GE GE □□□ Series Service Manual

DS200SDCCG5A

1. Description

DS200SDCCG5A Technical Specifications

2. Specifications

Specification	Value
Abbreviation	**SDCC G5A**
Manufacturer	**GE Motors and Industrial Systems**
Onboard	**Software Qty 4 EPROMS at U11, U12, U22, and U23. Qty 1 EEPROM at U9**
Weight	**1.5lbs**
Series	**TC2000 Turbine Control System**
Part	**Number DS200SDCCG5A**
Product	**Type Drive Control Card**
Instruction	**Manual GEI-100029C (Supercedes GEI-100029B)**
Shipping	**Weight 1.5 lb**
About	**the DS200SDCCG5A**
Model	**Number: DS200SDCCG5A.**
Manufacturer:	**General Electric (GE).**
Series:	**Mark V Turbine Control System Series.**
Functional	**Description: Drive Control Card (SDCC-abbreviated).**
Revision:	**This is a revised version of the original DS200SDCCG5 parent PCB, indicated by the "A-rated functional product revision."**
Hardware	**Tips and Specifications**
Microprocessors:	**Populated with 3 microprocessors and RAM accessible by multiple microprocessors simultaneously.**
Each	**microprocessor is assigned specific drive control processing tasks.**
Microprocessors	**have necessary firmware and hardware installed (e.g., one performs math calculations for co-motor control**

3. Product Information

DS200SDCCG5A Technical Specifications

Abbreviation SDCC G5A

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Onboard Software Qty 4 EPROMS at U11, U12, U22, and U23. Qty 1 EEPROM at U9

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Series TC2000 Turbine Control System

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Instruction Manual GEI-100029C (Supercedes GEI-100029B)

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Manufacturer: General Electric (GE).

Series: Mark V Turbine Control System Series.

Functional Description: Drive Control Card (SDCC-abbreviated).

Revision: This is a revised version of the original DS200SDCCG5 parent PCB, indicated by the "A-rated functional product revision."

Hardware Tips and Specifications

Microprocessors: Populated with 3 microprocessors and RAM accessible by multiple microprocessors simultaneously.

Each microprocessor is assigned specific drive control processing tasks.

Microprocessors have necessary firmware and hardware installed (e.g., one performs math calculations for co-motor control).

EPROM Connectors: Features five EPROM connectors for storing configuration software.

Four EPROM modules store factory-assigned configuration parameters.

One EPROM module stores user/servicer-assigned configuration parameters.

Auxiliary Card Connections:

Contains connectors and standoffs for connecting to auxiliary cards available within the Mark V Series.

Cards can be attached with screws and connected via cable.

Auxiliary cards enable connection to a local area network or add to signal processing capabilities.

Jumpers: Contains jumpers set at the factory for board configuration.

Caution: These jumpers should not be moved to change board behavior.

Performance Note: Its status as a revised Drive Control Card (DS200SDCCG5A) may alter the original performance specifications and functionality of the initial DS200SDCCG5.

SPECIFICATIONS:

Part Number: DS200SDCCG5A

Manufacturer: General Electric

Series: EX2000

Product Type: Digital Exciter Drive Control Card

Number of channels: 16

Analog outputs: 0-20 mA

Frame Rate: 100 Hz

Repair: 3-7 Day

Availability: In Stock

Country of Origin: United States

Manual: GEI-100029D

FUNCTIONAL DESCRIPTION:

DS200SDCCG5A is a Digital Exciter Drive Control Card manufactured and designed by General Electric as part of the EX2000 Series used in the Excitation Control systems. The Drive Control Card (SDCC), which is the main processor board, contains the EX2000's primary control circuitry. It consists of three 16-bit microprocessors and associated circuits coupled via dual-ported RAM. It includes general-purpose interface circuitry that connects with other boards to form various types of excitation systems. This interface circuitry controls and processes exciter and customer I/O. It also expands processing capability via two external dual-ported RAMs. (In TC2000 applications, the interface circuitry and three primary microprocessors are utilized for various tasks.) The three primary microprocessors of the SDCC are:

An 80C186 microcontroller (U1) that employs both digital and analog I/O and has a variety of built-in peripheral features.

Among these features are the direct memory access (DMA) controller, timer/counters, an interrupt controller, wait-state generators, and address decoding for chip choices. User interfaces, external regulating loops (such as speed and location), and system-level operations make up DCP software.

A processor for motor control (MCP), a microcontroller (U21) with an 80C196 processor that has high-speed I/O, analog I/O, traditional digital I/O, timer/counters, and a watchdog timer. Inner loops like current regulators and motor/technology-specific features like dc phase control, ac motion control, and ac general purpose make up MCP software.

For motor control algorithms that are too sophisticated for the MCP, a TMS320C25 digital signal processor (U35) executes math-intensive operations. Only when the drive requires the extra processing power does the SDCC use this processor and the electronics that go along with it. The only devices with which the CMP interfaces are its dual-ported RAM and EPROM.

Five memory chips make up the onboard software for the DS200SDCC card: four EPROMs (U11, U12, U22, and U23) that carry factory-programmed configuration data and one EEPROM (U9) that stores field-adjustable settings. On the SDCC, these memory chips are housed in sockets.

AUXILIARY BOARD MOUNTING PROVISIONS:

Additional auxiliary boards and modules can be mounted using the SDCC mounting facilities. The SDCC is compatible with the following boards:

DS215SLCC or 531X306LCC LAN Communications Card

531X309SPC Signal Processor Card

DS200SPCB Multibridge Signal Processor Card

HARDWARE CONFIGURATION:

The SDCC includes configurable hardware that must be set correctly for the application:

Berg-type (manually movable) hardware jumpers, identified by a JP nomenclature

Wire jumpers, identified by a WJ nomenclature

These jumpers are utilized for user application options or factory testing. The majority of the jumper options are pre-set at the factory. These factory fixed positions are listed on the test data sheets that come with each controller (in the drive/exciter door pocket). The jumper descriptions are included in Table 2, starting with the default option.

SOFTWARE CONFIGURATION TOOLS:

The SDCC requires the use of the ST2000, GE Control System Toolbox, or LynxOS Drive Configurator for any software modification, download, or replacement. For any software modifications, the ST2000, GE Control System Toolbox, or LynxOS Drive Configurator instruction book, a suitable PC, and the relevant drive/exciter instruction book are also needed.