

# NATHAN - Modular drive and technology platform for robotic applications



## Controller

The fully programmable controller EM5 with CAN master serves as an interface to ROS and Ethernet. Diagnostic information can be called up on the touchscreen.



- Ideal for prototyping autonomous mobile systems
- Expandable, upgradable, highly flexible
- Max. load capacity up to 100 kg

## Wheel drive

The wheel drive consists of the brushless DC servo motor PD4-E with integrated controller and CAN connection, a GPLEP70 planetary gearbox as well as a mounting flange. The motors are connected to the CAN master of the EM5 and are controlled in real time.



# Technical data

## MECHANICAL PROPERTIES

- Max. load capacity (at least two wheels loaded): 100 kg
- Max. speed: 1 m/s
- Max. acceleration/deceleration: 1 m/s<sup>2</sup>
- Gradeability (with max. load): 5%
- Max. lateral tilt angle: 2°
- Max. obstacle to overcome: 5 mm
- Max. gap to overcome: 20 mm

## ELECTRICAL PROPERTIES

- Rated voltage: 24 V DC
- Permissible voltage: 22...30 V DC
- Max. charging current: 25 A

## WHEEL DRIVE

- Differential drive, consisting of two wheel drives
  - Brushless DC servo motor PD4-E with integrated controller
  - Operating voltage: 12 - 48 V DC ±5%
  - Phase current: 4.2 A rms
  - Holding torque: 1.87 Nm
  - Integrated magnetic single-turn absolute encoder, 1024 pulses/revolution
  - Communication/fieldbus: CANopen
- Precision planetary gearbox GPLEP70-1S-7 with 7:1 reduction
- Wheel made of PEVODYN Soft 78° Shore A with 100 mm outer diameter

## CONTROLLER EM5 WITH CAN MASTER

- Operating voltage: 24 V DC ±25%
- Communication/fieldbus: Ethernet, CANopen (master)
- Configuration interface: USB
- Touchscreen display resolution: 480×272 pixels

## POWER SUPPLY

- Battery not included