH.

Acclimatisation is an important factor as most people get used to working in hot environments and so can tolerate higher temperatures for longer periods.

Fitness is another very variable factor. In general fitter people have higher tolerance of high temperatures.

Hydration is critical in hot environments as dehydration is a major factor in turning heat stress into heat stroke. You should start drinking water before you start working in the hot environment. Make sure your team has an adequate supply of cold water and that they drink it frequently.

There are a number of health conditions which seriously impact on a person's ability to cope with extreme heat. On top of the list are heart disease and

high blood pressure. If someone on your team suffers from either of the above it is probably safest not to put them in high temperature environments.

As all “fridgies” are teetotallers and hence would never come to work with a hangover, you may be surprised to know that dehydration caused by alcohol consumption means you will dehydrate faster in hot conditions faster and hence be less tolerant of heat stress.

SO WHEN IS TOO HOT TO WORK?

It may come as a surprise, but there is no defined temperature above which it is too hot to work. There are however conditions when it is not safe to work. The key word here is safe, because in a work environment it is the duty of care of the employer to ensure the workplace is safe to work in. (Note: duty of care may extend to subcontractors also.) So how do you know what is safe and what is not. Unfortunately the answer is not simple as the safety guidelines take in a range of factors some of which are beyond the scope of most HVAC contractors to measure.

THE MAIN ENVIRONMENTAL FACTORS ARE; TEMPERATURE, RADIANT HEAT, AIR SPEED AND HUMIDITY.

In Australia the standard method of working out safe working temperature is to put all of these into one measurement called WBGT. Unfortunately you need a specially made instrument costing in several thousand dollars and it needs to be installed for up to an hour in the workspace before you get accurate reading. If you want more information try <http://www.airmet.com.au/Product/Quest-Temp-32.aspx>



To give you an idea how this works and what the difference inside the ceiling and outside can be Airmet kindly put one of their heat stress monitors in the ceiling of a house in suburban Melbourne on a day when the maximum temperature only reached 33 C. Inside the ceiling was another matter.

At 9 am it was 26 C outside and was actually only 23 C inside the ceiling. The temperature climbed both inside and out during the morning so at midday it was 30 C outside and 38 C inside. At this point the monitor was still saying the conditions were ok for continuous work inside the ceiling.

However things changed quickly inside the

ceiling. By 12:10 the monitor was now indicating that it was safe to work for 45 minutes per hour in the ceiling (inside temperature was 39 C) and by 12:30 this had dropped to only 30 minutes per hour (inside temp was 41 C). By 1:10pm it had dropped to 15 minutes per hour (inside temp 44 C) and by 2:20pm the monitor was indicating that it was unsafe to work in the ceiling at all. (inside temp was 46 C). The maximum temperature inside the ceiling was 47.6 C at 2:50 when the outside temperature was 33 C.

The monitor indicated it was ok to work inside for 15 minutes an hour at 3:30 with the inside temp still at 46 but lower humidity. At 4:40 it was ok to resume 30 minutes per hour and by 6:00pm it ok to work for 45 minutes per hour. It was not safe to resume continuous work until 7.00pm with the inside temperature still 37 C.

Given the environmental and personal factors above it is worth re-examining the factors we know from the death of the insulation worker in Sydney.

The outside temperature was over 40 C which in its own right would have limited work to a maximum of 30 minutes at a time. If the reports of 60 C inside the ceiling are correct it was simply too hot to work in the space.

It was the workers first day on the job and he was almost certainly not acclimatised.

The fact that he collapsed with heat stroke after lunch also suggests he had dehydrated quickly.

To have reached the stage of actual heat stroke he would have gone through a range of early warning symptoms; profuse sweating, light headedness and inability to concentrate, headache, heat rash. Oddly as heat stress progresses to heat stroke you actually stop sweating but become delirious and eventually go into a coma. It would seem his symptoms went unnoticed.

Under the OH&S laws in every state it is the employers duty of care to ensure a safe work place for your employees. So make sure you understand the risks, have a clear policy and procedures for working in a hot ceiling (or for that matter on the roof of a shopping centre in similar conditions). One of the most important and simple procedures is to use a buddy system where workers keep a watch on each other for symptoms of heat stress. This is particularly important for new and unacclimatised staff. Most importantly don't take risks with workers health in this environment. Its just not worth dying to get the job done on time.

See the useful links for the NSW code of practice for working in hot and cold environments. The full WBGT instrument is available for purchase or hire from www.airmet.com.au

* The information provided here is intended for use as general information and should only be used as a guideline for working in hot environments. If you require specific information on this subject contact your local work cover authority or a qualified consultant.