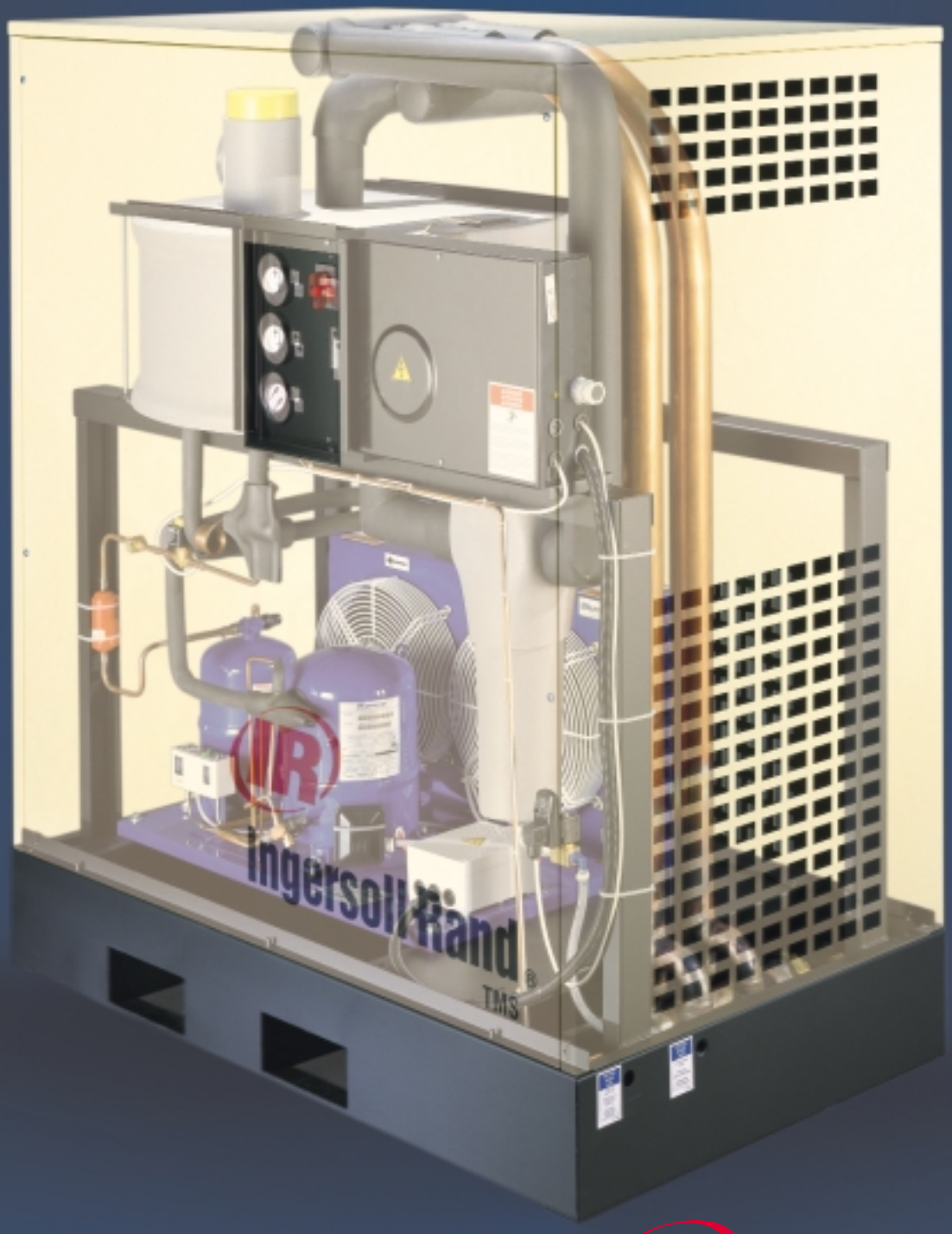
Ingersoll Rand®

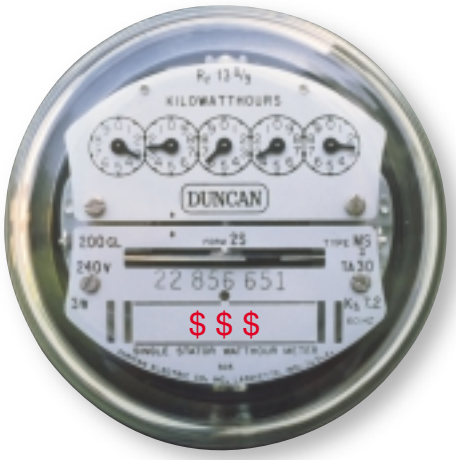
TMS - Thermal Mass® Cycling Air Dryer



Ingersoll Rand®

Out of Control Energy Costs?

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



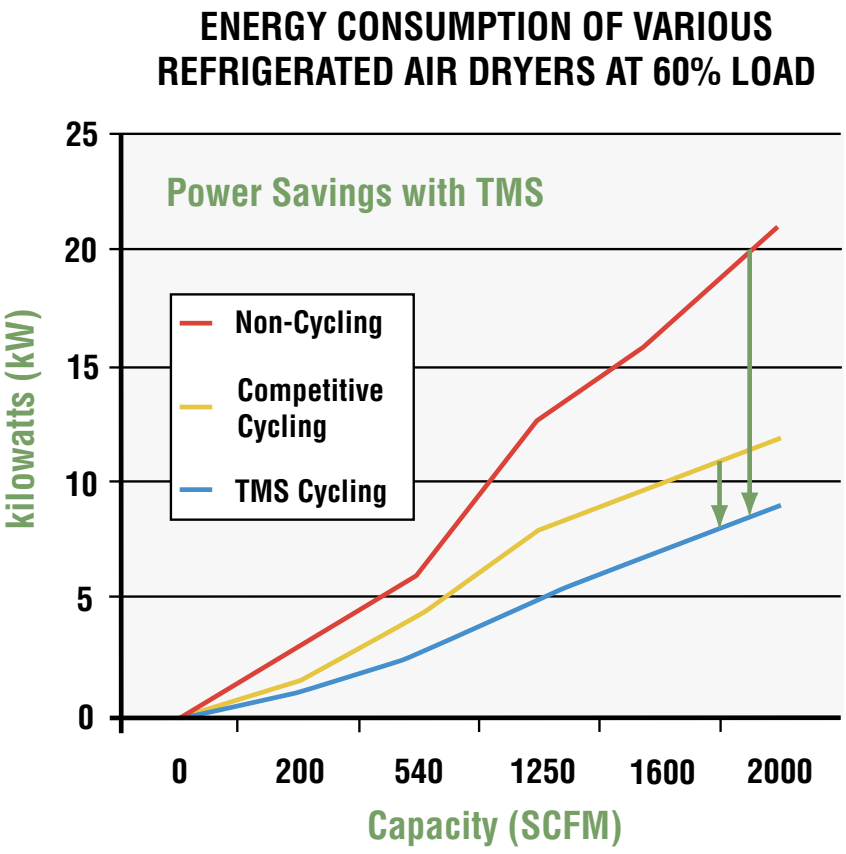
Ingersoll-Rand has long been considered a leading authority in providing energy savings solutions for compressed air systems. The TMS Thermal Mass cycling dryer continues that tradition by providing significant energy savings downstream of the air compressor.

The most efficient way to dry air!!

- Lowest Pressure Drop in the industry (Average pressure drop across the range of 2.6 psig) 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 TMS100-TMS2700 (eliminates waste of costly compressed air)
- Environmentally Friendly Refrigerant
- High Efficiency moisture separator
- High Ambient Standard TMS50-TMS2700 (33-115°F)
- 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!



The graph to the left demonstrates the available energy savings by showing 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.

- **Operation Variable dewpoint settings at your fingertips**

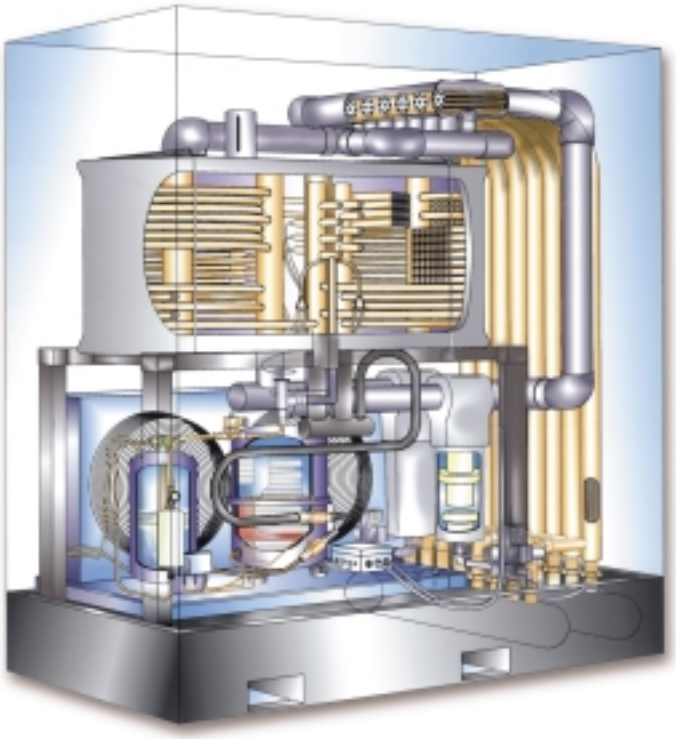
  An accurate start/stop control system maintains the dewpoint temperature and can be easily adjusted to raise the dewpoint temperature up to a maximum of 50°F thereby allowing the dryer to run with even greater efficiency.

- **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 lowest 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 only 2 psig! For each additional 2 psig pressure the air compressor has to provide, the running costs of the air compressors electric motor will increase by at least 1% (ignoring additional wear and tear). This results in tremendous energy savings.



- **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 Condensate Systems**

  All units employ high efficiency condensate separators to ensure that the water is properly separated from the air streams under all operating conditions. In addition, no air loss drains (TMS 100 and above) remove the condensate reliably without wasting any power.

- **Instrumentation that you can read!**

  Essential information such as pressure and dewpoint are displayed on easily read panels that can be interpreted immediately without having to interrogate troublesome controllers.

TMS Performance

TMS Model No.	Capacity 33 - 39°F / 2°C scfm	Capacity 33 - 39°F / 2°C m³/min	Power absorbed kW 60 Hz	Pressure Drop psig	Dimensions inches (mm) L	Dimensions inches (mm) W	Dimensions inches (mm) H	Shipping Weight kg	Shipping Weight lbs	Connections Inlet/Outlet NPT
TMS12	12	0.36	0.23	.4	18 (457)	14 (345)	20 (495)	38	83	1/2" M
TMS20	20	0.56	0.25	.9	18 (457)	14 (345)	20 (495)	40	88	1/2" M
TMS30	30	0.92	0.41	1.7	20 (512)	15 (370)	23 (575)	52	114	1/2" M
TMS35	35	1.08	0.60	1.9	20 (512)	15 (370)	23 (575)	58	128	1/2" M
TMS50	50	1.66	0.35	2	24 (605)	23 (575)	30 (740)	98	216	1" F
TMS70	70	2.00	0.41	2.2	24 (605)	23 (575)	30 (740)	103	238	1" F
TMS80	80	2.50	0.60	2.6	24 (605)	23 (575)	30 (740)	107	236	1" F
TMS100	100	3.00	0.65	2.3	24 (605)	23 (575)	30 (740)	123	271	1" F
TMS140	140	4.30	0.94	2.2	35 (895)	27 (675)	42 (1070)	180	396	1 1/2" F
TMS200	200	6.50	1.20	1.9	35 (895)	27 (675)	42 (1070)	205	452	1 1/2" F
TMS280	280	8.50	1.30	2.5	35 (895)	27 (675)	42 (1070)	240	529	1 1/2" F
TMS380	380	12.00	1.70	2.3	54 (1365)	32 (815)	63 (1610)	427	941	2" F
TMS540	540	16.80	2.60	2.5	54 (1365)	32 (815)	63 (1610)	510	1124	2" F
TMS670	670	20.00	3.00	3	54 (1365)	32 (815)	63 (1610)	559	1232	2" F
TMS780	780	24.00	3.90	3.5	60 (1520)	32 (815)	70 (1780)	648	1428	3" ANSI Flg.
TMS950	950	28.00	3.90	3.6	60 (1520)	32 (815)	70 (1780)	704	1552	3" ANSI Flg.
TMS1250	1250	38.40	4.90	2.6	78 (1980)	42 (1075)	80 (2050)	1107	2440	4" ANSI Flg.
TMS1420	1420	44.00	6.40	3	78 (1980)	42 (1075)	80 (2050)	1179	2600	4" ANSI Flg.
TMS1600	1600	51.20	6.40	3.3	78 (1980)	42 (1075)	80 (2050)	1305	2877	4" ANSI Flg.
TMS2000	2000	62.40	9.40	3	78 (1980)	42 (1075)	80 (2050)	1451	3198	6" ANSI Flg.
TMS2700	2700	78.00	7.24 x 2	3	78 (1980)	59 (1498)	83 (2108)	1510	3329	6" ANSI Flg.

REFERENCE CONDITIONS	SCFM (CAGI)	m³/min (ISO)
Inlet Compressed Air Pressure:	100 psi g	7 bar g
Inlet Compressed Air Temperature:	100°F (68% RH)	35°C
Ambient Temperature:	100°F	25°C
Minimum Pressure Dew Point:	35°F	2°C

OPERATING LIMITATIONS	SCFM (CAGI)	m³/min (ISO)
Working Pressure:	30 - 232 psi g	2 - 16 bar g
Inlet Air Temperature:	130°F	55°C
Ambient Temperature:	33°F to 115°F	1°C - 46°C

- Shipping weight is approximate
- Water Cooled Units available upon request (50 SCFM and Above)

PRESSURE DEWPOINT

NFPA CLASS S	RANGE (°F)	FACTOR	AMBIENT TEMP (°F)	FACTOR
H	33-39	1.0	80	1.18
J*	40-44	1.1	100	1.00
K*	45-49	1.2	110	0.93
M*	50-54	1.3	115	0.88

CORRECTION FACTORS

INLET AIR TEMP (°F)	Inlet Air Pressure (psig) 60	80	90	100	115	125	150	190	200	220	232
	Flow (% of Rated Capacity)										
80	117	124	126	130	134	137	142	150	152	156	159
90	103	108	111	114	117	120	124	131	133	137	139
100	90	95	97	100	103	105	109	115	117	120	122
110	89	84	85	88	91	92	96	101	103	106	107
120	69	73	75	77	79	81	84	89	90	92	94
130	61	65	66	68	70	71	74	78	80	82	83

SELECTION EXAMPLE

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

Customer Flow Rate	115 cfm		
Inlet Temperature	110°F		
System Pressure	90 psig	= Correction Factor	.85
Dewpoint	37°F	= Correction Factor	1.0
Ambient Temperature	110°F	= Correction Factor	.93
Step 1	115 cfm/.85	= 135	
Select		= TMS 140	
Step 2	135 cfm/.93	= 145	
Select		= TMS 200	

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