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EAGLE™ R6

Accuracy. Speed. Repeatability.
Motion Control Solutions for CMMs

EAGLE™ R6

The EAGLE™ R6 is the sixth generation of our well-established and successful motion controller family for a variety of coordinate measuring machines. EAGLE™ R6 combines proven technics with the latest state of the art technology, resulting in a high-end and smart controller solution. The separation of complex logic and application dependent interfaces ensures maximum speed, exceptional machine throughput, and accurate measuring results. The EAGLE™ R6 ensures full backwards compatibility to all EAGLE™ controllers, making an upgrade to the newest generation easy and simple.

- Ultrafast data processing for best touched and scanned probing performance
- Geometric Error Compensation integrated in controller
- Certified software and hardware for safety features
- Backward compatibility with all EAGLE™ controllers
- EtherCAT® Master[1] for advanced automation systems

EAGLE™ R6 PRO SERIES

EAGLE™ R6 pro/3
The EAGLE™ R6 pro series are high-end controller systems with very high flexibility and unlimited measuring volume. The application can be extended easily by using soft-key or pluggable optional hardware boards.

EAGLE™ R6 pro/4
For machine types like gantry or CMMs with rotary table, the EAGLE™ R6 pro/4 is the ideal solution for complex metrology applications. It is equipped with an additional motor output to control up to four axes.

EAGLE™ R6 pro/4 HP
The HP variant controls up to four axes and delivers 1000 W power in total, making the EAGLE™ R6 pro/4 HP ideal for high power-demanding systems.
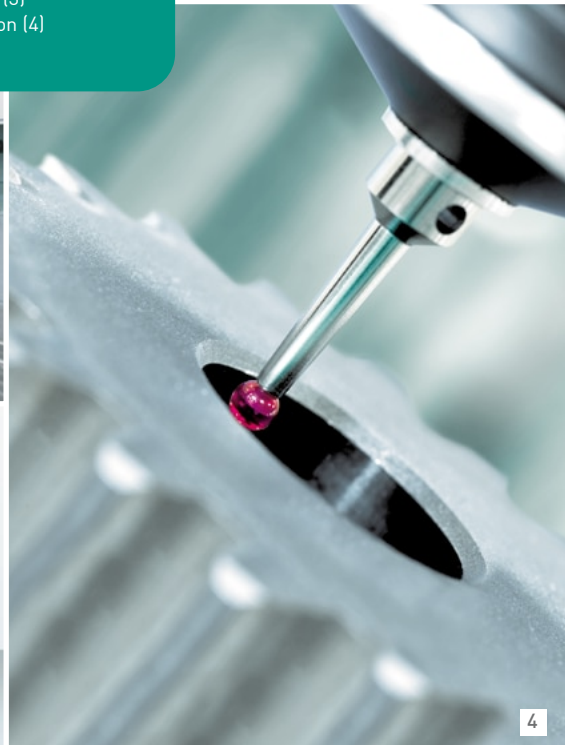
EAGLE™ R6 – DESIGNED TO SUPPORT YOUR SUCCESS

GEOMETRIC ERROR COMPENSATION (GEC)

Geometric Error Compensation is one of the key technologies for operation of Coordinate Measurement Machines. GEC ensures a high accuracy of measurements with compensation of inherent geometric and thermally induced errors in CMMs. All compensation calculations are included in the Pantec EAGLE™ R6 controller and can be enabled via softkey. For convenience and ease of use, the entire error map gathering and GEC configuration procedure is done over the GEC Wizard in the Pantec Support Tool.

APPLICATIONS
- Bridge CMMs (1)
- Horizontal arm CMMs (2)
- Gantry CMMs (3)
- Gear inspection (4)
- Milling

PROBEPOINT PLUS

EAGLE™ R6 provides enhanced scan performance, with samples containing fully calibrated probe deflections and interpolated motor positions. These samples deliver probed points at rates of up to 32kSps. Various trigger input sources for different probe types boost the scope of the EAGLE™ R6 for demanding measuring applications. Single probed point measurements with scanning probes are optimized by hardware accelerated probe deflection matrix calculations. The oscilloscope function, included in Pantec Support Tool, delivers data for analysis of machine conditions during measurement tasks. It offers new optimization methods and maximizes CMM performance.

SUPPORT TOOL

Support Tool is a PC based program for commissioning and servicing of Pantec controllers and connected devices aimed at technician's level. It provides a multiwindow graphical user interface with a wide range of toolboxes, that simplify the controller's configuration and diagnosis in an intuitive and user friendly way. The guided step-by-step wizard toolbox is very useful for first start-up or upgrading systems. It accompanies the user through the parametrization and functionality checks throughout the process. Additional toolboxes are available for geometrical and thermal compensation (GEC) or probe calibration (TP/SP).

HAND TERMINAL DEVICE

The EAGLE™ Pad and the EAGLE™ Pad RC hand terminal devices are intended for the use with the entire Pantec controller range. Enclosed in a rugged lightweight housing, these devices offer an exceptional performance, ergonomic design and high functionality – even under challenging operating conditions like manufacturing environments.

EAGLE™ Pad
. Robust and reliable
. Economical standard solution
. Proven technology
. Ergonomic design, intuitive operation

EAGLE™ Pad RC
. Wireless connection

...Coming soon

EAGLE™ Pad – hand terminal

Unquestionably easy to command on a robust and reliable enclosure. Its proven technology, ergonomic design and intuitive use make the EAGLE™ Pad the economical standard solution for operation of all EAGLE™ controllers.

EAGLE™ Pad RC – hand terminal remote control

The EAGLE™ Pad RC, with its integrated battery and wireless module, communicates with the controller wirelessly and offers similar functionality as the cable variant. It allows for remote control of the machine from a longer distance and freedom of handling without an attached cable. A safety performance level D is achieved with this device.

Technical Specifications

Specifications	EAGLE™ R6 pro/3	EAGLE™ R6 pro/4	EAGLE™ R6 pro/4 HP
Configured for direct CNC controlled CMMs	✓	✓	✓
Number of CMM axes controlled	3	4	4
Communications link with PC	Gigabit Ethernet	Gigabit Ethernet	Gigabit Ethernet
Direct Software integration	EAGLE.driver	EAGLE.driver	EAGLE.driver
Integrated motor power supply	✓	✓	✓
Emergency stop SS1 PL d, Kat. 3	✓ extended	✓ extended	✓ extended
Drive power	5A / 60V	5A / 60V	5A / 120V
Motor types	DC-Brush	DC-Brush	DC-Brush
Touch-trigger probing function	✓	✓	✓
Probepoint Plus	✓	✓	✓
Temperature sensor inputs (T-Bus™)	16	16	16
Digital scale input RS422	✓	✓	✓
Subcount interpolation	✓	✓	✓
Absolute encoder interface	✓	✓	✓
Configuration over USB (e.g. firmware update)	✓	✓	✓
Measurement volume	unlimited	unlimited	unlimited
Distance-coded reference mark support	✓	✓	✓
Pantec Support Tool	✓	✓	✓

Electrical data			
Nominal input power	500 VA	500 VA	1100 VA
Input voltage	115 VAC / 230 VAC	115 VAC / 230 VAC	115 VAC / 230 VAC

Physical data			
Dimension (L x H x D)	490 x 135 x 380 mm	490 x 135 x 380 mm	490 x 135 x 380 mm
Weight	20 kg	20 kg	25 kg
Rack mounting	19″	19″	19″

Product configuration	230 VAC	115 VAC
EAGLE™ R6 pro/3	55605	55606
EAGLE™ R6 pro/4	55607	55610
EAGLE™ R6 pro/4 HP	55611	55612

HW - Options	
SP25/600 Interface	33506
SP80 Interface	33507
SP25/80/600/PHS Interface	33508
TP200 Interface	34478
Analog Interface ±10V	34480
SP25/80/600/PHS, Analog Interface	34481
Brushless Axis with Scan Interface	55598
Brushless Axis	55599

Softkey - Options	
SP25/SP600 interface	80520
Optical Probe Interface	80521
EtherCAT® Master[1]	80522
GEC Basic (integrated in the controller)	80523
GEC Full (integrated in the controller)	80524

[1] EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

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Pantec Metrology, located in Ruggell, Liechtenstein, develops technologies that make CMM and vision systems more competitive. With an installed base of more than 15,000 CMM controllers worldwide, the company plays a leading role in the field of CMM machine control. Pantec Metrology is a Business Unit of Pantec Engineering AG.

Pantec Engineering AG provides solutions in automation and mechatronics for the mechanical engineering and medical device industries worldwide. Through its rigorous focus on niche strategies and high degree of service orientation, the company has become a world leader in its five primary markets.

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