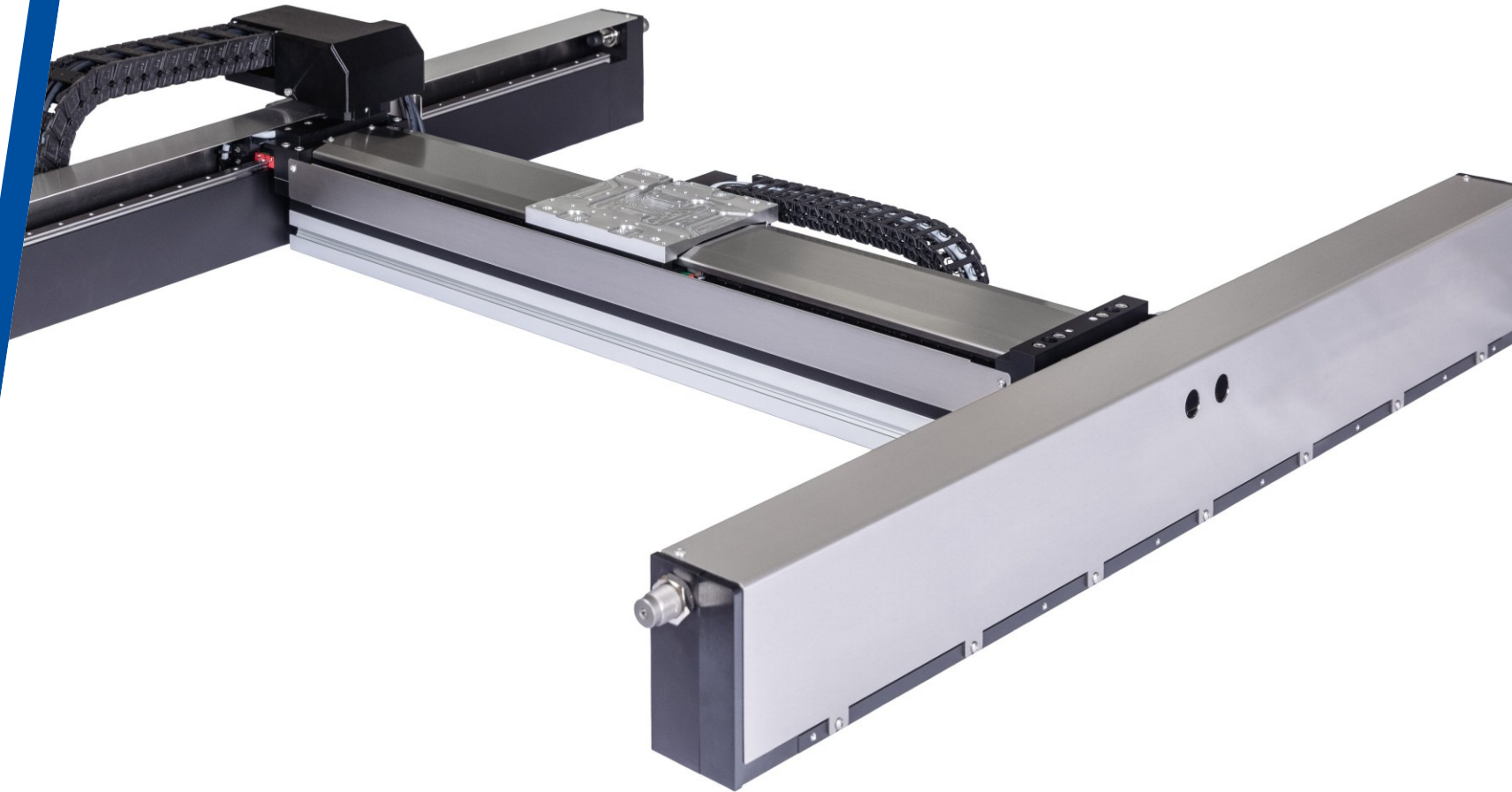


PHYSIK INSTRUMENTE

X-365 Precision XY Gantry System



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02.03.2026

Technology & Features Overview

X-365: A gantry mechanics based on industry-proven & enhanced technology

- Modular XY gantry system **based on industry-proven standard components**, providing
- **Various travel ranges and configurations** for specific application requirements
- High-performance **ironless linear motors** for cogging-free motion
- **Absolute encoders** for accurate position feedback without the need for referencing
- **Precision recirculating ball bearing guides** for highest stiffness and flatness
- Thermally **decoupled** components
- Comprehensive service offerings: **R-ENG-GA On-site Gantry Axes Alignment Service** in addition to the established PI service offerings



Applications & Market Areas

Designed for **industrial automation and precision manufacturing**, the X-365 Modular Gantry Platform adapts seamlessly to diverse applications, enhancing productivity and reliability across:

- Advanced Manufacturing
 - Parts manipulation
 - Pick & place applications
 - Camera placement
 - Additive and Electronics manufacturing
- Test and Inspection
 - 2D Profiling, 3D Profiling
- Laser Material Processing
 - Cutting, Welding



X-365 addresses the needs in these markets:

- ✓ Ultimate flexibility instead ready machine
- ✓ Fast availability
- ✓ at reasonable cost

Motion Specifications

Verified performance

Specification		Unit	Comments
Load capacity	15	kg	Max.
Travel range X	200, 400, 600, 800	mm	X: gantry axis
Travel range Y	200, 400, 600	mm	Y: bridge axis
Velocity X max.	2.0 / 1.4	m/s	Unloaded / with max. load 15 kg. With G-901.RA5486B
Velocity Y max.	2.5 / 1.2	m/s	Unloaded / with max. load 15 kg. With G-901.RA5486B
Acceleration X max.	1.5 / 1.0	g	Unloaded / with max. load 15 kg
Acceleration Y max.	2.5 / 1.2	g	Unloaded / with max. load 15 kg
Bidirectional Repeatability, X & Y	±0.5	µm	Per axis
Accuracy calibrated, X & Y	±1	µm	Per axis. Achieved by 1D mapping of the X and Y axis
Minimum Incremental Motion X & Y	0.1	µm	
Peak force X	430	N	With max. load 15 kg
Peak force Y	260	N	With max. load 15 kg
Orthogonality X to Y	<35	µrad	
Encoder type	Absolute		Resolution 1 nm. Avoids collisions on startup due to referencing
Yaw control (ΘZ)	Yaw control is done by the controller for achieving the orthogonality specification. It is not accessible to the customer.		

Modules, Options & Configurations

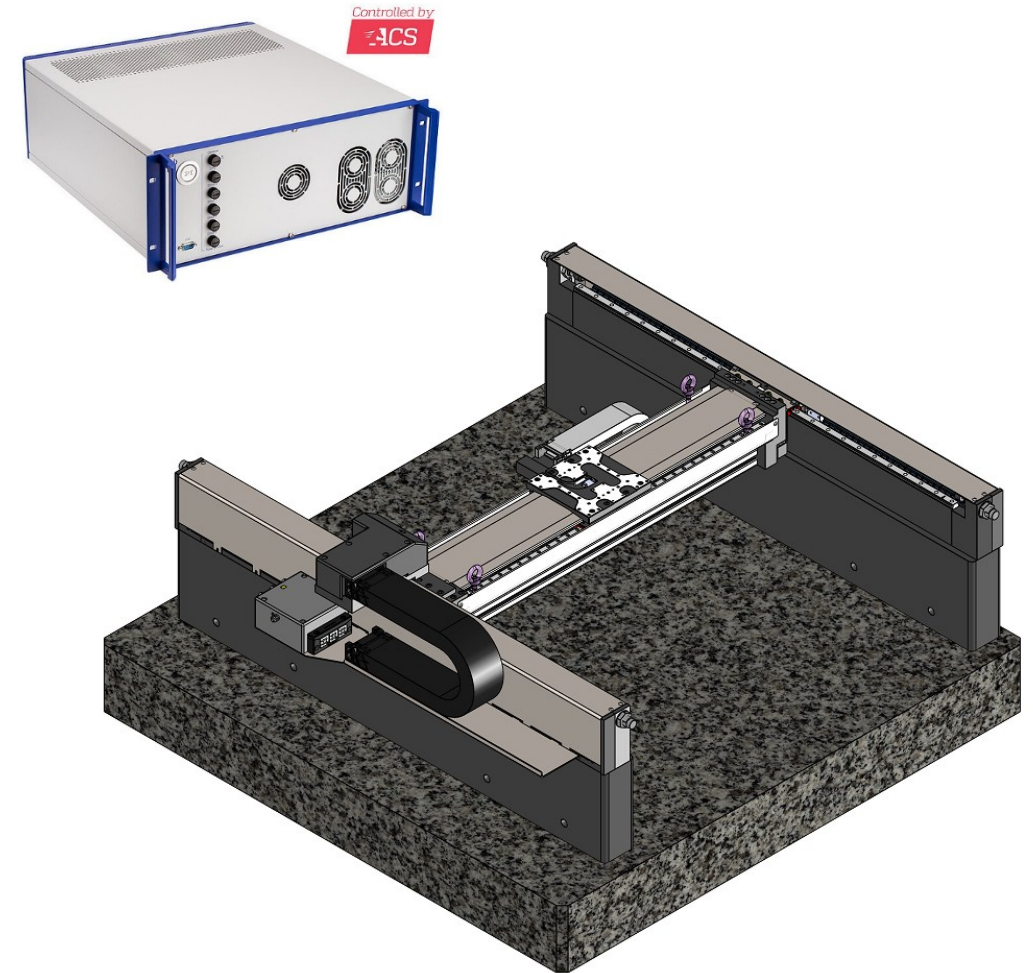
Controls & Accessories

Travel ranges:

- X-axis: 200, 400, 600, 800 mm
- Y-axis: 200, 400, 600 mm
- Surfaces anodized/blank
- Y-axis and platform horizontal/vertical
- Variations of carrier plate (none, standard, custom)
- Side covers for debris protection

Options:

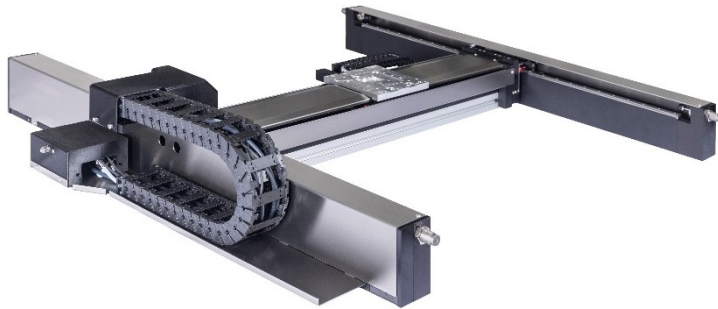
- **base granite or tooling plate**
- **spacers from granite or Aluminum**
- **ACS controller & PI cabling**
- **On-site axes alignment service**



Summary X-365

ILLUSTRATION

Stand-alone, as a system or as part of the application?



UVP

Unique value proposition

- Rapid automation of manufacturing processes by partly customizable gantries from stock
- Sustainable usage of existing support platforms (granite) at the customer by broad integratability
- Reliable even in harsh environments by optional debris protection

DESCRIPTION

Product description and scope



- X-365 extends the PI portfolio with a standardized modular precision XY gantry system
- As a BM1 product, it is cheaper and has a shorter lead time compared to customized systems

Scope of delivery:

- X-365: XY gantry system
- Controller & cabling (to be purchased seperately)
- Granite or Aluminum tooling plate (optional)
- R-ENG-GA on-site alignment service (optional)

APPLICATION

Market areas and use cases



- Advanced Manufacturing
 - Parts manipulation
 - Pick & Place
 - Camera placement
 - Additive and Electronics manufacturing
- Test and Inspection
 - 2D Profiling, 3D Profiling
- Laser Material Processing
 - Cutting, Welding

HIGHLIGHTS



Key Features

- Modular XY gantry system based on standard components
- Various travel ranges and configurations for specific application requirements
- High-performance ironless linear motors for cogging-free motion
- Absolute encoders for accurate position feedback without the need for referencing
- Precision recirculating ball bearing guides for highest stiffness and flatness
- Thermally decoupled components
- Comprehensive service offerings: R-ENG-GA On-site Gantry Alignment Service in addition to the established PI service offerings

USP

Unique selling proposition

- Standard product: best-in-class price and lead time
- Best-in-class availability of configurable variants
- Highest flexibility by using standardized components
- Excellent performance of a system with linear motor and absolute encoders
- Broadest service offering:
 - Highest precision by optional on-site alignment of X-axes parallelism
 - Extensive support and trust by optional remote or on-site trainings

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