Machine Room Less
ELEVIO
Automatic Passenger Elevator
A great invention

The MRL is one of the greatest innovations the lift industry has encountered in the past few decades. In the last 10 years, the growth of MRL lifts has been unprecedented particularly in India, where MRL is the standard for low to mid-rise buildings has grown remarkably. The remarkable growth of this technology is a result of the recognition from the building industry of its tangible benefits for everyone – the architects, building owners, users and the environment as a whole.

Key Points

- The Elevio range of automatic passenger elevators from ESCON deploys advanced technology in vertical transportation.
- They provide comfortable, elegant, quick and safe mode for up & down people moment in high rises.
- They are an amazing blend of state of the art elevator technology and aesthetic appeal.

ESCON puts great emphasis on safety and the need to maintain disruption free motion of passengers. The Elevio range offers various passenger capacities, speed and an array of functional features and interior layouts to choose from. We have a dedicated team of engineers & technicians who ensures the installation and maintenance and most importantly the safety for our customers.

Using Energy Wisely

Our Long term commitment to developing energy-efficient elevators has created systems and functions that make intelligent use of power.

**Milestones of Energy-saving Technologies in Elevator Development**

<table>
<thead>
<tr>
<th>Year</th>
<th>Motor</th>
<th>Traction</th>
<th>Motor drive</th>
<th>Control Circuit</th>
<th>Power consumption CO₂ emission*3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>Induction motor</td>
<td>Worm geared</td>
<td>AC2 Control</td>
<td>Relay</td>
<td>100%</td>
</tr>
<tr>
<td>1980</td>
<td>Permanent magnet motor</td>
<td>Gearless</td>
<td>ACVV** control</td>
<td>Microcomputer</td>
<td>93%</td>
</tr>
<tr>
<td>1990</td>
<td></td>
<td></td>
<td>VVVF*** control</td>
<td></td>
<td>74%</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>37%</td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30%</td>
</tr>
</tbody>
</table>

Note:
*1: Alternative current, variable voltage
*2: Variable voltages, variable frequency
*3: CO₂ emissions in this table are from elevator operation and do not include emissions from manufacturing, transportation and other processes.

**Advantages of LED’S**

Ceiling: ECS14
- LED Lighting (optional)
- Used for ceiling lights and hall lanterns, LEDs boost the overall energy performance of the building. Furthermore, a long service life eliminates the need for frequent lamp replacement.
- Approximately 12.5 times longer
- Approximately 75% Saving

ESCON provides following features:

- LED Lightings with innovative designs
- No Lead & Asbestos sheet in our products.
- Auto on/off light/fan mode
- It provides minimum carbon emission.
**Elevio Automatic: MRL**

**Control Master**

ESCON Integrated CAN Bus Serial V3F controller

Escon's newly upgrade "Integrated Drive Controller" is very easy to adjust at site. This controller adopts "CAN BUS " serial communication technology.

Many of the human functions such as Duplex control, Group control, Remote Monitoring, Emergency rescue makes elevator operations highly safe and reliable. Cabling wires are reduced efficiently with new system configuration (car top board, car board etc). More stability and best in class ride comfort are realized due to the excellent V3F Drive System with this ESCON makes an "Integrated CAN Bus Serial" V3F controller approach.

**Technical specifications**

1: Power supply with AC 380V to 460 Volts, 50HZ, (3) Phase
2: Power range with 5.5 KW to 22 KW
3: Rated speed with upto 1.75 MPS
4: Main controller with Escon Make Integrated Drive controller
5: Safety standard with EN 81
6: Landing mode with Direct landing
7: Accuracy of Level ling with Less than +/− 3mm
8: Environmental Temperature with -10 degree C to +45 degree C
9: Cabinet Colour with Dark grey/ Customize
10: Installation method with Escon type
11: Traction motor Adopted with ACPM Synchronous motor
12: Encoder Sincos with 2048 ppr.
13: Brake with DC 110V, rated current less than 4.5 amps
14: Rescue device with advanced ERD system

**Features**

With a small permanent-magnet synchronous motor (PMSM) combined with a variable voltage, variable frequency (VVVF) drive. This change reduces the size, weight, heat output and saves lot of energy during traditional traction systems.

**Advantages**

- Building Cost Savings:
  - The elimination of the machine room leads to lower construction costs.
- Energy Cost Saving:
  - MRL Elevator technology uses smaller motors, which, in turn, down sizes the necessary power supply and thereby building energy operating costs.

**Overspeed Governor**

As the name suggested it governs the speed by braking the lift, in case it ever exceeds its rated speed. Failing of these devices like these ensures strict adherence to safety standards.

Conventional elevator safety equipment includes an overspeed governor, for impeding elevator car movements, when a predetermined speed is exceeded. However Overspeed governors includes a switch that opens when the elevator reaches a predetermined overspeed such as 110-140% of rated speed. When the switch opens, power is removed from the machine motor and brake. A braking mechanism, actuated in response to movement of the elevator car by motion transmission means, impedes the elevator car.

**Other advantages of MRL Elevator:**

- No machine room is required.
- It reduces motor size and weight.
- It eliminates oil.
- It gives a leverage in space saving as well.
- It reduces Radio Frequency.
- It provides minimalistic harmonic distortion.
Emergency Operation: To ensure passenger safety, our elevators are equipped with functions for emergencies like power failure and fire.

**Power Failure**

**Escon Rescue Device (ERD) (Standard)**

Upon electric power supply failure, a car automatically moves to the nearest lower floor either up or down depending on the number of passengers in elevator and doors open by using a rechargeable battery to facilitate the evacuation of passengers. Also, an emergency car light automatically turns on immediately and provides minimum level of lighting within a car by the chargeable battery.

**ESCON RESCUE DEVICE (ERD)**

Running time ERD is minimized, with ERD function getting completed as soon as the lift reaches floor level with door open. So overall efficiency of the system is improved. Door sensor (infra red full height sensor) comes integrated with ERD. Ease of operations is guaranteed with ERD. The motor over current protection and under current protection features are available with ERD. ERD design is as per EN-81 safety standard norms. Encoder feedback from the motor can be connected directly to ERD to check and set load sensing direction. Brake feedback signal can be connected to ERD to cross check whether the brake is energized & running smoothly.

**Fire**

**Firefighters’s Emergency Operation (FE) (Optional)**

When the fire operation switch is activated, the car immediately returns to the predetermined floor. The car then responds only to car calls which facilitate firefighting and rescue operations.

The environmentally-friendly system with its machine allows the roomless arrangements, which establishes new standards for elevator performance with reliability and robust design flexibility. It offers passengers more comfort and also achieves energy savings.

An innovative elevator system which provides:

**Environmental sustainability**

- The belts and gearless machines with sealed for life bearings do not require any form of polluting lubricant.
- A compact permanent magnet gearless machine ensures an energy conserving MRL drive, which achieves energy savings of up to 75% as compared to a conventional system with a non-regenerative drive. It also reduces operational costs to a larger extent.
- LED lighting offers increased efficiency and long lasting benefits as compared to conventional tubes.

**Enhanced ride quality**

- By replacing conventional steel ropes with smooth, polyurethane-coated steel belts, it results in a quieter and smoother ride.
- MRL drive provides a comfortable ride with improved stopping accuracy.
- It provides Smoother elevator acceleration and deceleration.
- Ease of operations is very convenient.

**Safety and reliability**

The Sensor belt monitoring system continually monitors the status of the belt’s steel cords enhancing both their lifetime and their reliability.
Elevio Automatic: MRL

Design and Specifications - Traction MRL - Hoisting Steel Ropes

Design and Specifications - Traction MRL - Coated Steel Belts

Note: Above Dimensions are Considering Hoisting Steel Ropes

Note: Above Dimensions are Considering Coated Steel Belts

Your Safety is our First Priority
Elevio Automatic: MRL

Car Designs and Finishes

Cabins Standard
- ECB171

Cabins Optional
- ECB112

Ceiling Standard
- EC101

Ceiling Optional
- EC314

Flooring Standard
- SS Finishes Standard
- PVC Coated Finishes

Flooring Optional
- SS Finishes Optional

SS Finishes Standard

PVC Coated Finishes

Paint Shade
- Standard
- Option

Car Operating Panel

Landing Operating Panel

This picture is for reference only. The actual product may vary according to requirements.

MS Finishes Standard

Car Designs and Finishes

Door Open Button

Emergency Bell Button

Destination Floor Buttons

Management Key Switch

Sub Cabinet

Door Open Button