

DIGITAL CONTROL SYSTEM FOR KINETO (KTM) AND OTHER TRACKING MOUNTS

THE DIGITAL CONTROL SYSTEM INCLUDES:

- Closed Loop Position Control
- Advanced servo loop control with command generator and state observer for optimized tracking
- High-speed communications for remote control via Ethernet communications
- Analog rate command via joystick, stiff stick, or external computer is standard
- IRIG-B time synchronization available
- Software Tool Box provided for mount analysis and tuning
- Built-in Test (BIT), data logging and function generator
- Built-in data logging allows postprocessing analysis of performance
- Highly reliable digital architecture with EPLD executed safety functions
- Detailed installation documentation
- Field proven installations on KTMs, Cinetheodolites, Optical Tracking Mounts and Antenna Tracking Mounts

SINGLE STATION CONTROL, HIGH ACCURACY, AND RELIABILITY

The Digital Control System provides additional functionality necessary to eliminate legacy closed loop position control systems while upgrading the Servo Power Amplifier Chassis and Encoder Chassis. This system is implemented with a compact, high reliability architecture using a CPU and the QNX real-time operating system.

The Digital Control System is backward-compatible with the present Encoder chassis (P/N 712450-1) and Servo/Power Amplifier chassis (P/N 712448-1) as specified in the WSMR purchase description PD-2372-94C dated November 15, 1995. Mating connectors are supplied.



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THE SERVO SYSTEM SOFTWARE ANALYSIS TOOL BOX ENABLES THE FIELD TECHNICIAN TO TUNE THE SERVO SYSTEM BY OPTIMIZING SYSTEM BANDWIDTH, FILTER PLACEMENT, AND TIME RESPONSE.

BUILT-IN FUNCTION GENERATORS INCLUDE STEP/RAMP/WHITE NOISE INPUT FUNCTIONS TO DETERMINE PLANT AND SYSTEM FREQUENCY RESPONSE, TO CHECK THE TIME RESPONSE, AND TO VALIDATE THE COMPENSATION.

DIGITAL CONTROL SYSTEM FEATURES

HIGH-PERFORMANCE SERVO CONTROL

- Advanced dynamic filter and state variable estimator design for enhanced noise/spurious signal rejection
- Up to 1000 Hz servo loop update rate for high BW servos and excellent disturbance rejection
- Position output asynchronous for precision axis data collection and video/film annotation
- QNX real-time operating system
- Axis Converter Module (ACM), pedestal mounted, provides lower noise resolver and Inductosyn signals and higher accuracy encoded data

SERVO SYSTEM SOFTWARE ANALYSIS TOOL BOX

- Optimize loop control and bandwidth with software test functions, data collection, and data reduction
- Detect and compensate for mount, payload, and structural resonances
- GUI design and analysis tools generate desired low-pass, and notch filter coefficients (5 filters/axis)

STAND-ALONE/REMOTE CAPABILITY

- Full-range network designation and reporting capability
- High-speed communications; Ethernet interface is standard

MAINTENANCE-FRIENDLY ARCHITECTURE

- Text-based configuration files
- Built-in data-logger and virtual test instruments
- Extensive BIT/self-test capabilities

OPTIONS AND EXPANDABILITY

- Automatic video tracker option with compensator
- Communication via copper, fiber-optic, or microwave channels
- Deterministic error correction option improves accuracy and jitter beyond basic specifications
- Custom user interface/GUI option
- Single station remote operation control console
- Internal GPS position and timing card

FULLY CUSTOMIZED SOLUTIONS

- L-3 Brashear custom products range from a basic controller to multiple networked pedestals with a local/remote real-time TSPI processing station



Rear View

Brashear

615 Epsilon Drive
Pittsburgh, PA 15238
Tel : 412-967-7700
Fax: 412-967-7973
www.L-3Com.com/Brashear



communications

Brashear

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