

EGRD Series

Refrigerant Air Dryers

ELGI™

Why do we need to dry the air?

When atmospheric air cools down, as happens following a compressor compression process, water vapour precipitates as condensate. This is the form of water that is naturally present in the air we breathe. Under average conditions, a compressor with a capacity of 3 m³/min at 7.5 bar will generate approximately 40 litres of water per day. This condensate needs to be removed from the compressed air system to prevent corrosion and damage to transmission piping and end use machines. Compressed air drying is hence essential and is an important part of air treatment process.

Compressed air will also contain water, dirt, wear particles, bacteria and even degraded lubricating oil. All these impurities mix together to form an abrasive sludge. This sludge is often acidic and accelerates wear and tear of tools, pneumatic machinery, block valves and orifices. This results in costly air leaks and high maintenance. It also corrodes pipes and can bring production process to a standstill.

Only compressed air that is totally clean and dry will ensure reliable working of compressed air systems and maximum savings. The favoured method of drying the compressed air is through refrigeration dryers.

Elgi offers a reliable solution through Elgi Airmate Refrigerant Air Dryers. The dryers ensure longer life of compressed air systems through efficient removal of the condensate and contaminants.



Elgi Dryer Features:

Controller

- Microprocessor based controller for high-performance of the drier and visual indication of dew point using LED ensures online monitoring.
- Visual indication for temperature probe failure and cooling fan for easy fault identification.
- Setting options available for controlling the automatic drain valves and condenser fan cut-off*



* In selected models only

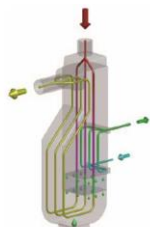


Refrigeration Compressor

- Hermetically sealed and highly energy efficient rotary compressor for low noise

Cycle Controller / Hot gas by pass valve

- The pressure operated 100% modulating mechanical type cycle controller ensures quicker and reliable response to changes in inlet air temperature to maintain optimum dew point under wide operating temperature.
- Prevents freezing phenomenon in the evaporator and ensures smoother and reliable operation due to complete mechanical system.



Heat exchanger / ALU Dry Module

- High efficiency Aluminum plate type heat exchanger with inbuilt Al coalescence filter for compactness and robustness.
- The compact "Alu dry" module encompasses both air to air heat exchanger called pre-cooler and air to refrigerant air heat exchanger.
- Design ensures cross flow between coolant and hot air, thus minimizing pressure drop and maximizing thermal efficiency.
- Heat exchanger insulated with Eco-friendly material for high degree of insulation and efficiency with minimum impact on the environment.



Condenser

High efficient copper tubed Aluminum finned condenser. The hot high pressure refrigerant enters into the condenser in gaseous state and gets cooled through the forced circulation of cold air using a fan and flows to the expansion valve in liquid state



Condensate Drain

- Automatic condensate drain removes maximum condensate from the system.
- Microprocessor based controller for controlling the drain solenoid valve timings. User tuneable timer ensures moist free air even at high humid and tropical conditions.

ELGI™

Always Better.

ELGI Refrigeration Air Dryer



Model	Flow		Max Pressure bar g	Electrical			Nominal Connected Power KW	Dimensions in mm			Weight Kg	Inlet/Outlet Size
	cfm	m³/min		Standard Ph/V/Freq	Option-1 Ph/V/Freq	Option-2 Ph/V/Freq		breadth	depth	height		
EGRD 100	100	2.83	14	1/230/50	1/115/60	1/230/60	0.48	380	445	775	39	1.1/4" BSP-F
EGRD 150	150	4.25	14	1/230/50	1/115/60	1/230/60	0.75	380	445	775	37	1.1/4" BSP-F
EGRD 200	200	5.66	14	1/230/50	1/115/60	1/230/60	0.95	380	445	775	41	1.1/4" BSP-F
EGRD 300	300	8.49	14	1/230/50	-	1/230/60	0.94	610	625	1030	94	2" BSP-F
EGRD 400	400	11.33	14	1/230/50	-	1/230/60	1.55	610	625	1030	94	2" BSP-F
EGRD 500	500	14.16	14	1/230/50	-	1/230/60	1.59	715	725	1155	144	2.1/2" BSP-F
EGRD 600	600	17.00	14	3/400/50	3/460/60	3/380/60	3.35	940	1160	1590	240	DN80-PN16
EGRD 750	750	21.24	14	3/400/50	3/460/60	3/380/60	3.50	940	1160	1590	242	DN80-PN16
EGRD 900	900	25.48	14	3/400/50	3/460/60	3/380/60	4.30	940	1160	1590	275	DN80-PN16
EGRD 1100	1100	31.15	14	3/400/50	3/460/60	3/380/60	4.40	940	1160	1590	276	DN80-PN16
EGRD 1254	1254	35.51	14	3/400/50	3/460/60	3/380/60	5.00	940	1160	1590	311	DN80-PN16
EGRD 1552	1552	43.95	14	3/400/50	3/460/60	3/380/60	6.50	1300	1380	1970	463	DN100-PN16
EGRD 1750	1750	49.55	14	3/400/50	3/460/60	3/380/60	6.70	1300	1380	1970	538	DN100-PN16
EGRD 2000	2000	56.63	14	3/400/50	3/460/60	3/380/60	7.50	1300	1380	1970	540	DN100-PN16
EGRD 2900	2900	82.12	14	3/400/50	3/460/60	3/380/60	8.50	1300	1380	1970	612	DN100-PN16

All data mentioned above is for air cooled versions measured according to ISO 7183, with standard voltages, at 5-7 °C dew point.
Water cooled versions, high pressure dryers and high ambient temperature dryers are available on request.
Standard scope of supply includes only electronic drain valves, zero loss drains are supplied as option

Due to continuous improvements the specifications are subject to change without notice

Correction factors

Inlet air pressure	bar g	4	5	6	7	8	10	12	14
Factor F1		0.77	0.86	0.93	1.00	1.05	1.14	1.21	1.27

Ambient temperature	°C	<=25	30	35	40	45
Factor F2		1.00	0.98	0.95	0.88	0.80

Inlet air temp.	°C	<=30	35	40	45	50	55
Factor F3		1.15	1.00	0.84	0.71	0.59	0.50

Dew Point	°C	3	5	7	10
Factor F4 (EGRD 010 to EGRD 500)		0.91	1.00	1.10	1.26
Factor F4 (Above EGRD 500)		1.00	1.09	1.19	1.37

How to calculate dryer minimum nominal capacity to meet rated conditions

$$\frac{\text{Actual rated capacity}}{F1 \times F2 \times F3 \times F4}$$

Dryer nominal capacity need to be higher than "Actual required capacity". (exceeding dryer's nominal capacity, water carry-over could occur)

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