

## Never Compromise on Quality and Safety

Schneider M10-9 lift drives are the solution to technical requirements of today's elevators. This inverter controls induction and permanent magnet motors. It is the first choice for new installation, machine room less lifts, but also for modernization. Experience the proven Schneider reliability combined with a new level of quality and safety.



### THE RIGHT CHOICE

Schneider M10-9 lift drives are the right choice for modern elevators as they meet all their technical requirements. They are suited for new installations as well as modernization of all kinds of elevators including machine room less lifts. They control induction and permanent magnet motors with proven efficiency and reliability making each ride a safe and comfortable one.



### HIGHEST LEVEL OF COMFORT

Schneider M10-9 lift drives with their superior vector control algorithm and special control functions provide the highest level of comfort in every ride. They provide a bump-free start, smooth speed transition and precise landing each time.



### FAST SETUP TIME

Schneider M10-9 lift drives take away the hassle of setting up an elevator. The setup time will be short and energy saving. All the motor data are automatically tuned in without the need for rope removals. The default settings will match the requirements of the elevators in most installations with their parameters clearly shown in their technical terms and measurements.



### VERSATILE CONTROLLER INTERFACE

Schneider M10-9 lift drives provide both analogue and digital inputs and outputs for their connection to the elevator controller. Besides supporting various types of controllers, their versatility also enables problem-free connections.



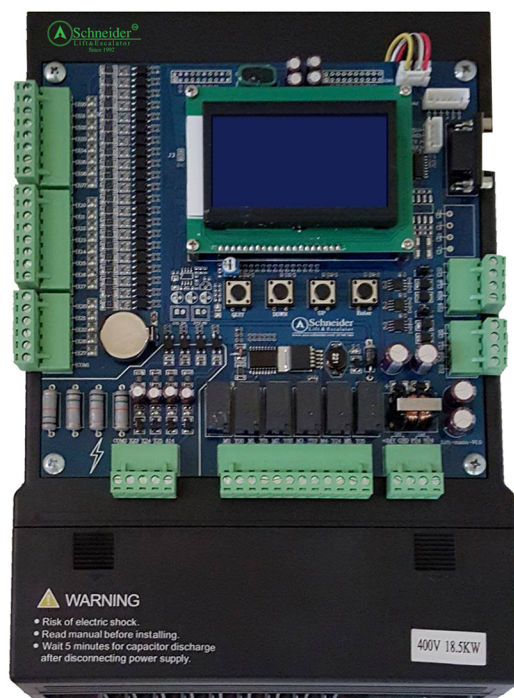
### EFFICIENT BRAKING FEATURE

Schneider M10-9 lift drives come with an efficient EN81-A3 compliant brake monitoring feature. This feature replaces all exterior devices and reduces cost.



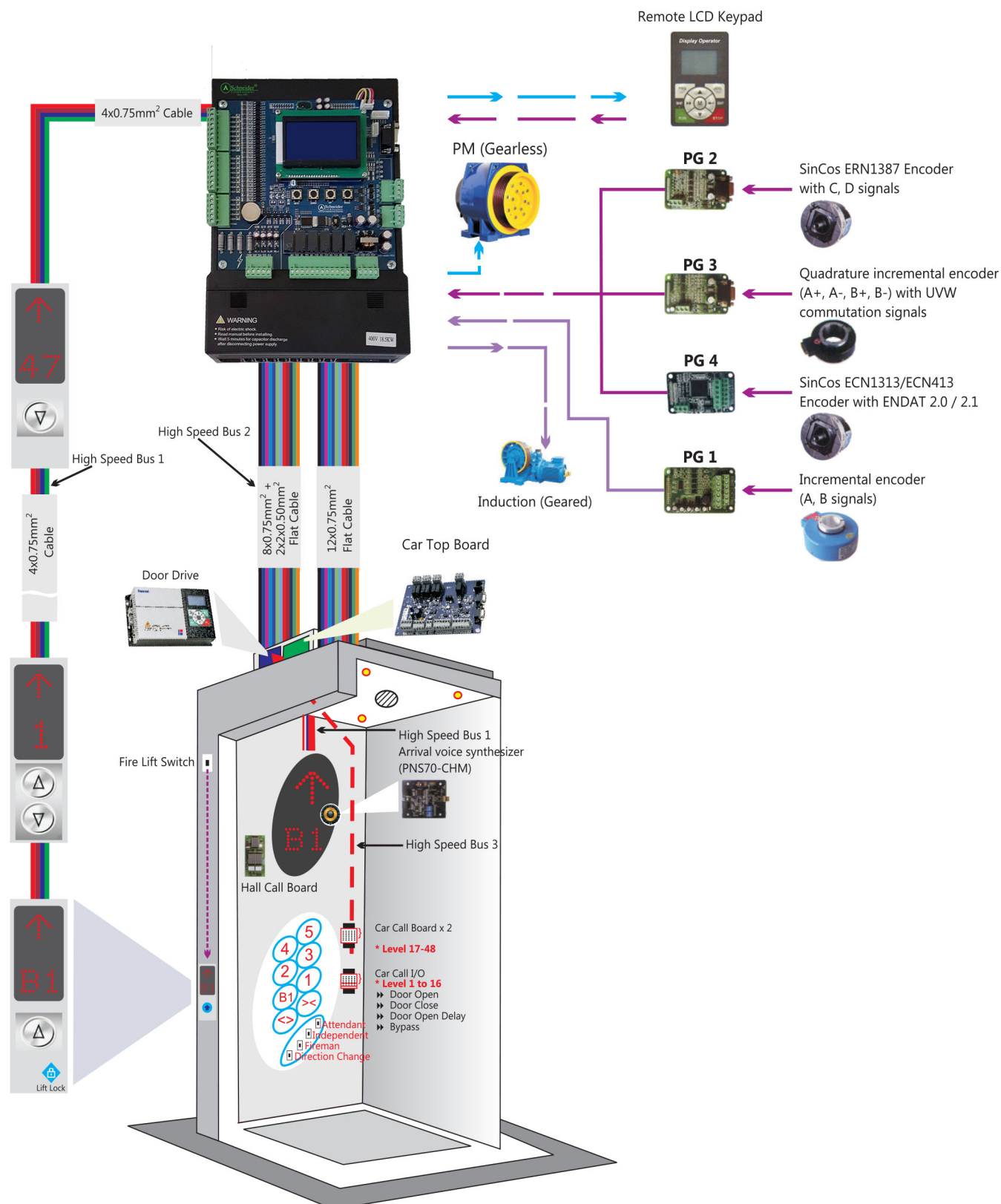
### EMERGENCY OPERATION

Schneider M10-9 lift drives can be powered by an uninterruptable power supply unit or batteries during a power outage. They automatically adjust to the light load direction and utilize the most suitable components to overcome any over sizing.



Landing Operation Panel (LOP)	SCHNEIDER M10-9	Motor Type	Hot Pluggable Keypad
Standard	COP		Feedback Type

## Basic Connection Diagram Standard 48 - Floors Full Collective



## Schneider M10-9

Schneider M10-9 is the ideal integrated solution for elevator control, suitable for a diverse range of geared and gearless machines, proving the best riding comfort with high safety integrity.

## Serial Communication High Performance Elevator Integrated Controller

### Application : Serial Link Communication

- ▶ Simplex, Duplex, 3-8 Group Control Elevator
- ▶ High speed, Medium speed & Low speed
- ▶ Superior elevator, Passenger elevator, Medical elevator, Residential elevator & Disable elevator etc.
- ▶ Elevator rated speed  $\leq 4.0\text{m/sec}$
- ▶ Floor level: Each CCB (Car Call Board) can adopt up to 16 floors above 16 serial link additional CCB up to 48 floors.

### Power Rating

- ▶ 2.2KW to 45KW 3Ø 380/400/415V
- ▶ 3.7KW to 30KW 3Ø 220V
- ▶ 2.2KW to 3.7KW 1Ø 220V

### M10-9 Technical Features

- ▶ Redundancy control through multi CPU 's equipped with CAN bus, MOD bus, and GSM communication technology
- ▶ Based on displacement calculation methods derive N velocity Profile to achieve optimum direct to point distance control
- ▶ Simple two wire serial communication to commission duplex group control
- ▶ Group control with less than 8 elevators is based on fuzzy logic theory
- ▶ In built real time clock facilitate time sharing control and elevator management
- ▶ Flexible emergency back up power 220VAC power input makes emergency evacuation easily
- ▶ Automatic Identification operation between short floors
- ▶ Handheld operation Tool, Mini LCD keypad, PDA, PC to facilitate easy commissioning
- ▶ 60 Fault codes facilitate easy diagnostics
- ▶ Power on reset \* is not needed / Direct to floor landing, smooth ride comfort & optimal travel mean time
- ▶ Advance door opening & re leveling using optimal card
- ▶ On control board 7 segment LED displays for floor position indicator
- ▶ Wide variety of door function control to meet different needs in freight lift doors requirement
- ▶ Optimum exclusive function, quick easy start up periods
- ▶ Pre factory default parameters setting facilitate zero parameters setting at site
- ▶ All inputs and outputs are user programmable suitable for auto door
- ▶ Start torque auto compensation for no weighing device
- ▶ Debugging, Monitoring & fault diagnosis using LCD display keypad
- ▶ Anti nuisance function / Anti slip protection provided
- ▶ Automatic On/Off cooling fan
- ▶ Automatic light load search for rescue mode operation

### General Specifications

#### 380 to 480Vac 3 Phase Ratings (-15% to 10% : 3Ø, 323Vac to 528Vac)

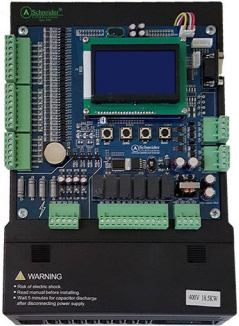
Model Code M10-9 A/B	Power Capacity (KVA) 3Ø	Power Current (A) 3Ø	Power Motor (KW)
4T2P2	3.4	5.1	2.2
4T3P7	5.9	9	3.7
4T5P5	8.5	13	5.5
4T7P5	11	18	7.5
4T011	16	27	11
4T015	21	33	15
4T018	24	39	18
4T022	30	48	22
4T030	39	60	30
4T037	49	75	37
4T045	59	91	45

### General Specifications

#### 220 to 240Vac 1Ø & 3Ø Ratings (-15% to 10% : 187Vac to 264Vac)

	Model Code M10-9 A/B	Power Capacity (KVA)	Output Current (A)	Typical Motor (KW)
Single Phase	2S2P2	3.8	10.3	2.2
	2S3P7	5.9	17	3.7
	2T3P7	5.9	17	3.7
Three Phase	2T5P5	8.5	27	5.5
	2T7P5	11	33	7.5
	2T011	16	45	11
	2T015	21	55	15
	2T018	24	70	18
	2T022	30	80	22
	2T030	39	110	30



<p><b>Powernet Integrated Solutions Family</b></p>	<p><b>Schneider M10-9 Serial Communication</b></p> 
<p><b>Applications</b></p>	<ul style="list-style-type: none"> <li>• Simplex, Duplex and 3-8 Group Elevator Control type of elevators</li> <li>• High Speed, Medium speed, Low speed</li> <li>• Commercial elevator, residential elevator, villa elevator, passenger elevator, hospital elevator, disabled elevator etc.,</li> <li>• Elevator rated speed <math>\leq 4.0\text{m/sec}</math></li> <li>• Supports up to 48 floors as a standard.</li> <li>• 3 mode of door operation mode - Manual, Semi-Auto &amp; Auto.</li> </ul>
<p><b>Applicable Motor Type</b></p>	<p>Asynchronous (Induction) motor Synchronous Permanent magnet motor</p>
<p><b>Control Technology</b></p>	<p>Closed Loop Vector Control</p>
<p><b>Power Rating</b></p>	<p>2.2kw to 45kw</p>
<p><b>AC Voltage</b></p>	<p>1Ø, 220Vac to 240Vac (-15% to 10% : 187Vac to 264Vac) 3Ø, 220Vac to 240Vac (-15% to 10% : 187Vac to 264Vac) 3Ø, 380Vac to 480Vac (-15% to 10% : 323Vac to 528Vac)</p>
<p><b>Start Torque</b></p>	<p>0Hz/200% (Closed Loop)</p>
<p><b>Speed Control Range</b></p>	<p>1 : 1000 (Closed Loop)</p>
<p><b>Speed Accuracy</b></p>	<p><math>\pm 0.5\%</math> (Closed Loop)</p>
<p><b>Torque Control Accuracy</b></p>	<p><math>\pm 5\%</math> (Closed Loop)</p>
<p><b>Overload Capability</b></p>	<p>150% rated current for 60 seconds; 200% rated current for 1 second</p>
<p><b>Group Control Function</b></p>	<p>Yes, Duplex is standard. With optional PNS-GCB card, group control of 3 to 8 elevators is possible</p>
<p><b>Motor Parameter Auto-Tuning</b></p>	<p>Yes, Static (without brake opening) and rotating auto-tuning for asynchronous (induction) and PM synchronous motor with load and without load</p>

<b>Acceleration/Deceleration</b>	Based on displacement calculation methods drive N velocity profile to achieve optimum direct-to-point distance control
<b>Re-levelling Function</b>	Yes. On the occasion when elevator stops at the floor level and a large number of persons or goods enter or leaves, the levelling fluctuates because of the elastic deformation of elevator wire ropes and rubber. With this intelligent Re-levelling function, the system is allowed to run automatically at the re-levelling speed to run automatically at the re-levelling speed to the floor level with door open. Requires PNS70-AOB-A/B
<b>Direct-to-floor Function</b>	Yes. By the principle of distance, automatically generates the smooth curves from start of parking, no crawling, directly stop in the levelling position
<b>Forced Deceleration</b>	New and reliable compulsive terminal deceleration function helps to identify the deceleration point automatically
<b>Shaft Parameter Self-Learning</b>	32-Bit data, record the elevator car shaft position before first run
<b>Levelling Adjustment</b>	Individual floor levelling adjustment function through COP
<b>Real Time Clock</b>	In-built real time clock to facilitate time-sharing control and elevator management
<b>Digital I/O</b>	24 Digital input terminals (Specification: +24Vdc, 5mA) 3 dedicated inputs for safety circuit (Support 110Vac or 110Vdc)
<b>Analog I/O</b>	1 analog input terminals for load cell (Specification: -10 to 10Vdc)
<b>Relay</b>	6 relay output terminals (250Vac/5A, 30Vdc/5A) with programmable function
<b>Communication</b>	2 CANbus (For Car Top Board and Duplex functions) 1 Modbus (For Hall Call Board)
<b>Encoder Feedback</b>	<ul style="list-style-type: none"> <li>• Optimal encoder cards for PMSM (Gearless)               <ul style="list-style-type: none"> <li>i.PNS70-PG2 : Weton SinCos EI58C9.25/ERN1387 encoder with C,D signals 5Vdc, 2048PPR</li> <li>ii.PNS70-PG4 : Absolute Sincos ECN1313/ECN413 encoder with EnDat 2.0/2.1 Serial communications, 5Vdc, 2048PPR</li> <li>iii.PNS70-PG3 : Quadrature incremental encoder (A+,A-,B+,B-) with UVW communication signals, 5Vdc, 8192PPR</li> </ul> </li> <li>• Optional encoder cards for Induction motor (Geared)               <ul style="list-style-type: none"> <li>i.PNS70-PG1 : Incremental encoder single ended (A,B Signals, 12Vdc)</li> <li>ii.PNS70-PG3 : Quadrature incremental encoder (A+,A-,B+,B- signals, 5Vdc HTL)</li> </ul> </li> </ul>
<b>Braking Unit</b>	Built-in Up to 30kw