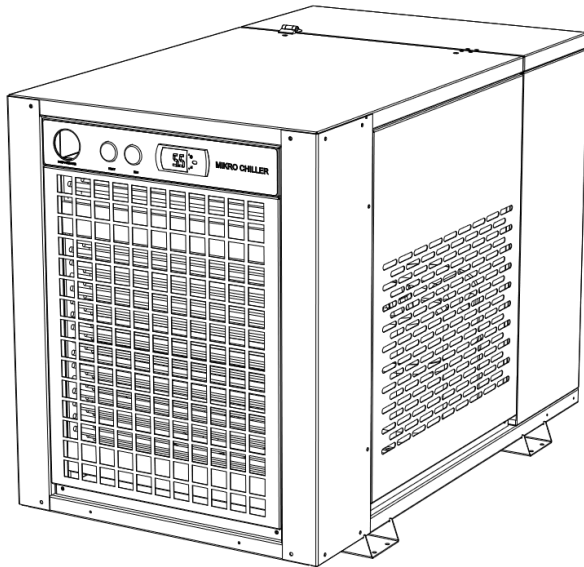


# INDUSTRIAL CHILLERS – 1- 4kW

## AIR COOLED

### TECHNICAL DATA



Thermex Solutions is Australia's largest manufacturer of small specialised industrial water chillers

Industrial process chillers are designed to circulate water to a heat producing process via a water pump. The water brings the heat back to the chiller where the compression cycle cools the water before it is returned to the heat process.

They are typically not for potable water applications although the chiller can be designed to supply potable water.

All Thermex chillers up to 100kW are supplied with a buffer tank – the buffer tank is an important feature in all chillers and the bigger the better. The buffer tank in a process chiller has many benefits such as

- helping protect the compressor from excessive starts
- preventing thermal spikes impacting on the compressor
- allows closer temperature tolerance to the process
- having stored chilled water to allow a managed shut down of a process should there be a problem with the cooling cycle
- allows for a vented design and prevent the need for a hydraulics kit

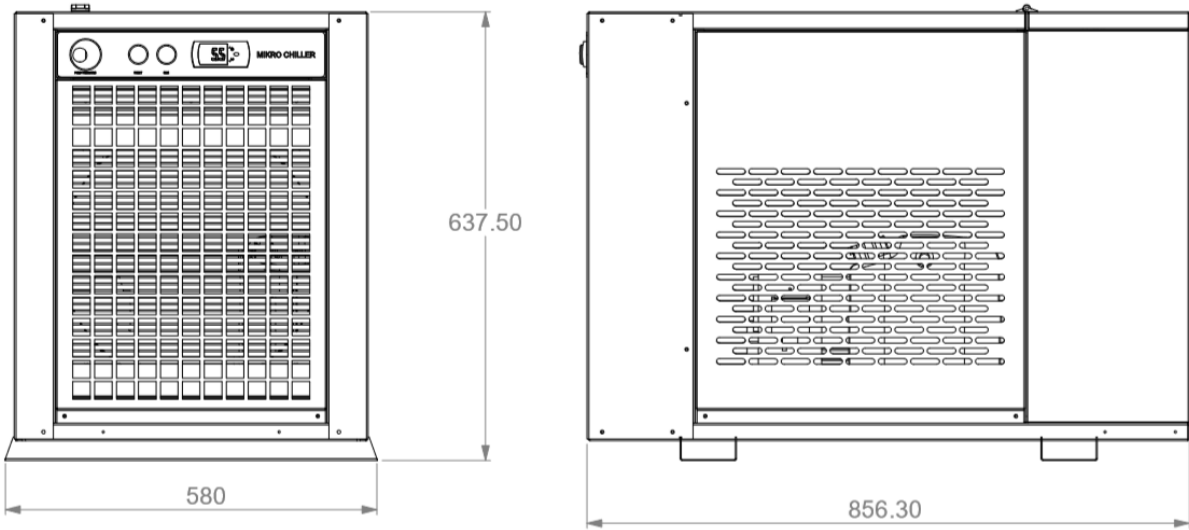
All Thermex process industrial chillers are supplied with high efficiency scroll compressors supplied by Copeland. The scroll compressor is the latest in compressor technology

All Thermex water chillers use R134a refrigerant – R134a is a contemporary refrigerant with a low global warming potential. R134a refrigerant also has the benefit of being a low-pressure refrigerant gas – this allows Thermex chillers to operate in extreme ambient conditions- up to 52°C. Chinese and European manufactured chillers are rated at 35C ambient condition and are generally supplied with condensers that are not suited to these extreme conditions.

**TECHNICAL DATA**

Model	TCM010	TCM015	TCM020	TCM025
<b>Cooling capacity 10°C Supply</b>	<b>0.99</b>	<b>1.42</b>	<b>1.93</b>	<b>2.49</b>
Power input – kW	0.78	0.93	1.26	1.58
Current draw - A	4.3	4.6	5.6	7.36
<b>Cooling capacity 20°C Supply</b>	<b>1.50</b>	<b>2.10</b>	<b>2.90</b>	<b>3.60</b>
Power input - kW	0.85	1.04	1.42	1.85
Current draw	4.7	5.3	6.57	8.02
<b>45C ambient environment – for operation in a 25°C environment cooling capacity will increase by 25%</b>				
Maximum fan power input - kW			0.17	
Maximum fan current draw – A			0.73	

**DIMENSIONS**



**The units are designed to be installed with equipment with small heat loads. Typical installations include**

- Analytical equipment
- Lasers etching systems
- XRD
- Dialysis
- Small injection moulding machines
- Food preparation
- Pre-cooling for ice machines

**All Thermex water chillers are supplied with – as standard -**

- **Rugged Powder coated galvanised steel** chassis for all weather durability
- **All weather durability** – all the components on the chiller are rated to be in the weather. The electrical enclosure is an IP55 rated
- **Pumps** – Thermex series chillers are supplied with an integrated primary pump
- **High efficiency scroll compressors** from the industry’s leading suppliers for durability and long product life
- **Warranty** – Comprehensive 12 months warranty on all parts and labour
- **Buffer tanks** to provide close temperature control and minimise compressor starts – stainless steel
- **High efficiency R134a** refrigerant with low global warming potential and to ensure operation in even the highest ambient temperatures
  
- **Comprehensive** factory acceptance testing before dispatch
- **Highly** accurate electronic controller
- **Stainless steel** plate heat exchanger evaporator
- **Evaporator** protection on all models
- **A comprehensive range to suit any solution**

**Options**

**Thermex solutions** is able to engineer a solution for our customers. Chiller requirements are rarely the same with smaller chillers and we are able to supply the chiller built for the specialized applications

- Close temperature tolerance
- Castors
- Food preparation
- Water cooled
- Closed loop



**GENERAL INFORMATION**

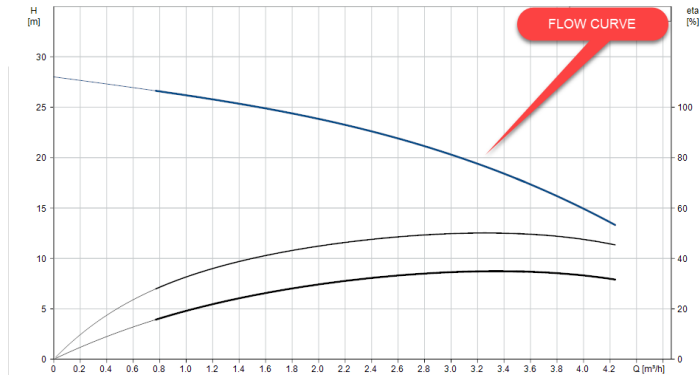
**Condenser**

Air flow through condenser - M <sup>3</sup> /hr – maximum	2000
Hot air discharge	Horizontal through the sides of the unit
Fan wiring	Single phase
Number of fans	1
Condenser construction	7mm rifle bore copper tube – aluminum fin 14 FPI
Air pressure drop across condenser – pa	80
Fan noise rating – dB – 50hz	59
Fan size – mm	350
Fan type - Axial	4 pole Single phase
Condensing capacity control	Head pressure fan speed control
Condenser coating	Nano coated for corrosion protection

**Evaporator**

Pressure drop across evaporator – Pa	50
Evaporator construction	Plate HX
Evaporator material	Stainless steel – 316 – copper flashing
Fouling factor – evaporator - m <sup>2</sup> C/kW	0.0018
Evaporator protection – standard models	Bypass
No. refrigeration circuits	1
No. Of compressors	1
Application	Standard cooling
Capacity control	0-100%
Compressor type	Reciprocating – hermetically sealed
Compressor oil	PVE
Refrigerant	R134a
Liquid receiver volume – litres	1.4
High pressure safety cut out	2300 kPa
Low pressure safety cut out	80 kPa
Compressor start method	DOL – capacitor start
General unit construction	Electrostatic epoxy powder coated galvanized sheet metal
TX Valve	Mechanical expansion
Centre of gravity	50/50 Long axis 50/50 Short axis to the front
Controller	Electronic
Buffer tank construction	Stainless steel
Buffer tank volume	40L
Water fittings	½” John Guest push fit
Water fittings – drain	½”
Approximate shipping weight – dry	TC010      TCM015      TCM020      TCM025
	60            60            65            65
Approximate refrigerant charge – kg	0.70        0.70        0.80        1.0

## PRIMARY CIRCULATING PUMP PERFORMANCE



### Pump data

- RPM 2900
- Approvals - CE,WRAS,ACS,TR,EAC
- Housing – cast iron
- Impeller – Stainless steel 304
- Rated power 0.55 kW
- Rated Hz – 50
- Rated voltage 220/ 240
- Rated amps 3.1
- Weight 14kg

### PUMP PERFORMANCE

The unit will usually be supplied with a primary circulating pump as standard

Thermex can customize the pump for particular applications and these should be specified at the time of order

The unit has an internal water bypass designed to protect the heat exchanger – it should not be closed under any circumstances

The flow/ pressure charts for the standard pump are shown above



THERMEX SOLUTIONS P/L  
20/85 ALFRED RD  
CHIPPING NORTON NSW 2170  
AUSTRALIA  
+612 9724 2492

**All operational cooling capacity, power consumption and current draw data shown above is based on the chiller operating at the limit of its design and is intended to be an indication only.**

**Each chiller will be individually designed to customer requirements and a detailed product specification will be supplied at time of order including installation instructions and dimensions. The power consumed by the unit and the current it will draw vary depending on how the chiller is constructed. The chillers performance may also vary slightly from the figures above again based on customer requirements.**

**Thermex Solutions product range is subject to change without notice**

#### **WARRANTY**

- Thermex Solutions warrants all its products for 12 months from the agreed commissioning date – no later than 30 days from invoicing date.
- The warranty is to the first purchaser of the unit
- The warranty covers all parts and labour to rectify the unit
- The warranty is subject to Thermex Solutions terms and conditions which will be provided at the time of order

#### **CONTACT**

THERMEX SOLUTIONS  
20/85 ALFRED RD  
CHIPPING NORTON NSW 2170  
AUSTRALIA  
[www.thermex.com.au](http://www.thermex.com.au)

Phone – (02) 9724 2492

Email  
[sales@thermex.com.au](mailto:sales@thermex.com.au)