

Rexroth NYCe 4000



System



- NYCe 4000 system solution
- Housing, available in different versions
 - Motion controller, network modules, and different drive amplifiers available as slide-in cards
 - High-performance software tools for intuitive programming, simple tuning, and comprehensive diagnosis

Rexroth NYCe 4000 and 4000 LMS

The NYCe 4000 motion control system gives you an unparalleled degree of freedom. Sophisticated hardware designed to handle complex operations combined with open software architecture provides the ideal platform for tailored motion solutions and simple integration into your automation landscape.

NYCe 4000 offers:

- Control with integrated drives
- Control loops with high bandwidth
- Powerful tuning and visualization software
- Open architecture
- Modular and compact design

NYCe 4000 LMS offers:

- Inverted linear motor principle
- Motion even under difficult process conditions
- Stand-alone carrier control
- Carrier tracking

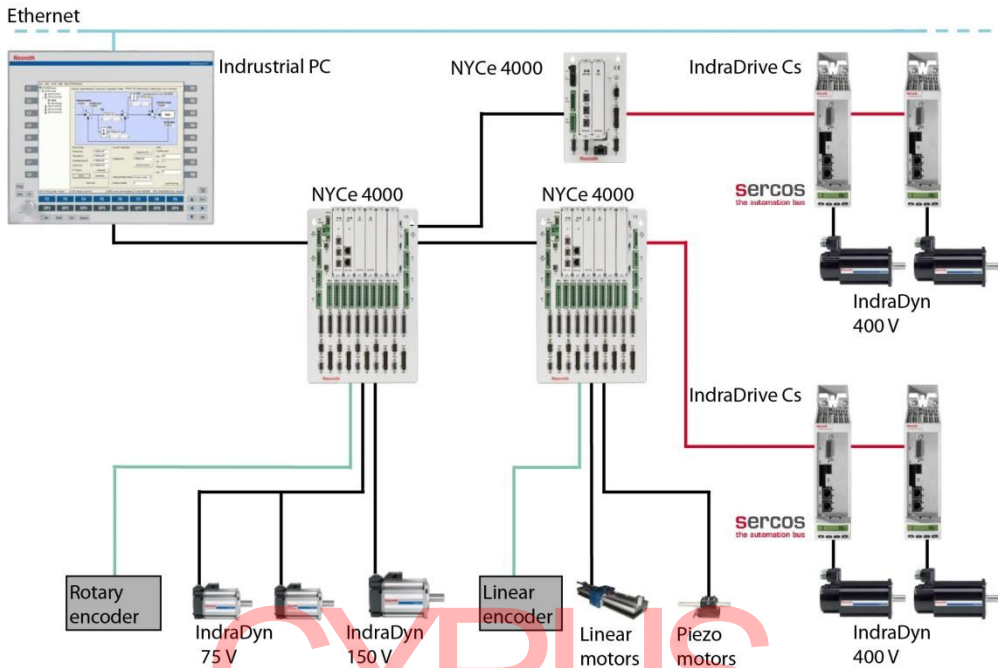
The modular multi-axis controller contains all of the control and drive hardware in an extremely compact housing. High-level programming languages allow you to write complex motion control programs.

Extremely high-speed control loops with 32 kHz bandwidth deliver maximum precision and dynamic performance.

The motion control system can handle up to 120 digital and analog I/Os in parallel in real time. You implement complex process operations on standardized hardware.

Pre-defined software algorithms ensure zero-vibration and zero-backlash.

The open controller architecture gives you complete freedom to define your own customized kinematics. An intuitive, dialog-based user interface with numerous wizards makes development work much easier, simplifying the commissioning process and reducing time to market.



NYCe 4000 system architecture

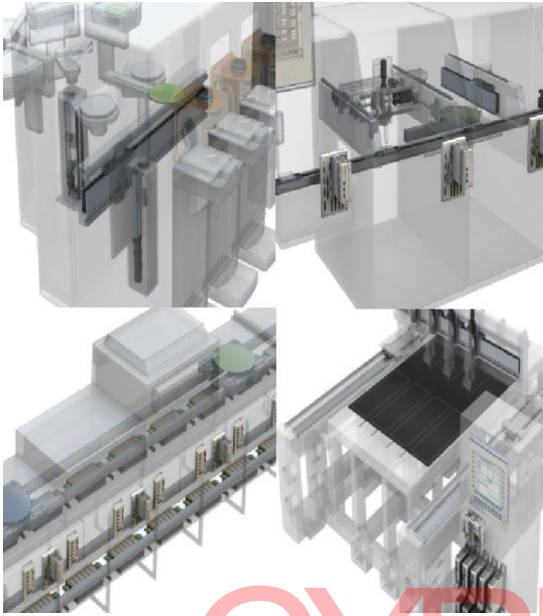
- With industrial PC as master
- Up to 62 nodes are possible in one configuration
- Support of various motor and encoder types
- With integrated drive electronics for motors < 1 kW
- Control of external drive controllers for motors > 1 kW via Ethernet-based real-time bus Sercos III

The NYCe 4000's system architecture allows you to make any adjustments based on your requirements. The modular hardware enables quick, error-free system integration. The controller master is a standard industrial PC.

The subordinate motion control units support a wide range of motors and encoders. Programming the system is simple using standard building blocks.

For specific applications you can build your own application supported by a wide range of tools.

Applications



Typical applications for NYCe 4000 systems

- Front-end semiconductor production
- Back-end semiconductor production
- Test and inspection systems for semiconductors
- MEMS/microsystem technology
- Solar cell production
- Flat screen production
- Special tool machines
- Special robots
- Assembly and configuration of electronic components
- Surface treatment

The Rexroth NYCe 4000 motion control system is designed for applications with low-voltage servo and stepper motor axes up to 150 V demanding high motion control performance, such as applications in the semiconductor industry, medicinal technology, solar cell and flat screen production requiring above all speed and precision, as well as efficiency and a short time-to-market.

Linear conveyor systems in solar cell production

For machines in solar cell production, parts must be transported from one process station to the next separately in a vacuum. Applying the principle of the inverted linear motor, Rexroth developed the linear motion system (LMS), where the NYCe 4000 plays a crucial role. A separate drive for each individual workpiece pallet and processing of the positional data captured by Hall sensors enables high precision movements at high speeds.

Test and inspection systems for semiconductors

Controlling a positioning table in a vacuum, for example inside an electron microscope, requires highly precise positioning in combination with fast feed movements, as well as constant ultra-low speed feed movements. Specific control algorithms are integrated into the NYCe 4000 for piezo motor control.

Back-end semiconductor production (die-bonding/die-bumping)

Die-bonding, die-attach, and especially die-bumping applications require highly precise positioning.

NYCe 4000 offers high-precision positioning with maximum dynamics and very sensitive force control, along with adjustable positioning forces for different motors.

Housing

| Description | Page | Details |
|-------------|---------------------------|---------------------|
| NYCe 4000 | Housing for one module | NY4013 |
| NYCe 4000 | Housing for two modules | NY4023 |
| NYCe 4000 | Housing for three modules | NY4033 |
| NYCe 4000 | Housing for four modules | NY4043 |
| NYCe 4000 | Housing for five modules | NY4053 |
| NYCe 4000 | Housing for three modules | NY4063 |
| NYCe 4000 | Housing for two modules | NY4073 |
| NYCe 4000 | Housing for one module | NY4078 NYCe 4000 |

Slide-in modules

| Description | Page | Details |
|-----------------|--------------------------|-----------|
| Control modules | MCU with FireWire | NY4110 |
| Control modules | MCU with Ethernet | NY4112 |
| Drive modules | PWM drive | NY4120 |
| Drive modules | PWM drive | NY4120/10 |
| Drive modules | PWM drive | NY4125 |
| Drive modules | DC drive | NY4130 |
| Drive modules | PWM high voltage drive | NY4140 |
| Drive modules | I/O extension | NY4160 |
| Drive modules | Sercos III master module | NY4150/10 |

Accessories for drive modules

| Description | Page | Details |
|-------------------------------|--------------------------------------|-----------|
| Accessories for drive modules | Multiplexer for linear motion system | NY4960/10 |
| Accessories for drive modules | SinCos option module | NY4199 |

Software

| Description | Page |
|--------------------|--------------------|
| NYCe 4000 software | NYCe 4000 software |

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