

**SOUTHERN CROSS  
COMPRESSORS (AUSTRALIA)**



**ATS** Air  
Treatment  
Solutions

# TROPICAL DAT SERIES REFRIGERATED COMPRESSED AIR DRYERS



*Refrigerated air dryers*

## **TROPICAL DAT SERIES**



Virtually all compressed air applications can benefit from air that is free from residual condensate, a naturally occurring outcome when air is compressed. Compressed air, contaminated with moisture, can prove to be costly leading to increased product spoilage, maintenance and downtime.

The energy saving DAT series refrigerated dryers from Southern Cross are highly efficient, durable and ideally suited for harsh Australian operating environments.

Selecting the right DAT series dryer for your application will maximise system efficiency, reduce downtime risk and save on energy costs.

### **FEATURES**

- Large heat exchangers resulting in low pressure drop and maximised overall energy efficiency.
- Patented ATS High contact mixing chamber ensuring excellent heat transfer and condensate separation.
- Pressure dewpoint maintained at a steady 3°C under all operating conditions. (Subject to correct dryer selection parameters).
- Electronic programmable condensate drains



## DRYER FUNCTION

The warm compressed air enters the air/air heat exchanger and is then pre-cooled by the outgoing cold air. The pre-cooled air then passes through the evaporator where it is cooled to the required temperature. The condensate which has been separated from the compressed air in the moisture separator is discharged automatically through the condensate drain. The refrigerant and the temperature are regulated by the bypass pressure valve.

## ULTRA COMPACT HEAT EXCHANGER

The main part of the refrigerated air dryer is the heat exchanger. The DAT series compact aluminium unit contains multiple stages to maximise contact time and heat transfer.

### Air/Air Exchanger

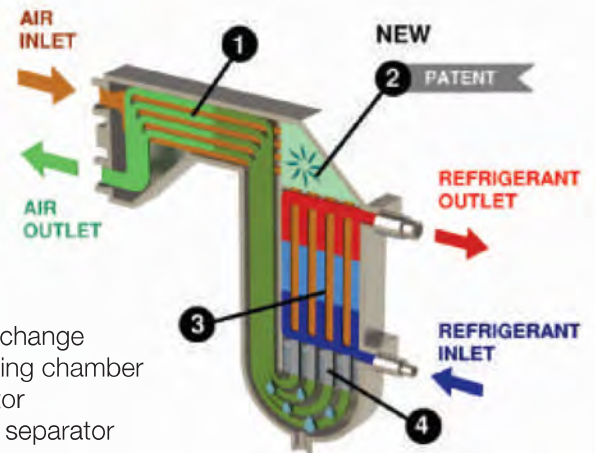
This is the first stage where inlet air is pre-cooled and the outlet air is post-heated. This reduces energy consumption in the chiller circuit and minimises the possibility of condensate forming on the outer surface of pipework throughout the plant.

### Flow Mixing Chamber

Unlike other heat exchangers, the unit includes a flow mixing chamber at the air/air outlet. Because air temperatures at the exit of the air/air exchanger channels are not uniform, the mixing chamber allows the air flow to enter evaporator channels at a uniform temperature providing optimum heat exchange.

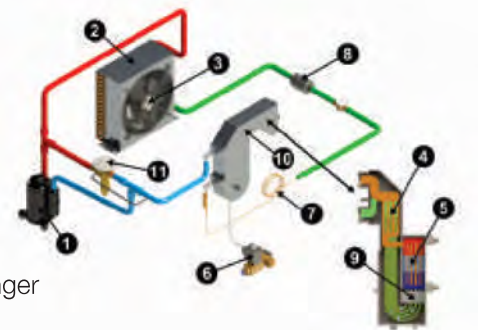
### Condensate Separator

The air cooled in the evaporator passes through an efficient condensate separator allowing the condensate to drain into a large collecting chamber. The module and condensate separator are designed to keep pressure drop to a minimum.



### Exchanger

1. Air/air exchange
2. Flow mixing chamber
3. Evaporator
4. Moisture separator



### Circuit

1. Compressor
2. Condenser
3. Fan motor
4. Air/air heat exchanger
5. Evaporator
6. Condensate discharge valve
7. Capillary tube
8. Dryer filter
9. Condensate separator
10. Ultra compact heat exchanger
11. Bypass valve

## CONTROL PANELS

The ATS control panels are designed to provide maximum operator control while being extremely user friendly.

## DISPLAY

- Dew point
- Operating mode
- Drain management
- Alarm management



1. DAT2 to DAT60



2. DAT75 to DAT150



3. DAT200 to DAT800

# ATS Refrigerated air dryers

Reference data for following nominal conditions.

Ambient temperature: 35°C  
 Inlet air pressure: 7 barg  
 Inlet air temperature: 45°C  
 Pressure dew point: 3°C (-22°C atmospheric dew point)

Maximum working conditions.

Ambient temperature: 45°C  
 Inlet air temperature: 55°C

## REFRIGERATED DRYER SELECTION CHART

### TROPICAL DAT SERIES



Model	Flow rate		BSP	Dimensions L x W x H (mm)	Weight kg	Refrigerant Type	Power Supply v/ph/Hz
	m³/min	cfm					
DAT5	0.70	25	¾"	409 x 345 x 480	26	R134a	230/1/50
DAT10	1.20	42					
DAT15	1.87	66					
DAT20	2.55	90	1"	462 x 396 x 536	27		
DAT35	3.45	122					
DAT40	4.20	148					
DAT50	6.10	216	1 ½"	606 x 517 x 667	30		
DAT60	7.10	250					
DAT75	10.70	378					
DAT100S	14.70	519	2"	763 x 642 x 1457	35		
DAT125	16.20	572					
DAT150	21.00	742					
DAT200	30.00	1060	2 ½"	685 x 405 x 1045	85		
DAT250	40.00	1413					
DAT300	50.00	1766					
DAT400	60.00	2118	3"	1156 x 657 x 1650	90		
DAT500	70.00	2471					
DAT700	108.00	3825					
DAT800	120.00	4237	DN100	1406 x 1056 x 1765	120	R407c	400/3/50
			DN125				
			DN150				

#### Correction factor for operating pressure changes

Inlet air pressure (bar)	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor	0.83	0.85	0.93	1.00	1.06	1.11	1.15	1.18	1.20	1.22	1.24	1.25	1.26

#### Correction factor for dew point changes

Air temperature (°C)	3	5	7	9	10
Factor	1.00	1.09	1.18	1.30	1.33

#### Correction factor for ambient temperature changes (air cooled)

Ambient temperature (°C)	25	30	35	40	42	45
Factor	1.11	1.07	1.00	0.85	0.75	0.66

#### Correction factor for inlet air temperature changes

Air temperature (°C)	30	35	40	45	50	55
Factor	1.43	1.30	1.20	1.00	0.87	0.68

\*We reserve the right to change specifications without notice in the interest of product improvements.



ATS Refrigerated Dryers are distributed in Australia by:  
**SOUTHERN CROSS COMPRESSORS (AUSTRALIA) PTY LTD**

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