pantec

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 (CMM). 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.

With the support of most metrology software solutions and CMM hardware, the EAGLE™ R6 offers an open and independent solution, that adapts to your situation and not the other way around.

- Ultrafast data processing for best touched and scanned probing performance
- Certified software and hardware for safety features
- Backward compatibility with all EAGLE™ controllers
- Comprehensive support of metrology software solutions and hardware components
- Simple and fast feature upgrade with license keys or option boards
- Geometric Error Compensation integrated in controller
- EtherCAT® Master[1] for advanced automation systems
- Support of incremental and absolute encoders

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

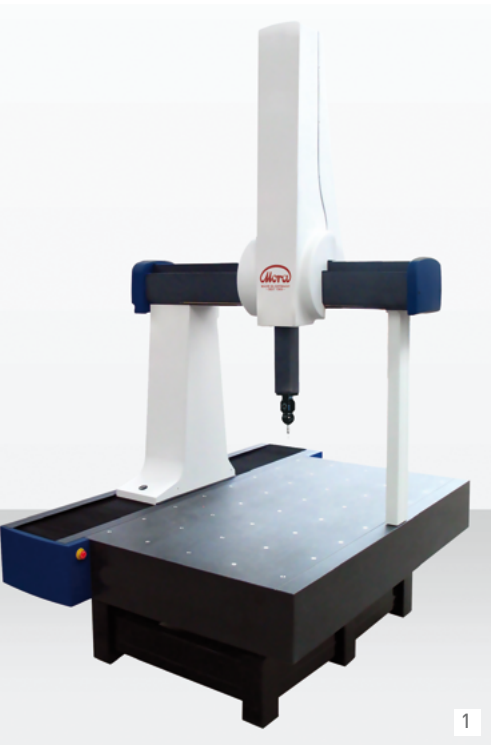## VERSATILE HARD- AND SOFTWARE INTERFACES

EAGLE™ R6 is an open controller system towards measurement software as well as to the machine. Pantec Metrology cooperates with most of the measurement software vendors to have a direct interface between software and controller. This guarantees highest communication performance which results in an excellent machine performance. On the machine side EAGLE™ R6 is ranging from small and medium sized CMMs up to big gantry machines with dual drive. So EAGLE™ R6 is the ultimate hub to migrate different types of CMMs to your preferred metrology software.

CMM UPGRADE VIA LICENSE KEYS

Using software license keys, the EAGLE™ R6 offers extended functionality and improved measurement accuracy. Through a quick and simple upgrade process, these license keys allow to customize and upgrade the CMM's performance in minutes, without complicated hardware replacement. With this solution you can focus on today's requirements and minimize your initial investment while keeping the option open for future feature upgrades and enhancements.

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

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 calculated internally by the Pantec EAGLE™ R6 controller. The GEC is available as a basic or full version. The GEC basic, which compensates for 3 linearity and 3 squareness errors as well as temperature influences, is included in all EAGLE™ R6 controllers. The comprehensive GEC full, which compensates for 21 parameters (9 linearity, 9 rotation and 3 squareness) and temperature influences, is optionally available via license key. 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.

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 DATA

	EAGLE™ R6 pro/3	EAGLE™ R6 pro/4	EAGLE™ R6 pro/4 HP
Specifications			
• 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
• Emergency stop SS1 PL d, Kat. 3	✓ extended	✓ extended	✓ extended
• Integrated motor power supply	✓	✓	✓
• Drive power	5 A / 60 V	5 A / 60 V	5 A / 120 V
• Total drive output power (5 A, PWM 96 kHz)	425 W	425 W	820 W
• Motor types	DC-Brush	DC-Brush	DC-Brush
• Touch-trigger probing function	✓	✓	✓
• Probe point sample rate	up to 4 kHz	up to 4 kHz	up to 4 kHz
• Temperature sensor inputs (T-Bus™)	16	16	16
• Digital scale input RS422	✓	✓	✓
• Subcount interpolation	✓	✓	✓
• Absolute encoder interface (BiSS-C, EnDat 2.2)	✓	✓	✓
• Configuration over USB (e.g. firmware update)	✓	✓	✓
• Measurement volume	unlimited	unlimited	unlimited
• Distance-coded reference mark support	✓	✓	✓
• GEC Basic (integrated in the controller)	✓	✓	✓
• Pantec Support.Tool	✓	✓	✓
Electrical data			
• Total input power (115 VAC / 230 VAC)	900 VA / 1250 VA	900 VA / 1250 VA	1150 VA / 1800 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	13 kg	13 kg	18,5 kg
• Rack mounting	19" / 3U	19" / 3U	19" / 3U

Product configuration	230 VAC	115 VAC
• EAGLE™ R6 pro/3	55605	55606
• EAGLE™ R6 pro/4	55609	55610
• EAGLE™ R6 pro/4 HP	55611	55612

Hand terminals	
• EAGLE™ Pad	34530
• EAGLE™ Pad RC	on request

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

License key - Options	
• SP25/SP600 Interface	80520
• Optical Probe Interface	80521
• EtherCAT® Master[1]	80522
• GEC Full (integrated in the controller)	80524
• IIoT Interface	80525

[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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