# Standard and Optional Equipment

## Standard Equipment

→ Standard P30 base truck
→ Lateral change 3PzS battery compartment
→ Dual mode operation (manual/automatic)
→ Hook with pull cable
→ Lead acid battery (3PzS, 345Ah)
→ Manual charging
→ 1 ° front SICK safety scanner
→ 2 ° rear SICK safety scanner
→ Reflector navigation
→ Communication module
→ Visual and acoustic warning indicators
→ P & F ultra high definition navigation scanner
→ BECKHOFF touch screen
→ Key switch

## Optional Equipment

→ 3 position tow hook
→ Lithium-ion battery
→ Pure lead battery
→ Automated charging
→ Curtain scanner
→ Blue spot
→ I/O panel
→ Automatic un-hitch

## Other Options Available on Request

# Linde Robotics
# Tractor
**P-MATIC 30/50C - LOAD CAPACITY 3000kg, 5000kg**

## Safety

Adopting SICK safety CPU module and multiple safety scanners, 360° all-round safety protection and 3D obstacle detection can be realised, meeting the requirements of PLd safety level in EN ISO3691-4. Linde Robotics trucks anticipate and react autonomously to their direct environment, to improve efficiency and reduce the need for human intervention.

## Performance

The safety design of Linde Robotics trucks can achieve the maximum forward speed of up to 2m/s, backward speed of up to 0.8m/s and turning speed of up to 0.7m/s. The robot path can be dynamically adjusted subject to its application which can assist in the path planning of complex environments and selecting the right driving path to achieve a greater throughput.

## Flexibility

Linde Robotics trucks are designed to work in a shared environment with humans. The user-friendly interface provides all needed controls and information at a glance. The automatic or manual modes can be switched with the press of one button, the design of which meets the relevant standards.

## Reliability

The Linde Robotics trucks bring together popular Linde manual trucks and intelligent navigation technology. The safety system design meets the requirements of European safety standards, to provide 24/7 operation, high accuracy and reliable automatic logistics handling solutions, which inturn optimises your costs of operation.

## Service

Electrical design modularisation, efficiency in servicing, localised service support and stockholding of vulnerable parts maximise uptime and cost effectiveness. Network access permitting, an AGV system can even be diagnosed remotely via computer.

# Features

## Smart safety

→ 360 ° horizontal safety protection
→ 3D full protection, intelligent area protection
→ Protection area real-time switchover
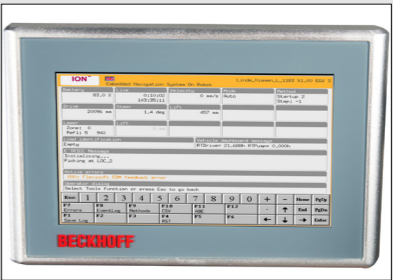→ Meet EN ISO3691-4 safety requirements

## Navigation system

→ Accurate and reliable laser reflector navigation system
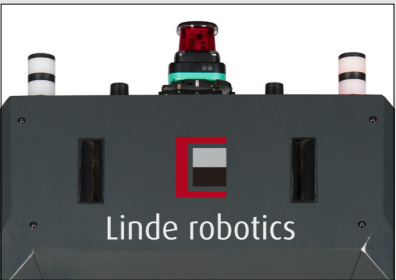→ Ultra high definition navigation scanner

### Dual mode operation

→ Safety mode switch button design
→ Linde control tiller
→ One touch operation for automatic or manual mode

### User interface

→ 7 inch touch screen
→ Vehicle status / alarm indicator
→ Real-time task management
→ Real-time path display
→ Basic parameter setting
→ Fault diagnosis

### Operations management

→ Supports multiple communication protocol interfaces
→ Third-party signal access: safety door / field sensors / photoelectric switch / elevator / mechanical arm, etc.
→ Dynamic path planning to avoid traffic jams caused by hot spots or disabled AGVs

*Subject to modification in the interests of progress, illustrations and technical details not binding for actual constructions and may show the optional equipment.*

# Technical Data

| | | | Linde | Linde |
|---|---|---|---|---|
| | 1.1 | Manufacturer | | |
| Characteristics | 1.2 | Model designation | **P-MATIC 30C** | **P-MATIC 50C** |
| | 1.3 | Power unit | Battery | Battery |
| | 1.4 | Operation | Stand-on | Stand-on |
| | 1.5 | Load capacity | Q (kg) | 3000 | 5000 |
| | 1.7 | Rated drawbar pull | F (n) | 600 [4] | 1000 [4] |
| | 1.9 | Wheelbase | y (mm) | 1049.5 [2] | 1049.5 [2] |
| Weights | 2.1 | Service weight | kg | 1015 | 1015 |
| | 2.3 | Axle load without load, drive/load side | kg | 630/385 | 630/385 |
| Wheels | 3.1 | Tyres, front (drive)/rear (load) C=cushion rubber, P=polyurethane | | P+P/P | P+P/P |
| | 3.2 | Tyre size, front (drive) wheel | mm | Ø254X102 | Ø254X102 |
| | 3.3 | Tyre size, rear (load) wheel | mm | 2 X Ø250X80 | 2 X Ø250X80 |
| | 3.4 | Tyre size, front (castor) wheel | mm | 2 X Ø100X40 | 2 X Ø100X40 |
| | 3.5 | Wheels, number front (drive)/rear (load) (x=driven) | | 1x+2/2 | 1x+2/2 |
| | 3.6 | Track width, front (drive) | b10 (mm) | 544 | 544 |
| | 3.7 | Track width, rear (load) | b11 (mm) | 675 | 675 |
| Dimensions | 4.5 | Height of backrest/seat (min/max) | h7 (mm) | 710/910 [3] | 710/910 [3] |
| | 4.9 | Height of tiller arm in operating position, min/max (±20mm) | h14 (mm) | 1020/1120 | 1020/1120 |
| | 4.12 | Tow coupling height | h10 (mm) | 252 | 252 |
| | 4.17 | Rear overhang | 5 (mm) | 339 | 339 |
| | 4.19 | Overall length | l1 (mm) | 1788 | 1788 |
| | 4.21 | Overall width | b1/b2 | 819/926 | 819/926 |
| | 4.32 | Ground clearance, centre of wheelbase | m2 (mm) | 58 | 58 |
| | 4.35 | Turning radius | Wa (mm) | 1455 [6] | 1455 [6] |
| Performances | 5.1 | Travel speed, with/without load | km/h | 8/8 [6] 7.2/7.2 [7] | 8/8 [6] 7.2/7.2 [7] |
| | 5.3 | Maximum drawbar pull (5 minutes rating) | n | 4000 | 4000 |
| | 5.5 | Drawbar pull (60 minutes rating) | n | 1800 | 1800 |
| | 5.7 | Climbing ability, with/without load, 30 minute rating | % | 22 (2173N) [5] | 22 (2173N) [5] |
| | 5.8 | Maximum climbing ability, with/without load, 5 minute rating | % | 43 [5] | 43 [5] |
| | 5.10 | Service brake | | Electro-magnetic | Electro-magnetic |
| Drive | 6.1 | Drive motor, 60 minute rating | kW | 3 | 3 |
| | 6.3 | Battery according to DIN | | 3Pzs 345 | 3Pzs 345 |
| | 6.4 | Battery voltage/rated capacity (5h) | V/Ah | 24/345 | 24/345 |
| | 6.5 | Battery weight (±5%) | kg | 278.8 [1] | 278.8 [1] |
| Others | 8.1 | Type of drive control | | LAC | LAC |
| | 8.4 | Noise level | dB | <70 | <70 |

Figures for standard version may vary when optional equipment is fitted.

1) With battery item 6.5
2) With battery compartment 3Pzs side removal (+100 mm for 3Pzs vertical removal)
3) 100mm clearance (through an adjustment handle)+100mm (through a fixed adjustment behind the seat)
4) Base on level, dry surface with rolling resistance of 200N/t. Refer to graph opposite for specific operating conditions and when the application involves inclines or ramps
5) AGV needs to be used on flat, level ground, the ground flatness is < = 1%
6) AGV manual mode status
7) AGV mode. This is theoretical, calculated, value. Specific value depends on site implementation

* The actual running speed is dependent on the application and environment