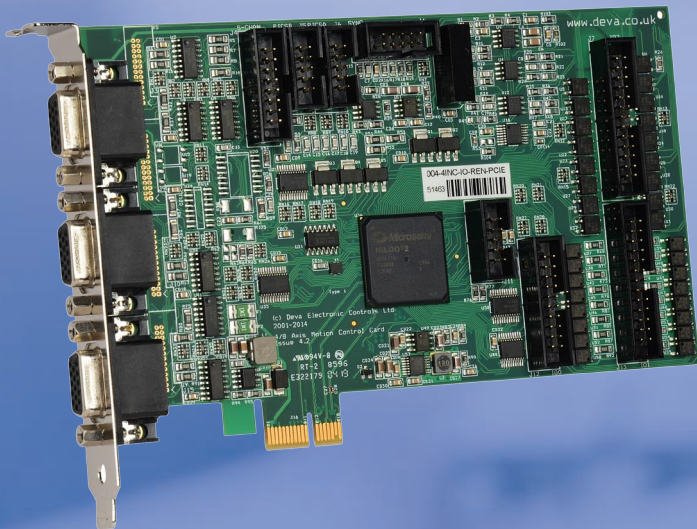**deva**
ELECTRONIC CONTROLS

AUTOMATIC CMM SOLUTIONS

4/8 AXIS PCI EXPRESS CMM CONTROLLER

FEATURES:

- 4/8 axes of servo control
- High performance: cost ratio
- Linear, circular, helical & spherical interpolation
- 16/12 opto-isolated digital inputs & out puts
- Fully featured integrated probe cycles
- Comprehensive axis and move status monitoring
- Joystick probe protection mode
- Renishaw PICS A and PICS B connections
- Comprehensive user manual
- Support & demonstration software

APPLICATIONS:

- Fully automatic co-ordinate measuring machines
- Automatic measuring systems
- CNC inspection equipment
- Automatic quality control systems

ORDER CODE:

004-4INC-IO-REN-PCIE

SEE WEBSITE FOR ALL PRODUCT OPTIONS

DESCRIPTION:

4/8 AXIS PCI EXPRESS CMM CONTROLLER

4/8 AXIS PCI EXPRESS CMM CONTROLLER

The Deva PCI CMM Controller is designed to meet the demanding requirements of the OEM and retrofit co-ordinate measuring machine market. This objective has been achieved on a single PCIe interface card which integrates digital IO, a Renishaw touch probe interface and fully featured probe cycle library.

Incorporating high speed, closed loop axis control within the PC allows a highly cost effective CMM solution. On board signal conditioning circuitry ensures high precision, position measurement so that external probe conditioning equipment is no longer needed.

An ActiveX control encapsulates the functionality required by CNC CMM applications in a fast, easy to use component that is compatible with rapid application development tools such as Visual Basic, Visual 'C' and DotNET. Example source code demonstrates the capabilities of the ActiveX, which is also compatible with many popular 3rd party CMM software packages. Axis tuning and jogging facilities are provided for easy machine setup.

Plug 'n' Play software support for 32 bit and 64 bit versions of Windows XP, 7, 8 and 10 enables simple installation and automatic configuration of multiple controllers supporting a total of 16 axes.

SPECIFICATION:

Format	3.3v PCIe 2.0 compliant
Base address	4K memory space
Interrupts	1
No. of axes	4 to 8 axis
Counter size / rate	20 bit / 10 MHz
Encoder supply	Fused +5V & +12V
Encoder connection	RS422 or TTL single-ended
Analog outputs	±10V, 16 bit single ended
Axis inputs	RS422 or TTL marker & probe
Axis outputs	Opto-isolated servo enable
Digital inputs	16 x opto-isolated
Digital outputs	16 x opto-isolated MOSFET
Weight	160g
Size	175mm x 125mm

OPERATION

A closed loop controller with PID and velocity feed forward terms maintains control of axis position by continually monitoring axis position and updating axis speed. Axis speed is set using high resolution ±10V analog outputs connected to the speed reference input of the axis drive amplifier, whilst axis position is derived using industry standard incremental encoders. On board timer interrupt logic ensures that axis update rates of typically 1kHz are achieved. Simple mnemonics identify axis configuration parameters and permit rapid tuning of the servo control loop.

SOFTWARE FEATURES

- Fully featured and configurable probing cycles and probe protection
- Linear, circular, spherical and vector motions
- Blending of positioning and probing motions reduces cycle times
- Independent 'S' curve acceleration parameters for positioning and probing motions
- 3 axis joystick support with axis lock and probe point facilities
- Configurable axis datum cycles
- Easy IO integration
- Up and running fast with the integral control panel
- Simple software integration through an event driven interface
- Comprehensive Visual 'C' and Visual Basic support
- Supported by many popular 3rd party CMM software packages

HARDWARE FEATURES

- Compatibility with all Renishaw PICS based probe systems
- 3 stage digital filters ensure reliable operation in harsh environments
- Pulse generator can trigger an event every 'n' counts of an encoder
- Time stamper can latch the time when an event occurs
- Axis comparator can trigger an event when an axis reaches a pre-programmed value
- Sync connector allows synchronisation between multiple cards
- Support for differential or single ended input configurations RS422, NPN, PNP and TTL
- Single lane PCIe expansion slot to ensure fast read / write access cycles
- 16 opto-isolated digital inputs allowing the sensing of switches and sensors around a system such as emergency stop and over-travel switches
- 16 opto-isolated outputs including 4 servo enable outputs give the ability to control other devices

QUALITY

We aim to provide our customers with the highest quality products and customer support. Our team of experienced engineers are available to discuss your specific applications.

To ensure the user is up and running in the shortest possible time, our products are supplied with comprehensive manuals, demonstration software and all required connectors and shells.

We products are designed and manufactured in the UK and include a 36 month, no quibble warranty.

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