

## Refrigerated Air Dryer

A refrigerated air dryer is the most commonly used type of compressed air dryer for most plant applications for the drying of plant air and other utility gases like hydrogen gas, nitrogen drying etc. where a dew point of (+2) Deg. C. at line pressure i.e. (-22) Deg. C. at atmospheric pressure) is an acceptable norm.

As much as 2300 gallons of water can be removed from a 100 cfm system operating at 100 psi in 12 months of 3 shift operation, water which without a dryer, would have passed through the delicate pneumatic equipments

### **FEATURES OF REFRIGERATED DRYER**

A full range of refrigerant dryers are available to provide dry clean air to any size and type of compressed air systems

### **ENERGY EFFICIENT HEAT EXCHANGER**

Power consumption reduced by upto 10% over conventional system.

### **ADVANCED DESIGN**

Dirt and oil contamination is removed by either impaction or integral filtration-ensures maximum protection for compressed air equipment at all times

### **CONTAMINANT REMOVAL DOWN TO 1 MICRON**

Minimal additional filtration is required after the refrigerated dryer for most applications.

### **TRIED AND TESTED CONTROL SYSTEM**

Ensures maximum reliability of the refrigerated air dryer at all times.

### **DEW POINT INDICATOR (AT LINE PR.)**

At a glance monitoring of dryer performance thru an online digital dew point temperature indicator.

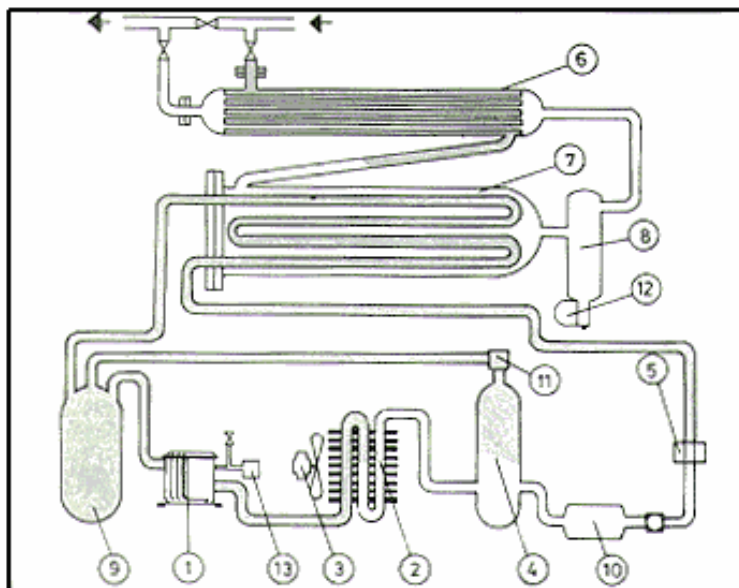
### **LOW NOISE LEVELS- 60 DB (A)**

Suitable for location in indoor working environment



Wet Compressed air undermines efficiency of smallest to the largest pneumatic system. Therefore, moisture removal in compressed air system installation is a must. The drying of Compressed air by Mellcon Refrigerated Air Dryer is the most economical and reliable process of compressed air treatment. The incoming saturated, moist air is pre-cooled in the Air - to - Air Heat Exchanger (6) by the outgoing dry chilled air. In the process, a greater part of Water Vapour gets condensed into liquid moisture. Further moisture separation takes place in the Freon -to- Air Heat Exchanger (7) where air is chilled to a temperature of +2 Deg. C. and moisture condenses. This temperature is termed as pressure 'Dew Point'. The Moisture Separator (8) removes the condensate by an Automatic Condensate Trap (12) i.e. auto drain.

1. Refrigeration Compressor
2. Refrigerant Condensor
3. Electric Fan
4. Liquid Receiver
5. Thermostatic Expansion Valve
6. Air -to- Air heat Exchanger
7. Freon -to- Air Heat Exchanger
8. Centrifugal Condensate Separator
9. Accumulator
10. Moisture Removal Filter
11. By-Pass Valve
12. Automatic Condensate Trap i. e. autodrain
13. Press for Fan (AC only )



The compressed dry air is reheated in Air -to- Air Heat Exchanger and fed to the point of application. As long as compressed air temperature remains above the +2 Deg. C., no further condensation will occur. The Dew Point of +2 Deg. C. is sufficient enough for the smooth and trouble free pneumatic / process applications. The refrigeration circuit is the conventional circuit comprising refrigerant Compressor (1), air or water cooled Condenser (2), Expansion Valve (5) etc. using Freon R-22 as refrigerant gas. Use of R-22 as a refrigerant is permissible up to the year 2030 AD. as per Montreal Protocol. System with Ecofriendly Refrigerant like R-134 A, R-404 A, R-407C are also offered. Air Cooled (AC) models are available up to 2750 CFM and higher models are available with water cooled condenser.

HIGH PRESSURE REFRIGERATED TYPE AIR DRYER						
SL.NO.	MODEL NO.	CAPACITY		PRESSURE KG / CM <sup>2</sup> G	PIPE LINE SIZE (MM)	APPROX. DIMENSIONS(MM)
		CFM	M <sup>3</sup> / HR			
01.	RF-HPR-01	35	60	35	15	1000 X 800 X 1000
02.	RF-HPR-02	70	120	35	15	1000 X 800 X 1000
03.	RF-HPR-03	35	60	70	09	1000 X 800 X 1000
04.	RF-HPR-04	70	120	70	15	1000 X 800 X 1000

The above Refrigerated Air Dryer capacities are rated at an inlet temp. of 40°C., and at an outlet dew point of (+2)°C at line Pressure, Supply Voltage of 220 V-1 PH- 50 HZ or 415V-3PH-50 Hz.

## TECHNICAL DATA

MODEL NO.	CAPACITY			PIPE LINE SIZE (MM)	AIR COOLED (AC) Power Consumption KW	WATER COOLED		Refrigerant
	CFM	M3 HR	NM3 HR			Power consumption KW	Water Consumption LPM	
RF-01	30	51	42	15	0.15	-	-	R-134A
RF-02	60	102	84	25	0.38	-	-	R-134A
RF-03	100	170	140	25	0.55	-	-	R-134A
RF-04	160	272	224	25	0.80	0.48	8	R-22
RF-05	200	340	280	40	1.14	0.61	10	R-22
RF-06	300	510	420	40	1.40	0.86	16	R-22
RF-07	400	680	560	40	1.88	1.00	20	R-22
RF-08	500	850	700	50	2.14	1.40	30	R-22
RF-09	600	1020	840	50	2.51	1.60	36	R-22
RF-10	700	1190	980	65	3.02	-	-	R-22
RF-11	750	1275	1050	65	-	1.94	45	R-22
RF-12	900	1530	1260	65	3.56	3.02	55	R-22
RF-13	1000	1700	1400	80	4.78	3.17	60	R-22
RF-14	1100	1870	1540	80	-	3.45	70	R-22
RF-15	1250	2175	1750	80	5.22	3.66	75	R-22
RF-16	1350	2295	1890	80	6.06	4.25	80	R-22
RF-17	1500	2550	2100	100	6.85	4.93	90	R-22
RF-18	1750	2975	2450	100	-	5.88	105	R-22
RF-19	1850	3145	2590	100	8.32	-	-	R-22
RF-20	2000	3400	2800	100	-	6.76	120	R-22
RF-21	2100	3570	2940	125	10.00	-	-	R-22
RF-22	2300	3910	3220	125	10.20	7.60	140	R-22
RF-23	2750	4675	3850	125	11.00	8.37	160	R-22
RF-24	3000	5100	4200	150	-	9.20	170	R-22
RF-25	3250	5525	4550	150	-	10.60	180	R-22
RF-26	3500	5950	4900	150	-	11.86	200	R-22
RF-27	3750	6375	5250	150	-	11.00	220	R-22
RF-28	4000	6800	5600	150	-	12.67	230	R-22
RF-29	4250	7225	5950	200	-	13.80	240	R-22
RF-30	4500	7650	6300	200	-	14.00	250	R-22
RF-31	4750	8075	6650	200	-	14.15	270	R-22
RF-32	5250	8925	7350	200	-	17.11	300	R-22

Above Ratings are at the following conditions :

Inlet Air Temperature : 40 °C  
 Inlet Air Pressure : 7.0 Kg/cm<sup>2</sup>g  
 Pressure Dew Point : 2 °C

**NOTE :** Refrigerated Air Dryers based on eco-friendly refrigerants like R-134a / 404a / 407c are available on request.

Above data is only for estimation and can be changed without notice