

Profile

PRODUCT



Overview

Smart Power is a digital power management system built into the power stage of the Bulletin 1394 Digital, AC, Multi-Axis Motion Control System. The Smart Power micro-controller works hand-in-hand with the motion and axis micro-controllers measuring and controlling various power-related portions of the drive operation such as soft-start, regeneration, and motor power use.

Features

The Smart Power System provides the following features:

- ◆ Advanced, real time, thermal modeling of critical power circuits
- ◆ Digital setup and control for soft start, regeneration, and power management
- ◆ Assessment and optimization of system power usage
- ◆ Micro-processor-based design replaces analog functions
- ◆ Power usage information is available in readable as well as control network format
- ◆ Easy to use (% of capacity) format

The Smart Power System can assist in providing the following benefits:

- ◆ Avoids oversizing/overspecifying of servo equipment
- ◆ Assists in process speed improvement by providing factual power use information
- ◆ Avoids nuisance tripping due to intermittent loading
- ◆ High confidence in operation and more effective use of system capacity
- ◆ Helps determine most effective motion profile for desired process

Typical Applications

Applications with high dynamic loads that require optimum use of the servo system and best time of move will benefit from the use of the 1394 Smart Power System. Typical applications include:

- ◆ High-speed packaging
- ◆ Press load/unload
- ◆ Converting

1394 Smart Power



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Specifications

Catalog Number/System Requirements

Hardware requirements	Available on all 1394-SJT22-xxx, 22 kW system modules	
Software requirements	For:	This software is required:
	GMC models	GML Commander GML-C-x, V4.0 and later
	Servo models	None required
	CNC models	Not available
Firmware requirements	For:	This firmware is required:
	GMC models	V3.7 or later
	Servo models	V5.1 or later
	CNC models	Not available

Control Functionality

Thermal modeling	Regenerative power, motoring power, dynamic filters, software programmable
Start-up control	In-rush current limiting
Regenerative control	IT limiting, shunt resistor/shunt system thermal modeling and protection

Processing

Processor type	Dedicated processor
Sample rate	40, 80, 160 microseconds
Data refresh	1 ms
Data storage	Active only, RAM

Sample Attributes

- ◆ DC Link voltage (bus volts)
- ◆ DC Link current
- ◆ Soft Start system status
- ◆ Regeneration system status

Published System Information

- ◆ DC Link voltage (bus volts)
- ◆ Regenerative power usage (% available on system capacity)
- ◆ Motoring power usage (% available system capacity)
- ◆ Shunt power usage (% available shunt capacity, RMS)
- ◆ Shunt peak power usage (% available shunt capacity, last ten seconds)
- ◆ Power on time (days, minutes, drive power on time)
- ◆ Enabled time (days, minutes, drive enabled time)

Warnings Available

- ◆ System capacity warning (factory set to 80% of system capacity)
- ◆ Shunt capacity warning (factory set to 80% of shunt system capacity)

Programmable parameter

- ◆ Shunt model select

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