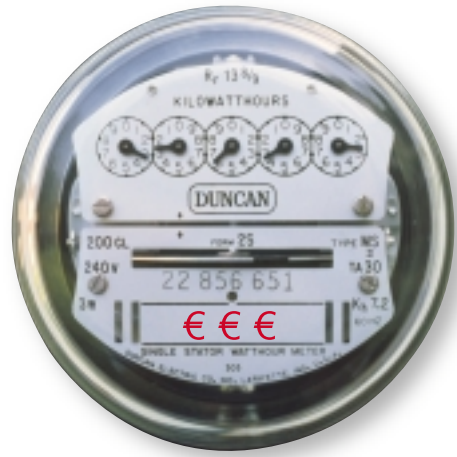


## Out of Control Energy Costs?

Are you finding yourself less competitive due to higher operating costs?



Ingersoll-Rand has long been considered a leading authority in providing energy saving solutions for compressed air systems. The TMS Thermal Mass™ cycling dryer continues that tradition by providing significant energy savings downstream of the air compressor.

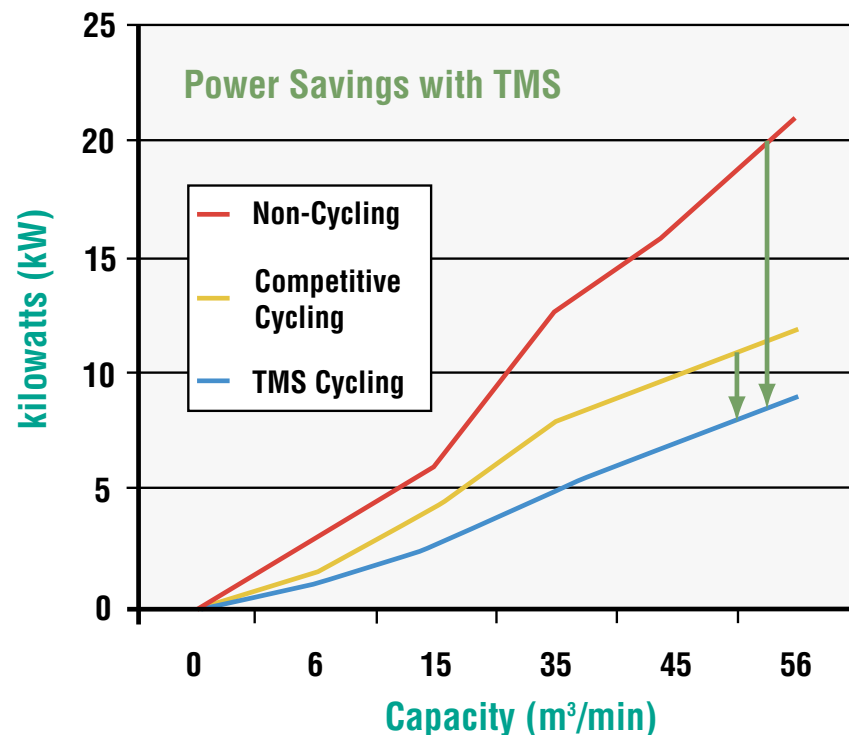
### The most efficient way to dry air!

- Lowest Pressure Drop in the industry (Average pressure drop across the range of 0.19 bar)  
Lower pressure drop = Energy Savings
- Highest thermal efficiency using high capacity liquid Thermal Mass™ storage (allows for constant dew point)
- No air loss drains standard with TMS38-TMS1100 (eliminates waste of costly compressed air)
- Environmentally friendly refrigerant
- High efficiency moisture separator
- Variable dew point settings at your fingertips, allows you to operate at the most efficient temperature
- Maintenance free hermetically sealed refrigerant compressor

### Energy Savings over conventional and competitive cycling dryers are dramatic!

No matter the air capacity requirement, TMS dryers that utilize high efficiency thermal storage, low pressure drop tube design, and no air loss drains prove themselves to have by far the lowest operating costs of any equivalent sized competitive unit, whether that be a non-cycling or cycling design!

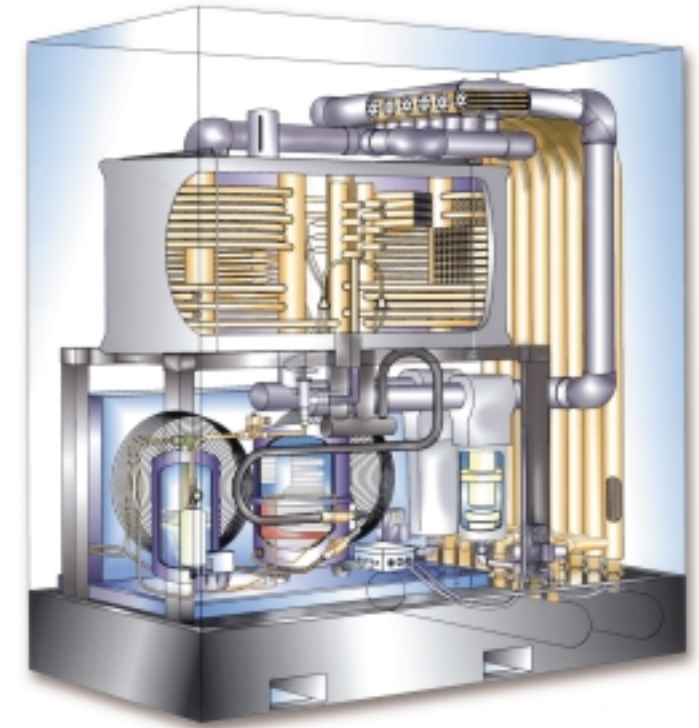
### ENERGY CONSUMPTION OF VARIOUS REFRIGERATED AIR DRYERS AT 60% LOAD



The graph to the left demonstrates the available energy savings. It shows typical power consumptions for different types of refrigerated dryers when operating in an average working scenario of 60% capacity flow through the air dryer.

## Benefits of Ownership

- **Classic Thermal Mass™ Performance**  
Most installations operate with varying degrees of compressed air usage. When there is no or little demand for dry air, the TMS simply shuts down to save energy. The main exchanger contains a liquid Thermal Mass™, which stores a vast amount of cold energy that lays dormant until the load demand increases to a point where the unit automatically restarts providing consistent dewpoints and temperatures.
- **Variable Dewpoint Settings**  
An accurate start/stop control system maintains the dewpoint and can be easily adjusted up to a maximum of 10°C thereby allowing the dryer to run with even greater efficiency.
- **Machines Built to Last**  
The reliability of TMS dryers is legendary even when operating within the harshest of environments. This can only be achieved using the latest refrigeration technology constructed from heavy duty materials to the highest quality standards.
- **Lowest Running Costs of Any Refrigeration Dryer**  
The patented designs of our heat exchanger gives an extremely low pressure drop. All heat exchangers are made from smooth bore corrosion free copper. Typically, the TMS dryer has a pressure drop across the dryer of less than 0.2 bar! Remember, for each additional 0.14 bar pressure the air compressor has to provide, the running costs of the air compressor electric motor will increase by at least 1% (ignoring additional wear and tear). Therefore by keeping pressure drop to a minimum, tremendous energy savings can be obtained.



- **Units That Are Easily Serviced**  
Simple maintenance programs ensure that the units will keep operating at peak efficiency for years to come. Also, through careful design fouling of the internal heat exchanger surfaces is negligible thereby eliminating future requirements for cleaning or additional filtration. In addition, expensive pressure vessel inspections are not required.
- **Efficient and Effective Systems**  
All units employ high efficiency condensate separators to ensure that the water is properly separated from the air stream under all operating conditions. In addition, no air loss drains (TMS38 and above) remove the condensate reliably without wasting any power.
- **Instrumentation That You Can Read**  
Essential information such as pressure and dewpoint are displayed (TMS55 and above) on easily read panels that can be interpreted immediately without having to interrogate troublesome controllers.



## TMS Performance

TMS Model	Capacity 2°C		Capacity 7°C		Capacity 10°C		Power Absorbed kW	Power Absorbed kW	Pressure Drop	Dimensions (mm)			Shipping Weight	Connections Inlet/Outlet
	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz				L	W	H		
	m³/min	m³/min	m³/min	m³/min	m³/min	m³/min								
TMS4	0.36	0.38	0.42	0.45	0.45	0.48	0.23	0.21	0.04	457	345	495	38	1/2" M
TMS7	0.56	0.60	0.65	0.70	0.70	0.75	0.30	0.23	0.07	457	345	495	40	1/2" M
TMS12	0.92	0.98	1.06	1.13	1.15	1.23	0.31	0.38	0.12	512	370	570	52	1/2" M
TMS14	1.08	1.16	1.25	1.34	1.35	1.44	0.58	0.55	0.15	512	370	570	58	1/2" M
TMS20	1.66	1.78	1.85	2.00	2.00	2.18	0.31	0.32	0.16	605	575	740	98	1" F
TMS25	2.00	2.14	2.36	2.53	2.55	2.73	0.58	0.38	0.17	605	575	740	103	1" F
TMS31	2.50	2.67	2.93	3.14	3.17	3.39	0.65	0.55	0.22	605	575	740	107	1" F
TMS38	3.00	3.21	3.47	3.71	3.75	4.01	0.68	0.60	0.19	605	575	740	123	1" F
TMS55	4.30	4.60	5.00	5.35	5.41	5.79	1.02	0.87	0.18	895	675	1060	180	1 1/2" F
TMS80	6.50	6.95	7.59	8.12	8.21	8.78	1.12	1.11	0.19	895	675	1060	205	1 1/2" F
TMS105	8.50	9.10	9.82	10.51	10.62	11.36	1.44	1.20	0.19	895	675	1060	240	1 1/2" F
TMS150	12.00	12.84	13.88	14.85	15.00	16.05	1.67	1.59	0.21	1365	815	1617	427	2" F
TMS210	16.80	17.98	19.43	20.79	21.00	22.47	2.50	2.50	0.21	1365	815	1617	510	2" F
TMS250	20.00	21.40	23.13	24.75	25.00	26.75	3.00	2.86	0.23	1365	815	1617	558	2" F
TMS300	24.00	25.68	27.75	29.69	30.00	32.10	3.00	3.71	0.27	1520	815	1805	648	80mmDin 2633
TMS350	28.00	29.96	32.38	34.65	35.00	37.45	4.00	3.71	0.25	1520	815	1805	705	80mmDin 2633
TMS480	38.40	41.00	44.40	47.51	48.00	51.36	5.30	4.76	0.25	1980	1075	2050	1107	100mmDin 2633
TMS550	44.00	47.00	50.88	54.44	55.00	58.85	6.20	6.19	0.23	1980	1075	2050	1179	100mmDin 2633
TMS640	51.20	54.78	59.20	63.34	64.00	68.48	7.20	6.19	0.26	1980	1075	2050	1305	100mmDin 2633
TMS780	62.40	66.77	72.15	77.20	78.00	83.46	8.10	8.76	0.23	1980	1075	2050	1451	125mmDin 2633
TMS1100	88.00	94.16	101.00	108.10	110.00	117.70	2 x 5.8	2 x 6.91	0.20	1950	1496	2095	1510	150mmDin 2633

Performance in accordance with ISO 7183

### REFERENCE CONDITIONS

Inlet Compressed Air Pressure: 7 bar g  
 Inlet Compressed Air Temperature: 35°C  
 Ambient Temperature: 25°C  
 Pressure Dew Point: 2°C

### OPERATING LIMITATIONS

Working Pressure: 2 - 16 bar g  
 Inlet Air Temperature: 55°C  
 Ambient Temperature: 2°C - 43°C (47°C option)

### ELECTRICAL SUPPLY

TMS4 - TMS80 230-1-50 Hz  
 TMS105 - TMS1100 400-3-50 Hz

- Shipping weight is approximate
- Water Cooled Units available upon request (TMS20 and above)

### CORRECTION FACTORS

PRESSURE DEWPOINT		AMBIENT TEMPERATURE		WORKING PRESSURE (bar g)													
RANGE (°C)	FACTOR	TEMP (°C)	FACTOR	Inlet temp (°C)	4	5	6	7	8	9	10	11	12	13	14	15	16
2	1.0	20	1.06	25	1.18	1.21	1.23	1.26	1.31	1.34	1.37	1.40	1.42	1.46	1.49	1.51	1.54
4	1.05	25	1.00	30	1.04	1.07	1.09	1.11	1.15	1.18	1.21	1.23	1.25	1.29	1.31	1.33	1.35
7	1.16	30	0.95	35	0.94	0.96	0.98	1.00	1.04	1.06	1.09	1.11	1.13	1.16	1.18	1.20	1.22
10	1.25	35	0.90	40	0.84	0.85	0.87	0.89	0.93	0.94	0.97	0.99	1.01	1.03	1.05	1.07	1.09
		40	0.85	45	0.74	0.76	0.77	0.79	0.82	0.84	0.86	0.88	0.89	0.92	0.93	0.95	0.96
		43	0.84	50	0.66	0.67	0.68	0.70	0.73	0.74	0.76	0.78	0.79	0.81	0.83	0.84	0.85
		47	0.80	55	0.58	0.60	0.60	0.62	0.64	0.66	0.68	0.69	0.70	0.72	0.73	0.74	0.76

### SELECTION EXAMPLE

To select a dryer for the following conditions use the correction factors given: See Table

Customer Flow Rate 3.5 m³/min  
 Inlet Temperature 45°C  
 System Pressure 6 bar g 0.77 = Correction Factor  
 Dewpoint 4°C 1.05 = Correction Factor  
 Ambient Temperature 35°C 0.9 = Correction Factor  
 Step 1 3.5 m³/min / 0.77 4.55 m³/min  
 Step 2 4.55 m³/min / 1.05 4.33 m³/min  
 Step 3 4.33 m³/min / 0.9 4.81 m³/min  
 Select = TMS80

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# Ingersoll-Rand®

## TMS - Thermal Mass™ Cycling Air Dryer

