SUMED International

TRIDENT
engineering quality air & gas




- Designed for locomotive use
- Non volatile memory system
- Automatic Purge control valve (Optional)
- Fixed volume automatic drain valve
- Built in Pre Filter

Air Dryer for locomotives

Locodry

Principle of Operation

Moist Air from the compressor enters into the Pre filter through the top manifold. Water and oil coalesces here. The condensate with water and oil is drained by the Drain valve. The drain valve is periodically opened by the controller. The specially designed drain valve discharges only a fixed volume of condensate and minimizes air loss. The air then passes through the Inlet Shuttle valve and the Drying tower. In the drying tower, Activated Alumina adsorbs the water vapour present in the air and sends out Dry air of required Dew point. Fine Alumina powder which may come from the bed of desiccant is removed by the After filter. Clean and dry compressed air is let out through the outlet shuttle valve and the Purge Control valve.

The Purge Control Valve Diaphragm senses the outlet flow and accordingly the Purge Air port size area is varied. This changes the amount of Purge Air during regeneration in proportion to the flow of compressed air through the dryer. Purge air is also a function of the inlet pressure and hence the purge control valve uses purge air in proportion to the moisture load.

The two towers operate alternately in the drying and regeneration phase, dry purge air is passed through the tower under regeneration and released into the atmosphere. Under given operating conditions (service pressure of 10.5 Kg/cm2 (g)) 10% of the airflow is used for regeneration. A fixed quanity of air is purged during very low flows. The regeneration phase is shorter than the drying phase in order to allow the regenerated tower to return to service pressure before a new cycle starts. The purge is 10% - 15% for units with Auto Adjust purge control valve and fixed 15% - 20% without Auto Adjust purge control valve.

Salient Features

- **Designed for locomotive use :** Meets all Environmental and functional specifications for the Railroad industry. This dryer will withstand the vibrations, temperature in a locomotive platform out side the locomotive.
- Operates over a wide Voltage range
- **Non volatile memory system** - The dryer is completely switched off when the compressor is off and restarts where the cycle was stopped. This increases the life of the dryer.
- **Automatic Purge control valve :** Adjusts purge air depending on the compressed air flow and pressure. This ensures guaranteed dew point at optimized purge loss. This also reduces compressor usage.
- Fixed Volume Automatic Drain valve drains condensate without wasting much of compressed air. It has a fail safe design
- Optimised design to meet Input-output dewpoint depression requirement
- Desiccant health indicator for each desiccant tower
- Pre-filter health indicator.
- Low MTTR
- High MTBF
- All aluminum construction for corrosion free long life.
- **Slide-In mount :** The dryer can be slided in and out for service and installation in minutes, when installed in the mounting bracket (e.g. Trident MB1)
- Small size
- Dewpoint depression of 30°C at design airflow and 15°C at worst case of airflow and ambient temperature.
- Low pressure drop of 3% of inlet pressure at design air flow.

Applications :

Trident Locomotive dryers are designed exclusively for the railroad industry for the following applications :

• Electric Locomotives • Diesel Locomotives • Commuter locomotives • Shunting locomotives
• Mining applications • EMU / DEMU / MEMU

Model	In Put Voltage	Heater	Auto Purge	Differential Pressure Indicator for Pre - Filter	Mounting Bracket	Flow	Overall dimensions LxBxH (mm)	Weight (kg)	Electrical connector
LD 1	0 3	1 4	0 1	0 1	1 5	0 1 2 3	310x570x510	65	MIL std Circular shell
LD 2	0 3	0 1 2 3	0	0 1	2 3 4 5	0 1 2 3	360x400x505	60	
LD 3	0 3	0	0	1	5	4	300x300x810	43	
LD 4	0 3	0	0	1	5	6	300x300x650	33	
LD 5	0 3	3	0	1	5	5	406x592x670	100	

Ordering code :

LD X X X X X X X

0 - Flow 110 scfm
1 - Flow 90 scfm
2 - Flow 60 scfm
3 - Flow 45 scfm
4 - Flow 35 scfm
5 - Flow 200 scfm
6 - Flow 30 scfm

1 - With Slide in Mounting Bracket MB 1 suitable for LD1 only
2 - Mounting Bush (CD 750)
3 - Bolt on Bracket MB3 suitable for LD2 only (AD1041)
4 - Bolt on bracket MB4 suitable for LD2 only (AD1040)
5 - No Mounting Bracket

0 - With Differential Pressure Indicator for Pre-filter
1 - Without Differential Pressure Indicator for Pre-filter

0 - Without Auto Adjust Purge Control Valve
1 - With Auto Adjust Purge Control Valve

0 - Without Heater (upto 3^{0}C ambient)
1 - With 74 VDC Heaters (upto -40^{0}C ambient)
2 - With 110 VDC Heaters (upto -40^{0}C ambient)
3 - With 24 VDC Heaters (upto -40^{0}C ambient)
4 - Additional heater for controller (upto -50^{0}C ambient)

0 - Input voltage 48-138 Vdc
3 - Input Voltage 24 Vdc

Models

How to order ?

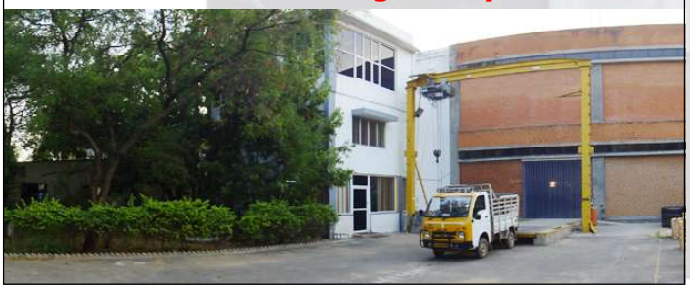
Ordering Example : LD 2 0 0 0 1 4 0

If you need - LD 2 Frame

→ Input voltage 48-138 Vdc
→ Without Heater
→ Without auto adjust purge control valve
→ Without differential pressure indicator for pre filter
→ Bolt on bracket MB4 suitable for LD2 only AD1040
→ Flow 110 scfm

SUMVED International

Manufacturing Facility



Our Presence

Our Other Range of Products

- Level Sensing Auto Drain Valve
- Desiccant Dryer (Heatless)
- Desiccant Dryer (Heated)
- Refrigeration Dryers
- Submicron Filter
- Oxygen & Nitrogen Generators

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