proANT AGVs

proANT
654 Trolley Lifter

proANT 654 Trolley Lifter

The transport robot solution for trolleys and transport carts

The proANT is equipped with a lifting fork which reaches under trolleys (floor rollers) and transport carts and lifts them. Containers, e.g. LLC (large load carriers) can also be lifted if they are put on a transfer station so that proANT can drive underneath. Depending on the load shape, the lifting fork can be designed in different widths.

The Trolley Lifter uses a laser scanner to detect the floor roller and automatically picks it up between the rollers, taking into account any offset and twist.

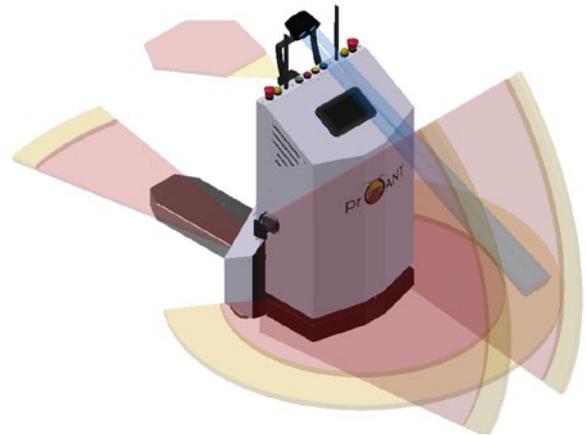| Dimensions (LxWxH)	1.049 mm x 640 mm / 600 mm (with/without side scanner) x 1.167 mm
Laser scanner	S300 von SICK (personal safety)
Load	up to 150 kg/300 kg
Load handling	Underrideable containers, trolleys and carts - max. dimensions 600 mm x 400 mm - ground clearance 115 to 155 mm - wheel distance: min. 225 mm Other container dimensions available on request
Height of load transfer	0 mm (ground); passive load handling with lifting function (max. 60 mm lifting height)
Drive	2 Servo motors, 2 wheels differential drive and 4 free spinning wheels
Speed	forward 1,3 m/s, backward 0,3 m/s
Turning circle	0 mm (turns on the spot)
Positioning accuracy	+/- 1°, +/- 10 mm
Battery	8 cells LiFeYPO4 with balancing board and temperature monitoring, 24 V DC

Load pick up

To pick up the load, the vehicle approaches the trolleys or transport carts and positions itself centrally in front of them. Then it turns 180° on the spot and drives backwards. A laser scanner in the lifting fork monitors the positioning and the vehicle control automatically threads the fork between the rollers of the trolley. A sensor at the front of the load compartment reports the correct load and the fork lifts the trolley until the rollers hang freely.

Safety

The proANT is equipped with a safety laser scanner which constantly scans the environment in the driving direction. Speed-dependent protective fields are defined in the scanner so that the proANT adapts its speed to the environment and always comes to a safe stop.
In the vertical scanner fields of optional side scanners, obstacles above the safety laser scanner are also detected to protect objects against damage..

The proANT transport robots navigate using laser scanners and react to changes in the working environment.
They are safe for persons, bypass obstacles and people independently or decide on alternative routes.
On the basis of a once scanned map of the environment, each transport robot independently calculates the optimal route to the destination

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