Scomi’s Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- A smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic designs.

### VEHCILE DATA
- **Type of Vehicle:** Monorail with single axle bogie (straddle type)
- **Train Capacity:** 2, 4, 6-car train

### DIMENSIONS AND WEIGHT
- **Guideway Running Surface Width:** 640 – 690 mm
- **Length of Train:**
  - 2-car: 20.7 m
  - 4-car: 41.4 m
  - 6-car: 62.1 m
- **Overall Width including Doors:** 3.8 m
- **Overall Height:** 4.3 m
- **Top of Train to Top of Car:** 3.2 m
- **Top of Train to Floor:** 2.7 m
- **Doorway Width (clear opening):** 1.5 m
- **Doorway Height (clear opening):** 1.9 m
- **Floor to Ceiling Height:** 2.1 m
- **Wheel Diameter New:** 1.006 m
- **Wheel Diameter Worn:** 0.994 m
- **Wheel Base:** 7.0 m
- **AW0 Car Weight (empty):** 15,000 kg

### SPECIFICATIONS

#### TECHNOICAL CHARACTERISTICS
- **Train Control:** ATP (Upgradable to ATO)
- **Power Collection:** Pneumatic suspension, dual rail supply collection system
- **Primary Power:** Nominal line voltage 750 Vdc
- **Auxiliary Power Supply:** 415 / 240 Vac
- **Low-Voltage Power Supply:** 24 Vdc
- **Propulsion:** Electric motors & gear reducers
- **Service Braking:** Electric resistance regenerative with pneumatic disc brakes
- **Parking Brakes:** Spring applied disc brakes
- **Emergency Brakes:** Pneumatic disc brakes
- **Automatic Coupler:** Mechanical retractable coupler
- **Bogie Material:** Steel
- **Vertical Suspension:** Pneumatic air bag, TRV, shock absorbers
- **Load Tyres:** Metro type nitrogen filled with internal run-flat and pressure monitoring sensor
- **Guidance Tyres:** Metro type nitrogen filled with internal run-flat
- **Carbody:**
  - Lightweight composite body
  - Stainless steel chassis

#### PERFORMANCE AND CAPACITY
- **Acceleration Rate (service):** 1.1 m/s²
- **Braking Rate (service):** 1.1 m/s²
- **Braking Rate (emergency):** 1.3 m/s²
- **Maximum Design Speed:** 90 km/h
- **Maximum Operating Speed:** 80 km/h
- **Minimum Horizontal Radius:** 50 m
- **Minimum Vertical Radius:** 500 m
- **Maximum Sustained Gradient:** 6%
- **Buff Load:** 400 kN
- **Seated Passengers:**
  - 20 – 24 per Car
- **Capacity per Car:**
  - 20 seats: 80 @ 4 pass. / m²
  - 24 seats: 80 @ 4 pass. / m²
- **Carbody:**
  - Lightweight composite body
  - Stainless steel chassis

### Side Windows
- 8 per car, laminated / tempered glass

### Doors
- 4 per car, bi-parting, external sliding

### Air Conditioning
- 1 x 40 kW roof mounted unit per car

### Fire Safety Design
- NFPA 130 compliant

Scomi’s Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- A smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic designs.

Scomi Rail Bhd
(formerly known as MTrans Technology Berhad)
5th Floor, Wisma Chase Perdana
Off Jalan Semantan
Damansara Heights
50490 Kuala Lumpur
Malaysia
www.scomiengineering.com.my
T +603 2080 5080
F +603 2080 6328
E inquiry@my.scomiengineering.com
Printed on environmentally friendly paper

© Scomi Rail 2017

Scomi’s Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- A smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic designs.

Scomi’s Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- A smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic designs.

Scomi’s Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- A smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic designs.
CARBODY STRUCTURE
The monocoque (load-bearing single-shell frame) body structure is constructed with composite materials. The lightweight structure combined with the stainless-steel chassis provides enhanced strength and durability of up to 30 years.

INTERIOR FACILITIES
The interior is designed with the comfort and safety of passengers in mind. Its spacious, minimalist concept maximises the flow of passengers and minimises obstruction in and around the doorways.

• Rail and structures are designed to assist steering, on-board circulation, sitting and standing passengers. And, guarding by persons with disabilities.

• Handrails and handgrips are placed within easy reach of all passengers in mind. Its spacious, minimalist concept maximises the flow of passengers and minimises obstruction in and around the doorways.

• Slip-resistant flooring keeps passenger-footing firm and stable.

• Air-conditioned passenger’s saloon with ergonomic seats, rail and stanchions are designed to assist standing passengers.

The monocoque (load-bearing single-shell frame) body structure is constructed with composite materials. The lightweight structure combined with the stainless-steel chassis provides enhanced strength and durability of up to 30 years.

Vehicle Management System
The VMS provides supervisory control, monitoring and diagnostic systems. Train status information is graphically displayed to the operator via the VMS. A deployment mechanism opens a cover and extends the coupler for coupling purpose whenever required.

• Rail and structures are designed to assist safe boarding, on-board circulation, sitting and standing passengers. And, guarding by persons with disabilities.

• Handrails and handgrips are placed within easy reach of all passengers in mind. Its spacious, minimalist concept maximises the flow of passengers and minimises obstruction in and around the doorways.

• Slip-resistant flooring keeps passenger-footing firm and stable.

• Air-conditioned passenger’s saloon with ergonomic seats, rail and stanchions are designed to assist standing passengers.

Boogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.

Bogie
The bogie structure is designed to support static and fatigue loads for a long as 30 years. To provide a smooth ride, the straddle-type bogie structure is combined with a dual bus communication between bogies and individual cars.

Automatic Coupler
The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work.

VVVF (Variable Voltage Variable Frequency) Drives
Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system.
CARBODY STRUCTURE

The monocoque (load-bearing single-shell frame) body structure is constructed with composite materials. Its lightweight structure combined with the stainless steel chassis provides enhanced strength and durability of up to 30 years.

INTERIOR FACILITIES

The interior is designed with the comfort and safety of passengers in mind. Its spacious, minimalist concept maximises the flow of passengers and minimises obstruction in and around the doorways.

• Rail and stanchions are designed to assist coach area is combined with 2 adjacent flippable seats per the standing area for passengers. Disabled wheelchair seating and standing assistance, and safe boarding, on-board circulation, and durability of up to 30 years.
• Handrails and handgrips are placed within easy reach of all standing passengers.

• Air conditioned passenger’s saloon with ergonomic and lightweight design provides enhanced strength and durability of up to 30 years.
• Slip-resistant flooring keeps passenger-footing firm and stable.

VEHICLE MANAGEMENT SYSTEM (VMS)

The VMS provides supervisory control, monitoring and diagnostic systems. Train status information is graphically displayed at the operator’s station to quickly respond and understand all train system status. All data is logged for further analysis.

AUTOmatic COUPLER

The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curves as well as any special track work. The retractable coupling is hidden when the vehicle is in motion. A deployment mechanism opens a cover and extends the coupler for coupling purposes whenever required.

VVVF (VARIABLE VOLTAGE VARIABLE FREQUENCY) DRIVES

Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system. The propulsion equipment uses variable voltage variable frequency (VVVF) inverters with high power per weight ratio. The system also provides high availability and safety integrity featuring safe-off state for propulsion and braking systems, and provides multiple functionalities including high integrity emergency brakes, service brakes (blended where necessary), security brakes and parking brakes.

PROPELLION CONTROL EQUIPMENT

The propulsion equipment uses switchable voltage-frequency variable (VVVF) inverters with high power per weight ratio. The system also provides high reliability and safety integrity featuring safe-off state for propulsion and braking systems. It is equipped with a dual redundant network interface to the VMS.
**Carbody Structure**

The monocoque (load-bearing single-shell frame) body structure is constructed with composite materials. The lightweight structure combined with the stainless steel chassis provides enhanced strength and durability of up to 30 years.

**Interior Facilities**

The interior is designed with the comfort and safety of passengers in mind. Its spacious, minimalist concept maximises the flow of passengers and minimises obstruction in and around the doorways.

**Vehicle Management System (VMS)**

The VMS provides supervisory control, monitoring and diagnostic systems. Train status information is graphically displayed to the operator via the HMI panel. Its user-friendly interface display allows the operator to quickly respond and understand all train system status.

**Brake System**

The brake system comprises the latest-generation electro-pneumatic mechanism systems available. Cost-effective, modular and lightweight, it provides multiple functionalities including high integrity emergency brakes, service brakes (blended wheel service), security brakes and parking brakes. The system is configurable with ATO / ATP railway applications and provides valuable cost and weight savings. Additional functionalities include compressor control, communications with train management systems, self-diagnosis, wheel slip and slide control with dual bus communication between bogies and individual cars.

**Cab Facilities**

The driver's console incorporates the master controller assembly, control buttons and panel view. The master controller controls the propulsion and braking systems and is equipped with a Driver's vigilance Device (DSD) control which prevents vehicle movement without proper manual operation by the operator. An ergonomic console design combined with a panoramic cockpit envelope maximises reach of the controls and provides visual interface while enhancing driver comfort and providing an optimal field of vision. The air-conditioned driver's compartment also carries emergency safety equipment.

**ATP / ATO Equipment**

Provision has been made forbooth automatic train protection systems only, if required. Automatic train operation equipment. The design of the safety circuits and communication with the vehicle management system is also taken into consideration.

**Automatic Coupler**

The mechanical coupler at each end is capable of emergency mechanical connection as well as impact energy absorption. It is capable to accommodate horizontal and vertical curving as well as any special track work.

**Provision of Variable Voltage Variable Frequency (VVVF) Drives**

Current technology PWM AC Drive / Dynamic brake controllers certified to the applicable IEC & NFPA codes / standards are the selected choice for the propulsion system. Electrically isolated, insulated digital communication and single cycle capability also make it suitable for passenger transit applications. Power: 100 kW Voltage Applications: 750 to 1500 VDC Modes of Control: Field-Oriented Control PWM Speed Regulation: 0.001% with Feedback.
Scomi’s Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- Smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic design.

### Vehicle Data

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Monorail with single axle bogie (straddle type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train Length</td>
<td>2-car: 20.6 m, 4-car: 41.2 m, 6-car: 61.8 m</td>
</tr>
<tr>
<td>Overall Width Including Doors</td>
<td>3.8 m</td>
</tr>
<tr>
<td>Overall Height</td>
<td>4.3 m</td>
</tr>
<tr>
<td>Top of Roof to Top of Car</td>
<td>3.2 m</td>
</tr>
<tr>
<td>Top of Roof to Top of Floor</td>
<td>7.1 m</td>
</tr>
<tr>
<td>Axle Width</td>
<td>1.8 m</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>7.0 m</td>
</tr>
<tr>
<td>AMB Car Weight</td>
<td>15,800 kg</td>
</tr>
</tbody>
</table>

### Technical Characteristics

- **Train Control**
  - ATP (Upgradable to ATO)

- **Power Collection**
  - Permanent Magnet Dual Axle Supply Collection System

- **Primary Power**
  - Nominal Voltage: 750 Vdc

- **Auxiliary Power Supply**
  - 415/240Vac
  - 24 Vdc

- **Propagation**
  - Electrical motors & gear reducers

- **Service Braking**
  - Electrodynamic regeneration with pneumatic disc brakes

- **Parking Brakes**
  - Spring applied disc brakes

- **Emergency Brakes**
  - Pneumatic disc brakes

- **Automatic Couplers**
  - Mechanical retractable coupler

- **Bogie Material**
  - Steel

- **Vertical Suspension**
  - Pneumatic air bags and shock absorbers

- **Load Tyres**
  - Medium type nitrogen filled with internal run-flat and pressure monitoring sensor

- **Guidance Tyres**
  - Medium type nitrogen filled with internal run-flat

- **Carbody**
  - Lightweight composite body
  - Stainless steel chassis

### Vehicle Data

- **Type of Vehicle**
  - Monorail with single axle bogie

- **Train Consist**
  - 2 / 4 / 6-car train

### Specifications

- **Dimensions and Weight**
  - Guidebeam Running Surface Width: 640 – 690 mm

- **Performance and Capacity**
  - Acceleration Rate (service): 1.1 m/s²
  - Braking Rate (service): 1.1 m/s²
  - Braking Rate (emergency): 1.3 m/s²

- **Maximum Design Speed**
  - 90 km/h

- **Maximum Operating Speed**
  - Up to 80 km/h

- **Minimum Horizontal Radius**
  - 50 m

- **Minimum Vertical Radius**
  - 500 m

- **Maximum Sustained Gradient**
  - 6%

- **Buff Load**
  - 400 kN

- **Seated Passengers**
  - 20 – 24 per Car

- **Capacity per Car**
  - 24 seats
  - 70 @ 4 pass. / m²
  - 87 @ 5 pass. / m²
  - 106 @ 6 pass. / m²

- **Side Windows**
  - 8 per car, laminated / transparent glass

- **Doors**
  - 4 per car, bi-parting, external sliding

### Scomi Rail Bhd

- **Address**
  - 5th Floor, Wisma Chase Perdana
  - Off Jalan Semantan
  - Damansara Heights
  - 50490 Kuala Lumpur
  - Malaysia

- **Website**
  - www.scomiengineering.com.my

- **Contact Details**
  - T: +603 2080 5080
  - F: +603 2080 6328
  - E: inquiry@my.scomiengineering.com

Printed on environmentally friendly paper • FSMR-Rev1107
Scomi's Monorail system is designed to address current mass urban transportation needs. The system complies with international standards of safety, quality and reliability. Based on our technological innovation, the monorail offers features and benefits for optimum flow of passengers and vehicle management system components which enables:

- A smooth ride quality.
- Higher passenger capacity.
- Energy efficiency.
- Lower operating costs.
- Environmentally friendly.
- Futuristic designs.

**SPECIFICATIONS**

**VEHICLE DATA**

<table>
<thead>
<tr>
<th>Type of Vehicle</th>
<th>Monorail with single axle bogie (straddle type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Train Layout</td>
<td>2, 4, 6-car train</td>
</tr>
</tbody>
</table>

**DIMENSIONS AND WEIGHT**

<table>
<thead>
<tr>
<th>Guidebeam Running Surface Width</th>
<th>440 – 600 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Train</td>
<td>2-car: 20.8 m</td>
</tr>
<tr>
<td></td>
<td>4-car: 48.8 m</td>
</tr>
<tr>
<td></td>
<td>6-car: 58.4 m</td>
</tr>
<tr>
<td>Overall Width Including Doors</td>
<td>3.3 m</td>
</tr>
<tr>
<td>Overall Height</td>
<td>4.3 m</td>
</tr>
<tr>
<td>Top of Boom to Top of Car</td>
<td>3.2 m</td>
</tr>
<tr>
<td>Top of Boom to Top of Floor</td>
<td>7.9 m</td>
</tr>
<tr>
<td>Driveway Width (Side opening)</td>
<td>1.80 m</td>
</tr>
<tr>
<td>Driveway Height (Side opening)</td>
<td>1.90 m</td>
</tr>
<tr>
<td>Floor to Ceiling Height</td>
<td>2.70 m</td>
</tr>
<tr>
<td>Wheel Diameter New</td>
<td>1006 mm</td>
</tr>
<tr>
<td>Wheel Diameter Worn</td>
<td>994 mm</td>
</tr>
<tr>
<td>Wheelbase</td>
<td>7.0 m</td>
</tr>
<tr>
<td>AWB Car Weight (empty)</td>
<td>15,000 kg</td>
</tr>
</tbody>
</table>

**VEHICLE TECHNOLOGICAL CHARACTERISTICS**

- **Train Control**: ATP (Upgradable to ATO)
- **Power Collection**: Permanent magnet dual set supply collection system
- **Primary Power**: Nominal line voltage 750 Vdc
- **Auxiliary Power Supply**: 415/240 Vac
- **Propulsion**: Electrical motors & gear reducers
- **Service Braking**: Electrical/dynamic regeneration with pneumatic air brakes
- **Parking Brakes**: Spring applied disc brakes
- **Emergency Brakes**: Pneumatic disc brakes
- **Automatic Couplings**: Mechanical retractable coupler
- **Bogie Material**: Steel
- **Vertical Suspension**: Pneumatic air bags and shock absorbers
- **Load Tyres**: Metro type nitrogen filled with internal run-flat and pressure monitoring sensor
- **Guidance Tyres**: Metro type nitrogen filled with internal run-flat
- **Carbody**: Lightweight composite body - Stainless steel chassis
- **Side Windows**: 6 per car, laminated / tempered glass
- **Doors**: 4 per car, bi-parting, external sliding
- **Air Conditioning**: 1 x 48 kW roof mounted unit per car
- **Fire Safety Design**: NFPA 130 compliant

**PERFORMANCE AND CAPACITY**

- **Acceleration Rate** (service): 1.1 m/s²
- **Braking Rate** (service): 1.1 m/s²
- **Braking Rate** (emergency): 1.3 m/s²
- **Maximum Design Speed**: 90 km/h
- **Maximum Operating Speed**: 80 km/h
- **Minimum Horizontal Radius**: 50 m
- **Minimum Vertical Radius**: 500 m
- **Maximum Sustained Gradient**: 6%
- **Buff Load**: 400 kN
- **Seated Passengers**: 20 – 24 per Car
- **Standing Capacity per Car**: 97 @ 4 pass. / m²
- **Standing Capacity per Car**: 92 @ 5 pass. / m²
- **Standing Capacity per Car**: 125 @ 6 pass. / m²

Scomi Rail Bhd
(formerly known as MTrans Technology Berhad)
5th Floor, Wisma Chase Perdana
Off Jalan Semantan
Damansara Heights
56490 Kuala Lumpur
Malaysia
www.scomiengineering.com.my
T +603 2080 5080
F +603 2080 6328
E inquiry@my.scomiengineering.com
Printed on environmentally friendly paper