



**TRIDENT**<sup>®</sup>  
Pneumatics Pvt. Ltd.  
An ISO 9001 : 2000 Company



- Designed for locomotive use
- Non volatile memory system
- Automatic Purge control valve
- Fixed Volume Automatic Drain valve

**Locodry**  
Air Dryer for Locomotives

## 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 Purge Control valve

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

The two towers operate alternately in the drying and regeneration phases. In the 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/cm<sup>2</sup> (g)) 10% of the airflow is used for regeneration. A fixed quantity 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% for units with Auto Adjust purge control valve and fixed 15% 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.

## Specifications

Model	Flow (max in scfm)	Length (in mm)	Breadth (in mm)	Height (in mm)	Weight (in Kg approx)	Electrical Connector
LD1	200	310	570	510	65	MIL std Circular shell
LD2	200	360	400	505	60	MIL std Circular shell
LD3	15	265	120	450	18	MIL std Circular shell

### Accessories : Mounting bracket for LD1 :

Model	Outside connection	Length (in mm)	Breadth (in mm)	Height (in mm)	Weight (in Kg approx)
MB 1	1" Flange as per drawing	405	650	195	18
MB 2		190	304	65	6

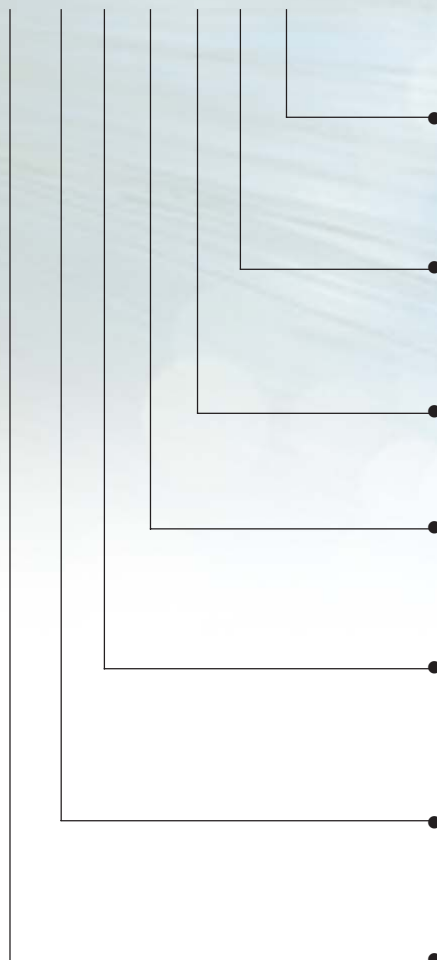
### Applications :

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

- Electric Locomotives
- Diesel Locomotives
- Commuter locomotives
- Shunting locomotives
- Mining applications

### Ordering code :

LD X X X X X X X



- 0 - Design air flow 110 scfm
- 1 - Design air flow 90 scfm
- 2 - Design air flow 60 scfm
- 3 - Design air flow 45 scfm
- 4 - Design air flow 15 scfm

- 0 - Bolt on Bracket MB2 suitable for LD2 only
- 1 - With Slide in Mounting Bracket MB 1 suitable for LD1 only
- 2 - No Mounting Bracket
- 3 - Bolt on Bracket MB3 suitable for LD2 only

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

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

- 0 - Without Heater
- 1 - With 74 VDC Heaters
- 2 - With 110 VDC Heaters

- 0 - Input voltage 48-138 Vdc
- 1 - Input Voltage 72 Vdc
- 2 - Input Voltage 110 Vdc

- 1 - LocoDry Frame 1
- 2 - LocoDry Frame 2
- 3 - LocoDry Frame 3



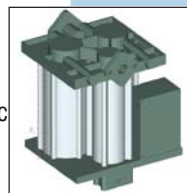
Mounting bracket MB2



Mounting bracket MB1



LocoDry Frame 1



LocoDry Frame 2

Dealer

## Trident Pneumatics Pvt Ltd

5/232, K.N.G. Pudur Road, Somayampalayam P.O.,  
Coimbatore - 641 108, India. Ph : +91-422-2400492 Fax : +91-422-2401376  
e-mail : sales@tridentpneumatics.com Website : www.tridentpneumatics.com