INERTIA
Product
Test Systems

genuen
ideas taking flight

INERTIA™

Real-Time Control System

Overview

A powerful, real-time control system, *INERTIA* combines the latest in digital control technology with off-the-shelf hardware to produce one of the industry's most powerful, flexible and advanced controllers at a cost effective price.

INERTIA control systems offer a flexible environment for completely defining and redefining your test environment - from user defined alarm procedures, test procedures, and block cycle generators to custom screens, database interfaces, and remote system monitoring.

System capabilities range from simple single axis control systems to multiple, multi-axis control systems. Whether your needs are for a single axis servohydraulic controller, a full engine dynamometer test cell controller or an advanced controller that provides model based control, an *INERTIA* system can meet your requirements.

For integrators and OEMs, *INERTIA* systems can be customized to fit your product needs with little up front cost and minimal risk while benefiting from a stable and powerful platform.

Applications

Durability Testing
Fatigue Testing
Block Cycling
Performance Testing
Quality Audit
Production Test
Engine Dynamometers
Chassis Dynamometers
Load Frame Controllers
Servohydraulic Controllers
Powertrain Dynamometers
Gearbox Testers

SPECIFICATIONS

Parameter		INERTIATM RT Base	Optional
PIDF Control	Control/Output Channels	Unlimited[i]	
	Loop Rates[i]	2 kHz 6 kHz	
	Output Drive	±10 V, ±100 mA	4-20 mA, Custom
	Gain Parameters	Proportional, Integral, Derivative, Feedforward	Model Based Control
	Compensation	Amplitude Control	Phase Compensation
Data Acquisition[ii]	Resolution	16-bit	18-bit
	Sample Rates	2 kHz	6 kHz
	Range	Voltage, current, strain gauge, AC LVDT, IEPE, Frequency, digital, thermocouple	
	Number of Channels	up to 512	up to 8,000
	Digital Filtering	Per channel	
	Calculated Channels	User defined numeric functions of any variable	
Operator PC Interface	Network Connection	Ethernet RJ45	
	Operating System	Windows XP Pro (Recommended)	
	Drivers	National Instruments LabVIEW Run Time v7.1 & MAX (included)	
	Utilities	PID Tuning, Data Reporting, Test Editor, User Administration, Screen Editor, Error Monitor, Alarm Monitor	
	Operator Screens	Unlimited number of user customizable screens with dialog driven configuration	
Test Generation	Waveform	Sine wave, Triangle, Square, Haversine, Ramps, Holds, Point Playback	
	Number of Channels	Unlimited[i]	
	Frequency Range	0.0001 Hz to 200 Hz	600 Hz Custom Steps
	Custom Steps	Conditional profile branching, Discrete	

		parameter adjustment	
Data Logging	Number of Log Files	8 independent	
	File Formats	ASCII, TDMS, ATF	Diadem
	Data Rates	Up To Maximum Acquisition Rate	
	Triggering Modes	Periodic Time, Periodic Cycles, Crash, In-Limit, Out-of-Limit	
	Trigger Channel	Any System Variable	

[i] Actual loop rates determined by system's channel count and processor options
[ii] Data acquisition channel types and number of total channels based on specific configuration

Sample Screen Images