REFRIGERATED AIR DRYERS

PLC. Controllers

- High technology “PLC. Control”
- State of Art Design
- Suitable for High Temperature
- High quality Efficiency
- All branded Components
- 50cfm. – 3000 cfm. Range

The results in loss of efficiency and material, and increase downtime. Moisture is usually the single major cause of unnecessary costs to compressed air systems. The cost of drying air is must lower than the damage caused by moisture. Thus, clean, dry compressed air is essential for effective working of any pneumatic systems. The only positive means of removing moisture from compressed air, i.e. completely drying air, is to install an air dryer. Compressed air can be dried by to methods

Housing : self extinguishing ABS
Front protection : IP 65
Power supply : 230vac 50Hz
Power absorption : 3VA max
Display : red LED.
Input : NTC probes
Relay output : up to 3 relay 20(8)Amp,16(5)Amp,8(3)Amp; 250Vac
Data storing : EPROM memory
Operating temperature : 0-60°C
Storage temperature : -25-60°C
Relative humidity : 20-85% (non Condensing)
Accuracy : better than 1% of F.S.

Fan motor

Filter dier

Condenser

Timer Drain

Low pressure sw.

104-1254

1504-5004

Compressor

Hot Gas bypass

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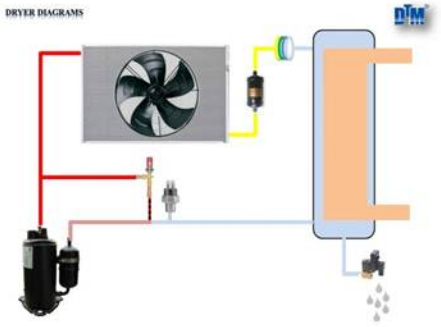
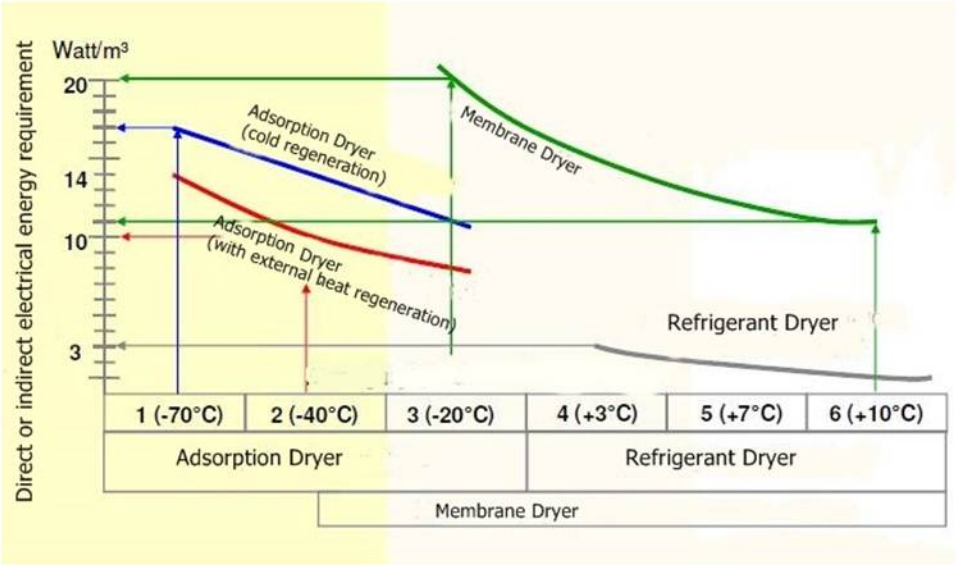
Refrigeration section (Freon)
The Evaporator is of tube in tube construction. The heat removed from the system is dissipated to the atmosphere/water by the condenser. The high pressure refrigerant flows into the expansion valves where it changes into liquid phase at low pressure. The boiling of liquid refrigerant takes place in Evaporator and cold dry air leaves from the Evaporator. Thus cold air leaves from the Evaporator. The low pressure, low temperature refrigerant passes into the compressor and the cycle repeats.
The Refrigeration Dryer senses the Refrigerant suction pressure and accordingly varies the flow of Hot Gas Bypass inside the system and maintains constant Dew point at various heat loads.



The temperature of air that issues from after coolers and water separators is usually higher than ambient temperature and the air is fully saturated with moisture. Compressed air cools as it moves along the air distribution line and its moisture content condenses. This results in rusting of pipes in air distribution pipes as seen in the examples in Figure

Dryers with different operating characteristics and dew points (the temperature at which the moisture in the air begins to condense) can be needed in different compressed air applications. Particularly in applications where ambient temperature is very low in winter conditions, dryers with excessively low dew point is required to prevent frosting in pipes.

Refrigerant dryers, adsorption dryers, and membrane dryers are types of dryers commonly used in the compressed air industry. Dew point classes of the above mentioned dryer types according to energy requirements has been shown in Figure



Technical Data

Model	Connect	Air flow		Voltage	Dimension
	inch	m^3/min	cfm	volt	
DTM 104	3/4"	1.4	50	1-230-50	500 x 600 x 600
DTM 154	3/4"	1.8	64	1-230-50	500 x 600 x 600
DTM 204	1"	2.9	102	1-230-50	500 x 600 x 650
DTM 304	1"	4.4	155	1-230-50	500 x 600 x 650
DTM 404	1"	5.6	198	1-230-50	550 x 800 x 770
DTM 504	11/2"	7.3	258	1-230-50	550 x 800 x 770
DTM 604	11/2"	9.1	321	1-230-50	550 x 800 x 770
DTM 754	2"	11.4	403	1-230-50	600 x 950 x 950
DTM 1004	21/2"	15.6	551	1-230-50	600 x 950 x 950
DTM 1254	21/2"	18.6	657	1-230-50	600 x 950 x 950
DTM 1504	3"	22.1	781	3-400-50	800 x 1200 x 1200
DTM 1804	3"	27.3	965	3-400-50	800 x 1200 x 1200
DTM 2204	3"	30.7	1085	3-400-50	800 x 1200 x 1200
DTM 2704	3"	40.7	1438	3-400-50	800 x 1200 x 1200
DTM 3404	4"	47.3	1672	3-400-50	800 x 1200 x 1700
DTM 4004	4"	53.5	1891	3-400-50	800 x 1200 x 1700
DTM 5004	4"	62.2	2198	3-400-50	800 x 1200 x 1700

Data refer to the following

Normal condition : Ambient temperature of 35°C, with inlet air at 7 bar and 3°C pressure dew point (-22°C atmospheric pressure dew point)

Max working condition* : Ambient temperature 45°C inlet air temp 80°C and inlet air pressure 13 bar

Correction factor for ambient temperature change							
Ambient temperature °C	30	32	35	38	40	42	45
Factor(F1)	1.11	1.06	1.00	0.96	0.92	0.88	0.84

Correction factor for air inlet temperature change									
Air inlet temperature °C	40	45	50	55	60	65	70	75	80
Factor(F2)	1.09	1.00	0.93	0.90	0.87	0.84	0.8	0.76	0.7

Correction factor for pressure change									
Working pressure kg/cm²	4	5	6	7	8	9	10	11	13
Factor(F3)	0.70	0.82	0.92	1.0	1.03	1.06	1.09	1.12	1.16

***Dryers maximum air flow = Dryers air flow x F1 x F2 x F3 ***